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Report: Elkview Operations (EVO) Local Aquatic Effects Monitoring Program (LAEMP), 2022

Overview: This report monitors aquatic conditions related to ongoing mining and the commissioning of the Elkview Operations Saturated Rock Fill (EVO SRF).

This report was prepared for Teck by Minnow Environmental Inc.

For More Information

If you have questions regarding this report, please:

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Future studies will be made available at teck.com/elkvalley.



**Elkview Operations (EVO) Local Aquatic
Effects Monitoring Program (LAEMP),
2022**

Prepared for:
Teck Coal Limited
Sparwood, British Columbia

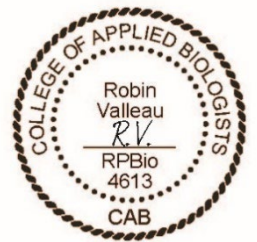
Prepared by:
Minnow Environmental Inc.
Victoria, British Columbia

June 2023

**Elkview Operations (EVO) Local Aquatic
Effects Monitoring Program (LAEMP), 2022**

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EXECUTIVE SUMMARY

The Elkview Operations Local Aquatic Effects Monitoring Program (EVO LAEMP) was designed to evaluate changes related to the commissioning of the Saturated Rock Fill (SRF). As per section 8.3.5 in Permit 107517, the EVO LAEMP is focused on the immediate receiving environment downstream of the EVO SRF including Erickson, Gate, Bodie, and Michel creeks. The EVO LAEMP is intended to monitor for changes in water quality, calcite, and temperature in the receiving environment downstream of the EVO SRF and how these changes may have potential effects to the biota. After starting the EVO SRF trials in 2018 (EVO SRF Phase 1; discharge to Gate and Bodie creeks), the EVO SRF started treating Erickson Creek water as part of Phase 2 (referred to as EVO SRF P2) on February 15, 2021. During EVO SRF P2 in 2021, water was discharged from the SRF back into Erickson Creek, with limited discharge from the SRF to Bodie and Gate creeks.

Sampling completed in September 2021 showed unexpected tissue selenium concentrations immediately downstream of the SRF outfall in Erickson Creek. Results from confirmatory sampling initiated by Teck's Adaptive Management Plan (AMP) response framework, and ongoing monthly investigative sampling was started in April 2022. On April 9, 2022, discharge of the SRF to Erickson Creek was paused to complete planned maintenance on the Erickson effluent pipeline. Due to the high BIT Se results observed in Erickson Creek, it was determined, through Teck's AMP framework, that treatment of Erickson Creek water would remain paused to further investigate the cause of the increased BIT Se concentrations. Benthic invertebrate tissues selenium concentrations returned to pre-SRF P2 levels by October 2022. The extended downtime allowed Teck to develop a robust trigger response plan (TRP) to support the restart of Erickson Creek treatment (Teck 2023a). A TRP was submitted October 3, 2022, with the discharge of treated effluent to Erickson Creek restarting on October 4, 2022. The results from the investigative sampling (until restart on October 4, 2022) were shared in the Elkview Operations Saturated Rock Fill (EVO SRF): Investigation Into Enhanced Selenium Bioaccumulation in Benthic Invertebrate Tissue in Erickson Creek Summary Report on May 4, 2023 (Teck 2023a). The EVO LAEMP report is focused on 6 specific questions related to the influence of the EVO SRF on Erickson, Gate, Bodie, and Michel creeks in 2022.

Study question # 1 (Has temperature changed in the receiving environment of Erickson Creek as the result of SRF water treatment?) was evaluated using continuous temperature data loggers installed in Erickson Creek. Water temperature in Erickson Creek downstream of the SRF was influenced by SRF operation in 2022; however, the effects were temporally constrained due to SRF shutdown during the summer months when the greatest SRF influence on water temperature (i.e., a significant increase downstream of the SRF outfall compared to upstream) was observed



in 2021 (Minnow 2022). Considering there were no observed effects on biological endpoints (i.e., BIC and productivity) that could be linked to the variability in the water temperature and water temperatures did not exceed permit or BCWQG downstream of the SRF, it is unlikely that this variability was ecologically significant in 2022.

Study Questions #2 (Has calcite in the receiving environment (Erickson, Bodie, Gate, and Michel creeks) been influenced by SRF water treatment and/or calcite prevention (e.g. antiscalant efforts?) was evaluated using calcite presence data collected during both the EVO LAEMP benthic invertebrate community (BIC) sampling as well as the Regional Calcite Program. Calcite presence in the receiving environment (Erickson, Gate, and Bodie creeks) was largely similar to previous years (pre-EVO SRF P2) in 2022, based on observations from the present study as well as the Regional Calcite Monitoring Program. Calcite presence in Michel Creek has been variable at all areas assessed under the LAEMP; however, calcite concretion and calcite index scores have remained low. Antiscalant treatment has been variable in all areas (Erickson, Gate, and Bodie creeks) and thus no conclusions around the cause of calcite variability among years associated with antiscalant dosing can be made in 2022.

Study Question #3 (Has SRF water treatment and/or calcite prevention (e.g., antiscalant) (a) decreased aqueous concentrations of selenium and nitrate and/or (b) changed other mine-related constituents in effluent and the receiving environment (Erickson, Bodie, Gate, and Michel creeks?) was evaluated through monitoring of water chemistry, including selenium speciation concentrations, throughout the EVO LAEMP study area. In 2022, the SRF removed 672 kg of selenium and 89,292 kg of nitrate decreasing selenium and nitrate loadings into the receiving environment. During SRF operation in 2022, concentrations of selenium and nitrate decreased in the receiving environment of Erickson Creek as well as Gate and Bodie creeks. In contrast, concentrations of selenium and nitrate in Michel Creek did not change concurrently with changes in SRF operation but has decreased from pre-SRF operation (nitrate) or remained similar to pre-SRF operation (selenium). A number of other mine-related constituents increased in the receiving environment (i.e., Erickson, Gate and Bodie creeks) downstream of the SRF treatment following operation, due to changing sources of influent. All of the constituents that increased, except for dissolved nickel and uranium, were below the available water quality criteria in Erickson Creek (Proposed Benchmarks and BCWQG, respectively). Increases in these constituents are likely due to higher concentrations present in water directed to the SRF for treatment from Natal Pit. The elevated concentrations are spatially constrained to Erickson, Gate and Bodie Creeks and similar trends are not observed in Michel Creek suggesting that the SRF had a minimal influence in the downstream receiving environment. Along with aqueous concentrations of mine-related constituents, sediment concentrations were monitored as part of



the EVO LAEMP. The elevated sediment metal (i.e., arsenic, cadmium, iron, manganese, nickel, selenium, and zinc) and PAH concentrations from SRF treatment also appear to be localized to a relatively small area directly downstream of the SRF outfall (RG_ERCKDT and RG_ERCKMD). In lower Erickson Creek (RG_ERCK) and Michel Creek, the concentrations of the majority of sediment constituent concentrations are similar to concentrations pre-SRF treatment and within regional normal ranges suggesting that the SRF had minimal influence on sediment chemistry in the downstream receiving environment.

Study Question #4 (Have benthic invertebrate tissue selenium concentrations changed as a result of the SRF in Erickson, Bodie, Gate, and Michel creeks?) was evaluated through the monitoring of composite-taxa benthic invertebrate tissue selenium concentrations throughout the study area monthly March through to the end of the year. A detailed analysis of the causal factors associated with changing BIT Se concentrations can be found in the 'Investigation Into Enhanced Selenium Bioaccumulation in Benthic Invertebrate Tissue in Erickson Creek' (Teck 2023a). Mean BIT selenium concentrations in Gate and Bodie creeks, were occasionally greater than the Level 1, 2, and 3 benchmarks for effects to benthic invertebrates in 2022. Additionally, the mean BIT Se concentrations immediately downstream of the SRF outfall in Erickson Creek often exceeded the EVWQP Level 1 benchmarks during the additional sampling events associated with the Erickson Creek selenium investigation and occasionally exceeded the EVWQP Level 2 and Level 3 benchmarks in the late winter and early spring before treatment was paused. Benthic invertebrate tissues selenium concentrations returned to pre-SRF P2 levels by October 2022. The Investigation into Enhanced Selenium Bioaccumulation in Benthic Invertebrate Tissue in Erickson Creek identified strong evidence that SRF-derived particles are the primary driver of the observed BIT Se increase in upper Erickson Creek. The influence of the SRF on BIT selenium concentrations was isolated to directly below the SRF outfall in Erickson Creek. In contrast, mean BIT selenium concentrations at the confluence of Erickson Creek and Michel Creek and the study areas in Michel Creek were all below EVWQP benchmarks.

Study Question #5 (Are there changes in the benthic invertebrate community in Erickson, Bodie, Gate, and Michel creeks associated with SRF treatment (including calcite prevention)?) was evaluated through monitoring of BIC endpoints. BIC endpoints including taxa richness and % EPT (Ephemeroptera, Plecoptera, and Trichoptera) were lower than reference and below regional and/or habitat-adjusted normal ranges at some areas in Erickson Creek in 2022. Investigation of spatial and temporal trends indicated that these differences were either observed both up- and downstream of the SRF outfall (e.g., decrease in % EPT at both RG_ERCKUT and RG_ERCKDT) and/or were observed prior to commissioning for EVO SRF P2 (e.g., lower taxa richness at RG_ERCKUT; lower % EPT at RG_ERCK). Overall, while changes in BIC were apparent in Michel Creek (i.e., decrease in %EPT), these changes have been variable through



time and are not aligned with known changes in SRF operation, indicating minimal effects of the SRF. Total abundance and abundance of key BIC endpoints (EPT abundance) remained high throughout the study area, resulting in no limitations of food available to fish in fish bearing areas of Erickson or Michel creeks.

Study question #6 (Is SRF water treatment affecting indicators of productivity (e.g., phosphorus) in the receiving environment?) was evaluated through monitoring changes in phosphorus, benthic invertebrate density, and biomass and periphyton coverage. Concentrations of total phosphorus increased downstream of the SRF outfall in Erickson Creek in 2022 (SRF shutdown for six months) compared to 2021 (SRF discharging). No changes in BIC biomass and density were apparent in 2022, most likely due to SRF shutdown during the growing season leading to lower temperatures at that time compared to 2021. Mean periphyton coverage was moderate at the reference study area (RG_ALUSM) and at all mine-exposed study areas evaluated, except RG_ERCK, and RG_BOCK, where periphyton was high and low, respectively and there were no patterns in visual periphyton score associated with SRF discharge in 2022. There were no changes in productivity associated with SRF operation in 2022 in Erikson, Gate, Bodie and Michel creeks.

Overall, in 2022, the SRF removed 89,292 kg of nitrate and 672 kg of selenium decreasing selenium and nitrate loadings into the receiving environment. During SRF operation, concentrations of nitrate and selenium decreased in Erickson Creek as well as Gate and Bodie creeks. In Michel Creek concentrations of nitrate have decreased from base year of monitoring, likely due to SRF treatment. As expected in 2022, during SRF shutdown in Erickson Creek, temperature, and benthic proxies of productivity (i.e., benthic biomass and density) returned to pre-SRF P2 operation conditions. While the changes observed in water quality, temperature, and productivity in 2022 were expected based on SRF operational status, changes in calcite presence and benthic invertebrate community were less clear. Calcite in the receiving environment (Gate, Bodie, and Erickson creeks) was largely similar to pre-EVO SRF P2 operation in 2022; however, it is unclear if the shifts in 2022 compared to 2021 were related to SRF operation and subsequent changes to antiscalant treatment, shutdown during the spring and summer of 2022 precludes any conclusions around the cause of calcite variability among years. Lastly, while effects to benthic invertebrate community in relation to reference normal ranges were apparent in Erickson Creek and Michel Creek, they were either present prior to SRF commissioning, have not changed substantially over time, and/or have been variable through time in a manner inconsistent with SRF operation, indicating multiple influences, both natural and stressor-related, on BIC, and suggests minimal effects of SRF operation. Additional years of data will be beneficial to assess changes in calcite and BIC associated with SRF water treatment.



Results of the 2022 EVO LAEMP provide information that supports Teck's AMP and informs future monitoring and management efforts.



TABLE OF CONTENTS

1	INTRODUCTION.....	1
1.1	Background.....	1
1.2	SRF Operational Timeline	4
1.3	Study Questions	9
1.4	Linkages to the Adaptive Management Plan for Teck Coal in the Elk Valley.....	11
2	METHODS	14
2.1	Overview	14
2.2	Physical Habitat and Supporting Measures	19
2.2.1	Temperature	19
2.2.1.1	Sampling Overview	19
2.2.1.2	Data Analysis.....	19
2.2.2	Sediment Quality.....	20
2.2.2.1	Sampling Overview.....	20
2.2.2.2	Laboratory and Data Analysis	20
2.2.3	Calcite and CABIN Measures.....	20
2.2.3.1	Sampling Overview.....	20
2.3	Water Quality and Toxicity.....	21
2.3.1	Water Quality	21
2.3.1.1	Sampling Overview.....	21
2.3.1.2	Laboratory and Data Analysis	21
2.3.2	Acute Toxicity.....	23
2.3.3	Chronic Toxicity.....	23
2.4	Periphyton.....	23
2.4.1	Sampling Overview	23
2.4.2	Data Analysis	24
2.5	Benthic Invertebrates.....	24
2.5.1	CABIN Sampling (Community).....	24
2.5.1.1	Sampling Overview.....	24
2.5.1.2	Laboratory and Data Analysis	24
2.5.2	Hess Sampling (Density, Biomass, and Community).....	25
2.5.2.1	Sample Overview.....	25
2.5.2.2	Laboratory and Data Analysis	25
2.5.3	Tissue Selenium.....	25
2.5.3.1	Sampling Overview.....	25
2.5.3.2	Laboratory and Data Analysis	26
3	RESULTS AND DISCUSSION.....	27
3.1	Study Question #1	27
3.1.1	Temperature	27
3.2	Study Question #2.....	29
3.2.1	Calcite.....	29
3.3	Study Question #3.....	41
3.3.1	Selenium and Nitrate.....	41
3.3.2	Other mine-related constituents in effluent	73
3.3.3	Supporting Data	89
3.3.3.1	Acute Toxicity Results.....	89
3.3.3.2	Chronic Toxicity Results.....	89
3.3.3.3	Sediment Quality.....	92



3.3.4	Summary	103
3.4	Study Questions #4	103
3.4.1	Spatial Benthic Invertebrate Tissue Trends	104
3.4.2	Temporal Benthic Invertebrate Tissue Trends	122
3.4.3	Summary	122
3.5	Study Questions #5	128
3.5.1	Benthic Invertebrate Community	128
3.6	Study Questions #6	137
3.6.1	Phosphorus	137
3.6.2	Biomass and Density	152
3.6.3	Visual Periphyton Coverage	152
4	INTEGRATED SUMMARY AND CONCLUSIONS	154
5	UPDATES TO 2021 TO 2023 EVO LAEMP STUDY DESIGN	156
6	REFERENCES	157

APPENDIX A	METHODS DATA ANALYSIS
APPENDIX B	DATA QUALITY REVIEW
APPENDIX C	PHYSICAL HABITAT
APPENDIX D	WATER QUALITY
APPENDIX E	PERIPHYTON
APPENDIX F	BENTHIC INVERTEBRATES
APPENDIX G	BIOLOGICAL TRIGGERS
APPENDIX H	LABORATORY REPORTS

LIST OF FIGURES

Figure 1.1:	Teck's Coal Mine Operations within the Elk River Watershed, Southeast British Columbia	2
Figure 1.2:	Overview of Completed Benthic Invertebrate Tissue Selenium Sampling Events in Relation to Phases of SRF Operation, 2018 to 2022	5
Figure 1.3:	EVO LAEMP SRF P2 Biological Monitoring Areas and Teck Water Quality Stations, 2022	6
Figure 1.4:	Temperature Logger Stations, Erickson Creek	8
Figure 1.5:	Conceptual Site Model for Potential Mine-Related Effects on the Aquatic Ecosystem	10
Figure 3.1:	Mean Daily Water Temperature Recorded by Temperature Loggers, EVO LAEMP, 2022	28
Figure 3.2:	Calcite Proportion and Concretion Scores for EVO LAEMP Areas, 2022	31
Figure 3.3:	Calcite Proportion and Concretion Scores for EVO LAEMP Areas, 2015 to 2022	32
Figure 3.4:	Comparison of Water Quality Constituent Concentrations During SRF Operation, EVO LAEMP, 2019 to 2022	43



Figure 3.5:	Time Series Plots for Total Selenium from EVO LAEMP Areas, 2012 to 2022	51
Figure 3.6:	Time Series Plots for Nitrate from EVO LAEMP Areas, 2012 to 2022	58
Figure 3.7:	Comparison of Water Quality Concentrations During SRF Operation, EVO LAEMP, Base Year to 2022	65
Figure 3.8:	Time Series Plots for Dissolved Nickel from EVO LAEMP Areas, 2012 to 2022	75
Figure 3.9:	Time Series Plots for Total Uranium from EVO LAEMP Areas, 2012 to 2022	82
Figure 3.10:	Sediment Metal and Polycyclic Aromatic Hydrocarbon (PAH) Concentrations in September, EVO LAEMP, 2018 to 2022	94
Figure 3.11:	Selenium concentrations in Composite-taxa Benthic Invertebrate Samples Collected at Reference (Green) and Mine-Exposed (Blue) Areas of Bodie, Erickson, Gate, and Michel Creeks, EVO LAEMP, 2022	105
Figure 3.12:	Selenium concentrations in Benthic Invertebrate Tissues found in EVO LAEMP Areas, 2012 to 2022	115
Figure 3.13:	Benthic Invertebrate Tissue Selenium Concentrations at Erickson Creek Areas, EVO LAEMP 2022	123
Figure 3.14:	Benthic Invertebrate Tissue Selenium Concentrations at Michel Creek Areas, EVO LAEMP, 2022	124
Figure 3.15:	Benthic Invertebrate % EPT and % Ephemeroptera, EVO LAEMP, September 2022	129
Figure 3.16:	Time Series Plots for Total Phosphorus from EVO LAEMP Areas, 2012 to 2022	138
Figure 3.17:	Benthic Invertebrate Community Endpoints at Erickson Creek, Gate Creek, Bodie Creek and Michel Creek, EVO LAEMP, September 2022	145
Figure 3.18:	Benthic Invertebrate Density and Biomass Metrics Collected by Hess Sampling for Upstream (RG_ERCKUT) and Downstream (RG_ERCKDT) Areas, EVO LAEMP, September 2021 and 2022	153

LIST OF TABLES

Table 2.1:	Approach for the EVO LAEMP, 2021 to 2023	15
Table 2.2:	Sampling Design for EVO SRF P2 LAEMP Monitoring in 2022	16
Table 2.3:	Additional Sampling for EVO SRF P2 LAEMP Monitoring in 2022	17
Table 2.4:	Summary of Water Quality Monitoring for EVO LAEMP SRF per Permit 107517	18
Table 2.5:	Temperature Loggers in Erickson Creek, 2022	22
Table 3.1:	Calcite Presence, Concretion, and Index Values, EVO LAEMP, 2015 to 2021	39
Table 3.2:	Summary of Acute Toxicity Test Results for EVO LAEMP Monitoring Stations, 2022	90
Table 3.3:	Results of Quarterly and Semi-Annual Chronic Toxicity Testing at EV_MC2, 2015 to 2022 (Golder 2016, 2017a, 2018, 2019, 2020a, 2021, 2022	91



ACRONYMS AND ABBREVIATIONS

- AMP** – Adaptive Management Plan
- ANOVA** – Analysis of Variance
- BCWQG** – British Columbia Water Quality Guidelines
- BIC** – Benthic Invertebrate Community
- BIT** – Benthic Invertebrate Tissue
- CA** – Correspondence Analysis
- CCA** – Canonical Correspondence Analysis
- CABIN** – Canadian Aquatic Biomonitoring Network
- Cc** – Calcite concretion
- CI** – Calcite Index (utilizing Cp)
- CI'** – Calcite Index (utilizing Cp')
- CMm** – Coal Mountain Mine
- Cp** – Calcite Presence (binary assessment)
- Cp'** – Calcite Presence (percent-based assessment)
- CSM** – Conceptual Site Model
- CRC ICP-MS** – Collision Reaction Cell Inductively Coupled Plasma-Mass Spectrometry
- CVAFS** – Cold Vapour Atomic Fluorescence Spectroscopy
- DQR** – Data Quality Review
- EFN** – Environmental Flow Needs
- EMC** – Environmental Monitoring Committee
- ENV** – British Columbia Ministry of Environment and Climate Change Strategy
(formerly BCMOE)
- EPT** – Ephemeroptera, Plecoptera, and Trichoptera
- EVO** – Elkview Operation
- EVWQP** – Elk Valley Water Quality Plan
- FRO** – Fording River Operation
- GC/MS** – Gas Chromatography with Mass Spectrometric Detection
- GHO** – Greenhills Operation
- GLM** – Generalized Linear Model
- HR-ICP-MS** – High Resolution Inductively Coupled Plasma Mass Spectrometry
- ICP-MS** – Laser Ablation Inductively Coupled Plasma Mass Spectrometry
- LAEMP** – Local Aquatic Effects Monitoring Program
- LCO** – Line Creek Operation



LPL – Lowest Practical Level, referring to taxonomic identification of benthic invertebrates

LRL – Laboratory Reporting Limit

MOD – Magnitude of Difference

P1 – Phase 1

P2 – Phase 2

PAH – Polycyclic Aromatic Hydrocarbons

PDF – Portable Document Format

QA/QC – Quality Assurance / Quality Control

RAEMP – Regional Aquatic Effects Monitoring Program

R.P. Bio. – Registered Professional Biologist

SME – Subject Matter Expert

SPO – Site Performance Objective

SRF – Saturated Rock Fill

TIE - Toxicity identification evaluation

TOC – Total Organic Carbon

WCT – Westslope Cutthroat Trout



1 INTRODUCTION

1.1 Background

Teck Coal Limited (Teck) operates four mines in the Elk River watershed to extract steel-making coal. The four mines are the Fording River Operation (FRO), Greenhills Operation (GHO), Line Creek Operation (LCO), and Elkview Operation (EVO; Figure 1.1). A fifth mine, Coal Mountain Mine (CMm), is also owned by Teck and located in the Elk River watershed; however, it is no longer in operation and has been moved into the care and maintenance designation. Discharges from the mines to the Elk River watershed are authorized by the British Columbia Ministry of Environment and Climate Change Strategy (ENV) through permits that are periodically issued under provisions of the *Environmental Management Act*. Permit 107517¹ specifies the terms and conditions associated with discharges from Teck's five Elk Valley mine operations and includes requirements for regional and local aquatic effects monitoring programs.

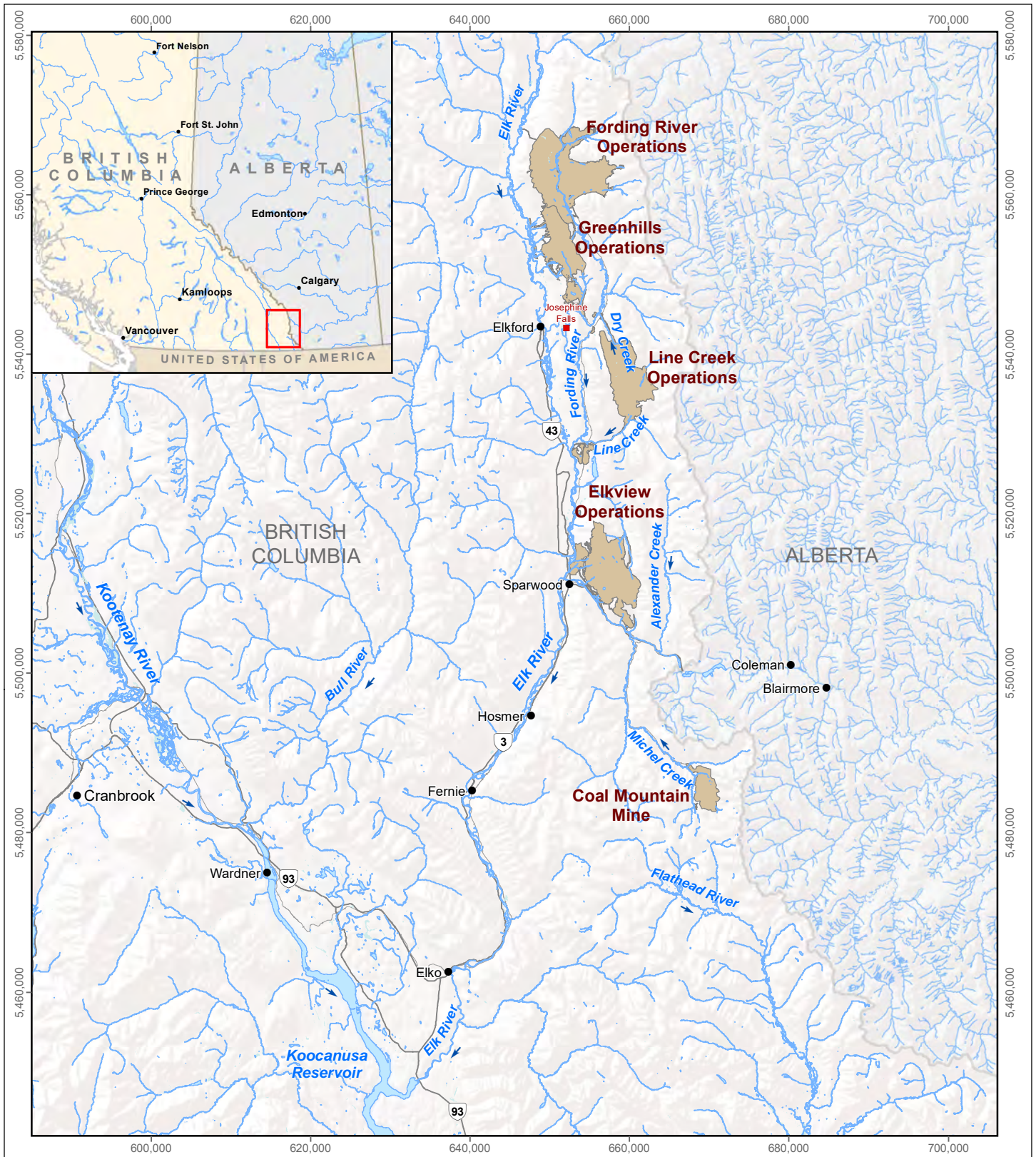
This report satisfies the annual commitments in section 8.3.5 of Permit 107517 that outlines the requirements for the EVO Local Aquatic Effects Monitoring Program (LAEMP) as follows:

“The permittee must develop and implement a LAEMP to determine the magnitude and extent of influence from EVO SRF (Saturated Rock Fill) discharge on water quality (including temperature), calcite and benthic invertebrate communities to assess what factors are contributing to the observed effects. The study design must be reviewed by the EMC² and submitted to the director for approval by June 30, 2021. The LAEMP must be designed to an appropriate temporal scale to capture short term, local effects to the immediate receiving environment, and must consider the possibility of impacts resulting from potential selenium speciation.”

¹ Permit 107517 was initially issued on November 19, 2014, but has been amended on numerous occasions with the most recent revisions occurring on May 18, 2023.

² EMC refers to the Environmental Monitoring Committee, which Teck was required to form under Permit 107517. The EMC consists of representatives from Teck, ENV, the Ministry of Energy and Mines, Environment Canada, the Ktunaxa Nation Council, Interior Health Authority, and an independent scientist. Environment Canada has agreed to provide input on a case-by-case basis when requested by the other members of the EMC but has not yet been called upon to participate. The EMC reviews submissions and provides technical advice to Teck and the ENV Director regarding monitoring programs.





LEGEND

 Teck Coal Mine Operations

Teck's Coal Mine Operations within the Elk River Watershed, Southeast British Columbia

0 10 20 40 km

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Date: April 2023
 Project 227202.0012



Figure 1.1

The study design was approved on October 15, 2021, and then amended on March 4, 2022³. Section 9.5 of Permit 107517 states:

The LAEMP Annual Reports must be reported on in accordance with generally accepted standards of good scientific practice in a written report and submitted to the Director by June 30 of each year following the data collection calendar year.

In addition to local monitoring under the LAEMP, Teck's Regional Aquatic Effects Monitoring Program (RAEMP) provides comprehensive routine monitoring and assessment of potential mine-related effects on the aquatic environment downstream from Teck's mines in the Elk Valley (i.e., annual sampling and more comprehensive monitoring every three years). Data collected under the EVO LAEMP is incorporated into RAEMP reporting.

Teck conducts a variety of additional programs to monitor, evaluate, and/or manage the aquatic effects of mining operations, within the EVO LAEMP study area those include:

- Water Quality Monitoring;
- Regional Calcite Monitoring, under Calcite Management Plan;
- Fish and Fish Habitat Management;
- Chronic Toxicity Testing Program;
- Tributary Management, under the Tributary Management Plan;
- Adaptive Management, under the Adaptive Management Plan;
- Regional and Site-Specific Groundwater Monitoring Programs;
- Environmental Flow Needs (EFN) Studies;
- Flow Accretion Studies; and
- Elkview Operational and Treatment Facilities Reporting.

The EVO LAEMP assesses site-specific conditions as it relates to Saturated Rock Fill (SRF) operation on a more frequent and localized basis than the RAEMP and is spatially restricted to Erickson (upstream and downstream of the SRF Outfall), Gate (upstream and downstream of settling pond), Bodie, and Michel creeks (upstream and downstream of the confluence with Erickson Creek), as well as two reference areas (located on Lower Alexander Creek and upper

³ The amended study design required sediment quality data from RG_MI3 be included in the EVO LAEMP Annual report, monthly water quality monitoring for EV_MC3a and EV_MC3, selenium bioaccumulation by benthic invertebrates for all areas included in the annual EVO LAEMP report. Additionally, monthly sampling at RG_ERCKUT was required from January to June 2022 with a statistical comparison of water quality to F2_ECIN.



Michel Creek). The LAEMP will continue as required until sufficient data have been collected to evaluate the study questions and/or relevant ongoing monitoring requirements can be incorporated into the RAEMP.

1.2 SRF Operational Timeline

A key component of Permit 107517 is the incorporation of an adaptive management approach for the advancement of research on treatment technologies to both reduce mine-related constituent loadings in the environment as well as reduce the reliance on long term active water treatment (as noted in Section 7.2 of the Permit). In accordance with this approach, Teck, in January of 2018, commenced a full-scale trial of the EVO SRF (SRF P1) for the removal of aqueous nitrate and selenium from water sourced from Natal Pit, and reported >90% removal of selenium and nitrate from influent waters with a treatment capacity of up to 10,000 m³/d (Teck 2020a, Figure 1.2). On February 22, 2018, SRF effluent discharge commenced through the Bodie Creek Rock Drain, which then flows to either Bodie or Gate creeks (Teck 2020a). Teck initiated wet testing of Erickson Creek intake/outfall structure on December 10, 2020, prior to the commissioning phase of EVO SRF P2, and during this time EVO SRF remained in recirculation as the facility continued the biomass growth stage in advance of moving into Erickson Creek forward flow (i.e. treating and discharging back to Erickson Creek) on February 15, 2021 (EVO SRF P2; Teck 2022a). The commissioning phase of the EVO SRF P2 was completed on August 13, 2021, and the facility transitioned to the operations phase on August 14, 2021. Natal pit was brought online as a supplemental influent source for Erickson Creek on November 9, 2021, to build the pit water level within the EVO SRF treatment zone. Teck began discharging treated effluent to the Gate and Bodie systems in January of 2022 (Teck 2022a).

The hydraulic design capacity of EVO SRF P2 is 21,053 m³/d (Teck 2020a), which can be sourced solely from Erickson Creek during periods of higher flow or combined with water from Natal Pit for treatment during periods of lower flow or to make up pit level (Figure 1.3). For the majority of 2021⁴, treated effluent from the SRF was returned through the outfall structure into the non-fish bearing reach of Erickson Creek (Figure 1.3), with limited discharge in Gate Creek and Bodie Creek through the Bodie rock drain. Both the Bodie and Gate Creek catchments have been considerably altered as a result of historical mining, and the original channels of significant portions of these catchments are composed of rock spoils and reclaimed slopes and are acting as rock drains (Teck 2020b). Overall, the effect of the EVO SRF P2 on the receiving environment is expected to be positive (via decreases of selenium and nitrate); however, a subset of

⁴ In 2021, the average throughput of the EVO SRF P2 was 12,604 m³/day and treated a total volume of 4,033,353m³ in 2021. EVO SRF P2 experienced 53 downtime events in 2021, with five of these events being greater than 24 hours in duration (Teck 2022a).

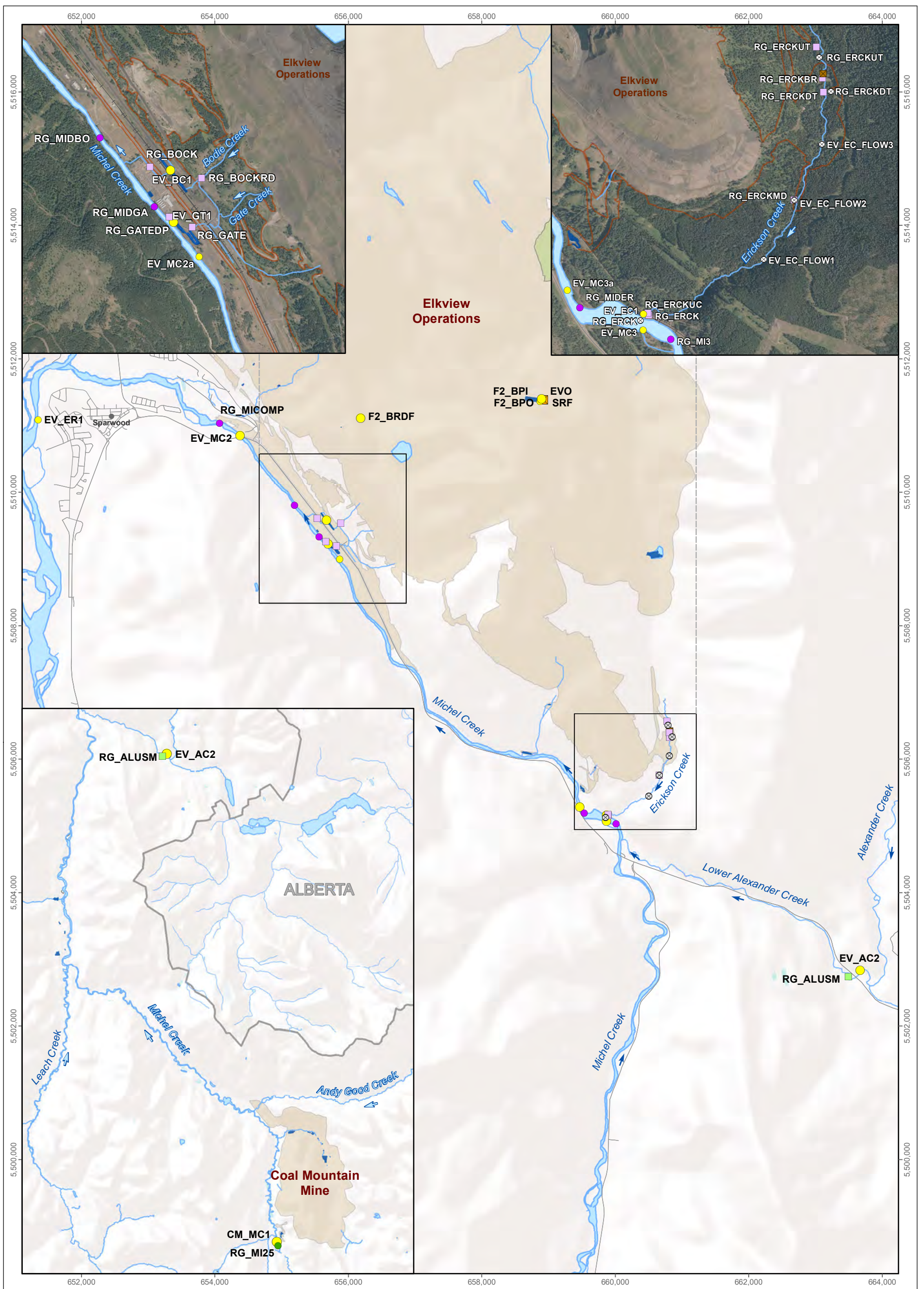


EVO SRF Operational Phase	2018				2019				2020				2021				2022																														
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N
SRF P1 Operations	█				█				█				█				█																														
SRF P2 Operations	█				█				█				█				█																														

- = Tissue selenium analysis sampling event included in LAEMP Study Design.
- = Additional tissue selenium analysis sampling event.
- █ SRF P1 Operations █ SRF P2 Operations

Figure 1.2: Overview of Completed Benthic Invertebrate Tissue Selenium Sampling Events in Relation to Phases of SRF Operation, 2018 to 2022

Notes: EVO = Elkview Operations; SRF = Saturated Rock Fill; P1 = Phase 1 Operations (Natal Pit to Bodie and Gate Creeks); P2 Operations = Phase 2 (Natal Pit to Bodie, Gate, and Erickson Creeks).



LEGEND

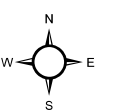
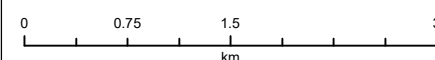
Sampling Location

- Mine-exposed - Main Stem
- Mine-exposed - Tributary
- Reference - Main Stem
- Reference - Tributary
- Teck Water Quality Monitoring Station
- ⊗ Temperature Logger

- Elkview Operation Saturated Rock Fill
- SRF Discharge
- Settling Pond
- Tailings Pond
- Teck Coal Mine Operations

Note: * two loggers are present at RG_ERCKUT and three loggers are present at RG_ERCK.

EVO LAEMP SRF P2 Biological Monitoring Areas and Teck Water Quality Stations, 2022



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Figure 1.3

constituents (nickel, phosphorus, selenite, and organoselenium species) as well as temperature (Figure 1.4; Erickson Creek only) could increase in the receiving environment as a result of SRF treatment (Golder 2020a, Teck 2020a).

Prior to commissioning of the SRF, studies were conducted to investigate fish habitat and usage (Robinson 2009, Wilkinson 2009, Lotic 2015, and Ecofish 2020) in Gate, Bodie, Erickson, and Michel creeks. In short, results from these studies demonstrated a lack of suitable habitat for fish in these areas. As well, Bodie and Gate creeks routinely undergo fish salvages and have suspected fish barriers⁵, while upper portions of Erickson Creek (referred to as Reach 2) are above two natural fish barriers (i.e., 2 m waterfall) present approximately 290 m upstream of the confluence of Michel Creek. Although fish (specifically Westslope Cutthroat [WCT] and Bull Trout) have been documented in lower portions of Erickson Creek (i.e. below the upstream natural barrier, referred to as Reach 1), this area contains poor fish habitat and likely only provides summer foraging habitat for fish from Michel Creek (Ecofish 2020). Additional existing condition studies evaluating water and sediment quality, benthic invertebrate community, and benthic invertebrate tissue (BIT) demonstrated that Gate, Bodie, and Erickson creeks) had elevated concentrations of aqueous selenium, nitrate, and other water quality constituents greater than Elk Valley Water Quality Plan (EVWQP) benchmarks and/or British Columbia Water Quality Guidelines (BCWQGs; (Minnow 2020a⁶, 2021a). Elevated concentrations of selenium in benthic invertebrate tissue in Gate and Bodie creeks was also recorded in the existing condition studies (Minnow 2020a, 2021a). In Michel Creek, most water quality constituents were below relevant Elk Valley Water Quality Plan (EVWQP) benchmarks/BCWQGs and benthic invertebrate community (BIC) metrics were within regional reference normal ranges.

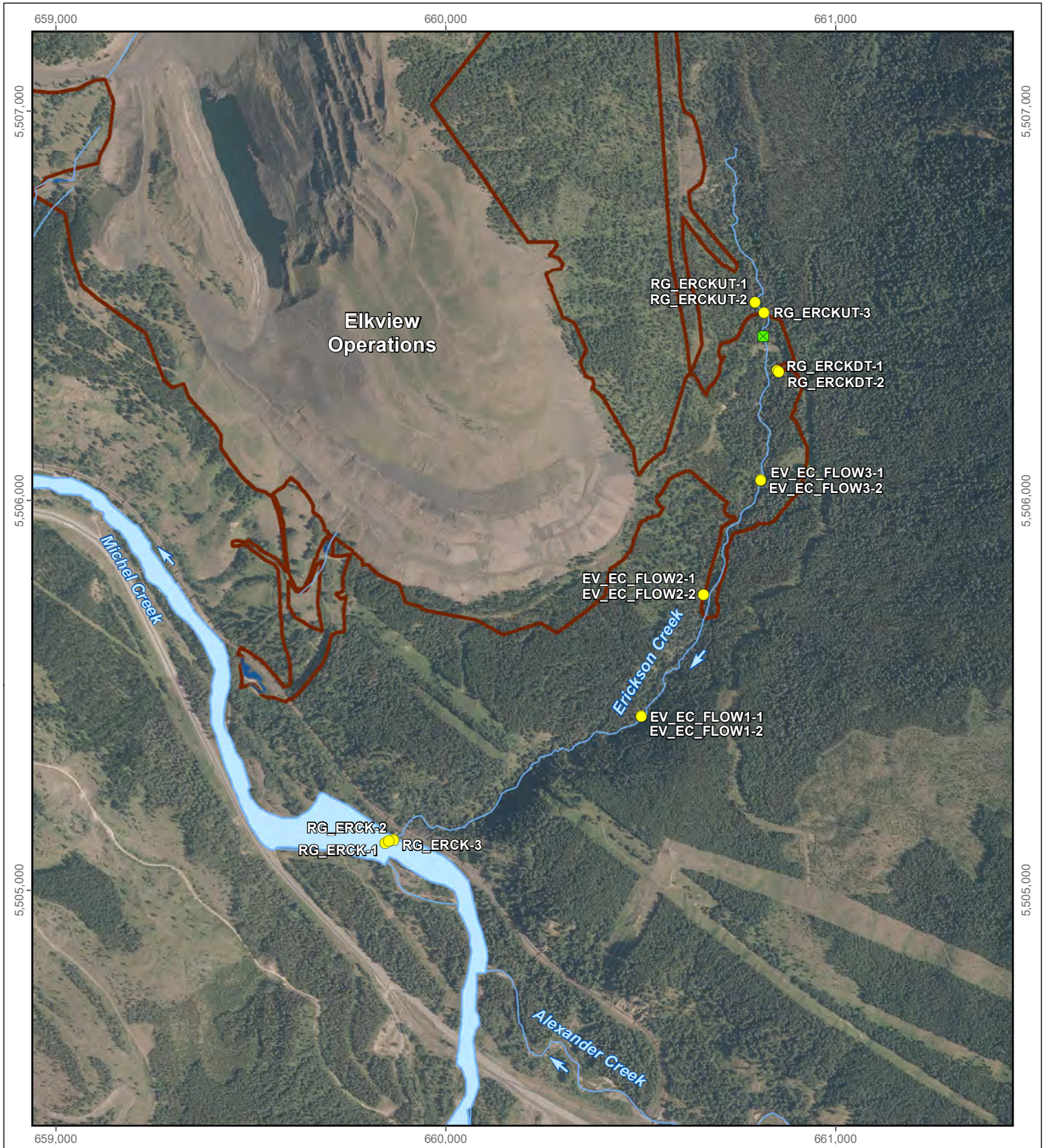
Sampling completed in September 2021 showed that mean tissue selenium concentrations in benthic invertebrates were elevated above Level 1 benchmarks for benthic invertebrates (for growth, reproduction, and survival) at RG_ERCKDT⁷. Confirmation sampling was conducted in December 2021 and March 2022 in multiple sampling areas in Erickson Creek including

⁵ Teck also routinely conducts fish salvage efforts in Bodie and Gate creeks (which are constructed discharge channels) to manage fish exclusion from these areas (Teck 2020a)

⁶ The term “baseline” was previously used when evaluating the existing conditions of the EVO area (Minnow 2020a). As mining was already established in this area, the term “baseline” has been updated to “existing conditions” to more accurately describe the nature of the data collected.

⁷ Benthic invertebrate tissue selenium concentrations were also elevated above benchmark values for benthic invertebrates (for growth, reproduction and survival) in Gate Creek (RG_GATE >Level 2 benchmark and RG_GATEDP >Level 1 benchmark) and Bodie Creek (RG_BOCK >Level 3 benchmark). However, discharge of the SRF was limited in Bodie or Gate Creek in 2021, and thus elevated selenium concentrations in BIT at these areas are not believed to be caused by SRF treatment. Furthermore, concentrations in Bodie Creek (at RG_BOCK) are similar to those pre-SRF (2015 and 2016).

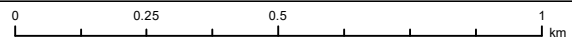




LEGEND

- Logger
- Intake/Outfall Location
- ▭ Settling Pond
- Teck Coal Mine Operations

Temperature Logger Stations, Erickson Creek



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Figure 1.4

RG_ERCKUT, RG_ERCKDT, and RG_ERCK. Results from the confirmatory sampling initiated Teck's Adaptive Management Plan (AMP) response framework, and ongoing monthly investigative sampling was initiated in April 2022. Additionally, in December 2021 a fourth sampling area was added to Erickson Creek (RG_ERCKMD) located midway between RG_ERCKDT and RG_ERCK, to increase the spatial resolution of BIT selenium concentration data (Figure 1.3).

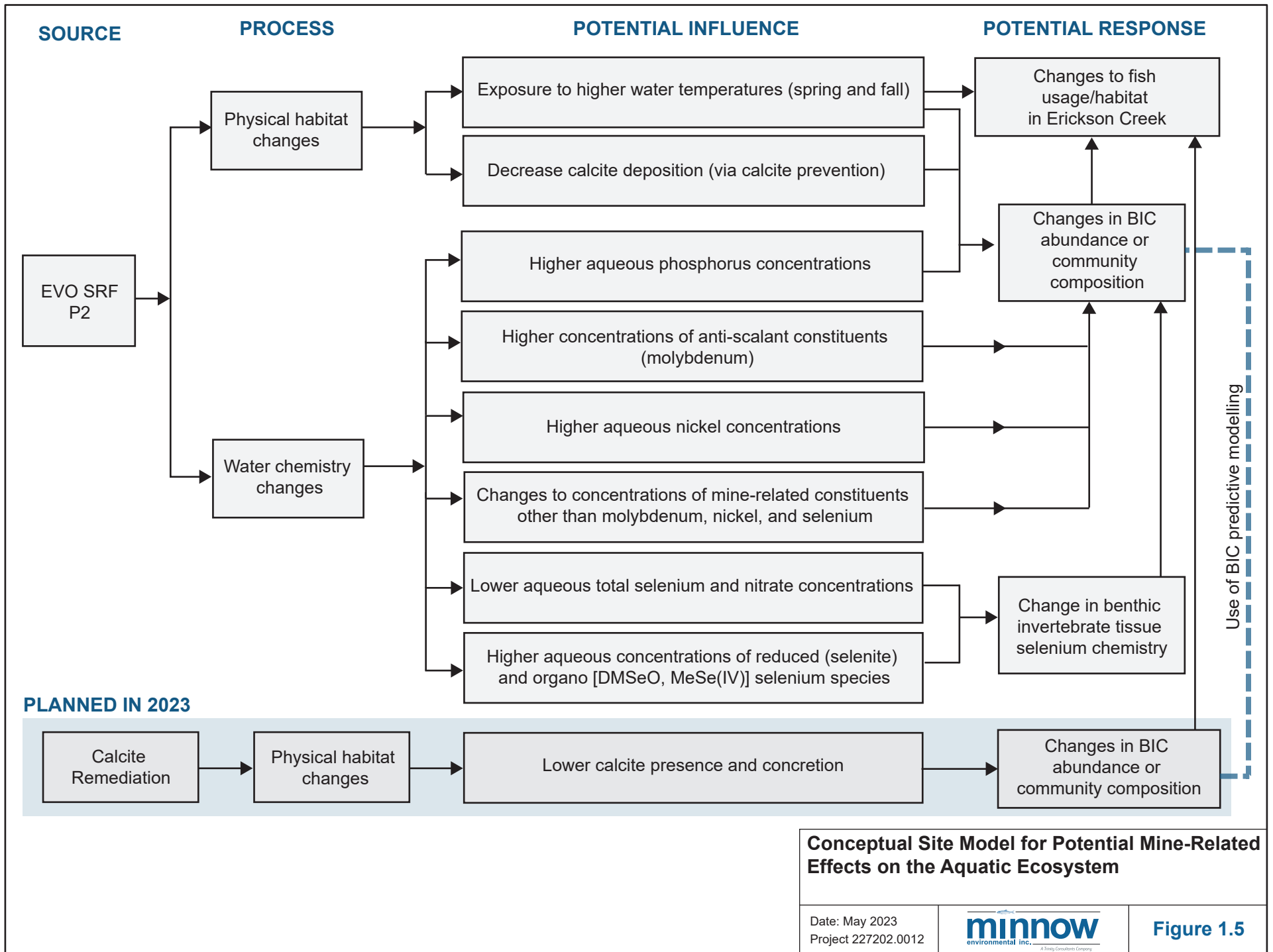
On April 9, 2022, discharge of the SRF to Erickson Creek was paused to complete planned maintenance on the Erickson effluent pipeline. Due to the high BIT Se results observed in Erickson Creek, it was determined through Teck's AMP framework that treatment of Erickson Creek water would remain paused to further investigate the cause of the increased BIT Se concentrations. The extended downtime allowed Teck to develop a robust trigger response plan (TRP) to support the restart of Erickson Creek treatment (Teck 2023a). A TRP was submitted October 3, 2022, with the discharge of treated effluent to Erickson Creek restarting on October 4, 2022. The results from the investigative sampling (until restart on October 4, 2022) were shared in the Elkview Operations Saturated Rock Fill (EVO SRF): Investigation Into Enhanced Selenium Bioaccumulation in Benthic Invertebrate Tissue in Erickson Creek Summary Report on May 4, 2023a).

1.3 Study Questions

As illustrated by the conceptual site model (CSM; Figure 1.5), the EVO LAEMP was primarily designed to assess the magnitude and extent of influence from the EVO SRF in receiving environment (Erickson, Bodie, Gate, and Michel creeks; Figure 1.3) on water quality (including temperature [Figure 1.5]), calcite, benthic invertebrate communities, and BIT selenium chemistry. The objective of the EVO LAEMP, together with the results from SRF Trial, the existing conditions studies, and EMC engagement (Minnow 2020a, Minnow 2021a) led to the development of the following study questions:

1. Has temperature changed in the receiving environment of Erickson Creek as the result of SRF water treatment?
2. Has calcite in the receiving environment (Erickson, Bodie, Gate, and Michel creeks) been influenced by SRF water treatment and/or calcite prevention (e.g. antiscalant) efforts?
3. Has SRF water treatment and/or calcite prevention (e.g. antiscalant) (a) decreased aqueous concentrations of selenium and nitrate and/or (b) changed other mine-related constituents in effluent and receiving environment (Erickson, Bodie, Gate, and Michel creeks)?





4. Have benthic invertebrate tissue selenium concentrations changed as a result of the SRF in Erickson, Bodie, Gate, and Michel creeks?
5. Are there changes in the benthic invertebrate community in Erickson, Bodie, Gate, and Michel creeks associated with SRF treatment (including calcite prevention)?
6. Is SRF water treatment affecting indicators of productivity (e.g. phosphorus) in the receiving environment?

1.4 Linkages to the Adaptive Management Plan for Teck Coal in the Elk Valley

Teck has developed an Adaptive Management Plan (AMP) to support implementation of the EVWQP to achieve water quality and calcite targets, to be protective of human health and the environment, and where necessary, restorative, and to facilitate continuous improvement of water quality in the Elk Valley (Teck 2018). Following an adaptive management framework, the AMP identified six Management Questions that are re-evaluated at regular intervals as part of AMP updates throughout EVWQP implementation. Data from the RAEMP (Minnow 2020b) and the various LAEMPs (including the EVO LAEMP) feed into the adaptive management process to address these Management Questions that collectively address the environmental management objectives of the AMP (Teck 2018) and the EVWQP (Teck 2014). The AMP also identifies key uncertainties that need to be reduced to fill gaps in current understanding and support achievement of the EVWQP objectives.

The EVO LAEMP was primarily designed to monitor conditions associated with the SRF operation and to answer site-specific questions on an annual basis (Section 1.3). Management actions as part of an AMP response framework may be triggered at any time during the course of each annual LAEMP cycle (results are reported on June 30th of each year for the preceding calendar year) depending on the answers to site-specific LAEMP questions and on available data. In the 2021/22 AMP Report a key AMP response to unexpected BIT selenium concentrations was conducted as part of the EVO LAEMP. For example, the EVO LAEMP Question #4 is: “Have benthic invertebrate tissue selenium concentrations changed as a result of the SRF in Erickson, Bodie, Gate, and Michel creeks?”. Monitoring in September 2021 identified that despite decreased total selenium concentrations below the SRF outfall (as well as other areas downstream in Erickson Creek), tissue selenium concentrations in benthic invertebrates were elevated in the nearest sampling areas downstream of the SRF outfall, RG_ERCKDT. Confirmatory sampling in December 2021 and March 2022 showed BIT Se concentrations above the level 1, and in some cases, level 2 and 3 benchmarks. BIT Se enrichment was restricted to upstream reaches in Erickson Creek; no changes compared to pre- EVO SRF P2 conditions were detected in BIT Se from Erickson Creek near the mouth (RG_ERCK) nor in Michel Creek



(RG_MIDER), indicating a localized effect. Water treatment of Erickson Creek was paused in early April 2022 for planned maintenance and extended as an adaptive management response to mitigate further increases in BIT Se during the investigation into the cause of the increased BIT Se concentrations. Shortly after treatment was paused, BIT Se concentrations decreased in upper Erickson and reached pre-SRF concentrations by October 2022. Finally, additional BIT, water quality, sediment, periphyton, and bryophyte sampling events have also been implemented, as part of the AMP response framework, to allow for a more detailed understanding of SRF performance and stabilization (starting in March 2022). The results from the investigative sampling (until restart on October 4, 2022) were shared in the Elkview Operations Saturated Rock Fill (EVO SRF): Investigation Into Enhanced Selenium Bioaccumulation in Benthic Invertebrate Tissue in Erickson Creek Summary Report on May 4, 2023 (2023a).

In addition to addressing questions specific to the EVO LAEMP on an annual basis, monitoring data from the LAEMP will contribute to the broader data set assessed every three years within the RAEMP. The RAEMP is primarily designed to evaluate Management Question #5 of the AMP (i.e., “Does monitoring indicate that mine-related changes in aquatic ecosystem conditions are consistent with expectations?”). Data from the RAEMP is also used in the evaluation of Management Question #2, (i.e., “Will aquatic ecosystem health be protected by meeting the long-term site performance objectives?) and for each Management Question, a Key Uncertainty framework has also been developed to identify data gaps and direct future work (as described in annual AMP Reports, e.g., Teck 2020c). Information acquired from the EVO LAEMP will be used in conjunction with other studies in the Elk Valley area (including other LAEMPs and the RAEMP) to reduce these uncertainties and provide additional context to the ecological conditions of the Elk Valley area as a whole. Furthermore, monitoring as part of the EVO LAEMP will follow an adaptive approach under the AMP response framework, to inform whether further investigations or adjustments are required in future EVO LAEMP study designs.

The evaluation of biological triggers is incorporated into the current report as part of Management Question #5 of the AMP (Teck 2021a). Biological triggers were developed in consultation with the EMC for a subset of the biological monitoring endpoints that are effective indicators of changes at the ecosystem level. The purpose of the biological triggers is to quickly identify biological monitoring areas where unexpected biological conditions may be occurring that may require management action. In this LAEMP report, percent EPT (Ephemeroptera [mayflies], Plecoptera [stoneflies], and Trichoptera [caddisflies]) and composite-taxa BIT tissue selenium concentration in 2022 were assessed against their respective biological triggers (additional information and methods pertaining to this analysis can be found in Appendix G).



The fourth annual AMP report was submitted on July 31, 2022, and included monitoring data collected in 2021 (Teck 2022b). In 2021 and 2022, concentrations of aqueous total selenium, nitrate, sulfate, and cadmium met the SPO (monthly average) at the EVO Michel Creek Compliance Point (EV_MC2) and at Elk River Downstream of Michel Creek Order Station (EV_ER1) nitrate exceeded the compliance limit in March and April 2021 and March 2022 (Teck 2022). For more information on the adaptive management framework, the Management Questions, the Key Uncertainties, the Response Framework, Continuous Improvement, linkages between the AMP and other EVWQP programs, and AMP reporting, refer to the AMP (Teck 2021a) and the 2021 Annual AMP report (Teck 2022b).



2 METHODS

2.1 Overview

The general approach for the EVO LAEMP includes a description of the collected data and data evaluation in relation to each of the study questions (Table 2.1). This report includes data up to the end of the 2022 calendar year for all endpoints. Historical data are also presented where appropriate.

Water quality and biological samples were collected from established monitoring areas in Erickson, Bodie, Gate, and Michel creeks (Figure 1.3; Tables 2.2 to 2.4). Biological monitoring areas are the same locations utilized as part of previous existing conditions evaluations to support the EVO SRF P2 (Minnow 2020a, 2021a) and the RAEMP (Minnow 2020b). Biological monitoring areas include those potentially influenced by the SRF, including areas upstream (RG_ERCKUT) and downstream (RG_ERCKDT, RG_ERCKMD, RG_ERCKUC and RG_ERCK) of the SRF intake/outfall structure in the non-fish bearing reach of Erickson Creek as well as above and below the sediment pond in Gate Creek (RG_GATE and RG_GATEDP, respectively) as well as upstream and downstream of the sedimentation pond in Bodie Creek (RG_BOCKRD and RG_BOCK, respectively). Four areas in Michel Creek were sampled, including directly upstream of Erickson Creek (RG_MI3), downstream of the Erickson Creek (RG_MIDER), Gate Creek (RG_MIDGA), and Bodie Creek (RG_MIDBO) confluences, and an area downstream of all EVO influence into Michel Creek (RG_MICOMP; EVO Compliance point). Two reference areas were included, one in Alexander Creek (RG_ALUSM), and another in upper Michel Creek (RG_MI25). Additional biological sampling occurred through 2022 to support the Investigation Into Enhanced Selenium Bioaccumulation in Benthic Invertebrate Tissue in Erickson Creek (Table 2.3; Teck 2023a). Although water samples are taken during sampling at each of these areas, biological monitoring areas are also paired with Teck routine water quality stations (when applicable) to provide additional temporal information regarding water quality.

To address the study questions described in Section 1.3, the 2022 EVO LAEMP included evaluation of the following components:

- Water temperature in Erickson Creek recorded continuously with data loggers;
- Concentration of total selenium and other constituents (i.e. those listed in Appendix A) in sediment;
- Calcite presence and concretion in receiving environment;



Table 2.1: Approach for the EVO LAEMP, 2021 to 2023

Study Questions	Water				Biological				
	Measurement Endpoint	Indicator Type	Areas ^a	Evaluation Criteria ^b	Measurement Endpoint	Indicator Type	Areas	Evaluation Criteria ^b	
<u>Study Question #1</u> : Has temperature changed in the receiving environment of Erickson Creek as the result of SRF water treatment?	Temperature	Indirect	RG_ERCKUT, RG_ERCKDT, EV_EC_FLOW3, EV_EC_FLOW2, EV_EC_FLOW1, RG_ERCK	(via data loggers)	Comparison to water quality guidelines and SPO criteria.	Direct	Benthic invertebrate community structure (abundance, richness, %EPT, %Ephemeroptera, %Chironomidae)	RG_ERCKUT, RG_ERCKDT, RG_ERCK	Comparison to results from past observations, reference areas, and reference normal ranges.
<u>Study Question #2</u> : Has calcite in the receiving environments (Erickson, Bodie, Gate, and Michel Creeks) been influenced by SRF water treatment and/or calcite prevention (e.g. antiscalant) efforts??	Calcite	Indirect	RG_ALUSM, RG_MI25, RG_ERCKUT, RG_ERCKDT, RG_ERCK, RG_GATE ^e , RG_BOCK ^e , RG_MI3, RG_MIDER, RG_MIDGA, RG_MIDBO, RG_MICOMP		Comparison to results for past observations, reference areas, and to future SPO criteria. Comparison between SRF downstream and upstream areas.	Direct	Benthic invertebrate community structure (abundance, richness, %EPT, %Ephemeroptera, %Chironomidae)	RG_ALUSM, RG_MI25, RG_ERCKUT, RG_ERCKDT, RG_ERCK, RG_GATE ^e , RG_BOCK ^e , RG_MI3, RG_MIDER, RG_MIDGA, RG_MIDBO, RG_MICOMP	Comparison to results from past observations, reference areas, and reference normal ranges.
<u>Study Question #3</u> : Has SRF water treatment and/or calcite prevention (e.g. antiscalant) (a) decreased aqueous concentrations of selenium and nitrate and/or (b) changed other mine-related constituents in effluent and receiving environments (Erickson, Bodie, Gate, and Michel Creeks)?	Water Quality	Indirect	RG_ALUSM, RG_MI25, RG_ERCKUT, RG_ERCKDT, RG_ERCK, RG_GATE, RG_GATEDP, RG_BOCK, RG_MI3, RG_MIDER, RG_MIDGA, RG_MIDBO, RG_MICOMP		Comparisons to results for past observations, reference areas, and to water quality guidelines and benchmarks. Comparison between SRF downstream and upstream areas.	Direct	Benthic invertebrate community structure (abundance, richness, %EPT, %Ephemeroptera, %Chironomidae)	RG_ALUSM, RG_MI25, RG_ERCKUT, RG_ERCKDT, RG_ERCK, RG_GATE ^e , RG_BOCK ^e , RG_MI3, RG_MIDER, RG_MIDGA, RG_MIDBO, RG_MICOMP	Comparison to results from past observations, reference areas, and reference normal ranges.
	Sediment Quality	Indirect	RG_ALUSM, RG_MI25, RG_ERCKUT, RG_ERCKDT, RG_MICOMP						
	Aqueous Toxicity ^c	Semi-direct	Acute: F2_BPO, EV_ECOUT, EV_EC1, EV_GT1, and EV_BC1 Chronic: EV_MC2	Comparison to reference areas and expectations based on aqueous concentrations of mine-related chemicals.					
<u>Study Question #4</u> : Have benthic invertebrate tissue selenium concentrations changed as a result of the SRF in Erickson, Bodie, Gate, and Michel Creeks?	Total and dissolved selenium concentrations	Indirect	RG_ALUSM, RG_MI25, RG_ERCKUT, RG_ERCKDT, RG_ERCK, RG_GATE, RG_GATEDP, RG_BOCK, RG_MI3, RG_MIDER, RG_MIDGA, RG_MIDBO, RG_MICOMP		Comparison to results for past observations and reference areas. Comparison between SRF downstream and upstream areas.	Indirect	Benthic invertebrate tissue selenium (composite taxa samples)	RG_ALUSM, RG_MI25, RG_ERCKUT, RG_ERCKMD ^f , RG_ERCKDT, RG_ERCK, RG_GATE, RG_GATEDP, RG_BOCK, RG_MI3, RG_MIDER, RG_MIDGA, RG_MIDBO, RG_MICOMP	Concentrations relative to effect benchmarks, past observations, and reference area results. Comparison to lotic bioaccumulation models.
	Selenium speciation	Indirect	RG_ALUSM, RG_MI25, RG_ERCKUT, RG_ERCKDT, RG_ERCK, RG_GATE, RG_GATEDP, RG_BOCK, RG_MI3, RG_MIDER, RG_MIDGA, RG_MIDBO, RG_MICOMP						
<u>Study Question #5</u> : Are there changes in the benthic invertebrate community in Erickson, Bodie, Gate, and Michel Creeks associated with SRF treatment (including calcite prevention)?	Temperature	Indirect	See Study Question #1		Benthic invertebrate community structure (abundance, richness, %EPT, %Ephemeroptera, %Chironomidae)	Direct	RG_ALUSM, RG_MI25, RG_ERCKUT, RG_ERCKDT, RG_ERCK, RG_GATE ^e , RG_BOCK ^e , RG_MI3, RG_MIDER, RG_MIDGA, RG_MIDBO, RG_MICOMP	Comparison to results from past observations, reference areas, and reference normal ranges.	
	Calcite	Indirect	See Study Question #2						
	Water Quality and Supporting Evidence ^d	Indirect	See Study Question #3						
<u>Study Question #6</u> : Is SRF water treatment affecting indicators of productivity (e.g. phosphorus) in the receiving environment?	Phosphorus and other nutrient concentrations	Indirect	RG_ALUSM, RG_MI25, RG_ERCKUT, RG_ERCKDT, RG_ERCK, RG_GATE, RG_GATEDP, RG_BOCK, RG_MI3, RG_MIDER, RG_MIDGA, RG_MIDBO, RG_MICOMP	Comparison to results from past observations, reference areas, and to available water quality guidelines.	Visual Periphyton Coverage	Direct	RG_ALUSM, RG_MI25, RG_ERCKUT, RG_ERCKDT, RG_ERCK, RG_GATE, RG_GATEDP, RG_BOCK, RG_MI3, RG_MIDER, RG_MIDGA, RG_MIDBO, RG_MICOMP	Comparison to results from past observations	
					Benthic invertebrate density, biomass, and community	Direct	RG_ERCKUT, RG_ERCKDT	Comparison to results from past observations and reference areas.	
					Benthic invertebrate community structure (abundance, richness, %EPT, %Ephemeroptera, %Chironomidae)	Direct	RG_ALUSM, RG_MI25, RG_ERCKUT, RG_ERCKDT, RG_ERCK, RG_GATE ^e , RG_BOCK ^e , RG_MI3, RG_MIDER, RG_MIDGA, RG_MIDBO, RG_MICOMP	Comparison to results from past observations, reference areas, and reference normal ranges.	

Notes: SPO = Site Performance Objective. EPT = Ephemeroptera, Plecoptera, and Trichoptera. SRF = Saturated Rock Fill.

^a Areas listed under 'Water' include only those taken for the purposes of the EVO LAEMP (i.e. sampling conducted concurrently with biological sampling). Additional information regarding Teck's routine water quality monitoring is shown in Table 2.4.

^b Comparison to past observations refers to comparison of results during SRF operation to results prior to SRF operation.

^c Aqueous acute and chronic toxicity are evaluated as part of permit 107517 through the Annual Water Quality Monitoring Program and Annual Chronic Toxicity Testing Program, respectively. Results from these studies are used to support the water quality results collected for the EVO LAEMP.

^d Supporting evidence includes sediment quality and aqueous acute and chronic toxicity.

^e Benthic invertebrate community structure and calcite were not evaluated at RG_GATE or RG_BODIE in 2021 as suitable riffle habitat was not identified, which is consistent with CABIN protocols.

^f RG_ERCKMD was added in December 2021 to add spatial resolution to selenium concentrations in benthic invertebrate tissue in Erickson Creek.

Table 2.2: Sampling Design for EVO SRF P2 LAEMP Monitoring in 2022

Area	Biological Area Code	UTMs		September 2022							
				Water ^a		Sediment Quality	Calcite Index ^b	Periphyton Visual Coverage Score	Benthic Invertebrates		
		Easting	Northing	Selenium Speciation	Water Quality				Kick Sampling (Community)	Hess Sampling (Density, Biomass, Community)	BIC Tissue Selenium Sampling
Reference	RG_ALUSM	663516	5502707	n=1 (✓)	n=1 (✓)	n=3 (✓)	n=3 (✓)	n=5 (✓)	n=3 (✓)	-	n=3 (✓)
	RG_MI25	668195	5482814	n=1 (✓)	n=1 (✓)	n=3 (✓)	n=3 (✓)	n=5 (✓)	n=3 (✓)	-	n=3 (✓)
Mine-exposed	RG_ERCKUT	660791	5506595	n=1 (✓)	n=1 (✓)	n=5 (✓)	n=3 (✓)	n=5 (✓)	n=3 (✓)	n=10 (✓)	n=5 (✓)
	RG_ERCKDT	660816	5506325	n=1 (✓)	n=1 (✓)	n=5 (✓)	n=3 (✓)	n=5 (✓)	n=3 (✓)	n=10 (✓)	n=5 (✓)
	RG_ERCKMD	660662	5505759	-	-	-	-	-	-	-	-
	RG_ERCK	659748	5505095	n=1 (✓)	n=1 (✓)	n=5 ^e	n=1 (✓)	n=5 (✓)	n=1 (✓)	-	n=1 (✓)
	RG_GATE	655845	5509206	n=1 (✓)	n=1 (✓)	-	n=0 ^d	n=5 (✓) ^f	n=0 ^d	-	n=3 (✓)
	RG_GATEDP ^c	655654	5509261	n=1 (✓)	n=1 (✓)	-	-	n=1 (✓) ^f	-	-	n=3 (✓)
	RG_BOCK ^c	655417	5509642	n=1 (✓)	n=1 (✓)	-	n=0 ^d	n=1 ^f	n=0 ^d	-	n=3 (✓)
	RG_MI3	660022	550524	n=1 (✓)	n=1 (✓)	n=4 ^e	n=3 (✓)	n=5 (✓)	n=3 (✓)	-	n=3 (✓)
	RG_MIDER	659591	5505157	n=1 (✓)	n=1 (✓)	n=5 ^e	n=3 (✓)	n=5 (✓)	n=3 (✓)	-	n=3 (✓)
	RG_MIDGA	660022	5505024	n=1 (✓)	n=1 (✓)	-	n=3 (✓)	n=5 (✓)	n=3 (✓)	-	n=3 (✓)
	RG_MIDBO	655225	5509758	n=1 (✓)	n=1 (✓)	-	n=3 (✓)	n=5 (✓)	n=3 (✓)	-	n=3 (✓)
RG_MICOMP	654308	5510897	n=1 (✓)	n=1 (✓)	n=5 (✓)	n=5 (✓)	n=5 (✓)	n=5 (✓)	-	n=5 (✓)	

Notes: (✓) = target sample size met, "-" = no sampling expected, BIC = Benthic Invertebrate Composite-Taxa, LAEMP = local aquatic environmental monitoring program, TBD = to be determined (new sampling). Target sample size is shown. RG_ERCKMD was added in December 2021 for additional spatial resolution of benthic invertebrate tissue selenium concentrations in Erickson Creek.

^a Water sampling does not include sampling conducted by Teck.

^b In the initial study design, calcite index was to be evaluated once at each area. To be consistent with CABIN protocols (and other LAEMP projects and the RAEMP), calcite was evaluated at each riffle that kick sampling (community)

^c Benthic invertebrate tissue and selenium speciation sampling at RG_GATEDP and RG_BOCK also occurred in August 2022 as part of the Selenium Speciation program.

^d RG_GATE and RG_BOCK were not evaluated using kick and sweep sampling for benthic invertebrate community monitoring or calcite index as the sampling reach did not have a "well-established riffle or straight run" present (which is a requirement for CABIN sampling [Environment Canada 2012a]).

^e Sediment sampling was conducted as part of the RAEMP at RG_ERCK, RG_MI3, and RG_MIDER.

^f Visual periphyton monitoring is part of the CABIN protocol and thus only expected to occur if benthic invertebrate community evaluations and other CABIN protocols are conducted. Although CABIN protocols did not occur at RG_GATE, RG_GATEDP, and RG_BOCK, periphyton visual scores were still utilized. In the study design, RG_BOCK was to be evaluated at five areas, but to the limited habitat and area of study only one visual inspection was conducted.

Table 2.3: Additional Sampling for EVO SRF P2 LAEMP Monitoring in 2022

Sampling Event	Water Quality		BIC Tissue Selenium Sampling	Sediment Quality
	Water Quality	Selenium Speciation		
March 2022	Yes	Yes	Yes	Yes
April 2022	Yes	Yes	Yes	Yes
May 2022	Yes	Yes	Yes	Yes
June 2022	Yes	Yes	Yes	Yes
July 2022	Yes	Yes	Yes	Yes
August 2022	Yes	Yes	-	-
September 2022	Yes	Yes	Yes	Yes
October 2022	Yes	Yes	Yes	Yes
November 2022	Yes	Yes	Yes	Yes
December 2022	Yes	Yes	Yes	Yes

Notes: "-" = no sampling expected. BIC = Benthic Invertebrate Composite-Taxa.

Table 2.4: Summary of Water Quality Monitoring for EVO LAEMP SRF per Permit 107517

Stream (Location Description)	Biological Station Code	Teck Water Station Code	EMS Number	UTM (NAD83, 11U)		Water Quality Samples					
				Easting	Northing	Area Type	Field Parameters ^a	All Other Parameters Required Under Mine Permits ^b	Selenium Speciation	Toxicity ^c	
										Acute ^d	Chronic ^e
Alexander Creek	RG_ALUSM	EV_AC2	-	663482	5502718	Reference	S	S	-	-	-
Michel Creek (upstream of Coal Mountain Operations)	RG_MI25	CM_MC1	E258175	668209	5482832	Reference	W/M	W/M	-	-	-
Natal West Pit Intake	-	F2_NWPI	E321791	656193	5511083	Influent	D	M	W	-	-
Erickson Creek Intake	-	F2_ECIN ^f	E321811	656195	5511082	Influent	D	M	W	-	-
Effluent Retention Pond Outlet	-	F2_BPO	E321812	658874	5511362	Effluent	D	M	W	Q	-
Erickson Creek Outfall	-	F2_ECF	E321813	660812	5506372	Effluent	C	-	-	-	-
Bodie Rock Drain	-	F2_BRDF	E321815	656185	5511108	Effluent	-	-	-	-	-
Erickson Creek upstream of SRF Outfall	RG_ERCKUT ^f	-	-	660811	5506509	Mine-exposed	S	S	S	-	-
Erickson Creek downstream of SRF Outfall	RG_ERCKDT	EV_ECOUT	E321814	660816	5506325	Mine-exposed	W/M	M	S	Q	-
Midpoint in Erickson Creek	RG_ERCKMD ^g	--	--	660659	5505736	Mine-exposed	S	S	S	-	-
Erickson Creek at Mouth (discharge to Michel Creek)	RG_ERCK	EV_EC1	0200097	659909	5505172	Mine-exposed	W/M	M	S	Q	-
Gate Creek (upstream of settling pond)	RG_GATE	--	--	655824	5509196	Mine-exposed	S	S	S	-	-
Gate Creek Sedimentation Pond Decant	RG_GATEDP	EV_GT1	E206231	655654	5509261	Mine-exposed	W/M	W/M	S	Q	-
Bodie Creek Sedimentation Pond Decant	RG_BOCK	EV_BC1	E102685	655536	5509605	Mine-exposed	W/M	W/M	S	Q	-
Michel Creek upstream of Erickson Creek	RG_MI3	EV_MC3 ^h	200203	660032	5505022	Mine-exposed	W/M	W/M	M	-	-
Michel Creek downstream of Erickson Creek	RG_MIDER	EV_MC3a ⁱ	E327471	659482	5505234	Mine-exposed	M	M	M	-	-
Michel Creek upstream of Gate Creek	-	EV_MC2a	E310168	655871	5508994	Mine-exposed	W/M	M	M	-	-
Michel Creek downstream of Gate Creek	RG_MIDGA	-	-	655565	5509332	Mine-exposed	S	S	S	-	-
Michel Creek downstream of Bodie Creek	RG_MIDBO	-	-	655194	5509803	Mine-exposed	S	S	S	-	-
Michel Creek downstream of Hwy #3 Bridge (Compliance Point)	RG_MICOMP	EV_MC2 ^j	E300091	654367	5510857	Mine-exposed	W/M	W/M	M	-	Q/SA
Elk River downstream of Michel Creek at C.P.R. Roadhouse	-	EV_ER1	200393	651354	5511080	Mine-exposed	W/M	W/M	-	-	-

Notes: "-" = sampling will not be completed at this area, UTM = Universal Transverse Mercator, EVO = Elkview Operations, SRF = Saturated Rock Fill, C = Continuous Monitoring (Temperature Only), D = daily, M = monthly, W = weekly, W/M = weekly during freshet (March 15 to July 15), monthly otherwise, Q = quarterly, S = September (once), SA = semi-annual. Sampling frequency is currently managed through the permit.

^a Dissolved oxygen, water temperature, specific conductance, pH.

^b Parameters consistent with Permit 107517 (see Table 2.5 for details).

^c Aqueous acute and chronic toxicity are evaluated as part of permit 107517 through the Annual Water Quality Monitoring Program and Annual Chronic Toxicity Testing Program, respectively. Results from these studies are used to support the water quality results collected for the EVO LAEMP.

^d Q = Quarterly 96-hr rainbow trout LT₅₀; 48-hr *Daphnia* spp. LT₅₀.

^e Q = Quarterly 7-day *C. dubia* growth and survival, 72-hr *P. subcapitata* growth tests; SA = Semi-annual 28-day *H. azteca* growth and survival tests in spring and fall, 30-day early life stage rainbow trout tests in spring and fall, 30-day early life stage fathead minnow tests in summer and winter.

^f Routine water quality from Erickson Creek Intake (i.e. Influent) will be paired with the biological sampling area, RG_ERCKUT.

^g RG_ERCKMD was added in December 2022 to add additional spatial resolution to selenium concentrations in benthic invertebrate tissue in Erickson Creek.

^h The location of the Teck Compliance station, EV_MC3, is different than the biological sampling area (RG_MI3). The UTM for EV_MC3 are 659833E and 5505234N.

ⁱ Monthly sampling at EV_MC3a was added to the EVO LAEMP study design on March 4, 2022 and will be paired with RG_MIDER.

^j The location of the Teck Compliance station, EV_MC2, is different than the biological sampling area (RG_MICOMP). The UTM for EV_MC2 are 655871E and 5508994N.

- Concentrations of nutrients, total selenium, selenium species, and other constituents (i.e. those listed in Appendix A) in water, based on concurrent and routine water quality monitoring;
- Acute toxicity of SRF buffer pond outlet effluent (F2_BPO) and four surface water locations from Erickson Creek (EV_ECOUT [RG_ERCKDT] and EV_EC1 [RG_ERCK]), Bodie Creek (EV_BC1 [RG_BOCK]), and Gate Creek (EV_GT1 [RG_GATEDP]), as well as chronic toxicity of surface water from the compliance point EV_MC2 (RG_MICOMP);
- Periphyton visual coverage scores; and
- Benthic invertebrate density, biomass, community, and composite-taxa tissue selenium concentrations.

Water quality monitoring and acute and chronic water toxicity testing results presented in this report include requirements specified under Permit 107517. Biological sampling in 2022 was completed in September in accordance with the 2021 to 2023 EVO LAEMP study design (Minnow 2021b), with additional sampling occurring monthly from March to December 2022 (Table 2.3).

The methods associated with sample collection, laboratory analysis, and data analyses are described in the following sections and in Appendix A.

2.2 Physical Habitat and Supporting Measures

2.2.1 Temperature

2.2.1.1 Sampling Overview

To evaluate potential temperature-related effects associated with the SRF discharge, instream continuous data loggers (TidbiT v2 Temp [UtBI-001]) were deployed at six locations (RG_ERCKUT, RG_ERCKDT, EV_EC_FLOW3, EV_EC_FLOW2, EV_EC_FLOW1, and RG_ERCK) in Erickson Creek in December 2020 (Figure 1.4; Table 2.4). Temperature data from these loggers was downloaded three times in 2022 (April, June, and October/November).

2.2.1.2 Data Analysis

Temperature data is reviewed for anomalies prior to analysis. Temperature data from Teck routine water monitoring in fish-bearing areas of Erickson Creek (EV_EC1 [RG_ERCK]), were evaluated relative to British Columbia water quality guidelines. Maximum daily temperature from temperature loggers at EV_EC1 (RG_ERCK) were compared directly to the SPO (which is based largely on the optimum temperatures for fish noted above) per Permit 107517.



2.2.2 Sediment Quality

2.2.2.1 Sampling Overview

Sediment quality samples were collected concurrently with benthic invertebrate sampling in September 2022 using procedures consistent with those outlined in the British Columbia Field Sampling Manual (BCMOECCS 2020a). Three replicate sediment samples from both reference areas (RG_ALUSM and RG_MI25) were collected, while five replicate sediment samples were collected immediately upstream (RG_ERCKUT) and downstream of the SRF outfall (RG_ERCKDT) in Erickson Creek as well as at the compliance point in Michel Creek (RG_MICOMP; Figure 1.3; Table 2.2). Sediment samples were also collected at RG_MI3 (n=4), RG_ERCK (n=5), and RG_MIDER (n=5) as part of the 2021 to 2023 RAEMP study design (Minnow 2021c). Additional samples were collected monthly in Erickson Creek from March to December 2022, when sediment was present (Table 2.3).

2.2.2.2 Laboratory and Data Analysis

Sediment samples were analyzed by ALS Environmental in Calgary, Alberta, and analyses included physical and chemical parameters (e.g., moisture content, particle size, total organic carbon [TOC], metals and metalloids, and polyaromatic hydrocarbons [PAHs]). Analyses of sediment quality data were completed using the following approaches (see Appendix B sections B3.1.2 and B3.1.3 for detailed methodology):

- Tabular and graphical comparison to British Columbia Sediment Quality Guidelines (WSQGs), except for selenium concentrations which were compared to an alert concentration considered equivalent to an upper WSQG. The sediment data were also compared to regional normal ranges.
- Graphical spatial comparisons of chemical parameters;
- Assessment of sediment quality upstream and downstream of SRF outfall as well as in the Michel using a two-way ANOVA;

2.2.3 Calcite and CABIN Measures

2.2.3.1 Sampling Overview

Consistent with the requirements of the Canadian Aquatic Biomonitoring Network (CABIN) sampling protocol, supporting habitat information (e.g., water velocity and depth, *in situ* water quality [temperature, dissolved oxygen, specific conductivity, pH], canopy cover, and substrate characteristics [100 pebble count]) was documented concurrent with benthic



invertebrate community samples (Environment Canada 2012a)⁸. Visual scores of periphyton coverage were recorded in accordance with the CABIN method (and are discussed in greater detail in Section 2.4). In addition to the CABIN requirements, measurements of calcite presence and concretion were conducted on 100 particles (pebbles) at each biological sampling location concurrent with (and using the same particles as) the 100-pebble count.

2.3 Water Quality and Toxicity

2.3.1 Water Quality

2.3.1.1 Sampling Overview

Water quality and selenium speciation samples, as well as *in situ* water quality data (i.e., temperature, flow, pH, conductivity, and DO), were collected concurrently with all biological sampling (Tables 2.2 to 2.4). In addition, routine water quality monitoring data collected by Teck and that corresponded with many biological sampling areas were included in the EVO LAEMP (Table 2.4). Water quality samples were collected to understand potential changes to concentrations of nutrients and mine-related constituents in accordance with Permit 107517, while selenium speciation samples were collected to provide understanding of speciation in the study area, and to compare to benthic invertebrate tissue selenium concentrations. Sample collection procedures were consistent with those outlined in the British Columbia Field Sampling Manual (BCMOE 2013; see Appendix A2.1 for detailed methodology).

2.3.1.2 Laboratory and Data Analysis

Water quality samples were analyzed by ALS Environmental in Calgary, AB for the constituents listed in Permit 107517 except for selenium species (Table 2.5). Analysis of selenium species was performed by Brooks Applied Labs in Seattle, WA. Methods used were consistent with the British Columbia Environmental Laboratory Manual (BCMOECCS 2020b) where applicable (See Appendix A for detailed methodology). Upon completion of the laboratory analyses, data reports were provided to Minnow and Teck electronically as Adobe Acrobat PDF (Appendix H) and Microsoft Excel files and data were uploaded to Teck's EQUIS database.

Water quality data collected routinely (by Teck) and concurrently with biological sampling were stored in Teck's EQUIS™ database, and relevant data was downloaded from the database in

⁸ As benthic invertebrate community sampling was not conducted at RG_GATE and RG_BOCK (as discussed in more detail in Section 2.5.4 and Section 7.6), the 100-pebble count was also not conducted. As such calcite for these areas is based on information provided by the 2021 Regional Calcite Monitoring Program (Robinson et al. 2022).



Table 2.5: Temperature Loggers in Erickson Creek, 2022

Logger Number	Area	UTM	
		Easting	Northing
20745495	EV_EC_FLOW1	660502	5505446
21199587	EV_EC_FLOW1	660502	5505446
20745435	EV_EC_FLOW2	660662	5505759
20745441	EV_EC_FLOW2	660662	5505759
20745436	EV_EC_FLOW3	660809	5506052
20745470	EV_EC_FLOW3	660809	5506052
20745465	RG_ERCK	659866	5505129
21087183	RG_ERCK	659845	5505120
21418920	RG_ERCK	659855	5505127
20745473	RG_ERCKDT	660851	5506333
20745485	RG_ERCKDT	660855	5506330
20745439	RG_ERCKUT	660794	5506508
20745479	RG_ERCKUT	660794	5506509
21087191	RG_ERCKUT	660817	5506482

Excel format for analysis. Analyses of water quality data were completed using the following approaches (see Appendix A for detailed methodology):

- Tabular and graphical comparison to applicable benchmarks, SPOs, interim screening values, and BCWQGs (Appendix Table A.1);
- Graphical spatial comparisons of order constituents (nitrate, total selenium, dissolved cadmium, and sulphate), TDS, total and dissolved nickel, and selenium species
- Evaluation of temporal trends in monthly mean water quality concentrations using a Two-way censored regression analysis of variance (2-way ANOVA).
- Evaluation of concentrations between the station immediately upstream (RG_ERCKUT) and immediately downstream (RG_ERCKDT) using a Two-way censored regression analysis of variance (2-way ANOVA).

Quality assurance and control results (e.g. field blanks, duplicate samples, etc.) associated with water samples collected concurrently with biological samples are discussed in greater detail in the DQR in Appendix B (see Appendix H for applicable laboratory reports).



2.3.2 Acute Toxicity

Acute toxicity tests were conducted on a quarterly basis at five stations within in the EVO LAEMP study area as discussed in the Annual Water Quality Report (Table 2.4; Teck 2022b):

- Downstream of outfall in Erickson Creek (EV_ECOU);
- Erickson Creek at confluence of Michel Creek (EV_EC1);
- Gate Creek discharge monitoring location (EV_GT1); and
- Bodie Creek discharge monitoring location (EV_BC1).

Acute toxicity consisted of two bioassays as per Permit 107517:

- Single concentration acute toxicity test (96-hour LT_{50}) using rainbow trout (*Oncorhynchus mykiss*); universal method: EPS 1/RM/9 (Environment Canada 2007a); and
- Single concentration acute toxicity test (48-hour LT_{50}) using *Daphnia* spp.; universal method: EPS 1/RM/11 (Environment Canada 1996).

2.3.3 Chronic Toxicity

Chronic toxicity testing was conducted by Nautilus Environmental for the annual Regional Chronic Toxicity Study as required by Permit 107517 (WSP 2023). The quarterly and semi-annual tests were conducted using *Pseudokirchneriella subcapitata*, *Ceriodaphnia dubia*, *Hyalella azteca*, *Oncorhynchus mykiss*, and *Pimephales promelas* (detailed methodology can be found in Appendix A2.4).

2.4 Periphyton

2.4.1 Sampling Overview

Periphyton sampling for the purpose of assessing productivity involved visual scoring as specified in the CABIN method for benthic invertebrate sampling (Environment Canada 2012a). Although only a single score is required per area under the CABIN protocol, scores were recorded for five stations (a minimum of 5 metres apart) in each biological monitoring area as part of the EVO LAEMP, except for RG_BOCK and RG_GATEDP which had limited sampling area and thus only one score for the area was recorded (detailed methodology can be found in Appendix A3.2.3).



2.4.2 Data Analysis

Periphyton coverage was evaluated spatially and temporally in conjunction with other measures of productivity, including temporal/spatial trends of phosphorus and other nutrients (Section 3.6.1), as well as measurements of density and biomass of benthic invertebrates upstream and downstream of the SRF intake/outfall structure in Erickson Creek (Section 3.6.2) to better understand the influence of the SRF on productivity. Tabulated periphyton scores was performed in Microsoft Excel.

2.5 Benthic Invertebrates

Benthic invertebrate samples were collected to address study questions related to benthic invertebrate tissue (BIT) selenium bioaccumulation (Section 3.4), productivity (as determined via Hess sampling; Section 3.6.2), and community structure (as determined via CABIN sampling; Section 3.5). Consistent with other LAEMPs and the RAEMP (Minnow 2021c,d, Minnow and Lotic 2021), benthic invertebrate sampling was completed in Biweekly or monthly from March to December of 2022. As noted in Section 2.3.1, individual water samples for routine water quality analysis and selenium speciation analysis were collected from each monitoring area during the sampling event, concurrently with the collection of biological samples.

2.5.1 CABIN Sampling (Community)

2.5.1.1 Sampling Overview

Benthic invertebrate samples were collected using a kick and sweep method to allow evaluation of community structure. Three replicate samples were collected from each reference area (RG_ALUSM and RG_MI25) and each mine-exposed area (Table 2.2), with the exception of RG_MICOMP where five replicate samples were collected to support the RAEMP study design requirements (Minnow 2021c). As noted in the 2021 to 2023 EVO Study Design (Minnow 2021b), one sample was taken from RG_ERCK (replication not possible due to the presence of a single riffle habitat).

Benthic invertebrate community sampling followed the CABIN protocol, which involved a 3-minute travelling kick into a net with a triangular aperture measuring 36 cm per side and a mesh having 400- μ m openings (Environment Canada 2012a). Supporting measures, including habitat characterization, were also collected concurrent with sampling. For detailed methodology, see Appendix A).

2.5.1.2 Laboratory and Data Analysis

Benthic invertebrate community samples were analyzed by Cordillera Consulting (lead taxonomist Scott Finlayson), in Summerland BC, for sorting and taxonomic identification.



Total organism abundance was reported for every distinct taxon identified in each sample. Benthic invertebrate community structure was evaluated based on total abundance, taxonomic richness (to the lowest practicable level of taxonomy), and the abundances and proportional abundances (%) of major taxonomic groups. Analyses of benthic invertebrate community data were completed using the following approaches (see Appendix A for detailed methodology):

- Graphical comparison of data relative to regional and site-specific normal ranges ;
- Evaluation of temporal changes in endpoints from mine-exposed and reference areas using a two-way ANOVA;

2.5.2 Hess Sampling (Density, Biomass, and Community)

2.5.2.1 Sample Overview

Benthic invertebrate community samples were collected using a Hess sampler with 500 µm mesh, which allowed for evaluation of density, biomass, and community structure of the area sampled. Ten single-Hess samples were collected at each of two mine-exposed areas, one immediately upstream (RG_ERCKUT) and one downstream of the SRF outfall (RG_ERCKDT), with the replicate sampling locations a minimum of 5 m apart (Figure 1.3; Table 2.2).

2.5.2.2 Laboratory and Data Analysis

Benthic invertebrate biomass and density samples were sent to Zeas Inc. (lead taxonomist Danuta Zaranko), in Nobleton ON, for sorting and taxonomic identification. Analyses of benthic invertebrate productivity data were completed using the following approaches (see Appendix A sections for detailed methodology):

- Graphical comparison of benthic invertebrate biomass and density changes temporally and spatially.
- A two-way ANOVA comparison between areas upstream (RG_ERCKUT) and downstream (RG_ERCKDT) of SRF water treatment.

2.5.3 Tissue Selenium

2.5.3.1 Sampling Overview

Benthic invertebrate tissue (BIT) samples for selenium analysis were collected using the kick and sweep sampling method (which is described in greater detail in Appendix A), except that sampling was not timed and kicking continued only until sufficient organisms were collected. All sampling events included collection of a composite sample representative of the benthic



invertebrate community at the monitoring area (composite-taxa samples; see Appendix A3.4.1 for detailed methodology).

2.5.3.2 Laboratory and Data Analysis

Benthic invertebrate tissue samples were kept in a freezer until they were transported by courier in coolers with ice packs to TrichAnalytics Inc. in Saanichton, BC. Samples were dehydrated (<60°C) upon receipt by the laboratory and analyzed using Laser Ablation Inductively Coupled Plasma Mass Spectrometry (ICP-MS). Quality assurance/quality control measures associated with the tissue chemistry analyses included evaluation of laboratory duplicates and certified reference materials, discussed in greater detail in the Data Quality Review (DQR) in Appendix B (see Appendix H for applicable laboratory reports). Results are reported on a dry weight basis along with moisture content.

Analyses of composite-taxa BIT selenium data were completed using the following approaches (see Appendix A for detailed methodology):

- Graphical comparison of tissue selenium concentrations relative to applicable benchmarks (Appendix Table A.2) and the regional reference normal range;
- Evaluation of spatial differences among areas in tissue selenium concentrations for each sampling event in 2022, using a one-way ANOVA.
- Evaluation of the potential effects of SRF operational phases on tissue selenium concentrations from mine-exposed areas relative to upstream and reference areas using a two way ANOVA;
- Comparison of observed tissue selenium concentrations to those predicted using selenium bioaccumulation tool.



3 RESULTS AND DISCUSSION

3.1 Study Question #1

Study question # 1 (Has temperature changed in the receiving environment of Erickson Creek as the result of SRF water treatment?) was evaluated using continuous temperature data loggers installed at RG_ERCKUT, RG_ERCKDT (EV_ECOUT), EV_EC_FLOW1, EV_EC_FLOW2, EV_EC_FLOW3, and RG_ERCK (EV_EC1).

3.1.1 Temperature

Temperature in upper Erickson Creek (RG_ERCKUT, RG_ERCKDT (EV_ECOUT), EV_EC_FLOW1, EV_EC_FLOW2, and EV_EC_FLOW3) is heavily influenced by groundwater and is consistently between 5 and 6°C year-round in the absence of SRF discharge. Although the SRF does not utilize heating or cooling, the effluent (or treated water) being discharged from the effluent retention pond is expected to be influenced by seasonal fluctuations in air temperatures both in the pond and the pipeline when compared to water upstream (Golder 2020c, Teck 2020a). As such, water temperatures measured by continuous data loggers in Erickson Creek upstream of the SRF outfall (RG_ERCKUT), were consistent throughout 2022 at approximately 5°C, similar to 2021 (Figure 3.1). Water temperatures downstream of the SRF (RG_ERCKDT); however, fluctuated concurrently with SRF operational period. During SRF operation (i.e., January to April and October to the end of the year), mean daily temperatures at RG_ERCKDT were slightly higher than RG_ERCKUT (~0.5 °C) and more variable. Variability in temperature can be attributed to several factors including but not limited to changes in the proportional volume of treated water entering Erickson Creek and changes in the thermal regime in the effluent retention pond (e.g., seasonal and daily changes in sunlight, ambient air temperature, and residence time). Patterns in water temperature were similar to RG_ERCKDT further downstream at EV_EC_FLOW3, EV_EC_FLOW2, EV_EC_FLOW1 during SRF operation, and during shutdown (April to October) water temperatures at all stations in Erickson Creek (except RG_ERCK) were between 5°C and 6°C. Temperatures at RG_ERCK (EV_EC1) showed more seasonality (irrespective to SRF operational status) compared to RG_ERCKDT with minimum temperatures recorded in the winter months typically ranging from 1 to 6 °C and maximum temperatures in the summer reaching a maximum daily average of 8.6°C (observed in July; Appendix Table C.1). On several occasions, temperatures at EV_EC1 (RG_ERCK) were higher than upstream areas, likely due to the lack of canopy cover and shallower water in that area; however, water temperature did not exceed of the Permit 107517 limit at EV_EC1 in 2022 (7°C January 1 to April 30 and November 1 to December 31, 13°C May 1 to August 31, and 10°C September 1 to October 31).



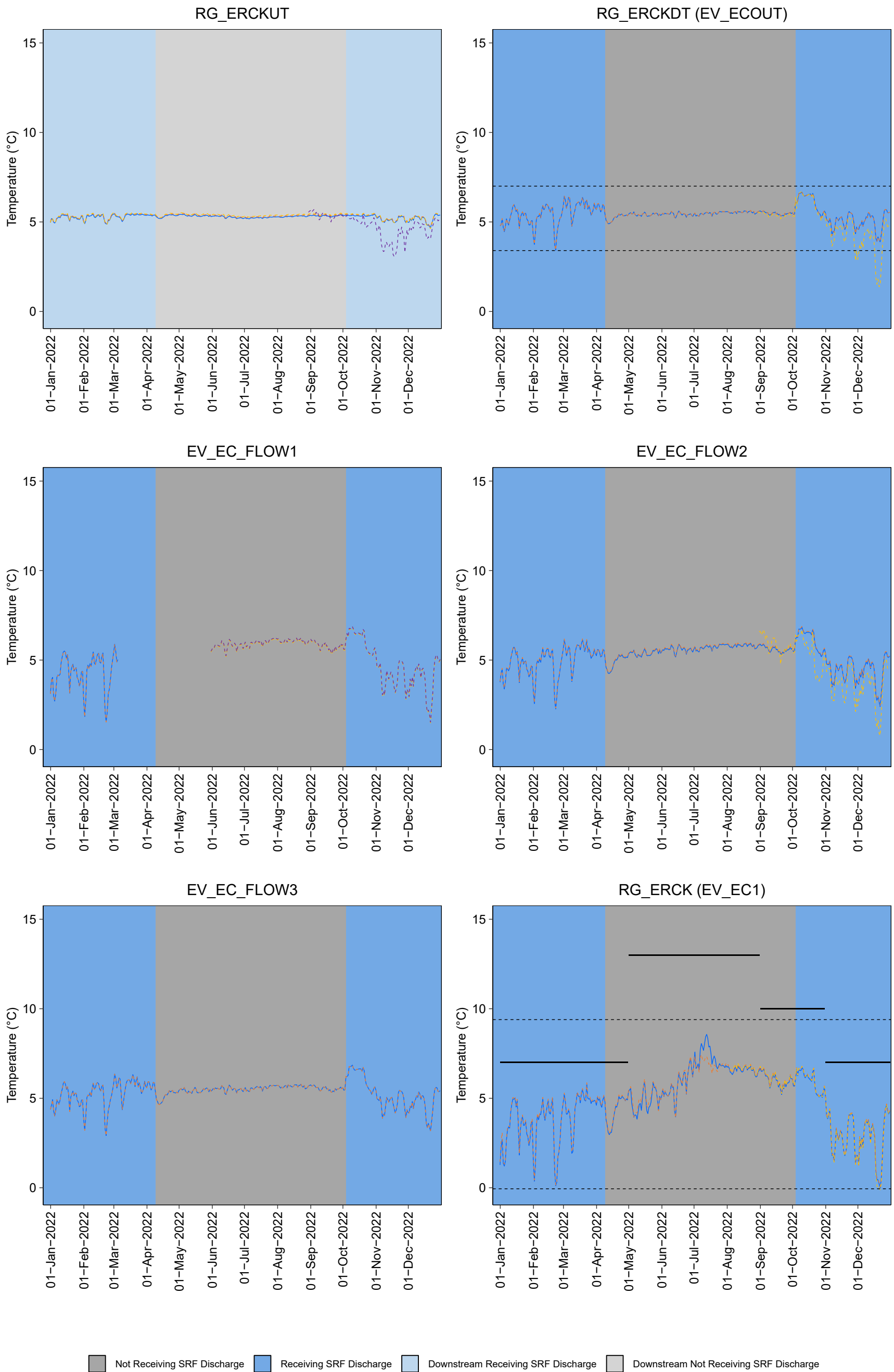


Figure 3.1: Mean Daily Water Temperature Recorded by Temperature Loggers, EVO LAEMP, 2022

Note: Solid black horizontal lines indicate the maximum daily temperature as specified in Permit 107517, which came into effect August 13, 2021. Dashed horizontal lines indicate the minimum and maximum average hourly temperature from 2018 to 2020. Different colours indicate replicate loggers.

Temperature at RG_ERCKDT and RG_ERCK were within the minimum and maximum average hourly temperature from 2018 to 2020 (prior to SRF operation) throughout 2022, with the exception of one logger at RG_ERCKDT (EV_ECOUT) which recorded cooler temperatures. The cooler temperatures recorded on the single logger could be due to the placement of the logger, this logger was installed in a slower moving pool which may be more susceptible to daily changes in air temperature. In 2021, temperatures were only greater than pre-SRF temperatures in the summer months at these stations, while in 2022 the SRF was not discharging during this time and thus remained similar to pre-SRF temperatures.

Temperature measurements at stations in fish-bearing areas of Erickson were also compared to British Columbia guidelines⁹, which are defined as a maximum $\pm 1^{\circ}$ C change from the optimum temperature range for spawning, incubation, and alevin / rearing temperature guidelines for both WCT and bull trout (BCMOE 2001). Temperatures in Erickson Creek (EV_EC1 [RG_ERCK]) remained within or below the optimum temperature ranges specified for both species, throughout the year (Appendix Table C.1).

In summary, water temperature in Erickson Creek downstream of the SRF (RG_ERCKDT, EV_EC_FLOW1, EV_EC_FLOW2, and EV_EC_FLOW3) was influenced by SRF operation in 2022; however, the magnitude of effects were both lower (compared to 2021) and temporally constrained due to SRF shutdown during the summer months when the SRF had the greatest influence on water temperature in 2021 (Minnow 2022). Considering there were no observed changes in biological endpoints (i.e., BIC and productivity) that could be linked to the variability in the water temperature and water temperatures did not exceed permit or BCWQG downstream of the SRF it is unlikely that this variability was ecologically significant in 2022.

3.2 Study Question #2

Study Questions #2 (Has calcite in the receiving environment (Erickson, Bodie, Gate, and Michel creeks) been influenced by SRF water treatment and/or calcite prevention (e.g. antiscalant) efforts?) was evaluated using calcite presence data collected through both the EVO LAEMP CABIN sampling as well as the Regional Calcite Program.

3.2.1 Calcite

Calcite accumulation has the potential to negatively affect aquatic habitat through changes to stream substrate characteristics (Minnow 2016; Hocking et al. 2020). Calcite concretion can adversely affect aquatic organisms via reduced suitability of habitat for fish spawning, egg incubation, and overwintering, or via potential effects to benthic invertebrates, and benthic

⁹ As noted in Section 1.2, upper portions of Erickson Creek and both Bodie and Gate Creek have been confirmed to be non-fish bearing.



invertebrate productivity that provides an important prey source for adult and juvenile fish (Robinson 2010; Barrett et al. 2016; Wright et al. 2018; Hocking et al. 2020; Minnow 2022). As many of the biological monitoring areas assessed in the EVO LAEMP are above fish barriers (Gate Creek, Bodie Creek, and upper portions of Erickson Creek), the potential effects of calcite on fish are limited to lower portions of Erickson (specifically RG_ERCK) and in Michel Creek. Regardless, direct effects of calcite on substrate and habitat and the impacts on benthic invertebrate community composition throughout the EVO LAEMP study area were considered.

Benthic invertebrate sampling targeted riffle habitat during September sampling and included calcite measurements (Figure 3.2; Appendix Table C.2). Both CI' and CI were reported for all areas in 2022; however, comparisons to previous years were completed using CI values. Mean CI values in 2022 for both reference areas (RG_ALUSM [CI' = 0.27 and CI = 0.68] and RG_MI25 [CI' = 0.05 and CI = 0.28]) were similar to previous years (2015 to 2021; Figure 3.3; Appendix Table C.2). While the reference areas showed consistent CI temporal patterns, mean CI values at RG_ERCKUT (upstream of the SRF outfall) has been variable over time, ranging from 1.42 (2020) to 0.20 (2021). At RG_ERCKDT (downstream of the SRF outfall), a similar pattern as upstream was observed, with lowest CI values recorded in 2021 (CI = 0.66) and the highest value recorded in 2020 (CI = 1.67). Both upstream and downstream of the SRF outfall (and the antiscalant addition), CI values in 2022 increased relative to 2021 but were lower than 2019 and 2020 (Table 3.1). Calcite trends in Erickson Creek are potentially confounded by the temporary suspension of SRF and calcite treatment in 2022; however, in 2021, CI values were consistently lower than previous years across many areas including upstream and downstream of the SRF outflow, this pattern is therefore likely not connected to antiscalant treatment in Erickson Creek and is more likely regional variation or sampler variation¹⁰. Calcite concretion (Cc) at both RG_ERCKUT (mean Cc = 0.07) and RG_ERCKDT (mean Cc = 0.13) was similar to Cc values recorded in 2021, lower than pre-antiscalant treatment values (2020 and 2022), and below the future SPO (December 31, 2024: Cc ≤ 0.5; ENV 2023).

Lower Erickson Creek at the mouth of Michel Creek (RG_ERCK), had a CI value of 2.47 in 2022, which was slightly higher than previous years (2018 to 2021; ranging from 1.58 to 2.20). Calcite concretion at RG_ERCK in 2022 was higher than previous years (Cc = 1.49) and currently greater than the future SPO (ENV 2023). Lower Erickson Creek (Reach 1, 290 m, stretching from the confluence of the Michel Creek to above RG_ERCK) is slated for calcite remediation and the lower 50 to 70 m will be remediated in September of 2023.

¹⁰ Minnow will continue to attend the annual calcite workshop (as part of the regional calcite program) to reduce sampler variation



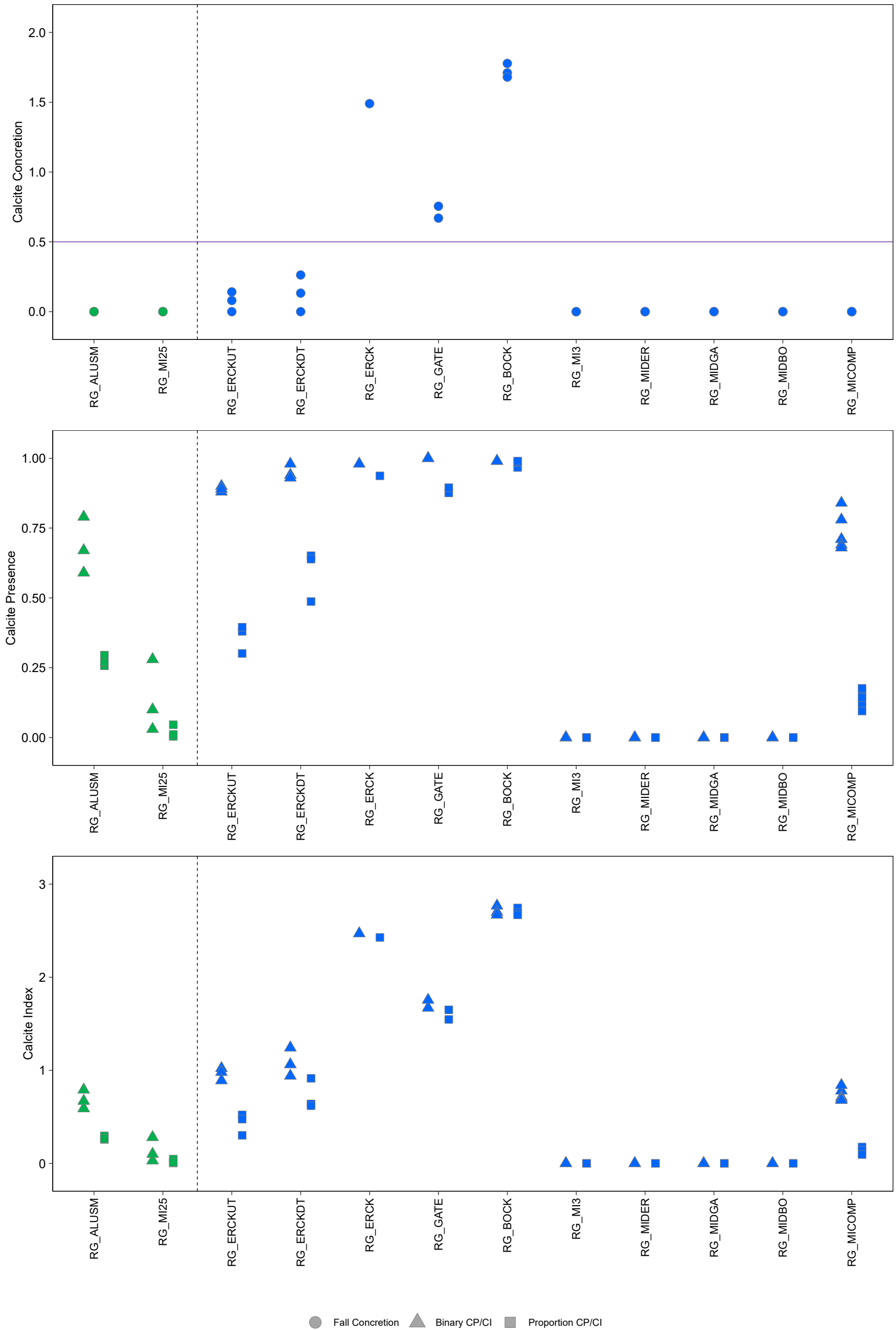


Figure 3.2: Calcite Proportion and Concretion Scores for EVO LAEMP Areas, 2022

Notes: Calcite data from reference stations in green and mine-exposed stations in blue. Calcite Presence was measured using both a presence/absence (binary) and proportional method. The horizontal purple line represents the future SPO (i.e. by December 31st, 2024 Calcite Concretion Score = 0.5). Dashed vertical line separates reference from mine-exposed areas.

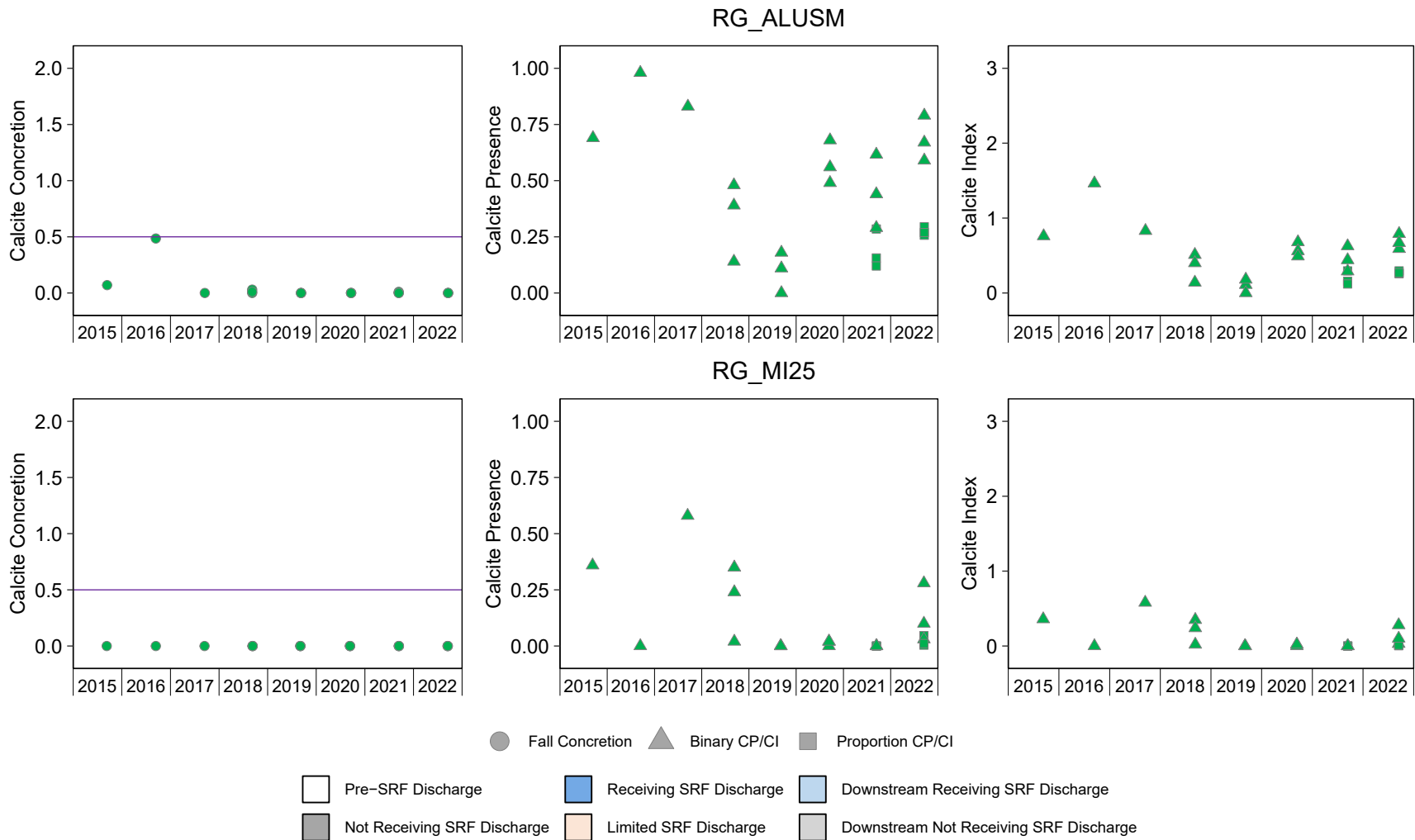


Figure 3.3: Calcite Proportion and Concretion Scores for EVO LAEMP Areas, 2015 to 2022

Notes: Calcite data from reference stations in green and mine-exposed stations in blue. Calcite data were collected in the fall (August to September). In 2021 and 2022 calcite Presence was measured using both a presence/absence (binary) and proportional method. The horizontal purple line represents the future SPO (i.e. by December 31st, 2024 Calcite Concretion Score = 0.5)

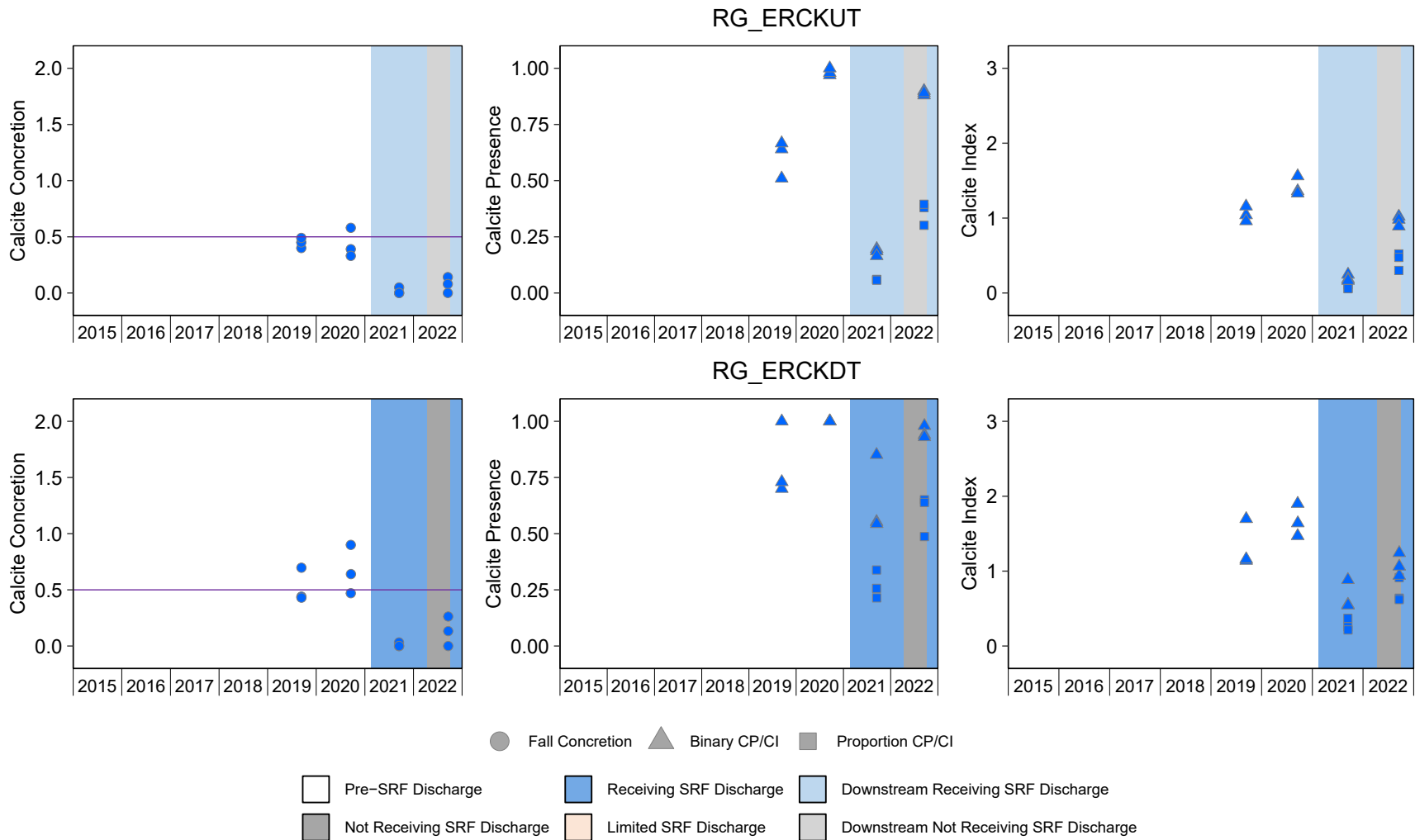


Figure 3.3: Calcite Proportion and Concretion Scores for EVO LAEMP Areas, 2015 to 2022

Notes: Calcite data from reference stations in green and mine-exposed stations in blue. Calcite data were collected in the fall (August to September). In 2021 and 2022 calcite Presence was measured using both a presence/absence (binary) and proportional method. The horizontal purple line represents the future SPO (i.e. by December 31st, 2024 Calcite Concretion Score = 0.5)

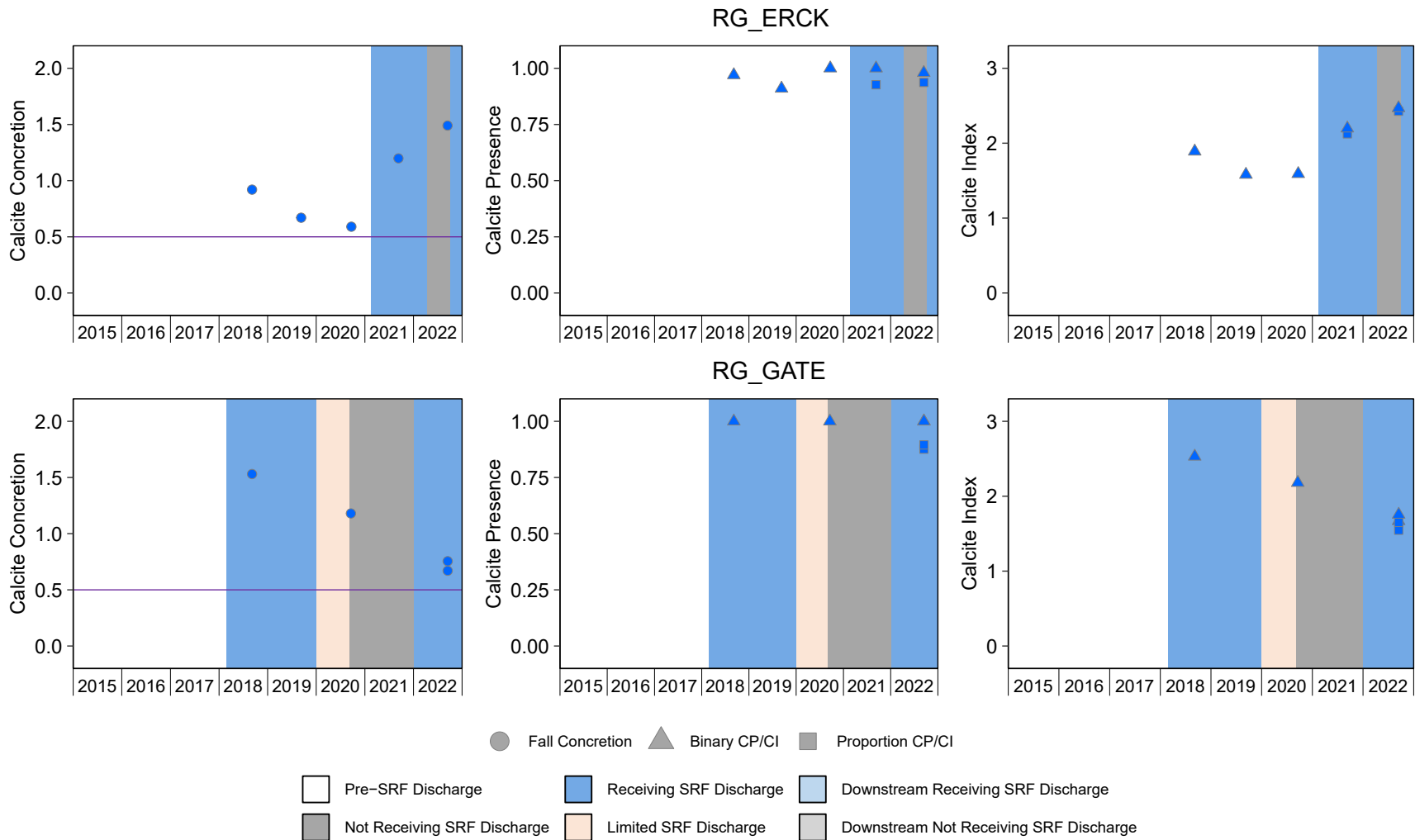


Figure 3.3: Calcite Proportion and Concretion Scores for EVO LAEMP Areas, 2015 to 2022

Notes: Calcite data from reference stations in green and mine-exposed stations in blue. Calcite data were collected in the fall (August to September). In 2021 and 2022 calcite Presence was measured using both a presence/absence (binary) and proportional method. The horizontal purple line represents the future SPO (i.e. by December 31st, 2024 Calcite Concretion Score = 0.5)

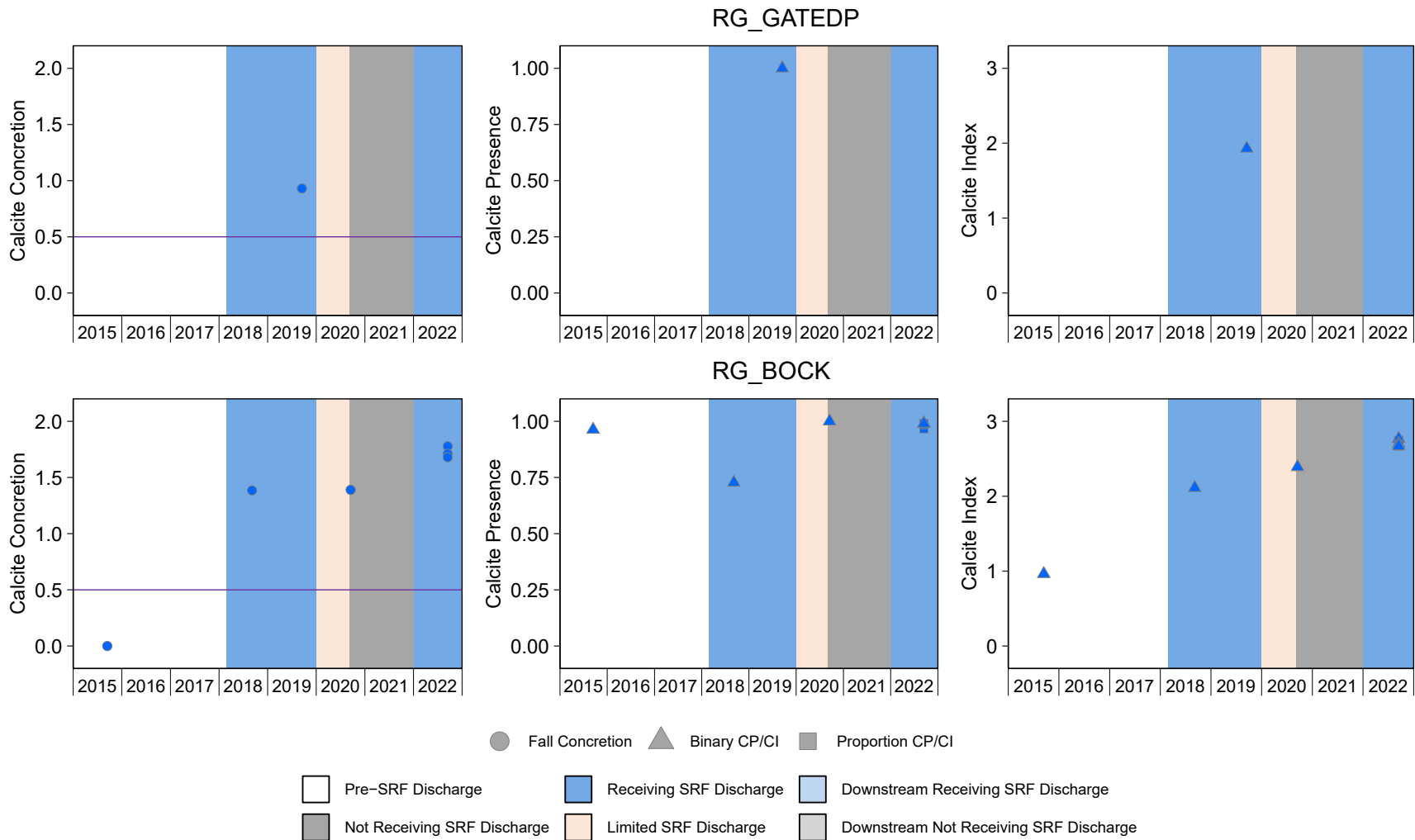


Figure 3.3: Calcite Proportion and Concretion Scores for EVO LAEMP Areas, 2015 to 2022

Notes: Calcite data from reference stations in green and mine-exposed stations in blue. Calcite data were collected in the fall (August to September). In 2021 and 2022 calcite Presence was measured using both a presence/absence (binary) and proportional method. The horizontal purple line represents the future SPO (i.e. by December 31st, 2024 Calcite Concretion Score = 0.5)

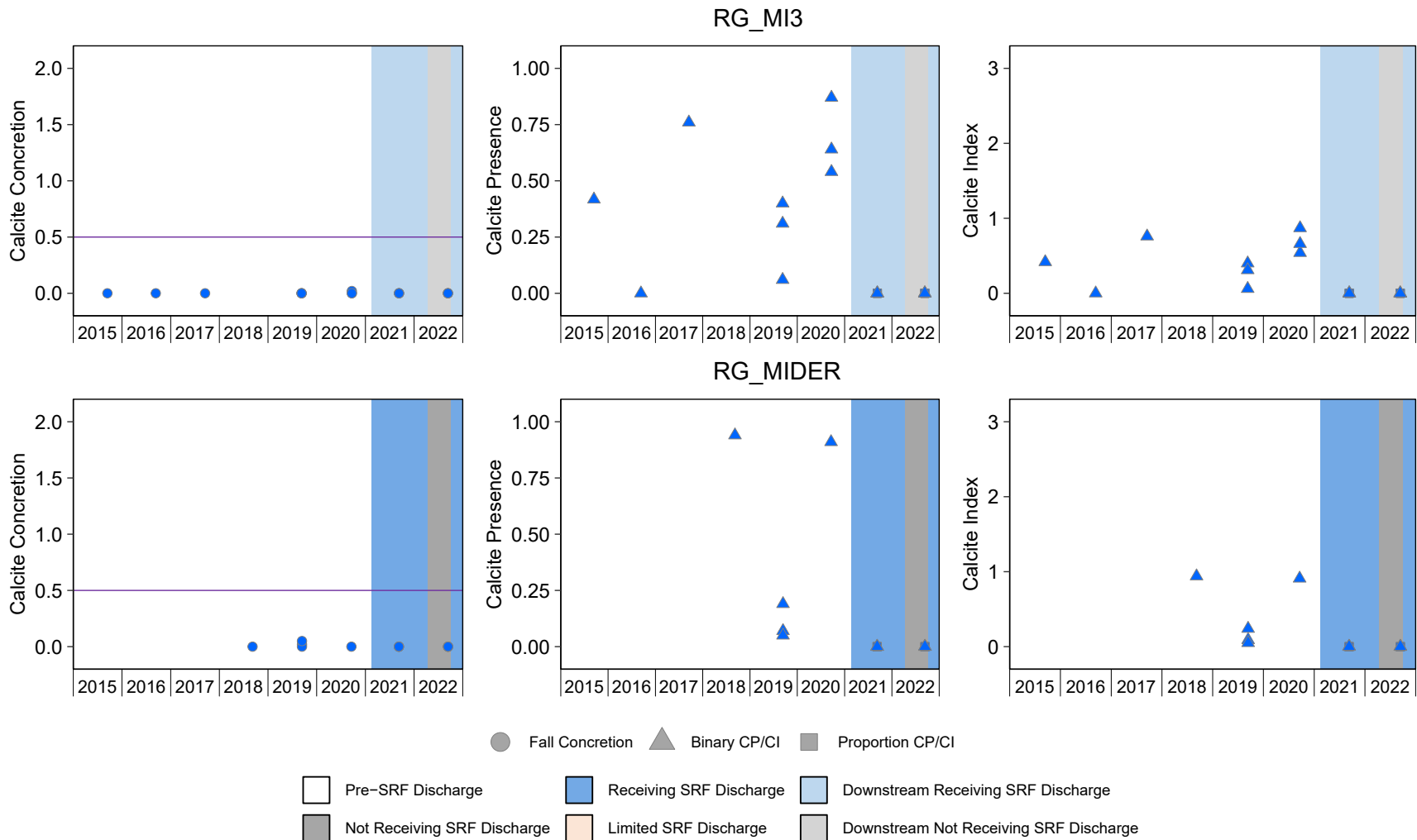


Figure 3.3: Calcite Proportion and Concretion Scores for EVO LAEMP Areas, 2015 to 2022

Notes: Calcite data from reference stations in green and mine-exposed stations in blue. Calcite data were collected in the fall (August to September). In 2021 and 2022 calcite Presence was measured using both a presence/absence (binary) and proportional method. The horizontal purple line represents the future SPO (i.e. by December 31st, 2024 Calcite Concretion Score = 0.5)

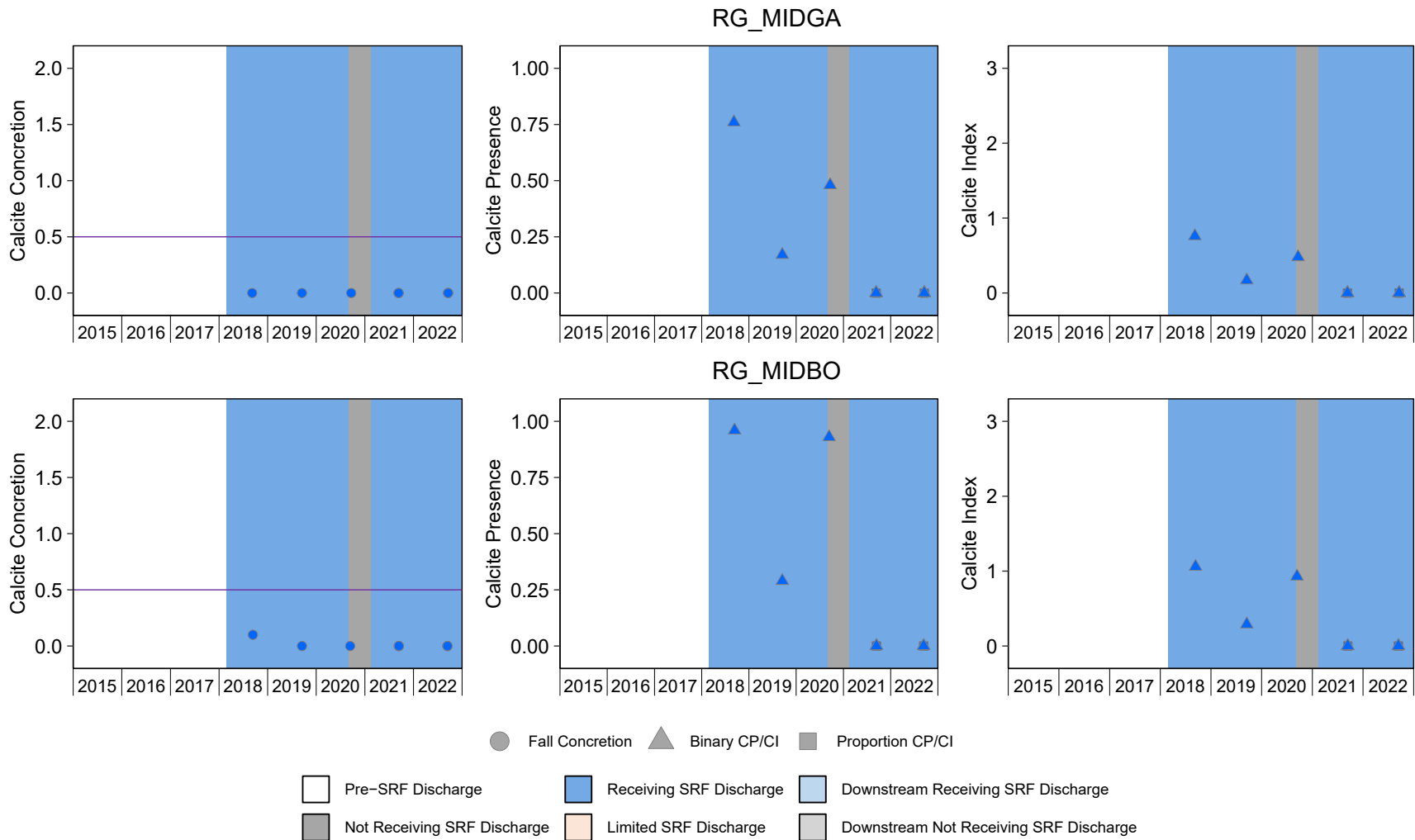


Figure 3.3: Calcite Proportion and Concretion Scores for EVO LAEMP Areas, 2015 to 2022

Notes: Calcite data from reference stations in green and mine-exposed stations in blue. Calcite data were collected in the fall (August to September). In 2021 and 2022 calcite Presence was measured using both a presence/absence (binary) and proportional method. The horizontal purple line represents the future SPO (i.e. by December 31st, 2024 Calcite Concretion Score = 0.5)

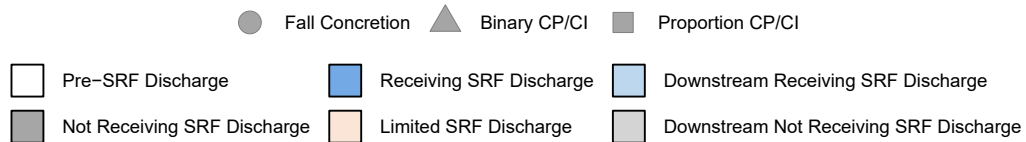
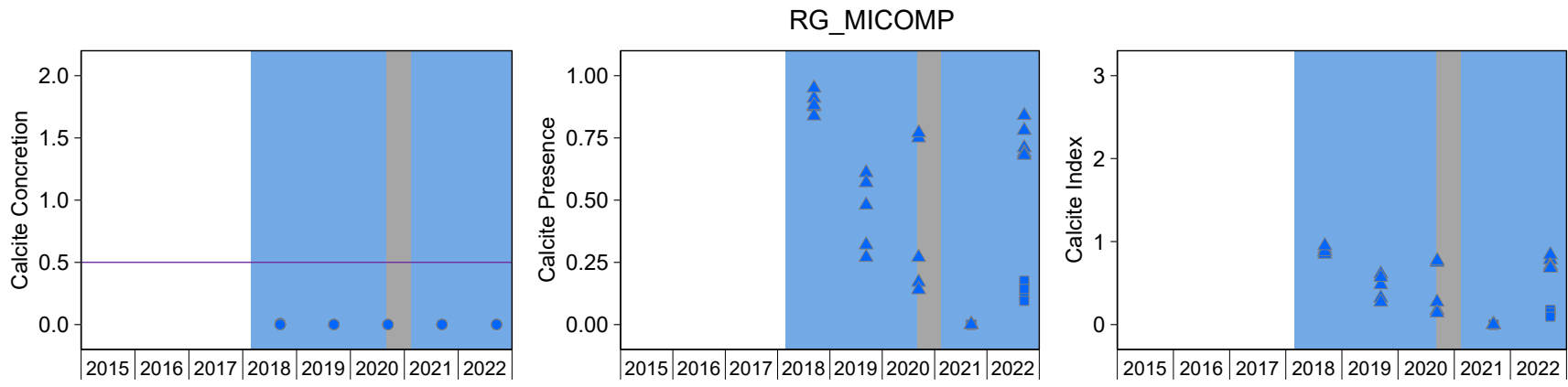


Figure 3.3: Calcite Proportion and Concretion Scores for EVO LAEMP Areas, 2015 to 2022

Notes: Calcite data from reference stations in green and mine-exposed stations in blue. Calcite data were collected in the fall (August to September). In 2021 and 2022 calcite Presence was measured using both a presence/absence (binary) and proportional method. The horizontal purple line represents the future SPO (i.e. by December 31st, 2024 Calcite Concretion Score = 0.5)

Table 3.1: Calcite Presence, Concretion, and Index Values, EVO LAEMP, 2015 to 2021

Waterbody	Station	2019					2020					2021					2022				
		Calcite Presence		Calcite Concretion	Calcite Index		Calcite Presence		Calcite Concretion	Calcite Index		Calcite Presence		Calcite Concretion	Calcite Index		Calcite Presence		Calcite Concretion	Calcite Index	
		CP'	CP	CC	CI'	CI	CP'	CP	CC	CI'	CI	CP'	CP	CC	CI'	CI	CP'	CP	CC	CI'	CI
Lower Alexander Creek (Reference)	RG_ALUSM	0.110	0.110	0	0.110	0.110	0.680	0.680	0	0.680	0.680	0.285	0.616	0.0101	0.295	0.626	0.257	0.590	0	0.257	0.590
		0	0	0	0	0	0.560	0.560	0	0.560	0.560	0.156	0.440	0	0.156	0.440	0.295	0.790	0	0.295	0.790
		0.180	0.180	0	0.180	0.180	0.490	0.490	0	0.490	0.490	0.120	0.290	0	0.120	0.290	0.269	0.670	0	0.269	0.670
Michel Creek (Reference)	RG_MI25	0	0	0	0	0	0.0200	0.0200	0	0.0200	0.0200	0	0	0	0	0	0.0460	0.280	0	0.0460	0.280
Erickson Creek	RG_ERCKUT	0.640	0.640	0.400	1.04	1.04	0.970	0.970	0.390	1.36	1.36	0.0588	0.196	0.0495	0.108	0.246	0.380	0.880	0.141	0.521	1.02
		0.510	0.510	0.450	0.960	0.960	0.980	0.980	0.580	1.56	1.56	0.0604	0.187	0	0.0604	0.187	0.395	0.900	0.0800	0.475	0.980
		0.667	0.667	0.490	1.16	1.16	1.00	1.00	0.330	1.33	1.33	0.0571	0.165	0	0.0571	0.165	0.301	0.890	0	0.301	0.890
	RG_ERCKDT	0.700	0.700	0.440	1.14	1.14	1.00	1.00	0.900	1.90	1.90	0.338	0.851	0.0319	0.370	0.883	0.651	0.980	0.263	0.914	1.24
		0.730	0.730	0.430	1.16	1.16	1.00	1.00	0.470	1.47	1.47	0.257	0.553	0	0.257	0.553	0.639	0.940	0	0.639	0.940
RG_ERCK	1.00	1.00	0.697	1.70	1.70	1.00	1.00	0.640	1.64	1.64	0.214	0.543	0	0.214	0.543	0.487	0.930	0.133	0.620	1.06	
Gate and Bodie Creek	RG_GATE	0.910	0.910	0.670	1.58	1.58	1.00	1.00	0.590	1.59	1.59	0.927	1.00	1.20	2.12	2.20	0.937	0.980	1.49	2.43	2.47
		-	-	-	-	-	1.00	1.00	1.18	2.18	2.18	-	-	-	-	-	0.876	1.00	0.670	1.55	1.67
	RG_GATEDP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.895	1.00	0.755	1.65	1.76
	RG_BOCK	1.00	1.00	0.930	1.93	1.93	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		-	-	-	-	-	1.00	1.00	1.39	2.39	2.39	-	-	-	-	-	0.967	0.990	1.78	2.74	2.77
-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.985	0.990	1.71	2.70	2.70	
Michel Creek	RG_MI3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.990	0.990	1.68	2.67	2.67	
		0.400	0.400	0	0.400	0.400	0.540	0.540	0	0.540	0.540	0	0	0	0	0	0	0	0	0	0
		0.310	0.310	0	0.310	0.310	0.640	0.640	0.0200	0.660	0.660	0	0	0	0	0	0	0	0	0	0
	RG_MIDER	0.0600	0.0600	0	0.0600	0.0600	0.870	0.870	0	0.870	0.870	0	0	0	0	0	0	0	0	0	0
		0.0700	0.0700	0.0200	0.0900	0.0900	-	-	-	-	-	0	0	0	0	0	0	0	0	0	0
		0.0500	0.0500	0	0.0500	0.0500	0.910	0.910	0	0.910	0.910	0	0	0	0	0	0	0	0	0	0
	RG_MIDGA	0.190	0.190	0.0500	0.240	0.240	-	-	-	-	-	0	0	0	0	0	0	0	0	0	0
		0.170	0.170	0	0.170	0.170	0.480	0.480	0	0.480	0.480	0	0	0	0	0	0	0	0	0	0
		-	-	-	-	-	-	-	-	-	-	0	0	0	0	0	0	0	0	0	0
	RG_MIDBO	-	-	-	-	-	-	-	-	-	-	0	0	0	0	0	0	0	0	0	0
		0.290	0.290	0	0.290	0.290	0.930	0.930	0	0.930	0.930	0	0	0	0	0	0	0	0	0	0
		-	-	-	-	-	-	-	-	-	-	0	0	0	0	0	0	0	0	0	0
	RG_MICOMP	-	-	-	-	-	-	-	-	-	-	0	0	0	0	0	0	0	0	0	0
		0.480	0.480	0	0.480	0.480	0.170	0.170	0	0.170	0.170	0	0	0	0	0	0.165	0.780	0	0.165	0.780
		0.610	0.610	0	0.610	0.610	0.270	0.270	0	0.270	0.270	0	0	0	0	0	0.176	0.840	0	0.176	0.840
0.320		0.320	0	0.320	0.320	0.140	0.140	0	0.140	0.140	0	0	0	0	0	0.121	0.710	0	0.121	0.710	
0.570		0.570	0	0.570	0.570	0.750	0.750	0	0.750	0.750	0	0	0	0	0	0.143	0.690	0	0.143	0.690	
0.270	0.270	0	0.270	0.270	0.770	0.770	0	0.770	0.770	0	0	0	0	0	0.0950	0.680	0	0.0950	0.680		

Notes: "-" = no calcite monitoring was completed. "Cp" = calcite presence score using a binary assessment method. "Cp'" = calcite presence score based on the percent of the particle surface area covered by calcite as a decimal to the nearest 10th percentile (0.1, 0.2, 0.3, etc.). "CI" = calcite index calculated using the binary calcite presence. "CI'" = calcite index calculated using the proportional calcite presence. Calcite indexes from the Regional Calcite Monitoring Program have not been provided.

In Gate Creek (RG_GATE) in 2022, calcite values were lower than recorded in previous years (2022 CI = 1.75), in contrast, calcite values in Bodie Creek (RG_BOCK) were higher in 2022 (CI = 2.71) compared to previous years (Figure 3.3). Calcite concentration at both Gate and Bodie creeks was above the future SPO in 2022 (Cc = 0.71 and 1.72). Both Gate and Bodie creeks have received treated effluent from the EVO SRF P2 from early-2022 on, which includes the addition of antiscalant.

Calcite index values collected with benthic invertebrate community samples at each of the Erickson Creek biological monitoring areas and Gate and Bodie creeks in 2022 were lower than those reported in the 2022 Regional Calcite Monitoring Program (which were evaluated between August and October; Smit and Robinson 2023). The cause of the difference could be due to the different spatial extents between the programs as well as the high presence of bryophytes in Erickson Creek (which is a unique habitat characteristic in the Elk Valley) which makes assessment of calcite difficult (see supporting CABIN measurements and methods for further details Appendix A3.2.1 and A 3.2.3). The mean 2022 CI score for the Erickson Creek area upstream of the SRF outfall was 1.54, while CI downstream the outfall and further downstream in Erickson Creek ranged from 2.89 to 2.94. Results from the 2022 Regional Calcite Monitoring Program report suggest that pre-EVO SRF P2 calcite presence and concretion in the Erickson Creek areas upstream (CI values: 1.68 to 1.73) and downstream of the outfall (CI values: 2.46 to 2.96) were largely lower than post-EVO SRF P2 operation upstream (CI values: 1.42 to 1.54) and similar to downstream of the outfall (CI values: 2.89 to 2.94). In 2022, the mean CI in Bodie Creek (1.43 [below the settling pond] and 2.83 [above the settling pond]) and Gate Creek (1.38 [above the settling pond]) were similar to or slightly higher than observations from previous years (Smit and Robinson 2023). Data from Gate and Bodie creeks are inconclusive when considering the effectiveness of antiscalant. In Gate Creek CI values have been decreasing since the start of treatment (2021); however, treated (GATE-25), and untreated (GATE-50 and GATE-75) areas have been decreasing at a similar rate. Areas in Bodie as well as Erickson Creek [including the above the SRF outfall] currently have Cc scores that are greater than the future SPO (December 31, 2024: Cc ≤ 0.5).

Immediately downstream of SRF influenced tributaries (Erickson, Gate, and Bodie creek) in Michel Creek (RG_MIDER, RG_MIDGA, and RG_MIDBO) and the area above the confluence of Erickson Creek (RG_MI3) had no reportable calcite presence or concretion in 2022 (resulting in a CI of 0; Figure 3.2; Appendix Table C.2) and were overall similar to (2021) or lower than (2018 to 2020) results from previous years (Figure 3.3). Calcite index values recorded at RG_MICOMP were elevated in 2022 compared to 2021 but similar to values recorded between 2018 and 2020. Similarly low CI values in Michel Creek study areas were reported in the 2022



Regional Calcite Monitoring Program, where mean CI ranged from 0.04 to 0.45 in Michel Creek (Smit and Robinson 2023).

In summary, calcite presence in the receiving environment (Erickson, Gate, and Bodie creeks) was largely similar to previous years (pre-EVO SRF P2) in 2022 based on observations from the present study as well as the Regional Calcite Monitoring Program. Calcite presence in Michel Creek has been variable in all areas; however, Cc and CI scores have remained low. Additional years of data are needed to evaluate the potential cause of the anomalous low calcite values in 2021 (RG_ERCKUT, RG_ERCKDT and RG_MICOMP); however, it is unlikely these changes are related to the SRF as the pattern is seen both upstream and downstream of the SRF outfall. Given the variability in SRF operational status (i.e., Erickson Creek shutdown) and as such no antiscalant treatment, no conclusions around the cause of calcite variability among years associated with antiscalant dosing can be made in 2022.

3.3 Study Question #3

Study Question #3 (Has SRF water treatment and/or calcite prevention (e.g., antiscalant) (a) decreased aqueous concentrations of selenium and nitrate and/or (b) changed other mine-related constituents in effluent and the receiving environment (Erickson, Bodie, Gate, and Michel creeks)?) was evaluated through monitoring of water chemistry, including selenium speciation concentrations, throughout the EVO LAEMP study area. Aqueous concentrations of mine-related constituents are elevated in relation to the British Columbia Water Quality Guidelines (BCWQG), the Elk Valley Water Quality Plan (EVWQP) benchmarks, Updated effects Concentrations and Proposed Benchmarks when applicable (Appendix Table A.1).

Water chemistry data collected for the 2022 EVO LAEMP were of acceptable quality as characterized by good detectability, appropriate LRLs, minimal evidence of laboratory or field contamination, good laboratory and field precision and accuracy, and few hold time exceedances. Overall, the associated water chemistry data from ALS and BAL can be used with a high level of confidence in the derivation of conclusions.

3.3.1 Selenium and Nitrate

The removal of aqueous selenium and nitrate through SRF water treatment has been evident in Erickson, Gate, and Bodie creeks as significant changes in concentrations have been observed between periods of SRF operation and shutdown. Erickson Creek began receiving SRF discharge on February 15th, 2021, and on April 9, 2022, discharge of the SRF to Erickson Creek was paused to complete planned maintenance on the Erickson effluent pipeline. Due to the high BIT Se results observed in Erickson Creek, it was determined through Teck's AMP framework that treatment of Erickson Creek water would remain paused to further investigate the cause of



the increased BIT Se concentrations. The extended downtime allowed Teck to develop a robust trigger response plan (TRP) to support the restart of Erickson Creek treatment (Teck 2023a). A TRP was submitted October 3, 2022, with the discharge of treated effluent to Erickson Creek restarting on October 4, 2022. In 2022, when the SRF was shutdown, aqueous concentrations of selenium and nitrate were no longer significantly different between stations upstream and downstream of the SRF discharge location (Figure 3.4; Appendix Table D.1). Additionally, aqueous concentrations of selenium and nitrate increased significantly at stations in Erickson Creek downstream of the SRF outfall in 2022 during SRF shutdown compared to 2021, when the SRF was discharging into Erickson Creek (EV_ECOUT [RG_ERCKDT] and EV_EC1 [RG_ERCK]; Figure 3.5 and 3.6; Appendix Figure D.16; Appendix Table D.2). Gate and Bodie creeks began receiving SRF discharge on February 22nd, 2018 (EVO SRF P1), which continued until January 1, 2020, when SRF flow was reduced and then stopped discharging completely for 16 months (until January 1, 2022). As of January 2022, the SRF was discharging to both Gate and Bodie creeks. Aqueous concentrations of selenium (total and dissolved) and nitrate were significantly lower in Gate and Bodie creeks in 2022 (SRF discharging) compared to 2021 (SRF not discharging; EV_GT1 [RG_GATEDP] and EV_BC1 [RG_BOCK]; Figure 3.5 and 3.6, Appendix Figure D.16, Appendix Table D.2). Therefore, the results of water chemistry analyses of samples collected from Erickson, Gate, and Bodie creeks in 2021 and 2022 confirm that aqueous concentrations of selenium and nitrate decreased in the receiving environment when the SRF water treatment was active.

In 2022, the SRF removed 672 kg of selenium and 89,292 kg of nitrate decreasing selenium and nitrate loadings into the receiving environment. Concentrations of selenium and nitrate in Michel Creek did not change concurrently with specific changes in SRF operation (i.e., shutdown in Erickson), but the annual mean concentrations have decreased from the base year of monitoring, likely related to SRF treatment (RG_MIDER and RG_MICOMP). Aqueous concentrations of selenium in Michel Creek downstream of tributaries receiving SRF treatment (i.e., at EV_MC2 [RG_MICOMP]) were similar to concentrations in 2015 to 2020 but higher than 2021 in 2022 (Figure 3.7; Appendix Figure D.30; Appendix Table D.4), and concentrations at RG_MI3 (located upstream of treatment in Michel Creek) have increased over the same period. Overall, concentrations of selenium were higher at RG_MICOMP compared to RG_MI3, and the magnitude of difference was similar from 2017 to February 2021 regardless of SRF operation status. From March 2021 to the end of 2022, however, the magnitude of difference was slightly reduced (Appendix Figure D.30; appendix Table D.4), likely related to SRF treatment. Nitrate concentrations downstream at RG_MICOMP have decreased since base year (2015) and were lower during SRF treatment (2019 to 2022) compared to pre-SRF treatment (2015 to 2017). Aqueous selenium concentrations have been



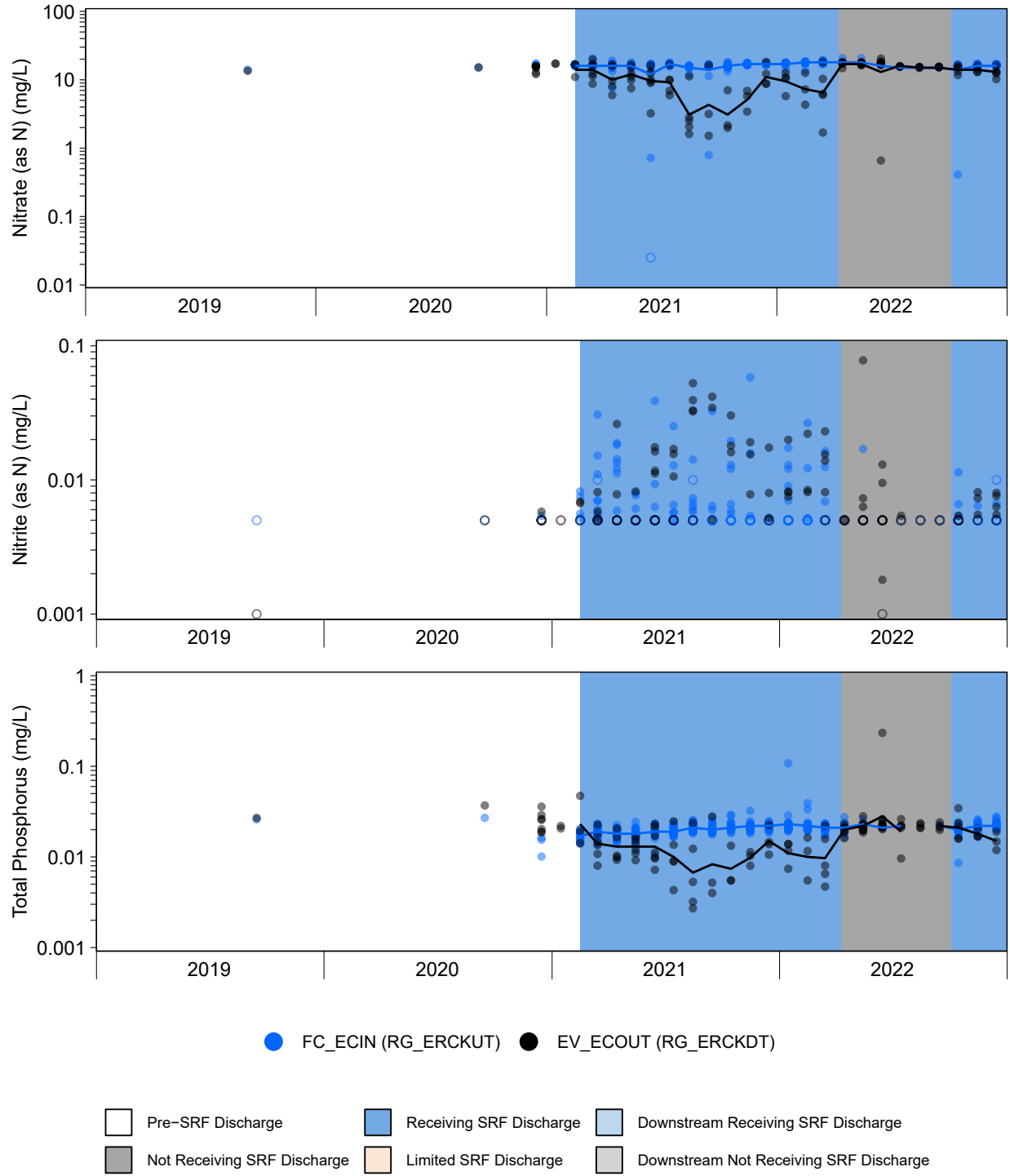


Figure 3.4: Comparison of Water Quality Constituent Concentrations During SRF Operation, EVO LAEMP, 2019 to 2022

Notes: Values at the laboratory reporting limit are plotted with an open symbol.

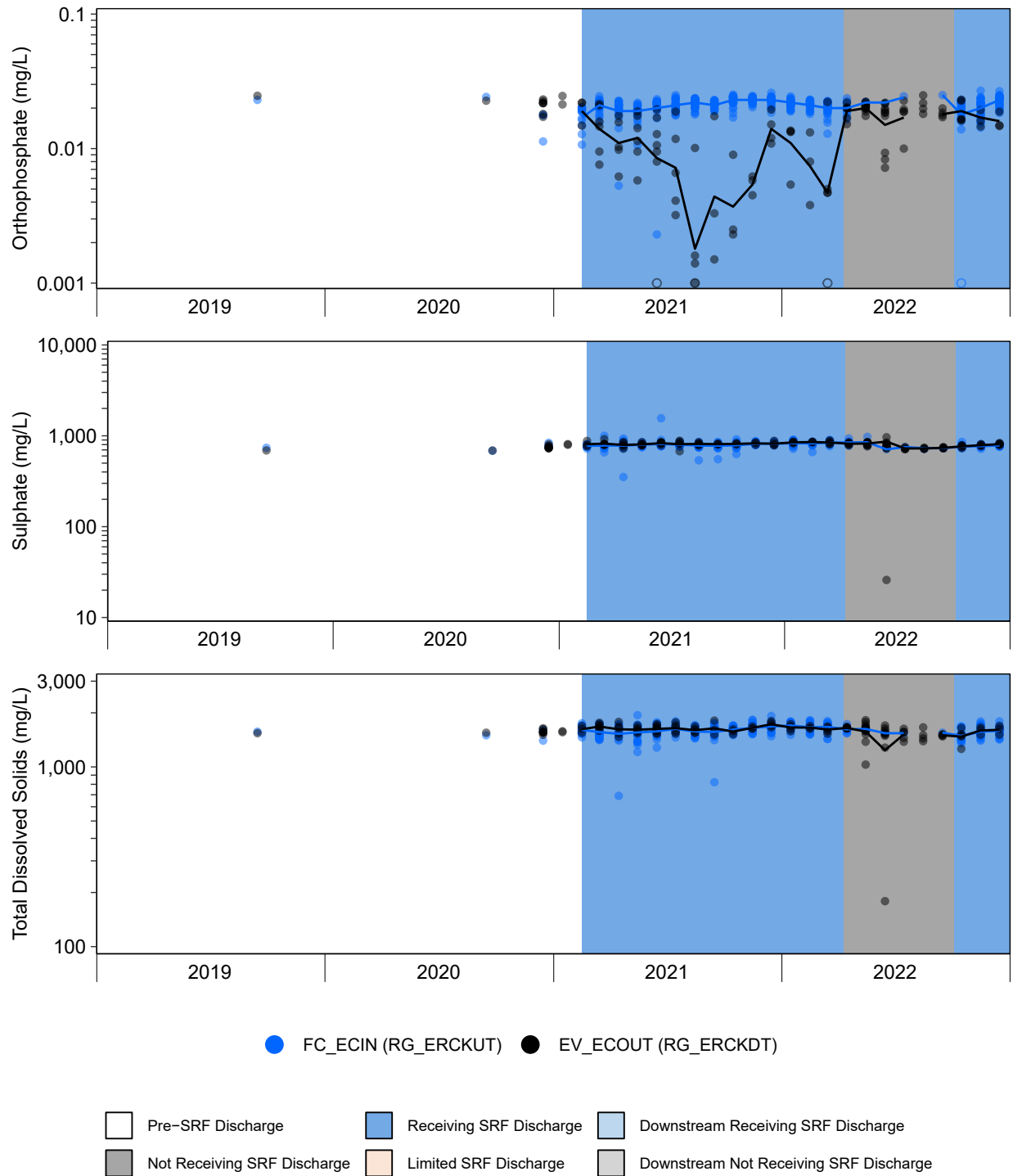


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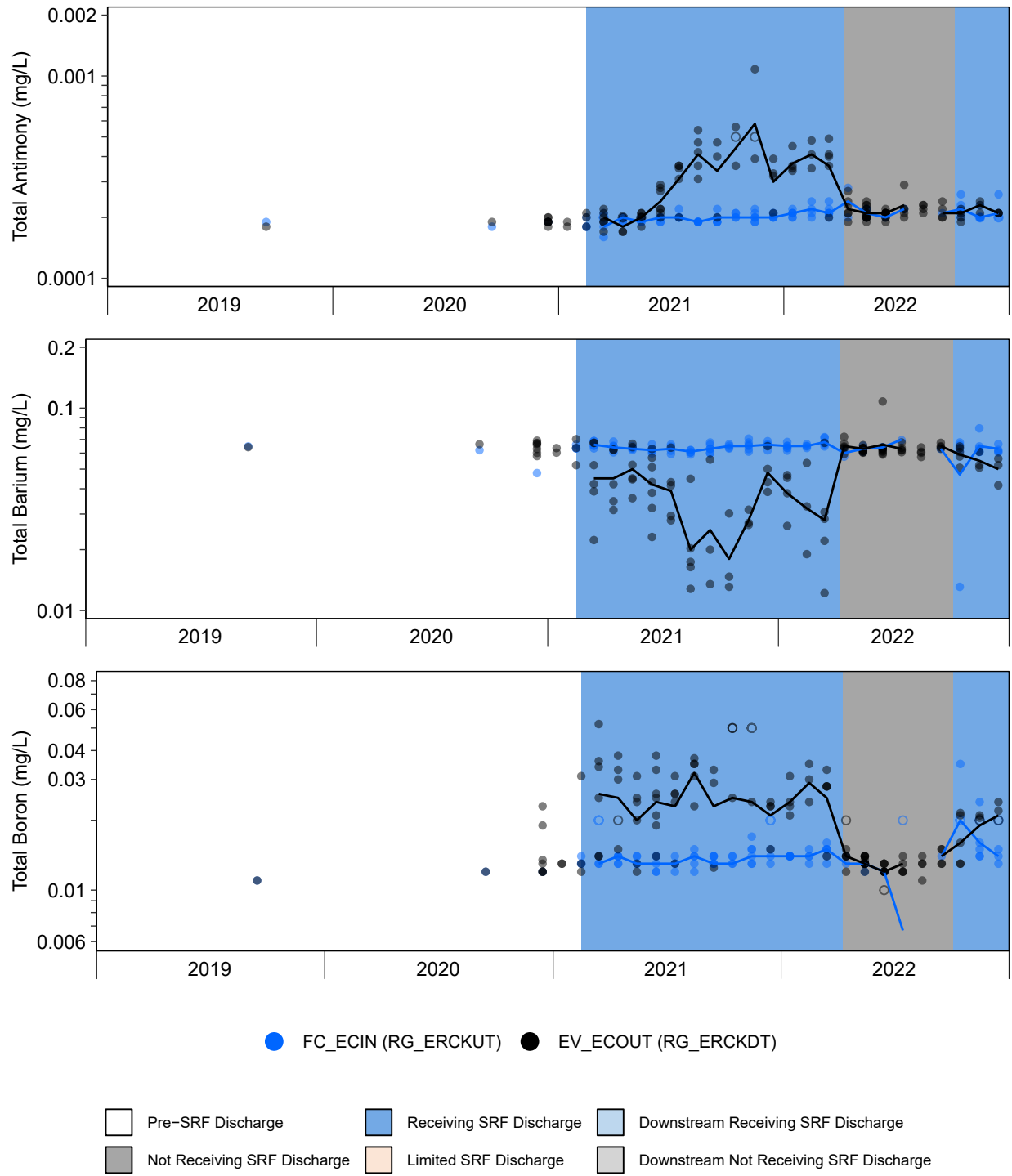


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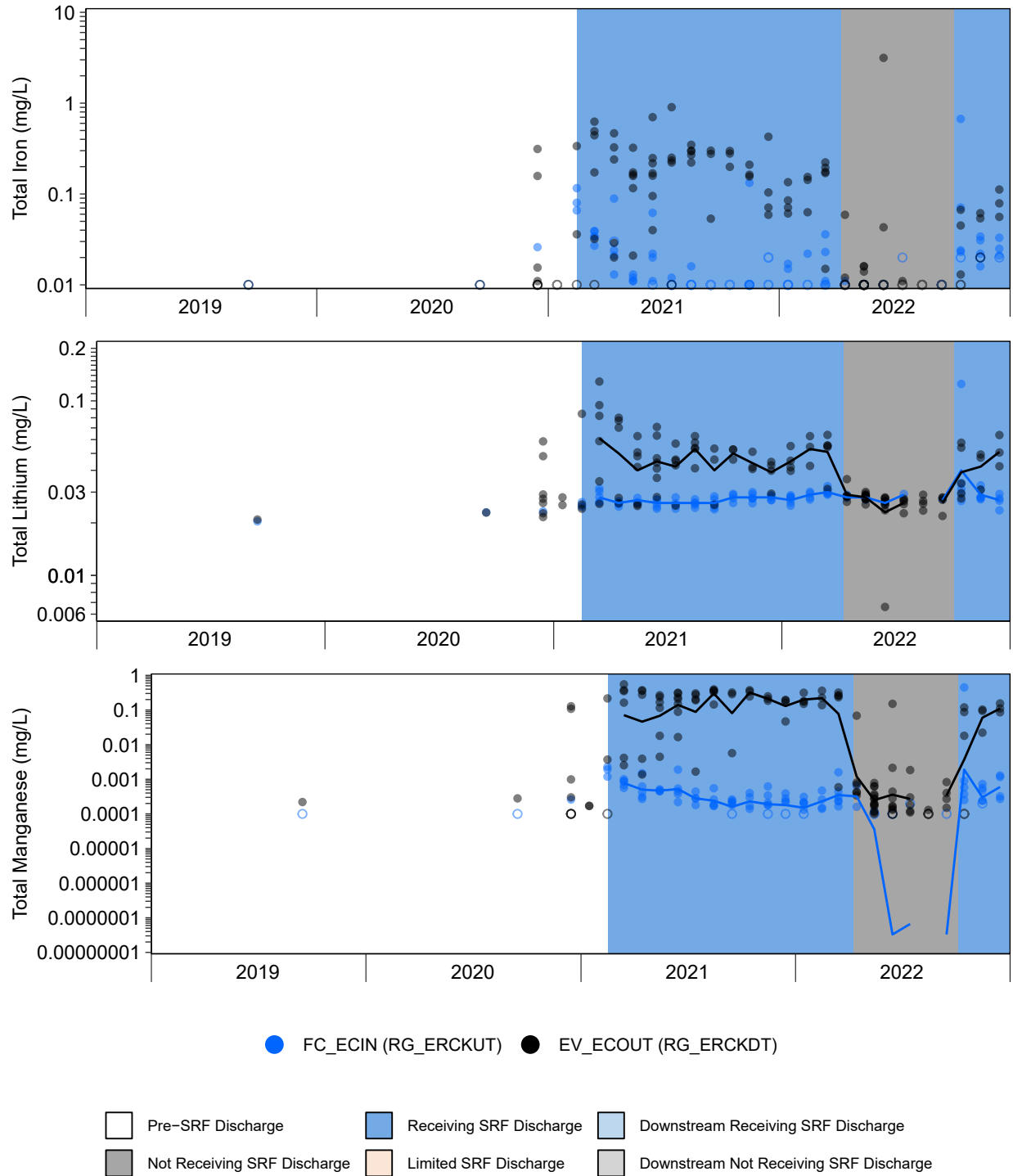


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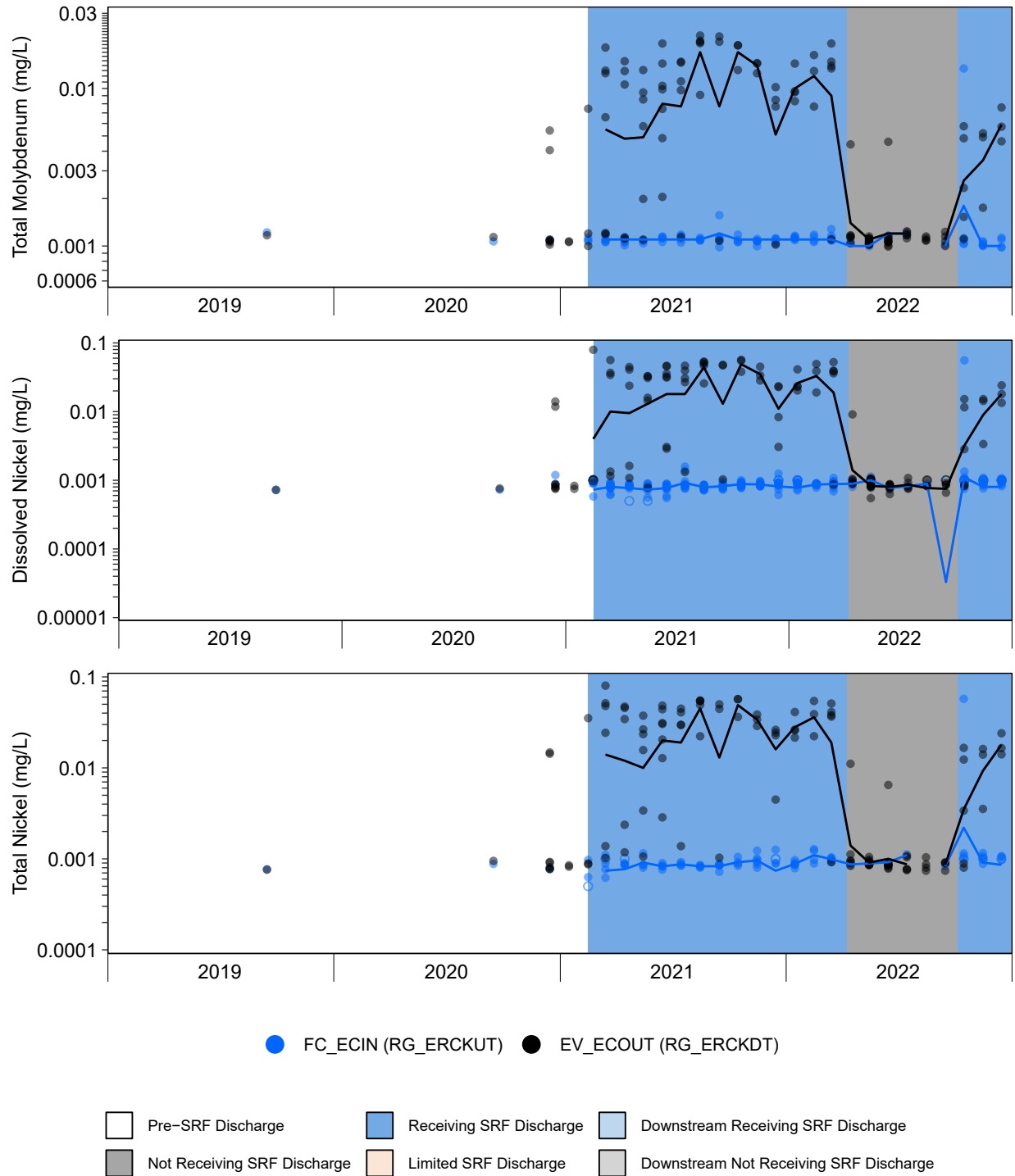


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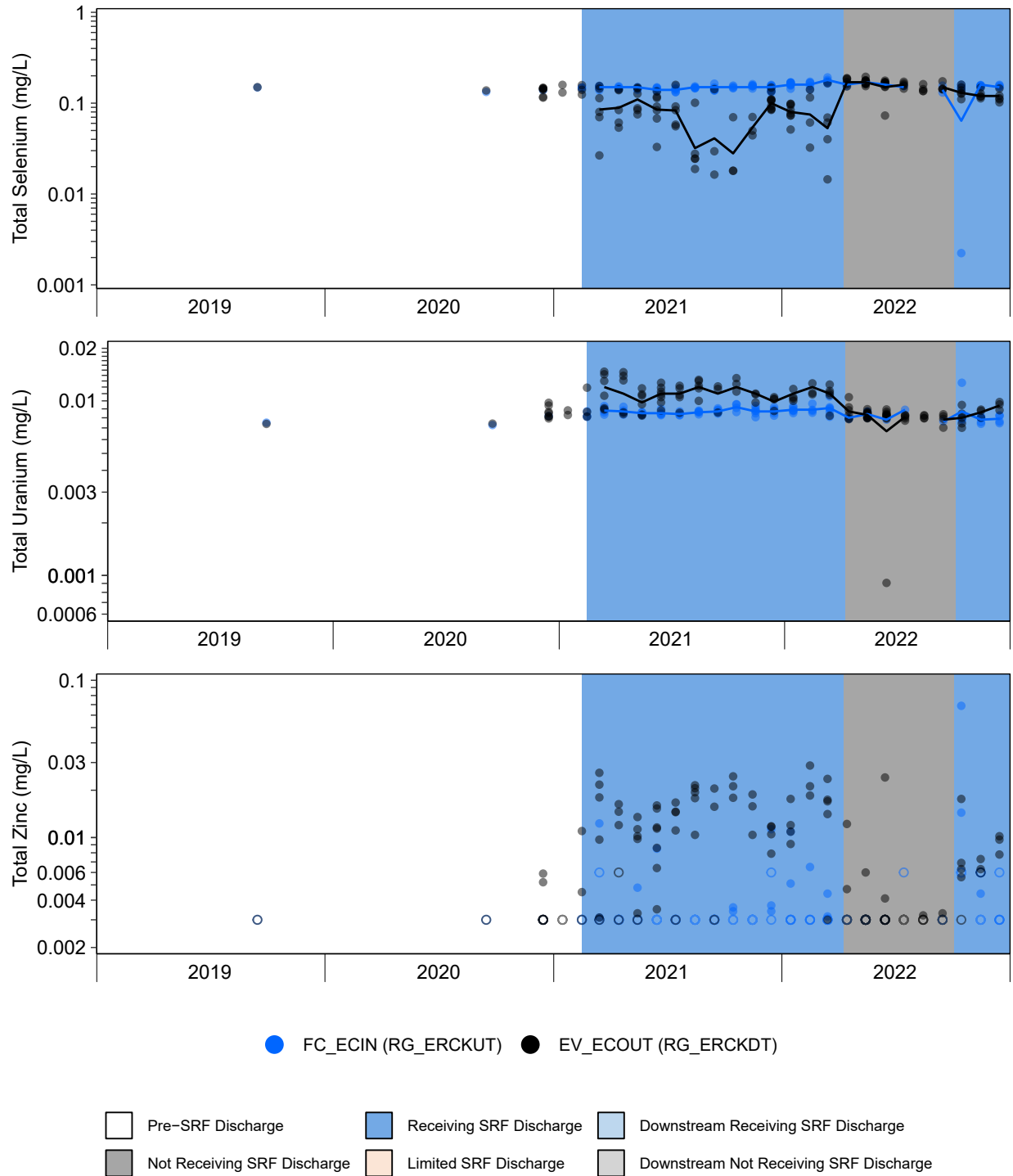


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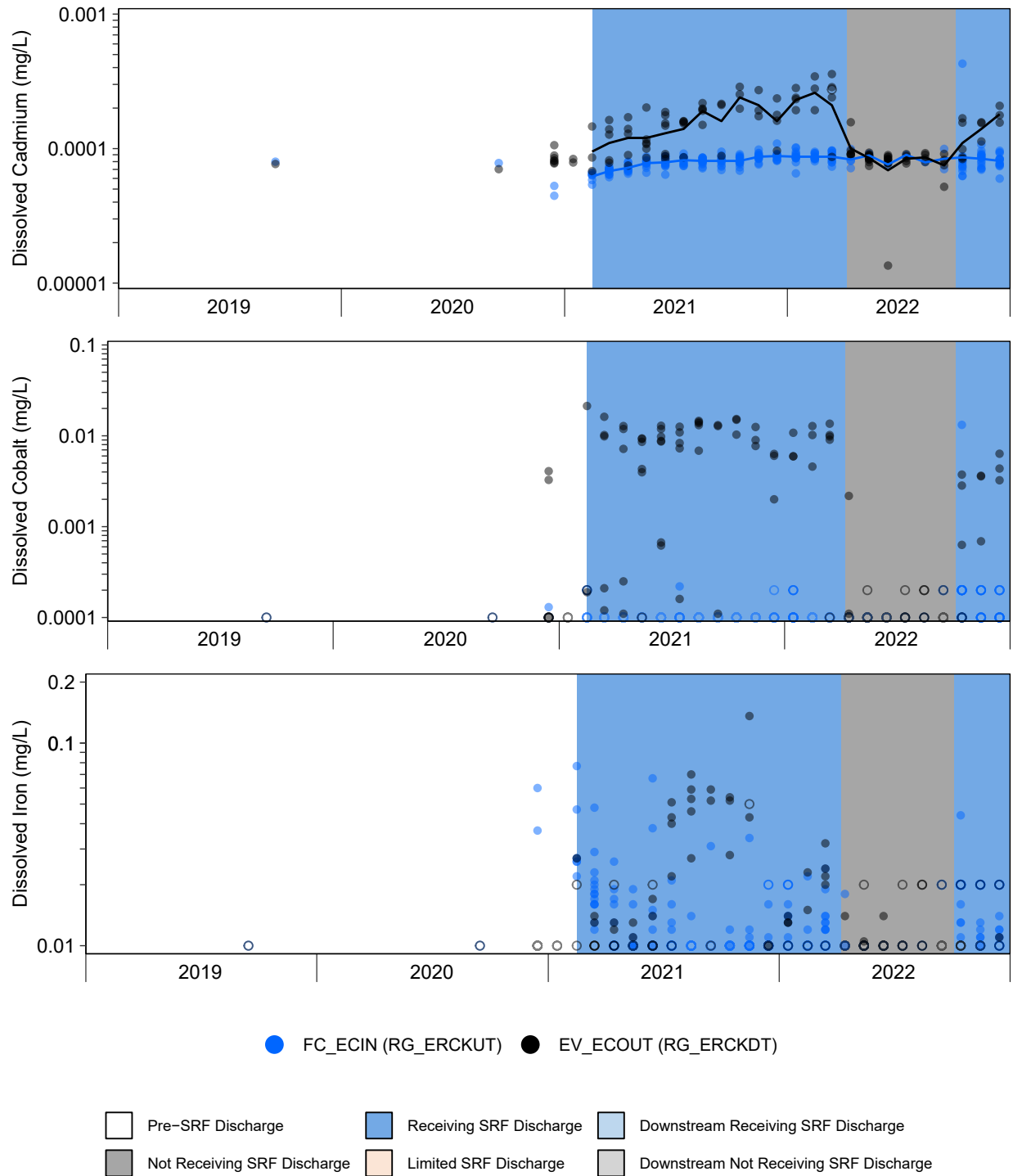
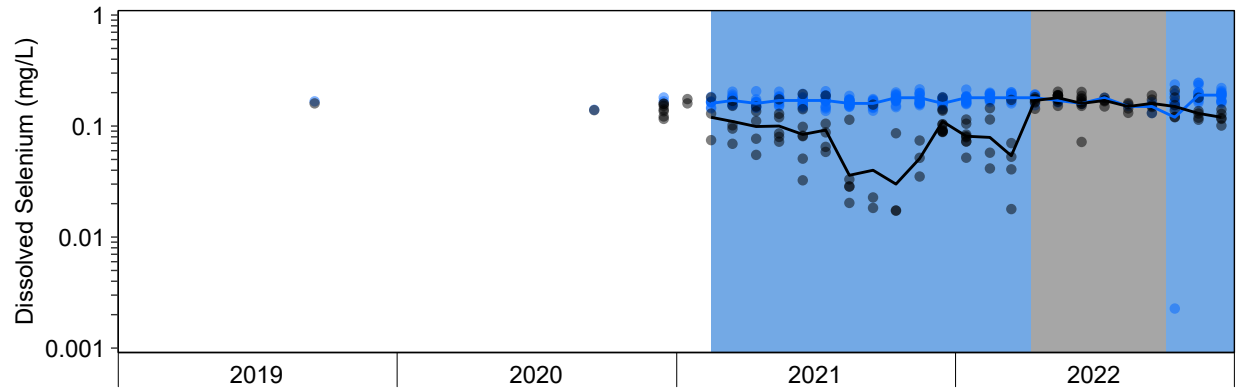


Figure 3.4: Comparison of Water Quality Constituent Concentrations During SRF Operation, EVO LAEMP, 2019 to 2022

Notes: Values at the laboratory reporting limit are plotted with an open symbol.



● FC_ECIN (RG_ERCKUT) ● EV_ECOUT (RG_ERCKDT)

Pre-SRF Discharge
 Receiving SRF Discharge
 Downstream Receiving SRF Discharge
 Not Receiving SRF Discharge
 Limited SRF Discharge
 Downstream Not Receiving SRF Discharge

Figure 3.4: Comparison of Water Quality Constituent Concentrations During SRF Operation, EVO LAEMP, 2019 to 2022

Notes: Values at the laboratory reporting limit are plotted with an open symbol.

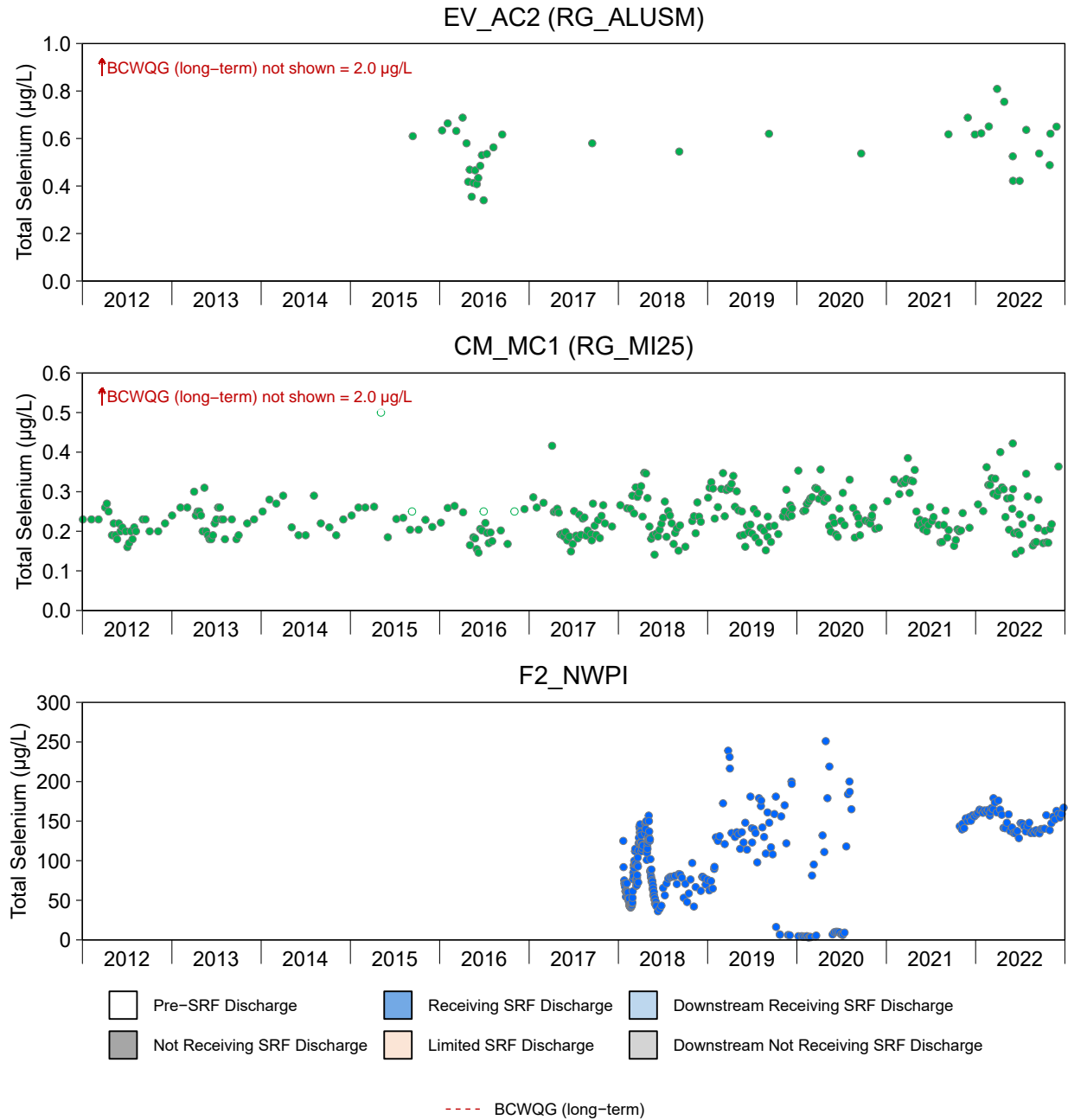


Figure 3.5: Time Series Plots for Total Selenium from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

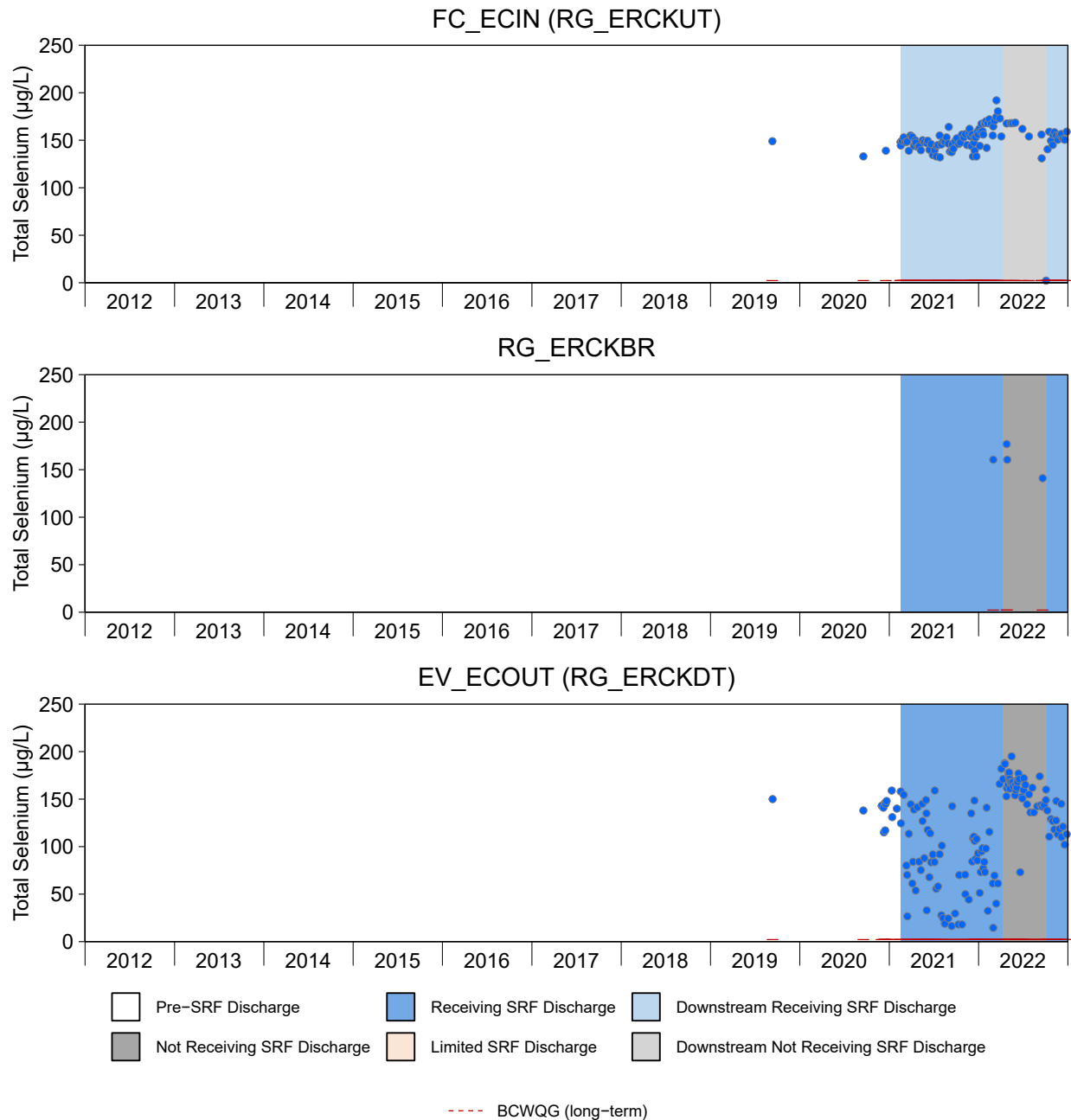


Figure 3.5: Time Series Plots for Total Selenium from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

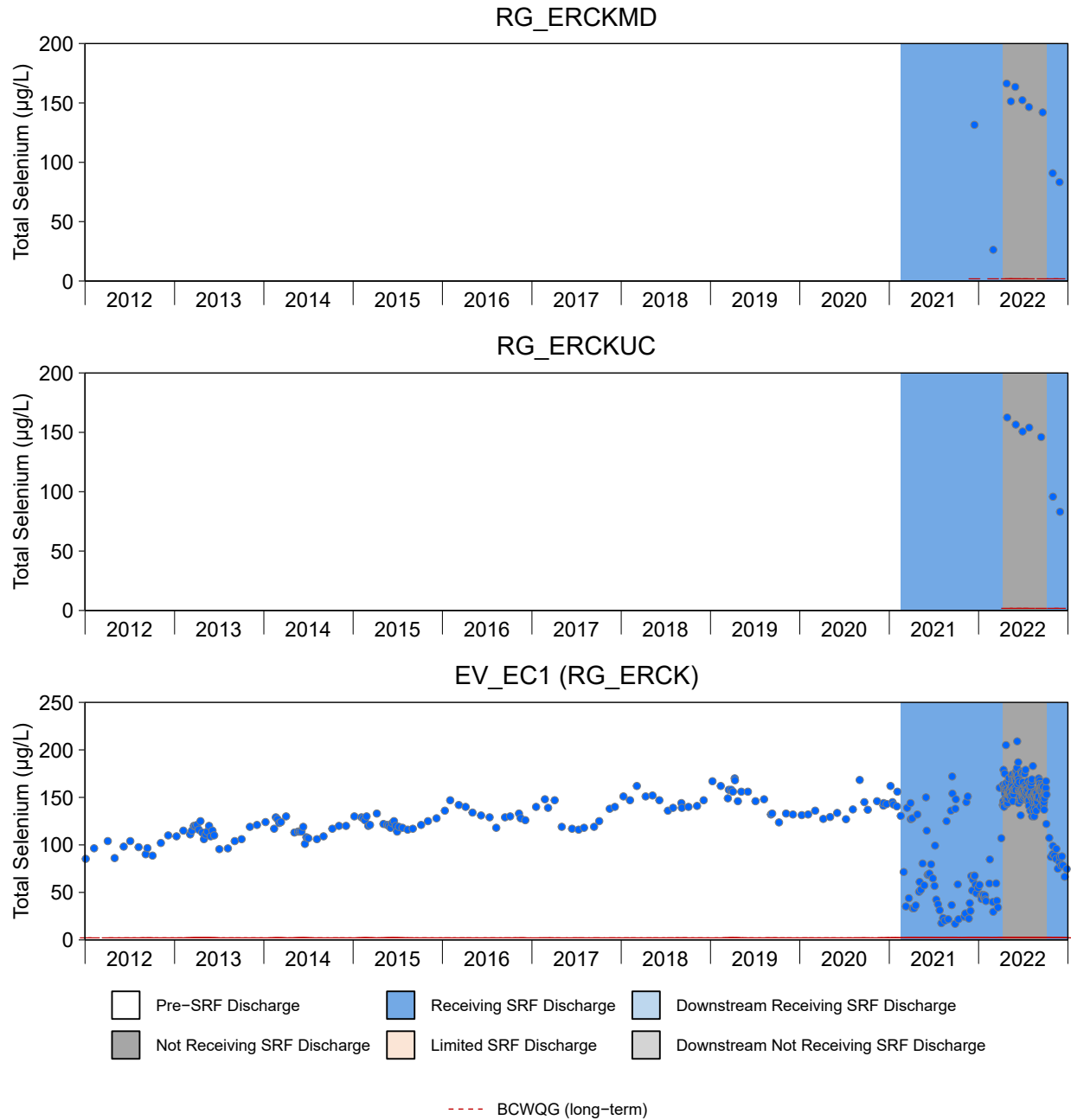


Figure 3.5: Time Series Plots for Total Selenium from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

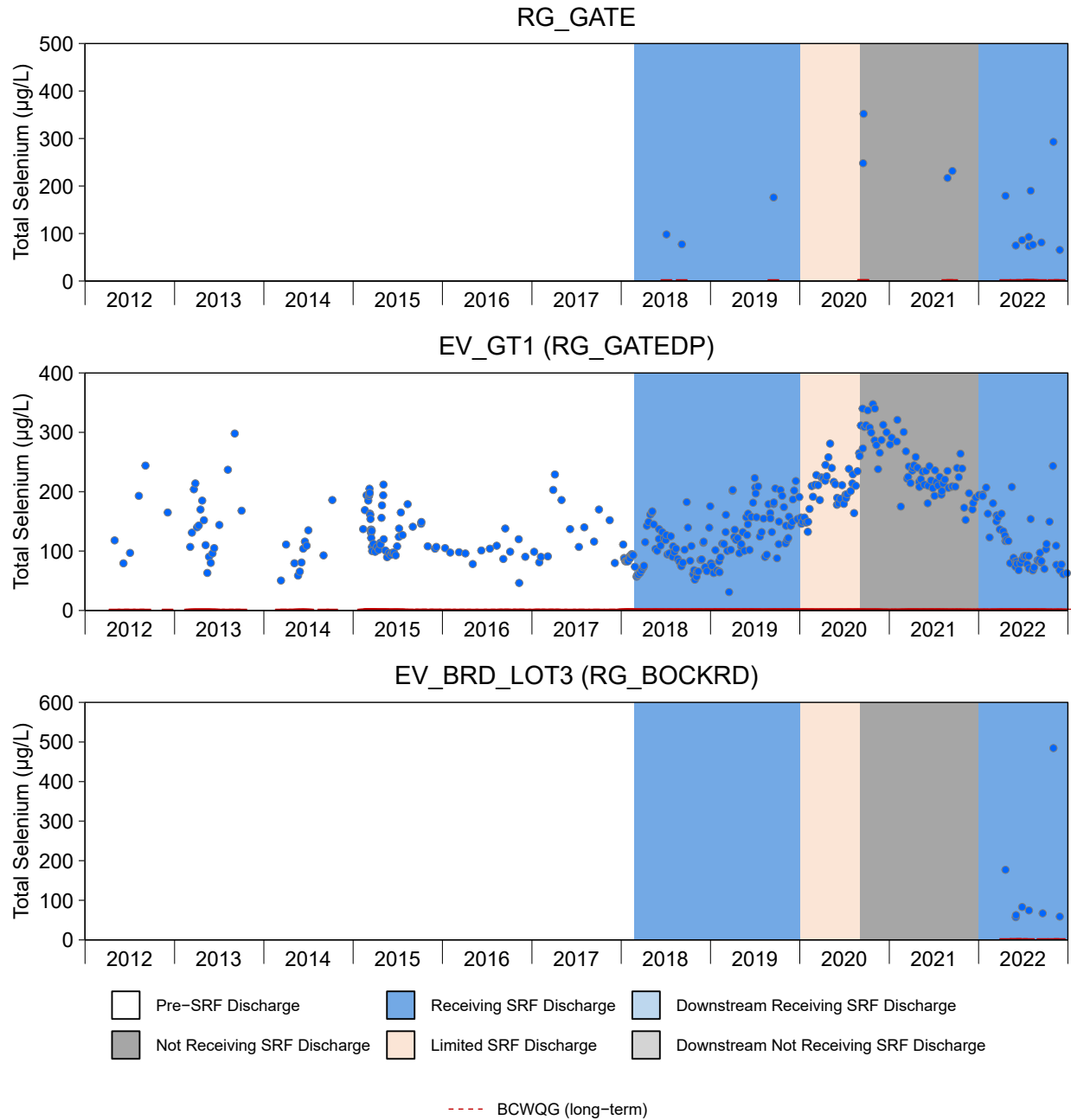


Figure 3.5: Time Series Plots for Total Selenium from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

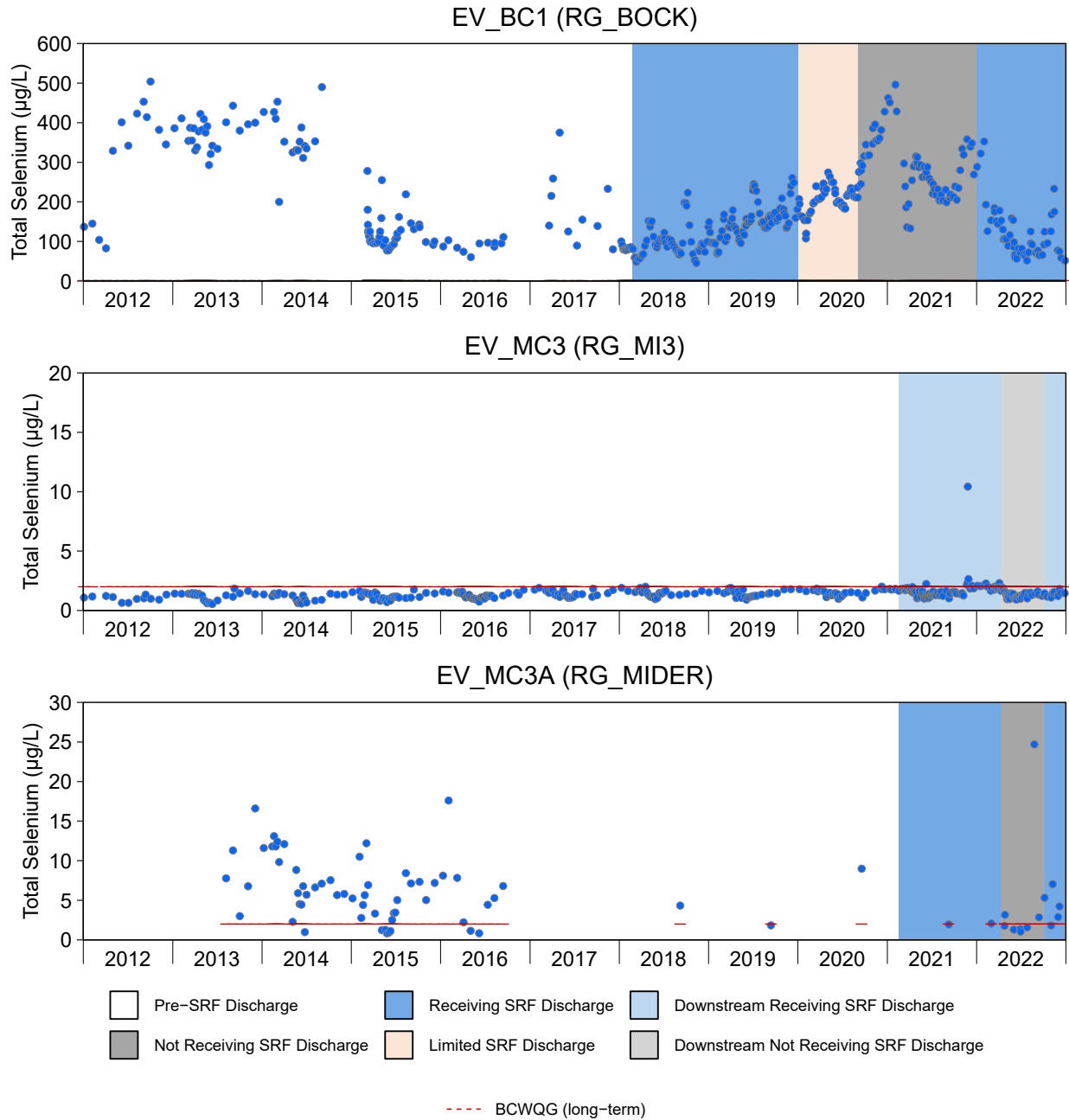


Figure 3.5: Time Series Plots for Total Selenium from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

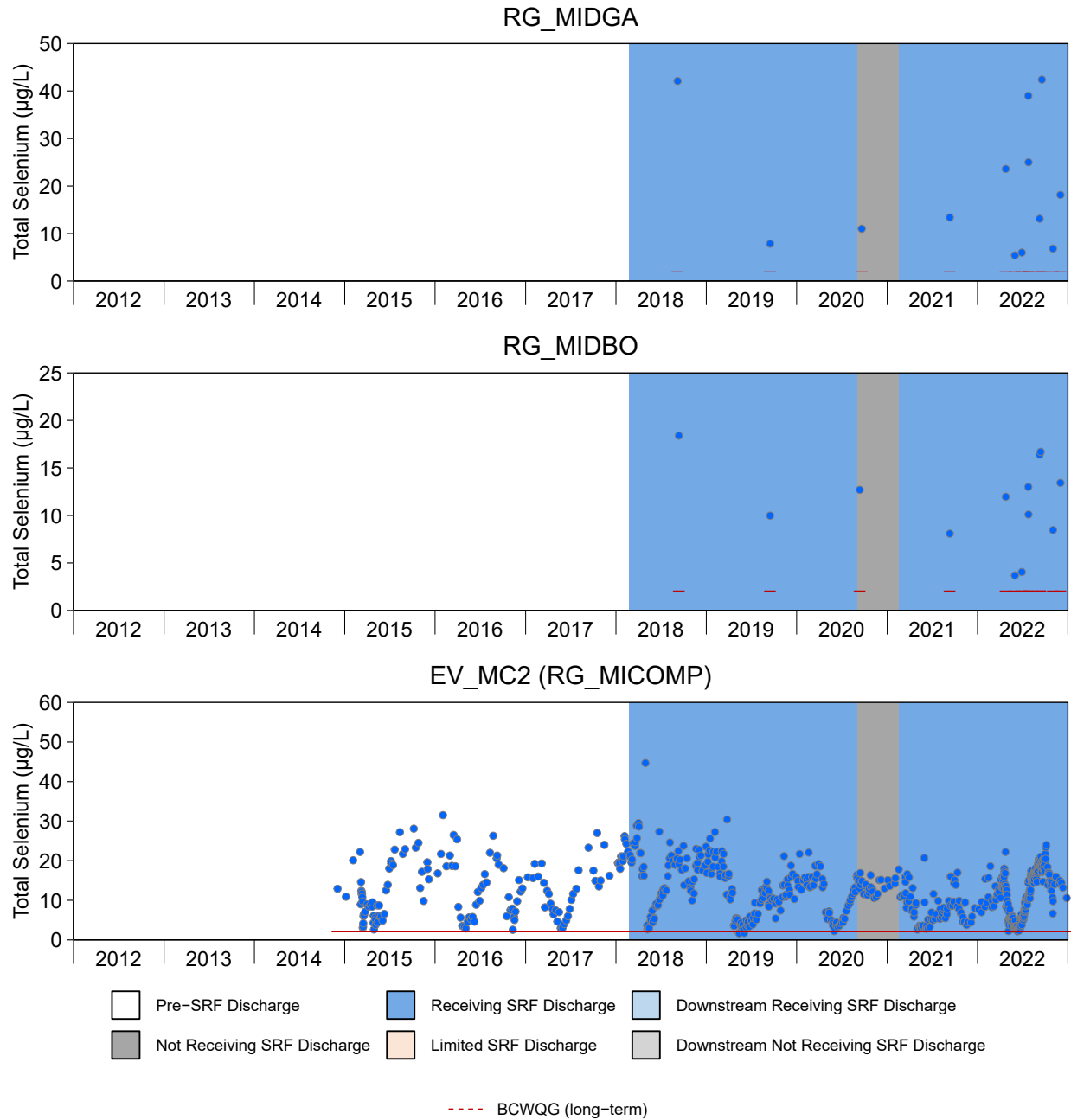


Figure 3.5: Time Series Plots for Total Selenium from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

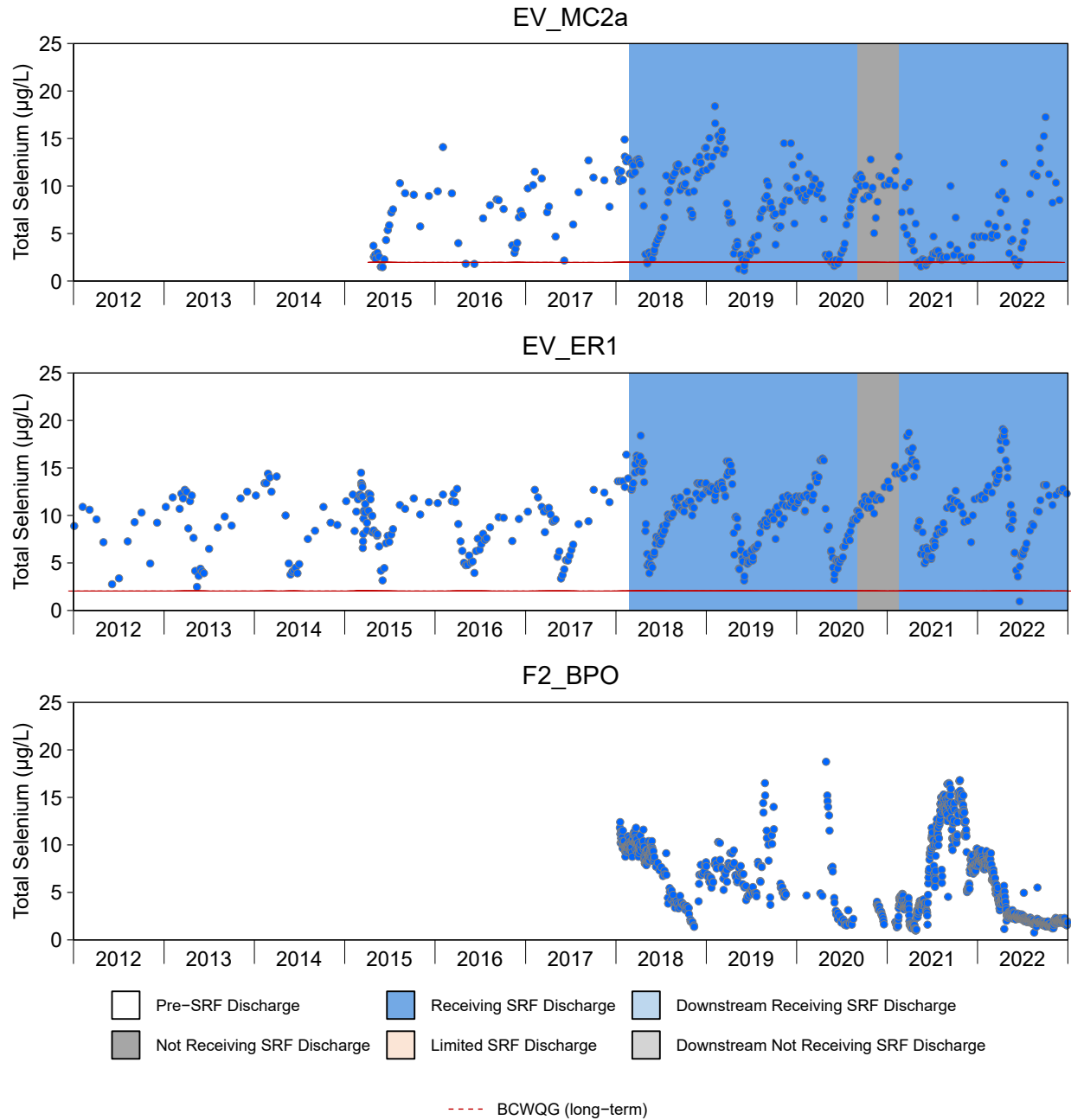


Figure 3.5: Time Series Plots for Total Selenium from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

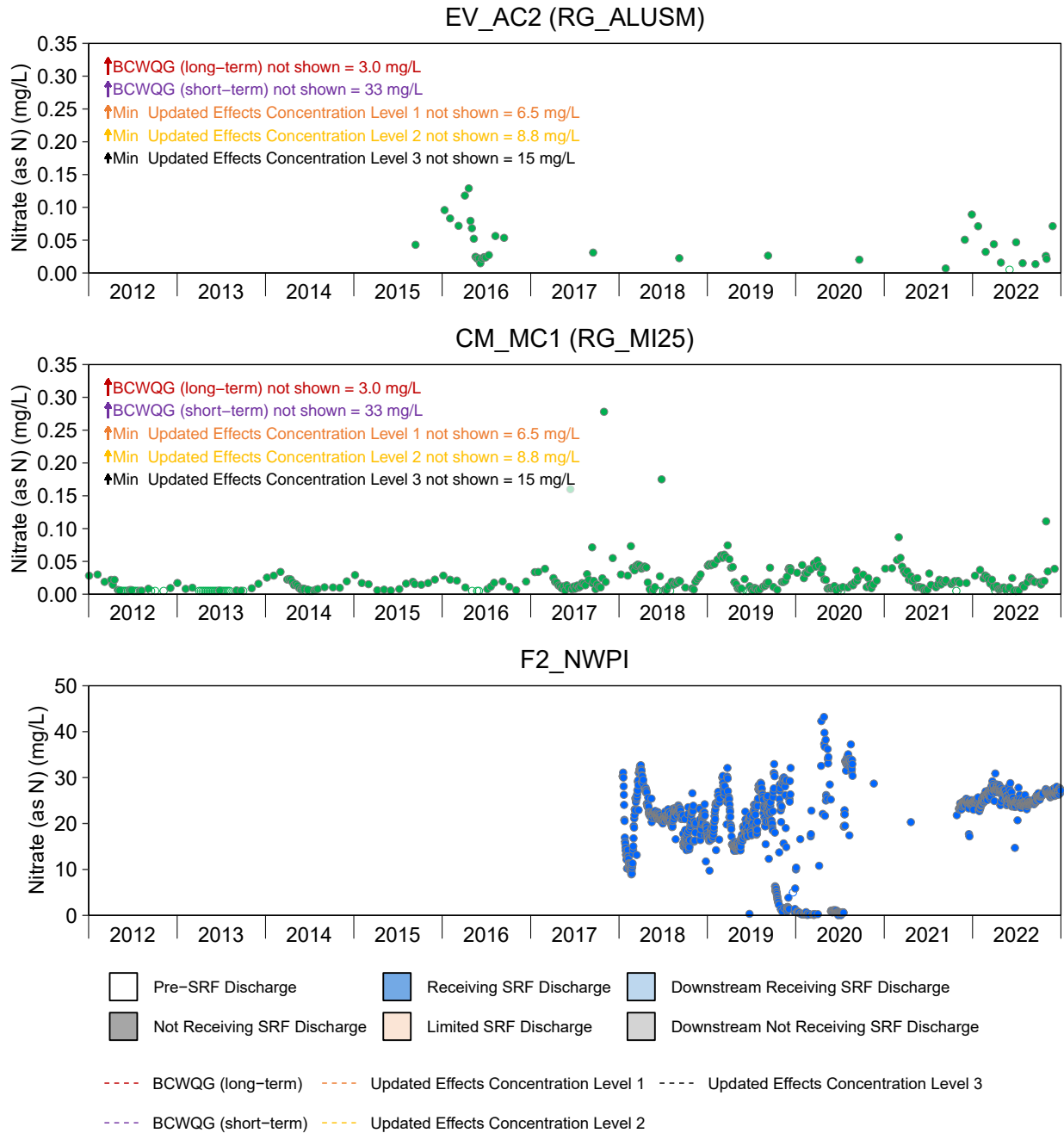


Figure 3.6: Time Series Plots for Nitrate from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Guidelines are dependent on water hardness. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018). When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

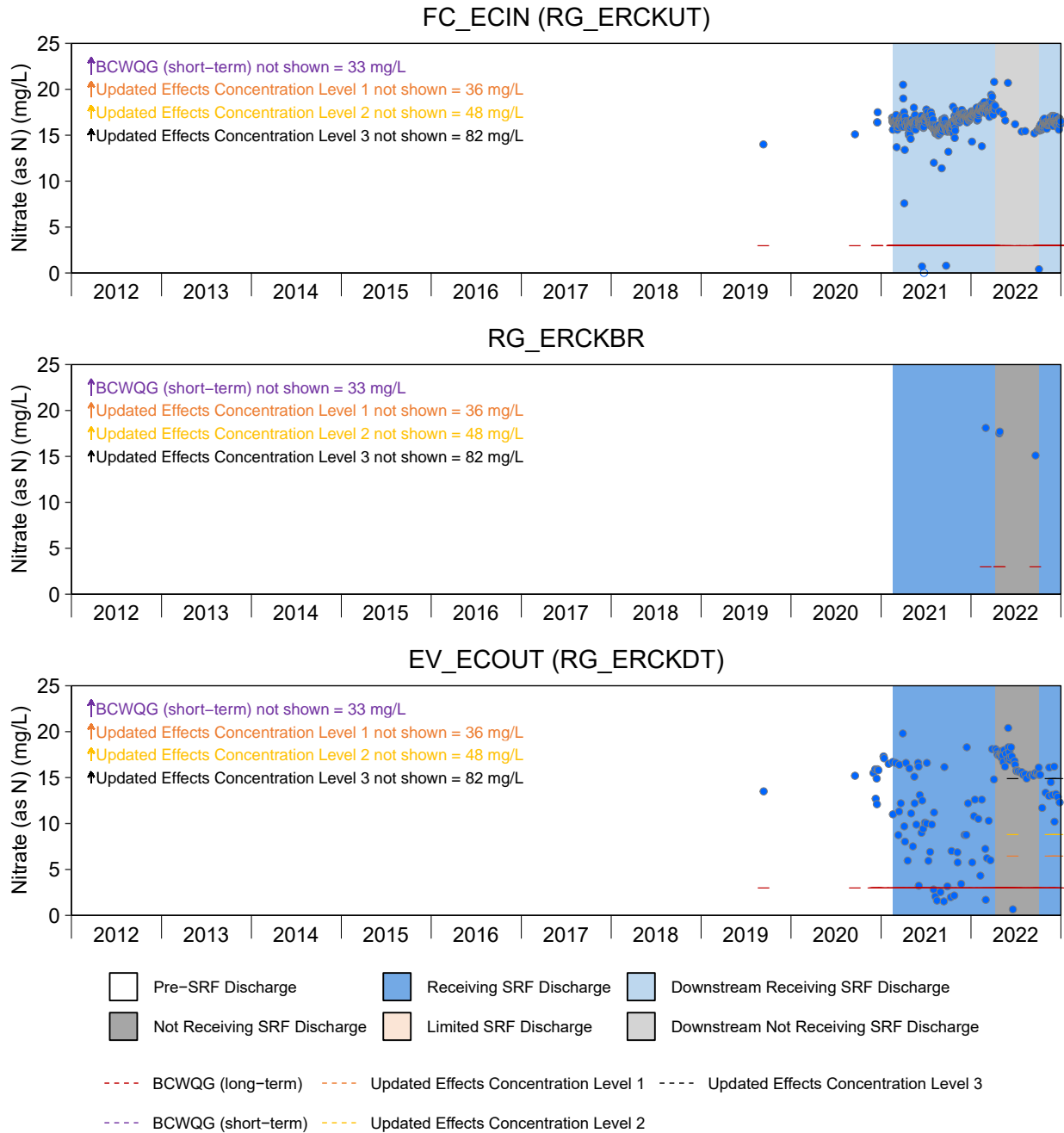


Figure 3.6: Time Series Plots for Nitrate from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Guidelines are dependent on water hardness. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018). When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

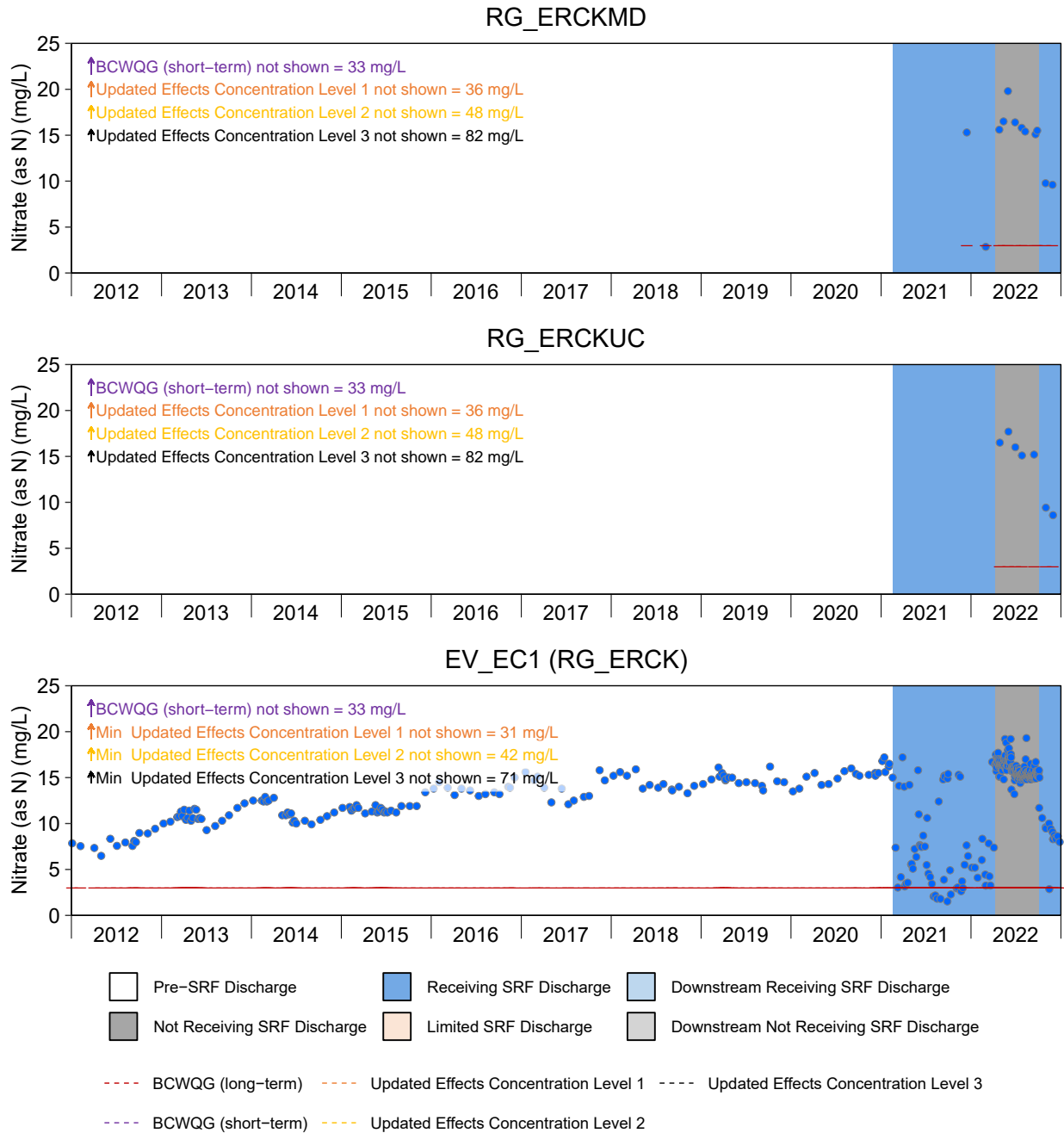


Figure 3.6: Time Series Plots for Nitrate from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Guidelines are dependent on water hardness. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018). When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.



Figure 3.6: Time Series Plots for Nitrate from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Guidelines are dependent on water hardness. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018). When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

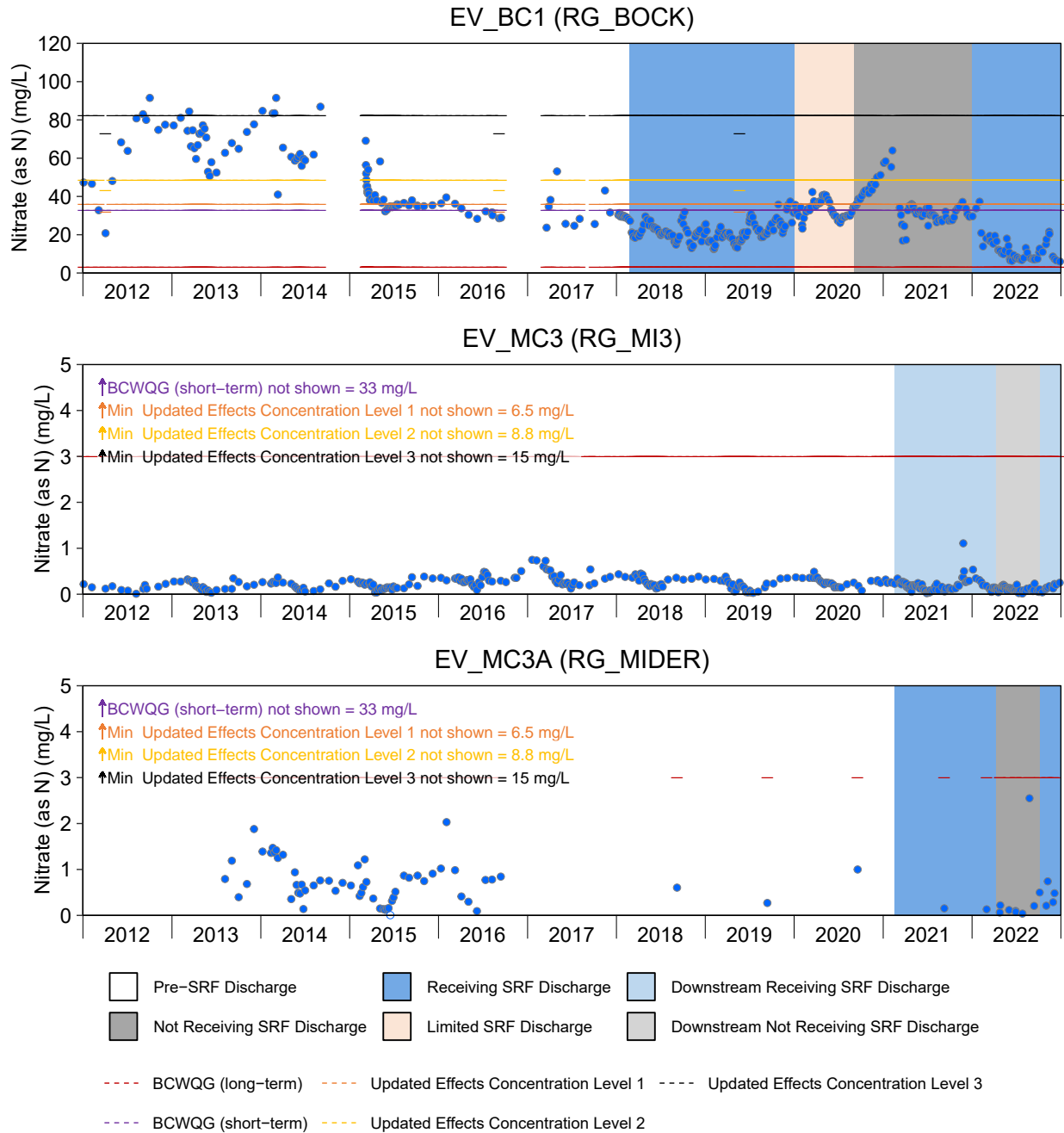


Figure 3.6: Time Series Plots for Nitrate from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Guidelines are dependent on water hardness. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018). When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

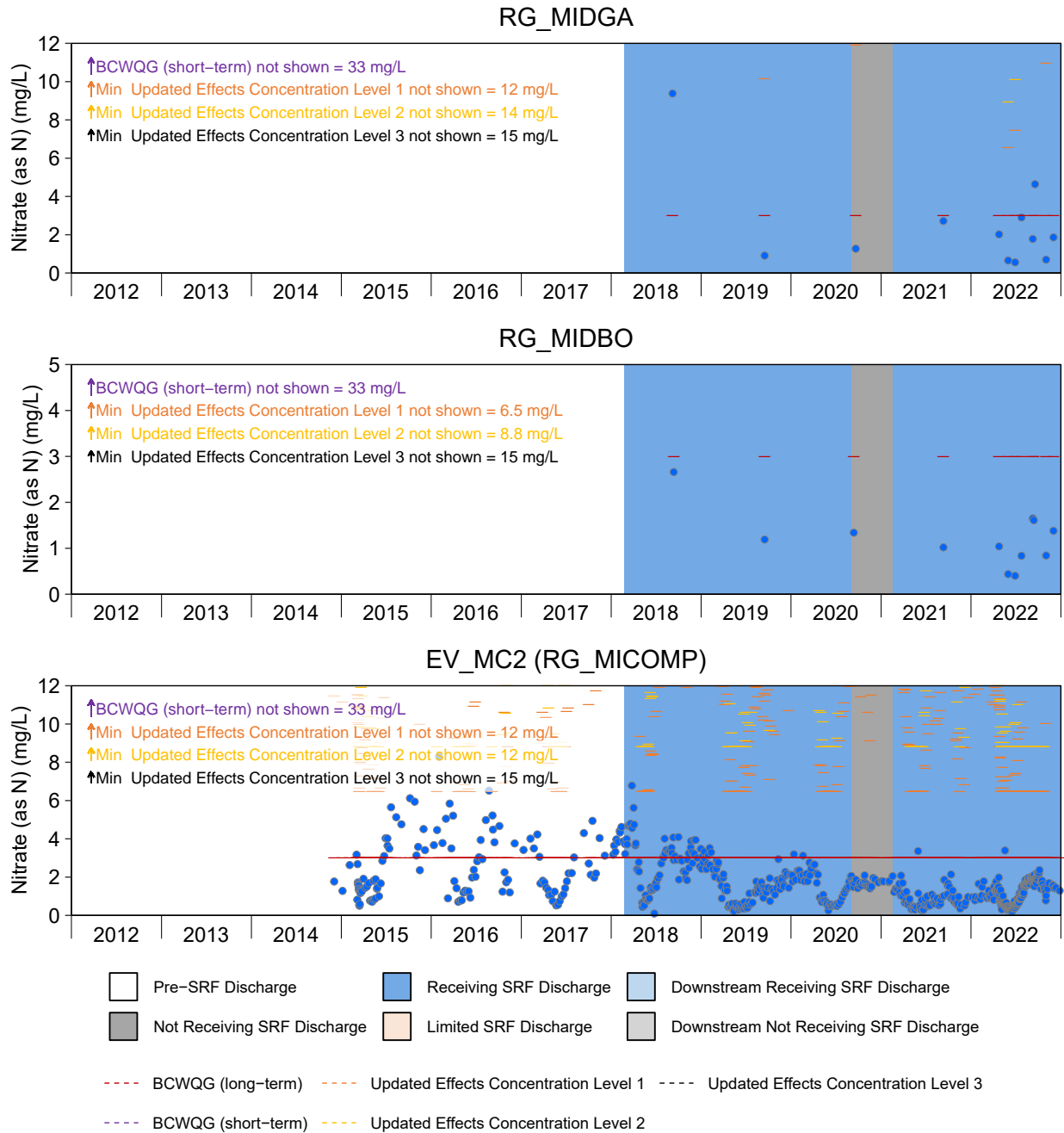


Figure 3.6: Time Series Plots for Nitrate from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Guidelines are dependent on water hardness. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018). When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

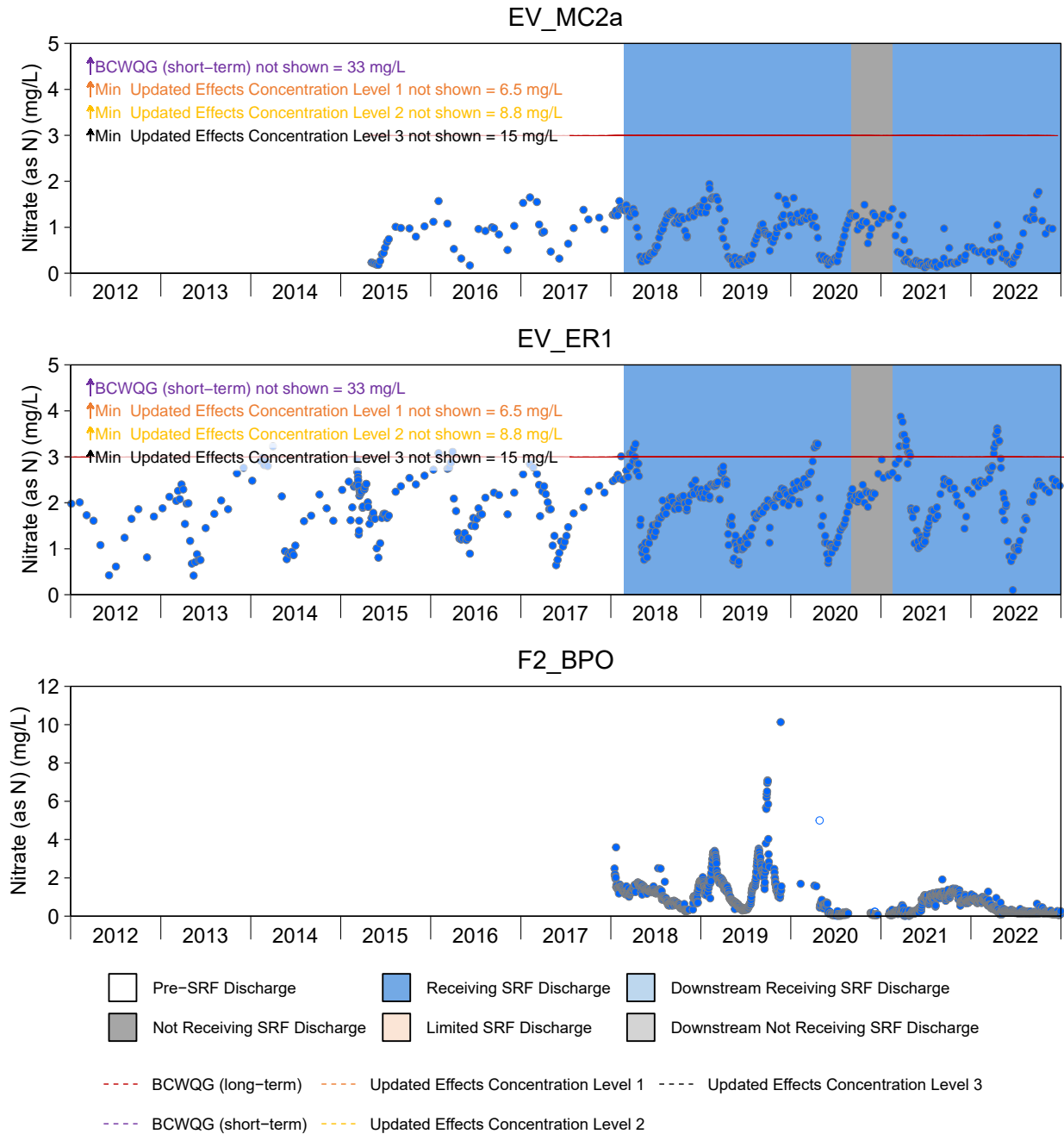


Figure 3.6: Time Series Plots for Nitrate from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Guidelines are dependent on water hardness. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018). When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

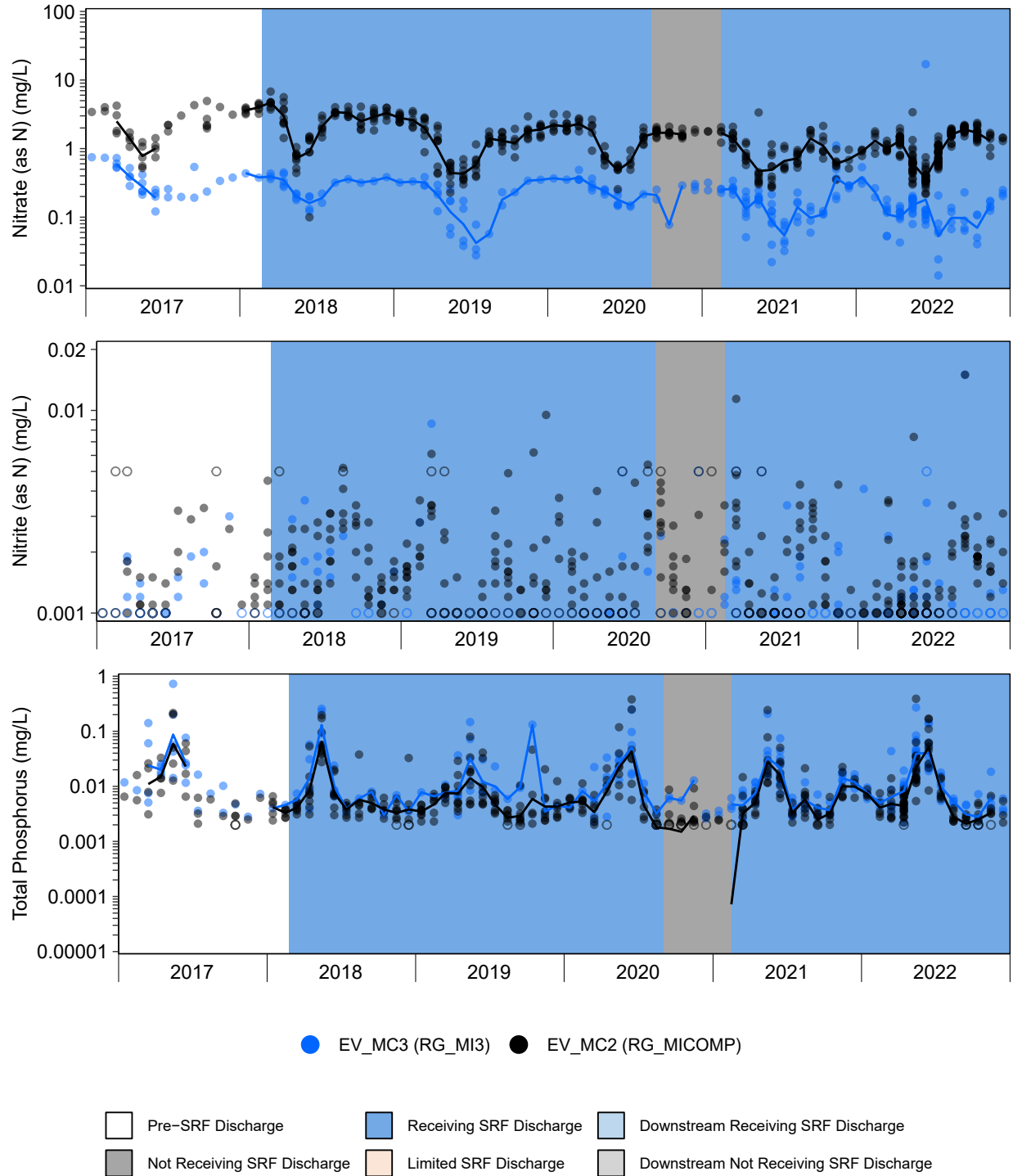


Figure 3.7: Comparison of Water Quality Concentrations During SRF Operation, EVO LAEMP, Base Year to 2022

Notes: Values at the laboratory reporting limit are plotted with an open symbol. Trendlines connect means for consecutive time periods included in statistical analysis.

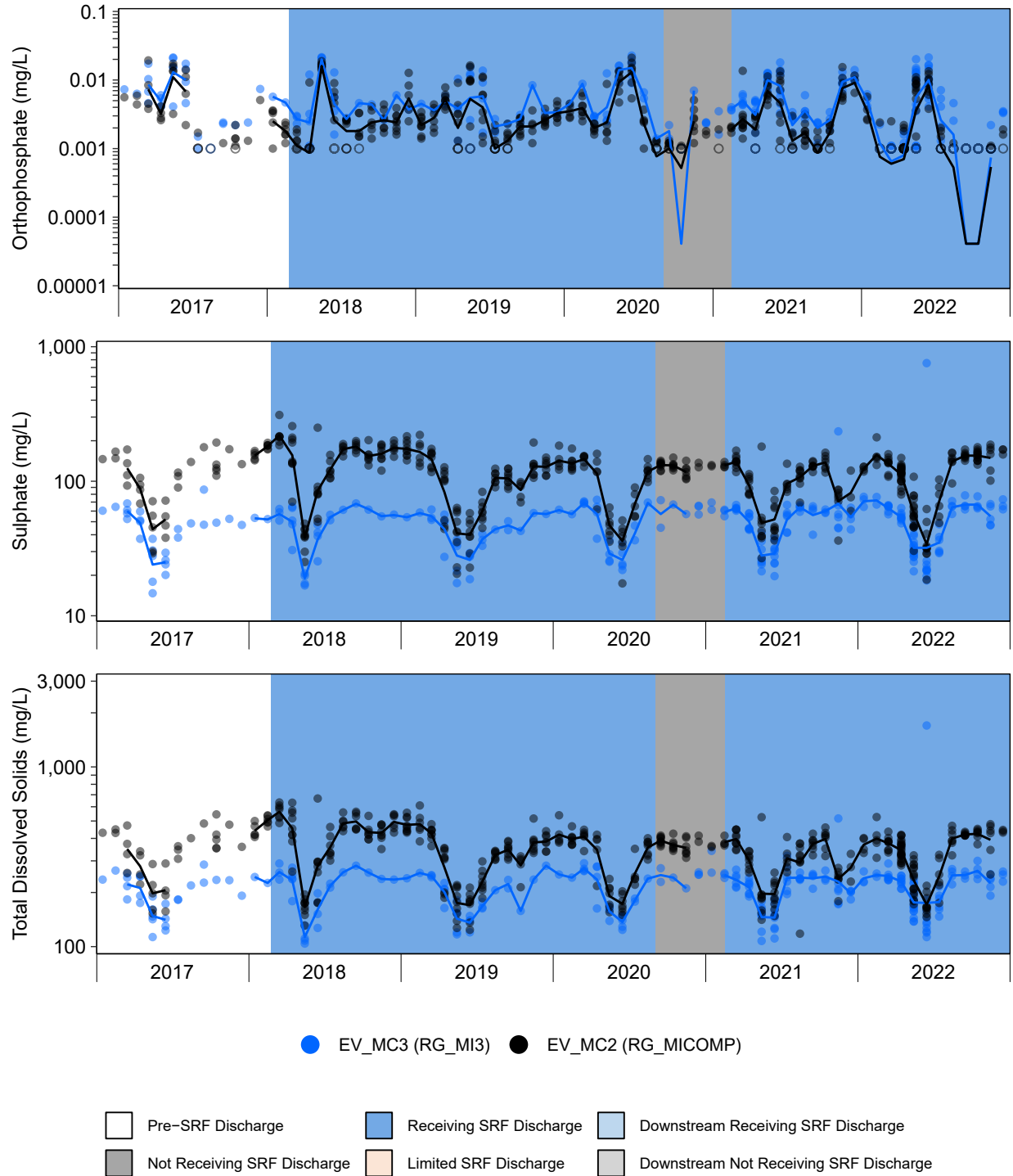


Figure 3.7: Comparison of Water Quality Concentrations During SRF Operation, EVO LAEMP, Base Year to 2022

Notes: Values at the laboratory reporting limit are plotted with an open symbol. Trendlines connect means for consecutive time periods included in statistical analysis.

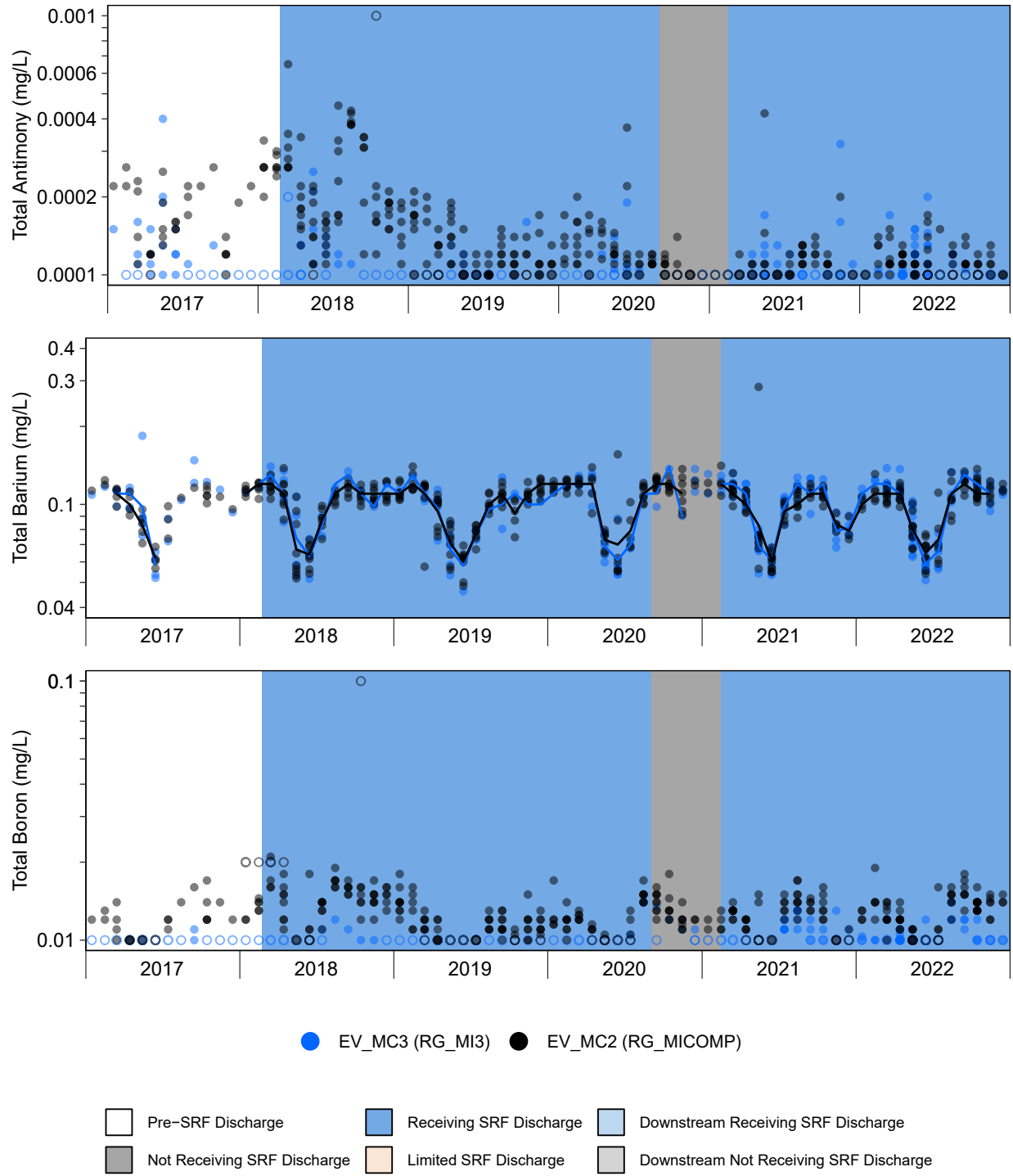


Figure 3.7: Comparison of Water Quality Concentrations During SRF Operation, EVO LAEMP, Base Year to 2022

Notes: Values at the laboratory reporting limit are plotted with an open symbol. Trendlines connect means for consecutive time periods included in statistical analysis.

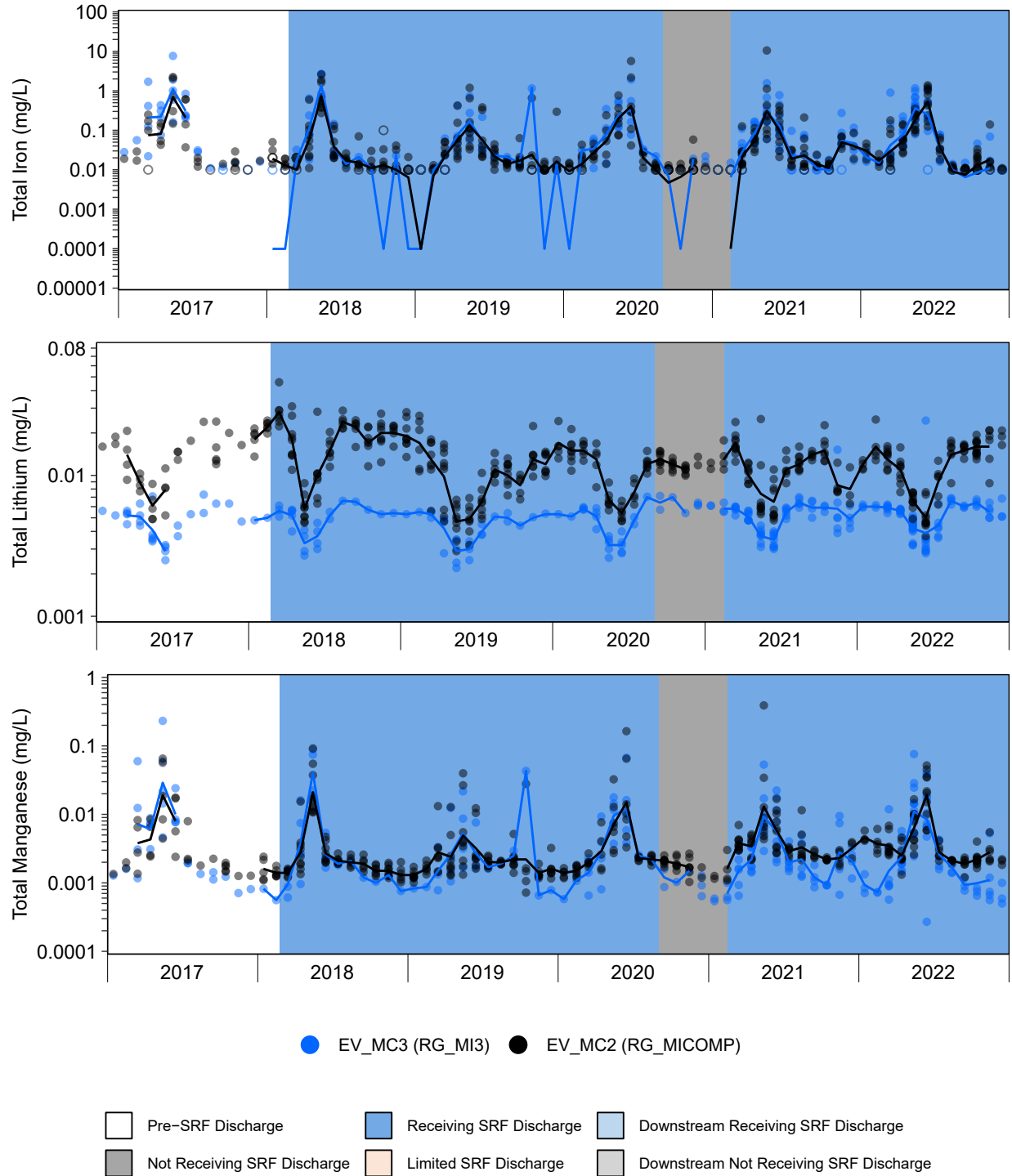


Figure 3.7: Comparison of Water Quality Concentrations During SRF Operation, EVO LAEMP, Base Year to 2022

Notes: Values at the laboratory reporting limit are plotted with an open symbol. Trendlines connect means for consecutive time periods included in statistical analysis.

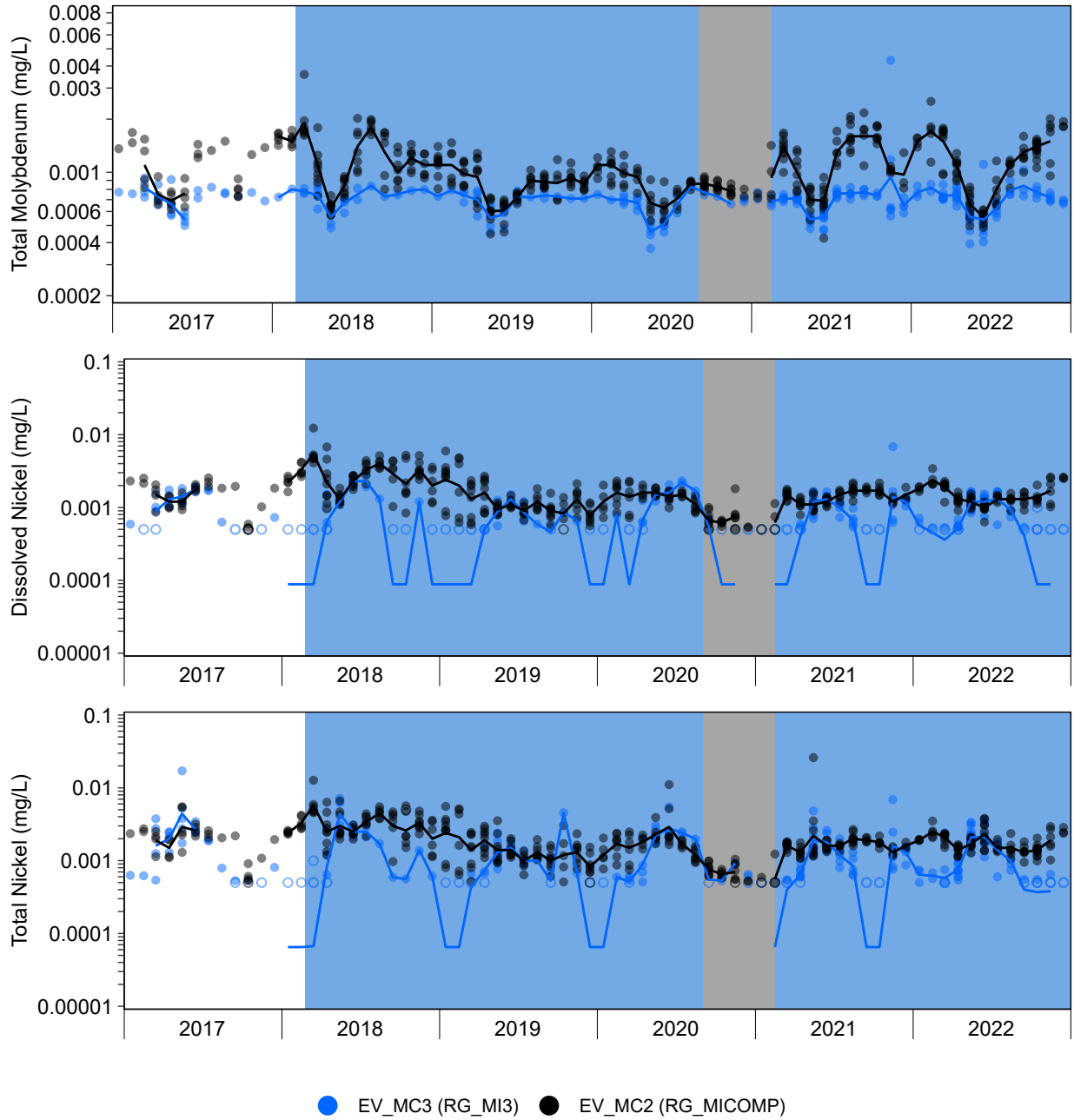


Figure 3.7: Comparison of Water Quality Concentrations During SRF Operation, EVO LAEMP, Base Year to 2022

Notes: Values at the laboratory reporting limit are plotted with an open symbol. Trendlines connect means for consecutive time periods included in statistical analysis.

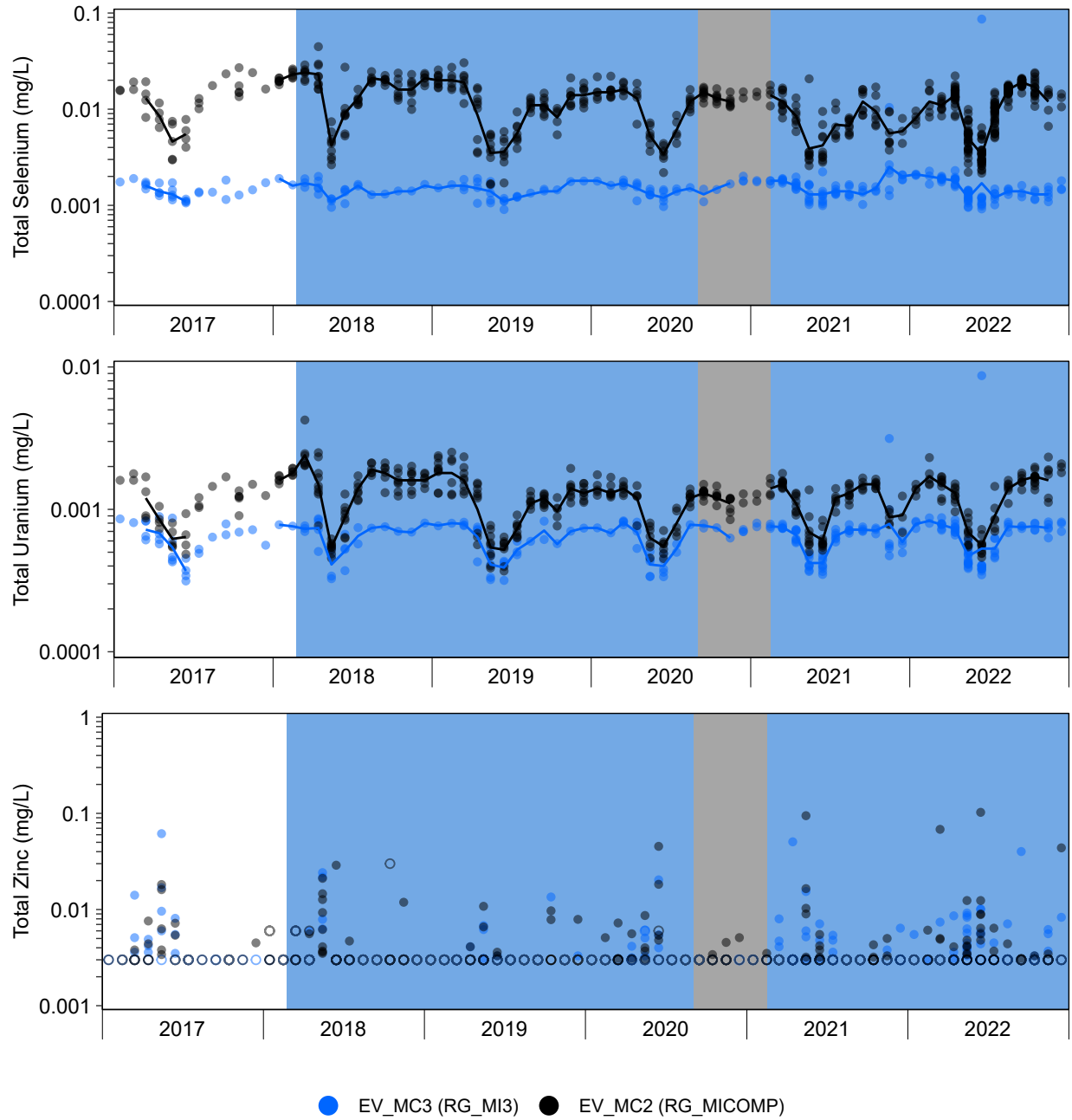


Figure 3.7: Comparison of Water Quality Concentrations During SRF Operation, EVO LAEMP, Base Year to 2022

Notes: Values at the laboratory reporting limit are plotted with an open symbol. Trendlines connect means for consecutive time periods included in statistical analysis.

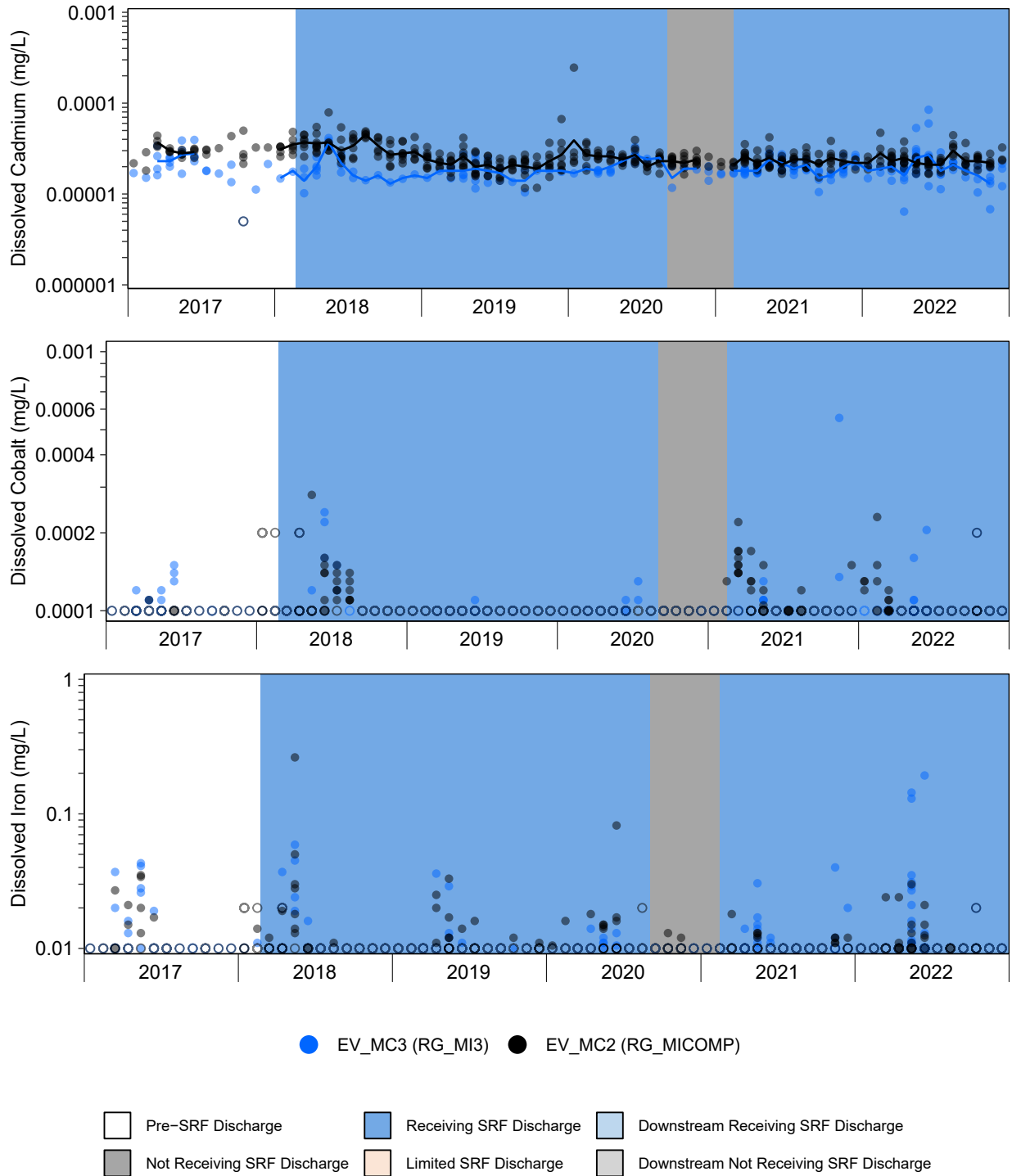
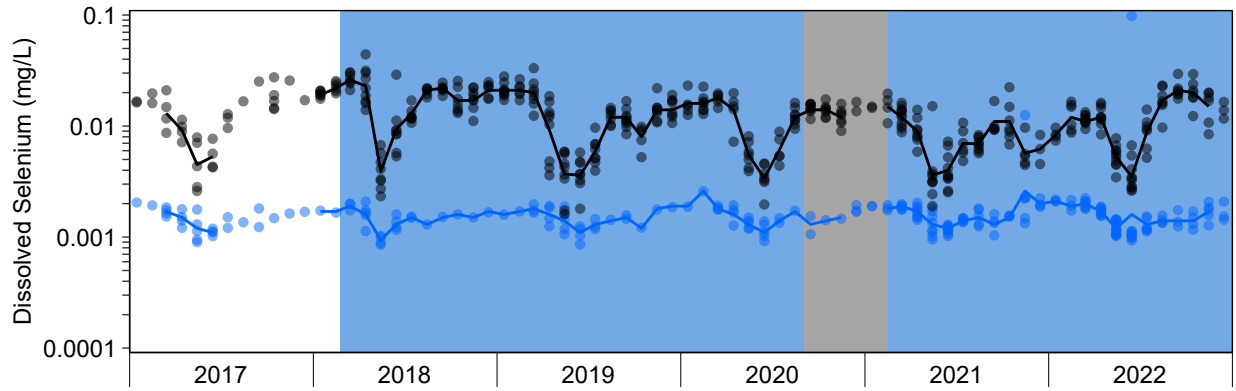


Figure 3.7: Comparison of Water Quality Concentrations During SRF Operation, EVO LAEMP, Base Year to 2022

Notes: Values at the laboratory reporting limit are plotted with an open symbol. Trendlines connect means for consecutive time periods included in statistical analysis.



● EV_MC3 (RG_MI3) ● EV_MC2 (RG_MICOMP)

Pre-SRF Discharge
 Receiving SRF Discharge
 Downstream Receiving SRF Discharge
 Not Receiving SRF Discharge
 Limited SRF Discharge
 Downstream Not Receiving SRF Discharge

Figure 3.7: Comparison of Water Quality Concentrations During SRF Operation, EVO LAEMP, Base Year to 2022

Notes: Values at the laboratory reporting limit are plotted with an open symbol. Trendlines connect means for consecutive time periods included in statistical analysis.

above the long-term BCWQG, while nitrate concentrations have been below the Level 1 Updated Effects Concentrations at all stations on Michel Creek receiving mine-impacted water for the total monitoring period (EV_MC3A [RG_MIDER], RG_MIDGA, RG_MIDBO, EV_MC2 [RG_MICOMP]; Figure 3.5 and 3.6; Appendix Figure D.16; Appendix Tables A.1 and D.3).

Although total and dissolved selenium concentrations decreased in Erickson Creek after the commissioning of the SRF in 2021, the concentrations of selenite and some organoselenium species increased (selenate remained the dominate selenium species; Appendix Figures D.21 to D.28). In 2022, when SRF discharge to Erickson Creek was temporarily shut down, aqueous concentrations of selenite and the frequency of organoselenium detection decreased, suggesting that selenite and organoselenium concentrations were related to SRF operation (Appendix Figures D.21 to D.28). While the maximum aqueous concentration of selenite at F2_ECIN (RG_ERCKUT) in 2022 was 0.63 µg/L, the maximum aqueous concentrations of selenite at areas below the SRF outfall in Erickson Creek, specifically EV_ECOUT (RG_ERCKDT) and EV_EC1 (RG_ERCK), was 1.9 and 1.4 µg/L, respectively (Appendix Table D.3). Organoselenium species were largely undetected prior to EVO SRF P2, and upstream of the SRF (F2_ECIN [RG_ERCKUT]) and in 2022. No clear pattern related to SRF operation was observed in Gate and Bodie Creeks, where changes in selenite and organoselenium species fluctuate seasonally and with changes in mine operations (i.e., pit dewatering and water treatment; Appendix Figures D.21 to D.28). Selenite concentrations in Michel Creek in 2022 were consistent with previous years and organoselenium species were generally not detected in these areas. In Gate (EV_GT1 [RG_GATEDP]) and Bodie creeks (EV_BC1 [RG_BOCK]) organoselenium species were above the draft screening values¹¹ (0.025 µg/L expressed as the sum of dimethylselenoxide and methylseleninic acid; ADEPT 2022) for all samples collected in 2022 (Table D.6). Concentrations of these organoselenium species were mostly nondetectable in Erickson Creek in 2022 and were below this screening value in all areas of Michel Erickson creeks (Appendix Figures D.21 to D.28; Appendix Table D.6).

3.3.2 Other mine-related constituents in effluent

SRF influent source (i.e., Natal Pit or Erickson Creek) has the potential to change the concentrations of a number of mine-related constituents, several of which increased directly downstream of the SRF outfall in Erickson Creek during SRF operation (EV_EC1 [RG_ERCKDT]; Figure 3.4, Appendix Table D.1), and decreased in 2022 when the SRF was shutdown

¹¹ As noted in the 2021 Selenium Speciation Monitoring Program (ADEPT, 2021), "Patterns of bioaccumulation support a draft screening value of 0.025 µg/L (expressed as the sum of DMSeO and MeSe(IV)) to indicate conditions that might cause an incremental increase in bioaccumulation relative to the normal range of variation in monitoring data." The sum of DMSeO and MeSe(IV) in each water sample was calculated by substituting zero for organoselenium results that were below detection (i.e., <LRL = 0).



(Appendix Table D.2). These constituents included total antimony, total boron, total iron, total lithium, total manganese, total molybdenum, dissolved and total nickel, total uranium, total zinc, dissolved cadmium, dissolved cobalt, and dissolved iron (Figure 3.8; Appendix Figure D.4 to D.15; Appendix Table D.1 and D.2). Some changes, such as for total molybdenum, (Appendix Figure D.10) can be attributed to antiscalant addition to the SRF effluent; molybdenum is present in the antiscalant, and increased concentrations can be seen in streams across the Elk Valley that receive antiscalant treatment. Although concentrations of several constituents increased downstream of the SRF outfall during SRF operation, the majority of these constituents had concentrations below available water quality criteria (BCWQGs, EVWQP benchmarks, etc.) with the exception of total uranium, dissolved nickel, total cobalt, and dissolved copper (Figures 3.8 and 3.9; Appendix Table D.3). This increase is spatially constrained to Erickson Creek (RG_ERCKDT to RG_ERCK) and is not seen in Michel Creek (Appendix Table D.3). Concentrations of dissolved nickel downstream of the SRF outfall in 2022 at EV_ECOUT (RG_ERCKDT) and EV_EC1 (RG_ERCK) were above the Level 3 proposed benchmark in 42% of samples, while concentrations of total uranium were above the long-term BCWQG in 38% and 34% of samples, respectively (Appendix Table D.3). Concentrations of total cobalt and dissolved copper downstream of the SRF outfall in 2022 at EV_ECOUT (RG_ERCKDT) were above the long-term BCWQG in 21% and 12% of samples, respectively (Appendix Table D.3).

Changes related to SRF operations have not been observed for most other mine-related constituents in Gate, Bodie, and Michel Creeks due to confounding factors such as, pit dewatering and volume of treated water. Total antimony decreased following SRF operation in 2018 compared to the base year of monitoring in Michel Creek downstream of Gate and Bodie Creeks (EV_MC2 [RG_MICOMP]; Appendix Figure D.4, Appendix Table D.2). Aqueous concentrations of total antimony have also decreased in Gate and Bodie Creeks in 2022 (SRF discharging) compared to 2021 (SRF not discharging; EV_GT1 [RG_GATEDP] and EV_BC1 [RG_BOCK]; Appendix Figure D.4, Appendix Table D.2). Aqueous concentrations of total molybdenum increased significantly in 2022 compared to 2021 in Gate and Bodie creeks, likely due to the increase volume of antiscalant dosed into Gate and Bodie creeks in 2022 (EV_GT1 [RG_GATEDP] and EV_BC1 [RG_BOCK]; Appendix Figure D.10; Appendix Table D.2). Between 2021 and 2022, total and dissolved nickel did not change significantly in Gate or Bodie Creeks, while total uranium increased significantly by 15.6% in Gate Creek but did not change significantly in Bodie Creek (EV_GT1 [RG_GATEDP] and EV_BC1 [RG_BOCK]; Figures 3.8 and 3.9; Appendix Figure D.11; Appendix Table D.2). Aqueous concentrations of dissolved nickel and total uranium remained above the proposed benchmarks and guideline, respectively, at all stations in both Gate and Bodie Creeks in 2022 (Figure 3.8 and 3.9; Appendix Table D.3).



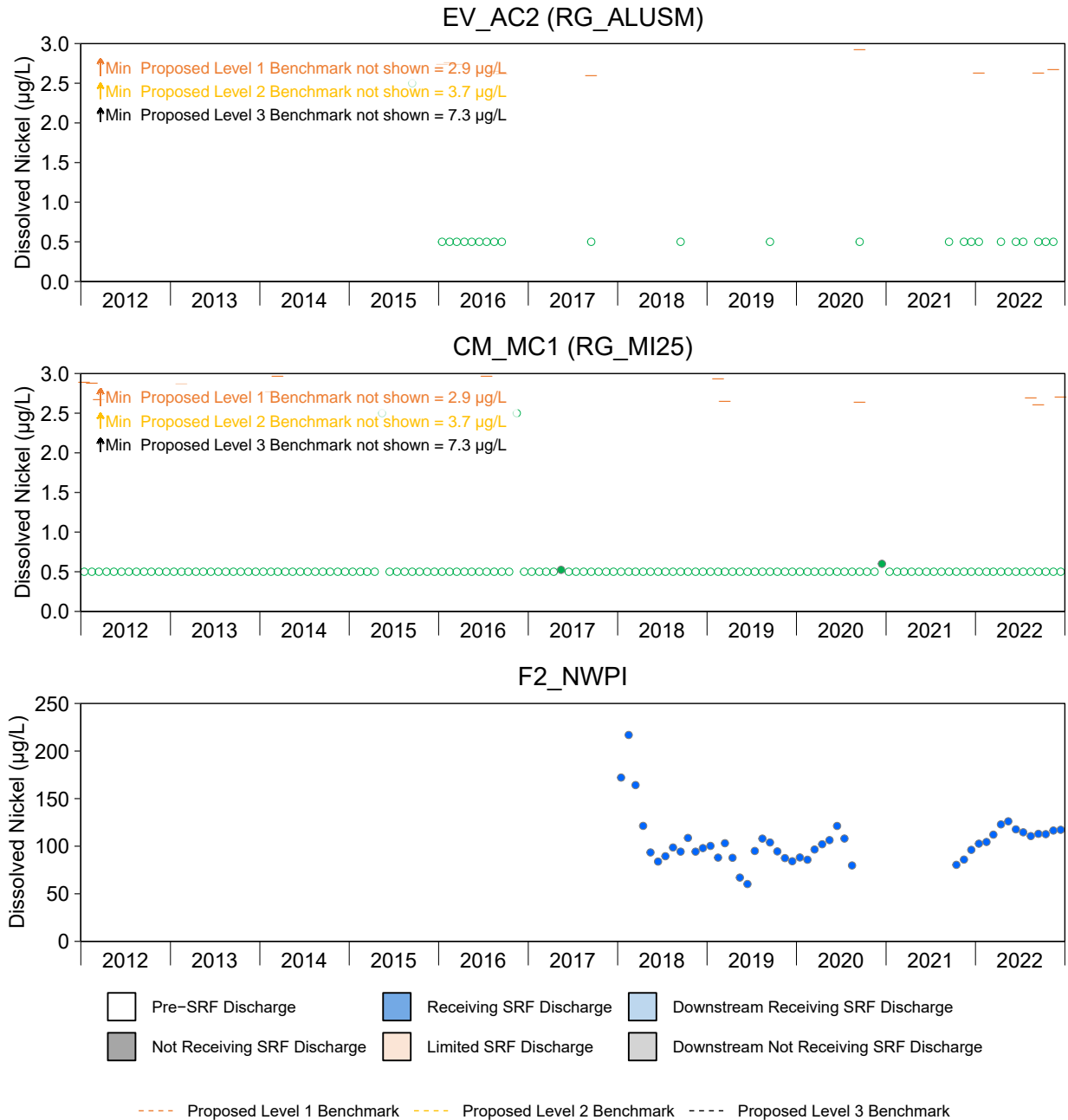


Figure 3.8: Time Series Plots for Dissolved Nickel from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

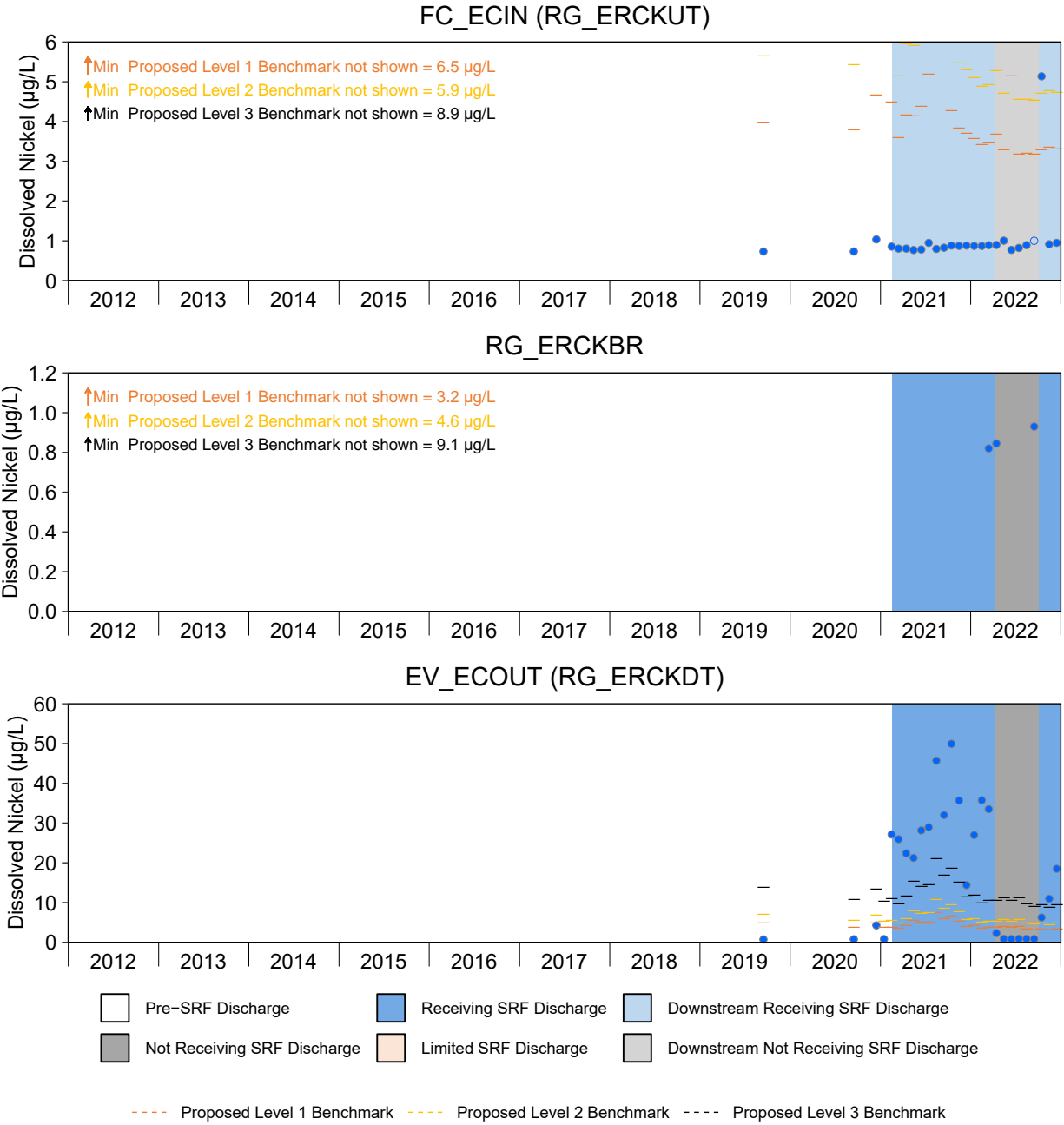


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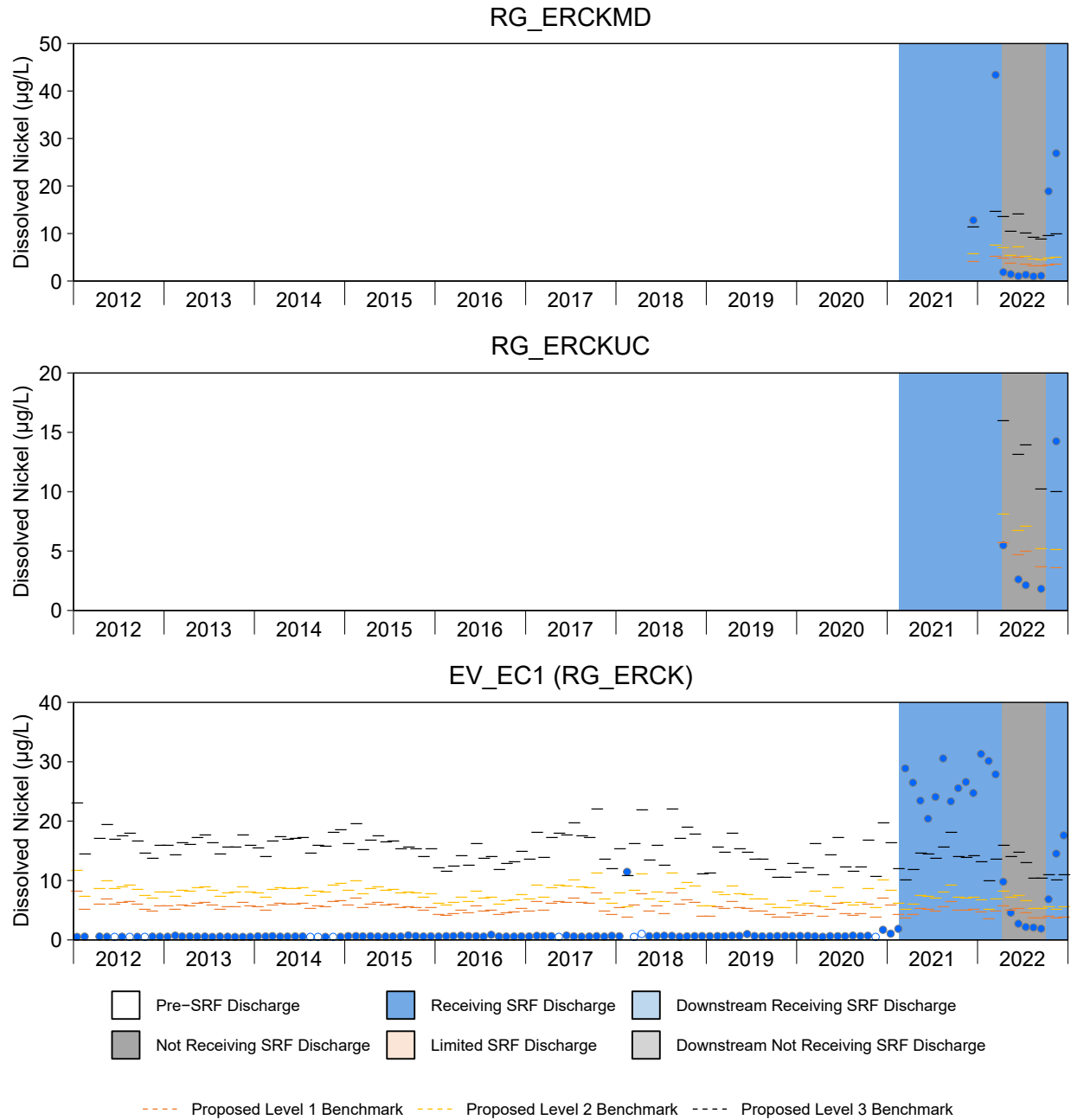


Figure 3.8: Time Series Plots for Dissolved Nickel from EVO LAEMP Areas, 2012 to 2022

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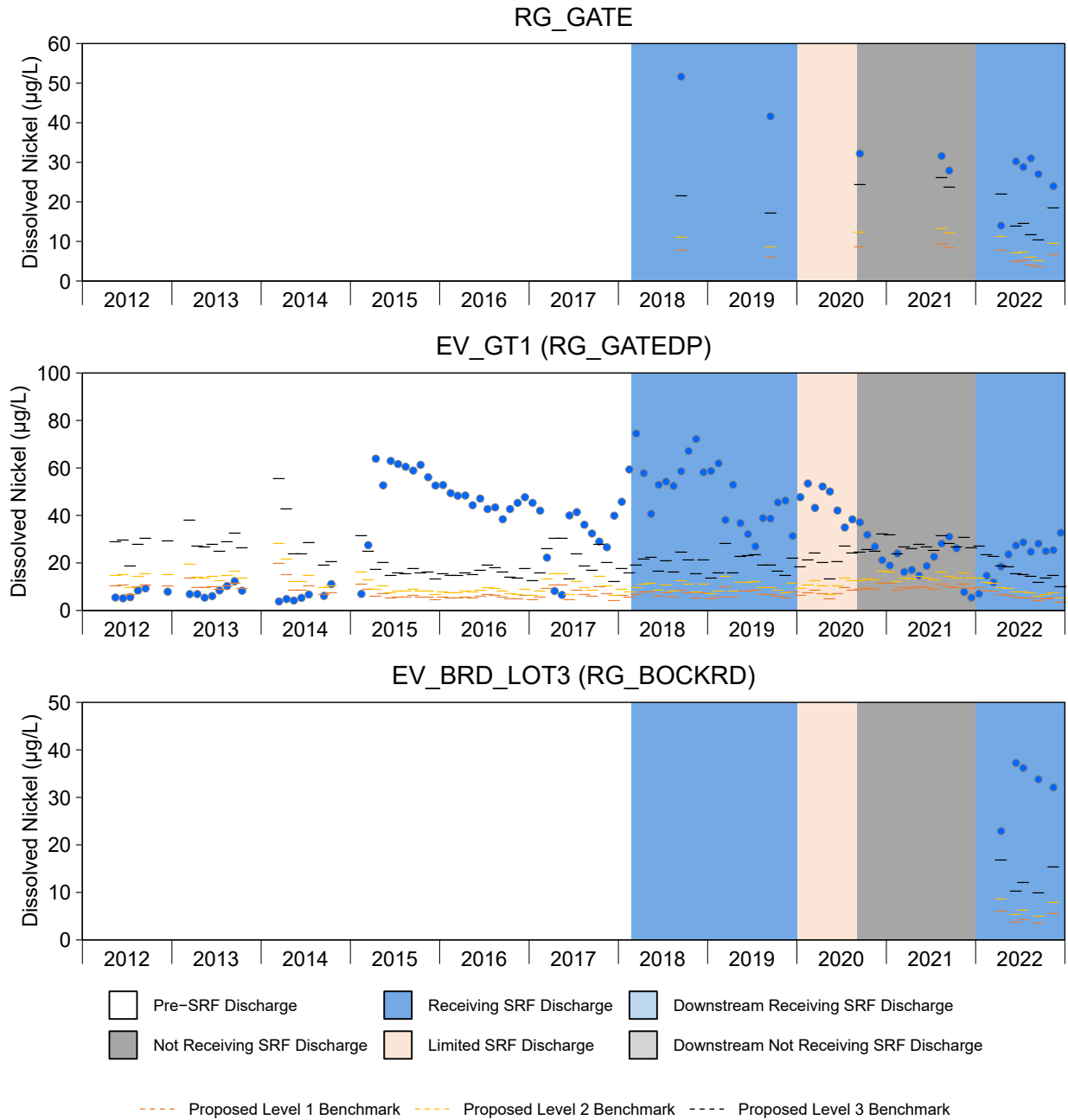


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Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

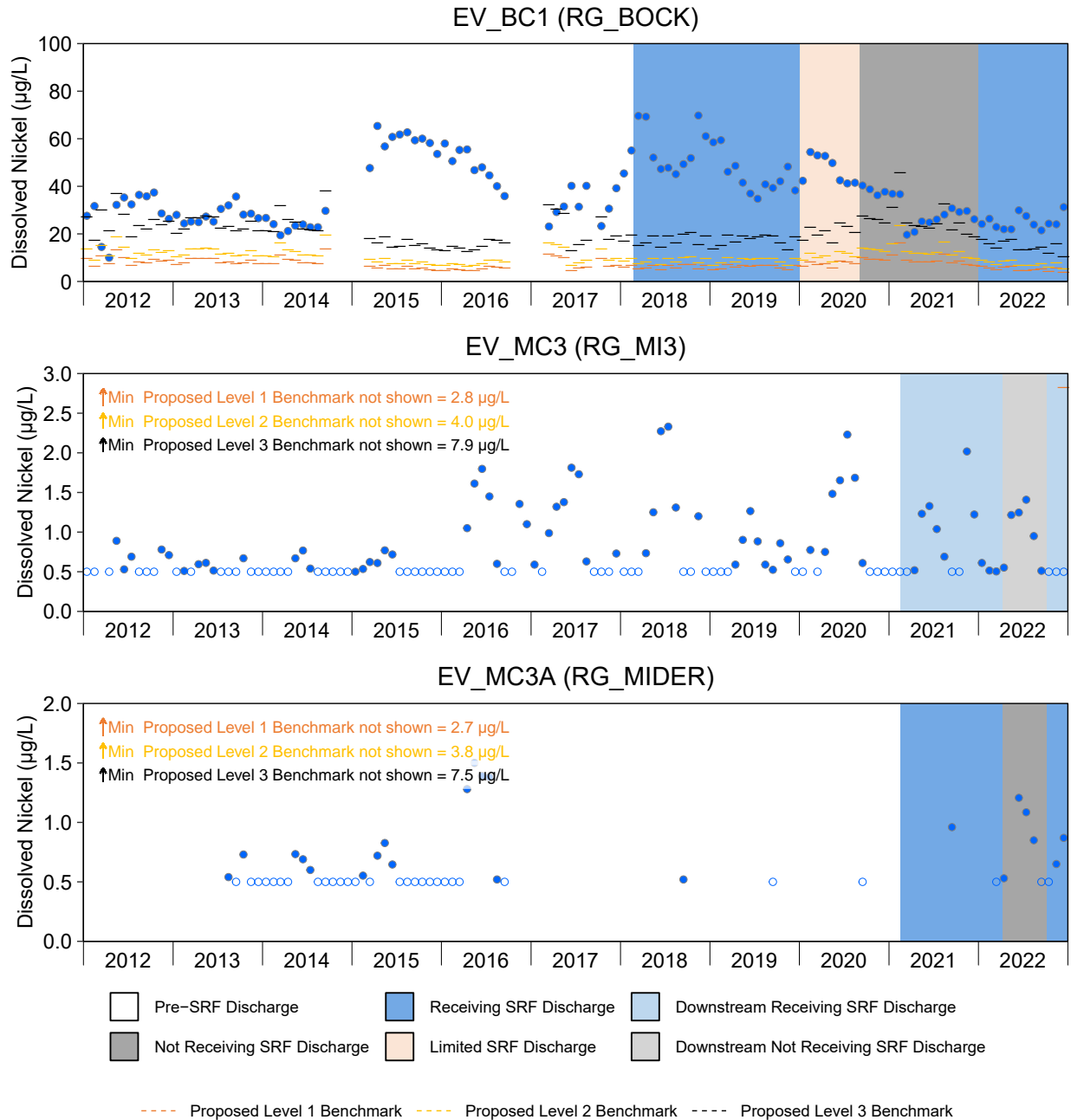


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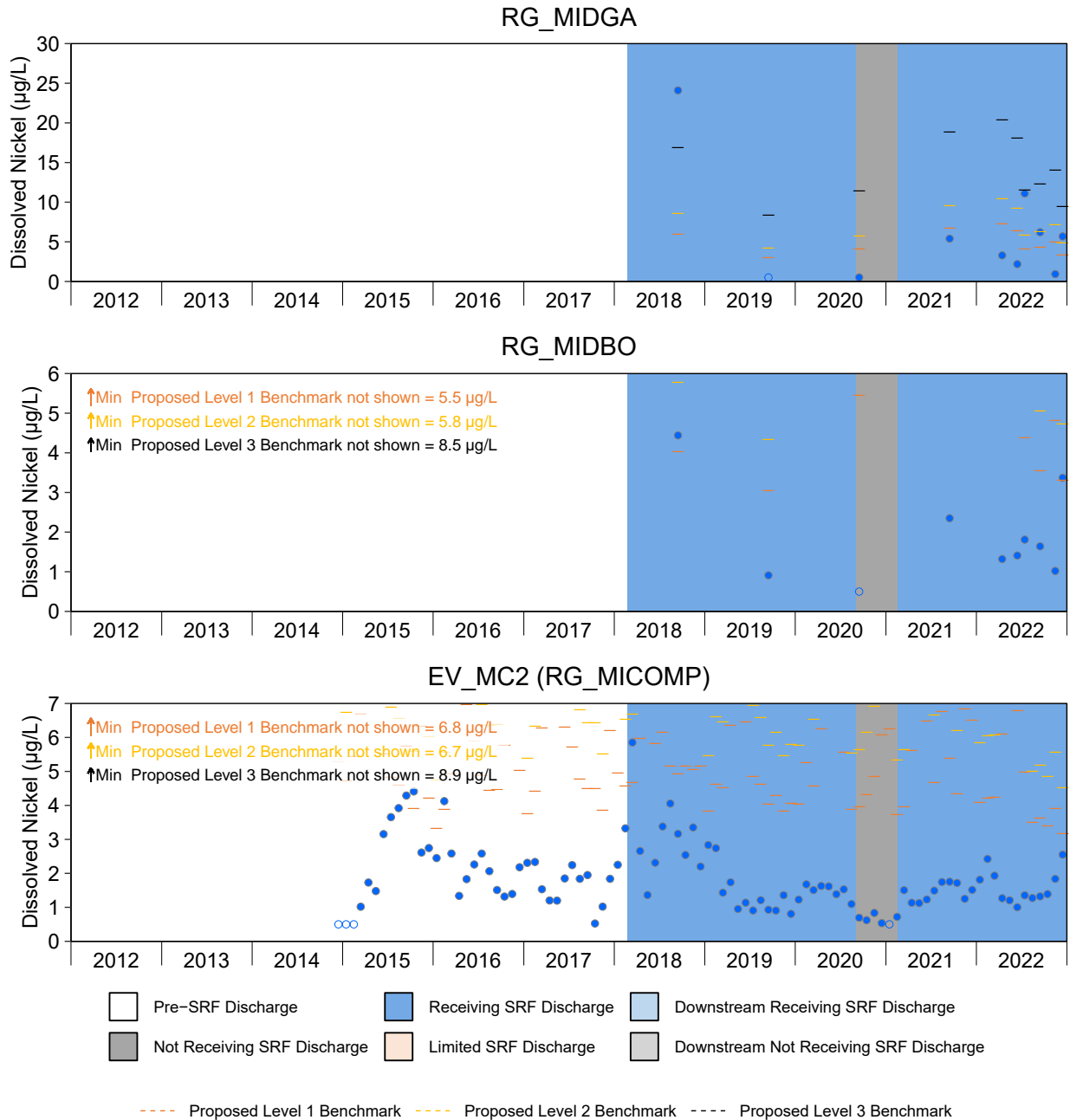


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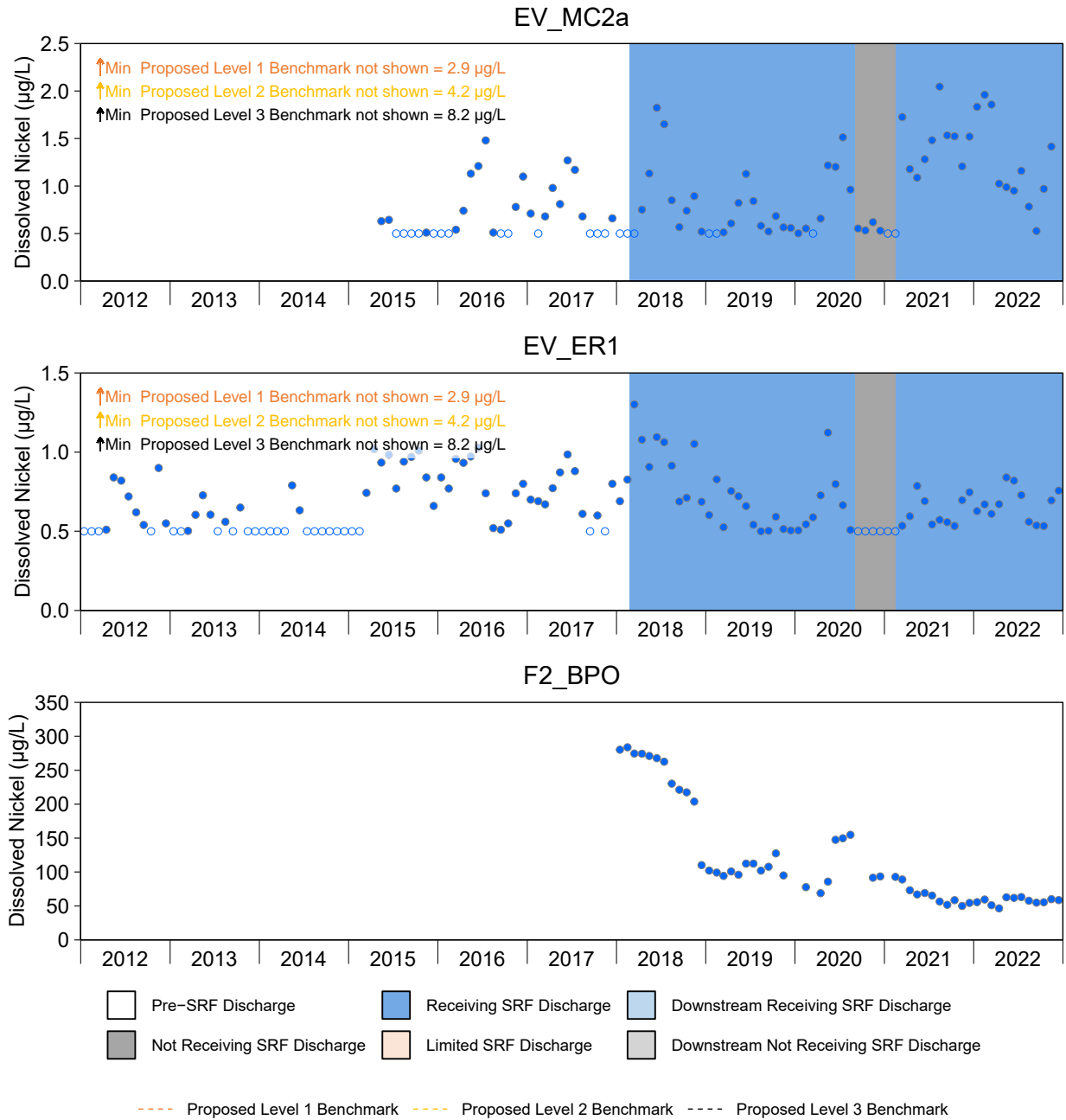


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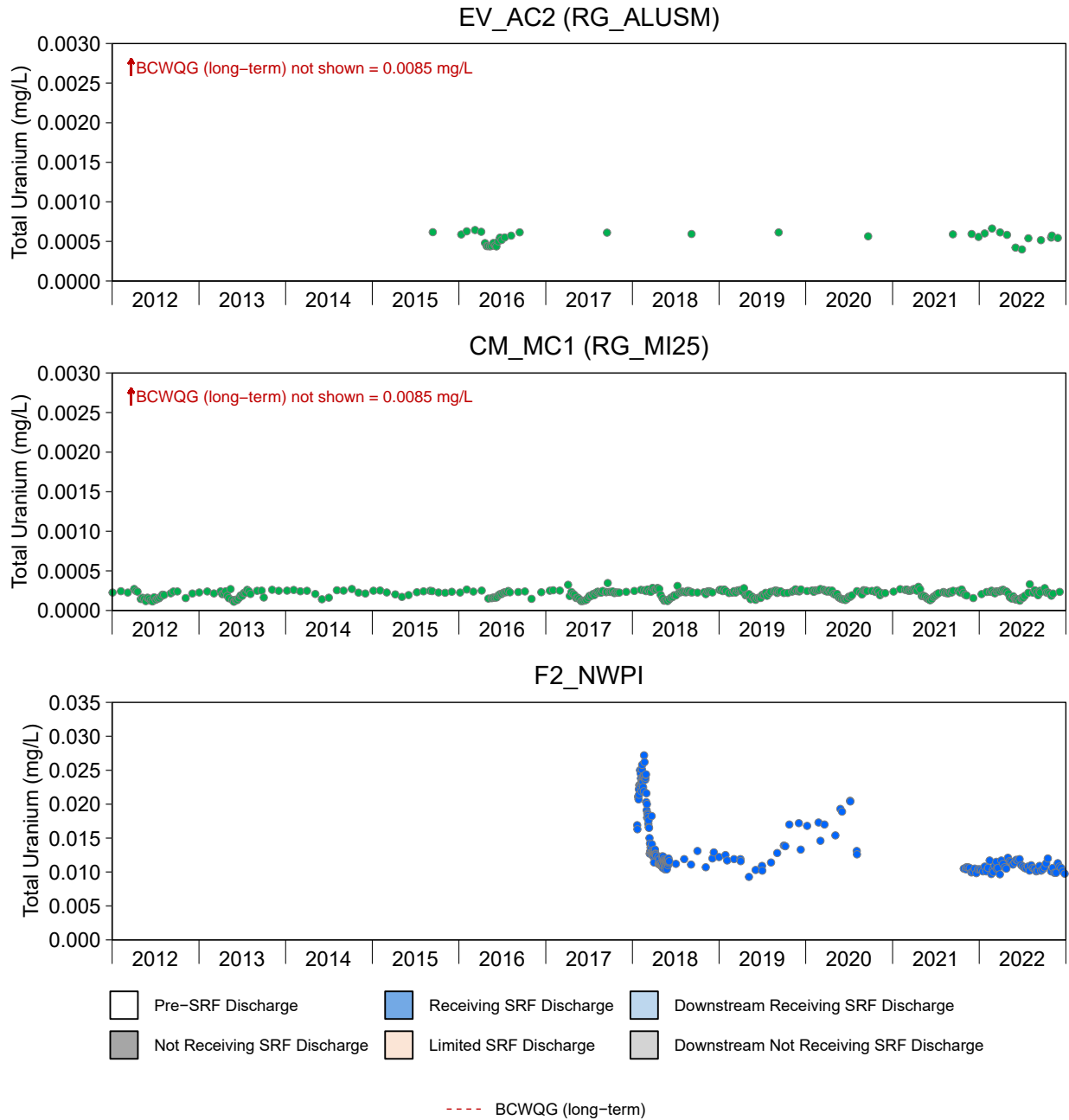


Figure 3.9: Time Series Plots for Total Uranium from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

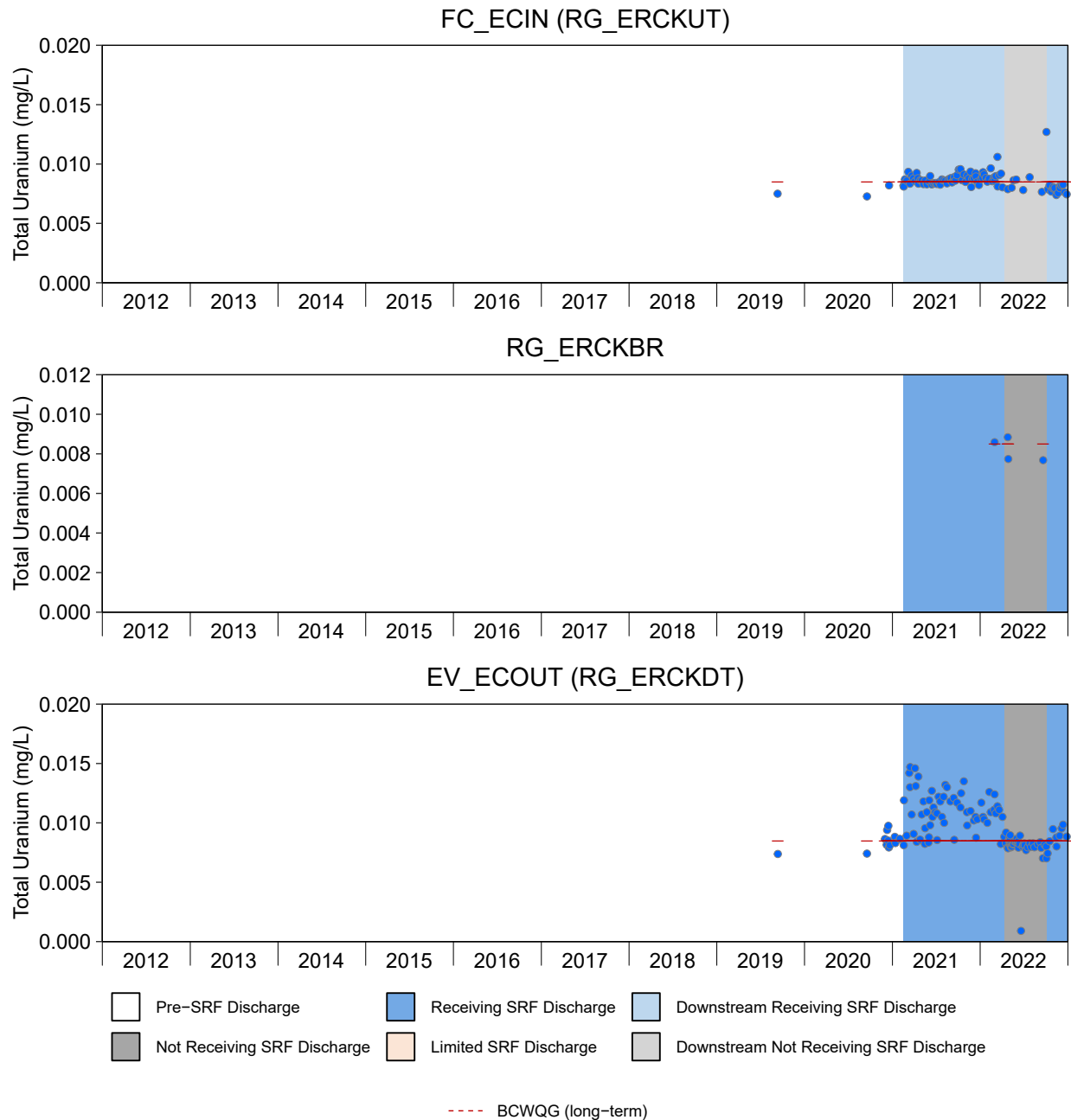


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Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

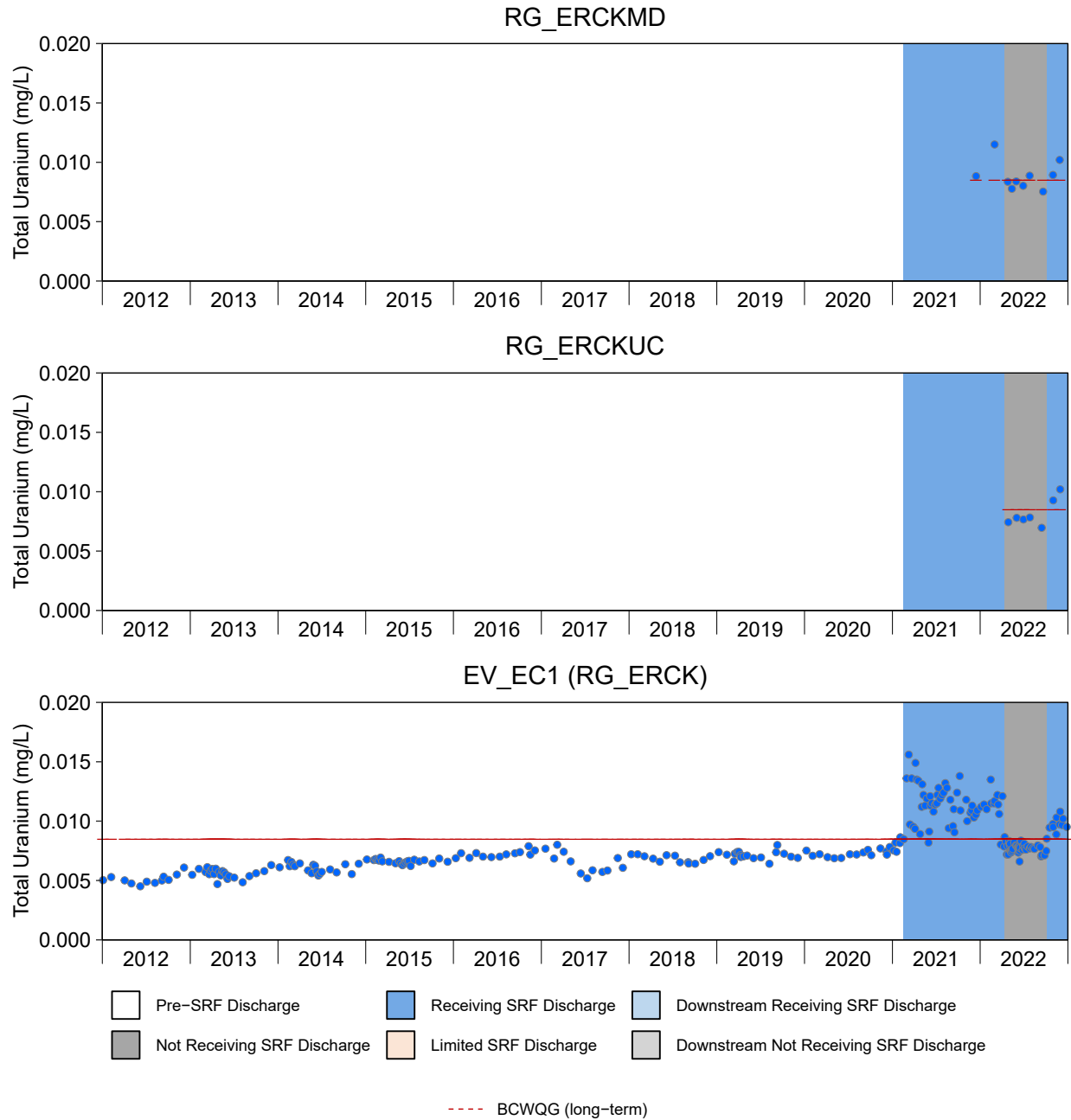


Figure 3.9: Time Series Plots for Total Uranium from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

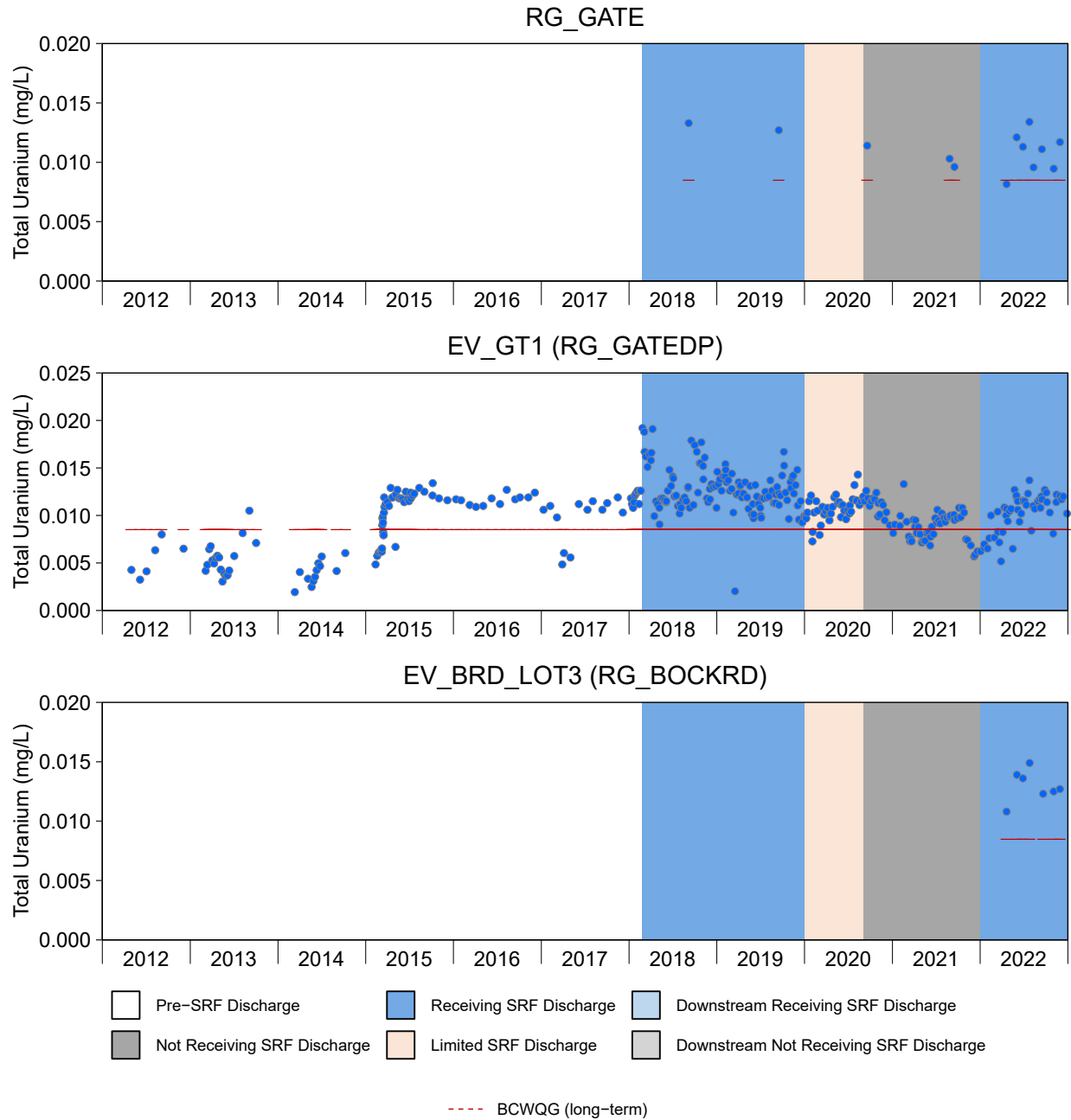


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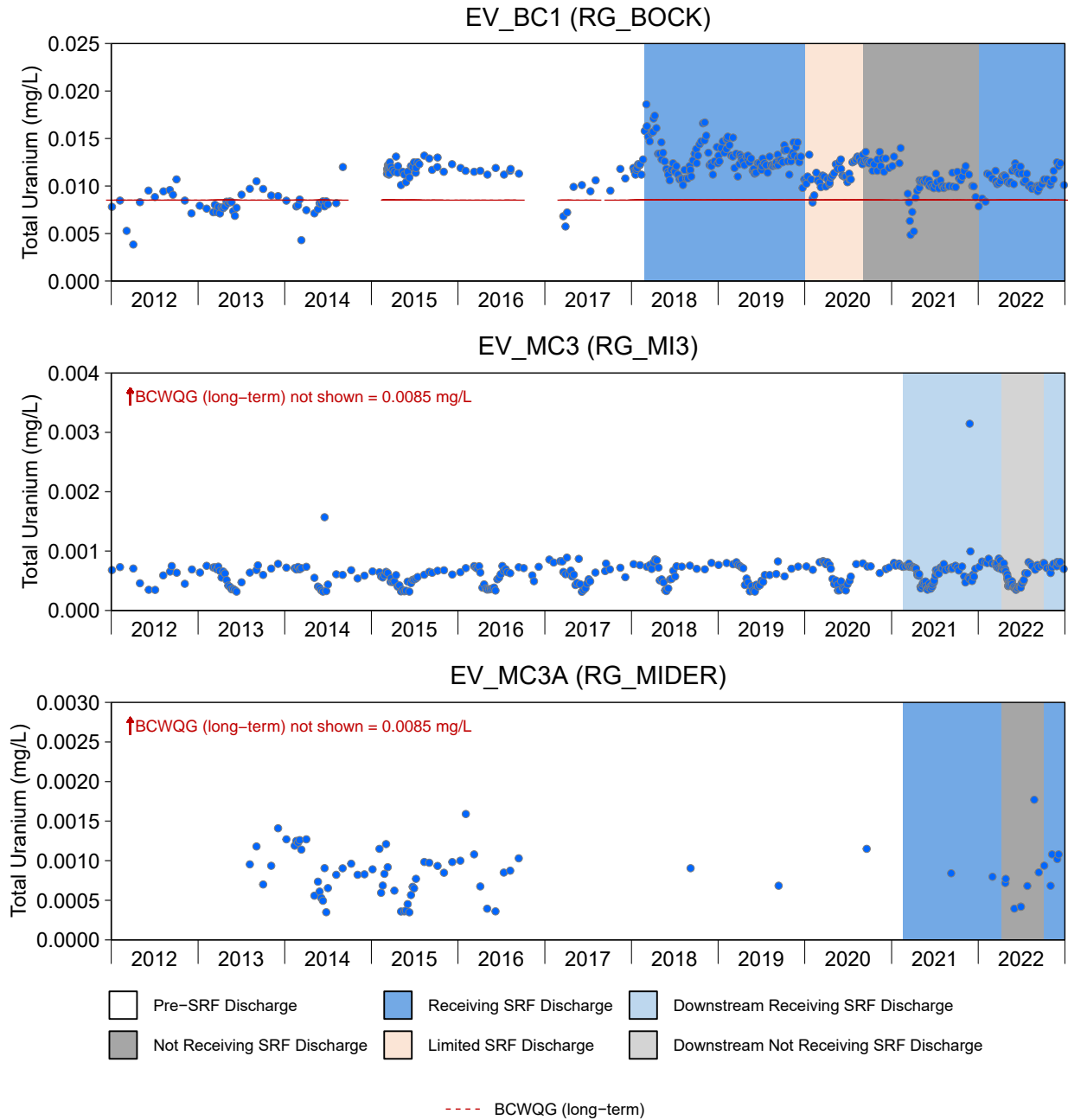


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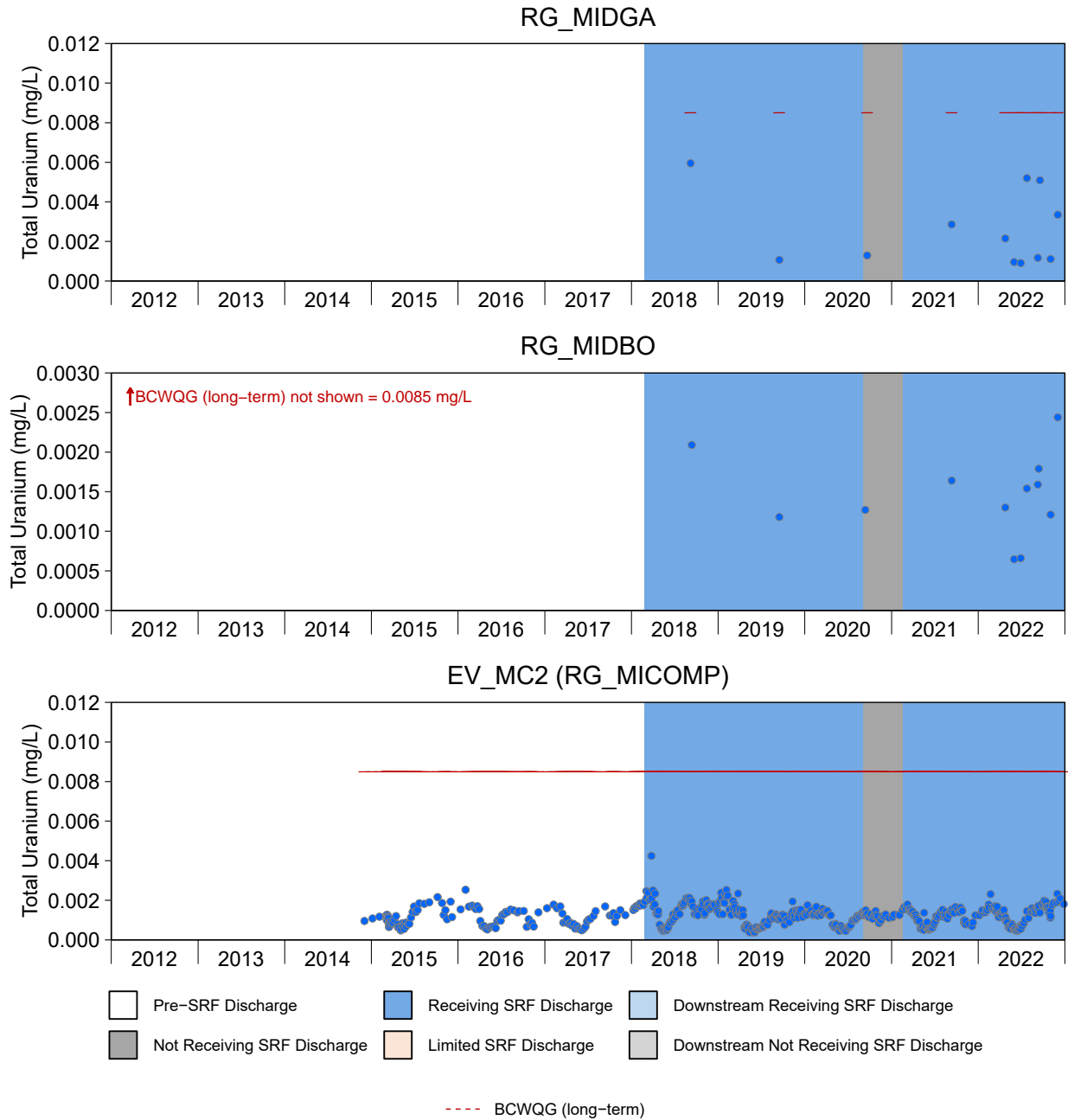


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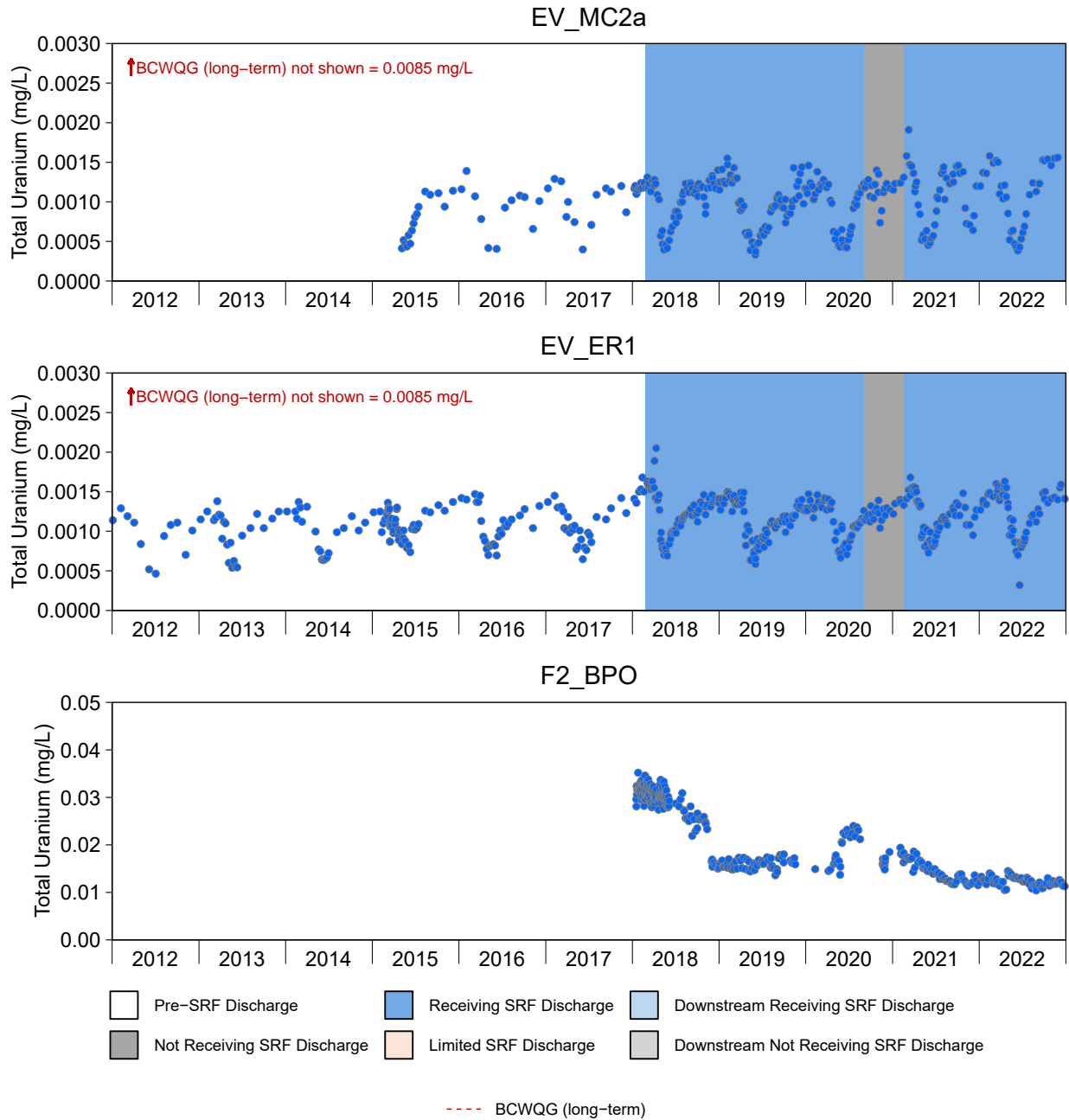


Figure 3.9: Time Series Plots for Total Uranium from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

Concentrations of total uranium were above long-term BCWQG in 74% and 96% of samples at EV_GT1 [RG_GATEDP] and EV_BC1 [RG_BOCK], respectively, and concentrations of dissolved nickel were above the Level 3 Updated Effects Concentration in 67% and 100% of samples, respectively (Appendix Table D.3).

3.3.3 Supporting Data

3.3.3.1 Acute Toxicity Results

Acute toxicity testing (using the water flea [*D. magna*] and rainbow trout) was conducted with water collected from four EVO LAEMP mine-exposed areas in 2022, EV_ECOUT (RG_ERCKDT; n=37), EV_EC1 (RG_ERCK; n=46), EV_GT1 (RG_GATEDP; n=31), and EV_BC1 (RG_BOCK; n=31 and n=30 for water flea and rainbow trout, respectively; Table 3.2; Appendix Table D.7). Toxicity testing occurred at least monthly at each area, with a maximum of five events in a given month (e.g., EV_ECOUT in June). Only one test in 2022 (at EV_EC1) failed the acute toxicity criteria, where the toxicity test caused > 50% mortality in water flea (Table 3.2), this occurred when the EVO SRF was not discharging to Erickson Creek. A toxicity identification evaluation (TIE) was initiated on the remaining volume of water from the original sample and displayed no mortality in the untreated water. The final report for the TIE conducted by the external laboratory was not able to conclusively define the toxicant as no mortality was observed in the TIE. The TIE report did outline that based on the initial hardness and alkalinity of the sample, the observation of white precipitate in the original tests, the lack of BCWQG exceedances in the water quality data, and the results of the original *Daphnia magna* tests performed, calcite precipitation appeared to be the most likely cause of the observed toxic effect. A few individual water samples did show mortality to rainbow trout (EV_EC1 [n=3]; EV_ECOUT [n=5]) and water flea (EV_BC1 [n=1]; EV_EC1 [n=7]; EV_ECOUT [n=5]), but in all cases toxicity was ≤20% (Appendix Table D.7). Effluent collected at EV_GT1 did not cause mortality to either test species in toxicity tests throughout 2022. Further information regarding acute toxicity test can be found in the Annual Water Quality Monitoring Program (Teck 2023b).


3.3.3.2 Chronic Toxicity Results

Chronic toxicity testing under the Regional Chronic Toxicity Study (WSP 2023) is required under Permit 107517 at the EVO Compliance Point, EV_MC2 (RG_MICOMP). Testing started in 2015 and has been performed quarterly with the water flea (*C. dubia*) and algae (*P. subcapitata*), while semi-annual tests have been conducted with fathead minnow and rainbow trout (Table 3.3). In 2018, chronic toxicity testing with the amphipod, *H. azteca*, was initiated and has occurred one to three times per year thereafter. Water flea survival and reproduction when exposed to water from EV_MC2 showed “no adverse response” in 2022. One of the toxicity tests (in Q2)



Table 3.2: Summary of Acute Toxicity Test Results for EVO LAEMP Monitoring Stations, 2022

Water Station			Water Flea (<i>Daphnia magna</i>)		Rainbow Trout (<i>Oncorhynchus mykiss</i>)	
Teck Code	Description	Year	# Tests > 50% mortality	Total # Tests	# Tests > 50% mortality	Total # Tests
EV_ECOUT	Erickson Creek d/s of SRF Outfall (RG_ERCKDT)	2022	0	37	0	37
EV_EC1	Erickson Creek at Mouth (discharge to Michel Creek; RG_ERCK)	2022	1	46	0	46
EV_GT1	Gate Creek Sedimentation Pond Decant (RG_GATEDP)	2022	0	31	0	31
EV_BC1	Bodie Creek Sedimentation Pond Decant (RG_BOCK)	2022	0	31	0	30

 Acute toxicity test failure(s) (> 50% test mortality).

Notes: d/s = downstream, SRF = saturated rock fill.

Table 3.3: Results of Quarterly and Semi-Annual Chronic Toxicity Testing at EV_MC2, 2015 to 2022 (Golder 2016, 2017a, 2018, 2019, 2020a, 2021, 2022)

Area	Quarter ^b	Water Flea (<i>Ceriodaphnia dubia</i>) ^b			Amphipod (<i>Hyalella azteca</i>) ^c		Green Alga (<i>Pseudokirchneriella subcapitata</i>)	Rainbow Trout (<i>Oncorhynchus mykiss</i>)				Fathead Minnow (<i>Pimephales promelas</i>)				
		Survival (% control-normalized)	Reproduction (% control-normalized; Protocol-specified)	Reproduction (% control-normalized; 8-day)	Survival (% control-normalized)	Dry Weight (% control-normalized)	Cell Yield (x10 ⁴ cells/ml)	Survival (% control-normalized)	Viability (% control-normalized)	Length (% control-normalized)	Wet Weight (% control-normalized)	Hatch (% control-normalized)	Survival (% control-normalized)	Biomass (% control-normalized)	Length (% control-normalized)	Normal Development (% control-normalized)
EV_MC2	2016	Q1	100	109±14	-	-	-	130.3± 12.4	-	-	-	-	-	-	-	-
		Q2	100	77±17	-	-	-	111.5± 8.1	68±5	66±4	105±3	113±13	-	-	-	-
		Q3	100	96±9	-	-	-	120.0± 5.7	-	-	-	-	-	-	-	-
		Q4	100	66±24	-	-	-	166.3± 2.2	87±9	88±7	102±1	110±4	-	-	-	-
	2017	Q1	100	94±20	-	-	-	216.3±13.3	-	-	-	-	-	-	-	-
		Q2	90±32	80±20	-	-	-	139.5±9.3	102±22	108±22	110±5	119±10	-	-	-	-
		Q3	100	96±11	-	-	-	157±12.1	-	-	-	-	-	-	-	-
		Q4	100	126±14	-	-	-	107.8±7	24±46^M	23±46^M	91±7	102±6	-	-	-	-
	2018	Q1	100	56±22	62±22	-	-	167.3±3.3	-	-	-	-	-	-	-	-
		Q2	90±32	94±17	87±17	-	-	155.5±5.3	106±2	109±5	105±3	111±22	-	-	-	-
		Q3	100	89±26	97±15	-	-	106.5±4.2	-	-	-	-	-	-	-	-
		Q4	111	92±31	100±11	98±14	51±6	90.5±5.3	91.5±15	96±16	105±1	106±3	-	-	-	-
	2019	Q1	100	96±16	96±16	-	-	81.5± 2.9	-	-	-	100	98	88±8	88±3	96±7
		Q2	100	83±7	83±7	-	-	105.2± 9.7	92±17	94±20	105±1	108±10	-	-	-	-
		Q3	100	96±16	81±14	104	143±11	39.2± 5.4	-	-	-	98± 3	78±24	86±13	103±8	100
		Q4	80±42	102±9	99±8	98±9	84±40	106.8± 3.5	80±11	75±8	100±2	101±6	-	-	-	-
	2020	Q1	111	100±27	100±27	-	-	73.0± 5.0	-	-	-	95±6 ^M	84±25 ^M	84±10^M	97±5^M	95±6 ^M
		Q2	100	109±10	109±10	100±9	92±12	124.5± 5.4	97±27 ^M	99±30 ^M	98±8 ^M	108±18 ^M	-	-	-	-
		Q3	100	100±9	100±9	-	-	82.0±7.2	-	-	-	98.3±3.3	94±11	88±12	95±6	100±0
		Q4	100	98±9	98±9	86±23	55±27	130±2.4	97±5	97±5	105±2	109±4	-	-	-	-
2021	Q1	100	107±8	-	-	-	82.5±6.8	-	-	-	98±10	97±9	84±8	96±5	98±5	
	Q2	100	86±32	-	102±6	- ^d	70.0±6.1	100±9 ^M	98±14 ^M	104±2 ^M	122±16 ^M	-	-	-	-	
	Q3	100	113±25	-	98±9	71±11	94.8±8.1	-	-	-	102±4	112±12	99±8	83±8	98±7	
	Q4	100	110±8	-	104±6	98±14	65.3±8.5	94±13	91±12	99±3	101±11	-	-	-	-	
2022	Q1	111±0	107±24	-	-	-	68±1.4	-	-	-	98±3	46±12	48±12	92±2	97±6	
	Q2	100±0	132±12	-	92±9	82±34	89.0±7.5	94±13 ^M	102±18 ^M	100±4 ^M	99±11 ^M	-	-	-	-	
	Q3	100±0	120±20	-	-	-	113.0±4.9	-	-	-	100±3 ^M	93±6 ^M	95±16 ^M	97±8 ^M	100±0 ^M	
	Q4	90±32	97±40	-	98±4	82±6	49.5±5.2	90±13 ^M	85±18 ^M	94±3 ^M	93±12 ^M	-	-	-	-	

Bold result significantly lower than Fording River reference (FR_UFR1).
Underline result significantly lower than Elk River reference (GH_ER2).
Italic result significantly lower than Michel Creek reference (CM_MC1).
 result significantly lower than South Line Creek reference (LC_SLC).

test categorized as no adverse response.
 test categorized as possible adverse response.
 test categorized as likely adverse response.
^M test had evidence of microbes in one or more replicates.

Notes: Q_x = Calendar year quarters; "-" = no data a) Possible and likely symbols are annotated with constituent identified as potentially contributing to observed response: H_RV = high inter-replicate variability; NO3 = nitrate; Ni = Nickel UN = unknown, no water quality constituent identified.

^a Results presented as percent survival or mean ± standard deviation.

^b Toxicity work in 2015 was not normalized to % control and thus is not shown.

^c *H. azteca* testing began in Q4 2018.

^d *H. azteca* testing was conducted in Q2 and Q4, per Permit 107517. Tests in Q2 were successfully conducted and survival was measured; however, test organisms were disposed prior to measuring dry weight due to a lab technician error.

with amphipods (*H. azteca*) was categorized as “likely adverse response” as evaluated by dry weight, but evidence for mine-related toxicity was weak (i.e., no water quality constituent was identified as potentially causing the effect; WSP 2023) and the test conducted in Q4 was categorized as “no adverse response” in both survival and dry weight. Both toxicity tests conducted with rainbow trout (in Q2 and Q4) showed “no adverse response” in all categories: survival, viability, length, and wet weight. One of the toxicity tests (in Q1) with fathead minnow was categorized as “likely adverse response” as evaluated by survival and biomass but no water quality constituent was identified as potentially contributing to the effect and the second test conducted in Q3 was categorized as “no adverse response” in all categories: hatch, survival, biomass, length, and normal development. Algae chronic toxicity testing in Q1, Q2, Q3, and Q4¹² of 2022 with water collected from EV_MC2 showed “no adverse response” to cell yield.

Temporal comparisons of chronic toxicity results for EV_MC2 indicated that observed organism responses (or lack thereof) for chronic toxicity testing in 2022 were similar to previous years. In addition, few adverse responses have been observed since initiation of testing in 2015, there is no apparent consistent pattern of responses, and there is no clear evidence of casual factors (WSP 2023), suggesting a lack of influence of the SRF (in either EVO SRF P1 or P2).

3.3.3.3 Sediment Quality

In September 2022, both RG_ERCKUT and RG_ERCKDT (upstream and downstream of the SRF outfall, respectively) had similar mean TOC values (8.46% and 9.96%, respectively), which were higher than values measured in sediments from Erickson Creek at the confluence with Michel Creek, RG_ERCK (3.05%). The higher TOC in upper Erickson Creek (RG_ERCKUT and RG_ERCKDT) is likely a result of additional detritus from decaying bryophytes that are not as abundant at RG_ERCK.

The mean September concentrations of seven metals (arsenic, cadmium, iron, manganese, nickel, selenium, and zinc) and twelve PAHs (acenaphthene¹³, acenaphthylene, anthracene, benz(a)anthracene, benzo(a)pyrene, chrysene, dibenz(a,h)anthracene, fluorene, 2-methylnaphthalene, naphthalene, phenanthrene, and pyrene) in sediment were above the lower BCWSQG at RG_ERCKDT, with eight of those constituents (cadmium, manganese, nickel, selenium, fluorene, 2-methylnaphthalene, Naphthalene, and phenanthrene) also above the

¹² Initial testing for *P. subcapitata* in Q4 indicated a likely adverse response for cell yield, but follow-up tests within two weeks yielded a result of “no adverse effect”.

¹³ Although acenaphthene was not detected in any replicate at RG_ERCKDT (and was not detected in a majority of EVO areas samples (~88%), due to the high detection limit associated with this compound uncertainty remains regarding the presence as well the possible concentration of this compound.



upper BCWSQG (Figure 3.10; Appendix Figure D.39 and D.40; Appendix Table D.8). For all these constituents, mean September concentrations in sediment were highest at RG_ERCKDT or RG_ERCKMD when compared to the other mine-exposed areas evaluated (RG_ERCKUT, RG_ERCK, RG_MI3, RG_MIDER, and RG_MICOMP; Appendix Figure D.5 Appendix Table D.8). Furthermore, a majority of these constituents at RG_ERCKDT had mean concentrations above the regional reference normal range (Appendix Figure D.6).

Concentrations of arsenic, cadmium, iron, manganese, nickel, and zinc increased directly downstream of the SRF outfall in 2022 compared to pre-SRF operations (RG_ERCKDT). Concentrations were higher downstream of the SRF outfall (RG_ERCKDT) when compared to upstream (RG_ERCKUT) in 2022 and 2021; although the magnitude of difference was smaller in 2022 (most likely due to the SRF shutdown). The increased concentrations of mine-related constituents were generally spatially constrained to just below the outfall (RG_ERCKDT), as similar changes were not seen in Erickson Creek at Michel Creek (RG_ERCK) or downstream of SRF treatment in Michel Creek (RG_MICOMP). Selenium concentration at RG_ERCKDT has constantly been elevated compared to RG_ERCKUT; the magnitude of difference was highest in 2021, when the SRF was discharging. At RG_ERCKUT (which is upstream of the SRF outfall), 11 of the 19 constituents (including cadmium, nickel, selenium, and some PAHs) exceeded the British Columbia Working Sediment Quality Guidelines (BC WSQG) and they were similar to pre-EVO SRF P2 concentrations (Figure 3.10; Appendix Table D.8). At RG_ERCK, cadmium, manganese, and nickel exceeded these criteria (Figure 3.10; Appendix Table D.8). At both RG_ERCKUT and RG_ERCK, the majority of sediment constituent concentrations have been stable or decreasing when comparing concentrations of 2022 to past results (2019, 2020 and 2021).

Mean sediment constituent concentrations in the area upstream of the Erickson Creek confluence with Michel Creek, RG_MI3, and both areas downstream of the confluence where sediment samples were collected, RG_MIDER and RG_MICOMP, were either below the BCWSQG or the regional reference normal range of the Elk Valley, and/or similar to results pre-EVO SRF P2 (Figure 3.10; Appendix Table C.2). Metal concentrations that exceeded the BCWSQG in these areas (such as arsenic, cadmium, nickel, and a few PAHs) also commonly exceeded guidelines in one or both reference areas (RG_MI25 and RG_ALUSM) suggesting that these constituents are naturally elevated in the Elk Valley (Figure 3.10). Overall, sediment metal and PAH concentrations in lower Erickson and Michel Creek were largely similar pre- and post-EVO SRF P2 suggesting a minimal influence of the SRF on these constituents.

Although a number of mine-related constituents in sediment increased downstream of the SRF outfall and had concentrations that exceeded the BCWSQG and the regional reference normal



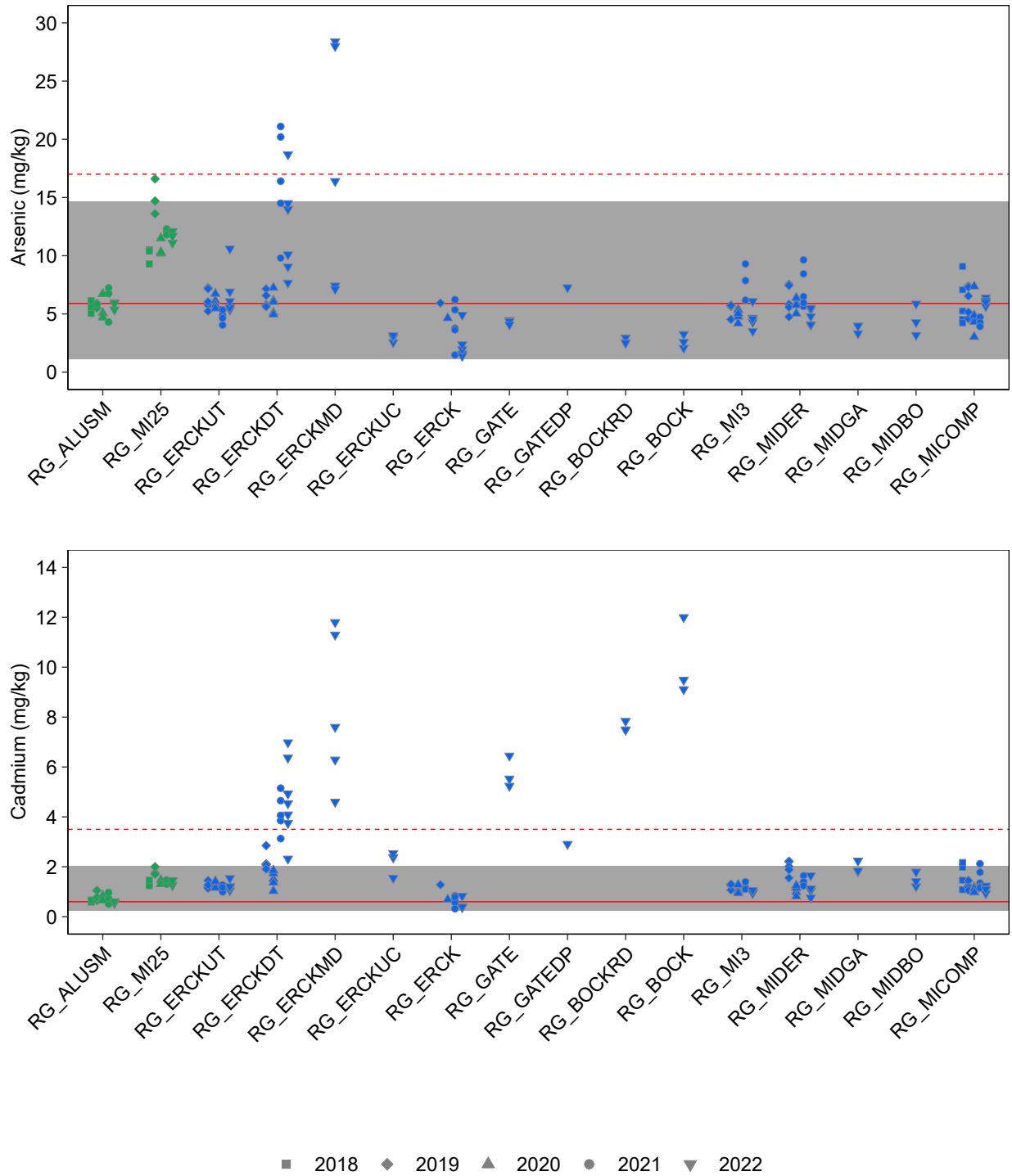


Figure 3.10: Sediment Metal and Polycyclic Aromatic Hydrocarbon (PAH) Concentrations in September, EVO LAEMP, 2018 to 2022

Notes: Green symbols represent reference areas and blue symbols represent exposed areas. Solid red line = Lower BC WSQG; broken red line = Upper BC WSQG. BC WSQG = British Columbia Working Sediment Quality Guideline (BCMOECCS 2021a) and approved BC Sediment Quality Guideline for Selenium (BCMOECCS 2021b). Shading represents the normal range which represents the 2.5th to 97.5th percentiles of 2017 and 2020 regional reference area data. Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL value.

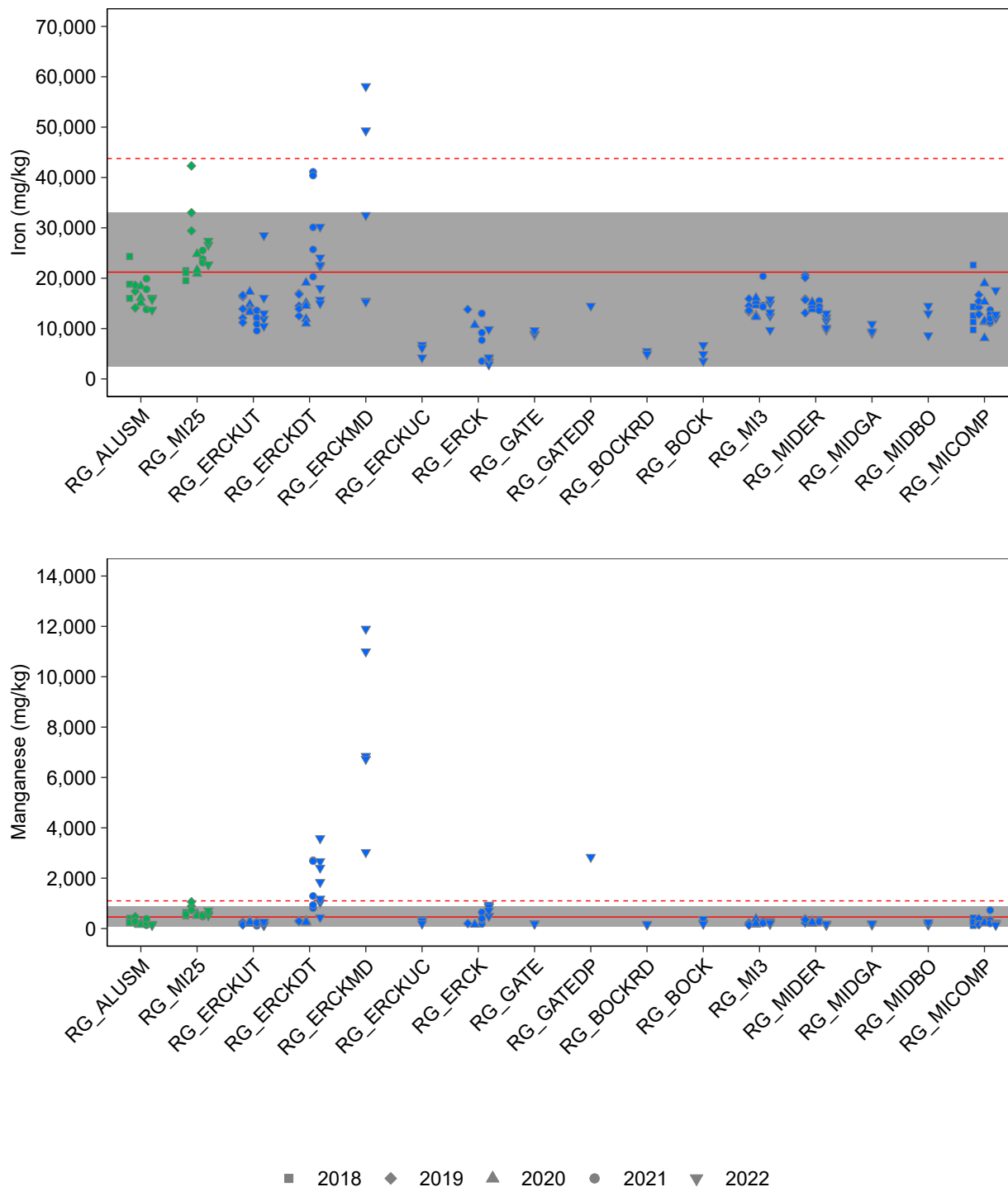


Figure 3.10: Sediment Metal and Polycyclic Aromatic Hydrocarbon (PAH) Concentrations in September, EVO LAEMP, 2018 to 2022

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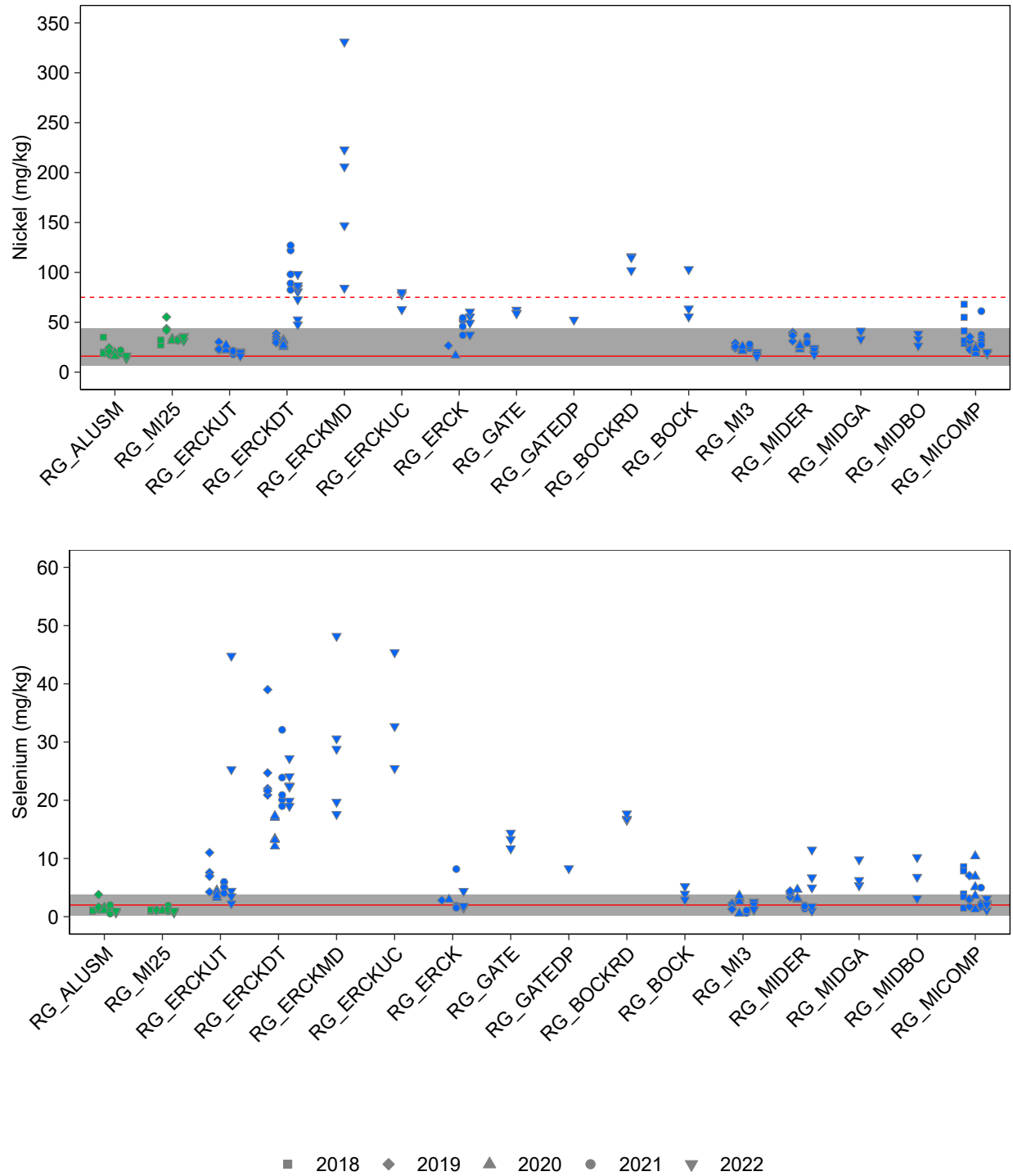


Figure 3.10: Sediment Metal and Polycyclic Aromatic Hydrocarbon (PAH) Concentrations in September, EVO LAEMP, 2018 to 2022

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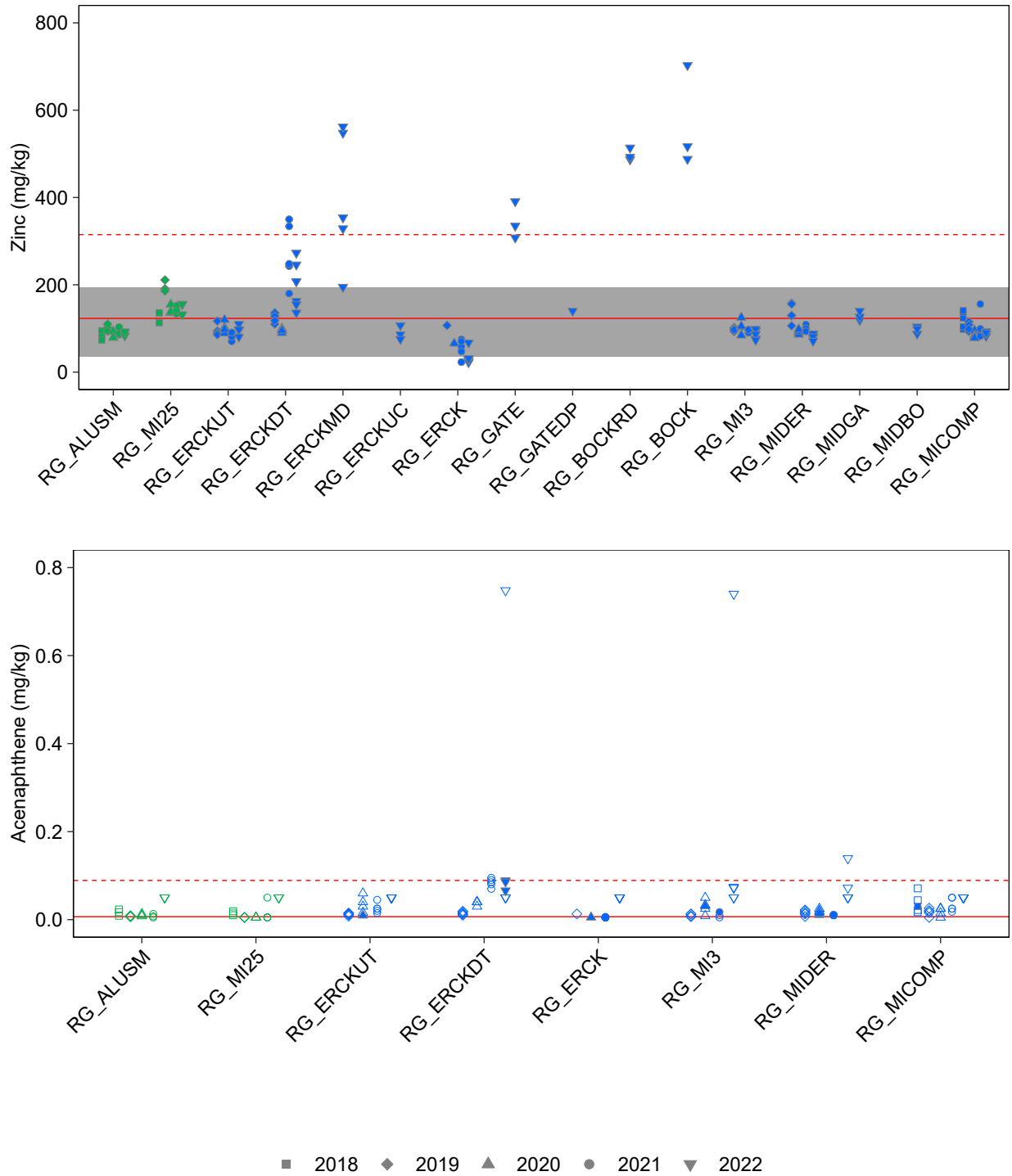


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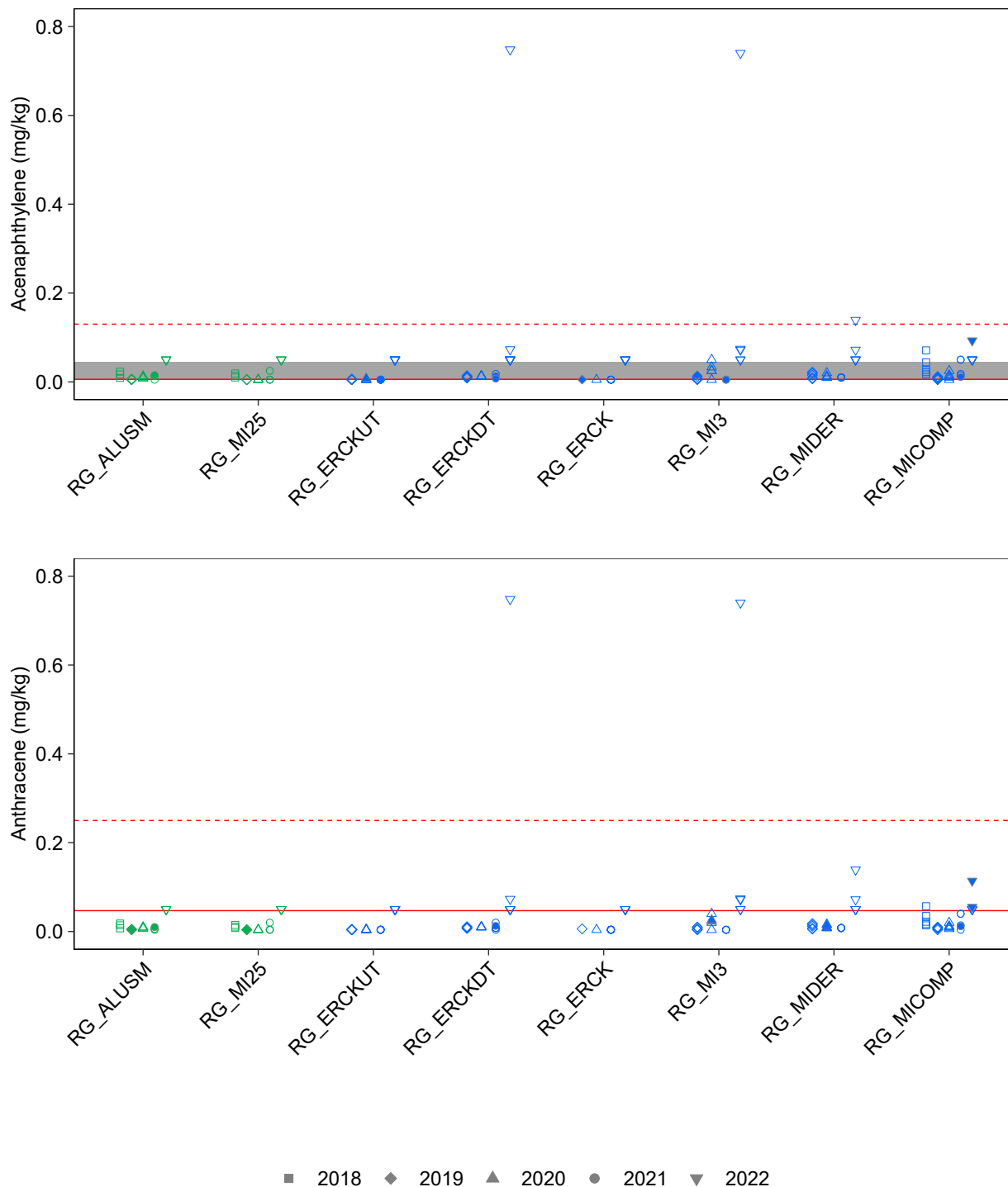


Figure 3.10: Sediment Metal and Polycyclic Aromatic Hydrocarbon (PAH) Concentrations in September, EVO LAEMP, 2018 to 2022

Notes: Green symbols represent reference areas and blue symbols represent exposed areas. Solid red line = Lower BC WSQG; broken red line = Upper BC WSQG. BC WSQG = British Columbia Working Sediment Quality Guideline (BCMOECCS 2021a) and approved BC Sediment Quality Guideline for Selenium (BCMOECCS 2021b). Shading represents the normal range which represents the 2.5th to 97.5th percentiles of 2017 and 2020 regional reference area data. Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL value.

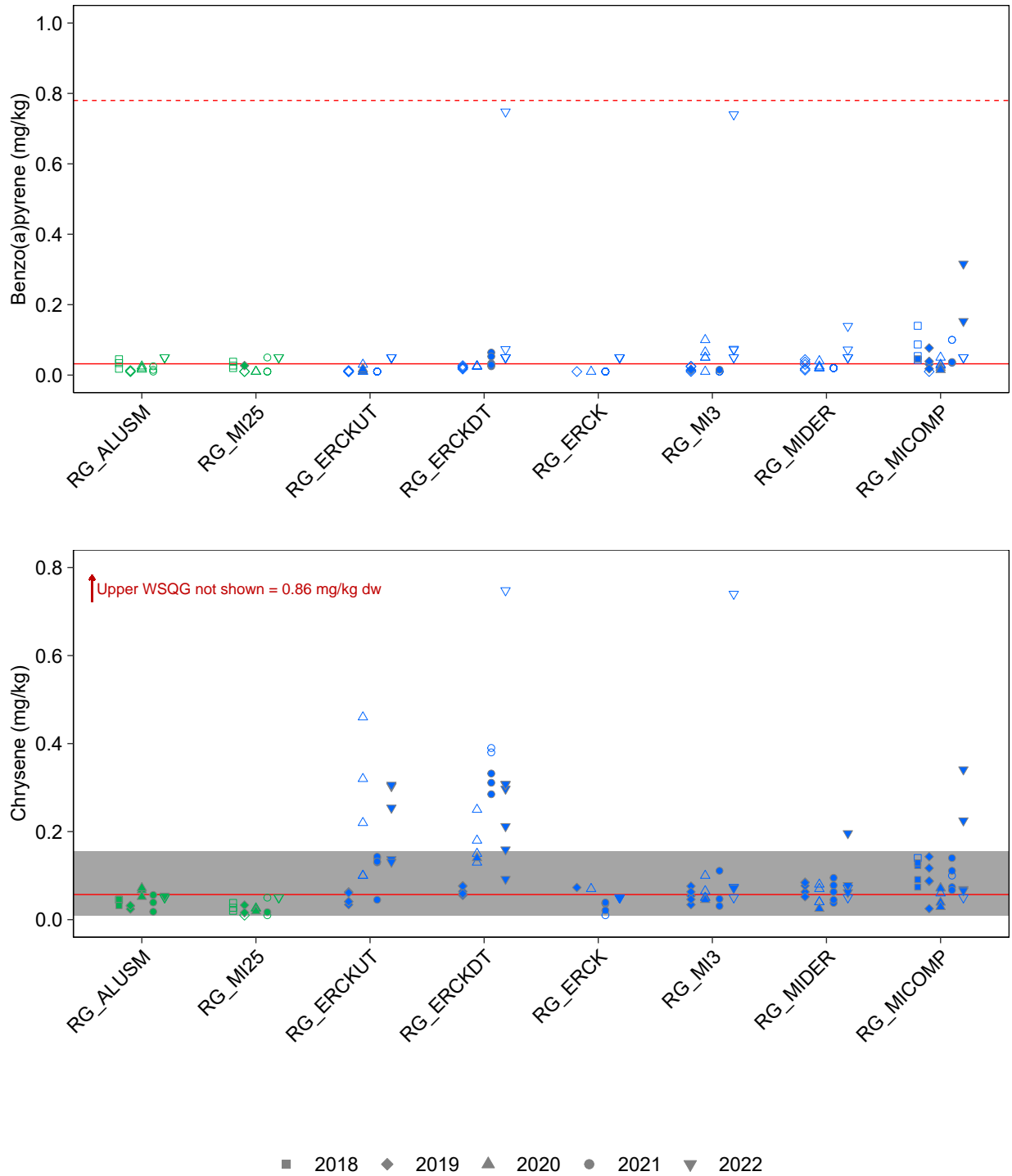


Figure 3.10: Sediment Metal and Polycyclic Aromatic Hydrocarbon (PAH) Concentrations in September, EVO LAEMP, 2018 to 2022

Notes: Green symbols represent reference areas and blue symbols represent exposed areas. Solid red line = Lower BC WSQG; broken red line = Upper BC WSQG. BC WSQG = British Columbia Working Sediment Quality Guideline (BCMOECCS 2021a) and approved BC Sediment Quality Guideline for Selenium (BCMOECCS 2021b). Shading represents the normal range which represents the 2.5th to 97.5th percentiles of 2017 and 2020 regional reference area data. Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL value.

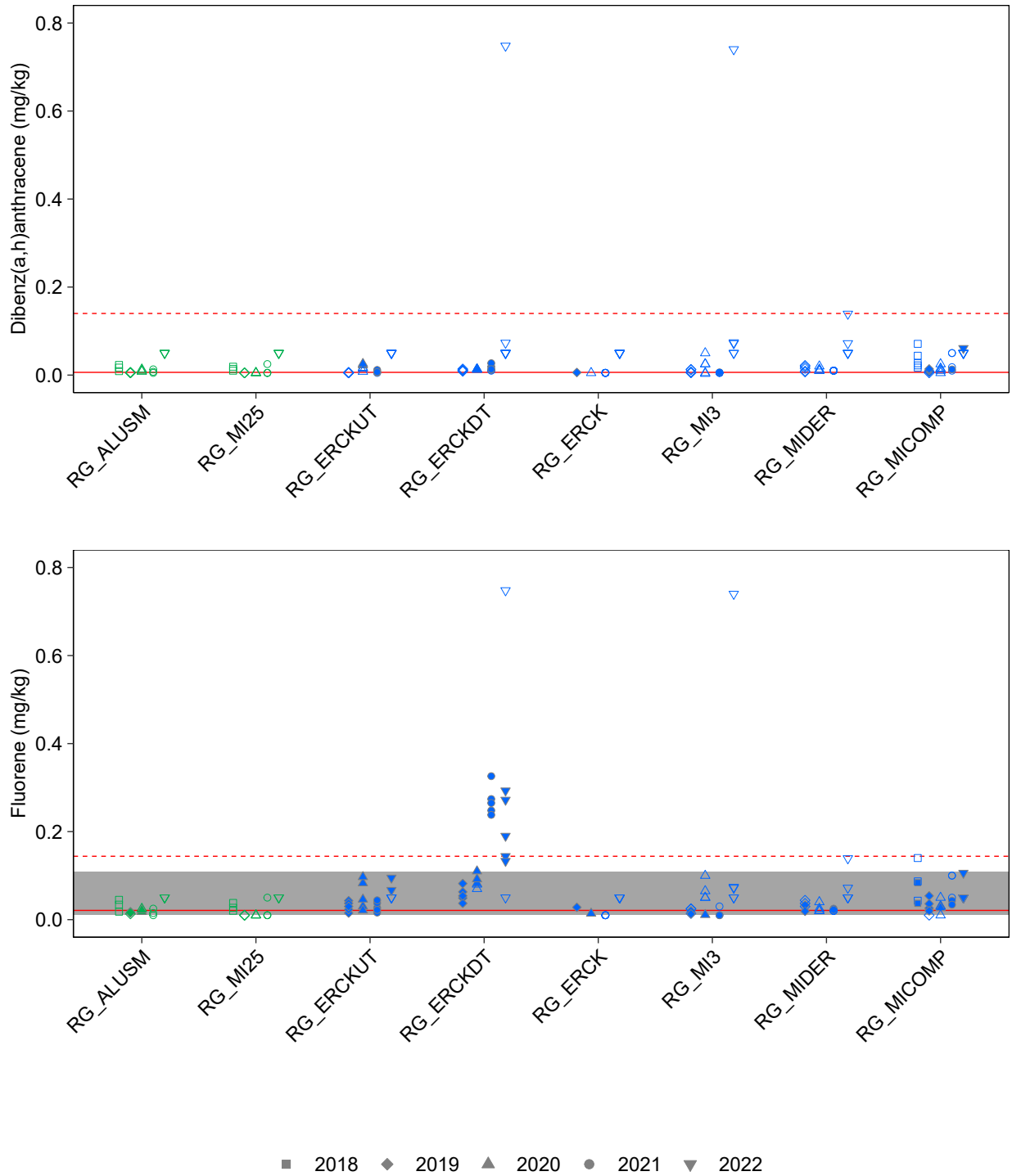


Figure 3.10: Sediment Metal and Polycyclic Aromatic Hydrocarbon (PAH) Concentrations in September, EVO LAEMP, 2018 to 2022

Notes: Green symbols represent reference areas and blue symbols represent exposed areas. Solid red line = Lower BC WSQG; broken red line = Upper BC WSQG. BC WSQG = British Columbia Working Sediment Quality Guideline (BCMOECCS 2021a) and approved BC Sediment Quality Guideline for Selenium (BCMOECCS 2021b). Shading represents the normal range which represents the 2.5th to 97.5th percentiles of 2017 and 2020 regional reference area data. Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL value.

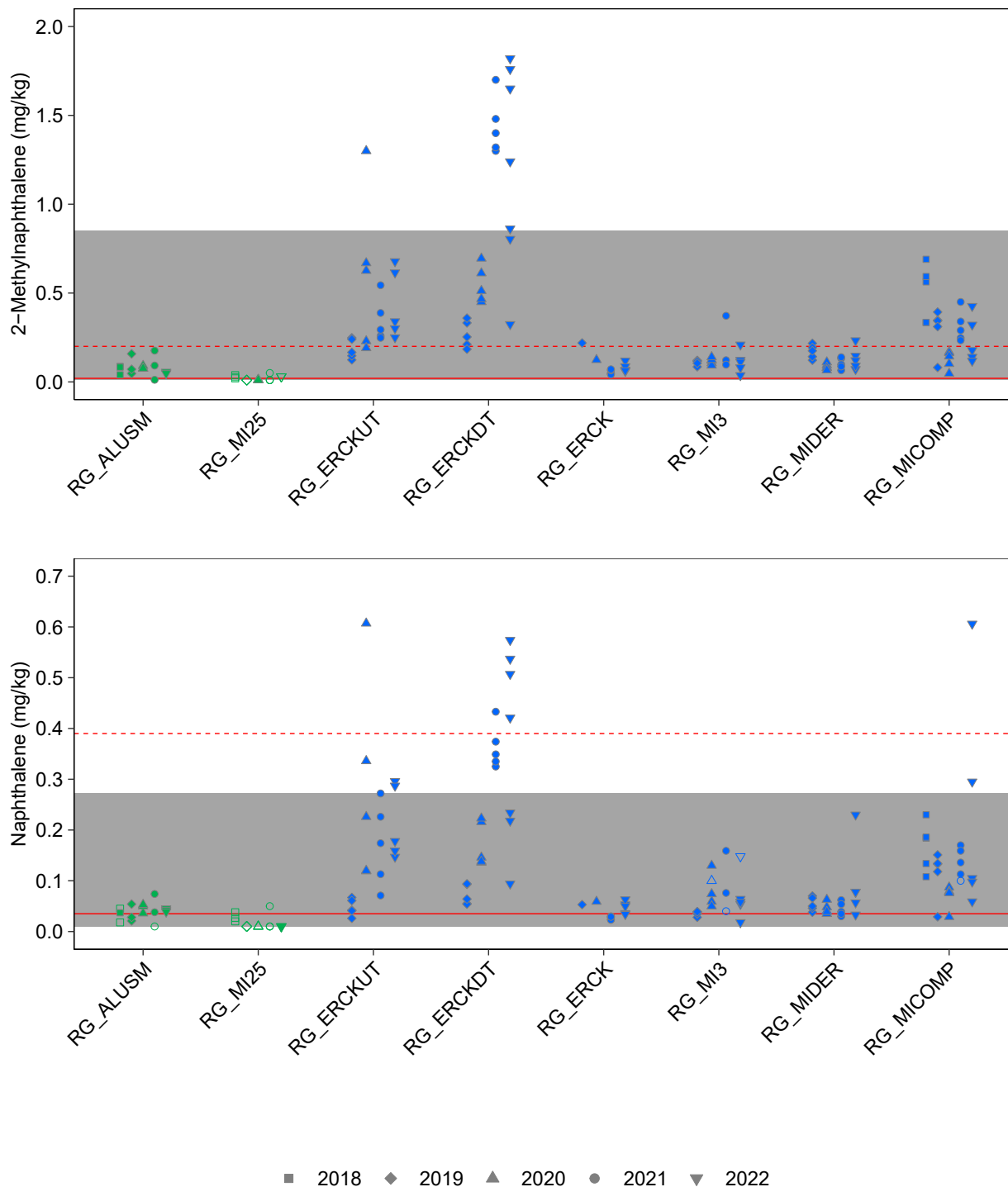


Figure 3.10: Sediment Metal and Polycyclic Aromatic Hydrocarbon (PAH) Concentrations in September, EVO LAEMP, 2018 to 2022

Notes: Green symbols represent reference areas and blue symbols represent exposed areas. Solid red line = Lower BC WSQG; broken red line = Upper BC WSQG. BC WSQG = British Columbia Working Sediment Quality Guideline (BCMOECCS 2021a) and approved BC Sediment Quality Guideline for Selenium (BCMOECCS 2021b). Shading represents the normal range which represents the 2.5th to 97.5th percentiles of 2017 and 2020 regional reference area data. Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL value.

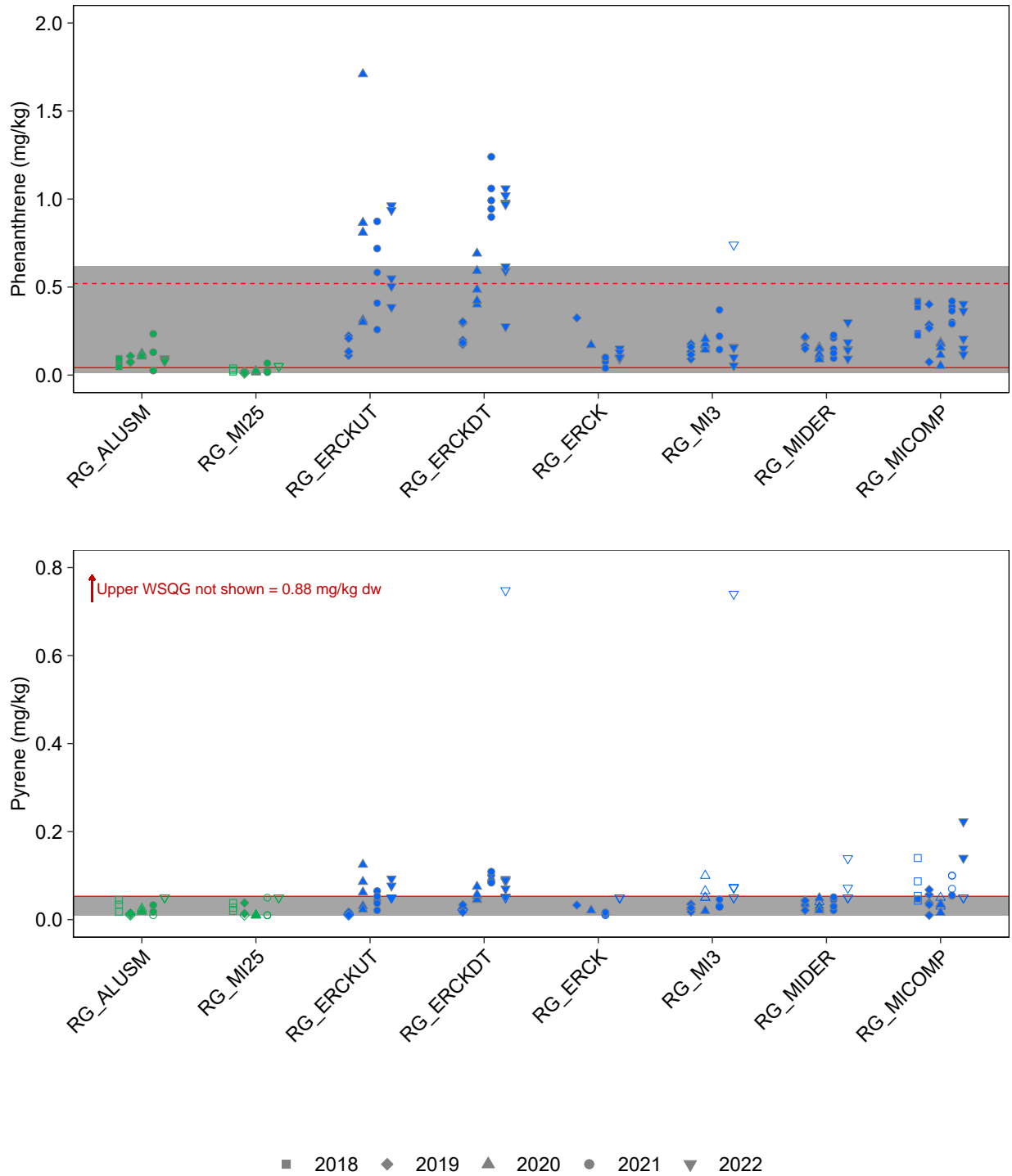


Figure 3.10: Sediment Metal and Polycyclic Aromatic Hydrocarbon (PAH) Concentrations in September, EVO LAEMP, 2018 to 2022

Notes: Green symbols represent reference areas and blue symbols represent exposed areas. Solid red line = Lower BC WSQG; broken red line = Upper BC WSQG. BC WSQG = British Columbia Working Sediment Quality Guideline (BCMOECCS 2021a) and approved BC Sediment Quality Guideline for Selenium (BCMOECCS 2021b). Shading represents the normal range which represents the 2.5th to 97.5th percentiles of 2017 and 2020 regional reference area data. Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL value.

range of the Elk Valley, the elevated sediment metal and PAH concentrations appeared localized to directly below the SRF outfall (RG_ERCKDT and RG_ERCKMD). The cause of the elevated sediment constituent concentrations (selenium, iron, and manganese) at RG_ERCKDT (when comparing results from 2019 and 2020 to 2021 and 2022) is currently being evaluated as part of the AMP response framework (in conjunction with the investigation into the cause of elevated BIT selenium concentrations downstream of the SRF outfall). Concentrations of metals and PAHs at the mouth of Erickson Creek (RG_ERCK) and in Michel Creek (RG_MIDER and RG_MICOMP) that were above BCWQG were within the regional reference normal range, and/or similar to past years suggesting that the SRF had minimal to no influence on sediment chemistry in lower Erickson Creek and Michel Creek.

3.3.4 Summary

In summary, during SRF operation in 2022 concentrations of selenium and nitrate decreased in the receiving environment of Erickson Creek as well as Gate and Bodie creeks. In contrast, concentrations of selenium and nitrate in Michel Creek did not change concurrently with changes in SRF operation but have decreased from pre-SRF operation (nitrate) or remained similar to pre-SRF operation (selenium). A number of other mine-related constituents increased in the receiving environment downstream of the SRF treatment following operation, due to changing sources of influent. All of the constituents that increased, except dissolved nickel and uranium, were below the available water quality criteria in Erickson Creek (Proposed Benchmarks and BCWQG, respectively). Increases in these constituents is likely due to higher concentrations present in water directed to the SRF for treatment from Natal Pit. The elevated concentrations are spatially constrained to Erickson, Gate and Bodie Creeks and similar trends are not observed in Michel Creek suggested that the SRF had a minimal negative influence in the downstream receiving environment. The elevated sediment metal and PAH concentrations from SRF treatment also appear to be localized to a relatively small area directly downstream of the SRF outfall (RG_ERCKDT and RG_ERCKMD). In lower Erickson Creek (RG_ERCK) and Michel Creek, the concentrations of the majority of sediment constituent concentrations are similar to concentrations pre-SRF treatment and within regional normal ranges suggesting that the SRF had minimal influence on sediment chemistry in the downstream receiving environment.

3.4 Study Questions #4

Study Question #4 (Have benthic invertebrate tissue selenium concentrations changed as a result of the SRF in Erickson, Bodie, Gate, and Michel creeks?) was evaluated through the monitoring of composite-taxa benthic invertebrate tissue selenium concentrations throughout the study area monthly March through to the end of the year. A detailed analysis of the causal factors associated with changing BIT Se concentrations can be found in the 'Investigation Into Enhanced Selenium



Bioaccumulation in Benthic Invertebrate Tissue in Erickson Creek' (Table 2.2 and 2.3; Teck 2023a).

Benthic invertebrate tissue data collected for the 2022 EVO LAEMP were of good quality as characterized by excellent detectability, appropriate LRLs, and excellent laboratory precision and accuracy. Therefore, the associated data can be used with a good level of confidence in the derivation of conclusions for this study.

3.4.1 Spatial Benthic Invertebrate Tissue Trends

Mean composite-taxa benthic invertebrate tissue (BIT) selenium concentrations at three mine-exposed areas in September 2022, RG_BOCK (directly below the settling pond in Bodie Creek), RG_GATE (above the settling pond in Gate Creek), and RG_GATEDP (directly below the settling pond in Gate Creek), exceeded the EVWQP Level 1 Benchmark for effects to benthic invertebrates (as well as the EVWQP Level 2 and Level 3 benchmarks for RG_GATEDP and RG_BOCK, respectively), were above the regional reference normal range, and were higher than the reference areas (RG_ALUSM and RG_MI25; Figure 3.11; Appendix Table F.1). RG_ERCKDT (directly below the SRF outfall) had mean BIT Se concentrations above the regional normal range but below the EVWQP Level 1 benchmark in September.

Of the areas where mean BIT selenium concentrations exceeded the Level 1 benchmark during LAEMP sampling in September 2022 (RG_GATE, RG_BOCKRD and RG_BOCK), only RG_BOCK had BIT selenium concentrations that increased when compared to pre-EVO SRF operation or the base year for comparisons (Figure 3.12; Appendix Table F.2). Several BIT samples from RG_BOCK in 2022 (n=6), had a proportion of annelids that met the criteria to evaluate annelids separately¹⁴ and the 'annelid only' tissue replicates were higher than most of the composite samples (Appendix Table F.1). Overall, the presence of annelids in these samples confound the interpretation of trends in BIT selenium concentrations, as they often have significantly higher Se concentrations and are more variable than the composite samples.

Mean BIT selenium concentrations in all other areas evaluated as part of the EVO LAEMP, including the area above the SRF outfall (RG_ERCKUT), the area at the confluence of Erickson and Michel Creek (RG_ERCK), as well as the entire study area of Michel Creek, which is the receiving water body for Erickson Creek, Gate Creek, and Bodie creeks (RG_MI3 [which is above the Erickson and Michel Creek confluence], RG_MIDER, RG_MIDGA, RG_MIDBO,

¹⁴ As noted in the methods, annelids were only included in the composite-taxa tissue sample if the proportion of annelids was >5% of the total biomass sample, and if so, an additional 'annelids only' sample was also evaluated. This process started in September 2021 as previous assessments have suggested that the presence of annelids in composite-taxa BIT samples may bias the results high (Golder 2021b). Annelids were not found at a high enough proportion in December sampling for any area to be evaluated separately.



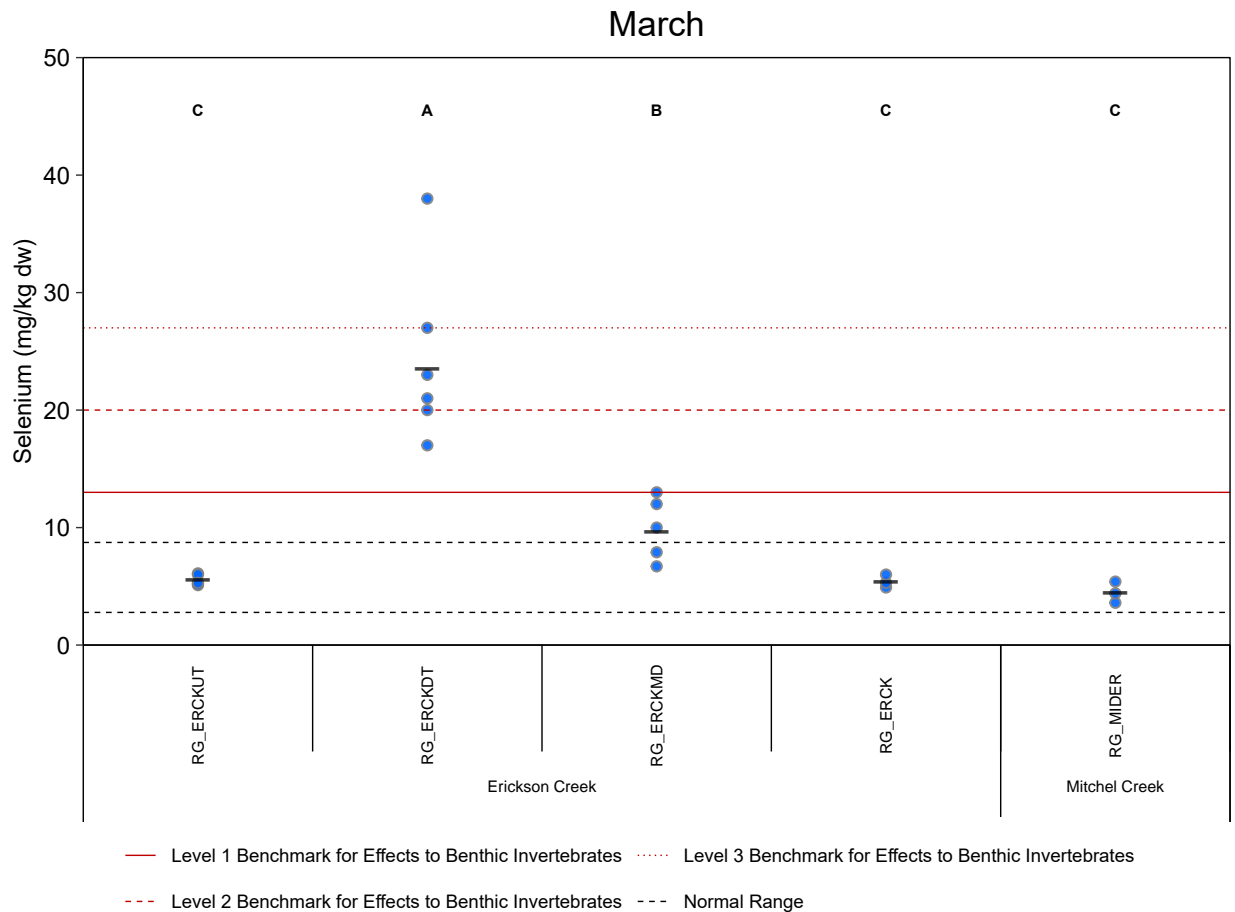


Figure 3.11: Selenium concentrations in Composite-taxa Benthic Invertebrate Samples Collected at Reference (Green) and Mine-Exposed (Blue) Areas of Bodie, Erickson, Gate, and Michel Creeks, EVO LAEMP, 2022

Notes: Samples outlined in purple had oligochaetes present. Area between the black lines represents the reference area normal range defined as the 2.5th and 97.5th percentiles of the distribution of reference area data (pooled 1996 to 2020 data) reported in the Regional Aquatic Effects Monitoring Program (RAEMP). Black horizontal lines represent the measure of central tendency (mean for untransformed data, geometric mean for log10 transformed data, and median for rank transformed data). Areas that do not share a letter (e.g. a, b, c) are significantly different ($\alpha = 0.05$) in a Tukey's HSD test following a one-way ANOVA by area. In December sampling only took place at RG_MIDGA, so no statistical analyses were run for December 2022 data. SRF Operational (blue shading) only applies to mine-exposed areas.

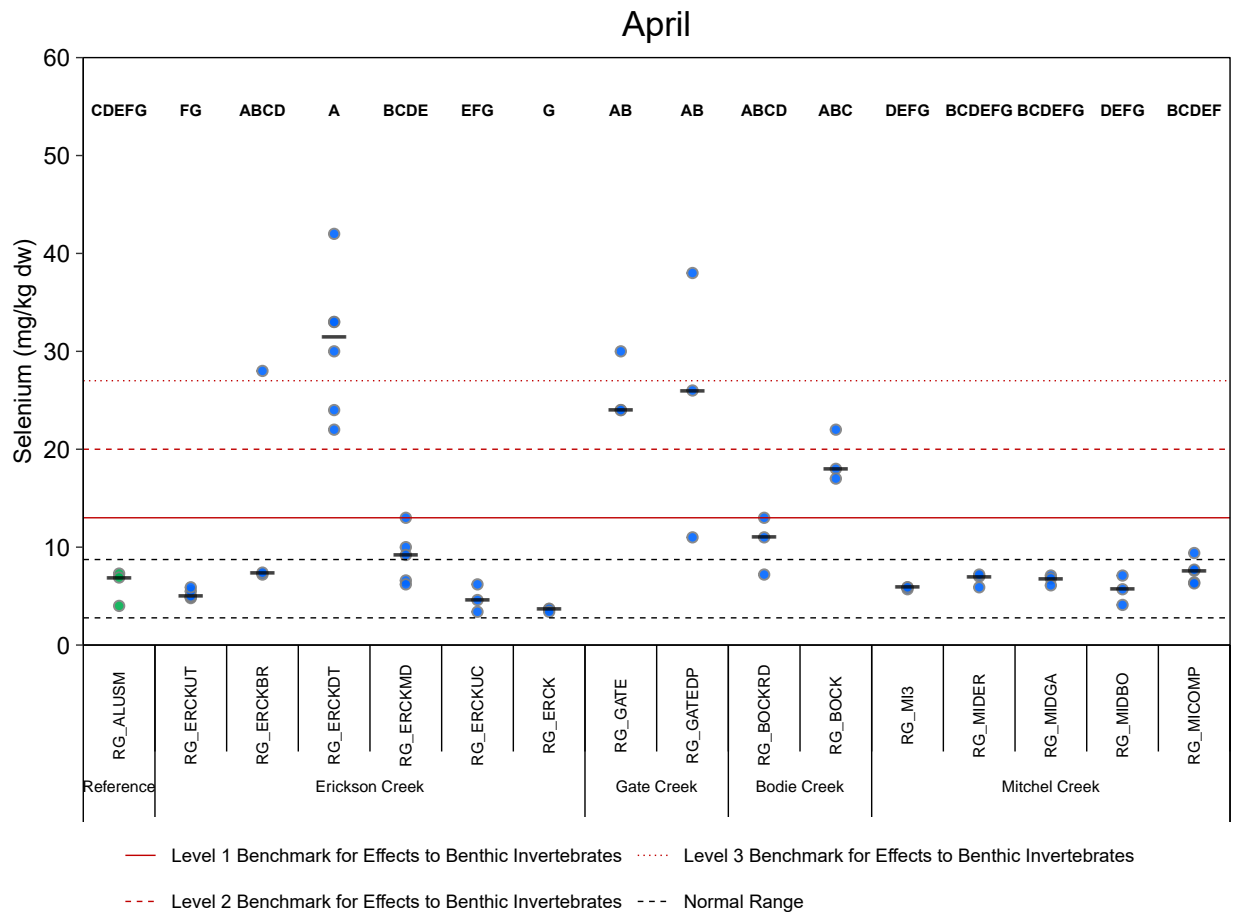


Figure 3.11: Selenium concentrations in Composite-taxa Benthic Invertebrate Samples Collected at Reference (Green) and Mine-Exposed (Blue) Areas of Bodie, Erickson, Gate, and Michel Creeks, EVO LAEMP, 2022

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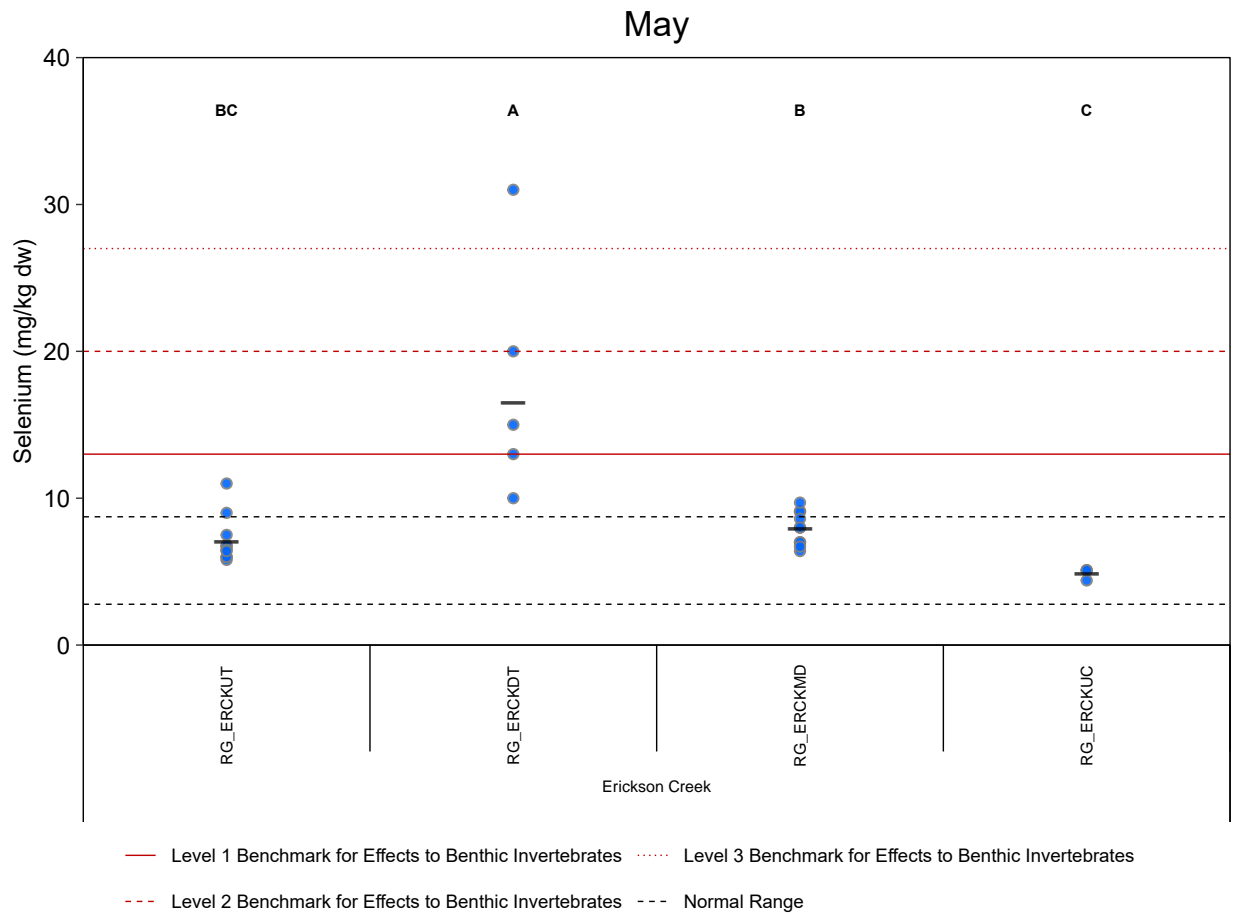


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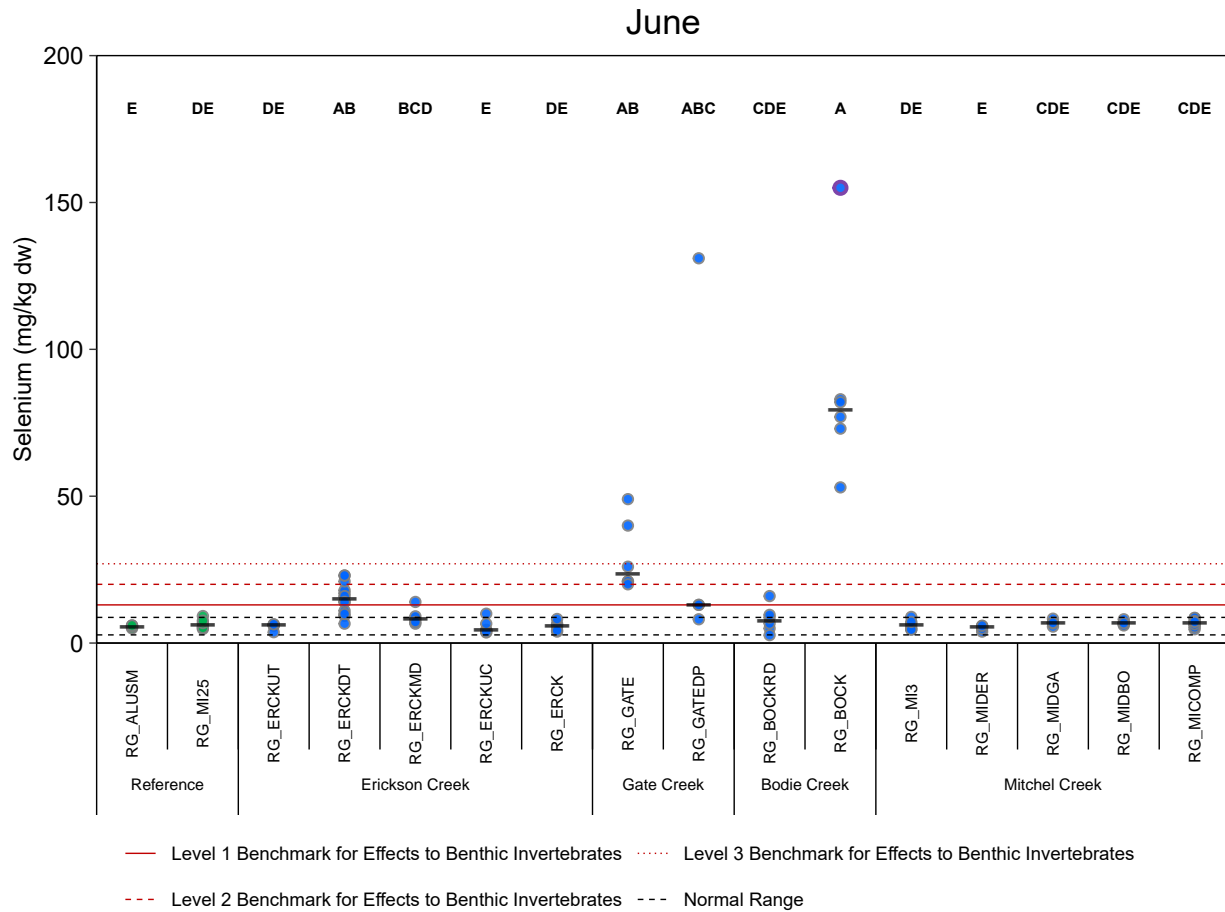


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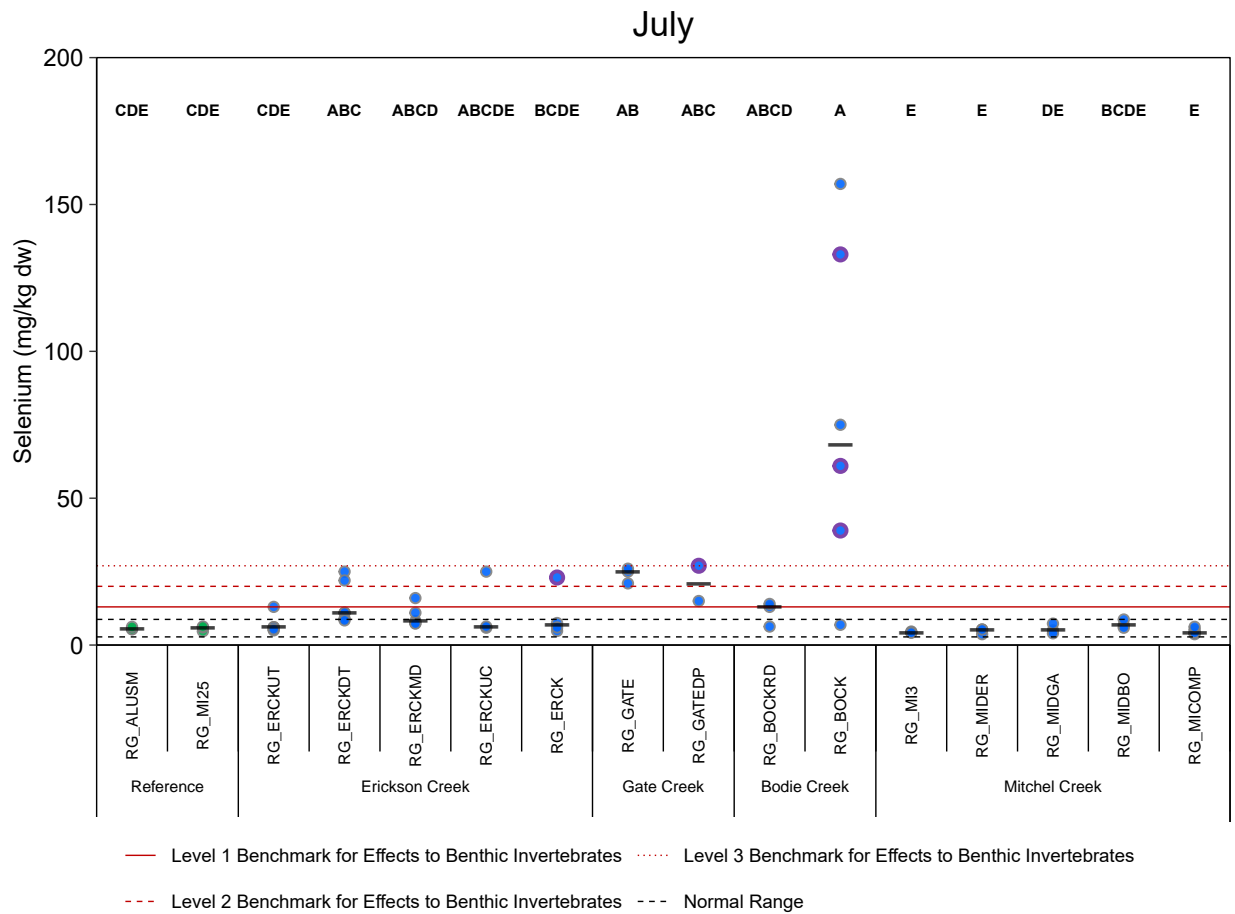


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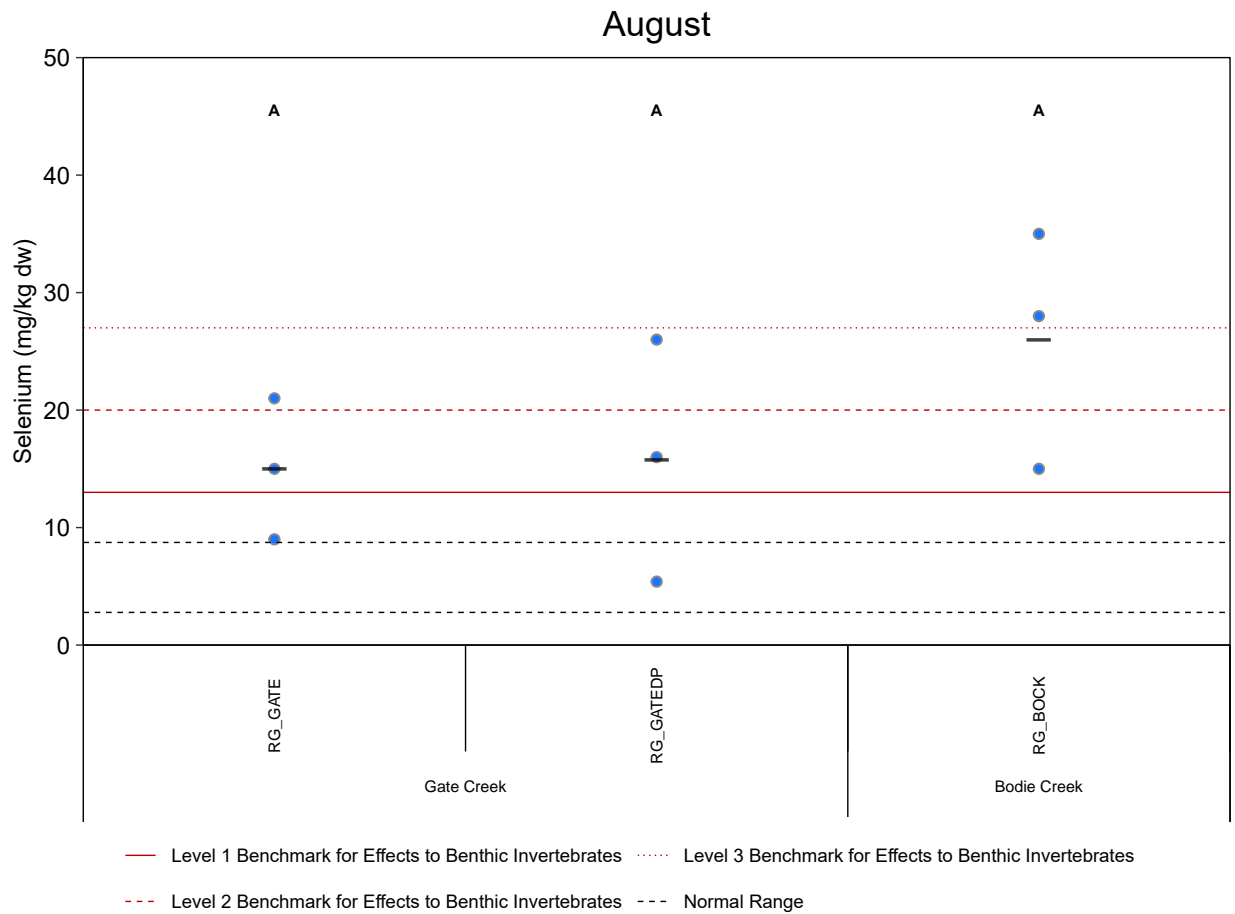


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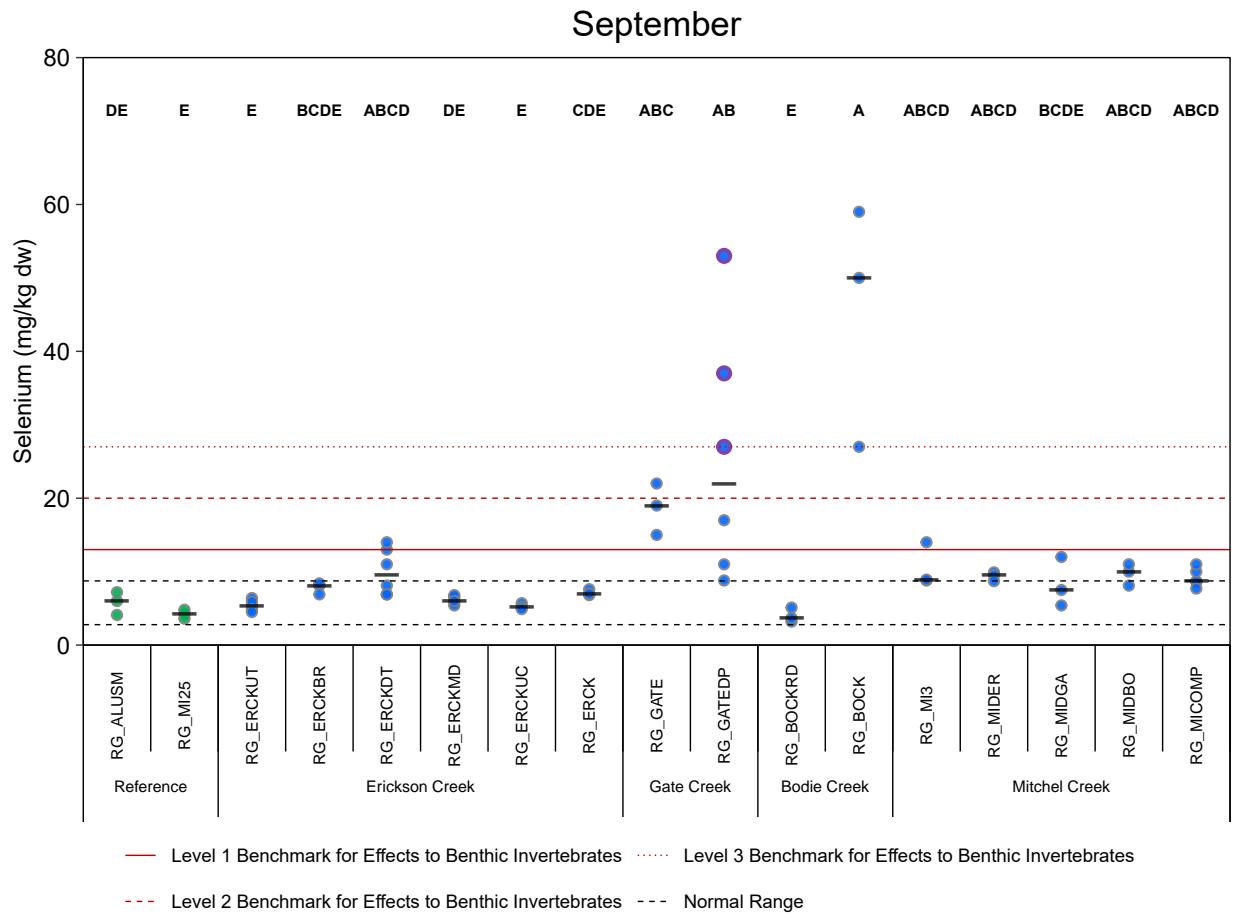


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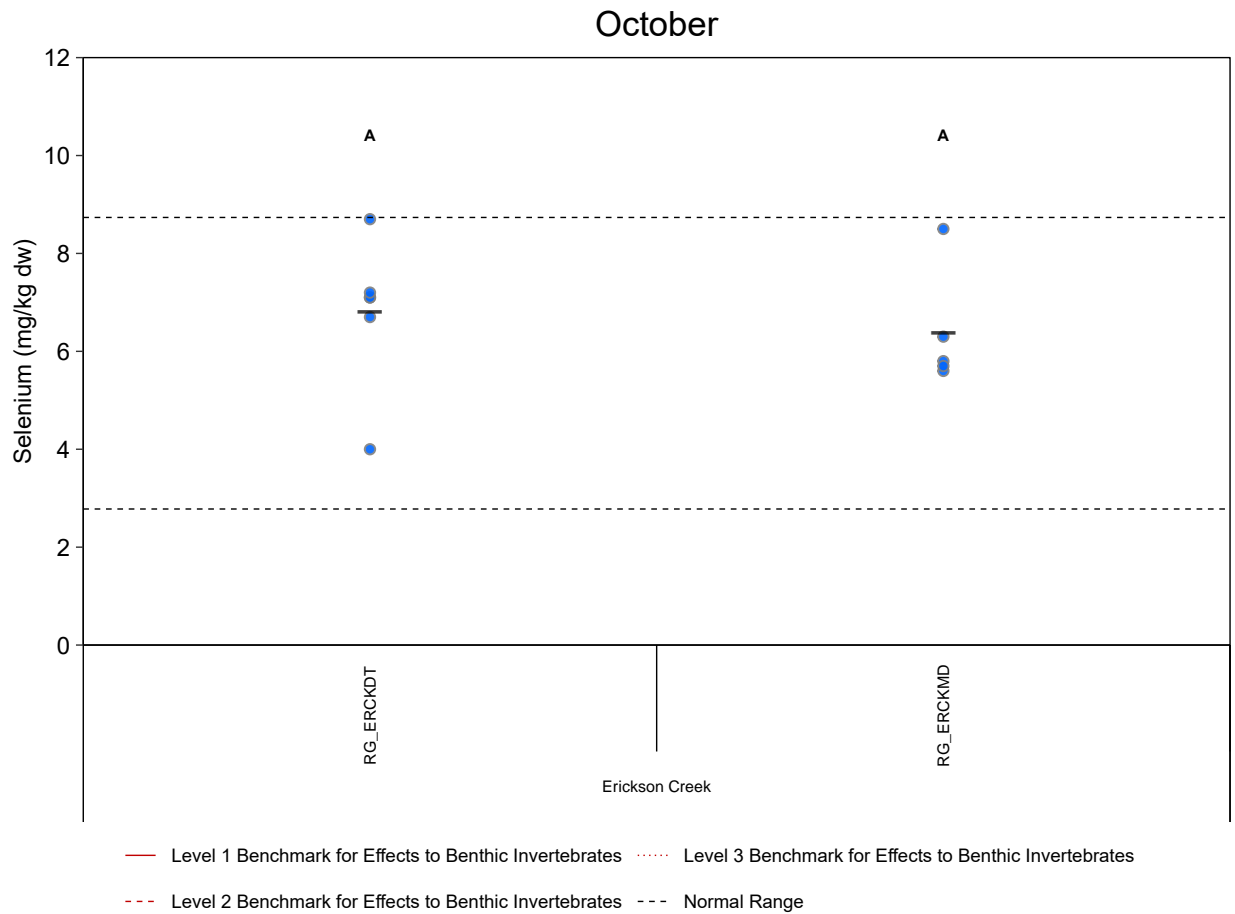


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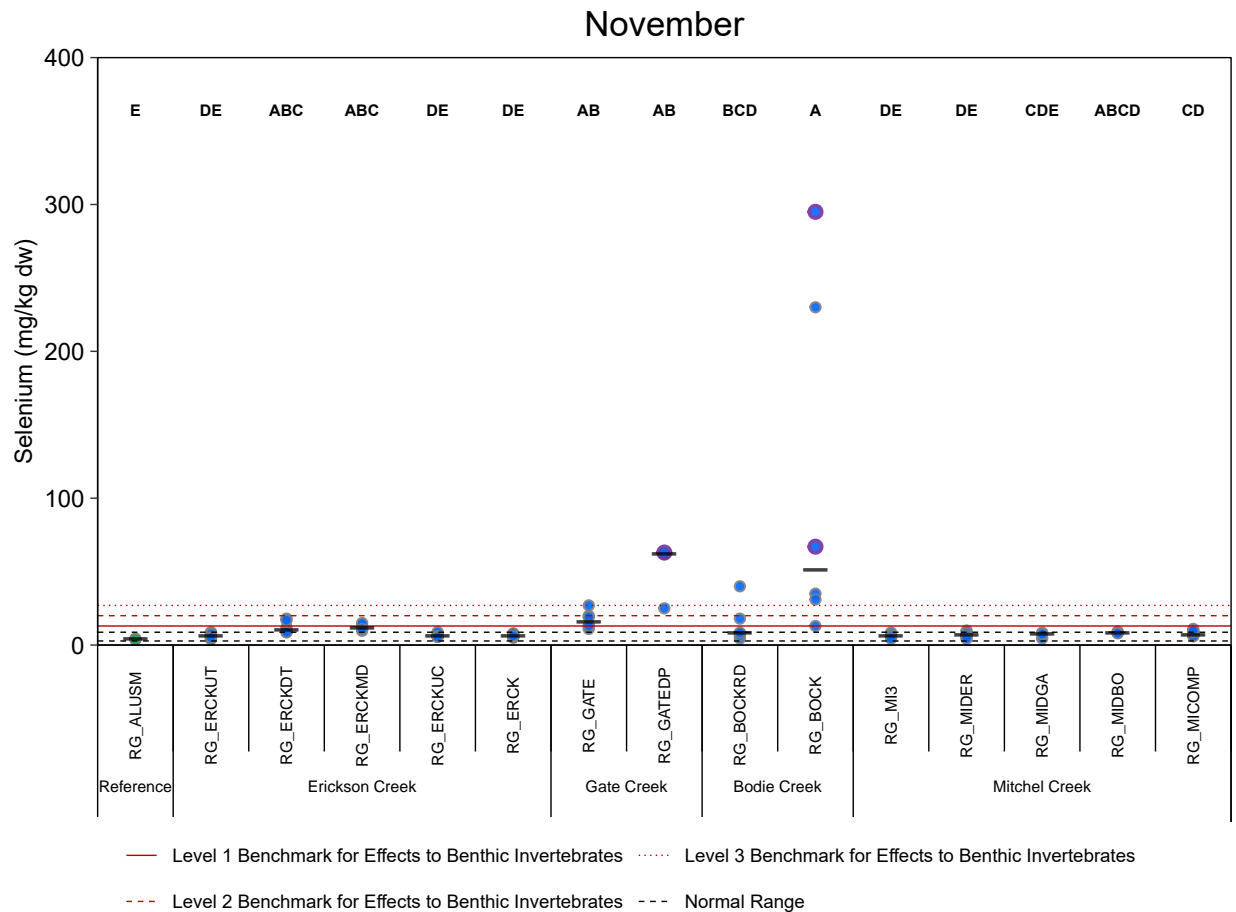


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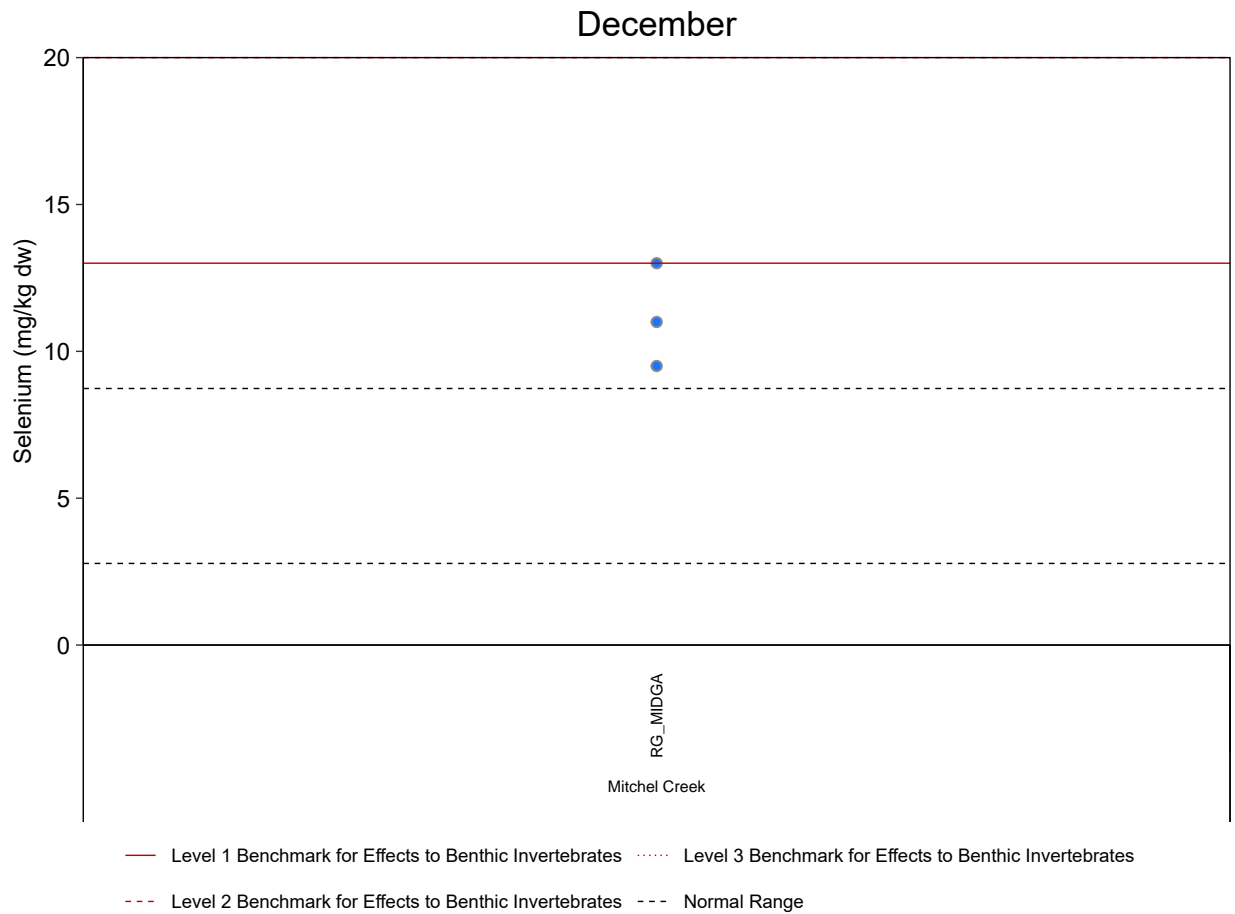


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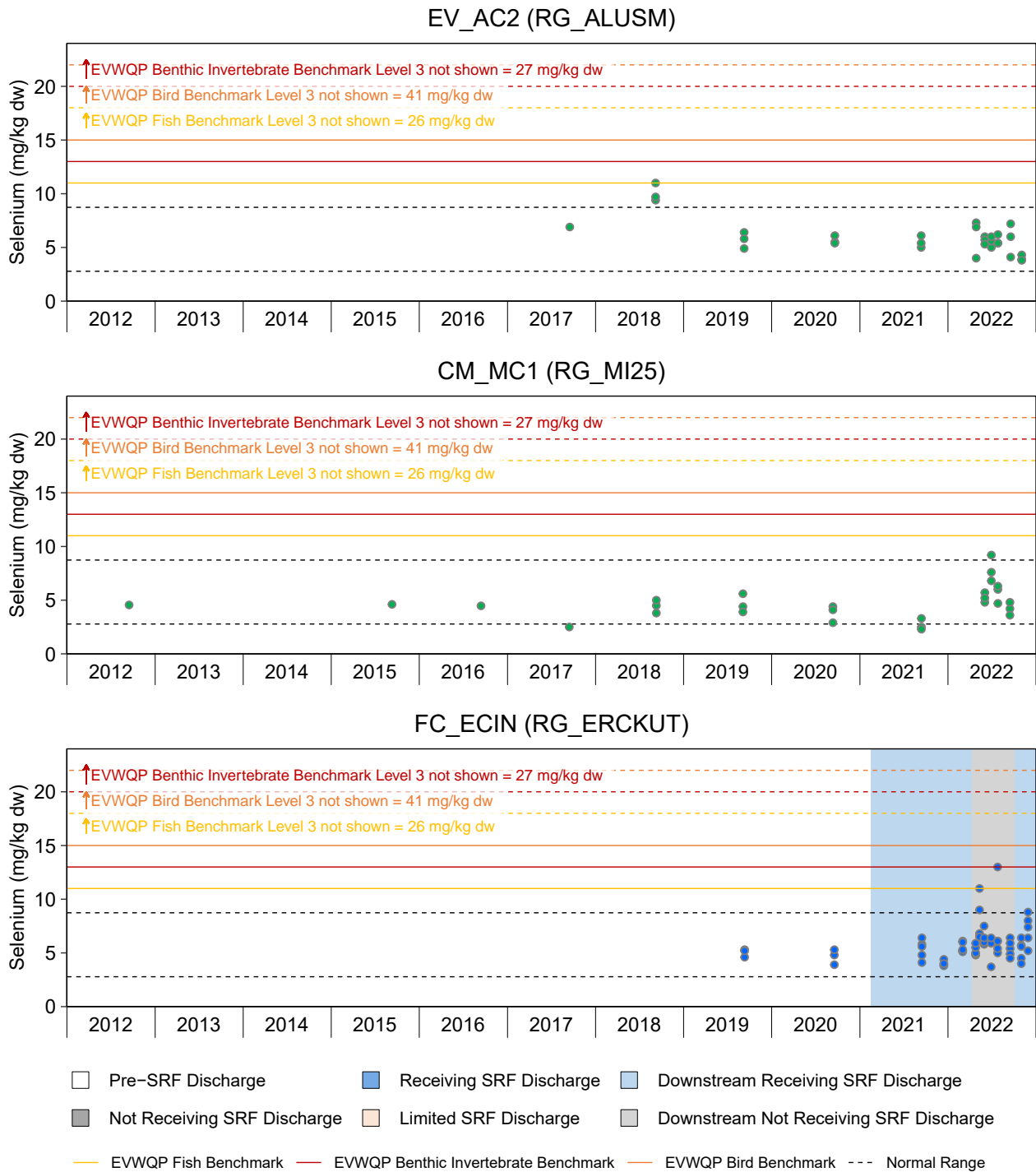


Figure 3.12: Selenium concentrations in Benthic Invertebrate Tissues found in EVO LAEMP Areas, 2012 to 2022

Notes: Reference areas are shown in green and mine-exposed areas are shown in blue. Samples outlined in purple had oligochaetes present. Area between the black lines represents the reference area normal range defined as the 2.5th and 97.5th percentiles of the distribution of reference area data (pooled 1996 to 2020 data) reported in the Regional Aquatic Effects Monitoring Program (RAEMP). For the remaining lines: Solid line = Level 1 Benchmark; Long hashed line = Level 2 Benchmark; Short hashed line = Level 3 Benchmark.

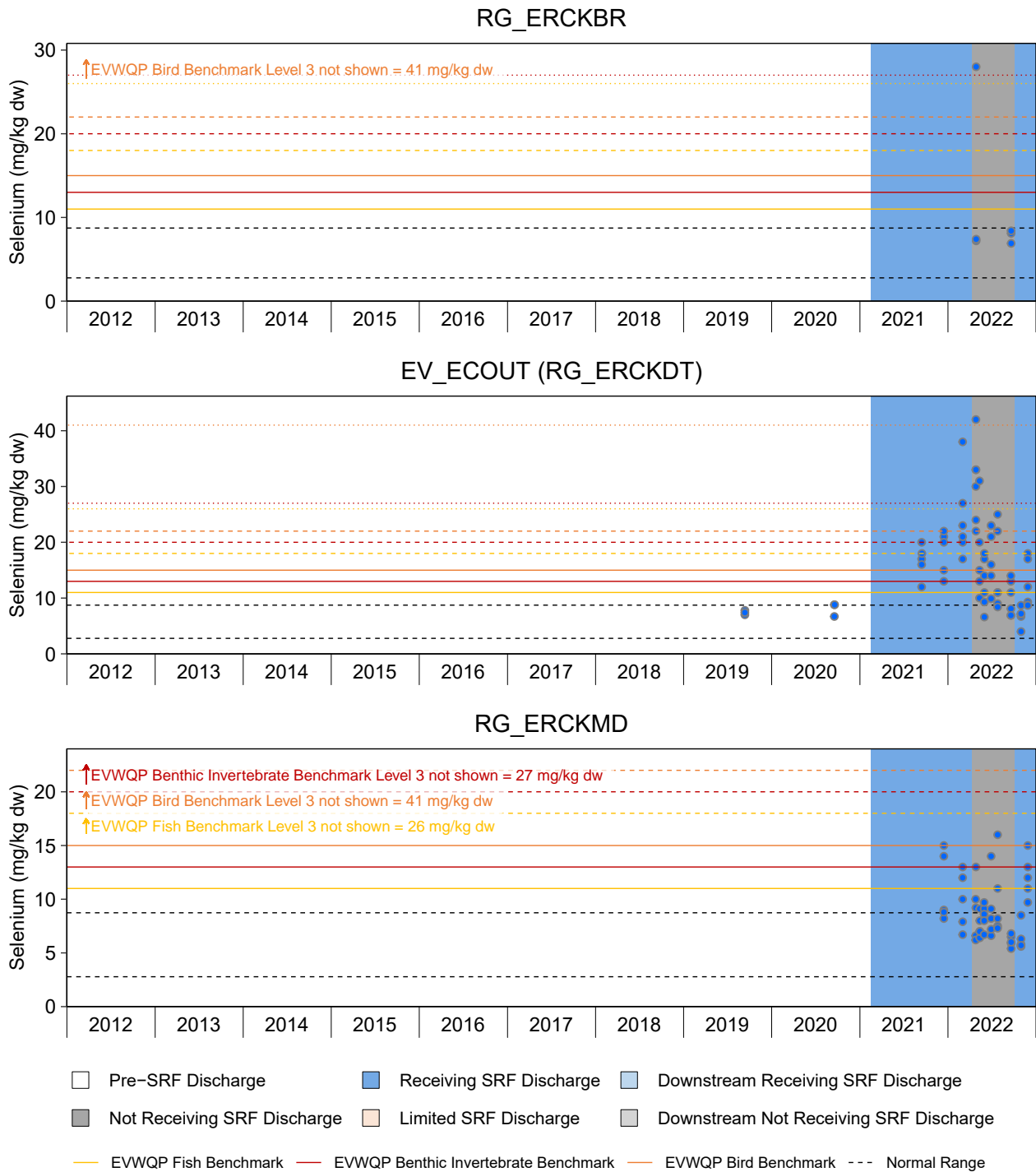


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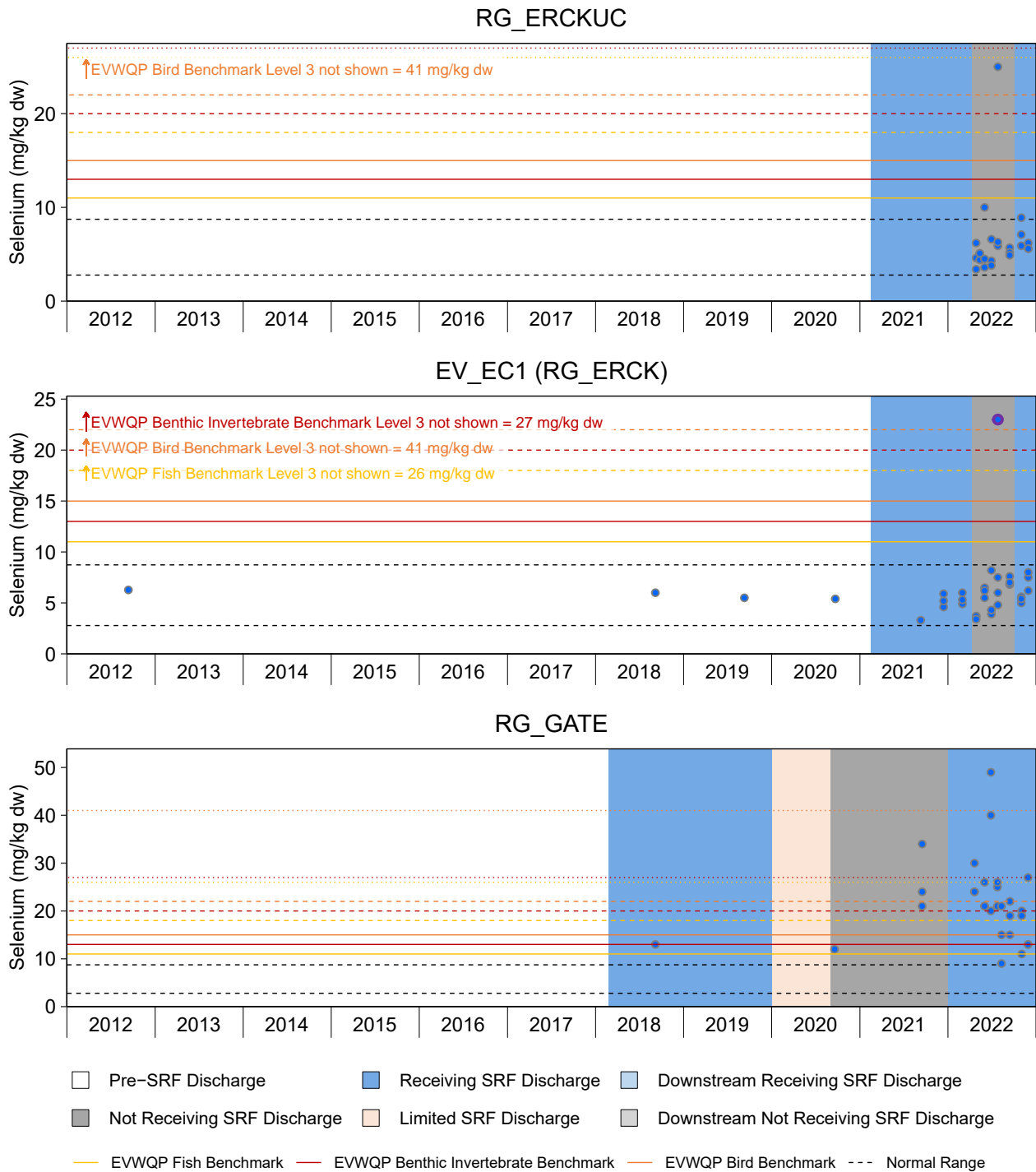


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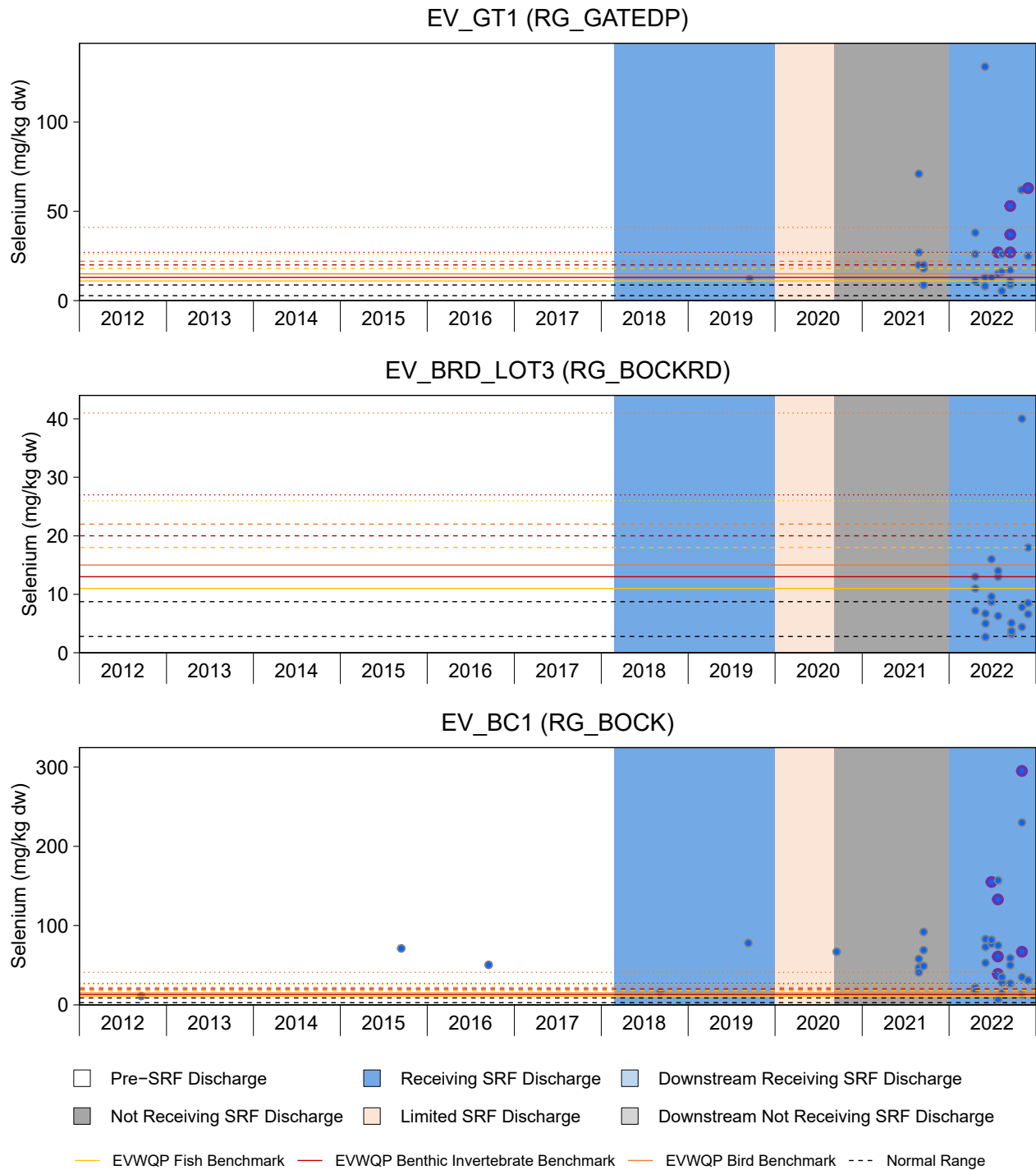


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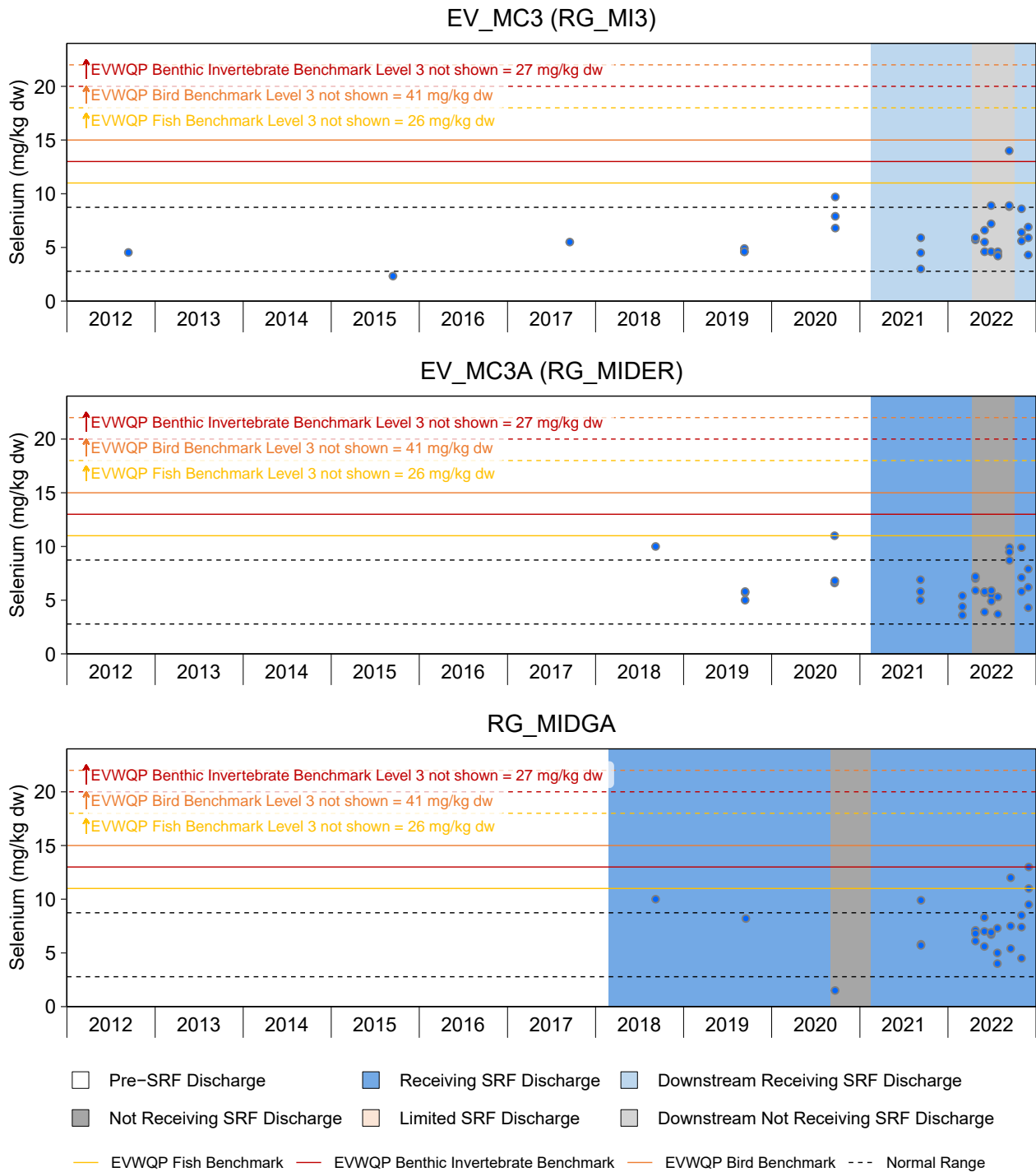


Figure 3.12: Selenium concentrations in Benthic Invertebrate Tissues found in EVO LAEMP Areas, 2012 to 2022

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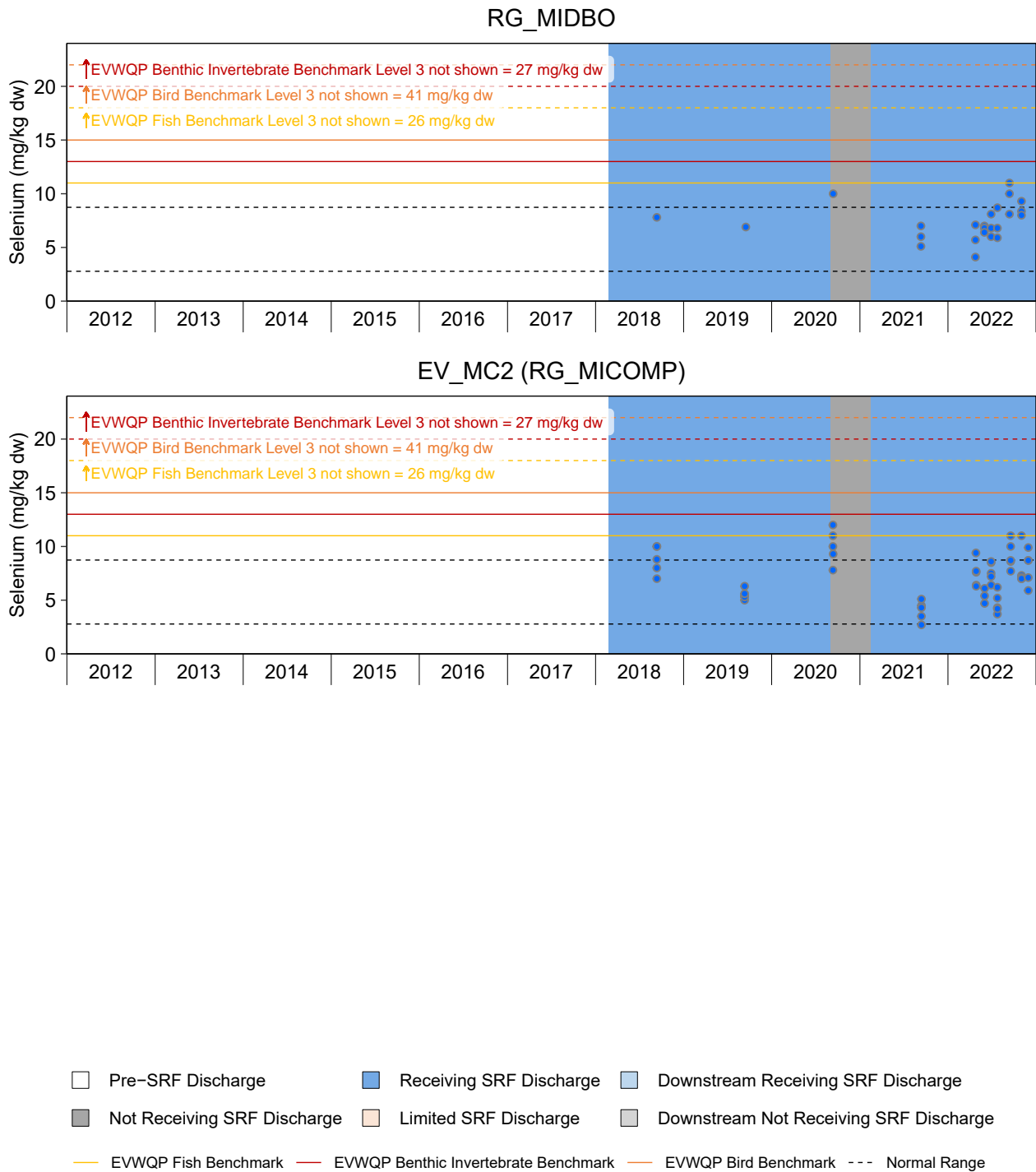


Figure 3.12: Selenium concentrations in Benthic Invertebrate Tissues found in EVO LAEMP Areas, 2012 to 2022

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and RG_MICOMP), were below the EVWQP Level 1 benchmark for effects to benthic invertebrates in 2022. In January only, mean selenium concentrations in samples from RG_MIDGA were above the EVWQP level one benchmark for fish growth (11 mg/kg dw). The mean BIT selenium concentrations in Michel Creek were only slightly above the regional reference normal range. Furthermore, mean BIT Se concentrations upstream and downstream of all SRF-affected tributaries in Michel Creek (RG_MI3 and RG_MICOMP) were not statistically different suggesting that elevated BIT selenium concentrations were localized to a small area within upper Erickson Creek and Gate and Bodie creeks.

Observed selenium results in BIT from 2022 were compared to the selenium speciation bioaccumulation tool (B-tool; de Bruyn and Luoma 2021) to better understand the relationships between aqueous selenium and BIT selenium concentrations. The b-tool provides insight into selenium bioaccumulation in relation to samples collected previously in the Elk River watershed (Golder 2020b). Field-measured mean benthic invertebrate tissue selenium concentrations from stations downstream of the SRF outfall in Erickson Creek (RG_ERCKDT, and RG_ERCKMD) as well as from Bodie (RG_BOCKRD and RG_BOCK) and Gate (RG_GATE and RG_GATEDP) creeks were considerably higher than the b-tool predicted Se concentrations for most samples (Appendix Table F.5). The results from this comparison suggested that samples fall outside the typical range in the Elk Valley and that factors other than selenium speciation alone may be driving selenium bioaccumulation in the SRF-influenced tributaries within the EVO LAEMP study area. More details on the potential drivers of selenium bioaccumulation in Erickson Creek can be found in 'Investigation Into Enhanced Selenium Bioaccumulation in Benthic Invertebrate Tissue in Erickson Creek' (Teck 2023a). In contrast to Erickson, Gate, and Bodie Creek areas, the B-tool was able to accurately predict BIT selenium concentrations for areas in Michel Creek as well as reference areas (RG_ALUSM and RG_MI25; Appendix Table F.5).

Selenium concentrations in BIT was also assessed against the biological trigger (see section 1.4 and Appendix G for details). The purpose of the biological triggers is to quickly identify biological monitoring areas where unexpected biological conditions may be occurring that may require management action. This was completed for each replicate from EVO LAEMP monitoring areas where water quality projections are available for each sampling event. The biological trigger for BIT selenium concentrations was exceeded in most replicates from both RG_BOCK and RG_GATE (for all sampling events). The BIT selenium concentration at RG_ERCK in Erickson Creek and the two areas evaluated in Michel Creek, were below the biological trigger threshold.



3.4.2 Temporal Benthic Invertebrate Tissue Trends

The mean BIT Se concentrations at RG_ERCKDT often exceeded the EVWQP Level 1 benchmarks during the additional sampling events associated with the Erickson Creek selenium investigation (March, April, May, June, and July) and occasionally exceeded the EVWQP Level 2 (March and April) and Level 3 benchmarks (April). As a result of increases BIT Se concentrations in 2021 and 2022 in upper Erickson Creek downstream of the EVO SRF P2 outfall, further investigation of the causal factors was initiated through Teck's AMP response framework. This Investigation into Enhanced Selenium Bioaccumulation in Benthic Invertebrate Tissue in Erickson Creek summary report (Teck 2023a) identified SRF-derived particles as the primary driver of the observed BIT Se increases in upper Erickson Creek and additional details can be found in the full report (See section 4 for more details; Teck 2023a).

BIT Se concentrations were highest at RG_ERCKDT in the spring of 2022 (March and April). On April 9, 2022, discharge of the SRF to Erickson Creek was paused to complete planned maintenance on the Erickson effluent pipeline. Due to the high BIT Se results observed in Erickson Creek, it was determined through Teck's AMP framework that treatment of Erickson Creek water would remain paused to further investigate the cause of the increased BIT Se concentrations could be completed. Following the shutdown of SRF discharge to Erickson there was a reduction in BIT Se concentrations and by October 2022 (6 months post-shutdown) BIT Se concentrations at RG_ERCKDT had return to concentrations observed prior to SRF discharge and were not statistically different than upstream (RG_ERCKUT; Figure 3.13; Appendix Table F.3). Post SRF restart, BIT Se concentrations increased at RG_ERCKDT and were elevated compared to RG_ERCKUT in (November and December 2022) but have remained at or below the EVWQP Level 1 benchmark for effects to benthic invertebrates. BIT selenium concentrations in Michel Creek upstream of Erickson Creek (RG_MI3) compared to downstream (RG_MIDER) were similar during all sampling events, suggesting a localized effect of SRF discharge in 2022 (Figure 3.14; Appendix Tables F.2 to F.4).

3.4.3 Summary

In summary, in 2022, the influence of the SRF on BIT selenium concentrations was isolated to a directly below the SRF outfall in Erickson Creek (RG_ERCKDT). Mean BIT selenium concentrations in Gate, Bodie, and upper portions of Erickson Creek (downstream of the SRF outfall) were above the Level 1 benchmark for effects to benthic invertebrates in 2022. In contrast, mean BIT selenium concentrations at the confluence of Erickson Creek and Michel Creek (RG_ERCK) and the study areas in Michel Creek were all below EVWQP benchmarks and mostly within the normal range (for more details see Section 4; Teck 2023a). The elevated levels of Se in BIT were observed in upper Erickson Creek from September 2021



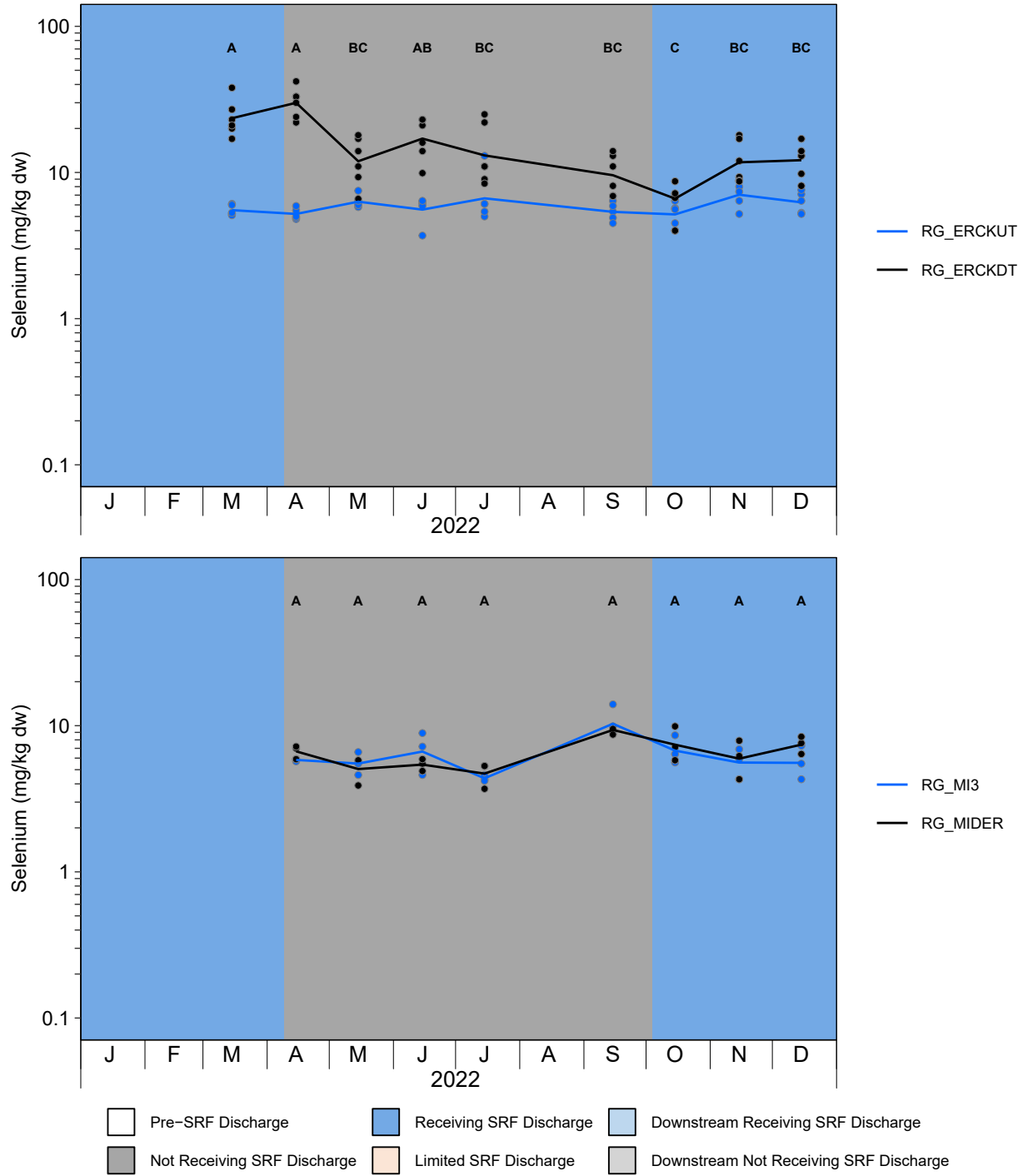


Figure 3.13: Benthic Invertebrate Tissue Selenium Concentrations at Erickson Creek Areas, EVO LAEMP 2022

Notes: Lines connect the estimated marginal means from an Analysis of Variance comparing the differences between areas over time. Letter represent results of post-hoc tests comparing changes in the relative difference between areas among the sampling periods. Periods that do not share a letter differ significantly in their relative difference (p -value < 0.05). Letters are arranged such that the greatest difference between the areas have the highest letter (i.e., A).

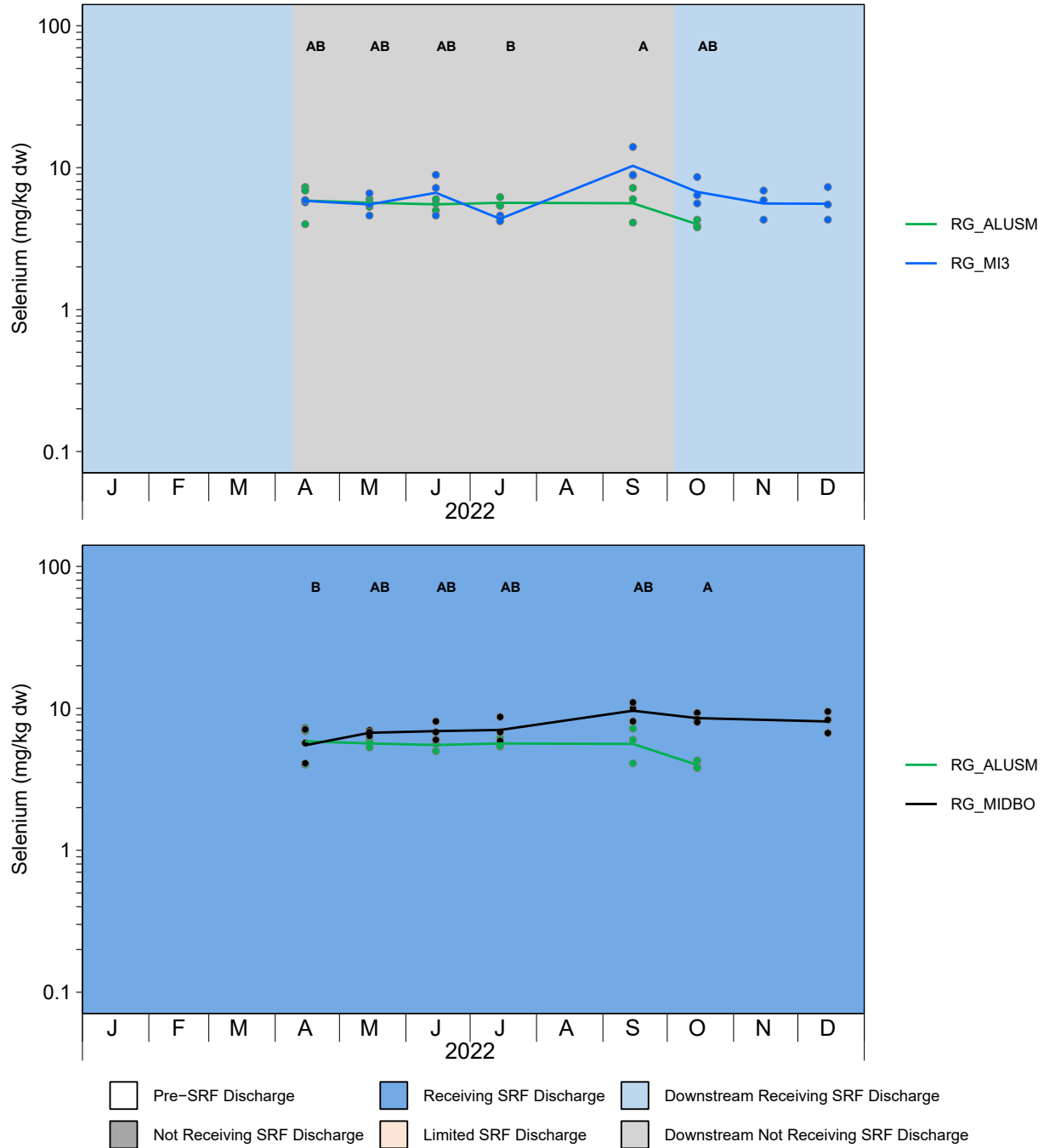


Figure 3.14: Benthic Invertebrate Tissue Selenium Concentrations at Michel Creek Areas, EVO LAEMP, 2022

Notes: Lines connect the estimated marginal means from an Analysis of Variance comparing the differences between areas over time. Letter represent results of post-hoc tests comparing changes in the relative difference between areas among the sampling periods. Periods that do not share a letter differ significantly in their relative difference (p-value < 0.05). Letters are arranged such that the greatest difference between the areas have the highest letter (i.e., A).

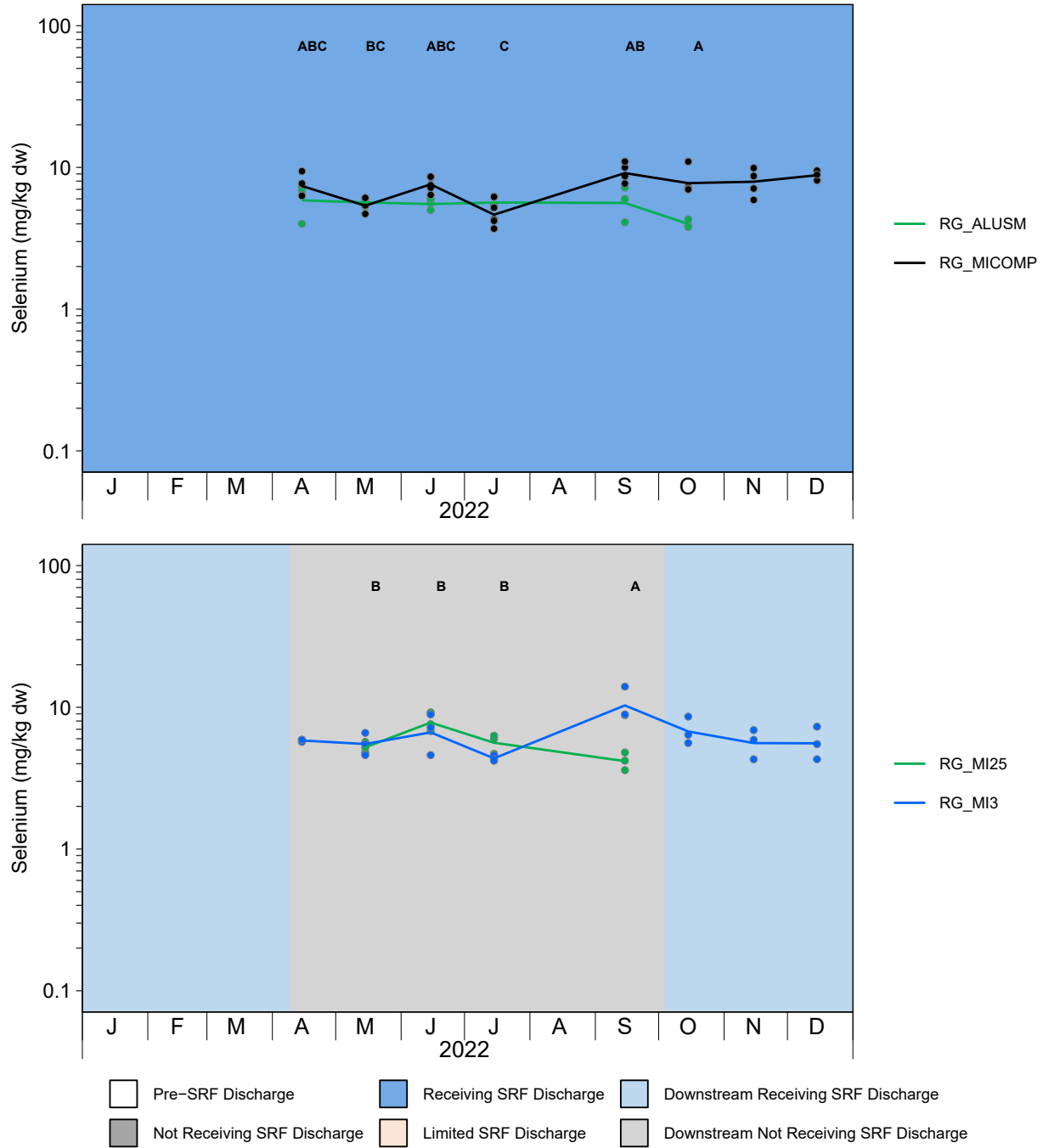


Figure 3.14: Benthic Invertebrate Tissue Selenium Concentrations at Michel Creek Areas, EVO LAEMP, 2022

Notes: Lines connect the estimated marginal means from an Analysis of Variance comparing the differences between areas over time. Letter represent results of post-hoc tests comparing changes in the relative difference between areas among the sampling periods. Periods that do not share a letter differ significantly in their relative difference (p-value < 0.05). Letters are arranged such that the greatest difference between the areas have the highest letter (i.e., A).

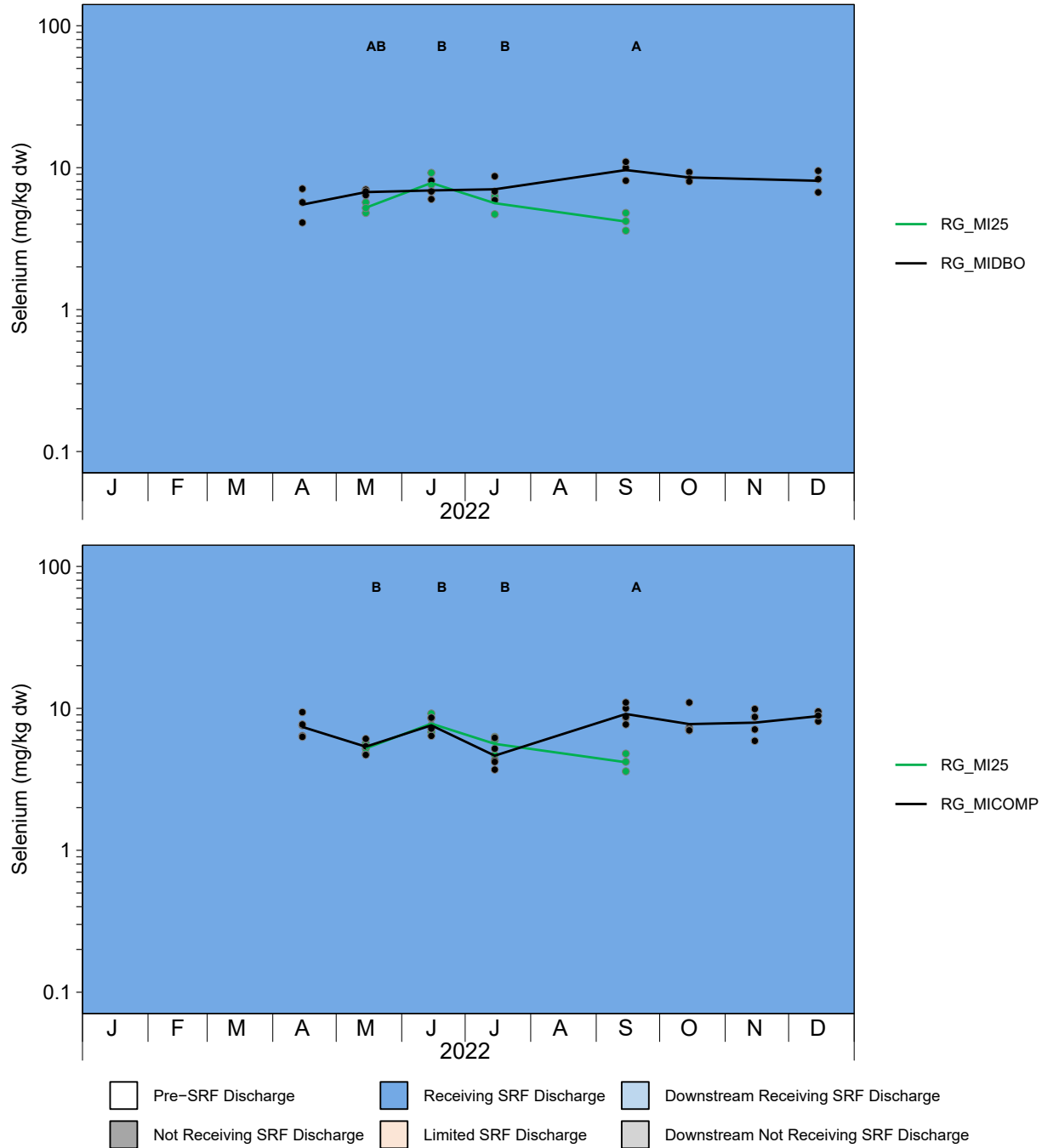


Figure 3.14: Benthic Invertebrate Tissue Selenium Concentrations at Michel Creek Areas, EVO LAEMP, 2022

Notes: Lines connect the estimated marginal means from an Analysis of Variance comparing the differences between areas over time. Letter represent results of post-hoc tests comparing changes in the relative difference between areas among the sampling periods. Periods that do not share a letter differ significantly in their relative difference (p-value < 0.05). Letters are arranged such that the greatest difference between the areas have the highest letter (i.e., A).

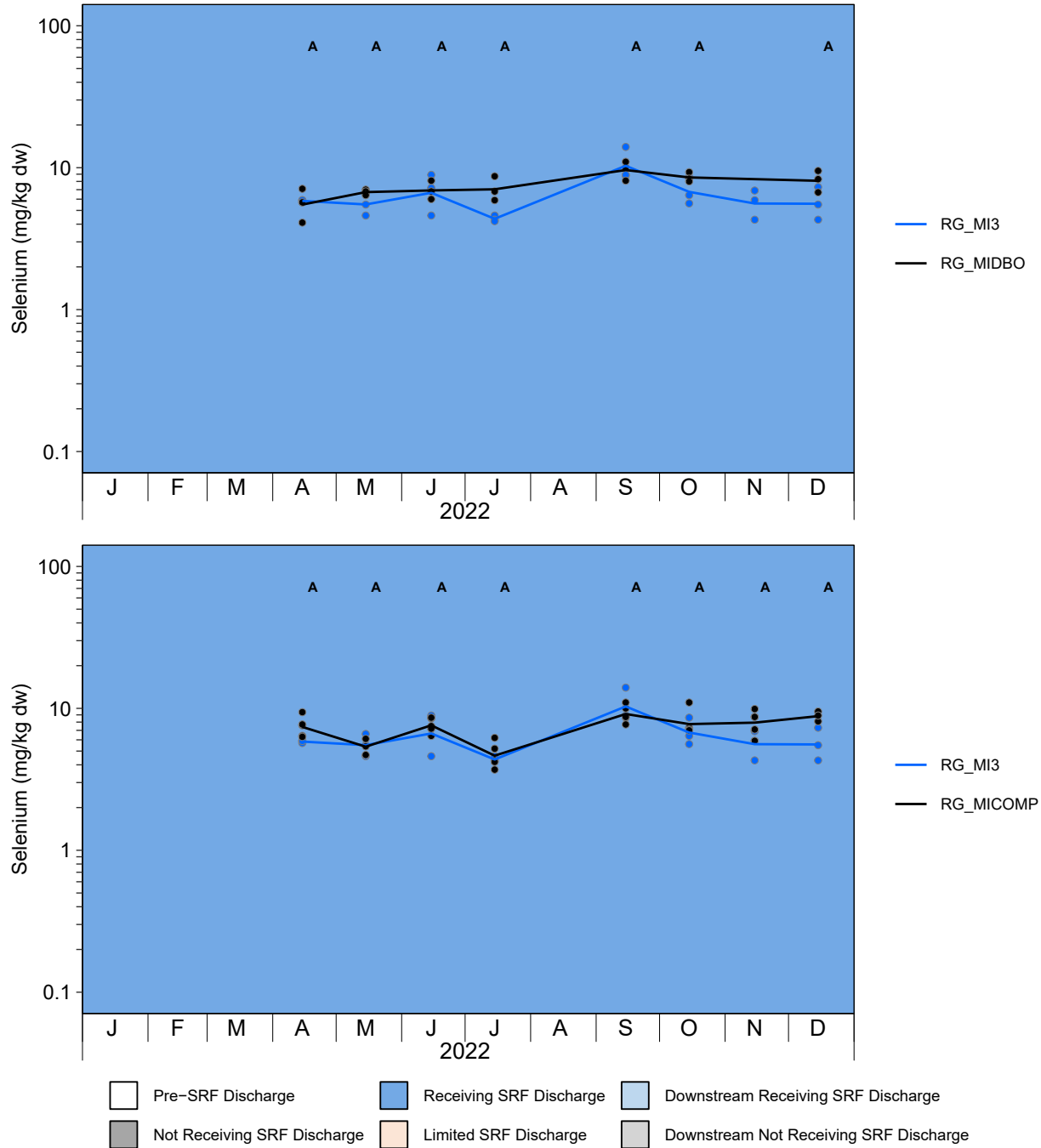


Figure 3.14: Benthic Invertebrate Tissue Selenium Concentrations at Michel Creek Areas, EVO LAEMP, 2022

Notes: Lines connect the estimated marginal means from an Analysis of Variance comparing the differences between areas over time. Letter represent results of post-hoc tests comparing changes in the relative difference between areas among the sampling periods. Periods that do not share a letter differ significantly in their relative difference (p-value < 0.05). Letters are arranged such that the greatest difference between the areas have the highest letter (i.e., A).

to March 2022 triggered an evaluation of different pathways of selenium enrichment of benthic tissue. This investigation identified strong evidence that SRF-derived particles are the primary driver of the observed BIT Se increase in upper Erickson Creek (See Section 4 for more detail). Additional details can be found in the full report (See section 4 for more details; Teck 2023a).

3.5 Study Questions #5

Study Question #5 (Are there changes in the benthic invertebrate community in Erickson, Bodie, Gate, and Michel creeks associated with SRF treatment (including calcite prevention)?) was evaluated through monitoring of BIC endpoints.

Benthic invertebrate community data collected for the EVO LAEMP were of excellent quality as characterized by excellent sub-sampling precision and accuracy, sorting efficiency and taxonomic identification accuracy. Therefore, the associated data can be used with a high level of confidence in the derivation of conclusions.

3.5.1 Benthic Invertebrate Community

Temporal changes in endpoints related to benthic invertebrate community (BIC) structure as determined by kick and sweep (i.e., CABIN) sampling in Erickson and Michel creeks downstream of SRF discharge were evaluated throughout the study area (Appendix Tables F.7 to F.18) and relative to reference areas in Alexander and Michel creeks, other mine-exposed areas in Michel Creek, and regional and habitat-adjusted normal ranges defined in the RAEMP (Appendix Figures F.1 to F.13; Minnow 2020b). Richness (# of taxa at Lowest Practical Level [LPL]) was within or above the regional and habitat-adjusted normal ranges at mine-exposed sites in Michel Creek and reference sites in Michel and Alexander creeks between 2012 and 2022 (Figure 3.15; Appendix Figure F.1). Downstream of the SRF outfall at RG_ERCKDT, taxa richness was largely within the regional normal range and the habitat-adjusted normal range, and greater than upstream of the SRF outfall at RG_ERCKUT where richness was below the habitat-adjusted and normal range in 2020, 2021 and 2022 (Appendix Figure F.1). Further downstream in Erickson Creek at RG_ERCK, taxa richness in 2022 was within the normal range and habitat-adjusted range and similar to all pre-EVO SRF P2 years except 2012 (Appendix Figure F.1). In general, no effects associated with the SRF outfall are apparent in taxa richness (Appendix Table F.6).

Total organism abundance and EPT abundance (i.e., # of organisms/ 3-min kick) were within regional reference normal ranges and within or above habitat-adjusted normal ranges in all sampled years at all areas (mine-exposed and reference; Figures 3.15; Appendix Figures F.2 and F.3), except the reference area RG_MI25 where interannual variability resulted in abundance



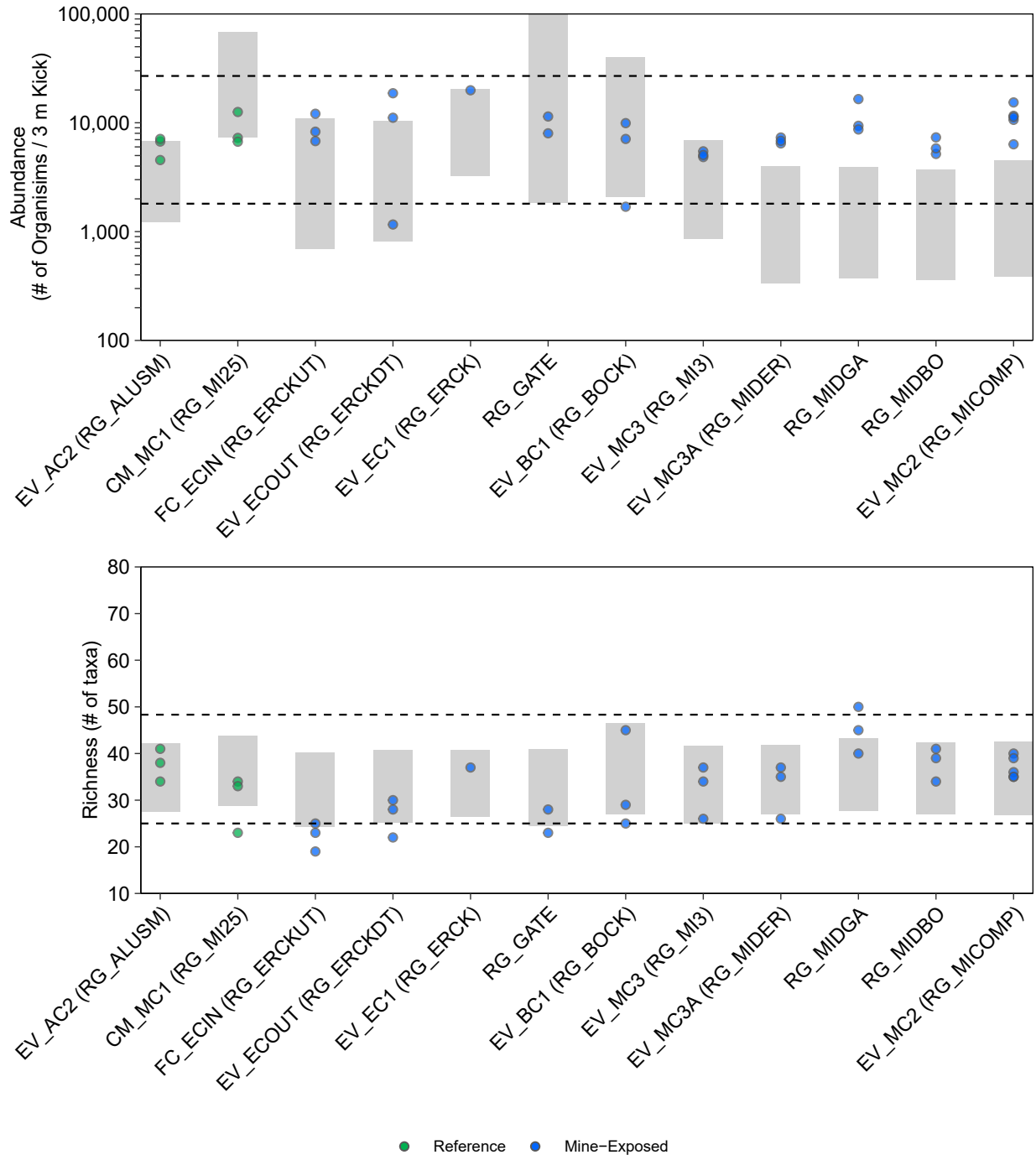


Figure 3.15: Benthic Invertebrate Community Endpoints at Erickson Creek, Gate Creek, Bodie Creek and Michel Creek, EVO LAEMP, September 2022

Notes: Site specific normal ranges developed using regression models for the RAEMP (Minnow 2020a) are shown, when applicable, with grey shading (Minnow 2020a). Regional normal ranges using percentiles of reference areas from 2012 to 2019 are shown as dashed horizontal lines.

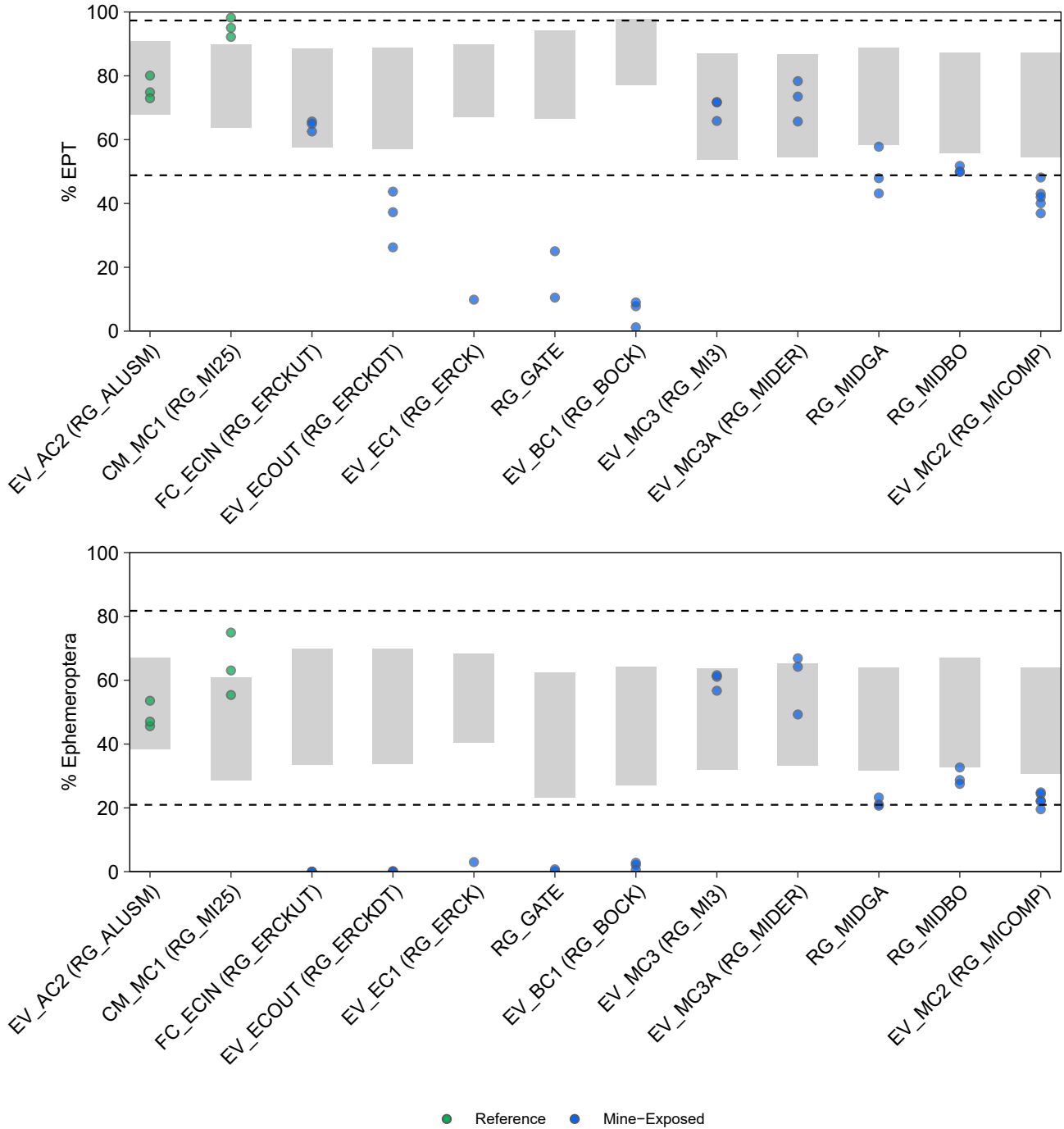


Figure 3.15: Benthic Invertebrate Community Endpoints at Erickson Creek, Gate Creek, Bodie Creek and Michel Creek, EVO LAEMP, September 2022

Notes: Site specific normal ranges developed using regression models for the RAEMP (Minnow 2020a) are shown, when applicable, with grey shading (Minnow 2020a). Regional normal ranges using percentiles of reference areas from 2012 to 2019 are shown as dashed horizontal lines.

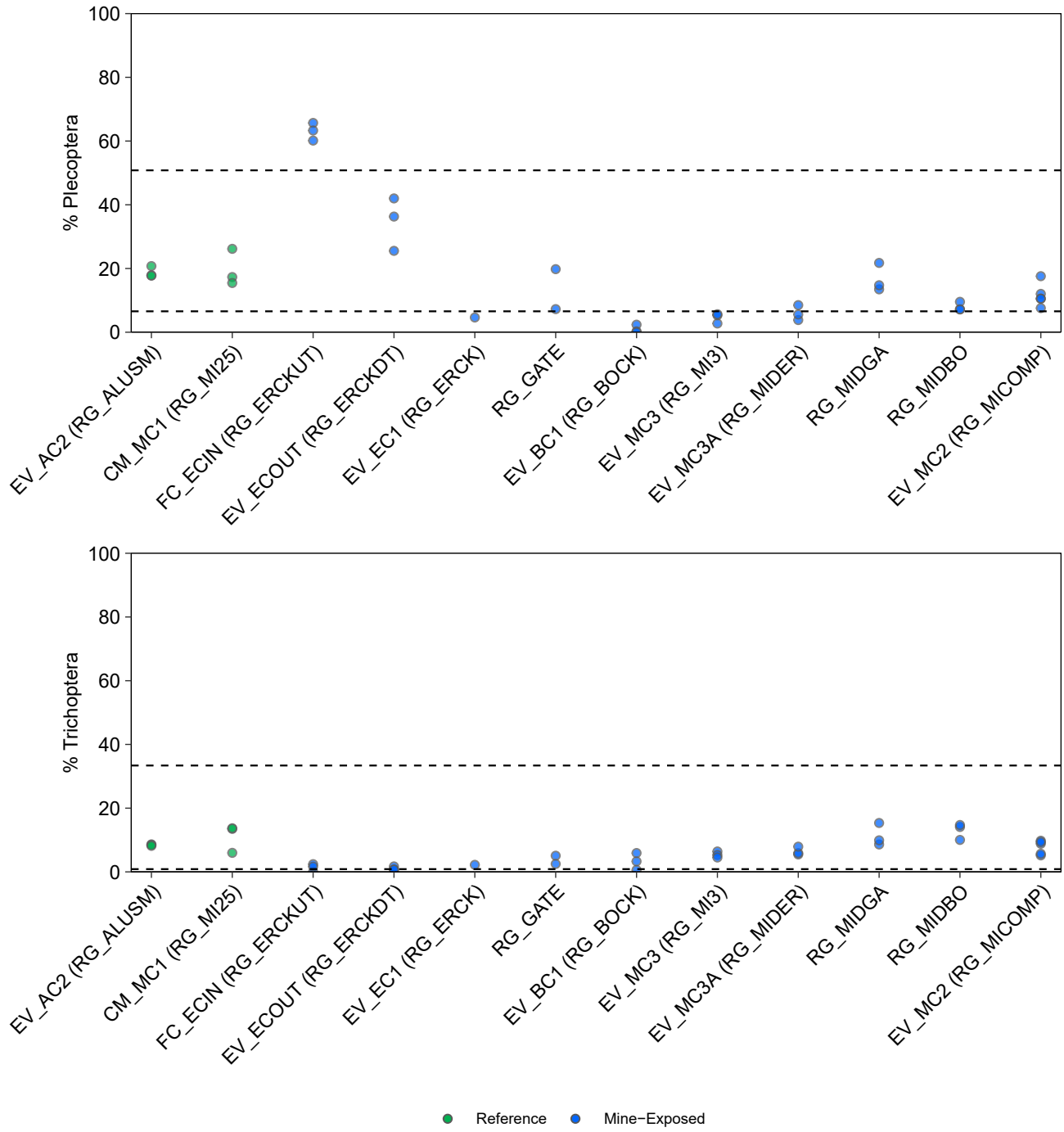


Figure 3.15: Benthic Invertebrate Community Endpoints at Erickson Creek, Gate Creek, Bodie Creek and Michel Creek, EVO LAEMP, September 2022

Notes: Site specific normal ranges developed using regression models for the RAEMP (Minnow 2020a) are shown, when applicable, with grey shading (Minnow 2020a). Regional normal ranges using percentiles of reference areas from 2012 to 2019 are shown as dashed horizontal lines.

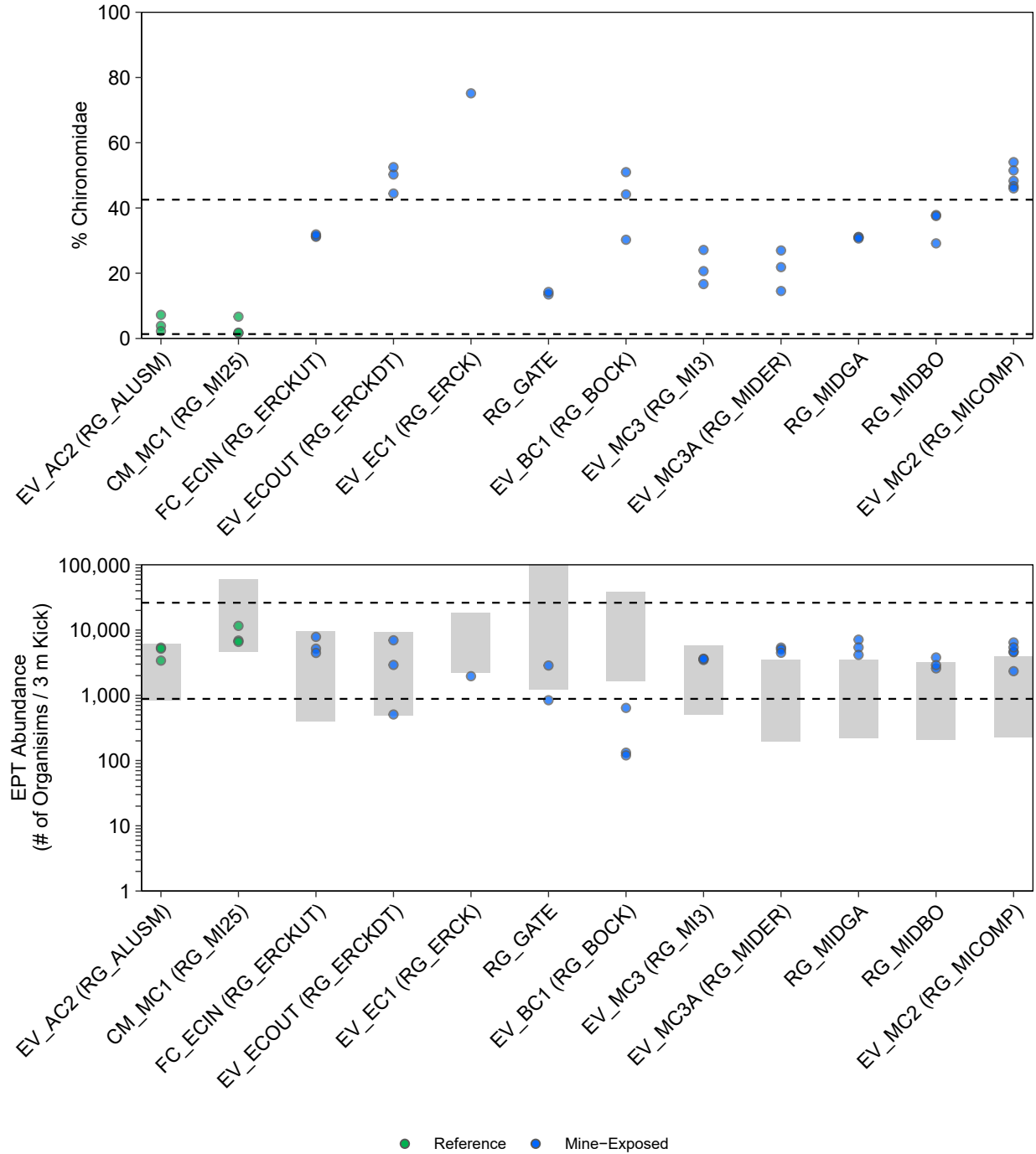


Figure 3.15: Benthic Invertebrate Community Endpoints at Erickson Creek, Gate Creek, Bodie Creek and Michel Creek, EVO LAEMP, September 2022

Notes: Site specific normal ranges developed using regression models for the RAEMP (Minnow 2020a) are shown, when applicable, with grey shading (Minnow 2020a). Regional normal ranges using percentiles of reference areas from 2012 to 2019 are shown as dashed horizontal lines.

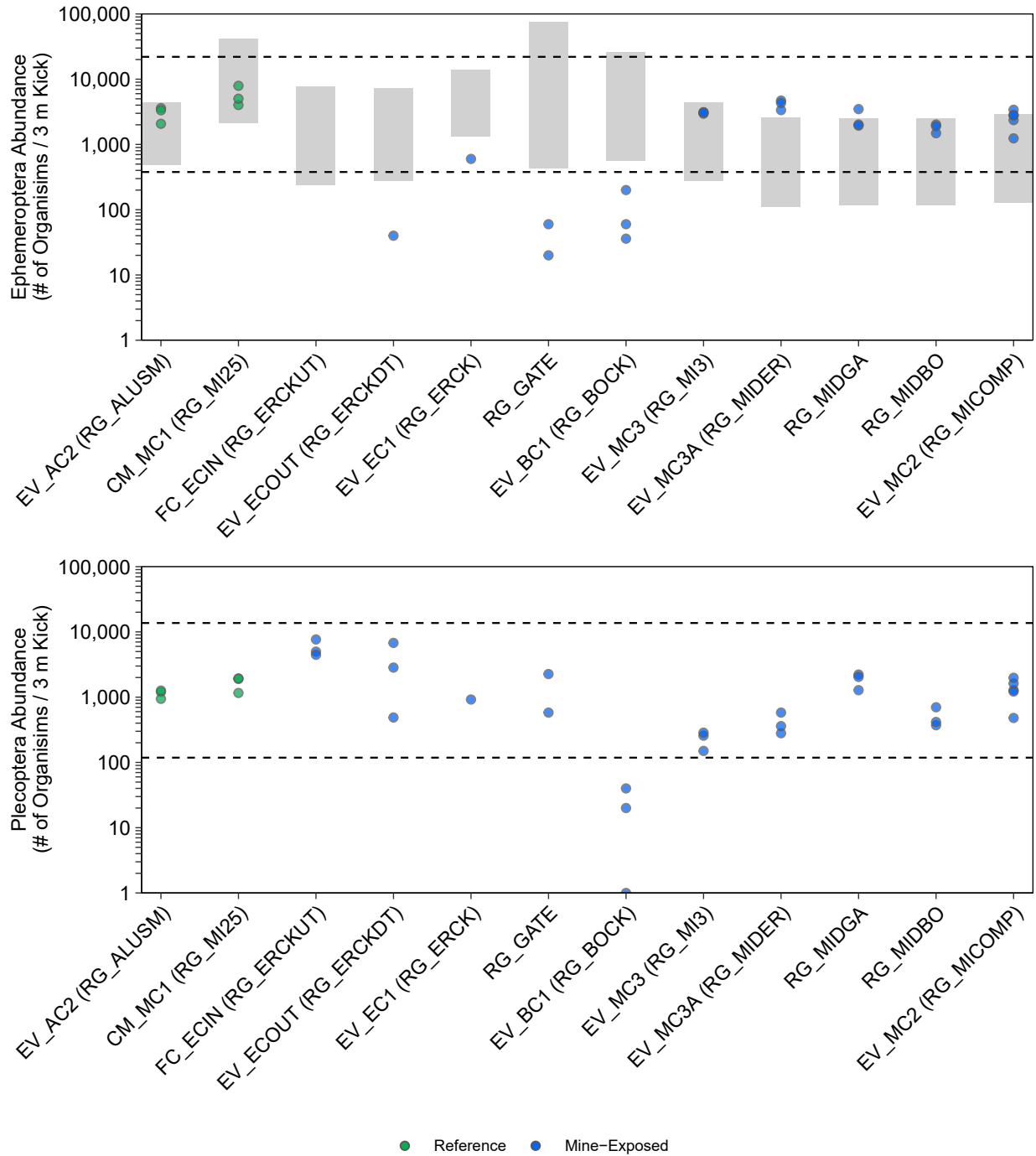


Figure 3.15: Benthic Invertebrate Community Endpoints at Erickson Creek, Gate Creek, Bodie Creek and Michel Creek, EVO LAEMP, September 2022

Notes: Site specific normal ranges developed using regression models for the RAEMP (Minnow 2020a) are shown, when applicable, with grey shading (Minnow 2020a). Regional normal ranges using percentiles of reference areas from 2012 to 2019 are shown as dashed horizontal lines.

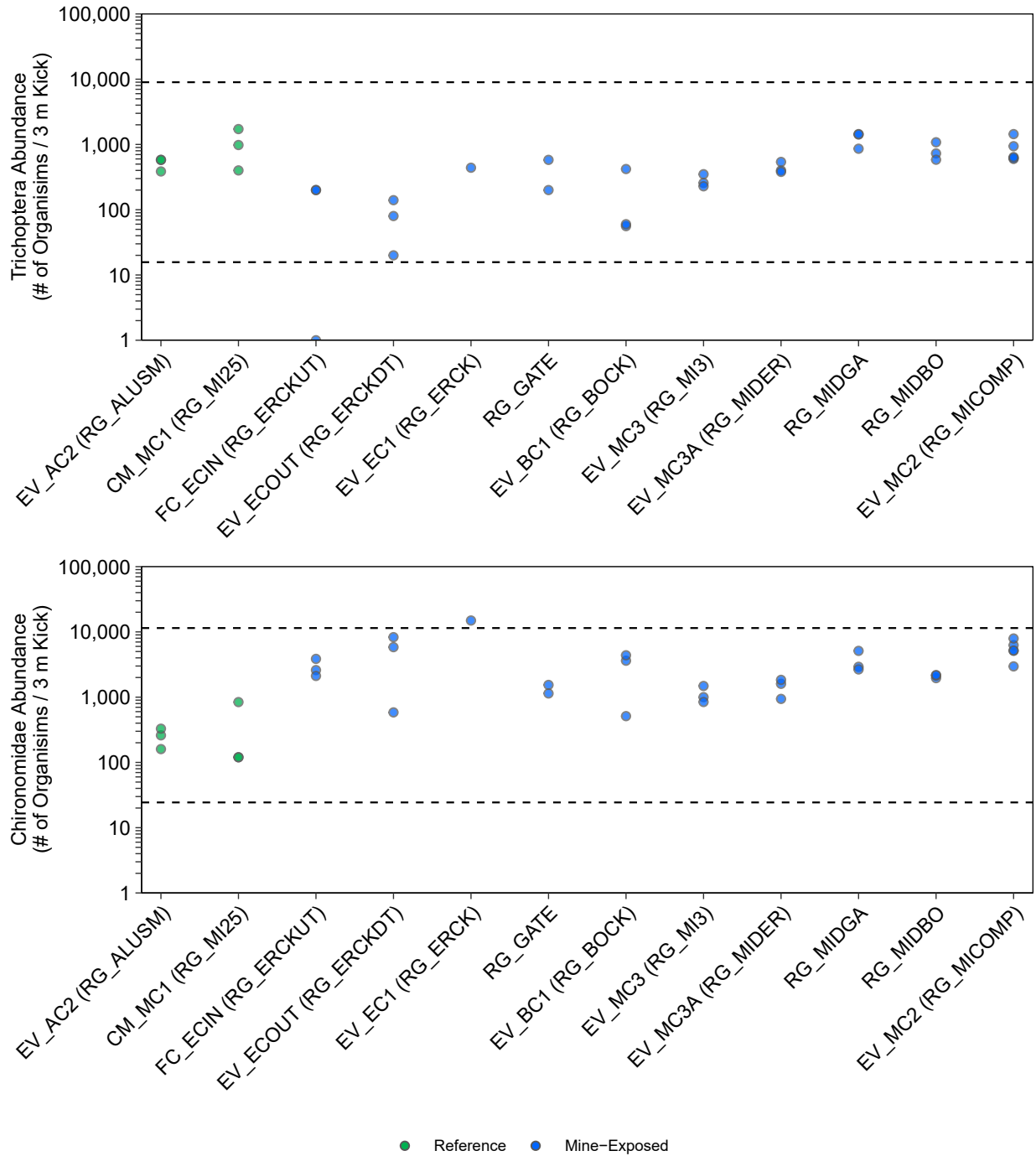


Figure 3.15: Benthic Invertebrate Community Endpoints at Erickson Creek, Gate Creek, Bodie Creek and Michel Creek, EVO LAEMP, September 2022

Notes: Site specific normal ranges developed using regression models for the RAEMP (Minnow 2020a) are shown, when applicable, with grey shading (Minnow 2020a). Regional normal ranges using percentiles of reference areas from 2012 to 2019 are shown as dashed horizontal lines.

and EPT abundance lower than the habitat-adjusted normal range in multiple years (i.e., 2012, 2019, 2020 and 2022; Appendix Figures F.2 and F.3). Total abundance and abundance of key BIC endpoints (EPT abundance) remained high throughout the study area, indicating no limitations of food available to fish in areas where they are present. In 2022 compared to 2021, there was no change in total abundance at any station in Erickson, Michel, Gate, or Bodie creeks (Appendix Table F.6). In 2022, EPT abundance was lower downstream (RG_ERCKDT) of the SRF compared to upstream (driven by a lower P abundance at RG_ERCKDT compared to RG_ERCKUT; Appendix Table F.5). These samples were, however, collected post-SRF shut down in Erickson Creek, and given only a single year of monitoring during SRF discharge into Erickson Creek (2021), the relationship with SRF discharge is unclear.

Despite EPT abundance within regional reference normal ranges, % EPT in 2022 fell below the regional and habitat-adjusted normal ranges at areas downstream of the SRF outfall in Erickson Creek (RG_ERCKDT and RG_ERCK); however, proportions were similar in 2022 compared to 2021 (Figure 3.15; Appendix Figure F.4). A similar pattern was also noted, to a lesser degree, upstream of the SRF outfall at RG_ERCKUT where % EPT was lower in 2021 compared to 2020 and 2019; and were similar in 2022 compared to 2021 (Appendix Figure F.4). Further downstream at RG_ERCK, % EPT has remained stable since 2019 (Appendix Figure F.4). In Gate and Bodie (RG_GATE and RG_BOCK) creeks %EPT falls below both the regional and habitat-adjusted normal ranges; this is most likely due to habitat characteristics (e.g., substrate quality) rather than SRF discharge (Figure 3.15; Appendix Figure F.4). Habitat at RG_GATE and RG_BOCK do not meet CABIN requirements and therefore interpretation of results from these areas against normal ranges developed based on reference areas consistent with CABIN requirements should be viewed with caution. At other mine-exposed areas in Michel Creek and reference areas in Michel and Alexander creeks, % EPT was within or above the regional normal ranges in all sampled years, except at RG_MICOMP in 2022 which fell below the regional normal range in all replicates (Appendix Figure F.5). Data from the 2022 RAEMP suggests that decreases BIC abundance in 2022 may be more likely driven by a regional environmental driver than mine-related activities. The 2022 RAEMP report will conduct additional analyses to tease out potential environmental drivers within the data set. Michel Creek areas downstream of Erickson, Gate, and/or Bodie creeks (RG_MIDGA, RG_MIDBO, and RG_MICOMP) fell below the habitat-adjusted normal ranges for % EPT in 2022 and recorded proportional decreases compared to 2021 (Appendix Table F.8). These compositional changes are mirrored by increases in the relative abundance of Chironomidae in 2022 compared to 2021. However, given the variability (% EPT increased at these areas in 2021 compared to 2019) and the limited data post-SRF operation data it is unclear if changes are associated with SRF discharge, mine-related impacts, or yearly variability in Michel Creek.



Lower % EPT at RG_ERCKDT in 2022 and RG_ERCK from 2019 to 2022 appears to be driven by low total and relative abundance of Ephemeroptera and high total and relative abundance of Chironomidae at all sampling areas in Erickson Creek (Figure 3.15; Appendix Figures F.5 and F.6). Total Ephemeroptera and % Ephemeroptera were below the regional and habitat-adjusted normal ranges at all three areas in Erickson Creek (RG_ERCKUT, RG_ERCKDT, and % Ephemeroptera at RG_ERCK) in all samples collected since 2018 (Figure 3.15; Appendix Figures F.5 to F.7). Conversely, the total and relative abundance of Plecoptera was within or above the regional normal range at RG_ERCKUT and RG_ERCKDT and was highest at RG_ERCKUT and RG_ERCKDT when compared to the other study areas, though relative abundance at RG_ERCKDT declined in 2021 and 2022 compared to 2019 and 2020 (Figure 3.15; Appendix Figures F.8 and F.9). Trichoptera total and relative abundance, although generally lower at areas in Erickson Creek than at reference areas and areas in Michel Creek, were also within the regional normal range between 2018 and 2022 (Figure 3.15; Appendix Figures F.10 and F.11).

The total abundance of Chironomidae has been high at RG_ERCK since 2018, often exceeding the regional normal range, and increased at RG_ERCKUT and RG_ERCKDT in 2021 and remained high in 2022 relative to earlier sampled years (Appendix Figure F.12). These observed high abundances of Chironomidae translated to higher % Chironomidae, which were above the regional normal range at RG_ERCK from 2018 to 2022 and at RG_ERCKDT in 2021 and 2022 (Appendix Figure F.13). The shift in community composition at RG_ERCKDT (increase in % Chironomidae and decrease in % Plecoptera), although coinciding with commissioning of EVO SRF P2 in early 2021, occurred at areas both upstream and downstream of the SRF outfall (in 2021) and continued in 2022 (at RG_ERCKDT) despite SRF shutdown to Erickson through most of the growing season; therefore, this shift does not appear to be directly related to SRF discharge.

Relative abundance of EPT was also assessed against the biological trigger established for this endpoint (see Appendix G for details). This was completed for each replicate from EVO LAEMP monitoring areas where water quality projections were available for each sampling event in 2022 (i.e., September sampling at RG_ERCK, RG_MI3, RG_MICOMP; see Appendix G for details). Biological trigger results indicated that of the three mine-exposed areas evaluated RG_ERCK and RG_MICOMP had % EPT that reached the biological trigger criteria (i.e., % EPT was below the biological trigger).

In summary, BIC endpoints including taxa richness and % EPT were lower than reference and below regional and/or habitat-adjusted normal ranges at some areas in Erickson Creek in 2022. Investigation of spatial and temporal trends indicated that these differences were either observed



both up- and downstream of the SRF outfall (e.g., decrease in % EPT at both RG_ERCKUT and RG_ERCKDT) and/or were observed prior to commissioning for EVO SRF P2 (e.g., lower taxa richness at RG_ERCKUT; lower % EPT at RG_ERCK). Overall, while BIC effects were apparent in Erickson Creek and Michel Creek, these effects were present prior to SRF commissioning, have not changed substantially over time, and/or have been variable through time, indicating minimal effects of the SRF. Total abundance and abundance of key BIC endpoints (EPT abundance) remained high throughout the study area, indicating no limitations of food available to fish in fish bearing areas of Erickson or Michel creeks.

3.6 Study Questions #6

Study question #6 (Is SRF water treatment affecting indicators of productivity (e.g., phosphorus) in the receiving environment?) was evaluated through monitoring changes in phosphorus, benthic invertebrate density, and biomass and periphyton coverage.

3.6.1 Phosphorus

The EVO SRF operational status coincided with changes in phosphorus and orthophosphate concentrations over time in Erickson Creek. Concentrations of total phosphorus increased significantly downstream of the SRF outfall at EV_ECOUT (RG_ERCKDT) and EV_EC1 (RG_ERCK) in 2022 (SRF shutdown for six months) compared to 2021 (SRF discharging), decreased concentrations of nitrate, phosphorus, and orthophosphate were noted below the outfall of the SRF in Erickson Creek in 2021 (Figure 3.16; Appendix Table D.2; Minnow 2022b). Orthophosphate also increased significantly downstream of the SRF outfall at EV_ECOUT (RG_ERCKDT) in 2022 compared to 2021, but no changes were observed downstream at EV_EC1 (RG_ERCK; Figure 3.17; Appendix Table D.2). Concentrations of phosphorus and orthophosphate have not changed with SRF operation in Gate and Bodie Creeks (Figure 3.16 and 3.17; Appendix Table D.2). Significant decreases in orthophosphate were observed in Michel Creek in 2022 compared to 2021 at stations upstream (EV_MC3 [RG_MI3]) and downstream (EV_MC2a and EV_MC2 [RG_MICOMP]) of tributaries receiving SRF discharge (Figure 3.17, Appendix Table D.2), but remained within the historical range of concentrations at all stations except for EV_MC2 (RG_MICOMP). No significant changes in total phosphorus were observed in any Michel Creek stations in 2022 compared to previous years. Concentrations of phosphorus were within the normal reference range (0.3 µg/L; Minnow 2020c) in Erickson in 2022 and the increase in 2022 has not affected other indicators of productivity (i.e., BIC biomass [Section 3.6.2], or periphyton visual scores [section 3.6.3]).



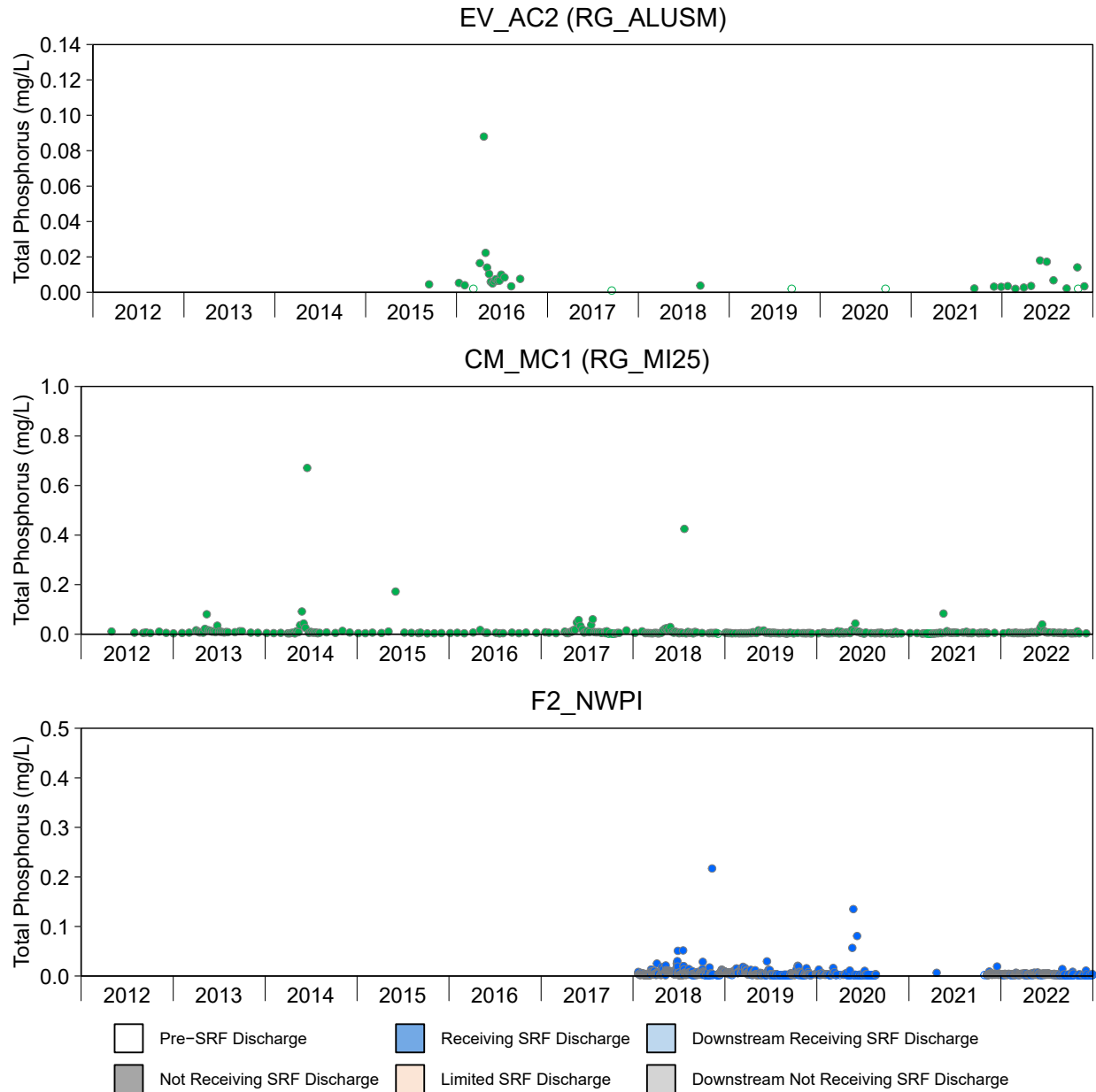


Figure 3.16: Time Series Plots for Total Phosphorus from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. High non-detect data from 2012 was removed. When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

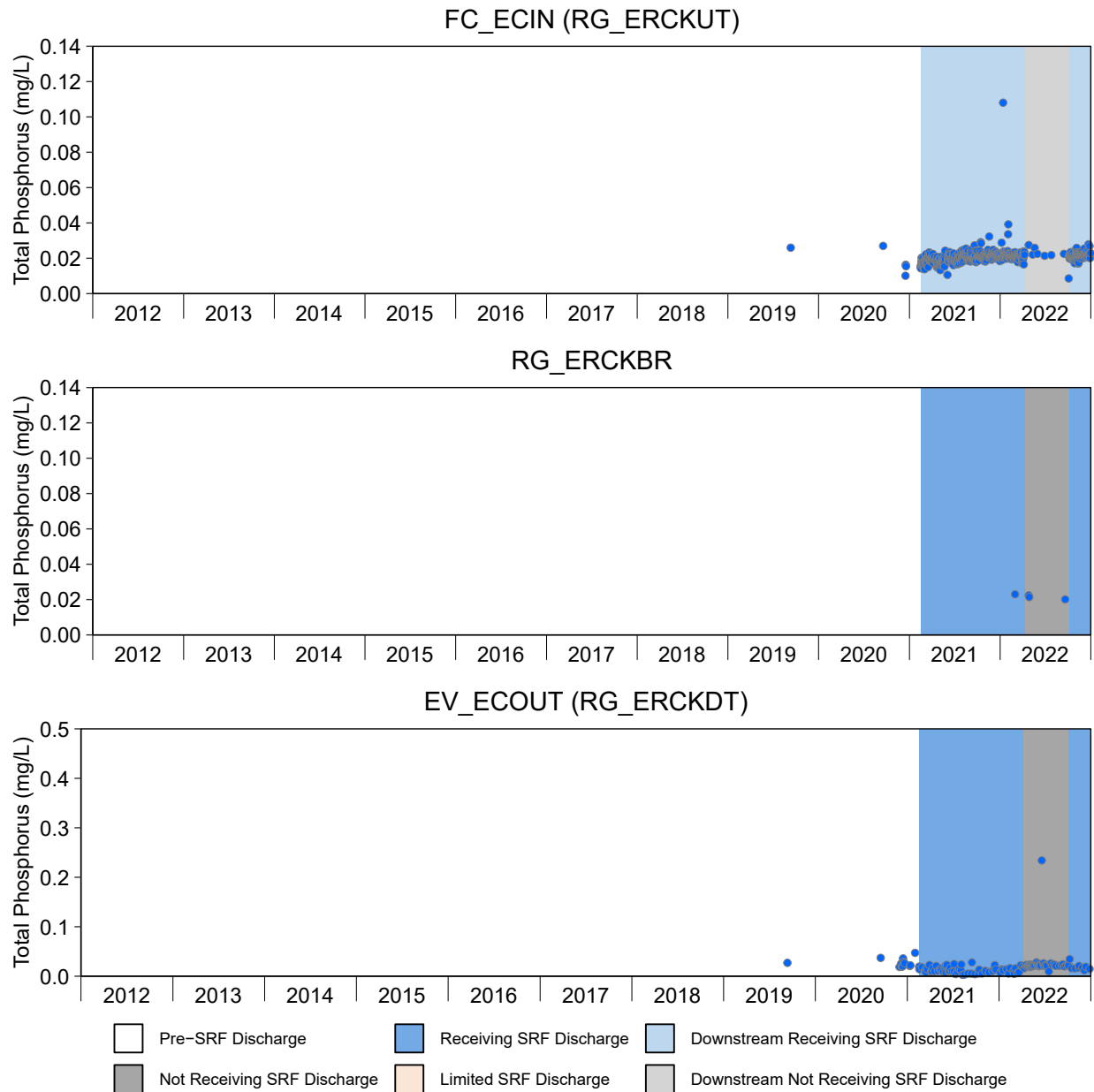


Figure 3.16: Time Series Plots for Total Phosphorus from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. High non-detect data from 2012 was removed. When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

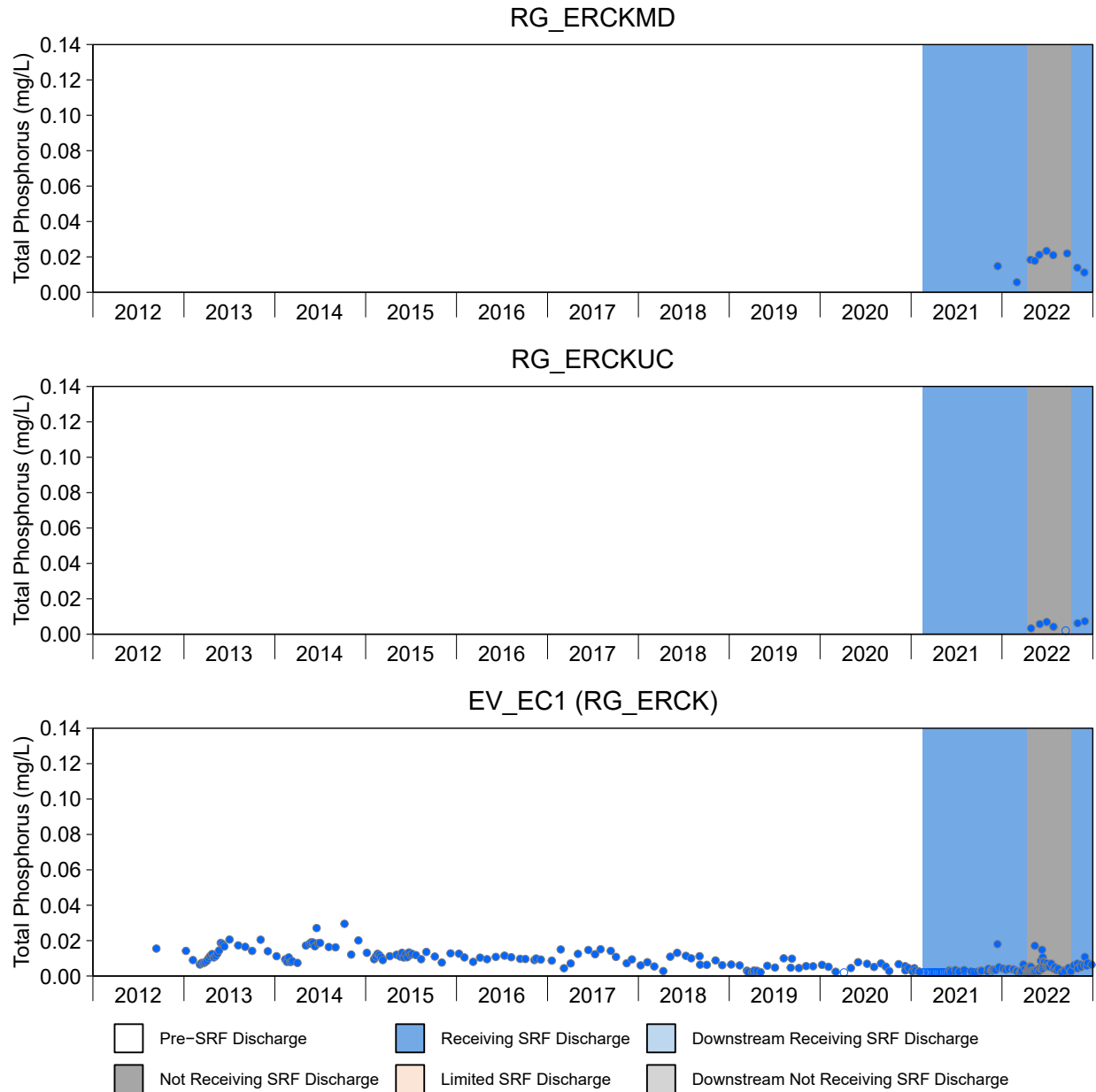


Figure 3.16: Time Series Plots for Total Phosphorus from EVO LAEMP Areas, 2012 to 2022

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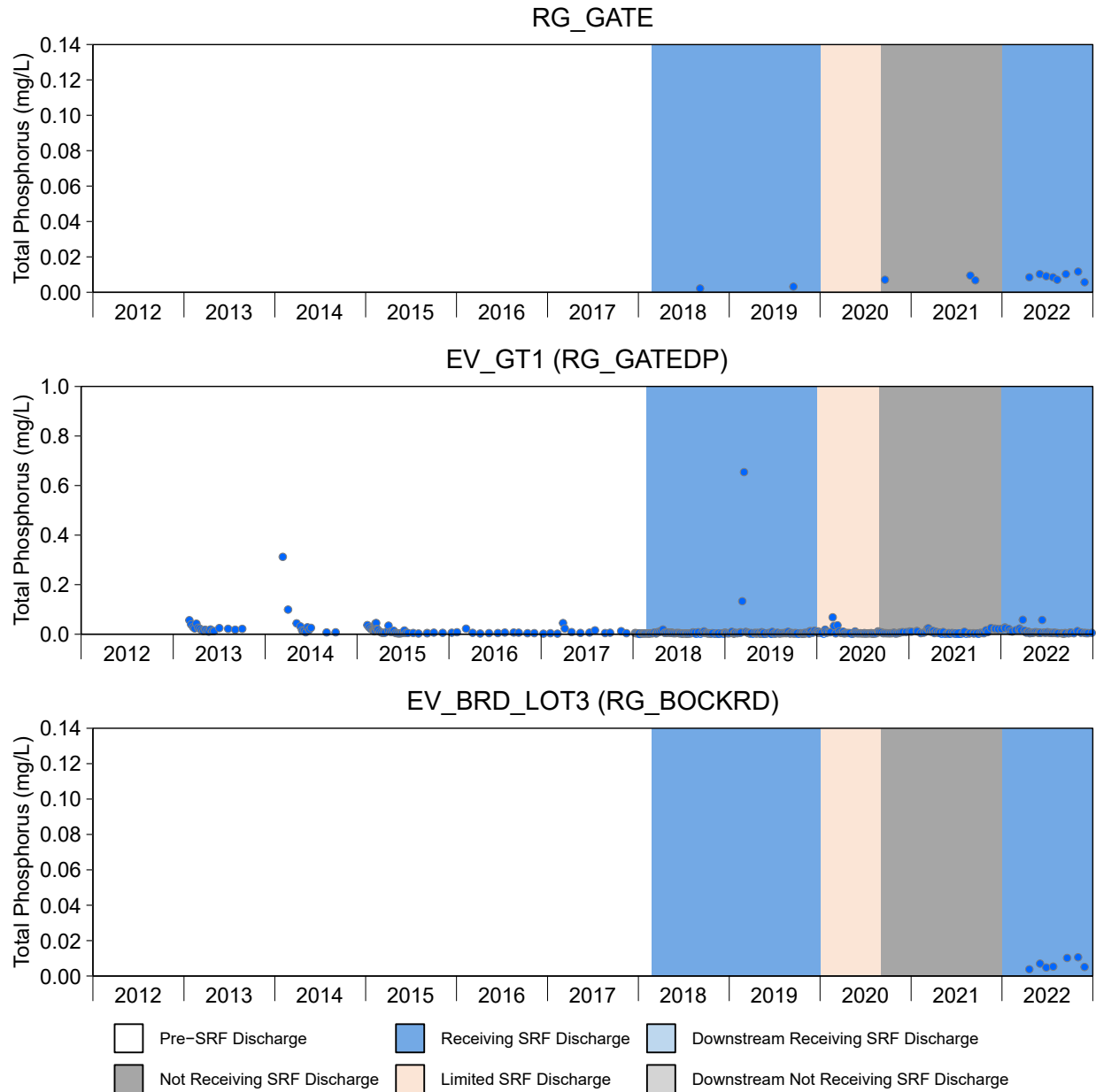


Figure 3.16: Time Series Plots for Total Phosphorus from EVO LAEMP Areas, 2012 to 2022

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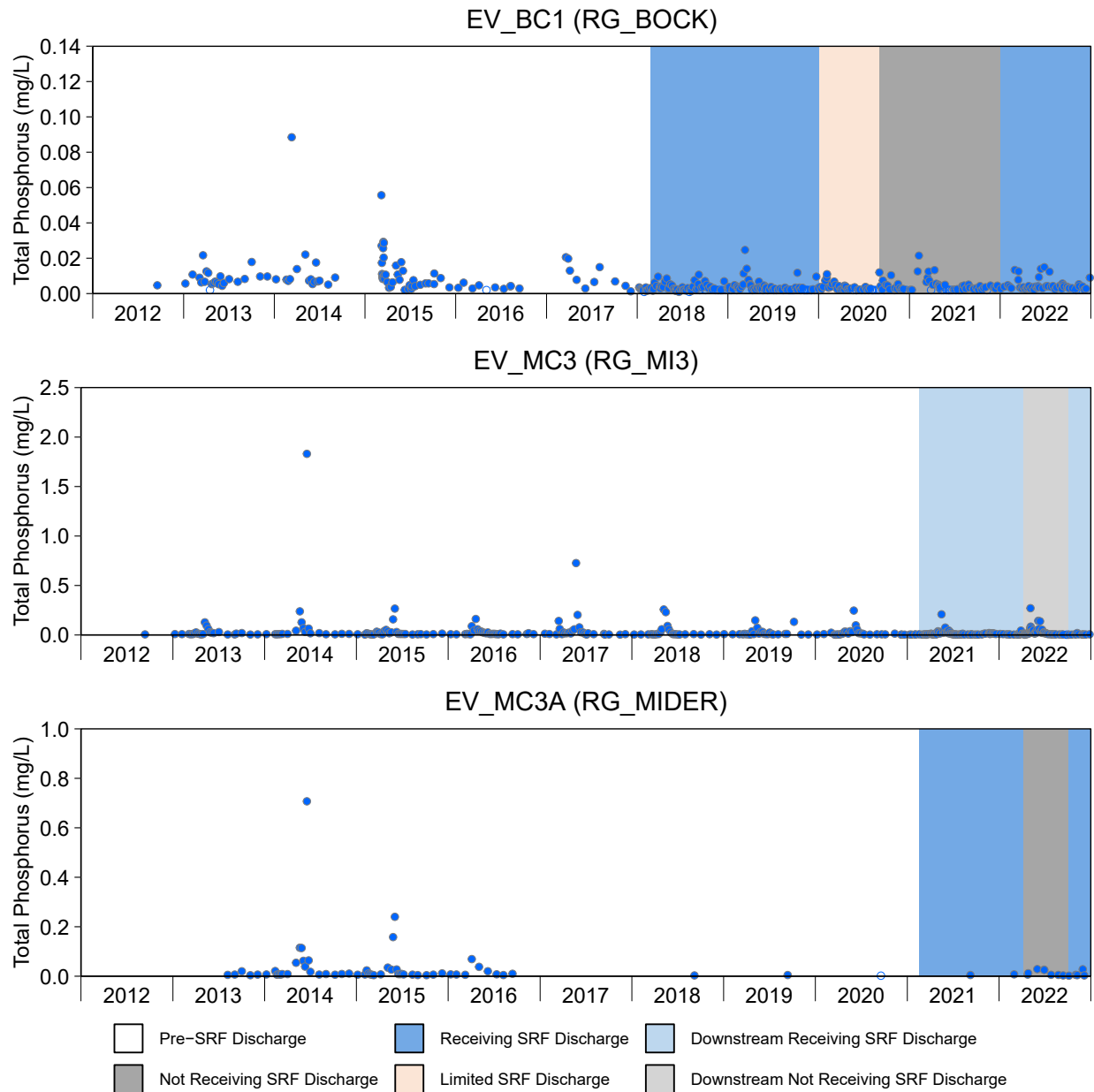


Figure 3.16: Time Series Plots for Total Phosphorus from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. High non-detect data from 2012 was removed. When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

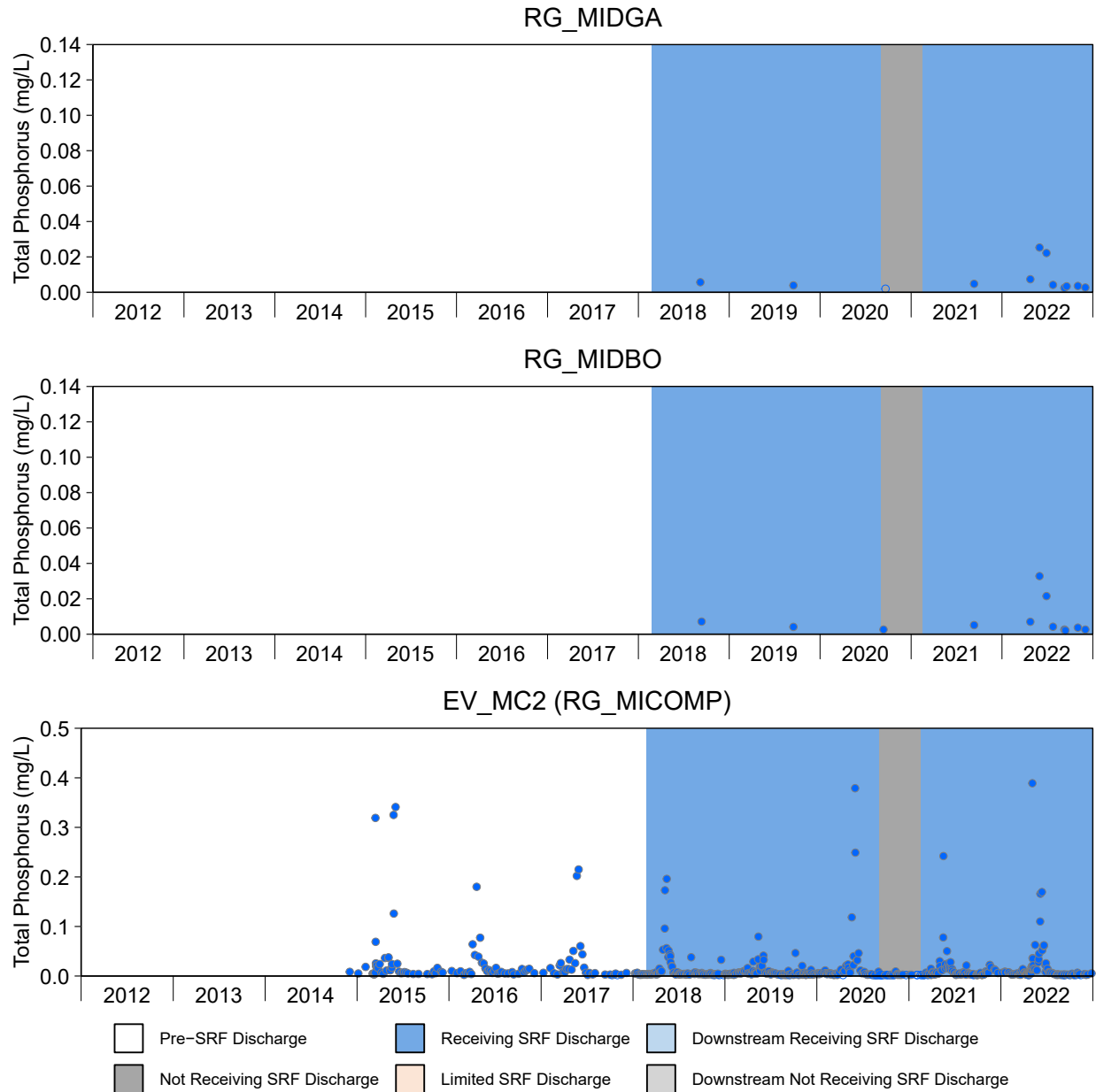


Figure 3.16: Time Series Plots for Total Phosphorus from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. High non-detect data from 2012 was removed. When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

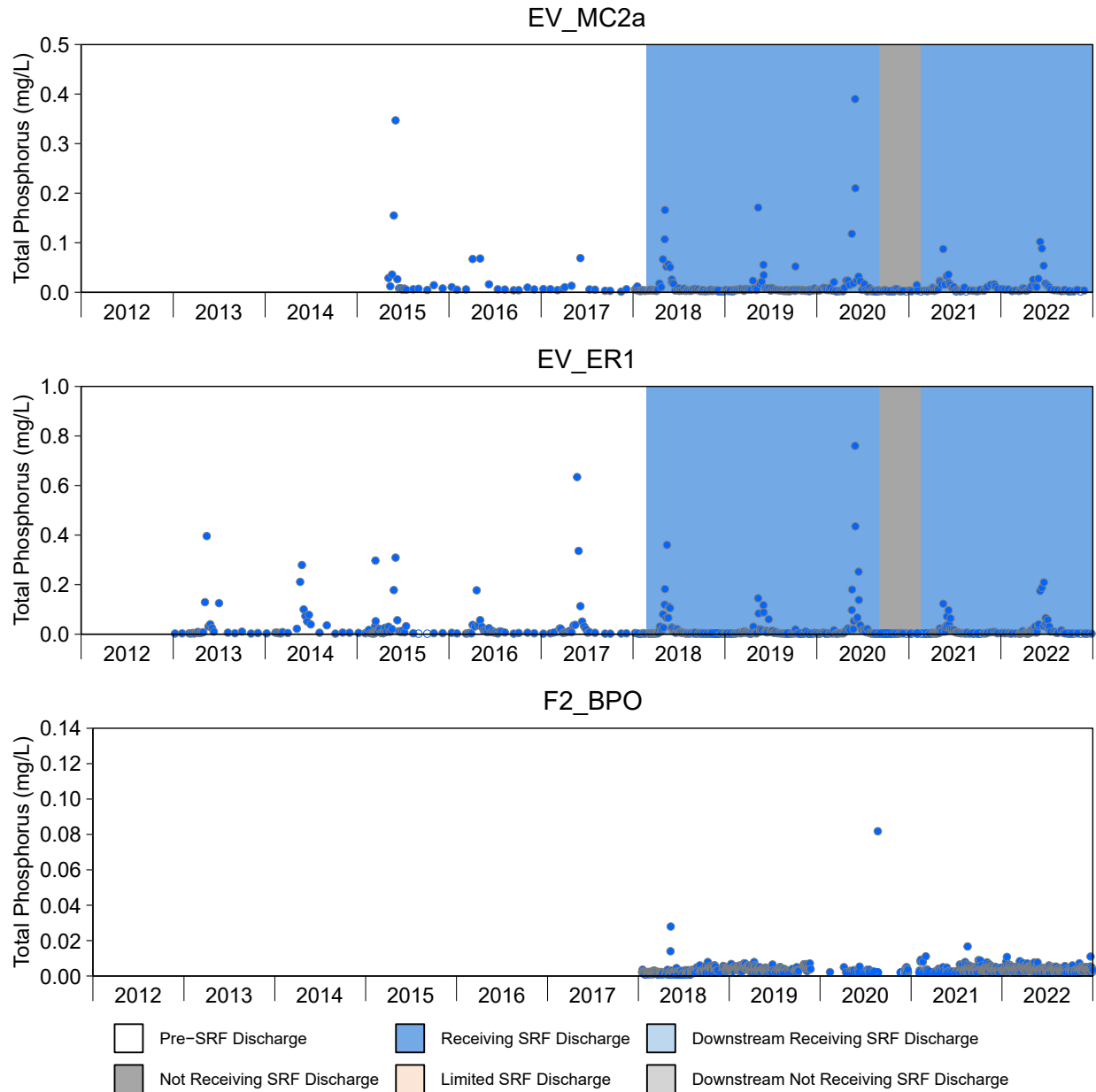


Figure 3.16: Time Series Plots for Total Phosphorus from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. High non-detect data from 2012 was removed. When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

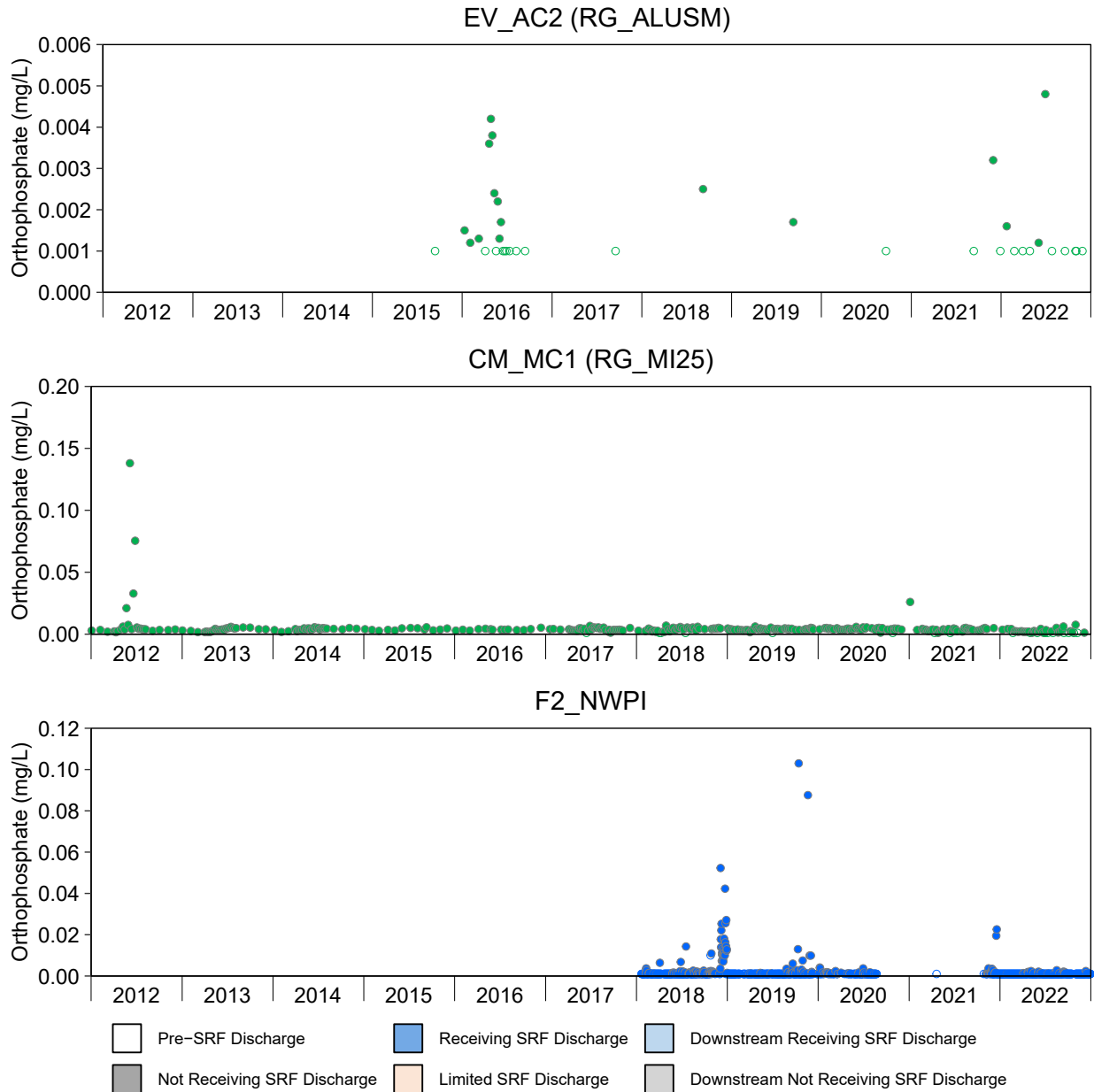


Figure 3.17: Time Series Plots for Orthophosphate from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

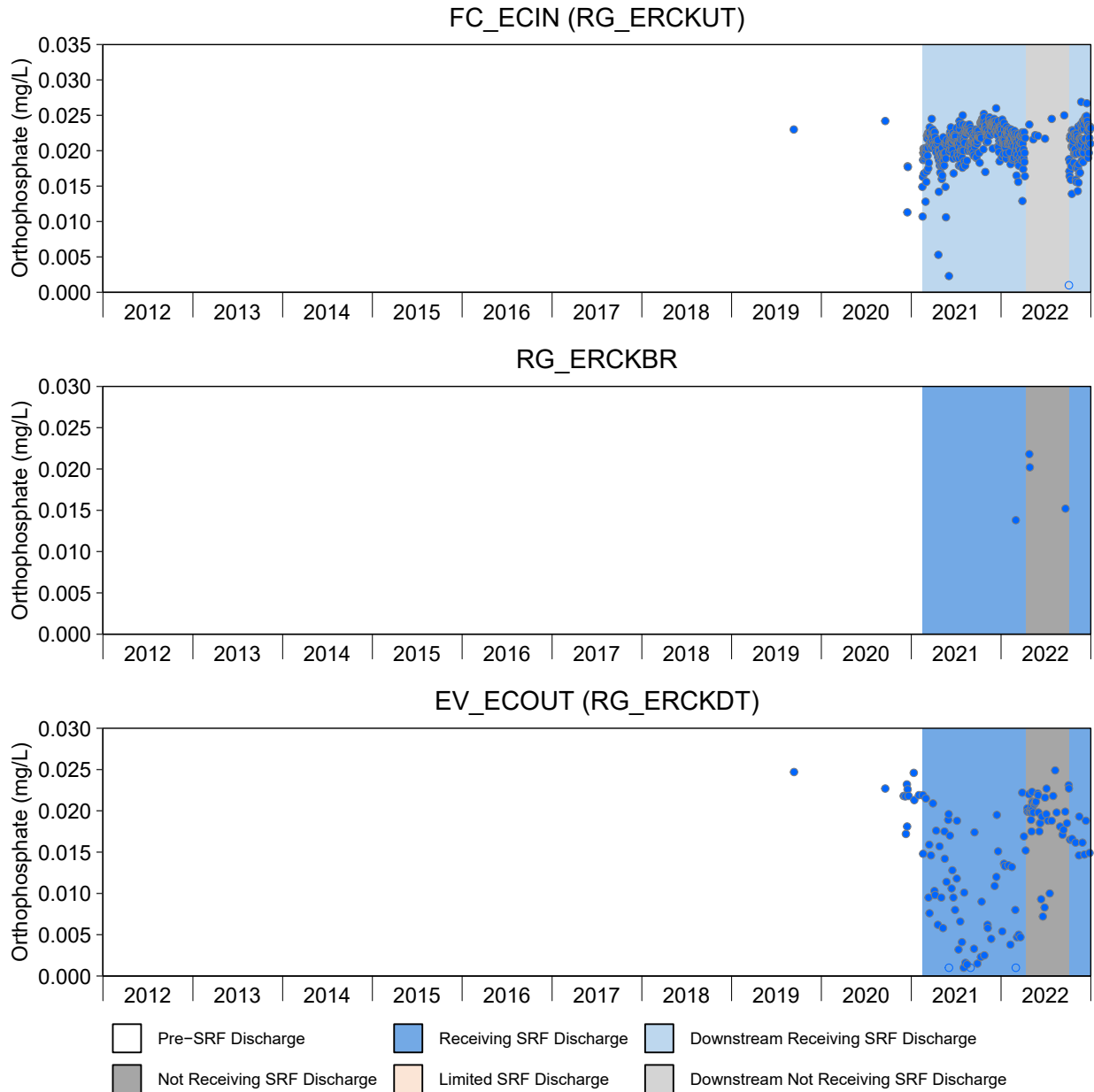


Figure 3.17: Time Series Plots for Orthophosphate from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

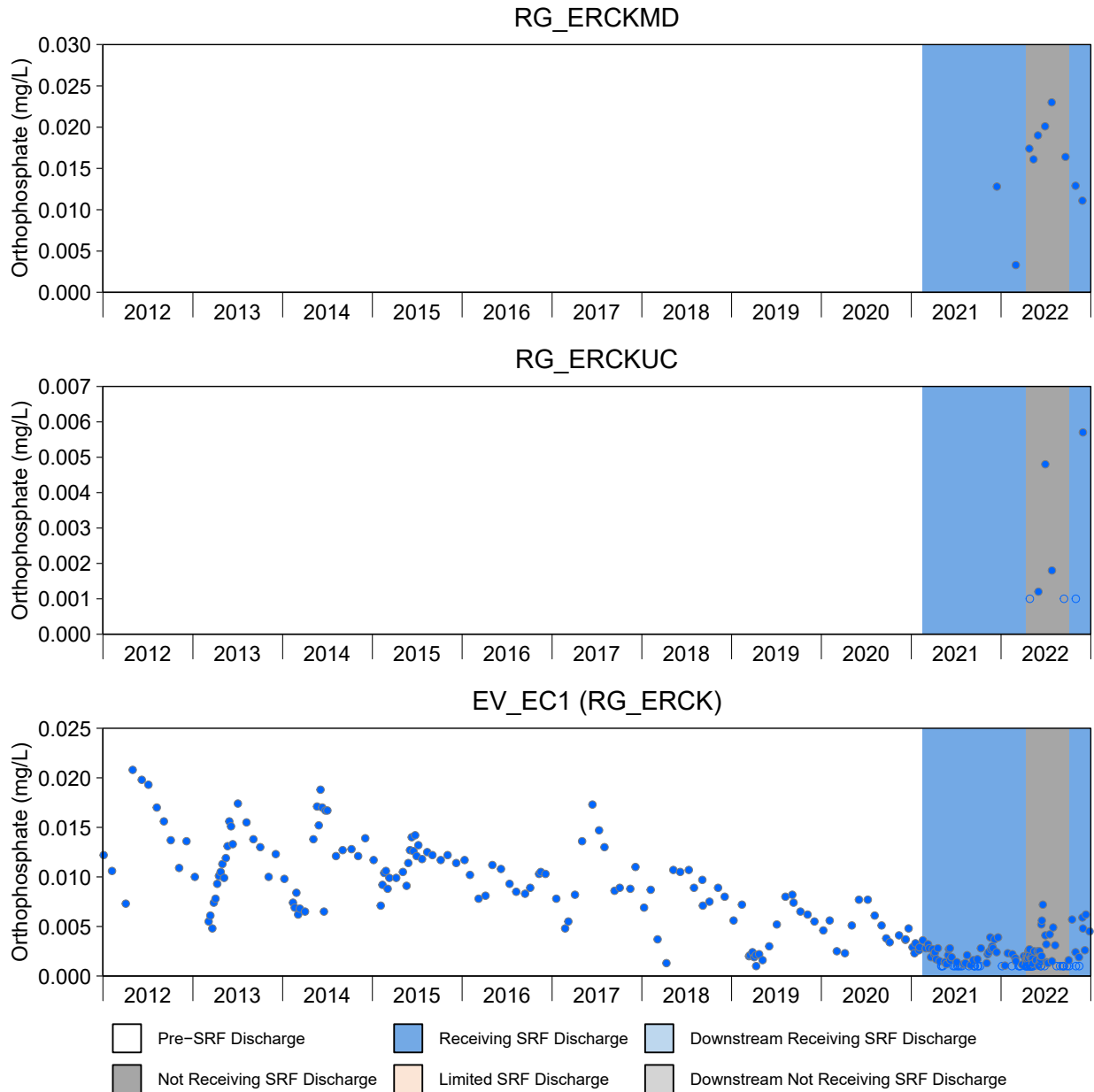


Figure 3.17: Time Series Plots for Orthophosphate from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

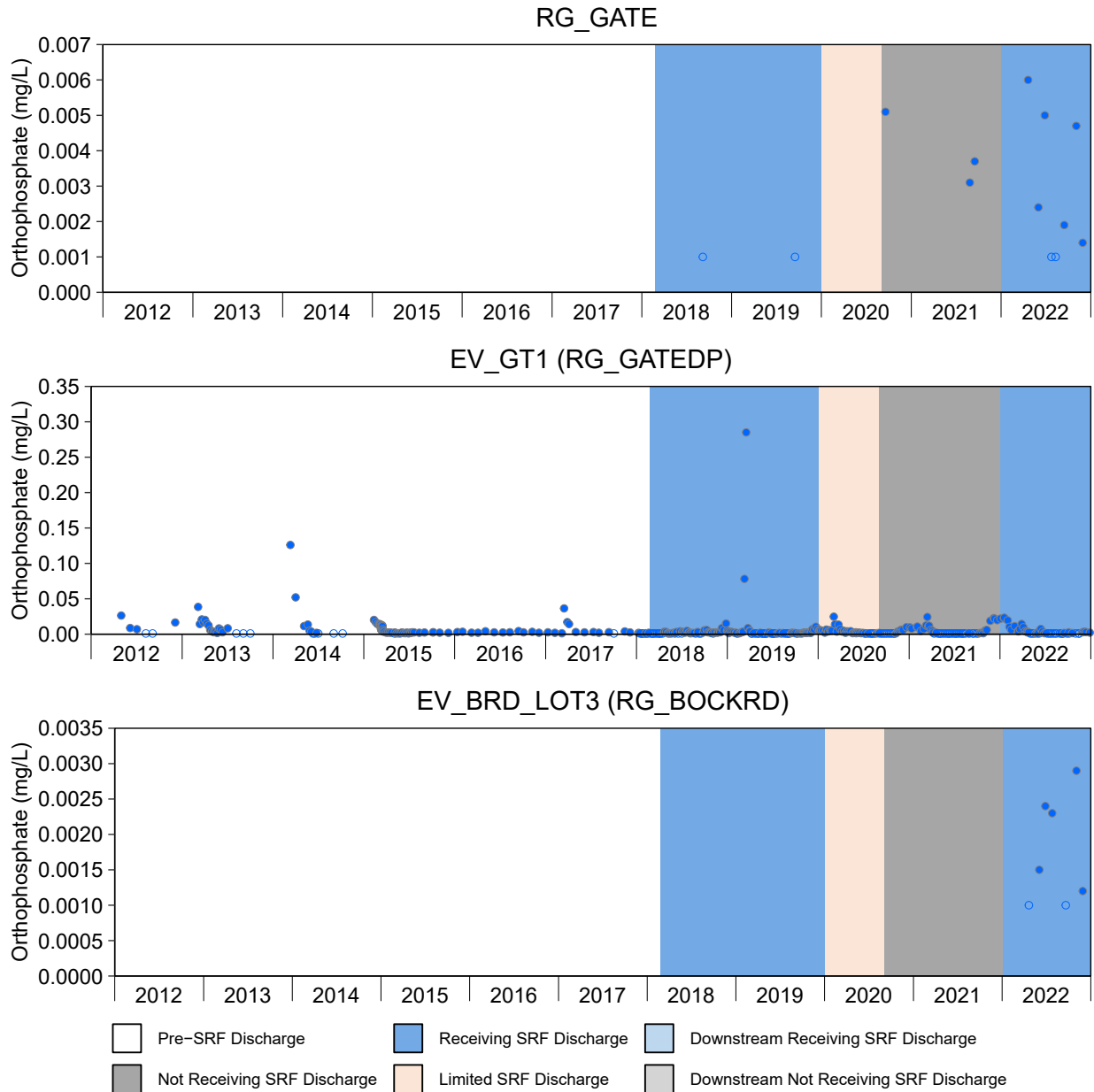


Figure 3.17: Time Series Plots for Orthophosphate from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

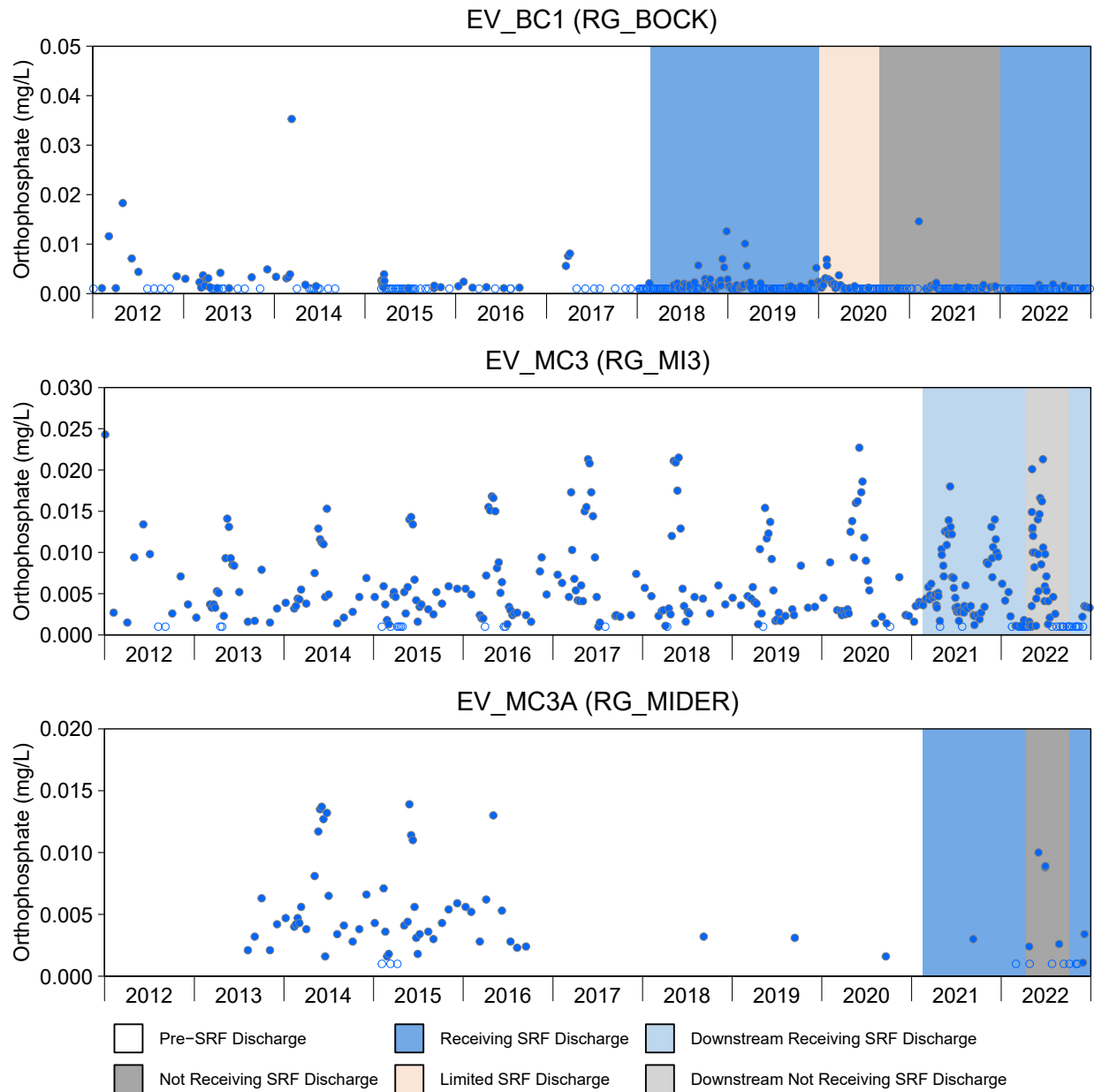


Figure 3.17: Time Series Plots for Orthophosphate from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

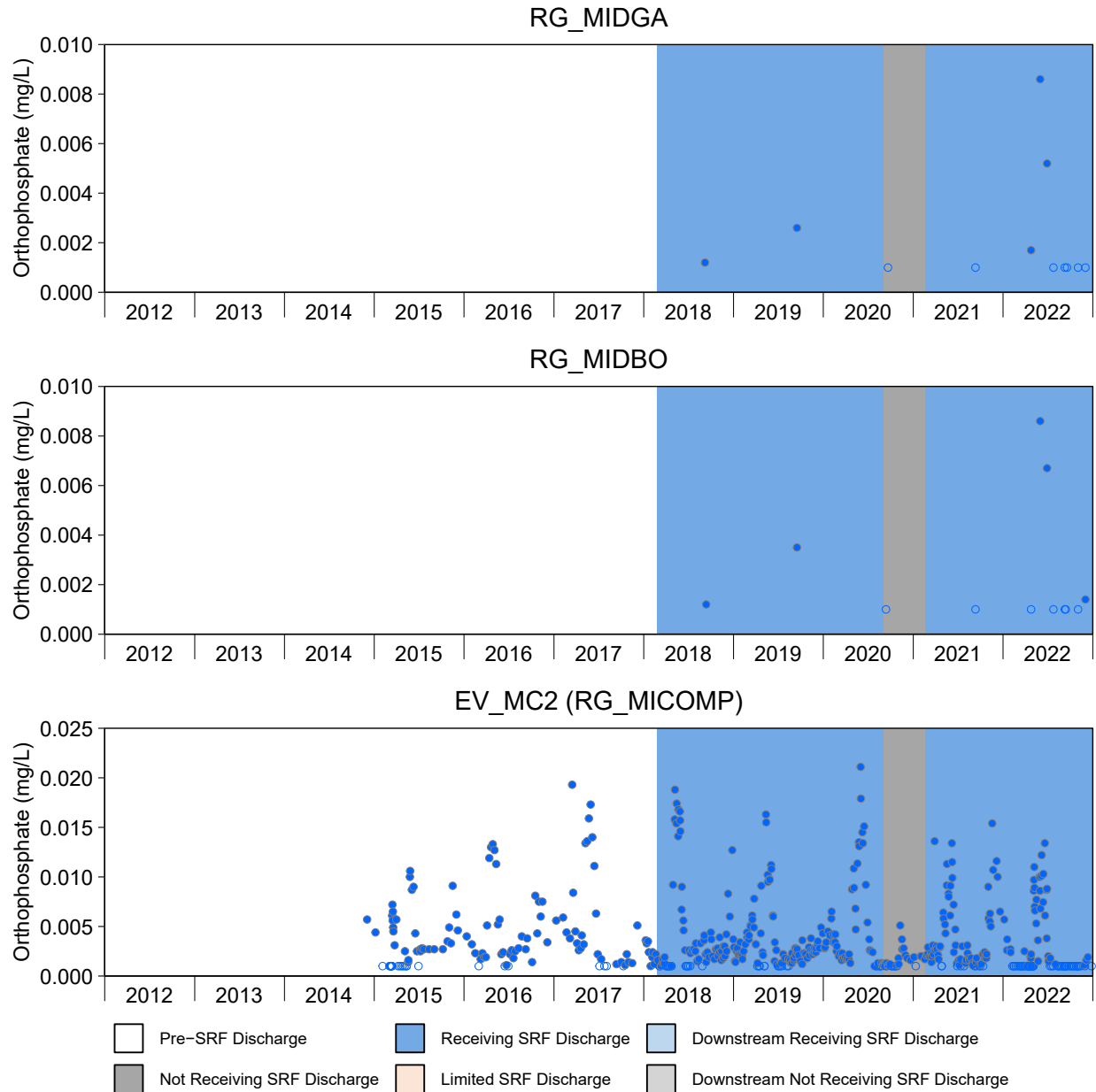


Figure 3.17: Time Series Plots for Orthophosphate from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

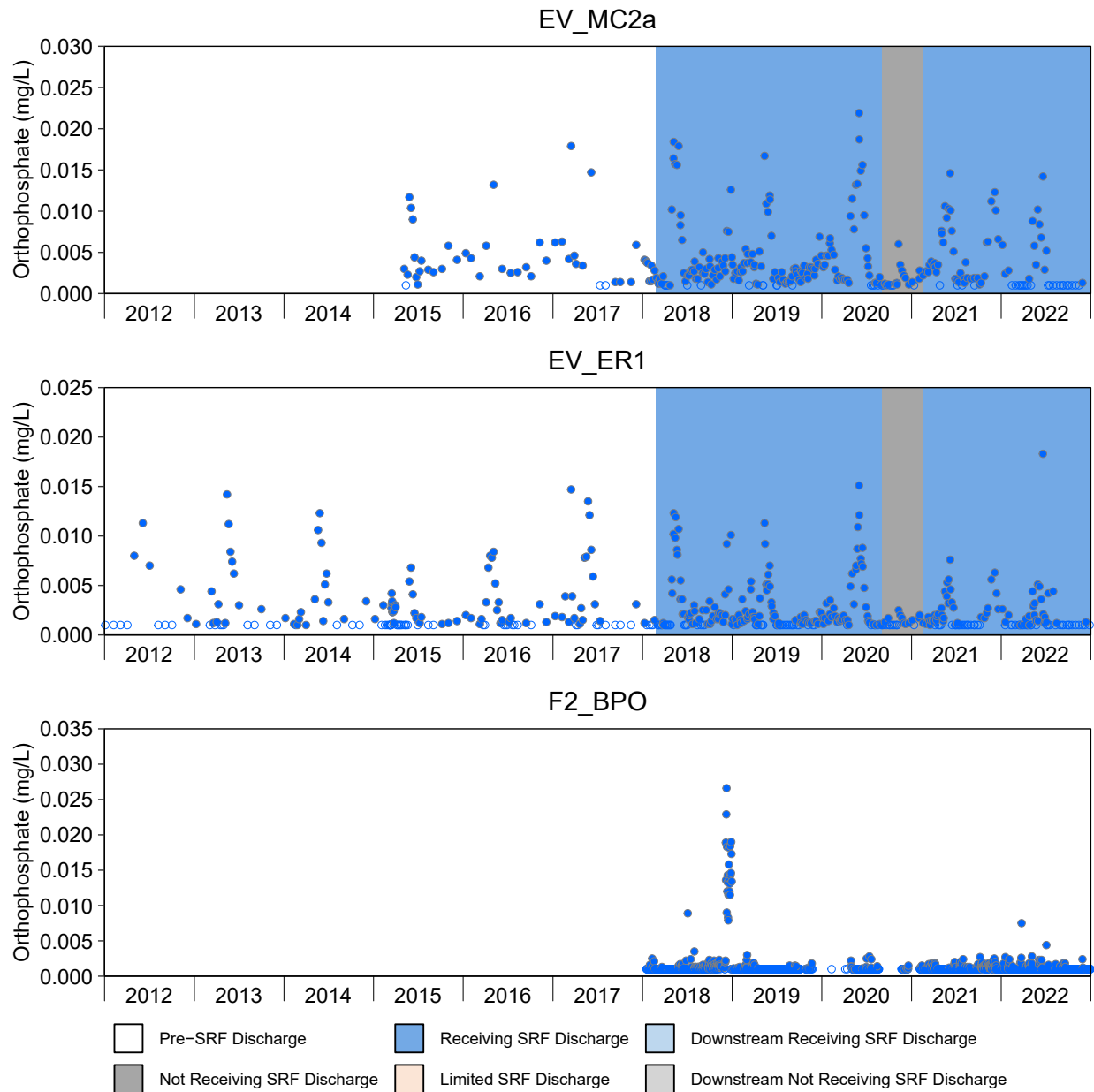


Figure 3.17: Time Series Plots for Orthophosphate from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

3.6.2 Biomass and Density

The total density of benthic invertebrates determined by Hess sampling in Erickson Creek in September 2022 showed no difference between RG_ERCKDT, downstream of the SRF water treatment outfall, and RG_ERCKUT, upstream of the SRF water treatment outfall in any endpoints (Figure 3.18), in contrast to 2021, when total density of benthic invertebrates was significantly higher at RG_ERCKDT compared to RG_ERCKUT. This difference in 2021 was driven by significantly higher densities of most major taxa at RG_ERCKDT, including Ephemeroptera, Plecoptera, and Chironomidae, as well as combined EPT density, which returned to values similar to upstream in 2022 (Figure 3.18; Appendix Tables F.4 and F.5). In 2021, greater organism densities at RG_ERCKDT compared to RG_ERCKUT suggested higher benthic invertebrate productivity immediately downstream of the SRF outfall in Erickson Creek, likely related to the elevated temperatures observed during the summer months at RG_ERCKDT in that year (Section 3.1). This increase on BIC biomass and density was not apparent in 2022, most likely due to SRF shutdown during the growing season leading to lower temperatures at that time compared to 2021.

3.6.3 Visual Periphyton Coverage

In September 2022, mean periphyton coverage was moderate at the reference study area (RG_ALUSM) and at all mine-exposed study areas evaluated, except RG_ERCK, and RG_BOCK (Appendix Table E.1). These sites all had mean visual periphyton coverage scores between 2 and 3 of a possible range from one (rocks not slippery and no obvious colour) to five (rocks mostly obscured by algae mats; Environment Canada 2012a). Moderate coverage in Gate, and Michel Creek are similar from previous existing conditions work in 2020 to 2022 (Minnow 2020a, 2021a, Minnow 2022b). RG_ERCK, near the confluence with Michel Creek, had a score of 5, where as Bodie Creek had a score of 1. The high periphyton score at RG_ERCK is consistent with 2021 (Minnow 2022b). There were no patterns in visual periphyton score associated with SRF discharge in 2022.



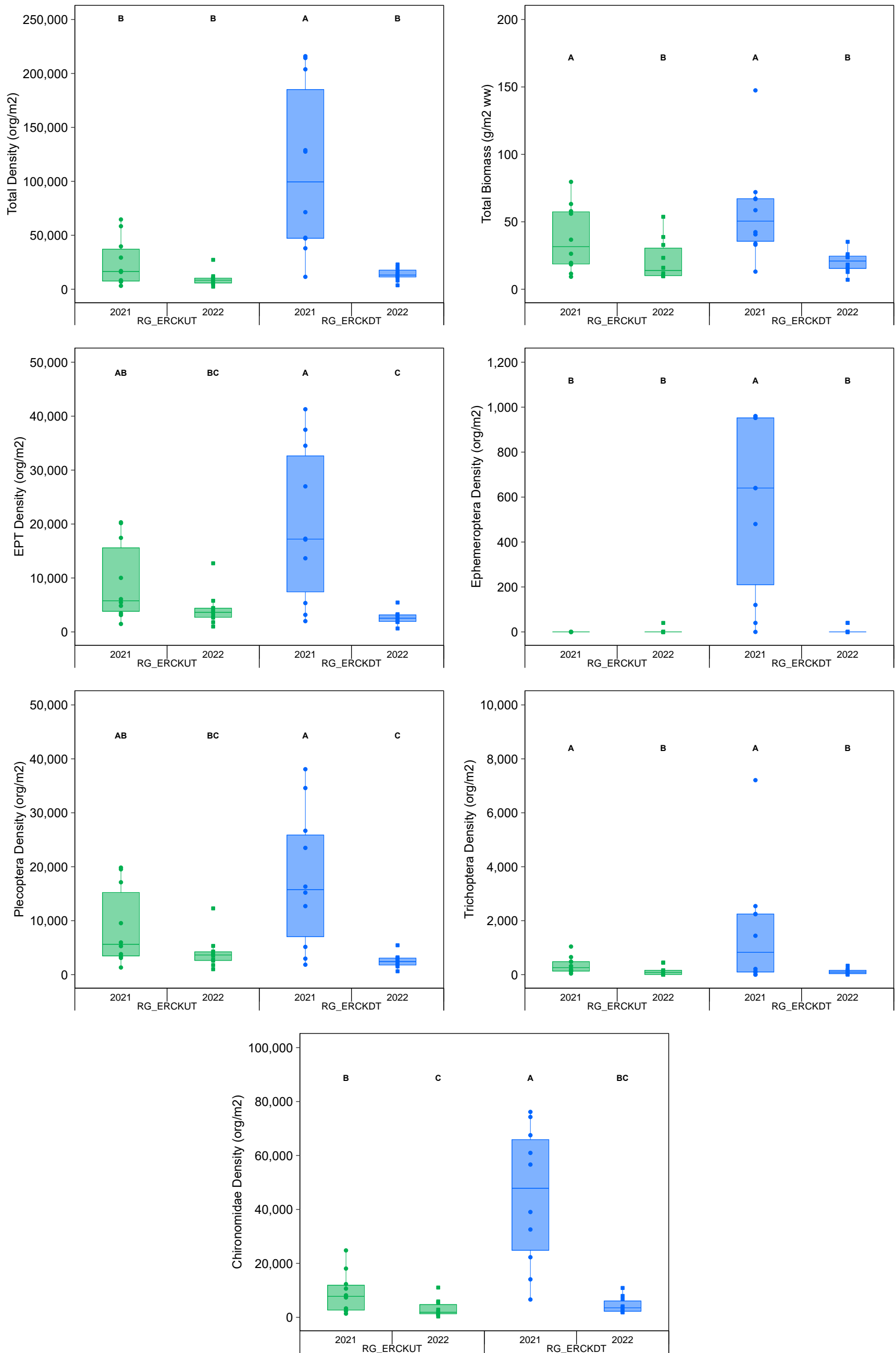


Figure 3.18: Benthic Invertebrate Density and Biomass Metrics Collected by Hess Sampling for Upstream (RG_ERCKUT) and Downstream (RG_ERCKDT) Areas, EVO LAEMP, September 2021 and 2022

Notes: Areas that share a letter are not significantly different (p-value=0.1). Each sampling event consisted of 10 samples.

4 INTEGRATED SUMMARY AND CONCLUSIONS

The EVO LAEMP report discusses key questions related to current biological conditions within the study area. The study questions are focused on water quality and the biological effects of SRF operation on the receiving environments of Erickson, Gate, Bodie, and Michel creeks.

In 2022, the SRF removed 89,292 kg of nitrate and 672 kg of selenium decreasing selenium and nitrate loadings into the receiving environment. During SRF operation, concentrations of nitrate and selenium decreased in Erickson Creek as well as Gate and Bodie creeks. In Michel Creek, concentrations of total selenium and nitrate have decreased compared to the base year of monitoring, likely related to SRF treatment. As expected in 2022, during SRF shutdown in Erickson Creek, temperature, and benthic proxies of productivity (i.e., benthic biomass and density) returned to pre-SRF P2 operation conditions.

While the changes observed in water quality, temperature, and productivity in 2022 were expected based on SRF operational status, changes in calcite presence and benthic invertebrate community were less clear. Calcite in the receiving environment (Gate, Bodie, and Erickson creeks) was largely similar to pre-EVO SRF P2 operation in 2022; however, it is unclear if the shifts in 2022 compared to 2021 were related to SRF operation, as shutdown (no antiscalant treatment), during the late spring and summer of 2022 precludes any conclusions around the cause of calcite variability among years. Lastly, while effects to benthic invertebrate community in relation to reference normal ranges were apparent in Erickson Creek and Michel Creek, they were either present prior to SRF commissioning, have not changed substantially over time, and/or have been variable through time in a manner inconsistent with SRF operation, indicating multiple influences, both natural and stressor-related, on BIC, and suggests minimal effects of SRF operation. Additional years of data will be beneficial to assess changes in calcite and BIC associated with SRF water treatment.

Samples collected for the 2021 EVO LAEMP identified an unexpected increase in BIT selenium concentrations compared to pre-EVO SRF P2 Operation in Upper Erickson Creek (RG_ERCKDT). Confirmatory sampling in December 2021 and March 2022 showed BIT Se concentrations above Level 1, and in some cases, Level 2 and 3 EVWQP benchmarks for effects to benthic invertebrates. Elevated BIT Se concentrations were spatially constrained to the upper reaches of Erickson Creek and no changes in BIT Se concentrations were recorded at either the confluence of Erickson Creek and Michel Creek or further downstream in Michel Creek. The concentrations of Se in BIT in upper Erickson Creek could not be accounted for through known aqueous bioaccumulation mechanisms (e.g., Se bioaccumulation model relationships between concentration of aqueous Se species to BIT Se concentrations), indicating another



source of bioavailable Se in upper Erickson Creek. This outcome triggered further investigation under Teck's Adaptive Management Plan Response Framework, including increased monitoring, and the development of the Investigation Into Enhanced Selenium Bioaccumulation in Benthic Invertebrate Tissue in Erickson Creek (Teck 2023a). This report explores potential contributing factors to increase BIT Se concentrations in Upper Erickson Creek and monitoring is on-going as of the date of this report.

Overall, the data gathered indicated that fine grained particulates (i.e., iron and manganese oxides), derived from SRF operation, are increasing Se bioaccumulation in BIT in upper Erickson Creek. Sediments collected in upper Erickson Creek below the SRF outfall show an increase in both total and bioavailable Se species at the same temporal scales as the observed BIT Se concentration increase. The enhanced sediment Se concentrations are only observed in the upper reaches of Erickson Creek and show no significant increase at the confluence with Michel Creek or in Michel Creek.

Water treatment of Erickson Creek was paused in early April 2022 for planned maintenance and extended as an adaptive management response to mitigate further increases in BIT Se concentrations during the investigation of cause. Shortly after treatment was paused, BIT Se concentrations decreased in upper Erickson and reached pre-SRF concentrations by October 2022. The SRF was restarted on October 4, and in November and December of 2022 mean BIT Se concentrations remained below EVWQP Level 1 benchmarks for benthic invertebrate tissue.

To reduce particle loading from the EVO SRF to Erickson Creek, Teck is advancing design and implementation of a temporary particle control (filtration) full scale trial. This has been informed by the results learned to date in Erickson Creek and has potential application to other SRF systems coming online in 2023. While filtration is understood to be an interim mitigation, based on our current understanding of the causal mechanism, it may not be the final mitigation for the EVO SRF (or other SRFs). Other mitigation strategies (e.g., flow rates, discharge pathways, SRF process adjustments, alternative filtration/removal technologies) that may also reduce or mitigate particle release into the receiving environment are being considered for application at EVO SRF and other SRFs, as appropriate.



5 UPDATES TO 2021 TO 2023 EVO LAEMP STUDY DESIGN

Permit 107517 (last amended May 18, 2023) contains Section 8.3.4 which outlines the LAEMP requirements for any changes to the approved 2021 to 2023 study design as follows:

“Section 8.3.4: The permittee must develop and implement a LAEMP to determine the magnitude and extent of influence from EVO SRF discharge on water quality (including temperature), calcite and benthic invertebrate communities to assess what factors are contributing to the observed effects. The study design must be reviewed by the EMC and submitted to the director for approval by June 30, 2021. The LAEMP must be designed to an appropriate temporal scale to capture short term, local effects to the immediate receiving environment, and must consider the possibility of impacts resulting from potential selenium speciation. The LAEMP must focus on Erickson Creek from EV_ECOUT (E321814) to EV_EC1 (0200097) and Michel Creek between EV_MC3 (0200203) and EV_MC2 (E300091) for 2021-2023.

Until the 2021-2023 LAEMP study design is approved and implemented, the permittee must continue the pre-operational aquatic effects monitoring program as outlined in Section 8.2.2 the EVO SRF Phase 2 Operations application. The permittee must notify the director at least 15 days prior to implementing any proposed changes to the approved LAEMP. Any changes to the approved study design must be reported in the annual LAEMP report.”

The EVO LAEMP Study Design was reviewed by the EMC and submitted June 30, 2021, in accordance with section 8.3.4. Sampling conducted in 2023 will follow the approved study design with one exception.

Lower Erickson Creek (Reach 1, 290 m, stretching from the confluence of the Michel Creek to above RG_ERCK) is slated for calcite remediation and the lower 50 to 70 m will be remediated in September of 2023. Due to the instream works it will likely be impossible to sample RG_ERCK in September 2023. If sampling is not possible at RG_ERCK alternative samples will be collected at RG_ERCK2, a newly established monitoring area located approximately 200 to 250 meters upstream of the confluence of Erickson and Michel creeks.



6 REFERENCES

- ADEPT (ADEPT Environmental Sciences Ltd.). 2022. Elk Valley Selenium Speciation Monitoring Program: 2021 Annual Report. Prepared for Teck Coal Limited, Sparwood, BC. April 2022.
- ASTM (American Society for Testing and Materials). 2013. Standard Guide for Conducting Early Life-Stage Toxicity Tests with Fishes. E1241-05, 29 p.
- Azimuth (Azimuth Consulting Group Partnership). 2018. Proposed Water Quality Triggers for the Elk Valley Adaptive Management Plan. Prepared for Teck Resources Limited, Vancouver, BC. June 2018.
- BCMOE (British Columbia Ministry of Environment). 1997. Ambient Water Quality Criteria for Dissolved Oxygen. February 1997.
- BCMOE. 2001. Water Quality Guidelines for Temperature. August 2001.
- BCMOE. 2013. British Columbia Field Sampling Manual for Continuous Monitoring and the Collection of Air, Air-Emission, Water, Wastewater, Soil, Sediment, and Biological Samples. 2013 Edition.
- BCMOECCS (British Columbia Ministry of Environment and Climate Change Strategy). 2020a. British Columbia Field Sampling Manual Part D: Solids. 2020 Edition.
- BCMOECCS. 2020b. British Columbia Environmental Laboratory Manual. Prepared by Analysis, Reporting & Knowledge Services Knowledge Management Branch. Updated April 2020.
- BCMOECCS. 2021a. British Columbia Approved Water Quality Guidelines: Aquatic Life, Wildlife & Agriculture – Guideline Summary. Water Quality Guideline Series, WQG-20. Prov. B.C., Victoria B.C.
- BCMOECCS. 2021b. Working Water Quality Guidelines: Aquatic Life, Wildlife & Agriculture. Water Quality Guideline Series, WQG-08. Prov. B.C., Victoria B.C.
- BCMOECC. 2022. Re: Approval of the EVO LAEMP 2021-2023 Study Design. October 15th, 2022.
- Carter, M.R., Gergorich, E.G., 2008. Soil Sampling and Methods of Analysis, 2nd Edition. Canada Society of Soil Science.
- COSEWIC (Committee on the Status of Endangered Wildlife in Canada). 2016. COSEWIC Assessment and Update Status Report on the Westslope Cutthroat Trout *Oncorhynchus clarkii lewisii* (British Columbia Population and Alberta Population) in Canada. COSEWIC, Ottawa. Available: www.cosewic.gc.ca/. March 2018).
- de Bruyn, A. and S.N. Luoma. 2021. Selenium Species Bioaccumulation Tool Draft Version 2.0. Prepared for Mariah Arnold, Teck Coal Limited, Sparwood, BC. February. Project 19133414/MQ2 Task 4.
- Ecofish (Ecofish Research Ltd.). 2020. Elkview Operations Saturated Rock Fill Phase 2 Project Ramping Assessment Report. Prepared for Teck Coal Limited. 6 March 2020.
- Environment Canada. 1996. Biological Test Method: Acute Lethality Test Using *Daphnia* spp. Environmental Protections Series. Method Development and Applications Section. Environmental Technology Centre. May 1996.



- Environment Canada. 1998. Biological Test Method: Toxicity Tests Using Early Life Stages of Salmonid Fish (Rainbow Trout). Environmental Technology Centre, Ottawa, Ontario. Environmental Protection Series. Report 1/RM/28. July 1998.
- Environment Canada. 2007a. Biological Test Method: Acute Lethality Test Using Rainbow Trout. Environmental Protections Series. Method Development and Applications Section. Environmental Technology Centre. May 2007.
- Environment Canada. 2007b. Biological Test Method: Growth Inhibition Test Using a Freshwater Alga. Environmental Technology Centre, Ottawa, Ontario. Environmental Protection Series. Report 1/RM/25. Second Edition. March 2007.
- Environment Canada. 2007c. Biological Test Method: Test of Reproduction and Survival Using the Cladoceran *Ceriodaphnia dubia*. Environmental Technology Centre, Ottawa, Ontario. Environmental Protection Series. Report EPS 1/RM/21. Second Edition. February 2007.
- Environment Canada. 2012a. Field Manual: Wadeable Streams. Canadian Aquatic Biomonitoring Network (CABIN).
- Environment Canada. 2012b. Metal Mining Technical Guidance for Environmental Effects Monitoring.
- Environment Canada. 2014. Laboratory Methods: Processing, Taxonomy, and Quality Control of Benthic Macroinvertebrate Samples. Canadian Aquatic Biomonitoring Network (CABIN). May.
- ENV (British Columbia Ministry of Environment and Climate Change Strategy). 2023. Amended Permit 107517 issued under the provisions of the *Environmental Management Act*. January 27, 2023.
- Golder (Golder Associates). 2020a. Water Temperature Modelling of Discharge from the Elkview Operations Saturate Rock Fill Phase 2 Project Memorandum. Prepared for Teck Coal Limited. September 21, 2020.
- Golder. 2020b. Updates to the Lotic and Lentic Statistical Bioaccumulation Models for Selenium in the Elk Valley. Prepared for Teck Coal Limited. November 2020.
- Golder 2021a. Elk Valley Selenium Speciation Program: 2021 Field Sampling Plan. Prepared for Teck Coal Limited. 29 July 2021.
- Golder. 2021b. Preliminary Annelid Bioaccumulation Analysis. Prepared for Teck Coal Limited. June 2021.
- Golder. 2021c. Selenium Species Bioaccumulation Tool Draft Version 2.0. Prepared for Teck Coal Limited. February 2021.
- Golder. 2022. 2021 Chronic Toxicity Program – Elk Valley Testing to Satisfy Permit Requirements; Interpretive Report. Submitted to Teck Coal Ltd. April 2022.
- Hocking, M., K. Akaoka, A. Buren, E. Vogt, J. MacAdams, and T. Hatfield. 2020. 2019 Calcite Effects to Spawning Habitat Suitability of Westslope Cutthroat Trout. Consultant's report prepared for Teck Coal Ltd. by Ecofish Research Ltd. May 8, 2020.
- Lotic (Lotic Environmental). 2015. Elkview Operations Baldy Ridge Extension Project. Fish and Fish Habitat Baseline Report. Final Report. September 2015.
- Lotic. 2021. Regional Calcite Monitoring Plan: Field Manual. Prepared for Teck Coal Limited by Lotic Environmental Ltd. May 2021.



- McPhail, J.D. 2007. The Freshwater Fishes of British Columbia, University of Alberta Press, Edmonton, AB.
- McPhail, J. D., and J. S. Baxter. 1996. A Review of Bull Trout (*Salvelinus confluentus*) Life-History and Habitat Use in Relation to Compensation and Improvement Opportunities. Fisheries Management Report No. 104, 35 p.
- Minnow (Minnow Environmental Inc.). 2015. Line Creek Local Aquatic Effects Monitoring Program (LAEMP), 2014. Prepared for Teck Coal Limited, Sparwood, British Columbia. May. Project #2516.
- Minnow. 2016. Evaluation of Calcite Effects on Aquatic Biota in the Elk Valley (2014 and 2015). Report prepared for Teck Coal Limited, Sparwood, BC. Report prepared by Minnow Environmental, Inc.
- Minnow. 2018a. Elk River Watershed Regional Aquatic Effects Monitoring Program (RAEMP) Final Report, 2015-2016. Prepared for Teck Coal Limited, Sparwood, British Columbia. January. Project #2561.
- Minnow. 2018b. Study Design for the Regional Aquatic Effects Monitoring Program, 2018 to 2020. Prepared for Teck Coal Limited, Sparwood, BC. March. Project #: 187202.0020.
- Minnow. 2018c. Line Creek Local Aquatic Effects Monitoring Program (LAEMP) Report, 2016. Prepared for Teck Coal Limited, Sparwood, BC. June 2018. Project #: 167202.0074
- Minnow. 2020a. Technical Memo for the Elkview Operation Saturated Rock Fill Phase 2 Baseline Aquatic Monitoring Study, September 2019. Prepared for Teck Coal Limited, Sparwood, British Columbia. March 10, 2021. Project #197202.0058.
- Minnow. 2020b. Elk River Water Regional Aquatic Effects Monitoring Program (RAEMP) Final Report, 2017 – 2019. Prepared for Teck Coal Limited, Sparwood, British Columbia. March. Project #187202.0011.
- Minnow. 2020c. Evaluation of Nutrient Concentrations in the Elk River Watershed Final Report. Prepared for Teck Coal Limited, Sparwood, British Columbia. November. Project#207202.0011.
- Minnow. 2021a. Technical Memo for the Elkview Operation Saturated Rock Fill Phase 2 Aquatic Monitoring Study of Existing Conditions, September 2020. Prepared for Teck Coal Limited, Sparwood, British Columbia. April 16, 2021. Project #197202.0058.
- Minnow. 2021b. Study Design for the 2021 to 2023 Elkview Operations (EVO) Local Aquatic Effects Monitoring Program (LAEMP). Prepared for Teck Coal Limited, Sparwood, British Columbia. June 2021. Project #217202.0009.
- Minnow. 2021c. Study Design for the Regional Aquatic Effects Monitoring Program, 2021 to 2023. Prepared for Teck Coal Limited, Sparwood, BC. February. Project 207202.0006.
- Minnow. 2021d. Study Design for Line Creek Local Aquatic Effects Monitoring Program (LAEMP), 2021. Prepared for Teck Coal Limited, Sparwood, BC. May. Project 207202.0015.
- Minnow. 2022a. Subject Matter Expert Report: Food Availability. Evaluation of Cause – Reduced Recruitment in the Harmer Creek Westslope Cutthroat Trout Population. Report prepared for Teck Coal Limited. Prepared by Minnow Environmental Inc.
- Minnow. 2022b. Elk Valley Local Aquatic Effects Monitoring Program (LAEMP) Report, 2021. Prepared for Teck Coal Limited, Sparwood, BC. June 2022. Project #: 217202.0009



- Minnow and Lotic. 2021. Study Design for Fording River Local Aquatic Effects Monitoring Program (LAEMP), 2021 to 2023. Prepared for Teck Coal Limited, Sparwood, BC. April. Project 217202.0011.
- Ogle, R.S., Maier, K.J., Kiffney, P., Williams, M.J., Brasher, A., Melton, L.A., Knight, A.W. 1988. Bioaccumulation of Selenium in Aquatic Ecosystems. *Lake Reservoir Manage.* 4,165-173.
- R Core Team. 2022. R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. URL <https://www.R-project.org>
- Robinson, M.D. 2009. Erickson Creek Fish Presence/Abundance Survey. Consultant report prepared by Interior Reforestation Co. Ltd. Prepared for Elk Valley Coal Corporation. December 2009.
- Robinson, M.D. 2010. Effects of calcite deposition on benthic macroinvertebrate communities throughout the Elk River Watershed. Prepared for Teck Coal Ltd. Prepared by Interior Reforestation Co. Ltd.
- Robinson, M.D., Gordon, S., Otto, M. 2022. 2021 Calcite Monitoring Program Annual Report. Prepared for by Teck Coal Ltd. by Lotic Environmental. April 2022.
- Riedel, G.F., Sanders, J.G., Gilmour, C.C. 1996. Uptake, Transformation, and Impact of Selenium in Freshwater Phytoplankton and Bacterioplankton Communities. *Aquat. Microbial Ecol.* 11, 43-51.
- Smit, R. and M.D. Robinson. 2023. Teck Coal Ltd. 2022 Calcite Monitoring Program Annual Report. Prepared for Teck Coal Ltd. by Lotic Environmental Ltd. 48 pp + appendices.
- Stewart, R., M. Grosell, D. Buchwalter, N. Fisher, S. Luoma, T. Mathews, P. Orr, W. Wang, X. 2010. Bioaccumulation and Trophic Transfer of Selenium. Pp. 93-139. In: P. Chapman et al. (Eds.), *Ecological Assessment of Selenium in the Aquatic Environment*. CRC Press, Boca Raton, London, New York.
- Teck (Teck Coal Limited). 2014. Elk Valley Water Quality Plan. Submitted to the British Columbia Minister of Environment for approval on July 22, 2014.
- Teck. 2016. Measurement of the Calcite Index. Standard Practices and Procedures – TC-CI-01. Teck Coal Limited.
- Teck. 2018. Water Quality Adaptive Management Plan for Teck Coal Operations in the Elk Valley. December.
- Teck. 2019a. Water Quality Adaptive Management Plan for Teck Coal Operations in the Elk Valley – 2018 Annual Report. Prepared by Teck Coal Limited. July 31, 2019.
- Teck. 2020a. Elkview Operations Saturate Rock Fill Phase 2 – Project Summary. Submitted to Ministry of Energy, Mines, and Petroleum Resources. May 5, 2020.
- Teck. 2020b. Mine Water Management Plan Elkview Operations. Submitted to Ministry of Energy, Mines, and Petroleum Resources. June 30, 2020.
- Teck. 2020c. Water Quality Adaptive Management Plan for Teck Coal Operations in the Elk Valley – 2019 Annual Report. Prepared by Teck Coal Limited. July 31, 2020.
- Teck. 2021a. Water Quality Adaptive Management Plan for Teck Coal Operations in the Elk Valley – 2021 Update. Prepared by Teck Coal Limited. December 15, 2021.
- Teck. 2021b. Water Quality Adaptive Management Plan for Teck Coal Operations in the Elk Valley – 2020 Annual Report. Prepared by Teck Coal Limited. July 31, 2021.



- Teck 2022a. Annual Water Treatment Performance Report – 2021. Prepared by Teck Coal Limited. March 31, 2022.
- Teck. 2022b. Annual Water Quality Report – 2021. Prepared by Teck Coal Limited. March 31, 2022.
- Teck. 2023a. EVO Saturated Rock Fill: Investigation Into Enhanced Selenium Bioaccumulation in Benthic Invertebrate Tissue in Erickson Creek. Prepared by Teck Coal Limited. May 4, 2023.
- Teck. 2023b. Surface Water Quality Monitoring 2022 Annual Report – 2022. Prepared by Teck Coal Limited. March 31, 2023. Therneau, T.M. 2017. Survival analysis. Package “survival” for R. April 4, 2017. <https://cran.r-project.org/web/packages/survival/survival.pdf>
- US EPA (United States Environmental Protection Agency). 1996. Ecological Effects Test Guidelines. OPPTS 850.1400 Fish Early-Life Stage Toxicity Test. EPA-712-C-96-121, Public Draft.
- US EPA. 2000. Methods for Measuring the Toxicity and Bioaccumulation of Sediment-Associated Contaminants with Freshwater Invertebrates. 2nd Edition. EPA/600/R-99/064. Office of Water, Washington, DC, USA.
- Vannote, R.L, Sweeney, B.W. 1980. Geographic Analysis of Thermal Equilibria: A Conceptual Model for Evaluating The Effect of Natural and Modified Thermal Regimes on Aquatic Insect Communities. *The American Naturalist*. 115:5, 667-695.
- Wilkinson, C. 2009. Sportfish population dynamics in an intensively managed river system. MSc Thesis. University of British Columbia.
- Wright, N., T. Jensma, H. Wright, K. Akaoka, M. Hocking, and T. Hatfield. 2018. 2017 Calcite Effects to Fish Spawning and Incubation. Prepared for Teck Coal Limited by Ecofish Research Ltd. February 19, 2018.
- Zathey, N., Mitchell, S., and Robinson, M.D. 2021. Teck Coal Ltd. 2020 Calcite Monitoring Program Annual Report. Prepared for Teck Coal Ltd. By Lotic Environmental Ltd.



APPENDIX A
METHODS AND DATA ANALYSIS

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A1	PHYSICAL HABITAT	1
A1.1	Temperature	1
A1.1.1	Sample Collection	1
A1.1.2	Data Analysis	1
A1.2	Sediment.....	2
A1.2.1	Sample Collection	2
A1.2.2	Laboratory Analysis.....	2
A1.2.3	Data Analysis	4
A1.2.4	Calcite Measurement	4
A1.2.5	Data Analysis	5
A2	WATER QUALITY	7
A2.1	Sample Collection	7
A2.2	Laboratory Analysis	7
A2.3	Data Analysis.....	9
A2.4	Acute Toxicity Testing.....	13
A2.5	Chronic Toxicity Testing.....	13
A3	BENTHIC INVERTEBRATES	15
A3.1	Overview.....	15
A3.2	Community Structure	15
A3.2.1	Sample Collection – Canadian Aquatic Biomonitoring Network (CABIN).....	15
A3.2.2	Laboratory Analysis.....	16
A3.2.3	Supporting Measures	16
A3.2.4	Data Analysis	17
A3.3	Biomass and Density (HESS).....	19
A3.3.1	Sample Collection	19
A3.3.2	Laboratory Analysis.....	19
A3.3.3	Data Analysis	19
A3.4	Benthic Invertebrate Tissue	20
A3.4.1	Sample Collection	20
A3.4.2	Laboratory Analysis.....	21
A3.4.3	Data Analysis	21
A4	REFERENCES	23



A1 PHYSICAL HABITAT

A1.1 Temperature

A1.1.1 Sample Collection

To evaluate potential temperature-related effects associated with the SRF discharge, instream continuous data loggers (TidbiT v2 Temp [UtBI-001]) were deployed at six locations (RG_ERCKUT, RG_ERCKDT, EV_EC_FLOW3, EV_EC_FLOW2, EV_EC_FLOW1, and RG_ERCK) in Erickson Creek in December 2020 (Figure 1.4; Table 2.4). Temperature data from these loggers was downloaded three times in 2021 (April, June, and October/November). Loggers were deployed in sets of two¹ to confirm logger accuracy and for contingency purposes. Two additional temperature loggers were installed at RG_ERCKUT and RG_ERCK on June 29th, 2021. The additional logger at RG_ERCKUT was installed to better understand temperature gradient upstream of the SRF, while the additional logger at RG_ERCK was added for contingency purposes due to the high calcification in the area, a lack of structures to anchor temperature loggers, as well as substantial flows in the area during freshet. Data from previously established temperature loggers monitored by Teck at F2_ECF (SRF effluent), EV_ECOUT (RG_ERCKDT), and EV_EC1 (RG_ERCK) were also included. Temperature loggers were downloaded onto a base station and uploaded to a computer for analysis. Following download, the loggers were placed back at the same depth for continued monitoring.

A1.1.2 Data Analysis

Temperature data from Teck routine water monitoring in fish-bearing areas of Erickson Creek (EV_EC1 [RG_ERCK]), were evaluated relative to British Columbia water quality guidelines². British Columbia water temperature guidelines for bull trout and westslope cutthroat trout specify a maximum ± 1 °C change from the optimum temperature range for different life stages of these species (spawning, incubation, and rearing; BCMOE 2001). Dissolved oxygen guidelines are also specific to life stage (buried embryo/alevin and all other life stages; BCMOE 1997). Guidelines for both these parameters were applied to periods of the year relevant to the specific life stage of each of the two species, with the time periods approximated from available literature (McPhail and Baxter 1996; McPhail 2007; COSEWIC 2016).

¹ The replicate logger at RG_ERCK was lost during collection on June 3rd, 2021.

² Air temperature at these areas was also considered in the interpretation of water temperature results.



Maximum daily temperature from temperature loggers at EV_EC1 (RG_ERCK) were compared directly to the SPO (which is based largely on the optimum temperatures for fish noted above) per Permit 107517³. Tabulated maximum daily temperature values via routine Teck monitoring in relation to the SPO was performed in Microsoft Excel and plots of temperature logger data were generated using R (R Core Team 2022).

A1.2 Sediment

A1.2.1 Sample Collection

Sediment quality samples were collected concurrently with benthic invertebrate sampling in September 2022. Three replicate sediment samples from both reference areas (RG_ALUSM and RG_MI25) were collected, while five replicate sediment samples were collected immediately upstream (RG_ERCKUT) and downstream of the SRF outfall (RG_ERCKDT) in Erickson Creek as well as at the compliance point in Michel Creek (RG_MICOMP; Figure 1.3; Table 2.2). Sediment samples were also collected at RG_MI3 (n=4), RG_ERCK (n=5), and RG_MIDER (n=5) as part of the 2021 to 2023 RAEMP study design (Minnow 2021a). Additional samples were collected monthly in Erickson Creek from March to December 2022, when sediment was present (Table 2.3). Surficial sediment was collected by slowly and carefully placing the spoon on the sediment surface in a manner that minimized disturbance and inserting the spoon into the sediment to capture sediment to a depth of 1 to 2 cm. Samples were collected into glass jars for analysis of polycyclic aromatic hydrocarbons (PAHs) and into polyethylene bags for analysis of metals, moisture content, and particle size distribution. Five sediment samples were collected at each mine-exposed area and three samples were collected in each reference area, consistent with the previous RAEMP cycle (Minnow 2020). Duplicate QC samples (split samples) were collected in the field concurrent with sediment chemistry samples at a rate of 10%. Following collection, samples were placed in a refrigerator at approximately 4°C until submitted to a qualified laboratory (ALS Calgary) for analysis.

A1.2.2 Laboratory Analysis

Sediment samples were analyzed by ALS Environmental in Calgary, Alberta. The laboratory thoroughly homogenized each sample prior to analysis. Methods used were consistent with the British Columbia Environmental Laboratory Manual (BCMOECCS 2020), where applicable,

³ The SPOs for temperature per Permit 107517 went into effect on August 13, 2021. The SPO at EV_EC1 (RG_ERCK) from January 1 to April 30 and November 1 to December 31 is <7°C, while from May 1 to August 31 it is <13°C, and September 1 to October 31 it is <10°C.



and include analyses of physical and chemical parameters (e.g., moisture content, particle size, total organic carbon [TOC], metals and metalloids, and PAHs).

Sediment samples were analyzed for the following constituents:

- Physical tests (moisture and pH);
- particle size and type (clay, grain size curve, silt, sand, gravel);
- Inorganic carbon, total carbon, total organic carbon, inorganic carbon (IC; as CaCO₃ equivalent);
- metals (aluminum, antimony, arsenic, barium, beryllium, bismuth, boron, cadmium, calcium, chromium, cobalt, copper, iron, lead, lithium, magnesium, manganese, mercury, molybdenum, nickel, phosphorus, potassium, selenium, silver, sodium, strontium, sulfur, thallium, tin, titanium, tungsten, uranium, vanadium, zinc, zirconium);
- polycyclic aromatic hydrocarbons (acenaphthene, acenaphthylene, acridine, anthracene, benz(a)anthracene, benzo(a)pyrene, benzo(b+j)fluoranthene, benzo(b+j+k)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3-c,d)pyrene, methyl naphthalene, 1+2-, methyl naphthalene, 1-, methyl naphthalene, 2-, naphthalene, phenanthrene, pyrene, quinoline, B(a)P total potency equivalents [B(a)P TPE], IACR (CCME), IACR AB (coarse), IACR AB (fine), PAHs, total (BC Sched 3.4), PAHs, total (EPA 16);
- polycyclic aromatic hydrocarbons surrogates (acridine-d₉, chrysene-d₁₂, naphthalene-d₈, phenanthrene-d₁₀).

Upon completion of the laboratory analyses, data reports were provided to Minnow and Teck electronically as Adobe Acrobat PDF and Microsoft Excel files.

Sediment samples were analyzed using the following methods:

- Moisture content was determined gravimetrically by drying the sample at 105°C;
- particle size distribution was determined by dry sieving (coarse particles), wet sieving (sand), and the pipette sedimentation method (fine particles);
- metals by Collision Reaction Cell Inductively Coupled Plasma-Mass Spectrometry (CRC ICP-MS; EPA 200.2/6020A);
- mercury by Cold Vapour Atomic Fluorescence Spectroscopy (CVAFS; EPA 200.2/245.7);
- TOC by combustion method (Carter and Gregorich 2008); and



- PAHs by rotary extraction using hexane/acetone (EPA 3570/8270) followed by capillary column gas chromatography with mass spectrometric detection (GC/MS).

Sediment chemistry data collected for the 2022 EVO LAEMP were of acceptable quality as characterized by appropriate LRLs, good detectability, excellent laboratory precision and accuracy, excellent field precision and reproducibility, and few hold time exceedances (Appendix B). Overall, the associated data were considered acceptable for this study.

A1.2.3 Data Analysis

Sediment quality data were tabulated, summarized, and compared to British Columbia Working Sediment Quality Guidelines (WSQGs), except for selenium concentrations which were compared to an alert concentration considered equivalent to an upper WSQG (BCMOECCS 2019, 2021a,b). The sediment data were also compared to reference area normal ranges, which were the 2.5th and 97.5th percentiles of pooled reference area distribution after removal of outliers (Minnow 2021c). Normal ranges could not be calculated for several PAHs because most of the values were below laboratory reporting limits (LRL). Data from 2017 to 2021 were plotted for all constituents for which a WSQG was available and visually assessed for temporal changes.

Temporal changes in sediment chemistry were evaluated relative to the commissioning of water treatment in December of 2021. Specifically, a censored analysis of variance (ANOVA) was conducted to compare differences in selenium concentrations between the station immediately upstream (RG_ERCKUT) and immediately downstream (RG_ERCKUT). Additional comparisons were made upstream (RG_MI3) and downstream (RG_MIDER) of Erickson Creek in Michel Creek as well as between additional areas in Michel Creek. Where there were significant differences a magnitude of difference (MOD) for each year comparison was calculated as:

$$MOD = \frac{MCT_{Treated, After} - MCT_{Predicted, After}}{MCT_{Predicted, After}} \times 100\%$$

; where:

$$MCT_{Predicted, After} = MCT_{Untreated, After} + (MCT_{Treated, Before} - MCT_{Untreated, Before});$$

and the measures of central tendency (MCT) are the estimated marginal means from the full ANOVA model. The MOD captures the change in concentrations at the treated station relative to what was expected given the differences pre-treatment. Calcite

A1.2.4 Calcite Measurement



Measurements of calcite presence and concretion were conducted on 100 particles (pebbles) at each biological sampling location concurrent with (and using the same particles as) the 100-pebble count. Calcite presence (C_p) has historically been a binary assessment (i.e., presence [score = 1] or absence [score = 0]; Teck 2016, Lotic 2021). In 2021, an additional method for assessing calcite presence in lotic environments was included (C_p' , Lotic 2021, Zathay et al. 2021, Robinson et al. 2022) that scored the fraction of the particle surface area covered by calcite as a decimal to the nearest 10th percentile (0.1, 0.2, 0.3, etc.; see Appendix C). The degree of concretion (C_c) was assessed by determining if the particle was removed with negligible resistance (not concreted; score = 0), noticeable resistance but removable (partially concreted; score = 1), or immovable (fully concreted; score = 2). If distinct particles were not visible due to heavy calcification, values of 1 (for presence) and 2 (for concretion) were recorded. If fines were encountered and calcite presence could not be visually confirmed, values of 0 (for presence) and 0 (for concretion) were recorded. If rocks were visible under fine material, the rock was selected for calcite measurements.

A1.2.5 Data Analysis

The results for the 100 particles were expressed as a Calcite Index (CI and CI') based on the following equations (Lotic 2021, Zathay et al. 2021, Robinson et al. 2022):

$$CI = C_p + C_c \text{ or } CI = C_p' + C_c$$

Where:

CI or CI' = Calcite Index⁴

$$C_p = \text{Calcite Presence Score} = \frac{\text{Number of particles with calcite}}{100 \text{ (binary score)}}$$

$$C_p' = \text{Calcite Presence Score} = \frac{\text{Number of particles with calcite}}{100 \text{ (proportional score)}}$$

$$C_c = \text{Calcite Concretion Score} = \frac{\text{Sum of particle concretion scores}}{100}$$

Calcite data collected as part of the Regional Calcite Monitoring Program (Lotic 2022) were reported but were not used in analyses as the calcite measurements taken concurrently

⁴ CI refers to the binary assessment of C_p and CI' refers to the proportional assessment of C_p' .



with biological sampling were deemed more appropriate because they are representative of the areas sampled for benthic invertebrates (i.e., riffles).



A2 WATER QUALITY

A2.1 Sample Collection

One water sample was collected concurrently with biological monitoring and included analysis of constituents stipulated in Permit 107517 (Appendix Table A.1), as well as selenium speciation. Sample collection procedures were consistent with those outlined in the British Columbia Field Sampling Manual (Province of British Columbia 2013). *In situ* measurements of temperature, dissolved oxygen (DO), pH, and specific conductance were recorded concurrently with biological monitoring. The water quality meter used to collect *in situ* measurements was calibrated regularly and maintained according to manufacturer instructions.

Water samples were collected far enough upstream or downstream of confluences (tributaries, discharges) to avoid areas of incomplete mixing (lateral, vertical), and upstream from bridges or other structures to avoid the potential for associated influence.

Water samples were collected by wading into a mid-channel area (unless it was not practical or safe to do so), moving from downstream to upstream, to avoid collection of water downstream of disturbed substrates. Samples were collected from mid-depth by inverting sample bottles below the surface before they were taken to shore prior to the addition of applicable preservatives. Water samples being analyzed for dissolved constituents were filtered in the field using a clean syringe affixed with a 0.45- μm membrane. Once filtered, the sample was preserved immediately in the manner specified by the analytical laboratory. Station location (i.e., GPS coordinates), date, time, and identifier were recorded on field sheets. All samples were kept at $\sim 4^{\circ}\text{C}$ until analysis. Samples were shipped to the analytical laboratory daily or every other day to achieve compliance with recommended analytical hold times.

Quality assurance and quality control (QA/QC) samples were collected in the field concurrent with water samples. A minimum of one water chemistry duplicate, one field blank, and one trip blank were collected for every 10 samples (10%).

A2.2 Laboratory Analysis

Water quality samples were analyzed by a qualified third-party Canadian Association for Laboratory Accreditation Inc. (CALA)-certified laboratory (ALS Environmental) for constituents listed in Permit 107517 (Appendix Table A.1). Analysis of selenium species was performed by a qualified third-party laboratory (Brooks Applied Labs, Seattle, WA). Methods were consistent



with the British Columbia Environmental Laboratory Manual (Province of British Columbia 2016), where applicable.

Water samples were analyzed by ALS Environmental (ALS; Calgary, AB) for constituents consistent with Permit 107517 (i.e., conventional constituents, major ions, nutrients, and total and dissolved metals; Appendix Table A.1) using the following methods indicated in parentheses:

- total organic carbon (TOC) and dissolved organic carbon (DOC; combustion method; American Public Health Association [APHA] 5310 for TOC);
- Total suspended solids (TSS) and total dissolved solids (TDS; gravimetric method; APHA 2540 D and C for TSS and TDS, respectively);
- alkalinity (potentiometric titration; APHA 2320);
- turbidity (nephelometric method; APHA 2130 Turbidity);
- hardness, as CaCO_3 (by calculation; APHA 2340 B);
- total and dissolved metals⁶, (collision cell inductively coupled plasma - mass spectrometry and inductively coupled plasma - optical emission spectrophotometry; APHA 3030 B&E/ Environmental Protection Agency [EPA] SW-846 6020A, and EPA 3005A/6010B, respectively);
- bromide, chloride, fluoride, and sulphate (ion chromatography; APHA 4110 B);
- ammonia, as N (fluorescence; J. Env. Monit., 2005, 7:37-42);
- nitrate and nitrite, as N (ion chromatography; EPA 300.0);
- total Kjeldahl nitrogen (TKN) (fluorescence; APHA 4500-NORG D.);
- orthophosphate and total phosphorus (colourimetric method; APHA 4500-P Phosphorus); and
- DMSeO, MeSe(IV), MeSe(VI), Se(IV), Se(VI), SeCN, SeMet, SeSO₃, unknown Se Sp, total Se and Dissolved Se.

Selenium speciation analysis was conducted by Brooks Applied Labs (Bothell, Washington) using ion chromatography inductively coupled plasma collision reaction cell mass spectrometry (ICICPCRC-MS). Constituents included selenate, selenite, dimethylselenoxide, methylseleninic acid, methaneselenonic acid, selenocyanate, selenomethionine, selenosulphate, and unknown selenium species. Selenium species were first separated on an



ion exchange column and then detected using a collision/reaction cell-equipped inductively coupled plasma mass spectrophotometry (ICP-MS). The applied method was optimized to provide interference free quantitation of individual selenium species at part-per-trillion (ppt) levels. Total (unfiltered) and dissolved (filtered) selenium analyses were also performed by Brooks Applied Labs using inductively coupled plasma triple quadrupole mass spectrometry (ICP-QQQ-MS). Water samples were collected into borosilicate glass containers and preserved to a pH < 2 with nitric acid. An aliquot of each preserved sample was further digested with nitric and hydrochloric acids in a closed vessel (bomb) prior to analysis. The applied sample collection, preservation, digestion, and analytical procedures are designed to accurately quantify selenium in the presence of potential interferences (e.g., chloride and bromide) and regardless of the chemical form of selenium present in solution (e.g., ionic, particulate, or volatile molecular forms).

Water chemistry data collected for the 2022 EVO LAEMP were of acceptable quality as characterized by good detectability, appropriate LRLs, minimal evidence of laboratory or field contamination, good laboratory and field precision and accuracy, and few hold time exceedances (Appendix A). Overall, the associated water chemistry data from ALS and BAL can be used with a high level of confidence in the derivation of conclusions.

A2.3 Data Analysis

Water quality assessment focused on constituents with early warning triggers (EWTs) as defined under the AMP (Azimuth 2018) as well as other constituents required to assess study questions. Total mercury was not included as the source of aqueous mercury concentrations in the Elk Valley is not considered mining (Teck 2019). Total phosphorus and orthophosphate were included in water quality assessment to assess productivity relative to water treatment. Data extracted from Teck's EQUIS database were screened for text values and converted to a common unit.

Routine water quality monitoring results were screened against British Columbia Water Quality Guidelines (BCWQG; BCMOEECS 2019, 2021a,b) as part of Teck's Annual Water Quality Monitoring Report under Permit 107517 (Teck 2022). Water samples taken concurrently with biological monitoring samples were integrated with routine water quality monitoring stations for a more complete data set. Routine water quality monitoring stations were matched with concurrent water samples according to proximity (Table 2.4). Water quality constituents were compared to BCWQGs (BCMOEECS 2019, 2021a,b), EVWQP benchmarks (Teck 2014), updated effects concentrations (i.e., for nitrate and sulphate), screening values for TDS, and the proposed benchmark for dissolved nickel, as applicable, for the 2022 calendar year. Plots of constituents with EWTs under the AMP (i.e., TDS, sulphate, total



concentrations of antimony, barium, boron, lithium, manganese, molybdenum, nickel, selenium, uranium, and zinc, and dissolved concentrations of cadmium and cobalt; Azimuth 2018), nutrients, and selenium species from 2012 to 2022 were plotted individually for each monitoring station.

Preparation of the 2014 Elk Valley Water Quality Plan (EVWQP) required derivation of science-based benchmarks for nitrate, sulphate, cadmium, and selenium. Risks associated with these constituents depend on their concentrations, concentrations of other water chemistry parameters known as exposure and toxicity modifying factors (ETMFs), and the sensitivity of aquatic receptors that could be exposed. The EVWQP benchmarks were derived, using a large body of published and site-specific information available at that time, to represent scientific best estimates of concentrations associated with no effects and defined levels of potential effect on chronic, sublethal endpoints for sensitive aquatic species. Margins of safety were incorporated in benchmark derivation to account for uncertainty and Teck committed to undertaking further study and periodic updates to progressively reduce that uncertainty and improve confidence in the benchmarks.

Studies conducted to progressively reduce uncertainty in benchmarks have included additional chronic toxicity studies of nitrate, sulphate, cadmium, and selenium individually and in mixtures, annual evaluation of water quality under the regional chronic toxicity monitoring program, updates to selenium bioaccumulation models in 2017 and 2022, development of new tools to predict bioaccumulation in relation to selenium speciation, and most recently an extensive program of validation and updates to the science-based benchmarks under Teck's Adaptive Management Plan (AMP). This program was undertaken to answer Management Question (MQ) 2 under the AMP: Will the aquatic ecosystem be protected by meeting the long-term site performance objectives? and associated key uncertainty 2.1: How will the science based benchmarks be validated and updated? The MQ2 program was developed with input from the Elk Valley Environmental Monitoring Committee (EMC) and results have been shared with the EMC on an ongoing basis since the program began.

A key outcome of the MQ2 program was the development of an updated compilation of chronic toxicity information for nitrate, sulphate, and selenium, including information available at the time of the EVWQP and studies conducted after the EVWQP. For nitrate and sulphate, the updated compilation represented a substantial increase in available toxicity information for key test species. This updated compilation was used to validate the EVWQP benchmarks and, where warranted, to derive updated effects concentrations that incorporate this new information (WSP Golder 2022). As in the EVWQP, the objective was to derive scientific best estimates of concentrations associated with no effects or defined levels of potential chronic,



sublethal effect to sensitive species and life stages relevant to the Elk Valley. The analysis in WSP (2022) concluded that the updated effects concentrations for nitrate and sulphate are supported by a larger dataset covering a wider range of conditions than was available at the time of the EVWQP, and thereby provide an improved basis for evaluating potential effects of these constituents.

Potential changes in water quality constituents at individual stations were analyzed statistically to evaluate (1) if there was an increase or decrease since the base year of monitoring (2012 or the earliest year if monitoring was initiated post-2012), (2) whether the annual mean was within the range of historical annual means, and (3) if the current monitoring year (2022) was different from the previous monitoring year (2021).

Monthly mean concentrations of each constituent were estimated using the Kaplan-Meier (K-M) method. The method involves transforming the left censored (i.e., < value) data set to a right censored (i.e., > value) data set, and then using the K-M estimator (used to estimate the mean survival time in survival analysis) to estimate the mean. The calculation was conducted using the `survfit()` function in the survival package (Therneau 2017) in R and involves calculating the area under the K-M survival curve. The K-M method is non-parametric and can accommodate multiple LRLs. The method of estimating the mean is equivalent to using the distribution of detectable values below the LRL to represent values that are < LRL. For example, the mean of the data set {1, 2, <4, 5} is estimated as the mean of 1, 2, [$\frac{1}{2} \times 1 + \frac{1}{2} \times 2$], and 5 which is 2.375. The value <4 is replaced by the distribution of values below 4 (i.e., 1 and 2 with equal weight of $\frac{1}{2}$). Similarly, the mean of the data set {1, 1.6, 2, 2.1, <4, 5} is estimated as the mean of 1, 1.6, 2, 2.1, [$\frac{1}{4} \times 1 + \frac{1}{4} \times 1.6 + \frac{1}{4} \times 2 + \frac{1}{4} \times 2.1$], and 5 which is 2.229. Again, the value <4 is replaced by the distribution of values below 4 (i.e., 1, 1.6, 2, and 2.1 with equal weight of $\frac{1}{4}$). If there is only one LRL and no detected values below the LRL, then the K-M estimate of the mean is equivalent to replacing the value below the LRL with the LRL (i.e., the best estimate for the values < LRL is the LRL).

Temporal changes in monthly mean concentrations for water quality constituents were evaluated for each station (reference and mine-exposed) from 2012 to 2022. Only years with at least six months and only stations with at least three years of data were included in the analysis. Because of the presence of LRLs for most parameters, a censored regression analysis of variance (ANOVA) model with factors *Year* and *Month* and assuming a log-normal distribution of the response variable was fit with maximum likelihood estimation for each station. The significance of each term in the model was assessed using likelihood-ratio tests to determine if there is a significant change in log-likelihood with the addition of the term in the model. This tested for an overall difference among years (including the *Month* term in



the model controlled for seasonal effects within a year). If the Year term was significant ($\alpha = 0.05$) then post-hoc contrasts were conducted to test for pairwise differences among years with an $\alpha = 0.05$ in a Tukey's HSD test which corrects for the number of comparisons.

For each year, a percent magnitude of difference from the base year (i.e., first year with minimum number of months) was calculated as:

$$\frac{Year_i - Base Year}{Base Year} \times 100 \%$$

and the significant difference between 2022 and previous years was assessed.

Tests for temporal trends were also conducted using the non-parametric seasonal Kendall test described by Hirsch et al. (1982). The tests were conducted using scripts written in R software (R Core Team 2022). The seasonal Kendall test assesses temporal trends separately for each season (or month in this case) and combines the results for each season into an overall test for trend. The test is non-parametric and assesses whether there is a monotonic increasing or monotonic decreasing trend over time. The test is conducted by calculating the test statistic S_i which is equal to the sum of the number of increases and decreases from a time period t to all time periods after t for each observation in season i . The overall test statistic S is computed as the sum of S_i for all seasons. The significance of the observed S is determined by comparing it to a critical value of S (at the significance level $\alpha = 0.05$) determined from the exact sampling distribution of S (calculated by determining all possible permutations and combinations of S based on the increases and decreases from the number of pairwise comparisons made; Hirsch et al. 1982). If more than 45 pairwise comparisons are made (equivalent to the number of pairwise comparisons for $n = 10$ in a single season), then the normal approximation is used to calculate a p-value and to assess significance (Hirsch et al. 1982). The standard normal deviate Z is calculated as:

$$Z = \begin{cases} \frac{S - 1}{\sqrt{\sigma_S}} & \text{if } S > 0 \\ 0 & \text{if } S = 0 \\ \frac{S + 1}{\sqrt{\sigma_S}} & \text{if } S < 0 \end{cases}$$

Where $\sigma_S = \sum_{i=1}^k \frac{n_i(n_i-1)(2n_i+5) - \sum T_i t_i(t_i-1)(2t_i+5)}{18}$ and n_i is the number of samples in month i , t_i is the number of tied values for each tied value T_i , and k is the number of seasons (Hirsch et al. 1982).



An estimate of the trend slope over time was estimated by computing the median of all slopes between data pairs within the same month (Helsel and Hirsch 2002). The slope was reported as a percentage change in concentration per year. The intercept of a line through the time series was estimated as the median intercept of all lines through each point with the estimated slope (Pohlert 2016). The trend analysis was only conducted with a minimum number of 5 pairwise comparisons, the minimum number required for all consecutive increases or decrease to be significant at $\alpha = 0.05$.

Potential temporal changes in constituents with EWTs, nutrients (total phosphorus and orthophosphate) and selenium speciation were also evaluated relative to the commissioning of the EVO SRF. Specifically, a censored analysis of variance (ANOVA) was conducted to compare differences in concentrations between the station immediately upstream (RG_ERCKUT) and immediately downstream (RG_ERCKDT). Additional comparisons were made upstream (RG_MI3) and downstream (RG_MIDER) of Erickson Creek in Michel Creek as well as between additional areas in Michel Creek.

Seasonal mean concentrations of order constituents (nitrate, total selenium, dissolved cadmium, and sulphate) and total nickel from 2022 were plotted spatially, while selenium species concentrations of samples taken concurrent with biological monitoring in 2022 were also plotted spatially.

A2.4 Acute Toxicity Testing

Aqueous chronic toxicity was monitored, analyzed, and interpreted under the Annual Water Quality Monitoring Program (Teck 2023). Two acute toxicity tests were conducted on a quarterly basis as part of the Annual Water Quality Monitoring Program (as per Permit 107517):

- Single concentration acute toxicity test (96-hour LC50) using rainbow trout (*Oncorhynchus mykiss*); universal method: EPS 1/RM/9 (Environment Canada 2007a); and
- Single concentration acute toxicity test (48-hour LC50) using *Daphnia* spp.; universal method: EPS 1/RM/11 (Environment Canada 1996).

A2.5 Chronic Toxicity Testing

The following chronic toxicity tests were completed quarterly or semi-annually for water samples collected at mine-exposed and reference sites, as per the Permit 107517 Chronic Toxicity Program:



- 72-hour growth/inhibition test using a freshwater alga (*Pseudokirchneriella subcapitata*) conducted quarterly using method: EPS1/RM/25; Environment Canada 2007a;
- 7-day test of reproduction and survival using the cladoceran, *Ceriodaphnia dubia* conducted quarterly using method: EPS1/RM/21; Environment Canada 2007b;
- 28-day water-only test of growth and survival using the amphipod, *Hyalella azteca* conducted semi-annually (in Q2 and Q4) using methods adapted from USEPA (2000);
- 30-day early life stage toxicity tests using rainbow trout, *Oncorhynchus mykiss* conducted semi-annually (in Q2 and Q4) using method: EPS 1/RM/28- 1E; Environment Canada 1998; and
- 28-day early life stage toxicity test using fathead minnow, *Pimephales promelas* conducted semi-annually (in Q1 and Q3) using methods: EPA-712-C-96-121; USEPA 1998; and E1241-05; ASTM 2013.

Toxicity tests and associated QA/QC measures were completed by a qualified third-party biological testing laboratory. Water quality samples were collected at the same time to support evaluation of toxicity test results. Results were reported quarterly and summarized annually by Teck in accordance with Permit 107517 requirements.



A3 BENTHIC INVERTEBRATES

A3.1 Overview

Benthic invertebrates are an important component of the aquatic ecosystem of the Elk River watershed because they can be used as indicators of localized food availability (based on abundance), food quality (based on tissue chemistry) and habitat quality (based on richness, % Ephemeroptera, Plecoptera and Trichoptera [EPT], and % Ephemeroptera, as well as abundance of EPT and Ephemeroptera, Plecoptera, and Trichoptera individually) for receptors at higher trophic levels. Benthic invertebrate monitoring in the EVO LAEMP consisted of community sampling, productivity, and composite-taxa tissue chemistry sampling. Supporting measures, including habitat characterization, were also collected concurrent with benthic invertebrate community samples, as described below.

Benthic invertebrate samples were collected to address study questions related to community structure (as determined via CABIN sampling; Section A3.2), productivity (as determined via Hess sampling; Section A3.3), and invertebrate tissue accumulation of selenium (Section A3.4). Consistent with other LAEMPs and the RAEMP (Minnow 2021a,b,c Minnow and Lotic 2021b), benthic invertebrate community and productivity sampling was completed in September; however, benthic invertebrate tissue sampling occurred monthly from March to December of 2022 (Table 2.2 and 2.3). Individual water samples for routine water quality analysis and selenium speciation analysis were collected from each monitoring area during each sampling event, concurrently with the collection of biological samples.

A3.2 Community Structure

A3.2.1 Sample Collection – Canadian Aquatic Biomonitoring Network (CABIN)

Benthic invertebrate community sampling followed the CABIN protocol, which involved a 3-minute travelling kick into a net with a triangular aperture measuring 36 cm per side and a mesh having 400-µm openings (Environment Canada 2012a). During sampling, the field technician moved across the stream channel (from bank to bank, depending on stream depth and width) in an upstream direction. With the net held immediately downstream of the technician's feet, the detritus and invertebrates disturbed from the substrate passively collected in the kick-net by the stream current. After three minutes of sampling time, the sampler returned to the stream bank with the sample. The kick-net was rinsed with water to move debris and invertebrates into the collection cup at the bottom of the net. The collection



cup was then removed, and the contents poured into a labelled plastic jar and preserved to a concentration of 10% buffered formalin solution in water.

A3.2.2 Laboratory Analysis

Benthic invertebrate community samples were sent to Cordillera Consulting (lead taxonomist Scott Finlayson), in Summerland BC, for sorting and taxonomic identification. Taxonomists at Cordillera have achieved certification for Group 1 (general Arthropods West), 2 (EPT East and West), and 3 (Chironomids West) benthic organisms in the Taxonomic Certification Program of the Society for Freshwater Science. At the beginning of the sorting process, each sample was examined and evaluated for estimation of total invertebrate numbers. If the total number was estimated to be greater than 600, then the laboratory's sub-sampling protocol was followed. Sorting efficiency and sub-sampling accuracy and precision was quantified using methods specified by Environment Canada (2014). Organisms were identified to the lowest practical level (LPL; typically genus or species).

Benthic invertebrate community data collected for the present study were of excellent quality as characterized by excellent sorting efficiency and excellent taxonomic identification accuracy (Appendix A). Therefore, the associated data can be used with a high level of confidence in the derivation of conclusions.

A3.2.3 Supporting Measures

Consistent with the requirements of the CABIN sampling protocol, supporting habitat information (i.e., water velocity and depth, *in situ* water quality [temperature, dissolved oxygen [DO], conductivity, pH], and substrate characteristics [Wolman 100-pebble count and substrate embeddedness]) were collected concurrently with BIC sampled in riffle habitats (Environment Canada 2012a). Periphyton scores were also ascribed to each biological monitoring area during September sampling, and according to CABIN sampling protocol (Environment Canada 2012a, Minnow and Lotic 2021b). The scoring was ascribed as follows:

- 1 – rocks not slippery, no obvious colour (<0.5mm thick);
- 2 – rocks slightly slippery, yellow-brown to light green in colour (0.5-1mm thick);
- 3 – rocks have noticeable slippery feel, patches of thicker green to brown algae (1-5mm thick);
- 4 – rocks are very slippery, numerous clumps (5-20mm thick); and
- 5 – rocks mostly obscured by algae mat, may have long strands (>20mm thick).



A3.2.4 Data Analysis

To address the investigation into the changes in BIC structure, endpoints of total sample abundance, richness (LPL taxonomy), percent (%) and total abundance of Chironomidae, EPT, Ephemeroptera, Plecoptera, and Trichoptera individually, and total abundance of key Ephemeroptera families (Baetidae, Heptageniidae, Ephemerellidae) were plotted spatially and temporally. Autotrophic to Heterotrophic Index, Shredder Index, Filtering to Collector Index, Predator Index, and Hyporheic to Benthic Index were also computed for each biological monitoring area from CABIN kick samples and using the following equations:

$$\text{Autotrophic to Heterotrophic Index} = \log_{10} \left(\frac{\text{Scrapers}}{\text{Shredders} + \text{Collector Gatherers} + \text{Filterers}} \right)$$

$$\text{Filtering Collector Index} = \log_{10} \left(\frac{\text{Filterers}}{\text{Collector Gatherers}} \right)$$

$$\text{Predator Index} = \log_{10} \left(\frac{\text{Predators}}{\text{All other Feeding Groups}} \right)$$

$$\text{Hyporheic to Benthic Index} = \log_{10} \left(\frac{\text{Burrowers}}{\text{Clingers} + \text{Sprawlers}} \right)$$

$$\text{Shredder Index} = \log_{10} \left(\frac{\text{Shredders}}{\text{Collector Gatherers} + \text{Filterers}} \right)$$

Benthic invertebrate community data collected in September were compared to regional normal (reference area) ranges and habitat adjusted site-specific normal ranges. The regional normal range is defined as the 2.5th and 97.5th percentiles of the distribution of reference area data (pooled 2012 to 2019 data) reported in the 2017 to 2019 RAEMP report (Minnow 2020). The site-specific normal ranges were calculated as prediction intervals from the final habitat model (Minnow 2020). Ninety-fifth percentile prediction intervals were calculated from linear mixed-effects models using simulations (n=100,000) to generate residual variation in random-effects terms. For Ephemeroptera and EPT Abundance endpoints, the prediction intervals from the % Ephemeroptera and % EPT models were multiplied by the prediction intervals from the Abundance model to generate the taxa specific abundance predictions. Prediction intervals were calculated using the predictInterval() function in the merTools R package (Knowles and Frederick, 2019). The residuals from the habitat models (observed minus model predicted values; on the transformed scale) were used in correlation analyses below.



Endpoints from September were plotted spatially (2022), and temporally (2012 to 2022) for each area where data were available. The relative composition of BIC was plotted spatially by monitoring area where samples were collected in 2022.

Temporal changes in benthic endpoints calculated from September kick and sweep data were evaluated for 2012 to 2022. For some (but not all) years there were replicate data for a given area within a year. Thus, for each endpoint, an ANOVA with factors *Year*, *Area* and *Year × Area* was fit. The best transformation for each endpoint was chosen as the transformation for which a Shapiro-Wilk's test on the residuals gave the highest P-value (i.e., most normally distributed). If there was a significant *Year* term, the variability within years and areas from the full model was used to test for significant differences between all pairwise comparisons of year for each area (i.e., is the difference between year *i* and year *j* greater than would be expected given the variability within areas for all stations for which we have replicates). This assumes the variability to be consistent among areas and years but allows for comparisons between years without replicates. Significance of the pairwise comparisons was assessed with an α of 0.05 in a Tukey's Honestly Significant Difference test (HSD) which corrects for the number of comparisons.

For each year, a magnitude of difference from the base year (i.e., first year with data) was calculated as:

$$\frac{Year_i - Base Year}{Pooled SD}$$

and the significant differences between 2022 and previous years was assessed. All statistics were conducted in R (R Core Team 2021).

Temporal changes in BIC endpoints were also evaluated relative to the commissioning of the EVO SRF. Specifically, an Analysis of Variance (ANOVA) was conducted to compare differences in endpoints between the station immediately upstream (RG_ERKUT) and immediately upstream (RG_ERCKDT). Additional comparisons were made upstream (RG_MI3) and downstream (RG_MIDER) of Erickson Creek in Michel Creek as well as between additional areas in Michel Creek. Where there were significant differences a magnitude of difference (MOD) for each year comparison was calculated as:

$$MOD = \frac{(MCT_{Treated After} - MCT_{Untreated After}) - (MCT_{Treated Before} - MCT_{Untreated Before})}{Pooled SD}$$

where the measures of central tendency (MCT) are the estimated marginal means from the full ANOVA model. The MOD captures the change in the difference between treated and



untreated stations before and after treatment relative to the variability within a station in a given year. All analysis was conducted in R (R Core Team, 2021).

A3.3 Biomass and Density (HESS)

A3.3.1 Sample Collection

Samples for analysis of benthic invertebrate density and biomass were collected using a Hess sampler (0.1 m² sampling area) with 500 µm mesh. Ten single-Hess samples were collected at each of two mine-exposed areas, one immediately upstream (RG_ERCKUT) and one downstream of the SRF outfall (RG_ERCKDT), with the replicate sampling locations a minimum of 5 m apart in September 2022 for analysis of benthic invertebrate biomass and density (Figure 1.3; Table 2.2).

A single sample was collected at each station by carefully inserting the base of the Hess sampler into the substrate to a depth of approximately 5 to 10 cm. Gravel or cobble enclosed within the Hess sampler was carefully washed while allowing the current to carry dislodged organisms into the mesh collection net. Organisms collected into the net were rinsed into the bottom of the net, and then into a labelled wide-mouth plastic jar. Samples were preserved to a nominal concentration of 10% buffered formalin in ambient water within approximately 6 hours of collection, so biomass was not lost through predation or decomposition of tissues before the samples were sorted at the laboratory.

A3.3.2 Laboratory Analysis

Benthic invertebrate biomass samples were sent to ZEAS Inc. (lead taxonomist Danuta Zaranko) in Nobleton, ON, for sorting and taxonomic identification. At the laboratory, preserved organisms in each sample were sorted from the sample debris, identified, and weighed at the family-level of taxonomy. Each family group of organisms was placed onto a fine cloth to drain excess surface moisture before being weighed to the nearest 0.1 mg. Total and family-level density and biomass were reported for each sample.

A3.3.3 Data Analysis

Laboratory data for benthic invertebrate biomass and density samples were converted to units of number of organisms per square meter (org/m²) based on the known area sampled. To understand the influence of the SRF on productivity measures of biomass and density of benthic invertebrates were evaluated (as well as evaluations of periphyton coverage and water quality as discussed in earlier sections). Overall biomass and density of benthic invertebrates as well as taxa-specific measures (specifically EPT, Ephemeroptera alone, Plecoptera alone,



Trichoptera alone, and Chironomidae alone) of these endpoints, determined via Hess sampling, were converted to number of organisms per square metre based on the area sampled. A spatial comparison between areas upstream (RG_ERCKUT) and downstream (RG_ERCKDT) of SRF water treatment were conducted using a Student's t-test, with $\alpha = 0.1$. When the assumption of normality was met, but homogeneity of variance was not, a t-test with unequal variance was used (Ruxton 2006). In instances where normality could not be achieved through data transformation, the non-parametric Mann-Whitney U-test was used. Statistical comparisons were conducted using R (R Core Team 2022). A magnitude of difference (MOD) was calculated for each endpoint as:

$$MOD = \frac{(MCT_{Downstream} - MCT_{Upstream})}{SD_{Upstream}} \times 100\%$$

, where the measures of central tendency (MCT) were means (untransformed) or geometric means (\log_{10} transformed) and the SD was standard deviation. The MOD calculations were conducted on the transformed scale when the data were transformed for analysis. When the Mann-Whitney test was used, the MOD was estimated using median values instead of means, and the Median Absolute Deviations (MAD) instead of SD.

A3.4 Benthic Invertebrate Tissue

A3.4.1 Sample Collection

Benthic invertebrate samples were collected for tissue chemistry using the kick and sweep sampling method described in section A3.2.1, except that sample collection was not timed. Samples were a composite of representative benthic invertebrate taxa in each sampling area. For each sample, clean tweezers were used to pick invertebrates from the debris until about 1 to 2 g wet weight (ww) was obtained. A photo was taken of each sample, and the dominant taxa added to the sample was recorded. Once sufficient tissue was picked from the debris, the sample was placed in a labelled vial and stored in a cooler with ice packs until it could be transferred to a freezer at the end of the day. Tissue samples were stored in a freezer and shipped frozen.

Upon collection of the sample using the kick and sweep sampling method at each replicate station, organisms were carefully removed from sample debris using tweezers until about 0.5 g of wet tissue was obtained. Field crews paid particular attention to proportions of annelids in kick and sweep collections, as these organisms have been known to hyperaccumulate some metals resulting in potentially biased results (Golder 2021). If annelids occurred at a proportion greater than 5% of the total sample biomass at a given replicate station, then these organisms were included in the composite sample (at that same proportion). Additionally in this scenario,



a separate 'annelid only' sample was collected for analysis from the replicate station. If the proportion of annelids represented less than 5% of the sample biomass for a given station, these organisms were not included in the composite-taxa sample.

A3.4.2 Laboratory Analysis

Tissue samples were kept in a freezer until they were transported by courier in coolers with ice packs to TrichAnalytics Inc. in Saanichton, BC. Samples were dehydrated (<60°C) upon receipt by the laboratory and analyzed using Laser Ablation Inductively Coupled Plasma Mass Spectrometry (ICP-MS). Results were reported on a dry weight basis along with moisture content. Quality assurance/quality control measures associated with the tissue chemistry analyses included evaluation of laboratory duplicates and certified reference materials. Benthic invertebrate tissue data collected for the 2022 EVO LAEMP were of good quality as characterized by excellent detectability, appropriate LRLs, and excellent laboratory precision and accuracy (Appendix B). Therefore, the associated data can be used with a good level of confidence in the derivation of conclusions for this study.

A3.4.3 Data Analysis

Composite-taxa benthic invertebrate tissue selenium concentrations were plotted for each EVO LAEMP monitoring area sampled in 2022 relative to:

- the regional normal (reference area) range, defined as the 2.5th and 97.5th percentiles of tissue selenium concentrations measured in reference areas that have not been disturbed by mining in historical studies completed in the Elk River watershed from 1996 to 2019 reported in RAEMP (Minnow 2020);
- data from previous sampling periods from 2012 to present, where available;
- the Level 1 EVWQP benchmarks for effects to invertebrates (13 milligrams/kilogram [mg/kg] dry weight [dw]), dietary effects to birds (15 mg/kg dw), and dietary effects to juvenile fish (11 mg/kg dw; Golder 2014) (Appendix Table A.2);
- the Level 2 EVWQP benchmarks for effects to invertebrates (20 milligrams/kilogram [mg/kg] dry weight [dw]), dietary effects to birds (22 mg/kg dw), and dietary effects to juvenile fish (18 mg/kg dw; Golder 2014) (Appendix Table A.2); and
- the Level 3 EVWQP benchmarks for effects to invertebrates (27 milligrams/kilogram [mg/kg] dry weight [dw]), dietary effects to birds (41 mg/kg dw), and dietary effects to juvenile fish (26 mg/kg dw; Golder 2014) (Appendix Table A.2).



Tissue selenium concentrations were paired with corresponding water selenium concentrations and compared to predictions from selenium bioaccumulation model (Golder 2020a) and the bioaccumulation tool (i.e., the 'B-tool'; predicts selenium tissue concentrations accounting for differences in selenium species and sulphate concentrations [Golder 2020b]).

Temporal changes in benthic invertebrate tissue selenium concentrations were evaluated relative to the commissioning of EVO SRF. Specifically, an analysis of variance (ANOVA) was conducted to compare differences in selenium concentrations between the station Where there were significant differences a magnitude of difference (MOD) was calculated as:

$$MOD = \frac{MCT_{Treated, After} - MCT_{Predicted, After}}{MCT_{Predicted, After}} \times 100\%$$

where:

$$MCT_{Predicted, After} = MCT_{Untreated, After} + (MCT_{Treated, Before} - MCT_{Untreated, Before})$$

and the measures of central tendency (MCT) are the estimated marginal means from the full ANOVA model. The MOD captures the change in concentrations at the treated station relative to what was expected given the differences pre-treatment. All analysis was conducted in R (R Core Team, 2021).



A4 REFERENCES

- ASTM (American Society for Testing and Materials). 2013. Standard Guide for Conducting Early Life-Stage Toxicity Tests with Fishes. E1241-05, 29 p.
- Azimuth (Azimuth Consulting Group Partnership). 2018. Proposed Water Quality Triggers for the Elk Valley Adaptive Management Plan. Prepared for Teck Resources Limited, Vancouver, BC. June 2018.
- BCMOE (British Columbia Ministry of Environment) – Water Policy and Sustainability Branch, Environmental Sustainability and Strategic Policy Division. 1997. Ambient Water Quality Criteria for Dissolved Oxygen. Retrieved from: [dissolvedoxygen-or.pdf\(gov.bc.ca\)](https://www2.gov.bc.ca/gov/content/industry/bcmoe/amb-water-quality-criteria-for-dissolved-oxygen.pdf). Victoria, BC.
- BCMOE. 2019. British Columbia Working Water Quality Guidelines for the Protection of Aquatic Life.
- BCMOECCS (British Columbia Ministry of Environment and Climate Change Strategy). 2019. British Columbia Working Water Quality Guidelines: Aquatic Life, Wildlife & Agriculture. Updated June 2019.
- BCMOECCS. 2020 British Columbia Laboratory Manual. Prepared by Analysis, Reporting & Knowledge Services Knowledge Management Branch. Updated April 2020.
- BCMOECCS. 2021a. Working Water Quality Guidelines: Aquatic Life, Wildlife & Agriculture. Water Quality Guideline Series, WQG-08. Prov. B.C.
- BCMOECCS. 2021b. British Columbia Approved Water Quality Guidelines: Aquatic Life, Wildlife & Agriculture. Summary Report. 39 pp.
- Carter, M.R., Gregorich, E.G. 2008. Soil Sampling and Methods of Analysis. 2nd Edition. Canada Society of Soil Science.
- Environment Canada. 1996. Biological Test Method: Acute Lethality Test Using Daphnia spp. Environmental Protections Series. Method Development and Applications Section. Environmental Technology Centre. May 1996.
- Environment Canada. 1998. Biological Test Method: Toxicity Tests Using Early Life Stages of Salmonid Fish (Rainbow Trout). Report EPS 1/RM/28, Second Edition. July.
- Environment Canada. 2007a. Biological Test Method: Growth Inhibition Test Using a Freshwater Alga. Report EPS 1/RM/25. Second Edition. March.



- Environment Canada. 2007b. Biological Test Method: Test of Reproduction and Survival using the Cladoceran *Ceriodaphnia dubia*. Report EPS 1/RM/21 Second Edition. February.
- Environment Canada. 2012a. Field Manual: Wadeable Streams. Canadian Aquatic Biomonitoring Network (CABIN).
- Environment Canada. 2014. Laboratory Methods: Processing, Taxonomy, and Quality Control of Benthic Macroinvertebrate Samples. Canadian Aquatic Biomonitoring Network (CABIN). May.
- Golder. (Golder Associates Ltd.). 2014. Benchmark Derivation Report for Selenium. Elk Valley Water Quality Plan. Report Number 13-1349-0006. July.
- Golder. 2020a. Technical memorandum – Updates to the Lotic and Lentic Statistical Bioaccumulation Models for Selenium in the Elk Valley. Prepared for Teck Coal Limited. November 2020.
- Golder. 2020b. Technical memorandum – Reducing uncertainty related to management question 2 – study design for task 4: bioaccumulation model validation and refinement. Prepared for Teck Coal Limited. May 2020.
- Golder. 2021. Preliminary Annelid Bioaccumulation Analysis. Prepared for Teck Coal Limited. June 2021.
- Helsel, D.R. and Hirsch, R.M. 2002. Statistical Methods in Water Resources Techniques of Water Resources Investigations, Book 4, chapter A3. U.S. Geological Survey. 522 pages.
- Hilborn, R., Bue, B.G., and Sharr, S. 1999. Estimating spawning escapements from periodic counts: a comparison of methods. *Can. J. Fish. Aquat. Sci.* 56(5): 888–896. doi:10.1139/f99-013.
- Hirsch, R.M., Slack, J.R., and Smith, R.A. 1982. Techniques of trend analysis for monthly water quality data. *Water Resources Research* 18: 107-121.
- Knowles, J.E., C. Frederick. 2019. merTools: Tools for Analyzing Mixed Effect Regression Models. R package version 0.5.0. <https://CRAN.R-project.org/package=merTools>
- Lotic (Lotic Environmental). 2021. Teck Coal Ltd. Regional Calcite Monitoring Program 2020 Annual Report. Prepared for Teck Coal Limited, Sparwood, BC. April 2021.
- Lotic. 2022. Teck Coal Ltd. Regional Calcite Monitoring Program 2021 Annual Report. Prepared for Teck Coal Limited, Sparwood, BC. April 2021.



- Minnow (Minnow Environmental Inc.). 2020. Elk River Watershed Regional Aquatic Effects Monitoring Program (RAEMP) Final Report, 2017 to 2019. Prepared for Teck Coal Limited, Sparwood, British Columbia. November. Project #187202.0011.
- Minnow. 2021a. Study Design for the Regional Aquatic Effects Monitoring Program, 2021 to 2023. Prepared for Teck Coal Limited, Sparwood, British Columbia. February. Project #207202.0006.
- Minnow. 2021b. Study Design for Line Creek Local Aquatic Effects Monitoring Program (LAEMP), 2021. Prepared for Teck Coal Limited, Sparwood, BC. May. Project 207202.0015.
- Minnow. 2021c. Study Design for 2021 to 2023 Elkview Operations (EVO) Local Aquatic Effects Monitoring Program (LAEMP), 2021. Prepared for Teck Coal Limited, Sparwood, BC. June. Project 217202.0009.
- Pohlert, T. 2016. Trend: non-parametric trend tests and change-point detection. R package version 0.2.0. <https://CRAN.R-project.org/package=trend>
- Province of British Columbia. 2013. British Columbia Field Sampling Manual (complete). Available from <https://www2.gov.bc.ca/gov/content/environment/research-monitoring-reporting/monitoring/laboratory-standards-quality-assurance/bc-field-sampling-manual?keyword=field&keyword=sampling&keyword>manual>. Accessed December 15, 2017.
- Province of British Columbia. 2016. British Columbia Environmental Laboratory Manual. Available <https://www2.gov.bc.ca/gov/content/environment/research-monitoring-reporting/monitoring/laboratory-standards-quality-assurance/bc-environmental-laboratory-manual>. Accessed March 16, 2018.
- R Core Team 2022. R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. URL <https://www.R-project.org/>.
- Robinson, M.D., Gordon, S., Otto, M. 2022. Teck Coal Ltd. 2021 Calcite Monitoring Program Annual Report. Prepared for Teck Coal Ltd. by Lotic Environmental Ltd. April 2022.
- Teck (Teck Coal Limited). 2014. Elk Valley Water Quality Plan. Submitted to the British Columbia Minister of Environment for Approval on July 22, 2014.
- Teck. 2016. Measurement of the Calcite Index. Standard Practices and Procedures – TC-CI-01.
- Teck (Teck Resources Limited). 2018. Water Quality Adaptive Management Plan for Teck Coal Operations in the Elk Valley. December 2018.



Teck. 2019. Permit 107517 Annual Water Quality Monitoring Report. Submitted to ENV on March 31, 2019.

Teck. 2022. Permit 107517 Surface Water Quality Monitoring 2021 Annual Report. Submitted to ENV on March 31, 2022.

Therneau, T.M. 2017. Survival analysis. Package "survival" for R. April 4, 2017. URL <https://cran.r-project.org/web/packages/survival/survival.pdf>.

USEPA (United States Environmental Protection Agency). 2000. Methods for Measuring the Toxicity and Bioaccumulation of Sediment-Associated Contaminants with Freshwater Invertebrates. 2nd Edition. EPA/600/R-99/064. Office of Water, Washington, DC, USA.

Zathey, N. Mitchell, S., and M.D. Robinson. 2021. Teck Coal Ltd. 2020 Calcite Monitoring Program Annual Report. Prepared for Teck Coal Ltd. by Lotic Environmental Ltd. 54 pp + appendices.



Table A.1: British Columbia Water Quality Guidelines (BCWQG), Site-Specific Elk Valley Water Quality Plan (EVWQP) Benchmarks, and Interim Screening Values for Parameters Assessed in EVO LAEMP, 2021

Variable	Units	British Columbia Water Quality Guidelines [§]		Year	Status	Site-Specific Benchmark [§]	Updated Effects Concentration/ Proposed Benchmark	
		Long-term Average	Short-term Maximum					
Non-Metals	Total Alkalinity	mg/L	For dissolved calcium = < 4mg/L, BCWQG = <10 For dissolved calcium = 4 to 8 mg/L, BCWQG = 10 to 20 For dissolved calcium = > 8 mg/L, BCWQG = > 20	-	2015	Working	-	-
	Unionized Ammonia [†]	mg/L	pH and Temperature dependent (tabular)	pH and Temperature dependent (tabular)	2009	Approved	-	-
	Chloride	mg/L	150	600	2003	Approved	-	-
	Fluoride	mg/L	-	For hardness ≤ 10 mg/L, BCWQG = 0.4 For hardness > 10 mg/L, BCWQG = [-51.73 + 92.57 × log ₁₀ (hardness)] × 0.01 Maximum applicable hardness = 385 mg/L	1990	Approved	-	-
	Nitrate as N	mg/L	3	33	2009	Approved	Level 1 EVWQP benchmark = $10^{1.0003(\log(\text{hardness})) - 1.52}$ Maximum applicable hardness = 500 mg/L Level 2 EVWQP benchmark = $10^{1.0003(\log(\text{hardness})) - 1.38}$ Maximum applicable hardness = 500 mg/L	Level 1 Updated Effects Concentration = $10^{(\log(10)/2.64)(1.45 - 1.18(\log_{10}(\text{hardness})))}$ Level 2 Updated Effects Concentration = $10^{(\log(10)/2.64)(1.45 - 1.18(\log_{10}(\text{hardness})))}$ Level 3 Updated Effects Concentration = $10^{(\log(10)/2.64)(1.45 - 1.18(\log_{10}(\text{hardness})))}$
	Nitrite as N [‡]	mg/L	0.02 to 0.20	0.06 to 0.60	2009	Approved	-	-
	Dissolved Oxygen [†]	mg/L	For buried embryo/alevin life stages, BCWQG (water column) = 11 BCWQG (interstitial) = 8; for other life stages, BCWQG (water column) = 8	For buried embryo/alevin life stages, BCWQG (water column) = 9 BCWQG (interstitial) = 6 For other life stages, BCWQG (water column) = 5	1997	Approved	-	-
	pH [†]	pH units	6.5 - 9.0		1991	Approved	-	-
	Sulphate [‡]	mg/L	128 to 429 Maximum applicable hardness = 250 mg/L	-	2013	Approved	Level 1 EVWQP Benchmark = BCWQG = 429	Level 1 Updated Effects Concentration = 617 Level 2 Updated Effects Concentration = 764 Level 3 Updated Effects Concentration = 1099
	Total Dissolved Solids	mg/L	-	-	-	-	Screening Level 1 Benchmark = 1,000	-
Metals and Metalloids	Antimony(III)	mg/L	0.009	-	2015	Working	-	-
	Arsenic	mg/L	-	0.005	2002	Approved	-	-
	Barium	mg/L	1	-	2015	Working	-	-
	Beryllium	mg/L	0.00013	-	2015	Working	-	-
	Boron	mg/L	1.2	-	2003	Approved	-	-
	Chromium [§]	mg/L	For Cr(VI), BCWQG = 0.001 For Cr(III), BCWQG = 0.0089	-	2015	Working	-	-
	Cobalt	µg/L	4	110	2004	Approved	-	-
	Iron	mg/L	-	1	2008	Approved	-	-
	Lead [¶]	mg/L	For hardness ≤ 8 mg/L, none proposed For hardness 8 to 360 mg/L, BCWQG = $0.001 \times (3.31 + \exp[1.273 \times \ln(\text{hardness}) - 4.704])$ No more than 20% of samples in a 30-d period should be > 1.5X the guideline. Maximum applicable hardness = 360 mg/L	For hardness ≤ 8 mg/L, BCWQG ≤ 0.003 For hardness 8 to 360 mg/L, BCWQG = $0.001 \times (\exp[1.273 \times \ln(\text{hardness}) - 1.460])$ Maximum applicable hardness = 360 mg/L	1987	Approved	-	-
	Manganese [¶]	mg/L	For hardness 37 to 450 mg/L, BCWQG ≤ $0.004 \times \text{hardness} + 0.605$ Maximum applicable hardness = 450 mg/L	For hardness 25 to 259 mg/L, BCWQG = $0.01102 \times \text{hardness} + 0.54$ Maximum applicable hardness = 259 mg/L	2001	Approved	-	-
	Mercury	mg/L	MeHg ≤ 0.5% of THg, BCWQG = 0.00002 Else, BCWQG = $[0.0001 / (\text{MeHg}/\text{THg})]$ OR When MeHg = 0.5% of THg, BCWQG = 0.00002 When MeHg = 1.0% of THg, BCWQG = 0.00001 When MeHg = 8.0% of THg, BCWQG = 0.0000125	-	2001	Approved	-	-
	Molybdenum	mg/L	7.6	46	2021	Approved	-	-
	Nickel	µg/L	-	-	-	-	Level 1 Interim Screening Value = 5.3 Level 2 Interim Screening Value = 15 Level 3 Interim Screening Value = 22	-
	Selenium	µg/L	2	-	2014	Approved	Level 1 EVWQP Benchmark = 19 Level 2 EVWQP Benchmark = 74	-
	Silver [†]	mg/L	For hardness ≤ 100 mg/L, BCWQG = 0.00005 For hardness > 100 mg/L, BCWQG = 0.0015	For hardness ≤ 100 mg/L, BCWQG = 0.0001 For hardness > 100 mg/L, BCWQG = 0.003	1996	Approved	-	-
	Thallium	mg/L	0.0008	-	1997	Working	-	-
	Uranium	mg/L	0.0085	-	2011	Working	-	-
	Zinc [¶]	mg/L	For hardness ≤ 90 mg/L, BCWQG = 0.0075 For hardness 90 to 330 mg/L, BCWQG = $[7.5 + 0.75 (\text{hardness} - 90)] \times 0.001$; Maximum applicable hardness = 330 mg/L	For hardness ≤ 90 mg/L, BCWQG = 0.033 For hardness 90 to 500 mg/L, BCWQG = $[33 + 0.75 (\text{hardness} - 90)] \times 0.001$; Maximum applicable hardness = 500 mg/L	1999	Approved	-	-
	Aluminum	mg/L	When pH ≥ 6.5, BCWQG = 0.05 When pH < 6.5, BCWQG = $\exp[1.6 - 3.327(\text{median pH}) + 0.402(\text{median pH}^2)]$	When pH ≥ 6.5, BCWQG = 0.1 When pH < 6.5, BCWQG = $\exp[1.209 - 2.426(\text{pH}) + 0.286(\text{pH}^2)]$	2001	Approved	-	-
	Cadmium [¶]	µg/L	For hardness = 3.4 to 285 mg/L, BCWQG = $(\exp[0.736 \times \ln(\text{hardness}) - 4.943])$ Maximum applicable hardness = 285 mg/L	For hardness = 7 to 455 mg/L, BCWQG = $(\exp[1.03 \times \ln(\text{hardness}) - 5.274])$ Maximum applicable hardness = 455 mg/L	2015	Approved	Level 1 EVWQP Benchmark = $10^{0.8(\log(\text{hardness})) - 2.53}$ Maximum applicable hardness = 285 mg/L	-
Nickel	µg/L	-	-	-	Proposed	Level 1 Benchmark = $\log(\text{Benchmark}) = 0.547 \times (\log(\text{DOC})) + 0.411 \times (\log(\text{Hardness})) - 0.520 \times (\log(\text{Bicarbonate})) + 0.856$ Level 2 Benchmark = $\log(\text{Benchmark}) = 0.547 \times (\log(\text{DOC})) + 0.411 \times (\log(\text{Hardness})) - 0.520 \times (\log(\text{Bicarbonate})) + 1.011$ Level 3 Benchmark = $\log(\text{Benchmark}) = 0.547 \times (\log(\text{DOC})) + 0.411 \times (\log(\text{Hardness})) - 0.520 \times (\log(\text{Bicarbonate})) + 1.304$	-	
Copper	mg/L	Biotic Ligand Model	Biotic Ligand Model	2019	Approved	-	-	
Iron	mg/L	-	BCWQG = 0.35 mg/L	2008	Approved	-	-	

Notes: "-" = no data available. The EVWQP Level 1 Benchmark for Nitrate is consistent with the longer term BCWQG.
[§] British Columbia Working (BCMOECCS 2021a) or Accepted (BCMOECCS 2021b) Water Quality Guidelines for the Protection of Aquatic Life. For guidelines dependent on other analytes (e.g., hardness), guidelines were screened using concurrent values.
[†] When appropriate, site-specific Elk Valley Water Quality Plan Benchmarks (EVWQP; Teck 2014) or interim screening values were applied in addition to or instead of BC water quality guidelines. Interim screening values are displayed for nickel (Golder 2017b).
[‡] Temperature and pH dependent; range of minimum and maximum values.
[§] Dependent on concurrent chloride; range of values reported (BCMOECCS 2021b).
[¶] Dissolved oxygen guidelines represent a minimum value, and so exceedances were quantified below this guideline.
^{††} Unrestricted change permitted within this pH range.
^{‡‡} For hardness-based guidelines, concurrent hardness values were used for calculating guidelines. If hardness values exceeding the maximum applicable hardness, then guidelines were determined using the maximum applicable hardness. If hardness values is lower than the minimum hardness, then guidelines were determined using the minimum hardness.
^{§§} Chromium(VI) is the dominant oxidation state in oxygenated environments, and so its guideline was applied.
^{¶¶} The most conservative guideline (0.0000125 mg/L) was applied.

Table A.2: Selenium Benchmarks for Benthic Invertebrate Tissues in the Elk Valley

Tissue Type	Benchmark			Source
	Value (µg/g dw)	Type	Description	
Whole body	4 ^a	BC guideline	Interim guideline for aquatic dietary tissue based on weight of evidence of lowest published toxicity thresholds and no uncertainty factor applied	BCMOE (2014)
Whole body	13	Site-specific benchmark	Level 1 (~10% effect) benchmark for growth, reproduction and survival of invertebrates	Teck (2014)
Whole body	20	Site-specific benchmark	Level 2 (~20% effect) benchmark for growth, reproduction and survival of invertebrates	Teck (2014)
Whole body	27	Site-specific benchmark	Level 3 (~50% effect) benchmark for growth, reproduction and survival of invertebrates	Golder (2014)
Whole body	11	Site-specific benchmark	Level 1 (~10% effect) benchmark for dietary effects to juvenile fish (growth)	Teck (2014)
Whole body	18	Site-specific benchmark	Level 2 (~20% effect) benchmark for dietary effects to juvenile fish (growth)	Teck (2014)
Whole body	26	Site-specific benchmark	Level 3 (~50% effect) benchmark for dietary effects to juvenile fish (growth)	Golder (2014)
Whole body	15	Site-specific benchmark	Level 1 (~10% effect) benchmark for dietary effects to juvenile birds	Teck (2014)
Whole body	22	Site-specific benchmark	Level 2 (~20% effect) benchmark for dietary effects to juvenile birds	Teck (2014)
Whole body	41	Site-specific benchmark	Level 3 (~50% effect) benchmark for dietary effects to juvenile birds	Golder (2014)

Note: µg/g dw = micrograms per gram dry weight.

^a British Columbia (BC) guidelines were not used in assessment of benthic invertebrate selenium tissue concentrations. Assessment was completed relative to site-specific benchmarks only.

APPENDIX B
DATA QUALITY REVIEW

APPENDIX B DATA QUALITY REVIEW

B1	INTRODUCTION	1
B1.1	Background.....	1
B1.2	Quality Control Samples	1
B2	SURFACE WATER CHEMISTRY	4
B2.1	Laboratory Reporting Limits.....	4
B2.2	Laboratory and Field Blanks	4
B2.3	Data Precision	5
B2.4	Data Accuracy	6
B2.5	Hold Times.....	7
B2.6	Other Concerns	7
B2.7	Data Quality Statement.....	7
B3	INTERSTITIAL WATER CHEMISTRY	8
B3.1	Laboratory Reporting Limits.....	8
B3.2	Laboratory and Field Blanks	8
B3.3	Data Precision	8
B3.4	Data Accuracy	9
B3.5	Hold Times.....	9
B3.6	Data Quality Statement.....	9
B4	SEDIMENT CHEMISTRY	10
B4.1	Laboratory Reporting Limits.....	10
B4.2	Laboratory Blanks.....	10
B4.3	Data Precision	11
B4.4	Data Accuracy	11
B4.5	Hold Times.....	12
B4.6	Data Quality Statement.....	12
B5	BENTHIC INVERTEBRATE COMMUNITY	13
B5.1	Sub-Sampling proportions, Precision, and Accuracy.....	13
B5.2	Organism Sorting Efficiency.....	13
B5.3	Taxonomic Identification Accuracy	13
B5.4	Data Quality Statement.....	13
B6	BENTHIC INVERTEBRATE TISSUE CHEMISTRY	15
B6.1	Laboratory Reporting Limits.....	15
B6.2	Data Accuracy and Precision.....	15
B6.3	Hold Times.....	15
B6.4	Data Quality Statement.....	15
B7	PERIPHYTON AND BRYOPHYTE TISSUE CHEMISTRY	16
B7.1	Laboratory Reporting Limits.....	16
B7.2	Laboratory and Field Blanks	16
B7.3	Data Accuracy and Precision.....	16
B7.4	Hold Times.....	17
B7.5	Data Quality Statement.....	17
B8	PERIPHYTON PRODUCTIVITY AND COMMUNITY	18
B8.1	Laboratory Blanks.....	18
B8.2	Data Accuracy	18
B8.3	Sub-sampling Precision	18



B8.4	Hold Times.....	18
B8.5	Data Quality Statement.....	18
B9	DATA QUALITY REVIEW SUMMARY	19
B10	REFERENCES	20



B1 INTRODUCTION

B1.1 Background

A variety of factors can influence the physical, chemical, and biological measurements made in an environmental study and thus affect the accuracy and/or precision of the data. Depending on their magnitude, inaccuracy and imprecision have the potential to affect the reliability of conclusions made from data; therefore, it is important to ensure that programs incorporate appropriate steps to control non-natural sources of data variability (i.e., minimize variability that does not reflect authentic spatial and temporal variability in the environment) and thus assure the quality of the data. Data quality as a concept is meaningful only when it relates to the intended use of the data. That is, one must know the context in which the data will be interpreted in order to establish a relevant basis for judging whether or not the data set is adequate. A data quality review (DQR) involves the comparison of field and laboratory measurement performance to Data Quality Objectives (DQOs) established for a particular study, such as evaluation of Laboratory Reporting Limits (LRL), blank sample data, data precision (based on field and laboratory duplicate samples), and data accuracy (based on matrix spike recoveries and/or analysis of standards or certified reference materials). Trusted analytical laboratories certified by Canadian Association for Laboratory Accreditation (CALA) or the National Environmental Laboratory Accreditation Program (NELAP) with a rigorous internal quality assurance program were selected to ensure the highest possible data quality. Data Quality Objectives were established *a priori* to reflect reasonable and achievable performance expectations (Table B.1). Programs involving many samples and analytes usually yield some results that exceed DQOs. This is particularly so for multi-element scans, as the analytical conditions are not necessarily optimal for every element included in the scan. Generally, scan results may be considered acceptable if no more than 20% of the parameters fail to meet DQOs. Overall, the intent of a DQR is not to reject any measurement that did not meet a DQO, but to ensure that any questionable data received more scrutiny to determine what effect, if any, this had on interpretation of results within the context of the project.

B1.2 Quality Control Samples

A DQR as conducted on all laboratory data collected as part of the 2022 Elkview Operations (EVO) Local Aquatic Effects Monitoring Program (LAEMP). The objective of a DQR is to define the overall quality of the data presented in the report, and, by extension, the confidence with which the data can be used to derive conclusions.



A DQR involves the examination of analytical results associated with several types of Quality Control (QC) samples collected or prepared in the field and laboratory. General QC samples collected for this project include the following:

- **Blanks** are samples of de-ionized water and/or appropriate reagent(s) that are handled and analyzed in the same way as regular samples. These samples will reflect any contamination of samples occurring in the field (in the case of field or travel blanks) or in the laboratory (in the case of laboratory or method blanks). Analyte concentrations should be below detection.
- **Laboratory Duplicates** are replicate sub-samples created in the laboratory from randomly selected field samples which are sub-sampled and then analyzed independently using identical analytical methods. The laboratory duplicate sample results reflect any variability introduced during laboratory sample handling and analysis and thus provide a measure of laboratory precision.
- **Field Duplicates** are samples collected from a randomly selected field station that are homogenized to the extent possible, split and analyzed separately in the laboratory. The duplicate samples are handled and analyzed in an identical manner in the laboratory.
- **Spike Recovery Samples** are created in the laboratory by adding a known amount/concentration of a given analyte (or mixture of analytes) to a randomly selected test sample previously divided to create two sub-samples. The spiked and regular sub-samples are then analyzed in an identical manner. The spike recovery represents the difference between the measured spike amount (total amount in the spiked sample minus the amount in the original sample) relative to the known spike amount (as a percentage). Two types of spike recovery samples are commonly analyzed: spiked blanks (or blank spikes) are created using laboratory control materials whereas matrix spikes (MS) are created using field-collected samples and are sometimes further tested in duplicate (matrix spike duplicates, MSD). The analysis of spiked samples provides an indication of the accuracy of analytical results.
- **Certified Reference Materials (CRM) or Reference Materials (RM)** are commercially prepared (or commercially homogenized) samples containing known chemical concentrations that are processed and analyzed along with batches of environmental samples. The sample results are then compared to the known concentrations to provide a measure of analytical accuracy. The results are reported as the percent of the known concentration that was recovered in the analysis.



- **Laboratory Control Samples** are created in the laboratory to have a known analyte concentration in a matrix free of interferences, such as deionized water or reference sand. The sample results are compared to the target results to confirm that the analytical method is accurate in a purified reference sample. The results are reported as the percent of the known concentration that was recovered in the analysis.
- **Laboratory Sorting Efficiency** are randomly selected grabs of the initially sorted community material. These samples are recounted and the number of invertebrates that were not recovered during the initial sort was determined. In order to reduce bias, recounting is conducted by an analyst uninvolved in the initial sample processing. This check is performed on 10% of samples and determines the accuracy through assessment of recovery (sorting) efficiency and quantifies any under-estimation of organism enumeration.
- **Taxonomic Quality Control Samples** are a randomly selected portion of a benthic invertebrate community field sample to be assessed by the laboratory using an internal quality control audit. A blind re-enumeration and re-identification of random samples is performed by an analyst uninvolved in the original sample processing. This assessment quantifies taxonomic misidentification among laboratory analysts and ensures accurate organism identities are reported.
- **Laboratory Subsamples** are community samples prepared by the laboratory to ensure that the fraction of the total sample examined was an accurate representation of the total number of organisms. By comparing the amount recovered between at least two sub-samples, one can assess the analytical precision. In addition, comparisons of the sub-samples from the whole community sample allows for an evaluation of sub-sampling accuracy.



B2 SURFACE WATER CHEMISTRY

B2.1 Laboratory Reporting Limits

The analytical reports for water chemistry from ALS Environmental Ltd. (ALS) and Brooks Applied Labs (BAL; see laboratory reports in Appendix H) were examined to assess LRLs relative to analyte concentrations and applicable guidelines (Tables B.2 and B.3). The LRLs for water quality analytes were assessed relative to British Columbia Water Quality Guidelines (BCWQG; BCMOECCS 2021a,b) for the protection of freshwater aquatic life, Elk Valley Water Quality Plan (EVWQP; Teck 2014) benchmarks, Updated Effects Concentrations (UEC; WSP Golder 2022), screening values for water quality (Teck 2020), and relevant site-specific benchmarks. Several analytes were reported at concentrations below the LRL in 100% of samples (Tables B.2 and B.3). For those analytes with one or more result(s) below the LRL, achieved LRLs were consistently lower than the BCWQG, EVWQP benchmarks, UEC, and screening values for water quality (as applicable), except for total mercury. The LRL for 96.7% of total mercury samples was 0.000005 mg/L, which is higher than the BCWQG of 0.00000125 µg/L; however, Azimuth (2019) determined that mercury inputs (total and methyl) in the Elk Valley area are not related to mining activities. Therefore, the achieved LRLs were appropriate for this study.

B2.2 Laboratory and Field Blanks

A total of 710 method blank (MB) samples were analyzed in the ALS laboratory reports (Appendix H). Of the 3,695 reported MB individual analyte results, only three results were above detection (one result each for total chromium, total magnesium, and total vanadium; see laboratory reports CG2215311 and CG2212628 in Appendix H). The MB exceedance for total vanadium was below five-times the blank level and the laboratory reporting limit was appropriately adjusted for total vanadium results within this laboratory report. As only three results (0.081% of MB results) did not meet the laboratory DQO and these did not include any primary analytes, these laboratory flags had a negligible impact on ALS water chemistry data reliability and laboratory precision was overall considered excellent.

A total of 260 MB samples were analyzed in the BAL laboratory reports (Appendix H). Of the 1,128 reported MB results, 49 results were above the LRL (12 results for selenite and 37 results each for total selenium; see laboratory reports 2203148, 2203149, 2203150, 2205070, 2205072, 2205073, 2206143, 2207083, 2208056, and 2208059 in Appendix H) and so did not meet the DQO. As only 4.34% of MB results did not meet the DQO, laboratory contamination



was not considered to be of concern and BAL laboratory precision was overall considered excellent.

To assess the potential for field sampling contamination, 15 field blank samples and 12 trip blank samples were submitted to ALS for water chemistry analyses (Table B.4). The same DQOs that were used for laboratory blanks were also used for field blanks (i.e., concentrations should be below the LRL). Of the 1,455 individual analyte results measured in the field blanks, only 37 results were above the LRL and did not meet the laboratory DQO (2.52% of results; one result each for acidity, total ammonia, total nickel, silicon, and strontium, and dissolved aluminum, magnesium, manganese, strontium, and zinc, two results each for total barium and molybdenum, three results each for total sodium, tin and dissolved copper, four results each for dissolved sodium and tin, and five results for dissolved barium; Table B.4). Of the 957 individual analyte results for trip blank samples, only 12 results (1.25% of results; one result each for Total Kjeldahl Nitrogen (TKN), total barium, magnesium, sulphur and dissolved silicon, and seven results for total ammonia) were above the LRL and did not meet the laboratory DQO (Table B.4). However, none of the analytes that were above detection in field or trip blank samples were analytes of concern in the EVO LAEMP. Additionally, as relatively few results were above detection in field or trip blanks (2.52 and 1.25%, respectively), field and laboratory contamination of water samples was considered of little to no concern and ALS laboratory precision was overall considered good.

To assess potential field sampling contamination, 10 field blank samples were submitted to BAL for aqueous selenium speciation analyses. Of the 134 individual analyte results measured in the field blanks, only 16 results were above the LRL and did not meet the laboratory DQO (11.9% of results; two results each for volatile dimethylselenide and selenite, three results for selenate, four results for dissolved selenium, and five results for total selenium; Table B.5). As relatively few results were above detection, field contamination of water samples was considered of little to no concern and BAL laboratory precision was overall considered good.

B2.3 Data Precision

A total of 62 laboratory duplicate samples were used to evaluate precision within the ALS laboratory reports (Appendix H). All of the 3,490 individual analyte results met the laboratory DQO and ALS laboratory analytical precision was considered excellent. A total of 57 laboratory duplicate samples were used to evaluate precision within the BAL laboratory reports (Appendix H). All of the 230 individual analyte results met the laboratory DQO and BAL laboratory analytical precision was considered excellent.



For water chemistry analyzed by ALS, 16 sets of field duplicate samples were collected to assess field sampling precision (Table B.6). Several relative percent differences (RPDs) could not be calculated as both analyte concentrations were below the LRL. Of the 1,097 RPDs that could be calculated, 90 RPDs were greater than the DQO of 30% (Table B.6). As a relatively low number of RPDs (8.20% of all results) were greater than 30% and most of those analytes were of low concern for the EVO LAEMP, field sampling precision was overall considered good.

To assess field sampling precision for selenium speciation, 16 sets of field duplicate samples were collected (Table B.7). Relative percent differences could not be calculated for several selenium speciation duplicate samples as the analyte concentrations in both samples were below the LRL. Of the 75 comparisons that could be calculated, 13 did not meet the DQO of 30% (one RPD for methylseleninic acid, two RPDs for total and dissolved selenium, three RPDs for selenate, and five RPDs for selenite; Table B.7). As 17.3% of all field duplicate comparisons did not meet the DQO, field sampling precision was overall considered adequate.

B2.4 Data Accuracy

Data accuracy within the ALS laboratory reports was evaluated based on results of 833 Laboratory Control Samples (LCS) and 120 Matrix Spike (MS) samples (see laboratory reports in Appendix H). All of the 3,650 LCS analyte results met the laboratory DQO. Of the 3,251 MS analyte results, three did not meet the laboratory DQO (0.09%; one result for TKN and two results for total chromium, see laboratory reports CG2204866, CG2209850, and CG2209854 in Appendix H). This TKN MS result was low due to interference from high nitrate in the initial sample, which causes negative bias on TKN. Recovery could not be calculated in several MS samples as background levels were greater than or equal to the initial spike concentration. However, as several other QC tests were successful and matrix spike issues due to high background presence is not uncommon, MS recovery not being calculable in several MS samples was not of great concern. Overall, the accuracy achieved by ALS was considered excellent.

Data accuracy within the BAL laboratory reports was evaluated based on results of 135 LCS, 57 MS samples, 57 Matrix Spike Duplicate (MSD) samples, and 100 Reference Material (RM) samples (see laboratory reports in Appendix H). All 248 LCS, 125 MS, 125 MSD, and 100 RM individual analyte results met the laboratory DQO. Therefore, the accuracy achieved by BAL was considered excellent.



B2.5 Hold Times

The recommended hold times for pH and oxidation-reduction potential (ORP) analyses (0.25 hrs) were exceeded in all samples collected. As *in situ* pH was used for data interpretation, these pH exceedances had no impact on data interpretability. Additionally, ORP is not used in any further analyses. The recommended hold times for nitrite and nitrate were exceeded by one day each in three samples, by two days in four samples, and by seven days in one sample. The recommended hold time for nitrite was also exceeded by one day in eight samples, by three days in three samples, and by four days in two samples. The recommended hold time for nitrate was also exceeded by one day in 13 samples, by three days in two samples, and by four days in three samples. The recommended hold times for turbidity and dissolved orthophosphate were exceeded by one day in two samples and by one day in five samples. The recommended hold times for turbidity were also exceeded by one to six hours in five samples, by two days in three samples, and by three days in six samples. The recommended hold times for dissolved orthophosphate was also exceeded by three days in seven samples and by four days in two samples. All hold times were met for selenium speciation samples, but filtration hold times were exceeded for dissolved selenium, dimethylselenoxide, methylseleninic acid, methaneselenonic acid, selenite, selenate, selenocyanate, selenomethionine, selenosulfate, and unknown selenium species in one sample each. Overall, few samples exceeded hold times and hold time exceedances are expected to have little effect on the interpretation of results.

B2.6 Other Concerns

Several TKN concentrations in water samples may have been biased low due to high nitrate concentrations. This may have lowered results for TKN in field duplicate samples, thereby increasing the RPD calculated between two of the field duplicate sample pairs.

B2.7 Data Quality Statement

Water chemistry data collected for the 2022 EVO LAEMP were of acceptable quality as characterized by good detectability, appropriate LRLs, minimal evidence of laboratory or field contamination, good laboratory and field precision and accuracy, and few hold time exceedances. Overall, the associated water chemistry data from ALS and BAL can be used with a high level of confidence in the derivation of conclusions.



B3 INTERSTITIAL WATER CHEMISTRY

B3.1 Laboratory Reporting Limits

The analytical reports for interstitial water chemistry from ALS and BAL (see laboratory reports in Appendix H) were examined to assess LRLs relative to analyte concentrations and applicable guidelines (Tables B.8 and B.9). The LRLs for water quality analytes were assessed relative to BCWQG (BCMOECCS 2021a,b) for the protection of freshwater aquatic life, EVWQP benchmarks (Teck 2014), UEC (WSP Golder 2022), screening values for water quality (Teck 2020), and relevant site-specific benchmarks. Several analytes were reported at concentrations below the LRL in 100% of samples (Tables B.8 and B.9). For those analytes with one or more result(s) below the LRL, achieved LRLs were consistently lower than the BCWQG, EVWQP benchmarks, UEC, and screening values for water quality (as applicable). Overall, the achieved LRLs were appropriate for this study.

B3.2 Laboratory and Field Blanks

A total of 57 MB samples were analyzed in the ALS laboratory reports (Appendix H). Of the 419 reported MB individual analyte results, only two results were above detection (one result each for total chromium and total magnesium; see laboratory reports CG2215311 and CG2212628 in Appendix H). As these exceedances only represent 0.48% of MB results and these did not include any primary analytes, detectable MB concentrations had a negligible impact on water chemistry data reliability and ALS laboratory precision was overall considered excellent. A total of 36 MB samples were analyzed in the BAL laboratory reports (Appendix H). All of the 260 reported MB results met the laboratory DQO and so BAL laboratory precision was overall considered excellent. No field blank samples or trip blank samples were collected for interstitial water chemistry.

B3.3 Data Precision

A total of 10 laboratory duplicate samples were used to evaluate precision within the ALS laboratory reports (Appendix H). All of the 296 individual analyte results met the laboratory DQO and ALS laboratory analytical precision was considered excellent. A total of 17 laboratory duplicate samples were used to evaluate precision within the BAL laboratory reports (Appendix H). All of the 121 individual analyte results met the laboratory DQO and BAL laboratory analytical precision was considered excellent. No field duplicate samples were collected for interstitial water chemistry.



B3.4 Data Accuracy

Data accuracy within the ALS laboratory reports was evaluated based on results of 66 LCS and 14 MS samples (see laboratory reports in Appendix H). All of the 416 LCS analyte results and 392 MS analyte results met the laboratory DQO. Recovery could not be calculated in several MS samples as background levels were greater than or equal to the initial spike concentration. However, as several other QC tests were successful and matrix spike issues due to high background presence is not uncommon, MS recovery not being calculable in several MS samples was not of great concern. Overall, the accuracy achieved by ALS was considered excellent.

Data accuracy within the BAL laboratory reports was evaluated based on results of 12 LCS, 17 MS samples, 17 MSD samples, and five RM samples (see laboratory reports in Appendix H). All 40 LCS, 56 MS, 56 MSD, and five RM individual analyte results met the laboratory DQO. Therefore, the accuracy achieved by BAL was considered excellent.

B3.5 Hold Times

The recommended hold times for nitrite and nitrate were exceeded by two days in five samples. None of the above hold time exceedances are expected to impact conclusions derived from the data but will still be taken into consideration during data interpretation. All hold times were met for selenium speciation samples, but the recommended filtration hold time was exceeded for one dissolved selenium sample. Overall, few samples exceeded hold times and hold time exceedances are expected to have little effect on the interpretation of results.

B3.6 Data Quality Statement

Interstitial water chemistry data collected for the 2022 EVO LAEMP were of acceptable quality as characterized by good detectability, appropriate LRLs, minimal evidence of laboratory contamination, excellent laboratory precision and accuracy, and few hold time exceedances. Overall, the associated water chemistry data from ALS and BAL can be used with a high level of confidence in the derivation of conclusions.



B4 SEDIMENT CHEMISTRY

B4.1 Laboratory Reporting Limits

The analytical reports for sediment chemistry from ALS and BAL (see laboratory reports in Appendix H) were examined to assess LRLs relative to analyte concentrations and applicable guidelines (Tables B.10 and B.11). The LRLs for these analytes were assessed relative to existing British Columbia Working Sediment Quality Guidelines (BCWSQG; BCMOECSS 2021a). Several analytes were reported at concentrations below the LRL in 100% of samples (Tables B.10 and B.11). Although several metals had at least one result below the LRL, all metal and selenium speciation LRLs were above the relevant guidelines and were therefore considered appropriate for this study. However, several LRLs for polycyclic aromatic hydrocarbons (PAHs) were below the BCWSQG Interim Sediment Quality Guideline (ISQG), including 100% of LRLs for acenaphthene, benzo(a)pyrene, dibenz(a,h)anthracene, fluorene, and phenanthrene (Tables B.10 and B.11). These relatively high LRLs were likely due to a combination of chromatographic interference due to PAH co-elution effects and high moisture content (resulting in low sample volume) in specific sediment samples. Sediment LRLs were overall considered appropriate for this study, and relatively high LRLs for PAHs will be considered during data interpretation. No LRLs for PAHs were above the BCWSQG Probable Effect Level (PEL). Overall, the achieved LRLs were appropriate for this study.

B4.2 Laboratory Blanks

A total of 143 MB samples were analyzed in the ALS laboratory reports (see laboratory reports in Appendix H). Of the 404 reported MB individual analyte results, only one result was above detection (vanadium; see laboratory report CG2204662 in Appendix H). As this DQO exceedance only represent 0.25% of MB results and did not include any primary analytes, these laboratory flags had a negligible impact on sediment chemistry data reliability and ALS laboratory precision was overall considered excellent.

A total of 348 MB samples were analyzed in the BAL laboratory reports (see laboratory reports in Appendix H). Of the 988 reported MB individual analyte results, only four results were above detection (four results for selenium fraction two; see laboratory report 2211152 in Appendix H). As these DQO exceedances only represent 0.40% of MB results and did not include any primary analytes, these laboratory flags had a negligible impact on sediment chemistry data reliability and BAL laboratory precision was overall considered excellent.



B4.3 Data Precision

A total of 76 laboratory duplicate samples were used to evaluate precision within the ALS laboratory reports (see laboratory reports in Appendix H). Of the 1,661 individual analyte results, 12 results did not meet the laboratory DQO (one result each for chromium, cobalt, manganese, molybdenum, nickel, selenium, sodium, benz(a)anthracene, benzo(a)pyrene, benzo(b+j)fluoranthene, benzo(k)fluoranthene, and indeno(1,2,3-c,d)pyrene; see laboratory reports CG2205458 and CG2208567 in Appendix H). As these exceedances only represent 0.72% of laboratory duplicate results, ALS laboratory analytical precision was considered excellent.

A total of 300 laboratory duplicate samples were used to evaluate precision within the BAL laboratory reports (see laboratory reports in Appendix H). All of the 868 individual analyte results met the laboratory DQO and so BAL laboratory analytical precision was considered excellent.

To assess field sampling precision for sediment chemistry, eight sets of field duplicate samples were submitted to ALS (Table B.12). Several RPDs could not be calculated as both analyte concentrations in the pair were below the LRL. Of the 255 RPDs that could be calculated, only 31 were greater than the DQO of 30% (12.2% of comparisons; Table B.12). One set of field duplicate samples was submitted to BAL (Table B.12). Several RPDs could not be calculated as both analyte concentrations in the pair were below the LRL. Of the 11 RPDs that could be calculated, only two were greater than 30% (18.2% of comparisons; Table B.12). As the above DQO exceedances represent 12.2 and 18.2% of field duplicate comparisons from samples submitted to ALS and BAL, respectively, sediment data was overall considered to have adequate field precision and reproducibility.

B4.4 Data Accuracy

Data accuracy for sediment chemistry analyses completed by ALS was evaluated based on the analysis of 177 LCS samples, 17 MS samples, and 1,037 RM samples. All 1,618 LCS, 404 MS, and 334 RM individual analyte results met the laboratory DQO. Therefore, the accuracy achieved by ALS was considered excellent.

Data accuracy within the BAL laboratory reports was evaluated based on results of 41 LCS, 34 MS samples, 34 MSD samples, and 22 RM samples (see laboratory reports in Appendix H). All 41 LCS, 40 MS, 40 MSD, and 22 RM individual analyte results met the laboratory DQO. Therefore, the accuracy achieved by BAL was considered excellent.



B4.5 Hold Times

The recommended hold time for mercury was exceeded by one day in three samples (see laboratory report CG2213498 in Appendix H). The recommended hold times for PAHs were exceeded by two days in six samples, by three days in four samples, and by four days in 10 samples (see laboratory reports CG2213414 and CG2213420 in Appendix H). These hold time exceedances are expected to have minimal impact on the data; however, this will be considered during interpretation of results. All hold times were met for sediment selenium speciation samples.

B4.6 Data Quality Statement

Sediment chemistry data collected for the 2022 EVO LAEMP were of acceptable quality as characterized by appropriate LRLs, good detectability, excellent laboratory precision and accuracy, adequate field precision and reproducibility, and few hold time exceedances. Overall, the associated data were considered acceptable for this study.



B5 BENTHIC INVERTEBRATE COMMUNITY

B5.1 Sub-Sampling proportions, Precision, and Accuracy

The analytical report from Cordillera Consulting Inc. (Cordillera; laboratory report in Appendix H) was examined to assess sub-sampling accuracy. For all samples, Canadian Aquatic Biomonitoring Network (CABIN) protocols were followed for sub-sampling (i.e., identification of a minimum 300 invertebrates), with a minimum of 5% of a sample being assessed. All 32 benthic invertebrate community structure samples submitted to Cordillera were subsampled (Table B.13) while all benthic invertebrate community samples submitted to ZEAS Inc. were examined in their entirety. Both the precision and accuracy of the three sub-samples randomly chosen for sub-sample assessment by Cordillera met the DQO in all sub-samples (20%; Table B.14). Thus, the precision and accuracy for sub-sampling of the benthic invertebrate community samples was considered excellent.

B5.2 Organism Sorting Efficiency

To measure the effectiveness of the sorters in sampling submitted to Cordillera at least 10% of samples were selected at random for resorting analysis by a different sorter. Sorting efficiency (i.e., percent recovery) of benthic invertebrate samples was excellent, achieving an average of 98.7% for the three community structure samples evaluated (Table B.15). Therefore, organism sorting efficiency was considered excellent.

B5.3 Taxonomic Identification Accuracy

Cordillera performed an internal audit of taxonomic identification for at least 10% of all community structure samples (n = 3; Table B.16). The analysts reported a total identification error rate (TIR) of 0%, a percent difference in enumeration (PDE) of 0.140 to 0.316%, a percent taxonomic disagreement (PTD) of 0.560 to 0.946%, and a Bray Curtis Dissimilarity Index (BCDI [which is a measure of the differences in identifications between different analysts] of 0.004 to 0.006). The laboratory DQO was based on TIR as per CABIN laboratory methods (<5% TIR; Environment Canada 2014). As the TIR was below 5% for all samples examined, the taxonomic accuracy of Cordillera Consulting Inc was considered excellent. No quality control samples were examined by ZEAS Inc.

B5.4 Data Quality Statement

Benthic invertebrate community data collected for the EVO LAEMP were of excellent quality as characterized by excellent sub-sampling precision and accuracy, sorting efficiency and



taxonomic identification accuracy. Therefore, the associated data can be used with a high level of confidence in the derivation of conclusions.



B6 BENTHIC INVERTEBRATE TISSUE CHEMISTRY

B6.1 Laboratory Reporting Limits

Analytical reports of benthic invertebrate tissue metal concentrations from TrichAnalytics Inc. (see laboratory reports in Appendix H) were examined to provide an inventory of analyte results below the LRL and to compare the LRLs for these analytes to available benchmarks (Table B.17). Most analyte concentrations were consistently above detection limits, except for several results for antimony, arsenic, mercury, and tin (0.24 to 18.5% of results for each analyte). However, all results for selenium were above detection and selenium is the only analyte with an applicable guideline. Therefore, the achieved LRLs were appropriate for this study.

B6.2 Data Accuracy and Precision

Data accuracy and precision were evaluated based on the analysis of 44 CRM samples. No CRM results for titanium could be calculated as the certified concentrations were too close to the reportable detection limit (see laboratory reports in Appendix H). All of the 1,276 CRM results that could be calculated for other analytes met the laboratory DQO. As titanium is not an analyte of concern in benthic invertebrate tissue in the EVO LAEMP, laboratory accuracy and precision as determined by CRM analyses was overall considered excellent.

Laboratory precision was also evaluated by duplicate analysis of 47 benthic invertebrate tissue samples (see laboratory reports in Appendix H). Several results could not be calculated due to values below the detection limit. However, all duplicate results that could be calculated met the laboratory DQO. Therefore, laboratory precision as determined by duplicate analyses was considered excellent.

B6.3 Hold Times

All recommended hold times were met for all benthic invertebrate tissue samples.

B6.4 Data Quality Statement

Benthic invertebrate tissue data collected for the 2022 EVO LAEMP were of good quality as characterized by excellent detectability, appropriate LRLs, and excellent laboratory precision and accuracy. Therefore, the associated data can be used with a good level of confidence in the derivation of conclusions for this study.



B7 PERIPHYTON AND BRYOPHYTE TISSUE CHEMISTRY

B7.1 Laboratory Reporting Limits

Analytical reports of periphyton and bryophyte tissue metal concentrations from ALS and TrichAnalytics Inc. (see laboratory reports in Appendix H) were examined to provide an inventory of analyte results below the LRL and to compare the LRLs for these analytes to available benchmarks (Table B.18). Most analyte concentrations were consistently above detection limits, except for several results for arsenic, beryllium, bismuth, boron, cesium, chromium, copper, lithium, mercury, sodium, tellurium, tin, and zirconium (0.22 to 75.0% of results for each analyte). However, all results for selenium were above detection and selenium is the only analyte with an applicable guideline. Therefore, the achieved LRLs were appropriate for this study.

B7.2 Laboratory and Field Blanks

A total of 94 MB samples were analyzed in the ALS laboratory reports for periphyton and bryophyte tissue chemistry (see laboratory reports in Appendix H). Of the 1,633 reported MB individual analyte results, only four results were above detection (one result for iron and three results for manganese; see laboratory reports CG2205369, CG2215410, and CG2216142 in Appendix H). As these exceedances only represent 0.24% of MB results and did not include any primary analytes, these laboratory flags had a negligible impact on tissue chemistry data reliability and ALS laboratory precision was overall considered excellent.

B7.3 Data Accuracy and Precision

Data accuracy for periphyton and bryophyte tissue chemistry analyses completed by ALS was evaluated based on the analysis of 94 LCS samples and 47 RM samples. Out of 1,736 LCS results, only two did not meet the DQO (two results for beryllium; see laboratory report CG2213441 in Appendix H). However, the DQO in these cases was only marginally exceeded (by <10%) for less than 10% of analytes in a Multi-Element Scan, which is considered acceptable as per the Ontario Ministry of the Environment, Conservation, and Parks (previously the Ontario Ministry of the Environment; OMOE) and Canadian Council of Ministers of the Environment (CCME; see laboratory report CG2213441 in Appendix H). Out of 1,181 RM results, eight did not meet the DQO (one result for calcium, two results each for lead and aluminum, and three results for nickel; see laboratory reports CG2205366, CG2204664, CG2204665, CG2205355, CG2205369, CG2208566, and CG2216723 in Appendix H). However, the DQO for the above analytes was only marginally exceeded (by <10%) for less than 10% of analytes in a Multi-Element Scan, which is considered acceptable as per the



Ontario Ministry of the Environment, Conservation, and Parks (previously the Ontario Ministry of the Environment; OMOE) and Canadian Council of Ministers of the Environment (CCME; see laboratory reports in Appendix H). Overall, as the above DQO exceedances only represent 0.12% of LCS results and 0.68% of RM results, the accuracy achieved by ALS was considered excellent.

Data accuracy for periphyton and bryophyte tissue chemistry analyses completed by Trich Analytics were evaluated based on the analysis of five CRM samples. No CRM results for titanium could be calculated as the certified concentrations were too close to the reportable detection limit (see laboratory reports in Appendix H). All of the 145 CRM results that could be calculated for other analytes met the laboratory DQO. As titanium is not an analyte of concern in benthic invertebrate tissue in the EVO LAEMP, laboratory accuracy and precision as determined by CRM analyses was overall considered excellent.

Laboratory precision for Trich Analytics was also evaluated by duplicate analysis of eight periphyton and bryophyte tissue chemistry samples (see laboratory reports in Appendix H). Of the 240 results, 19 comparisons could not be calculated due to values below the detection limit. However, all duplicate results that could be calculated met the laboratory DQO. Therefore, laboratory precision as determined by duplicate analyses was considered excellent.

B7.4 Hold Times

All recommended hold times were met for all periphyton and bryophyte tissue samples.

B7.5 Data Quality Statement

Periphyton and bryophyte tissue data collected for the 2022 EVO LAEMP were of good quality as characterized by excellent detectability, appropriate LRLs, and excellent laboratory precision and accuracy. Therefore, the associated data can be used with a good level of confidence in the derivation of conclusions for this study.



B8 PERIPHYTON PRODUCTIVITY

Dry weight, ash weight, ash-free dry weight, and chlorophyll a results were examined to assess LRLs relative to analyte concentrations (see laboratory report CG2215002 in Appendix H). All results were above the LRL except for one result for ash free dry weight (11.1% of results for ash free dry weight; Table B.19). Overall, the achieved LRLs were appropriate for the study.

B8.1 Laboratory Blanks

A total of eight MB samples were analyzed in the ALS laboratory reports for periphyton productivity (see laboratory reports in Appendix H). All of the 64 reported MB individual analyte results met the laboratory DQO (see laboratory report CG2215002 in Appendix H). Therefore, laboratory precision was overall considered excellent.

B8.2 Data Accuracy

The accuracy of chlorophyll a analyses conducted by ALS was evaluated based on results of eight LCS (see laboratory reports in Appendix H). All 64 LCS results met the laboratory DQO (see laboratory report CG2215002 in Appendix H). Therefore, accuracy achieved by the laboratory in this study was considered excellent.

B8.3 Hold Times

All recommended hold times were met for all periphyton productivity and community samples.

B8.4 Data Quality Statement

Periphyton productivity measurements (dry weight, ash weight, ash-free dry weight, and chlorophyll a) collected for the 2022 EVO LAEMP were of acceptable quality as illustrated by appropriate LRLs, no apparent laboratory contamination, and excellent laboratory accuracy. Therefore, the associated data can be used with a good level of confidence in the derivation of conclusions.



B9 DATA QUALITY REVIEW SUMMARY

Overall, the quality of the data collected for this project was considered acceptable for the derivation of conclusions associated with the objectives of the 2022 EVO Dry Creek LAEMP, with the exception of periphyton community sub-sampling precision. The relatively low degree of precision seen in periphyton community sub-sampling illustrates the need for QA/QC procedures during this process.



B10 REFERENCES

- Azimuth. 2019. Evaluation of water quality data mercury and methyl mercury in the Elk Valley. Technical Memorandum. March 5th, 2019.
- BCMOECCS (British Columbia Ministry of Environment and Climate Change Strategy). 2021a. Working Water Quality Guidelines: Aquatic Life, Wildlife and Agriculture. Water Quality Guideline Series, WQG-08. Water Protection and Sustainability Branch, Province of British Columbia, Victoria, B.C.
- BCMOECCS. 2021b. British Columbia Approved Water Quality Guidelines: Aquatic Life, Wildlife and Agriculture – Guideline Summary. Water Quality Guideline Series, WQG-20. Water Protection and Sustainability Branch, Province of British Columbia, Victoria, B.C.
- B.C. Ministry of Water, Land, and Resource, Stewardship, 2023. Aluminum Water Quality Guidelines – Freshwater Aquatic Life. Water Quality Guideline Series, WQG-09-1. Prov. B.C., Victoria B.C.
- Environment Canada. 2014. CABIN (Canadian Aquatic Biomonitoring Network) Laboratory Methods: Processing, Taxonomy, and Quality Control of Benthic Macroinvertebrate Samples. Environment Canada. May 2014.
- Golder. 2014. Benchmark Derivation Report for Selenium. Annex E of the Elk Valley Water Quality Plan. Prepared for Teck Coal Limited. July 2014.
- Teck (Teck Coal Limited). 2014. Elk Valley Water Quality Plan. Submitted to the British Columbia Minister of Environment for approval on July 22, 2014.
- Teck. 2020. Water Quality Adaptive Management Plan for Teck Coal Operations in the Elk Valley – 2019 Annual Report. Prepared by Teck Coal Limited. July 31, 2020.
- WSP Golder. 2022. Task 1: Elk Valley Water Quality Plan Benchmark Validation: Nitrate, Sulphate, and Selenium. Prepared by Teck Coal Limited. December 2022.



Table B.1: Laboratory Data Quality Objectives for the EVO LAEMP, 2022

Quality Control Measure	Quality Control Sample Type/Check	Study Component						
		Water Chemistry	Selenium Speciation	Sediment Chemistry	Benthic Invertebrate Community	Benthic Invertebrate, Periphyton, and Bryophyte Tissue Chemistry	Chlorophyll-a and AFDM	Periphyton and Bryophyte Tissue Chemistry
		ALS Environmental	Brooks Applied Labs	ALS Environmental	Cordillera Consulting	TrichAnalytics	ALS	ALS Environmental
Analytical Laboratory LRLs	Comparison of actual LRL versus target LRL	LRL for each parameter should be at least as low as applicable guidelines, benchmarks, and screening values	LRL for each parameter should be at least as low as applicable guidelines, benchmarks, and screening values	LRL for each parameter should be at least as low as applicable guidelines and benchmarks	-	LRL for each parameter should be at least as low as applicable guidelines and benchmarks	LRL for each parameter should be at least as low as applicable guidelines and benchmarks	LRL for each parameter should be at least as low as applicable guidelines, benchmarks, and screening values
Blank Analysis	Field, Trip, or Laboratory Blank	Concentrations measured in blank samples should be < LRL	Concentrations measured in blank samples should be < LRL	Concentrations measured in blank samples should be < LRL	-	-	Concentrations measured in blank samples should be < LRL	Concentrations measured in blank samples should be < LRL
Laboratory Precision	Laboratory Duplicates	< 4% (pH) <10% (conductivity) ≤15% RPD or <2x LRL (ORP, turbidity) ≤20% RPD or <2x LRL (all remaining analytes)	≤25% RPD (selenium species) ≤20% RPD (total selenium)	≤ 5% RPD (pH 1:2soil:water) ≤20% RPD (inorganic carbon, moisture) ≤30% RPD, 40% RPD or diff < 2x LOR (total metals) ≤ 50% RPD, 60-130% RPD or diff < 2xLOR RPD (PAHs)	-	≤60% RPD (calcium and strontium) ≤40% RPD (all remaining analytes)	-	< 4% (pH) <10% (conductivity) ≤15% RPD or <2x LRL (ORP, turbidity) ≤20% RPD or <2x LRL (all remaining analytes)
	Organism Sorting Efficiency	-	-	-	≥ 95%	-	-	
	Organism Sub-Sampling Precision and Accuracy	-	-	-	< 20% between subsamples	-	-	
Accuracy	Recovery of Blank Spike	-	75 to 125% (methylseleninic acid, selenate, selenite, selenocyanate, selenomethionine, total selenium)	-	-	-	-	
	Recovery of Matrix Spike	70 to 130% (TKN, orthophosphate, phosphorus, TOC, DOC, total and dissolved metals) 75 to 125% (ammonia, bromide, chloride, fluoride, nitrate, nitrite, sulphate)	75 to 125% (selenate, selenite, selenocyanate, selenomethionine, total selenium)	-	-	-	70 to 130% (TKN, orthophosphate, phosphorus, TOC, DOC, total and dissolved metals) 75 to 125% (ammonia, bromide, chloride, fluoride, nitrate, nitrite, sulphate)	
	Matrix Spike Duplicate	-	75 to 125% (selenate, selenite, selenocyanate, selenomethionine, total selenium)	-	-	-	-	
	Recovery of Certified Reference Material	-	75 to 125% (total selenium)	40 - 160 % (boron, thallium) 70 130 % (all other analytes) 80 - 120 % (inorganic carbon, total carbon) 96 - 104 % (pH)	-	60 to 140% (antimony, barium, boron, silver, tin, titanium) 90 to 110% (selenium) 70 to 130% (all remaining analytes)	-	-
	Laboratory Control Sample	75 to 125% (TKN) 80 to 120% (orthophosphate, phosphorus, DOC, TOC, total and dissolved metals) 85 to 115% (acidity, alkalinity, ammonia, bromide, TDS, TSS, turbidity) 90 to 110% (conductivity, chloride, fluoride, nitrate, nitrite, sulphate) 98.6-101% (pH), 95.4 to 104% (ORP)	-	50 - 130% (naphthalene, naphthalene-d8) 60 - 130% (PAHs) 80 - 120% (all other analytes) 90 - 110% (inorganic carbon, moisture) 97 - 103% (pH 1:2 soil:water)	-	-	80 to 120% (chlorophyll-a)	75 to 125% (TKN) 80 to 120% (orthophosphate, phosphorus, DOC, TOC, total and dissolved metals) 85 to 115% (acidity, alkalinity, ammonia, bromide, TDS, TSS, turbidity) 90 to 110% (conductivity, chloride, fluoride, nitrate, nitrite, sulphate) 98.6-101% (pH), 95.4 to 104% (ORP)
	Taxonomic Accuracy	-	-	-	< 5% TIR	-	-	-

Notes: LRL = Laboratory Reporting Limit; "-" = not applicable; < = less than; ≤ = less than or equal to; % = percent; RPD = Relative Percent Difference; ORP = oxidation-reduction potential; TKN = Total Kjeldahl Nitrogen; TOC = total organic carbon; DOC = dissolved organic carbon; TSS = total suspended solids; TDS = total dissolved solids; mg/kg dw = milligrams per kilogram dry weight; TIR = total identification error rate.

Table B.2: Laboratory Reporting Limit (LRL) Evaluation for Water Chemistry Analyses, EVO LAEMP, 2022

Parameter	Units	BC WQG ^a		EVWQP Level 1 Benchmarks/ Relevant Screening Values/UEC ^b	Range of LRLs	No. LRLs > Guideline	No. Sample Results < LRL
		Long-term	Short-term				
Physical Tests							
Total Suspended Solids	mg/L	-	-	-	1	0	20 (13.8%)
Anions and Nutrients							
Acidity (as CaCO ₃)	mg/L	-	-	-	10	0	85 (58.6%)
Alkalinity, Carbonate (as CO ₃)	mg/L	-	-	-	1	0	96 (66.2%)
Alkalinity, Carbonate (as CaCO ₃)	mg/L	-	-	-	1	0	96 (66.2%)
Alkalinity, Hydroxide (as CaCO ₃)	mg/L	-	-	-	1	0	133 (100%)
Alkalinity, Hydroxide (as OH)	mg/L	-	-	-	1	0	133 (100%)
Bromide	mg/L	-	-	-	0.25	0	116 (80.0%)
Fluoride	mg/L	-	1.32	-	0.10	0	26 (17.9%)
Ammonia, Total (as N) ^c	mg/L	0.251	1.30	-	0.005	0	84 (57.9%)
Nitrate (as N)	mg/L	3	32.8	6.48	0.025	0	2 (1.38%)
Nitrite (as N) ^d	mg/L	0.02	0.06	-	0.005	0	99 (68.3%)
Total Kjeldahl Nitrogen	mg/L	-	-	-	0.05	0	33 (22.8%)
Orthophosphate	mg/L	-	-	-	0.001	0	51 (35.2%)
Phosphorus	mg/L	-	-	-	0.002	0	4 (2.76%)
Carbon							
Dissolved Organic Carbon	mg/L	-	-	-	0.5	0	32 (22.1%)
Total Organic Carbon	mg/L	-	-	-	0.5	0	32 (22.1%)
Phytoplankton							
Chlorophyll a	µg/L	-	-	-	0.01	-	1 (11.1%)
Total Metals							
Aluminum	mg/L	0.0647	-	-	0.003	0	42 (29.0%)
Antimony	mg/L	0.009	-	-	0.0001	0	31 (21.4%)
Arsenic	mg/L	-	0.005	-	0.0001	0	1 (0.690%)
Beryllium	µg/L	0.01300	-	-	0.02	0	131 (90.3%)
Bismuth	mg/L	-	-	-	0.0001	0	132 (91.0%)
Boron	mg/L	1.20	-	-	0.01	0	30 (20.7%)
Cadmium	µg/L	-	-	-	0.005	0	3 (2.07%)
Chromium ^e	mg/L	0.001	-	-	0.0001	0	33 (22.8%)
Cobalt	µg/L	0.4	0.11	-	0.1	0	79 (54.5%)
Copper	mg/L	-	-	-	0.0005	0	120 (82.8%)
Iron	mg/L	-	1	-	0.01	0	50 (34.5%)
Lead ^f	mg/L	0.00632	0.0771	-	0.00005	0	105 (72.4%)
Manganese ^f	mg/L	1.03	1.59	-	0.0001	0	8 (5.52%)
Mercury ^g	µg/L	0.000125	-	-	0.0001 to 0.0005	103 (88.0%)	117 (96.7%)
Nickel ^f	mg/L	0.0924	-	-	0.0005	0	13 (8.97%)
Silver ^f	mg/L	0.00005	0.0001	-	0.00001	0	130 (89.7%)
Thallium	mg/L	0.0008	-	-	0.00001	0	69 (47.7%)
Tin	mg/L	-	-	-	0.0001	0	132 (91.0%)
Titanium	mg/L	-	-	-	0.0003	0	110 (75.9%)
Vanadium	mg/L	-	-	-	0.0005	0	101 (69.7%)
Zinc ^f	mg/L	0.0117	0.0372	-	0.003	0	97 (66.9%)
Dissolved Metals							
Aluminum ^h	mg/L	-	-	-	0.001	0	77 (53.1%)
Antimony	mg/L	-	-	-	0.0001	0	41 (28.3%)
Arsenic	mg/L	-	-	-	0.0001	0	4 (2.76%)
Beryllium	µg/L	-	-	-	0.02	0	145 (100%)
Bismuth	mg/L	-	-	-	0.00005	0	145 (100%)
Boron	mg/L	-	-	-	0.01	0	37 (25.5%)
Cadmium ^f	µg/L	0.020460	0.000562	0.00013	0.005	0	17 (11.7%)
Chromium	mg/L	-	-	-	0.0001	0	52 (35.9%)
Cobalt	µg/L	-	-	-	0.1	0	120 (82.8%)
Copper	mg/L	-	-	-	0.0002	0	96 (66.2%)
Iron	mg/L	-	0.35	-	0.01	0	126 (86.9%)
Lead	mg/L	-	-	-	0.00005	0	144 (100%)
Manganese	mg/L	-	-	-	0.0001	0	21 (14.5%)
Mercury	µg/L	-	-	-	0.000005	0	132 (91.0%)
Nickel	mg/L	-	-	0.0023	0.0005	0	19 (13.1%)
Silver	mg/L	-	-	-	0.00001	0	145 (100%)
Thallium	mg/L	-	-	-	0.00001	0	98 (67.6%)
Tin	mg/L	-	-	-	0.0001	0	145 (100%)
Titanium	mg/L	-	-	-	0.0003	0	145 (100%)
Vanadium	mg/L	-	-	-	0.0005	0	145 (100%)
Zinc	mg/L	-	-	-	0.001	0	55 (37.9%)

Notes: Only analytes with at least one result < Laboratory Reporting Limit (LRL) or LRL were above guidelines were displayed. The total number of samples in 2022 (n) was 145. Aqueous chlorophyll a, ash weight, and ash free dry weight were only analyzed in 18 samples. Dissolved mercury was only analyzed in 121 samples. EVWQP = Elk Valley Water Quality Plan; "-" = no applicable guideline exists. □

^a British Columbia Water Quality Guidelines for the protection of Aquatic Life (BCMOECCS 2021a,b).

^b Where more than one EVWQP Level 1 Benchmark, screening value, or Updated Effects Concentration (UEC; WSP Golder 2022) was applicable, the most conservative (lowest) value was used.

^c Guideline is the most conservative (lowest), based on estimates of a maximum temperature of 20°C and a minimum pH of 8.04.

^d Minimum water quality guidelines for Nitrite (as N) reported in BCMOECSS (2021a) for chloride concentrations < 2 mg/L.

^e Guideline for Chromium VI (0.001 mg/L) was selected, as this is the principal species found in surface waters.

^f Hardness-based guidelines calculated using the minimum hardness observed for all samples.

^g The most conservative guideline (0.125 µg/L) was applied.

^h Guideline based on minimum field pH.

Table B.3: Laboratory Reporting Limit (LRL) Evaluation for Surface Water Selenium Speciation Analyses, EVO LAEMP, 2022

Parameter	Units	Range of LRLs	No. Sample Results < LRL
Dimethylselenoxide (volatile)	µg/L	0.01	28 (100%)
Dimethyldiselenide (volatile)	µg/L	0.01	28 (100%)
Methylseleninic Acid	µg/L	0.01	162 (81.0%)
Methaneselenonic Acid	µg/L	0.01	200 (100%)
Selenite	µg/L	0.01 to 0.02	28 (13.9%)
Selenocyanate	µg/L	0.01	200 (99.5%)
Selenomethionine	µg/L	0.01	200 (100%)
Selenosulfate	µg/L	0.01	199 (99.5%)
Unknown Selenium Species	µg/L	0.01 to 0.03	197 (98.0%)

Notes: Only analytes with at least one result < Laboratory Reporting Limit (LRL) or LRL were above guidelines were displayed. No guideline existed for any analyte that had at least one result below the LRL. The total number of samples in 2022 (n) was 200; however, volatile dimethylselenoxide and dimethylselenide were only measured in 28 samples each.

^a British Columbia Water Quality Guidelines for the protection of Aquatic Life (BCMOECCS 2021a,b).

^b Where more than one EVWQP Level 1 Benchmark, screening value, or Updated Effects Concentration (UEC; WSP Golder 2022) was applicable, the most conservative (lowest) value was used.

^c Guideline is the most conservative (lowest), based on estimates of a maximum temperature of 20°C and a minimum pH of 8.

^d Minimum water quality guidelines for Nitrite (as N) reported in BCMOECCS (2021a) for chloride concentrations < 2 mg/L.

^e Guideline for Chromium VI (0.001 mg/L) was selected, as this is the principal species found in surface waters.

^f Hardness-based guidelines calculated using the minimum hardness observed for all samples.

^g The most conservative guideline (0.125 µg/L) was applied.

^h Guideline based on minimum field pH.

Table B.4: Field Blank and Trip Blank Evaluation for Water Chemistry Analyses, EVO LAEMP, 2022

Parameter	No. Field Blank Results < LRL	No. Trip Blank Results < LRL
Anions and Nutrients		
Acidity (as CaCO ₃)	14 (93.3%)	11 (100%)
Ammonia, Total (as N)	14 (93.3%)	5 (41.7%)
Nitrate (as N)	15 (100%)	11 (100%)
Total Kjeldahl Nitrogen	15 (100%)	10 (90.9%)
Total Metals		
Barium	13 (86.7%)	10 (90.9%)
Magnesium	15 (100%)	10 (90.9%)
Molybdenum	13 (86.7%)	11 (100%)
Nickel	14 (93.3%)	11 (100%)
Silicon	14 (93.3%)	11 (100%)
Sodium	12 (80.0%)	11 (100%)
Strontium	14 (93.3%)	11 (100%)
Sulphur	15 (100%)	10 (90.9%)
Tin	12 (80.0%)	11 (100%)
Dissolved Metals		
Aluminum	14 (93.3%)	9 (100%)
Barium	10 (66.7%)	9 (100%)
Copper	12 (80.0%)	9 (100%)
Magnesium	14 (93.3%)	10 (100%)
Manganese	14 (93.3%)	9 (100%)
Silicon	14 (93.3%)	8 (88.9%)
Sodium	11 (73.3%)	10 (100%)
Strontium	14 (93.3%)	9 (100%)
Tin	11 (73.3%)	9 (100%)
Zinc	14 (93.3%)	9 (100%)

Notes: LRL = Laboratory Reporting Limit; "-" = data not collected. A total of 15 field blank samples and 11 trip blank samples were collected in 2022. Only analytes with at least one blank results > LRL were displayed.

Table B.5: Field Blank and Trip Blank Evaluation for Surface Water Chemistry Selenium Speciation Analyses, EVO LAEMP, 2022

Parameter	No. Field Blank Results > LRL
Total Selenium	5 (50.0%)
Dissolved Selenium	4 (40.0%)
Dimethylselenide (volatile)	2 (100%)
Selenite	2 (20.0%)
Selenate	3 (30.0%)

Notes: LRL = Laboratory Reporting Limit; "-" = data not collected. A total of 10 field blank samples were collected in 2022; however, only two field blank samples were submitted for volatile dimethylselenide and dimethyldiselenide. Only analytes with at least one blank results > LRL were displayed. No guidelines existed for any analyte that had at least one result below the LRL.

Table B.6: Field Duplicate Results for Water Chemistry Analyses, EVO LAEMP, 2022

Parameter	Units	RG_GATEDP_WS_LAEMP_EVO_2022-04-21_NP	RG_RIVER_WS_LAEMP_EVO_2022-04-21_NP	RPD (%)	RG_ERCKIG_WS_LAEMP_EVO_2022-04_NP	RG_RIVER_WS_LAEMP_EVO_2022-04_NP	RPD (%)
Physical Tests							
Conductivity	µS/cm	1,890	1,880	0.531	1,950	1,930	1.03
Acidity (as CaCO ₃)	mg/L	<2.0	<2.0	-	17.7	18.2	2.79
Alkalinity, bicarbonate (as CaCO ₃)	mg/L	314	312	0.639	424	434	2.33
Alkalinity, bicarbonate (as HCO ₃)	mg/L	383	381	0.524	517	530	2.48
Alkalinity, carbonate (as CO ₃)	mg/L	<1.0	<1.0	-	<1.0	<1.0	-
Alkalinity, carbonate (as CaCO ₃)	mg/L	<1.0	<1.0	-	<1.0	<1.0	-
Alkalinity, hydroxide (as CaCO ₃)	mg/L	<1.0	<1.0	-	<1.0	<1.0	-
Alkalinity, hydroxide (as OH)	mg/L	<1.0	<1.0	-	<1.0	<1.0	-
Alkalinity, total (as CaCO ₃)	mg/L	314	312	0.639	424	434	2.33
Hardness (as CaCO ₃), dissolved	mg/L	1,190	1,210	1.67	1,240	1,230	0.810
Oxidation-reduction potential [ORP]	mV	265	331	22.1	533	499	6.59
pH	pH units	8.24	8.22	0.243	8.14	7.72	5.30
solids, total dissolved [TDS]	mg/L	1,630	1,640	0.612	1,690	1,670	1.19
solids, total suspended [TSS]	mg/L	5.10	2.20	79.5	4.70	4.00	16.1
Turbidity	NTU	2.49	2.69	7.72	0.130	0.170	26.7
Anions and Nutrients							
Kjeldahl nitrogen, total [TKN]	mg/L	0.164	0.230	33.5	1.33	1.23	186
Ammonia, total (as N)	mg/L	0.118	0.112	5.22	<0.0050	0.0486	163
Bromide	mg/L	<0.250	<0.250	-	<0.250	<0.250	-
Chloride	mg/L	9.68	9.49	1.98	6.23	6.10	197
Fluoride	mg/L	0.206	0.187	9.67	0.104	0.103	70.1
Nitrate (as N)	mg/L	10.6	10.4	1.90	17.8	17.5	199
Nitrite (as N)	mg/L	0.00960	0.00860	11.0	<0.0050	<0.0050	-
Orthophosphate, dissolved (as P)	mg/L	0.00260	0.00230	12.2	0.0193	0.0194	88.6
Phosphorus, total	mg/L	0.00850	0.00860	1.17	0.0226	0.0204	75.5
Sulfate (as SO ₄)	mg/L	906	888	2.01	831	816	200
Organic/Inorganic Carbon							
Carbon, dissolved organic [DOC]	mg/L	1.62	1.98	20.0	1.31	1.04	23.0
Carbon, total organic [TOC]	mg/L	1.46	1.86	24.1	1.00	1.03	2.96
Ion Balance (Matrix: Water)							
Anion sum	meq/L	26.2	25.7	1.93	27.2	27.1	0.368
Cation sum	meq/L	24.2	24.6	1.64	24.9	24.9	0
Ion balance (APHA)	%	3.97	2.19	57.8	4.41	4.23	4.17
Ion balance (cations/anions)	%	92.4	95.7	3.51	91.5	91.9	0.436
Total Metals							
Aluminum	mg/L	0.0170	0.0122	32.9	0.00330	<0.0030	194
Antimony	mg/L	0.000770	0.000750	2.63	0.000210	0.000210	0
Arsenic	mg/L	0.000340	0.000400	16.2	0.000260	0.000200	26.1
Barium	mg/L	0.246	0.227	8.03	0.0632	0.0626	0.954
Beryllium	µg/L	<0.040	<0.040	-	<0.020	<0.020	-
Bismuth	mg/L	<0.000100	<0.000100	-	<0.000050	<0.000050	-
Boron	mg/L	0.0360	0.0350	2.82	0.0140	0.0140	0
Cadmium	µg/L	0.177	0.163	8.24	0.0866	0.0803	7.55
Calcium	mg/L	246	228	7.59	263	265	0.758
Chromium	mg/L	<0.00020	<0.00020	-	0.000190	0.000180	5.41
Cobalt	µg/L	<0.20	<0.20	-	<0.10	<0.10	-
Copper	mg/L	<0.00100	<0.00100	-	<0.00050	<0.00050	-
Iron	mg/L	0.133	0.121	9.45	<0.010	<0.010	-
Lead	mg/L	<0.000100	<0.000100	-	<0.000050	<0.000050	-
Lithium	mg/L	0.0910	0.0858	5.88	0.0289	0.0296	2.39
Magnesium	mg/L	180	177	1.68	148	147	0.678
Manganese	mg/L	0.00720	0.00662	8.39	0.000170	0.000110	42.9
Mercury	mg/L	0.000670	0.000700	4.38	<0.00050	<0.00050	-
Molybdenum	mg/L	0.0134	0.0129	3.80	0.00113	0.00108	4.52
Nickel	mg/L	0.0229	0.0217	5.38	0.000870	0.000820	5.92
Potassium	mg/L	4.99	4.82	3.47	2.86	2.83	1.05
Selenium	µg/L	127	121	4.84	168	169	0.593
Silicon	mg/L	2.62	2.58	1.54	4.05	3.98	1.74
Silver	mg/L	<0.000020	<0.000020	-	<0.000010	<0.000010	-
Sodium	mg/L	6.20	6.04	2.61	3.28	3.18	3.10
Strontium	mg/L	0.627	0.611	2.58	0.231	0.227	1.75
Sulphur	mg/L	330	328	0.608	322	320	0.623
Thallium	mg/L	0.000040	0.000034	16.2	<0.000010	<0.000010	-
Tin	mg/L	<0.00020	<0.00020	-	<0.00010	<0.00010	-
Titanium	mg/L	<0.00060	<0.00060	-	<0.00030	<0.00030	-
Uranium	mg/L	0.0107	0.00968	10.0	0.00801	0.00783	2.27
Vanadium	mg/L	<0.00100	<0.00100	-	<0.00050	<0.00050	-
Zinc	mg/L	0.0110	0.00720	41.8	<0.0030	<0.0030	-

Indicates RPD exceeded 30%.

Notes: RPD = relative percent difference; "-" = no data/not calculated; LRL = Laboratory Reporting Limit. The RPD was calculated using < LRL results at the LRL if one result in a duplicate pair was below the LRL. The RPD was not calculated if both results were < LRL. Turbidity was not analyzed in duplicate samples.

Table B.6: Field Duplicate Results for Water Chemistry Analyses, EVO LAEMP, 2022

Parameter	Units	RG_GATEDP_WS_LAEMP_EVO_2022-04-21_NP	RG_RIVER_WS_LAEMP_EVO_2022-04-21_NP	RPD (%)	RG_ERCKIG_WS_LAEMP_EVO_2022-04_NP	RG_RIVER_WS_LAEMP_EVO_2022-04_NP	RPD (%)
Dissolved Metals							
Aluminum	mg/L	<0.0010	<0.0050	-	0.00130	<0.0010	185
Antimony	mg/L	0.000720	0.000720	0	0.000200	0.000190	5.13
Arsenic	mg/L	0.000250	<0.00050	66.7	0.000200	0.000240	18.2
Barium	mg/L	0.290	0.0458	145	0.0627	0.0632	0.794
Beryllium	µg/L	<0.020	<0.100	-	<0.020	<0.020	-
Bismuth	mg/L	<0.000050	<0.000250	-	<0.000050	<0.000050	-
Boron	mg/L	0.0320	<0.050	43.9	0.0130	0.0130	0
Cadmium	µg/L	0.130	0.110	16.7	0.0927	0.0856	7.96
Calcium	mg/L	241	239	0.833	256	250	2.37
Chromium	mg/L	<0.00010	<0.00050	-	0.000200	0.000180	10.5
Cobalt	µg/L	0.130	<0.50	117	<0.10	<0.10	-
Copper	mg/L	0.000240	<0.00100	123	<0.00020	<0.00020	-
Iron	mg/L	0.0110	<0.050	128	<0.010	<0.010	-
Lead	mg/L	<0.000050	<0.000250	-	<0.000050	<0.000050	-
Lithium	mg/L	0.0848	0.0812	4.34	0.0284	0.0278	2.14
Magnesium	mg/L	144	150	4.08	145	148	2.05
Manganese	mg/L	0.00498	0.00523	4.90	<0.00010	<0.00010	-
Mercury	mg/L	<0.0000050	<0.0000050	-	<0.0000050	0.0000056	200
Molybdenum	mg/L	0.0121	0.0121	0	0.00106	0.00105	0.948
Nickel	mg/L	0.0182	0.0185	1.63	0.000900	0.000800	11.8
Potassium	mg/L	4.36	4.30	1.39	2.82	2.83	0.354
Selenium	µg/L	131	118	10.4	169	198	15.8
Silicon	mg/L	2.40	2.33	2.96	3.85	3.88	0.776
Silver	mg/L	<0.000010	<0.000050	-	<0.000010	<0.000010	-
Sodium	mg/L	5.32	5.23	1.71	3.22	3.36	4.26
Strontium	mg/L	0.607	0.603	0.661	0.220	0.221	0.454
Sulphur	mg/L	310	1,180	117	303	303	0
Thallium	mg/L	0.000036	<0.000050	32.6	<0.000010	<0.000010	-
Tin	mg/L	<0.00010	<0.00050	-	<0.00010	<0.00010	-
Titanium	mg/L	<0.00030	<0.00150	-	<0.00030	<0.00030	-
Uranium	mg/L	0.0101	0.0103	1.96	0.00791	0.00770	2.69
Vanadium	mg/L	<0.00050	<0.00250	-	<0.00050	<0.00050	-
Zinc	mg/L	0.00550	0.00640	15.1	0.00220	0.00210	4.65

█ Indicates RPD exceeded 30%.

Notes: RPD = relative percent difference; "-" = no data/not calculated; LRL = Laboratory Reporting Limit. The RPD was calculated using < LRL results at the LRL if one result in a duplicate pair was below the LRL. The RPD was not calculated if both results were < LRL. Turbidity was not analyzed in duplicate samples.

Table B.6: Field Duplicate Results for Water Chemistry Analyses, EVO LAEMP, 2022

Parameter	Units	RG_ERCKUT_WS_LAEMP_EVO_2022-05-20_NP	RG_RIVER_WS_LAEMP_EVO_2022-05-20_NP	RPD (%)	RG_MIDER_WS_LAEMP_EVO_2022-03_NP	RG_RIVER_WS_LAEMP_EVO_2022-03_NP	RPD (%)
Physical Tests							
Conductivity	µS/cm	1,940	1,940	0	368	365	0.819
Acidity (as CaCO ₃)	mg/L	10.4	9.70	6.97	<2.0	<2.0	-
Alkalinity, bicarbonate (as CaCO ₃)	mg/L	427	442	3.45	139	134	3.66
Alkalinity, bicarbonate (as HCO ₃)	mg/L	520	540	3.77	170	163	4.20
Alkalinity, carbonate (as CO ₃)	mg/L	<1.0	<1.0	-	2.60	2.60	0
Alkalinity, carbonate (as CaCO ₃)	mg/L	<1.0	<1.0	-	4.40	4.40	0
Alkalinity, hydroxide (as CaCO ₃)	mg/L	<1.0	<1.0	-	<1.0	<1.0	-
Alkalinity, hydroxide (as OH)	mg/L	<1.0	<1.0	-	<1.0	<1.0	-
Alkalinity, total (as CaCO ₃)	mg/L	427	442	3.45	144	138	4.26
Hardness (as CaCO ₃), dissolved	mg/L	1,290	1,300	0.772	200	210	4.88
Oxidation-reduction potential [ORP]	mV	391	384	1.81	461	446	3.31
pH	pH units	7.99	7.95	0.502	8.36	8.36	0
solids, total dissolved [TDS]	mg/L	1,650	1,660	0.604	224	232	3.51
solids, total suspended [TSS]	mg/L	6.00	1.60	116	3.50	2.90	18.8
Turbidity	NTU	0.200	<0.10	66.7	2.39	2.63	9.56
Anions and Nutrients							
Kjeldahl nitrogen, total [TKN]	mg/L	0.999	1.08	7.79	0.0630	0.0600	4.88
Ammonia, total (as N)	mg/L	0.00810	<0.0050	47.3	<0.0050	<0.0050	-
Bromide	mg/L	<0.250	<0.250	-	<0.050	<0.050	-
Chloride	mg/L	5.74	5.68	1.05	1.34	1.40	4.38
Fluoride	mg/L	<0.100	<0.100	-	0.104	0.103	0.966
Nitrate (as N)	mg/L	16.6	16.6	0	0.132	0.131	0.760
Nitrite (as N)	mg/L	0.0170	<0.0050	109	<0.0010	<0.0010	-
Orthophosphate, dissolved (as P)	mg/L	0.0222	0.0231	3.97	<0.0010	<0.0010	-
Phosphorus, total	mg/L	0.0259	0.0242	6.79	0.00740	0.00530	33.1
Sulfate (as SO ₄)	mg/L	779	782	0.384	63.8	64.4	0.936
Organic/Inorganic Carbon							
Carbon, dissolved organic [DOC]	mg/L	<0.50	0.570	13.1	1.09	1.12	2.71
Carbon, total organic [TOC]	mg/L	<0.50	0.540	7.69	1.47	1.08	30.6
Ion Balance (Matrix: Water)							
Anion sum	meq/L	26.1	26.4	1.14	4.26	4.15	2.62
Cation sum	meq/L	26.0	26.2	0.766	4.16	4.37	4.92
Ion balance (APHA)	%	0.192	0.380	65.7	1.19	2.58	73.7
Ion balance (cations/anions)	%	99.6	99.2	0.402	97.6	105	7.31
Total Metals							
Aluminum	mg/L	<0.0030	<0.0030	-	0.0380	0.0581	41.8
Antimony	mg/L	0.000220	0.000220	0	<0.00010	<0.00010	-
Arsenic	mg/L	0.000230	0.000250	8.33	0.000170	0.000180	5.71
Barium	mg/L	0.0609	0.0617	1.31	0.0921	0.0956	3.73
Beryllium	µg/L	<0.020	<0.020	-	<0.020	<0.020	-
Bismuth	mg/L	<0.000050	<0.000050	-	<0.000050	<0.000050	-
Boron	mg/L	0.0130	0.0120	8.00	<0.010	<0.010	-
Cadmium	µg/L	0.0951	0.0915	3.86	0.0202	0.0232	13.8
Calcium	mg/L	258	252	2.35	55.6	56.2	1.07
Chromium	mg/L	0.000230	0.000280	19.6	0.000420	0.000300	33.3
Cobalt	µg/L	<0.10	<0.10	-	<0.10	<0.10	-
Copper	mg/L	<0.00050	<0.00050	-	<0.00050	<0.00050	-
Iron	mg/L	<0.010	<0.010	-	0.0350	0.0450	25.0
Lead	mg/L	<0.000050	<0.000050	-	<0.000050	<0.000050	-
Lithium	mg/L	0.0272	0.0263	3.36	0.00490	0.00530	7.84
Magnesium	mg/L	158	160	1.26	15.7	16.0	1.89
Manganese	mg/L	<0.00010	<0.00010	-	0.00192	0.00207	7.52
Mercury	mg/L	<0.00050	<0.00050	-	<0.00050	0.000810	47.3
Molybdenum	mg/L	0.000994	0.00104	4.52	0.000806	0.000756	6.40
Nickel	mg/L	0.000920	0.000910	1.09	0.000520	<0.00050	165
Potassium	mg/L	2.85	2.83	0.704	0.619	0.591	4.63
Selenium	µg/L	182	181	0.551	2.05	1.84	10.8
Silicon	mg/L	3.99	4.03	0.998	2.02	2.18	7.62
Silver	mg/L	<0.000010	<0.000010	-	<0.000010	<0.000010	-
Sodium	mg/L	3.34	3.33	0.300	3.75	3.85	2.63
Strontium	mg/L	0.229	0.234	2.16	0.156	0.157	0.639
Sulphur	mg/L	297	293	1.36	21.6	22.6	4.52
Thallium	mg/L	<0.000010	<0.000010	-	<0.000010	<0.000010	-
Tin	mg/L	<0.00010	<0.00010	-	<0.00010	<0.00010	-
Titanium	mg/L	<0.00030	<0.00030	-	0.000870	<0.00120	31.9
Uranium	mg/L	0.00863	0.00861	0.232	0.000797	0.000774	2.93
Vanadium	mg/L	<0.00050	<0.00050	-	<0.00050	<0.00050	-
Zinc	mg/L	<0.0030	<0.0030	-	0.00380	<0.0030	23.5

Indicates RPD exceeded 30%.

Notes: RPD = relative percent difference; "-" = no data/not calculated; LRL = Laboratory Reporting Limit. The RPD was calculated using < LRL results at the LRL if one result in a duplicate pair was below the LRL. The RPD was not calculated if both results were < LRL. Turbidity was not analyzed in duplicate samples.

Table B.6: Field Duplicate Results for Water Chemistry Analyses, EVO LAEMP, 2022

Parameter	Units	RG_ERCKUT_WS_LAEMP_EVO_2022-05-20_NP	RG_RIVER_WS_LAEMP_EVO_2022-05-20_NP	RPD (%)	RG_MIDER_WS_LAEMP_EVO_2022-03_NP	RG_RIVER_WS_LAEMP_EVO_2022-03_NP	RPD (%)
Dissolved Metals							
Aluminum	mg/L	<0.0010	<0.0010	-	0.00110	0.00250	77.8
Antimony	mg/L	0.000210	0.000210	0	<0.00010	<0.00010	-
Arsenic	mg/L	0.000220	0.000240	8.70	0.000120	0.000140	15.4
Barium	mg/L	0.0610	0.0622	1.95	0.0884	0.0951	7.30
Beryllium	µg/L	<0.020	<0.020	-	<0.020	<0.020	-
Bismuth	mg/L	<0.000050	<0.000050	-	<0.000050	<0.000050	-
Boron	mg/L	0.0120	0.0120	0	<0.010	<0.010	-
Cadmium	µg/L	0.0918	0.0876	4.68	0.0166	0.0144	14.2
Calcium	mg/L	267	264	1.13	54.2	56.4	3.98
Chromium	mg/L	0.000220	0.000240	8.70	0.000130	0.000360	93.9
Cobalt	µg/L	<0.10	<0.10	-	<0.10	<0.10	-
Copper	mg/L	<0.00020	<0.00020	-	<0.00020	0.000260	-
Iron	mg/L	<0.010	<0.010	-	<0.010	<0.010	-
Lead	mg/L	<0.000050	<0.000050	-	<0.000050	<0.000050	-
Lithium	mg/L	0.0248	0.0251	1.20	0.00460	0.00490	6.32
Magnesium	mg/L	152	156	2.60	15.6	16.7	6.81
Manganese	mg/L	0.000110	<0.00010	9.52	0.000420	0.000520	21.3
Mercury	mg/L	<0.0000050	<0.0000050	-	<0.0000050	<0.0000050	-
Molybdenum	mg/L	0.00101	0.00105	3.88	0.000750	0.000728	2.98
Nickel	mg/L	0.00113	0.00121	6.84	<0.00050	0.000570	13.1
Potassium	mg/L	2.68	2.74	2.21	0.547	0.588	7.22
Selenium	µg/L	186	189	1.60	1.88	2.05	8.65
Silicon	mg/L	3.70	3.85	3.97	1.91	1.89	1.05
Silver	mg/L	<0.000010	<0.000010	-	<0.000010	<0.000010	-
Sodium	mg/L	3.14	3.18	1.27	3.59	3.89	8.02
Strontium	mg/L	0.230	0.239	3.84	0.153	0.160	4.47
Sulphur	mg/L	277	285	2.85	21.1	20.8	1.43
Thallium	mg/L	<0.000010	<0.000010	-	<0.000010	<0.000010	-
Tin	mg/L	<0.00010	<0.00010	-	<0.00010	<0.00010	-
Titanium	mg/L	<0.00030	<0.00030	-	<0.00030	<0.00030	-
Uranium	mg/L	0.00824	0.00819	0.609	0.000724	0.000758	4.59
Vanadium	mg/L	<0.00050	<0.00050	-	<0.00050	<0.00050	-
Zinc	mg/L	0.00280	0.00200	33.3	<0.0010	<0.0010	-

Indicates RPD exceeded 30%.

Notes: RPD = relative percent difference; "-" = no data/not calculated; LRL = Laboratory Reporting Limit. The RPD was calculated using < LRL results at the LRL if one result in a duplicate pair was below the LRL. The RPD was not calculated if both results were < LRL. Turbidity was not analyzed in duplicate samples.

Table B.6: Field Duplicate Results for Water Chemistry Analyses, EVO LAEMP, 2022

Parameter	Units	RG_ERCK_WS_LAEMP_EVO_2022-05_NP	RG_RIVER_WS_LAEMP_EVO_2022-05_NP	RPD (%)	RG_MIDBO_WS_LAEMP_EVO_2022-06-01_NP	RG_RIVER_WS_LAEMP_EVO_2022-06-01_NP	RPD (%)
Physical Tests							
Conductivity	µS/cm	1,800	1,780	1.12	289	289	0
Acidity (as CaCO ₃)	mg/L	<2.0	<2.0	-	<2.0	<2.0	-
Alkalinity, bicarbonate (as CaCO ₃)	mg/L	362	342	5.68	106	109	2.79
Alkalinity, bicarbonate (as HCO ₃)	mg/L	441	417	5.59	130	133	2.28
Alkalinity, carbonate (as CO ₃)	mg/L	<1.0	<1.0	-	<1.0	<1.0	-
Alkalinity, carbonate (as CaCO ₃)	mg/L	<1.0	<1.0	-	<1.0	<1.0	-
Alkalinity, hydroxide (as CaCO ₃)	mg/L	<1.0	<1.0	-	<1.0	<1.0	-
Alkalinity, hydroxide (as OH)	mg/L	<1.0	<1.0	-	<1.0	<1.0	-
Alkalinity, total (as CaCO ₃)	mg/L	362	342	5.68	106	109	2.79
Hardness (as CaCO ₃), dissolved	mg/L	1,150	1,190	3.42	140	138	1.44
Oxidation-reduction potential [ORP]	mV	460	491	6.52	327	240	30.7
pH	pH units	8.28	8.27	0.121	8.25	8.22	0.364
solids, total dissolved [TDS]	mg/L	1,510	1,520	0.660	179	164	8.75
solids, total suspended [TSS]	mg/L	1.10	2.50	77.8	16.4	15.3	6.94
Turbidity	NTU	<0.10	<0.10	-	7.07	4.39	46.8
Anions and Nutrients							
Kjeldahl nitrogen, total [TKN]	mg/L	1.22	1.38	12.3	0.112	<0.050	76.5
Ammonia, total (as N)	mg/L	<0.0050	0.0532	166	<0.0050	<0.0050	-
Bromide	mg/L	<0.250	<0.250	-	<0.050	<0.050	-
Chloride	mg/L	5.43	5.46	0.551	0.710	0.680	4.32
Fluoride	mg/L	<0.100	<0.100	-	0.104	0.104	0
Nitrate (as N)	mg/L	16.1	16.2	0.619	0.437	0.440	0.684
Nitrite (as N)	mg/L	<0.0050	<0.0050	-	0.437	0.440	0.684
Orthophosphate, dissolved (as P)	mg/L	<0.0010	<0.0010	-	0.00860	0.00880	2.30
Phosphorus, total	mg/L	0.0171	0.00260	147	0.0328	0.0313	4.68
Sulfate (as SO ₄)	mg/L	774	778	0.515	49.6	49.5	0.202
Organic/Inorganic Carbon							
Carbon, dissolved organic [DOC]	mg/L	0.770	0.880	13.3	2.32	2.35	1.28
Carbon, total organic [TOC]	mg/L	1.62	0.780	70.0	2.33	2.55	9.02
Ion Balance (Matrix: Water)							
Anion sum	meq/L	24.6	24.3	1.23	3.24	3.30	1.83
Cation sum	meq/L	23.2	24.0	3.39	2.91	2.85	2.08
Ion balance (APHA)	%	2.93	0.621	130	5.36	7.32	30.9
Ion balance (cations/anions)	%	94.3	98.8	4.66	89.8	86.4	3.86
Total Metals							
Aluminum	mg/L	0.0123	<0.0030	114	0.264	0.256	3.08
Antimony	mg/L	0.000220	0.000220	0	0.000140	0.000100	33.3
Arsenic	mg/L	0.000310	0.000290	6.67	0.000330	0.000320	3.08
Barium	mg/L	0.0456	0.0441	3.34	0.0664	0.0685	3.11
Beryllium	µg/L	<0.020	<0.020	-	<0.020	<0.020	-
Bismuth	mg/L	<0.000050	<0.000050	-	<0.000050	<0.000050	-
Boron	mg/L	0.0130	0.0130	0	<0.010	<0.010	-
Cadmium	µg/L	0.0208	0.00700	99.3	0.0648	0.0533	19.5
Calcium	mg/L	224	226	0.889	36.3	36.5	0.549
Chromium	mg/L	0.000250	0.000200	22.2	0.000520	0.000520	0
Cobalt	µg/L	2.02	<0.10	181	0.210	0.210	0
Copper	mg/L	<0.00050	<0.00050	-	0.000600	0.000640	6.45
Iron	mg/L	0.0350	<0.010	111	0.285	0.281	1.41
Lead	mg/L	0.000054	<0.000050	7.69	0.000194	0.000197	1.53
Lithium	mg/L	0.0257	0.0260	1.16	0.00520	0.00510	1.94
Magnesium	mg/L	149	149	0	13.3	13.5	1.49
Manganese	mg/L	0.0435	0.000600	195	0.00796	0.00867	8.54
Mercury	mg/L	-	-	-	<0.0000050	<0.0000050	-
Molybdenum	mg/L	0.00131	0.00134	2.26	0.000721	0.000726	0.691
Nickel	mg/L	0.00748	0.00439	52.1	0.00205	0.00202	1.47
Potassium	mg/L	2.61	2.64	1.14	0.628	0.652	3.75
Selenium	µg/L	166	166	0	3.73	3.92	4.97
Silicon	mg/L	3.65	3.60	1.38	2.54	2.55	0.393
Silver	mg/L	<0.000010	<0.000010	-	<0.000010	<0.000010	-
Sodium	mg/L	3.05	3.14	2.91	2.03	2.06	1.47
Strontium	mg/L	0.222	0.219	1.36	0.0956	0.0969	1.35
Sulphur	mg/L	271	269	0.741	16.1	15.7	2.52
Thallium	mg/L	0.000013	0.000011	16.7	0.000013	0.000013	0
Tin	mg/L	<0.00010	<0.00010	-	<0.00010	<0.00010	-
Titanium	mg/L	<0.00030	<0.00030	-	0.00290	0.00305	5.04
Uranium	mg/L	0.00751	0.00772	2.76	0.000646	0.000625	3.30
Vanadium	mg/L	<0.00050	<0.00050	-	0.00129	0.00130	0.772
Zinc	mg/L	<0.0030	<0.0030	-	0.00310	<0.0030	3.28

Indicates RPD exceeded 30%.

Notes: RPD = relative percent difference; "-" = no data/not calculated; LRL = Laboratory Reporting Limit. The RPD was calculated using < LRL results at the LRL if one result in a duplicate pair was below the LRL. The RPD was not calculated if both results were < LRL. Turbidity was not analyzed in duplicate samples.

Table B.6: Field Duplicate Results for Water Chemistry Analyses, EVO LAEMP, 2022

Parameter	Units	RG_ERCK_WS_LAEMP_EVO_2022-05_NP	RG_RIVER_WS_LAEMP_EVO_2022-05_NP	RPD (%)	RG_MIDBO_WS_LAEMP_EVO_2022-06-01_NP	RG_RIVER_WS_LAEMP_EVO_2022-06-01_NP	RPD (%)
Dissolved Metals							
Aluminum	mg/L	0.00110	0.00130	16.7	0.0100	0.00990	1.01
Antimony	mg/L	0.000210	0.000210	0	<0.00010	<0.00010	-
Arsenic	mg/L	0.000220	0.000230	4.44	0.000170	0.000160	6.06
Barium	mg/L	0.0441	0.0449	1.80	0.0599	0.0597	0.334
Beryllium	µg/L	<0.020	<0.020	-	<0.020	<0.020	-
Bismuth	mg/L	<0.000050	<0.000050	-	<0.000050	<0.000050	-
Boron	mg/L	0.0120	0.0120	0	<0.010	<0.010	-
Cadmium	µg/L	0.00680	0.00590	14.2	0.0194	0.0203	4.53
Calcium	mg/L	219	220	0.456	36.1	35.5	1.68
Chromium	mg/L	0.000150	0.000180	18.2	0.000130	0.000120	8.00
Cobalt	µg/L	<0.10	<0.10	-	<0.10	<0.10	-
Copper	mg/L	<0.00020	<0.00020	-	0.000330	0.000300	9.52
Iron	mg/L	<0.010	<0.010	-	<0.010	<0.010	-
Lead	mg/L	<0.000050	<0.000050	-	<0.000050	<0.000050	-
Lithium	mg/L	0.0251	0.0258	2.75	0.00480	0.00480	0
Magnesium	mg/L	147	156	5.94	12.2	11.9	2.49
Manganese	mg/L	0.000370	0.000400	7.79	0.00113	0.00103	9.26
Mercury	mg/L	<0.0000050	<0.0000050	-	<0.0000050	<0.0000050	-
Molybdenum	mg/L	0.00137	0.00130	5.24	0.000653	0.000691	5.65
Nickel	mg/L	0.00437	0.00456	4.26	0.00150	0.00146	2.70
Potassium	mg/L	2.62	2.72	3.75	0.535	0.542	1.30
Selenium	µg/L	190	185	2.67	3.57	3.45	3.42
Silicon	mg/L	3.57	3.58	0.280	1.98	1.90	4.12
Silver	mg/L	<0.000010	<0.000010	-	<0.000010	<0.000010	-
Sodium	mg/L	3.18	3.18	0	2.03	1.98	2.49
Strontium	mg/L	0.212	0.211	0.473	0.0927	0.0914	1.41
Sulphur	mg/L	272	273	0.367	14.5	14.0	3.51
Thallium	mg/L	0.000010	0.000011	9.52	<0.000010	<0.000010	-
Tin	mg/L	<0.00010	<0.00010	-	<0.00010	<0.00010	-
Titanium	mg/L	<0.00030	<0.00030	-	<0.00030	<0.00030	-
Uranium	mg/L	0.00748	0.00751	0.400	0.000573	0.000546	4.83
Vanadium	mg/L	<0.00050	<0.00050	-	<0.00050	<0.00050	-
Zinc	mg/L	0.00160	<0.0010	188	0.00140	<0.0010	33.3

█ Indicates RPD exceeded 30%.

Notes: RPD = relative percent difference; "-" = no data/not calculated; LRL = Laboratory Reporting Limit. The RPD was calculated using < LRL results at the LRL if one result in a duplicate pair was below the LRL. The RPD was not calculated if both results were < LRL. Turbidity was not analyzed in duplicate samples.

Table B.6: Field Duplicate Results for Water Chemistry Analyses, EVO LAEMP, 2022

Parameter	Units	RG_MIDER_ WS_LAEMP_ EVO_2022- 06-02_NP	RG_RIVER_ WS_LAEMP_ EVO_2022- 06-02_NP	RPD (%)	RG_BOCKRD WS_LAEMP_ EVO_2022-06- 28_NP	RG_RIVER_ WS_LAEMP_ EVO_2022- 06-28_NP	RPD (%)
Physical Tests							
Conductivity	µS/cm	232	236	1.71	2,010	2,000	0.499
Acidity (as CaCO ₃)	mg/L	<2.0	<2.0	-	<2.0	<2.0	-
Alkalinity, bicarbonate (as CaCO ₃)	mg/L	90.0	99.4	9.93	410	399	2.72
Alkalinity, bicarbonate (as HCO ₃)	mg/L	110	121	9.52	500	486	2.84
Alkalinity, carbonate (as CO ₃)	mg/L	<1.0	<1.0	-	<1.0	5.20	135
Alkalinity, carbonate (as CaCO ₃)	mg/L	<1.0	<1.0	-	<1.0	8.60	158
Alkalinity, hydroxide (as CaCO ₃)	mg/L	<1.0	<1.0	-	<1.0	<1.0	-
Alkalinity, hydroxide (as OH)	mg/L	<1.0	<1.0	-	<1.0	<1.0	-
Alkalinity, total (as CaCO ₃)	mg/L	90.0	99.4	9.93	410	407	0.734
Hardness (as CaCO ₃), dissolved	mg/L	108	106	1.87	1,500	1,520	1.32
Oxidation-reduction potential [ORP]	mV	356	358	0.560	318	310	2.55
pH	pH units	8.10	8.13	0.370	8.28	8.29	0.121
solids, total dissolved [TDS]	mg/L	171	171	0	1,850	1,900	2.67
solids, total suspended [TSS]	mg/L	12.7	11.8	7.35	1.60	<1.0	46.2
Turbidity	NTU	7.32	7.85	6.99	0.900	1.16	25.2
Anions and Nutrients							
Kjeldahl nitrogen, total [TKN]	mg/L	<0.500	<0.500	-	1.04	1.52	-
Ammonia, total (as N)	mg/L	<0.0050	<0.0050	-	<0.0050	0.00680	30.5
Bromide	mg/L	<0.050	<0.050	-	0.536	0.499	7.15
Chloride	mg/L	0.300	0.340	12.5	13.2	12.9	2.30
Fluoride	mg/L	0.0900	0.0820	9.30	0.202	0.199	1.50
Nitrate (as N)	mg/L	0.105	0.114	8.22	8.04	7.84	2.52
Nitrite (as N)	mg/L	<0.0010	<0.0010	-	<0.0050	<0.0050	-
Orthophosphate, dissolved (as P)	mg/L	0.0108	0.00960	11.8	0.00240	<0.0010	82.4
Phosphorus, total	mg/L	0.0285	0.0535	61.0	0.00480	0.0236	132
Sulfate (as SO ₄)	mg/L	28.3	29.3	3.47	1,040	1,010	2.93
Organic/Inorganic Carbon							
Carbon, dissolved organic [DOC]	mg/L	2.33	2.98	24.5	<0.50	<0.50	-
Carbon, total organic [TOC]	mg/L	2.46	2.54	3.20	<0.50	<0.50	-
Ion Balance (Matrix: Water)							
Anion sum	meq/L	2.41	2.62	8.35	30.8	30.1	2.30
Cation sum	meq/L	2.25	2.22	1.34	30.5	30.8	0.979
Ion balance (APHA)	%	3.43	8.26	82.6	0.489	1.15	80.7
Ion balance (cations/anions)	%	93.4	84.7	9.77	99.0	102	2.99
Total Metals							
Aluminum	mg/L	0.261	0.254	2.72	0.00700	0.00490	35.3
Antimony	mg/L	<0.00010	<0.00010	-	0.000890	0.000840	5.78
Arsenic	mg/L	0.000300	0.000290	3.39	0.000400	0.000410	2.47
Barium	mg/L	0.0589	0.0579	1.71	0.0202	0.0276	31.0
Beryllium	µg/L	<0.020	<0.020	-	<0.020	<0.020	-
Bismuth	mg/L	<0.000050	<0.000050	-	<0.000050	<0.000050	-
Boron	mg/L	<0.010	<0.010	-	0.0370	0.0400	7.79
Cadmium	µg/L	0.0574	0.0567	1.23	0.302	0.314	3.90
Calcium	mg/L	28.0	28.1	0.357	261	264	1.14
Chromium	mg/L	0.000460	0.000430	6.74	<0.00010	<0.00010	-
Cobalt	µg/L	0.210	0.220	4.65	0.160	0.170	6.06
Copper	mg/L	0.000610	0.000870	35.1	<0.00050	<0.00050	-
Iron	mg/L	0.220	0.227	3.13	0.0390	0.0470	18.6
Lead	mg/L	0.000155	0.000188	19.2	<0.000050	<0.000050	-
Lithium	mg/L	0.00360	0.00330	8.70	0.129	0.121	6.40
Magnesium	mg/L	9.17	9.16	0.109	182	181	0.551
Manganese	mg/L	0.00710	0.00789	10.5	0.00357	0.00641	56.9
Mercury	mg/L	<0.0000050	<0.0000050	-	<0.0000050	<0.0000050	-
Molybdenum	mg/L	0.000533	0.000593	10.7	0.0157	0.0152	3.24
Nickel	mg/L	0.00175	0.00167	4.68	0.0388	0.0385	0.776
Potassium	mg/L	0.565	0.554	1.97	5.38	5.36	0.372
Selenium	µg/L	1.24	1.32	6.25	90.4	90.8	0.442
Silicon	mg/L	2.35	2.33	0.855	2.75	2.75	0
Silver	mg/L	<0.000010	<0.000010	-	<0.000010	<0.000010	-
Sodium	mg/L	1.92	1.90	1.05	10.3	10.3	0
Strontium	mg/L	0.0862	0.0858	0.465	0.512	0.516	0.778
Sulphur	mg/L	9.42	9.33	0.960	286	287	0.349
Thallium	mg/L	0.000013	0.000012	8.00	0.000061	0.000060	1.65
Tin	mg/L	<0.00010	<0.00010	-	<0.00010	<0.00010	-
Titanium	mg/L	0.00416	<0.00480	14.3	<0.00030	<0.00030	-
Uranium	mg/L	0.000381	0.000378	0.791	0.0136	0.0136	0
Vanadium	mg/L	0.00127	0.00123	3.20	<0.00050	<0.00050	-
Zinc	mg/L	<0.0030	0.00450	40.0	0.0133	0.0131	1.52

Indicates RPD exceeded 30%.

Notes: RPD = relative percent difference; "-" = no data/not calculated; LRL = Laboratory Reporting Limit. The RPD was calculated using < LRL results at the LRL if one result in a duplicate pair was below the LRL. The RPD was not calculated if both results were < LRL. Turbidity was not analyzed in duplicate samples.

Table B.6: Field Duplicate Results for Water Chemistry Analyses, EVO LAEMP, 2022

Parameter	Units	RG_MIDER_WS_LAEMP_EVO_2022-06-02_NP	RG_RIVER_WS_LAEMP_EVO_2022-06-02_NP	RPD (%)	RG_BOCKRD_WS_LAEMP_EVO_2022-06-28_NP	RG_RIVER_WS_LAEMP_EVO_2022-06-28_NP	RPD (%)
Dissolved Metals							
Aluminum	mg/L	0.0124	0.0134	7.75	<0.0020	<0.0020	-
Antimony	mg/L	<0.00010	<0.00010	-	0.000940	0.000950	1.06
Arsenic	mg/L	0.000180	0.000170	5.71	0.000350	0.000330	5.88
Barium	mg/L	0.0530	0.0530	0	0.0218	0.0284	26.3
Beryllium	µg/L	<0.020	<0.020	-	<0.040	<0.040	-
Bismuth	mg/L	<0.000050	<0.000050	-	<0.000100	<0.000100	-
Boron	mg/L	<0.010	<0.010	-	0.0440	0.0450	2.25
Cadmium	µg/L	0.0244	0.0205	17.4	0.275	0.267	2.95
Calcium	mg/L	28.6	28.2	1.41	286	292	2.08
Chromium	mg/L	0.000120	0.000130	8.00	<0.00020	<0.00020	-
Cobalt	µg/L	<0.10	<0.10	-	<0.20	<0.20	-
Copper	mg/L	0.000340	0.000360	5.71	<0.00040	<0.00040	-
Iron	mg/L	<0.010	<0.010	-	<0.020	0.0200	-
Lead	mg/L	<0.000050	<0.000050	-	<0.000100	<0.000100	-
Lithium	mg/L	0.00350	0.00320	8.96	0.131	0.136	3.75
Magnesium	mg/L	8.78	8.75	0.342	191	191	0
Manganese	mg/L	0.00100	0.000990	1.01	0.00353	0.00619	54.7
Mercury	mg/L	<0.0000050	<0.0000050	-	<0.0000050	<0.0000050	-
Molybdenum	mg/L	0.000560	0.000511	9.15	0.0168	0.0173	2.93
Nickel	mg/L	0.00126	0.00138	9.09	0.0384	0.0388	1.04
Potassium	mg/L	0.468	0.464	0.858	5.15	5.23	1.54
Selenium	µg/L	1.18	1.10	7.02	85.0	87.3	2.67
Silicon	mg/L	1.98	1.90	4.12	2.69	2.77	2.93
Silver	mg/L	<0.000010	<0.000010	-	<0.000020	<0.000020	-
Sodium	mg/L	1.93	1.91	1.04	9.75	9.86	1.12
Strontium	mg/L	0.0888	0.0864	2.74	0.522	0.541	3.57
Sulphur	mg/L	9.56	9.00	6.03	333	338	1.49
Thallium	mg/L	<0.000010	<0.000010	-	0.000064	0.000062	3.17
Tin	mg/L	<0.00010	<0.00010	-	<0.00020	<0.00020	-
Titanium	mg/L	<0.00030	<0.00030	-	<0.00060	<0.00060	-
Uranium	mg/L	0.000367	0.000373	1.62	0.0132	0.0136	2.99
Vanadium	mg/L	<0.00050	<0.00050	-	<0.00100	<0.00100	-
Zinc	mg/L	0.00110	0.00120	8.70	0.0136	0.0130	4.51

■ Indicates RPD exceeded 30%.

Notes: RPD = relative percent difference; "-" = no data/not calculated; LRL = Laboratory Reporting Limit. The RPD was calculated using < LRL results at the LRL if one result in a duplicate pair was below the LRL. The RPD was not calculated if both results were < LRL. Turbidity was not analyzed in duplicate samples.

Table B.6: Field Duplicate Results for Water Chemistry Analyses, EVO LAEMP, 2022

Parameter	Units	RG_MI25_WS_LAEMP_EVO_2022-06-30_NP	RG_RIVER_WS_LAEMP_EVO_2022-06-30_NP	RPD (%)	RG_BOCK_WS_LAEMP_EVO_2022-07-25_N	RG_RIVER_WS_LAEMP_EVO_2022-07-25_N	RPD (%)
Physical Tests							
Conductivity	µS/cm	204	204	0	1,770	1,770	0
Acidity (as CaCO ₃)	mg/L	<2.0	<2.0	-	<2.0	<2.0	-
Alkalinity, bicarbonate (as CaCO ₃)	mg/L	107	109	1.85	320	323	0.933
Alkalinity, bicarbonate (as HCO ₃)	mg/L	130	133	2.28	390	394	1.02
Alkalinity, carbonate (as CO ₃)	mg/L	<1.0	<1.0	-	<1.0	<1.0	-
Alkalinity, carbonate (as CaCO ₃)	mg/L	<1.0	<1.0	-	<1.0	<1.0	-
Alkalinity, hydroxide (as CaCO ₃)	mg/L	<1.0	<1.0	-	<1.0	<1.0	-
Alkalinity, hydroxide (as OH)	mg/L	<1.0	<1.0	-	<1.0	<1.0	-
Alkalinity, total (as CaCO ₃)	mg/L	107	109	1.85	320	323	0.933
Hardness (as CaCO ₃), dissolved	mg/L	110	114	3.57	1,230	1,200	2.47
Oxidation-reduction potential [ORP]	mV	280	304	8.22	387	390	0.772
pH	pH units	8.07	7.99	0.996	7.84	7.79	0.640
solids, total dissolved [TDS]	mg/L	121	116	4.22	1,570	1,620	3.13
solids, total suspended [TSS]	mg/L	2.50	4.90	64.9	5.30	1.50	112
Turbidity	NTU	1.33	1.26	5.41	2.42	0.240	164
Anions and Nutrients							
Kjeldahl nitrogen, total [TKN]	mg/L	<0.500	<0.500	-	0.349	0.419	-
Ammonia, total (as N)	mg/L	<0.0050	<0.0050	-	0.00760	0.00680	11.1
Bromide	mg/L	<0.050	<0.050	-	0.399	0.402	0.749
Chloride	mg/L	0.100	0.110	9.52	20.4	20.0	1.98
Fluoride	mg/L	0.0420	0.0410	2.41	0.184	0.179	2.75
Nitrate (as N)	mg/L	<0.0050	0.0123	84.4	6.78	6.72	0.889
Nitrite (as N)	mg/L	<0.0010	<0.0010	-	0.0104	0.0112	7.41
Orthophosphate, dissolved (as P)	mg/L	<0.0010	0.00250	-	<0.0010	<0.0010	-
Phosphorus, total	mg/L	0.00800	0.00780	2.53	0.00380	<0.0020	62.1
Sulfate (as SO ₄)	mg/L	6.14	6.10	0.654	871	867	0.460
Organic/Inorganic Carbon							
Carbon, dissolved organic [DOC]	mg/L	1.64	1.61	1.85	0.720	0.840	15.4
Carbon, total organic [TOC]	mg/L	1.76	1.67	5.25	1.09	0.670	47.7
Ion Balance (Matrix: Water)							
Anion sum	meq/L	2.27	2.31	1.75	25.6	25.6	0
Cation sum	meq/L	2.27	2.34	3.04	25.1	24.5	2.42
Ion balance (APHA)	%	<0.010	0.645	194	0.986	2.20	76.2
Ion balance (cations/anions)	%	100	101	0.995	98.0	95.7	2.37
Total Metals							
Aluminum	mg/L	0.0628	0.0682	8.24	<0.0060	<0.0060	-
Antimony	mg/L	<0.00010	<0.00010	-	0.000930	0.00107	14.0
Arsenic	mg/L	0.000260	0.000260	0	0.000310	0.000350	12.1
Barium	mg/L	0.0264	0.0271	2.62	0.0749	0.0788	5.07
Beryllium	µg/L	<0.020	<0.020	-	<0.040	<0.040	-
Bismuth	mg/L	<0.000050	<0.000050	-	<0.000100	<0.000100	-
Boron	mg/L	<0.010	<0.010	-	0.0610	0.0670	9.38
Cadmium	µg/L	0.0155	0.0158	1.92	<0.0100	0.0124	21.4
Calcium	mg/L	27.8	27.8	0	210	231	9.52
Chromium	mg/L	0.000330	0.000370	11.4	<0.00020	<0.00020	-
Cobalt	µg/L	<0.10	<0.10	-	<0.20	<0.20	-
Copper	mg/L	<0.00050	<0.00050	-	<0.00100	<0.00100	-
Iron	mg/L	0.0540	0.0620	13.8	<0.020	<0.020	-
Lead	mg/L	<0.000050	<0.000050	-	<0.000100	<0.000100	-
Lithium	mg/L	0.00230	0.00230	0	0.149	0.164	9.58
Magnesium	mg/L	8.44	8.46	0.237	170	177	4.03
Manganese	mg/L	0.00208	0.00220	5.61	0.000780	0.00100	24.7
Mercury	mg/L	<0.0000050	<0.0000050	-	<0.0000050	<0.0000050	-
Molybdenum	mg/L	0.000617	0.000626	1.45	0.0146	0.0166	12.8
Nickel	mg/L	<0.00050	<0.00050	-	0.0274	0.0290	5.67
Potassium	mg/L	0.346	0.350	1.15	5.89	6.16	4.48
Selenium	µg/L	0.183	0.211	14.2	71.2	74.4	4.40
Silicon	mg/L	2.08	2.12	1.90	3.13	3.20	2.21
Silver	mg/L	<0.000010	<0.000010	-	<0.000020	<0.000020	-
Sodium	mg/L	1.24	1.29	3.95	11.0	11.5	4.44
Strontium	mg/L	0.0817	0.0857	4.78	0.932	1.04	11.0
Sulphur	mg/L	2.40	2.32	3.39	347	358	3.12
Thallium	mg/L	<0.000010	<0.000010	-	0.000056	0.000066	16.4
Tin	mg/L	<0.00010	<0.00010	-	<0.00020	<0.00020	-
Titanium	mg/L	0.00102	0.00115	12.0	<0.00060	<0.00060	-
Uranium	mg/L	0.000161	0.000164	1.85	0.0113	0.0128	12.4
Vanadium	mg/L	<0.00050	<0.00050	-	<0.00100	<0.00100	-
Zinc	mg/L	<0.0030	<0.0030	-	<0.0060	<0.0060	-

Indicates RPD exceeded 30%.

Notes: RPD = relative percent difference; "-" = no data/not calculated; LRL = Laboratory Reporting Limit. The RPD was calculated using < LRL results at the LRL if one result in a duplicate pair was below the LRL. The RPD was not calculated if both results were < LRL. Turbidity was not analyzed in duplicate samples.

Table B.6: Field Duplicate Results for Water Chemistry Analyses, EVO LAEMP, 2022

Parameter	Units	RG_MIDER_WS_LAEMP_EVO_2022-06-02_NP	RG_RIVER_WS_LAEMP_EVO_2022-06-02_NP	RPD (%)	RG_BOCK_WS_LAEMP_EVO_2022-07-25_N	RG_RIVER_WS_LAEMP_EVO_2022-07-25_N	RPD (%)
Dissolved Metals							
Aluminum	mg/L	0.00500	0.00440	12.8	<0.0010	<0.0010	-
Antimony	mg/L	<0.00010	<0.00010	-	0.000930	0.000960	3.17
Arsenic	mg/L	0.000240	0.000260	8.00	0.000280	0.000260	7.41
Barium	mg/L	0.0292	0.0291	0.343	0.0771	0.0720	6.84
Beryllium	µg/L	<0.020	<0.020	-	<0.020	<0.020	-
Bismuth	mg/L	<0.000050	<0.000050	-	<0.000050	<0.000050	-
Boron	mg/L	<0.010	<0.010	-	0.0550	0.0520	5.61
Cadmium	µg/L	<0.0050	0.00720	36.1	0.00790	0.00680	15.0
Calcium	mg/L	28.7	29.9	4.10	214	215	0.466
Chromium	mg/L	0.000300	0.000260	14.3	<0.00010	<0.00010	-
Cobalt	µg/L	<0.10	<0.10	-	<0.10	<0.10	-
Copper	mg/L	<0.00020	<0.00020	-	<0.00020	<0.00020	-
Iron	mg/L	<0.010	<0.010	-	<0.010	<0.010	-
Lead	mg/L	<0.000050	<0.000050	-	<0.000050	<0.000050	-
Lithium	mg/L	0.00260	0.00260	0	0.152	0.155	1.95
Magnesium	mg/L	9.38	9.49	1.17	168	160	4.88
Manganese	mg/L	0.000620	0.000670	7.75	0.000600	0.000600	0
Mercury	mg/L	<0.0000050	<0.0000050	-	<0.0000050	<0.0000050	-
Molybdenum	mg/L	0.000584	0.000578	1.03	0.0135	0.0137	1.47
Nickel	mg/L	<0.00050	<0.00050	-	0.0264	0.0250	5.45
Potassium	mg/L	0.353	0.356	0.846	6.12	5.82	5.03
Selenium	µg/L	0.187	0.262	33.4	92.7	85.6	7.96
Silicon	mg/L	2.19	2.14	2.31	3.11	3.06	1.62
Silver	mg/L	<0.000010	<0.000010	-	<0.000010	<0.000010	-
Sodium	mg/L	1.32	1.31	0.760	11.2	10.6	5.50
Strontium	mg/L	0.0927	0.0916	1.19	0.948	0.948	0
Sulphur	mg/L	2.63	2.79	5.90	228	217	4.94
Thallium	mg/L	<0.000010	<0.000010	-	0.000052	0.000053	1.90
Tin	mg/L	<0.00010	<0.00010	-	<0.00010	<0.00010	-
Titanium	mg/L	<0.00030	<0.00030	-	<0.00030	<0.00030	-
Uranium	mg/L	0.000141	0.000147	4.17	0.0114	0.0106	7.27
Vanadium	mg/L	<0.00050	<0.00050	-	<0.00050	<0.00050	-
Zinc	mg/L	<0.0010	<0.0010	-	0.00120	<0.0010	18.2

Indicates RPD exceeded 30%.

Notes: RPD = relative percent difference; "-" = no data/not calculated; LRL = Laboratory Reporting Limit. The RPD was calculated using < LRL results at the LRL if one result in a duplicate pair was below the LRL. The RPD was not calculated if both results were < LRL. Turbidity was not analyzed in duplicate samples.

Table B.6: Field Duplicate Results for Water Chemistry Analyses, EVO LAEMP, 2022

Parameter	Units	RG_MICOMP _WS_LAEMP _EVO_2022- 09_N	RG_RIVER_ WS_LAEMP_ EVO_2022- 09_NP	RPD (%)	RG_ERCKMD _WS_LAEMP _EVO_2022- 09_N	RG_RIVER_ WS_LAEMP_ EVO_2022- 09_N	RPD (%)
Physical Tests							
Conductivity	µS/cm	594	593	0.168	1,810	1,790	1.11
Acidity (as CaCO ₃)	mg/L	<2.0	<2.0	-	4.80	6.60	31.6
Alkalinity, bicarbonate (as CaCO ₃)	mg/L	192	189	1.57	488	452	7.66
Alkalinity, bicarbonate (as HCO ₃)	mg/L	235	231	1.72	596	551	7.85
Alkalinity, carbonate (as CO ₃)	mg/L	5.60	5.80	3.51	<1.0	<1.0	-
Alkalinity, carbonate (as CaCO ₃)	mg/L	9.40	9.60	2.11	<1.0	<1.0	-
Alkalinity, hydroxide (as CaCO ₃)	mg/L	<1.0	<1.0	-	<1.0	<1.0	-
Alkalinity, hydroxide (as OH)	mg/L	<1.0	<1.0	-	<1.0	<1.0	-
Alkalinity, total (as CaCO ₃)	mg/L	202	199	1.50	488	452	7.66
Hardness (as CaCO ₃), dissolved	mg/L	340	353	3.75	1,300	1,300	0
Oxidation-reduction potential [ORP]	mV	383	306	22.4	309	310	0.323
pH	pH units	8.43	8.43	0	8.18	8.21	0.366
solids, total dissolved [TDS]	mg/L	415	393	5.45	1,480	1,490	0.673
solids, total suspended [TSS]	mg/L	<1.0	<1.0	-	3.30	4.20	24.0
Turbidity	NTU	0.380	0.370	2.67	0.210	0.480	78.3
Anions and Nutrients							
Kjeldahl nitrogen, total [TKN]	mg/L	<0.500	<0.500	-	1.30	0.659	-
Ammonia, total (as N)	mg/L	0.00620	0.0169	92.6	<0.0050	0.00640	24.6
Bromide	mg/L	<0.050	<0.050	-	<0.250	<0.250	-
Chloride	mg/L	4.01	4.01	0	5.18	5.10	1.56
Fluoride	mg/L	0.154	0.155	0.647	0.106	0.104	1.90
Nitrate (as N)	mg/L	1.66	1.66	0	15.1	15.3	1.32
Nitrite (as N)	mg/L	0.00270	0.00260	3.77	<0.0050	<0.0050	-
Orthophosphate, dissolved (as P)	mg/L	<0.0010	<0.0010	-	0.0164	0.0167	1.81
Phosphorus, total	mg/L	0.00280	0.00270	3.64	0.0220	0.0218	0.913
Sulfate (as SO ₄)	mg/L	142	142	0	746	745	0.134
Organic/Inorganic Carbon							
Carbon, dissolved organic [DOC]	mg/L	0.680	0.770	12.4	<0.50	<0.50	-
Carbon, total organic [TOC]	mg/L	0.850	0.740	13.8	<0.50	<0.50	-
Ion Balance (Matrix: Water)							
Anion sum	meq/L	7.23	7.17	0.833	26.5	25.8	2.68
Cation sum	meq/L	7.00	7.28	3.92	26.2	26.2	0
Ion balance (APHA)	%	1.62	0.761	72.2	0.569	0.769	29.9
Ion balance (cations/anions)	%	96.8	102	5.23	98.9	102	3.09
Total Metals							
Aluminum	mg/L	0.00520	0.00590	12.6	0.00590	0.00510	14.5
Antimony	mg/L	<0.00010	<0.00010	-	0.000210	0.000210	0
Arsenic	mg/L	0.000200	0.000210	4.88	0.000340	0.000390	13.7
Barium	mg/L	0.114	0.114	0	0.0646	0.0640	0.933
Beryllium	µg/L	<0.020	<0.020	-	<0.020	<0.020	-
Bismuth	mg/L	<0.000050	<0.000050	-	<0.000050	<0.000050	-
Boron	mg/L	0.0130	0.0130	0	0.0140	0.0140	0
Cadmium	µg/L	0.0222	0.0204	8.45	0.0975	0.102	4.51
Calcium	mg/L	74.3	75.1	1.07	238	240	0.837
Chromium	mg/L	0.000140	0.000150	6.90	0.000180	0.000180	0
Cobalt	µg/L	<0.10	<0.10	-	0.380	0.350	8.22
Copper	mg/L	<0.00050	<0.00050	-	<0.00050	<0.00050	-
Iron	mg/L	0.0100	<0.010	66.7	0.0700	0.0760	8.22
Lead	mg/L	<0.000050	<0.000050	-	<0.000050	<0.000050	-
Lithium	mg/L	0.0131	0.0137	4.48	0.0290	0.0302	4.05
Magnesium	mg/L	33.6	33.5	0.298	156	155	0.643
Manganese	mg/L	0.00197	0.00190	3.62	0.0126	0.0126	0
Mercury	mg/L	<0.0000050	<0.0000050	-	<0.0000050	<0.0000050	-
Molybdenum	mg/L	0.00100	0.00102	1.98	0.00102	0.00130	24.1
Nickel	mg/L	0.000950	0.000900	5.41	0.00121	0.00115	5.08
Potassium	mg/L	0.982	0.976	0.613	2.71	2.69	0.741
Selenium	µg/L	17.1	16.5	3.57	156	156	0
Silicon	mg/L	2.27	2.31	1.75	3.63	3.58	1.39
Silver	mg/L	<0.000010	<0.000010	-	<0.000010	<0.000010	-
Sodium	mg/L	4.12	4.10	0.487	3.43	3.38	1.47
Strontium	mg/L	0.185	0.184	0.542	0.220	0.216	1.83
Sulphur	mg/L	49.6	50.0	0.803	233	228	2.17
Thallium	mg/L	<0.000010	<0.000010	-	<0.000010	<0.000010	-
Tin	mg/L	<0.00010	<0.00010	-	<0.00010	<0.00010	-
Titanium	mg/L	<0.00030	<0.00030	-	<0.00030	<0.00030	-
Uranium	mg/L	0.00137	0.00134	2.21	0.00753	0.00746	0.934
Vanadium	mg/L	<0.00050	0.000510	1.98	0.000510	0.000550	7.55
Zinc	mg/L	0.00310	<0.0030	3.28	<0.0030	<0.0030	-

Indicates RPD exceeded 30%.

Notes: RPD = relative percent difference; "-" = no data/not calculated; LRL = Laboratory Reporting Limit. The RPD was calculated using < LRL results at the LRL if one result in a duplicate pair was below the LRL. The RPD was not calculated if both results were < LRL. Turbidity was not analyzed in duplicate samples.

Table B.6: Field Duplicate Results for Water Chemistry Analyses, EVO LAEMP, 2022

Parameter	Units	RG_MICOMP_WS_LAEMP_EVO_2022-09_N	RG_RIVER_WS_LAEMP_EVO_2022-09_NP	RPD (%)	RG_ERCKMD_WS_LAEMP_EVO_2022-09_N	RG_RIVER_WS_LAEMP_EVO_2022-09_N	RPD (%)
Dissolved Metals							
Aluminum	mg/L	0.00160	0.00170	6.06	<0.0010	<0.0010	-
Antimony	mg/L	<0.00010	0.000100	0	0.000220	0.000220	0
Arsenic	mg/L	0.000190	0.000190	0	0.000280	0.000290	3.51
Barium	mg/L	0.122	0.126	3.23	0.0629	0.0629	0
Beryllium	µg/L	<0.020	<0.020	-	<0.020	<0.020	-
Bismuth	mg/L	<0.000050	<0.000050	-	<0.000050	<0.000050	-
Boron	mg/L	0.0150	0.0160	6.45	0.0150	0.0150	0
Cadmium	µg/L	0.0213	0.0261	20.3	0.0856	0.0924	7.64
Calcium	mg/L	80.3	83.0	3.31	260	260	0
Chromium	mg/L	0.000130	0.000140	7.41	0.000190	0.000170	11.1
Cobalt	µg/L	<0.10	<0.10	-	<0.10	<0.10	-
Copper	mg/L	<0.00020	<0.00020	-	<0.00020	<0.00020	-
Iron	mg/L	<0.010	<0.010	-	<0.010	<0.010	-
Lead	mg/L	<0.000050	<0.000050	-	<0.000050	<0.000050	-
Lithium	mg/L	0.0141	0.0152	7.51	0.0275	0.0267	2.95
Magnesium	mg/L	33.9	35.4	4.33	159	158	0.631
Manganese	mg/L	0.00154	0.00167	8.10	0.000520	0.000520	0
Mercury	mg/L	<0.0000050	<0.0000050	-	<0.0000050	<0.0000050	-
Molybdenum	mg/L	0.00107	0.00106	0.939	0.00131	0.00140	6.64
Nickel	mg/L	0.000920	0.000940	2.15	0.00108	0.00104	3.77
Potassium	mg/L	1.08	1.15	6.28	2.74	2.72	0.733
Selenium	µg/L	25.0	26.0	3.92	213	215	0.935
Silicon	mg/L	2.88	3.05	5.73	4.50	4.55	1.10
Silver	mg/L	<0.000010	<0.000010	-	<0.000010	<0.000010	-
Sodium	mg/L	4.18	4.42	5.58	3.20	3.20	0
Strontium	mg/L	0.197	0.200	1.51	0.227	0.225	0.885
Sulphur	mg/L	57.7	61.1	5.72	228	232	1.74
Thallium	mg/L	<0.000010	<0.000010	-	<0.000010	<0.000010	-
Tin	mg/L	<0.00010	<0.00010	-	<0.00010	<0.00010	-
Titanium	mg/L	<0.00030	<0.00030	-	<0.00030	<0.00030	-
Uranium	mg/L	0.00151	0.00152	0.660	0.00763	0.00765	0.262
Vanadium	mg/L	<0.00050	<0.00050	-	<0.00050	<0.00050	-
Zinc	mg/L	<0.0010	<0.0010	-	0.00150	0.00170	12.5

█ Indicates RPD exceeded 30%.

Notes: RPD = relative percent difference; "-" = no data/not calculated; LRL = Laboratory Reporting Limit. The RPD was calculated using < LRL results at the LRL if one result in a duplicate pair was below the LRL. The RPD was not calculated if both results were < LRL. Turbidity was not analyzed in duplicate samples.

Table B.6: Field Duplicate Results for Water Chemistry Analyses, EVO LAEMP, 2022

Parameter	Units	RG_GATEDP _WS_LAEMP _EVO_2022- 11_NP	RG_RIVER_ WS_LAEMP EVO_2022- 11_NP	RPD (%)	RG_BOCKRD _WS_LAEMP _EVO_2022- 11_N	RG_RIVER_ WS_LAEMP EVO_2022- 11_N	RPD (%)
Physical Tests							
Conductivity	µS/cm	2,090	2,110	0.952	2,520	2,680	6.15
Acidity (as CaCO ₃)	mg/L	<2.0	<2.0	-	3.00	2.70	10.5
Alkalinity, bicarbonate (as CaCO ₃)	mg/L	226	248	9.28	310	295	4.96
Alkalinity, bicarbonate (as HCO ₃)	mg/L	276	303	9.33	378	360	4.88
Alkalinity, carbonate (as CO ₃)	mg/L	11.0	5.80	61.9	<1.0	<1.0	-
Alkalinity, carbonate (as CaCO ₃)	mg/L	18.4	9.60	62.9	<1.0	<1.0	-
Alkalinity, hydroxide (as CaCO ₃)	mg/L	<1.0	<1.0	-	<1.0	<1.0	-
Alkalinity, hydroxide (as OH)	mg/L	<1.0	<1.0	-	<1.0	<1.0	-
Alkalinity, total (as CaCO ₃)	mg/L	244	258	5.58	310	295	4.96
Hardness (as CaCO ₃), dissolved	mg/L	1,310	1,310	0	1,970	2,070	4.95
Oxidation-reduction potential [ORP]	mV	427	424	0.705	395	391	1.02
pH	pH units	8.43	8.37	0.714	8.19	8.19	0
solids, total dissolved [TDS]	mg/L	1,850	1,800	2.74	2,500	2,730	8.80
solids, total suspended [TSS]	mg/L	8.40	10.0	17.4	4.10	3.20	24.7
Turbidity	NTU	13.9	13.1	5.93	1.10	0.820	29.2
Anions and Nutrients							
Kjeldahl nitrogen, total [TKN]	mg/L	1.46	1.12	26.4	3.33	0.864	118
Ammonia, total (as N)	mg/L	0.213	0.190	11.4	0.664	0.536	21.3
Bromide	mg/L	0.261	0.270	3.39	<0.250	<0.250	-
Chloride	mg/L	28.7	28.9	0.694	20.7	19.0	8.56
Fluoride	mg/L	0.236	0.238	0.844	0.272	0.272	0
Nitrate (as N)	mg/L	23.3	23.4	0.428	46.5	50.9	9.03
Nitrite (as N)	mg/L	0.0581	0.0566	2.62	0.00640	0.00640	0
Orthophosphate, dissolved (as P)	mg/L	<0.0010	<0.0010	-	0.00290	0.00410	34.3
Phosphorus, total	mg/L	0.0109	0.0145	28.3	0.0106	0.0107	0.939
Sulfate (as SO ₄)	mg/L	1,040	1,040	0	1,420	1,550	8.75
Organic/Inorganic Carbon							
Carbon, dissolved organic [DOC]	mg/L	2.19	2.36	7.47	1.58	1.79	12.5
Carbon, total organic [TOC]	mg/L	2.34	2.39	2.11	1.60	1.78	10.7
Ion Balance (Matrix: Water)							
Anion sum	meq/L	29.0	29.3	1.03	39.7	42.4	6.58
Cation sum	meq/L	26.6	26.7	0.375	39.9	41.9	4.89
Ion balance (APHA)	%	-4.32	-4.64	7.14	0.250	-0.59	494
Ion balance (cations/anions)	%	91.7	91.1	0.656	100	98.8	1.21
Total Metals							
Aluminum	mg/L	0.0623	0.0683	9.19	<0.0060	<0.0060	-
Antimony	mg/L	0.000560	0.000570	1.77	0.000810	0.000960	16.9
Arsenic	mg/L	0.000390	0.000360	8.00	0.000370	0.000430	15.0
Barium	mg/L	0.140	0.143	2.12	0.0882	0.0757	15.3
Beryllium	µg/L	<0.040	<0.040	-	<0.040	<0.040	-
Bismuth	mg/L	<0.000100	<0.000100	-	<0.000100	<0.000100	-
Boron	mg/L	0.0360	0.0380	5.41	0.0500	0.0450	10.5
Cadmium	µg/L	0.130	0.131	0.766	0.135	0.161	17.6
Calcium	mg/L	247	260	5.13	353	362	2.52
Chromium	mg/L	0.000260	0.000220	16.7	<0.00020	<0.00020	-
Cobalt	µg/L	0.350	0.310	12.1	0.340	0.300	12.5
Copper	mg/L	<0.00100	<0.00100	-	<0.00100	0.00209	-
Iron	mg/L	0.103	0.0970	6.00	0.238	0.219	8.32
Lead	mg/L	0.000151	0.000141	6.85	<0.000100	<0.000100	-
Lithium	mg/L	0.109	0.110	0.913	0.171	0.178	4.01
Magnesium	mg/L	214	215	0.466	295	281	4.86
Manganese	mg/L	0.0157	0.0171	8.54	0.0315	0.0281	11.4
Mercury	mg/L	<0.0000050	<0.0000050	-	<0.0000050	<0.0000050	-
Molybdenum	mg/L	0.00641	0.00658	2.62	0.00819	0.00855	4.30
Nickel	mg/L	0.0191	0.0191	0	0.0350	0.0368	5.01
Potassium	mg/L	5.68	5.69	0.176	6.25	6.39	2.22
Selenium	µg/L	264	273	3.35	488	528	7.87
Silicon	mg/L	3.16	3.21	1.57	3.31	3.19	3.69
Silver	mg/L	<0.000020	<0.000020	180	<0.000020	<0.000020	-
Sodium	mg/L	6.11	6.11	0	7.99	8.06	0.872
Strontium	mg/L	0.873	0.882	1.03	1.16	1.08	7.14
Sulphur	mg/L	379	390	2.86	487	488	0.205
Thallium	mg/L	0.000043	0.000041	4.76	0.000043	0.000047	8.89
Tin	mg/L	<0.00020	<0.00020	-	<0.00020	<0.00020	-
Titanium	mg/L	0.00110	0.00133	18.9	<0.00060	<0.00060	-
Uranium	mg/L	0.00868	0.00890	2.50	0.0125	0.0133	6.20
Vanadium	mg/L	<0.00100	<0.00100	-	<0.00100	<0.00100	-
Zinc	mg/L	<0.0060	<0.0060	-	0.0122	0.0123	0.816

Indicates RPD exceeded 30%.

Notes: RPD = relative percent difference; "-" = no data/not calculated; LRL = Laboratory Reporting Limit. The RPD was calculated using < LRL results at the LRL if one result in a duplicate pair was below the LRL. The RPD was not calculated if both results were < LRL. Turbidity was not analyzed in duplicate samples.

Table B.6: Field Duplicate Results for Water Chemistry Analyses, EVO LAEMP, 2022

Parameter	Units	RG_GATEDP _WS_LAEMP _EVO_2022- 11_NP	RG_RIVER_ WS_LAEMP EVO_2022- 11_NP	RPD (%)	RG_BOCKRD _WS_LAEMP _EVO_2022- 11_N	RG_RIVER_ WS_LAEMP EVO_2022- 11_N	RPD (%)
Dissolved Metals							
Aluminum	mg/L	0.00260	0.00270	3.77	<0.0020	<0.0020	-
Antimony	mg/L	0.000520	0.000520	0	0.000800	0.000840	4.88
Arsenic	mg/L	0.000380	0.000370	2.67	0.000360	0.000320	11.8
Barium	mg/L	0.132	0.132	0	0.0833	0.0603	32.0
Beryllium	µg/L	<0.040	<0.040	-	<0.040	<0.040	-
Bismuth	mg/L	<0.000100	<0.000100	-	<0.000100	<0.000100	-
Boron	mg/L	0.0330	0.0340	2.99	0.0450	0.0420	6.90
Cadmium	µg/L	0.0920	0.0999	8.23	0.169	0.175	3.49
Calcium	mg/L	241	238	1.25	341	359	5.14
Chromium	mg/L	<0.00020	<0.00020	-	<0.00020	<0.00020	-
Cobalt	µg/L	0.220	0.220	0	0.290	0.300	3.39
Copper	mg/L	0.000500	0.000520	3.92	<0.00040	<0.00040	-
Iron	mg/L	<0.020	<0.020	-	0.168	0.142	16.8
Lead	mg/L	<0.000100	<0.000100	-	<0.000100	<0.000100	-
Lithium	mg/L	0.113	0.112	0.889	0.163	0.165	1.22
Magnesium	mg/L	172	175	1.73	272	285	4.67
Manganese	mg/L	0.0137	0.0136	0.733	0.0292	0.0267	8.94
Mercury	mg/L	<0.0000050	<0.0000050	-	<0.0000050	<0.0000050	-
Molybdenum	mg/L	0.00629	0.00611	2.90	0.00770	0.00811	5.19
Nickel	mg/L	0.0167	0.0172	2.95	0.0329	0.0349	5.90
Potassium	mg/L	5.31	5.41	1.87	6.17	6.12	0.814
Selenium	µg/L	278	285	2.49	524	563	7.18
Silicon	mg/L	2.76	2.70	2.20	3.09	3.06	0.976
Silver	mg/L	<0.000020	<0.000020	-	<0.000020	<0.000020	-
Sodium	mg/L	5.63	5.67	0.708	7.85	7.62	2.97
Strontium	mg/L	0.832	0.824	0.966	1.15	1.06	8.14
Sulphur	mg/L	386	387	0.259	452	479	5.80
Thallium	mg/L	0.000042	0.000040	4.88	0.000043	0.000042	2.35
Tin	mg/L	<0.00020	<0.00020	-	<0.00020	<0.00020	-
Titanium	mg/L	<0.00060	<0.00060	-	<0.00060	<0.00060	-
Uranium	mg/L	0.00838	0.00837	0.119	0.0121	0.0129	6.40
Vanadium	mg/L	<0.00100	<0.00100	-	<0.00100	<0.00100	-
Zinc	mg/L	0.00340	0.00430	23.4	0.0112	0.0124	10.2

█ Indicates RPD exceeded 30%.

Notes: RPD = relative percent difference; "-" = no data/not calculated; LRL = Laboratory Reporting Limit. The RPD was calculated using < LRL results at the LRL if one result in a duplicate pair was below the LRL. The RPD was not calculated if both results were < LRL. Turbidity was not analyzed in duplicate samples.

Table B.6: Field Duplicate Results for Water Chemistry Analyses, EVO LAEMP, 2022

Parameter	Units	RG_ERCKDT _WS_LAEMP _EVO_2022- 12_N	RG_RIVER_ WS_LAEMP_ EVO_2022- 12_N	RPD (%)	RG_GATEDP _WS_LAEMP _EVO_2022- 12_N	RG_RIVER_2 _WS_LAEMP _EVO_2022- 12_N	RPD (%)
Physical Tests							
Conductivity	µS/cm	1,880	1,870	0.533	1,970	1,950	1.02
Acidity (as CaCO ₃)	mg/L	4.00	2.90	31.9	<2.0	<2.0	-
Alkalinity, bicarbonate (as CaCO ₃)	mg/L	455	459	0.875	362	368	1.64
Alkalinity, bicarbonate (as HCO ₃)	mg/L	555	560	0.897	442	448	1.35
Alkalinity, carbonate (as CO ₃)	mg/L	<1.0	<1.0	-	10.9	10.7	1.85
Alkalinity, carbonate (as CaCO ₃)	mg/L	<1.0	<1.0	-	18.2	17.8	2.22
Alkalinity, hydroxide (as CaCO ₃)	mg/L	<1.0	<1.0	-	<1.0	<1.0	-
Alkalinity, hydroxide (as OH)	mg/L	<1.0	<1.0	-	<1.0	<1.0	-
Alkalinity, total (as CaCO ₃)	mg/L	455	459	0.875	380	385	1.31
Hardness (as CaCO ₃), dissolved	mg/L	1,270	1,290	1.56	1,340	1,280	4.58
Oxidation-reduction potential [ORP]	mV	345	365	5.63	351	338	3.77
pH	pH units	8.05	8.05	0	8.36	8.32	0.480
solids, total dissolved [TDS]	mg/L	1,430	1,380	3.56	1,650	1,760	6.45
solids, total suspended [TSS]	mg/L	2.10	1.20	54.5	1.20	2.20	58.8
Turbidity	NTU	0.720	0.740	2.74	0.640	0.710	10.4
Anions and Nutrients							
Kjeldahl nitrogen, total [TKN]	mg/L	1.79	1.85	3.30	1.03	2.29	75.9
Ammonia, total (as N)	mg/L	0.0406	0.0390	4.02	0.119	0.120	0.837
Bromide	mg/L	<0.250	<0.250	-	0.335	0.325	3.03
Chloride	mg/L	7.61	7.77	2.08	13.3	13.0	2.28
Fluoride	mg/L	0.175	0.166	5.28	0.291	0.289	0.690
Nitrate (as N)	mg/L	12.4	12.6	1.60	7.45	7.25	2.72
Nitrite (as N)	mg/L	0.00700	0.00770	9.52	0.0102	0.00980	4.00
Orthophosphate, dissolved (as P)	mg/L	0.0140	0.0144	2.82	0.00120	<0.0010	18.2
Phosphorus, total	mg/L	0.0153	0.0168	9.35	0.00570	0.00470	19.2
Sulfate (as SO ₄)	mg/L	835	828	0.842	965	958	0.728
Organic/Inorganic Carbon							
Carbon, dissolved organic [DOC]	mg/L	0.600	<0.50	18.2	0.760	0.720	5.41
Carbon, total organic [TOC]	mg/L	0.510	<0.50	1.98	0.760	0.660	14.1
Ion Balance (Matrix: Water)							
Anion sum	meq/L	27.6	27.5	0.363	28.6	28.5	0.350
Cation sum	meq/L	25.7	26.0	1.16	27.4	26.1	4.86
Ion balance (APHA)	%	-3.56	-2.8	23.9	-2.14	-4.4	69.1
Ion balance (cations/anions)	%	93.1	94.5	1.49	95.8	91.6	4.48
Total Metals							
Aluminum	mg/L	<0.0060	<0.0060	-	<0.0060	<0.0060	-
Antimony	mg/L	0.000220	<0.00020	9.52	0.000480	0.000460	4.26
Arsenic	mg/L	0.000330	0.000260	23.7	0.000310	0.000280	10.2
Barium	mg/L	0.0482	0.0469	2.73	0.356	0.354	0.563
Beryllium	µg/L	<0.040	<0.040	-	<0.040	<0.040	-
Bismuth	mg/L	<0.000100	<0.000100	-	<0.000100	<0.000100	-
Boron	mg/L	0.0210	<0.020	4.88	0.0400	0.0400	0
Cadmium	µg/L	0.203	0.193	5.05	0.112	0.0981	13.2
Calcium	mg/L	250	240	4.08	250	253	1.19
Chromium	mg/L	<0.00020	<0.00020	-	<0.00020	<0.00020	-
Cobalt	µg/L	4.45	4.12	7.70	<0.20	<0.20	-
Copper	mg/L	<0.00100	<0.00100	-	<0.00100	<0.00100	-
Iron	mg/L	0.0700	0.0630	10.5	0.0640	0.0600	6.45
Lead	mg/L	<0.000100	<0.000100	-	<0.000100	<0.000100	-
Lithium	mg/L	0.0508	0.0458	10.4	0.122	0.122	0
Magnesium	mg/L	167	160	4.28	184	182	1.09
Manganese	mg/L	0.121	0.114	5.96	0.00485	0.00491	1.23
Mercury	mg/L	<0.0000050	<0.0000050	-	<0.0000050	<0.0000050	-
Molybdenum	mg/L	0.00592	0.00534	10.3	0.0152	0.0155	1.95
Nickel	mg/L	0.0184	0.0167	9.69	0.0323	0.0320	0.933
Potassium	mg/L	3.36	3.20	4.88	5.05	4.93	2.40
Selenium	µg/L	119	117	1.69	71.5	67.6	5.61
Silicon	mg/L	3.80	3.67	3.48	2.83	2.84	0.353
Silver	mg/L	<0.000020	<0.000020	0	<0.000020	<0.000020	-
Sodium	mg/L	5.58	5.34	4.40	10.8	10.7	0.930
Strontium	mg/L	0.284	0.260	8.82	0.577	0.588	1.89
Sulphur	mg/L	288	280	2.82	343	338	1.47
Thallium	mg/L	0.000038	0.000038	0	0.000043	0.000045	4.55
Tin	mg/L	<0.00020	<0.00020	-	<0.00020	<0.00020	-
Titanium	mg/L	<0.00060	<0.00060	-	<0.00060	<0.00060	-
Uranium	mg/L	0.00921	0.00857	7.20	0.0120	0.0122	1.65
Vanadium	mg/L	<0.00100	<0.00100	-	<0.00100	<0.00100	-
Zinc	mg/L	0.00850	0.00660	25.2	0.00630	<0.0060	4.88

Indicates RPD exceeded 30%.

Notes: RPD = relative percent difference; "-" = no data/not calculated; LRL = Laboratory Reporting Limit. The RPD was calculated using < LRL results at the LRL if one result in a duplicate pair was below the LRL. The RPD was not calculated if both results were < LRL. Turbidity was not analyzed in duplicate samples.

Table B.6: Field Duplicate Results for Water Chemistry Analyses, EVO LAEMP, 2022

Parameter	Units	RG_ERCKDT _WS_LAEMP _EVO_2022- 12_N	RG_RIVER_ WS_LAEMP_ EVO_2022- 12_N	RPD (%)	RG_GATEDP _WS_LAEMP _EVO_2022- 12_N	RG_RIVER_2 _WS_LAEMP _EVO_2022- 12_N	RPD (%)
Dissolved Metals							
Aluminum	mg/L	<0.0020	<0.0020	-	<0.0020	<0.0020	-
Antimony	mg/L	<0.00020	0.000200	0	0.000440	0.000430	2.30
Arsenic	mg/L	0.000320	0.000360	11.8	0.000330	0.000260	23.7
Barium	mg/L	0.0455	0.0472	3.67	0.366	0.341	7.07
Beryllium	µg/L	<0.040	<0.040	-	<0.040	<0.040	-
Bismuth	mg/L	<0.000100	<0.000100	-	<0.000100	<0.000100	-
Boron	mg/L	0.0200	<0.020	0	0.0390	0.0400	2.53
Cadmium	µg/L	0.149	0.188	23.1	0.0931	0.106	13.0
Calcium	mg/L	254	250	1.59	244	236	3.33
Chromium	mg/L	<0.00020	<0.00020	-	<0.00020	<0.00020	-
Cobalt	µg/L	4.14	4.23	2.15	<0.20	<0.20	-
Copper	mg/L	<0.00040	<0.00040	-	<0.00040	<0.00040	-
Iron	mg/L	<0.020	<0.020	-	<0.020	<0.020	-
Lead	mg/L	<0.000100	<0.000100	-	<0.000100	<0.000100	-
Lithium	mg/L	0.0506	0.0511	0.983	0.119	0.127	6.50
Magnesium	mg/L	155	161	3.80	178	168	5.78
Manganese	mg/L	0.110	0.111	0.905	0.00436	0.00439	0.686
Mercury	mg/L	<0.0000050	<0.0000050	-	<0.0000050	<0.0000050	-
Molybdenum	mg/L	0.00565	0.00548	3.05	0.0144	0.0145	0.692
Nickel	mg/L	0.0178	0.0170	4.60	0.0311	0.0289	7.33
Potassium	mg/L	3.16	3.29	4.03	5.01	4.74	5.54
Selenium	µg/L	126	126	0	73.1	73.1	0
Silicon	mg/L	3.57	3.57	0	2.62	2.54	3.10
Silver	mg/L	<0.000020	<0.000020	-	<0.000020	<0.000020	-
Sodium	mg/L	5.23	5.35	2.27	10.5	9.83	6.59
Strontium	mg/L	0.274	0.271	1.10	0.560	0.551	1.62
Sulphur	mg/L	280	281	0.357	314	310	1.28
Thallium	mg/L	0.000033	0.000031	6.25	0.000044	0.000040	9.52
Tin	mg/L	<0.00020	<0.00020	-	<0.00020	<0.00020	-
Titanium	mg/L	<0.00060	<0.00060	-	<0.00060	<0.00060	-
Uranium	mg/L	0.00871	0.00878	0.800	0.0112	0.0114	1.77
Vanadium	mg/L	<0.00100	<0.00100	-	<0.00100	<0.00100	-
Zinc	mg/L	0.00830	0.00830	0	0.00560	0.00490	13.3

█ Indicates RPD exceeded 30%.

Notes: RPD = relative percent difference; "-" = no data/not calculated; LRL = Laboratory Reporting Limit. The RPD was calculated using < LRL results at the LRL if one result in a duplicate pair was below the LRL. The RPD was not calculated if both results were < LRL. Turbidity was not analyzed in duplicate samples.

Table B.7: Field Duplicate Results for Sediment Selenium Speciation Analyses, EVO LAEMP, 2022

Parameter	Units	RG_ALUSM_SE SeSp-2_2022-09- 18_N	RG_RIVER_SE SeSp-2_2022-09- 18_N	RPD (%)
Total Solids	%	61.73	63.27	2.46
Selenium	mg/kg dw	<0.003	<0.003	-
Selenium fraction 1	mg/kg dw	<0.003	<0.003	-
Selenium fraction 2	mg/kg dw	<0.003	<0.003	-
Selenium fraction 3	mg/kg dw	0.019	0.021	10.0
Selenium fraction 4	mg/kg dw	<0.032	<0.032	-
Selenium fraction 5	mg/kg dw	0.281	0.332	16.6
Dimethyl selenoxide fraction 1	mg/kg dw	0.293	0.317	7.87
Dimethyl selenoxide fraction 2	mg/kg dw	0.092	0.092	0
Methylseleninic acid fraction 1	mg/kg dw	<0.038	<0.038	-
Methylseleninic acid fraction 2	mg/kg dw	0.003	0.004	28.6
Selenate fraction 1	mg/kg dw	<0.003	<0.003	-
Selenate fraction 2	mg/kg dw	0.028	0.032	13.3
Selenite fraction 1	mg/kg dw	0.146	0.171	15.8
Selenite fraction 2	mg/kg dw	0.837	0.826	1.32
Selenocyanate fraction 1	mg/kg dw	<0.002	<0.002	-
Selenocyanate fraction 2	mg/kg dw	0.024	0.033	31.6
Selenomethionine fraction 1	mg/kg dw	<0.003	<0.003	-
Selenomethionine fraction 2	mg/kg dw	<0.003	<0.003	-
Selenosulfate fraction 1	mg/kg dw	<0.003	<0.003	-
Selenosulfate fraction 2	mg/kg dw	<0.003	<0.003	-
Unknown Selenium Species	mg/kg dw	<0.003	<0.003	-
Unknown Selenium Species fraction 1	mg/kg dw	<0.003	<0.003	-
Unknown Selenium Species fraction 2	mg/kg dw	<0.003	<0.003	-
Unknown selenium species - F2 Fraction	mg/kg dw	0.018	<0.003	83.3

 Value was above the data quality objective of $\leq 30\%$ Relative Percent Difference (RPD).

Notes: LRL = Laboratory Reporting Limit. If one result in a duplicate pair was below the LRL, RPD was calculated using the LRL in place of the value below detection results. RPD was not calculated if both results were < LRL. "-" indicates that the RPD was not calculated; "dw" = dry weight.

Table B.8: Laboratory Reporting Limit (LRL) Evaluation for Interstitial Water Chemistry Analyses, EVO LAEMP, 2022

Parameter	Units	BC WQG ^a		EVWQP Level 1 Benchmarks/ Relevant Screening Values/UEC ^b	Range of LRLs	No. LRLs > Guideline	No. Sample Results < LRL
		Long-term	Short-term				
Physical Tests							
Hardness - Dissolved (as CaCO ₃)	mg/L	-	-	-	0.50	-	0
Anions and Nutrients							
Bromide	mg/L	-	-	-	0.25	0	75 (100%)
Fluoride	mg/L	-	1.32	-	0.10	0	6 (8.00%)
Nitrate (as N)	mg/L	3	32.8	6.48	0.025	0	57 (76.0%)
Dissolved Metals							
Aluminum ^c	mg/L	-	-	-	0.001 to 0.005	0	68 (90.7%)
Antimony	mg/L	-	-	-	0.0001 to 0.0005	0	17 (22.7%)
Arsenic	mg/L	-	-	-	0.0001 to 0.0005	0	30 (40.0%)
Beryllium	µg	-	-	-	0.02 to 0.1	0	75 (100%)
Bismuth	mg/L	-	-	-	0.00005 to 0.00025	0	75 (100%)
Boron	mg/L	-	-	-	0.01 to 0.05	0	51 (68.0%)
Chromium	mg/L	-	-	-	0.0001 to 0.0005	0	44 (58.7%)
Cobalt	µg	-	-	-	0.1 to 0.5	0	55 (73.3%)
Copper	mg/L	-	-	-	0.0002 to 0.001	0	47 (62.7%)
Iron	mg/L	-	0.35	-	0.01 to 0.05	0	60 (80.0%)
Lead	mg/L	-	-	-	0.00005 to 0.00025	0	70 (93.3%)
Manganese	mg/L	-	-	-	0.0001 to 0.0005	0	16 (21.3%)
Nickel	mg/L	-	-	0.0023	0.0025 to 0.1	0	22 (29.3%)
Silver	mg/L	-	-	-	0.00005 to 0.1	0	50 (66.7%)
Thallium	mg/L	-	-	-	0.00005 to 0.0002	0	72 (96.0%)
Tin	mg/L	-	-	-	0.0003 to 0.0006	0	75 (100%)
Titanium	mg/L	-	-	-	0.00001 to 0.0015	0	75 (100%)
Vanadium	mg/L	-	-	-	0.001 to 0.0025	0	75 (100%)
Zinc	mg/L	-	-	-	0.005	0	26 (34.7%)

Notes: Only analytes with at least one result < Laboratory Reporting Limit (LRL) or LRL were above guidelines were displayed. The total number of samples in 2022 (n) was 75. Dissolved mercury was only analyzed in 58 samples. EVWQP = Elk Valley Water Quality Plan; "-" = no applicable guideline exists. □

^a British Columbia Water Quality Guidelines for the protection of Aquatic Life (BCMOECCS 2021a,b).

^b Where more than one EVWQP Level 1 Benchmark, screening value, or Updated Effects Concentration (UEC; WSP Golder 2022) was applicable, the most conservative (lowest) value was used.

^c Guideline based on minimum field pH.

Table B.9: Laboratory Reporting Limit (LRL) Evaluation for Interstitial Water Selenium Speciation Analyses, EVO LAEMP, 2022

Parameter	Units	Range of LRLs	No. Sample Results < LRL
Dissolved Selenium	µg/L	0.165	1 (1.39%)
Dimethylselenoxide	µg/L	0.01	3 (2.26%)
Methylseleninic Acid	µg/L	0.01	7 (5.26%)
Selenite	µg/L	0.02	53 (39.8%)
Selenosulfate	µg/L	0.01	5 (3.76%)
Unknown Selenium Species	µg/L	0.01	3 (2.26%)

Notes: Only analytes with at least one result < Laboratory Reporting Limit (LRL) or LRL were above guidelines were displayed. No guidelines existed for any analyte that had at least one result below the LRL. The total number of samples in 2022 (n) was 133.

Table B.10: Laboratory Reporting Limit (LRL) Evaluation for Sediment Chemistry Analyses, EVO LAEMP, 2022

Parameter	Units	BCWSQs ^a		Range of LRLs	No. LRLs > ISQG	No. LRLs > PEL	No. Sample Results < LRL
		ISQG	PEL				
Particle Size							
% Gravel (>2mm)	%	-	-	-	-	-	109 (47.6%)
% Sand (2.00mm - 1.00mm)	%	-	-	1	-	-	68 (29.7%)
% Sand (1.00mm - 0.50mm)	%	-	-	1	-	-	23 (10.0%)
% Sand (0.50mm - 0.25mm)	%	-	-	1	-	-	13 (5.68%)
% Sand (0.25mm - 0.125mm)	%	-	-	1	-	-	1 (0.437%)
% Sand (0.125mm - 0.063mm)	%	-	-	1	-	-	1 (0.437%)
% Clay (<4µm)	%	-	-	1	-	-	3 (1.31%)
Total Organic Carbon	%	-	-	0.159 to 1.39	-	-	1 (0.418%)
Metals							
Antimony	mg/kg	-	-	0.05 to 0.1	-	-	1 (0.376%)
Beryllium	mg/kg	-	-	0.1 to 2.43	-	-	15 (5.64%)
Bismuth	mg/kg	-	-	0.2 to 0.4	-	-	259 (97.4%)
Boron	mg/kg	-	-	5 to 50	-	-	95 (35.7%)
Chromium	mg/kg	37.3	90	0.1 to 1.89	0	0	1 (0.376%)
Lead	mg/kg	35.0	91.3	0.02 to 18.9	0	0	2 (0.752%)
Lithium	mg/kg	-	-	0.02 to 50	-	-	22 (8.27%)
Mercury	mg/kg	0.170	0.486	0.005 to 0.5	0	0	3 (1.13%)
Silver	mg/kg	0.5	-	0.005 to 7.5	0	-	38 (14.3%)
Sodium	mg/kg	-	-	0.005 to 50	-	-	20 (7.52%)
Sulphur	mg/kg	-	-	-	-	-	83 (31.2%)
Thallium	mg/kg	-	-	0.05 to 189	-	-	6 (2.26%)
Tin	mg/kg	-	-	0.2 to 380	-	-	266 (100%)
Titanium	mg/kg	-	-	0.1 to 1	-	-	1 (0.376%)
Tungsten	mg/kg	-	-	0.1 to 50	-	-	247 (92.9%)
Zirconium	mg/kg	-	-	0.05 to 2	-	-	164 (61.7%)
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	0.00671	0.0889	0.05 to 13	107 (100%)	8 (7.48%)	107 (80.5%)
Acenaphthylene	mg/kg	0.00587	0.128	0.05 to 1.89	122 (99.2%)	5 (4.07%)	123 (92.5%)
Acridine	mg/kg	-	-	0.05 to 0.35	-	-	100 (80.6%)
Anthracene	mg/kg	0.0469	0.245	0.05 to 7.1	122 (97.6%)	2 (1.60%)	125 (94.0%)
Benzo(a)anthracene	mg/kg	-	-	-	-	-	102 (76.7%)
Benzo(a)pyrene	mg/kg	0.0319	0.782	0.05 to 3.8	120 (100%)	0	120 (90.2%)
Benzo(b&j)fluoranthene	mg/kg	-	-	-	-	-	55 (41.4%)
Benzo(b+j+k)fluoranthene	mg/kg	-	-	0.005 to 0.748	-	-	71 (57.3%)
Benzo(g,h,i)perylene	mg/kg	0.17	0.32	0.005 to 0.748	2 (1.82%)	2 (1.82%)	110 (82.7%)
Benzo(k)fluoranthene	mg/kg	0.24	13.4	0.004 to 0.748	2 (1.65%)	0	121 (91.0%)
Chrysene	mg/kg	0.0571	0.862	0.01 to 0.748	10 (25.6%)	0	39 (29.3%)
Dibenz(a,h)anthracene	mg/kg	0.00622	0.135	0.01 to 0.748	122 (100%)	5 (4.10%)	122 (91.7%)
Fluoranthene	mg/kg	0.111	2.36	0.01 to 0.748	4 (4.04%)	0	99 (74.4%)
Fluorene	mg/kg	0.0212	0.144	0.01 to 0.748	74 (100%)	3 (4.05%)	74 (55.6%)
Indeno(1,2,3-c,d)pyrene	mg/kg	0.2	3.2	0.01 to 1.06	2 (1.65%)	0	121 (91.0%)
1-Methylnaphthalene	mg/kg	-	-	0.01 to 0.748	-	-	13 (10.5%)
2-Methylnaphthalene	mg/kg	0.0202	0.201	0.01 to 0.748	8 (100%)	0	8 (6.45%)
Naphthalene	mg/kg	0.0346	0.391	0.01 to 0.748	21 (91.3%)	0	23 (17.3%)
Phenanthrene	mg/kg	0.0419	0.515	0.01 to 0.748	8 (100%)	2 (25.0%)	8 (6.02%)
Pyrene	mg/kg	0.053	0.875	0.01 to 0.748	21 (26.6%)	0	79 (59.4%)
Quinoline	mg/kg	-	-	0.01 to 0.748	-	-	124 (100%)
B(a)P Total Potency Equivalent	mg/kg	-	-	-	-	-	46 (34.6%)

Notes: Only analytes with at least one result < Laboratory Reporting Limit (LRL) or LRL were above guidelines were displayed. The total number of samples in 2022 (n) was 266; however, polycyclic aromatic hydrocarbons (PAHs) were only measured in 122 to 124 samples. "-" = no applicable guideline exists; ISQG = Interim Sediment Quality Guideline; PEL = Probable Effects Limit; LRL = Laboratory Reporting Limit. □

^a British Columbia Working Sediment Quality Guidelines (BCMOECCS 2021a).

Table B.11: Laboratory Reporting Limit (LRL) Evaluation for Sediment Selenium Speciation Analyses, EVO LAEMP, 2022

Parameter	Units	BCWSQs ^a		Range of LRLs	No. Sample Results <LRL	No. LRLs > Guideline
		ISQG	PEL			
Selenium	mg/kg dw	2	-	0.126 to 0.909	1 (0.57%)	0
Selenium fraction 1	mg/kg dw	-	-	0.016 to 0.25	21 (11.9%)	-
Selenium fraction 2	mg/kg dw	-	-	0.011 to 0.433	1 (0.57%)	-
Selenium fraction 3	mg/kg dw	-	-	0.021 to 1.55	3 (1.70%)	-
Selenium fraction 4	mg/kg dw	-	-	0.015 to 0.29	35 (19.9%)	-
Selenium fraction 5	mg/kg dw	-	-	0.006 to 0.305	141 (80.1%)	-
Dimethyl selenoxide fraction 1	mg/kg dw	-	-	0.001 to 0.021	39 (22.2%)	-
Dimethyl selenoxide fraction 2	mg/kg dw	-	-	0.001 to 0.021	77 (43.8%)	-
Methylseleninic acid fraction 1	mg/kg dw	-	-	0.001 to 0.021	86 (48.9%)	-
Methylseleninic acid fraction 2	mg/kg dw	-	-	0.001 to 0.008	4 (8.00%)	-
Selenate fraction 1	mg/kg dw	-	-	0.003 to 0.085	74 (42.0%)	-
Selenate fraction 2	mg/kg dw	-	-	0.003 to 0.041	100 (56.8%)	-
Selenite fraction 1	mg/kg dw	-	-	0.002 to 0.038	16 (9.09%)	-
Selenite fraction 2	mg/kg dw	-	-	0.002 to 0.038	1 (0.57%)	-
Selenocyanate fraction 1	mg/kg dw	-	-	0.001 to 0.015	3 (2.38%)	-
Selenocyanate fraction 2	mg/kg dw	-	-	0.001 to 0.015	1 (0.57%)	-
Selenomethionine fraction 1	mg/kg dw	-	-	0.001 to 0.024	5 (2.84%)	-
Selenomethionine fraction 2	mg/kg dw	-	-	0.001 to 0.024	4 (2.27%)	-
Selenosulfate fraction 1	mg/kg dw	-	-	0.005 to 0.085	67 (31.6%)	-
Selenosulfate fraction 2	mg/kg dw	-	-	0.007 to 0.024	59 (31.1%)	-
Unknown Selenium Species	mg/kg dw	-	-	0.001 to 1.66	180 (29.8%)	-
Unknown Selenium Species fraction 1	mg/kg dw	-	-	0.002 to 0.019	1 (0.57%)	-
Unknown Selenium Species fraction 2	mg/kg dw	-	-	0.001 to 0.008	5 (10.0%)	-

Notes: Only analytes with at least one result < Laboratory Reporting Limit (LRL) or LRL were above guidelines were displayed. The total number of samples in 2022 (n) was 176. "-" = no applicable guideline exists; ISQG = Interim Sediment Quality Guideline; PEL = Probable Effects Limit; LRL = Laboratory Reporting Limit; dw = dry weight.

^a British Columbia Working Sediment Quality Guidelines (BCMOECCS 2021a).

Table B.12: Comparisons of Sediment Chemistry Field Duplicates, EVO LAEMP, 2022

Parameter	Unit	RG_GATE_SE-01_2022-04-21	RG_RIVER_SE-01_2022-04-21	RPD (%)	RG_ALUSM_SE-01_2022-04_NP	RG_RIVER_SE-01_2022-04_NP	RPD (%)
Physical Tests							
Moisture	%	58.6	53.8	8.54	66.8	68.7	2.77
Ph (1:2 Soil:Water)	pH units	7.78	7.81	0.38	7.41	7.48	0.94
Particle Size							
Clay (<0.004mm)	%	13.7	11	21.9	9.3	9.3	0
Silt (0.063mm - 0.0312mm)	%	9.8	10.4	5.94	22.6	22.9	1.31
Silt (0.0312mm - 0.004mm)	%	25.5	24.6	3.59	38.1	35.8	6.42
Sand (0.125mm - 0.063mm)	%	4.1	3.2	24.7	7.5	9.9	24.2
Sand (0.25mm - 0.125mm)	%	3.7	3.3	11.4	5.3	5.6	5.36
Sand (0.5mm - 0.25mm)	%	4.5	4	11.8	2.4	2.2	9.09
Sand (1.0mm - 0.50mm)	%	5.2	4.1	23.7	6.3	6.1	3.28
Sand (2.0mm - 1.0mm)	%	7.6	5.4	33.8	5.1	6.1	16.4
Gravel (>2mm)	%	25.9	34	27.0	3.4	2.1	61.9
Carbon							
Carbon, Inorganic (IC)	%	3.08	3.09	0.32	2.93	2.94	0.34
Carbon, Total (TC)	%	16	16.6	3.68	10.2	10.5	2.86
Carbon, Total Organic (TOC)	%	12.9	13.5	4.55	7.27	7.56	3.84
Carbon, Inorganic (IC), (As CaCO ₃ Equivalent)	%	25.7	25.7	0.00	24.4	24.5	0.41
Metals							
Aluminum	mg/kg	9,680	5,100	62.0	4860	4,590	5.88
Antimony	mg/kg	1.62	0.99	48.3	0.68	0.81	16.0
Arsenic	mg/kg	8.08	5.92	30.9	6.73	6.56	2.59
Barium	mg/kg	1,030	1,640	45.7	187	178	5.06
Beryllium	mg/kg	0.77	0.57	29.9	0.45	0.42	7.14
Bismuth	mg/kg	0.24	<0.20	-	<0.20	<0.20	-
Boron	mg/kg	12.7	5.2	83.8	8.7	7.7	13.0
Cadmium	mg/kg	7.65	5.72	28.9	3.63	3.56	1.97
Calcium	mg/kg	145,000	139,000	4.23	107000	105,000	1.90
Chromium	mg/kg	24.1	18.4	26.8	10.4	9.58	8.56
Cobalt	mg/kg	13.1	10.5	22.0	27.5	26.2	4.96
Copper	mg/kg	30.9	23.4	27.6	12.8	12.7	0.79
Iron	mg/kg	18,400	15,500	17.1	13200	13,600	2.94
Lead	mg/kg	14.4	10.5	31.3	6.81	6.93	1.73
Lithium	mg/kg	10.2	8.5	18.2	7.5	7.1	5.63
Magnesium	mg/kg	11,100	10,300	7.48	13000	12,900	0.78
Manganese	mg/kg	394	325	19.2	433	431	0.46
Mercury	mg/kg	0.0469	0.0304	42.7	0.0325	0.0337	3.56
Molybdenum	mg/kg	3.24	2.46	27.4	3.17	3.46	8.38
Nickel	mg/kg	95	76	22.2	59.4	57.4	3.48
Phosphorus	mg/kg	1,390	992	33.4	1350	1,280	5.47
Potassium	mg/kg	2,550	1,160	74.9	1370	1,240	10.5
Selenium	mg/kg	17.8	10.7	49.8	20.5	18.4	11.4
Silver	mg/kg	0.44	0.34	25.6	0.17	0.17	0
Sodium	mg/kg	139	102	30.7	118	144	18.1
Strontium	mg/kg	959	642	39.6	100	95.7	4.49
Sulfur	mg/kg	3,400	2,700	23.0	3200	2,900	10.3
Thallium	mg/kg	0.4	0.175	78.3	0.401	0.361	11.1
Tin	mg/kg	<2.0	<2.0	-	<2.0	<2.0	-
Titanium	mg/kg	25.1	11.9	71.4	12.4	13.5	8.15
Tungsten	mg/kg	4.21	2.37	55.9	<0.50	<0.50	-
Uranium	mg/kg	2.22	1.7	26.5	2.04	2.1	2.86
Vanadium	mg/kg	47.1	25.2	60.6	19.9	19.5	2.05
Zinc	mg/kg	485	375	25.6	149	152	1.97
Zirconium	mg/kg	<1.0	<1.0	-	<1.0	<1.0	0
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	-	-	-	<0.050	<0.050	-
Acenaphthylene	mg/kg	-	-	-	<0.050	<0.050	-
Acridine	mg/kg	-	-	-	<0.070	<0.080	-
Anthracene	mg/kg	-	-	-	<0.050	<0.050	-
Benz(A)Anthracene	mg/kg	-	-	-	<0.050	<0.050	-
Benzo(A)Pyrene	mg/kg	-	-	-	<0.050	<0.050	-
Benzo(B+J)Fluoranthene	mg/kg	-	-	-	0.080	0.077	3.90
Benzo(B+J+K)Fluoranthene	mg/kg	-	-	-	0.080	0.077	3.90
Benzo(G,H,I)Perylene	mg/kg	-	-	-	<0.050	<0.050	-
Benzo(K)Fluoranthene	mg/kg	-	-	-	<0.050	<0.050	-
Chrysene	mg/kg	-	-	-	0.175	0.167	4.79
Dibenz(A,H)Anthracene	mg/kg	-	-	-	<0.050	<0.050	-
Fluoranthene	mg/kg	-	-	-	<0.050	<0.050	-
Fluorene	mg/kg	-	-	-	0.082	0.088	6.82
Indeno(1,2,3-C,D)Pyrene	mg/kg	-	-	-	<0.050	<0.050	-
Methylnaphthalene, 1+2-	mg/kg	-	-	-	0.749	0.729	2.74
Methylnaphthalene, 1-	mg/kg	-	-	-	0.271	0.263	3.04
Methylnaphthalene, 2-	mg/kg	-	-	-	0.478	0.466	2.58
Naphthalene	mg/kg	-	-	-	0.185	0.167	10.8
Phenanthrene	mg/kg	-	-	-	0.486	0.484	0
Pyrene	mg/kg	-	-	-	0.050	0.054	7.69
Quinoline	mg/kg	-	-	-	<0.050	<0.050	-
B(a)P total potency equivalents [B(a)P TPE]	-	-	-	-	0.068	0.067	1.49
IACR (CCME)	-	-	-	-	1.00	0.98	2.04
IACR AB (coarse)	-	-	-	-	<0.10	<0.10	-
IACR AB (fine)	-	-	-	-	<0.10	<0.10	-
PAHs, total (BC Sched 3.4)	mg/kg	-	-	-	1.46	1.43	2.10
PAHs, total (EPA 16)	mg/kg	-	-	-	1.06	1.04	1.92

Value was above the data quality objective of ≤ 30% Relative Percent Difference (RPD).

Notes: LRL = Laboratory Reporting Limit. If one result in a duplicate pair was below the LRL, RPD was calculated using the LRL in place of the value below detection results. RPD was not calculated if both results were < LRL. "-" indicates that the RPD was not calculated.

Table B.12: Comparisons of Sediment Chemistry Field Duplicates, EVO LAEMP, 2022

Parameter	Unit	RG_MIDER_SE-2_2022-09-12_N	RG_RIVER_SE-2_2022-09-12_N	RPD (%)	RG_ERCK_SE-1_2022-09-14_N	RG_RIVER_SE-1_2022-09-14_N	RPD (%)
Physical Tests							
Moisture	%	44.3	41	7.74	65.3	62.4	4.54
Ph (1:2 Soil:Water)	pH units	7.99	7.93	0.75	7.4	7.65	1.20
Particle Size							
Clay (<0.004mm)	%	2.8	2.7	3.64	1.6	1.8	11.8
Silt (0.063mm - 0.0312mm)	%	12.9	14.2	9.59	7.5	7.5	0.00
Silt (0.0312mm - 0.004mm)	%	9.7	11.1	13.5	6.6	5.9	11.2
Sand (0.125mm - 0.063mm)	%	28.4	27.1	4.68	12.2	12.6	3.23
Sand (0.25mm - 0.125mm)	%	33.4	25.8	25.7	25.5	25.7	0.78
Sand (0.5mm - 0.25mm)	%	9.4	9.7	3.14	19.8	19.4	2.04
Sand (1.0mm - 0.50mm)	%	2.1	6.5	102	10.7	12.1	12.3
Sand (2.0mm - 1.0mm)	%	1.1	2.6	81.1	6.2	8.2	27.8
Gravel (>2mm)	%	<1.0	<1.0	-	9.9	6.8	37.1
Carbon							
Carbon, Inorganic (IC)	%	0.677	0.707	4.34	5.13	6.03	16.1
Carbon, Total (TC)	%	3.22	3.55	9.75	10.2	10.6	3.85
Carbon, Total Organic (TOC)	%	2.54	2.84	11.2	5.07	4.57	10.4
Carbon, Inorganic (IC), (As CaCO ₃ Equivalent)	%	5.64	5.89	4.34	42.8	50.3	16.1
Metals							
Aluminum	mg/kg	6,280	6,480	3.13	1,610	1,460	9.77
Antimony	mg/kg	0.81	0.84	3.64	0.2	0.21	4.88
Arsenic	mg/kg	5.39	5.5	2.02	1.58	1.58	0.00
Barium	mg/kg	192	191	0.52	101	97.7	3.32
Beryllium	mg/kg	0.52	0.53	1.90	0.12	0.12	0.00
Bismuth	mg/kg	<0.20	<0.20	-	<0.20	<0.20	-
Boron	mg/kg	<5.0	<5.0	-	<5.0	<5.0	-
Cadmium	mg/kg	1.04	1.02	1.94	0.397	0.363	8.95
Calcium	mg/kg	22,300	22,400	0.45	200,000	194,000	3.05
Chromium	mg/kg	10.1	10.4	2.93	2.76	2.74	0.73
Cobalt	mg/kg	4.8	4.8	0.00	27.8	27.5	1.08
Copper	mg/kg	10.3	10.3	0.00	3.01	2.72	10.12
Iron	mg/kg	11,500	11,700	1.72	3,410	2,970	13.79
Lead	mg/kg	7.72	7.86	1.80	2.24	2.02	10.33
Lithium	mg/kg	8.6	8.8	2.30	3.7	3	20.90
Magnesium	mg/kg	4,550	4,520	0.66	4,050	3,890	4.03
Manganese	mg/kg	175	175	0.00	505	488	3.42
Mercury	mg/kg	0.0335	0.0429	24.6	0.0089	0.0076	15.76
Molybdenum	mg/kg	1.32	1.34	1.50	0.51	0.52	1.94
Nickel	mg/kg	18.9	19.1	1.05	37.6	35	7.16
Phosphorus	mg/kg	1,040	1,100	5.61	418	336	21.75
Potassium	mg/kg	1,070	1,110	3.67	460	460	0.00
Selenium	mg/kg	1.03	0.94	9.14	4.39	4.26	3.01
Silver	mg/kg	0.15	0.15	0.00	<0.10	<0.10	-
Sodium	mg/kg	55	54	1.83	85	79	7.32
Strontium	mg/kg	49.5	52.3	5.50	115	109	5.36
Sulfur	mg/kg	<1000	<1000	-	4,400	4,000	9.52
Thallium	mg/kg	0.189	0.202	6.65	0.083	0.079	4.94
Tin	mg/kg	<2.0	<2.0	-	<2.0	<2.0	-
Titanium	mg/kg	30.4	29.4	3.34	12.1	10.9	10.43
Tungsten	mg/kg	<0.50	<0.50	-	<0.50	<0.50	-
Uranium	mg/kg	0.973	1.01	3.73	1.33	1.32	0.75
Vanadium	mg/kg	28.9	29.7	2.73	7.2	7.31	1.52
Zinc	mg/kg	78.3	78.1	0.26	26.2	23.5	10.87
Zirconium	mg/kg	<1.0	1.1	9.52	<1.0	<1.0	-
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	<0.050	<0.050	-	<0.050	<0.050	-
Acenaphthylene	mg/kg	<0.050	<0.050	-	<0.050	<0.050	-
Acridine	mg/kg	<0.050	<0.050	-	<0.050	<0.050	-
Anthracene	mg/kg	<0.050	<0.050	-	<0.050	<0.050	-
Benz(A)Anthracene	mg/kg	<0.050	<0.050	-	<0.050	<0.050	-
Benzo(A)Pyrene	mg/kg	<0.050	<0.050	-	<0.050	<0.050	-
Benzo(B+J)Fluoranthene	mg/kg	<0.050	<0.050	-	<0.050	<0.050	-
Benzo(B+J+K)Fluoranthene	mg/kg	<0.075	<0.075	-	<0.075	<0.075	-
Benzo(G,H,I)Perylene	mg/kg	<0.050	<0.050	-	<0.050	<0.050	-
Benzo(K)Fluoranthene	mg/kg	<0.050	<0.050	-	<0.050	<0.050	-
Chrysene	mg/kg	0.078	0.065	18.2	<0.050	<0.050	-
Dibenz(A,H)Anthracene	mg/kg	<0.050	<0.050	-	<0.050	<0.050	-
Fluoranthene	mg/kg	<0.050	<0.050	-	<0.050	<0.050	-
Fluorene	mg/kg	<0.050	<0.050	-	<0.050	<0.050	-
Indeno(1,2,3-C,D)Pyrene	mg/kg	<0.050	<0.050	-	<0.050	<0.050	-
Methylnaphthalene, 1+2-	mg/kg	0.266	0.292	9.32	0.123	0.128	3.98
Methylnaphthalene, 1-	mg/kg	0.12	0.129	7.23	0.056	0.057	1.77
Methylnaphthalene, 2-	mg/kg	0.146	0.163	11.00	0.067	0.071	5.80
Naphthalene	mg/kg	0.078	0.088	12.05	0.053	0.06	12.4
Phenanthrene	mg/kg	0.186	0.194	4.21	0.097	0.11	12.6
Pyrene	mg/kg	<0.050	<0.050	-	<0.050	<0.050	-
Quinoline	mg/kg	<0.050	<0.050	-	<0.050	<0.050	-
B(a)P total potency equivalents [B(a)P TPE]	-	<0.065	<0.065	-	<0.065	<0.065	-
IACR (CCME)	-	0.61	0.61	0.00	<0.60	<0.60	-
IACR AB (coarse)	-	<0.10	<0.10	-	<0.10	<0.10	-
IACR AB (fine)	-	<0.10	<0.10	-	<0.10	<0.10	-
PAHs, total (BC Sched 3.4)	mg/kg	0.49	0.51	4.00	0.22	0.24	8.70
PAHs, total (EPA 16)	mg/kg	0.34	0.35	2.90	<0.20	<0.20	-

Value was above the data quality objective of ≤ 30% Relative Percent Difference (RPD).

Notes: LRL = Laboratory Reporting Limit. If one result in a duplicate pair was below the LRL, RPD was calculated using the LRL in place of the value below detection results. RPD was not calculated if both results were < LRL. "-" indicates that the RPD was not calculated.

Table B.12: Comparisons of Sediment Chemistry Field Duplicates, EVO LAEMP, 2022

Parameter	Unit	RG_ERCKUT_SE-5_LAEMP_EVO_2 022-09-16_N	RG_RIVER_SE-5_LAEMP_EVO_2 022-09-16_N	RPD (%)	RG_ALUSM_SE-2_LAEMP_EVO_2 022-09-18_N	RG_RIVER_SE-2_LAEMP_EVO_2 022-09-18_N	RPD (%)
Physical Tests							
Moisture	%	73.2	74.3	1.49	43.7	42.2	3.49
Ph (1:2 Soil:Water)	pH units	7.79	7.74	0.64	7.67	7.97	1.20
Particle Size							
Clay (<0.004mm)	%	3.1	3.2	3.17	3.5	3.6	2.82
Silt (0.063mm - 0.0312mm)	%	25.4	24.3	4.43	11.5	12.5	8.33
Silt (0.0312mm - 0.004mm)	%	27.4	26.9	1.84	11.6	12.2	5.04
Sand (0.125mm - 0.063mm)	%	22.8	22.2	2.67	20.1	20.4	1.48
Sand (0.25mm - 0.125mm)	%	16.2	18	10.5	30.5	29.8	2.32
Sand (0.5mm - 0.25mm)	%	3.1	3.3	6.25	19.8	19	4.12
Sand (1.0mm - 0.50mm)	%	1.3	1.2	8.00	2.7	2.1	25.0
Sand (2.0mm - 1.0mm)	%	<1.0	<1.0	-	<1.0	<1.0	-
Gravel (>2mm)	%	<1.0	<1.0	-	<1.0	<1.0	-
Carbon							
Carbon, Inorganic (IC)	%	1.23	1.22	0.82	0.946	0.925	2.24
Carbon, Total (TC)	%	14.8	14.1	4.84	4.04	3.92	3.02
Carbon, Total Organic (TOC)	%	13.6	12.9	5.28	3.09	3	2.96
Carbon, Inorganic (IC), (As CaCO ₃ Equivalent)	%	10.2	10.2	0.00	7.88	7.7	2.31
Metals							
Aluminum	mg/kg	4,540	4,030	11.9	6,830	7,780	13.00
Antimony	mg/kg	0.74	0.73	1.36	0.37	0.44	17.3
Arsenic	mg/kg	10.6	9.84	7.44	5.37	5.39	0.372
Barium	mg/kg	493	455	8.02	152	155	1.95
Beryllium	mg/kg	0.52	0.45	14.4	0.55	0.6	8.70
Bismuth	mg/kg	<0.20	<0.20	-	<0.20	<0.20	-
Boron	mg/kg	5.3	<5.0	5.83	5.8	6.9	17.3
Cadmium	mg/kg	1.54	1.58	2.56	0.537	0.564	4.90
Calcium	mg/kg	40,100	39,500	1.51	29,800	31,700	6.18
Chromium	mg/kg	10.2	9.24	9.88	10.4	11.5	10.05
Cobalt	mg/kg	3.65	3.56	2.50	4.24	4.82	12.8
Copper	mg/kg	14.5	13.9	4.23	11.9	13.1	9.60
Iron	mg/kg	28,500	26,600	6.90	13,700	14,600	6.36
Lead	mg/kg	6.95	6.69	3.81	8.91	10.4	15.4
Lithium	mg/kg	5.4	4.5	18.2	11.8	12.7	7.35
Magnesium	mg/kg	5,710	5,670	0.70	9,420	8,320	12.4
Manganese	mg/kg	270	266	1.49	178	137	26.0
Mercury	mg/kg	0.0523	0.051	2.52	0.0258	0.0279	7.82
Molybdenum	mg/kg	1.09	1.03	5.66	1.05	1.06	0.95
Nickel	mg/kg	16.2	15.6	3.77	13.6	15.3	11.8
Phosphorus	mg/kg	2,090	1,870	11.1	939	1,130	18.5
Potassium	mg/kg	1,100	950	14.6	1,360	1,520	11.1
Selenium	mg/kg	44.8	44.4	0.897	0.68	0.86	23.4
Silver	mg/kg	0.24	0.24	0.00	0.1	0.11	9.52
Sodium	mg/kg	61	61	0.00	78	73	6.62
Strontium	mg/kg	57	51.5	10.1	43.9	49.4	11.8
Sulfur	mg/kg	<1000	<1000	-	<1000	<1000	-
Thallium	mg/kg	0.169	0.15	11.9	0.176	0.237	29.5
Tin	mg/kg	<2.0	<2.0	-	<2.0	<2.0	-
Titanium	mg/kg	12.5	9.8	24.2	7.9	5.6	34.1
Tungsten	mg/kg	<0.50	<0.50	-	<0.50	<0.50	-
Uranium	mg/kg	1.26	1.22	3.23	0.587	0.692	16.4
Vanadium	mg/kg	22.8	20.8	9.17	18.2	19.8	8.42
Zinc	mg/kg	80.9	79.2	2.12	83.6	88.3	5.47
Zirconium	mg/kg	1	1.1	9.52	<1.0	<1.0	-
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	<0.050	<0.050	-	<0.050	<0.050	-
Acenaphthylene	mg/kg	<0.050	<0.050	-	<0.050	<0.050	-
Acridine	mg/kg	0.053	0.05	5.83	<0.050	<0.050	-
Anthracene	mg/kg	<0.050	<0.050	-	<0.050	<0.050	-
Benz(A)Anthracene	mg/kg	<0.050	<0.050	-	<0.050	<0.050	-
Benzo(A)Pyrene	mg/kg	<0.050	<0.050	-	<0.050	<0.050	-
Benzo(B+J)Fluoranthene	mg/kg	0.151	0.122	21.2	<0.050	<0.050	-
Benzo(B+J+K)Fluoranthene	mg/kg	0.151	0.122	21.2	<0.075	<0.075	-
Benzo(G,H,I)Perylene	mg/kg	<0.050	<0.050	-	<0.050	<0.050	-
Benzo(K)Fluoranthene	mg/kg	<0.050	<0.050	-	<0.050	<0.050	-
Chrysene	mg/kg	0.306	0.269	12.9	<0.050	0.066	-
Dibenz(A,H)Anthracene	mg/kg	<0.050	<0.050	-	<0.050	<0.050	-
Fluoranthene	mg/kg	0.072	0.054	28.6	<0.050	<0.050	-
Fluorene	mg/kg	0.095	0.086	9.94	<0.050	<0.050	-
Indeno(1,2,3-C,D)Pyrene	mg/kg	<0.050	<0.050	-	<0.050	<0.050	-
Methylnaphthalene, 1+2-	mg/kg	1.11	1.05	5.56	0.089	0.12	29.7
Methylnaphthalene, 1-	mg/kg	0.434	0.407	6.42	0.033	0.045	30.8
Methylnaphthalene, 2-	mg/kg	0.678	0.647	4.68	0.056	0.075	29.0
Naphthalene	mg/kg	0.287	0.273	5.00	0.042	0.058	32.0
Phenanthrene	mg/kg	0.937	0.869	7.53	0.084	0.118	33.7
Pyrene	mg/kg	0.093	0.08	15.03	<0.050	<0.050	-
Quinoline	mg/kg	<0.050	<0.050	-	<0.050	<0.050	-
B(a)P total potency equivalents [B(a)P TPE]	-	0.076	0.073	4.03	<0.065	<0.065	-
IACR (CCME)	-	1.51	1.31	14.2	<0.60	0.61	1.65
IACR AB (coarse)	-	<0.10	<0.10	-	<0.10	<0.10	-
IACR AB (fine)	-	0.11	0.1	9.52	<0.10	<0.10	-
PAHs, total (BC Sched 3.4)	mg/kg	2.47	2.28	8.00	<0.20	0.32	46.2
PAHs, total (EPA 16)	mg/kg	1.94	1.75	10.3	<0.20	0.24	18.2

Value was above the data quality objective of ≤ 30% Relative Percent Difference (RPD).

Notes: LRL = Laboratory Reporting Limit. If one result in a duplicate pair was below the LRL, RPD was calculated using the LRL in place of the value below detection results. RPD was not calculated if both results were < LRL. "-" indicates that the RPD was not calculated.

Table B.12: Comparisons of Sediment Chemistry Field Duplicates, EVO LAEMP, 2022

Parameter	Unit	RG_MICOMP_SE-5_LAEMP_EVO_2 022-09-18_N	RG_RIVER_SE-5_LAEMP_EVO_2 022-09-18_N	RPD (%)	RG_ERCKDT_SE-6_LAEMP_EVO_2 022-09-18_N	RG_RIVER_SE-6_LAEMP_EVO_2 022-09-19_N	RPD (%)
Physical Tests							
Moisture	%	34.5	44.4	25.1	79	74	6.54
Ph (1:2 Soil:Water)	pH units	7.92	7.79	1.65	8.05	8.06	1.20
Particle Size							
Clay (<0.004mm)	%	2.5	2.6	3.92	7.2	7.7	6.71
Silt (0.063mm - 0.0312mm)	%	15.1	14.9	1.33	34.9	34.5	1.15
Silt (0.0312mm - 0.004mm)	%	13.2	13.3	0.75	47.5	48.1	1.26
Sand (0.125mm - 0.063mm)	%	23.2	23	0.87	3.8	3.7	2.67
Sand (0.25mm - 0.125mm)	%	26	27.5	5.61	4	3.4	16.2
Sand (0.5mm - 0.25mm)	%	16.3	15.3	6.33	1.9	1.8	5.41
	%	3.1	2.5	21.4	<1.0	<1.0	-
Sand (2.0mm - 1.0mm)	%	<1.0	<1.0	-	<1.0	<1.0	-
Gravel (>2mm)	%	<1.0	<1.0	-	<1.0	<1.0	-
Carbon							
Carbon, Inorganic (IC)	%	0.76	0.813	6.74	2.54	2.54	0.00
Carbon, Total (TC)	%	4.64	5.38	14.8	14.6	13.7	6.36
Carbon, Total Organic (TOC)	%	3.88	4.57	16.3	12.1	11.2	7.73
Carbon, Inorganic (IC), (As CaCO ₃ Equivalent)	%	6.33	6.77	6.72	21.1	21.2	0.47
Metals							
Aluminum	mg/kg	5,330	5,810	8.62	3,670	2,790	27.2
Antimony	mg/kg	0.79	0.8	1.26	0.76	0.59	25.2
Arsenic	mg/kg	6.02	5.54	8.30	10.1	8.26	20.0
Barium	mg/kg	184	190	3.21	201	164	20.3
Beryllium	mg/kg	0.49	0.55	11.5	0.51	0.38	29.2
Bismuth	mg/kg	<0.20	<0.20	-	<0.20	<0.20	-
Boron	mg/kg	<5.0	<5.0	-	5.7	<5.0	13.1
Cadmium	mg/kg	1.1	1.18	7.02	4.09	3.34	20.2
Calcium	mg/kg	28,200	28,000	0.71	80,300	63,200	23.8
Chromium	mg/kg	10.4	11.2	7.41	7.74	6.27	21.0
Cobalt	mg/kg	4.41	4.6	4.22	35.8	29.6	19.0
Copper	mg/kg	12.3	13.1	6.30	15.3	12.9	17.0
Iron	mg/kg	12,800	12,200	4.80	18,000	15,000	18.2
Lead	mg/kg	9.29	8.67	6.90	7.74	5.92	26.6
Lithium	mg/kg	6.8	8	16.2	4.6	3.5	27.2
Magnesium	mg/kg	5,610	5,850	4.19	6,520	5,420	18.4
Manganese	mg/kg	140	135	3.64	444	400	10.4
Mercury	mg/kg	0.036	0.0394	9.02	0.0492	0.0364	29.9
Molybdenum	mg/kg	1.43	1.37	4.29	1.23	0.97	23.6
Nickel	mg/kg	19.8	20.8	4.93	47.7	39.9	17.8
Phosphorus	mg/kg	1,160	1,200	3.39	1,460	1,180	21.2
Potassium	mg/kg	940	1,060	12.0	910	690	27.5
Selenium	mg/kg	2.08	2.49	17.9	19	14.7	25.5
Silver	mg/kg	0.17	0.18	5.71	0.21	0.17	21.1
Sodium	mg/kg	52	56	7.41	76	62	20.3
Strontium	mg/kg	53.7	58.4	8.39	78.2	62	23.1
Sulfur	mg/kg	<1000	<1000	-	<1000	<1000	-
Thallium	mg/kg	0.192	0.213	10.4	0.224	0.16	33.3
Tin	mg/kg	<2.0	<2.0	-	<2.0	<2.0	-
Titanium	mg/kg	17.9	17.2	3.99	7.6	9.9	26.3
Tungsten	mg/kg	<0.50	<0.50	-	<0.50	<0.50	-
Uranium	mg/kg	1.03	1.05	1.92	1.17	0.89	27.2
Vanadium	mg/kg	30	30.8	2.63	18.3	14.2	25.2
Zinc	mg/kg	90.2	92.6	2.63	155	132	16.0
Zirconium	mg/kg	<1.0	<1.0	-	<1.0	<1.0	-
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	<0.050	<0.050	-	0.066	0.052	23.7
Acenaphthylene	mg/kg	<0.050	0.073	37.4	<0.050	<0.050	-
Acridine	mg/kg	<0.050	0.055	9.52	0.108	0.106	1.87
Anthracene	mg/kg	0.055	0.112	68.3	<0.050	<0.050	-
Benz(A)Anthracene	mg/kg	0.122	0.374	102	<0.050	<0.050	-
Benzo(A)Pyrene	mg/kg	0.153	0.359	80.5	<0.050	<0.050	-
Benzo(B+J)Fluoranthene	mg/kg	0.27	0.625	79.3	0.142	0.098	36.7
Benzo(B+J+K)Fluoranthene	mg/kg	0.346	0.821	81.4	0.142	0.098	36.7
Benzo(G,H,I)Perylene	mg/kg	0.096	0.226	80.7	<0.050	<0.050	-
Benzo(K)Fluoranthene	mg/kg	0.076	0.196	88.2	<0.050	<0.050	-
Chrysene	mg/kg	0.225	0.53	80.8	0.307	0.227	30.0
Dibenz(A,H)Anthracene	mg/kg	<0.050	0.069	31.9	<0.050	<0.050	-
Fluoranthene	mg/kg	0.183	0.502	93.1	0.061	<0.050	19.8
Fluorene	mg/kg	0.05	0.084	50.7	0.19	0.142	28.9
Indeno(1,2,3-C,D)Pyrene	mg/kg	0.111	0.255	78.7	<0.050	<0.050	-
Methylnaphthalene, 1+2-	mg/kg	0.555	0.731	27.4	1.93	1.54	22.5
Methylnaphthalene, 1-	mg/kg	0.234	0.293	22.4	0.689	0.54	24.2
Methylnaphthalene, 2-	mg/kg	0.321	0.438	30.8	1.24	0.995	21.9
Naphthalene	mg/kg	0.295	0.567	63.1	0.421	0.27	43.7
Phenanthrene	mg/kg	0.364	0.519	35.1	0.97	0.731	28.1
Pyrene	mg/kg	0.14	0.342	83.8	0.087	0.066	27.5
Quinoline	mg/kg	<0.050	<0.050	-	<0.050	<0.050	-
B(a)P total potency equivalents [B(a)P TPE]	-	0.239	0.58	83.3	0.075	0.07	6.90
IACR (CCME)	-	3.22	7.91	84.3	1.45	1.14	23.9
IACR AB (coarse)	-	0.14	0.35	85.7	<0.10	<0.10	-
IACR AB (fine)	-	0.26	0.66	87.0	0.11	<0.10	9.52
PAHs, total (BC Sched 3.4)	mg/kg	1.91	3.97	70.1	3.34	2.48	29.6
PAHs, total (EPA 16)	mg/kg	2.14	4.83	77.2	2.24	1.59	33.9

Value was above the data quality objective of ≤ 30% Relative Percent Difference (RPD).

Notes: LRL = Laboratory Reporting Limit. If one result in a duplicate pair was below the LRL, RPD was calculated using the LRL in place of the value below detection results. RPD was not calculated if both results were < LRL. "-" indicates that the RPD was not calculated.

Table B.13: Percent of Sample Sorted and the Total Number of Invertebrates Recovered from the Sampled Fraction, EVO LAEMP, 2022

Sample ID	Laboratory ID	% Sampled	# Invertebrates
RG_BOCK_BIC-1_2022-09-15_N	CC231066	25	424
RG_BOCK_BIC-2_2022-09-15_N	CC231067	5	356
RG_BOCK_BIC-3_2022-09-15_N	CC231068	5	505
RG_ERCK_BIC-1_2022-09-14_N	CC231069	5	994
RG_GATE_BIC-1_2022-09-15_N	CC231070	5	579
RG_GATE_BIC-2_2022-09-15_N	CC231071	5	403
RG_MI3_BIC-1_2022-09-12_N	CC231072	6	328
RG_MI3_BIC-2_2022-09-12_N	CC231073	7	339
RG_MI3_BIC-3_2022-09-12_N	CC231074	7	355
RG_MIDBO_BIC-1_2022-09-13_N	CC231075	7	362
RG_MIDBO_BIC-2_2022-09-13_N	CC231076	5	367
RG_MIDBO_BIC-3_2022-09-13_N	CC231077	6	349
RG_MIDER_BIC-1_2022-09-13_N	CC231078	5	366
RG_MIDER_BIC-2_2022-09-13_N	CC231079	5	323
RG_MIDER_BIC-3_2022-09-13_N	CC231080	5	341
RG_ALUSM_BIC-1_2022-09-18_N	CC231081	5	336
RG_ALUSM_BIC-2_2022-09-18_N	CC231082	7	318
RG_ALUSM_BIC-3_2022-09-18_N	CC231083	5	355
RG_MIDGA_BIC-1_2022-09-18_N	CC231084	5	825
RG_MIDGA_BIC-2_2022-09-18_N	CC231085	5	469
RG_MIDGA_BIC-3_2022-09-18_N	CC231086	5	434
RG_MICOMP_BIC-1_2022-09-18_N	CC231087	5	532
RG_MICOMP_BIC-2_2022-09-18_N	CC231088	5	317
RG_MICOMP_BIC-3_2022-09-18_N	CC231089	5	579
RG_MICOMP_BIC-4_2022-09-18_N	CC231090	5	769
RG_MICOMP_BIC-5_2022-09-18_N	CC231091	5	563
RG_ERCKUT_BIC-1_2022-09-16_N	CC231092	5	414
RG_ERCKUT_BIC-2_2022-09-16_N	CC231093	7	475
RG_ERCKUT_BIC-3_2022-09-16_N	CC231094	5	605
RG_ERCKDT_BIC-1_2022-09-19_N	CC231095	50	581
RG_ERCKDT_BIC-2_2022-09-19_N	CC231096	5	934
RG_ERCKDT_BIC-3_2022-09-19_N	CC231097	5	556

Note: Only samples that were sub-sampled are displayed. All other BIC samples were examined in their entirety.

Table B.14: Benthic Invertebrate Community Sub-sampling Precision and Accuracy, EVO LAEMP, 2022

Station ID		Organisms in Subsample					Total	Precision Error		Accuracy Error	
Sample ID	Laboratory ID	1	2	3	4	5		Min (%)	Max (%)	Min (%)	Max (%)
		RG_BOCK_BIC-1_2022-09-15_N	CC231066	442	446	452					
RG_MIDER_BIC-1_2022-09-13_N	CC231078	372	361	380	376	369	1,858	0.81	5.00	0.11	2.85
RG_ALUSM_BIC-3_2022-09-18_N	CC231083	356	330	299	332	338	1,655	0.60	16.0	0.30	9.67
Average								0.77	8.11	0.27	4.75

Note: "-" indicates data not collected.

Table B.15: Benthic Invertebrate Community Sorting Efficiency, EVO LAEMP, 2022

Sample ID	Laboratory ID	Number of Organisms Recovered (Initial Sort)	Number of Organisms in Re-sort	Sorting Efficiency (%)
RG_MI3_BIC-1_2022-09-12_N	CC231072	328	1	99.7
RG_MIDBO_BIC-1_2022-09-13_N	CC231075	362	11	97.0
RG_ALUSM_BIC-2_2022-09-18_N	CC231082	328	2	99.3
Average				98.7

Table B.16: Percent Benthic Invertebrate Community Organism Recovery^a, EVO LAEMP, 2022

Sample ID	Laboratory ID	Percent Sampled (%)	Taxa Identified	TIR (%)	PDE (%)	PTD (%)	BCDI
RG_BOCK_BIC-2_2022-09-15_N	CC231067	5	357	0	0.140	0.560	0.004
RG_MI3_BIC-1_2022-09-12_N	CC231072	6	326	0	0.306	0.915	0.006
RG_MICOMP_BIC-2_2022-09-18_N	CC231088	5	315	0	0.316	0.946	0.006

Notes: TIR = Total Identification Error Rate, PDE = Percent Difference in Enumeration, PTD = Percent Taxonomic Disagreement, BCDI = Bray Curtis Dissimilarity Index to quantify differences in identifications.

^a For error rationale and calculations, refer to Cordillera report (Appendix H).

Table B.17: Laboratory Reporting Limit (LRL) Evaluation for Benthic Invertebrate Tissue Chemistry Analyses, EVO LAEMP, 2022

Parameter	Range of LRLs	No. Sample Results <LRL
Antimony	0.002 to 0.096	3 (0.73%)
Arsenic	0.318 to 0.486	38 (9.23%)
Mercury	0.018 to 0.122	76 (18.5%)
Tin	0.01 to 0.041	1 (0.24%)

Notes: "-" = no applicable guideline exists; LRL = Laboratory Reporting Limit; dw = dry weight. Only analytes with at least one sample results < LRL are displayed. Total number of samples in 2022 was 411. The only guideline that exists for benthic invertebrate tissue is for selenium and all LRLs for selenium were below the applicable guideline.

Table B.18: Laboratory Reporting Limit (LRL) Evaluation for Periphyton and Bryophyte Tissue Chemistry Analyses, EVO LAEMP, 2022

Parameter	Unit	Range of LRLs	No. Sample Results <LRL
Arsenic	mg/kg	0.01 to 1.82	3 (0.66%)
Beryllium	mg/kg	0.01 to 0.846	6 (1.60%)
Bismuth	mg/kg	0.01 to 0.846	96 (25.5%)
Boron	mg/kg	0.01 to 84.6	1 (0.22%)
Cesium	mg/kg	0.005 to 170	1 (0.27%)
Chromium	mg/kg	0.005 to 12.1	1 (0.22%)
Copper	mg/kg	0.015 to 12.1	1 (0.22%)
Lithium	mg/kg	0.01 to 42.3	4 (0.89%)
Mercury	mg/kg	0.03	29 (38.7%)
Sodium	mg/kg	0.1 to 1690	4 (0.887%)
Tellurium	mg/kg	0.02 to 1.69	282 (75.0%)
Tin	mg/kg	0.002 to 8.46	191 (42.4%)
Zirconium	mg/kg	0.2 to 16.9	6 (1.60%)

Notes: LRL = Laboratory Reporting Limit. Only analytes with at least one sample results < LRL are displayed. No applicable guidelines exist for any analyte that had at least one result below the LRL. The total number of samples in 2022 was 376; however, mercury, silver, and titanium were only measured in the 65 samples that were analyzed by Trich Analytics.

Table B.19: Laboratory Reporting Limit (LRL) Evaluation for Periphyton Productivity Analyses, EVO LAEMP, 2022

Parameter	Units	Range of LRLs	No. Sample Results <LRL
Ash Free Dry Weight	g	0.001	1 (11.1%)

Notes: "-" = no applicable guideline exists; LRL = Laboratory Reporting Limit. Only analytes with at least one sample results < LRL are displayed. The total number of samples collected in 2022 was nine.

APPENDIX C
PHYSICAL HABITAT

Table C.1: Summary of Maximum Daily Temperature Exceedances in Erickson Creek (RG_ERCK), EVO LAEMP, 2022

Month	Threshold	Logger 1			Logger 2			Logger 3		
		Number of Days	Number of Days Exceeding Threshold	Number of Days Exceeding Threshold (%)	Number of Days	Number of Days Exceeding Threshold	Number of Days Exceeding Threshold (%)	Number of Days	Number of Days Exceeding Threshold	Number of Days Exceeding Threshold (%)
January	7	31	0	0	31	0	0	-	-	-
February	7	28	0	0	28	0	0	-	-	-
March	7	31	0	0	31	0	0	-	-	-
April	7	9	0	0	9	0	0	-	-	-
October	10	28	0	0	28	0	0	28	0	0
November	7	30	0	0	30	0	0	30	0	0
December	7	31	0	0	31	0	0	31	0	0

Notes: "-" = no data available.

Table C.2: Calcite Presence, Concretion, and Index Values, EVO LAEMP, 2015 to 2021

Waterbody	Station	2015					2016					2017					
		Calcite Presence		Calcite Concretion	Calcite Index		Calcite Presence		Calcite Concretion	Calcite Index		Calcite Presence		Calcite Concretion	Calcite Index		
		CP'	CP	CC	CI'	CI	CP'	CP	CC	CI'	CI	CP'	CP	CC	CI'	CI	
Lower Alexander Creek (Reference)	RG_ALUSM	0.690	0.690	0.0700	0.760	0.760	0.980	0.980	0.485	1.46	1.46	0.830	0.830	0	0.830	0.830	
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Michel Creek (Reference)	RG_MI25	0.359	0.359	0	0.359	0.359	0	0	0	0	0	0.580	0.580	0	0.580	0.580	
Erickson Creek	RG_ERCKUT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	RG_ERCKDT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
RG_ERCK	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Gate and Bodie Creek	RG_GATE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	RG_GATEDP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	0.963	0.963	0	0.963	0.963	-	-	-	-	-	-	-	-	-	-		
	RG_BOCK	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Michel Creek	RG_MI3	0.417	0.417	0	0.417	0.417	0	0	0	0	0	0.760	0.760	0	0.760	0.760	
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	RG_MIDER	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	RG_MIDGA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	RG_MIDBO	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	RG_MICOMP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-		-	-	-	-	-	-	-	-	-	-	-	-	-	-		
-		-	-	-	-	-	-	-	-	-	-	-	-	-	-		

 Calcite index > 1.0.

Notes: "-" = no calcite monitoring was completed. "Cp" = calcite presence score using a binary assessment method. "Cp'" = calcite presence score based on the percent of the particle surface area covered by calcite as a decimal to the nearest 10th percentile (0.1, 0.2, 0.3, etc.). "CI" = calcite index calculated using the binary calcite presence. "CI'" = calcite index calculated using the proportional calcite presence. Calcite indexes from the Regional Calcite Monitoring Program have not been provided.

Table C.2: Calcite Presence, Concretion, and Index Values, EVO LAEMP, 2015 to 2021

Waterbody	Station	2018					2019					2020				
		Calcite Presence		Calcite Concretion	Calcite Index		Calcite Presence		Calcite Concretion	Calcite Index		Calcite Presence		Calcite Concretion	Calcite Index	
		CP'	CP	CC	CI'	CI	CP'	CP	CC	CI'	CI	CP'	CP	CC	CI'	CI
Lower Alexander Creek (Reference)	0.830	0.140	0.140	0	0.140	0.140	0.110	0.110	0	0.110	0.110	0.680	0.680	0	0.680	0.680
		0.480	0.480	0.0300	0.510	0.510	0	0	0	0	0	0.560	0.560	0	0.560	0.560
		0.390	0.390	0.0100	0.400	0.400	0.180	0.180	0	0.180	0.180	0.490	0.490	0	0.490	0.490
Michel Creek (Reference)	0.580	0.350	0.350	0	0.350	0.350	0	0	0	0	0	0.0200	0.0200	0	0.0200	0.0200
Erickson Creek	-	-	-	-	-	-	0.640	0.640	0.400	1.04	1.04	0.970	0.970	0.390	1.36	1.36
		-	-	-	-	-	0.510	0.510	0.450	0.960	0.960	0.980	0.980	0.580	1.56	1.56
		-	-	-	-	-	0.667	0.667	0.490	1.16	1.16	1.00	1.00	0.330	1.33	1.33
	RG_ERCKDT	-	-	-	-	-	0.700	0.700	0.440	1.14	1.14	1.00	1.00	0.900	1.90	1.90
		-	-	-	-	-	0.730	0.730	0.430	1.16	1.16	1.00	1.00	0.470	1.47	1.47
		-	-	-	-	-	1.00	1.00	0.697	1.70	1.70	1.00	1.00	0.640	1.64	1.64
-	0.970	0.970	0.920	1.89	1.89	0.910	0.910	0.670	1.58	1.58	1.00	1.00	0.590	1.59	1.59	
Gate and Bodie Creek	-	1.00	1.00	1.53	2.53	2.53	-	-	-	-	-	1.00	1.00	1.18	2.18	2.18
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	1.00	1.00	0.930	1.93	1.93	-	-	-	-	-	
	-	0.727	0.727	1.38	2.11	2.11	-	-	-	-	-	1.00	1.00	1.39	2.39	2.39
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Michel Creek	0.760	-	-	-	-	-	0.400	0.400	0	0.400	0.400	0.540	0.540	0	0.540	0.540
		-	-	-	-	-	0.310	0.310	0	0.310	0.310	0.640	0.640	0.0200	0.660	0.660
		-	-	-	-	-	0.0600	0.0600	0	0.0600	0.0600	0.870	0.870	0	0.870	0.870
	-	0.940	0.940	0	0.940	0.940	0.0700	0.0700	0.0200	0.0900	0.0900	-	-	-	-	-
		-	-	-	-	-	0.0500	0.0500	0	0.0500	0.0500	0.910	0.910	0	0.910	0.910
		-	-	-	-	-	0.190	0.190	0.0500	0.240	0.240	-	-	-	-	-
	-	0.760	0.760	0	0.760	0.760	0.170	0.170	0	0.170	0.170	0.480	0.480	0	0.480	0.480
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	0.960	0.960	0.100	1.06	1.06	0.290	0.290	0	0.290	0.290	0.930	0.930	0	0.930	0.930
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		0.909	0.909	0	0.909	0.909	0.480	0.480	0	0.480	0.480	0.170	0.170	0	0.170	0.170
		0.875	0.875	0	0.875	0.875	0.610	0.610	0	0.610	0.610	0.270	0.270	0	0.270	0.270
		0.838	0.838	0.0101	0.848	0.848	0.320	0.320	0	0.320	0.320	0.140	0.140	0	0.140	0.140
0.880	0.880	0	0.880	0.880	0.570	0.570	0	0.570	0.570	0.750	0.750	0	0.750	0.750		
0.950	0.950	0	0.950	0.950	0.270	0.270	0	0.270	0.270	0.770	0.770	0	0.770	0.770		

 Calcite index > 1.0.

Notes: "-" = no calcite monitoring was completed. "Cp" = calcite presence score using a binary assessment method. "Cp'" = calcite presence score based on the percent of the particle surface area covered by calcite as a decimal to the nearest 10th percentile (0.1, 0.2, 0.3, etc.). "CI" = calcite index calculated using the binary calcite presence. "CI'" = calcite index calculated using the proportional calcite presence. Calcite indexes from the Regional Calcite Monitoring Program have not been provided.

Table C.2: Calcite Presence, Concretion, and Index Values, EVO LAEMP, 2015 to 2021

Waterbody	Station	2021					2022				
		Calcite Presence		Calcite Concretion	Calcite Index		Calcite Presence		Calcite Concretion	Calcite Index	
		CP'	CP	CC	CI'	CI	CP'	CP	CC	CI'	CI
Lower Alexander Creek (Reference)	0.680	0.285	0.616	0.0101	0.295	0.626	0.257	0.590	0	0.257	0.590
		0.156	0.440	0	0.156	0.440	0.295	0.790	0	0.295	0.790
		0.120	0.290	0	0.120	0.290	0.269	0.670	0	0.269	0.670
Michel Creek (Reference)	0.0200	0	0	0	0	0	0.0460	0.280	0	0.0460	0.280
Erickson Creek	0.970	0.0588	0.196	0.0495	0.108	0.246	0.380	0.880	0.141	0.521	1.02
		0.0604	0.187	0	0.0604	0.187	0.395	0.900	0.0800	0.475	0.980
		0.0571	0.165	0	0.0571	0.165	0.301	0.890	0	0.301	0.890
	RG_ERCKDT	0.338	0.851	0.0319	0.370	0.883	0.651	0.980	0.263	0.914	1.24
		0.257	0.553	0	0.257	0.553	0.639	0.940	0	0.639	0.940
		0.214	0.543	0	0.214	0.543	0.487	0.930	0.133	0.620	1.06
1.00	0.927	1.00	1.20	2.12	2.20	0.937	0.980	1.49	2.43	2.47	
Gate and Bodie Creek	1.00	-	-	-	-	-	0.876	1.00	0.670	1.55	1.67
		-	-	-	-	-	0.895	1.00	0.755	1.65	1.76
	-	-	-	-	-	-	-	-	-	-	-
	1.00	-	-	-	-	-	0.967	0.990	1.78	2.74	2.77
		-	-	-	-	-	0.985	0.990	1.71	2.70	2.70
-	-	-	-	-	-	0.990	0.990	1.68	2.67	2.67	
Michel Creek	0.540	0	0	0	0	0	0	0	0	0	0
		0	0	0	0	0	0	0	0	0	0
		0	0	0	0	0	0	0	0	0	0
	-	0	0	0	0	0	0	0	0	0	0
		0	0	0	0	0	0	0	0	0	0
		0	0	0	0	0	0	0	0	0	0
	0.480	0	0	0	0	0	0	0	0	0	0
		0	0	0	0	0	0	0	0	0	0
		0	0	0	0	0	0	0	0	0	0
	0.930	0	0	0	0	0	0	0	0	0	0
		0	0	0	0	0	0	0	0	0	0
		0	0	0	0	0	0	0	0	0	0
	0.170	0	0	0	0	0	0.165	0.780	0	0.165	0.780
		0	0	0	0	0	0.176	0.840	0	0.176	0.840
		0	0	0	0	0	0.121	0.710	0	0.121	0.710
0		0	0	0	0	0.143	0.690	0	0.143	0.690	
0	0	0	0	0	0.0950	0.680	0	0.0950	0.680		

 Calcite index > 1.0.

Notes: "-" = no calcite monitoring was completed. "Cp" = calcite presence score using a binary assessment method. "Cp'" = calcite presence score based on the percent of the particle surface area covered by calcite as a decimal to the nearest 10th percentile (0.1, 0.2, 0.3, etc.). "CI" = calcite index calculated using the binary calcite presence. "CI'" = calcite index calculated using the proportional calcite presence. Calcite indexes from the Regional Calcite Monitoring Program have not been provided.

APPENDIX D
WATER QUALITY AND SEDIMENT CHEMISTRY

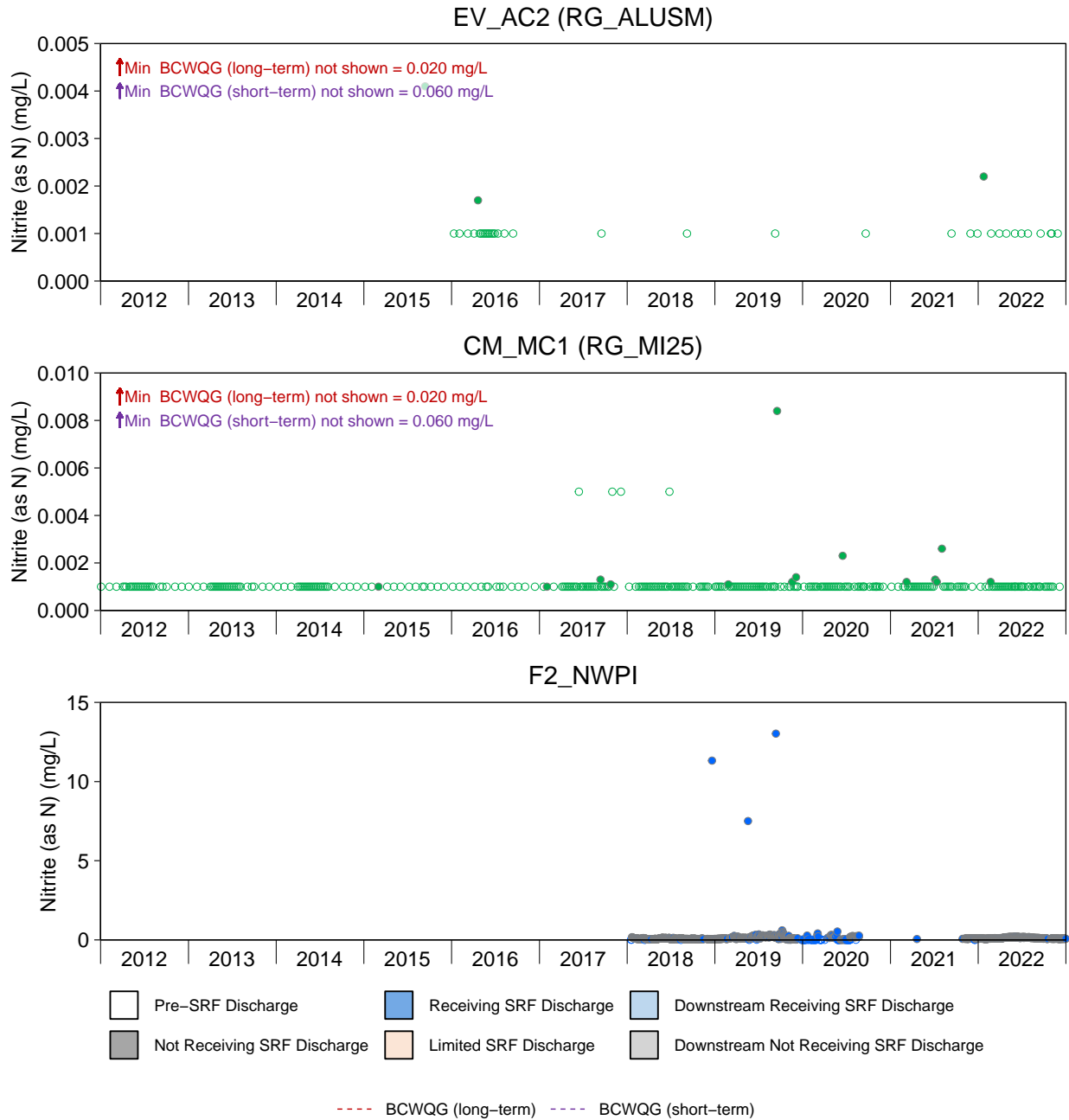


Figure D.1: Time Series Plots for Nitrite from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Guidelines are dependent on water chloride concentrations. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018). When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

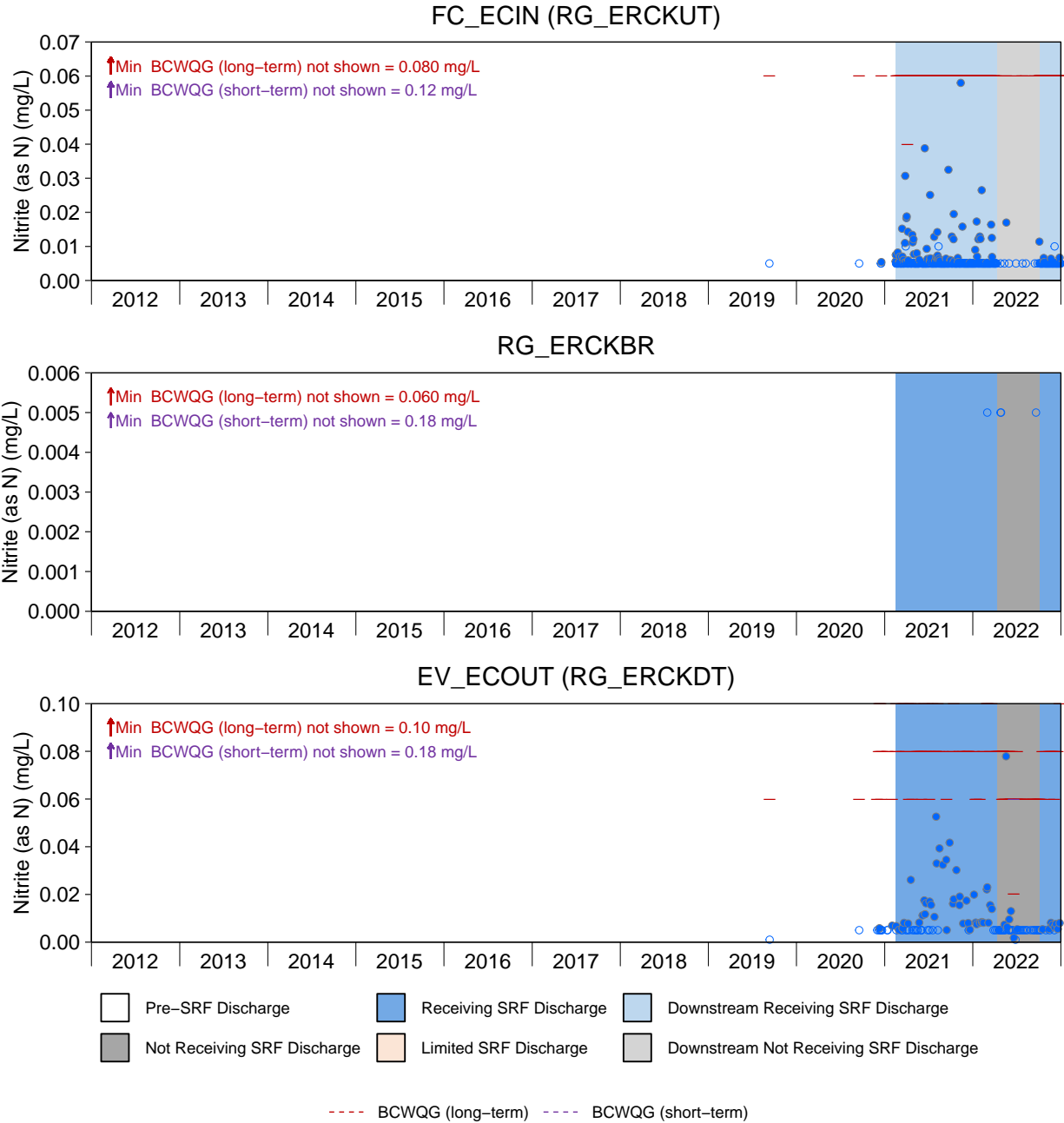


Figure D.1: Time Series Plots for Nitrite from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Guidelines are dependent on water chloride concentrations. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018). When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

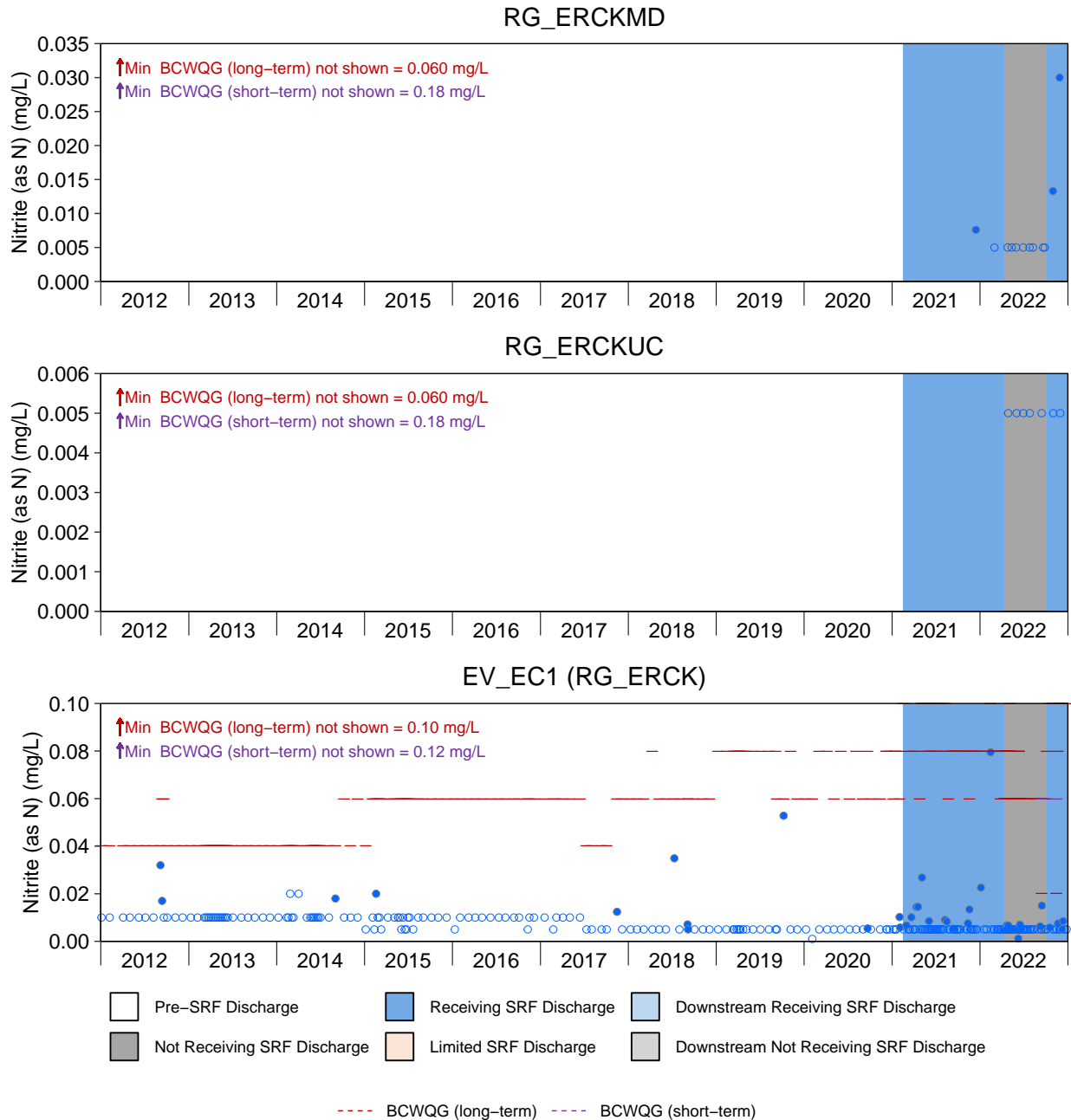


Figure D.1: Time Series Plots for Nitrite from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Guidelines are dependent on water chloride concentrations. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018). When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

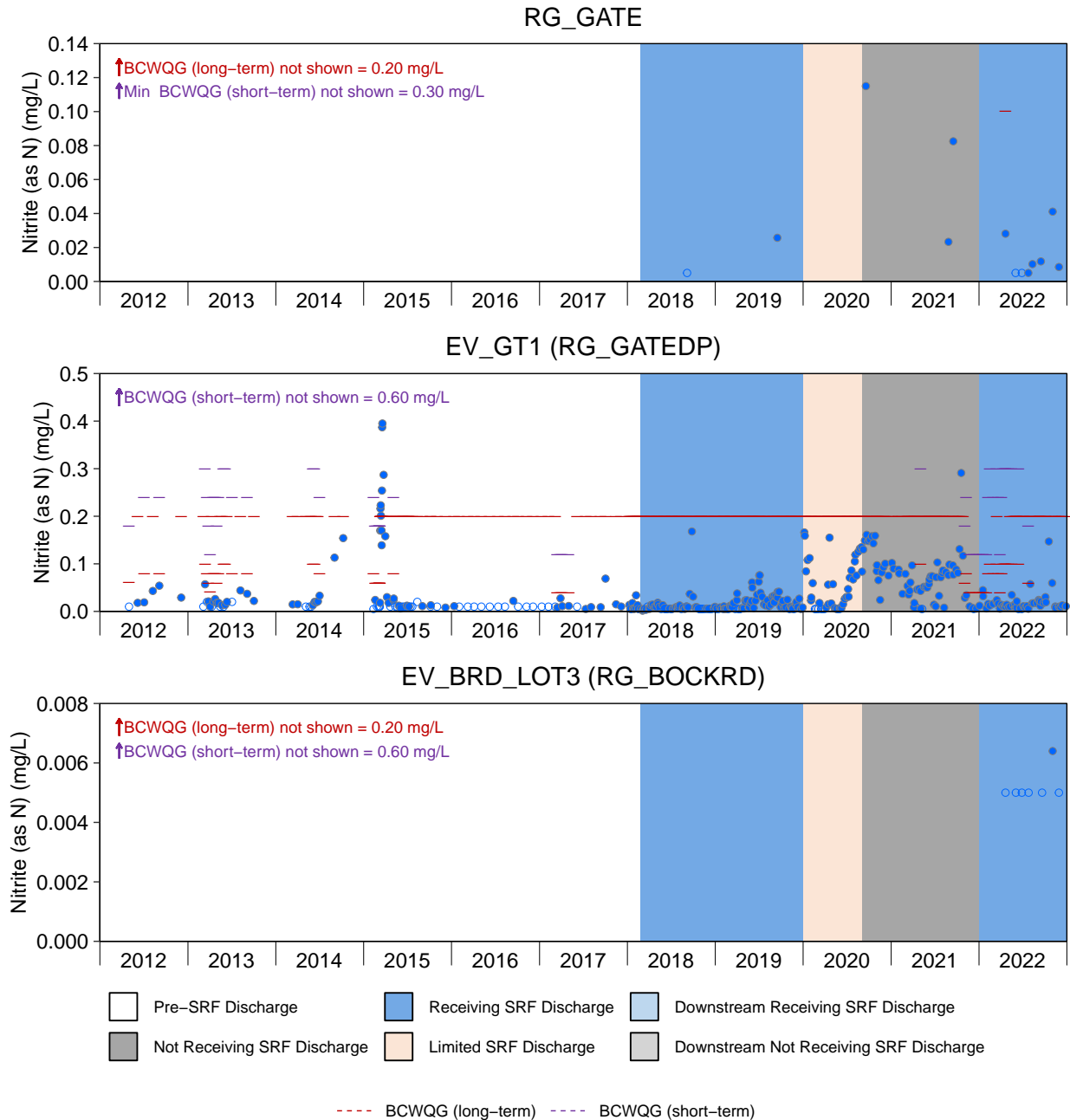


Figure D.1: Time Series Plots for Nitrite from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Guidelines are dependent on water chloride concentrations. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018). When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

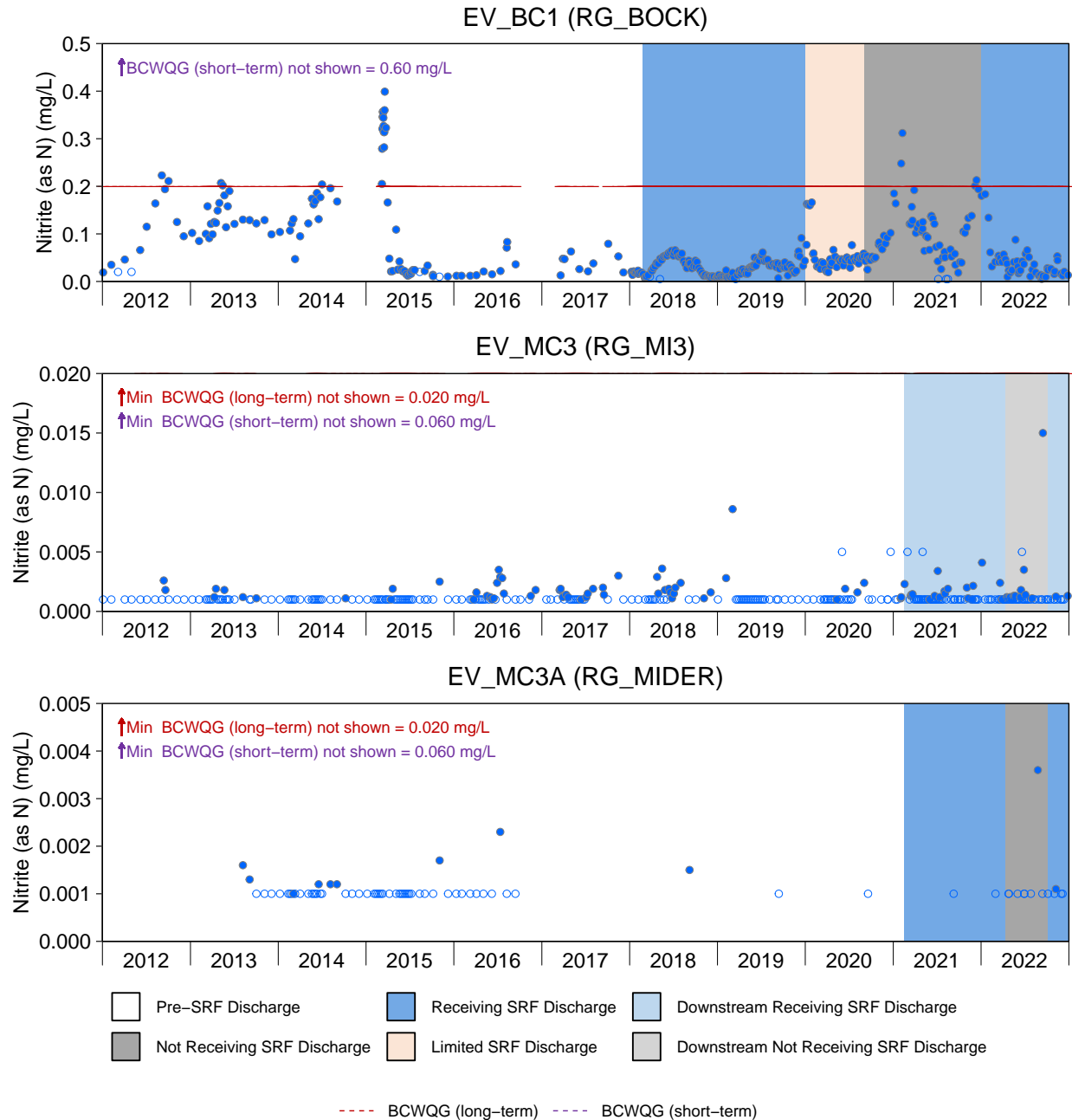


Figure D.1: Time Series Plots for Nitrite from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Guidelines are dependent on water chloride concentrations. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018). When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

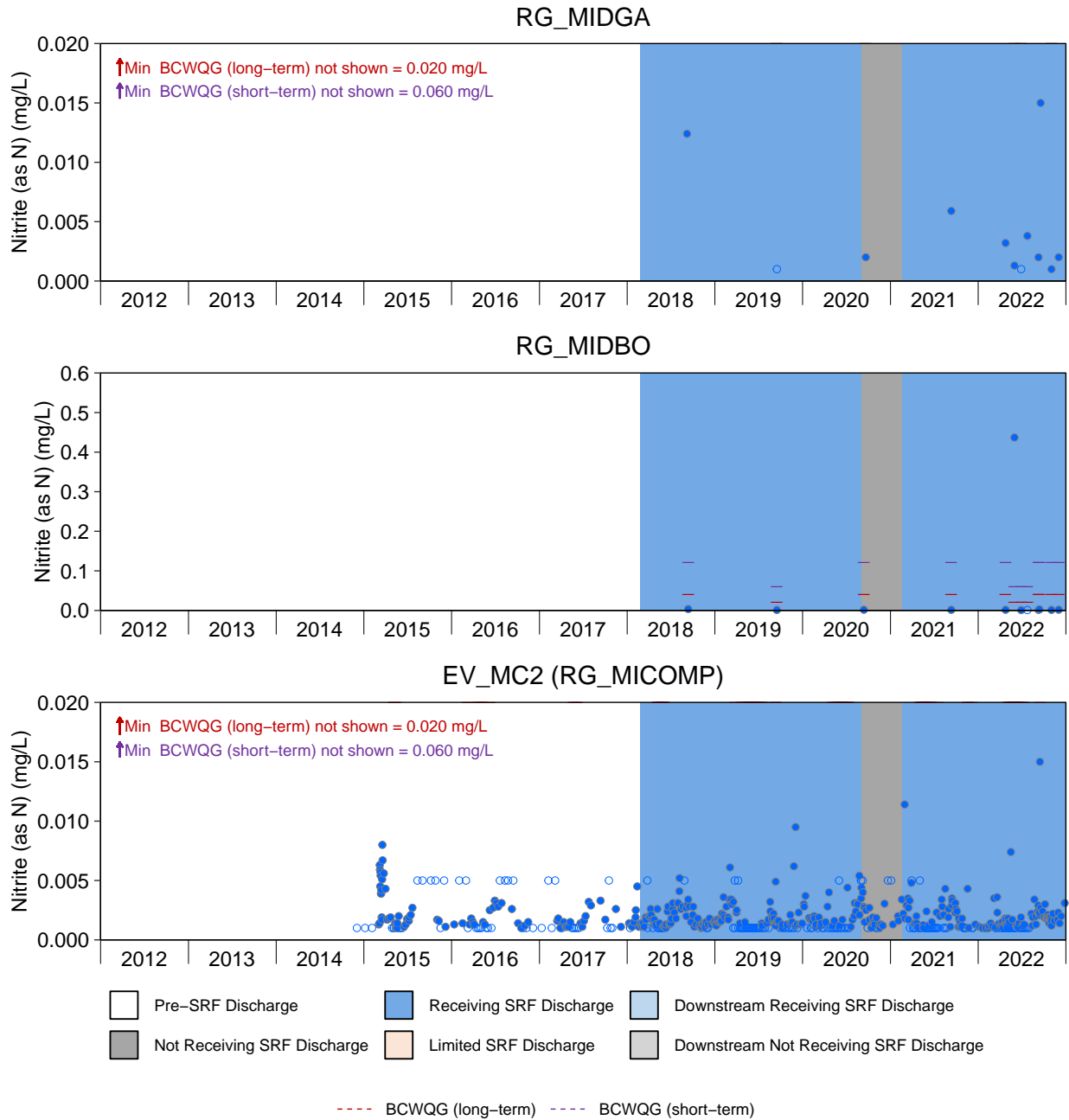


Figure D.1: Time Series Plots for Nitrite from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Guidelines are dependent on water chloride concentrations. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018). When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

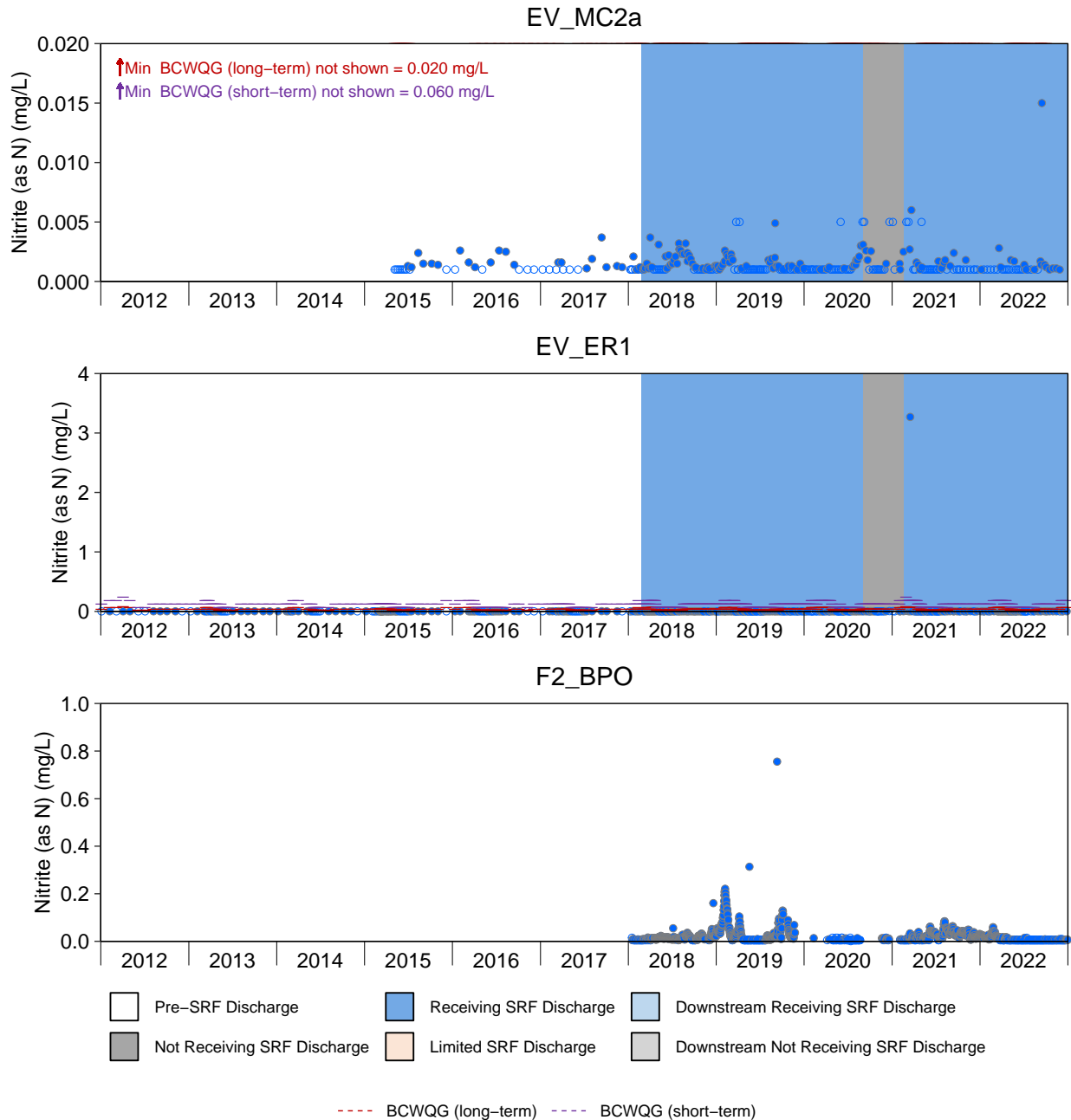


Figure D.1: Time Series Plots for Nitrite from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Guidelines are dependent on water chloride concentrations. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018). When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

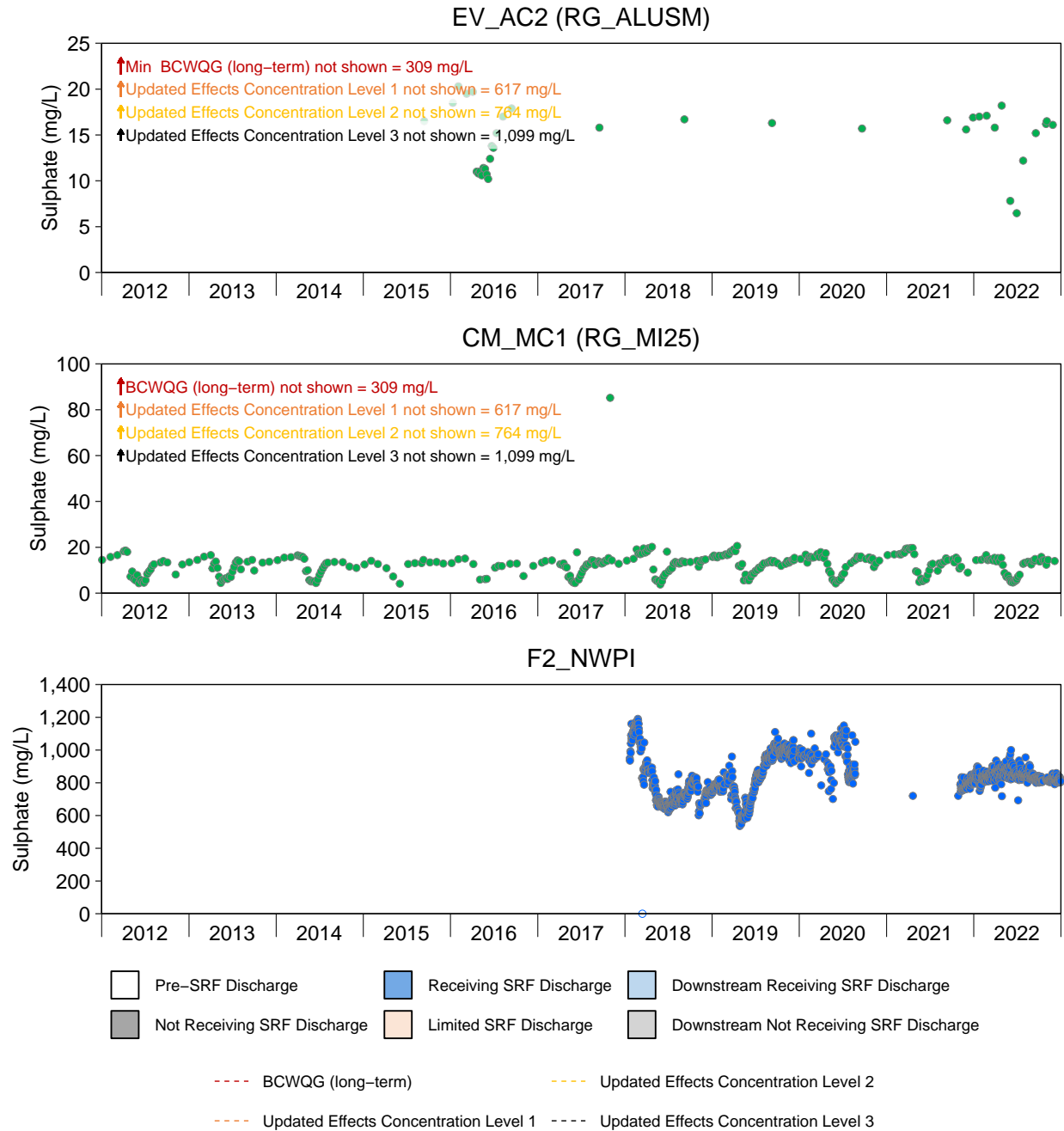


Figure D.2: Time Series Plots for Sulphate from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Guidelines are dependent on water hardness. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018). When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

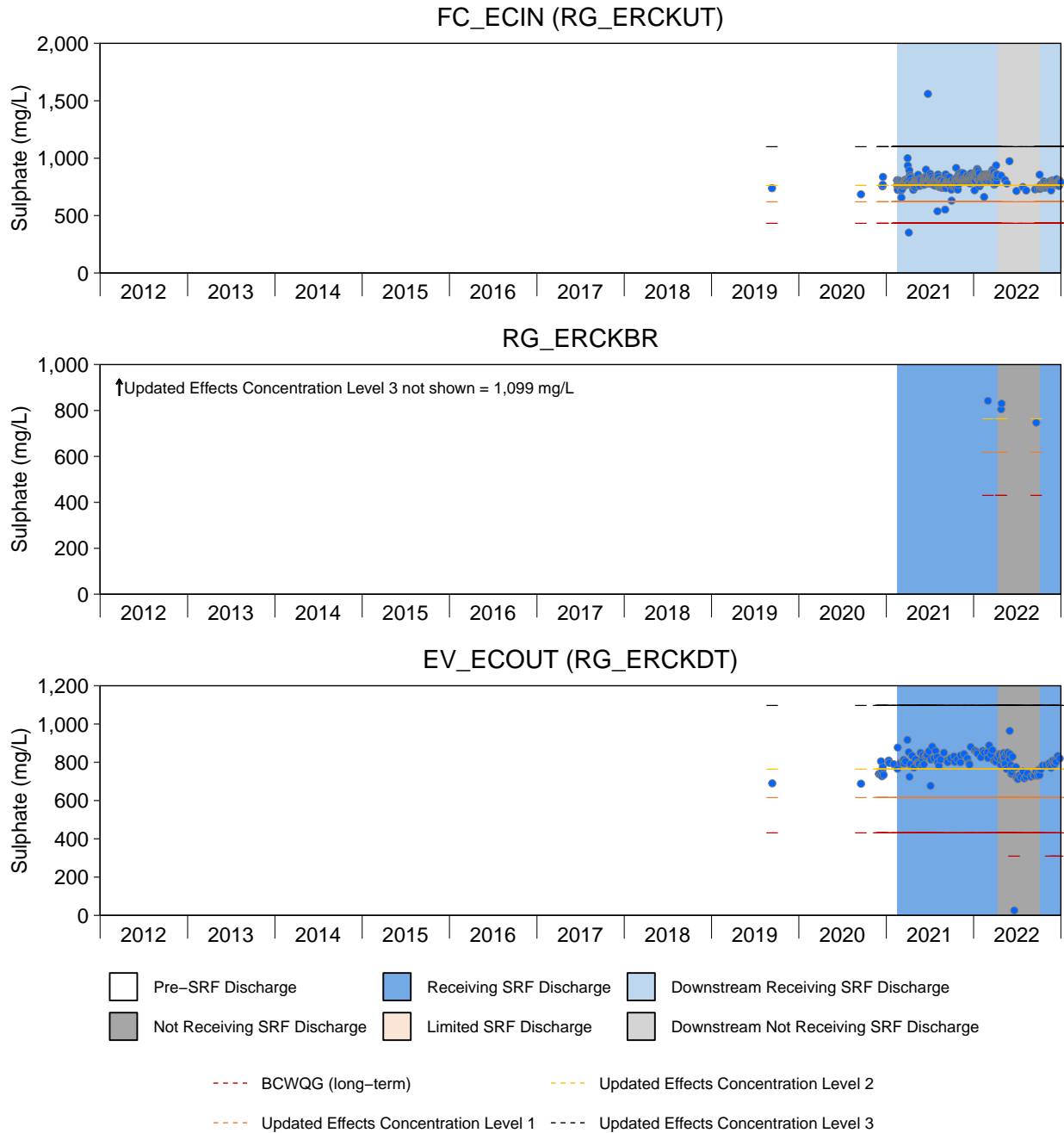


Figure D.2: Time Series Plots for Sulphate from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Guidelines are dependent on water hardness. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018). When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

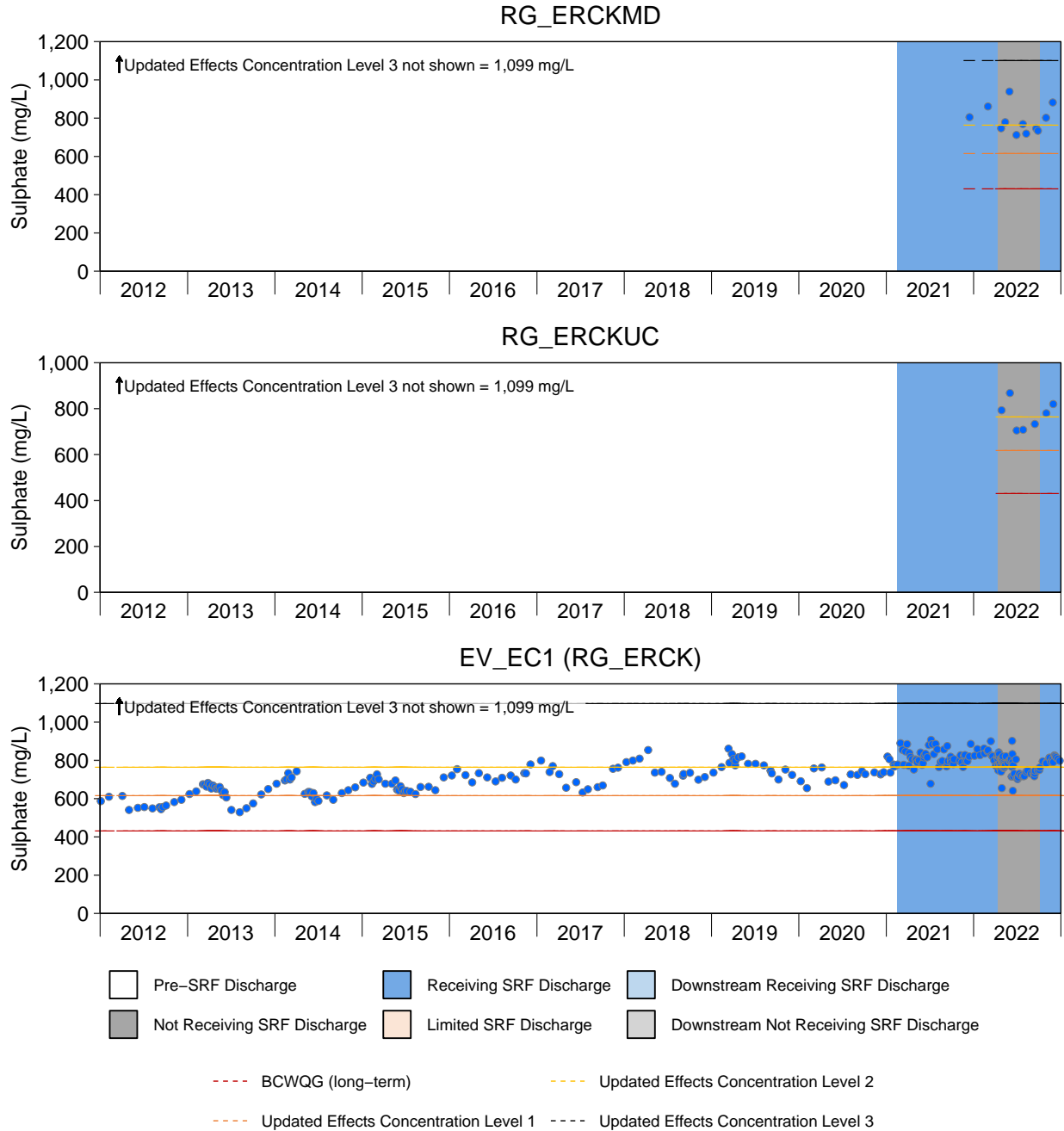


Figure D.2: Time Series Plots for Sulphate from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Guidelines are dependent on water hardness. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018). When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

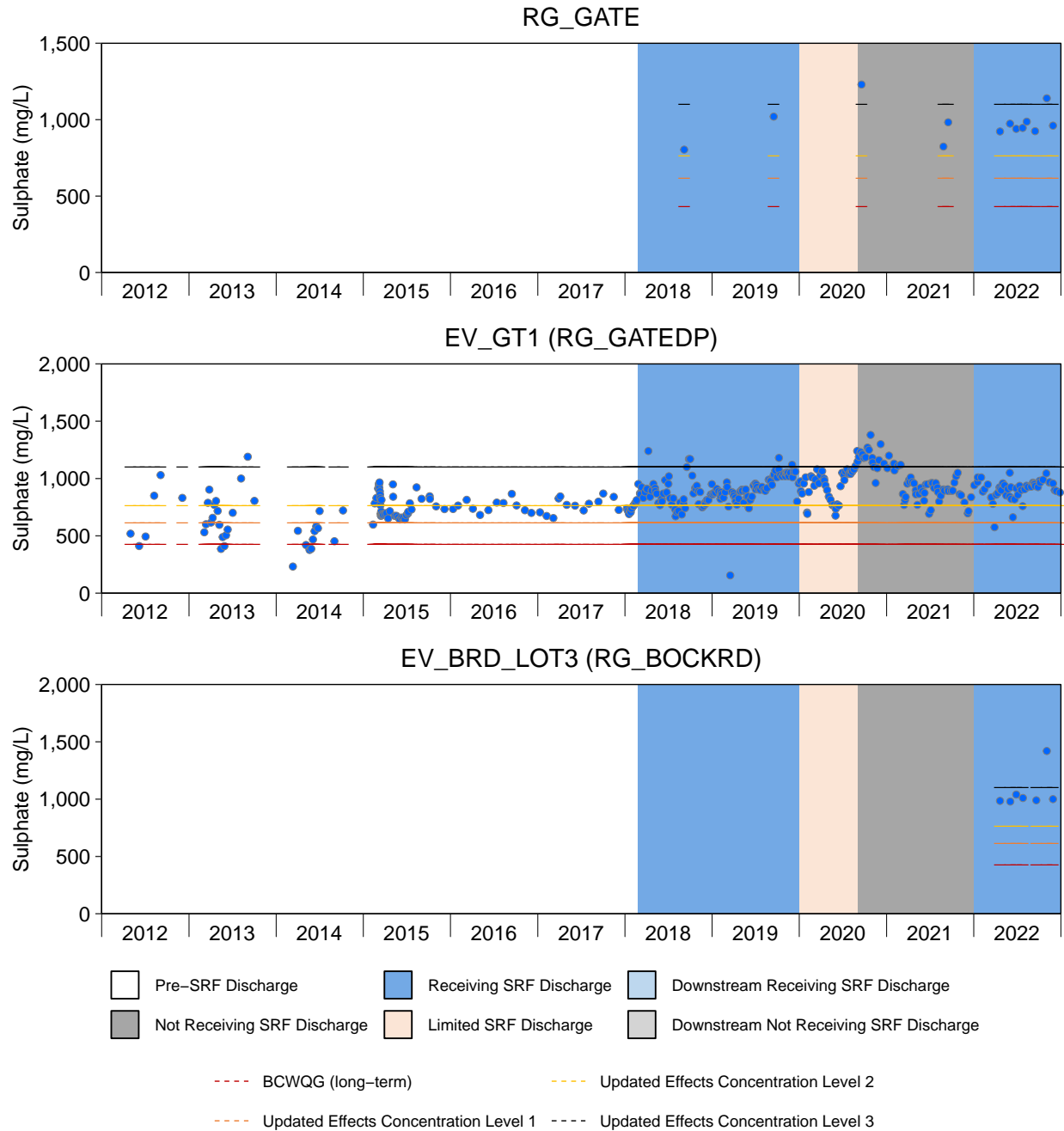


Figure D.2: Time Series Plots for Sulphate from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Guidelines are dependent on water hardness. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018). When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

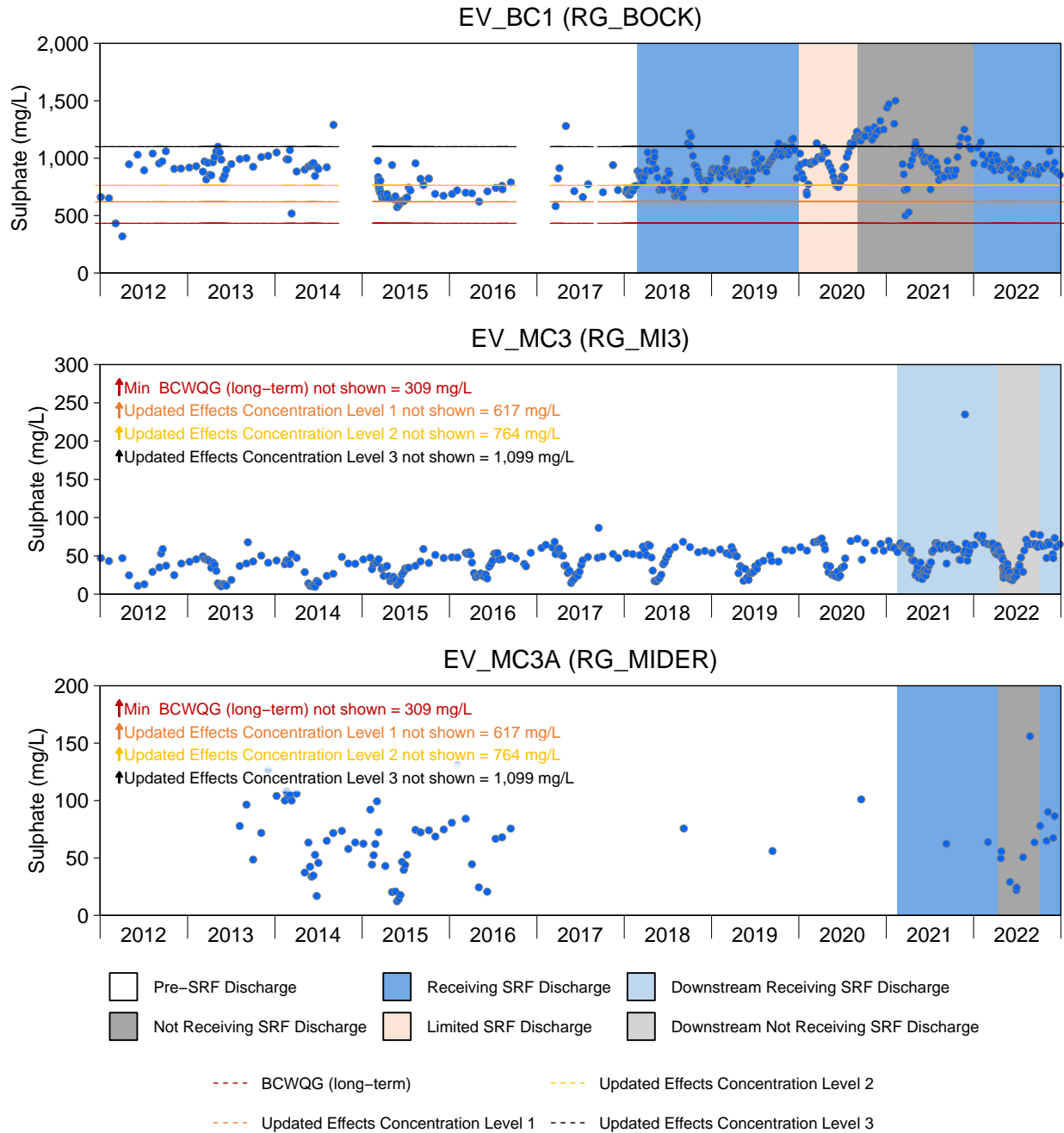


Figure D.2: Time Series Plots for Sulphate from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Guidelines are dependent on water hardness. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018). When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

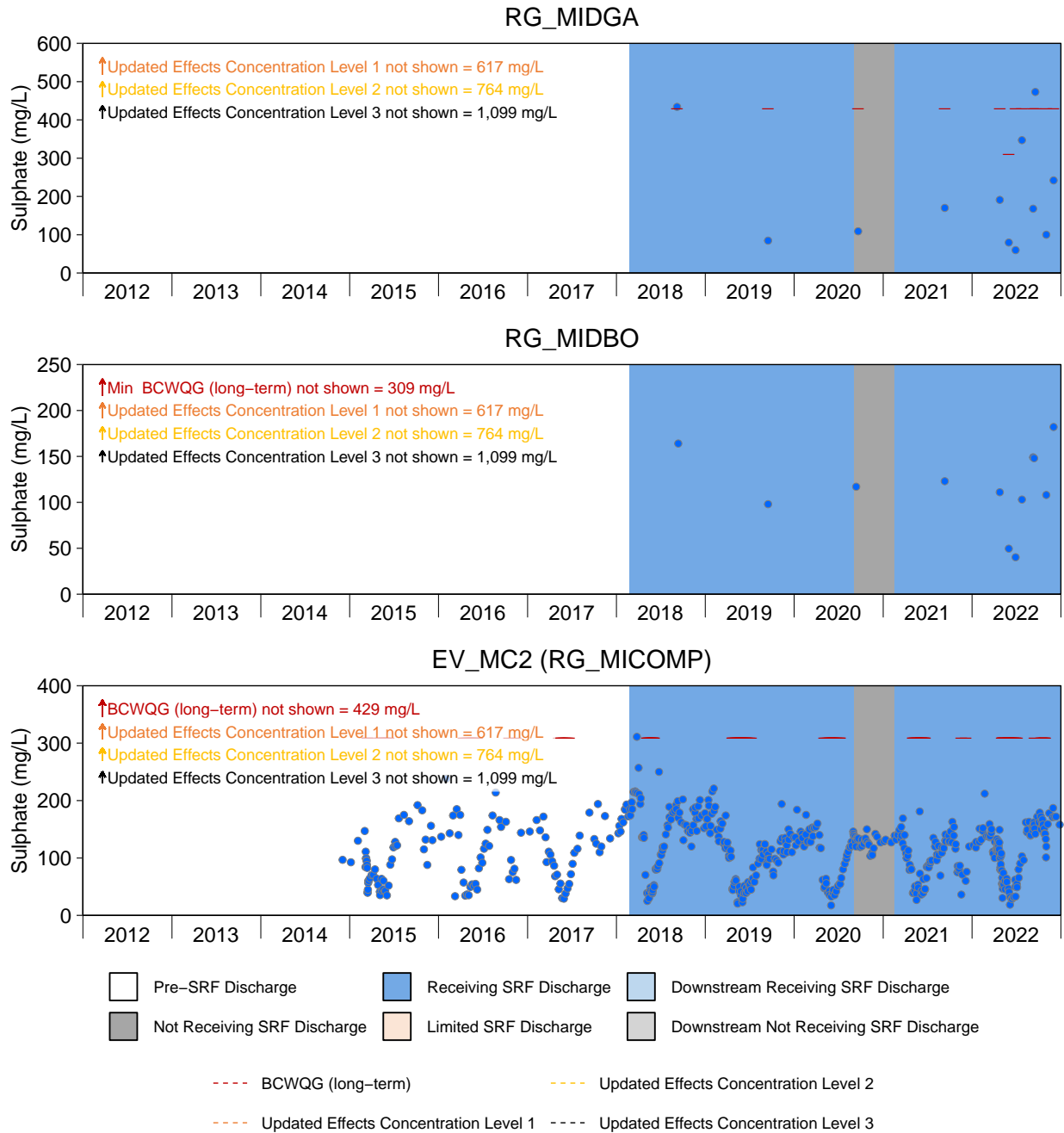


Figure D.2: Time Series Plots for Sulphate from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Guidelines are dependent on water hardness. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018). When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

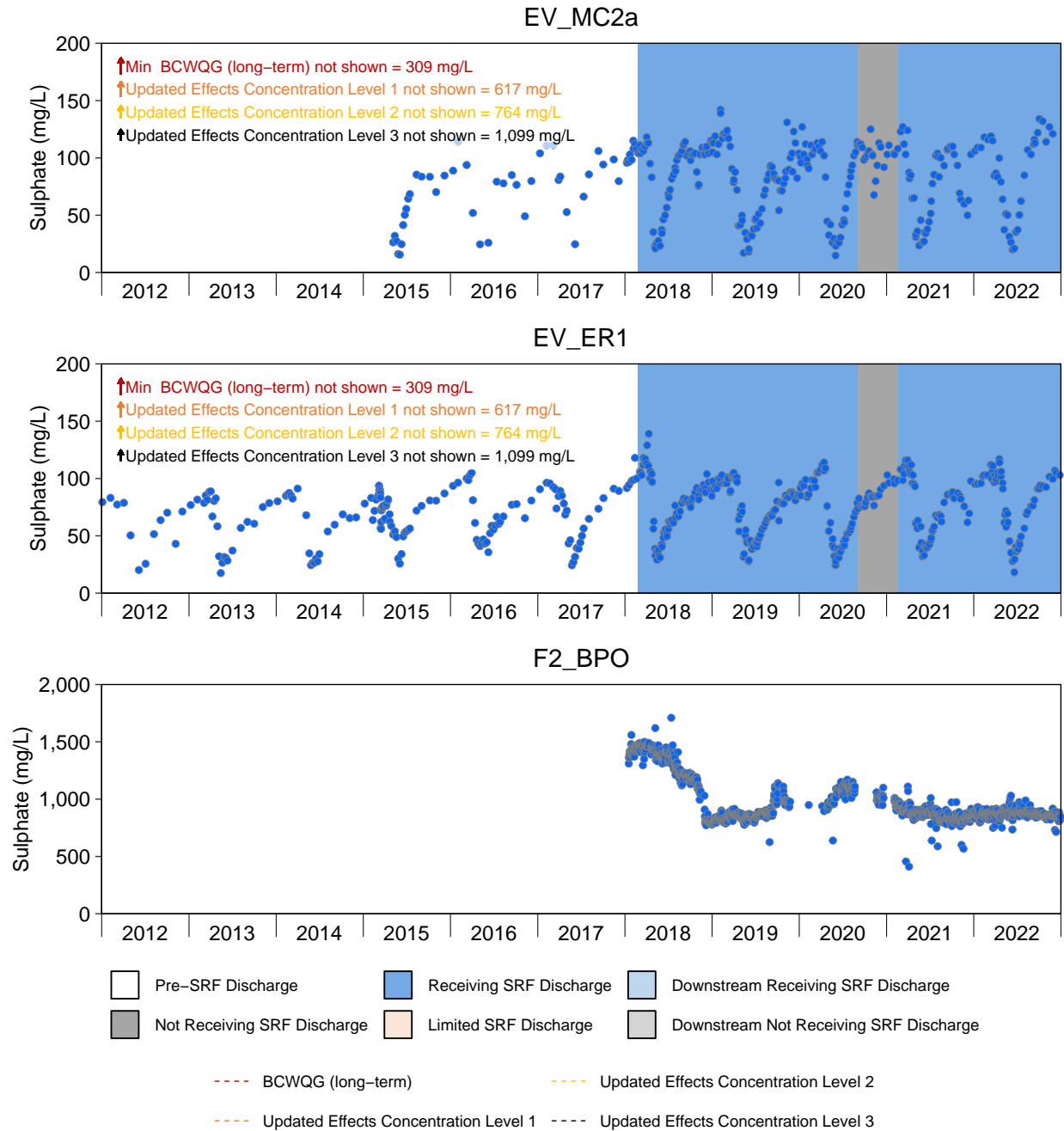


Figure D.2: Time Series Plots for Sulphate from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Guidelines are dependent on water hardness. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018). When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

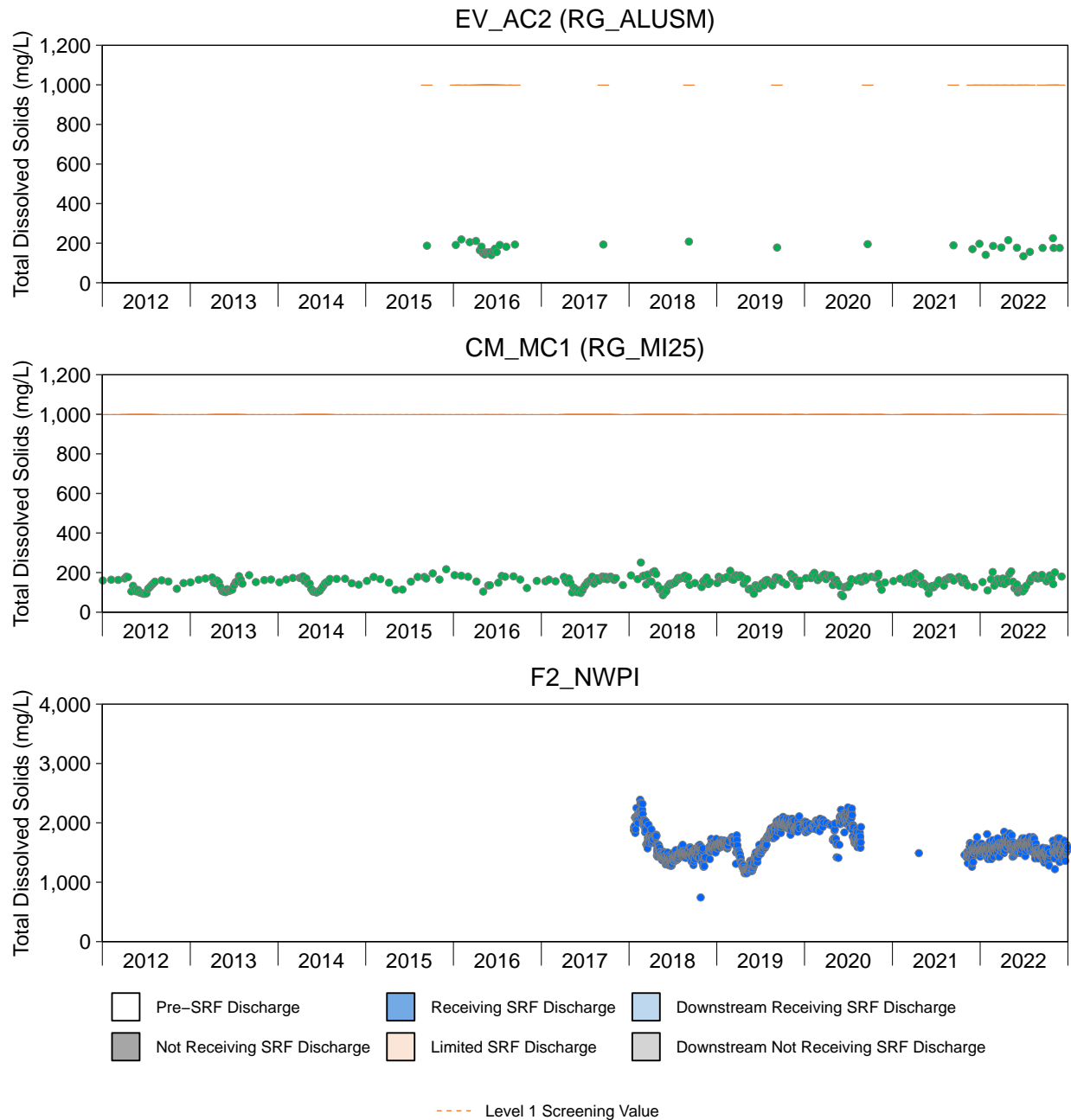


Figure D.3: Time Series Plots for Total Dissolved Solids from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018). When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

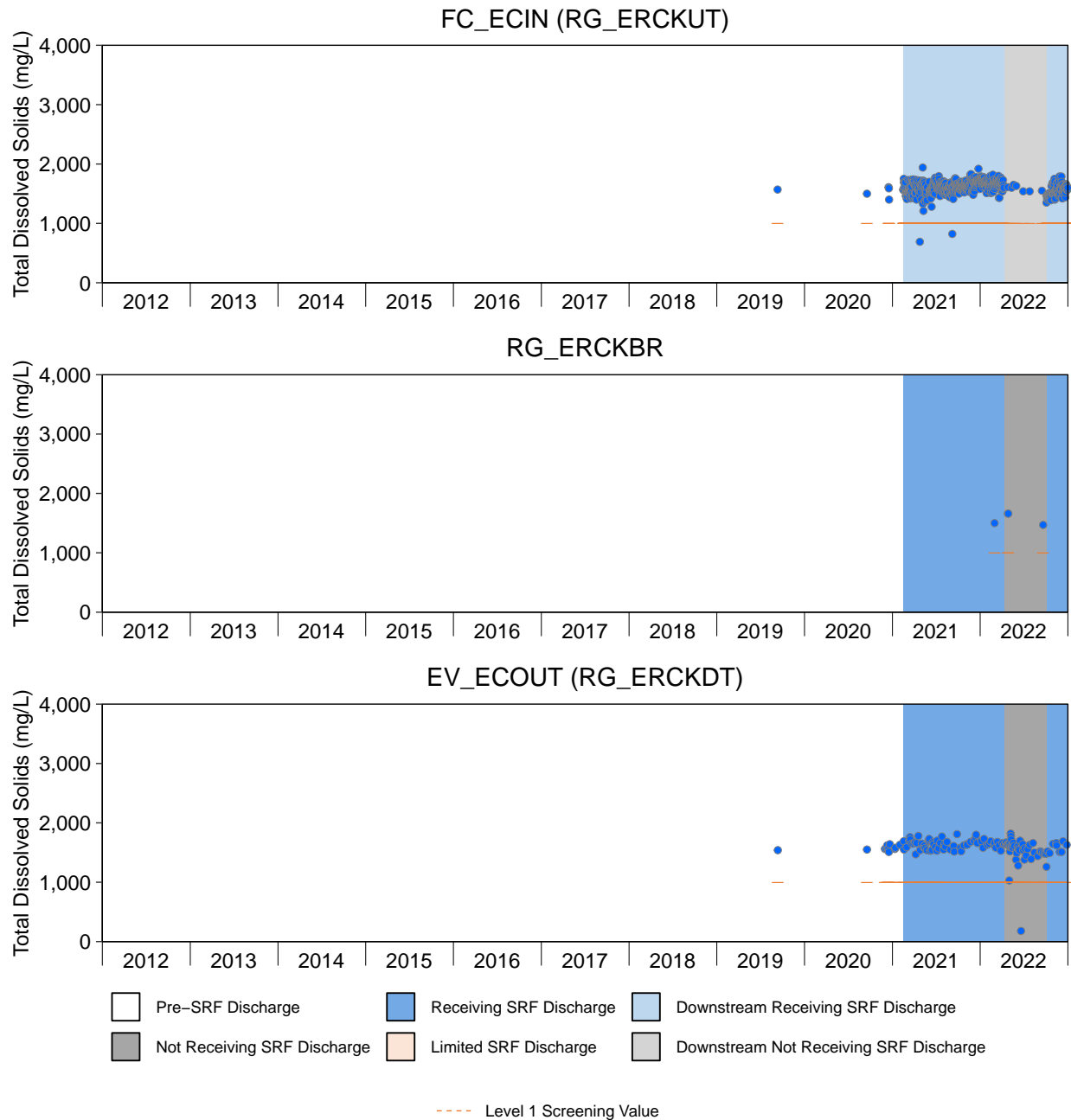


Figure D.3: Time Series Plots for Total Dissolved Solids from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018). When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

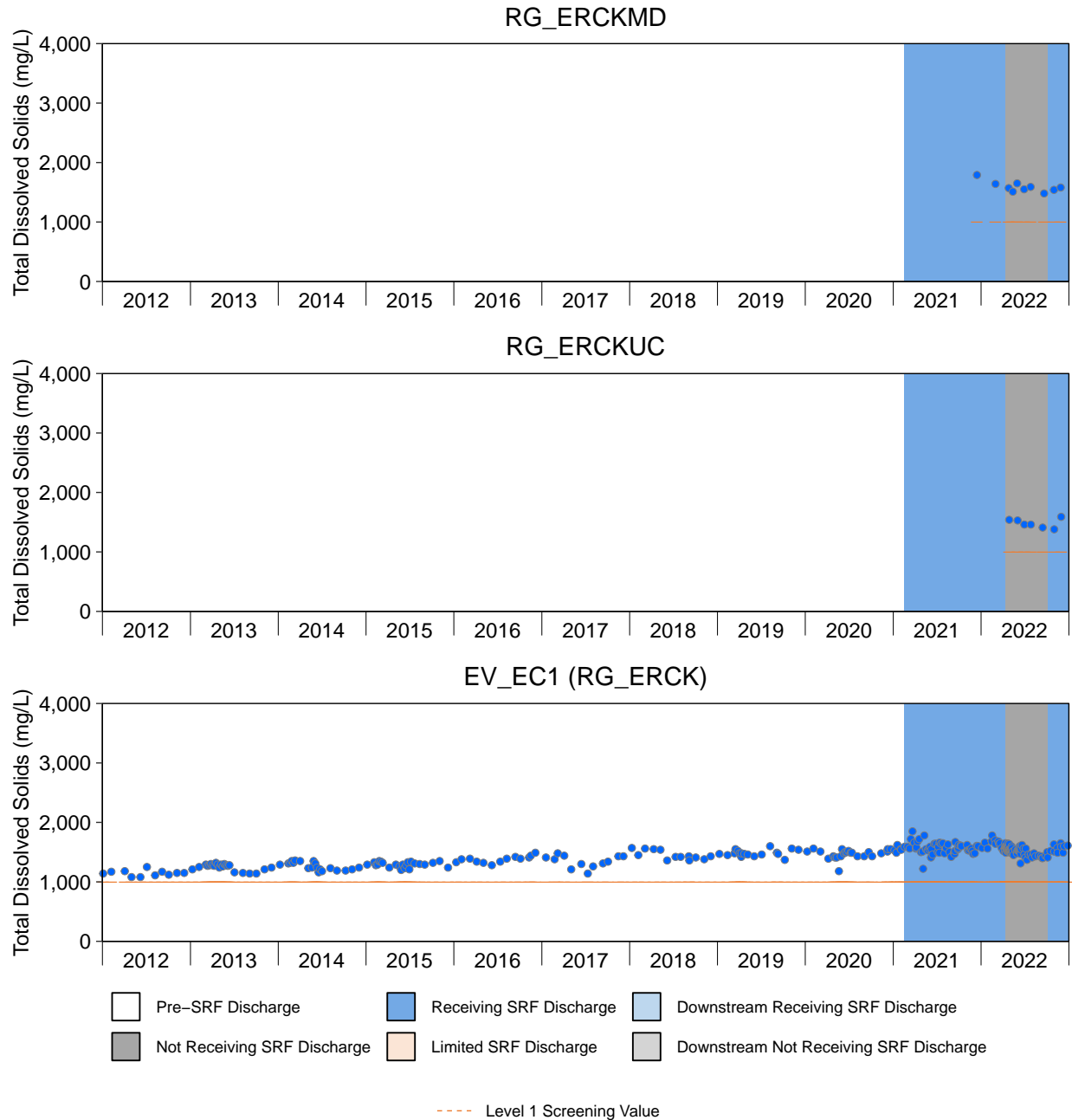


Figure D.3: Time Series Plots for Total Dissolved Solids from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018). When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

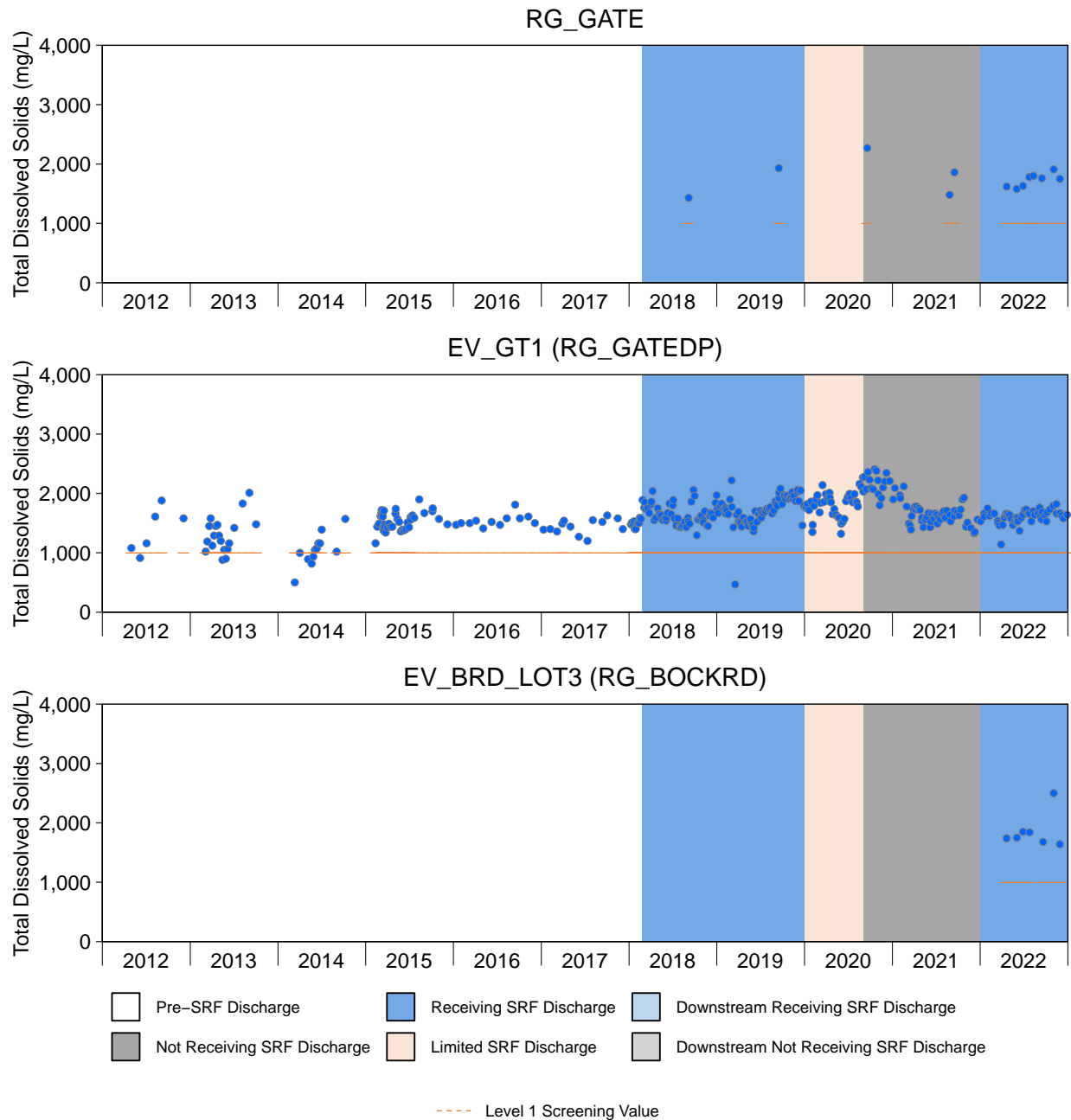


Figure D.3: Time Series Plots for Total Dissolved Solids from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018). When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

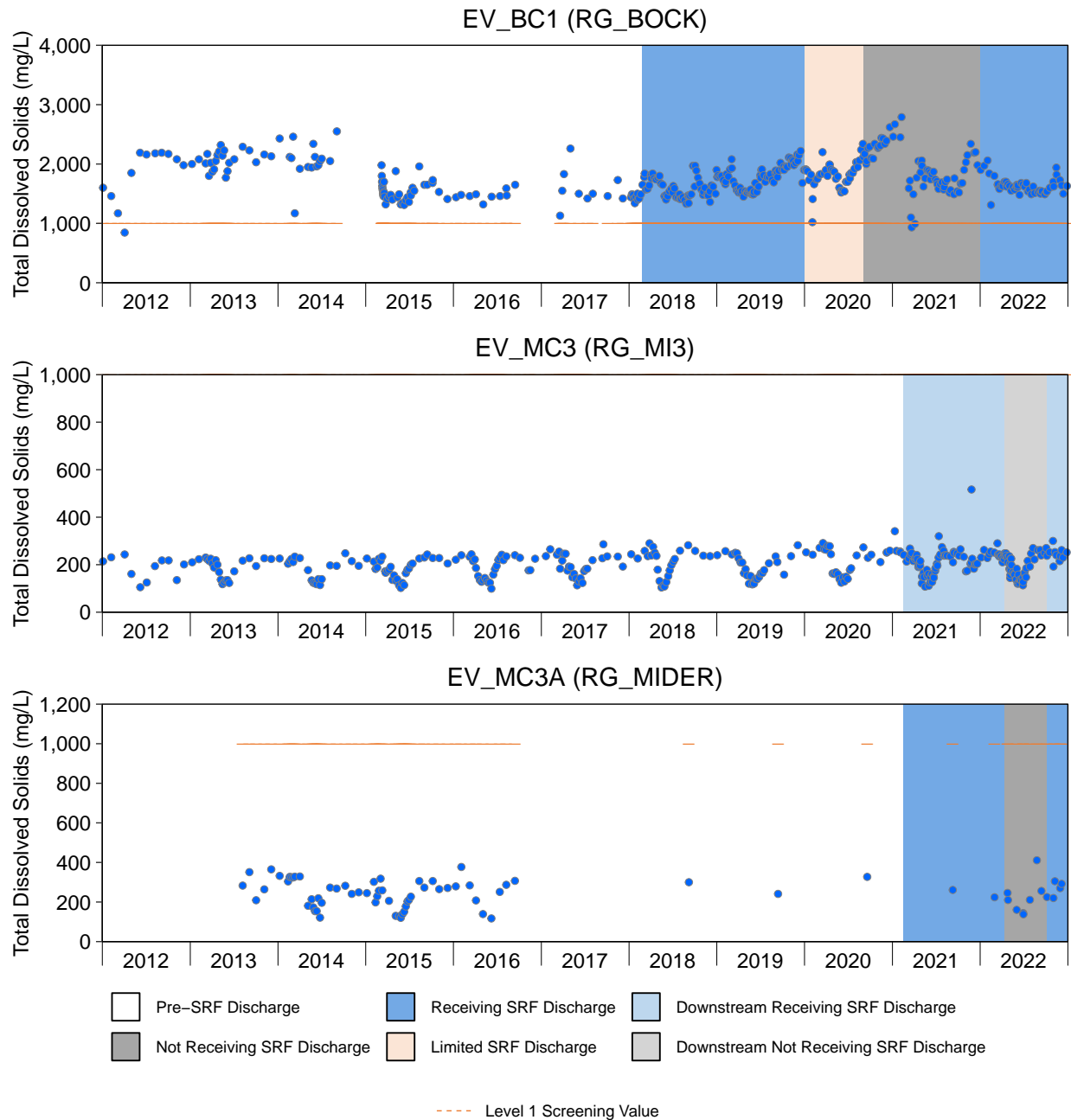


Figure D.3: Time Series Plots for Total Dissolved Solids from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018). When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

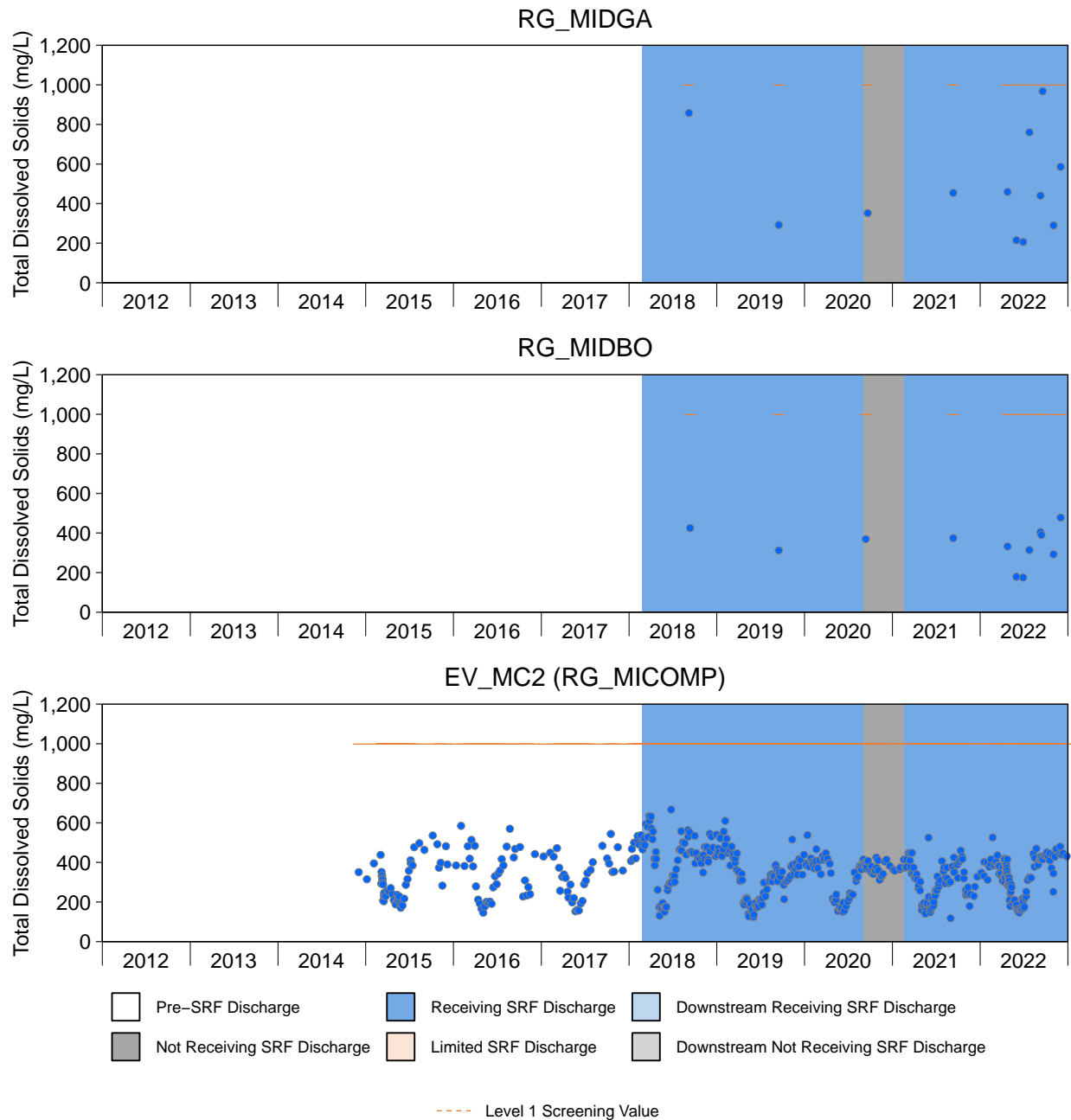


Figure D.3: Time Series Plots for Total Dissolved Solids from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018). When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

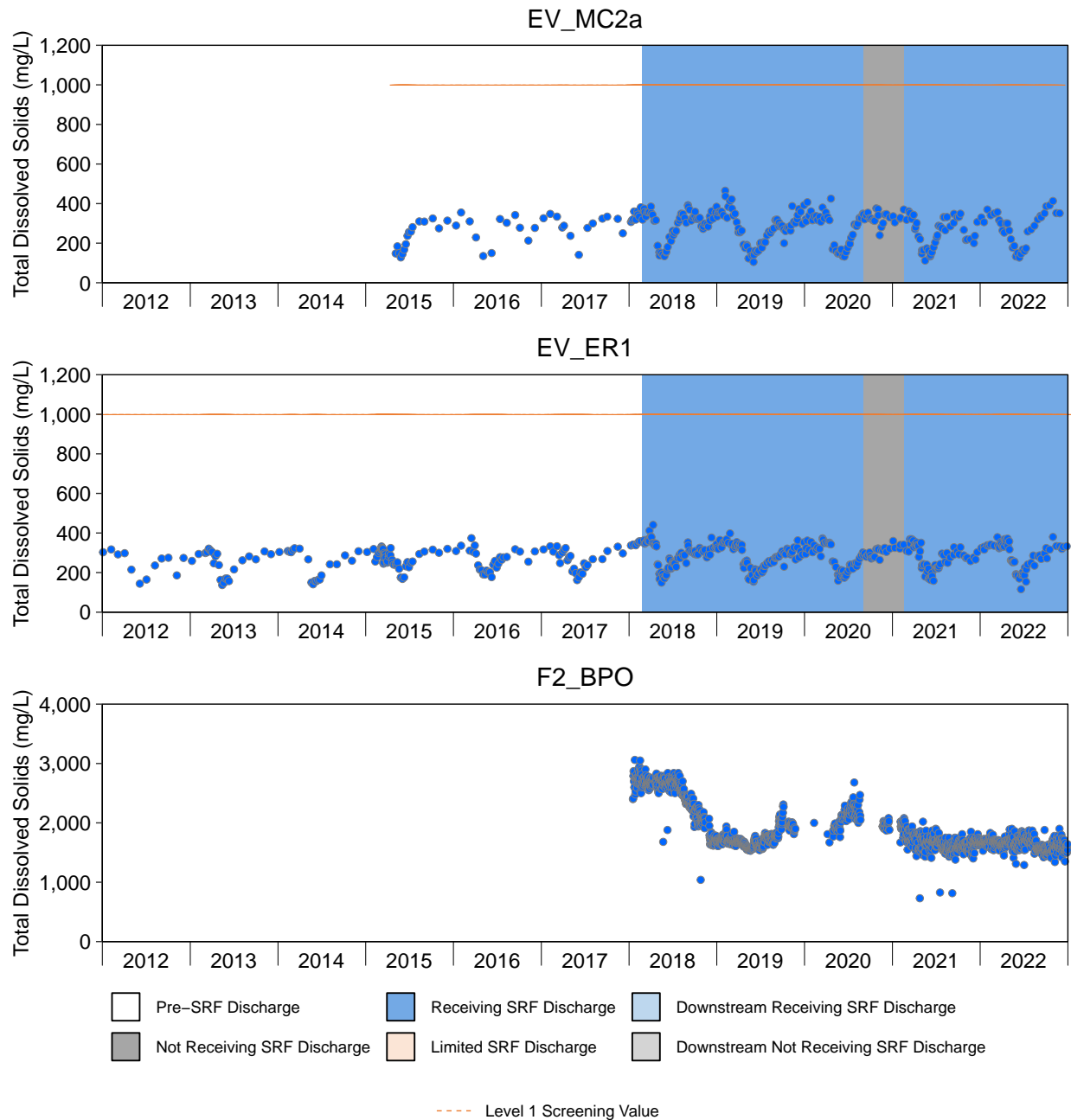


Figure D.3: Time Series Plots for Total Dissolved Solids from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018). When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

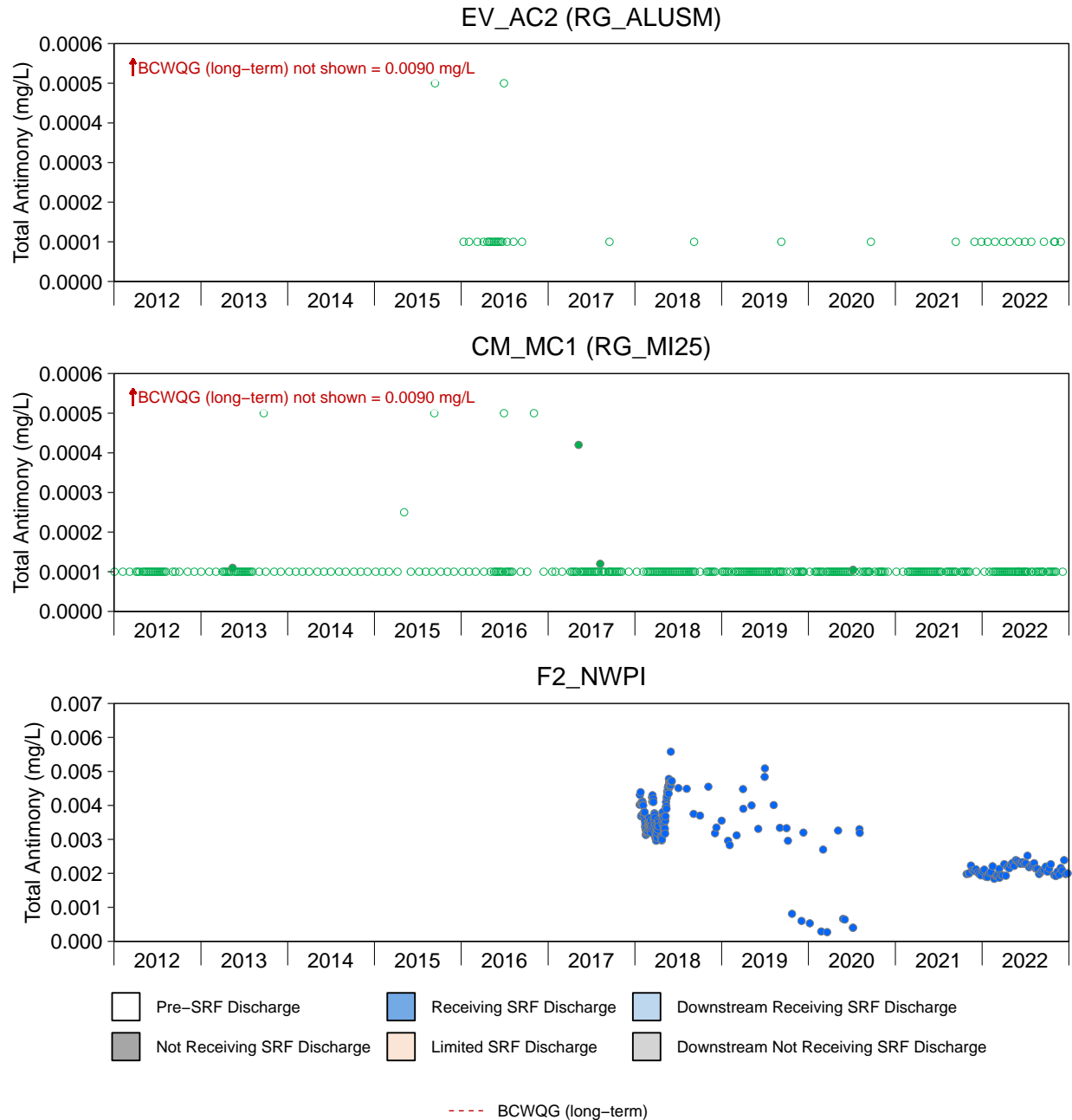


Figure D.4: Time Series Plots for Total Antimony from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018). When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

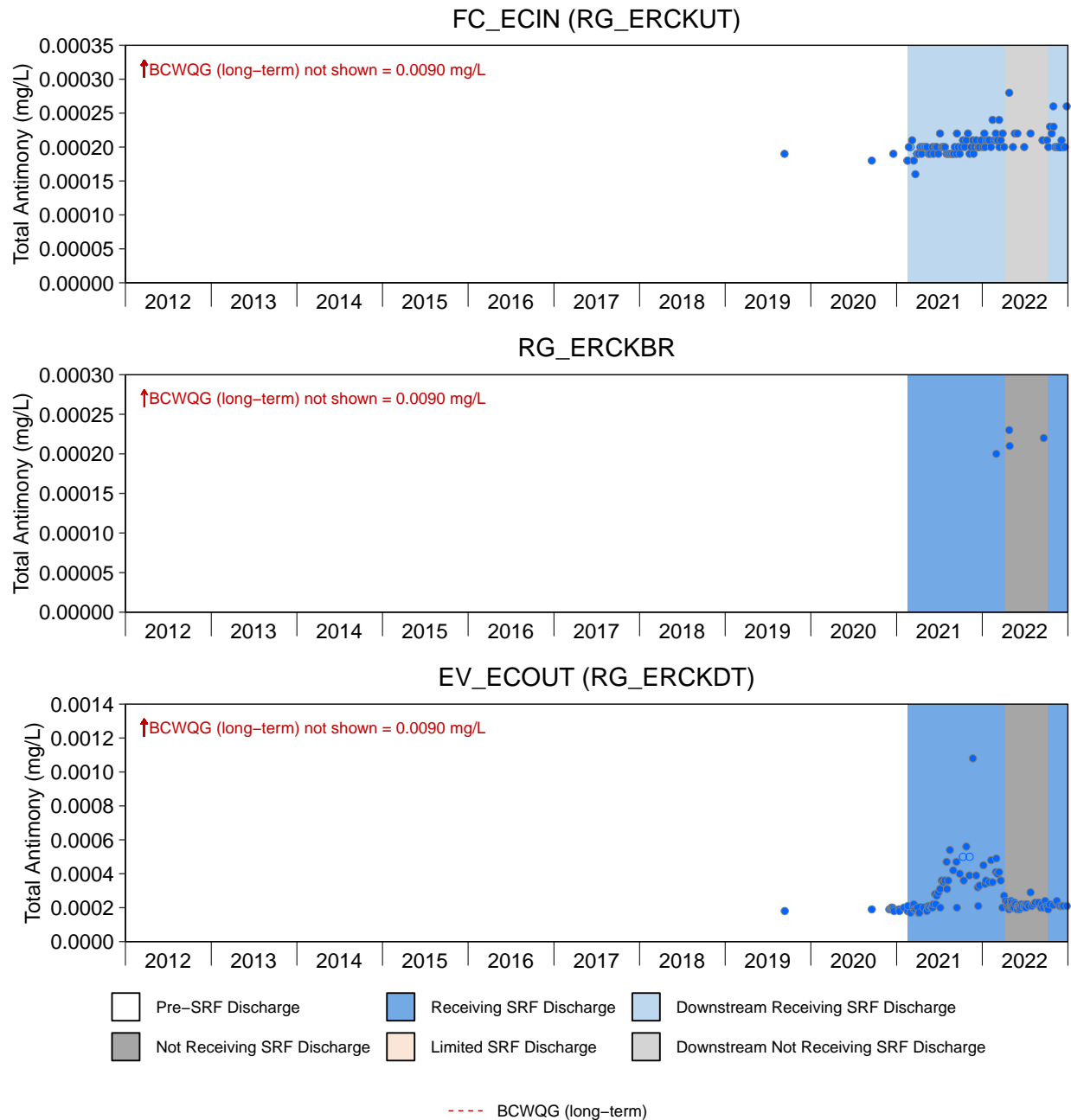


Figure D.4: Time Series Plots for Total Antimony from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018). When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

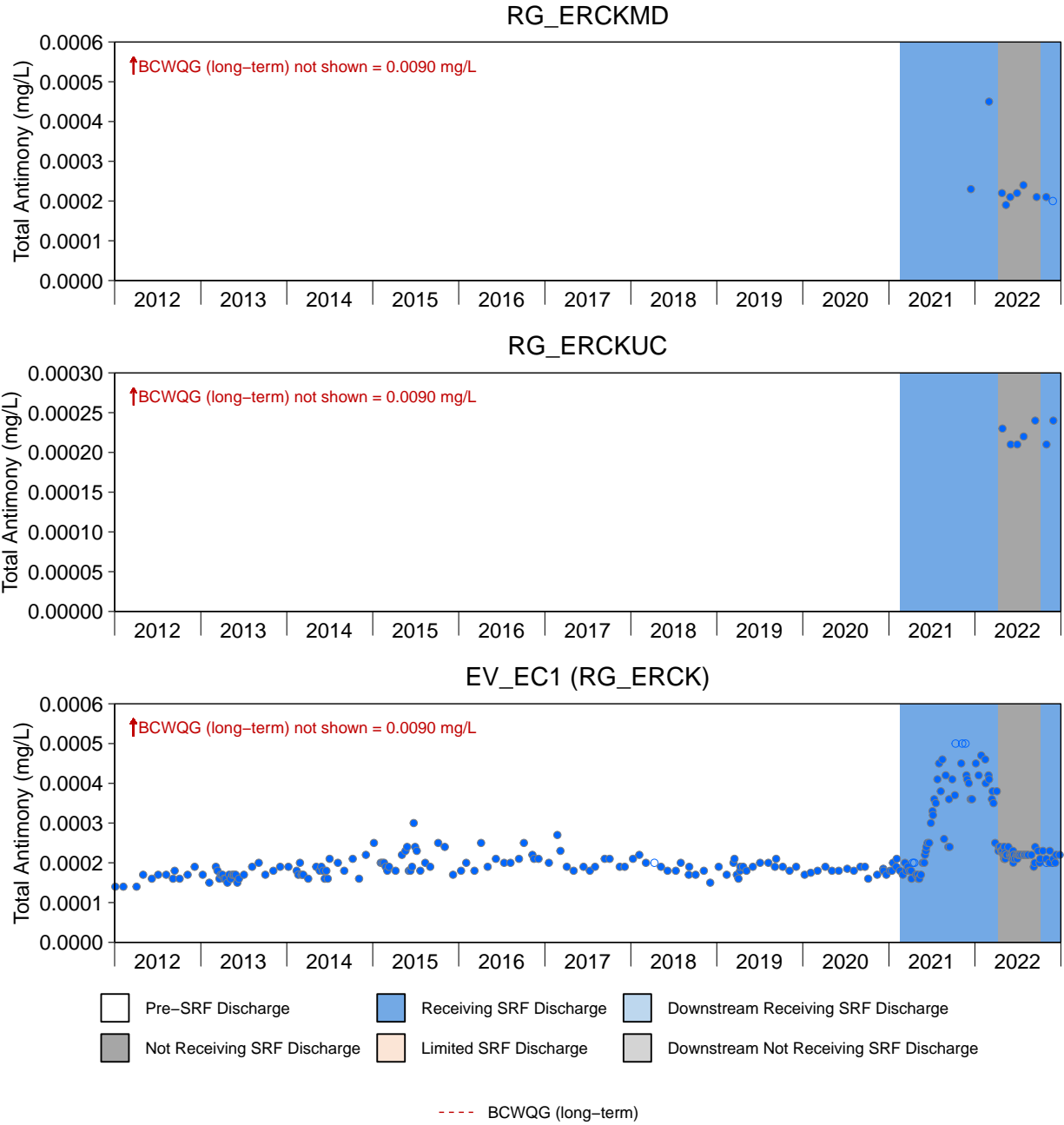


Figure D.4: Time Series Plots for Total Antimony from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018). When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

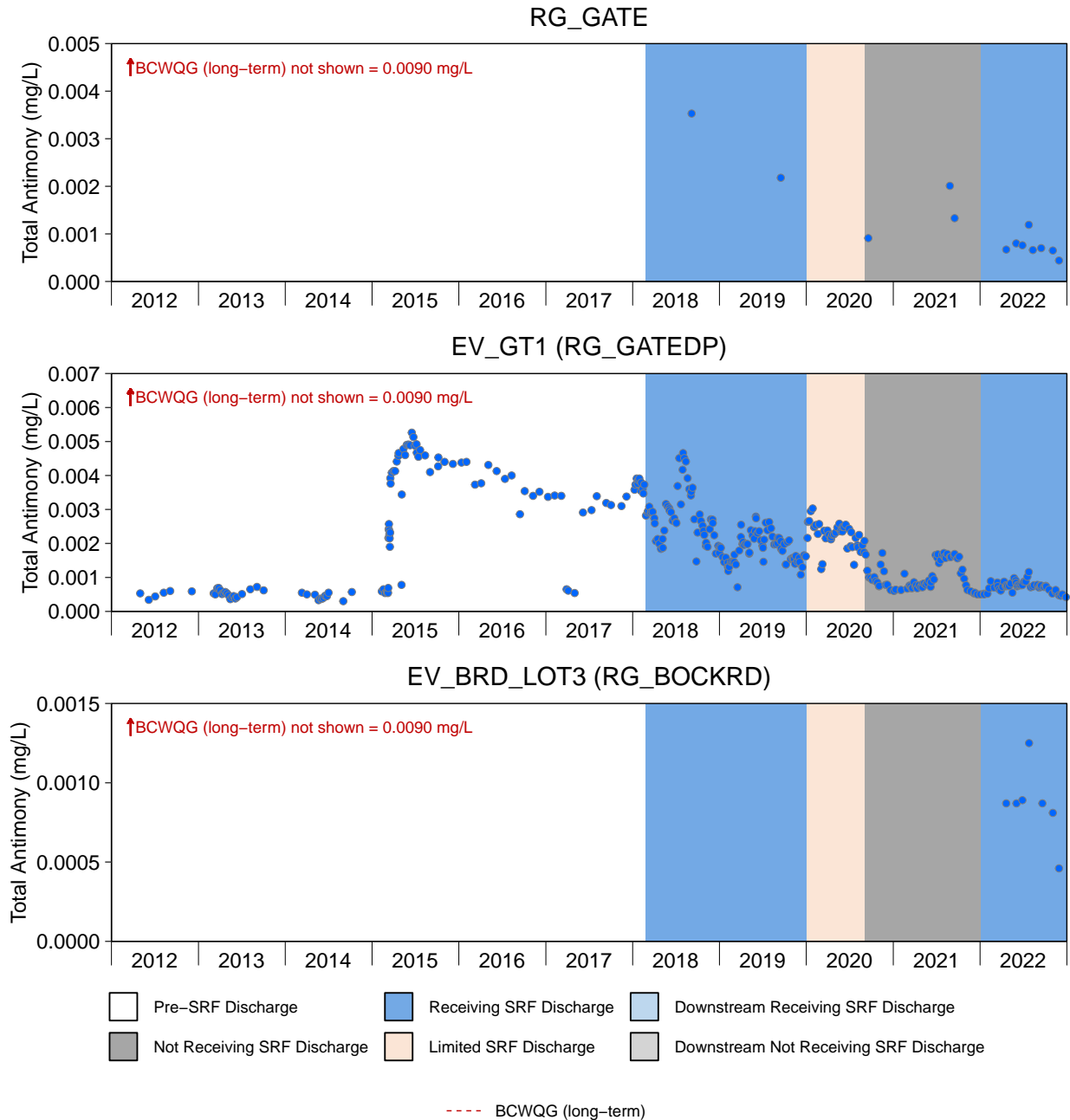


Figure D.4: Time Series Plots for Total Antimony from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018). When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

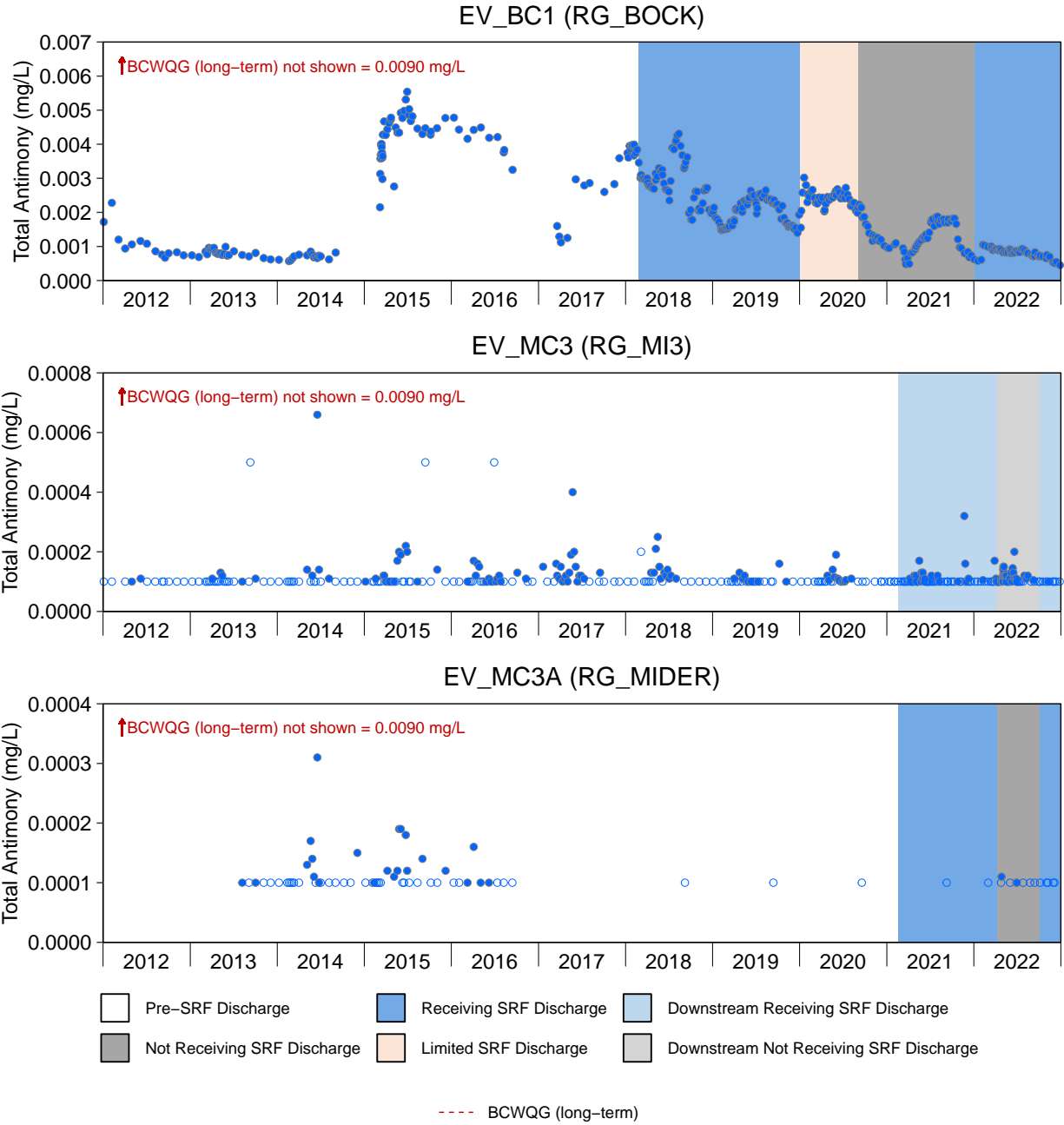


Figure D.4: Time Series Plots for Total Antimony from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018). When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

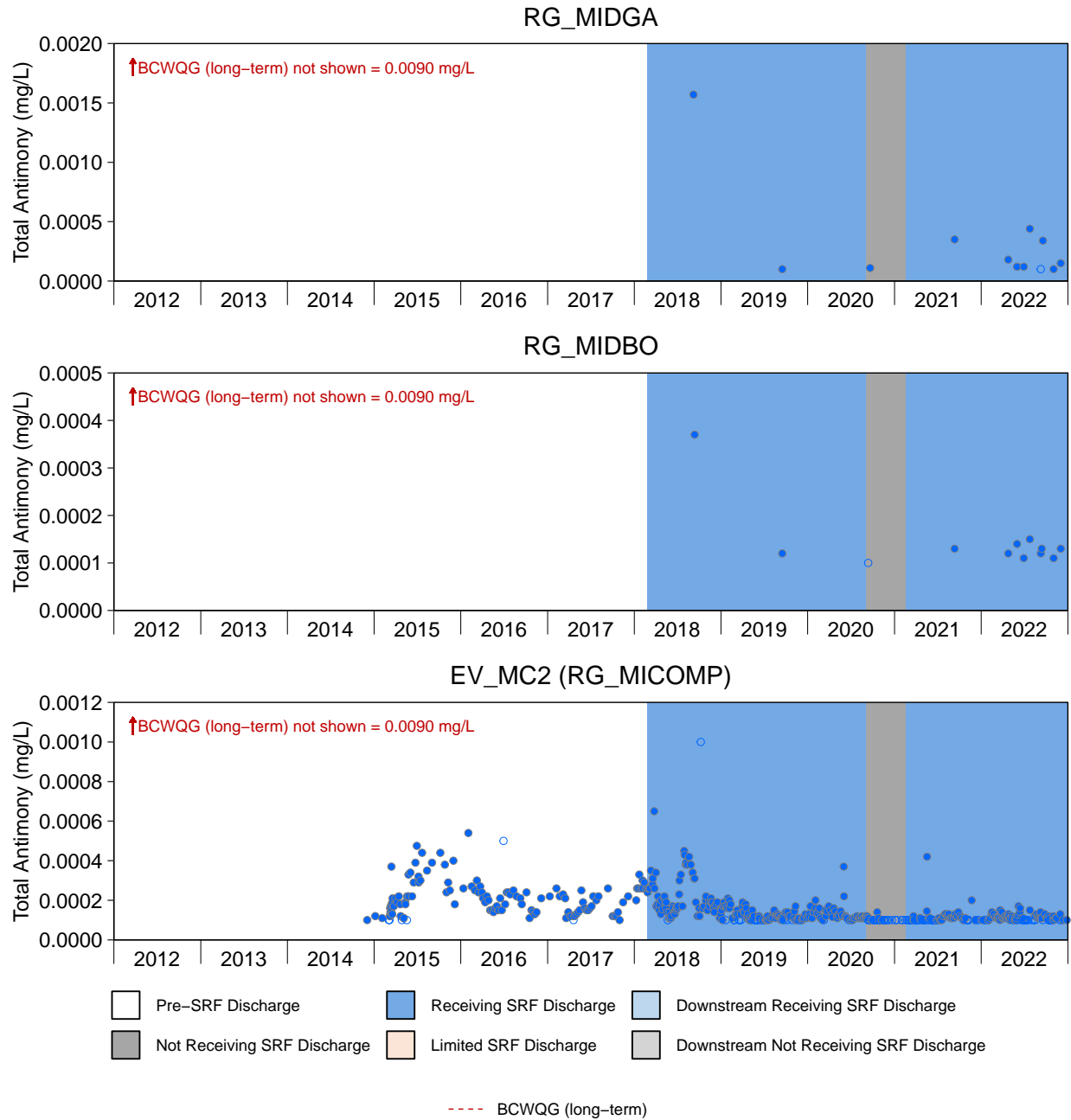


Figure D.4: Time Series Plots for Total Antimony from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018). When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

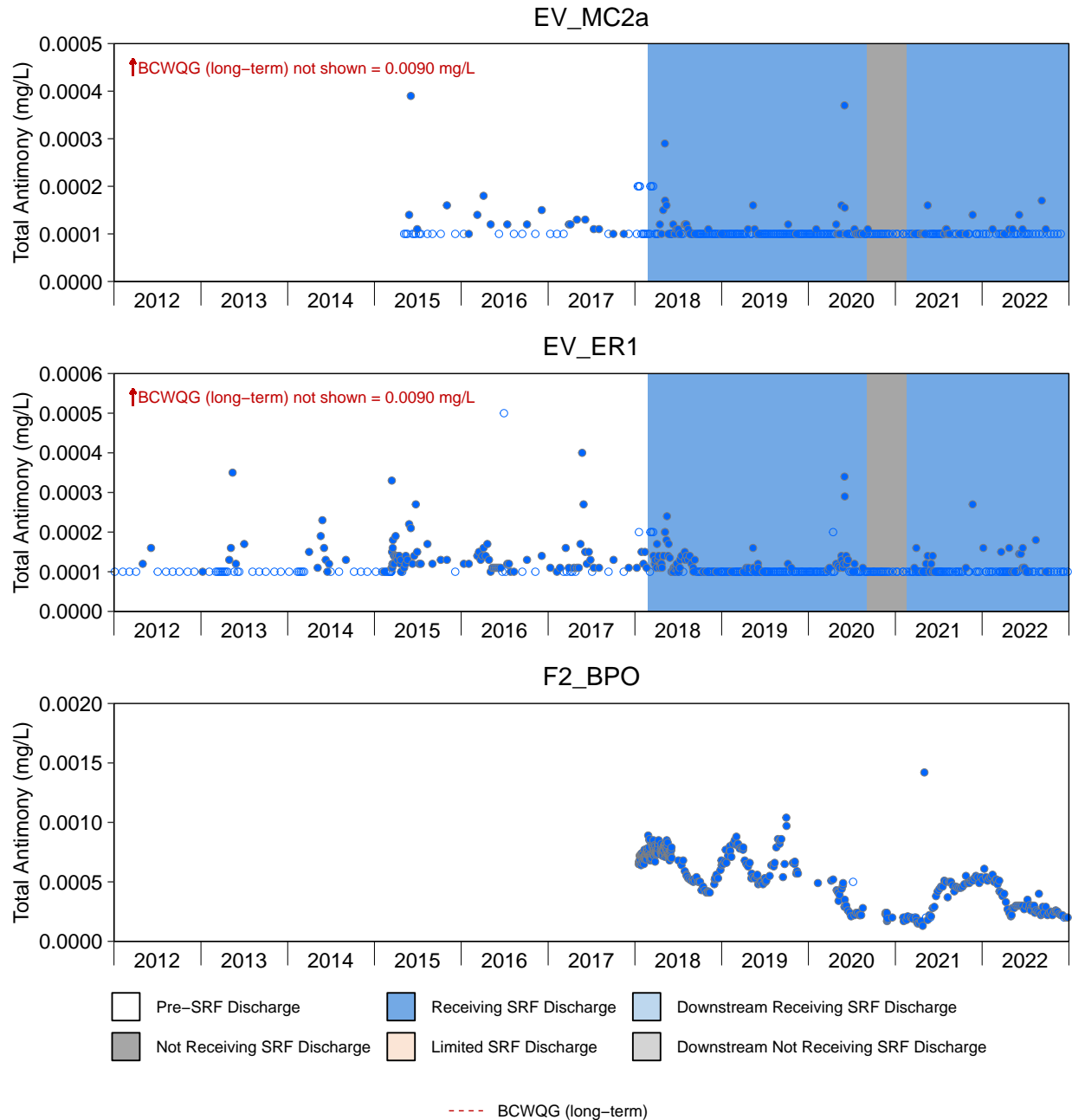


Figure D.4: Time Series Plots for Total Antimony from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018). When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

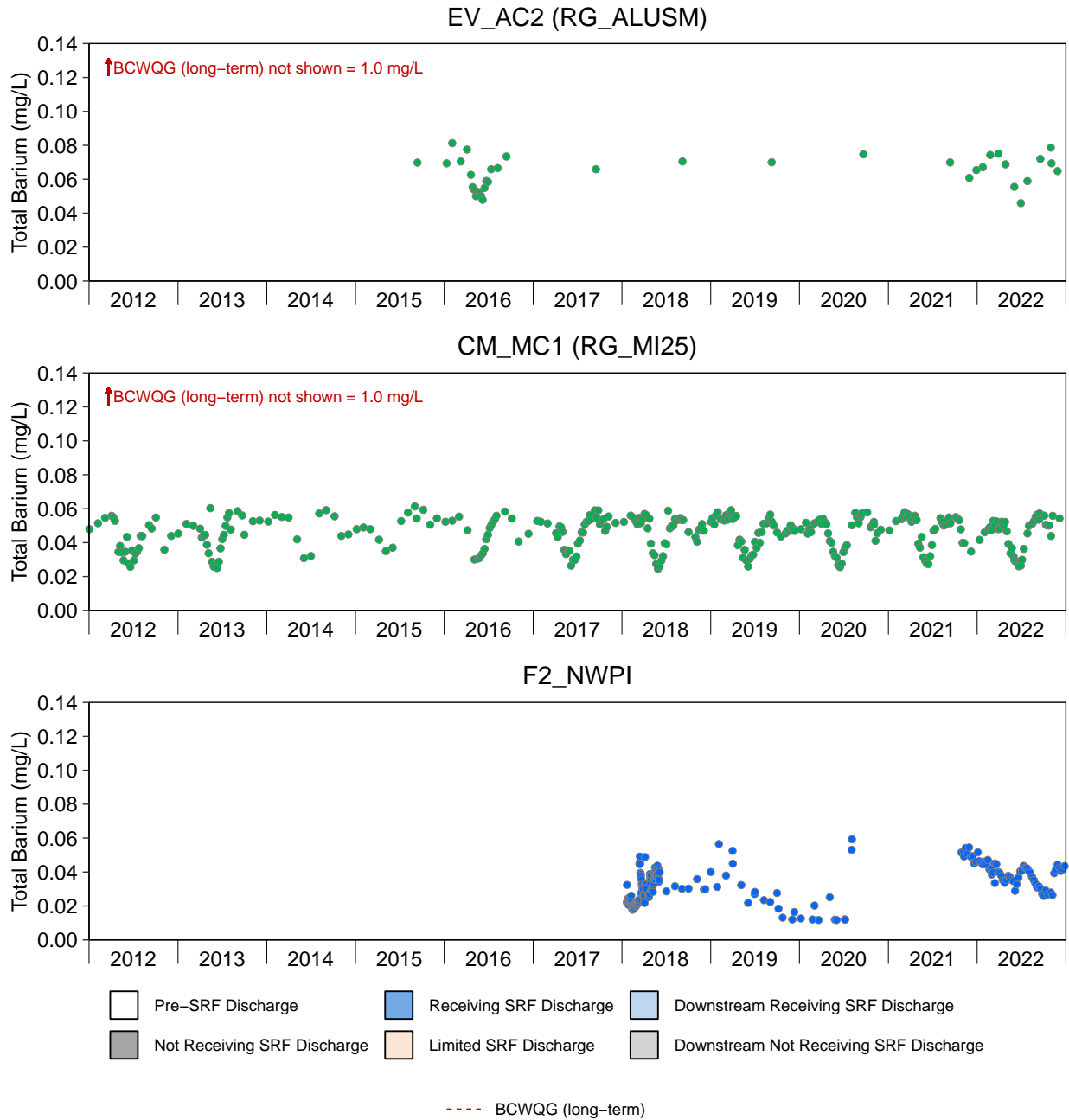


Figure D.5: Time Series Plots for Total Barium from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018). When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

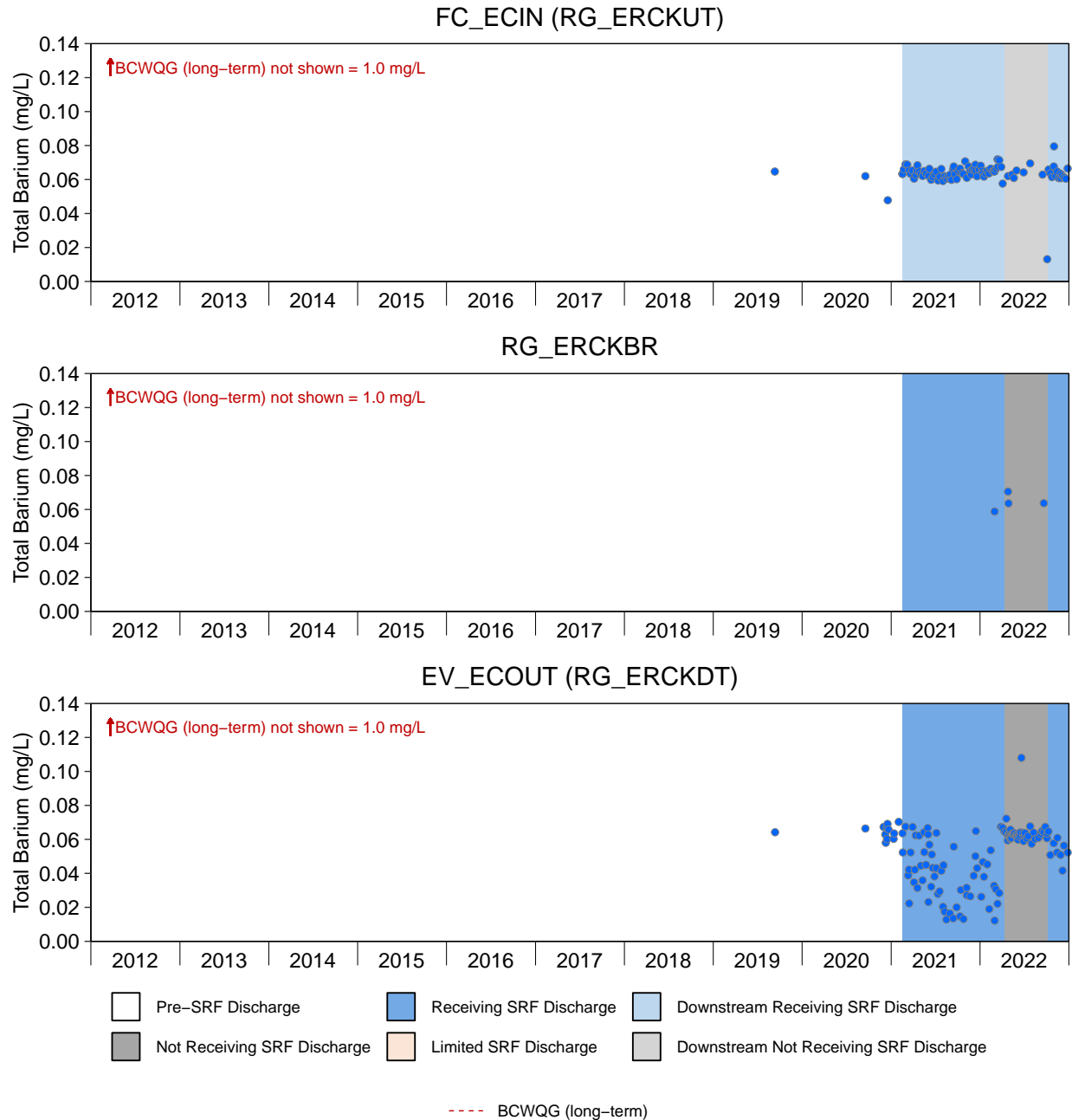


Figure D.5: Time Series Plots for Total Barium from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018). When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

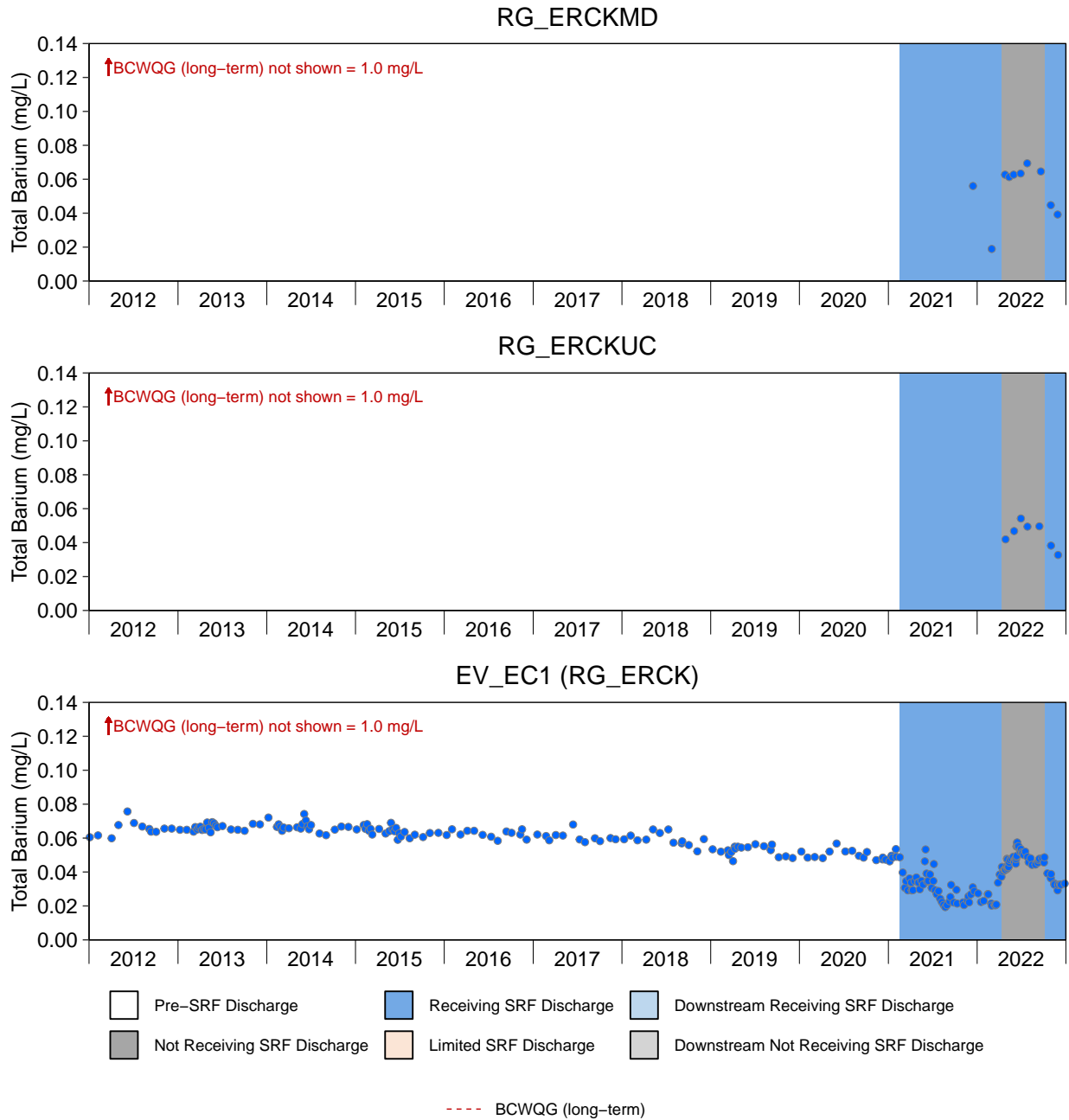


Figure D.5: Time Series Plots for Total Barium from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018). When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

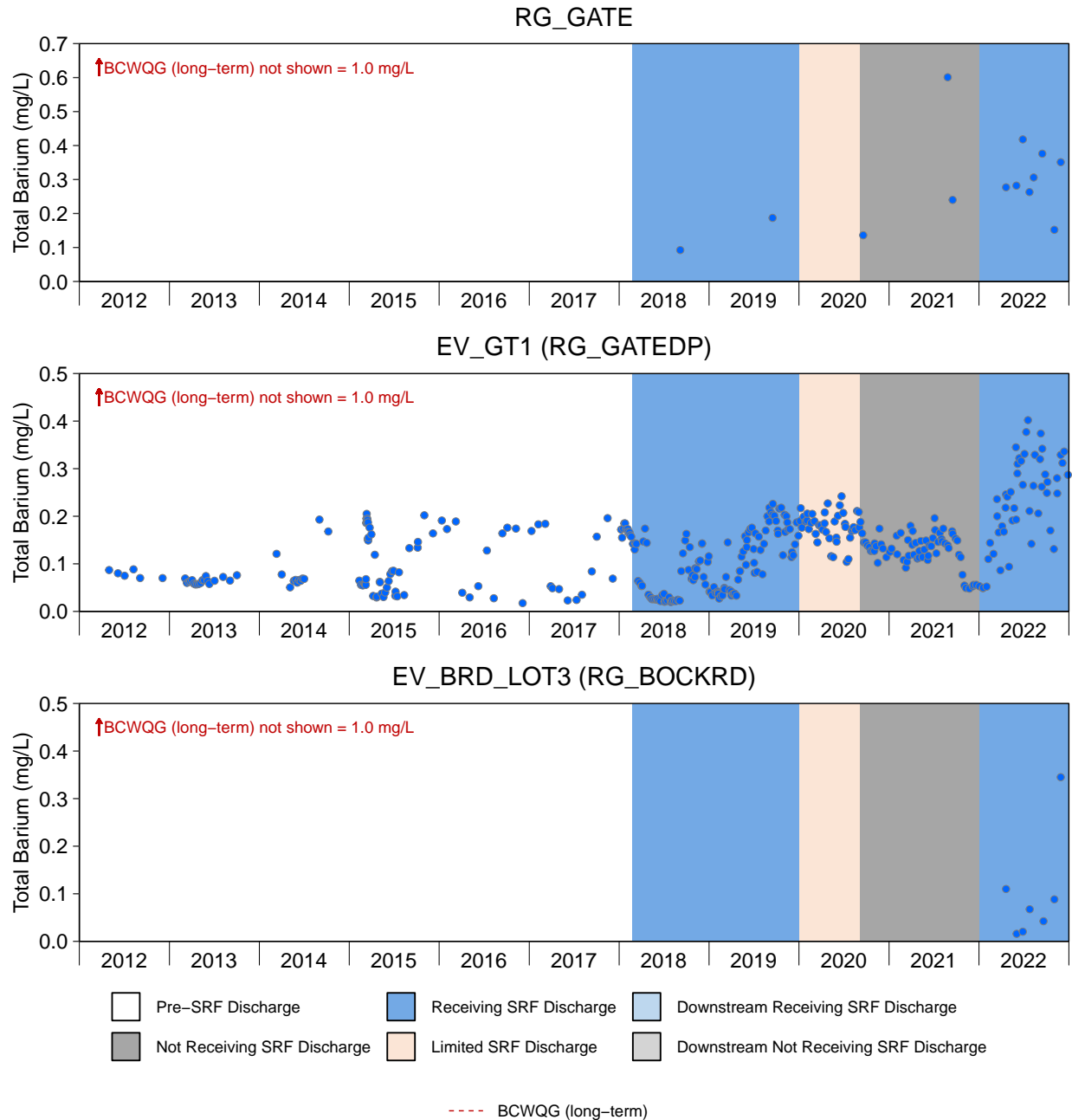


Figure D.5: Time Series Plots for Total Barium from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018). When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

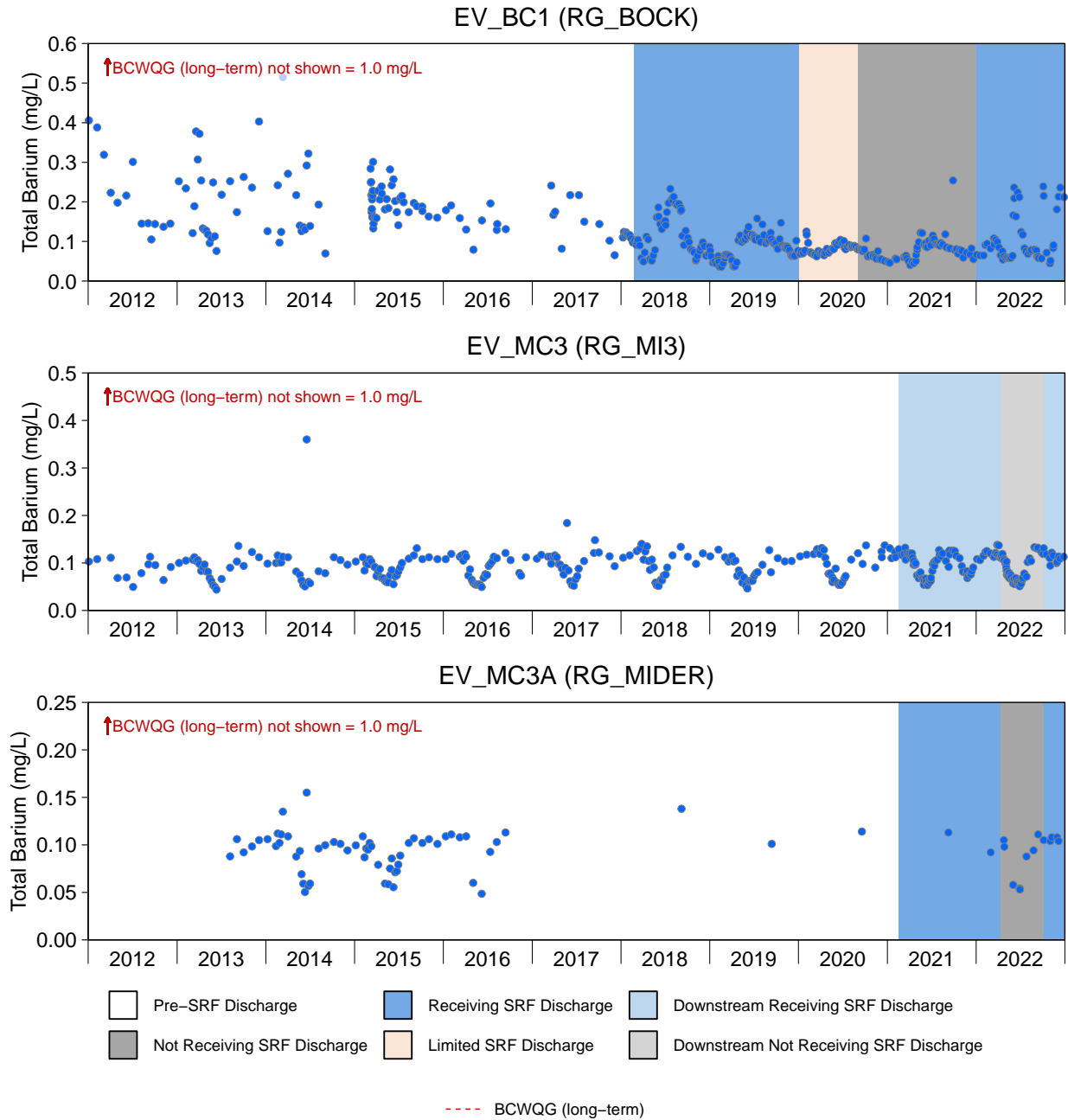


Figure D.5: Time Series Plots for Total Barium from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018). When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

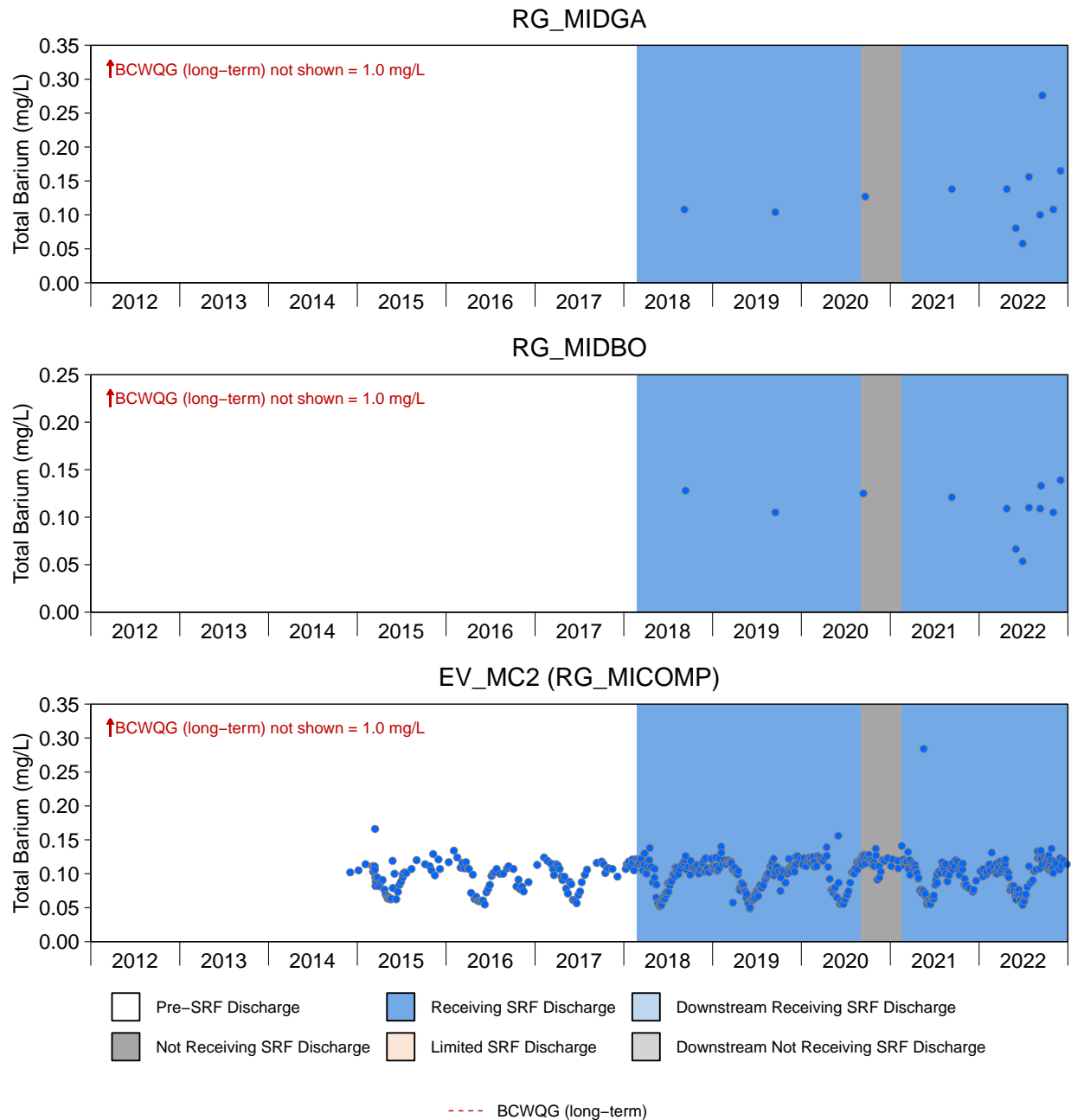


Figure D.5: Time Series Plots for Total Barium from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018). When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

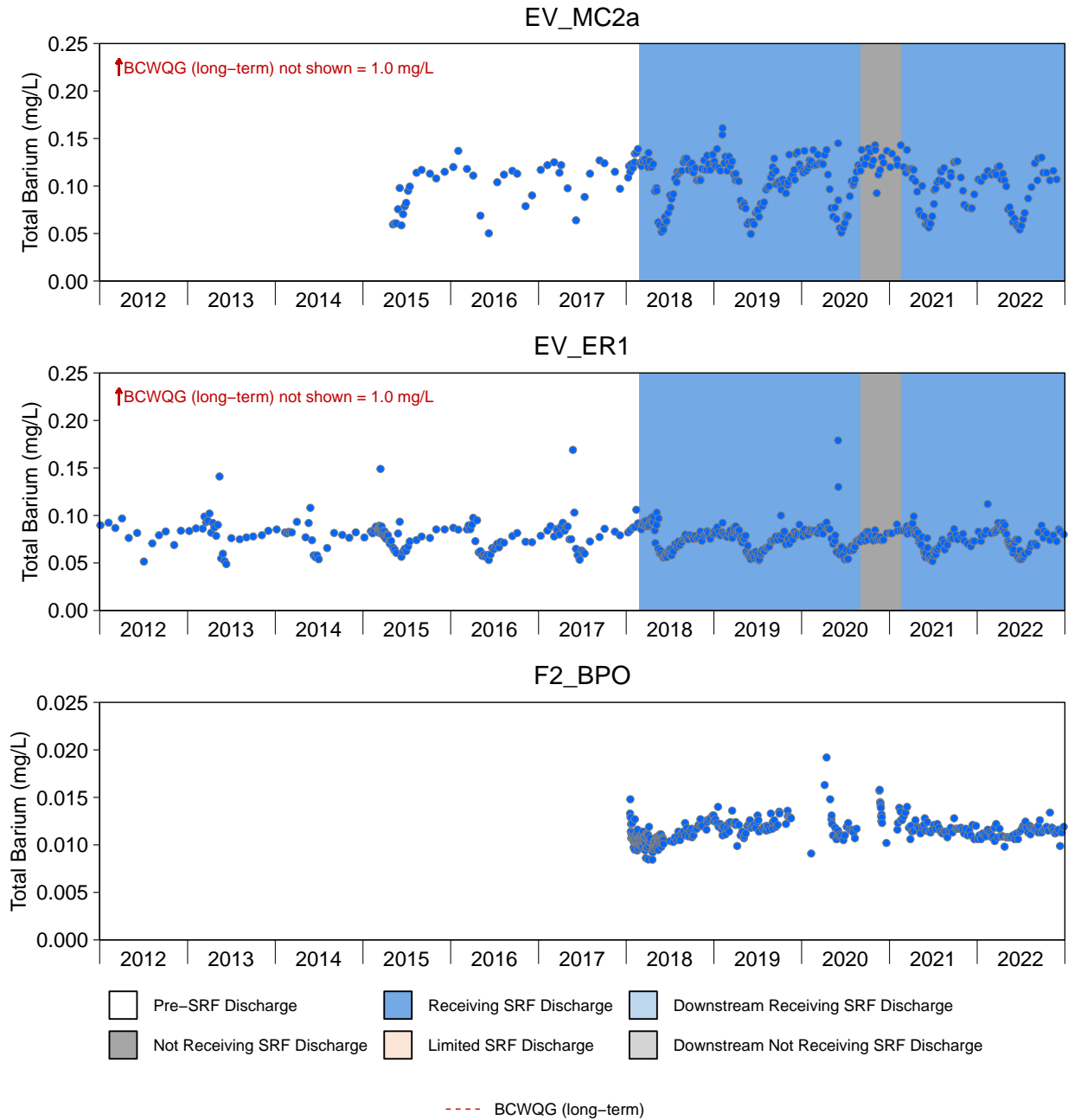


Figure D.5: Time Series Plots for Total Barium from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018). When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

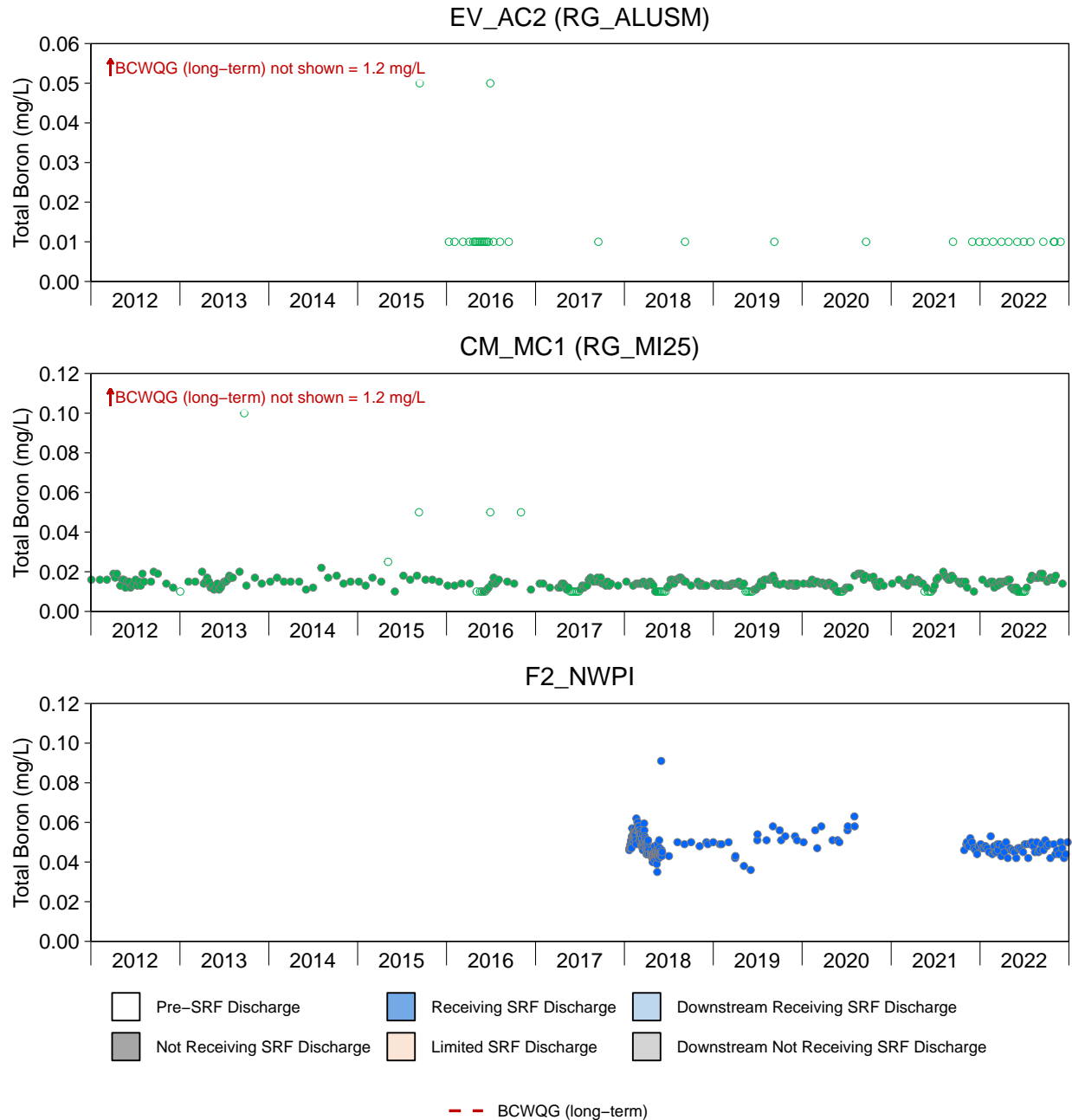


Figure D.6: Time Series Plots for Total Boron from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018). When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

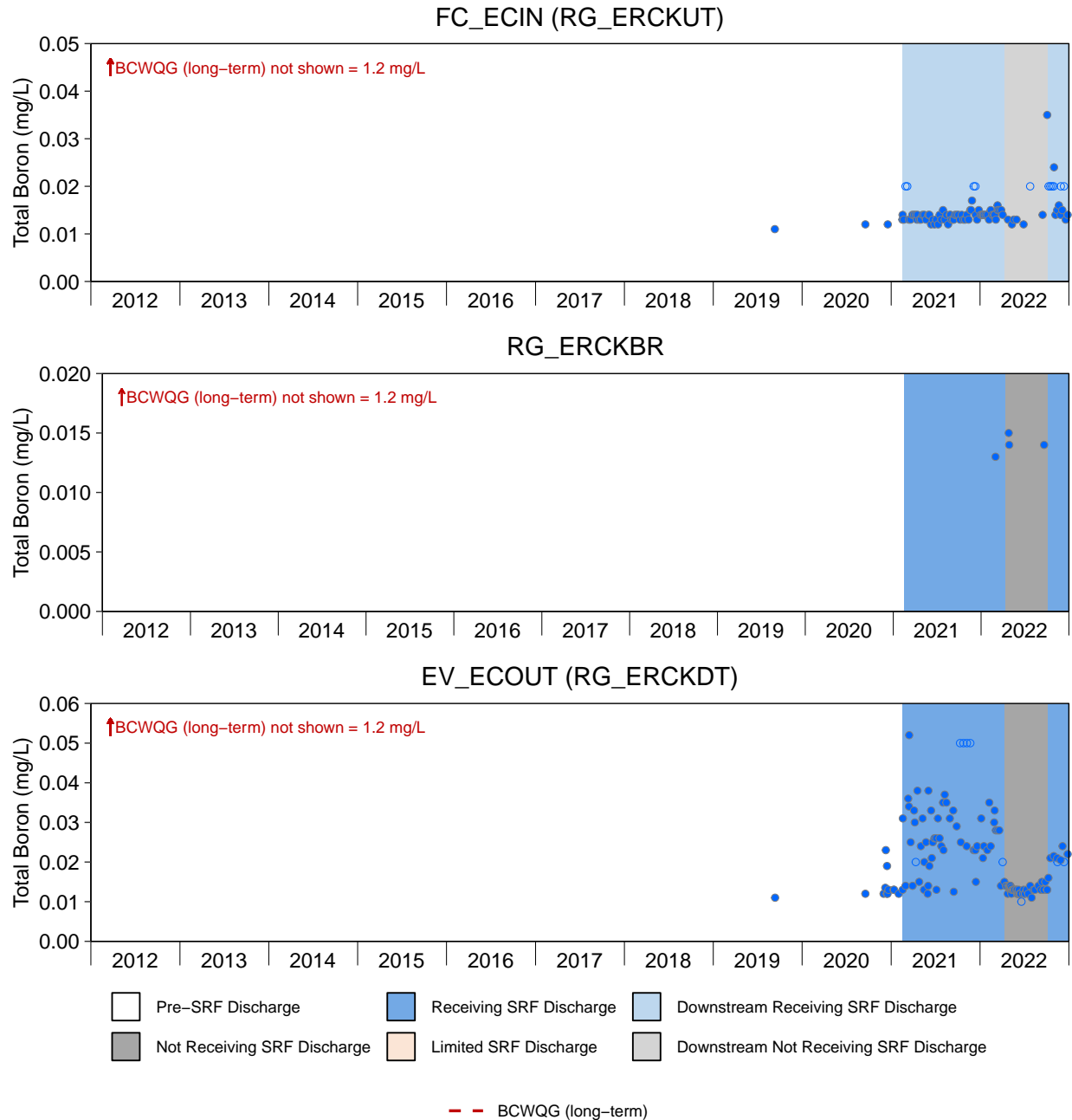


Figure D.6: Time Series Plots for Total Boron from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018). When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

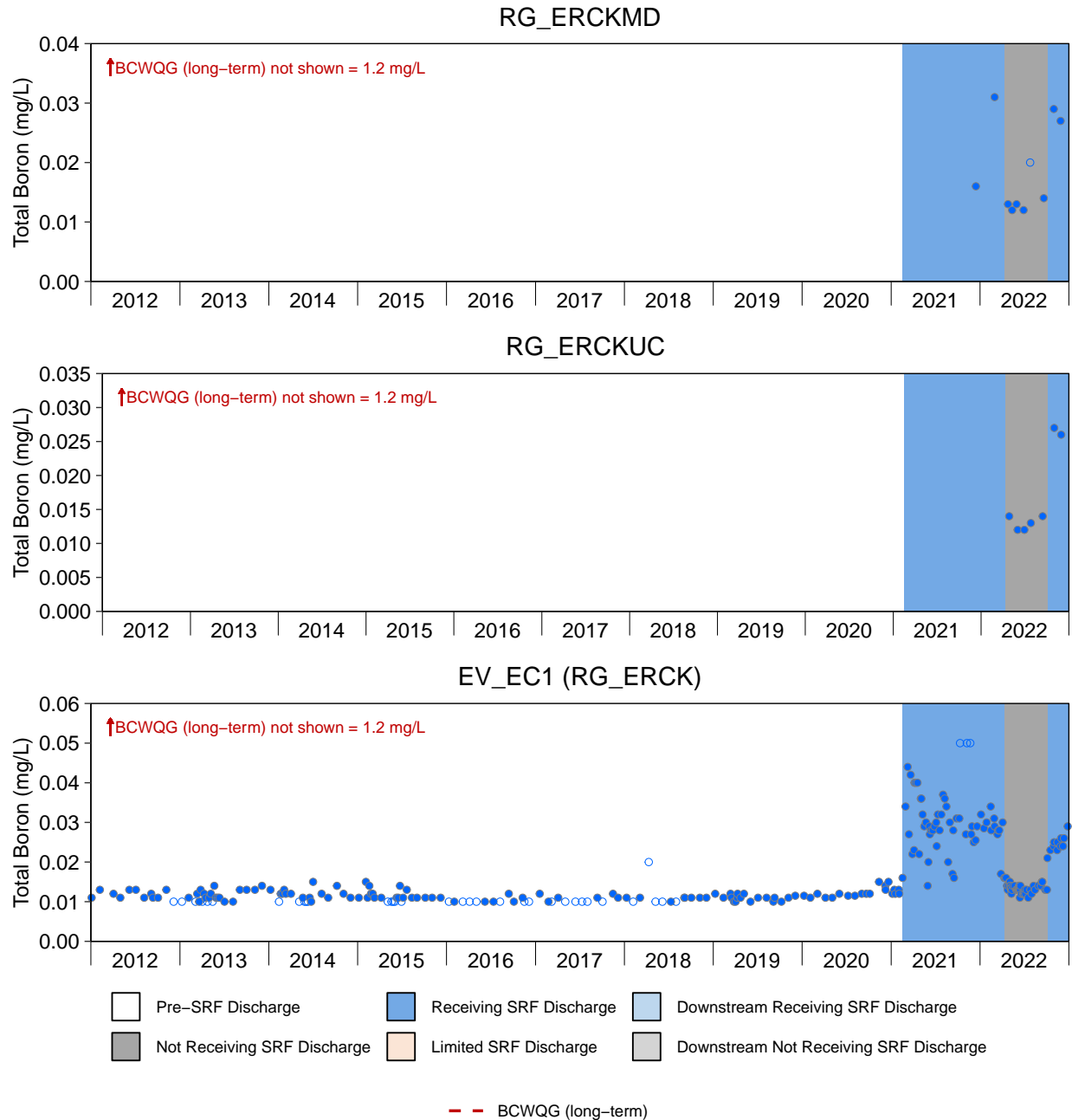


Figure D.6: Time Series Plots for Total Boron from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018). When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

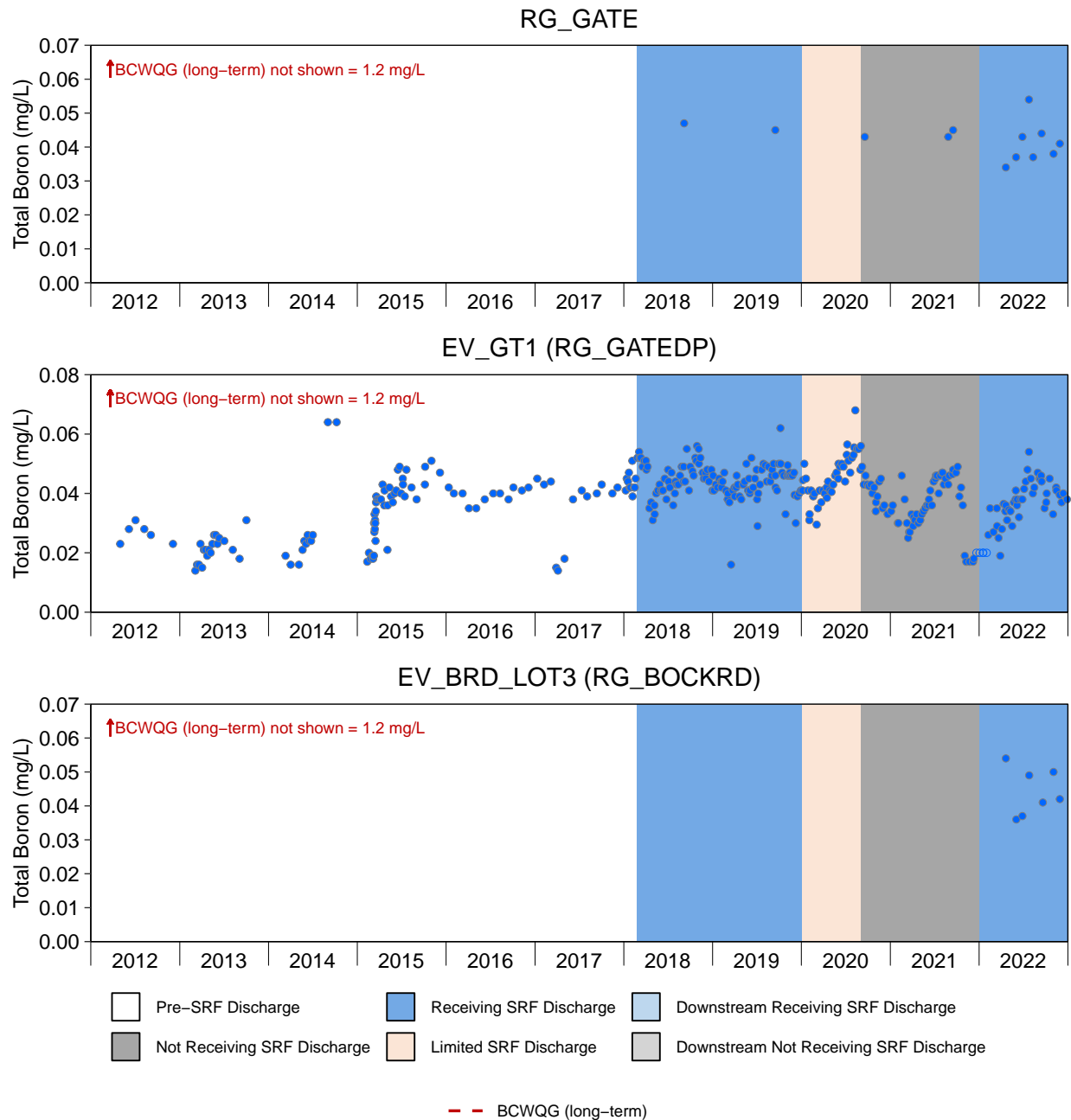


Figure D.6: Time Series Plots for Total Boron from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018). When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

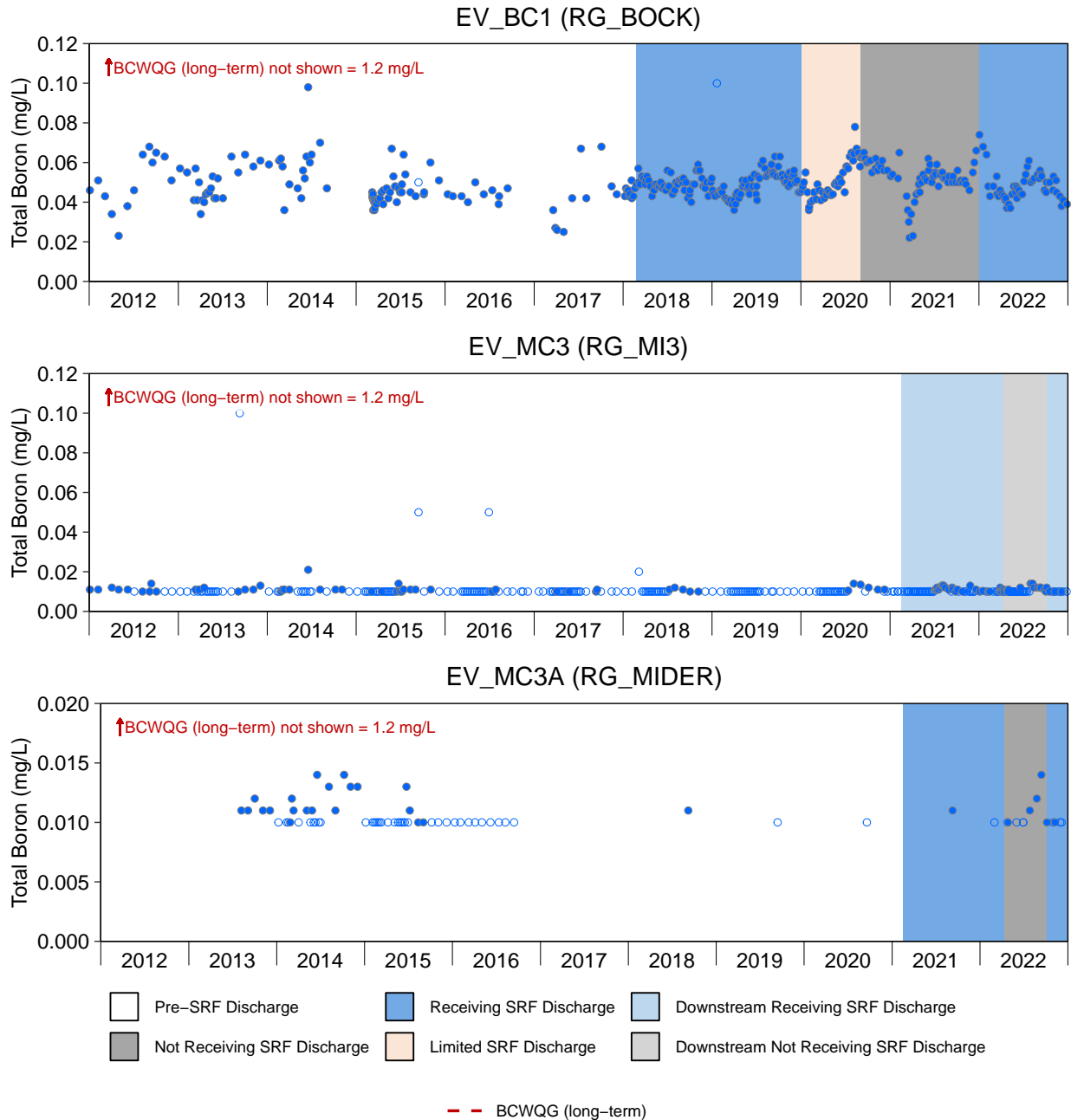


Figure D.6: Time Series Plots for Total Boron from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018). When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

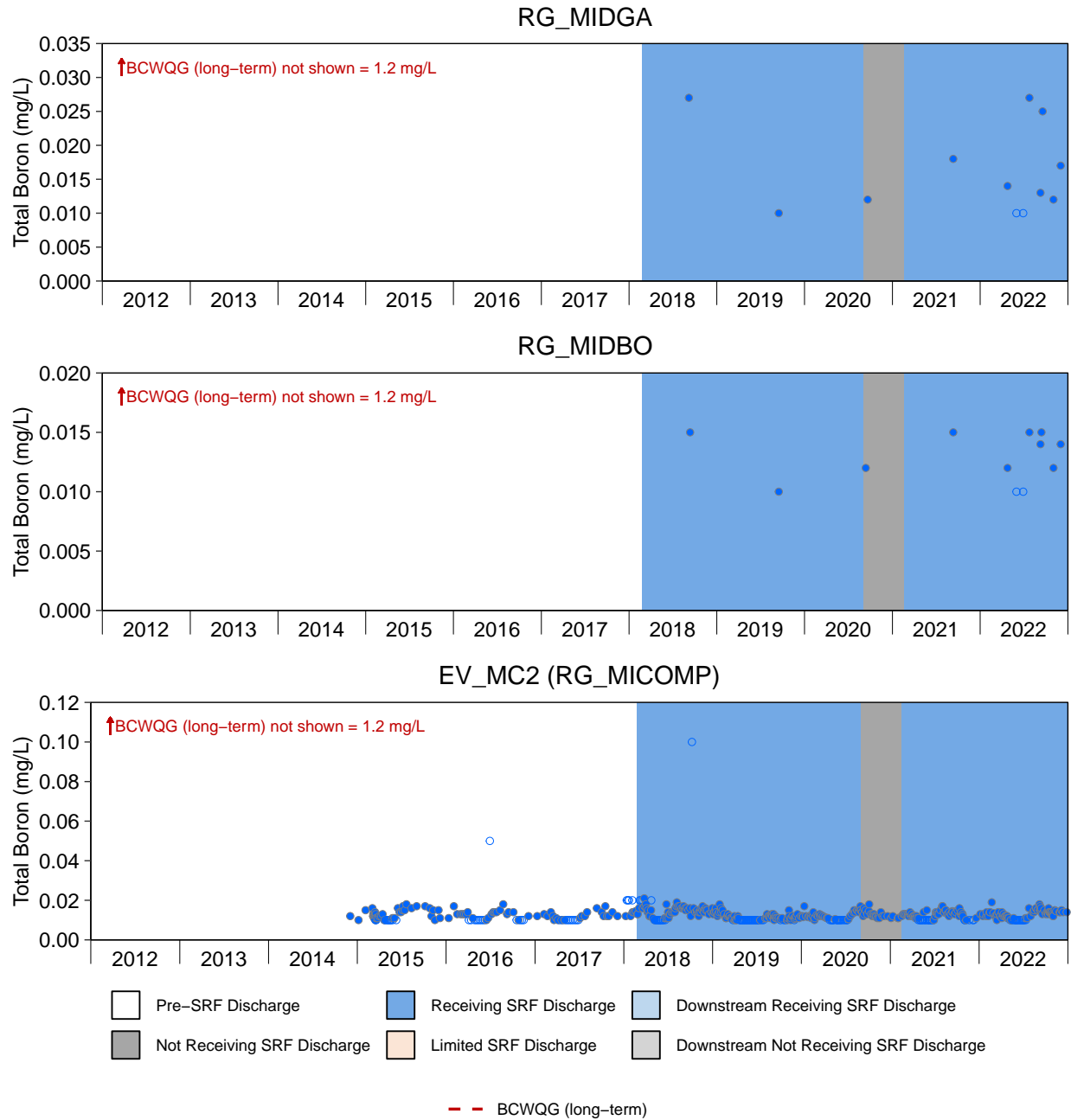


Figure D.6: Time Series Plots for Total Boron from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018). When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

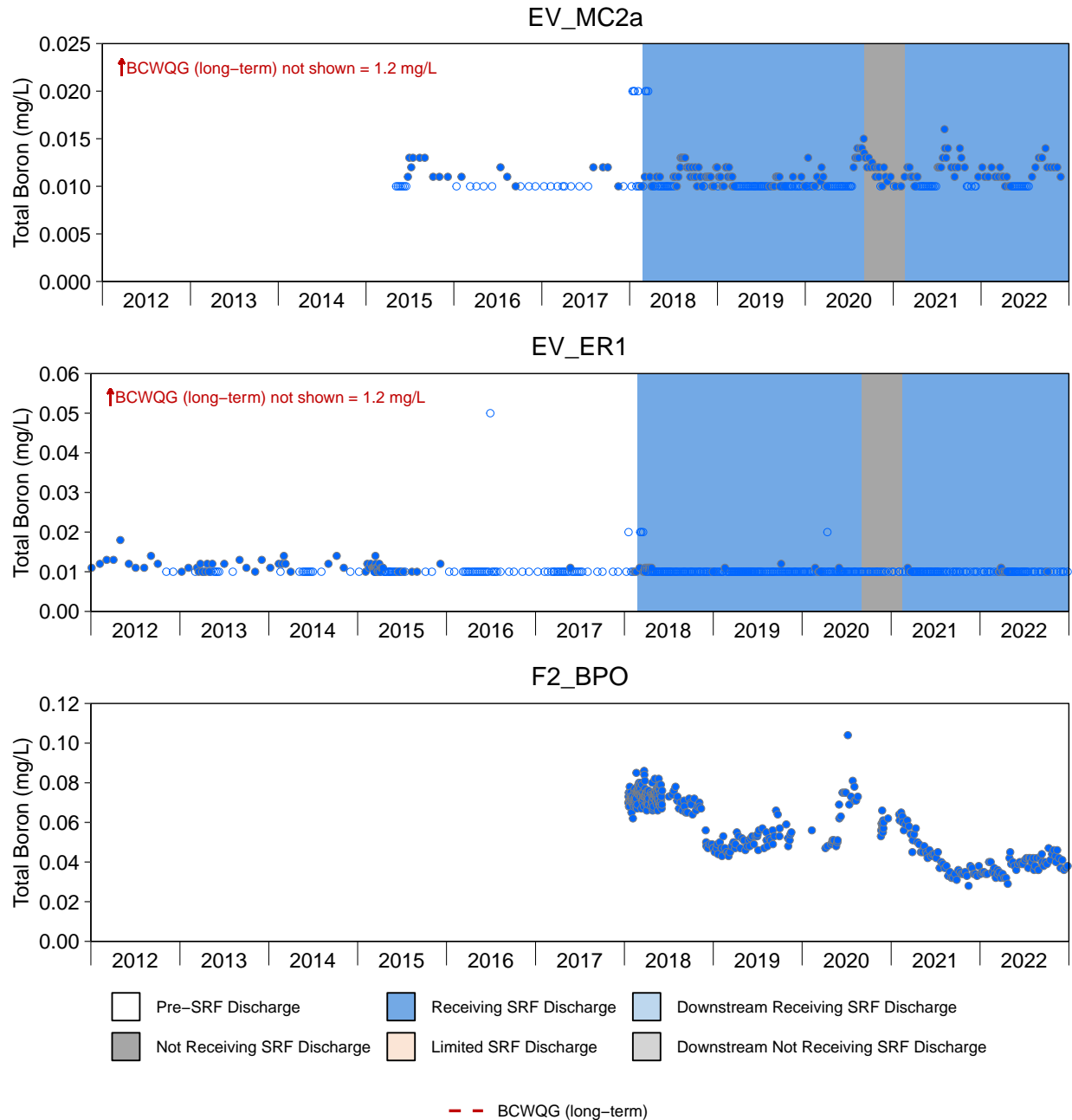


Figure D.6: Time Series Plots for Total Boron from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018). When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

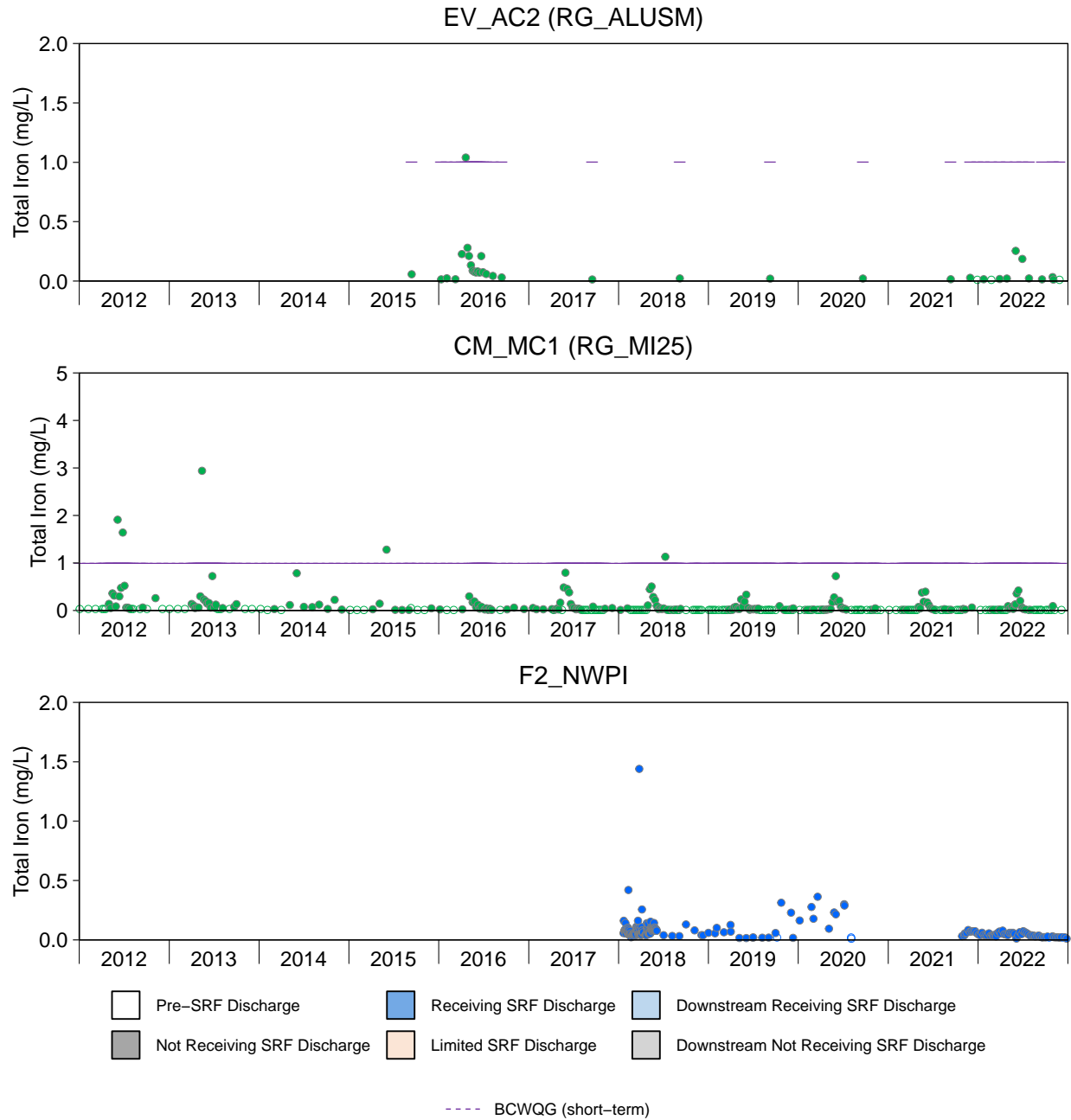


Figure D.7: Time Series Plots for Total Iron from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

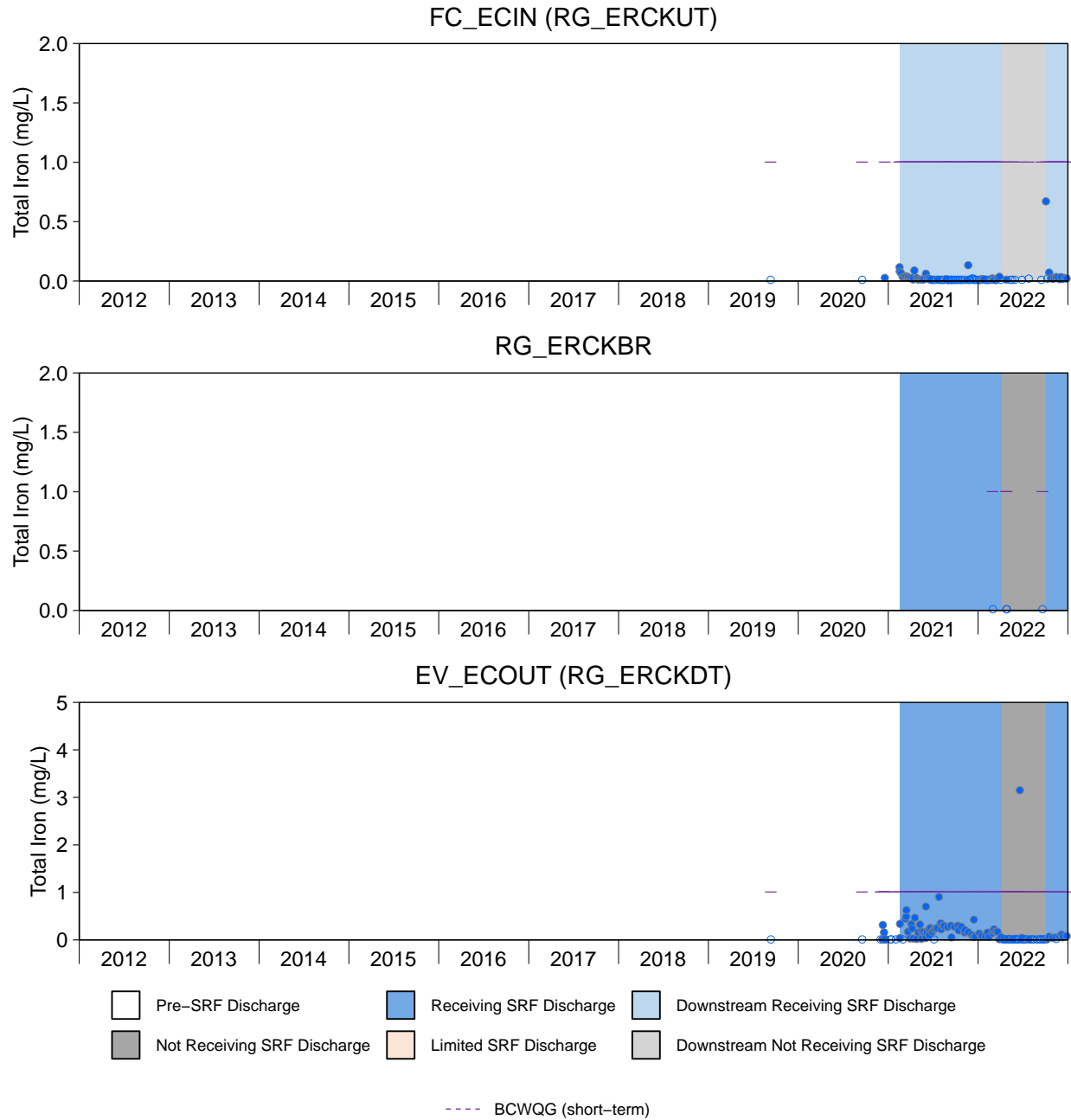


Figure D.7: Time Series Plots for Total Iron from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

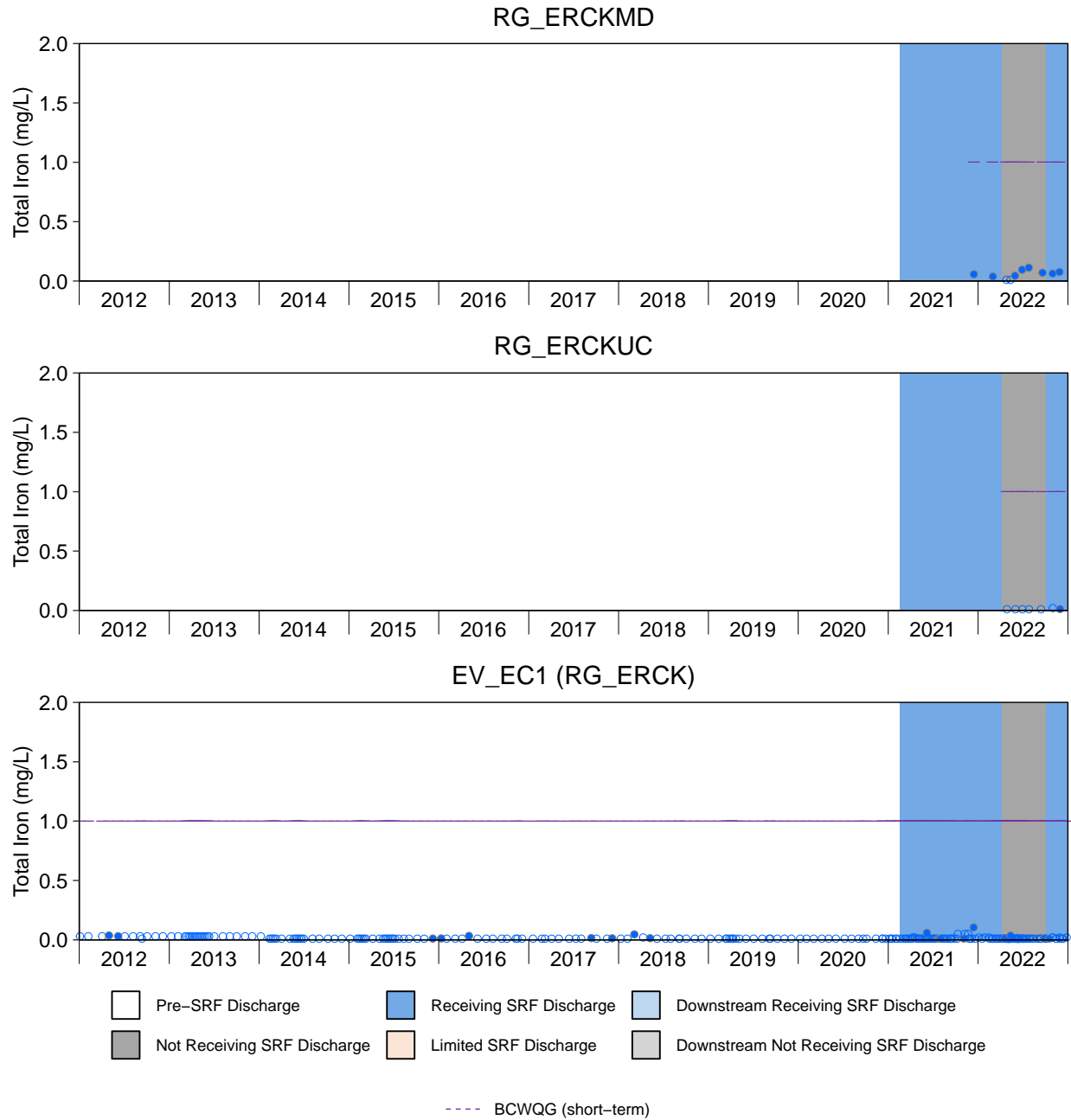


Figure D.7: Time Series Plots for Total Iron from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

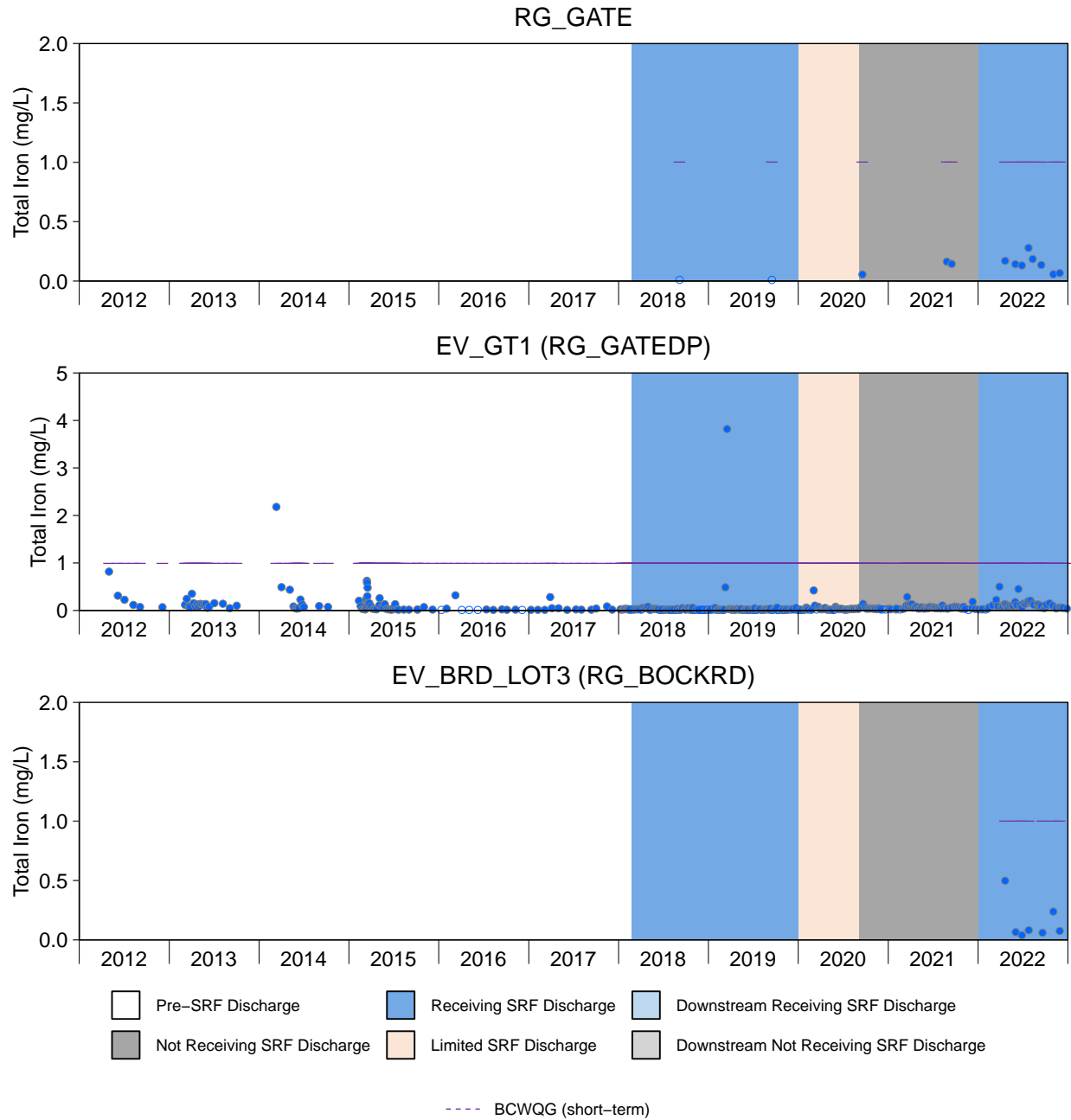


Figure D.7: Time Series Plots for Total Iron from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

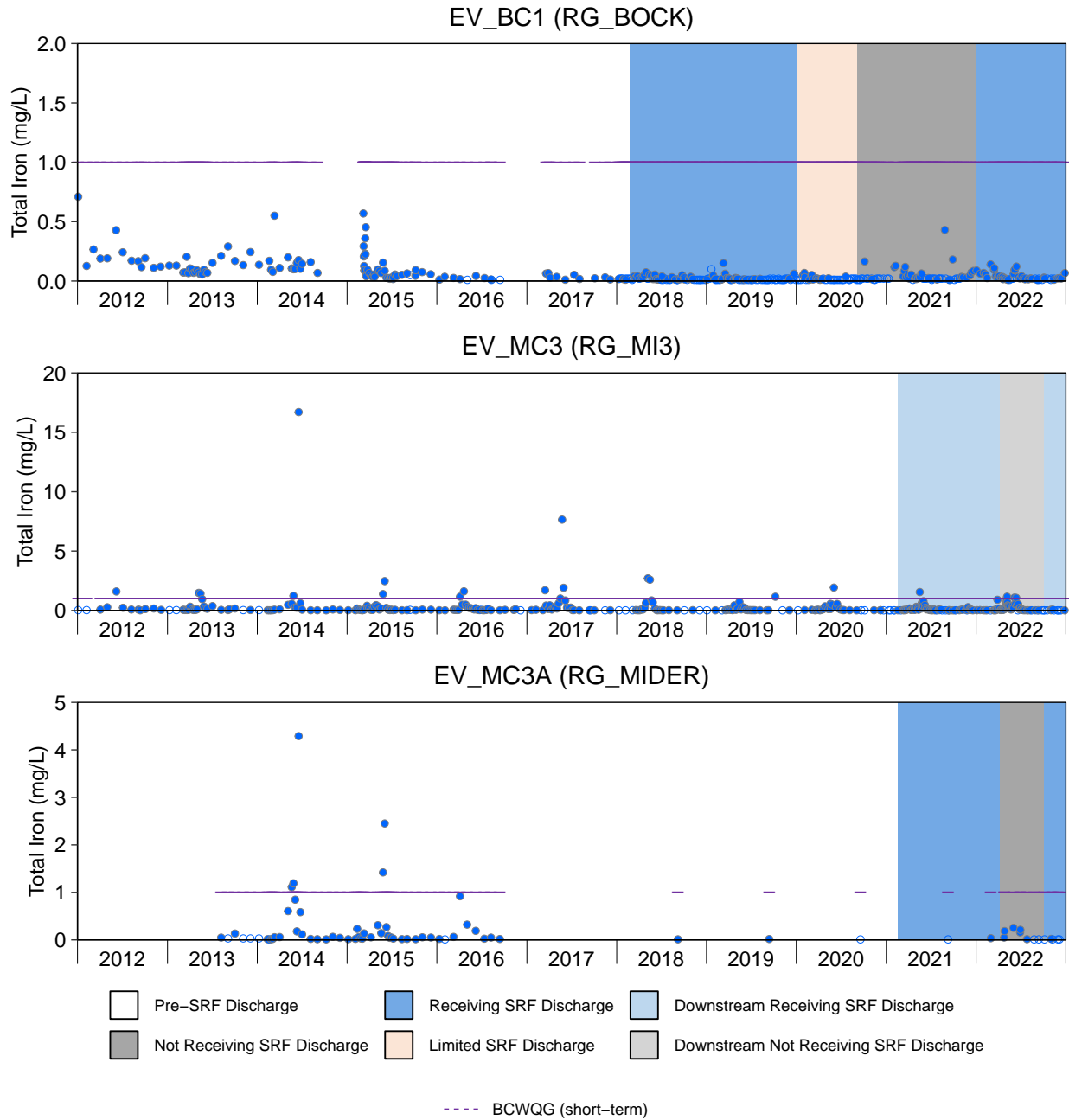


Figure D.7: Time Series Plots for Total Iron from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

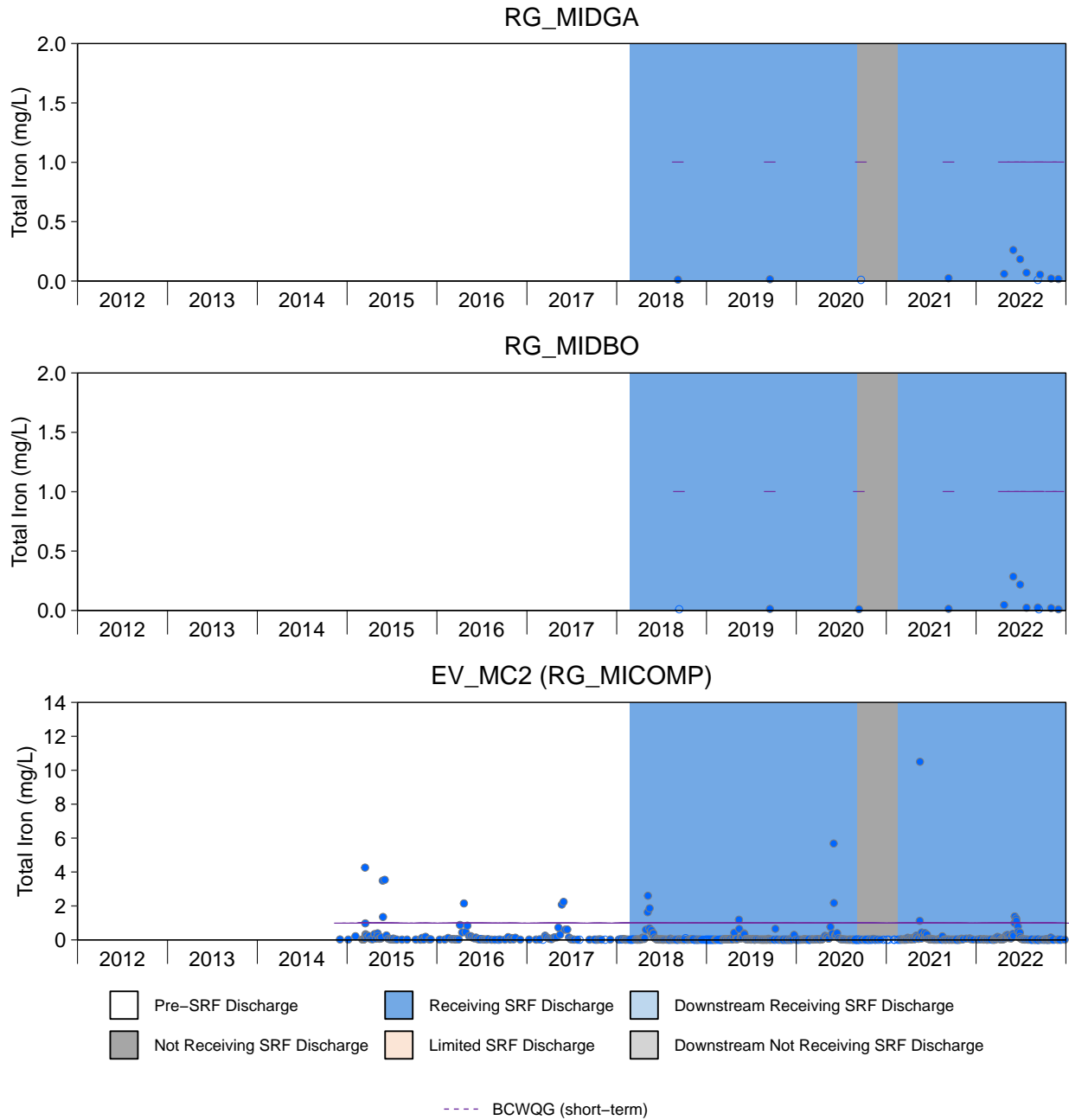


Figure D.7: Time Series Plots for Total Iron from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

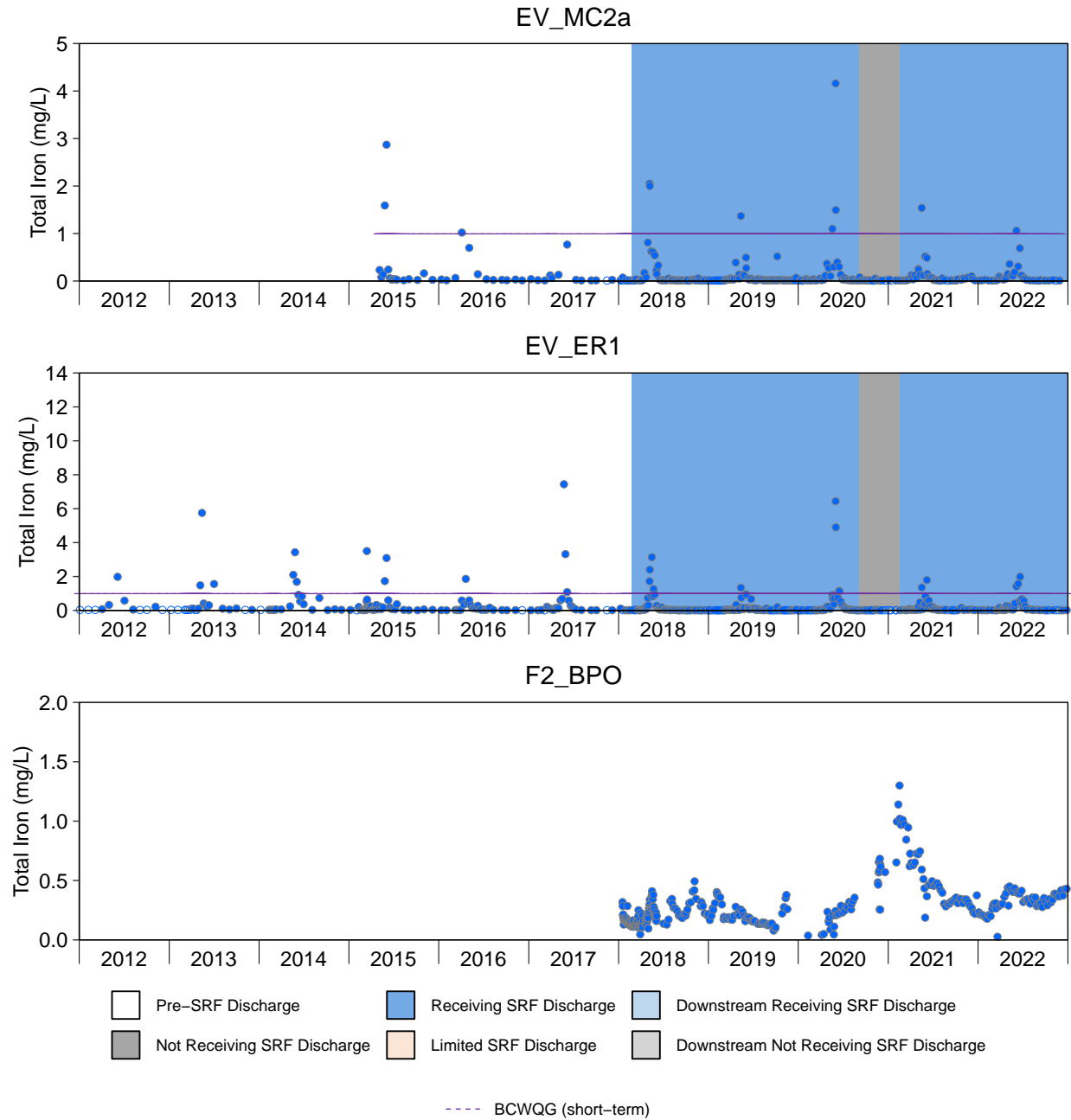


Figure D.7: Time Series Plots for Total Iron from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.



Figure D.8: Time Series Plots for Total Lithium from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

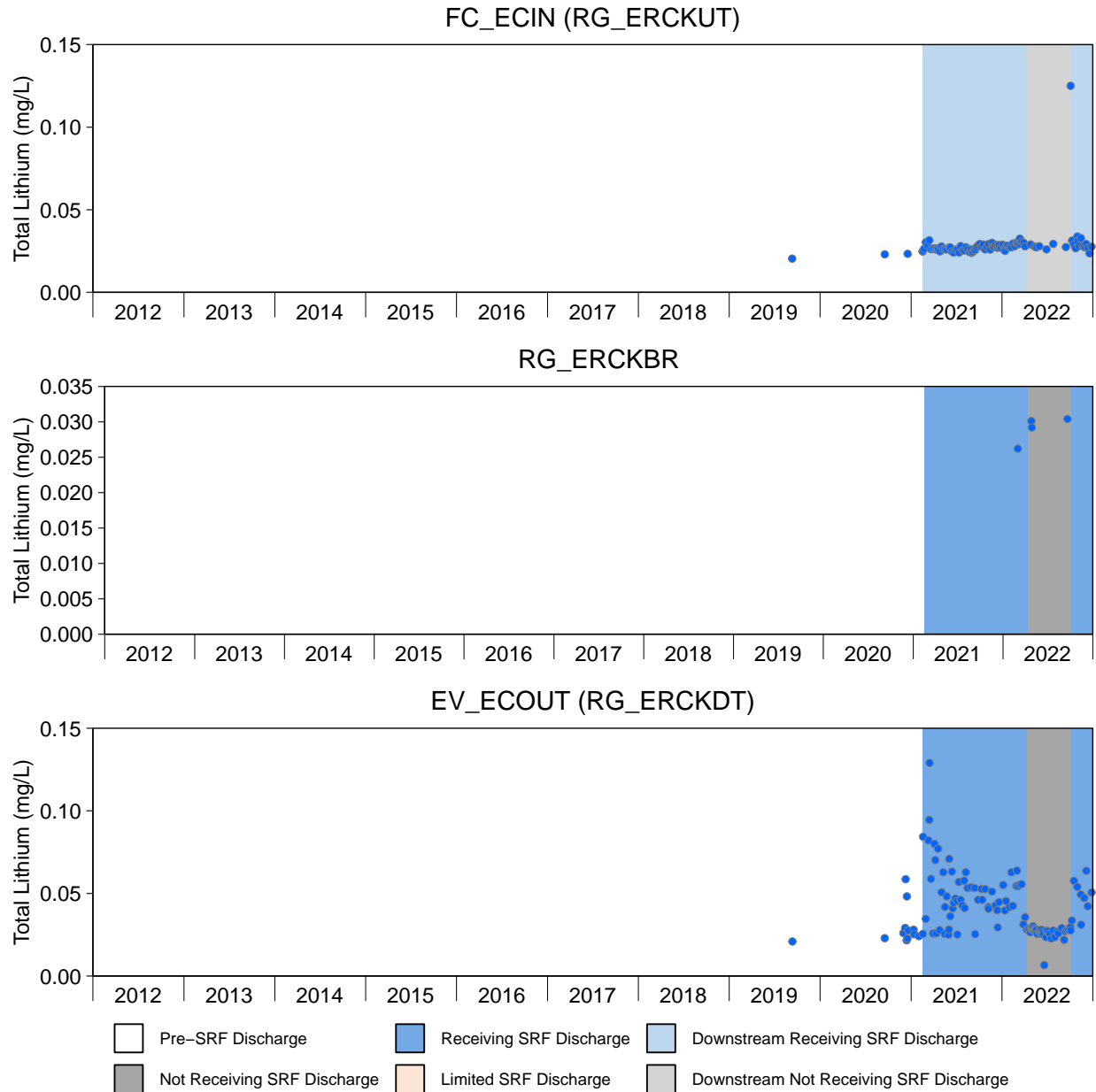


Figure D.8: Time Series Plots for Total Lithium from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

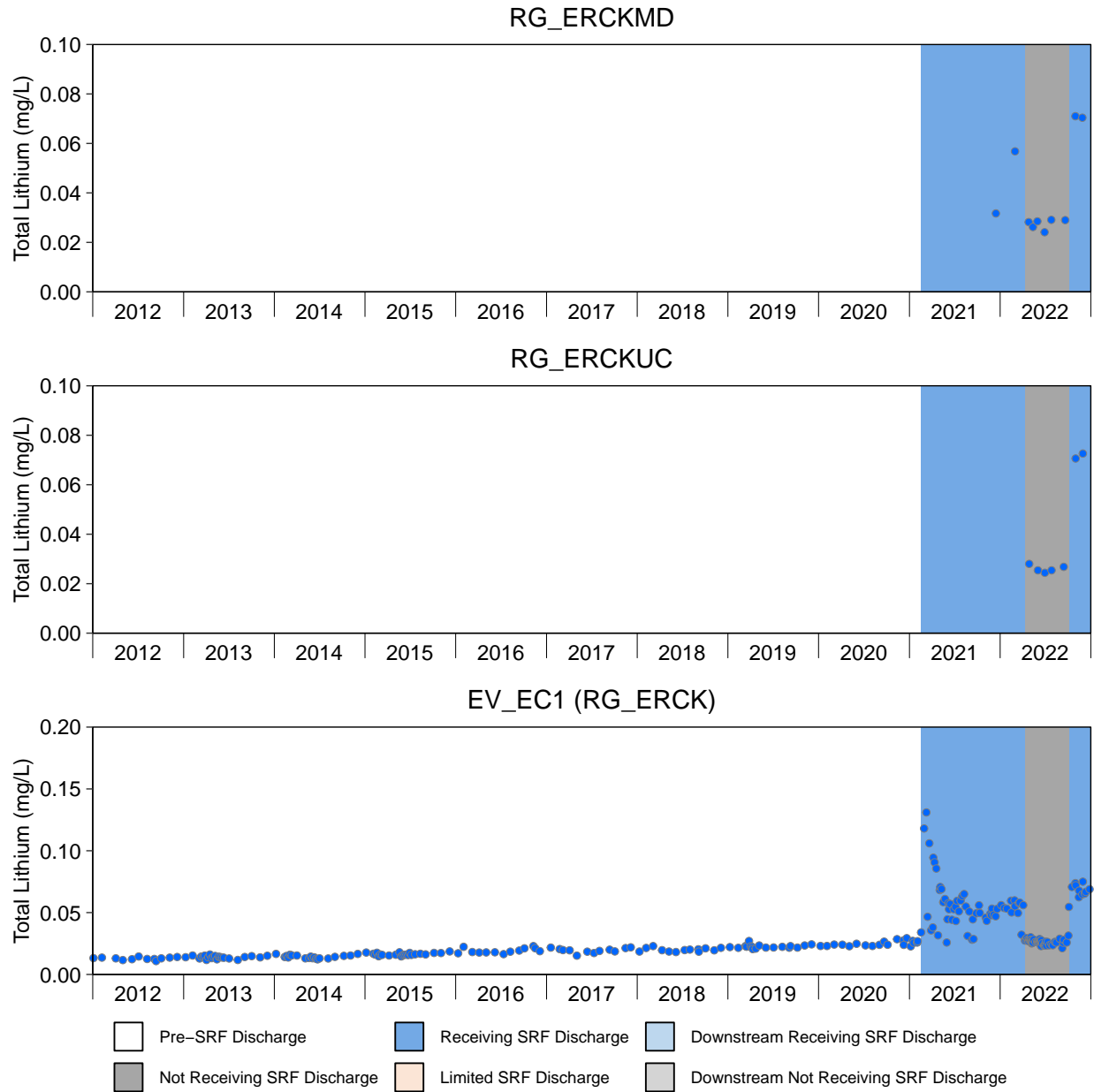


Figure D.8: Time Series Plots for Total Lithium from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

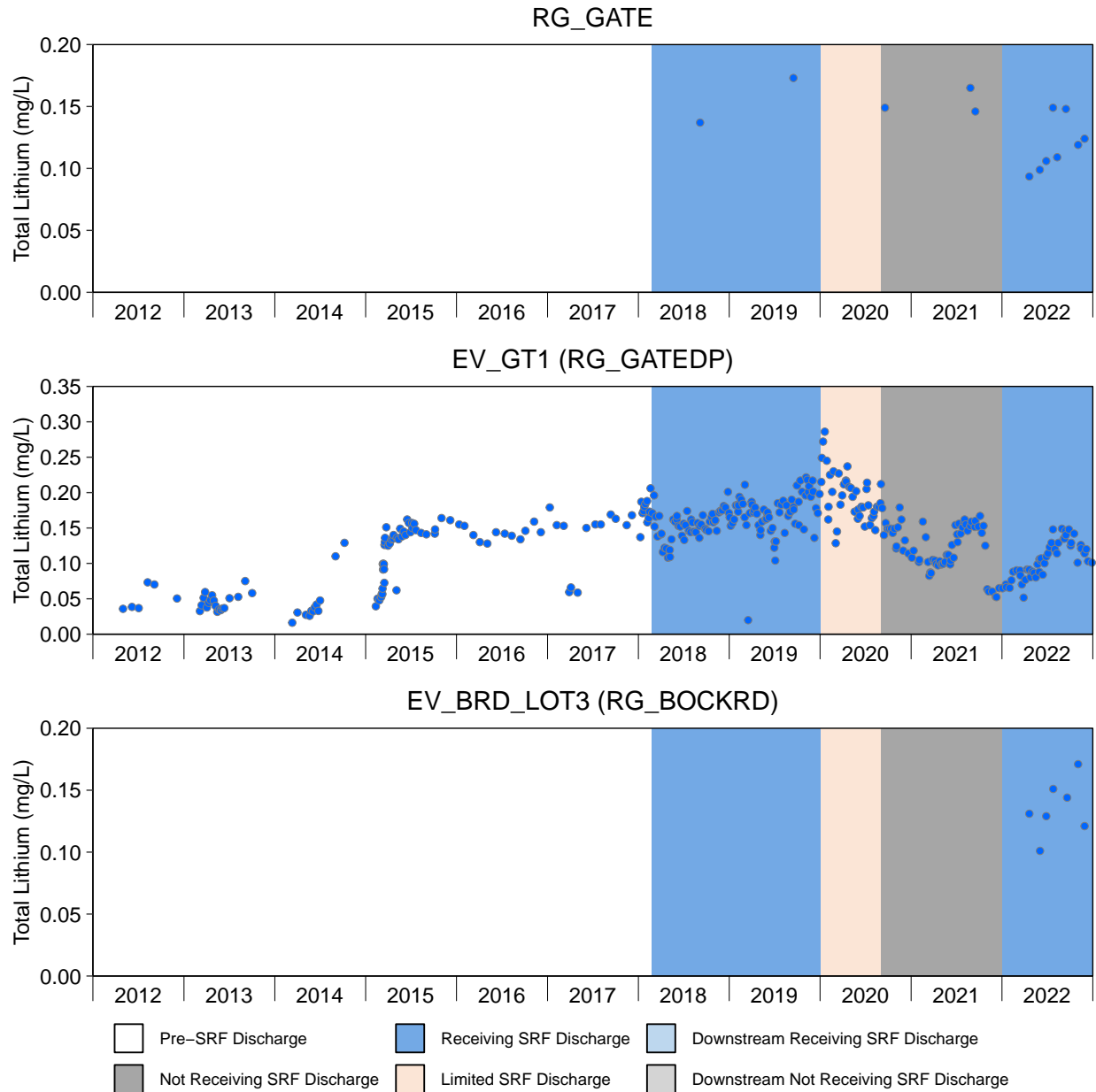


Figure D.8: Time Series Plots for Total Lithium from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

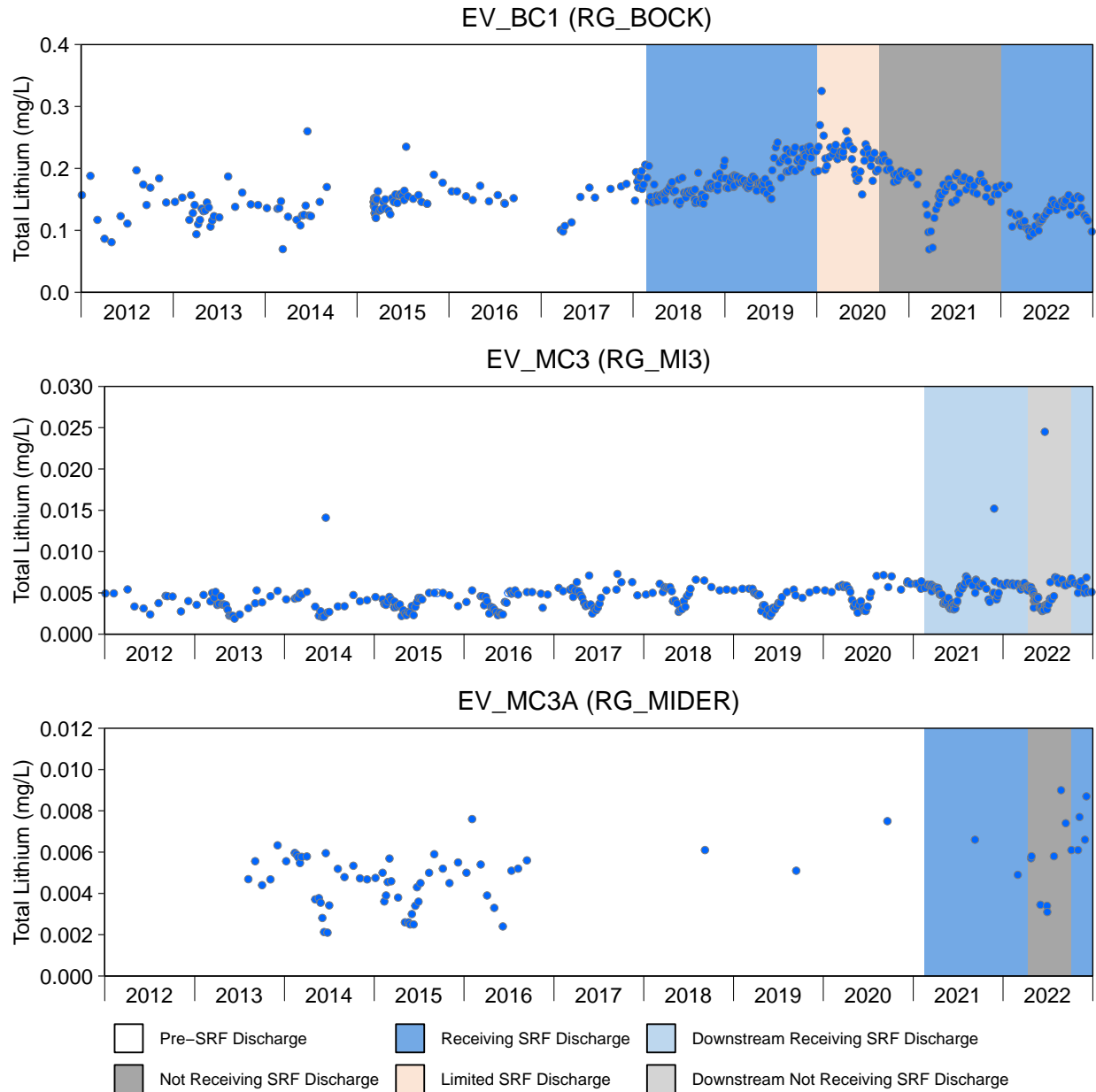


Figure D.8: Time Series Plots for Total Lithium from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

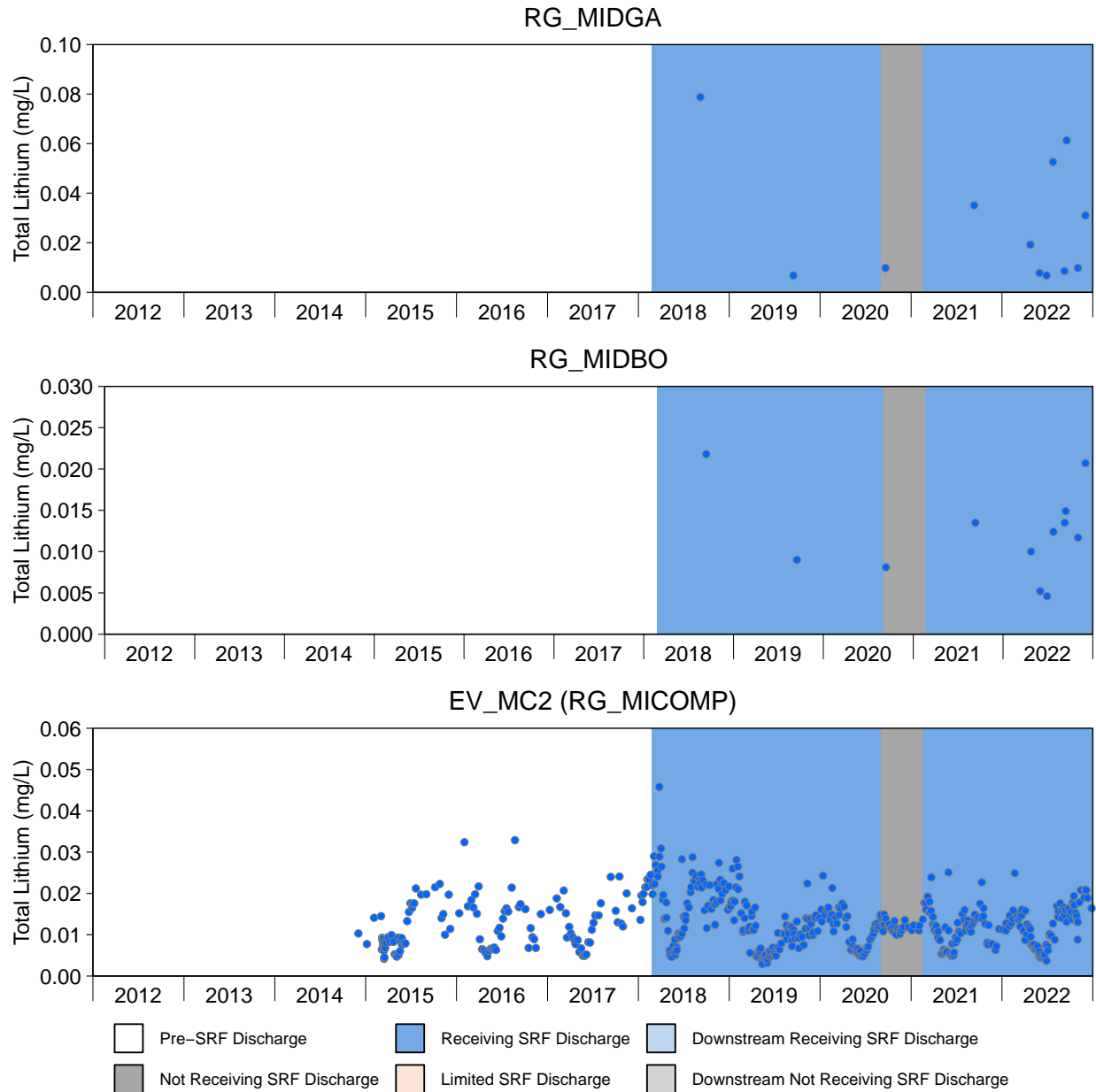


Figure D.8: Time Series Plots for Total Lithium from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

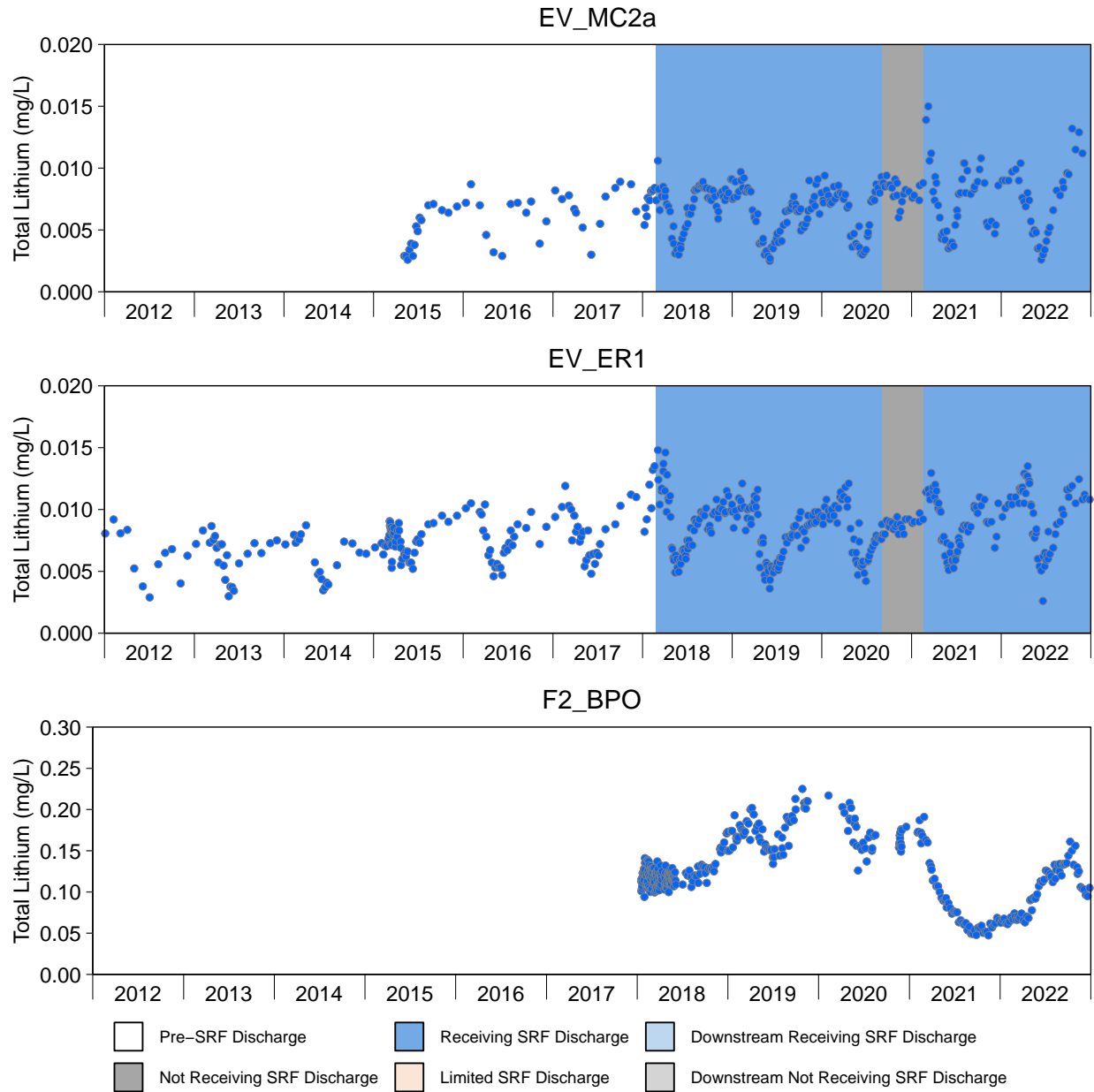


Figure D.8: Time Series Plots for Total Lithium from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

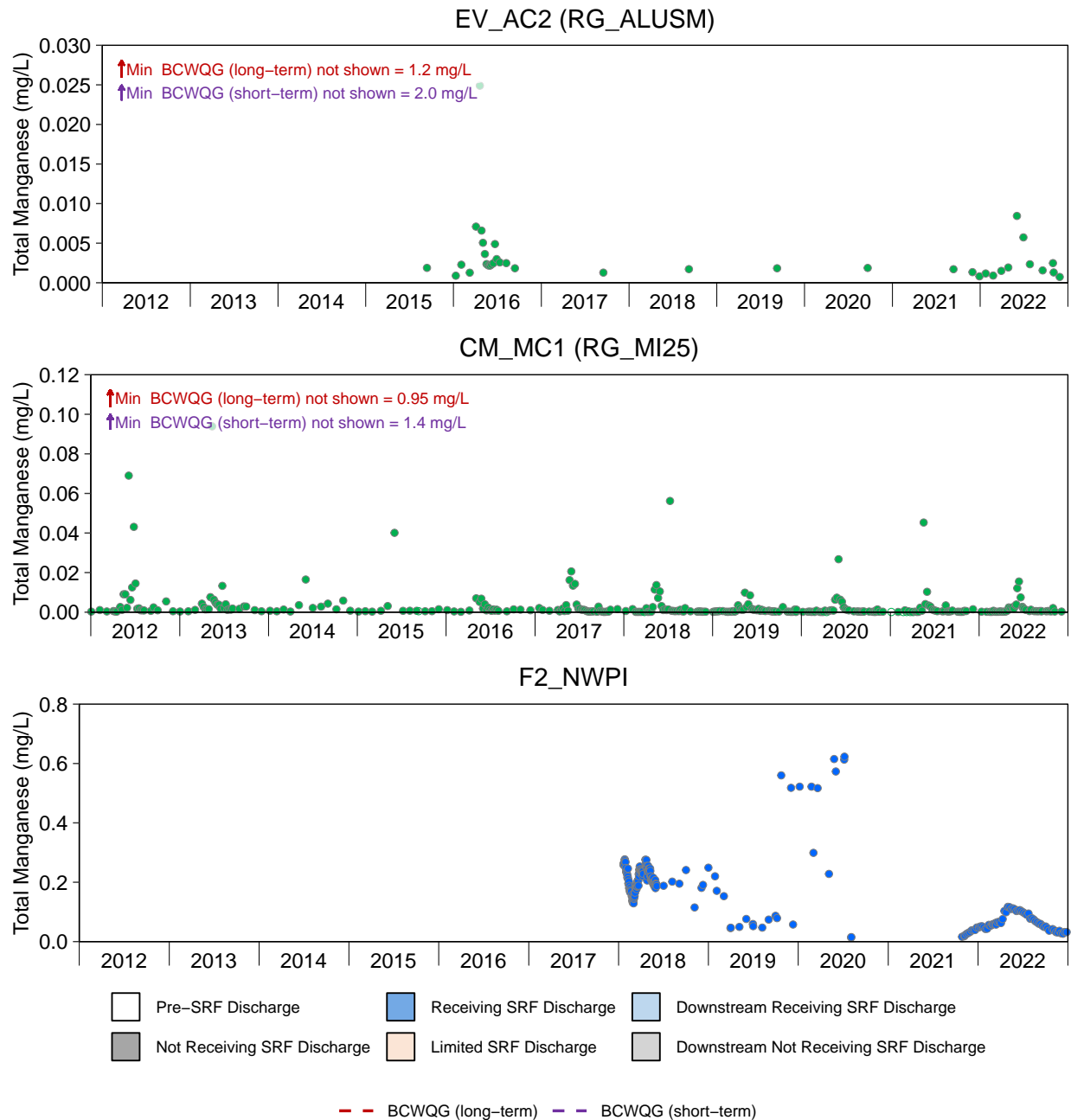


Figure D.9: Time Series Plots for Total Manganese from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

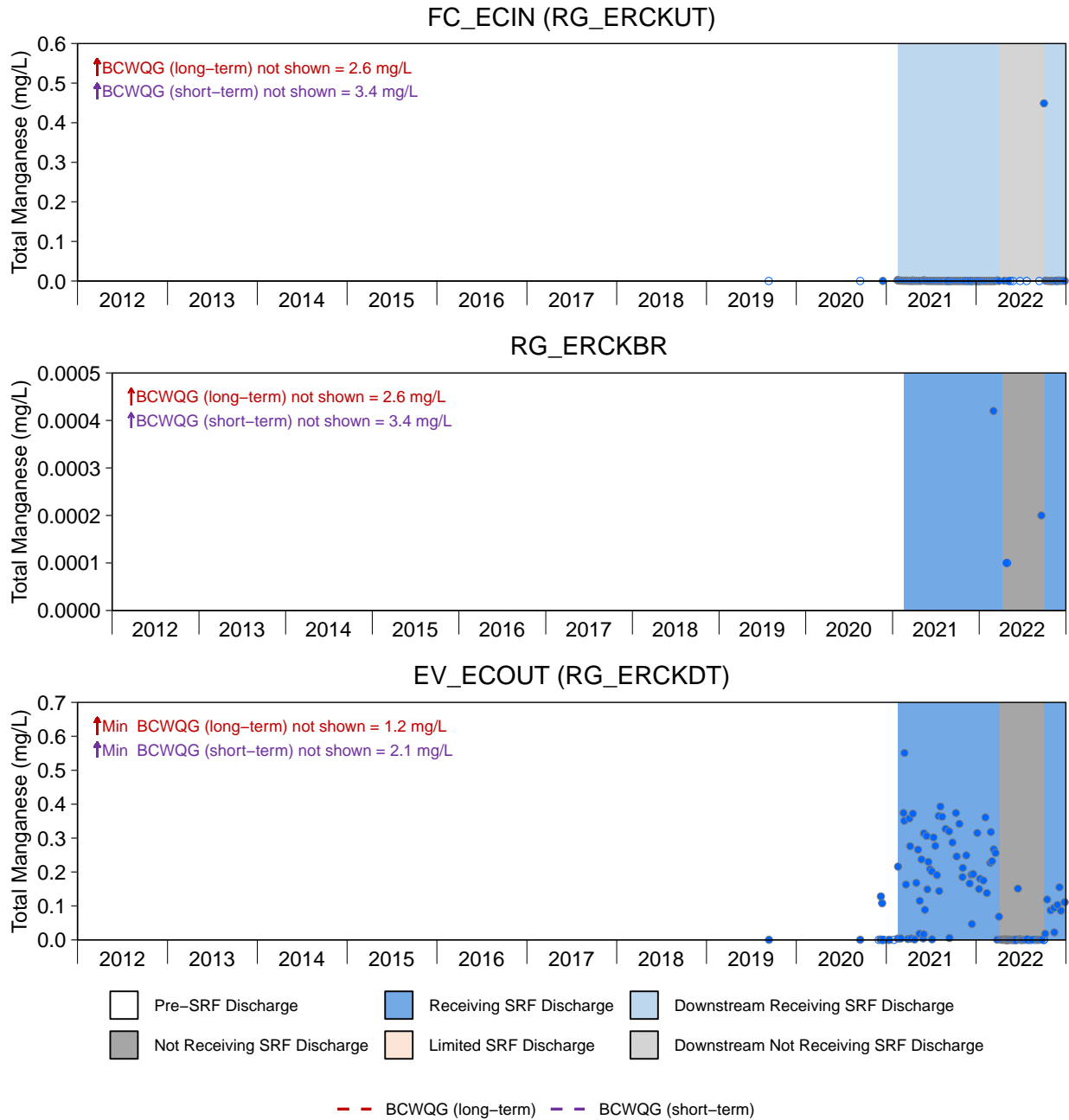


Figure D.9: Time Series Plots for Total Manganese from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

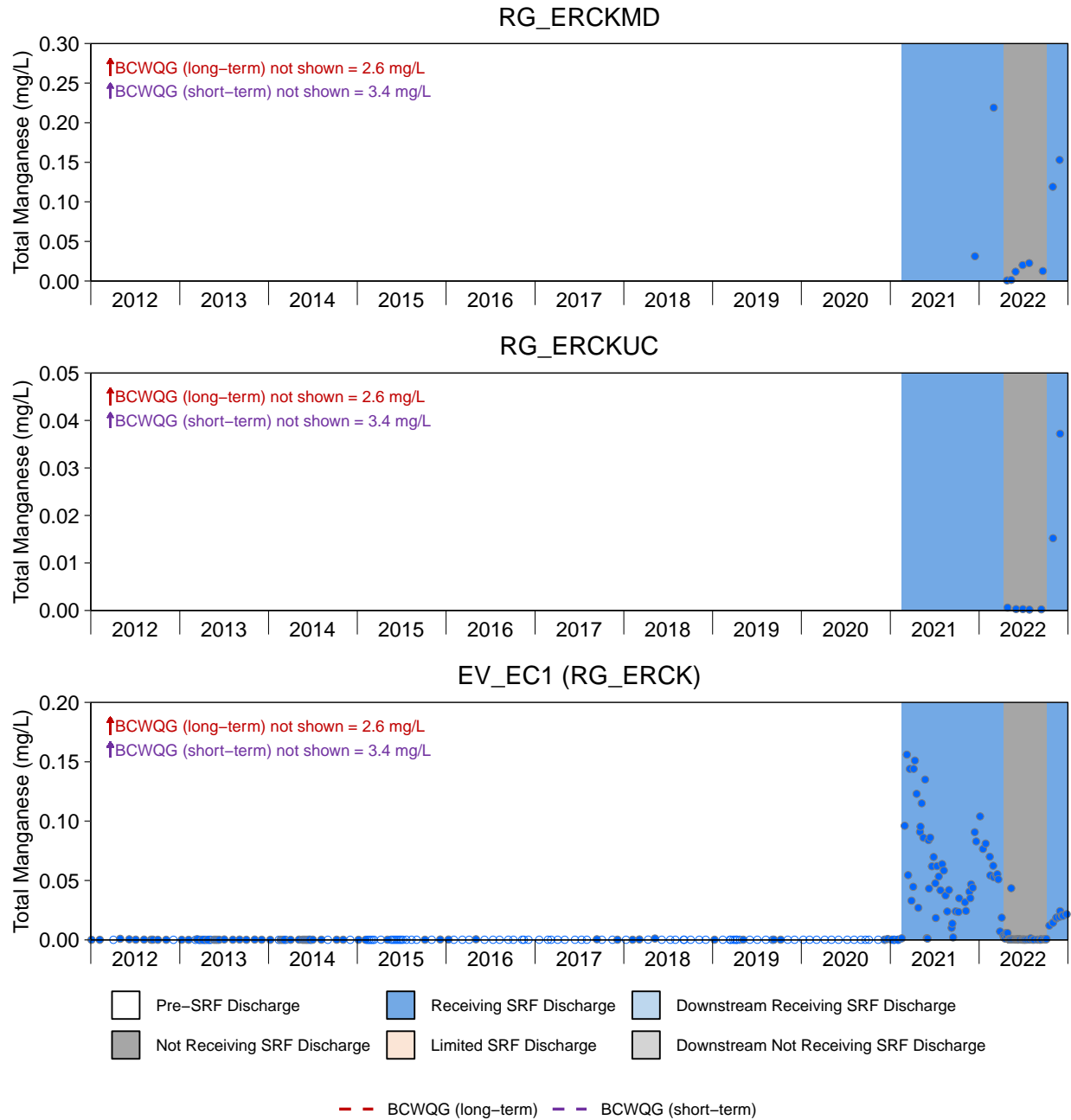


Figure D.9: Time Series Plots for Total Manganese from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

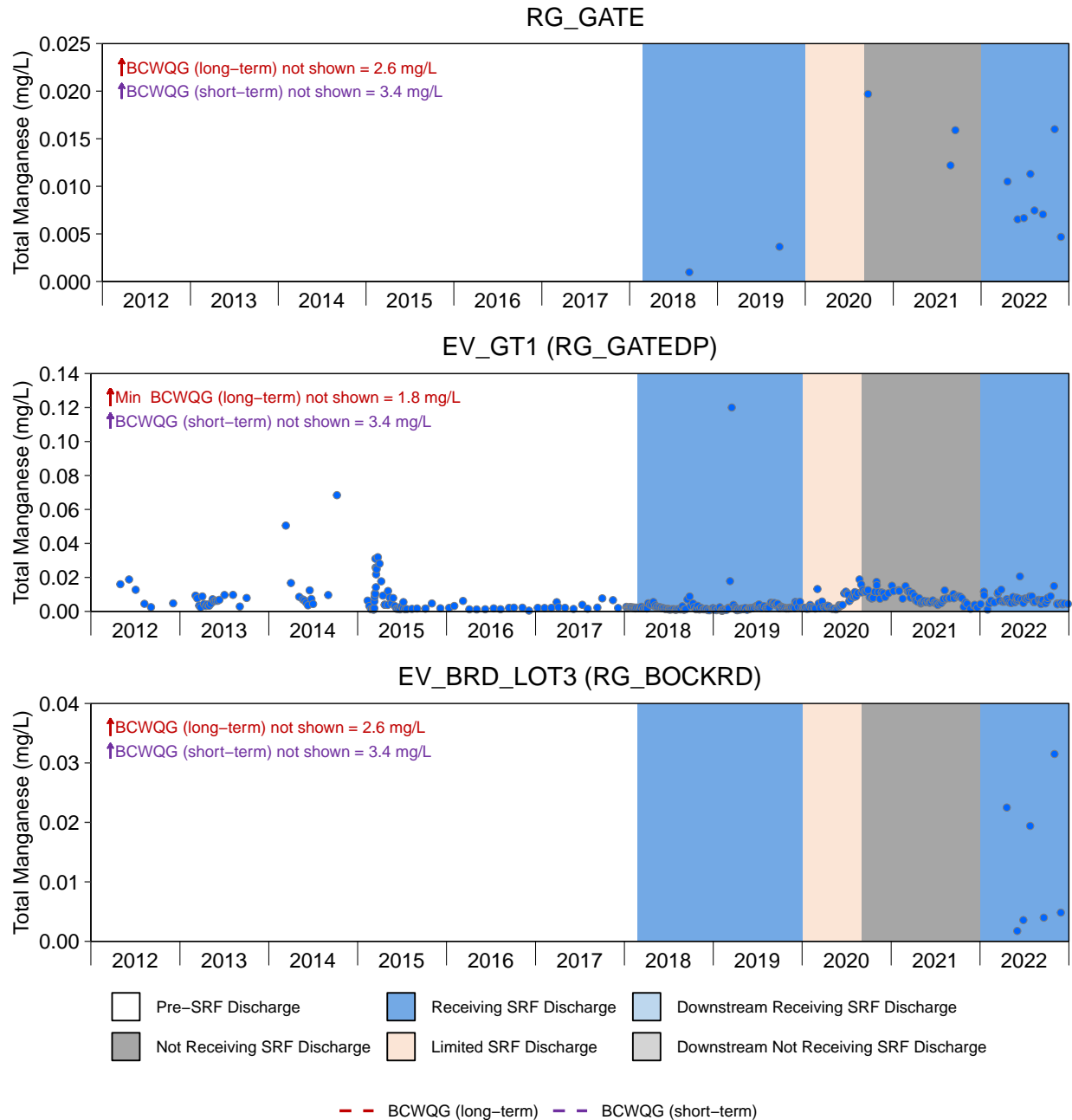


Figure D.9: Time Series Plots for Total Manganese from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

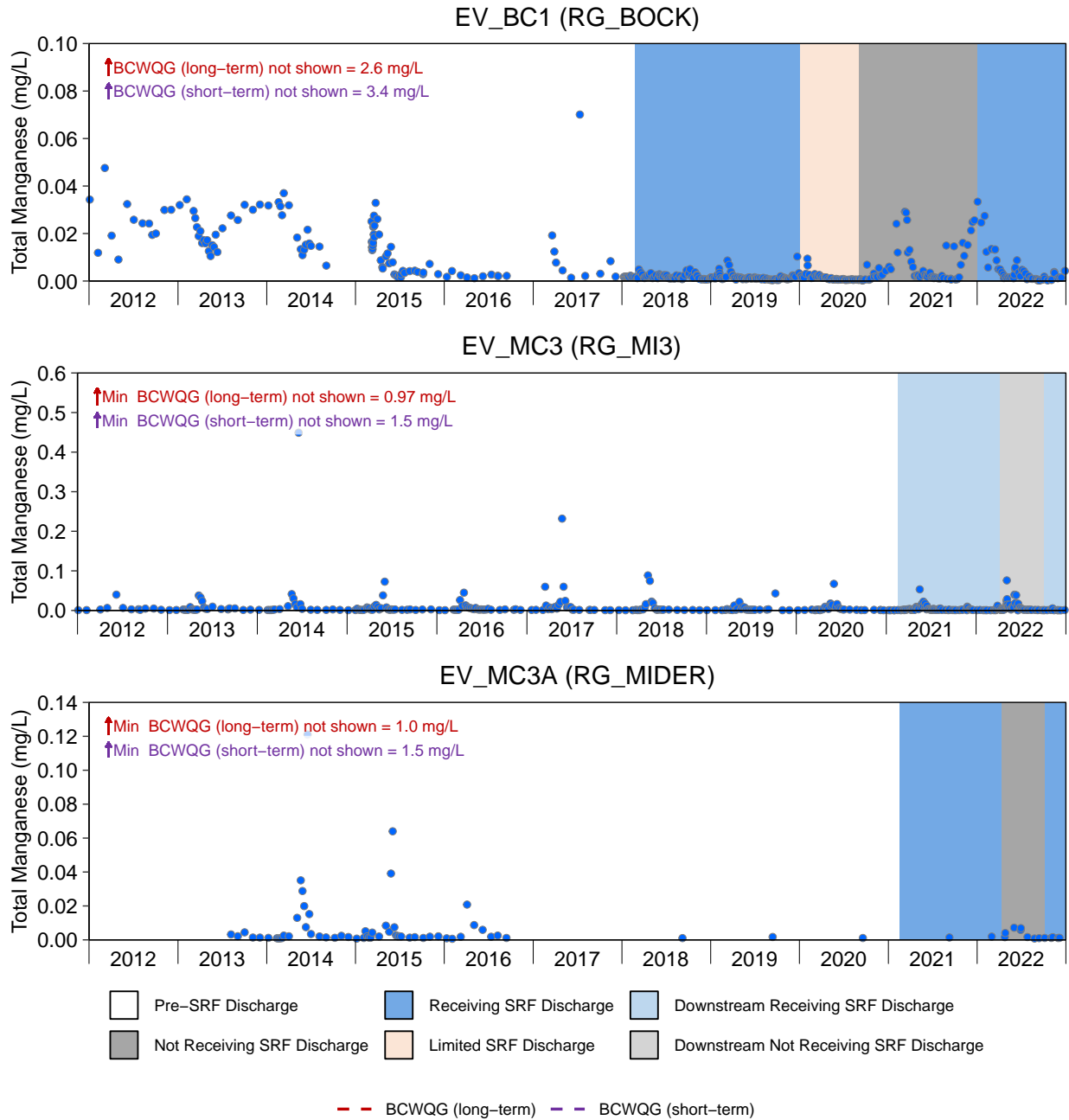


Figure D.9: Time Series Plots for Total Manganese from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

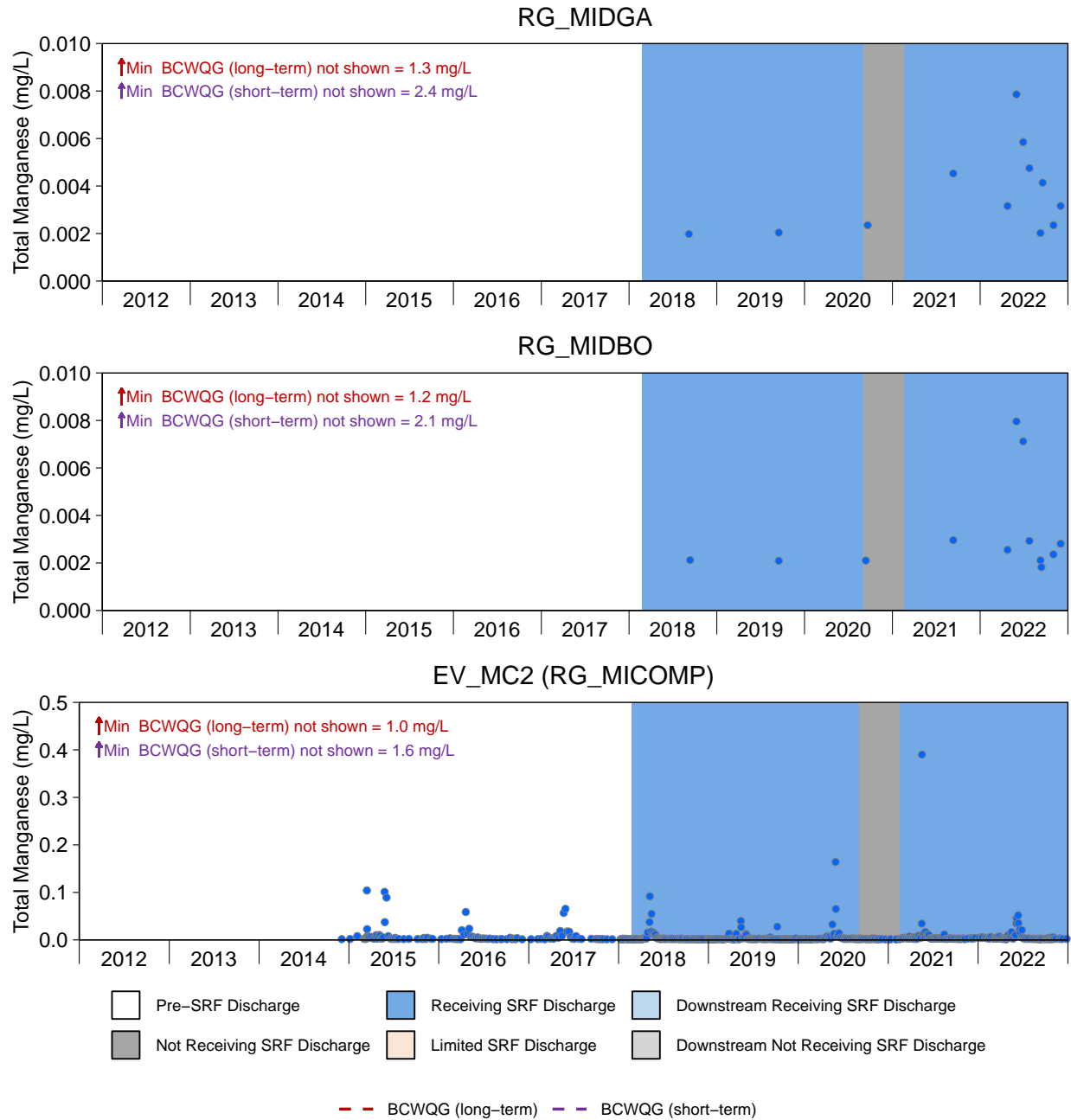


Figure D.9: Time Series Plots for Total Manganese from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

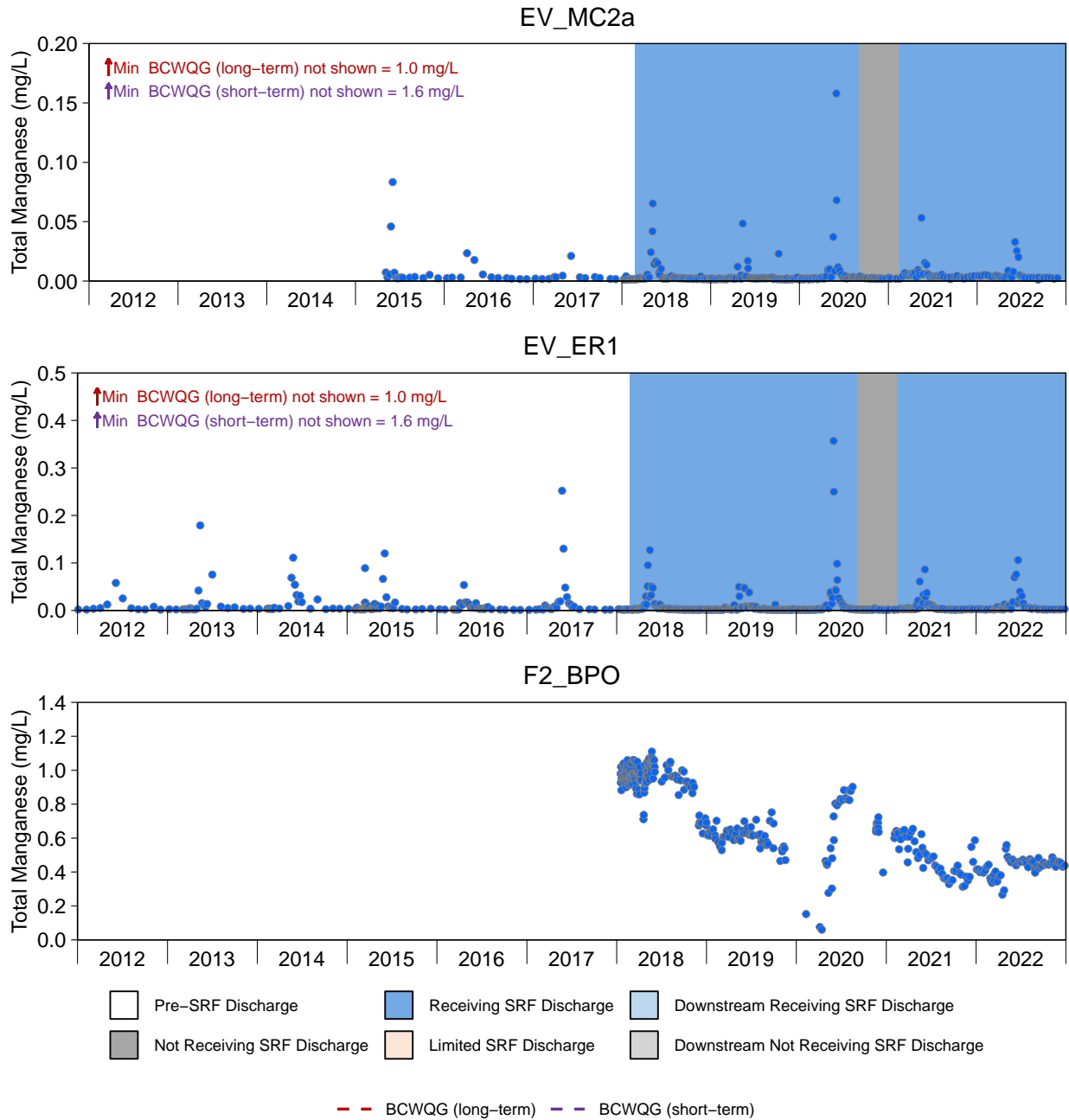


Figure D.9: Time Series Plots for Total Manganese from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

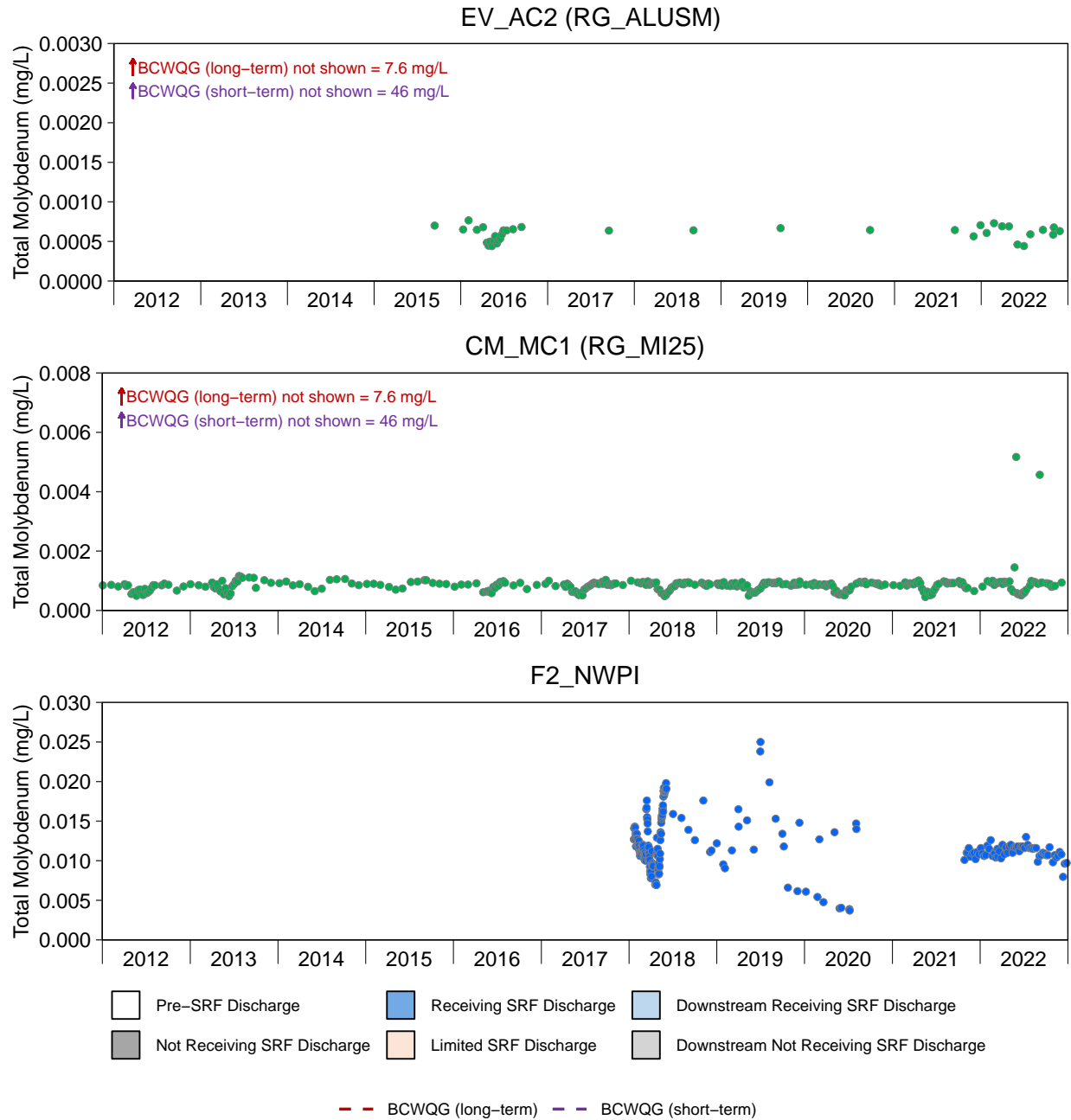


Figure D.10: Time Series Plots for Total Molybdenum from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

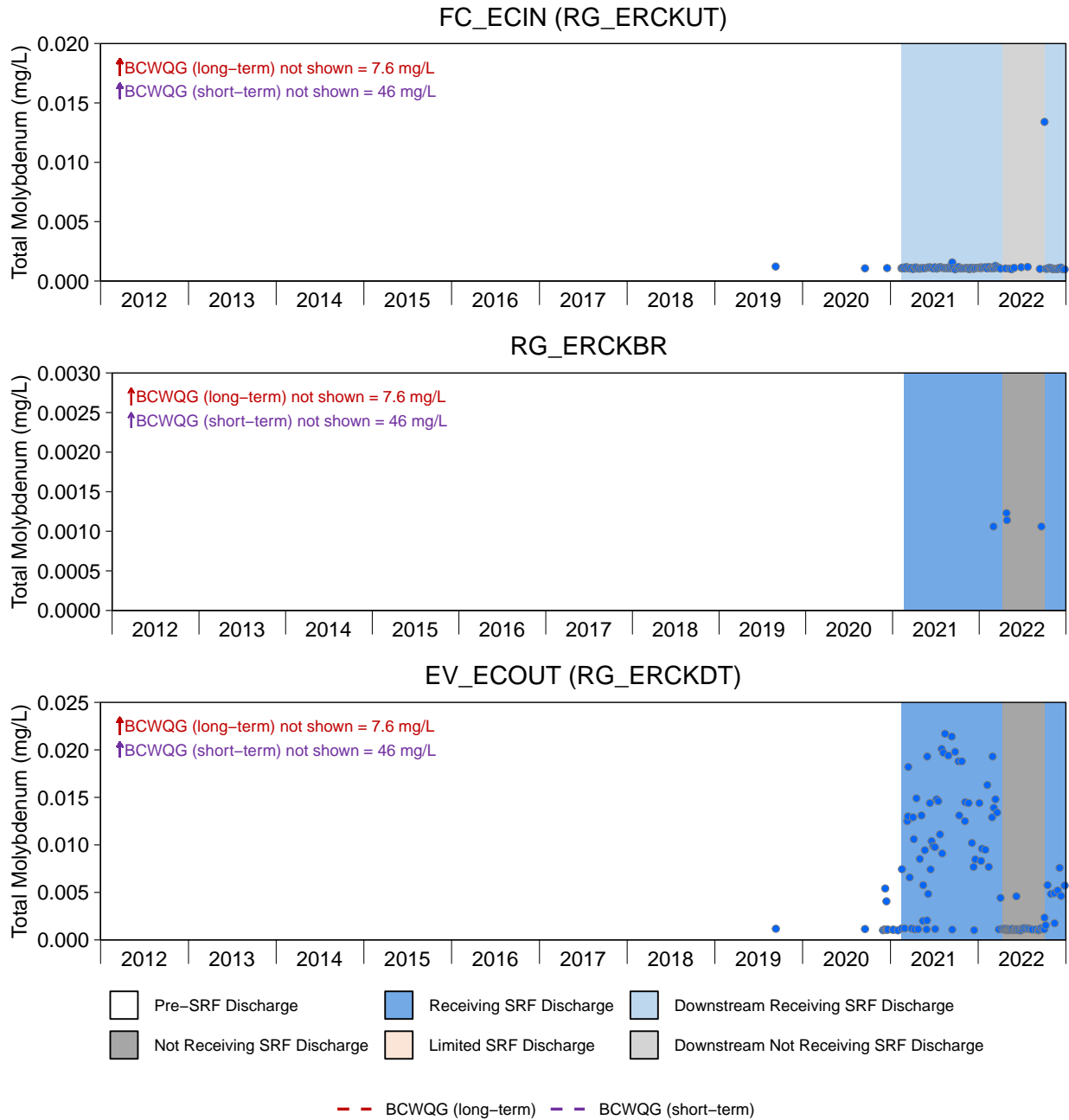


Figure D.10: Time Series Plots for Total Molybdenum from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

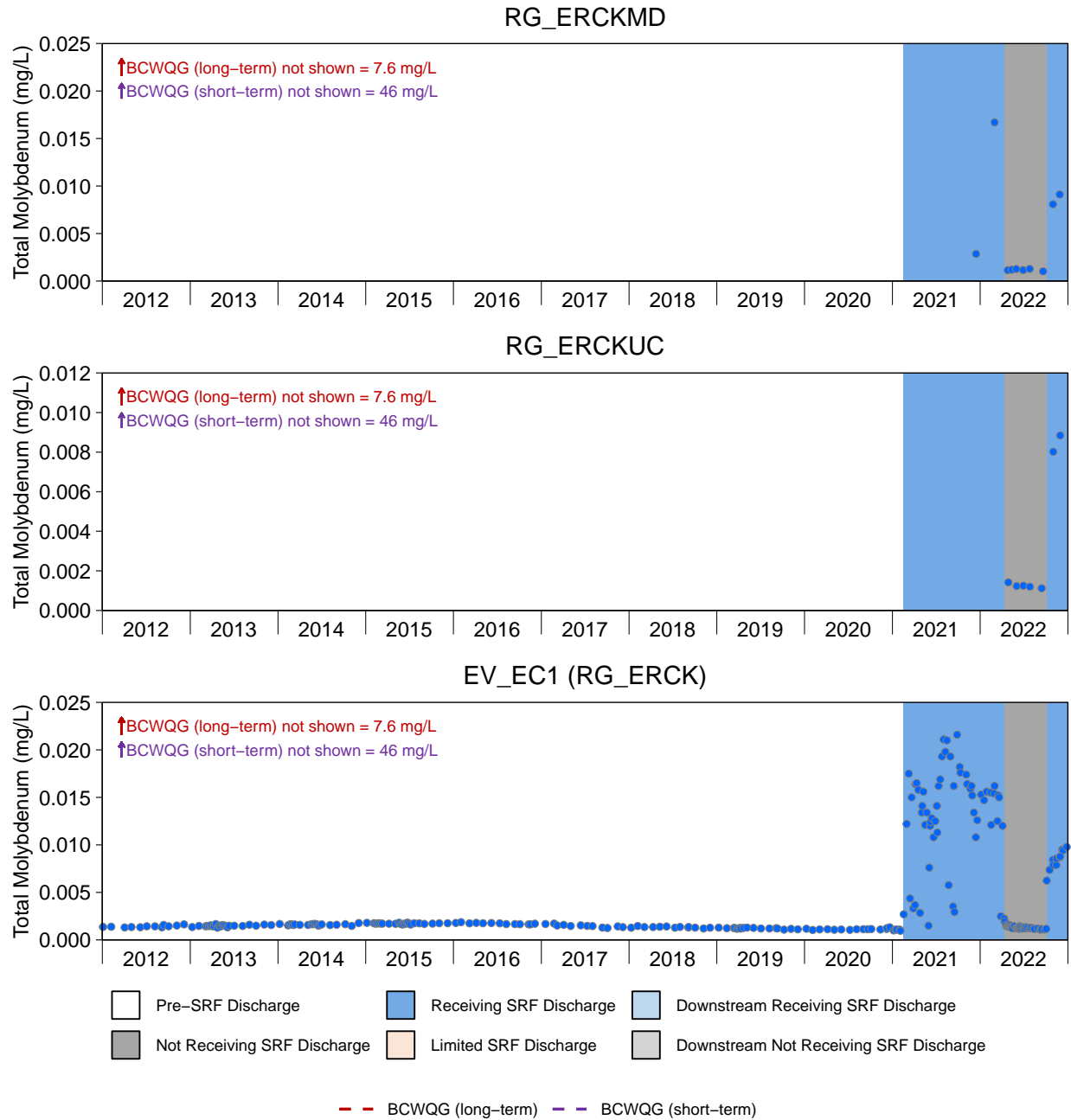


Figure D.10: Time Series Plots for Total Molybdenum from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

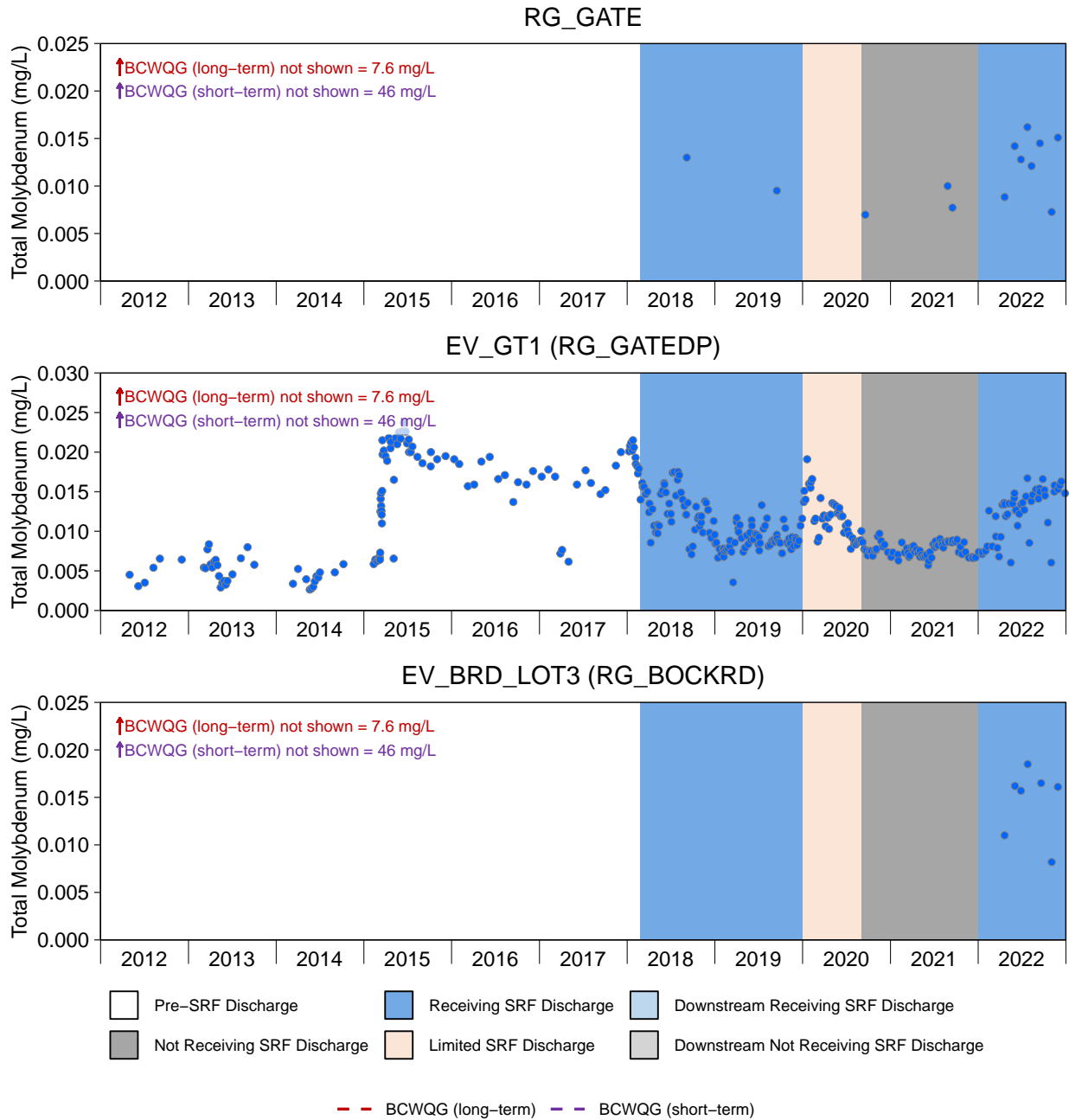


Figure D.10: Time Series Plots for Total Molybdenum from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

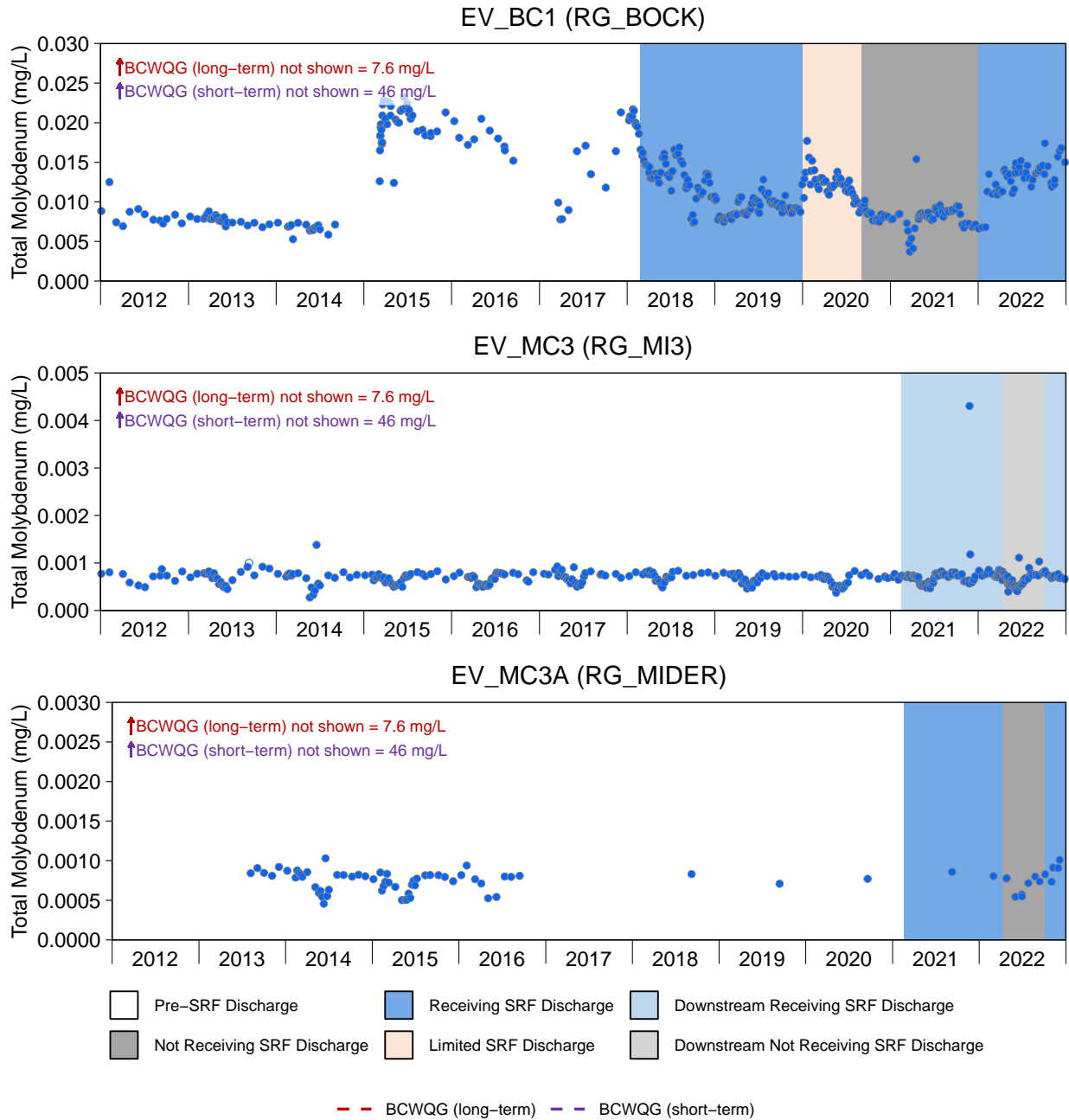


Figure D.10: Time Series Plots for Total Molybdenum from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

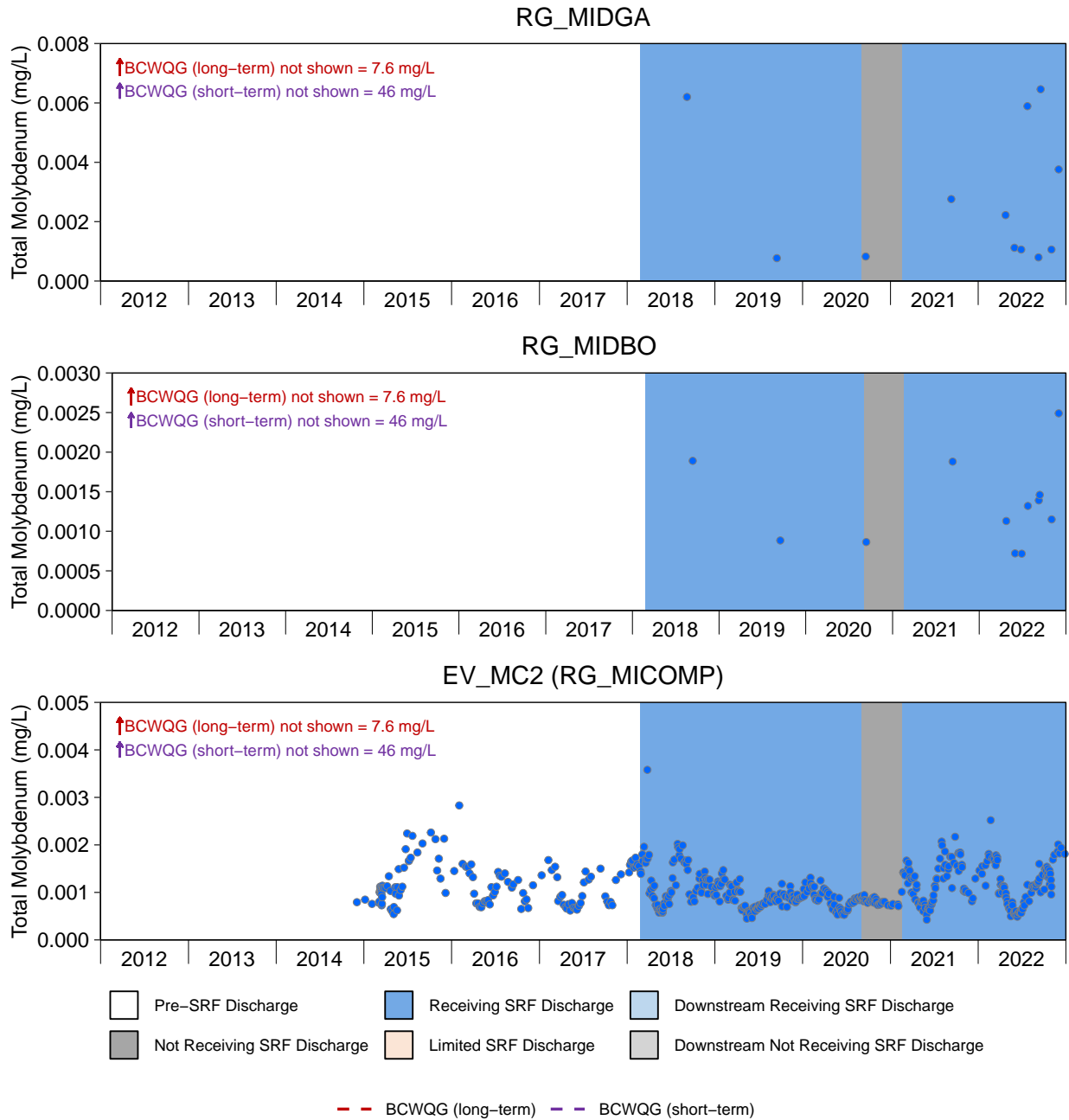


Figure D.10: Time Series Plots for Total Molybdenum from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

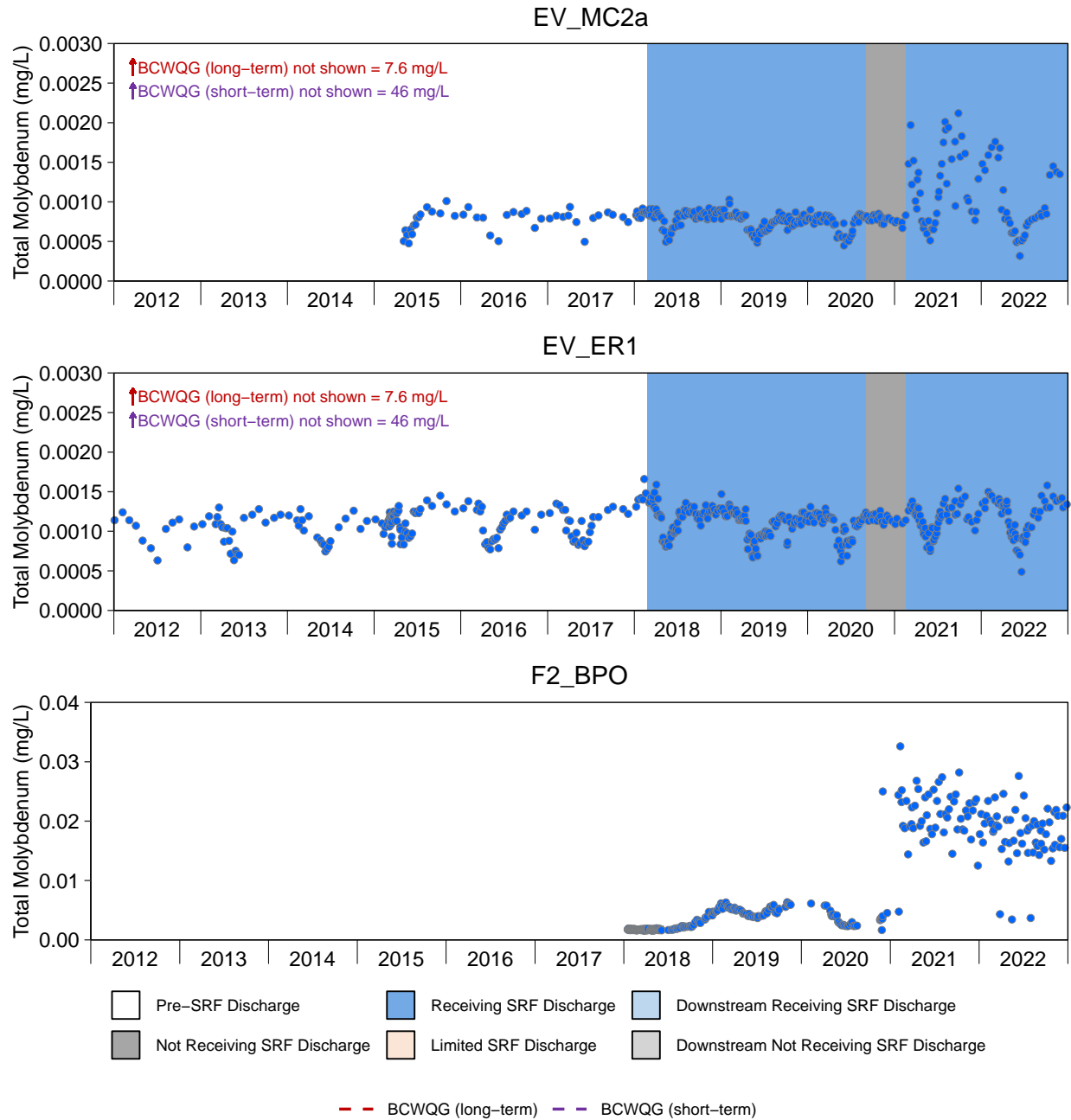


Figure D.10: Time Series Plots for Total Molybdenum from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

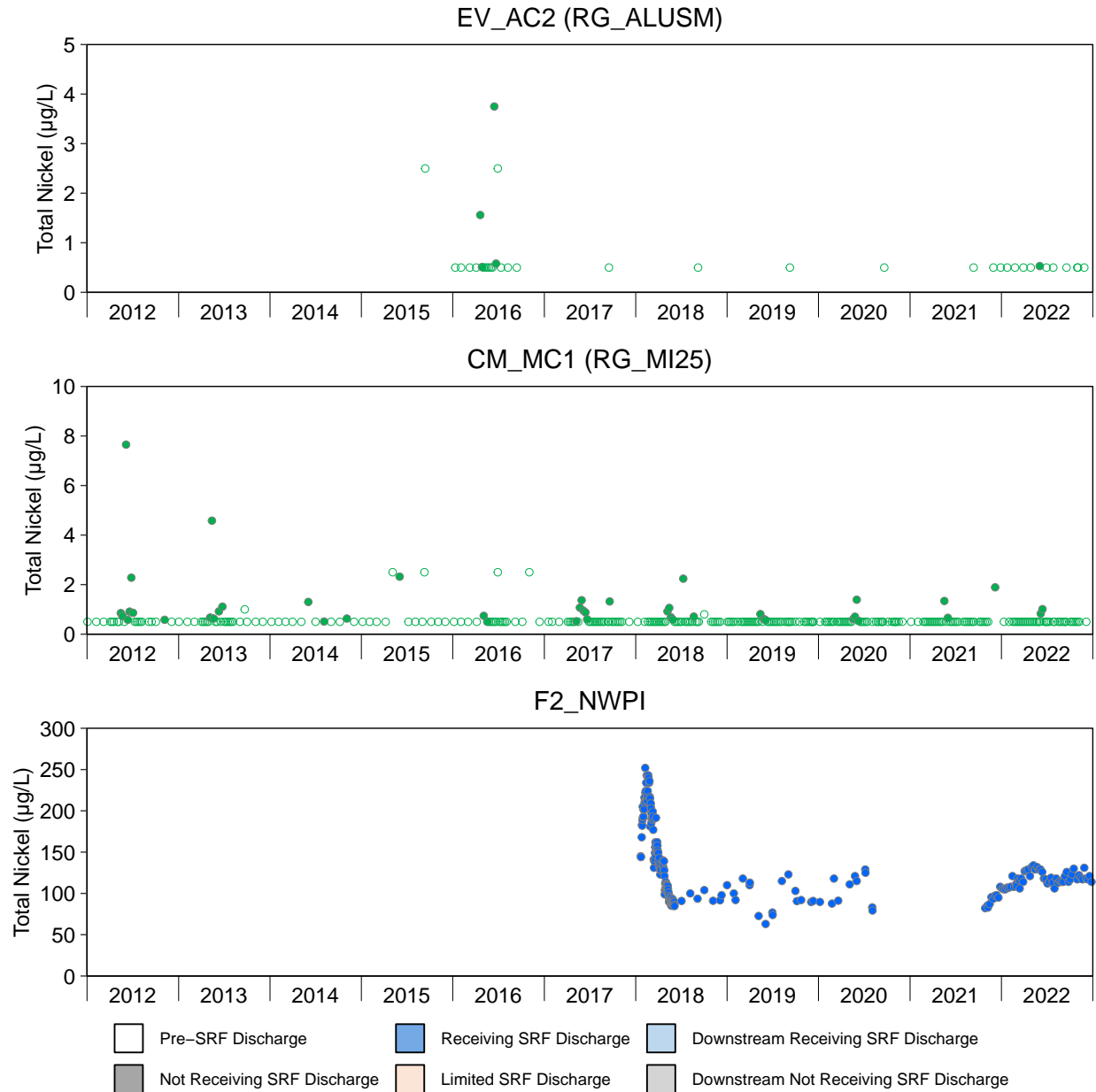


Figure D.11: Time Series Plots for Total Nickel from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

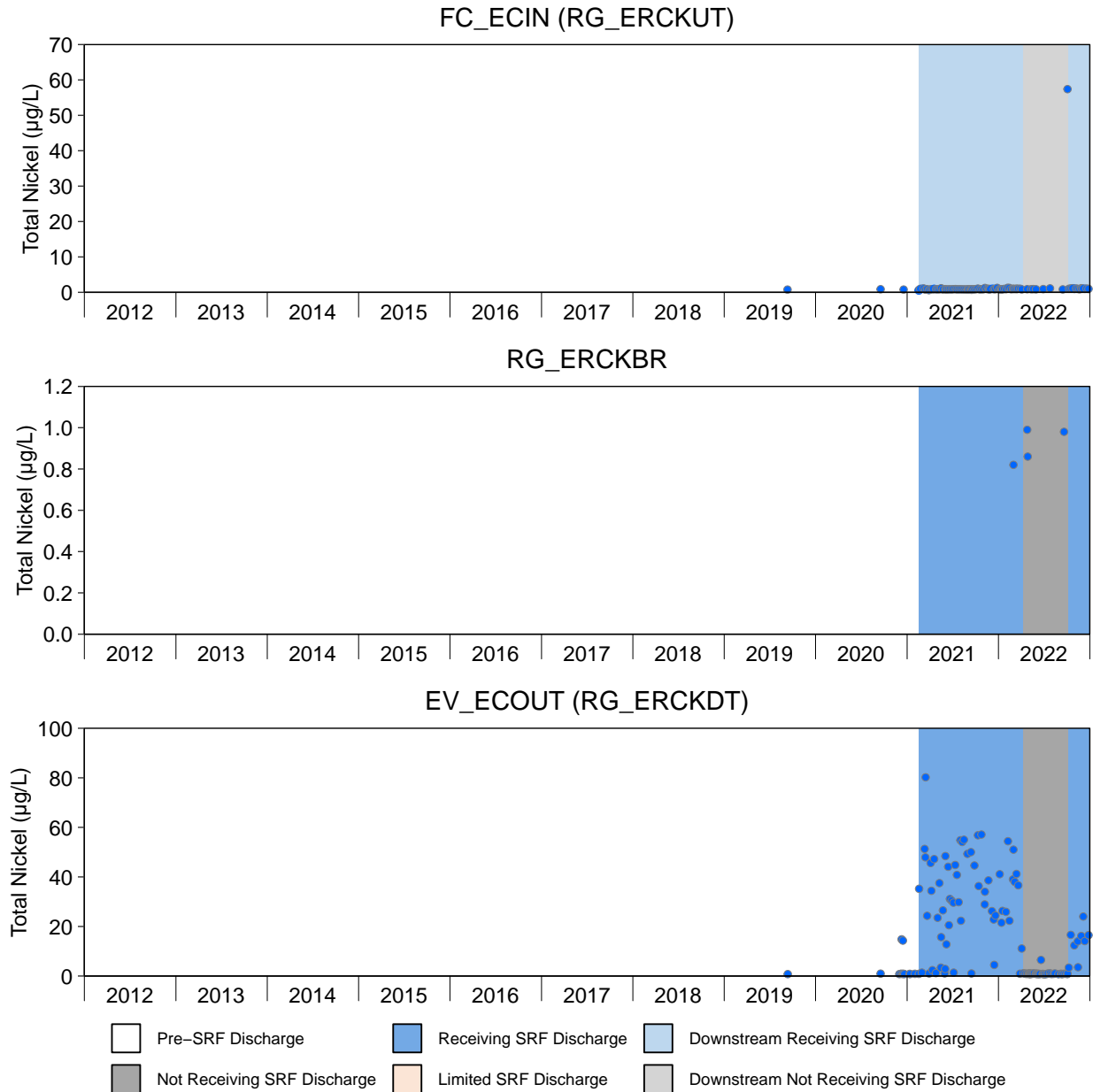


Figure D.11: Time Series Plots for Total Nickel from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

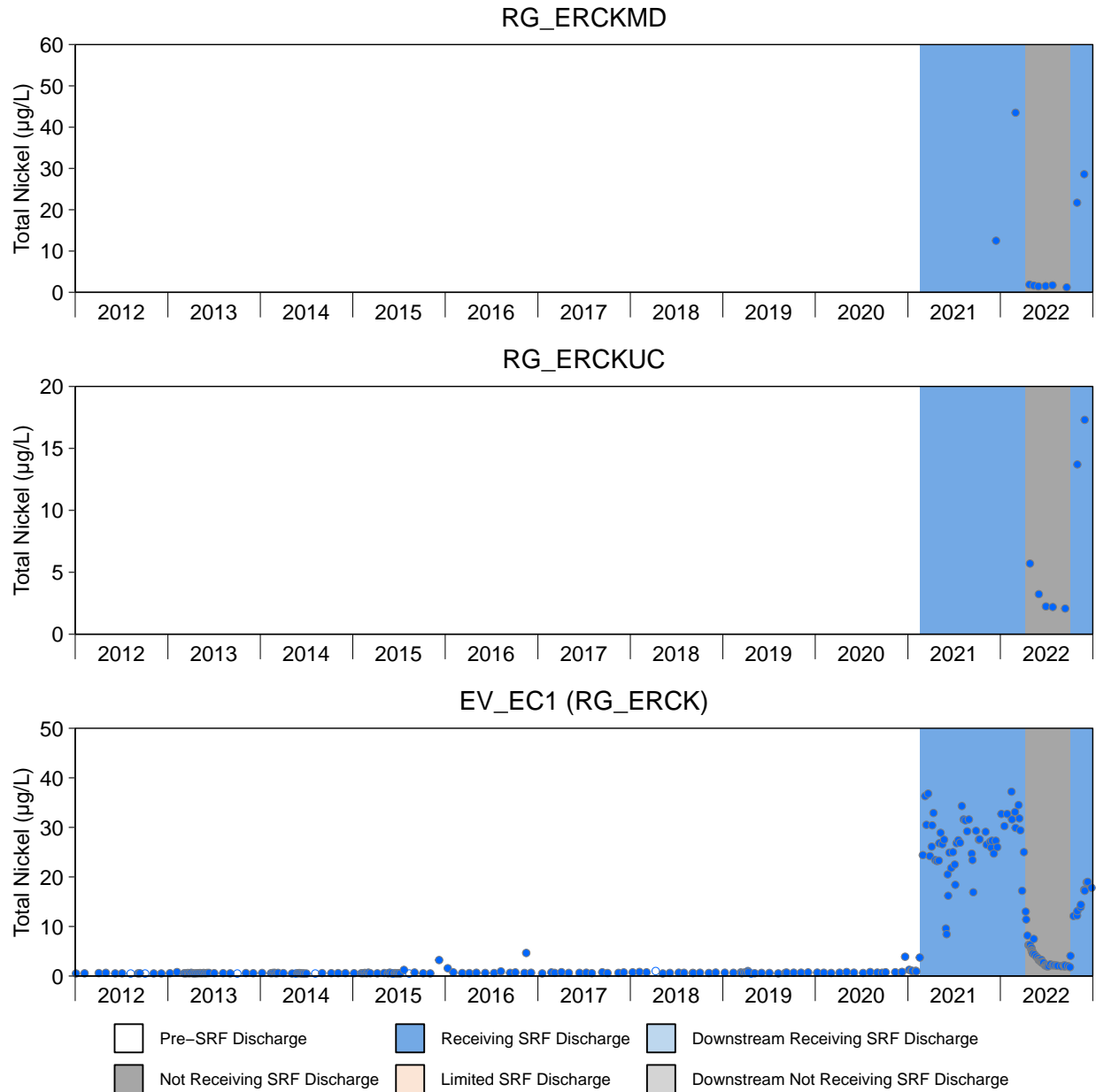


Figure D.11: Time Series Plots for Total Nickel from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

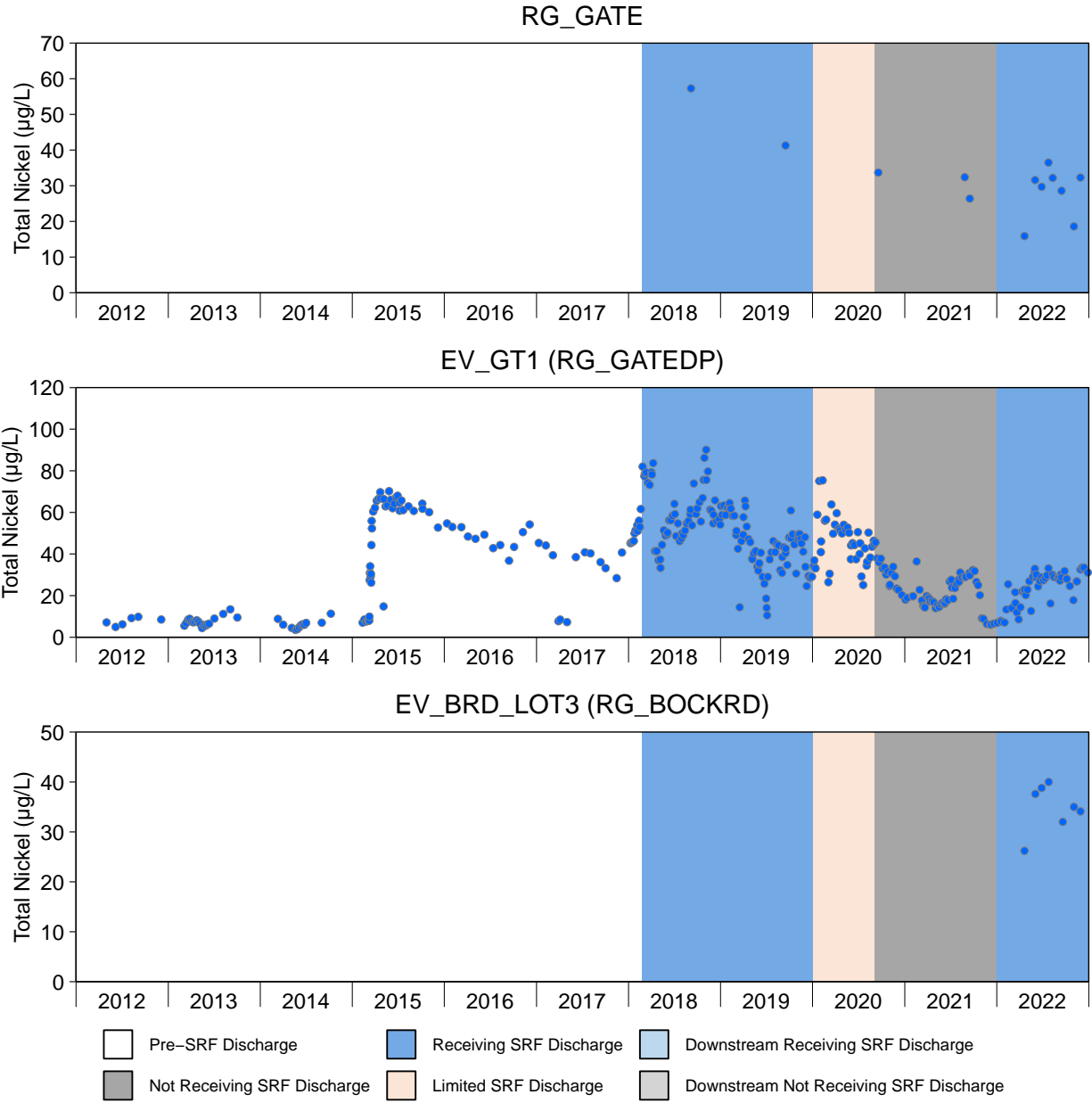


Figure D.11: Time Series Plots for Total Nickel from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

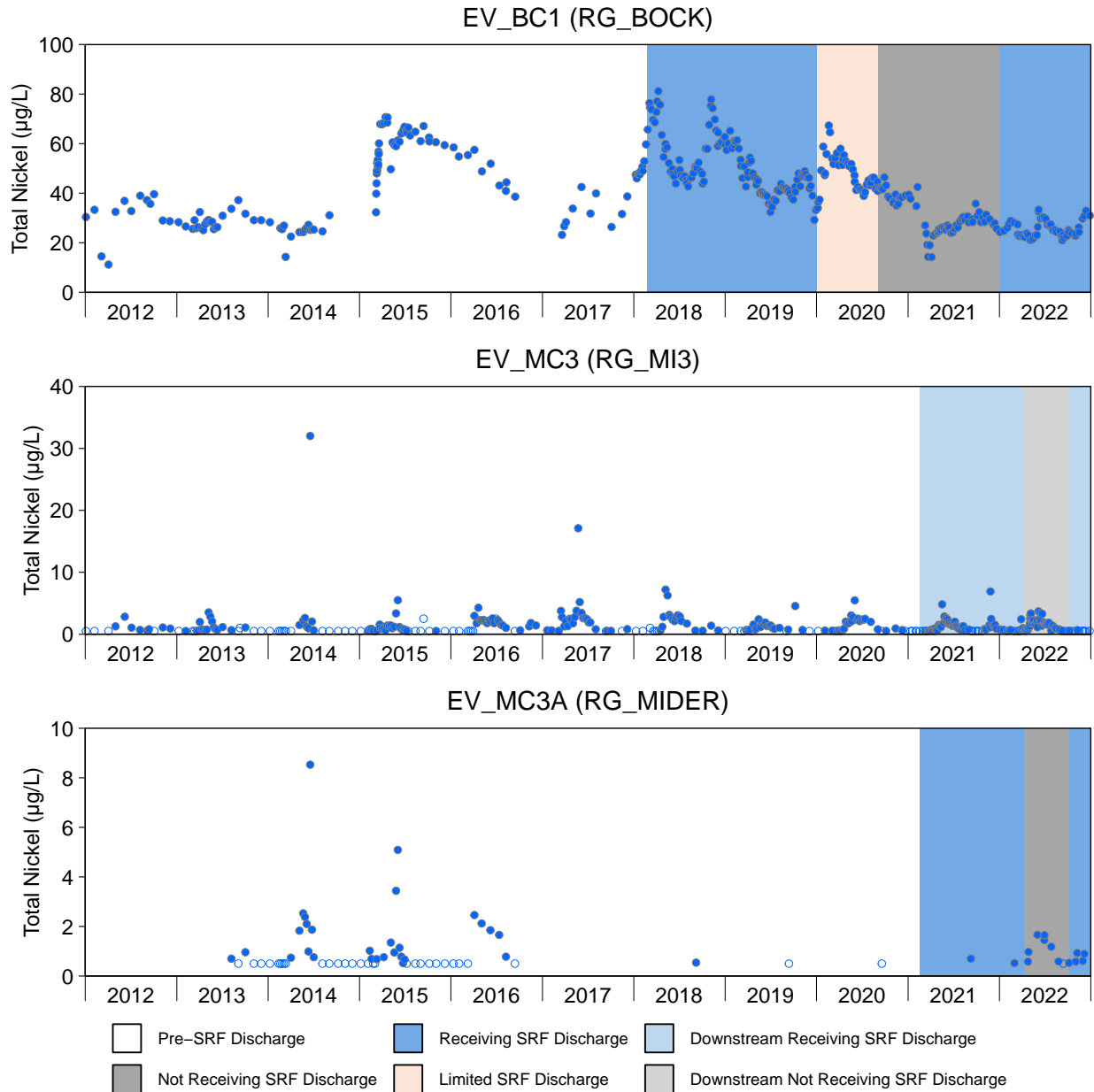


Figure D.11: Time Series Plots for Total Nickel from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

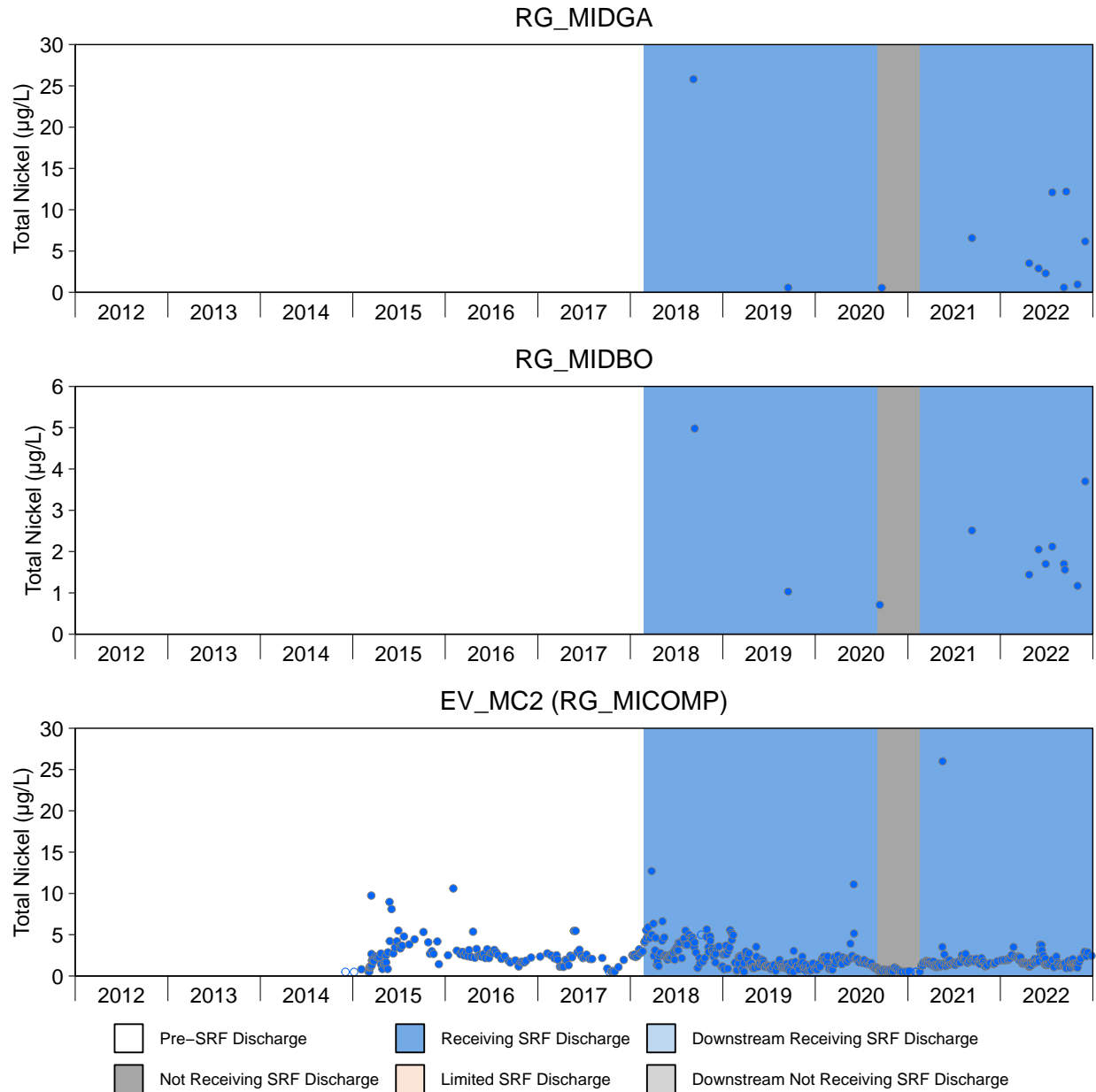


Figure D.11: Time Series Plots for Total Nickel from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

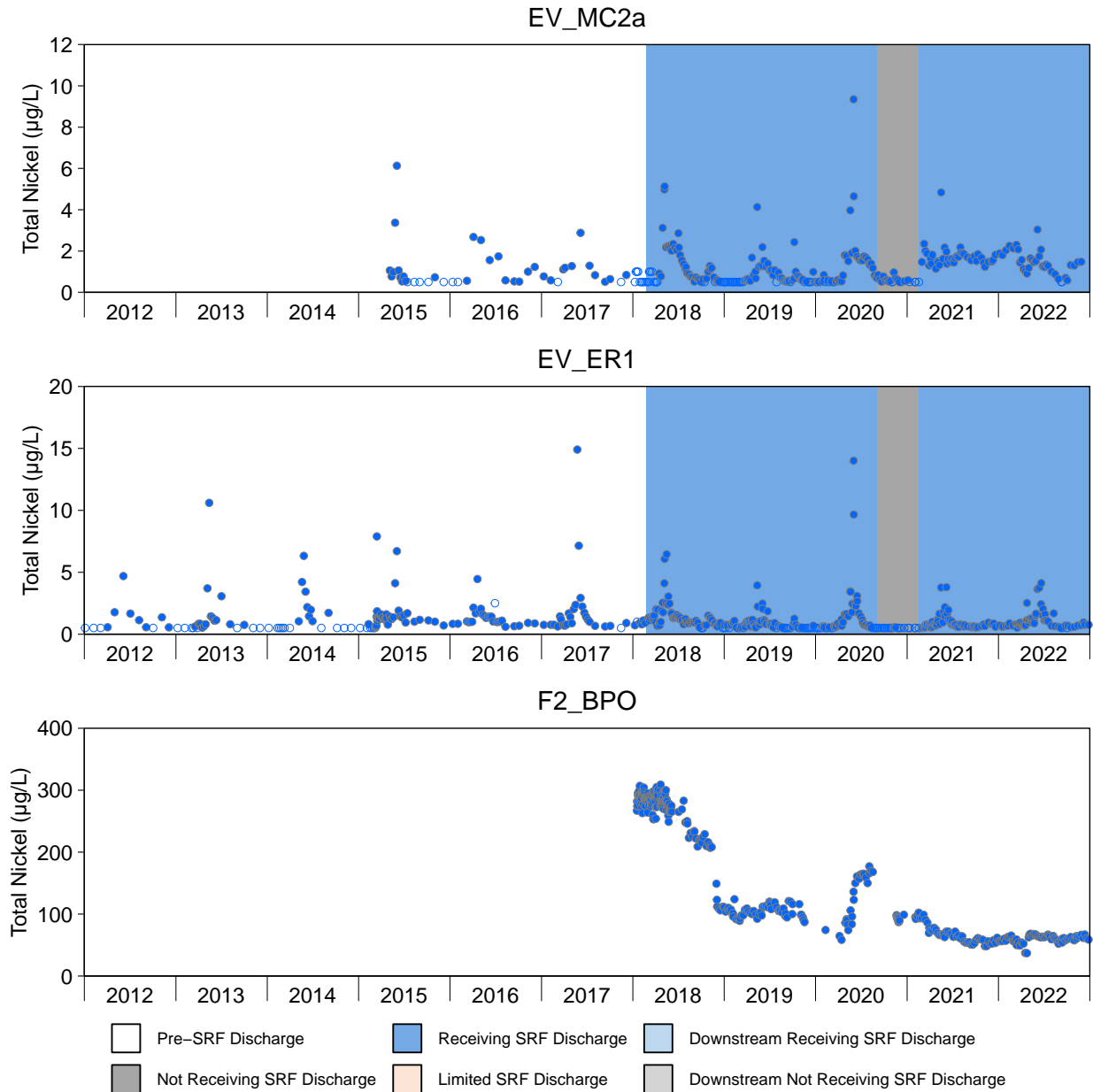


Figure D.11: Time Series Plots for Total Nickel from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

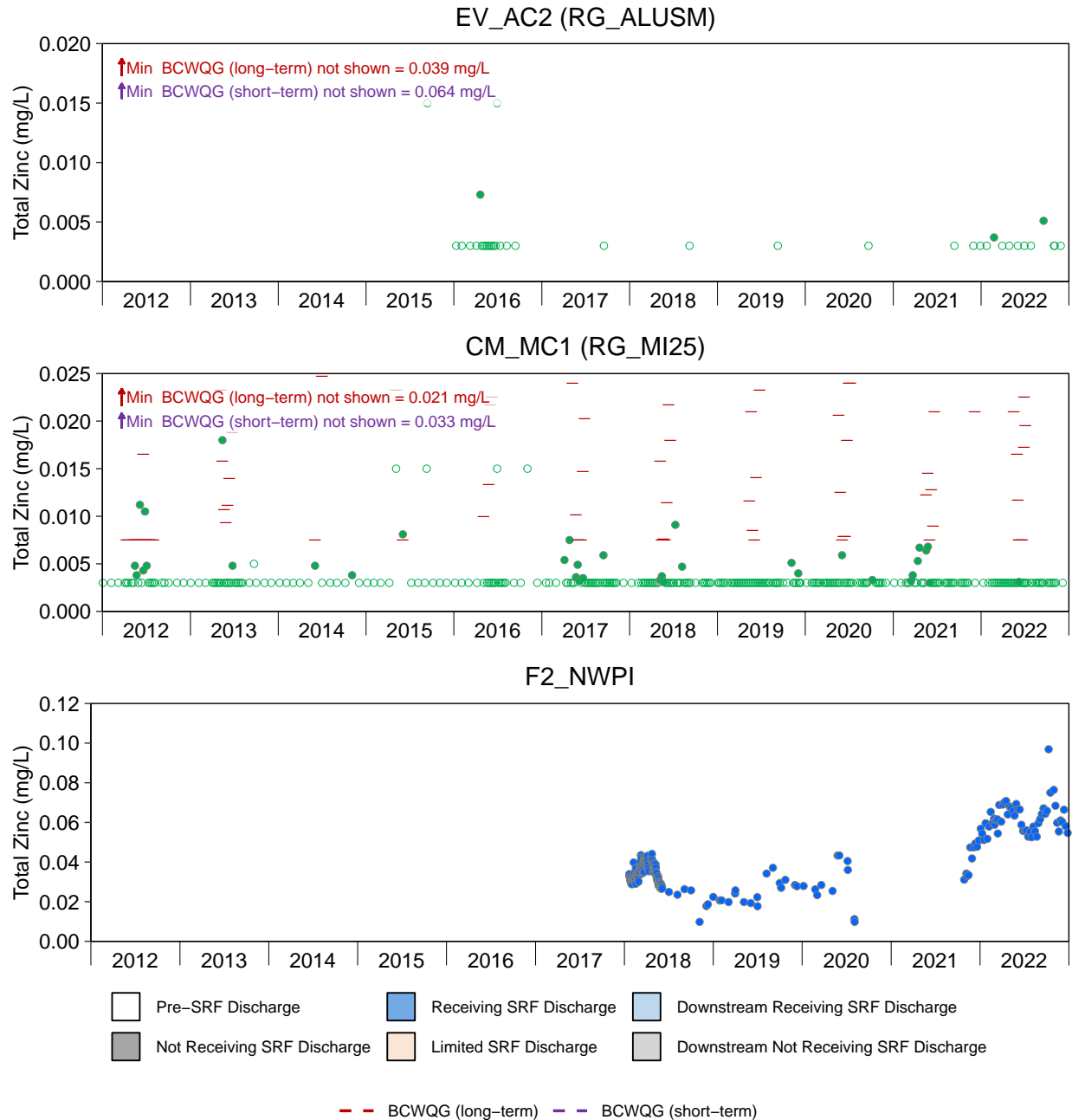


Figure D.12: Time Series Plots for Total Zinc from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Guidelines are dependent on water hardness. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

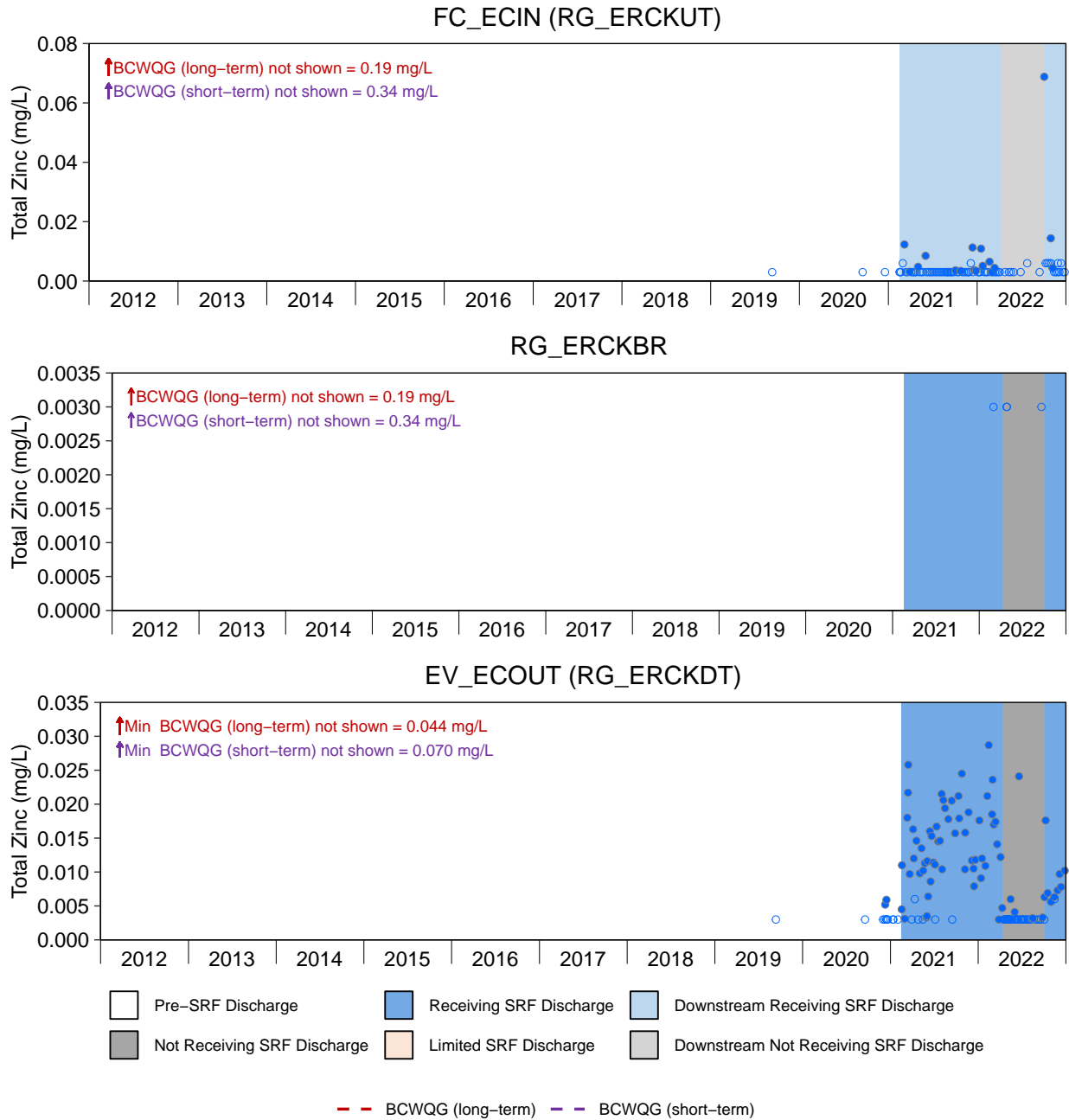


Figure D.12: Time Series Plots for Total Zinc from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Guidelines are dependent on water hardness. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

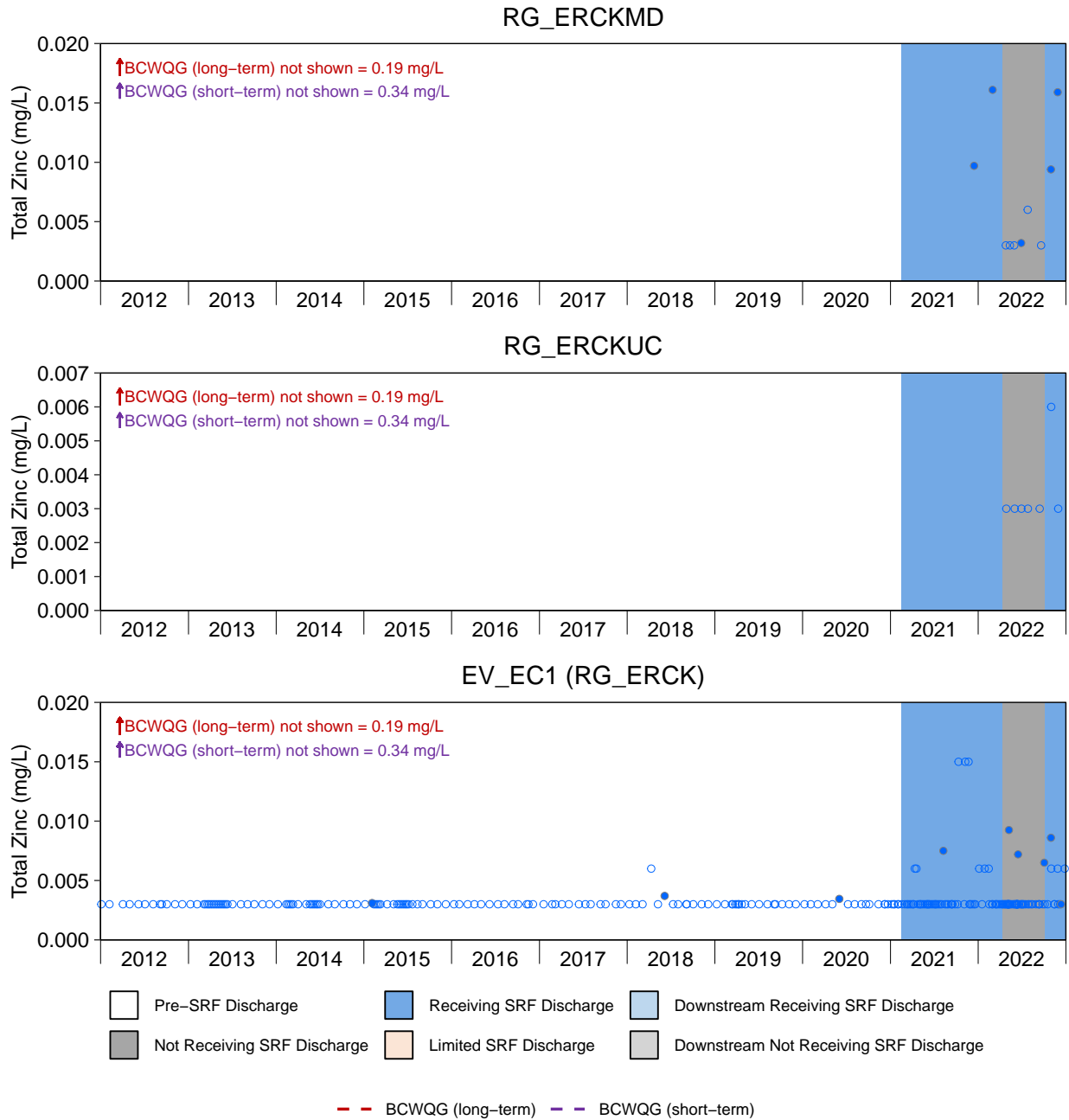


Figure D.12: Time Series Plots for Total Zinc from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Guidelines are dependent on water hardness. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

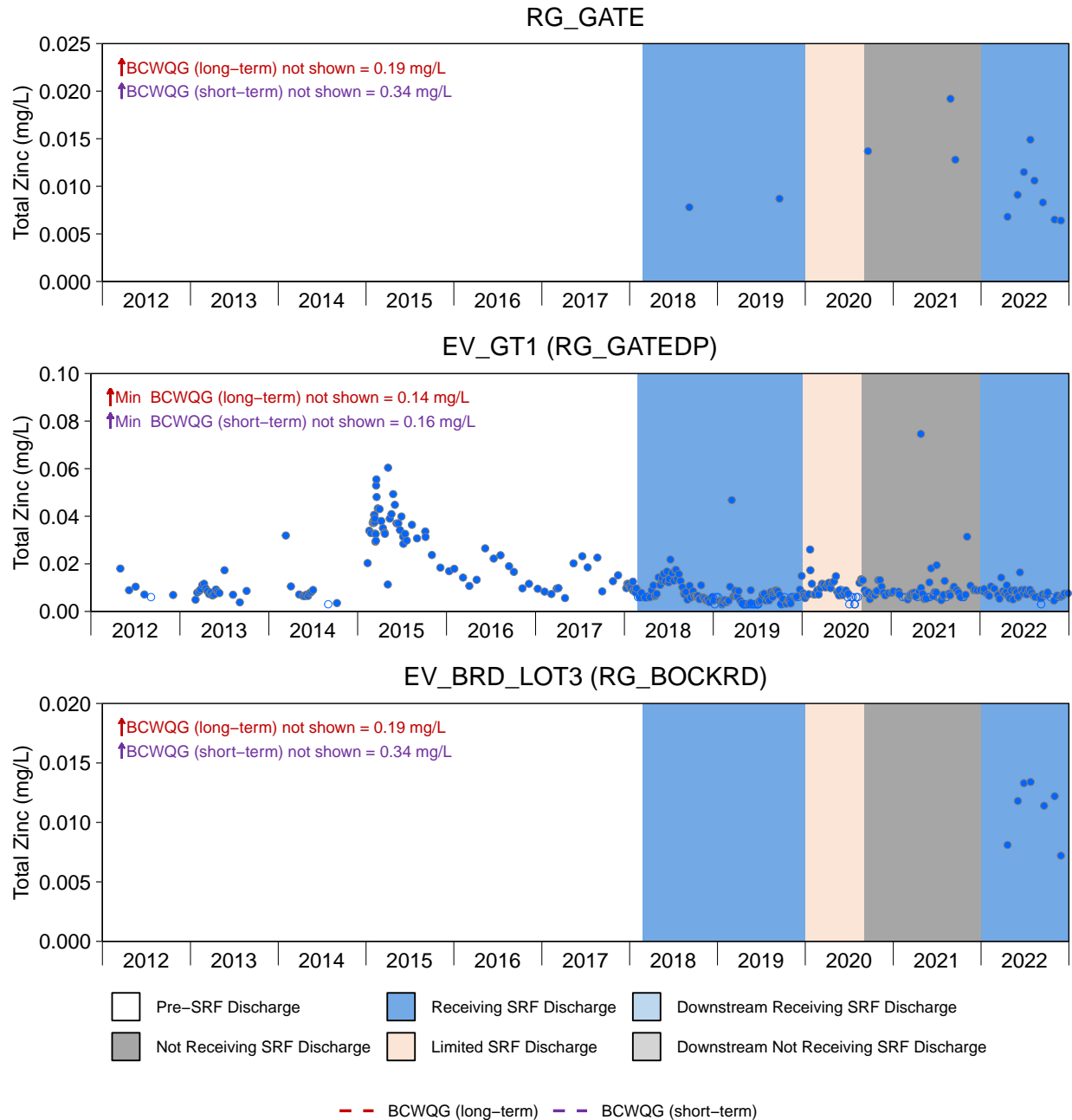


Figure D.12: Time Series Plots for Total Zinc from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Guidelines are dependent on water hardness. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

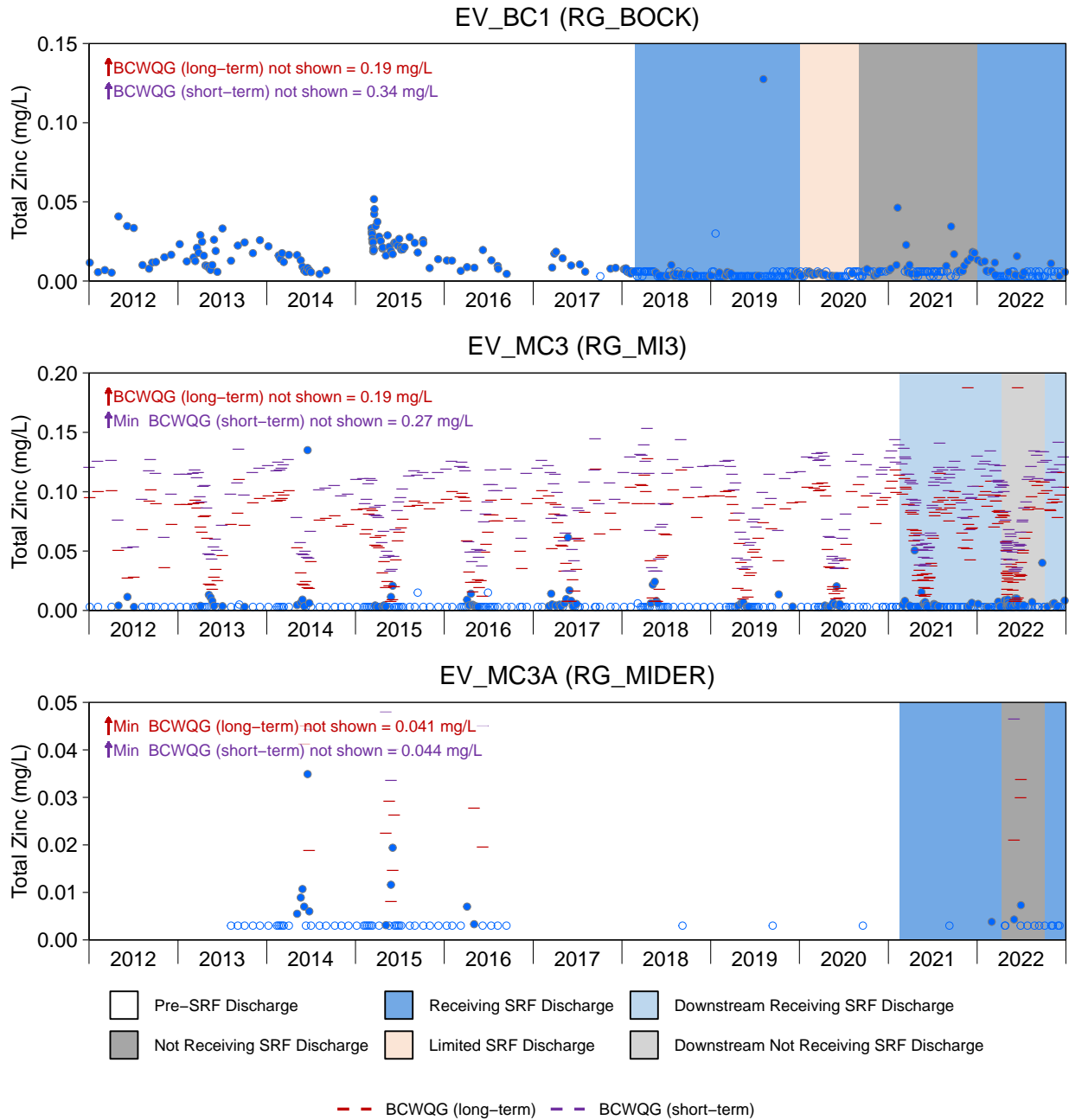


Figure D.12: Time Series Plots for Total Zinc from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Guidelines are dependent on water hardness. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

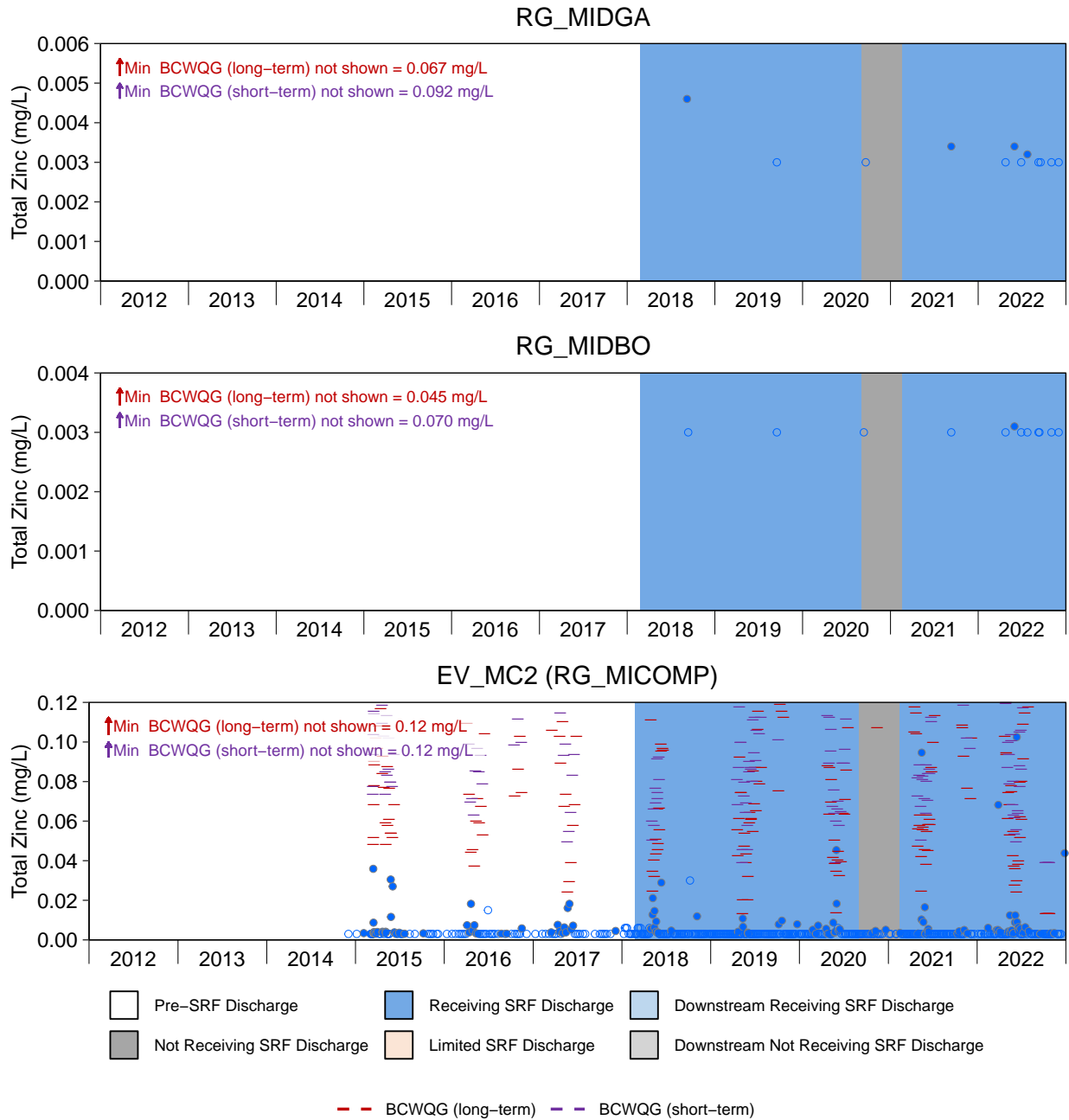


Figure D.12: Time Series Plots for Total Zinc from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Guidelines are dependent on water hardness. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

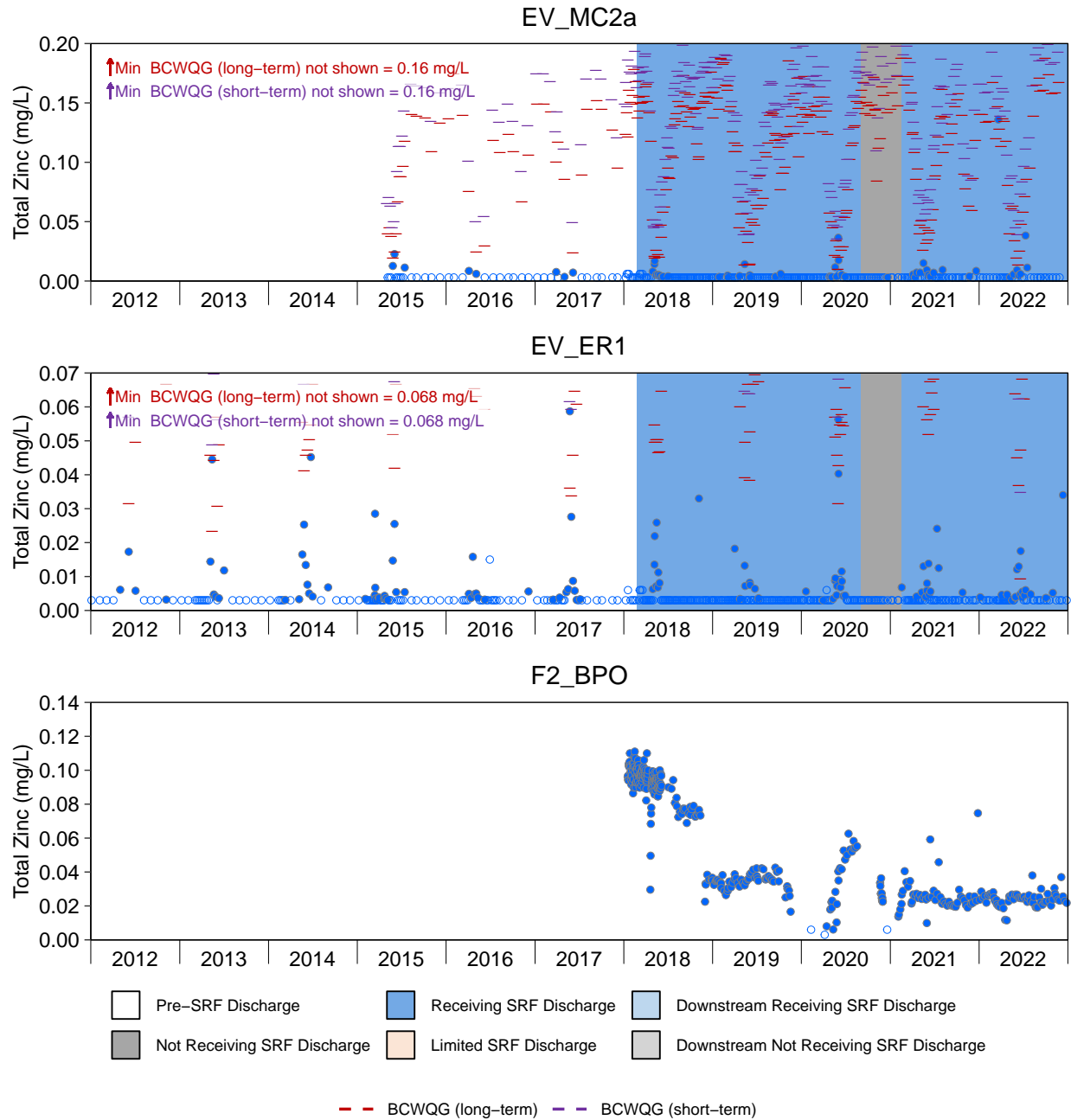


Figure D.12: Time Series Plots for Total Zinc from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Guidelines are dependent on water hardness. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

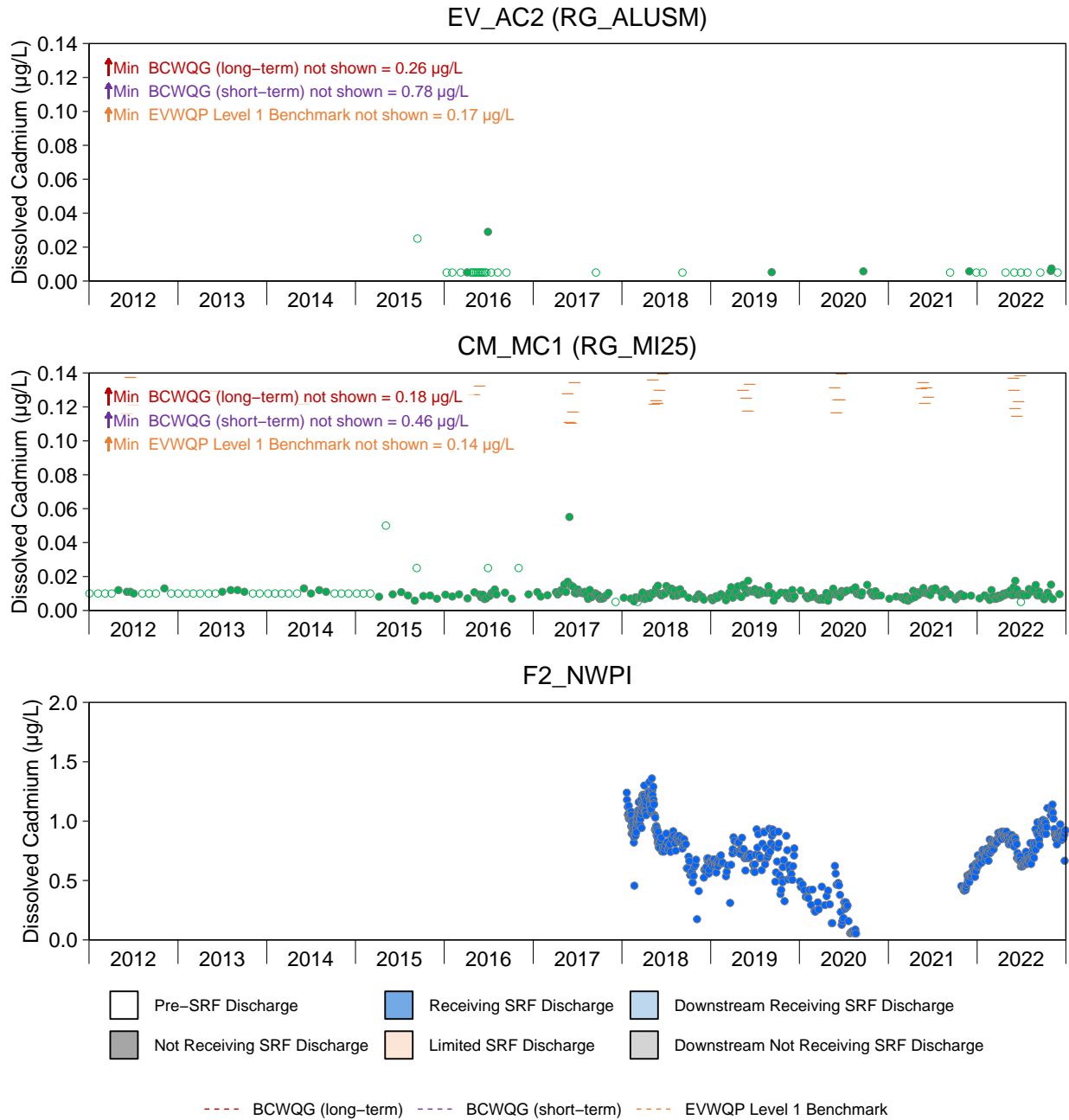


Figure D.13: Time Series Plots for Dissolved Cadmium from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Guidelines are dependent on water hardness. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

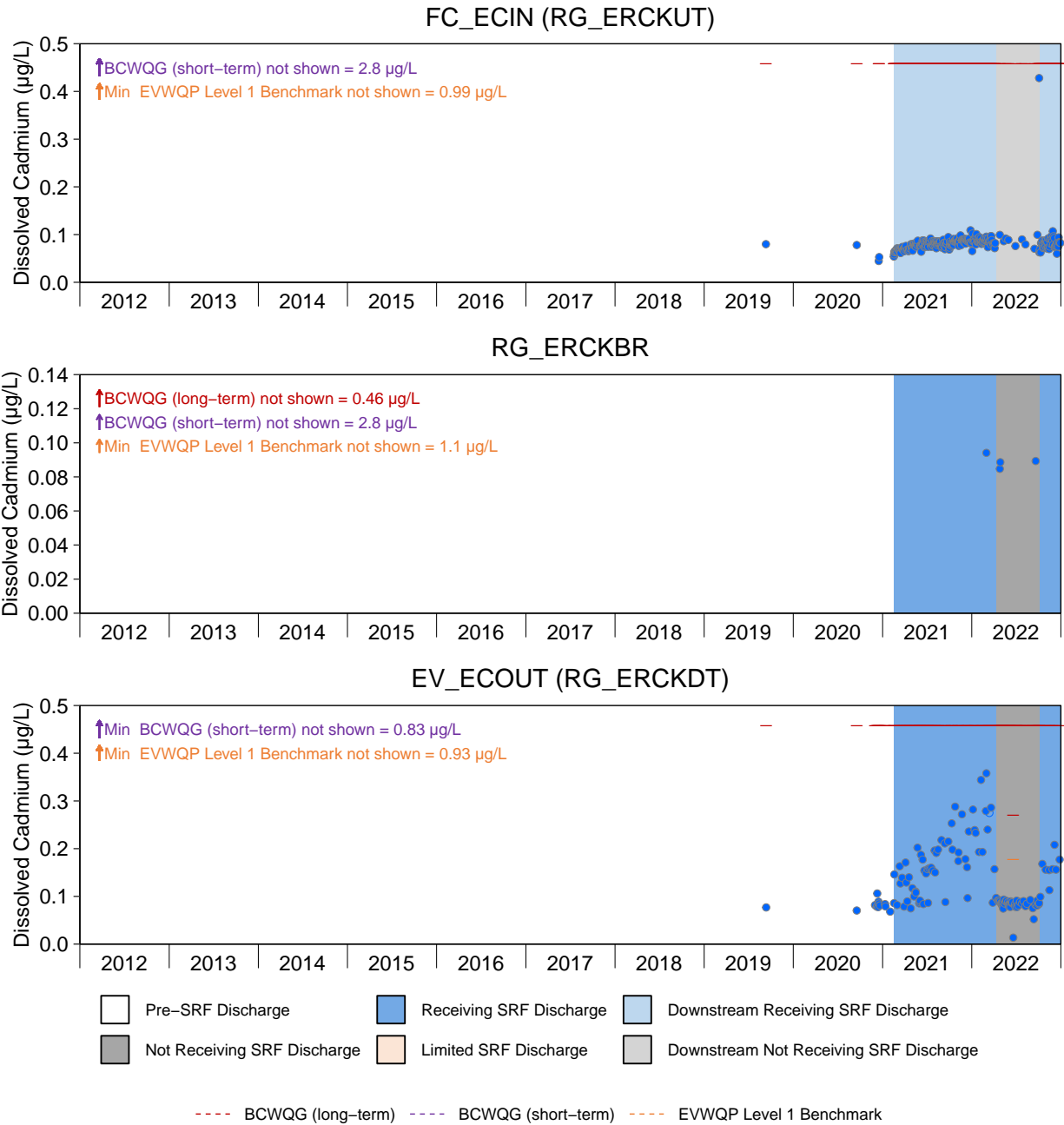


Figure D.13: Time Series Plots for Dissolved Cadmium from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Guidelines are dependent on water hardness. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

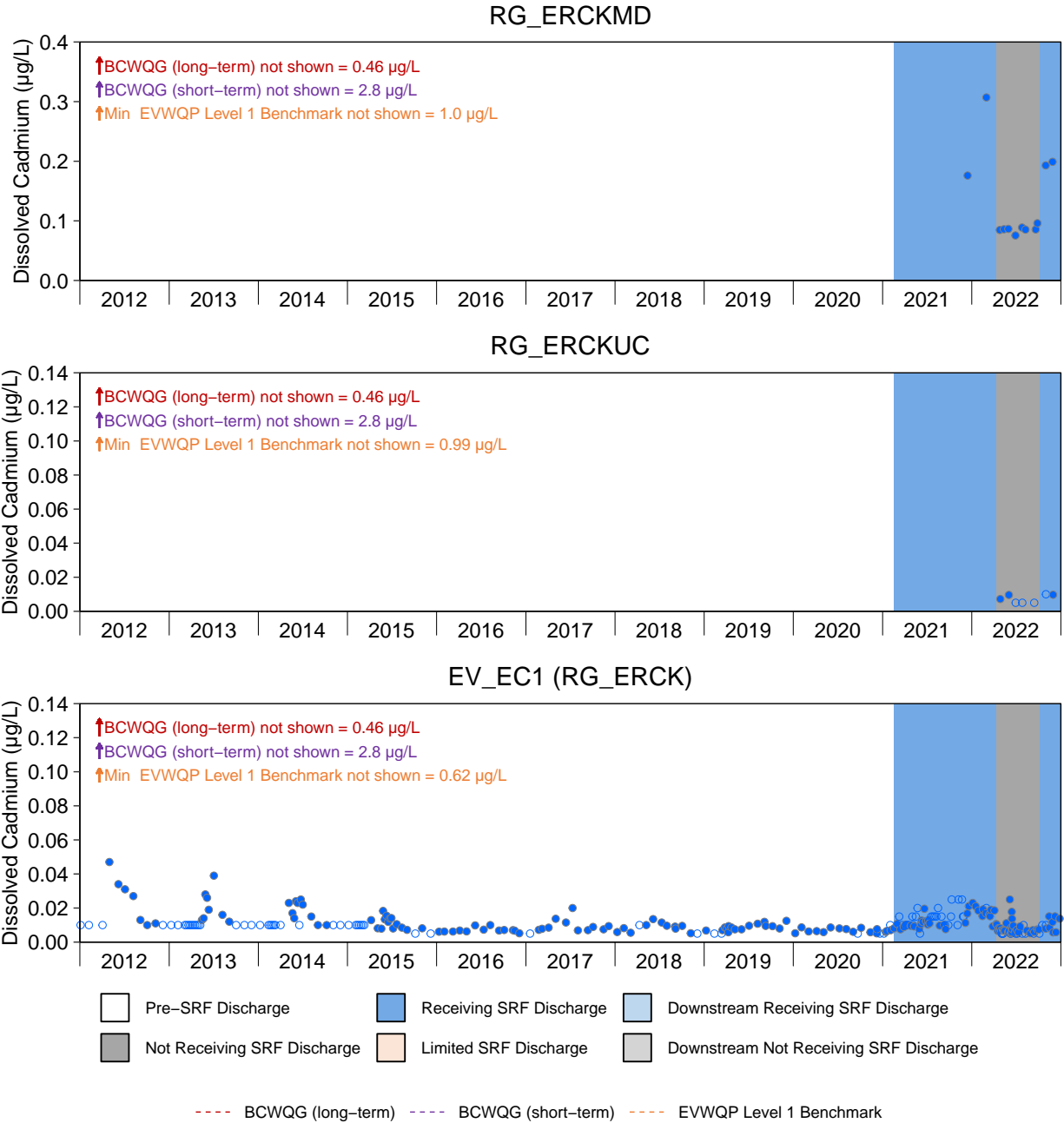


Figure D.13: Time Series Plots for Dissolved Cadmium from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Guidelines are dependent on water hardness. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

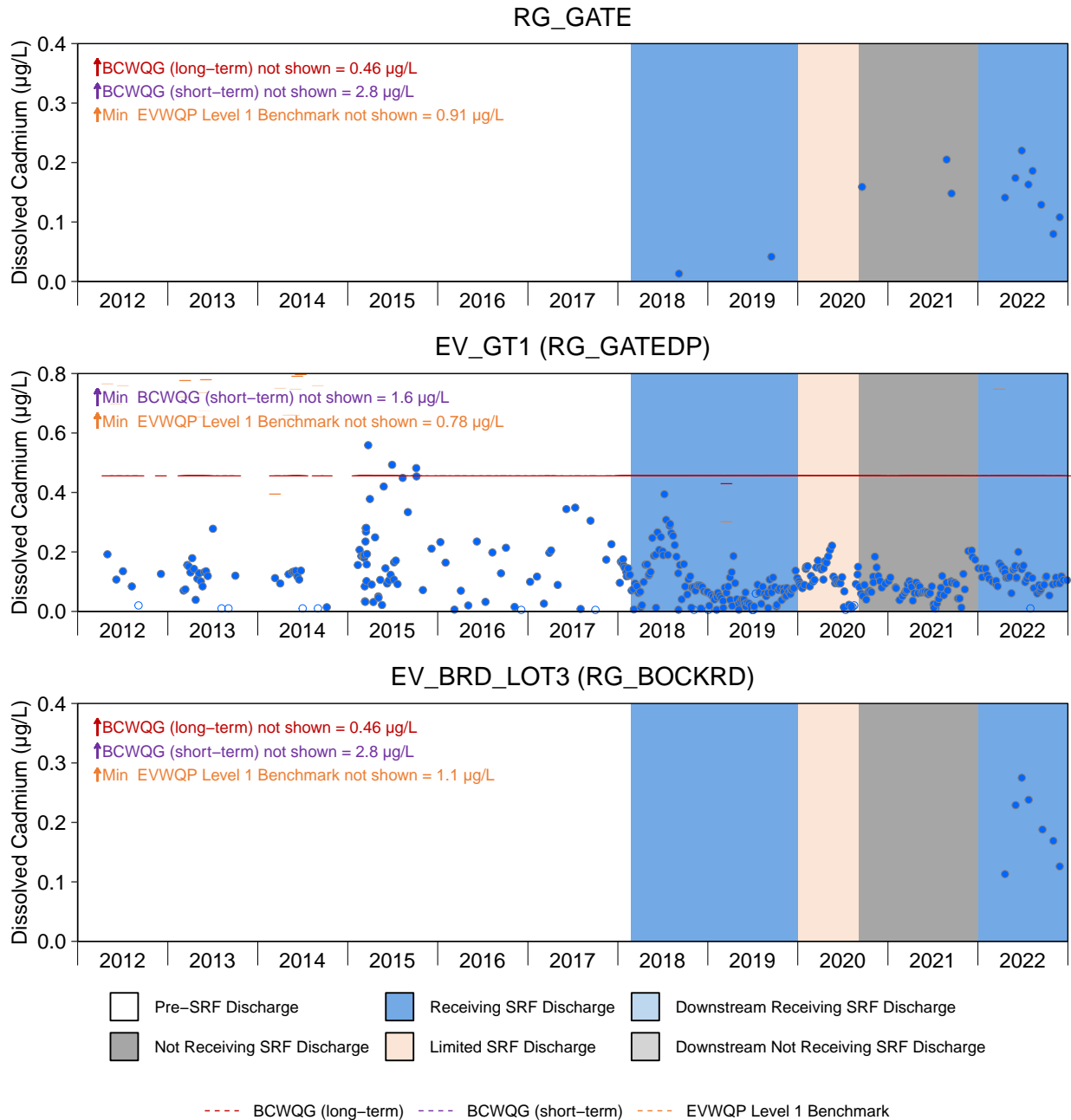


Figure D.13: Time Series Plots for Dissolved Cadmium from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Guidelines are dependent on water hardness. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

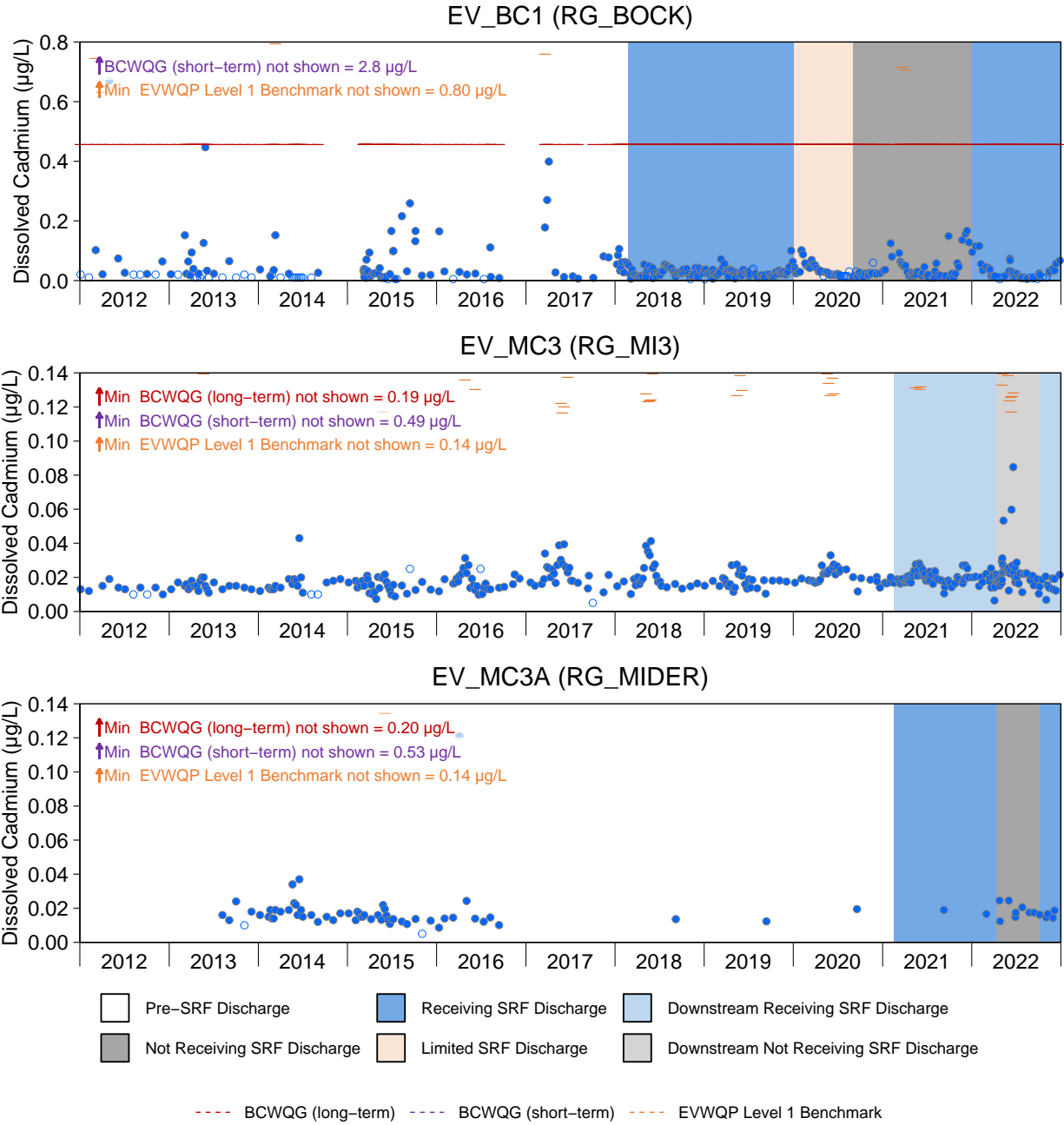


Figure D.13: Time Series Plots for Dissolved Cadmium from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Guidelines are dependent on water hardness. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

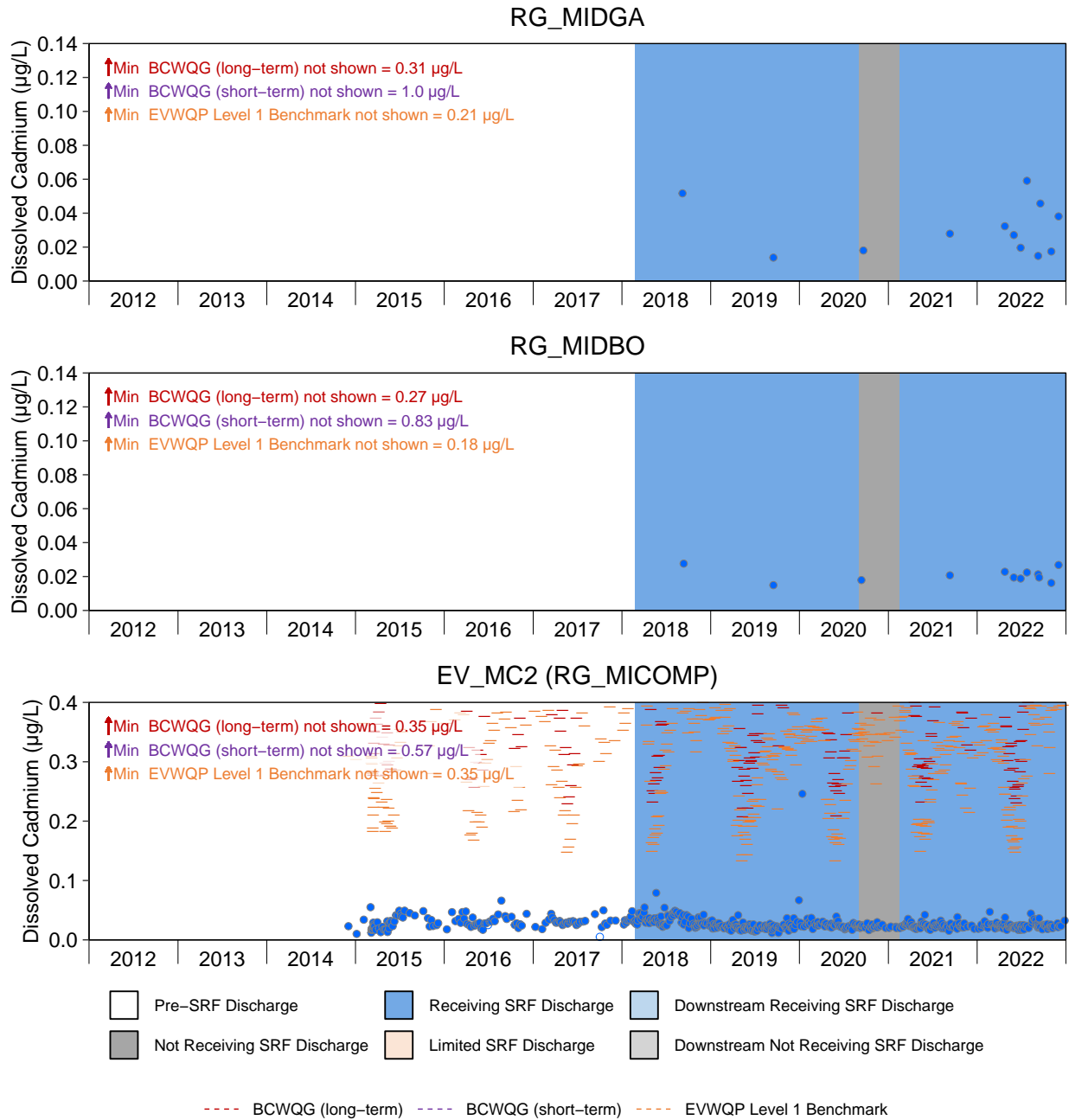


Figure D.13: Time Series Plots for Dissolved Cadmium from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Guidelines are dependent on water hardness. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

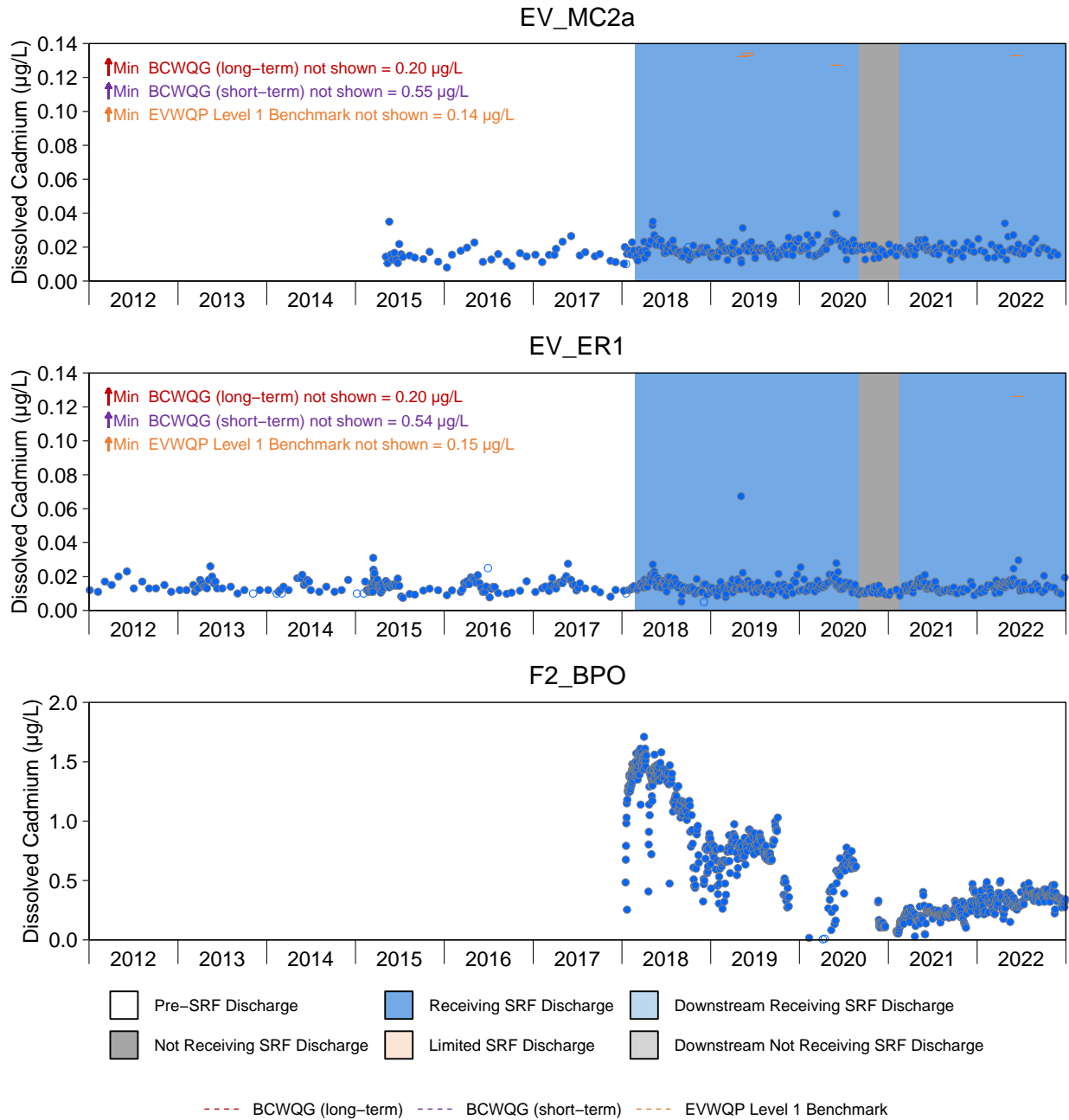


Figure D.13: Time Series Plots for Dissolved Cadmium from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Guidelines are dependent on water hardness. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

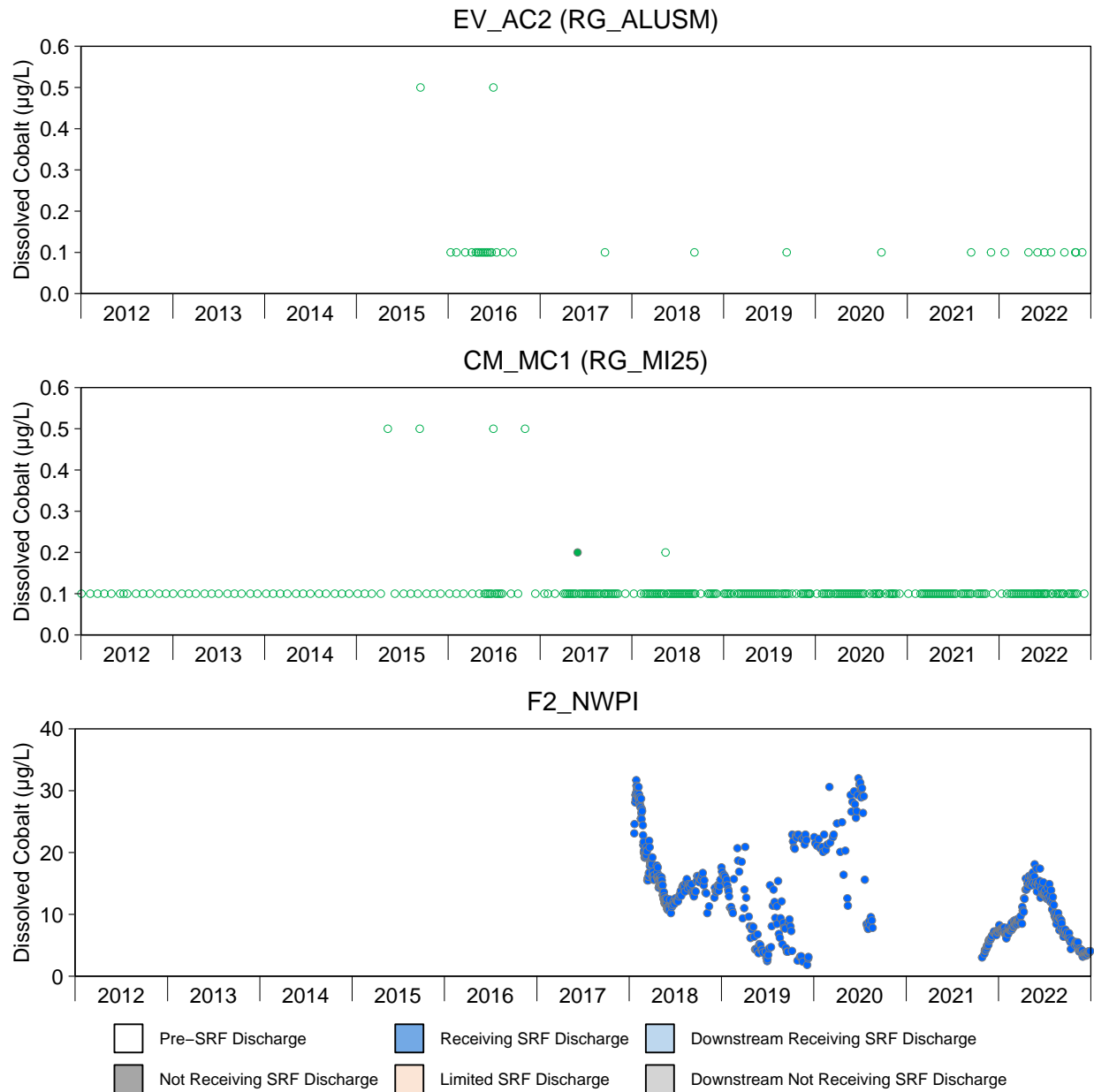


Figure D.14: Time Series Plots for Dissolved Cobalt from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

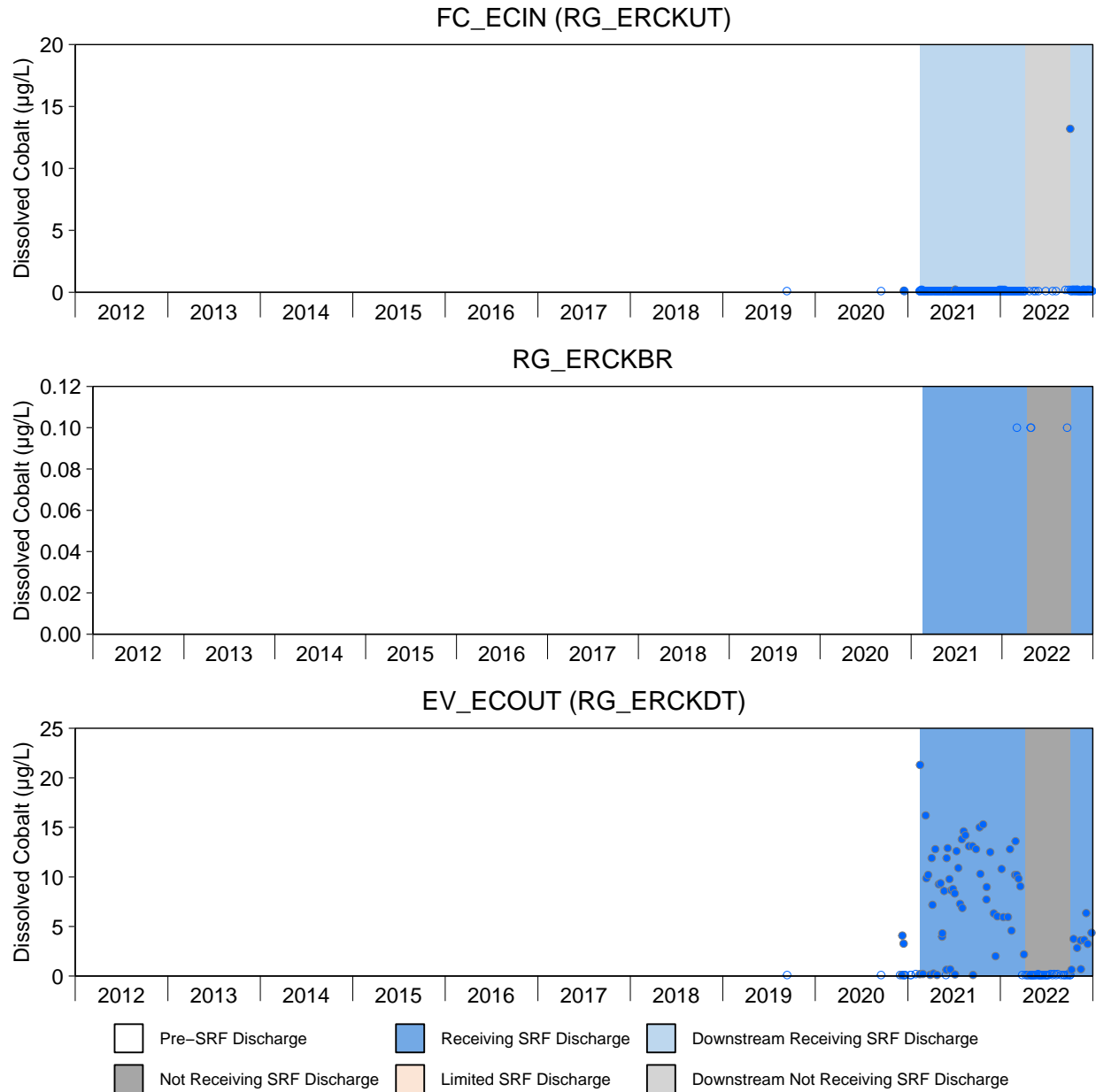


Figure D.14: Time Series Plots for Dissolved Cobalt from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

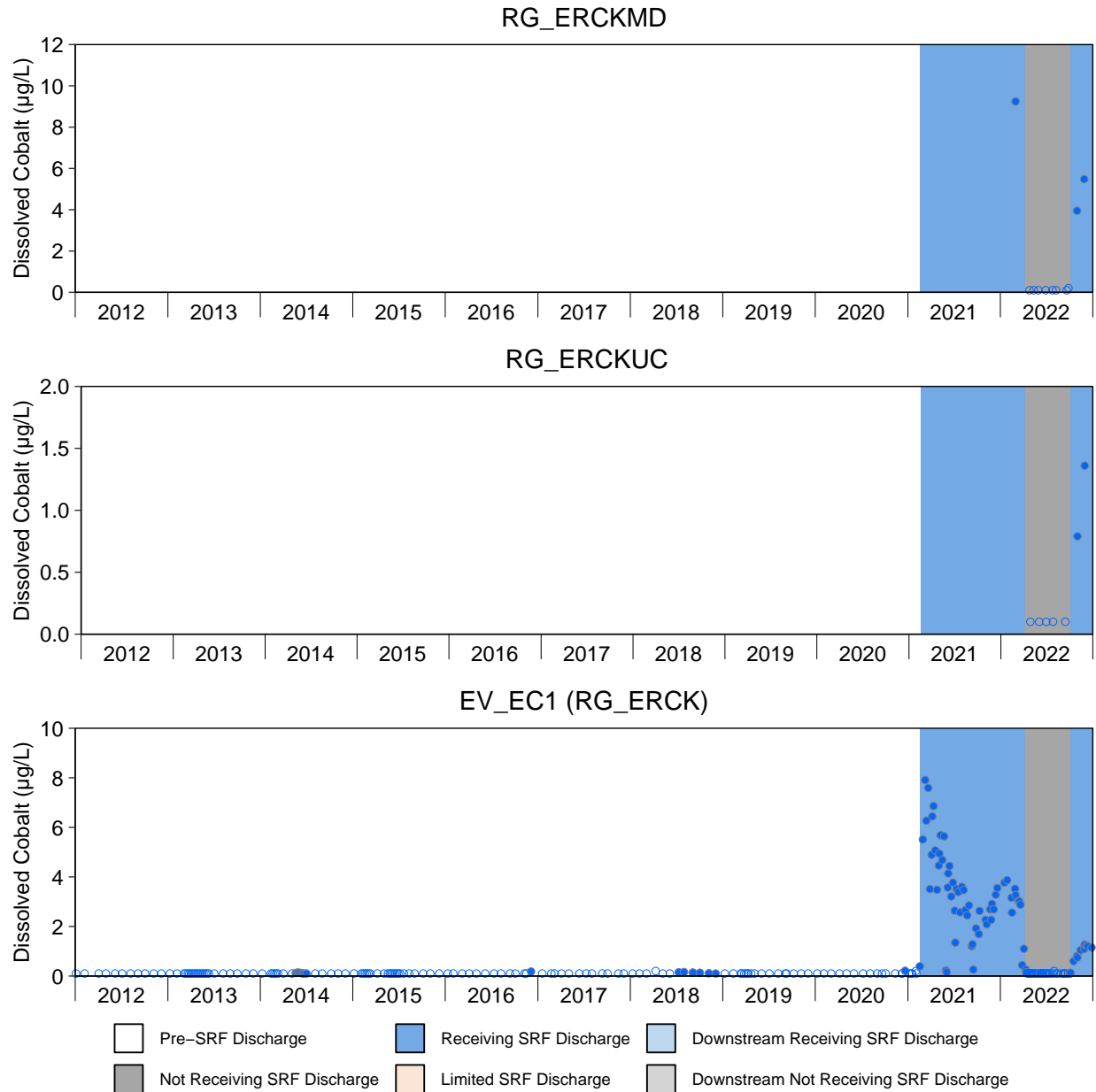


Figure D.14: Time Series Plots for Dissolved Cobalt from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

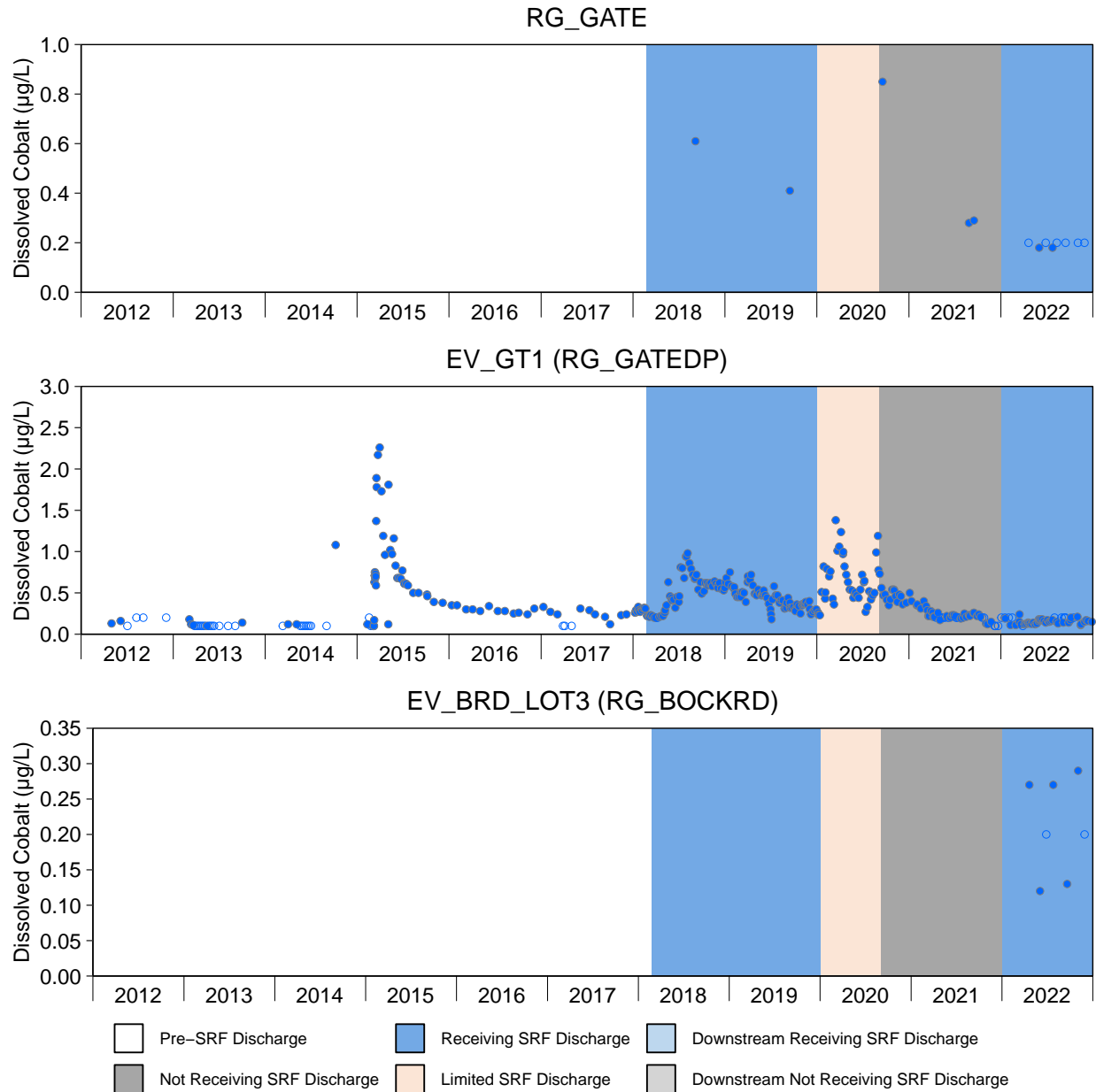


Figure D.14: Time Series Plots for Dissolved Cobalt from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

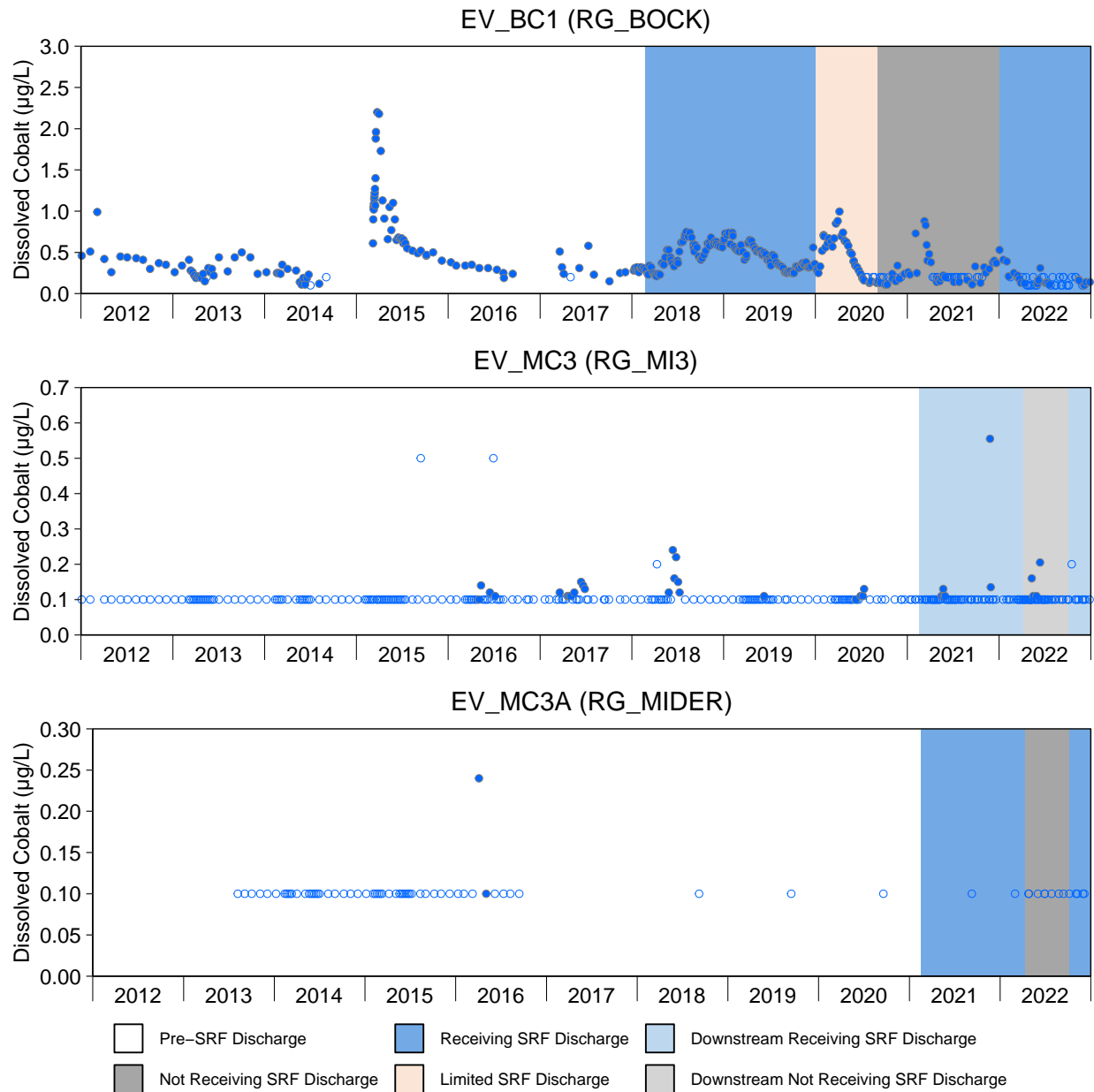


Figure D.14: Time Series Plots for Dissolved Cobalt from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

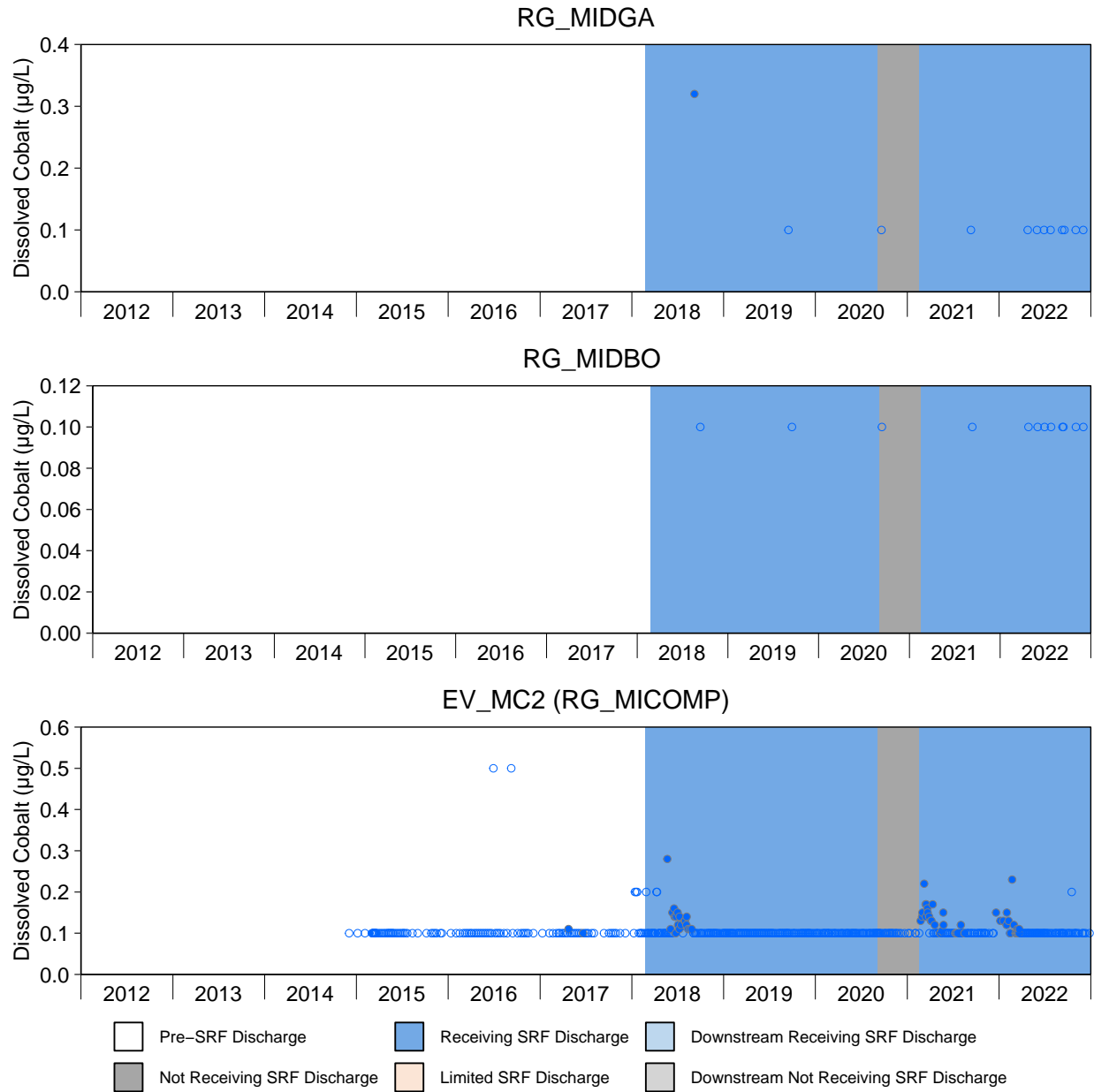


Figure D.14: Time Series Plots for Dissolved Cobalt from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

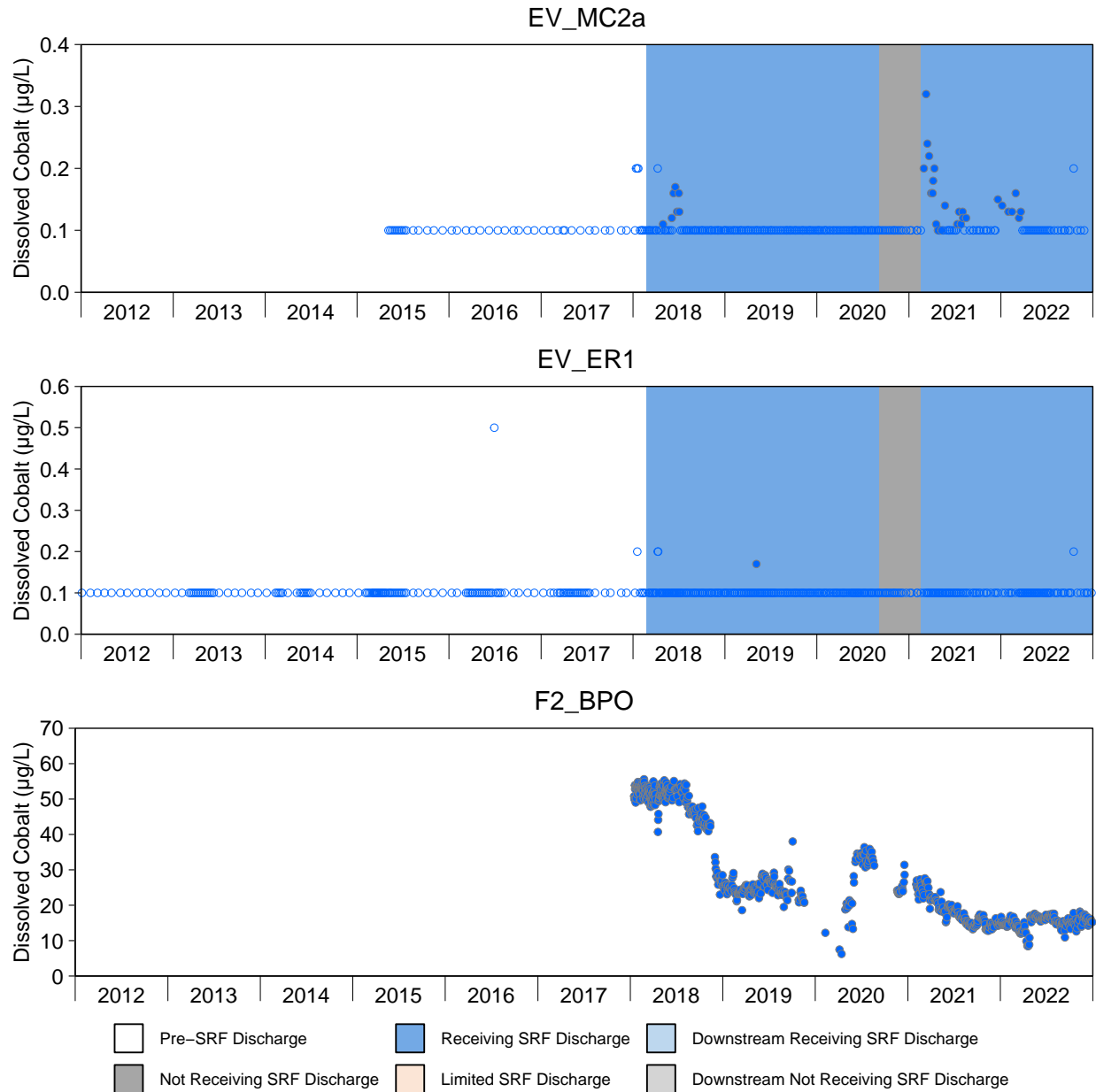


Figure D.14: Time Series Plots for Dissolved Cobalt from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

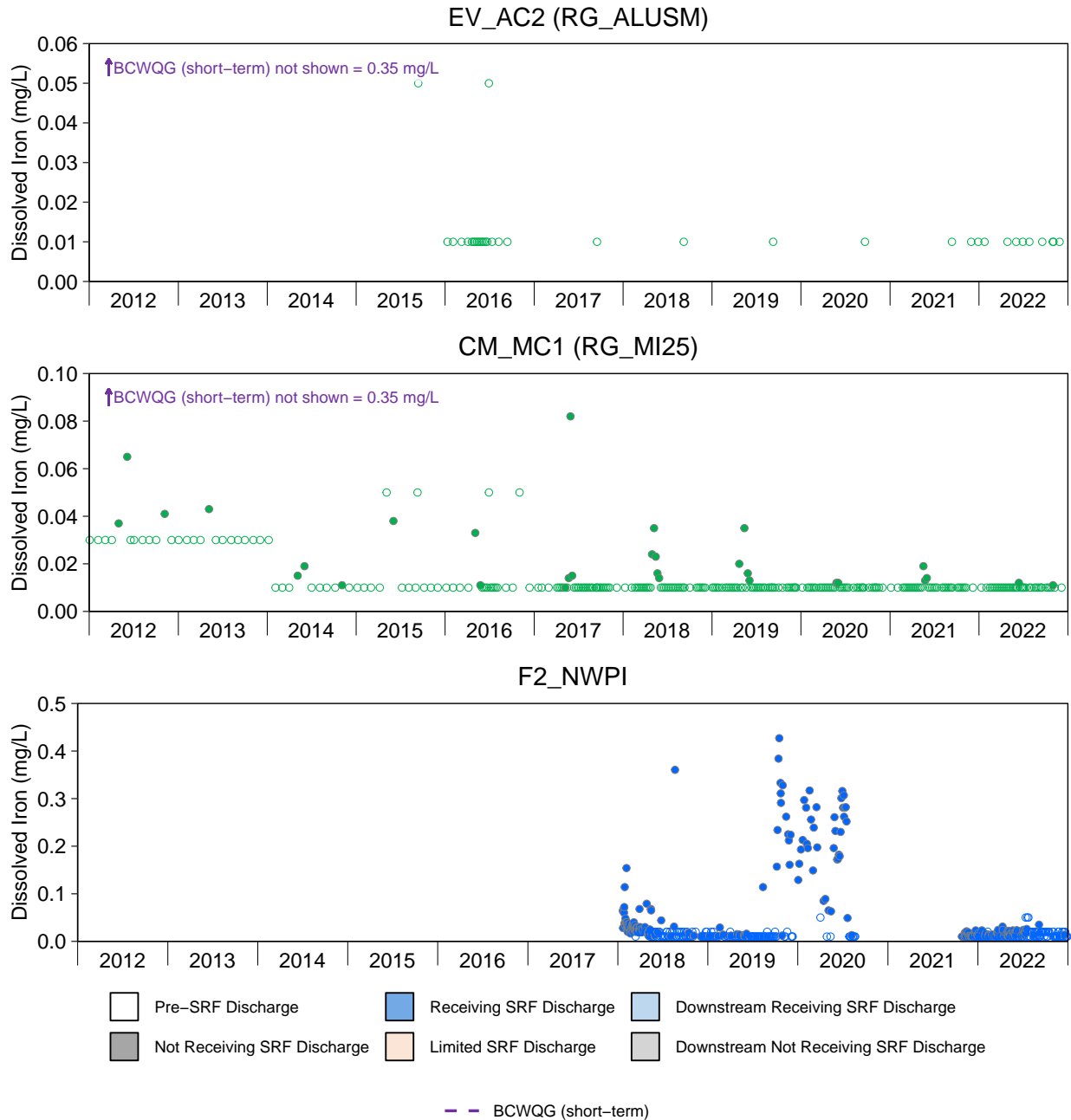


Figure D.15: Time Series Plots for Dissolved Iron from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

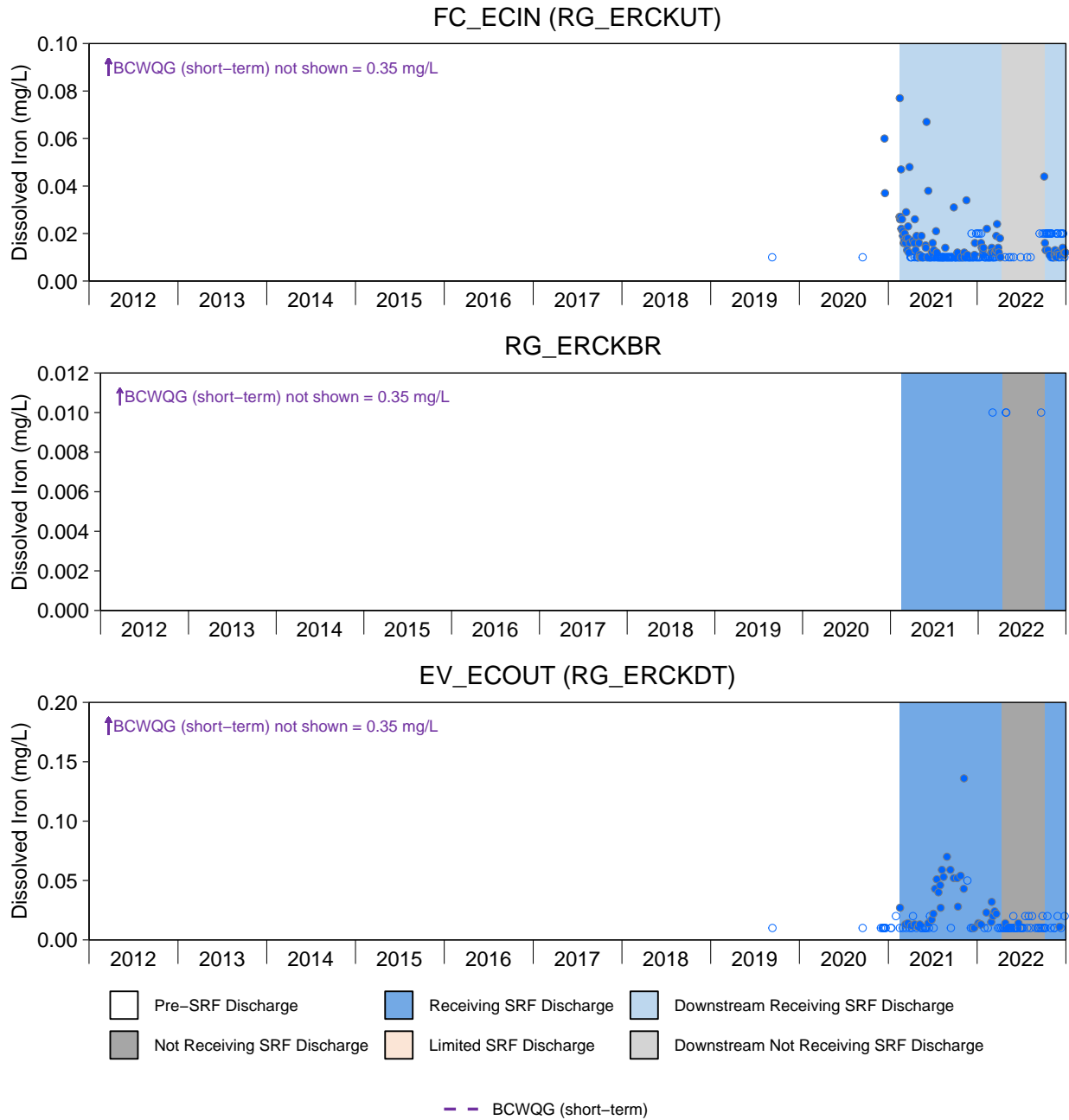


Figure D.15: Time Series Plots for Dissolved Iron from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

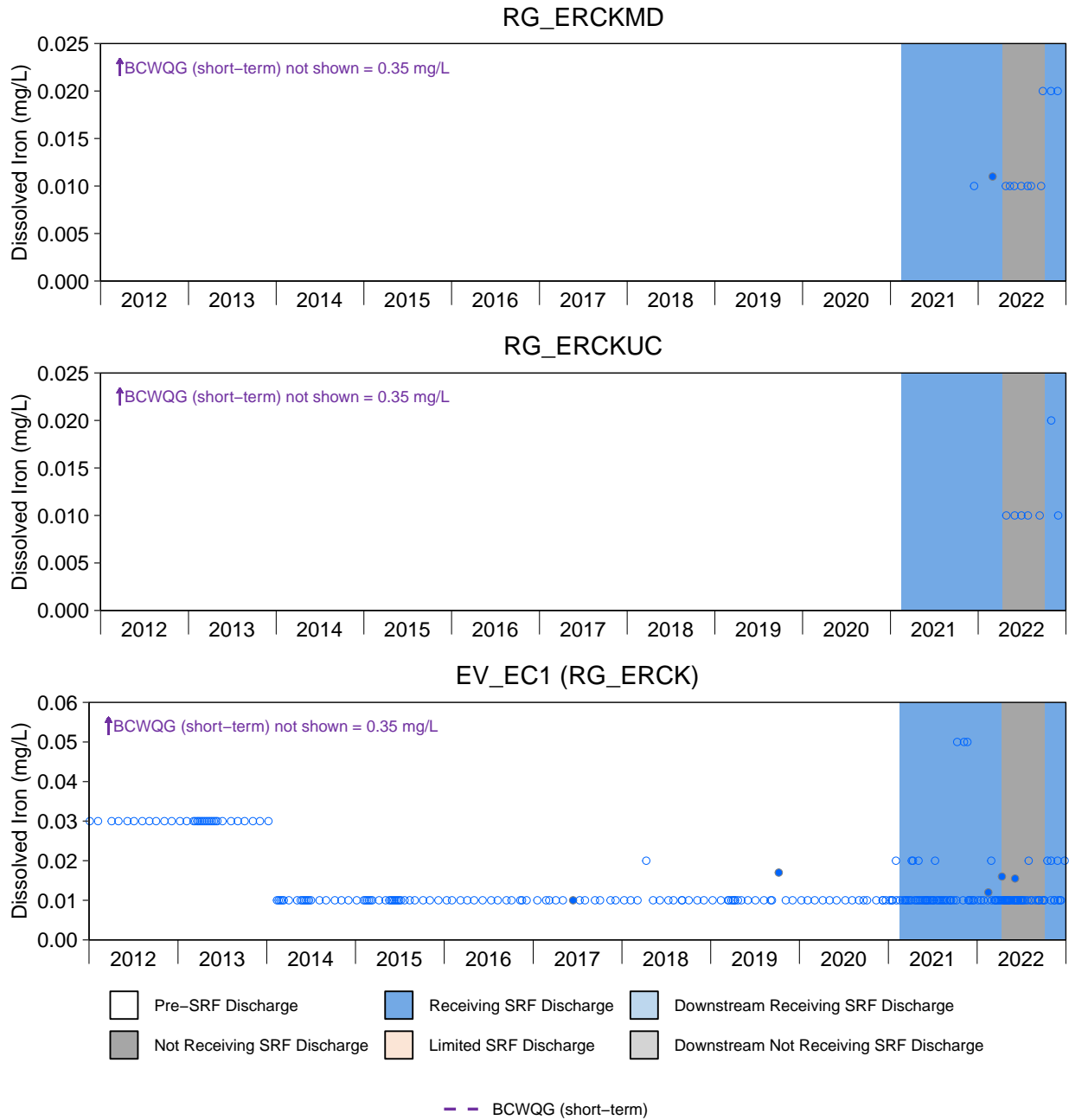


Figure D.15: Time Series Plots for Dissolved Iron from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

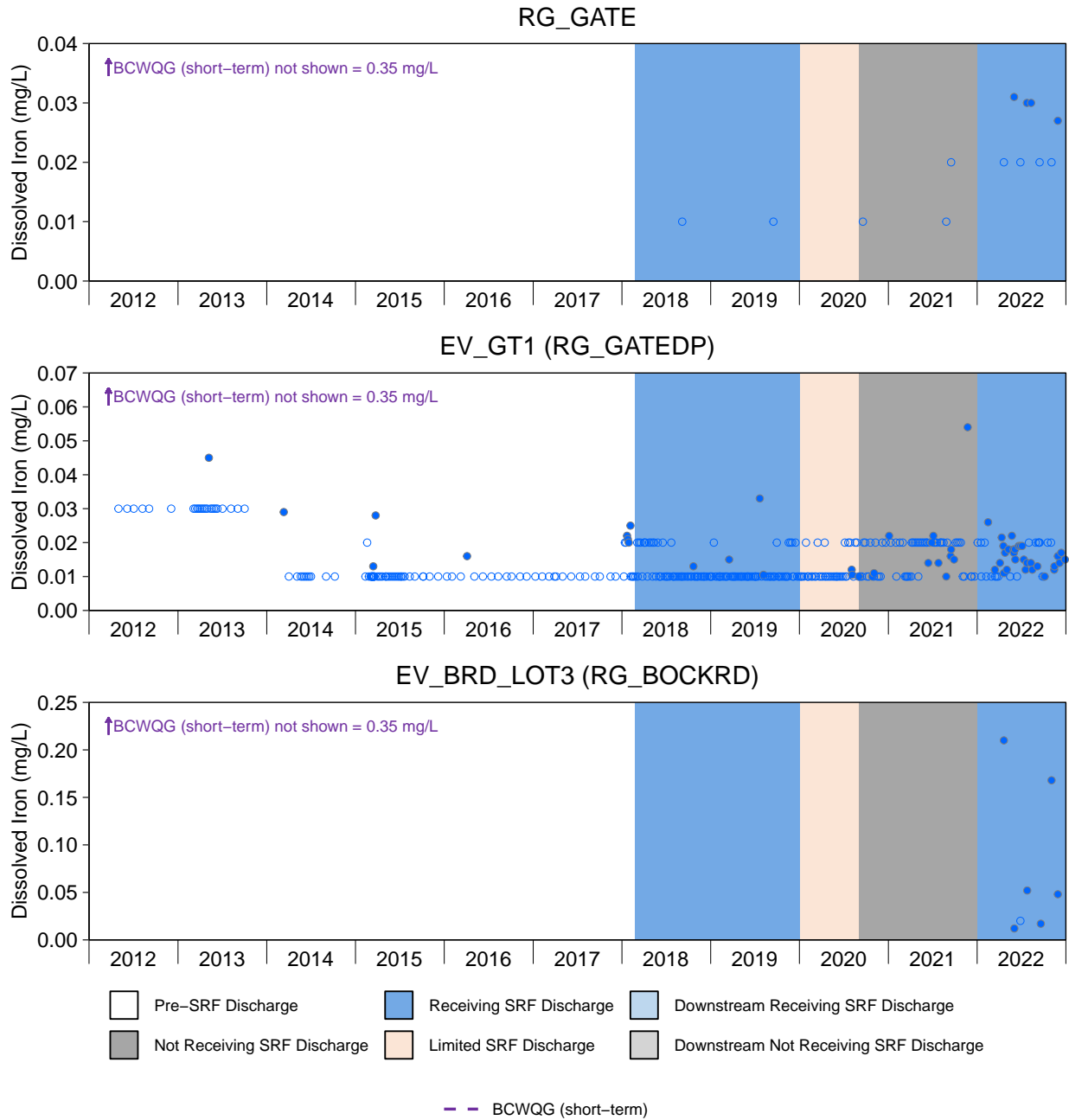


Figure D.15: Time Series Plots for Dissolved Iron from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

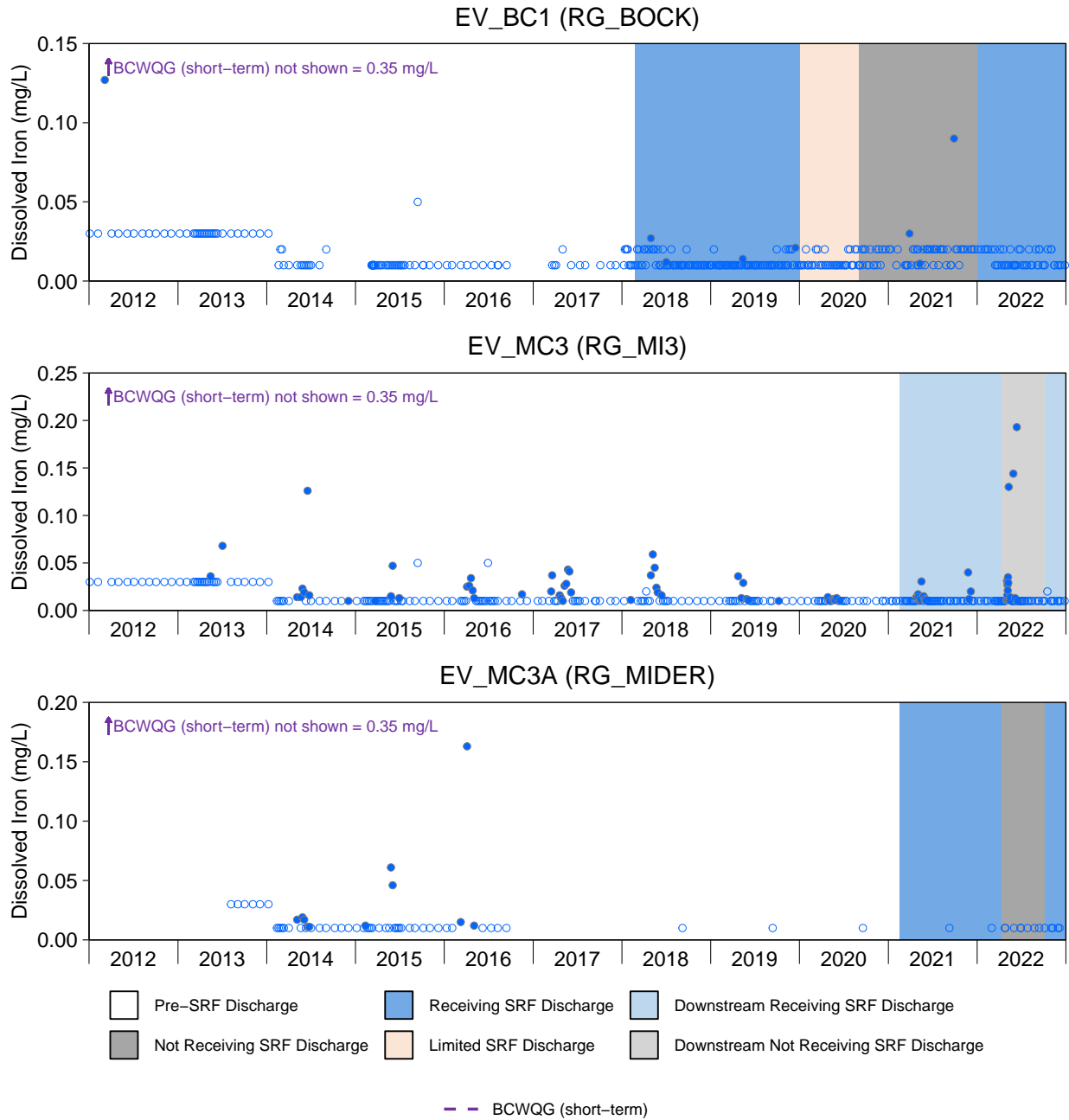


Figure D.15: Time Series Plots for Dissolved Iron from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

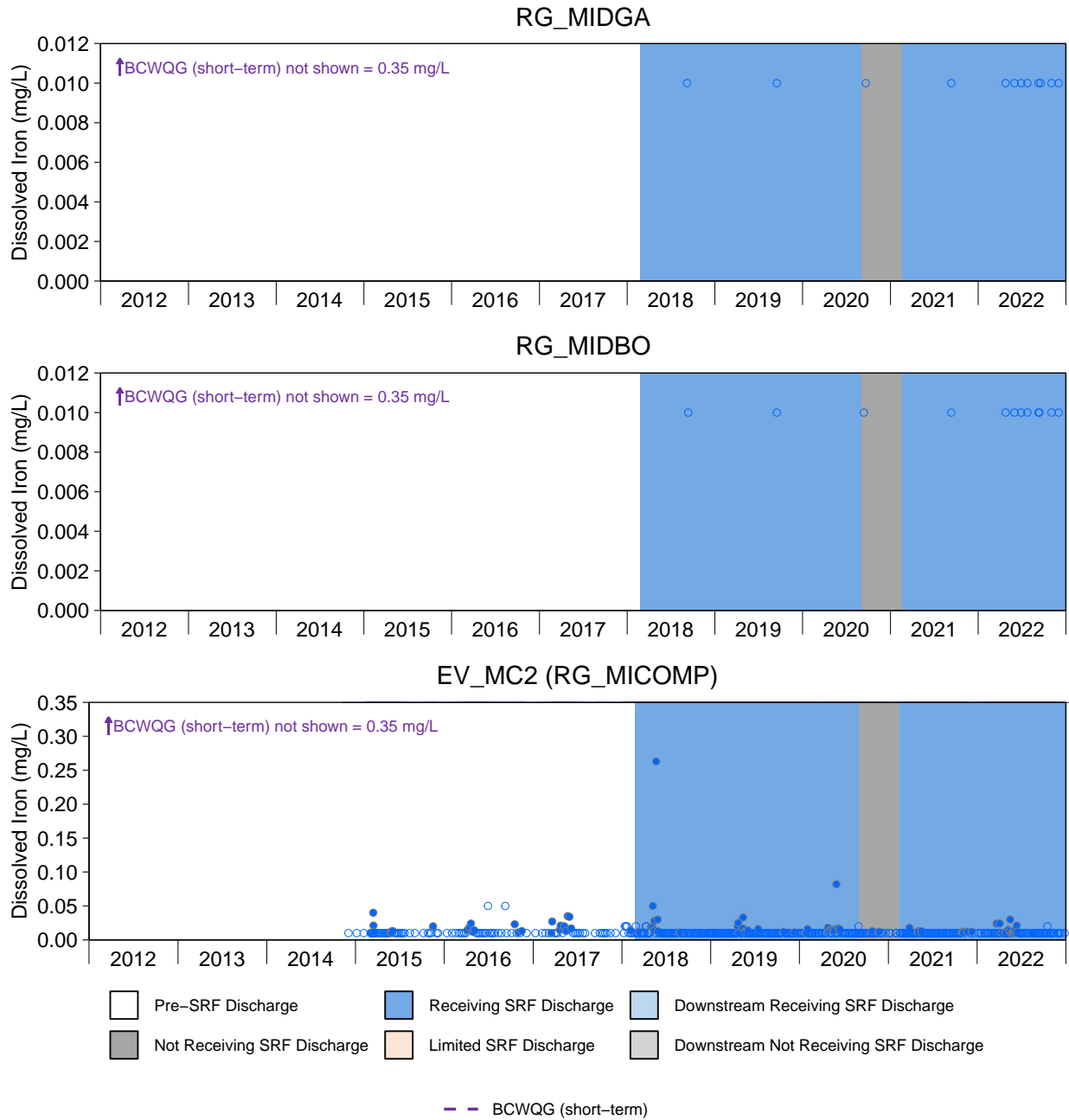


Figure D.15: Time Series Plots for Dissolved Iron from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

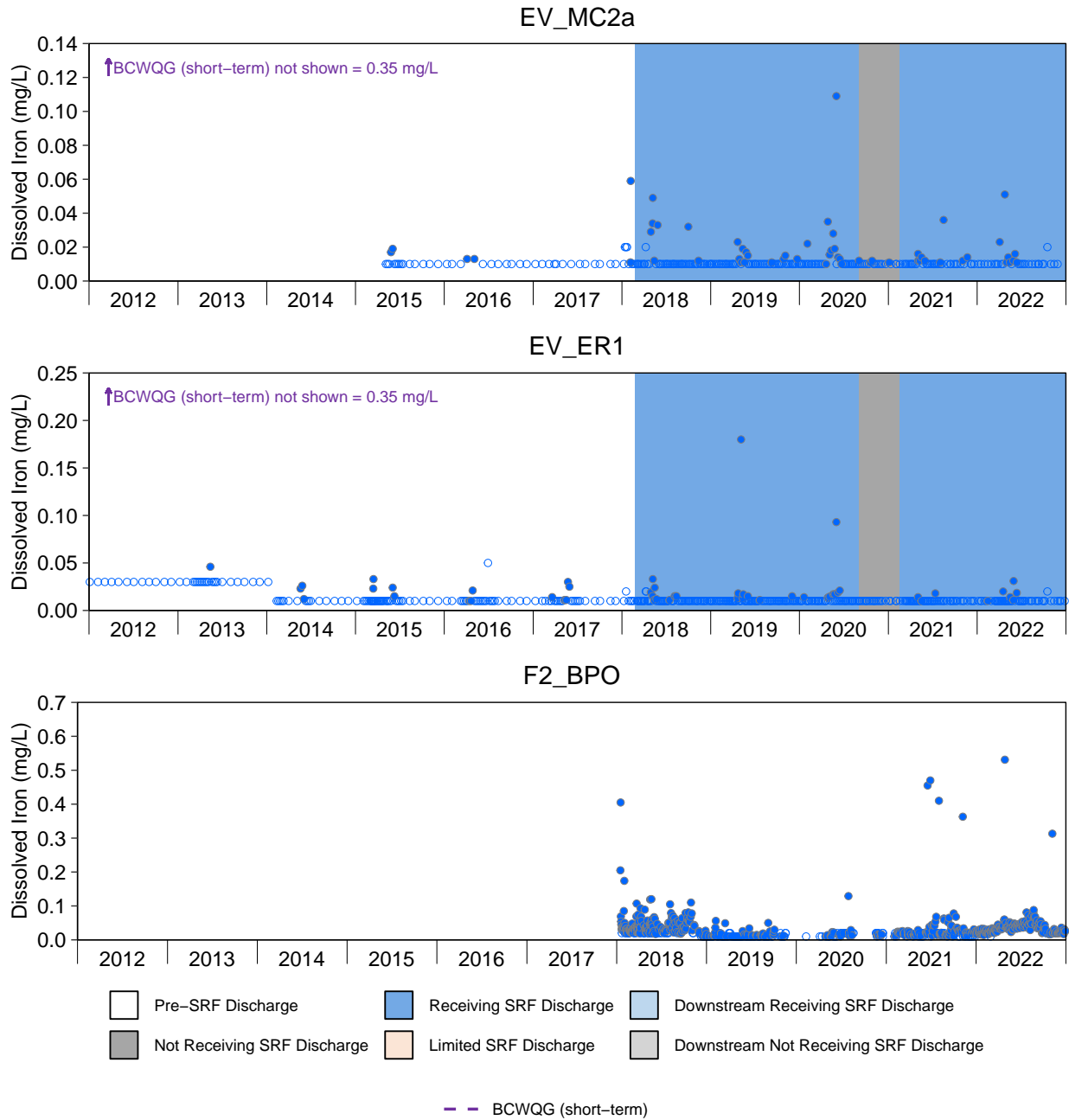


Figure D.15: Time Series Plots for Dissolved Iron from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

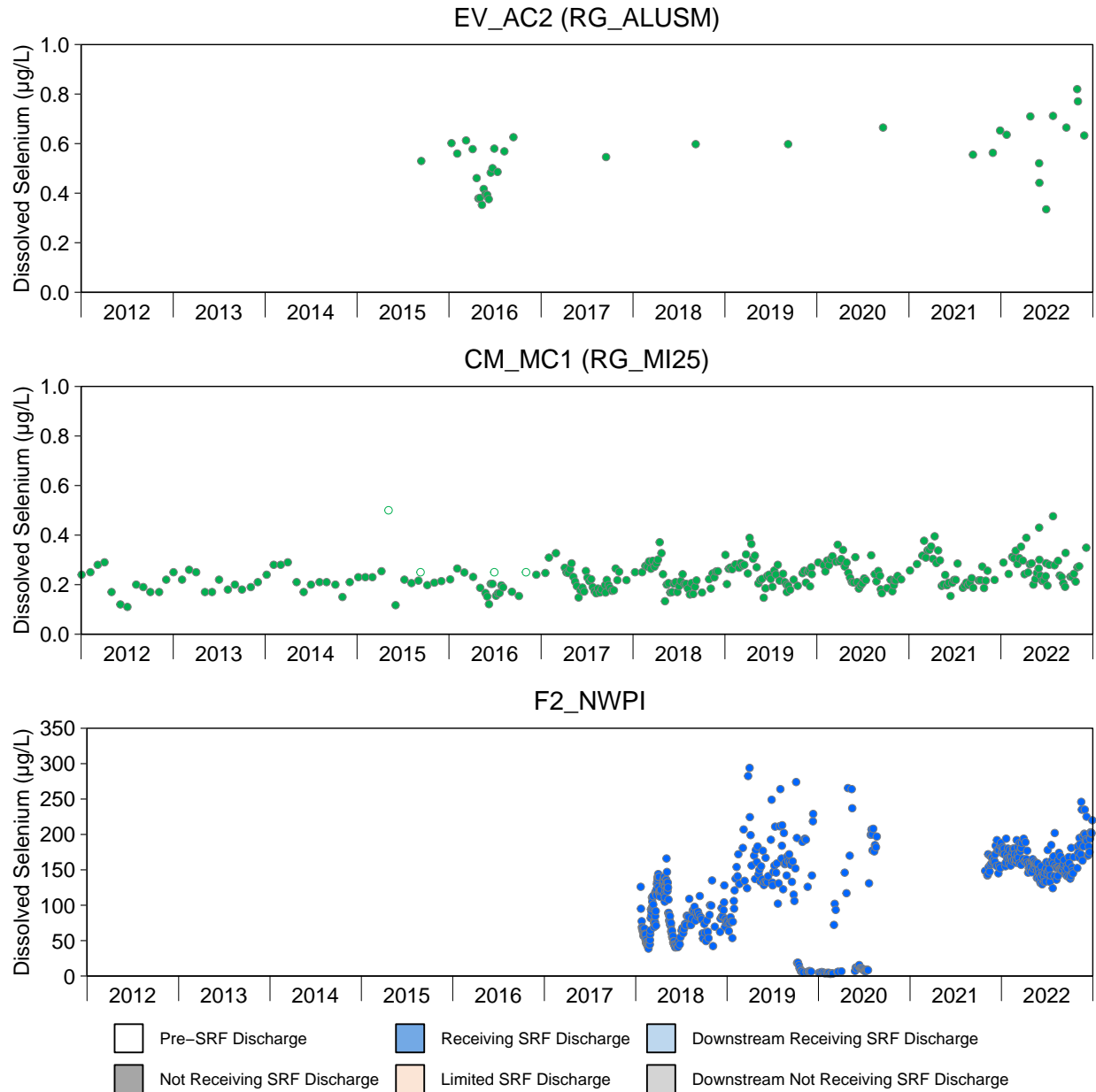


Figure D.16: Time Series Plots for Dissolved Selenium from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

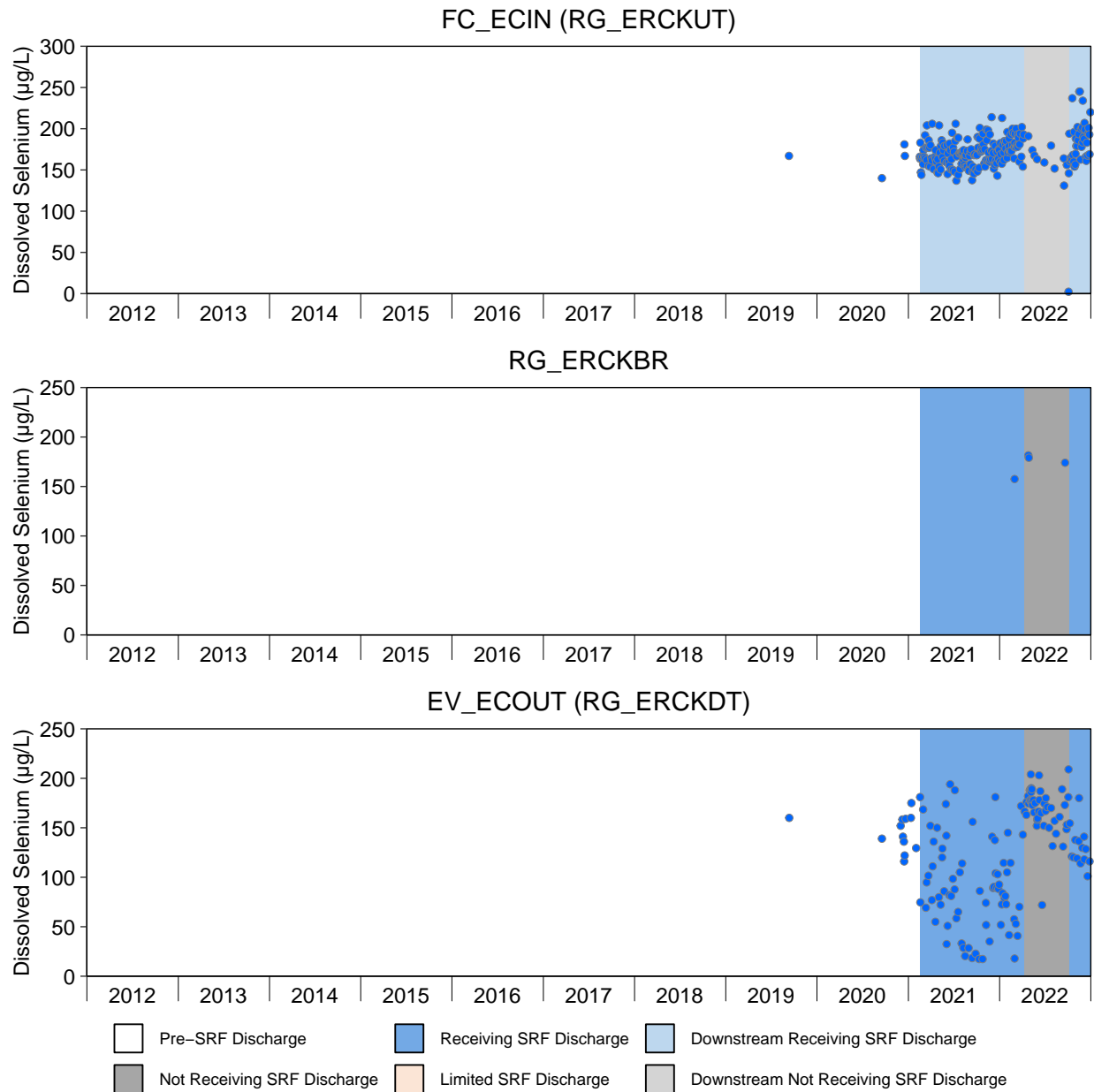


Figure D.16: Time Series Plots for Dissolved Selenium from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

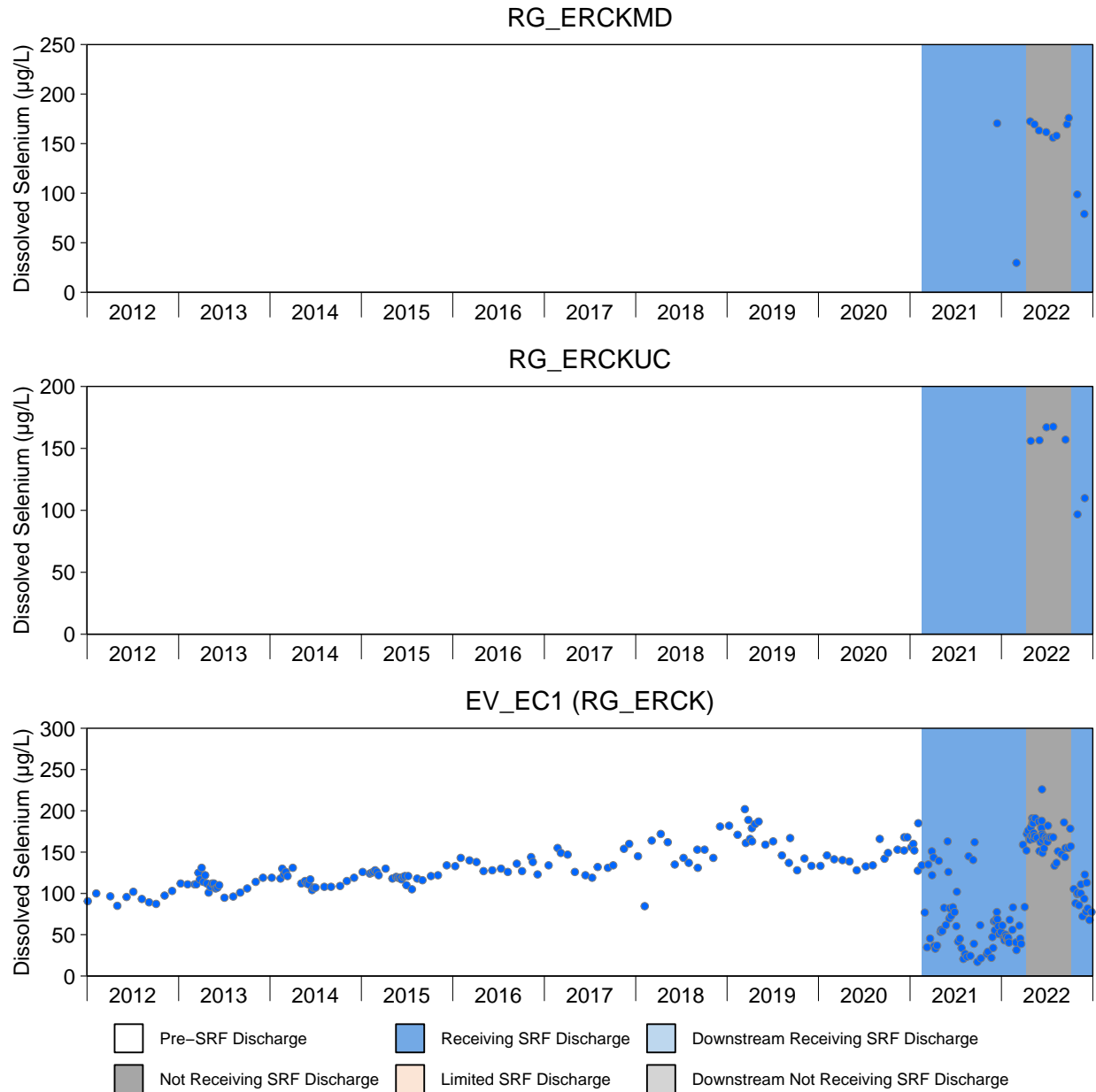


Figure D.16: Time Series Plots for Dissolved Selenium from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

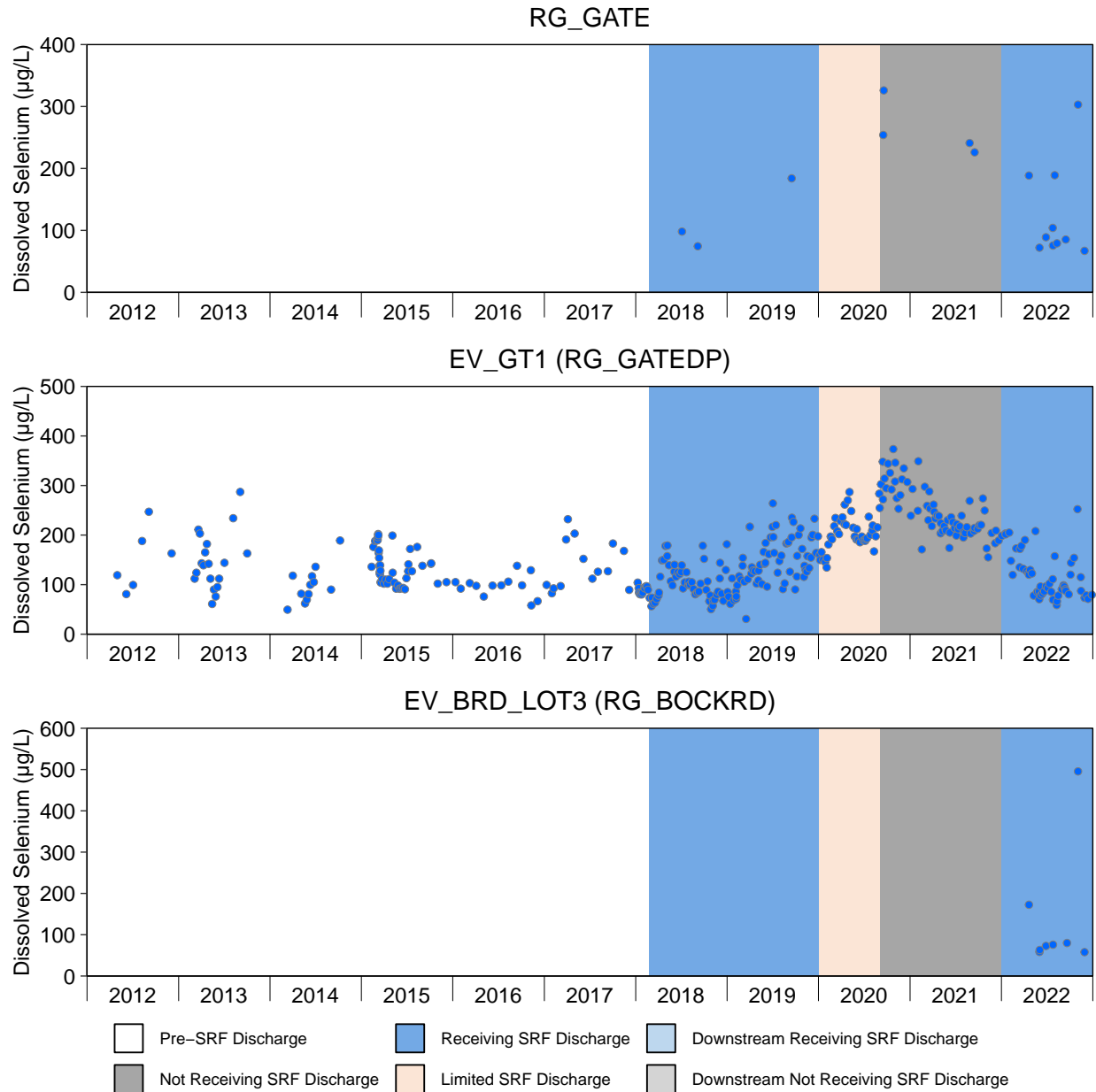


Figure D.16: Time Series Plots for Dissolved Selenium from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

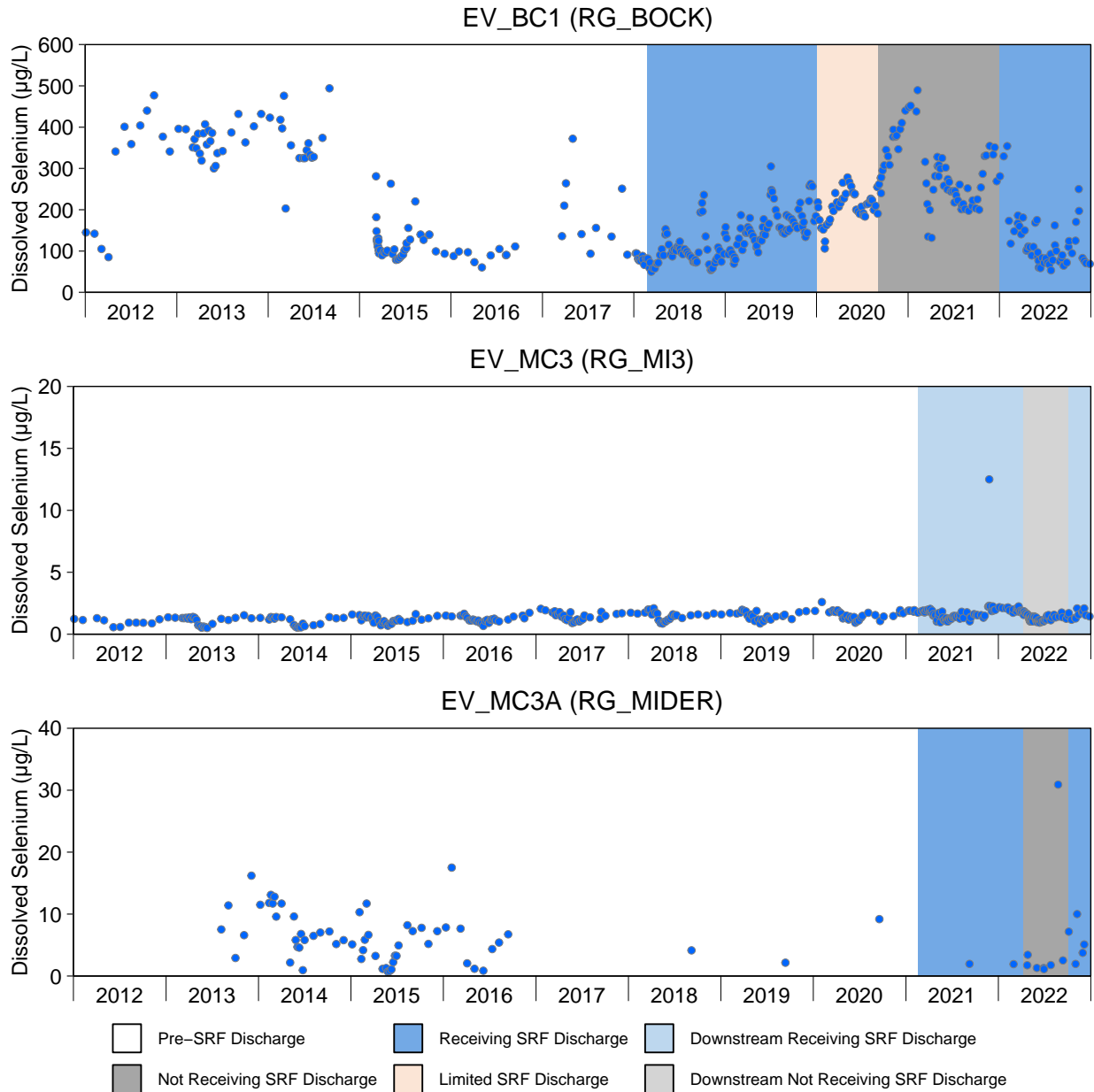


Figure D.16: Time Series Plots for Dissolved Selenium from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

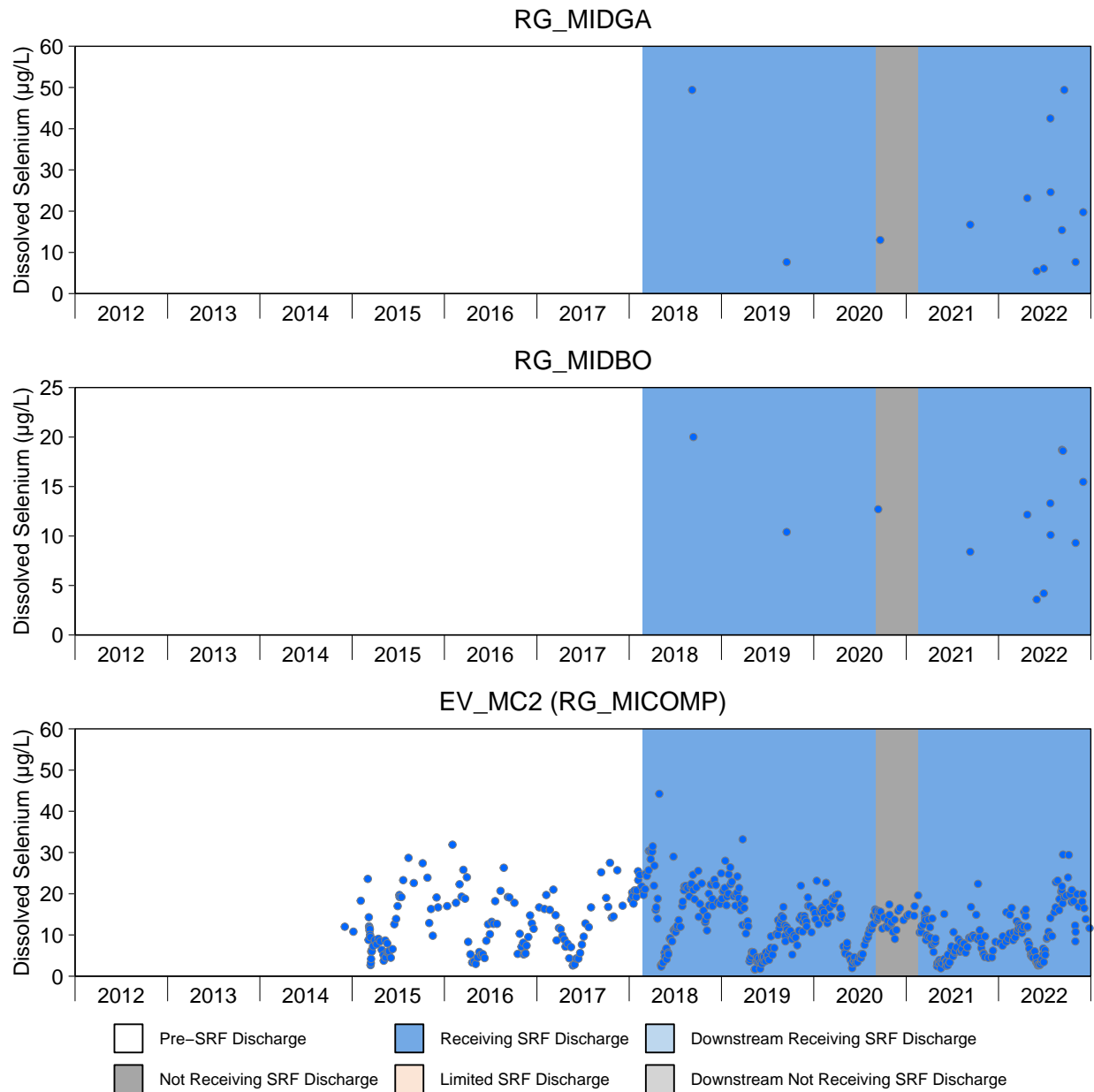


Figure D.16: Time Series Plots for Dissolved Selenium from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

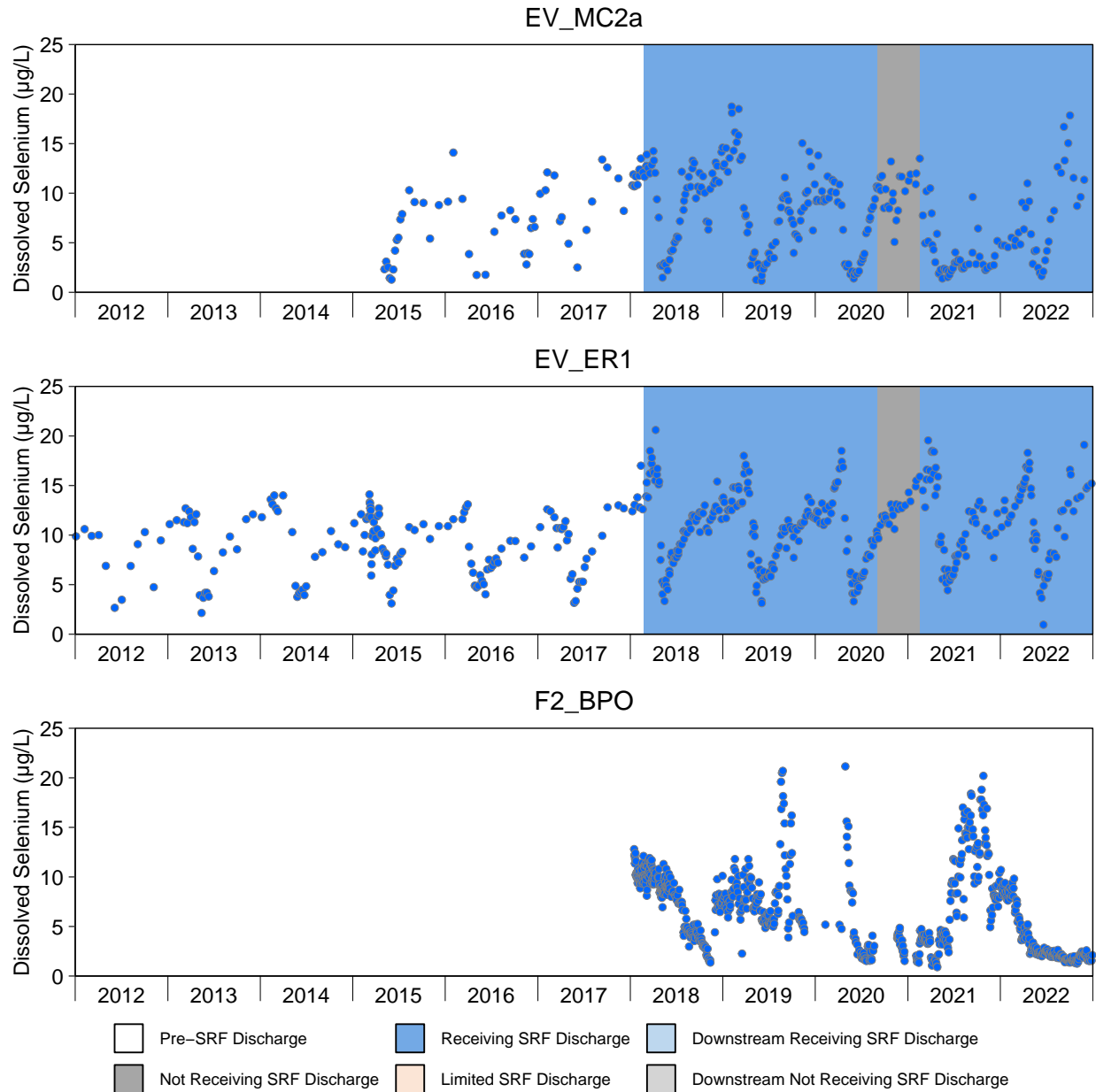


Figure D.16: Time Series Plots for Dissolved Selenium from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018).

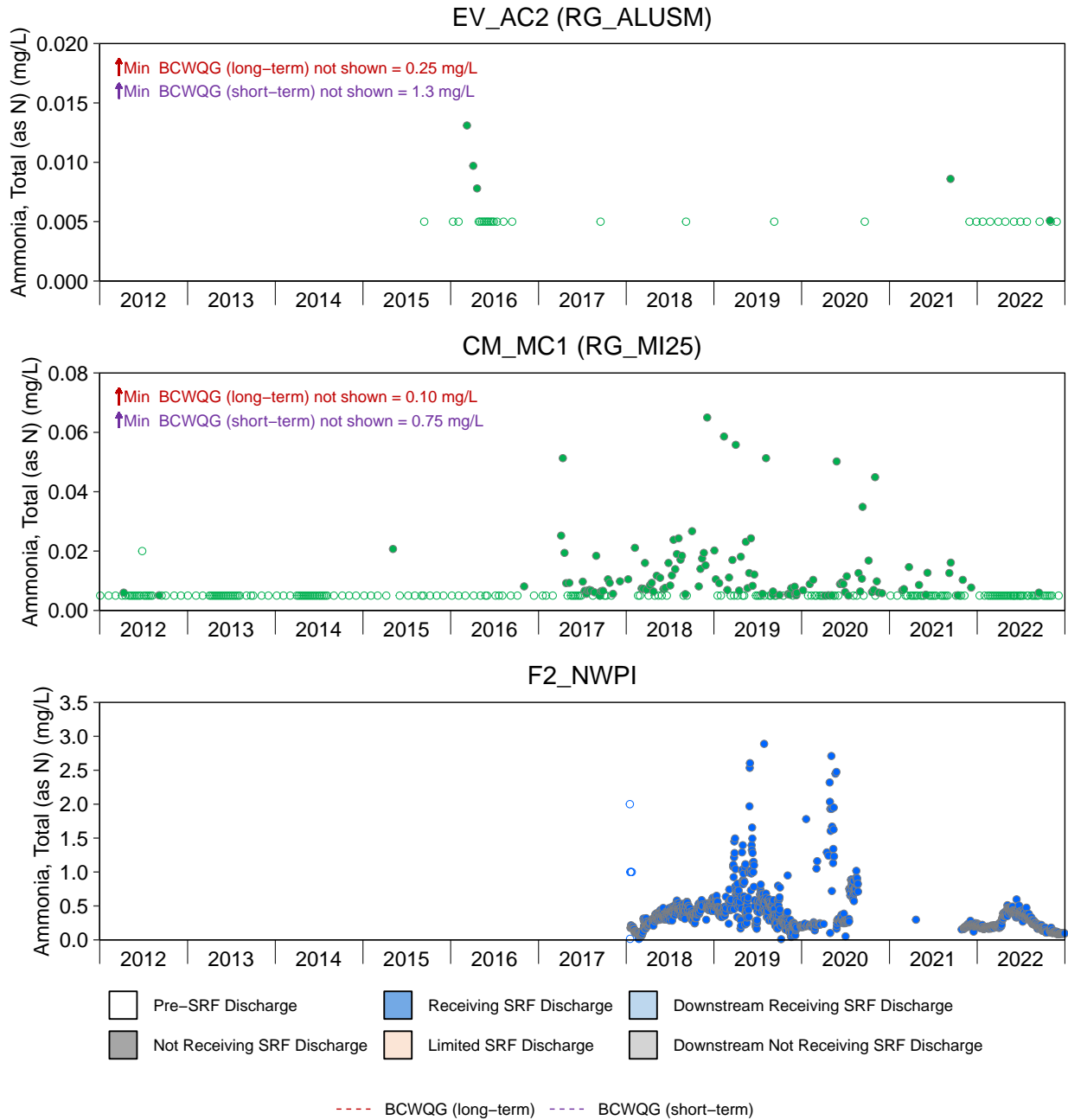


Figure D.17: Time Series Plots for Ammonia from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Guidelines are dependent on water temperature and pH.

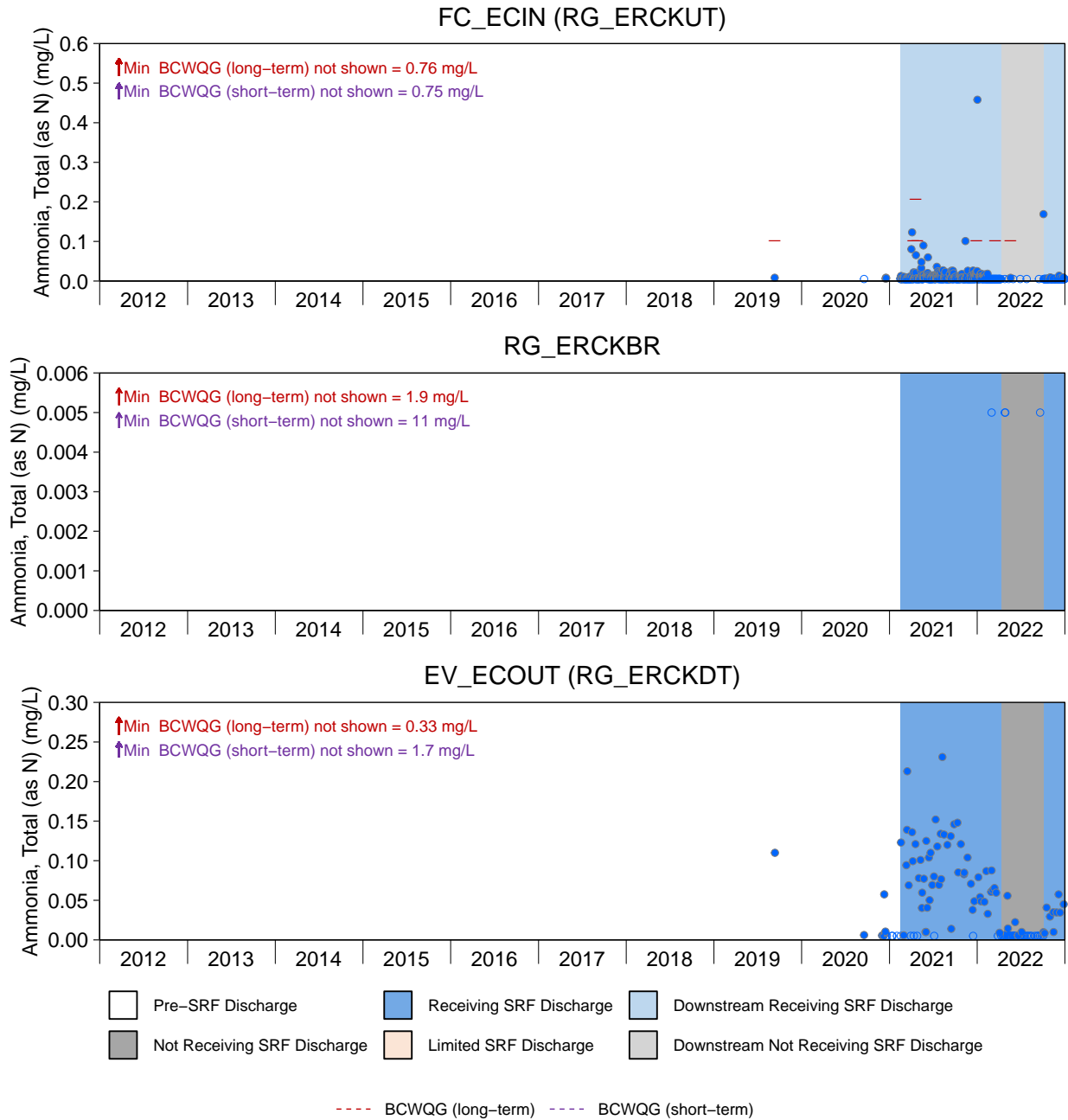


Figure D.17: Time Series Plots for Ammonia from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Guidelines are dependent on water temperature and pH.

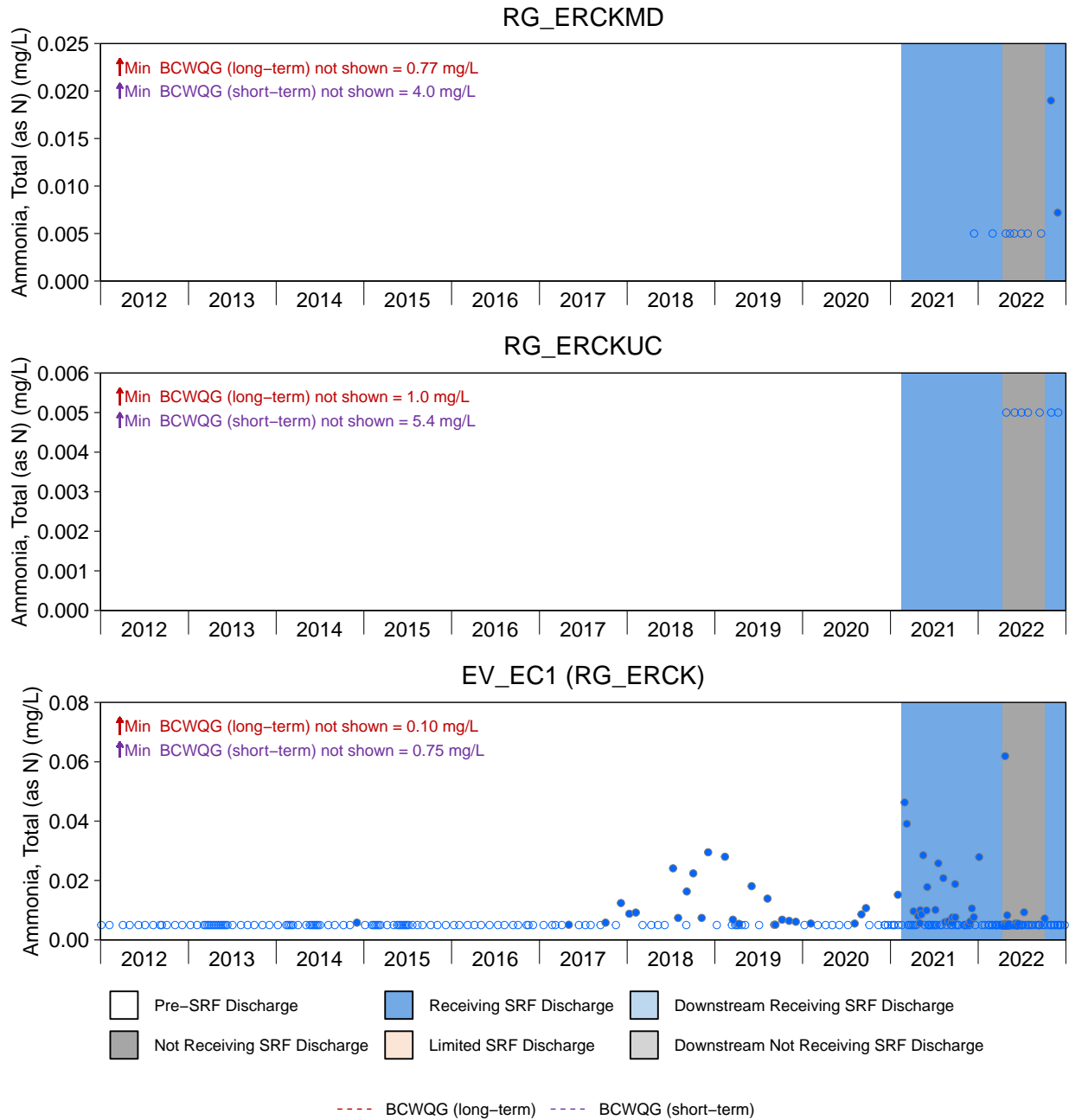


Figure D.17: Time Series Plots for Ammonia from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Guidelines are dependent on water temperature and pH.

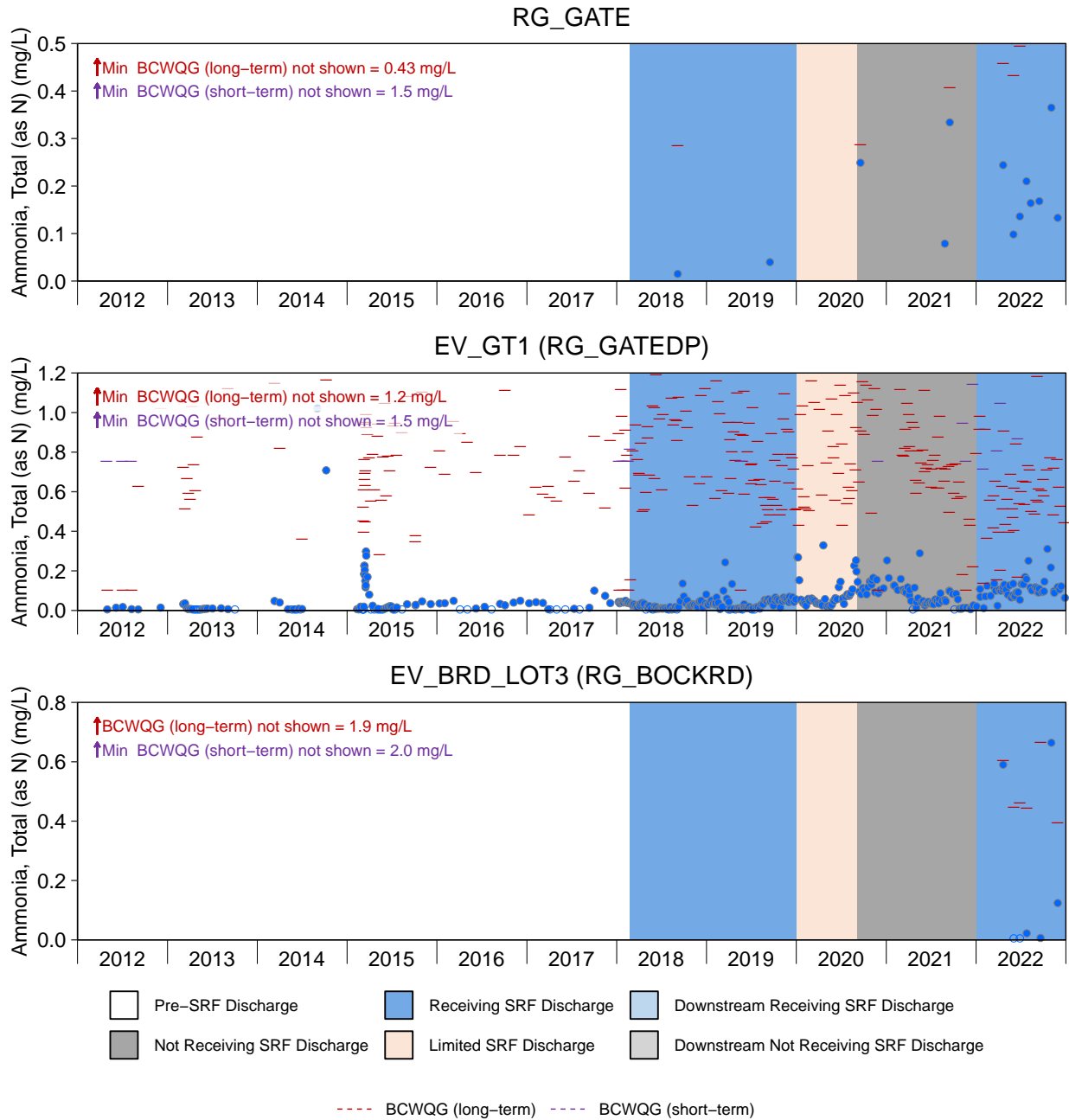


Figure D.17: Time Series Plots for Ammonia from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Guidelines are dependent on water temperature and pH.

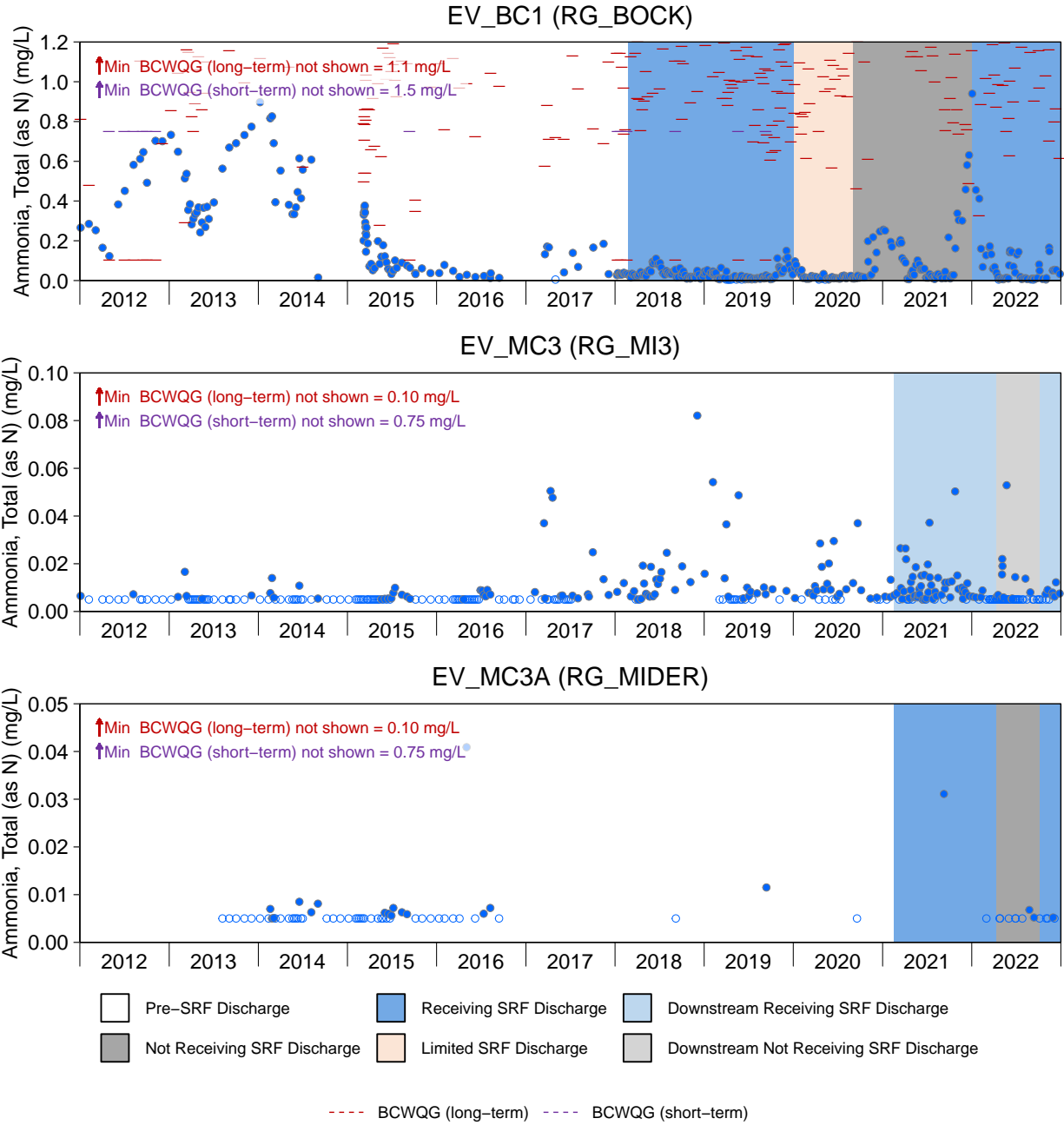


Figure D.17: Time Series Plots for Ammonia from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Guidelines are dependent on water temperature and pH.

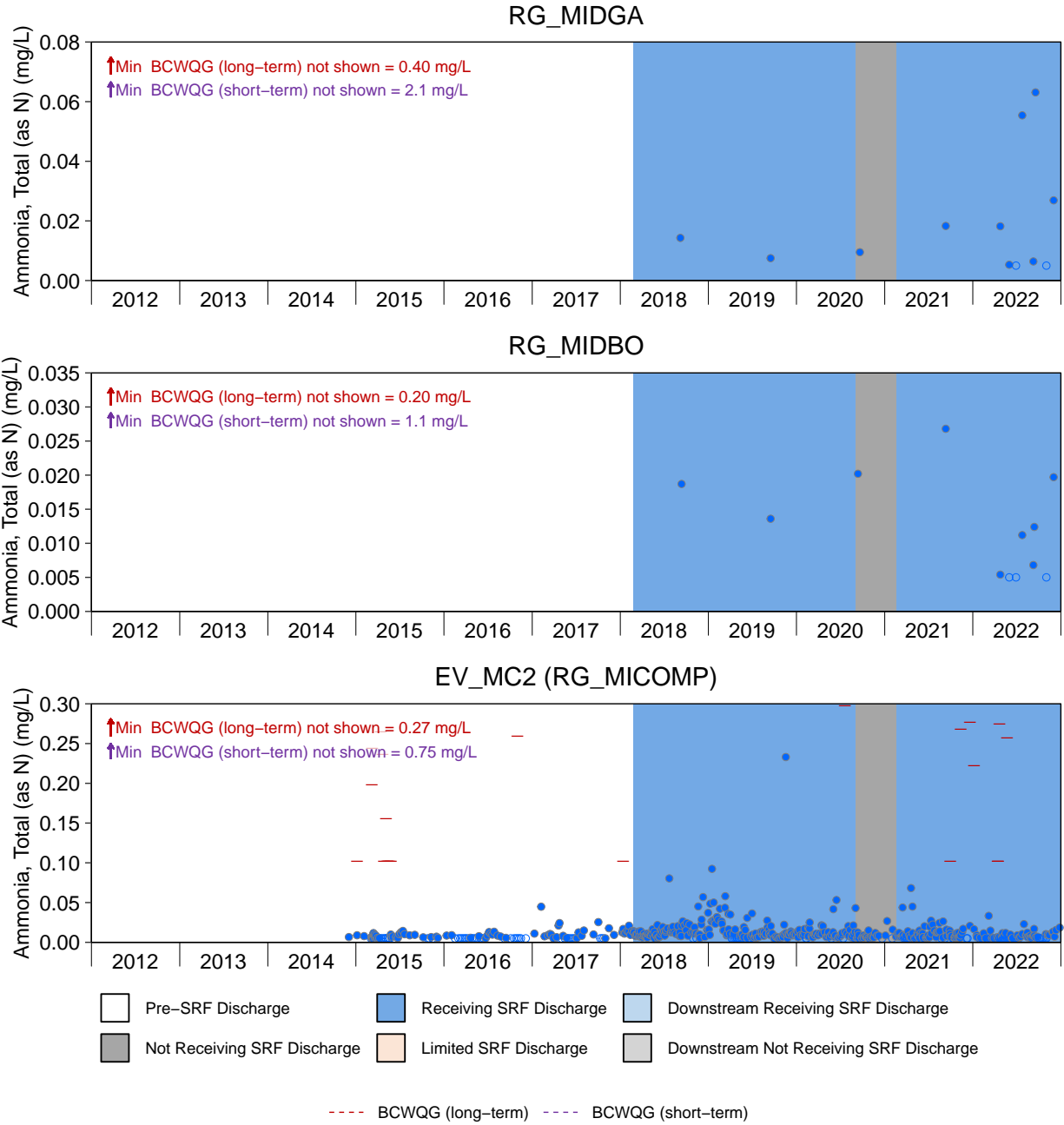


Figure D.17: Time Series Plots for Ammonia from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Guidelines are dependent on water temperature and pH.

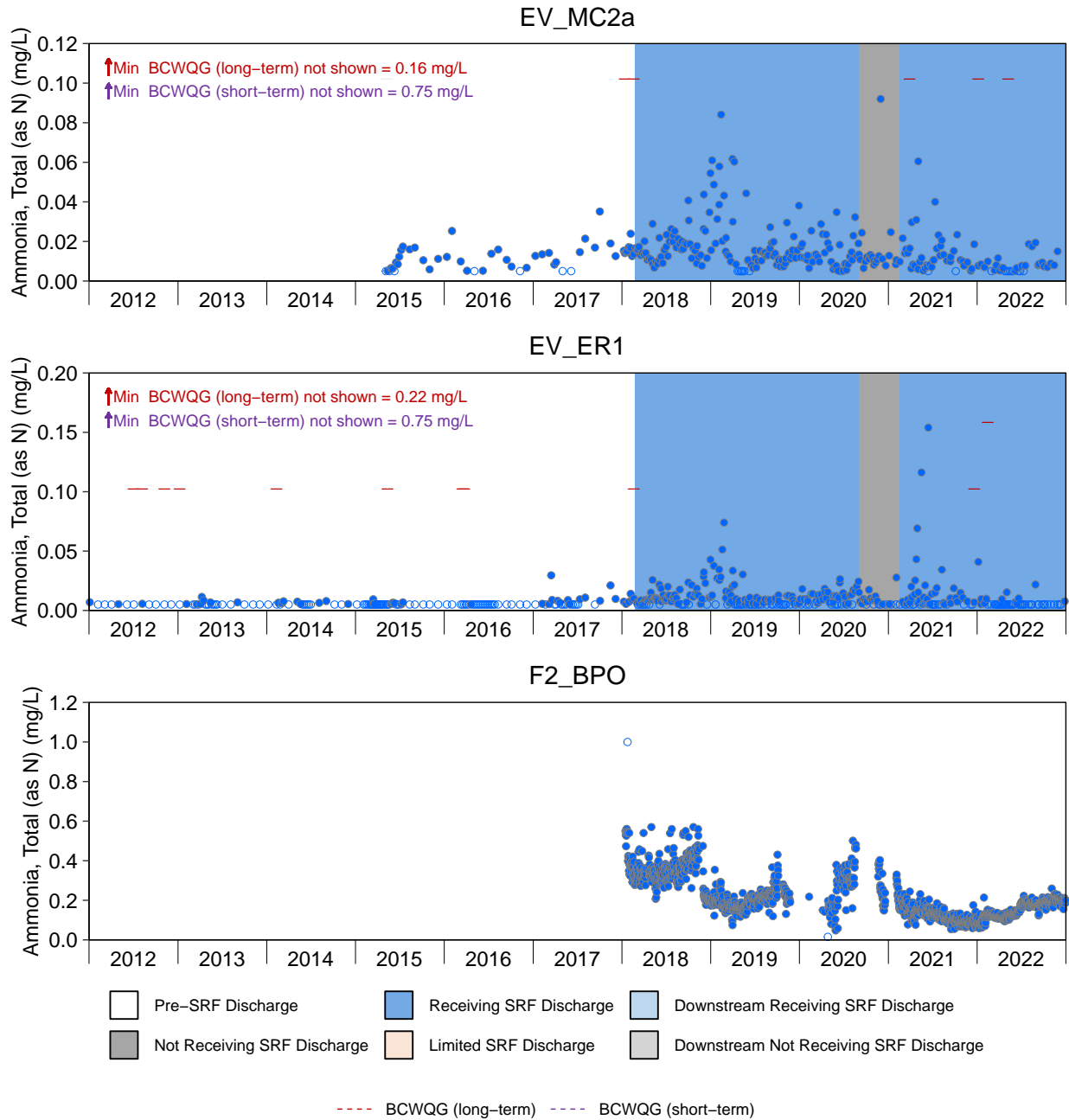


Figure D.17: Time Series Plots for Ammonia from EVO LAEMP Areas, 2012 to 2022

Notes: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Guidelines are dependent on water temperature and pH.

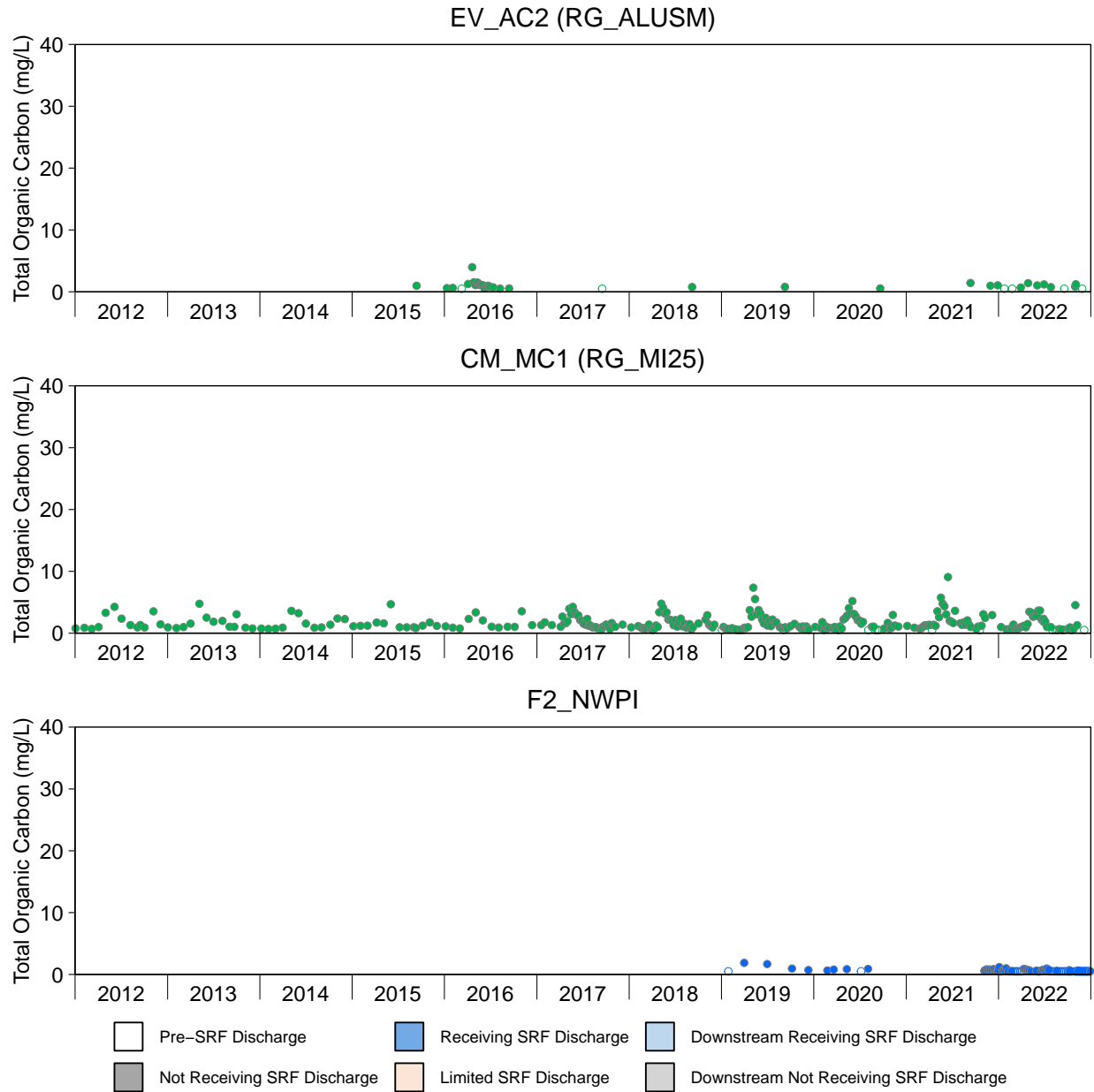


Figure D.18: Time Series Plots for Total Organic Carbon from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

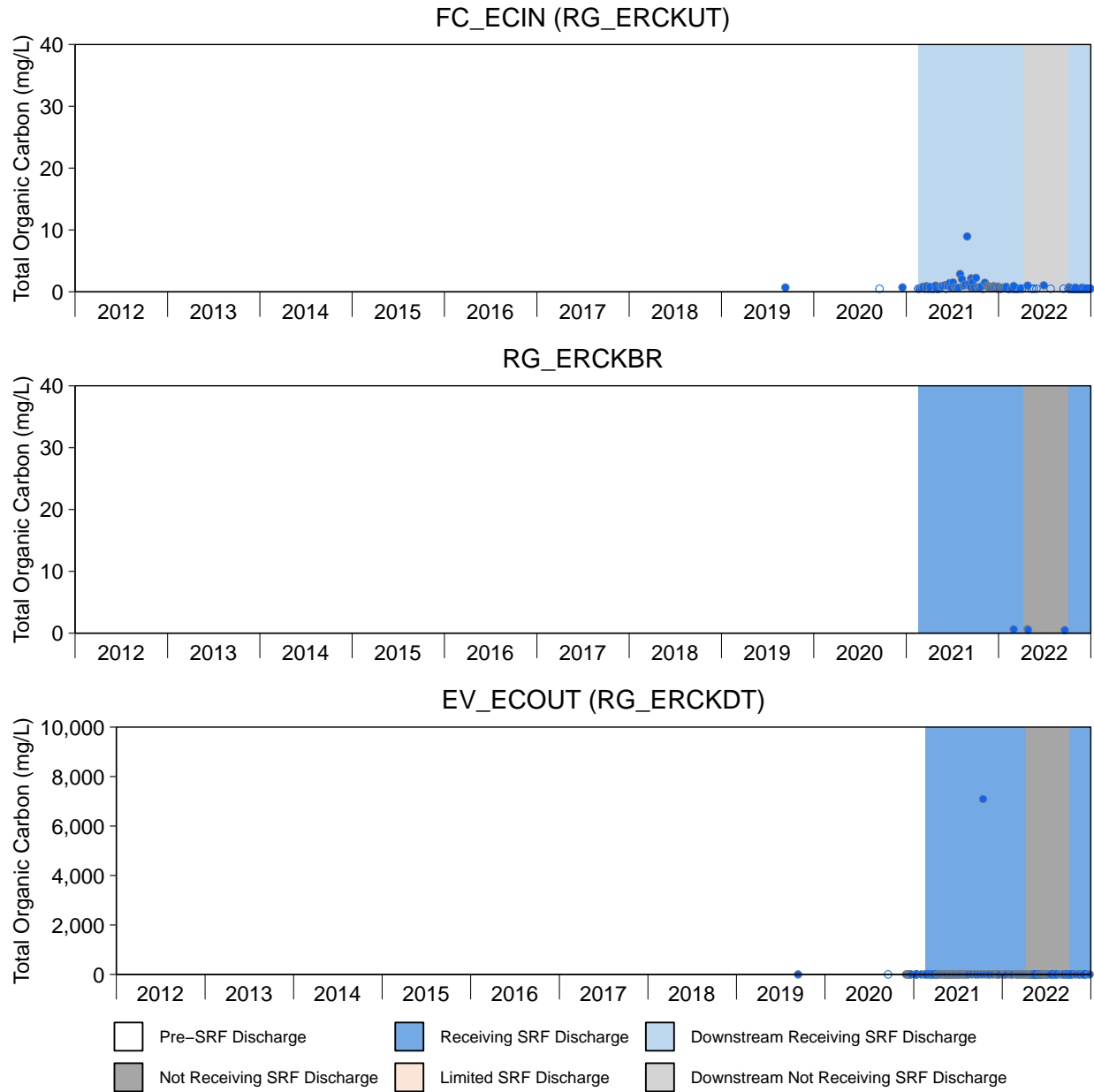


Figure D.18: Time Series Plots for Total Organic Carbon from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

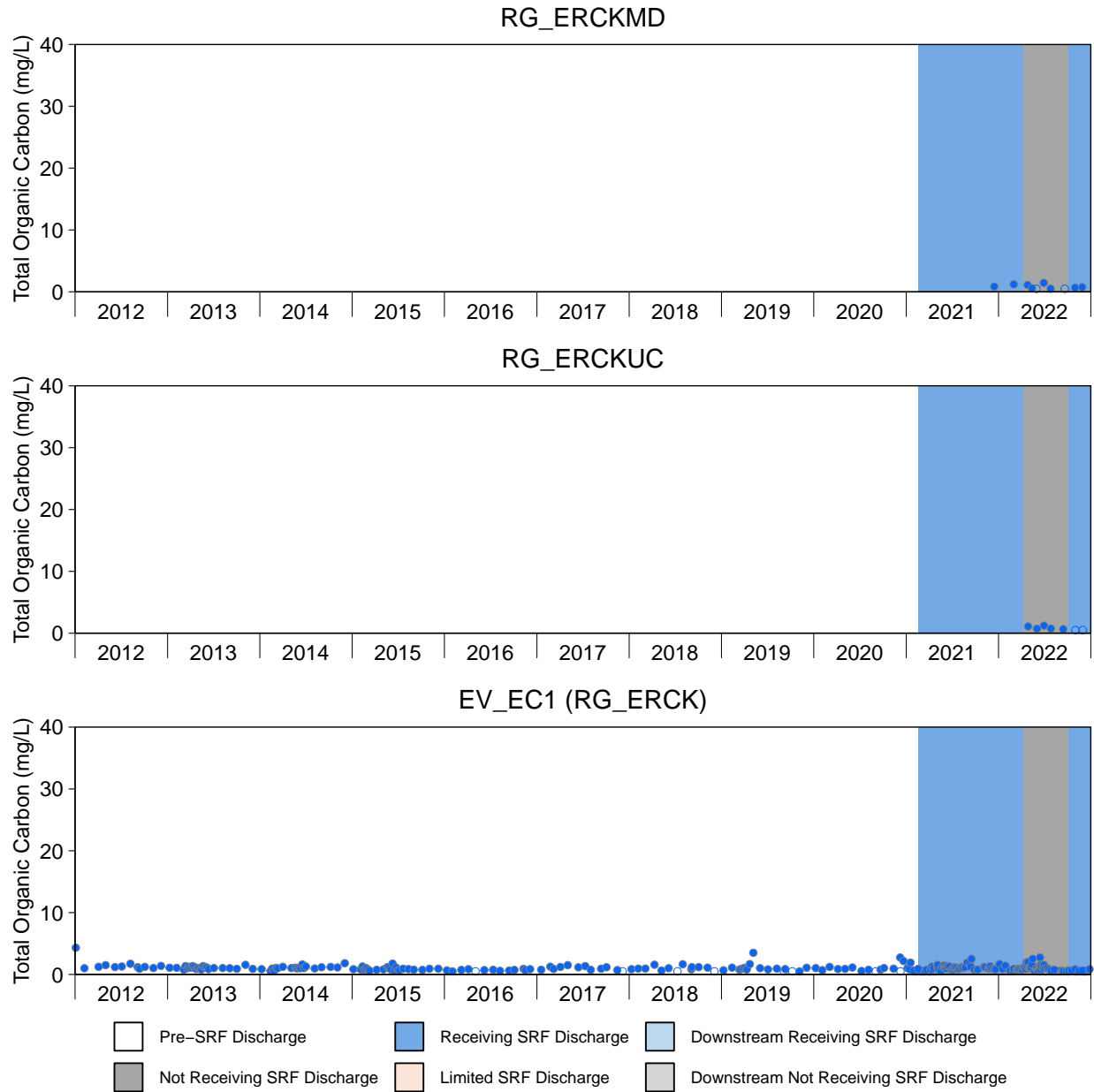


Figure D.18: Time Series Plots for Total Organic Carbon from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

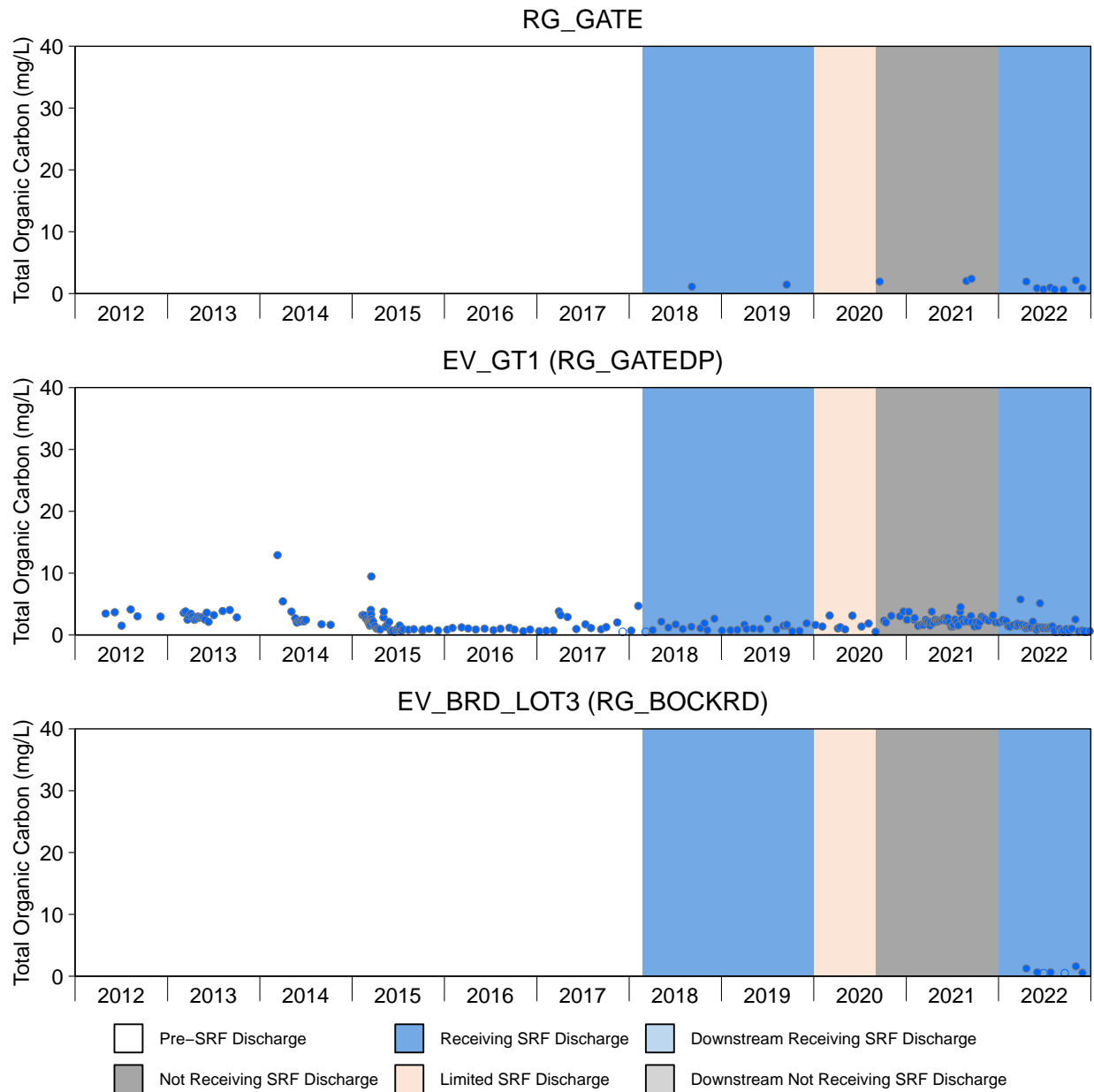


Figure D.18: Time Series Plots for Total Organic Carbon from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

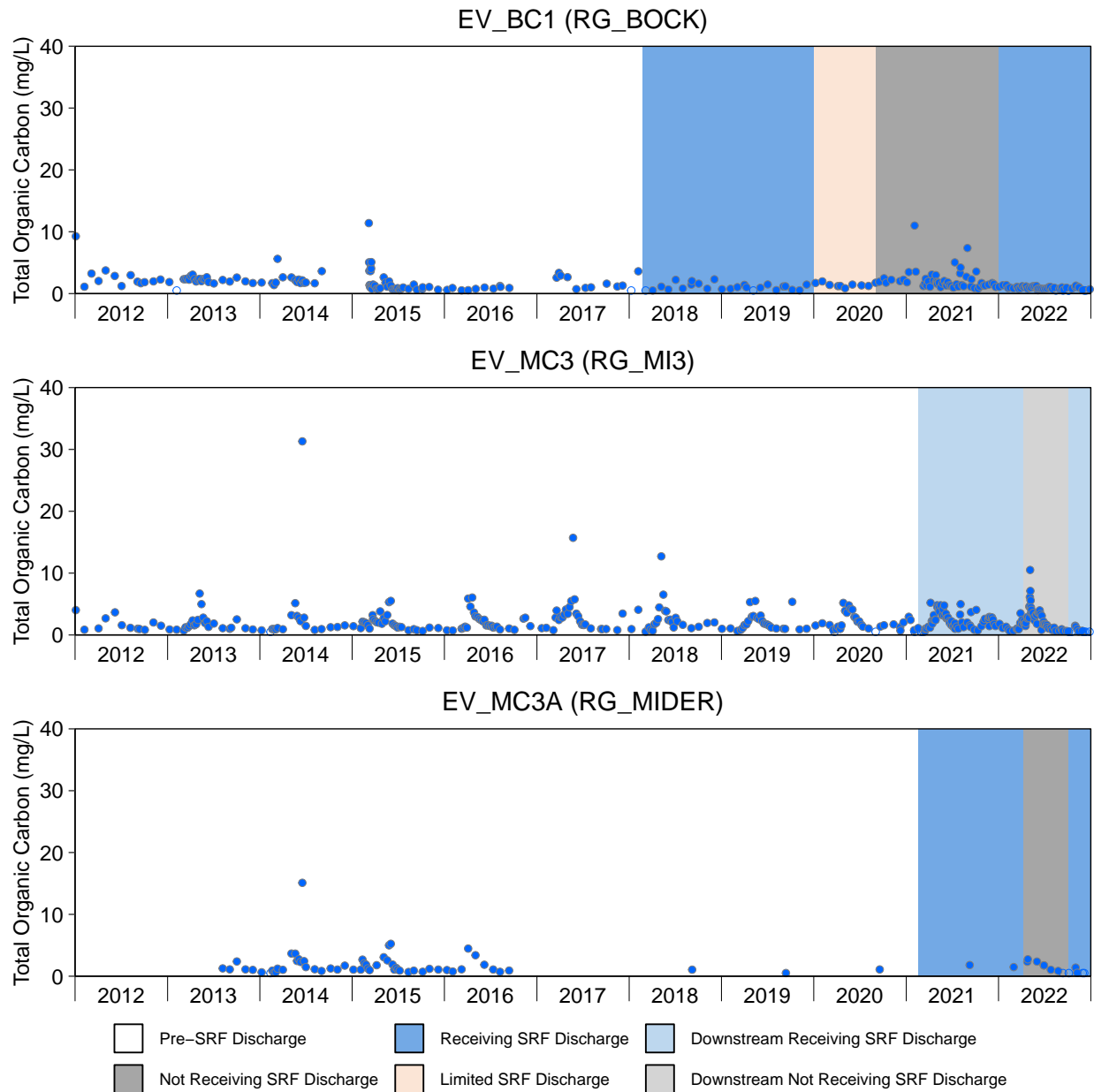


Figure D.18: Time Series Plots for Total Organic Carbon from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

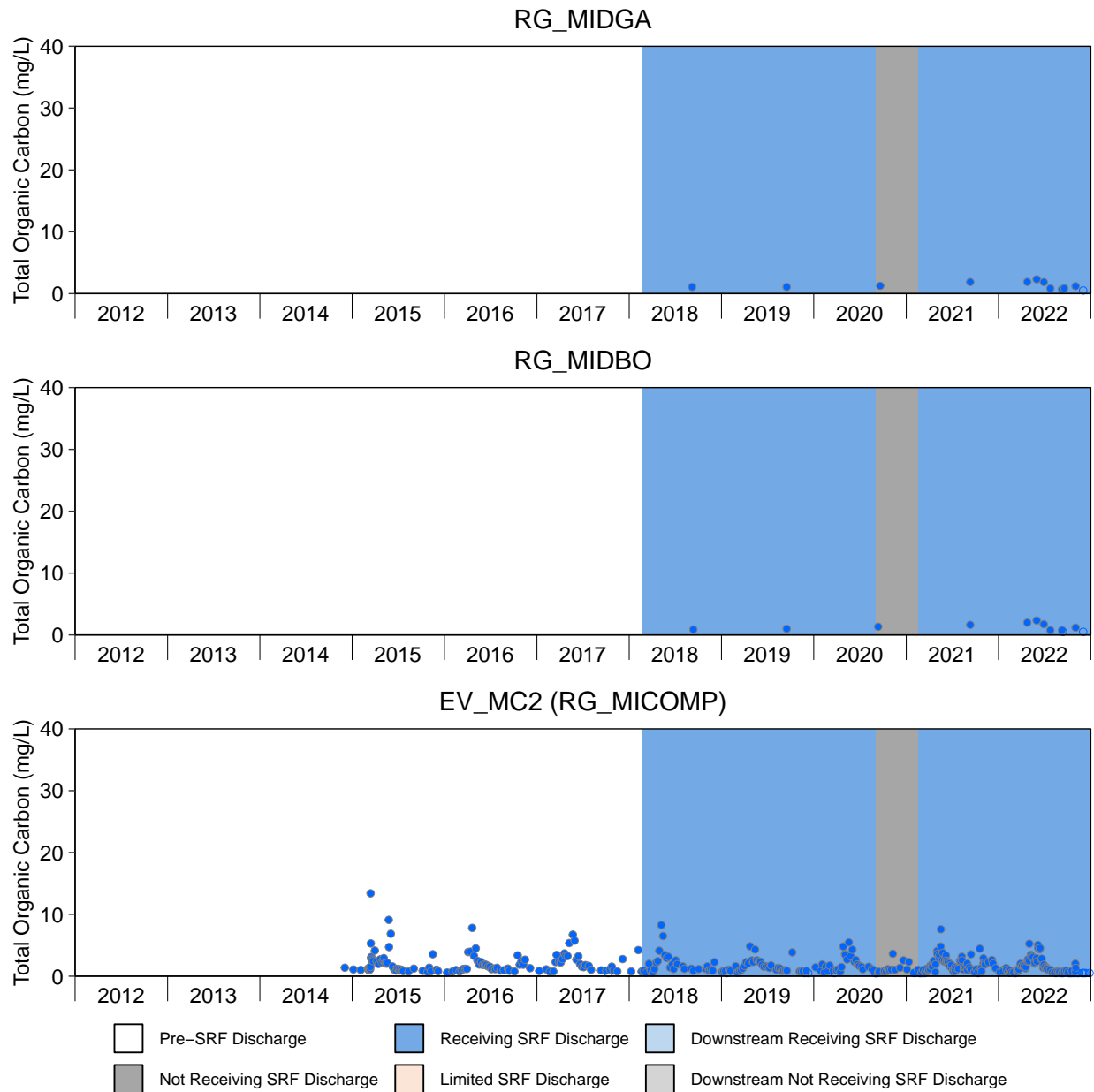


Figure D.18: Time Series Plots for Total Organic Carbon from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

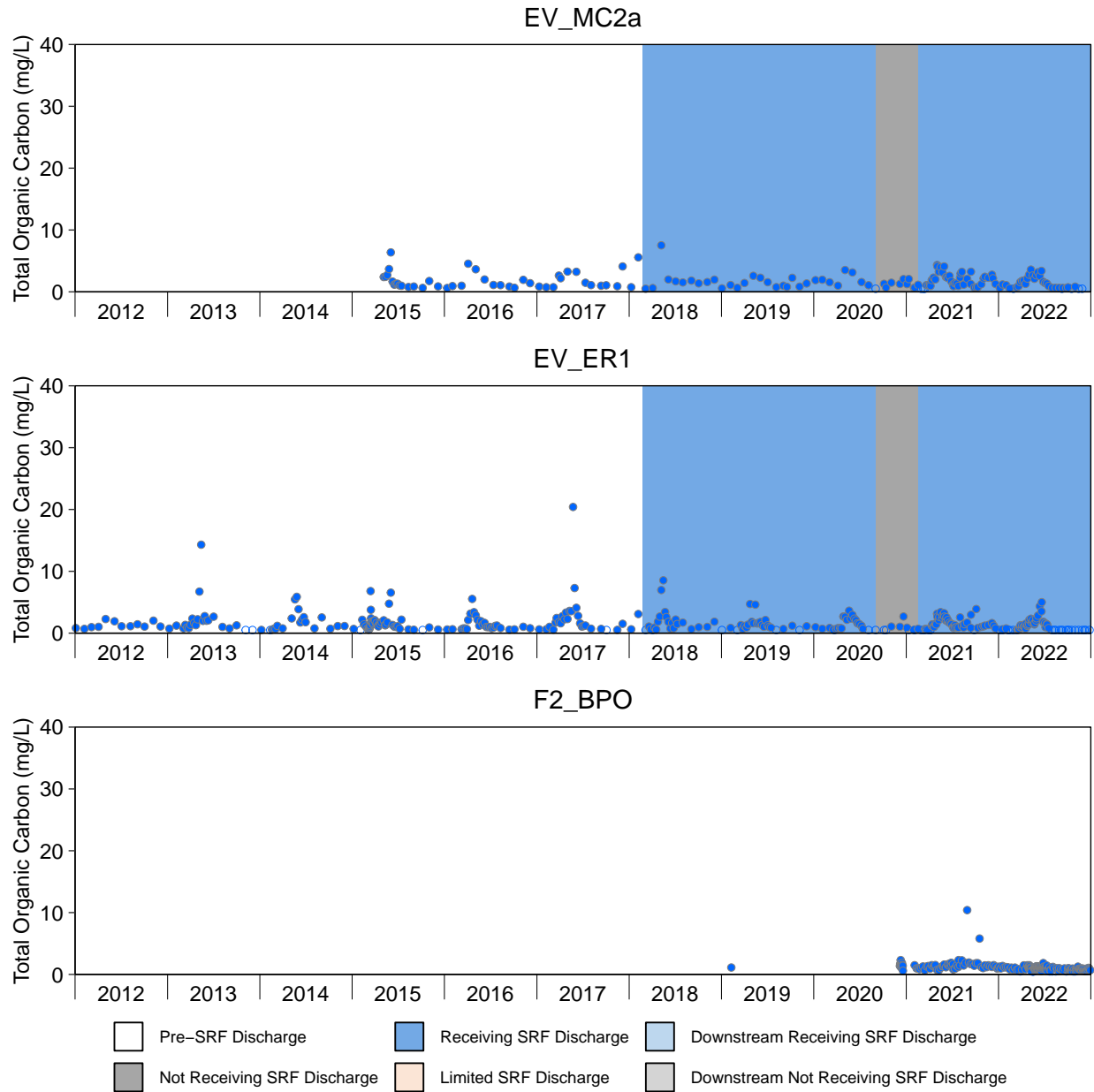


Figure D.18: Time Series Plots for Total Organic Carbon from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

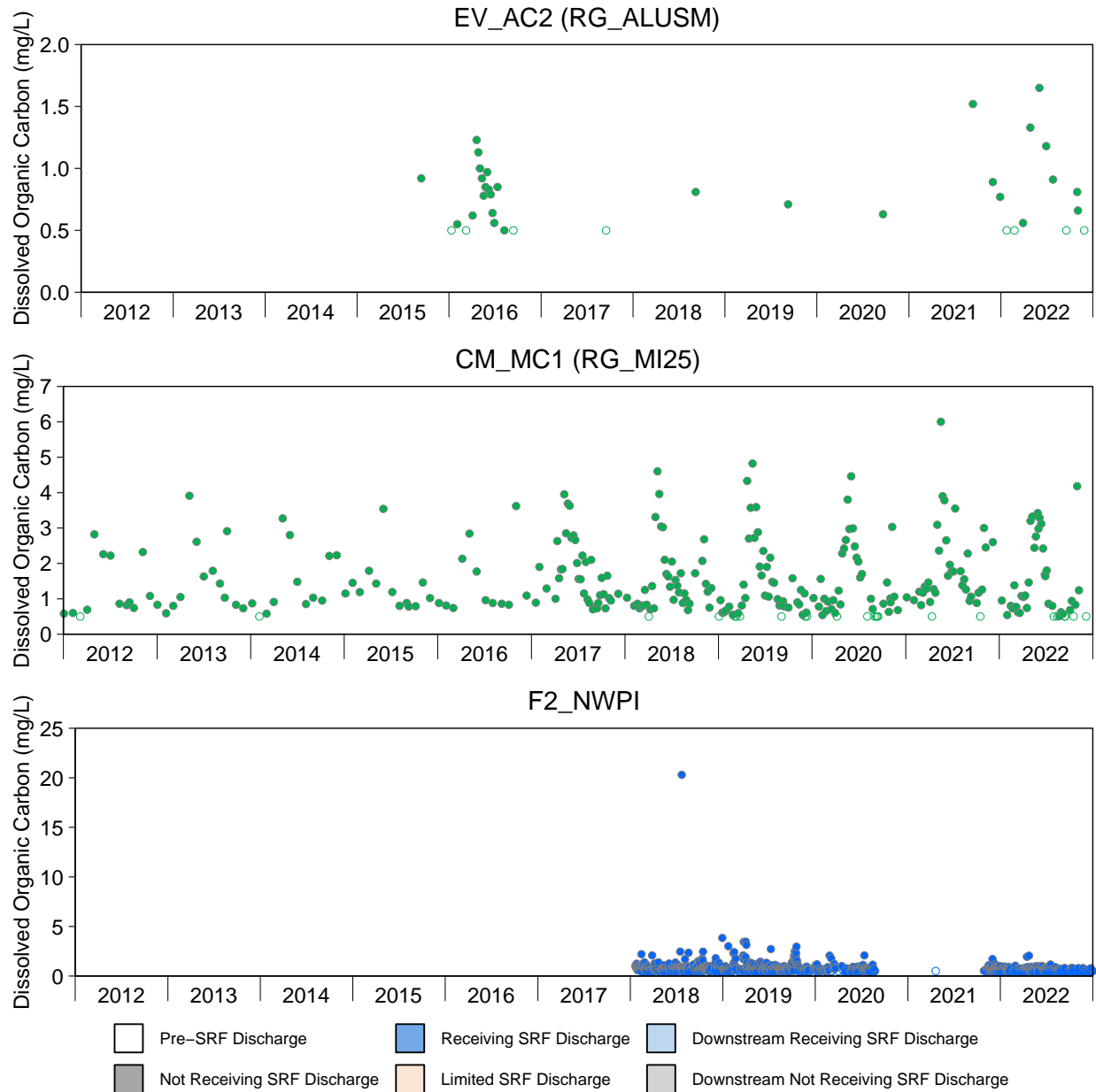


Figure D.19: Time Series Plots for Dissolved Organic Carbon from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

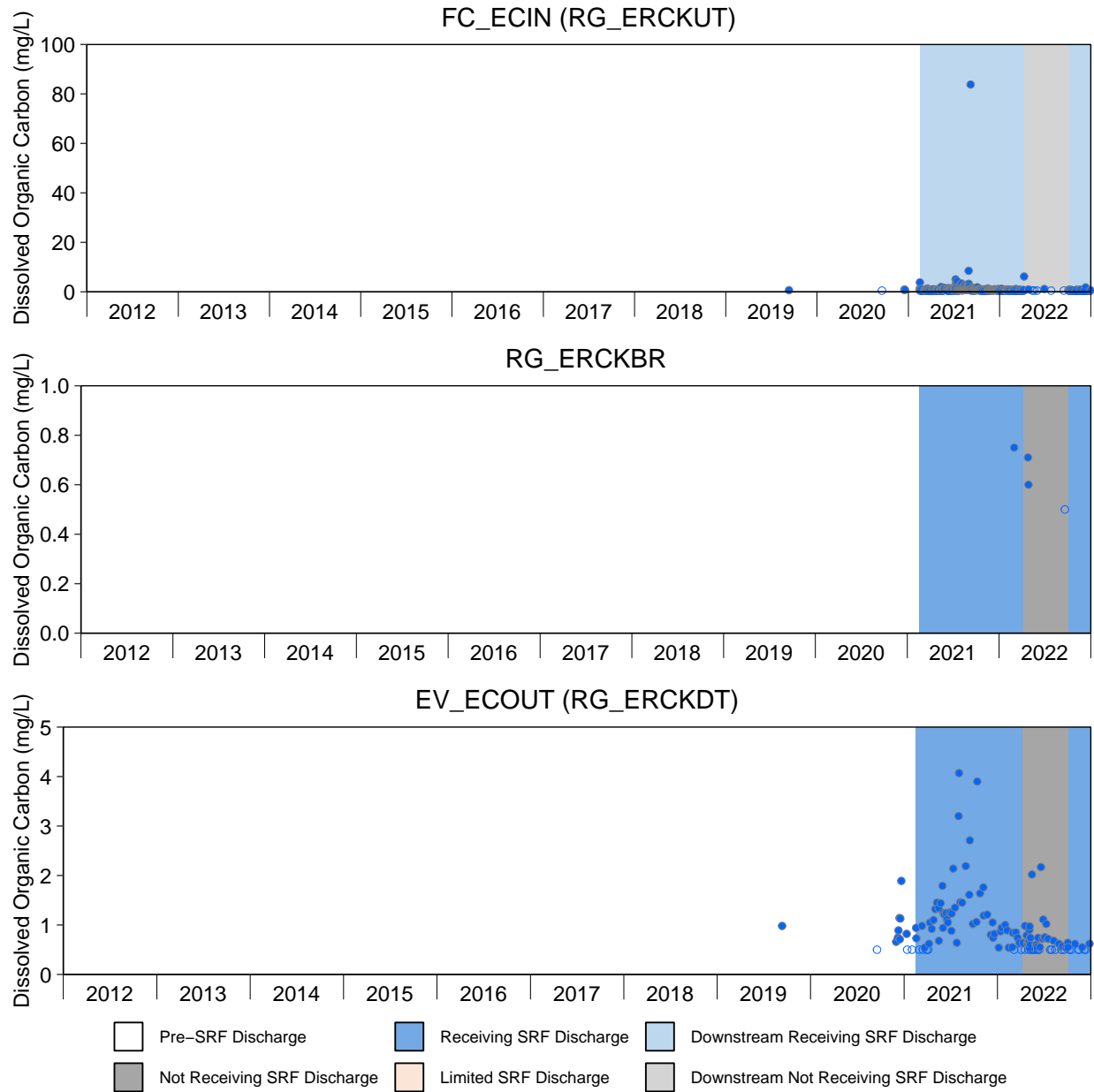


Figure D.19: Time Series Plots for Dissolved Organic Carbon from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

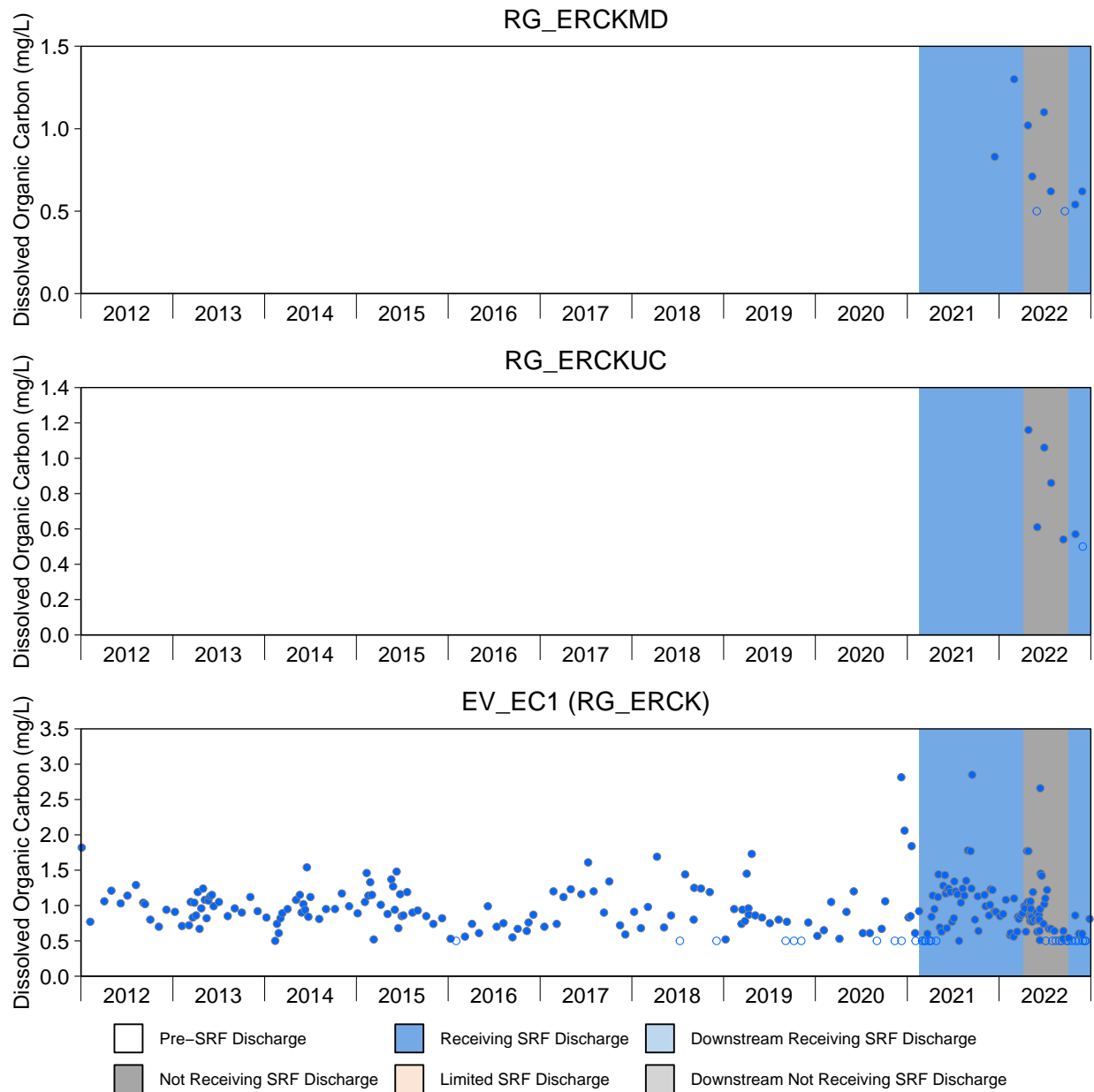


Figure D.19: Time Series Plots for Dissolved Organic Carbon from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

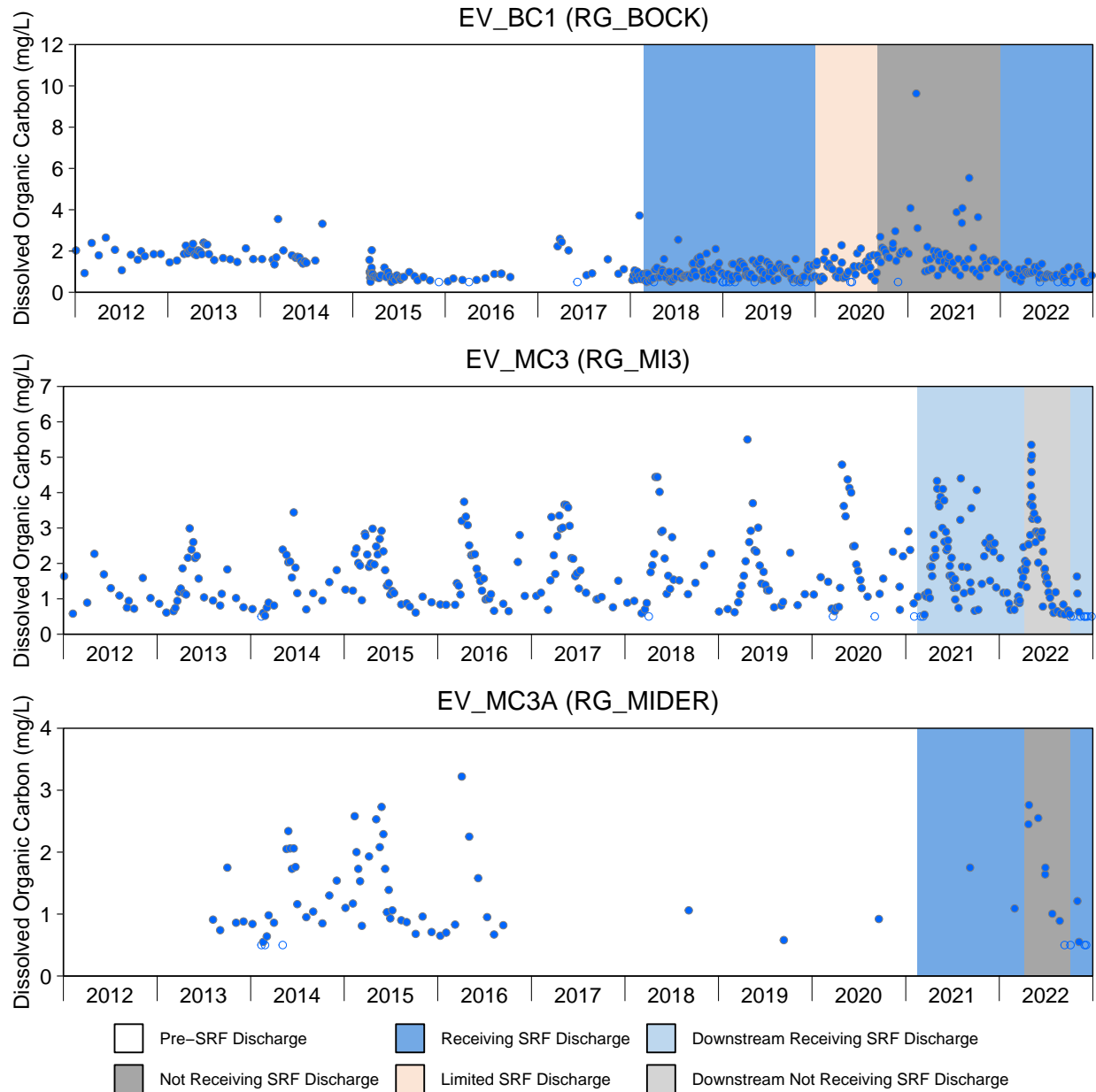


Figure D.19: Time Series Plots for Dissolved Organic Carbon from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

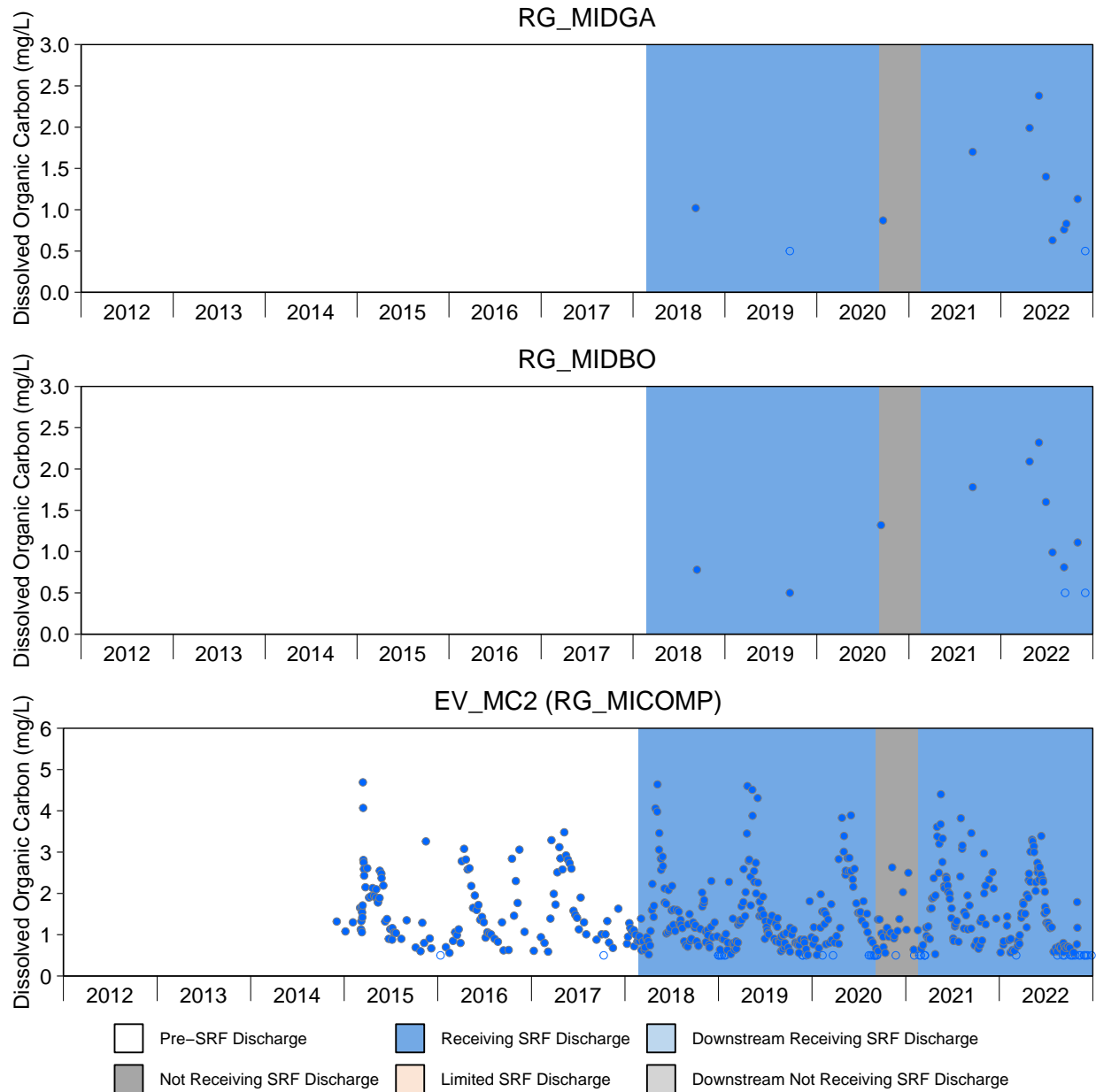


Figure D.19: Time Series Plots for Dissolved Organic Carbon from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

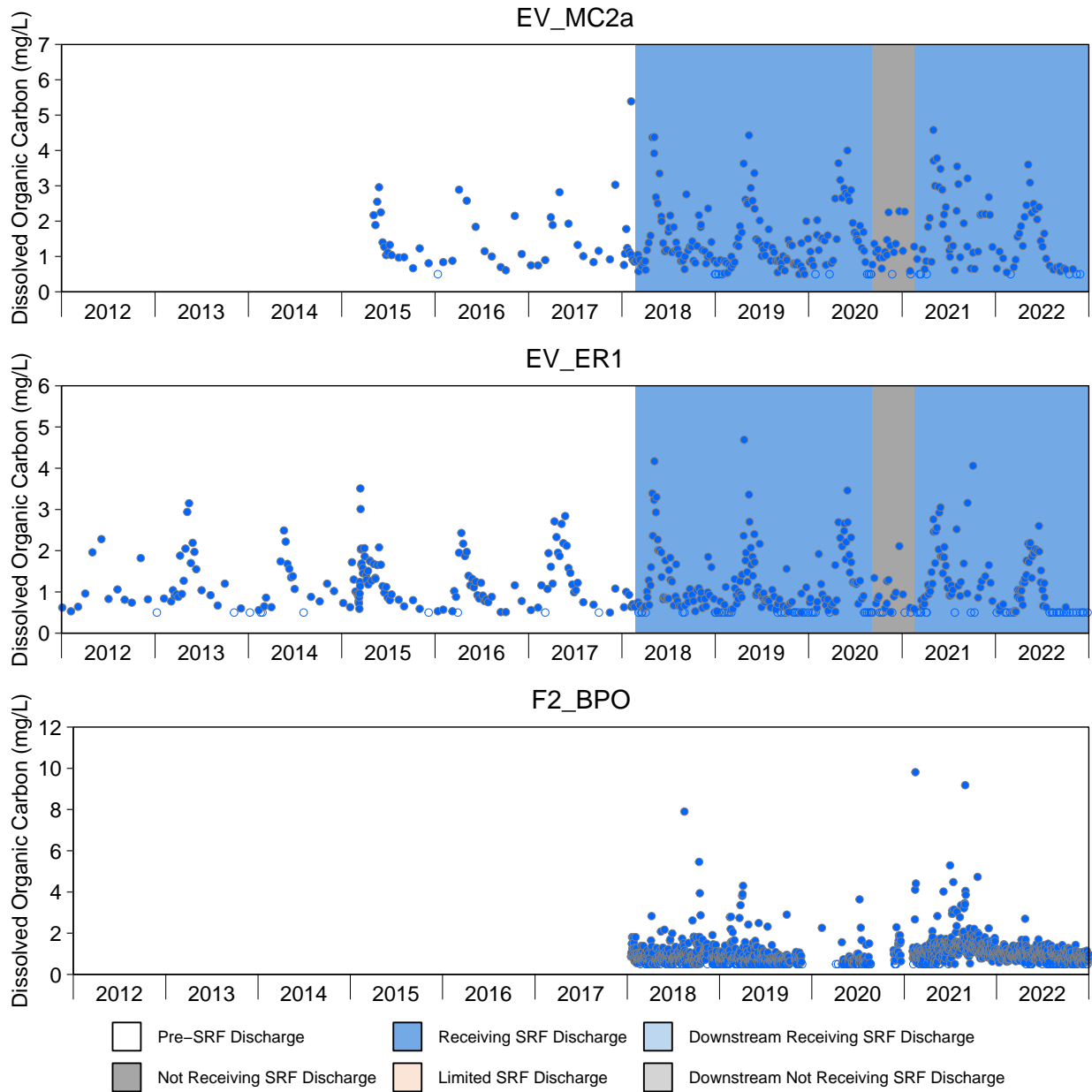


Figure D.19: Time Series Plots for Dissolved Organic Carbon from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

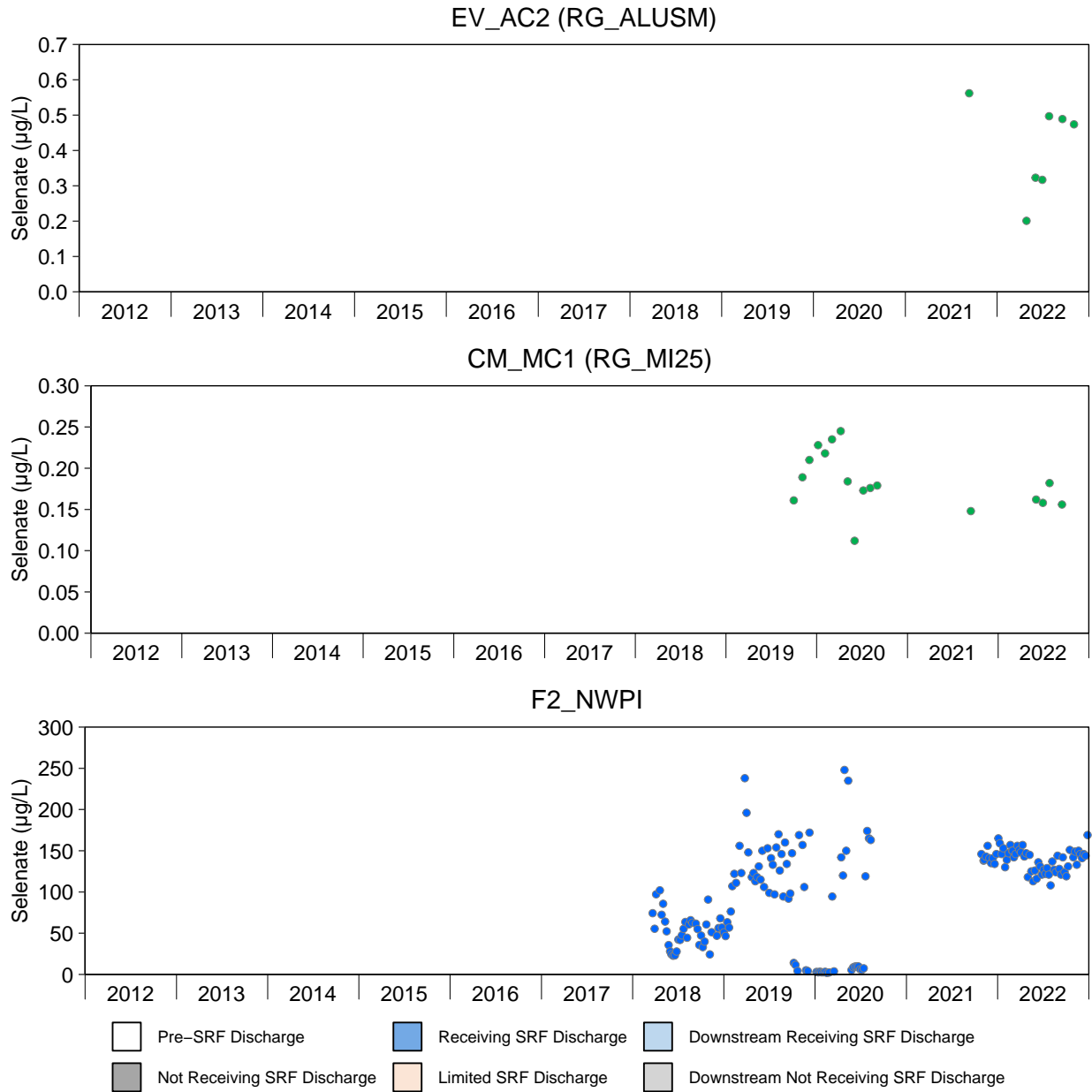


Figure D.20: Time Series Plots for Selenate from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

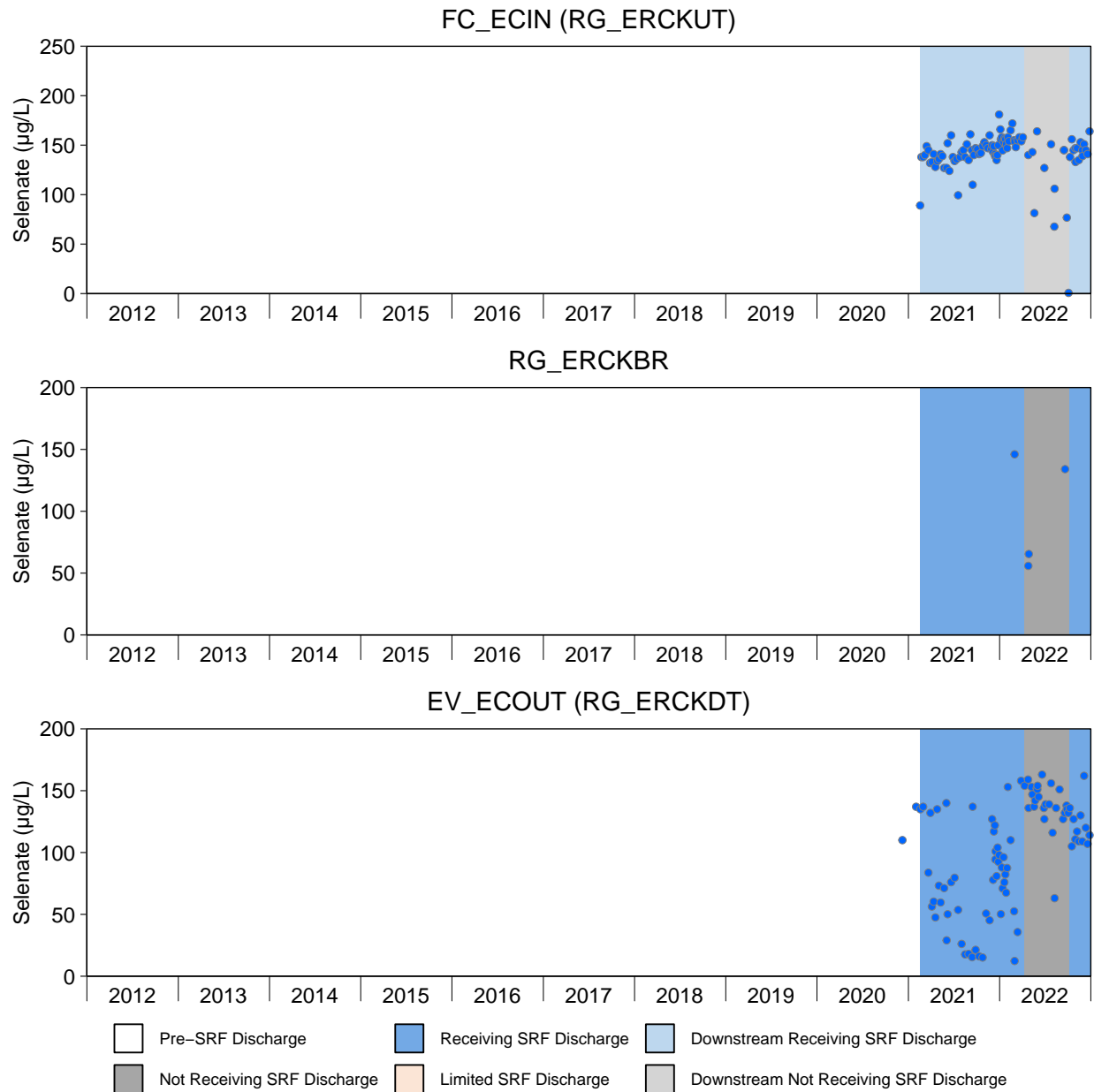


Figure D.20: Time Series Plots for Selenate from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

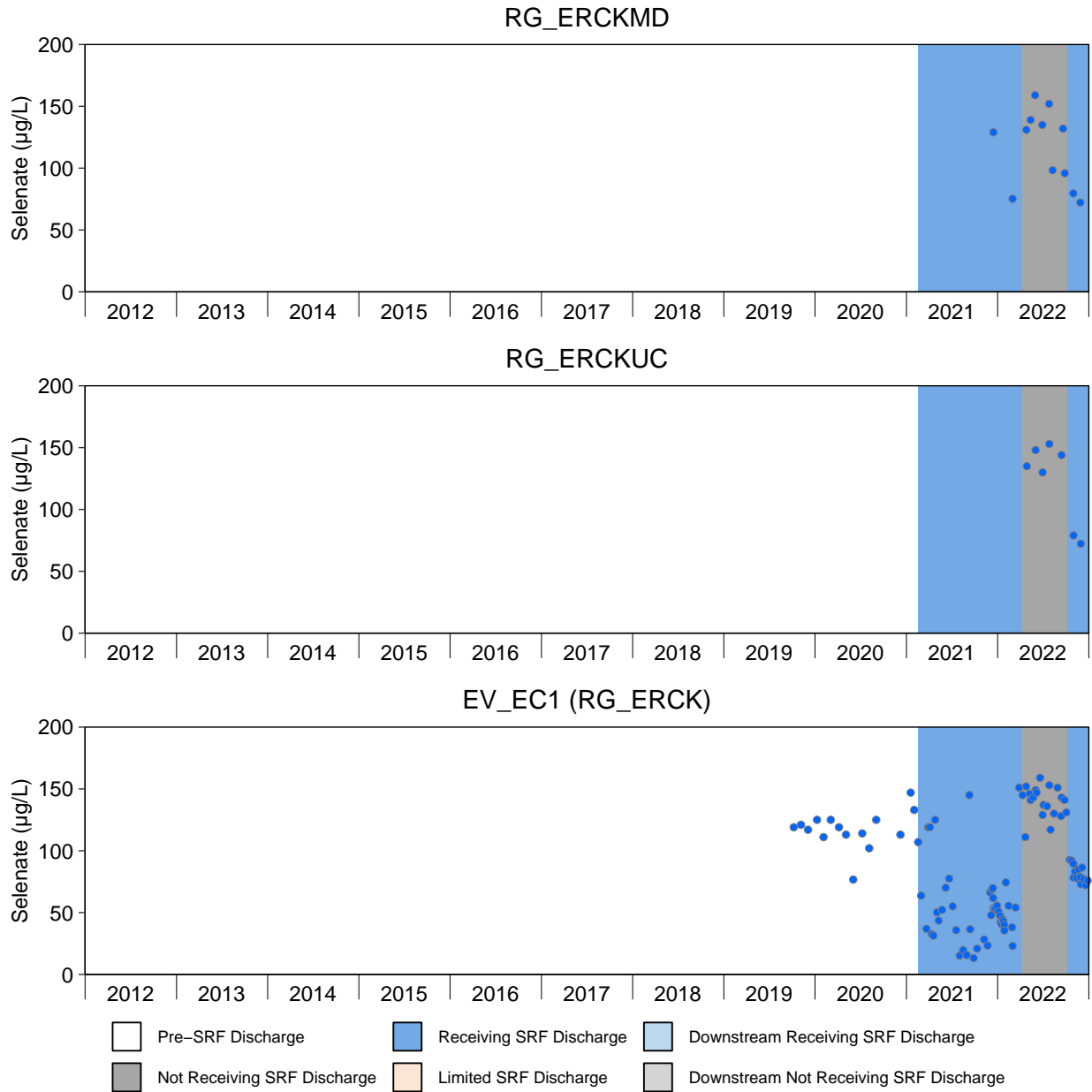


Figure D.20: Time Series Plots for Selenate from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

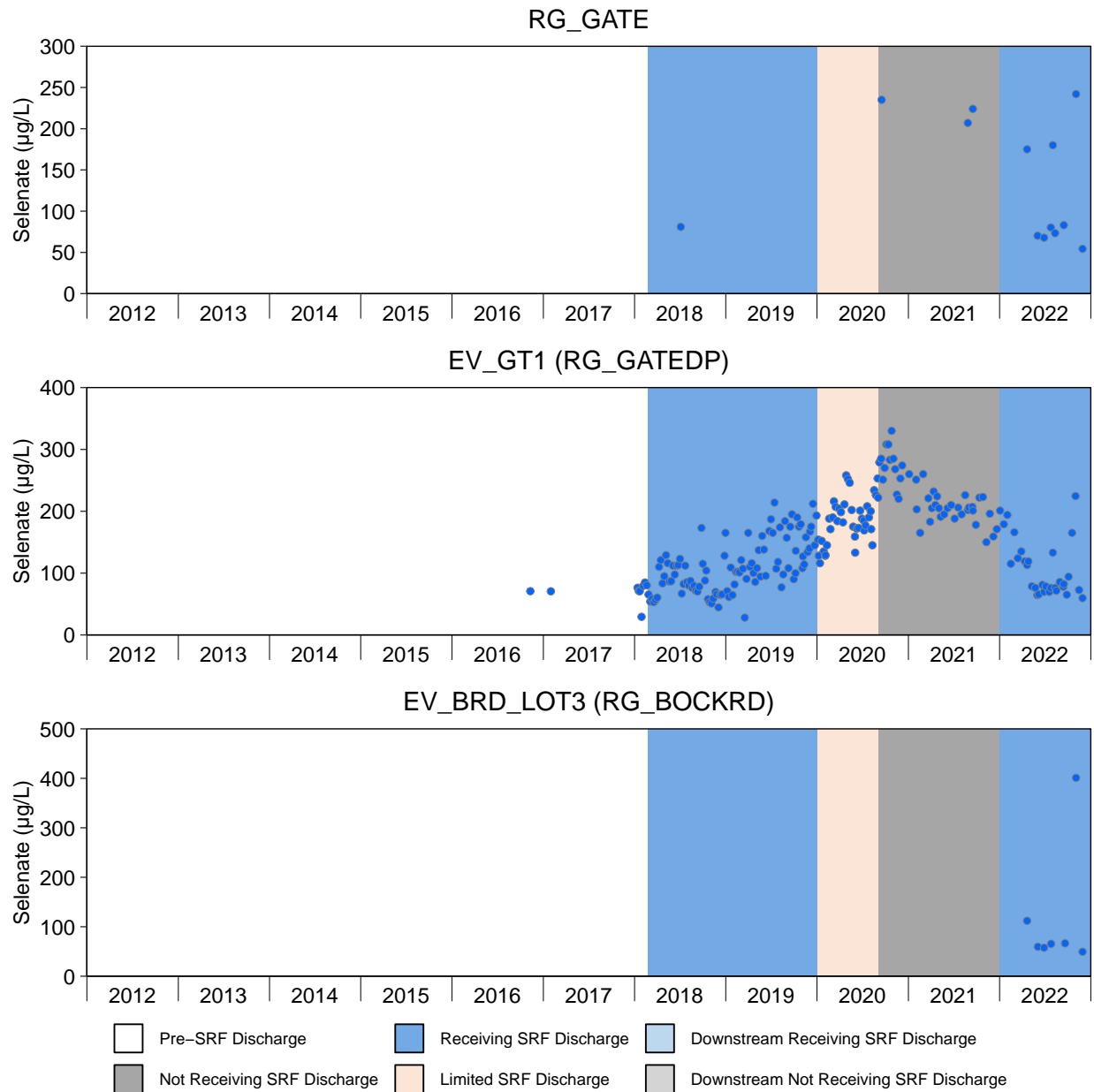


Figure D.20: Time Series Plots for Selenate from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

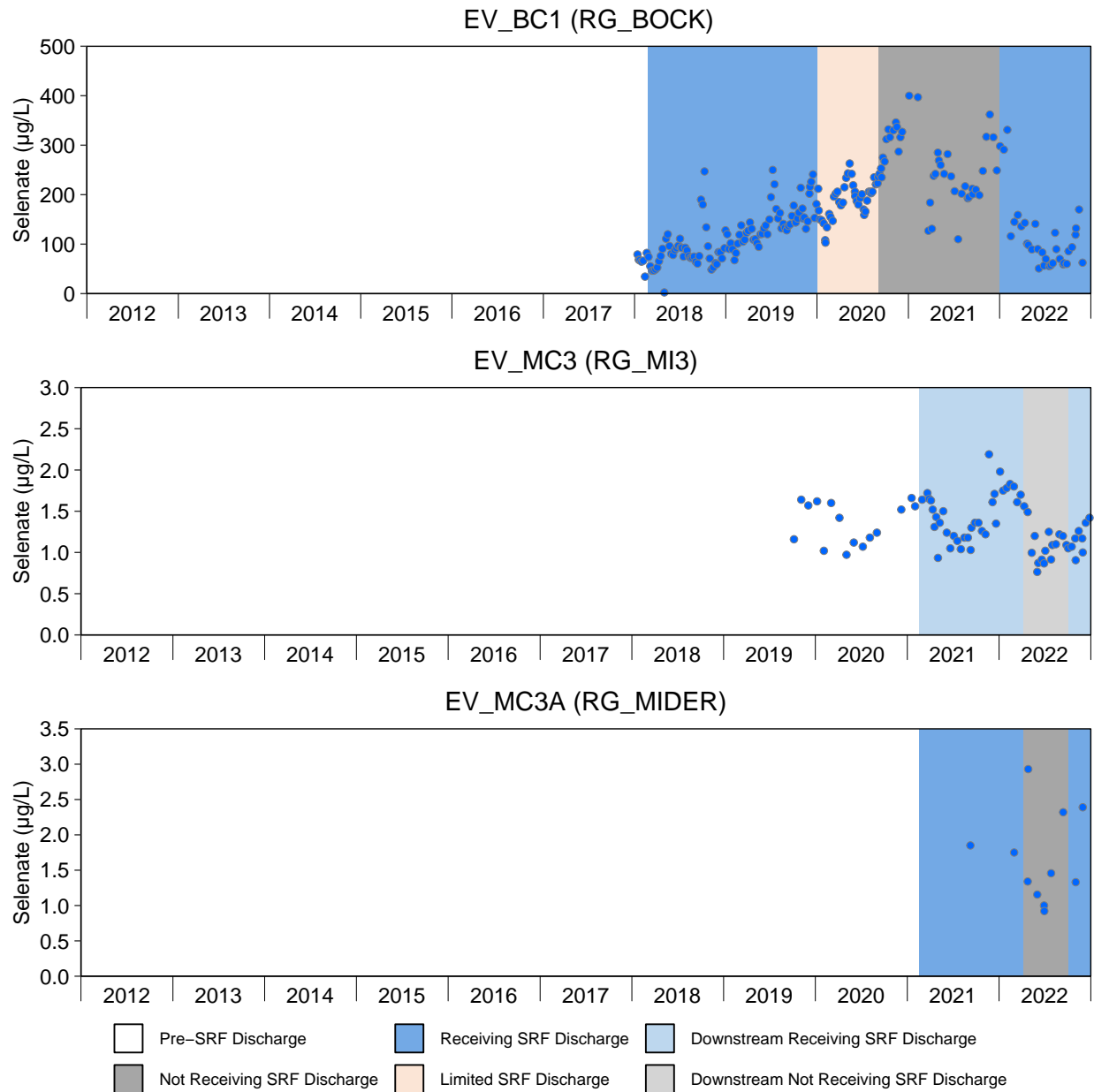


Figure D.20: Time Series Plots for Selenate from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

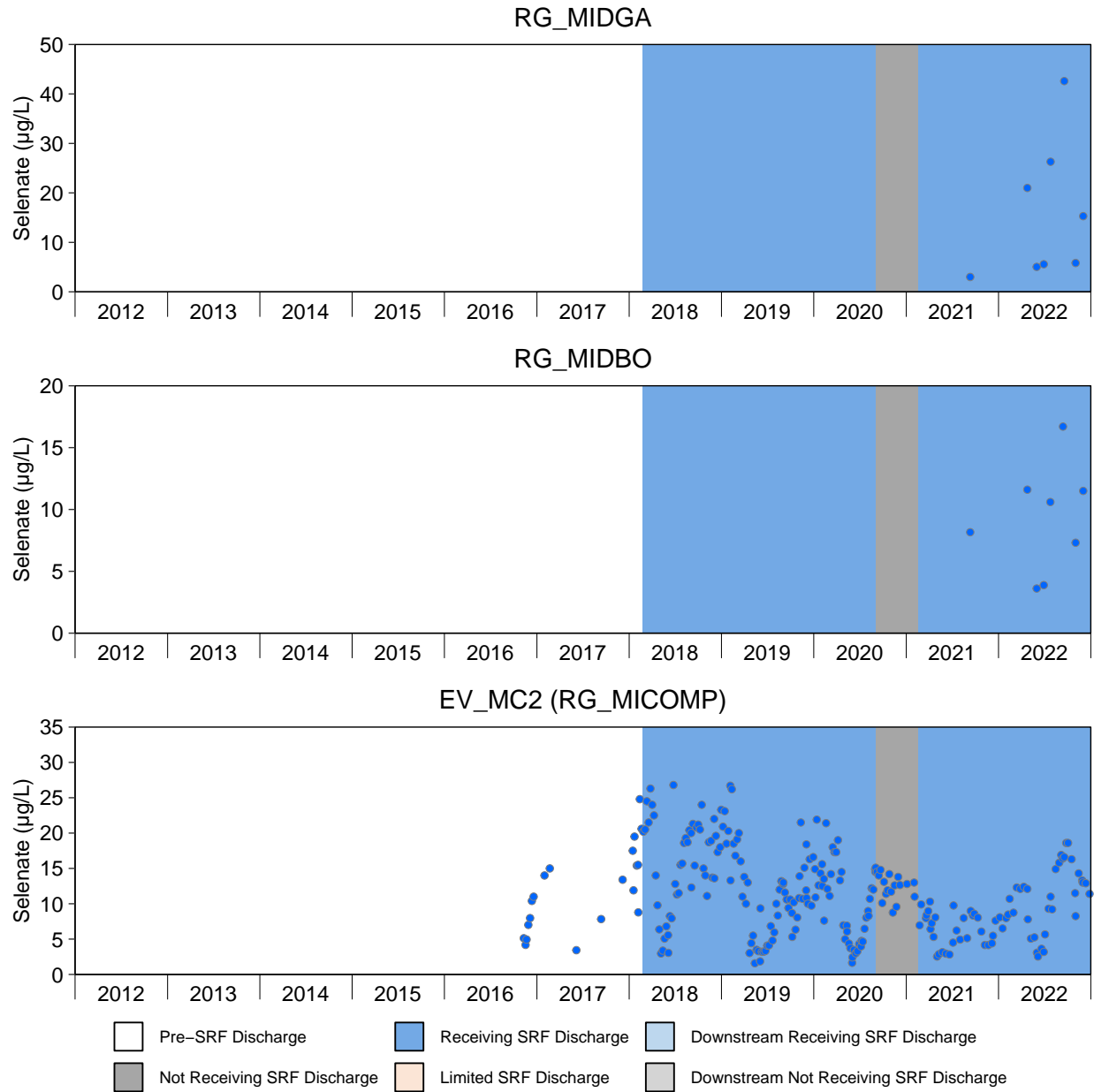


Figure D.20: Time Series Plots for Selenate from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

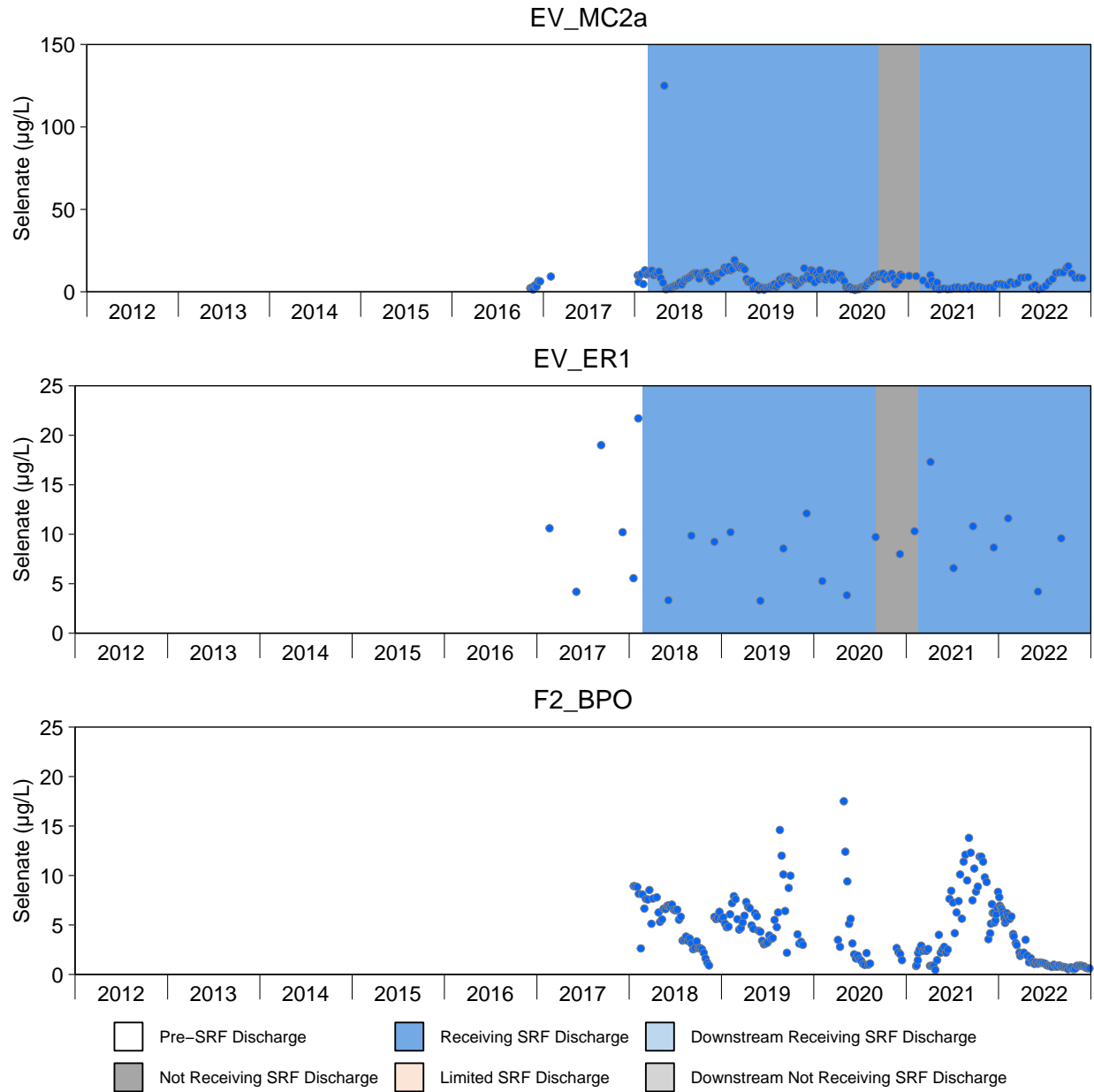


Figure D.20: Time Series Plots for Selenate from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

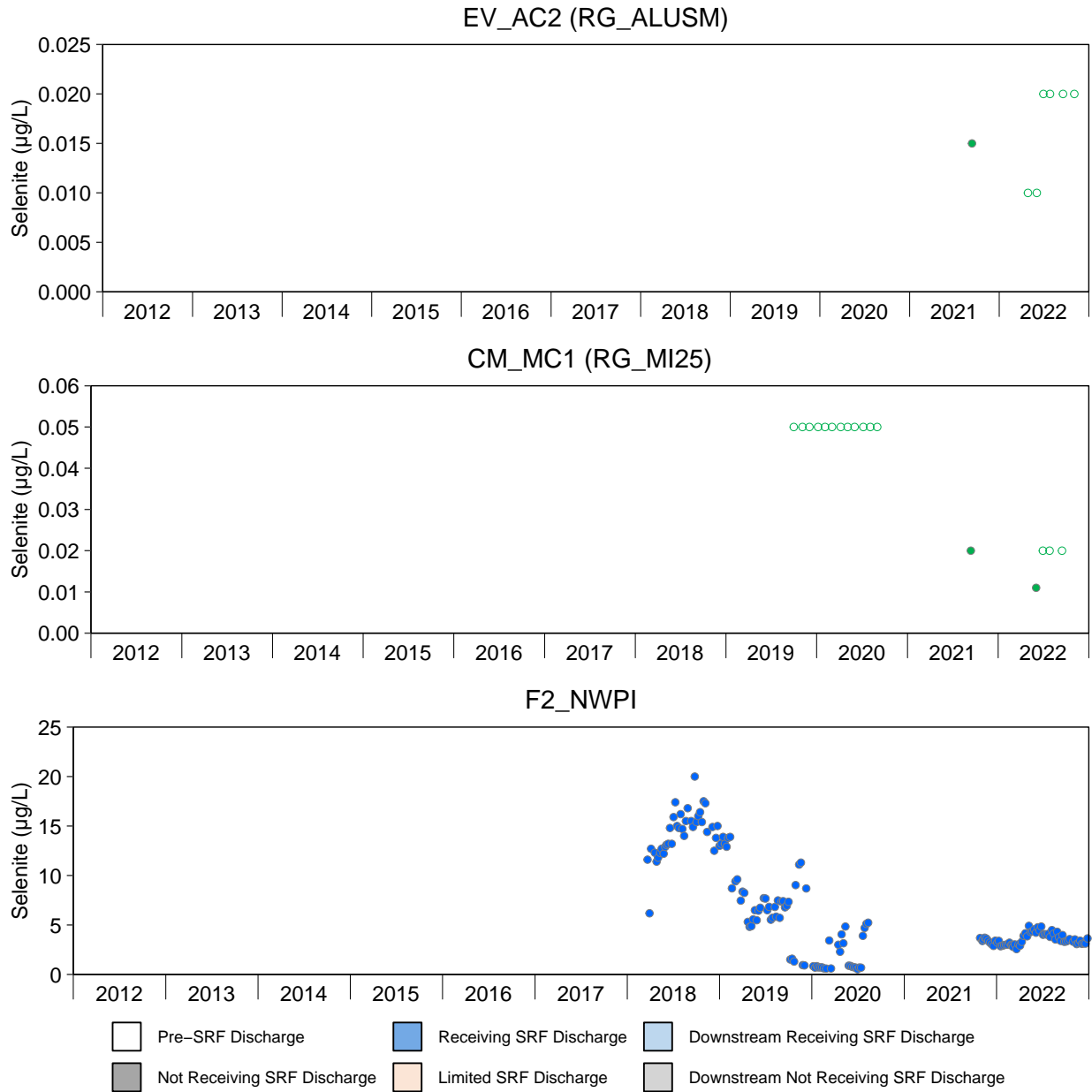


Figure D.21: Time Series Plots for Selenite from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

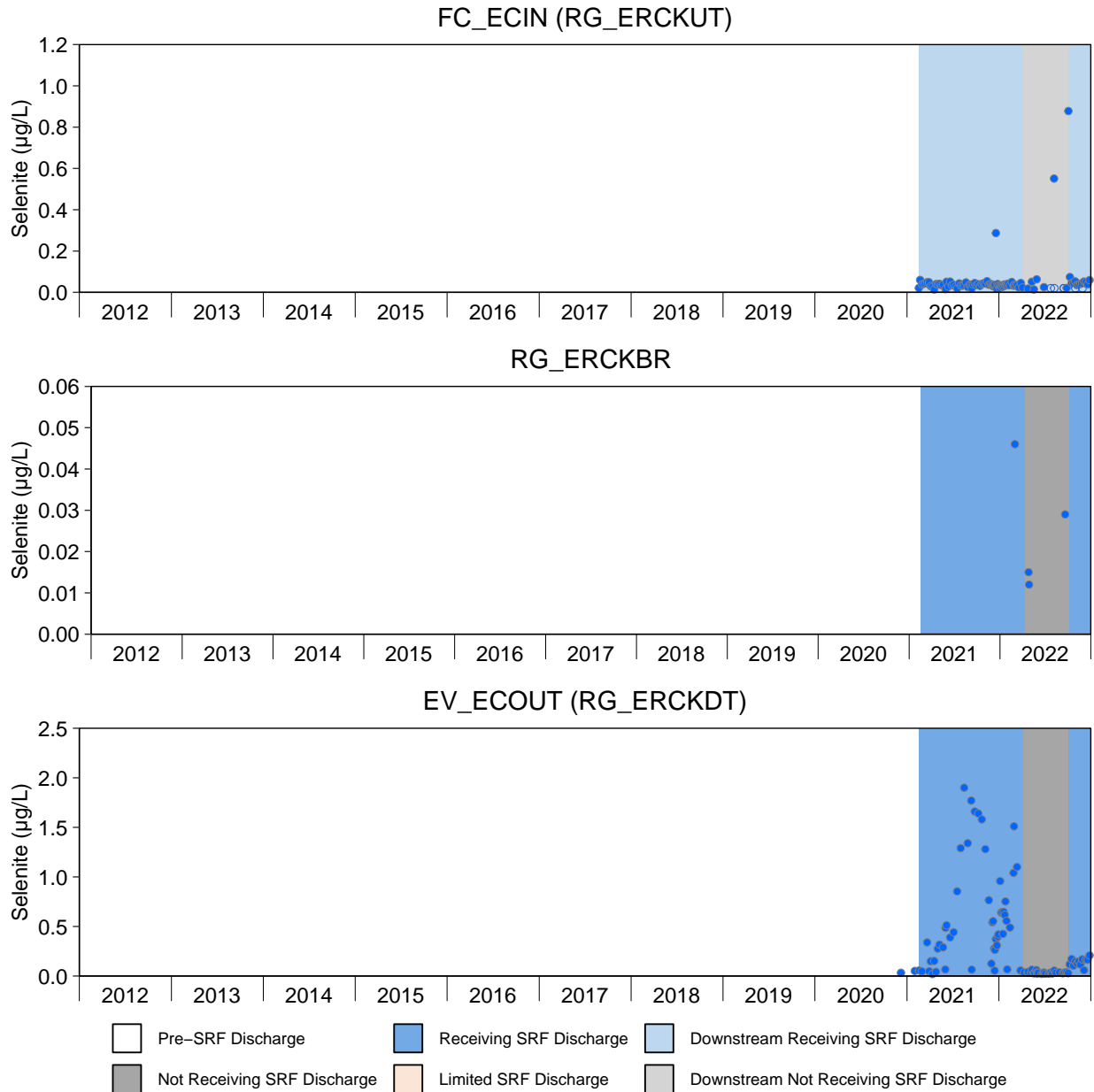


Figure D.21: Time Series Plots for Selenite from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

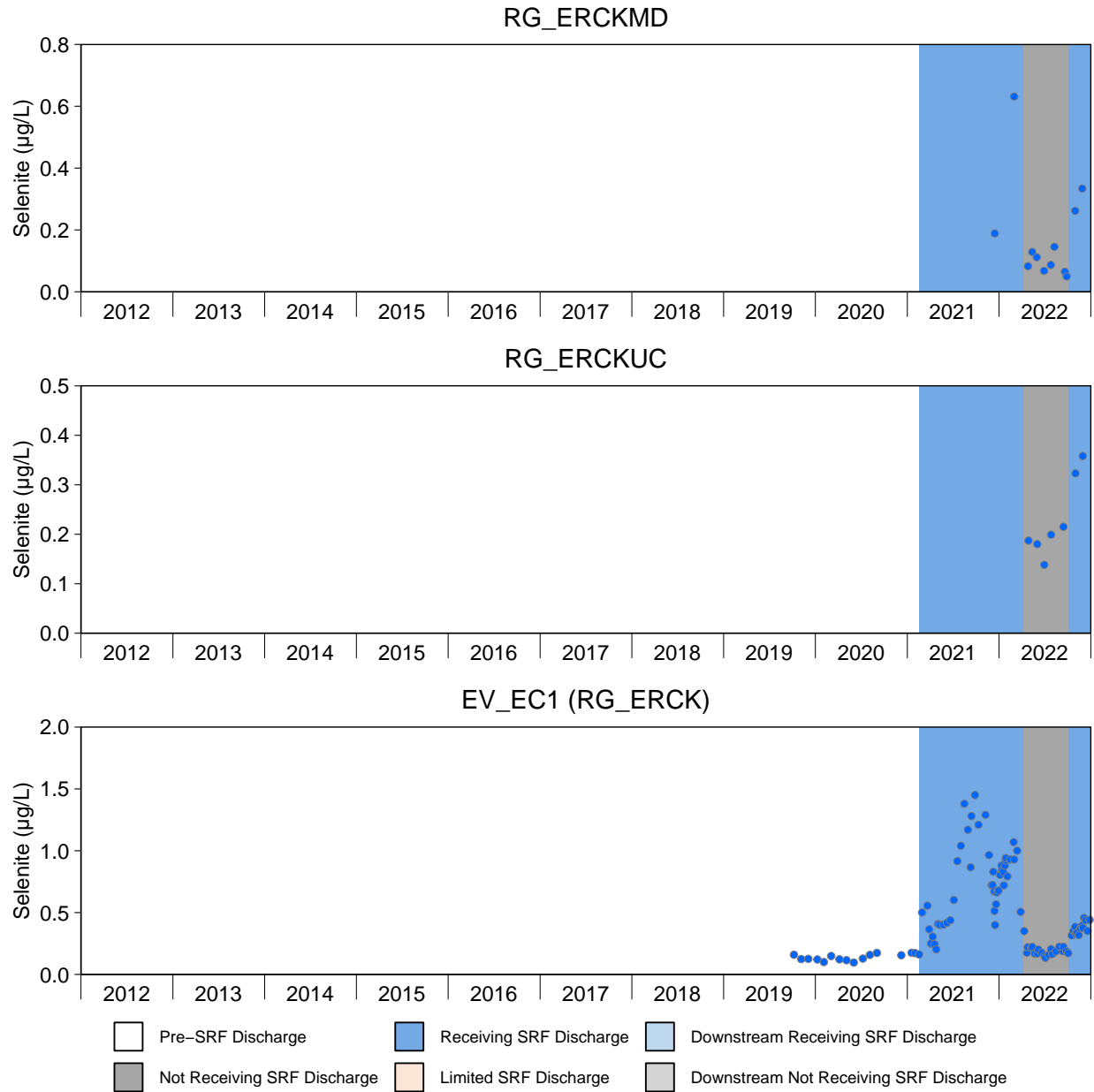


Figure D.21: Time Series Plots for Selenite from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

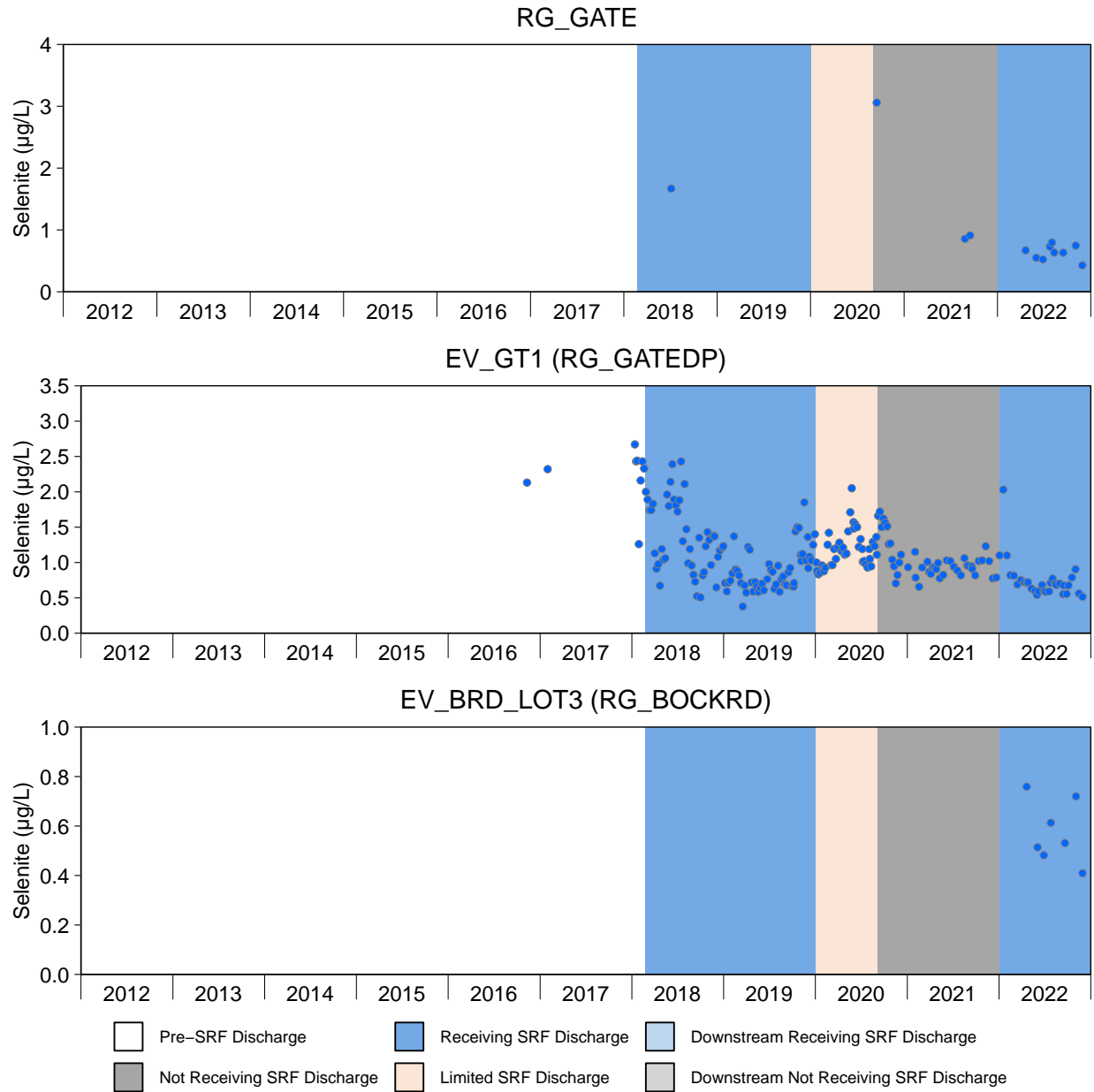


Figure D.21: Time Series Plots for Selenite from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

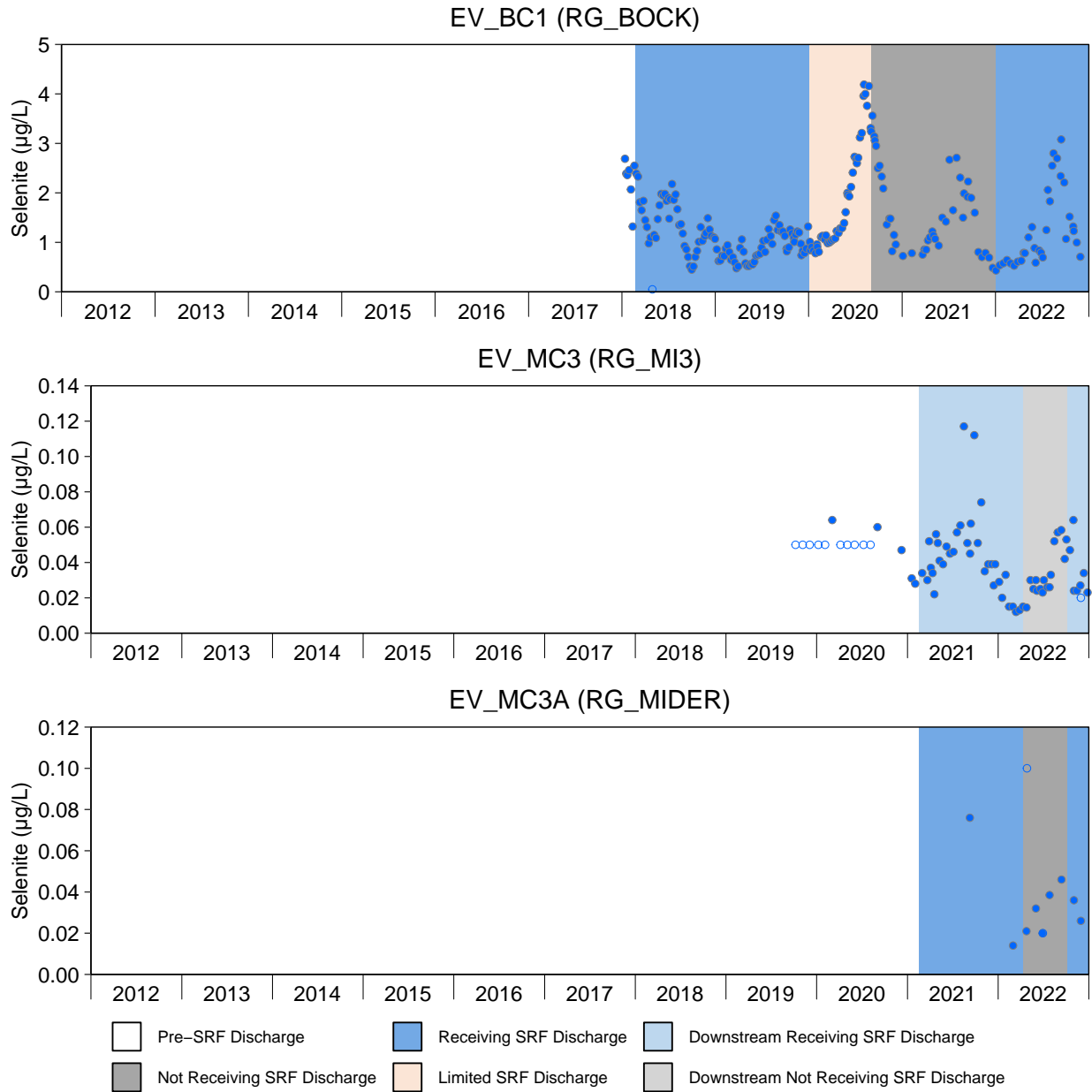


Figure D.21: Time Series Plots for Selenite from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

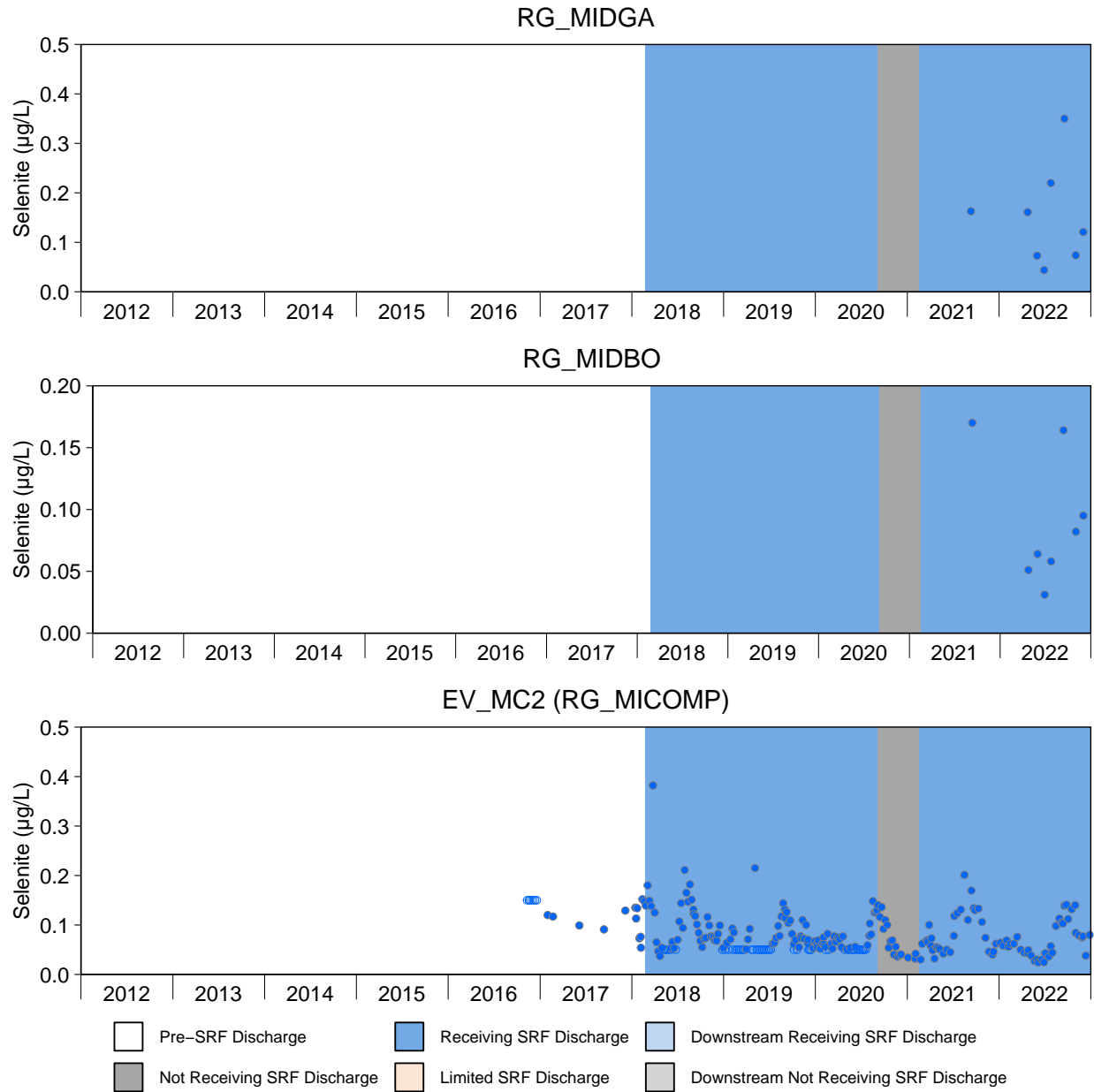


Figure D.21: Time Series Plots for Selenite from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

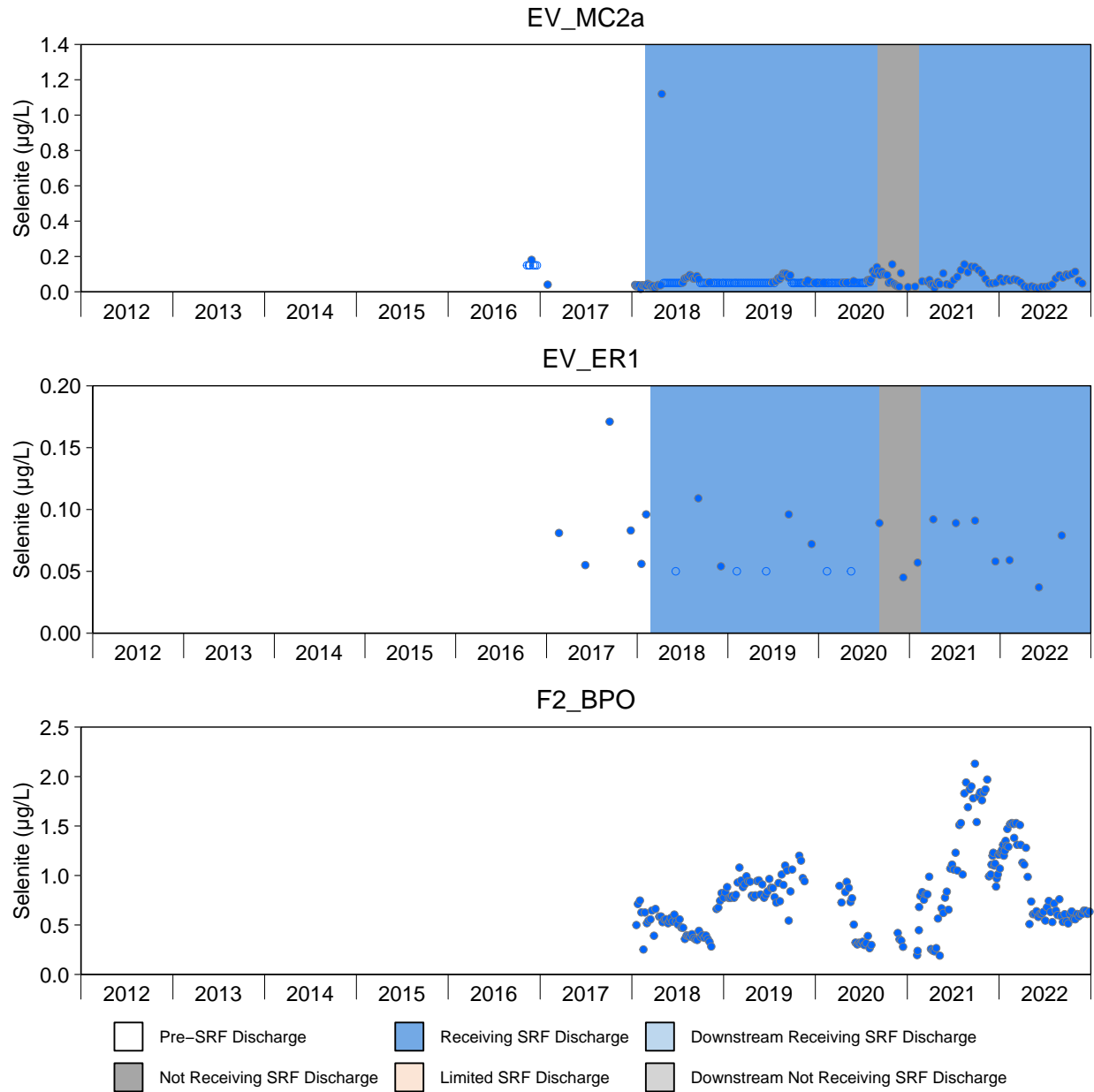


Figure D.21: Time Series Plots for Selenite from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

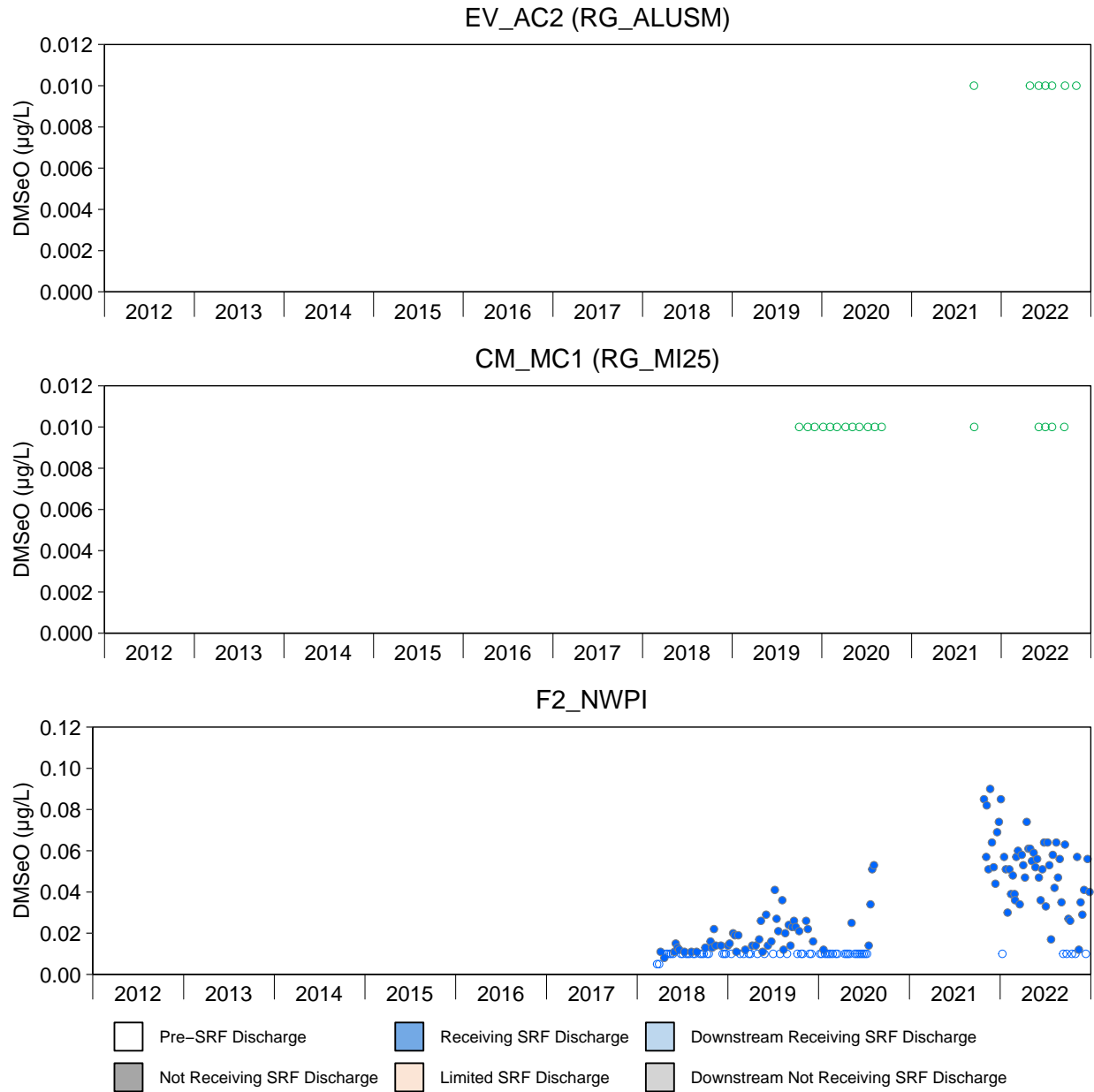


Figure D.22: Time Series Plots for DMSO from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

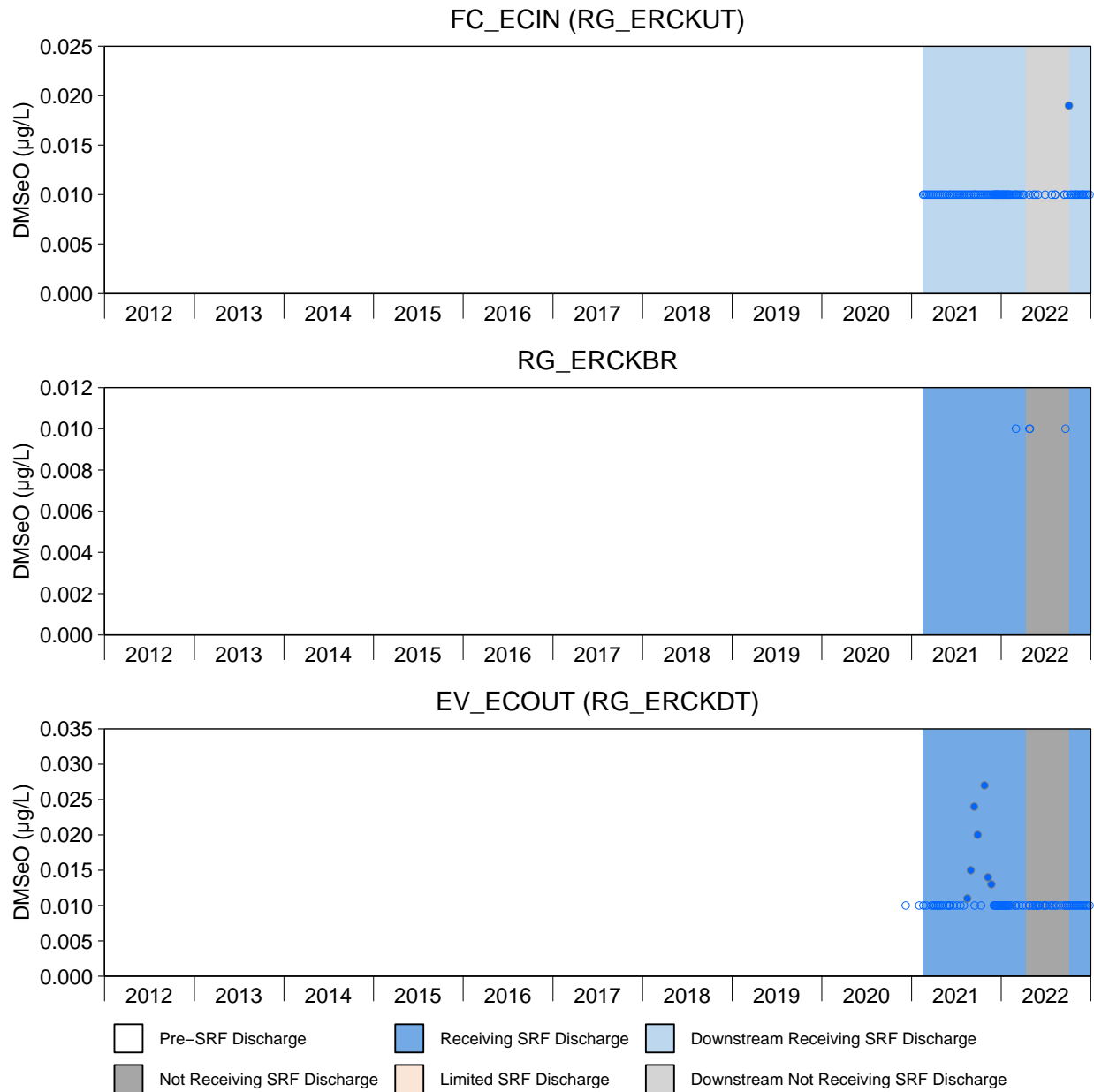


Figure D.22: Time Series Plots for DMSO from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

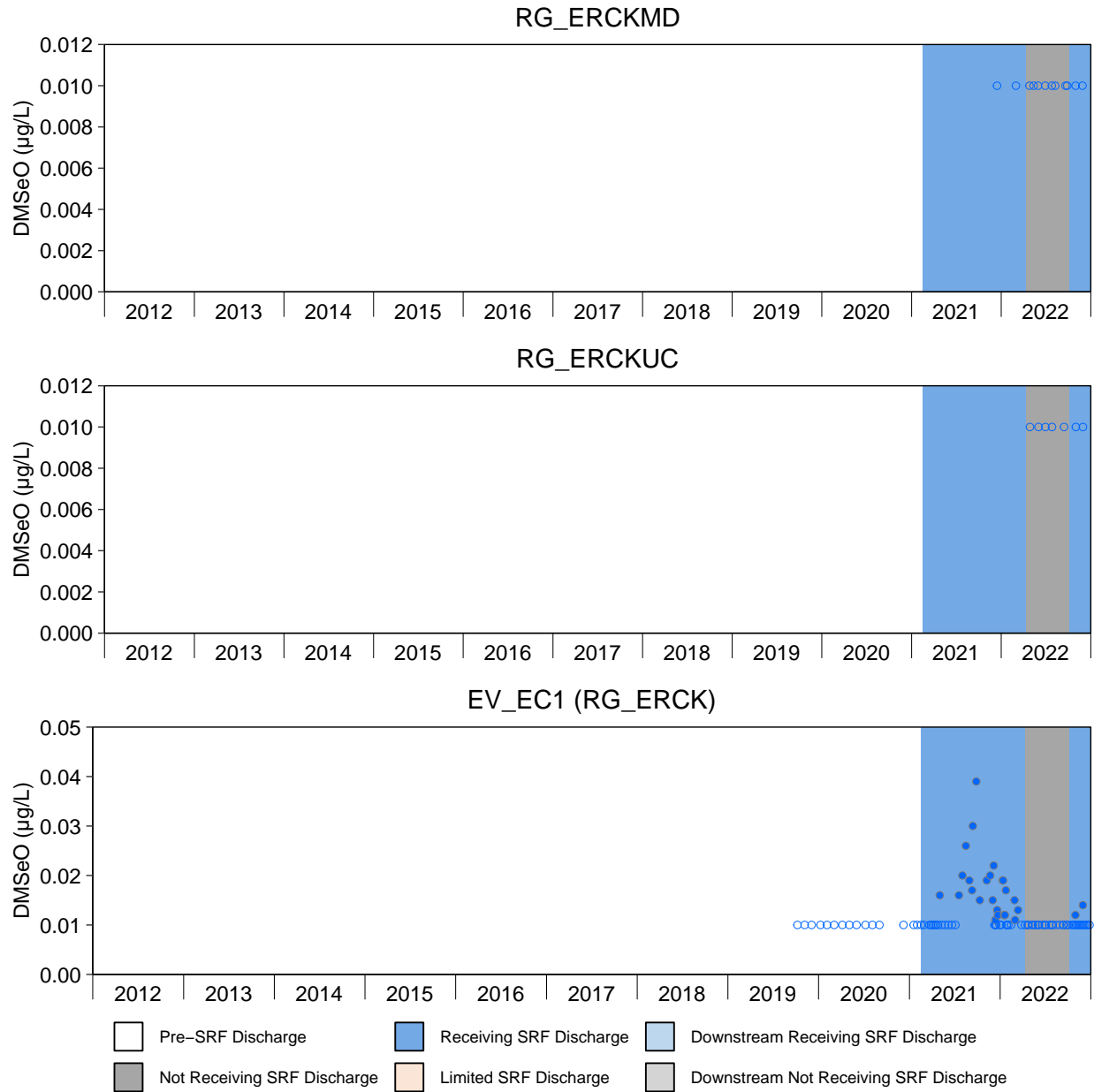


Figure D.22: Time Series Plots for DMSiO from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

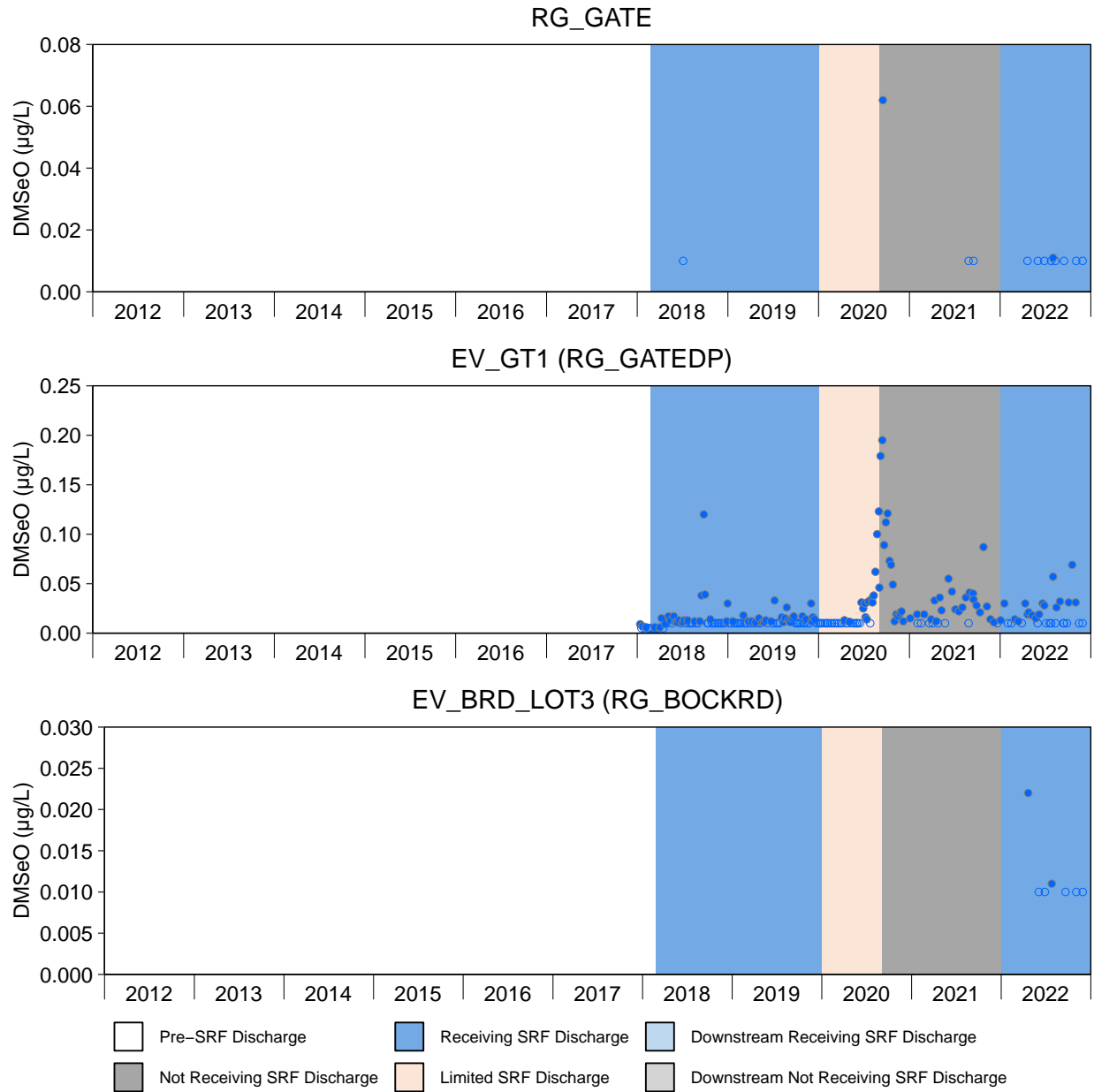


Figure D.22: Time Series Plots for DMSiO from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

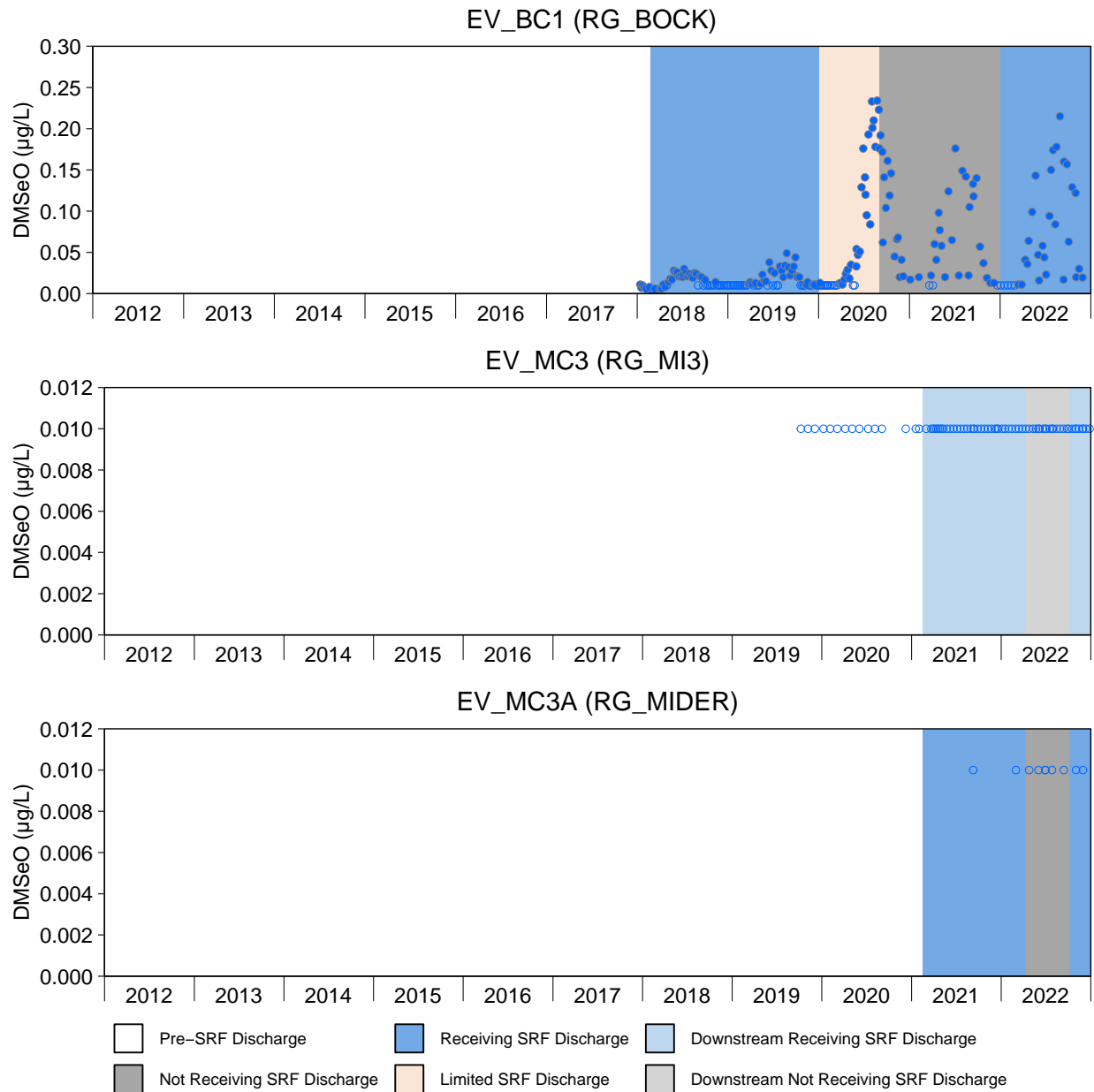


Figure D.22: Time Series Plots for DMSeO from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

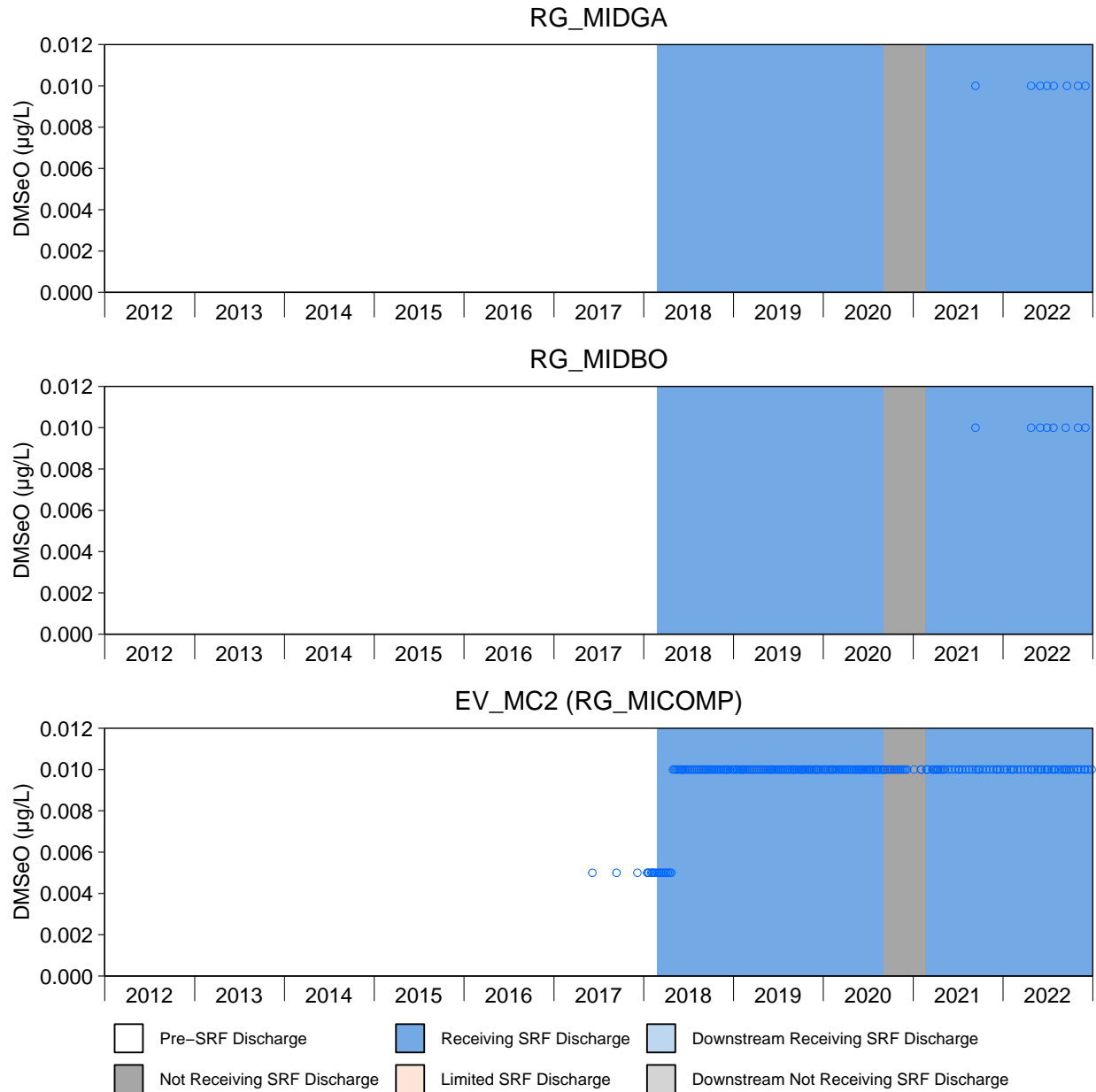


Figure D.22: Time Series Plots for DMSO from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

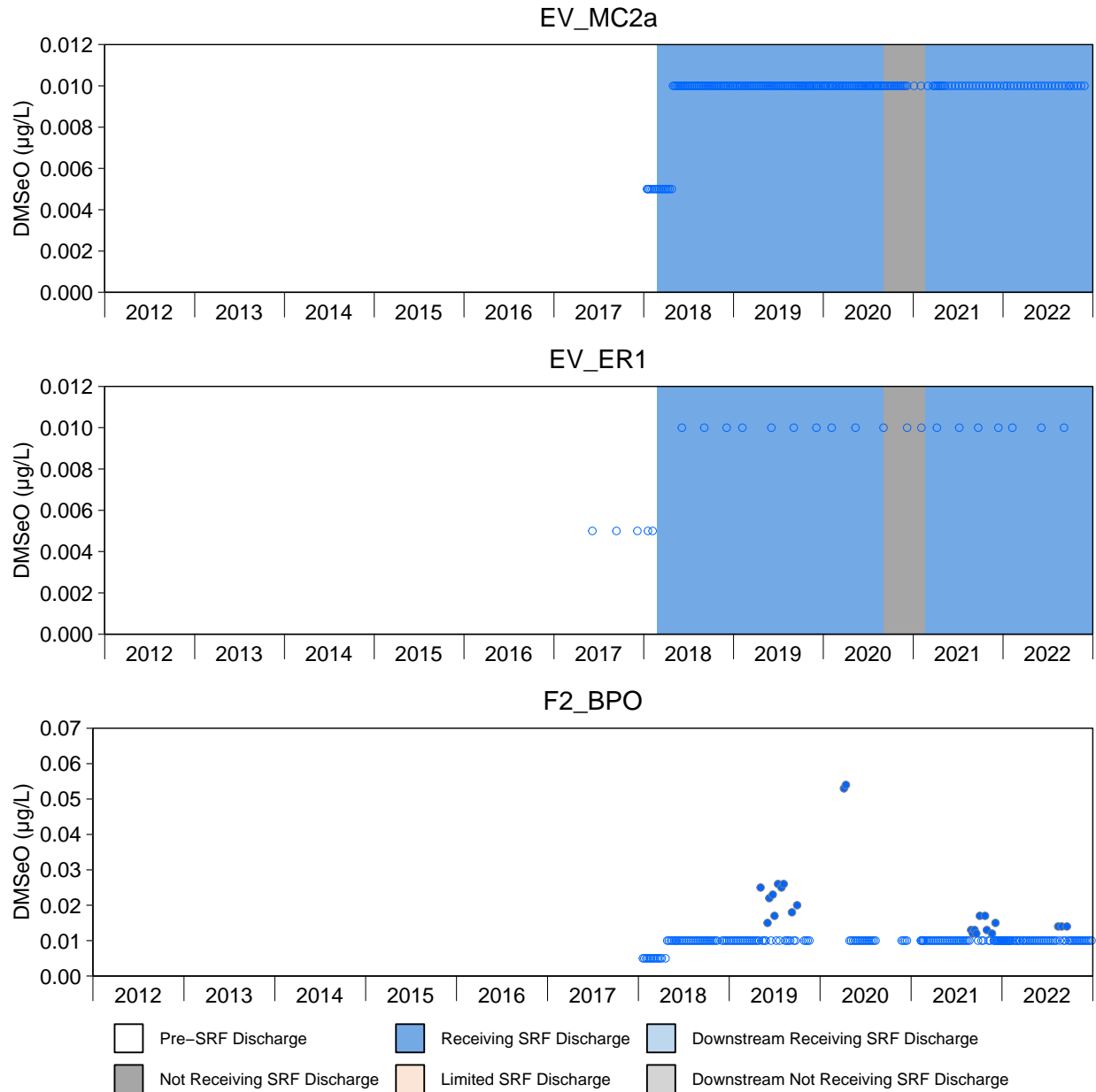


Figure D.22: Time Series Plots for DMS_eO from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

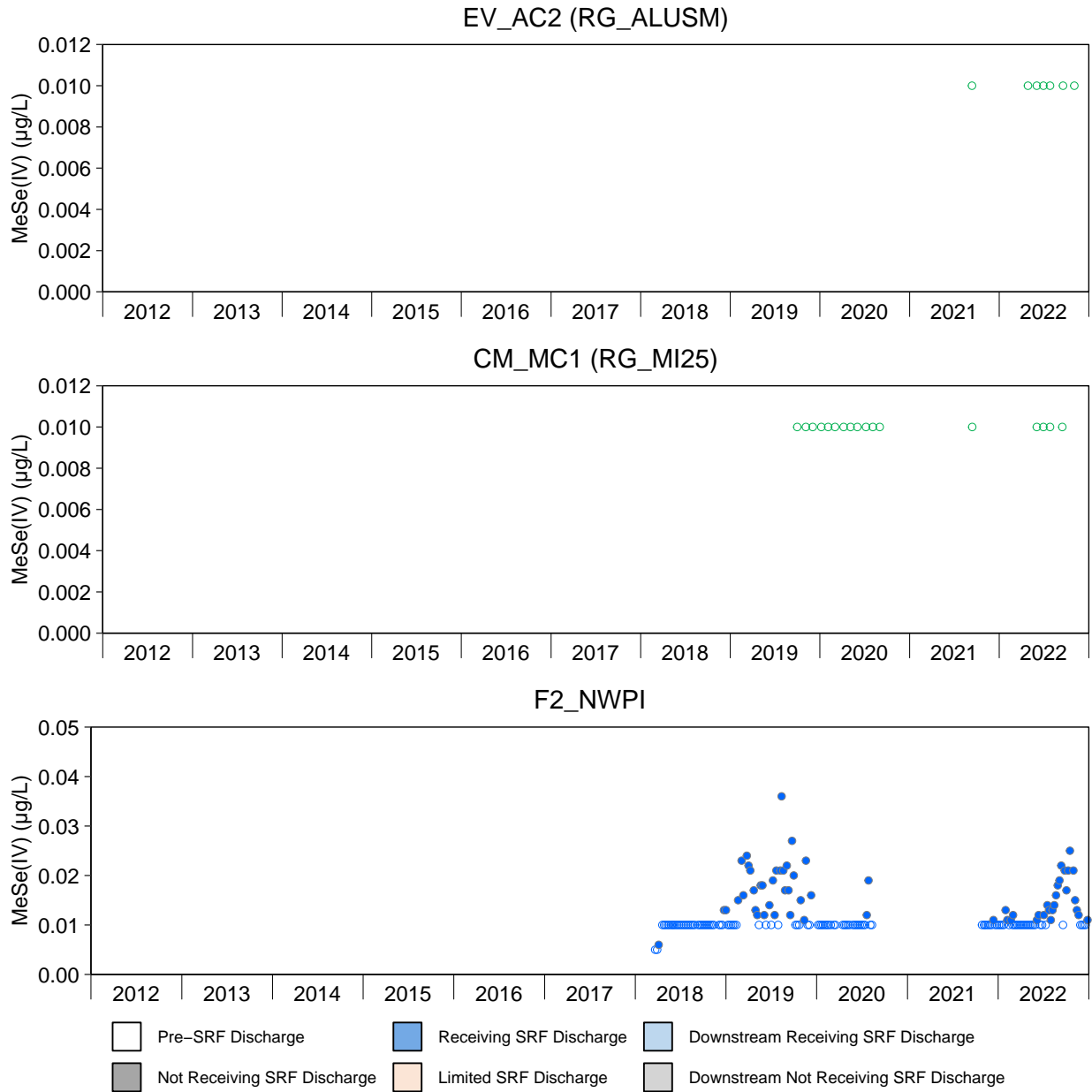


Figure D.23: Time Series Plots for MeSe(IV) from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

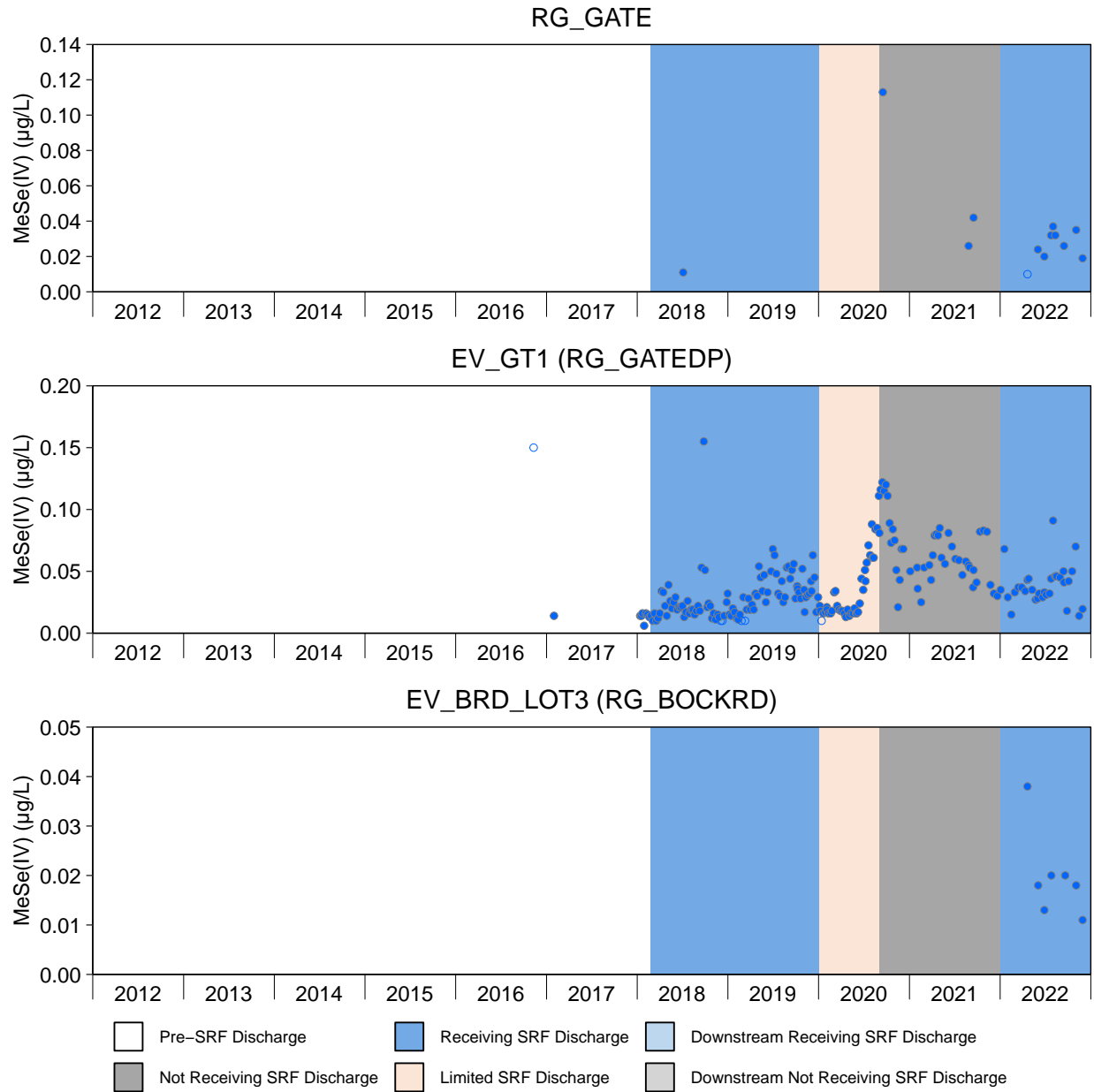


Figure D.23: Time Series Plots for MeSe(IV) from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

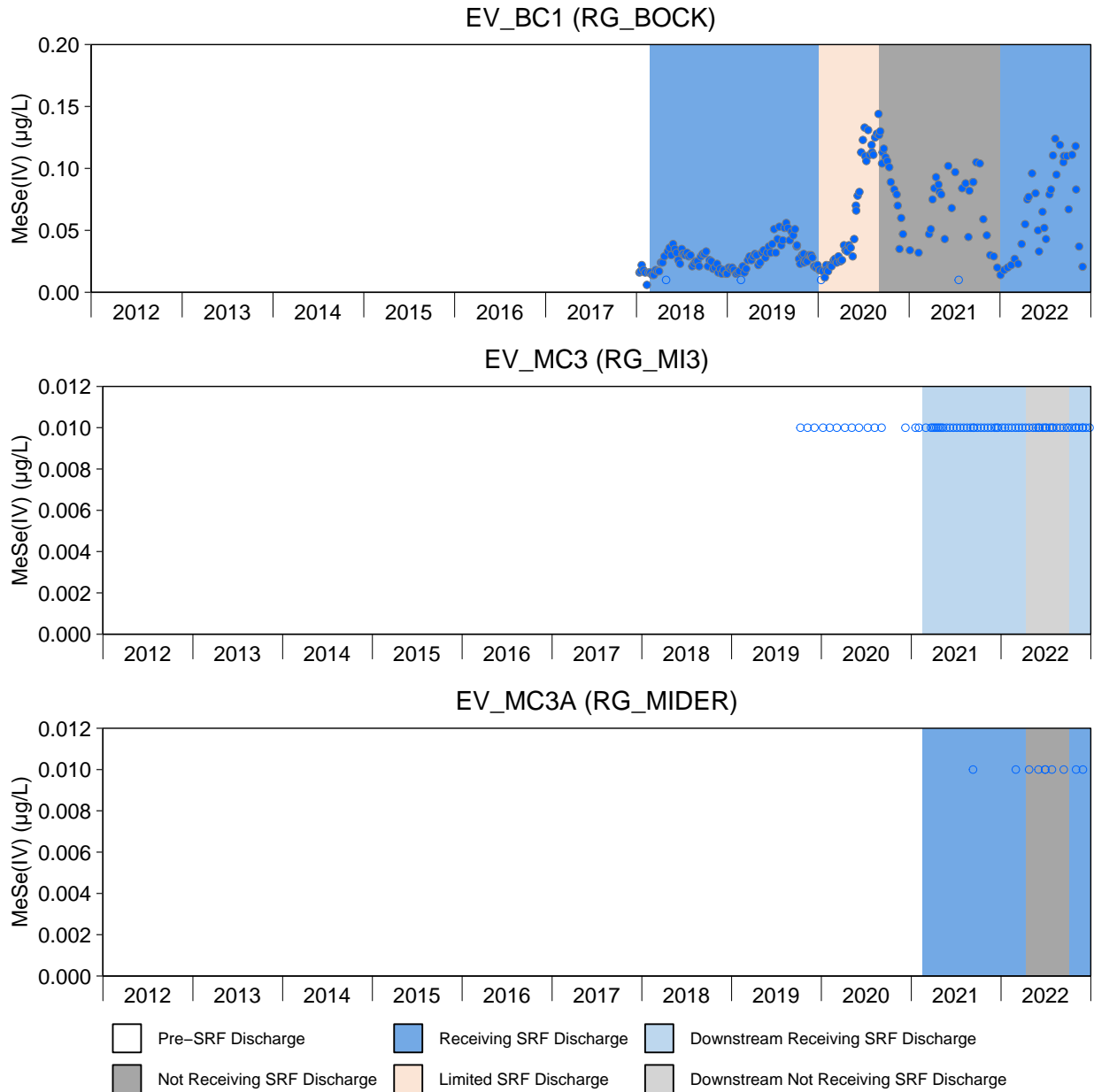


Figure D.23: Time Series Plots for MeSe(IV) from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

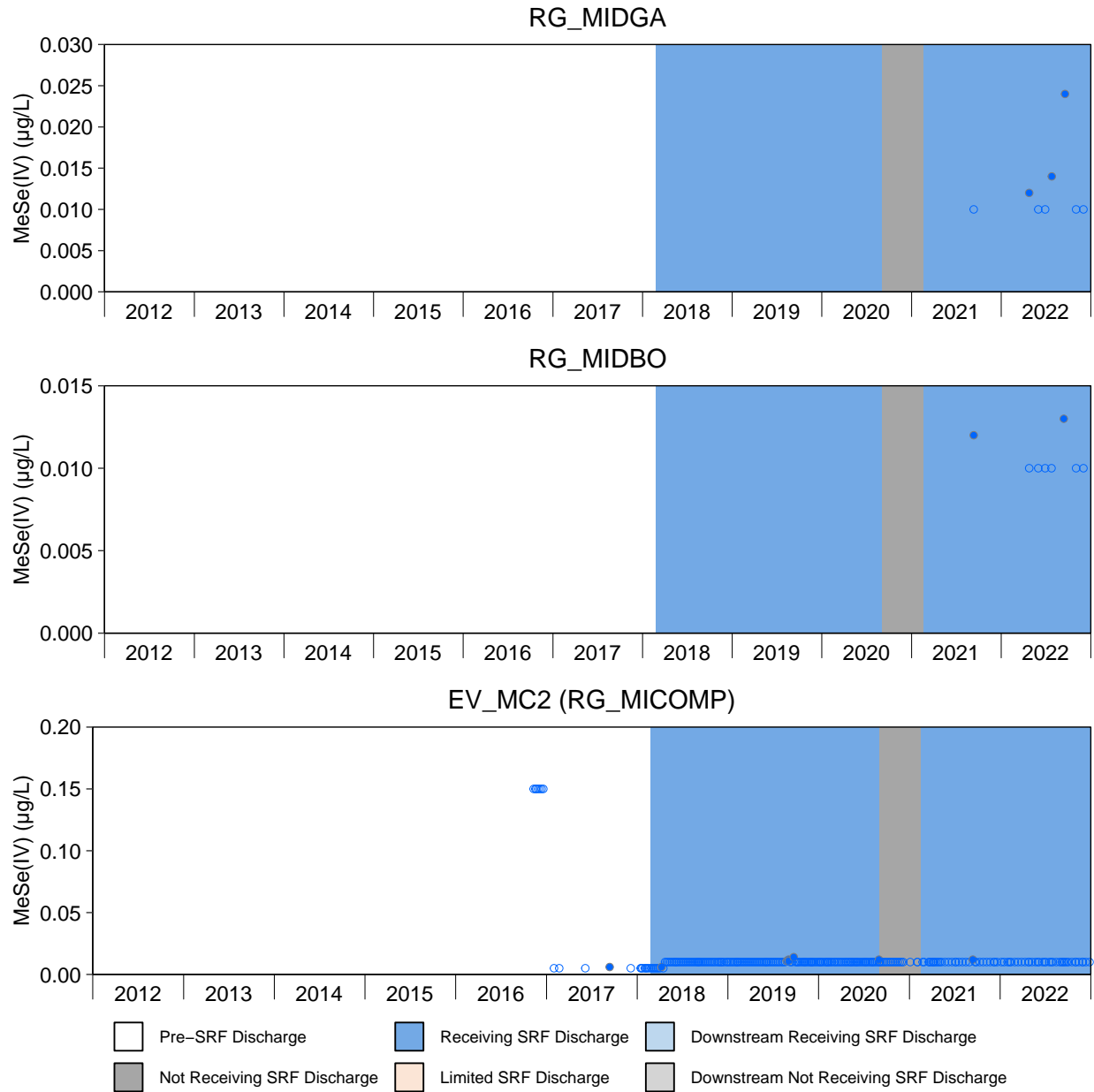


Figure D.23: Time Series Plots for MeSe(IV) from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

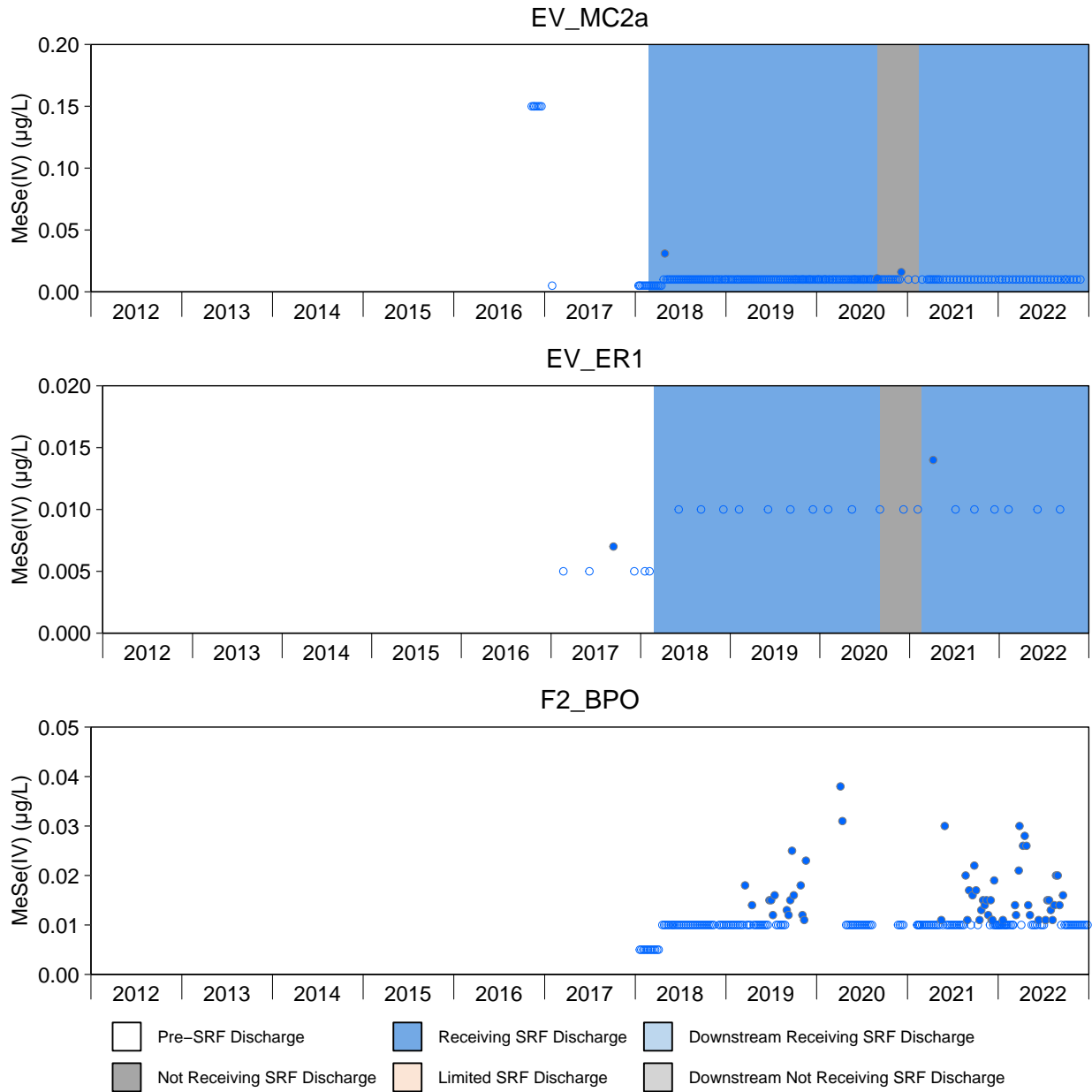


Figure D.23: Time Series Plots for MeSe(IV) from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

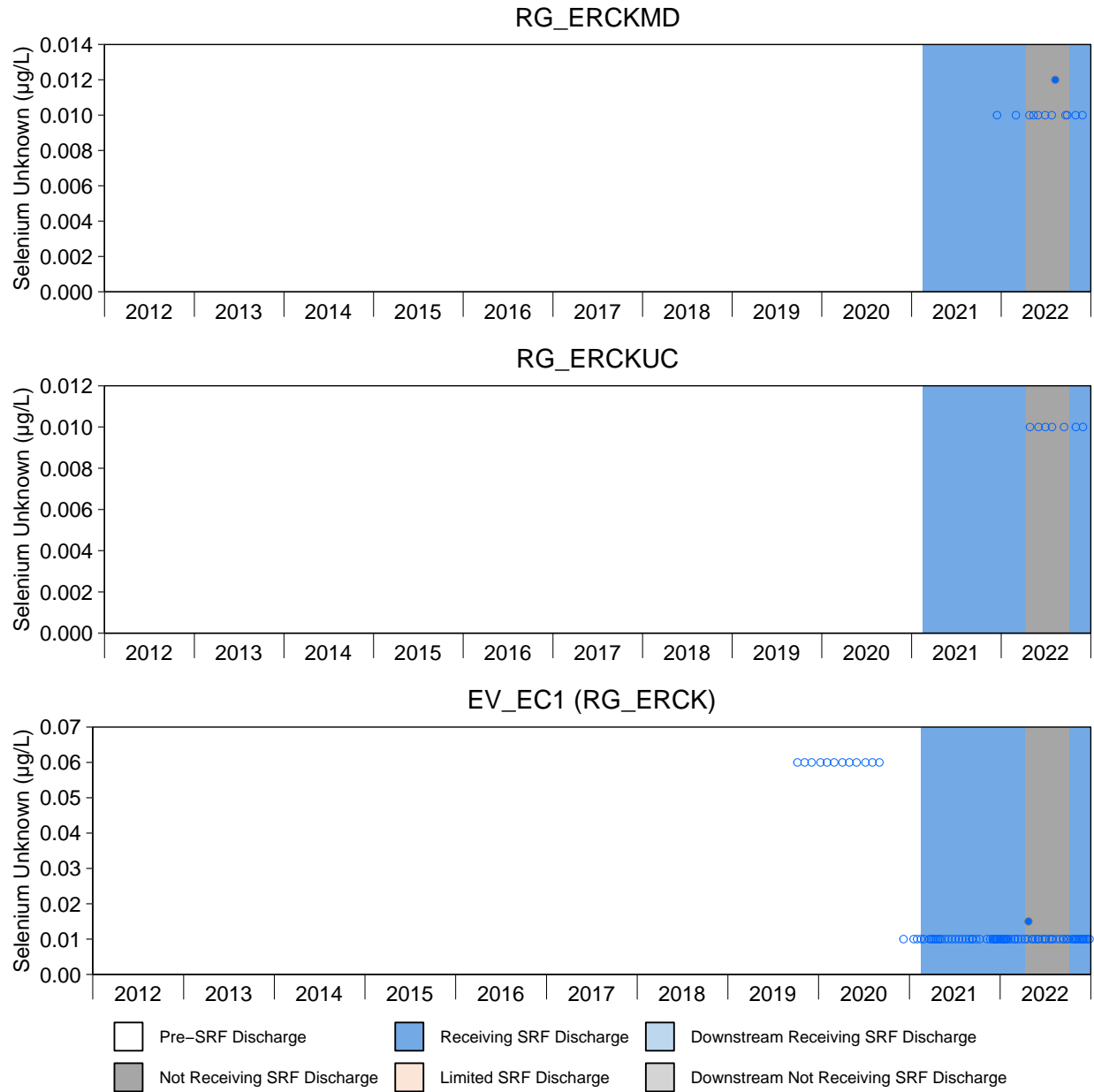


Figure D.24: Time Series Plots for Selenium Unknown from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

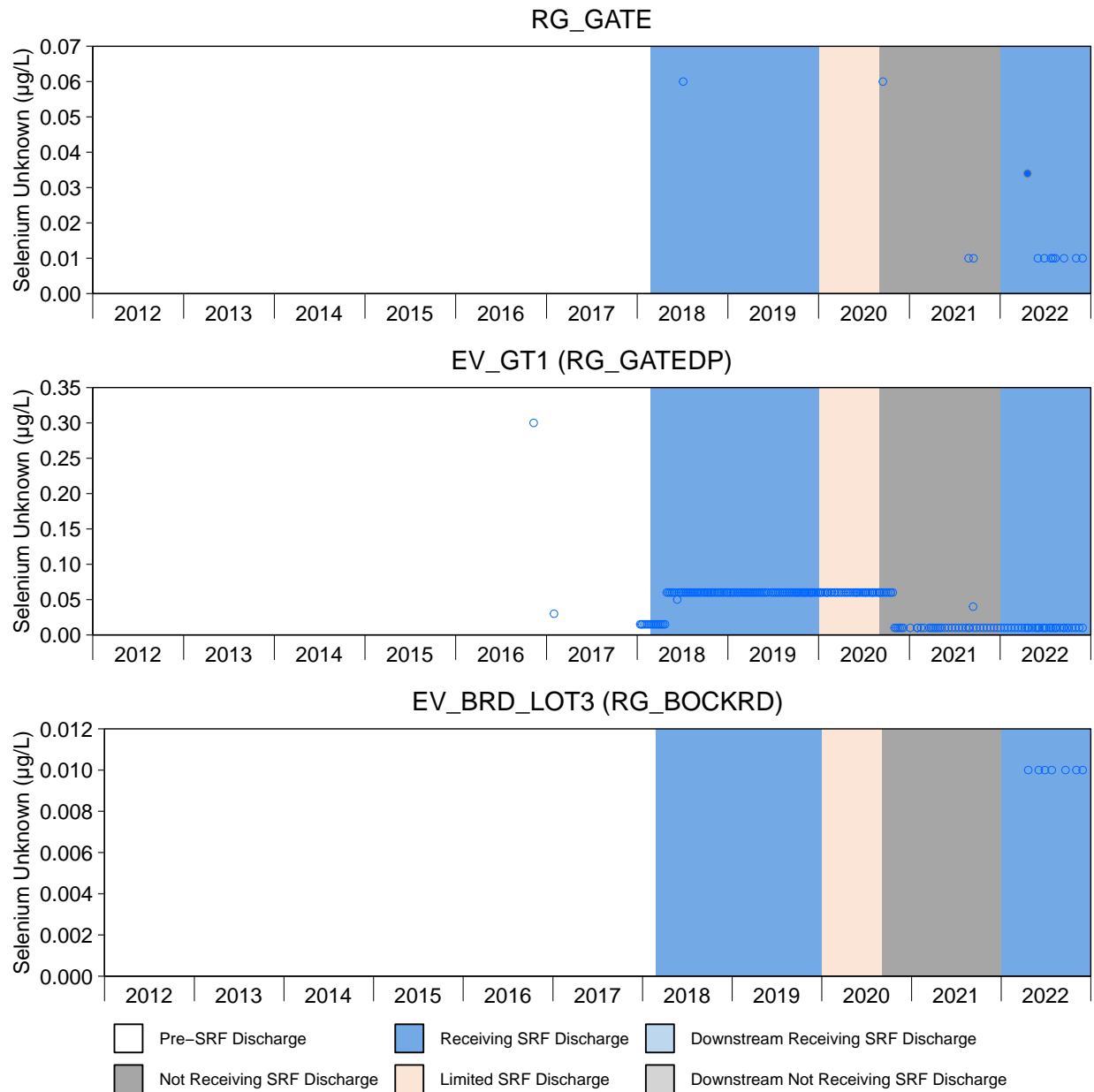


Figure D.24: Time Series Plots for Selenium Unknown from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

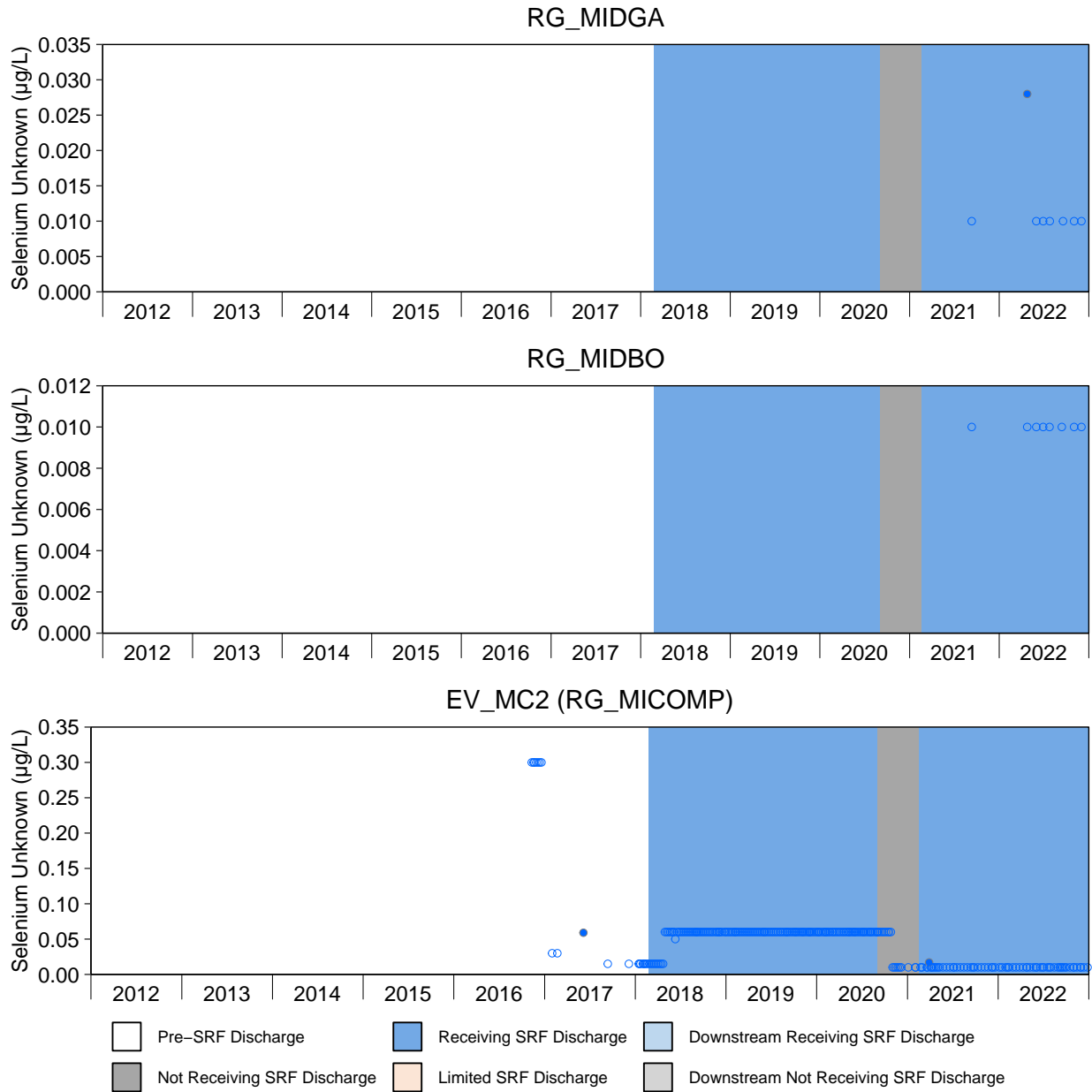


Figure D.24: Time Series Plots for Selenium Unknown from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

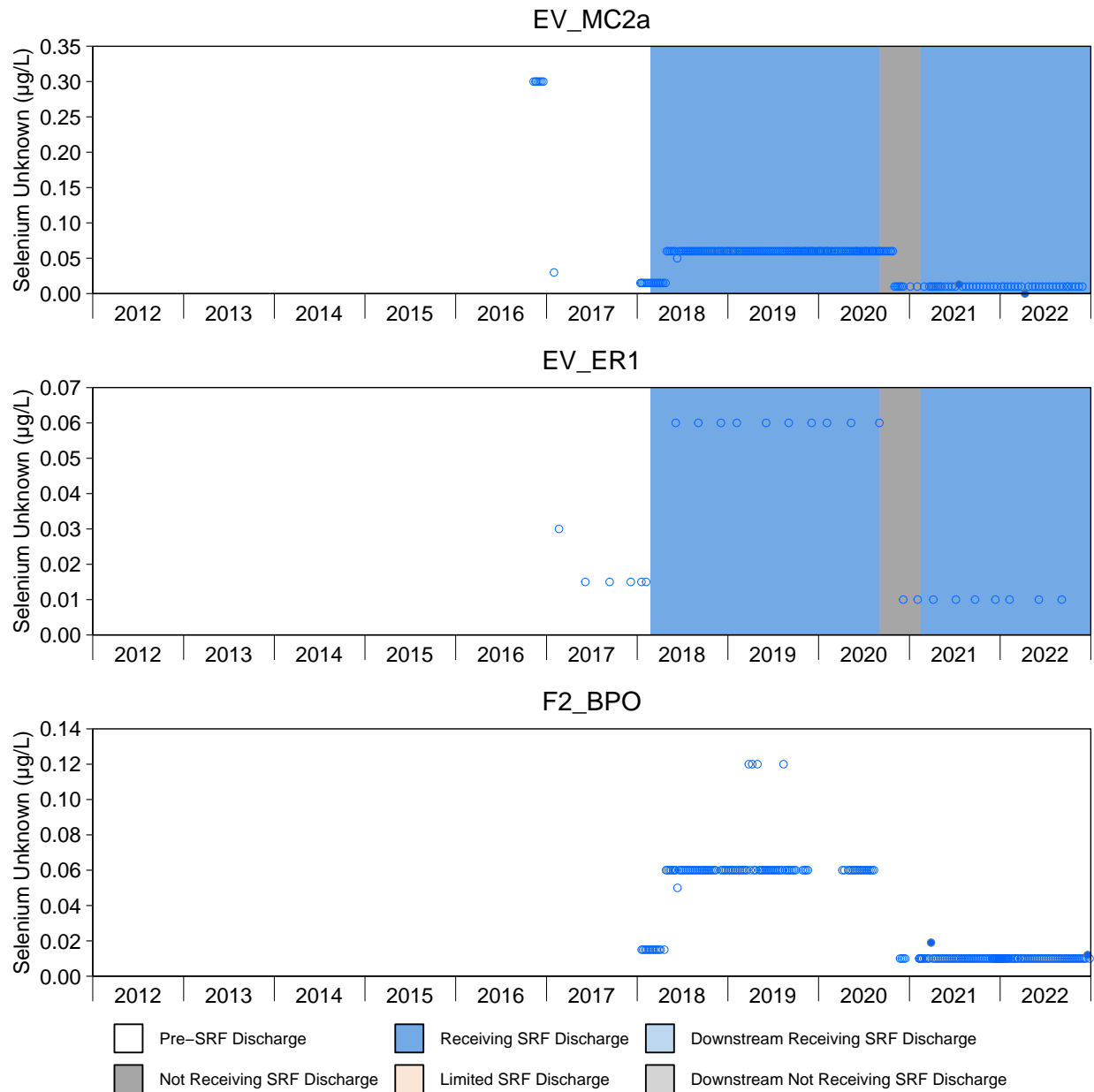


Figure D.24: Time Series Plots for Selenium Unknown from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

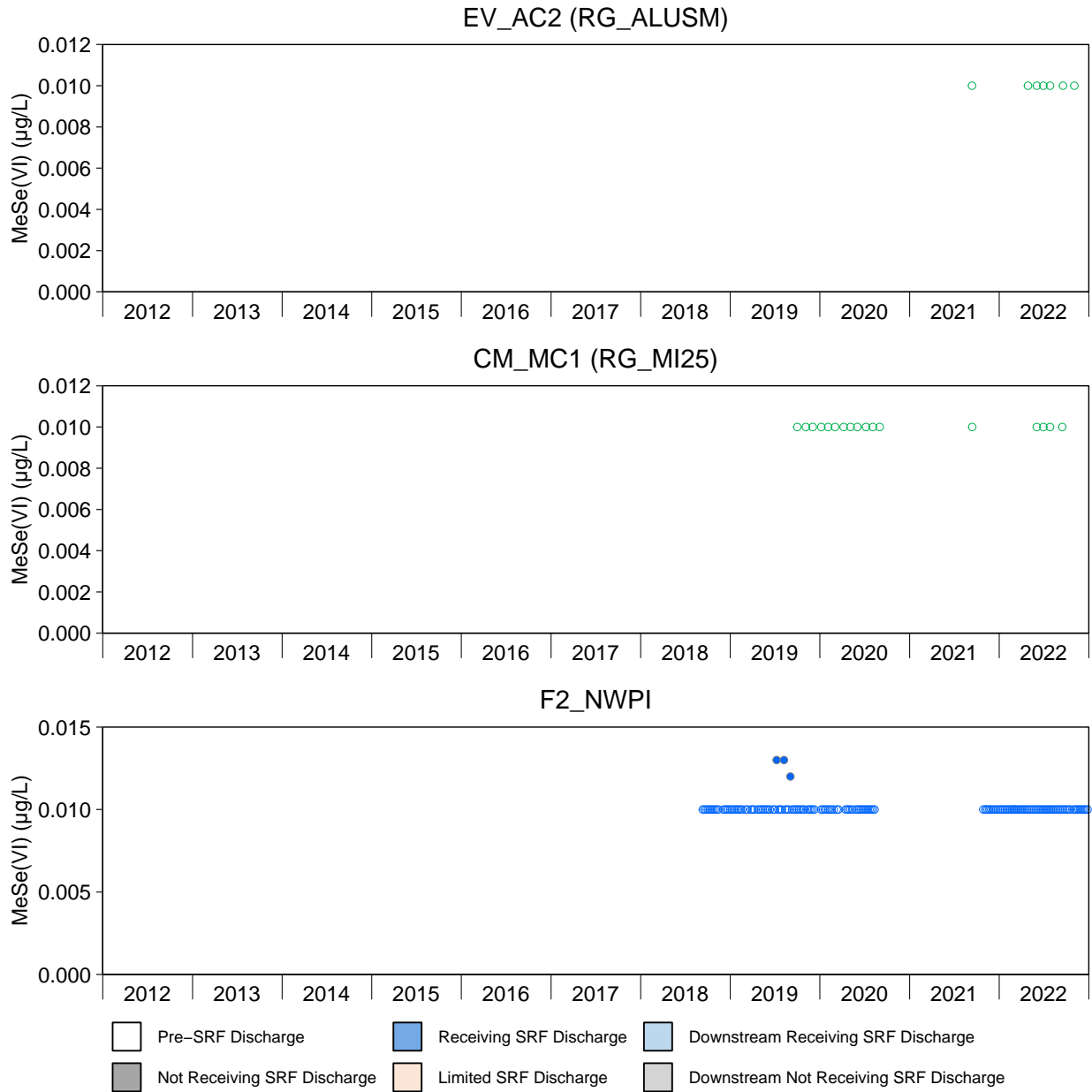


Figure D.25: Time Series Plots for MeSe(VI) from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

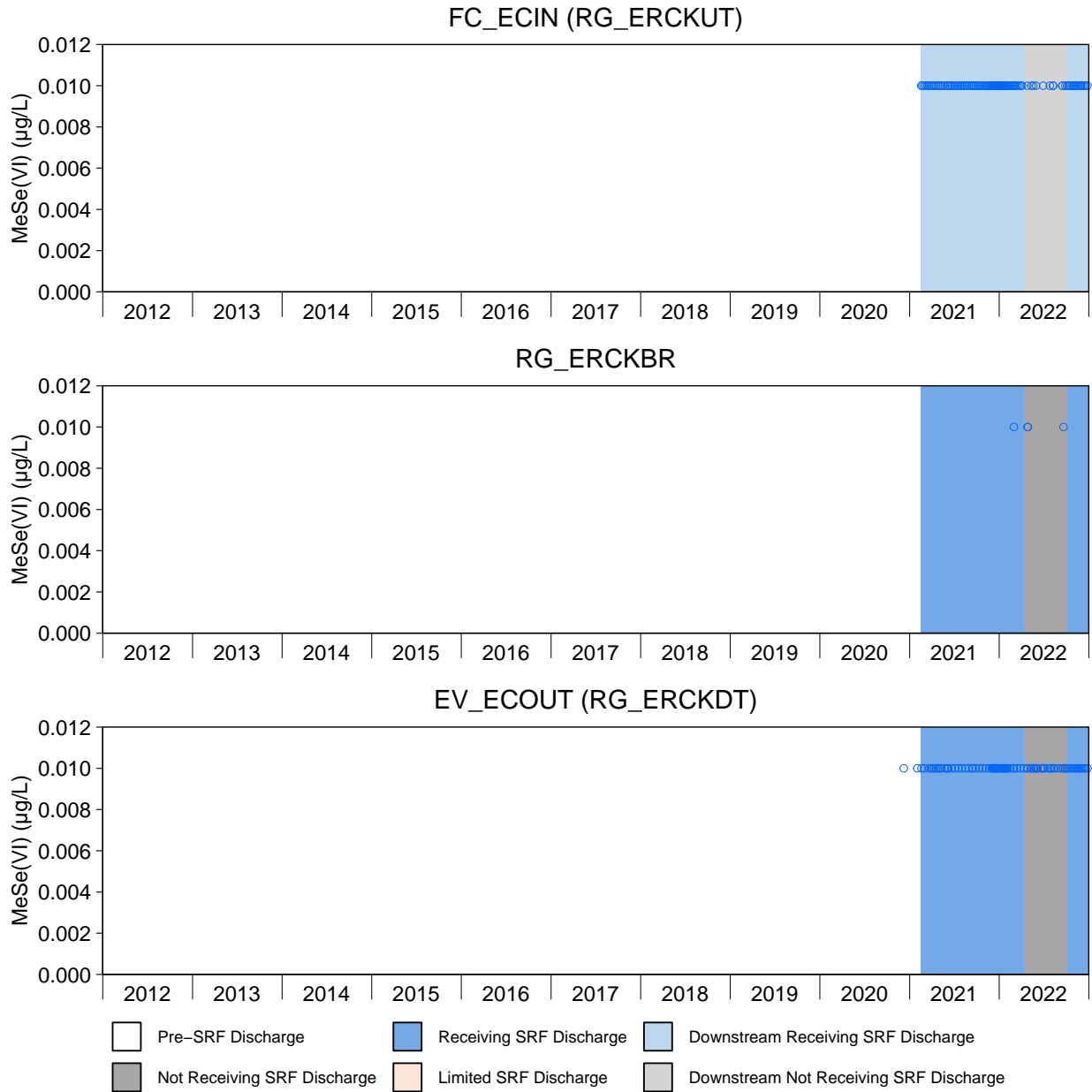


Figure D.25: Time Series Plots for MeSe(VI) from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

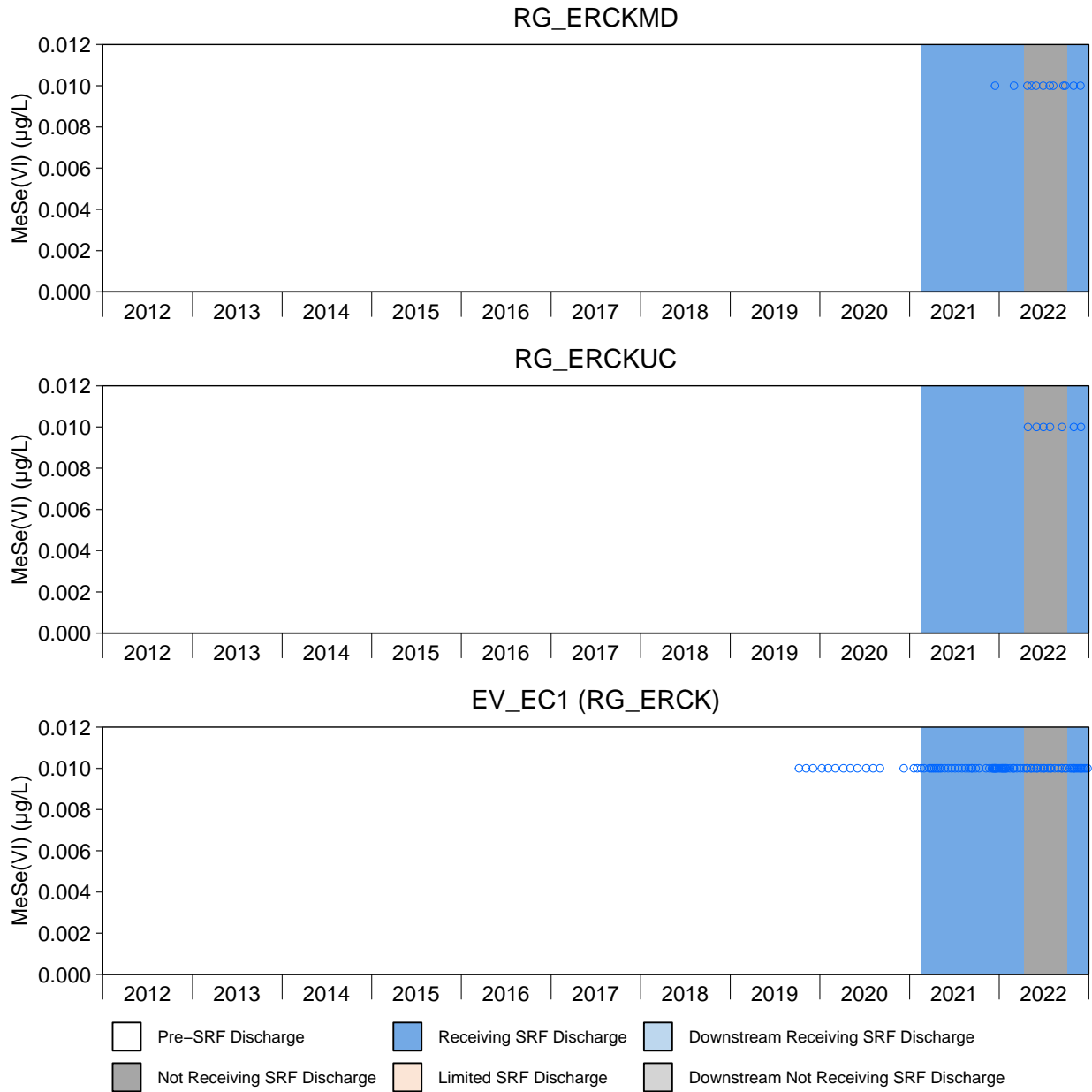


Figure D.25: Time Series Plots for MeSe(VI) from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

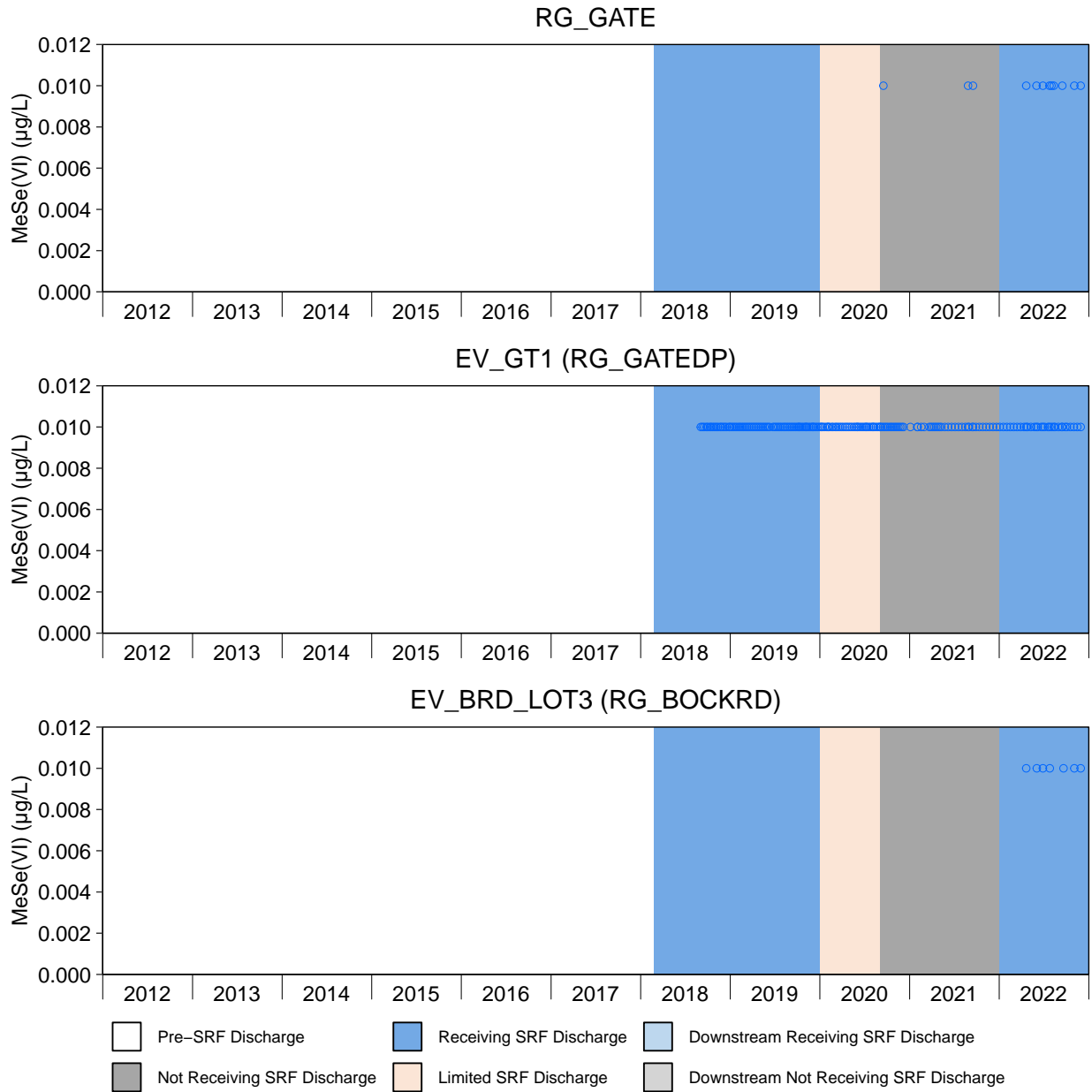


Figure D.25: Time Series Plots for MeSe(VI) from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

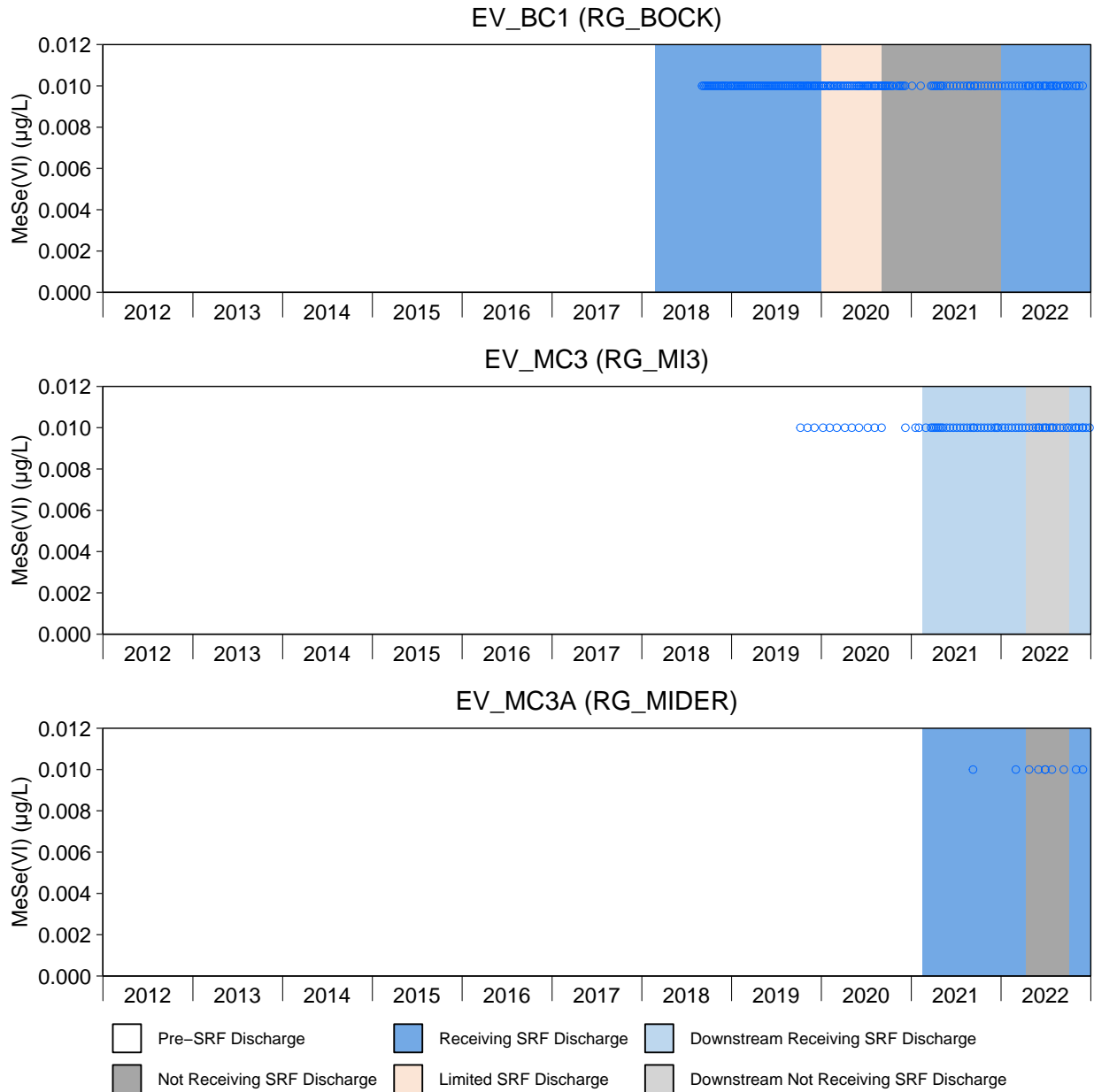


Figure D.25: Time Series Plots for MeSe(VI) from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

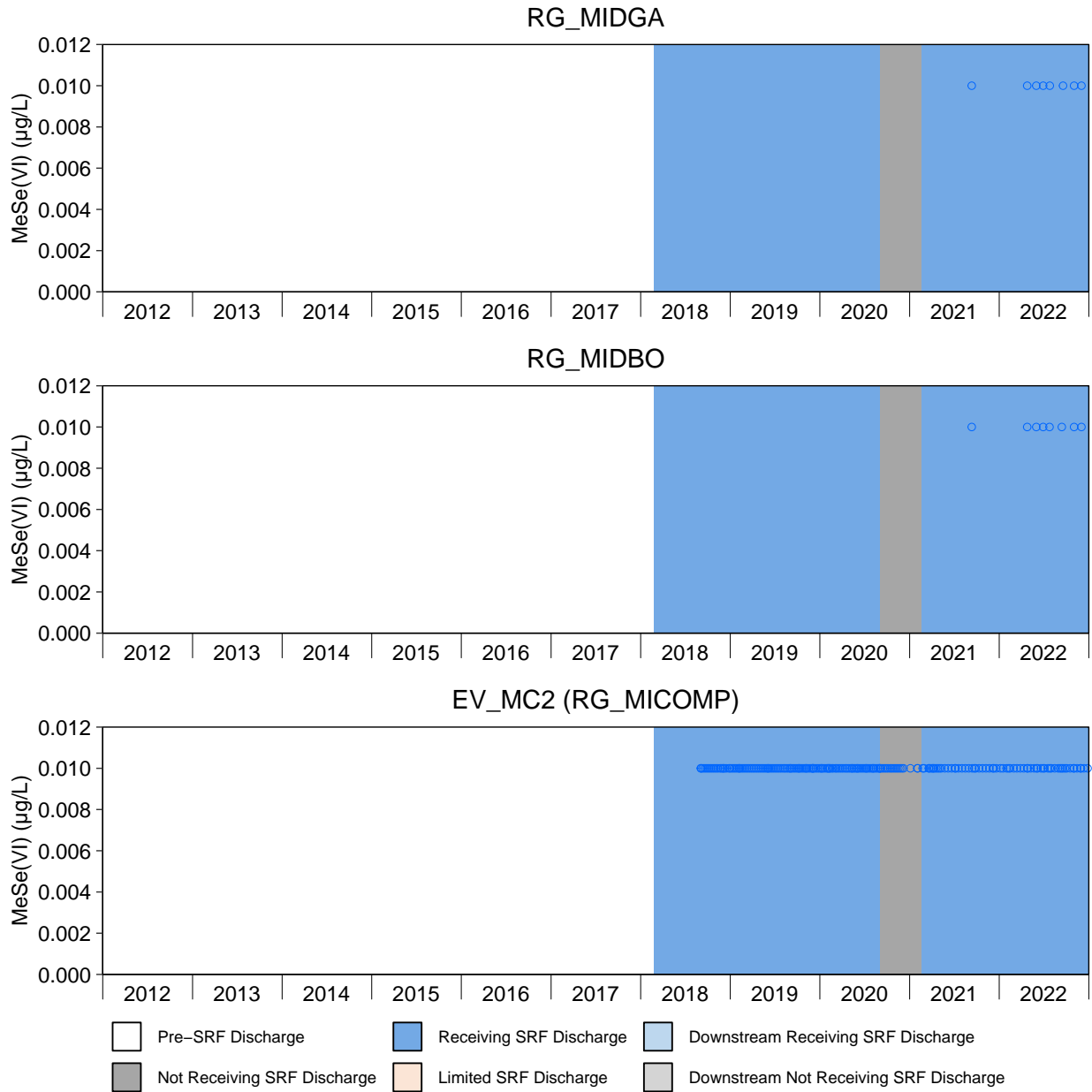


Figure D.25: Time Series Plots for MeSe(VI) from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

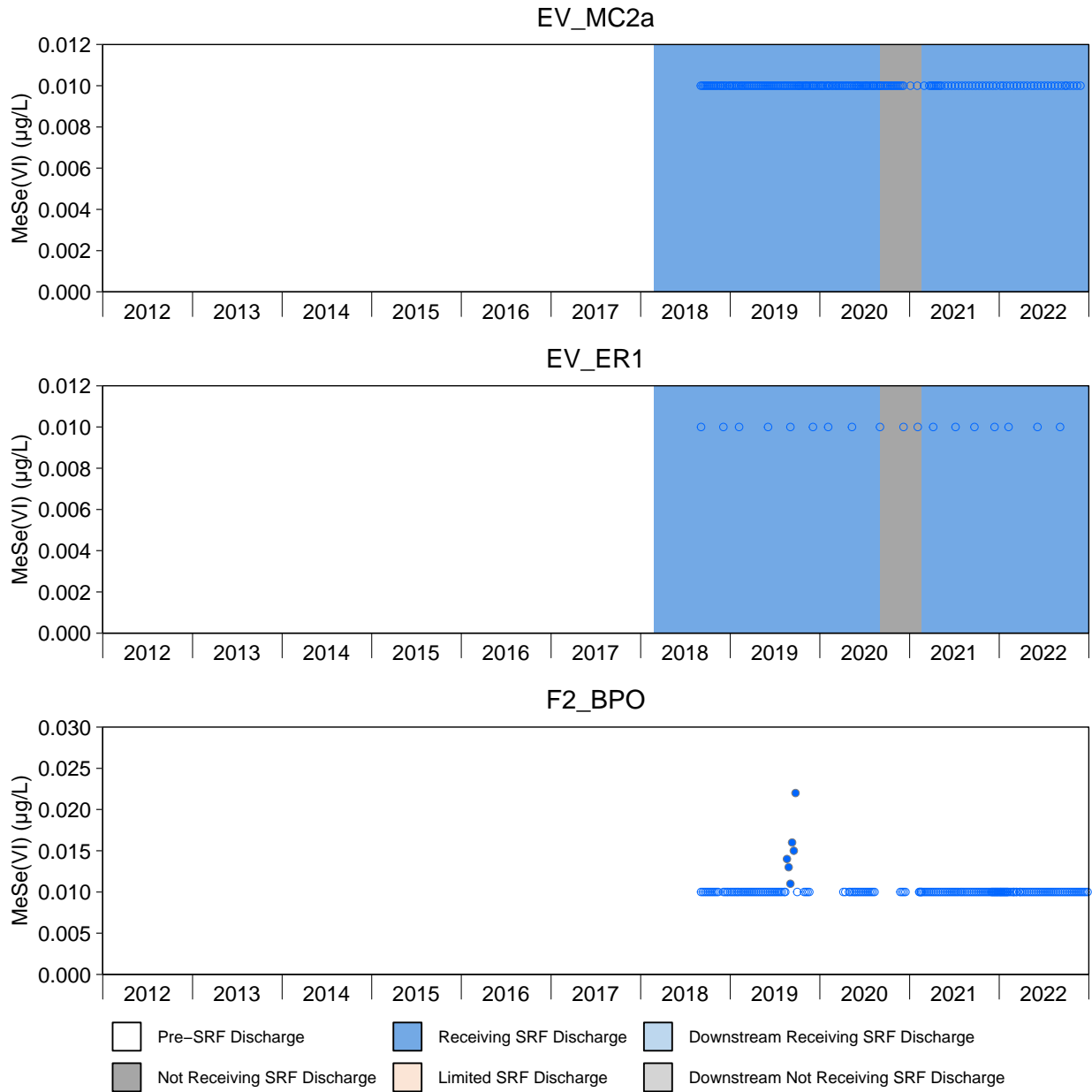


Figure D.25: Time Series Plots for MeSe(VI) from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

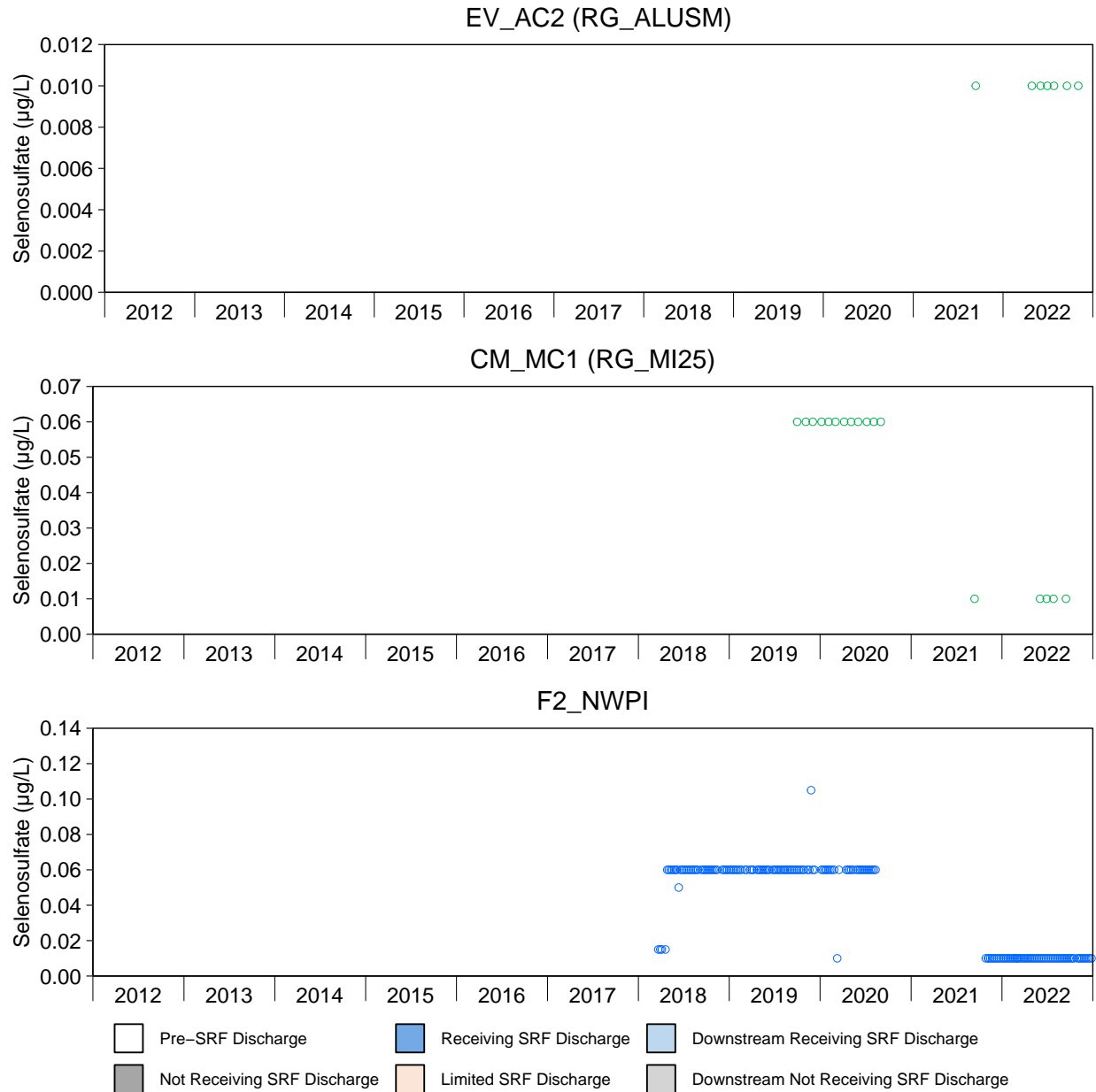


Figure D.26: Time Series Plots for Selenosulfate from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

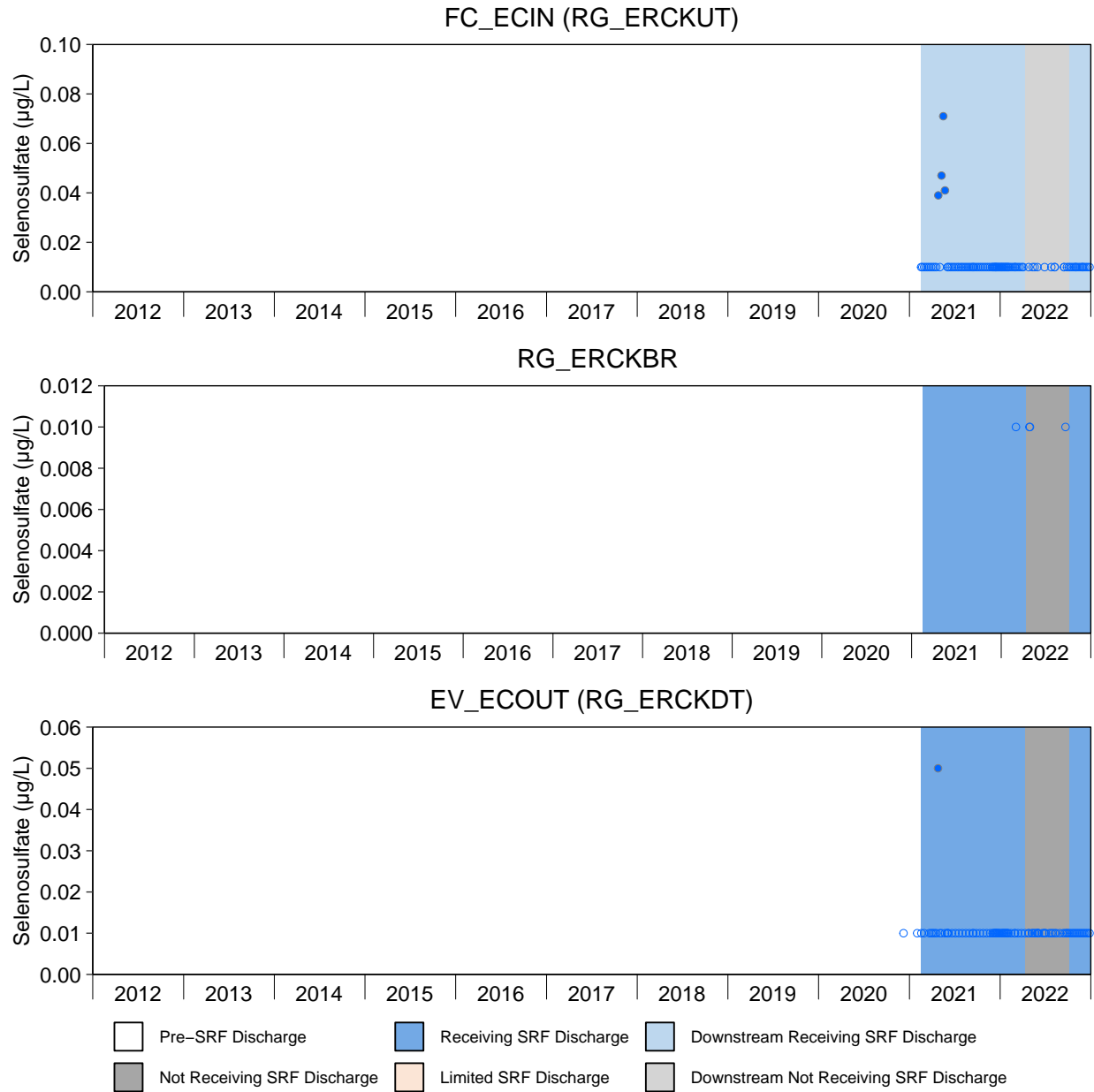


Figure D.26: Time Series Plots for Selenosulfate from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

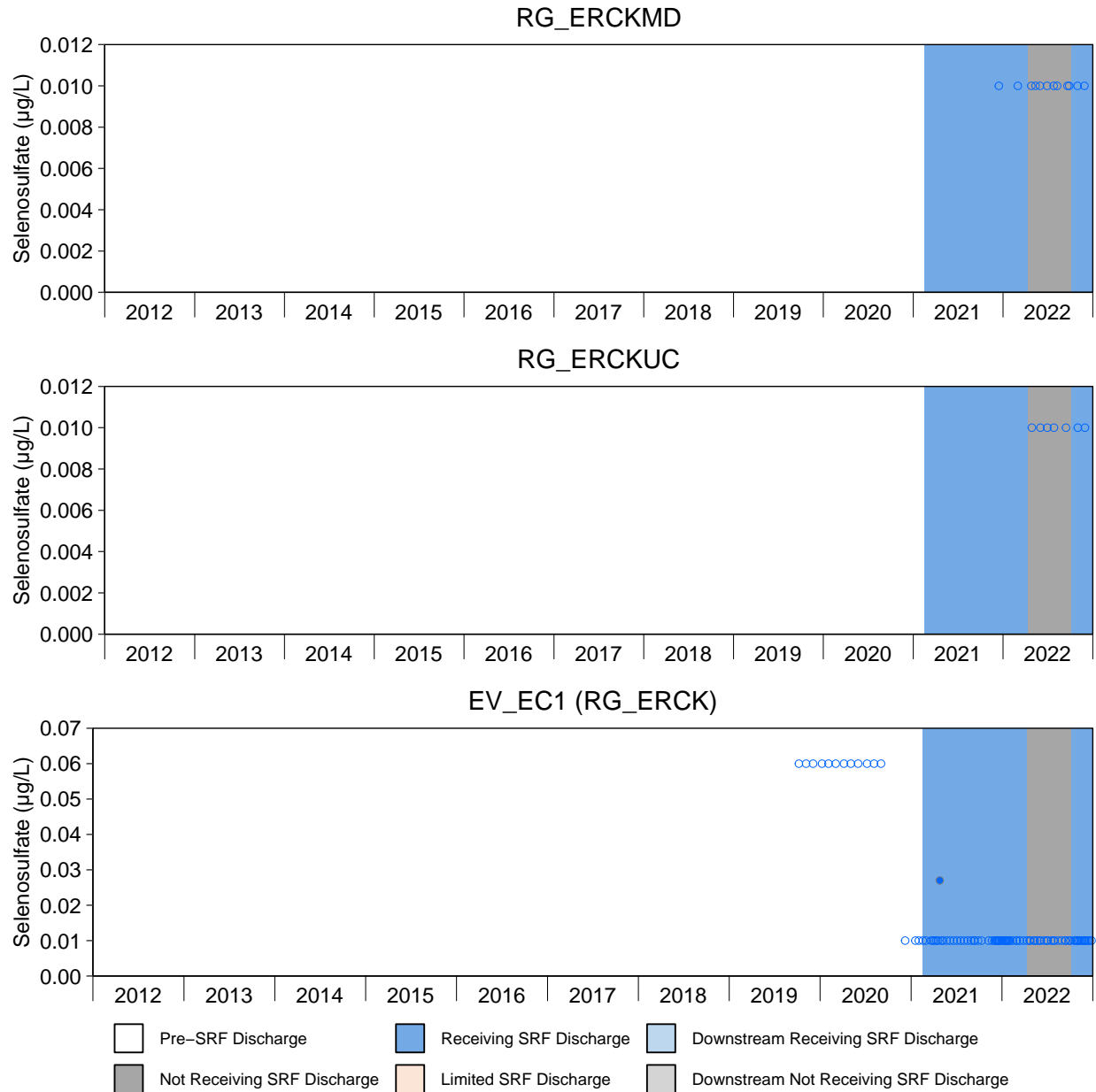


Figure D.26: Time Series Plots for Selenosulfate from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

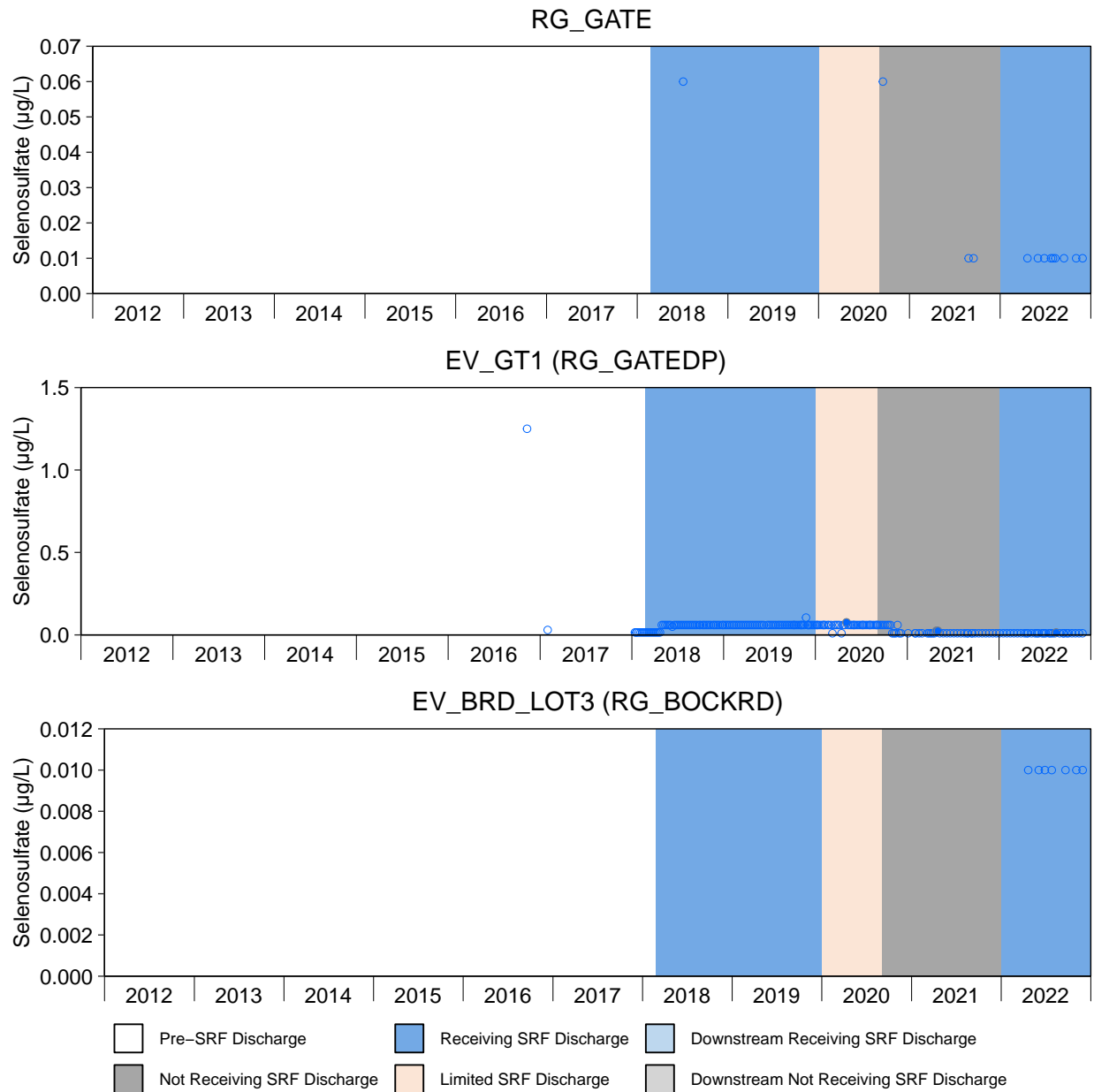


Figure D.26: Time Series Plots for Selenosulfate from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

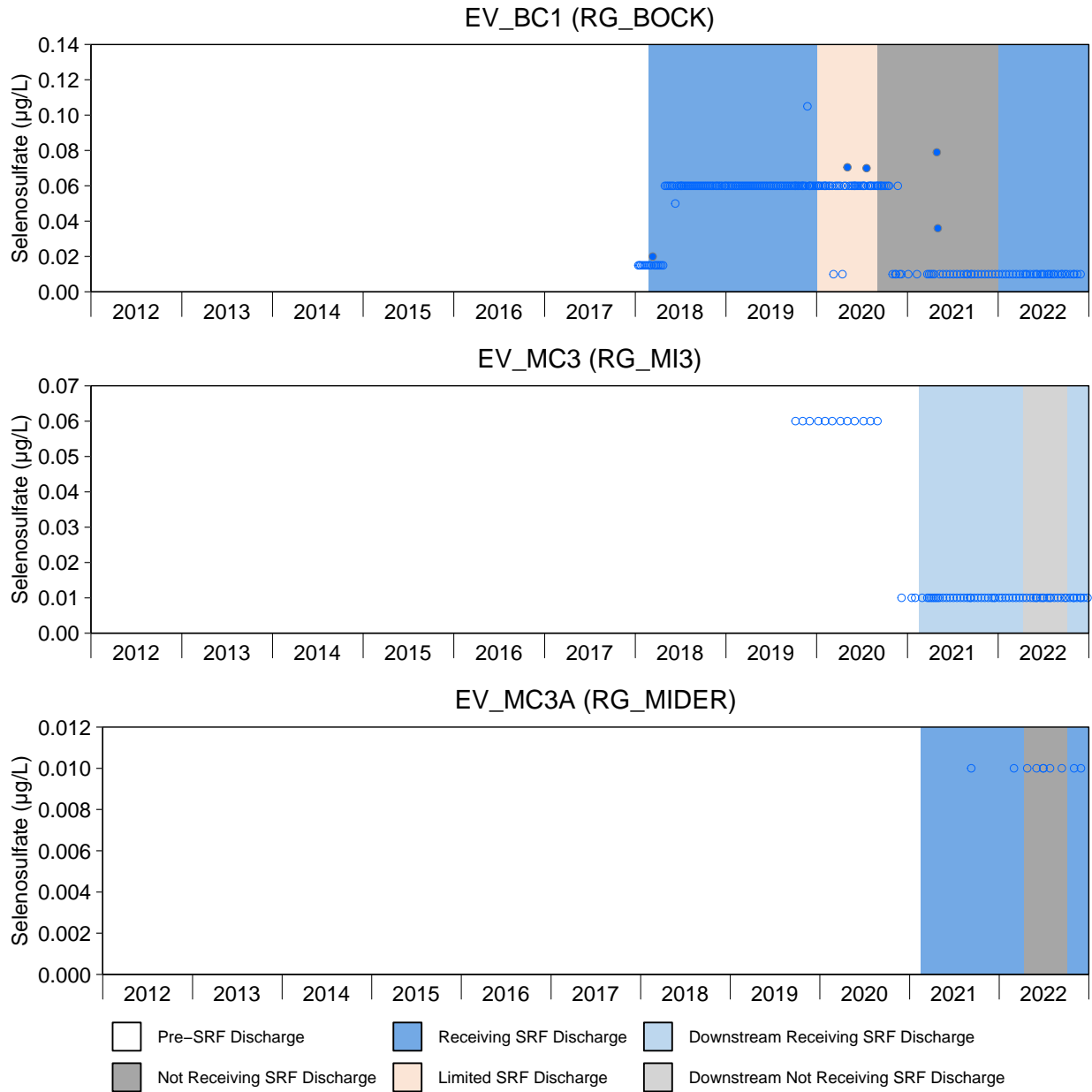


Figure D.26: Time Series Plots for Selenosulfate from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

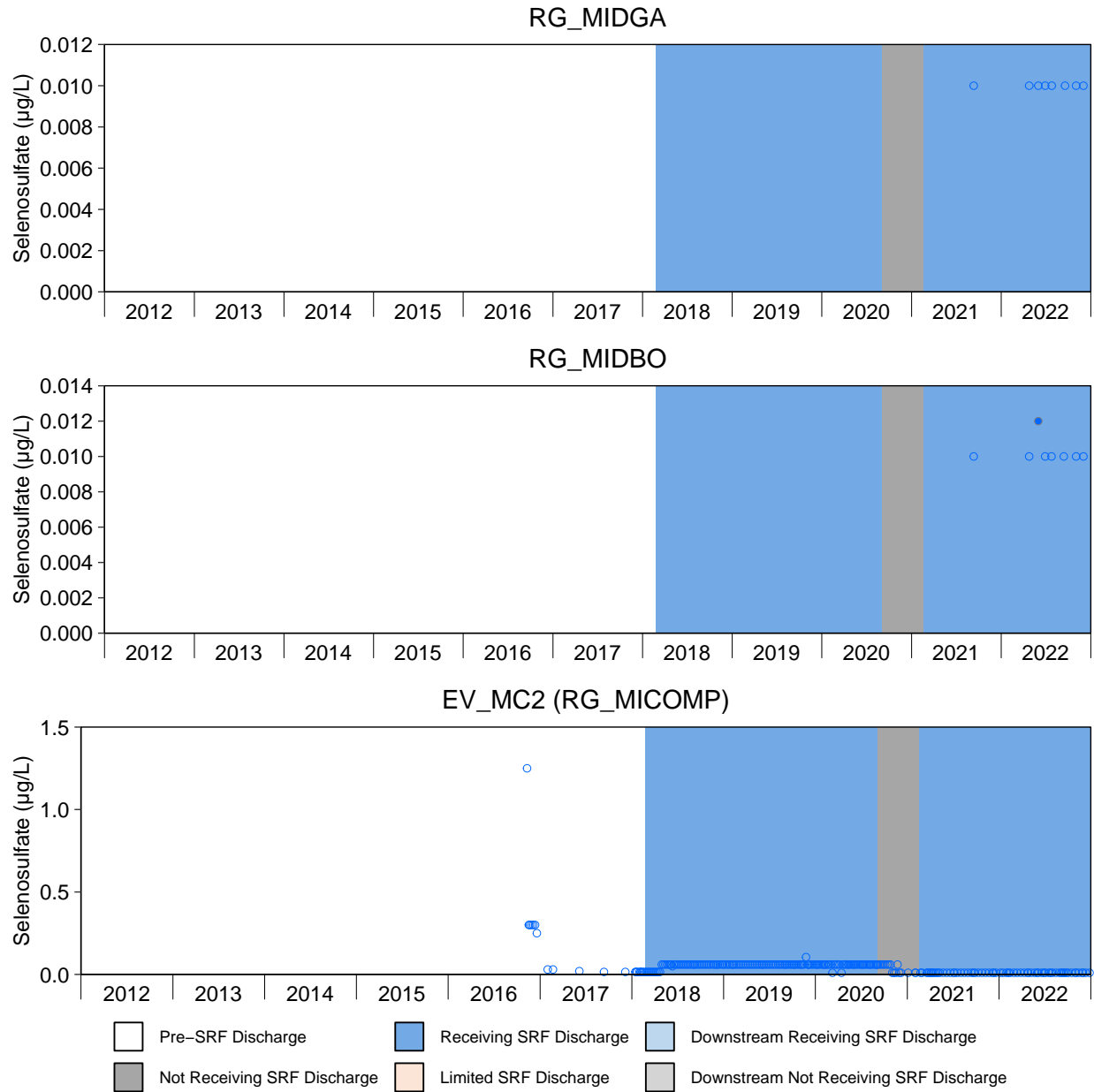


Figure D.26: Time Series Plots for Selenosulfate from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

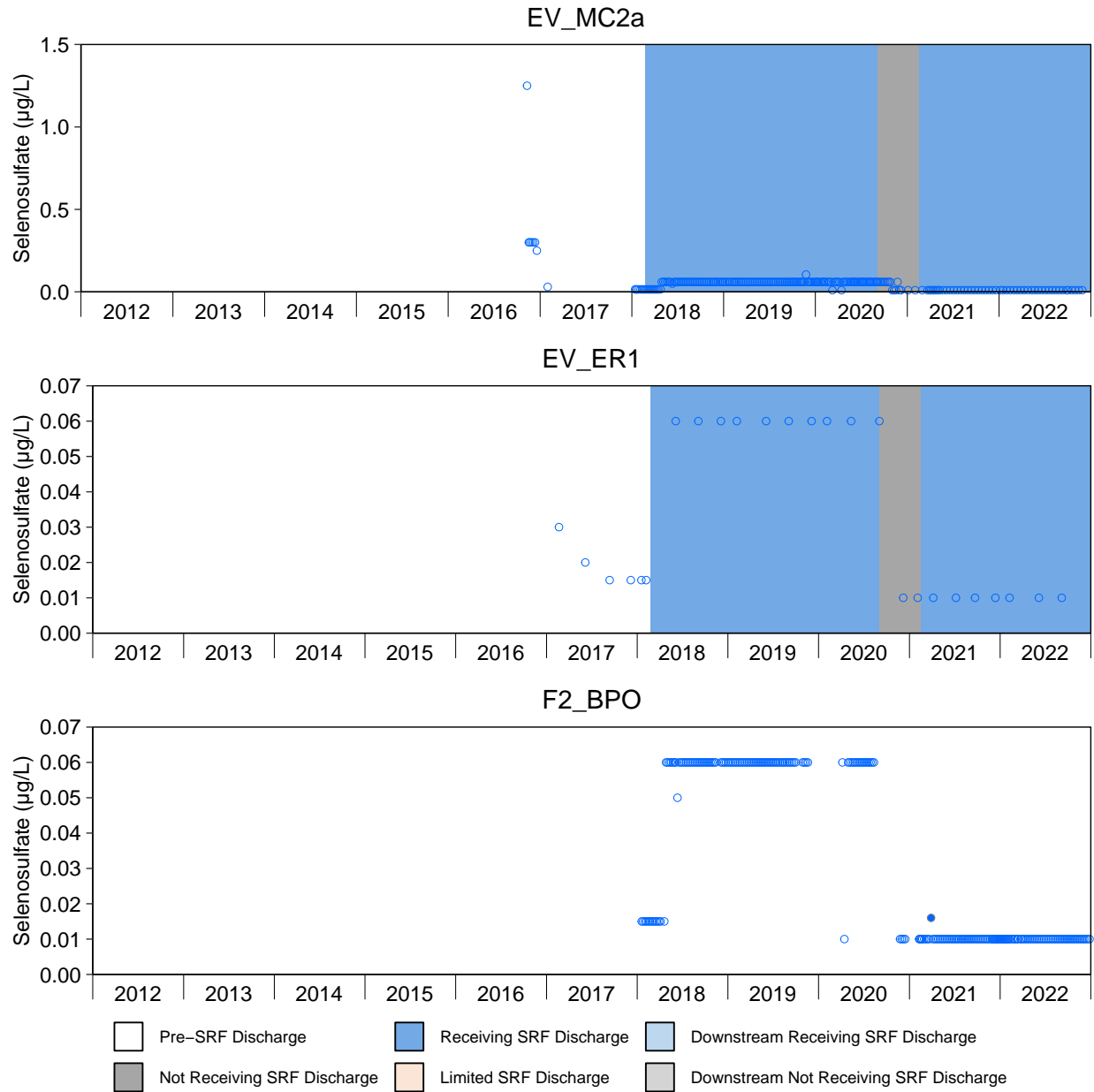


Figure D.26: Time Series Plots for Selenosulfate from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

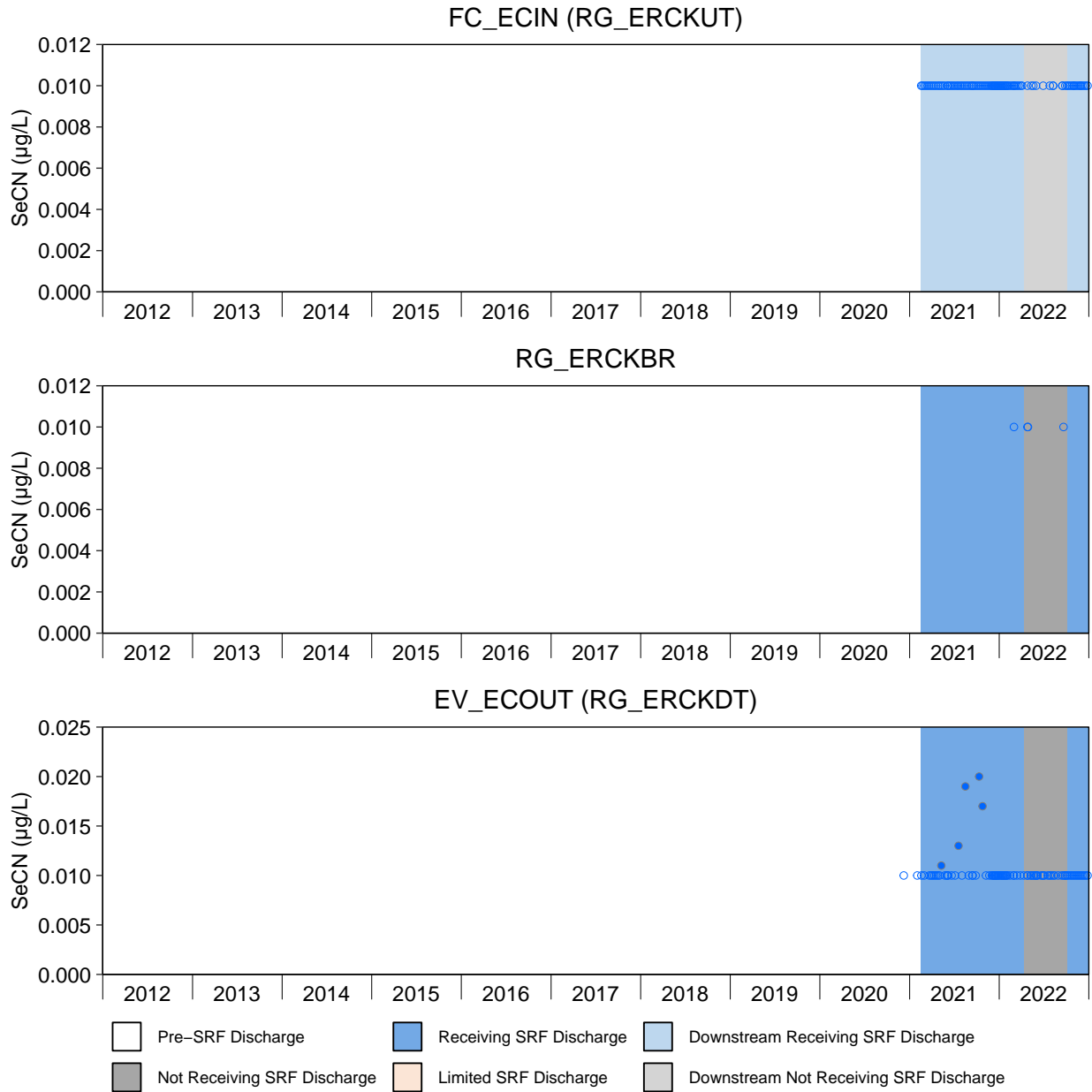


Figure D.27: Time Series Plots for Selenocyanate from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

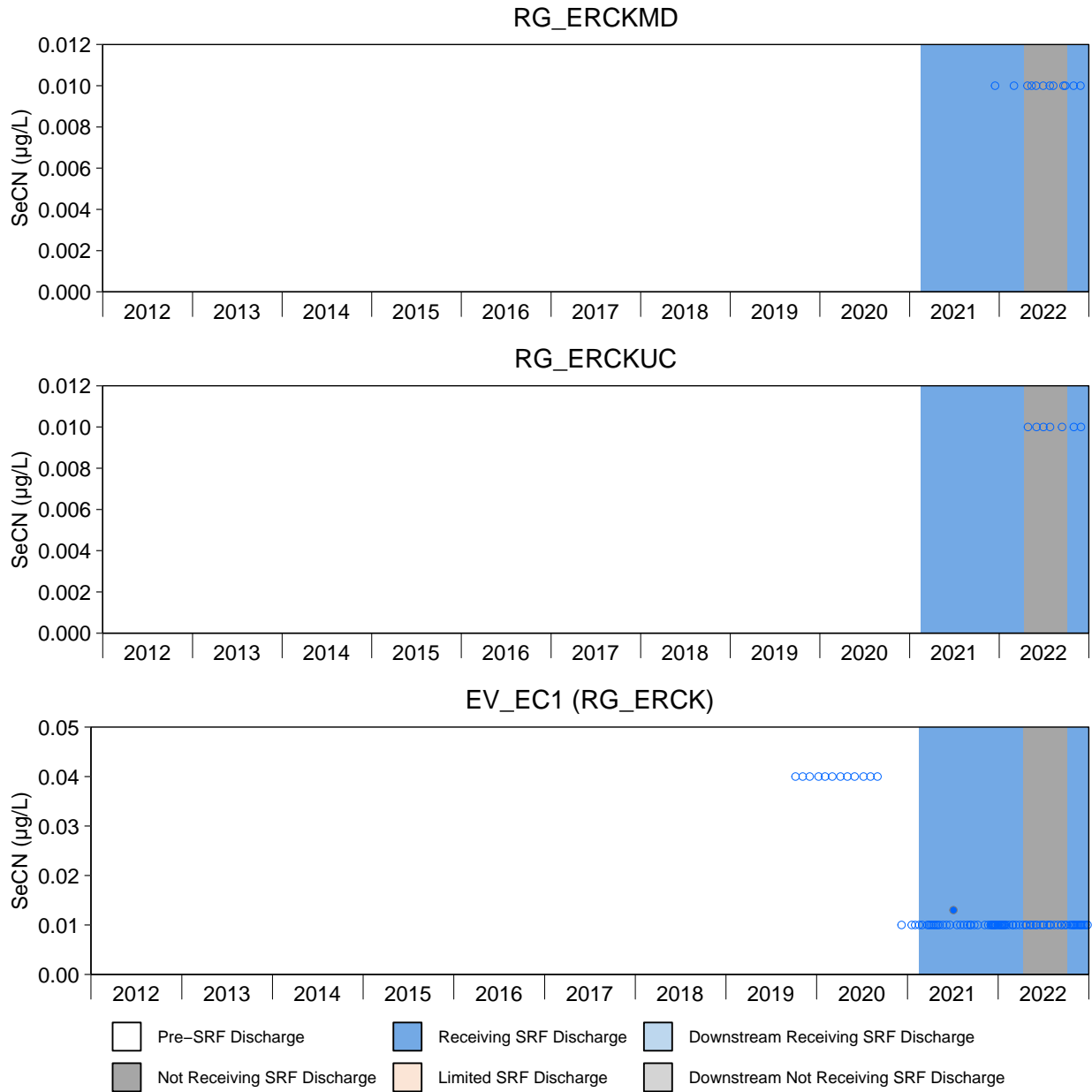


Figure D.27: Time Series Plots for Selenocyanate from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

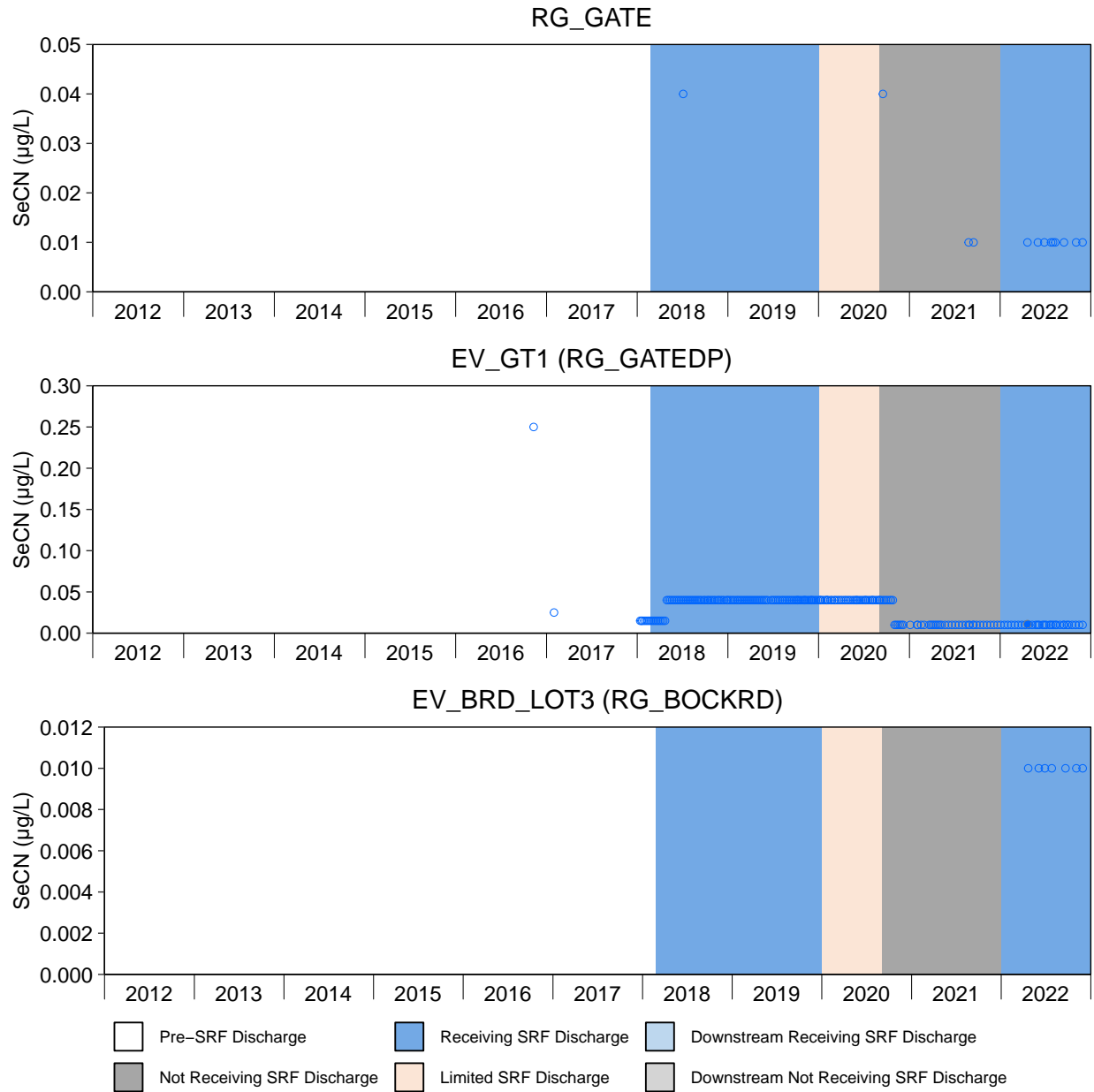


Figure D.27: Time Series Plots for Selenocyanate from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

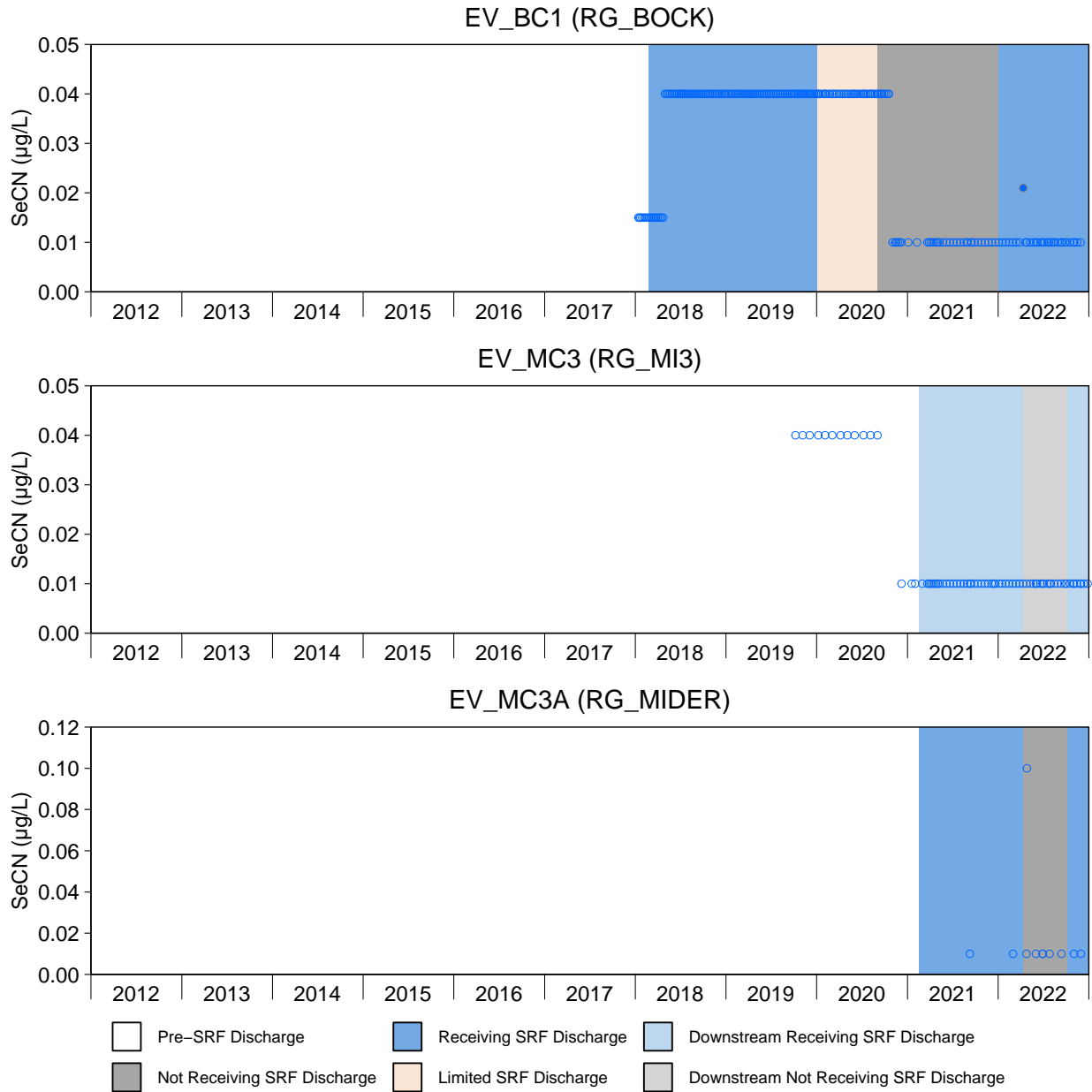


Figure D.27: Time Series Plots for Selenocyanate from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

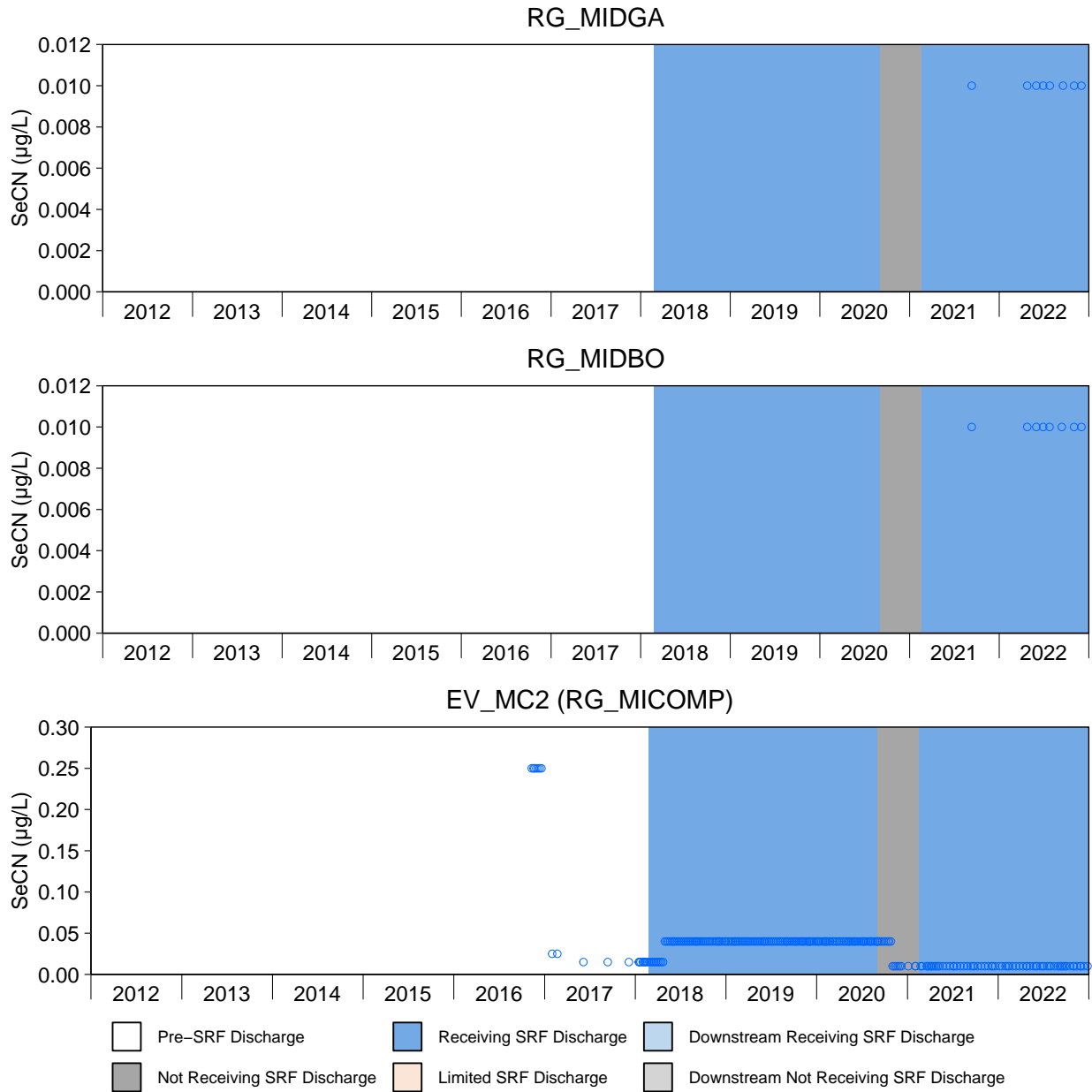


Figure D.27: Time Series Plots for Selenocyanate from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

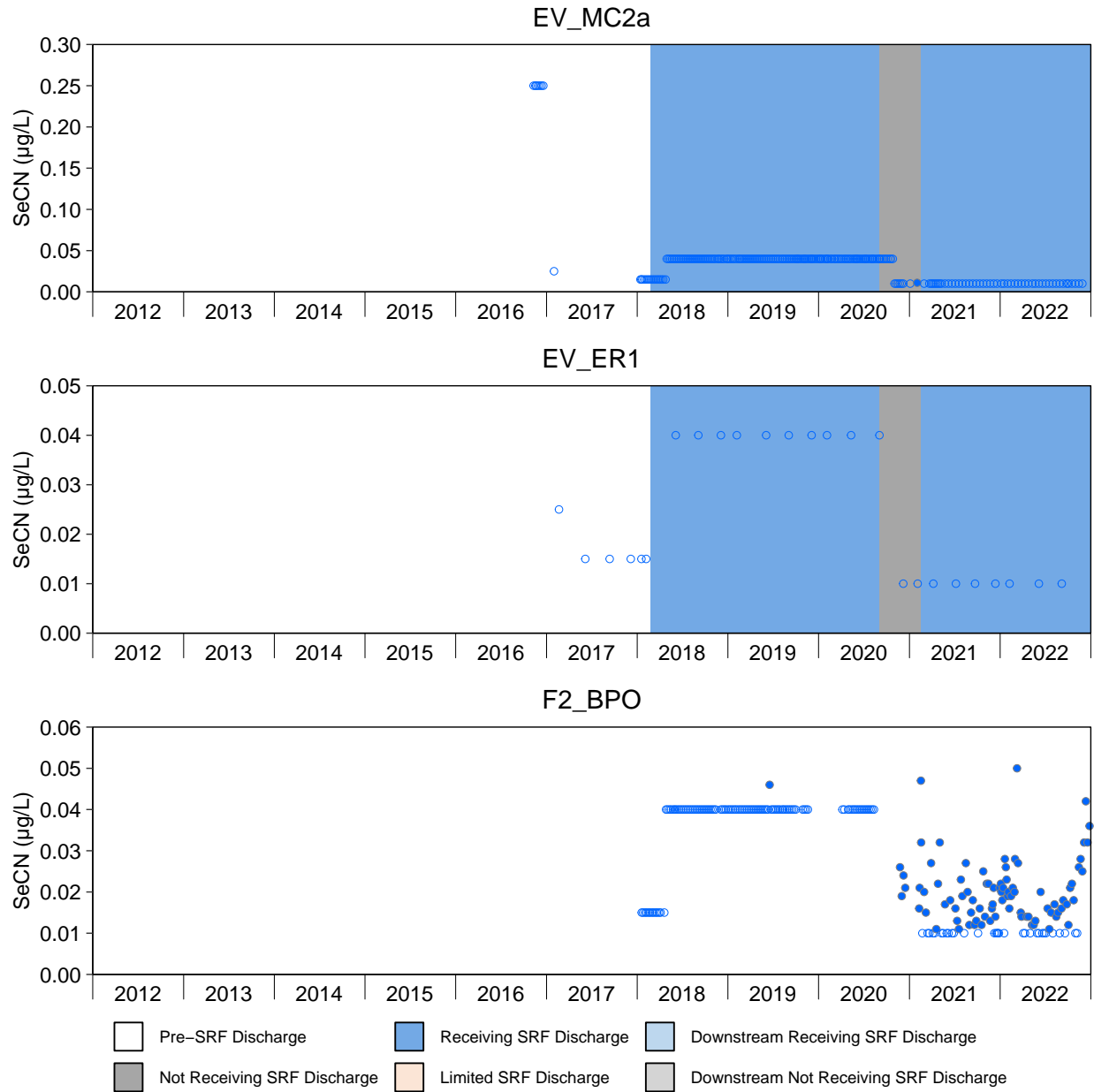


Figure D.27: Time Series Plots for Selenocyanate from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

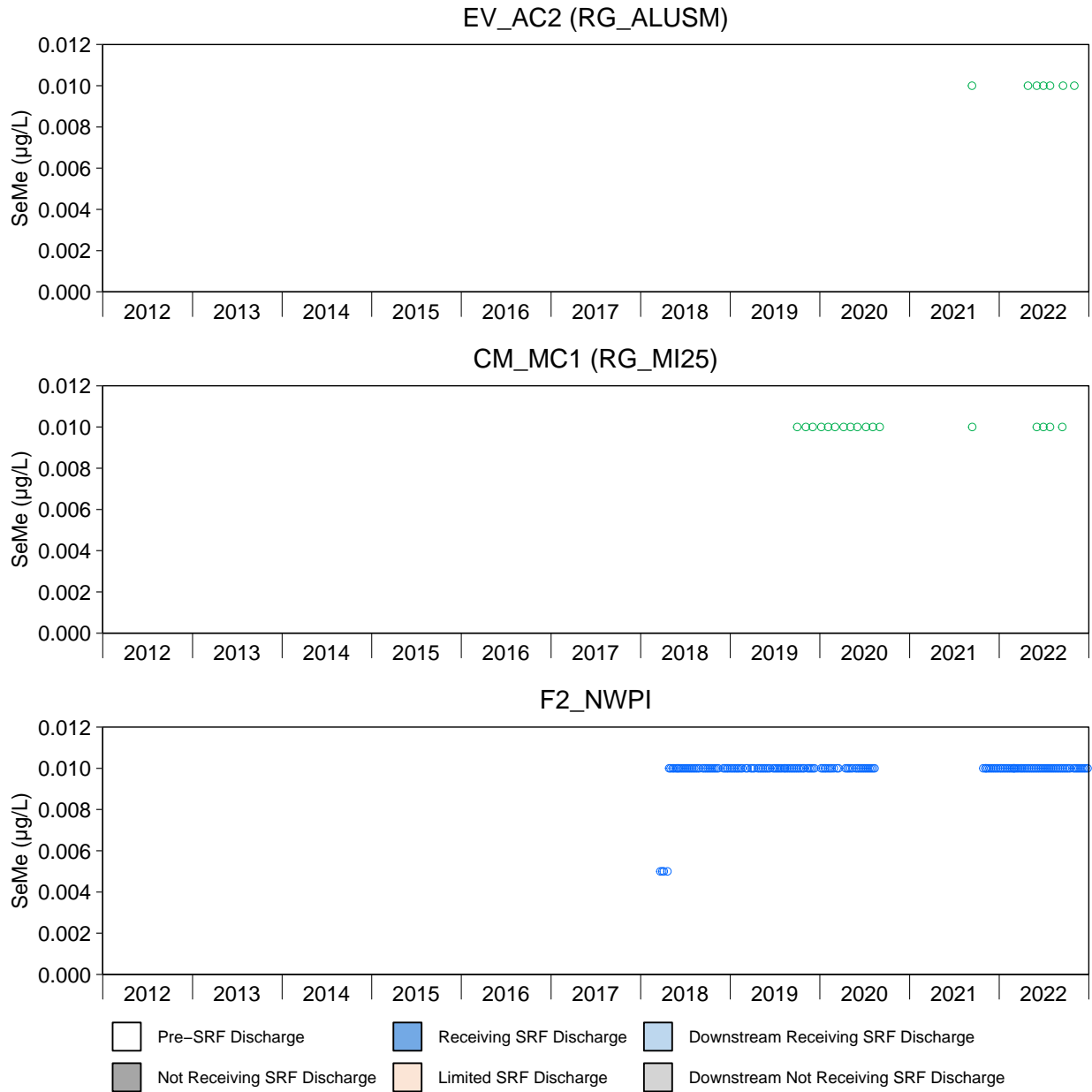


Figure D.28: Time Series Plots for Selenomethionine from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

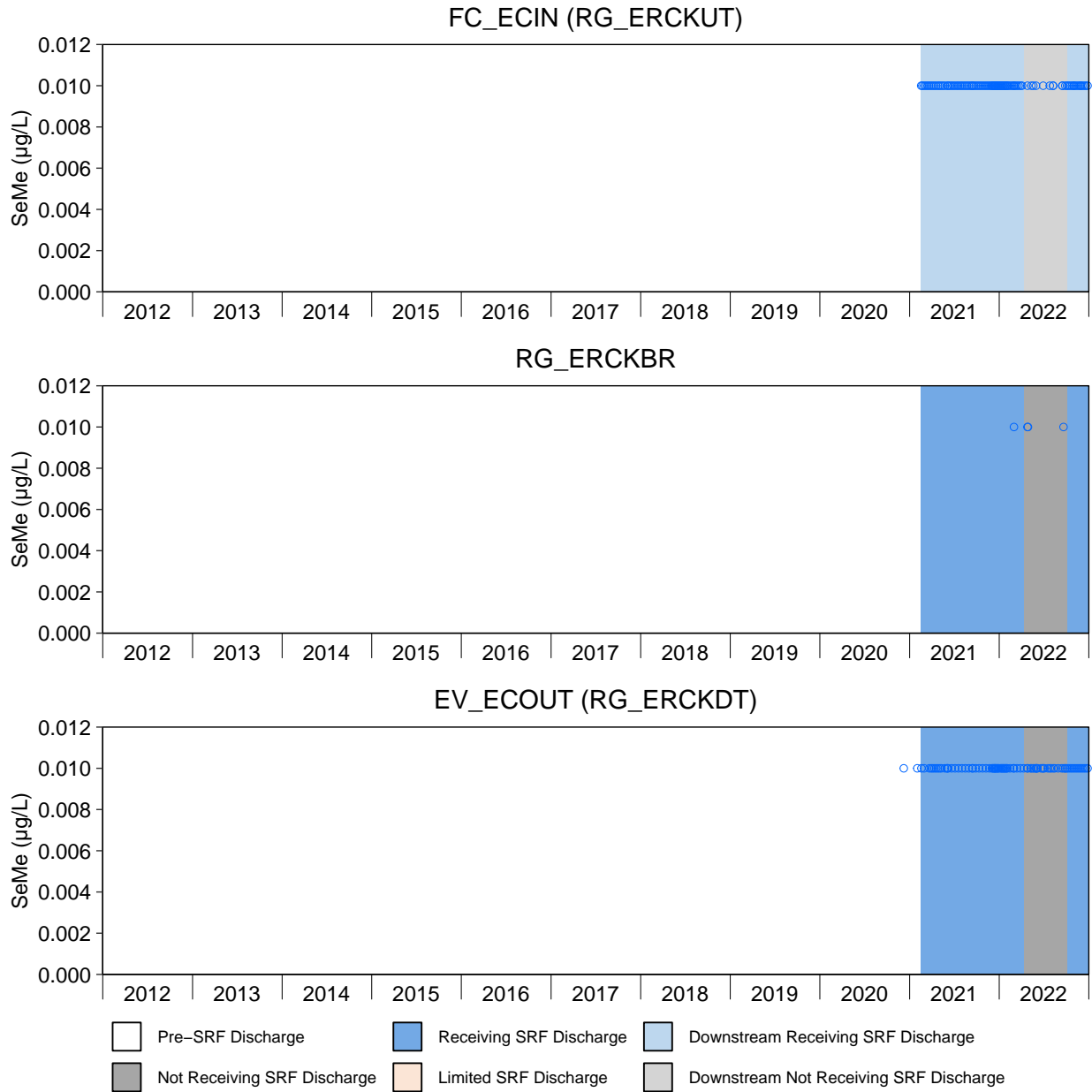


Figure D.28: Time Series Plots for Selenomethionine from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

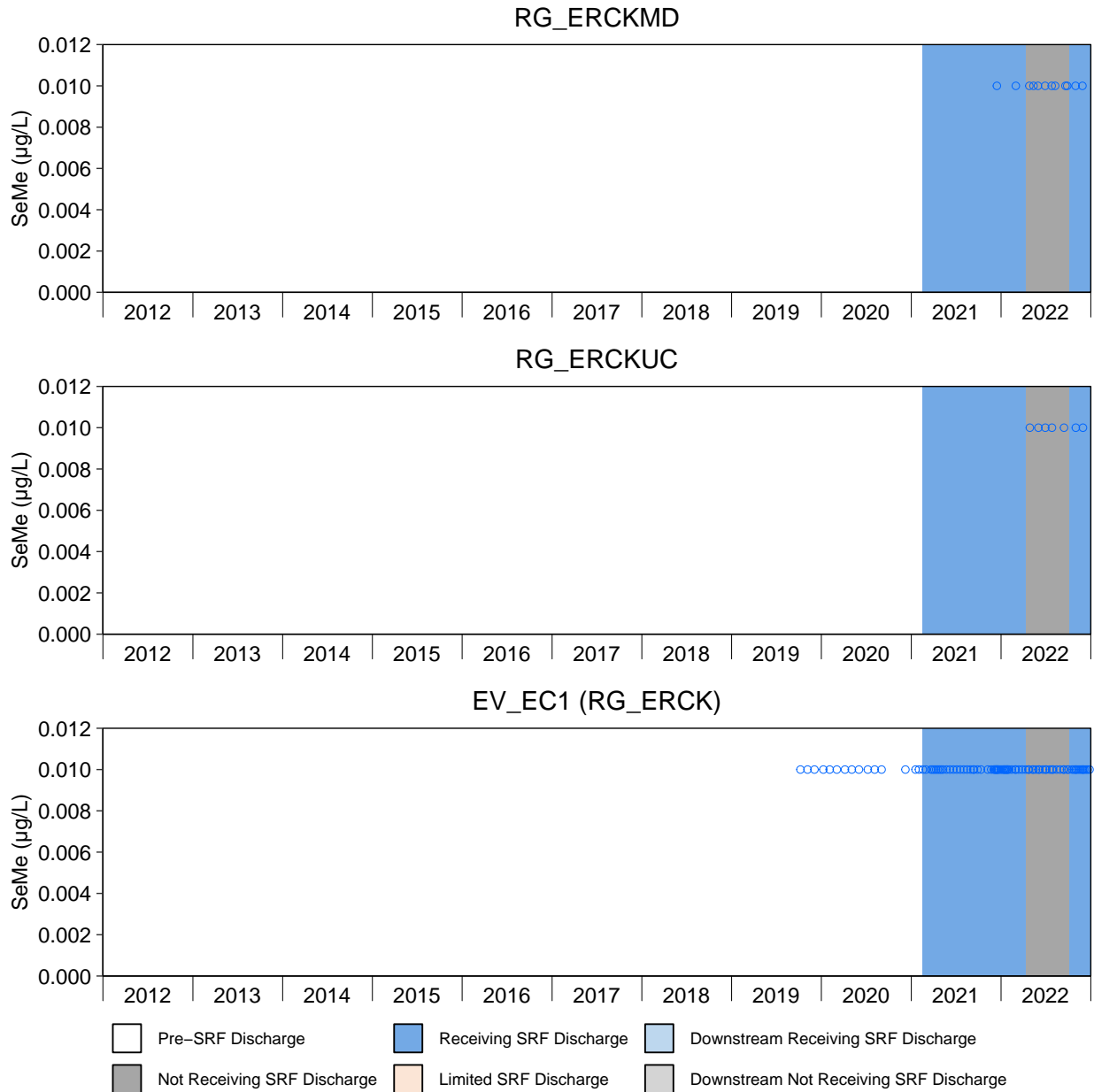


Figure D.28: Time Series Plots for Selenomethionine from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

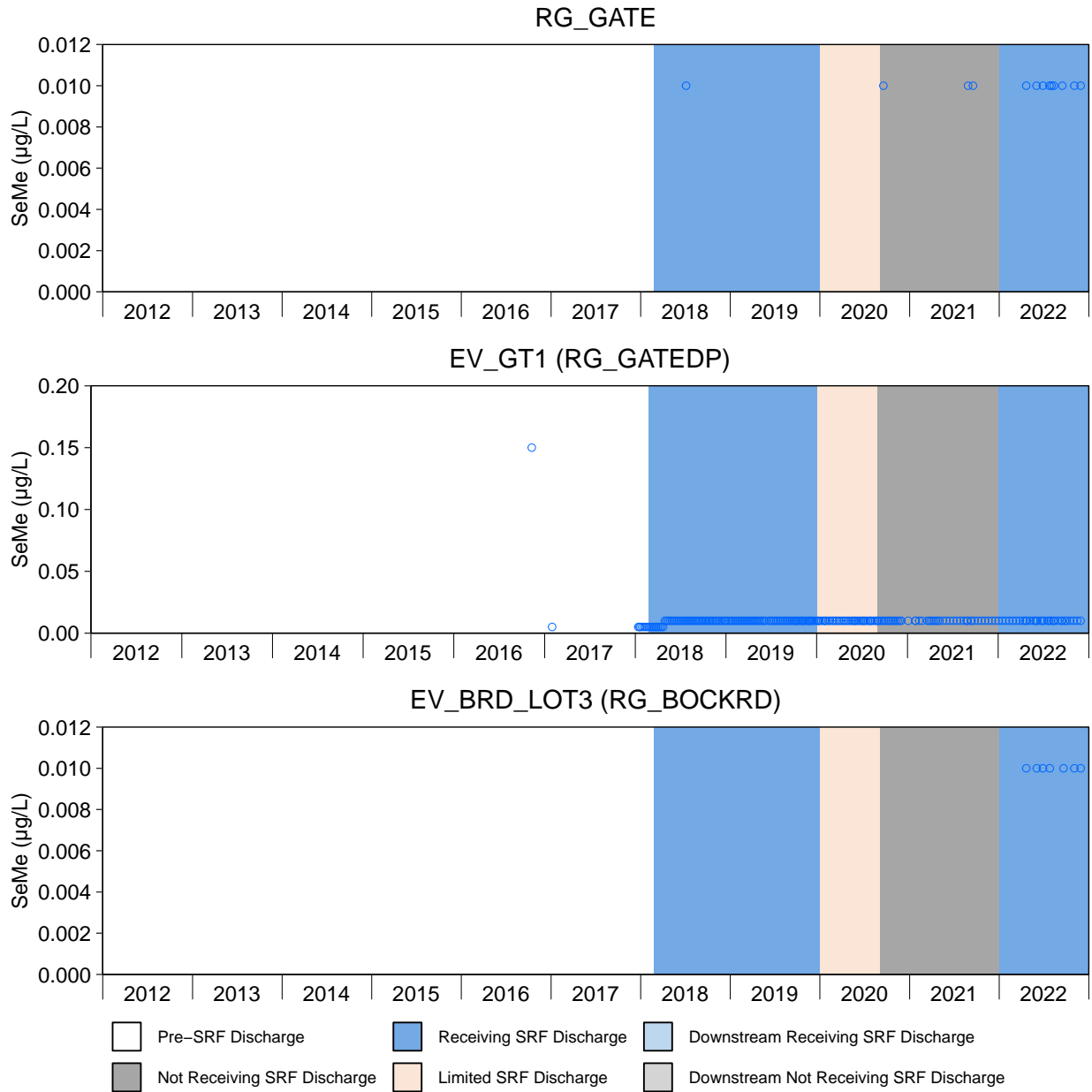


Figure D.28: Time Series Plots for Selenomethionine from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

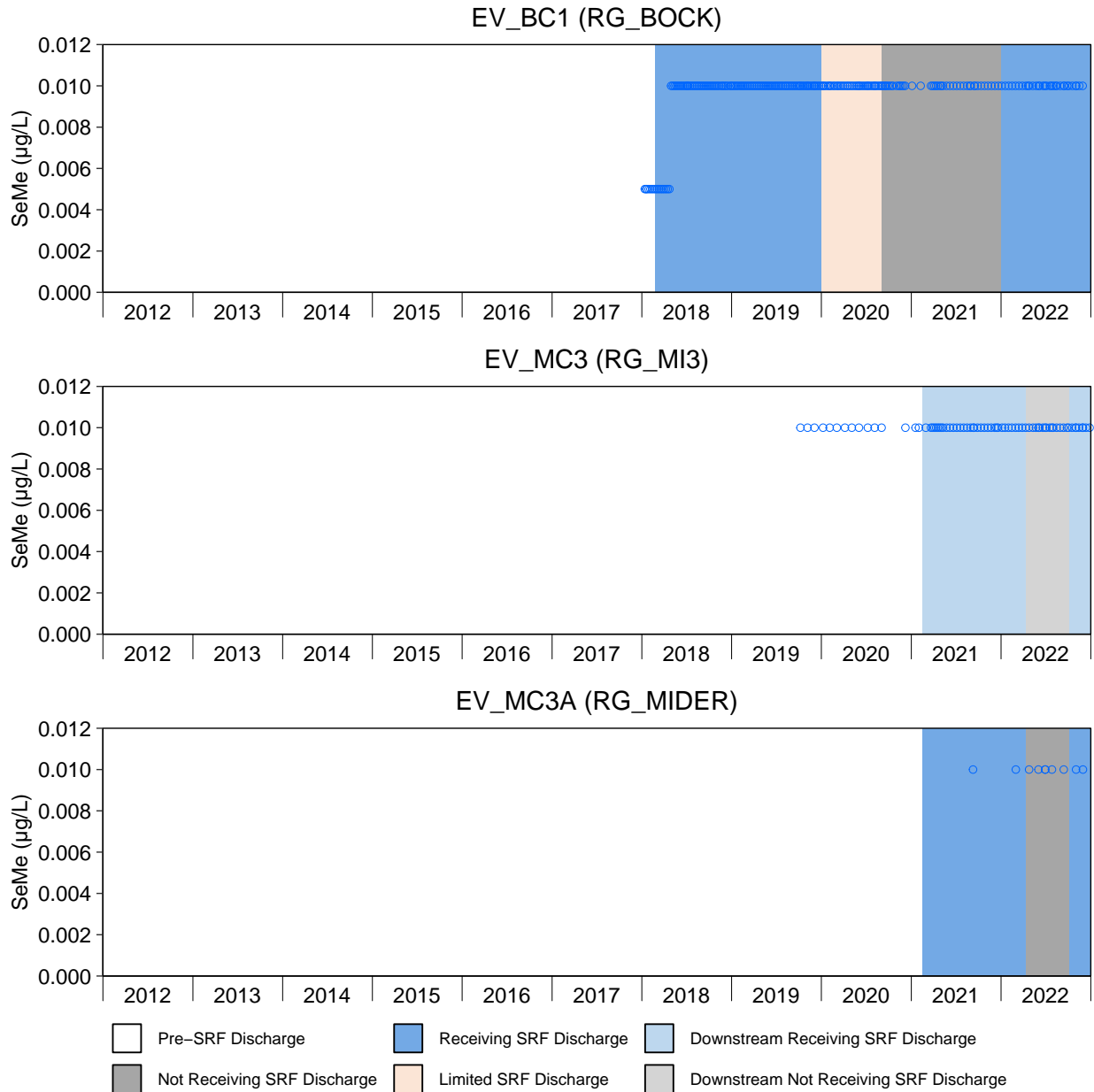


Figure D.28: Time Series Plots for Selenomethionine from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

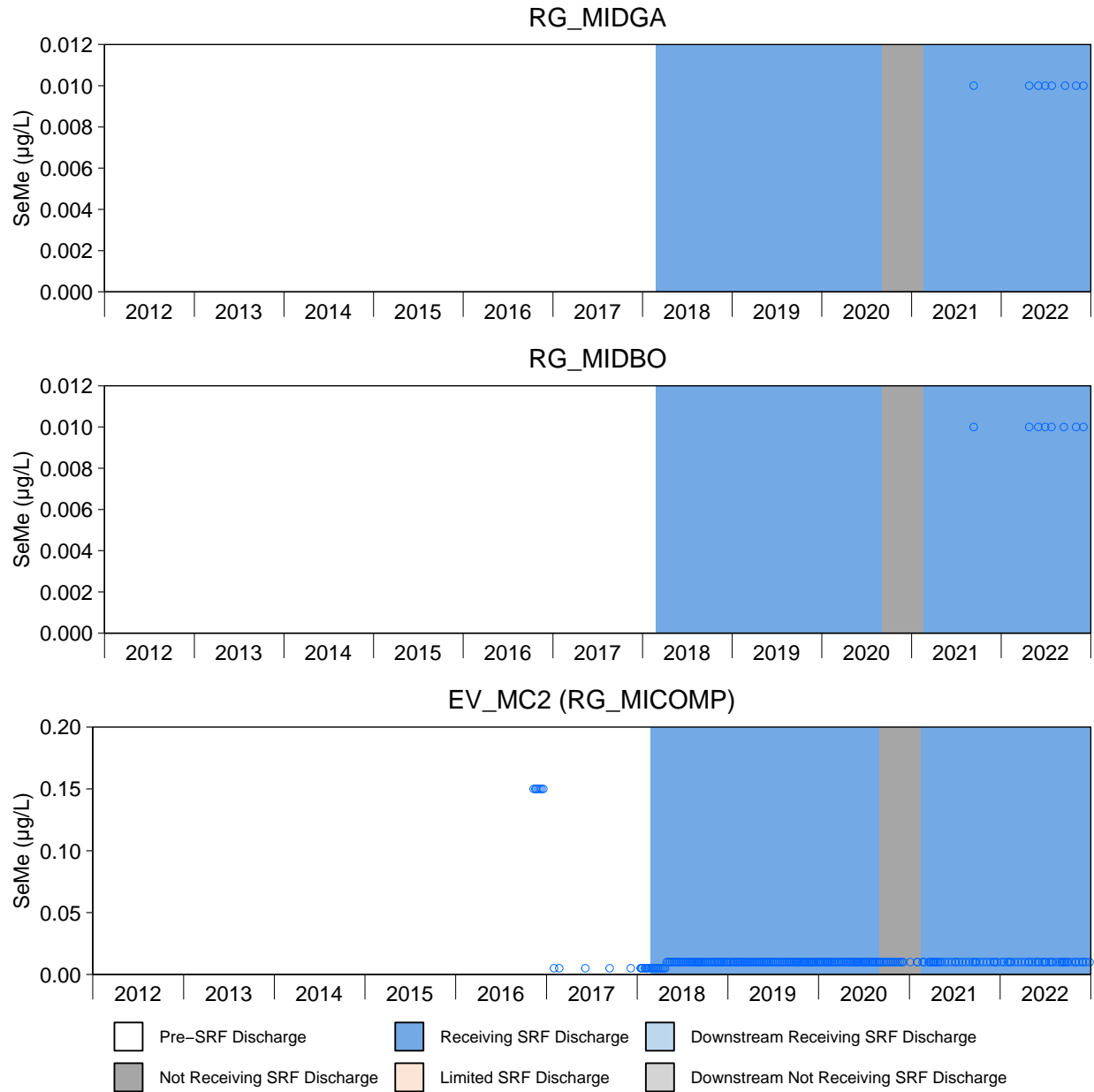


Figure D.28: Time Series Plots for Selenomethionine from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

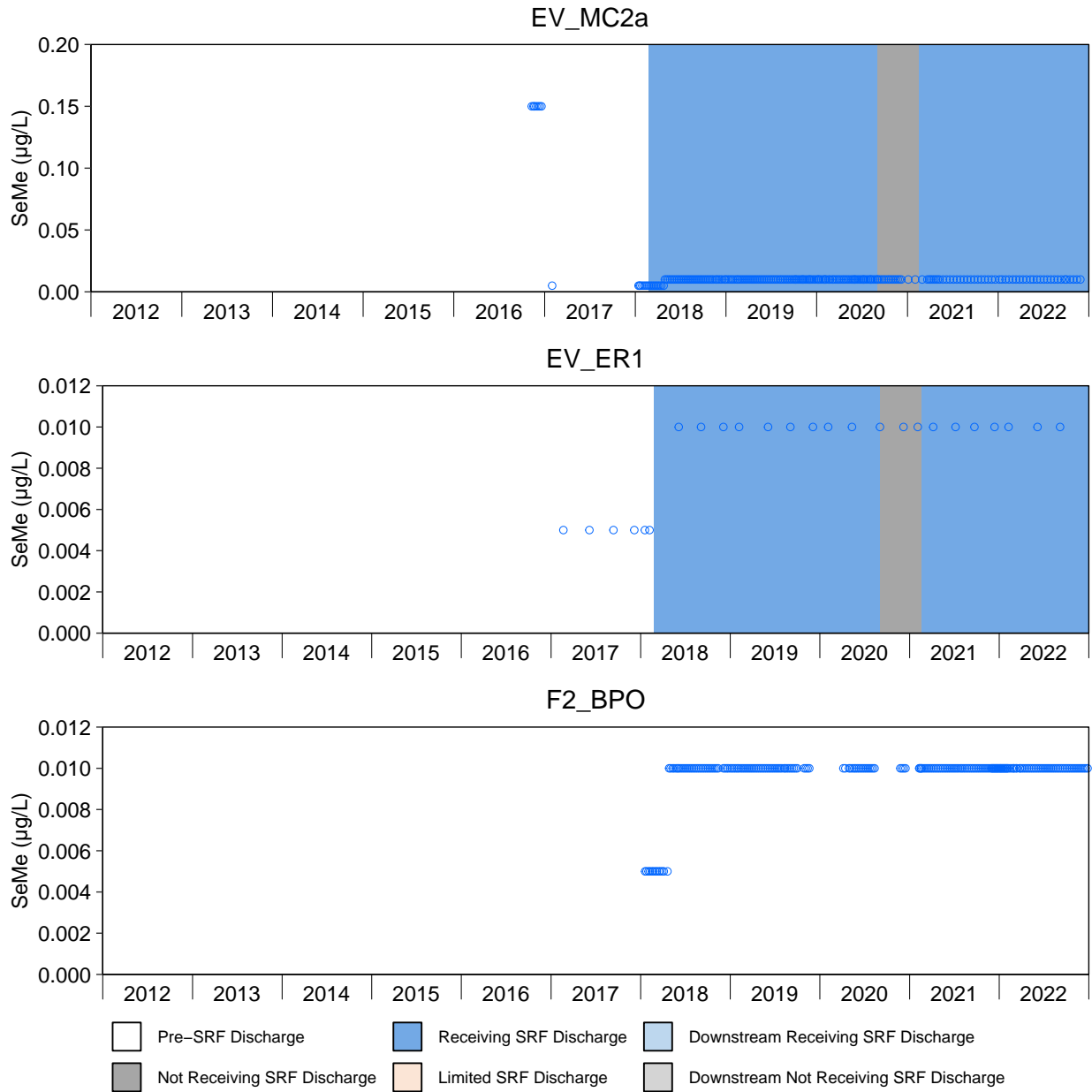


Figure D.28: Time Series Plots for Selenomethionine from EVO LAEMP Areas, 2012 to 2022

Note: Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL.

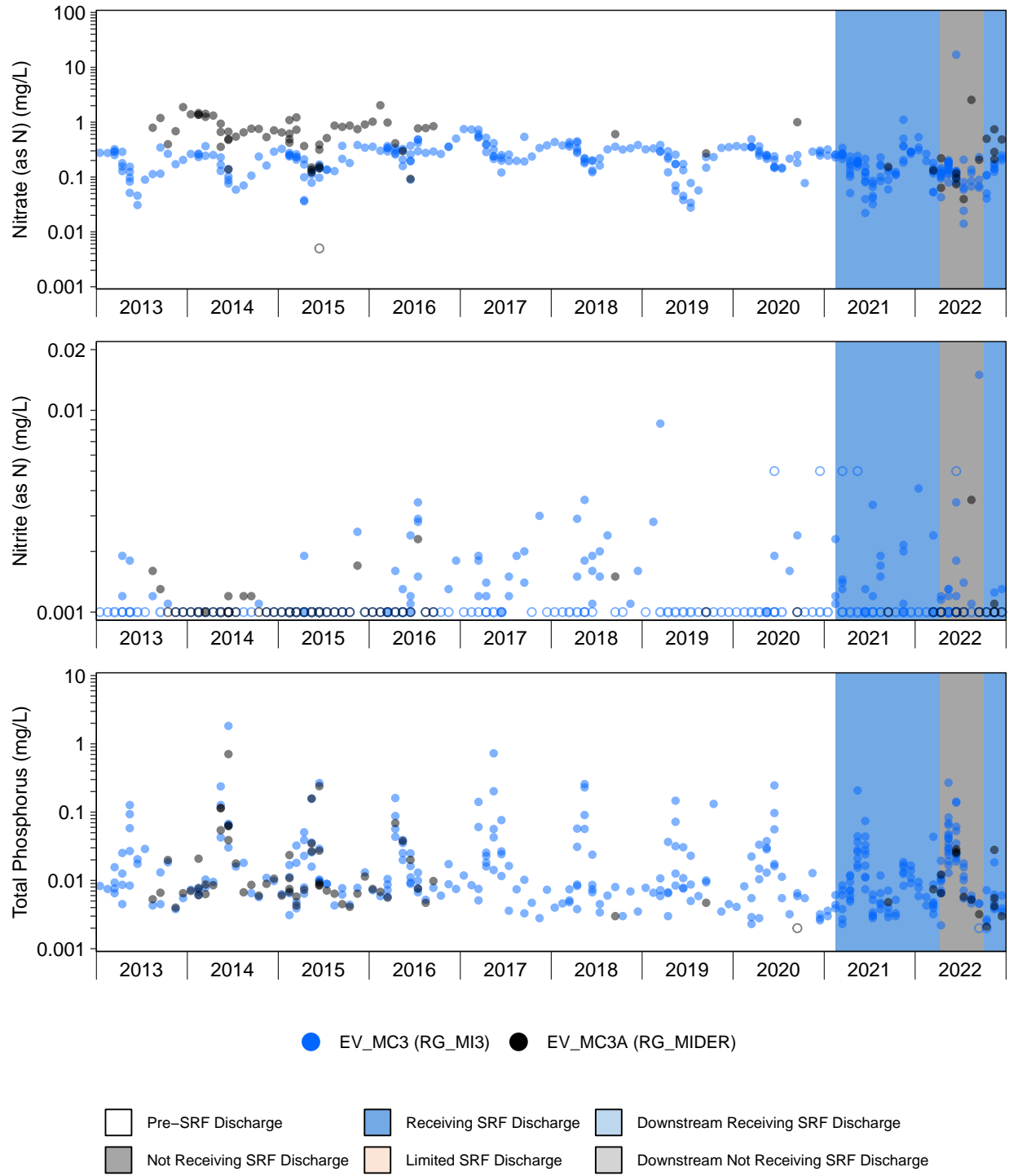


Figure D.29: Comparison of Water Quality Constituent Concentrations During SRF Operation, EVO LAEMP, Base Year to 2022

Notes: Values at the laboratory reporting limit are plotted with an open symbol. Trendlines connect means for consecutive time periods included in statistical analysis.

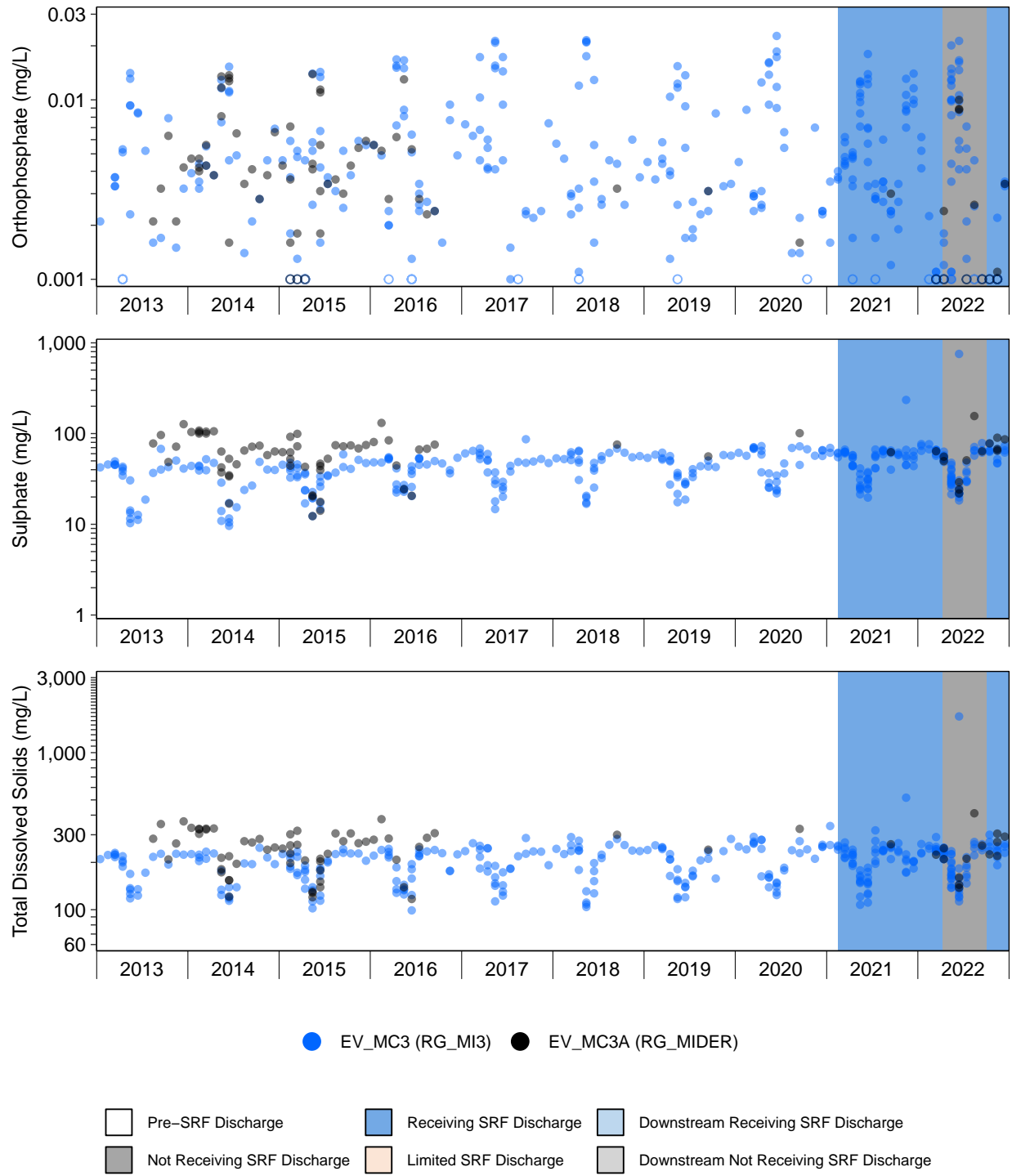


Figure D.29: Comparison of Water Quality Constituent Concentrations During SRF Operation, EVO LAEMP, Base Year to 2022

Notes: Values at the laboratory reporting limit are plotted with an open symbol. Trendlines connect means for consecutive time periods included in statistical analysis.

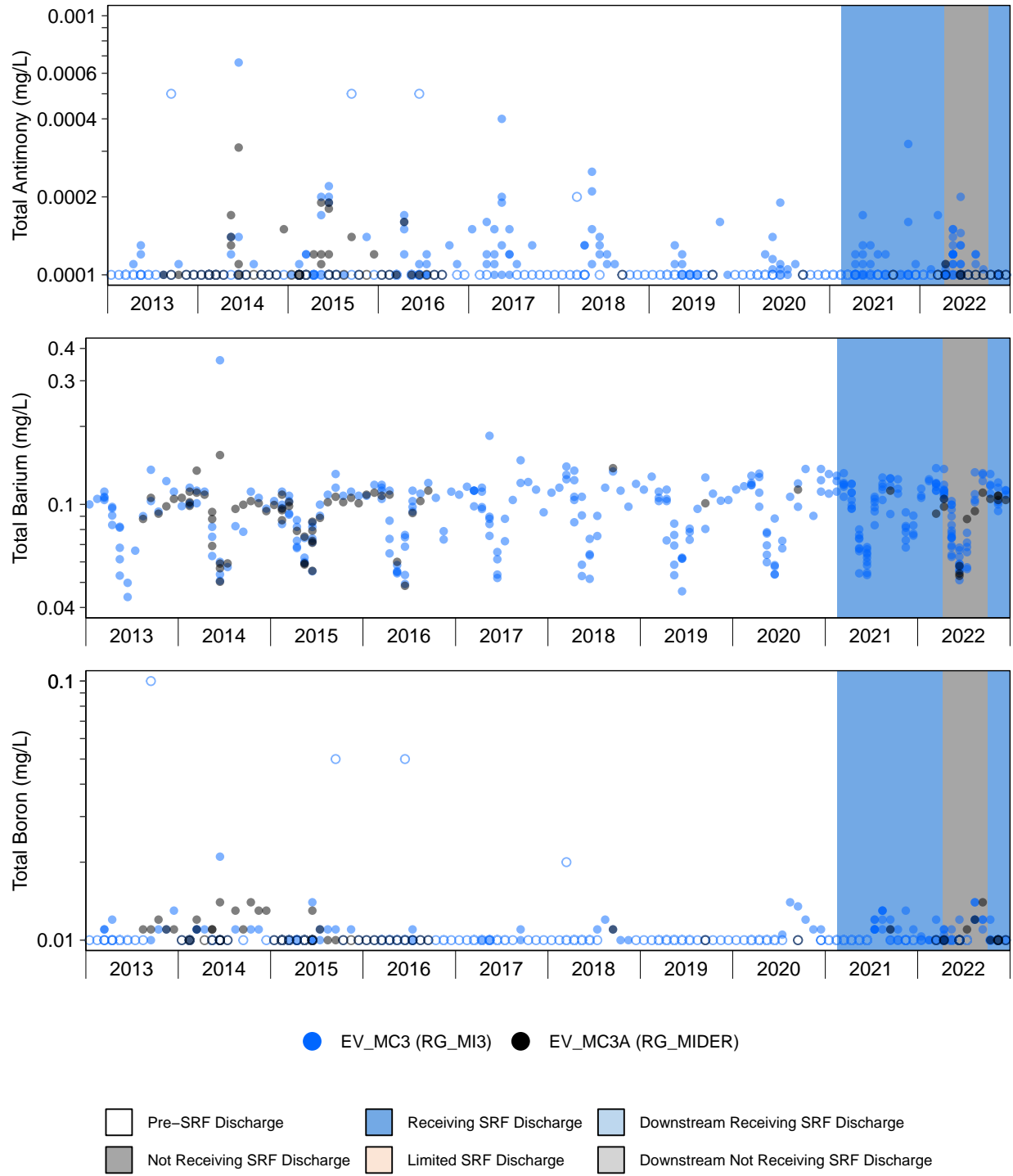


Figure D.29: Comparison of Water Quality Constituent Concentrations During SRF Operation, EVO LAEMP, Base Year to 2022

Notes: Values at the laboratory reporting limit are plotted with an open symbol. Trendlines connect means for consecutive time periods included in statistical analysis.

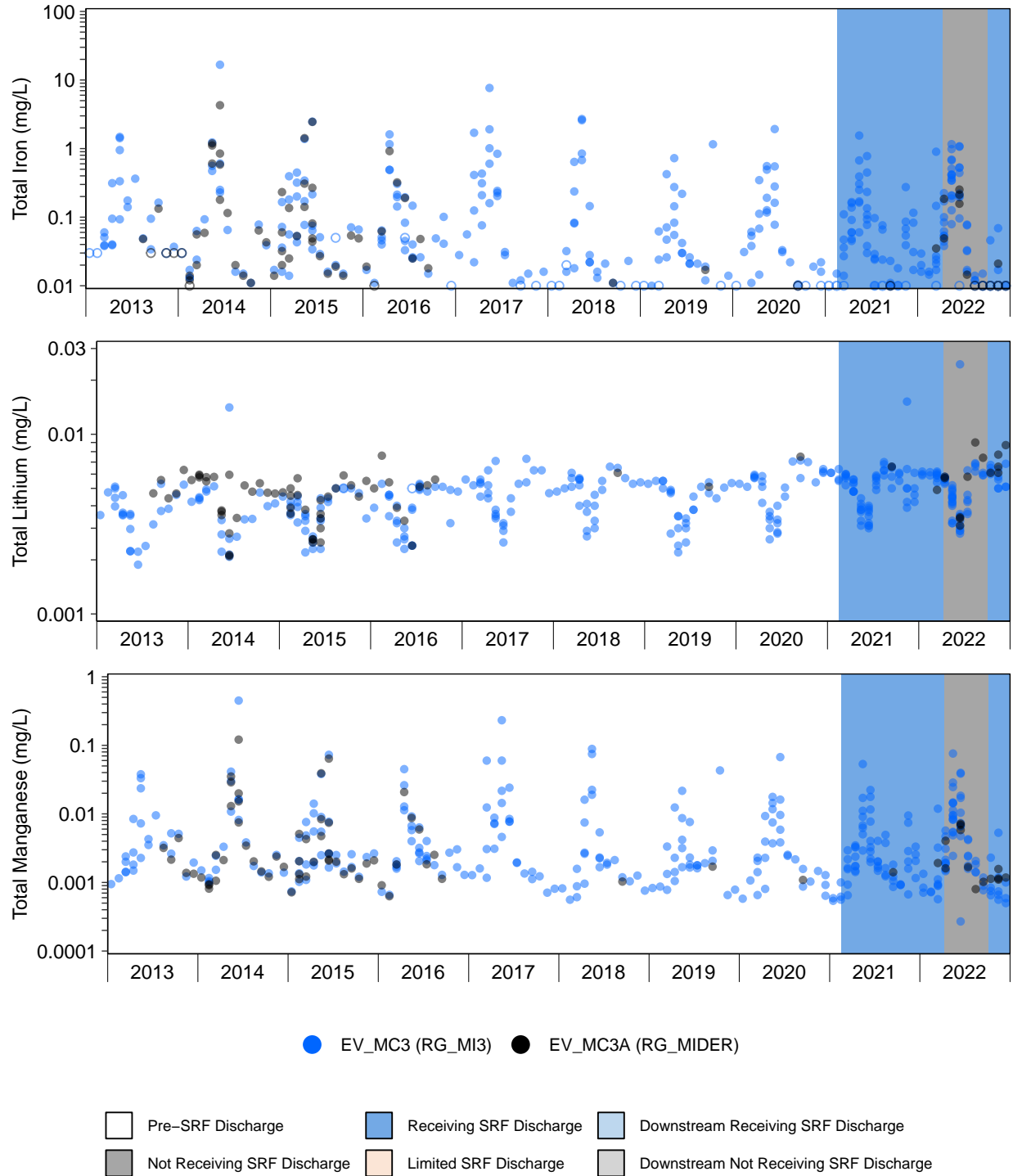


Figure D.29: Comparison of Water Quality Constituent Concentrations During SRF Operation, EVO LAEMP, Base Year to 2022

Notes: Values at the laboratory reporting limit are plotted with an open symbol. Trendlines connect means for consecutive time periods included in statistical analysis.

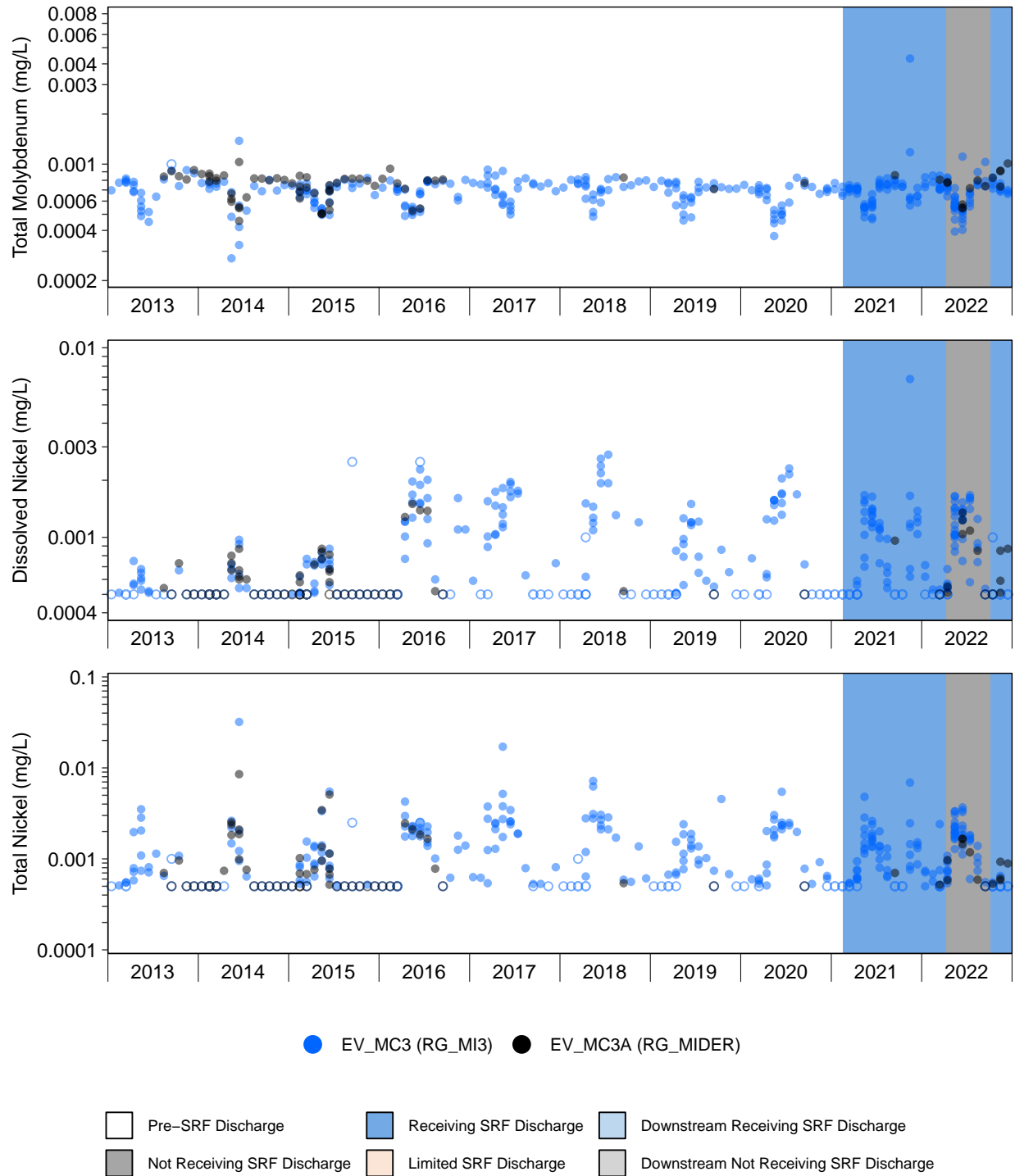


Figure D.29: Comparison of Water Quality Constituent Concentrations During SRF Operation, EVO LAEMP, Base Year to 2022

Notes: Values at the laboratory reporting limit are plotted with an open symbol. Trendlines connect means for consecutive time periods included in statistical analysis.

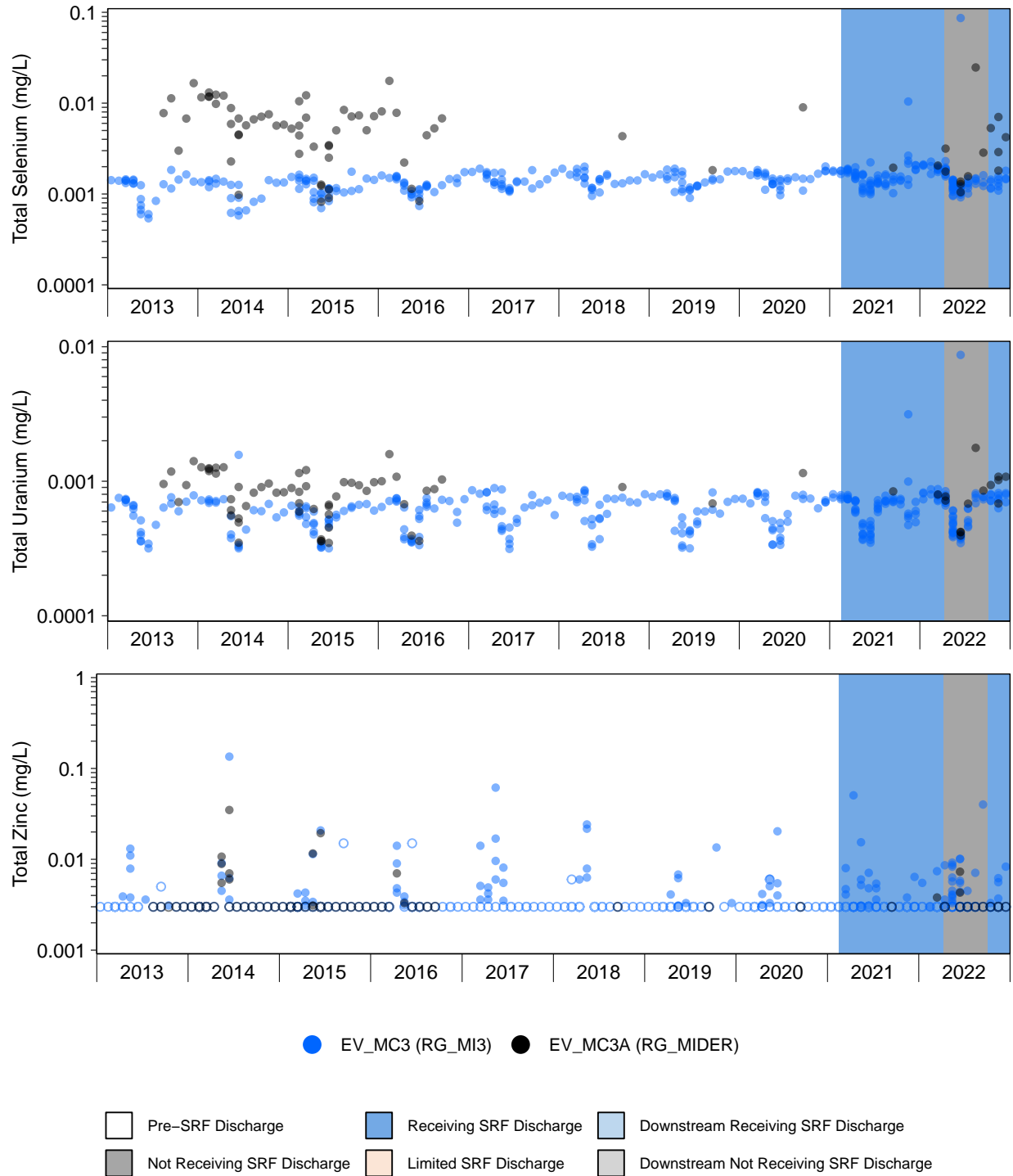


Figure D.29: Comparison of Water Quality Constituent Concentrations During SRF Operation, EVO LAEMP, Base Year to 2022

Notes: Values at the laboratory reporting limit are plotted with an open symbol. Trendlines connect means for consecutive time periods included in statistical analysis.

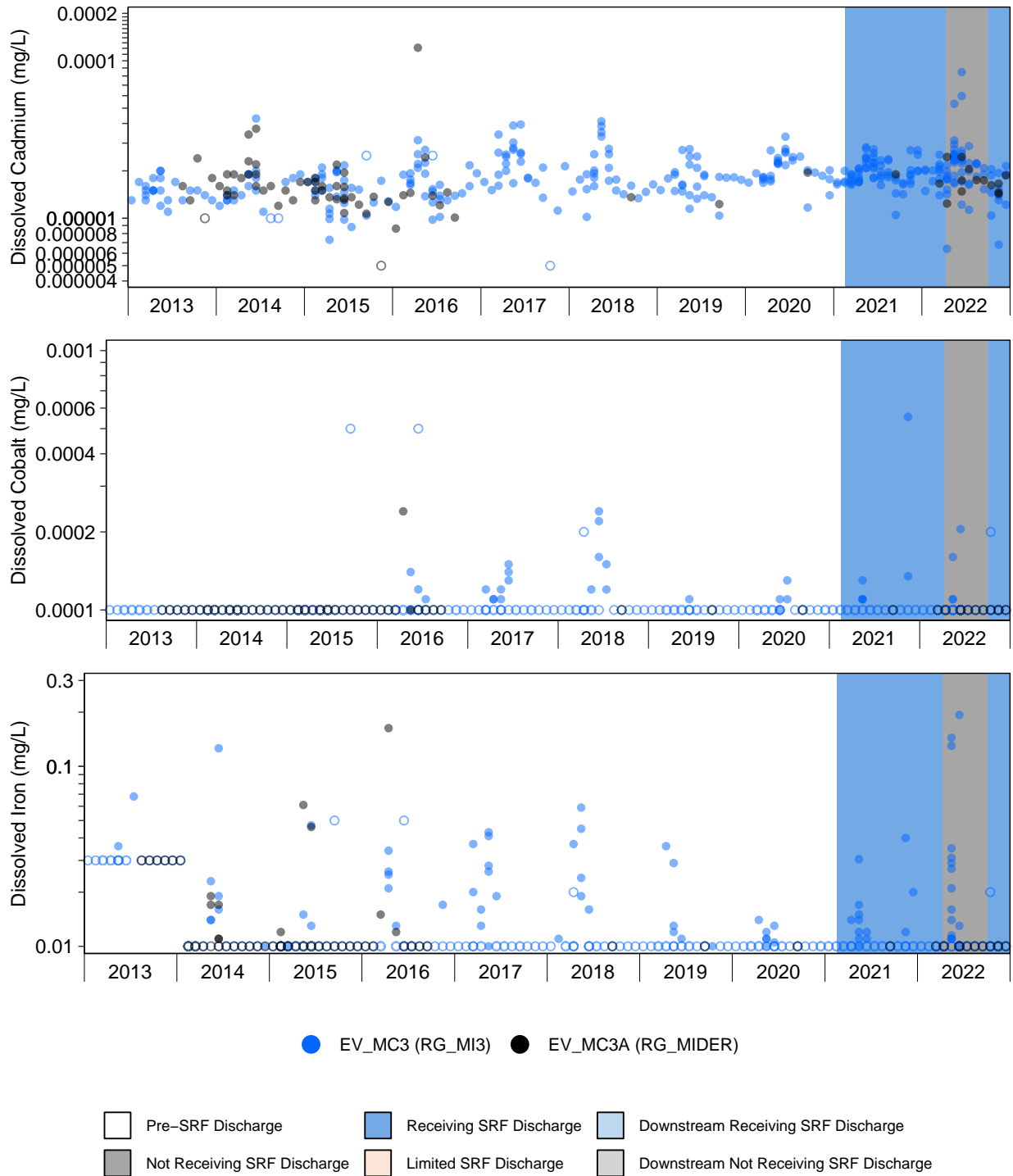
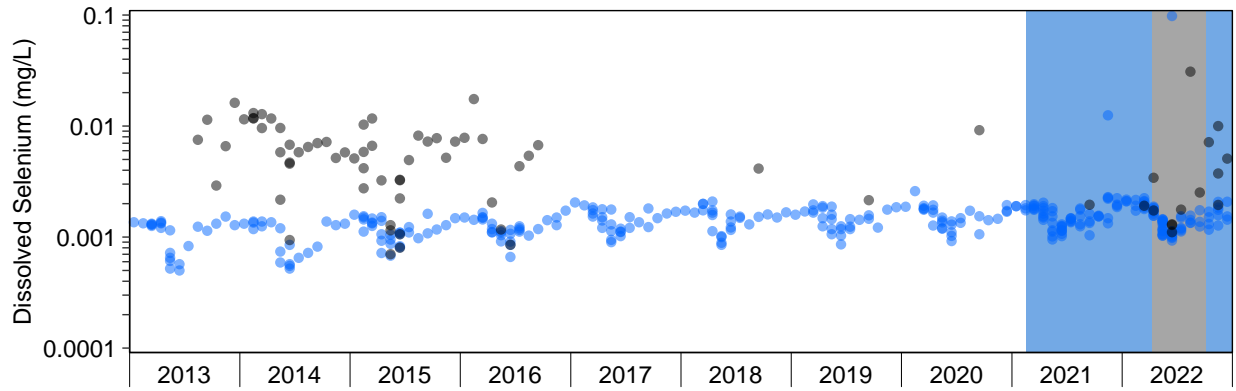


Figure D.29: Comparison of Water Quality Constituent Concentrations During SRF Operation, EVO LAEMP, Base Year to 2022

Notes: Values at the laboratory reporting limit are plotted with an open symbol. Trendlines connect means for consecutive time periods included in statistical analysis.



● EV_MC3 (RG_MI3) ● EV_MC3A (RG_MIDER)

□ Pre-SRF Discharge	■ Receiving SRF Discharge	□ Downstream Receiving SRF Discharge
■ Not Receiving SRF Discharge	□ Limited SRF Discharge	□ Downstream Not Receiving SRF Discharge

Figure D.29: Comparison of Water Quality Constituent Concentrations During SRF Operation, EVO LAEMP, Base Year to 2022

Notes: Values at the laboratory reporting limit are plotted with an open symbol. Trendlines connect means for consecutive time periods included in statistical analysis.

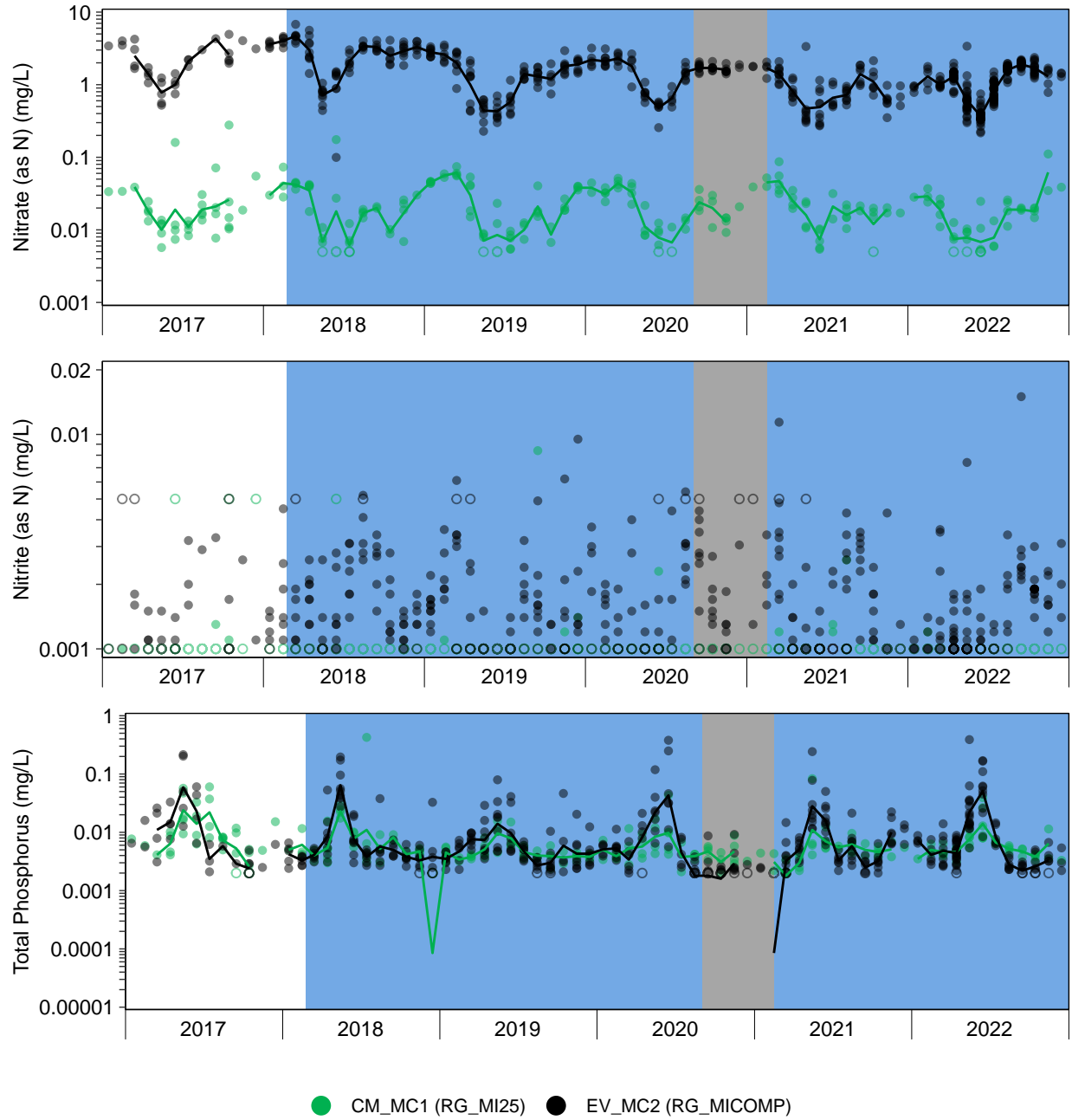


Figure D.30: Comparison of Water Quality Constituent Concentrations During SRF Operation, EVO LAEMP, Base Year to 2022

Notes: Values at the laboratory reporting limit are plotted with an open symbol. Trendlines connect means for consecutive time periods included in statistical analysis.

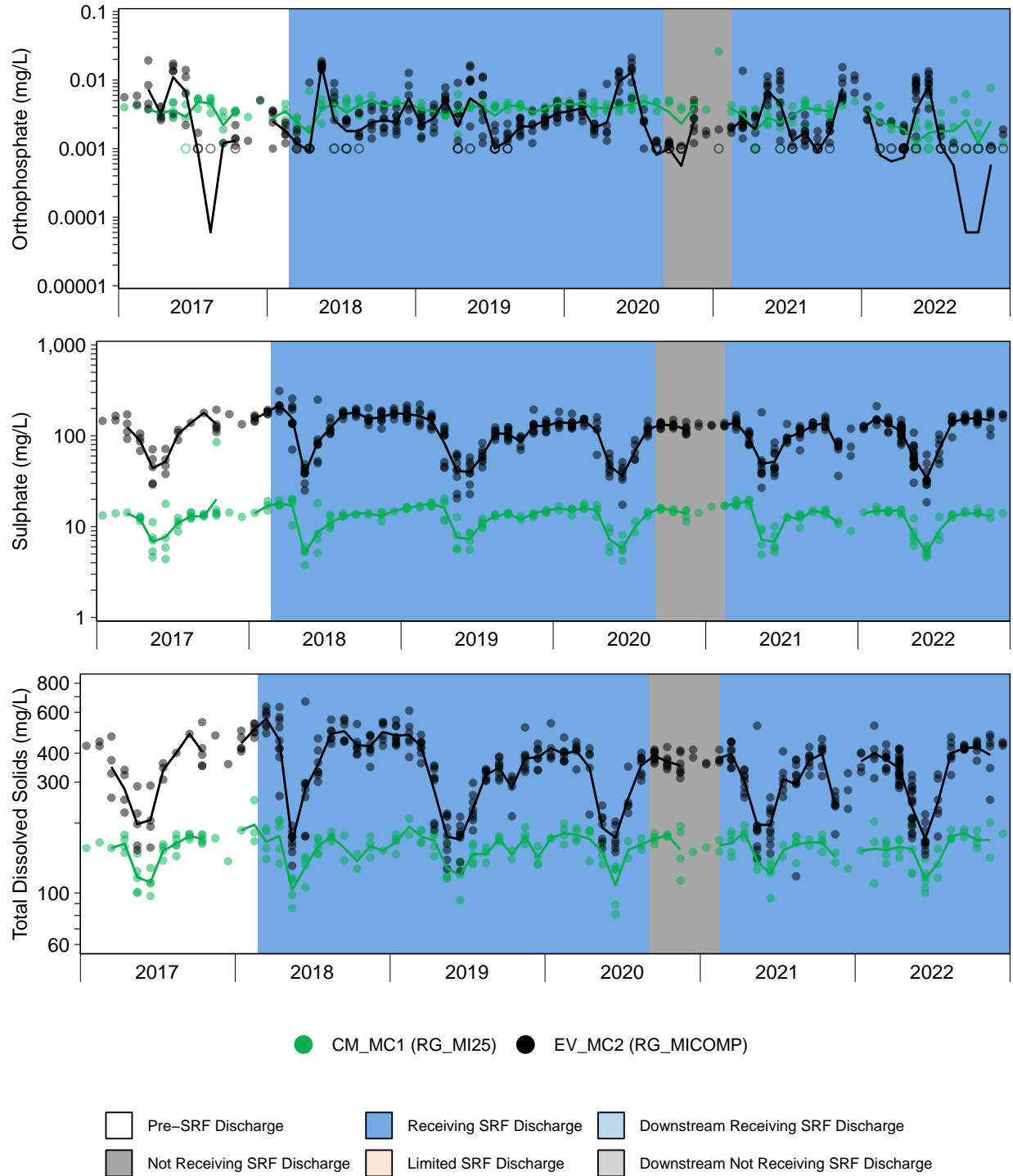


Figure D.30: Comparison of Water Quality Constituent Concentrations During SRF Operation, EVO LAEMP, Base Year to 2022

Notes: Values at the laboratory reporting limit are plotted with an open symbol. Trendlines connect means for consecutive time periods included in statistical analysis.

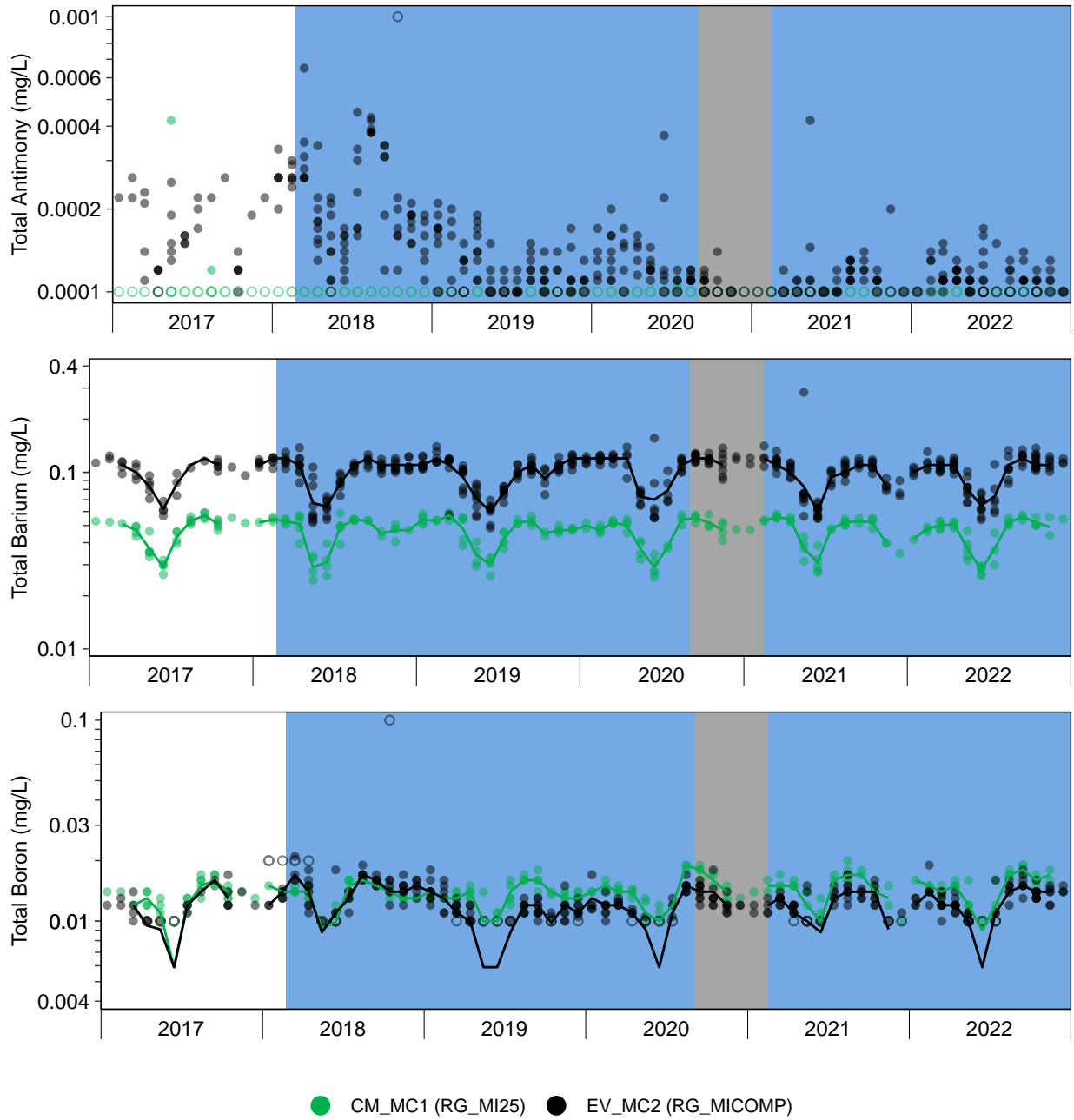


Figure D.30: Comparison of Water Quality Constituent Concentrations During SRF Operation, EVO LAEMP, Base Year to 2022

Notes: Values at the laboratory reporting limit are plotted with an open symbol. Trendlines connect means for consecutive time periods included in statistical analysis.

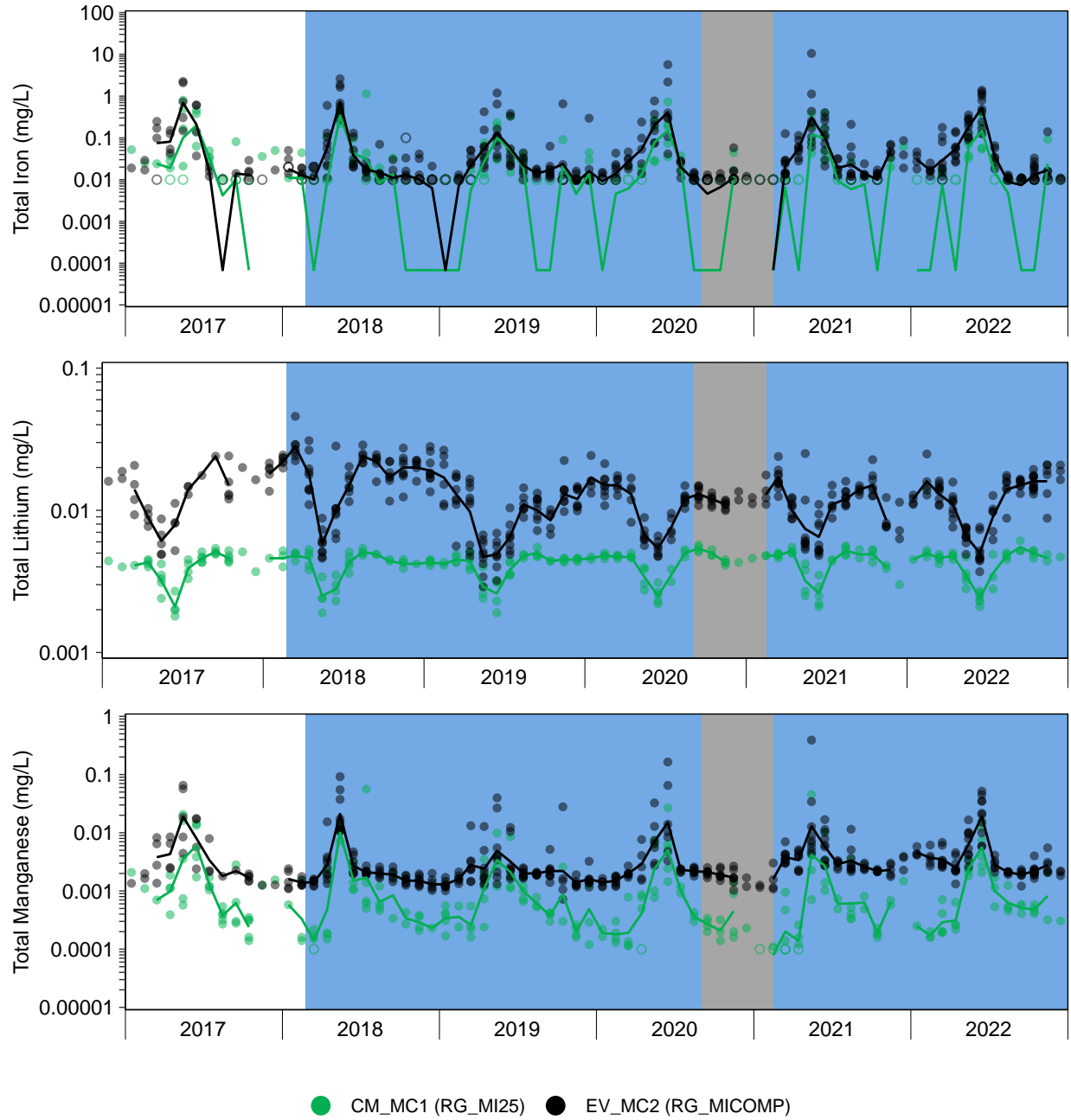


Figure D.30: Comparison of Water Quality Constituent Concentrations During SRF Operation, EVO LAEMP, Base Year to 2022

Notes: Values at the laboratory reporting limit are plotted with an open symbol. Trendlines connect means for consecutive time periods included in statistical analysis.

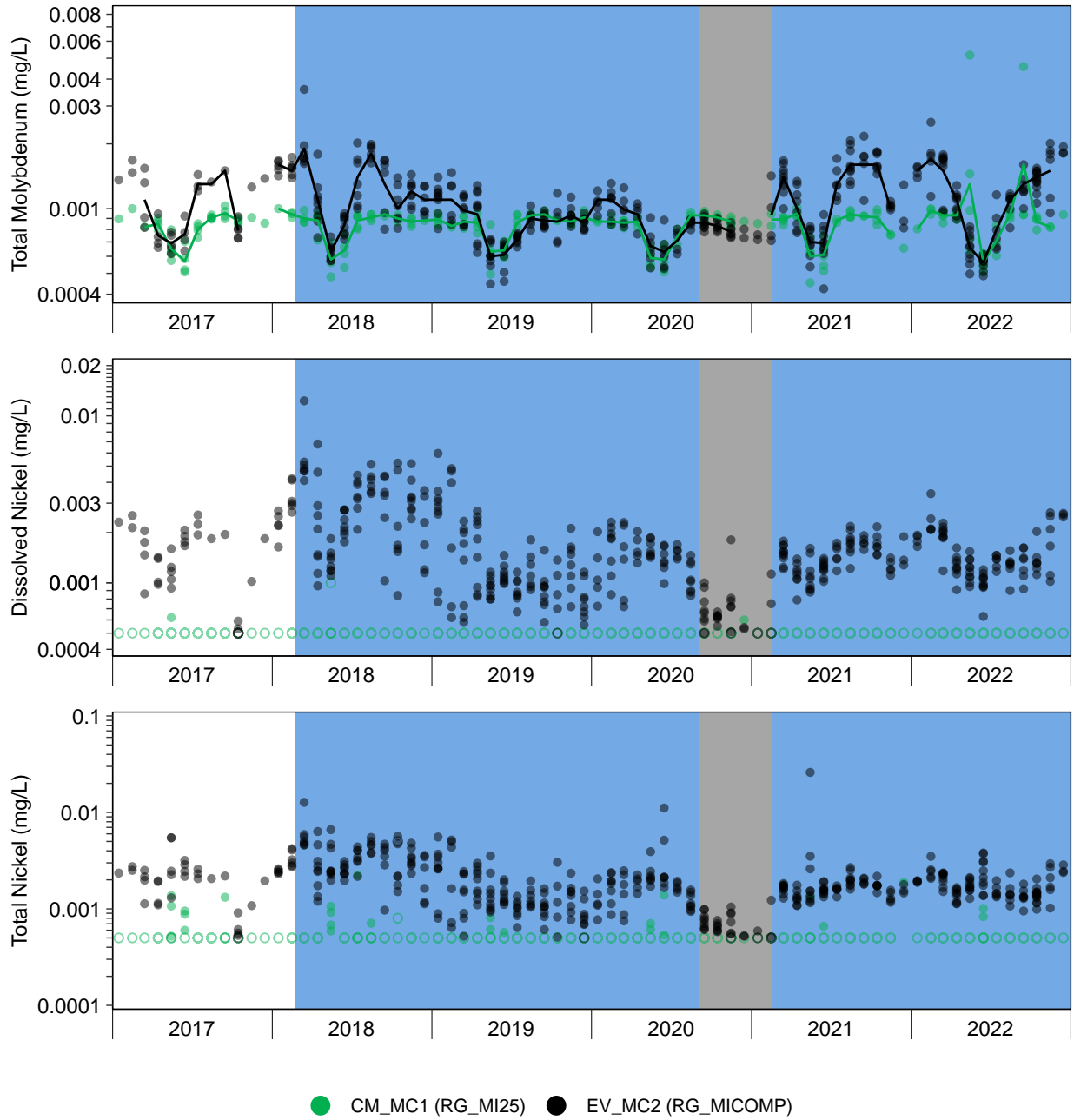


Figure D.30: Comparison of Water Quality Constituent Concentrations During SRF Operation, EVO LAEMP, Base Year to 2022

Notes: Values at the laboratory reporting limit are plotted with an open symbol. Trendlines connect means for consecutive time periods included in statistical analysis.

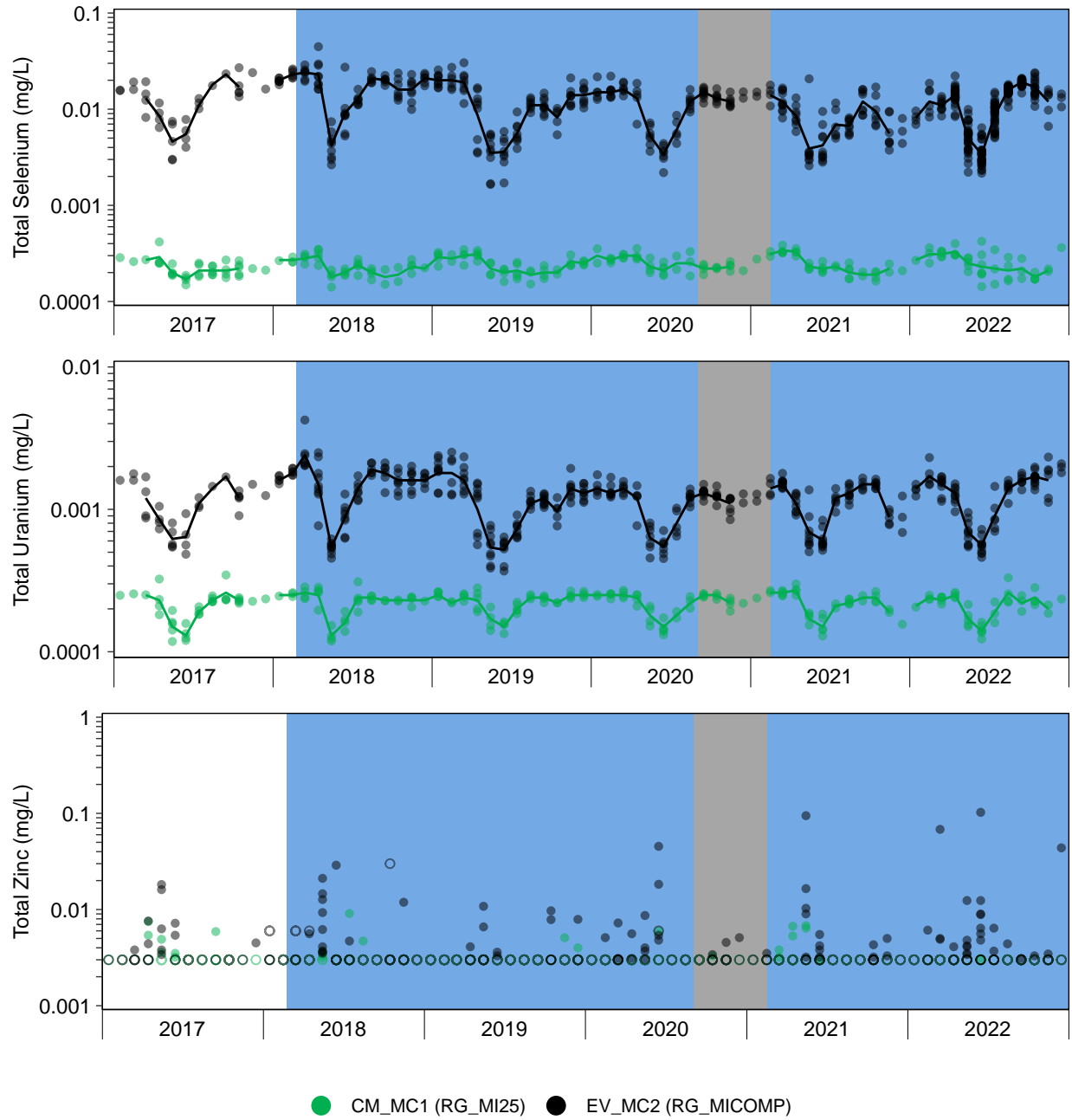


Figure D.30: Comparison of Water Quality Constituent Concentrations During SRF Operation, EVO LAEMP, Base Year to 2022

Notes: Values at the laboratory reporting limit are plotted with an open symbol. Trendlines connect means for consecutive time periods included in statistical analysis.

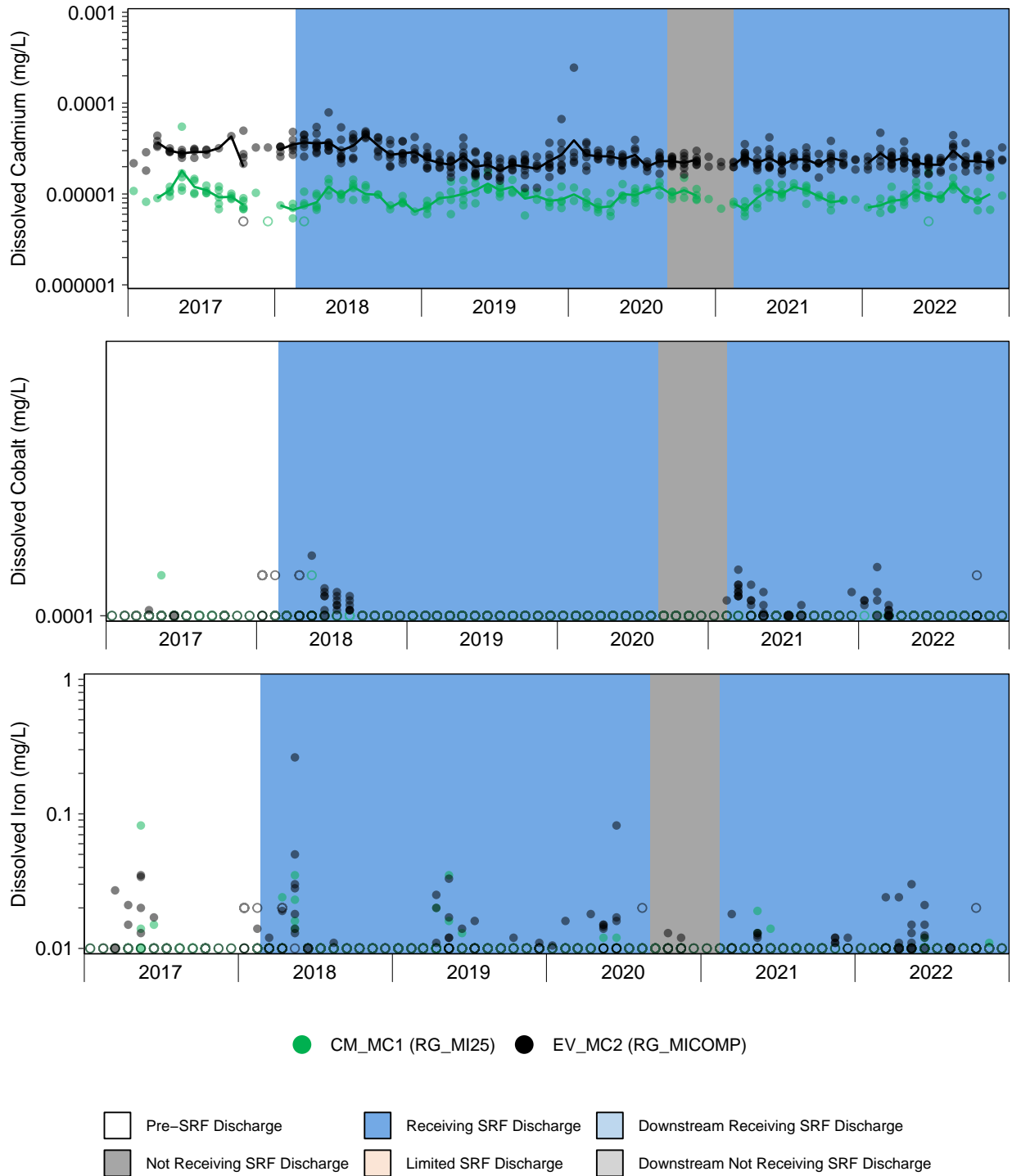
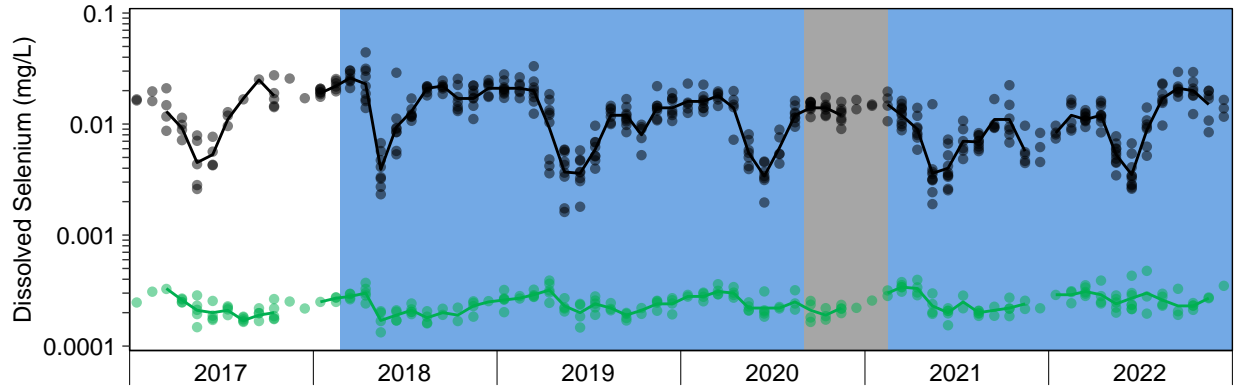


Figure D.30: Comparison of Water Quality Constituent Concentrations During SRF Operation, EVO LAEMP, Base Year to 2022

Notes: Values at the laboratory reporting limit are plotted with an open symbol. Trendlines connect means for consecutive time periods included in statistical analysis.



● CM_MC1 (RG_MI25) ● EV_MC2 (RG_MICOMP)

□ Pre-SRF Discharge	■ Receiving SRF Discharge	■ Downstream Receiving SRF Discharge
■ Not Receiving SRF Discharge	■ Limited SRF Discharge	■ Downstream Not Receiving SRF Discharge

Figure D.30: Comparison of Water Quality Constituent Concentrations During SRF Operation, EVO LAEMP, Base Year to 2022

Notes: Values at the laboratory reporting limit are plotted with an open symbol. Trendlines connect means for consecutive time periods included in statistical analysis.

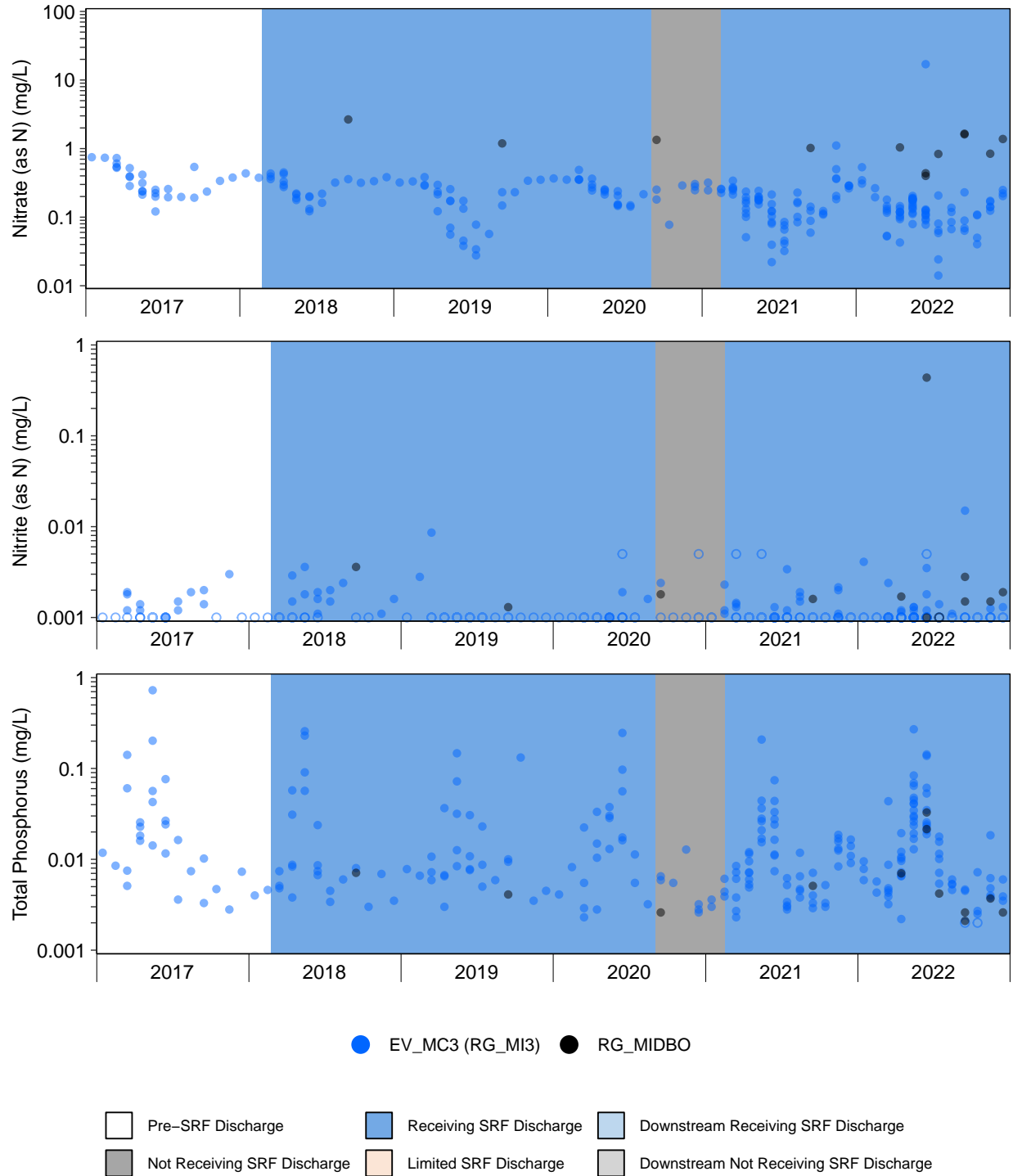


Figure D.31: Comparison of Water Quality Constituent Concentrations During SRF Operation, EVO LAEMP, Base Year to 2022

Notes: Values at the laboratory reporting limit are plotted with an open symbol. Trendlines connect means for consecutive time periods included in statistical analysis.

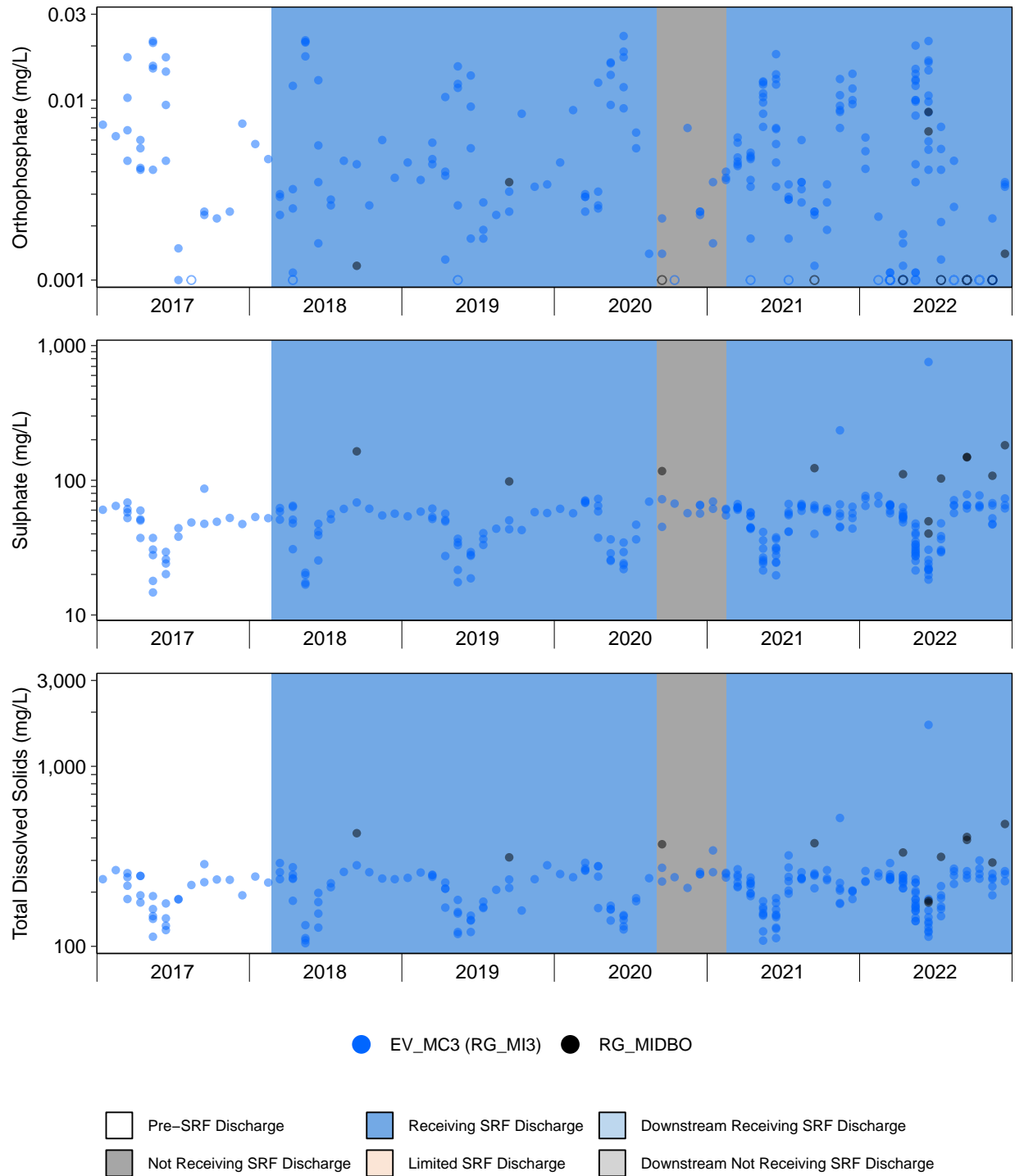


Figure D.31: Comparison of Water Quality Constituent Concentrations During SRF Operation, EVO LAEMP, Base Year to 2022

Notes: Values at the laboratory reporting limit are plotted with an open symbol. Trendlines connect means for consecutive time periods included in statistical analysis.

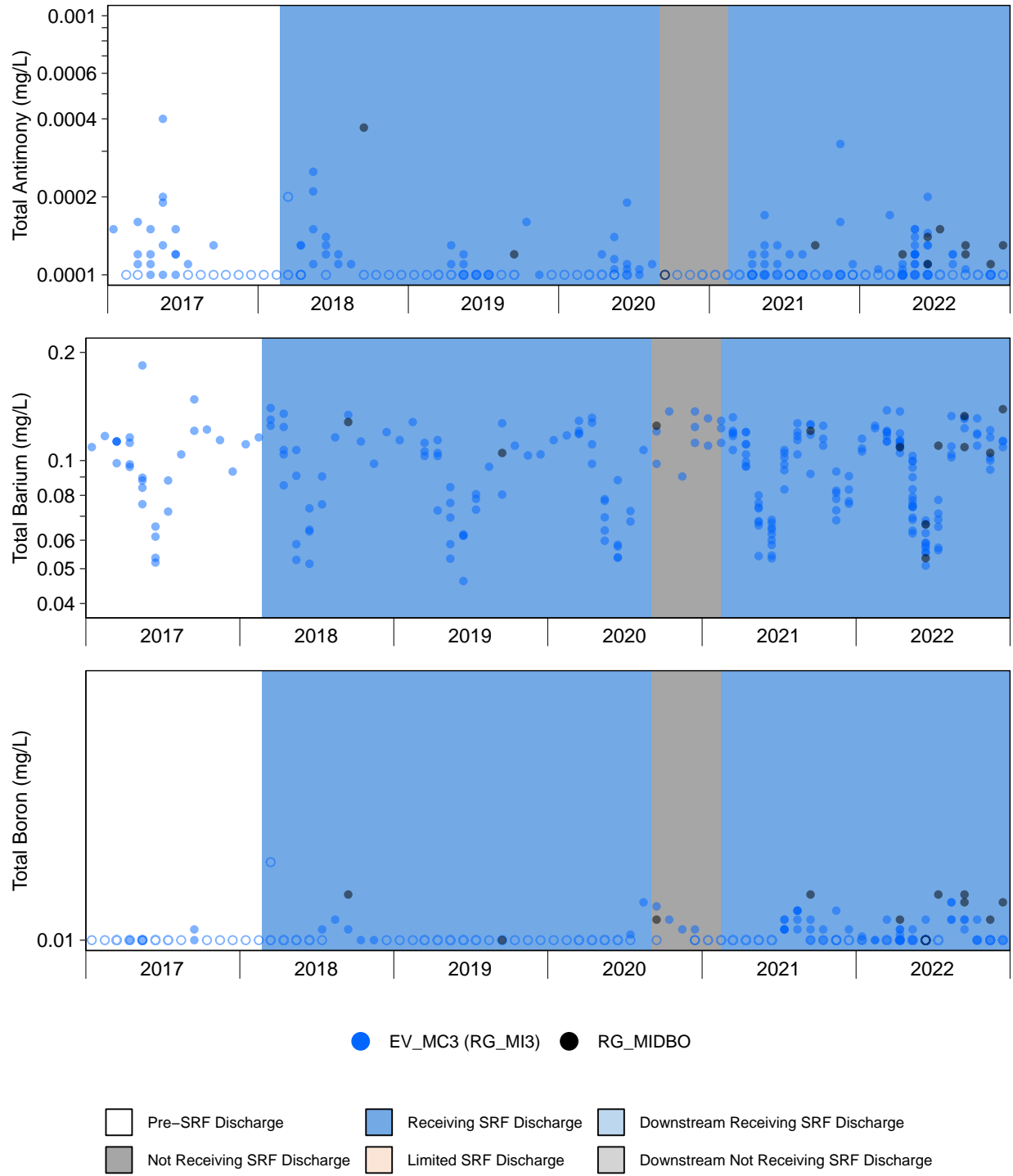


Figure D.31: Comparison of Water Quality Constituent Concentrations During SRF Operation, EVO LAEMP, Base Year to 2022

Notes: Values at the laboratory reporting limit are plotted with an open symbol. Trendlines connect means for consecutive time periods included in statistical analysis.

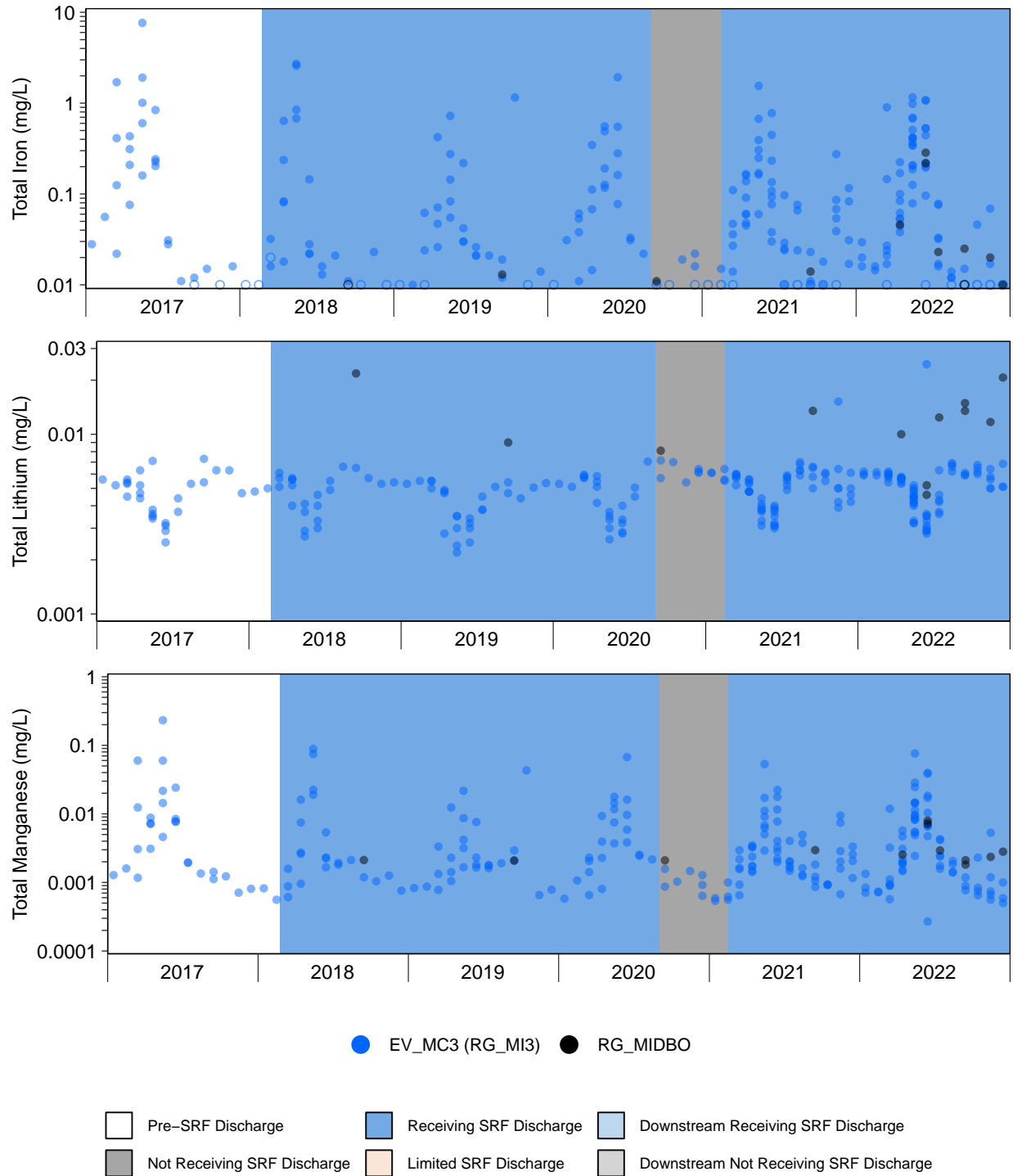


Figure D.31: Comparison of Water Quality Constituent Concentrations During SRF Operation, EVO LAEMP, Base Year to 2022

Notes: Values at the laboratory reporting limit are plotted with an open symbol. Trendlines connect means for consecutive time periods included in statistical analysis.

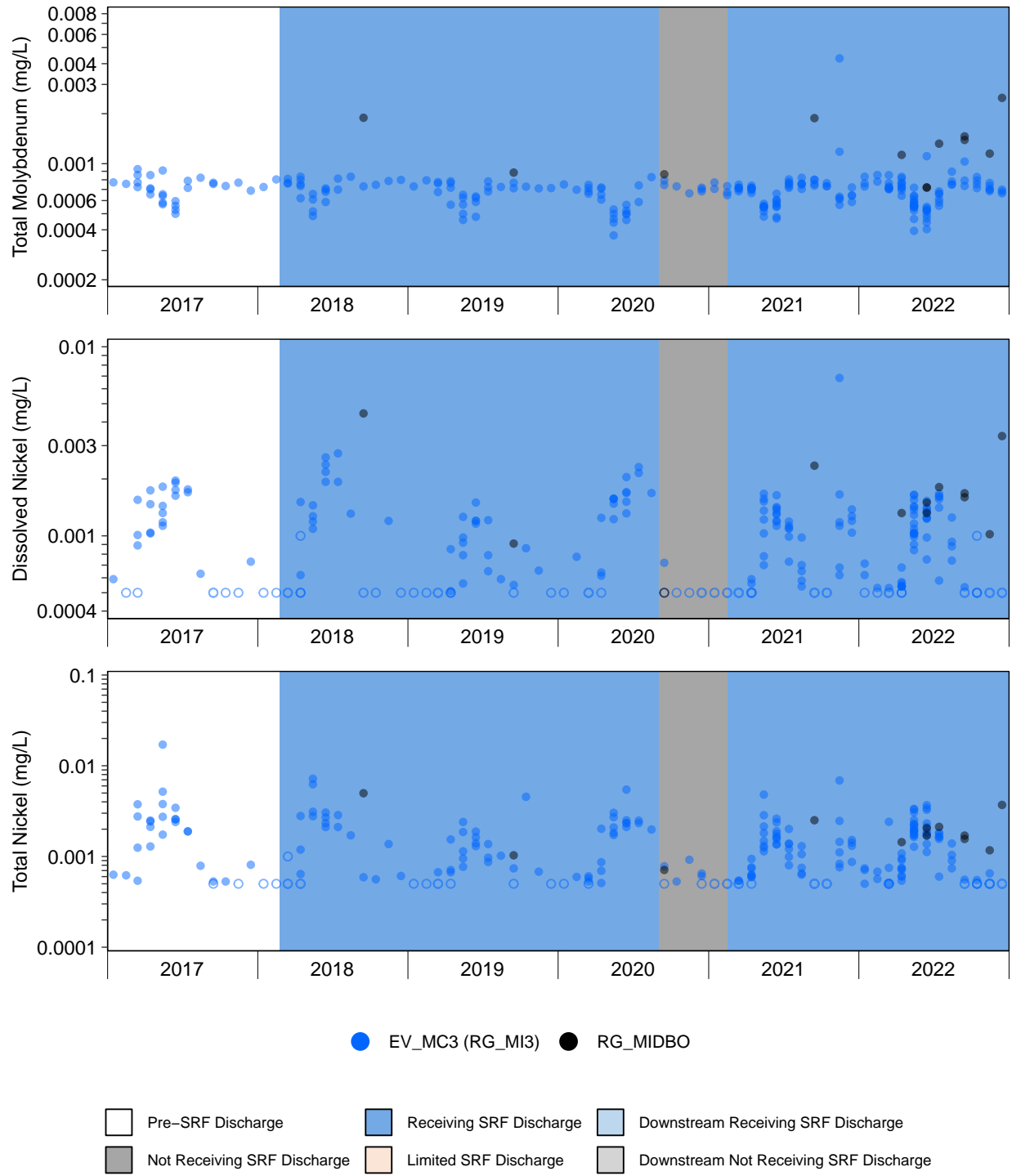


Figure D.31: Comparison of Water Quality Constituent Concentrations During SRF Operation, EVO LAEMP, Base Year to 2022

Notes: Values at the laboratory reporting limit are plotted with an open symbol. Trendlines connect means for consecutive time periods included in statistical analysis.

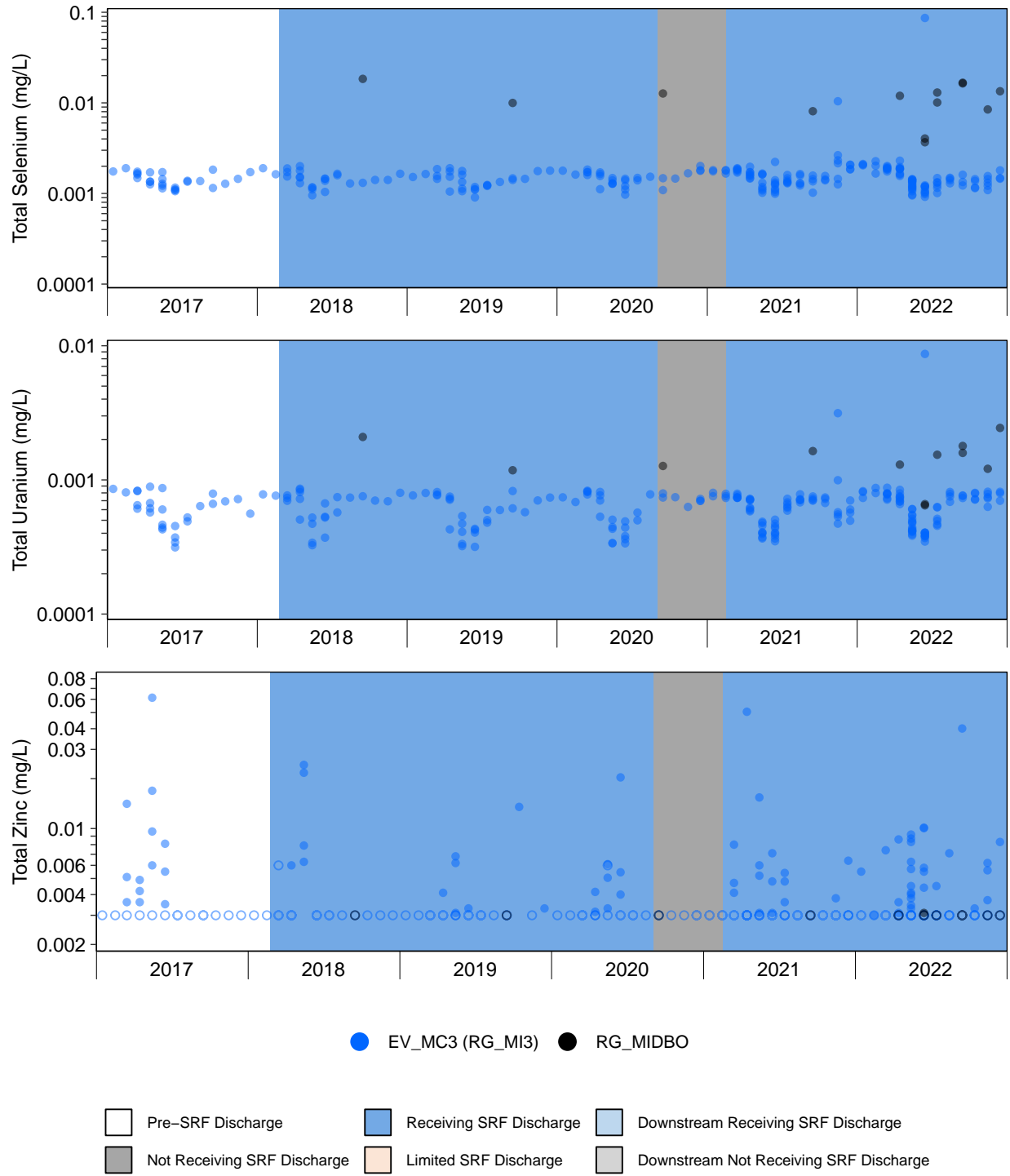


Figure D.31: Comparison of Water Quality Constituent Concentrations During SRF Operation, EVO LAEMP, Base Year to 2022

Notes: Values at the laboratory reporting limit are plotted with an open symbol. Trendlines connect means for consecutive time periods included in statistical analysis.

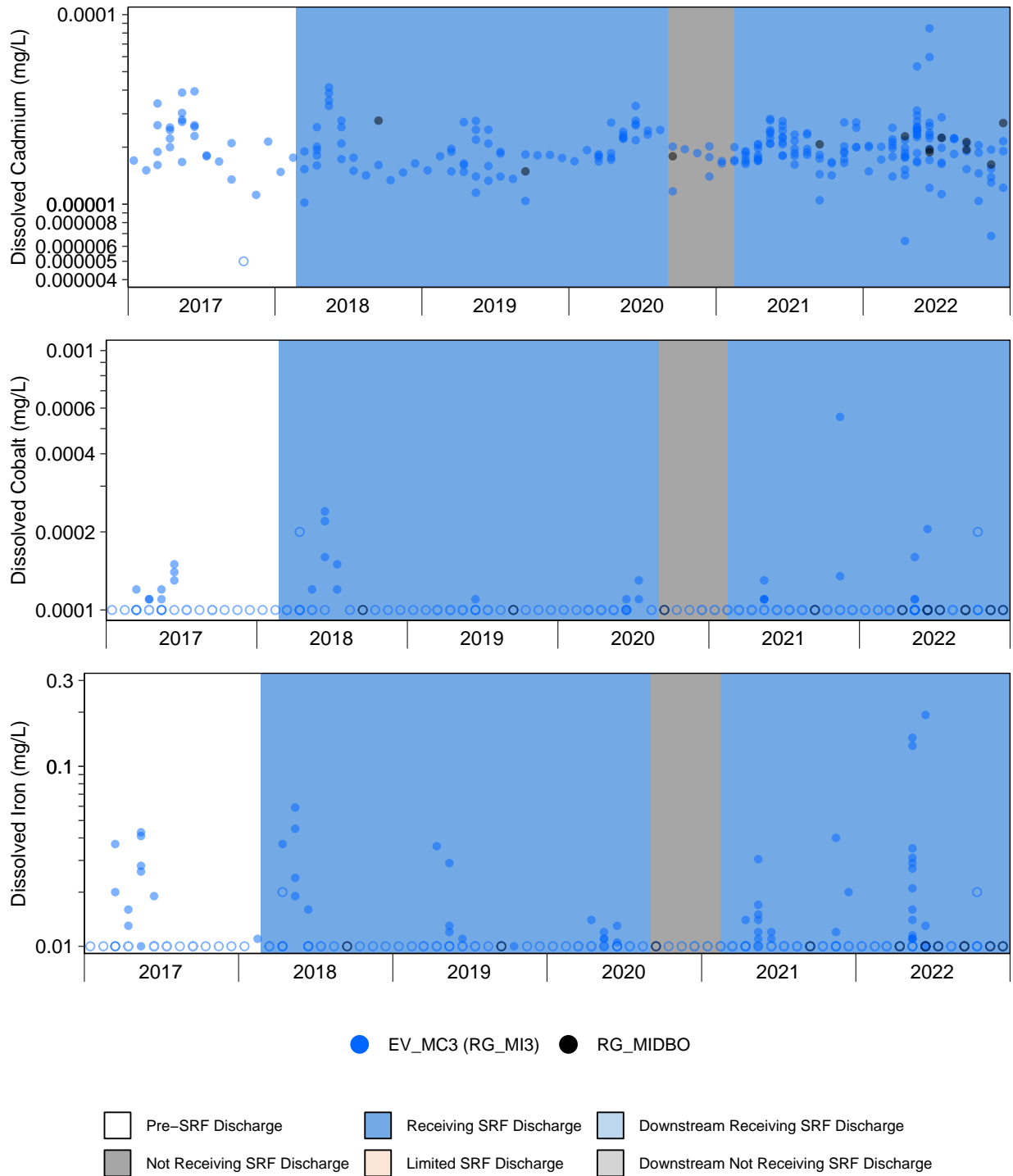
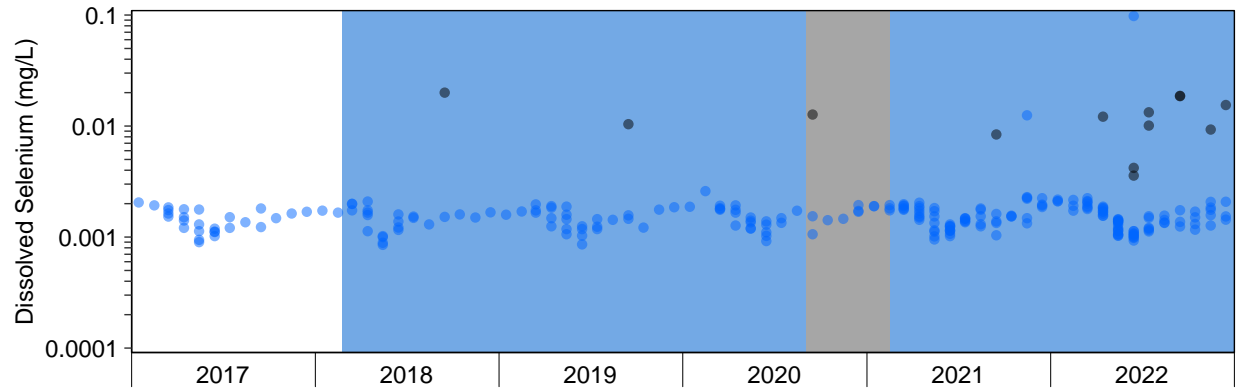


Figure D.31: Comparison of Water Quality Constituent Concentrations During SRF Operation, EVO LAEMP, Base Year to 2022

Notes: Values at the laboratory reporting limit are plotted with an open symbol. Trendlines connect means for consecutive time periods included in statistical analysis.



● EV_MC3 (RG_MI3) ● RG_MIDBO

□ Pre-SRF Discharge	■ Receiving SRF Discharge	■ Downstream Receiving SRF Discharge
■ Not Receiving SRF Discharge	■ Limited SRF Discharge	■ Downstream Not Receiving SRF Discharge

Figure D.31: Comparison of Water Quality Constituent Concentrations During SRF Operation, EVO LAEMP, Base Year to 2022

Notes: Values at the laboratory reporting limit are plotted with an open symbol. Trendlines connect means for consecutive time periods included in statistical analysis.

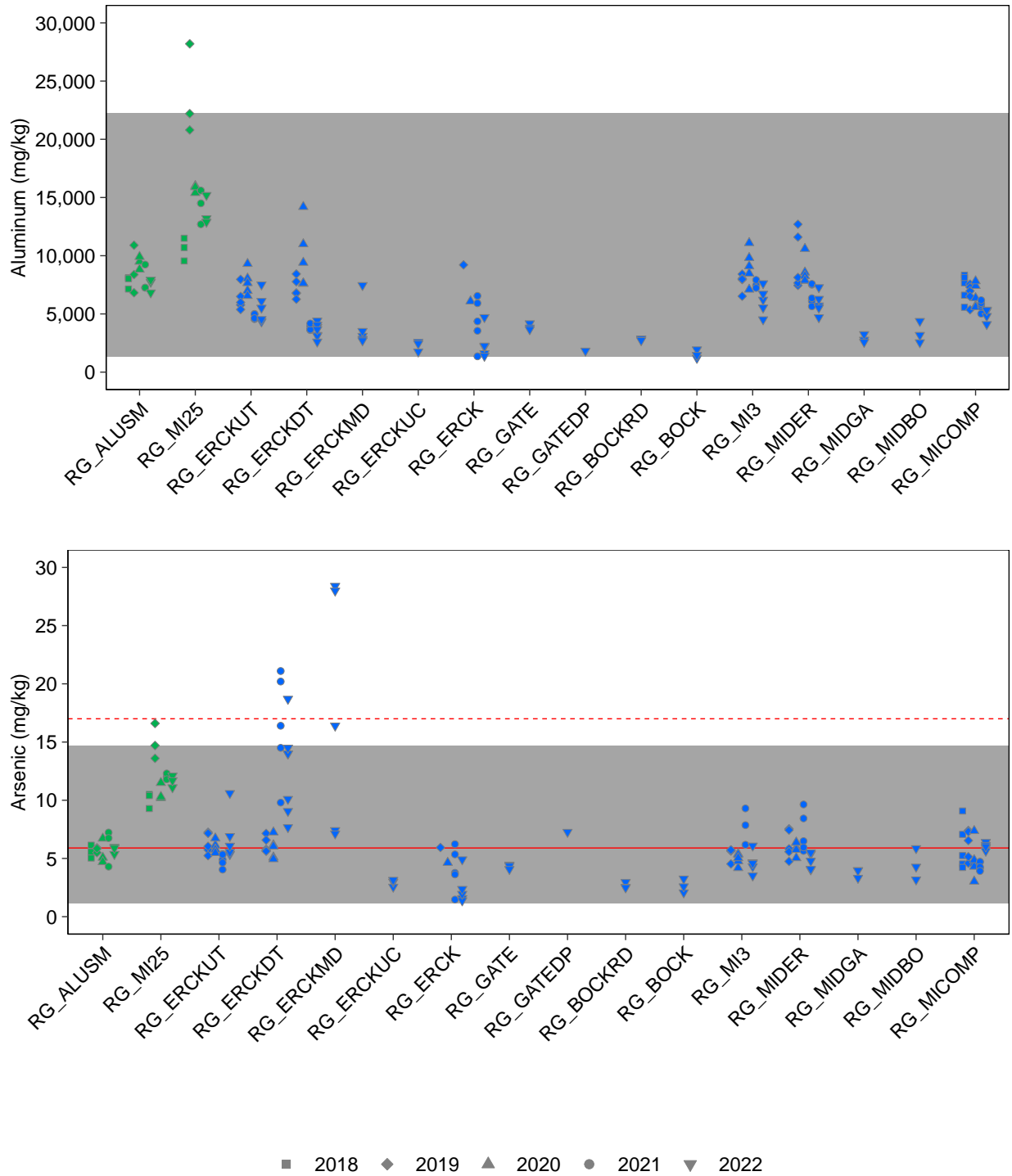


Figure D.32: Sediment Metal and Polycyclic Aromatic Hydrocarbon (PAH) Concentrations in September, EVO LAEMP, 2018 to 2022

Notes: Green symbols represent reference areas and blue symbols represent exposed areas. Solid red line = Lower BC WSQG; broken red line = Upper BC WSQG. BC WSQG = British Columbia Working Sediment Quality Guideline (BCMOECCS 2021a) and approved BC Sediment Quality Guideline for Selenium (BCMOECCS 2021b). Shading represents the normal range which represents the 2.5th to 97.5th percentiles of 2017 and 2020 regional reference area data. Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL value.

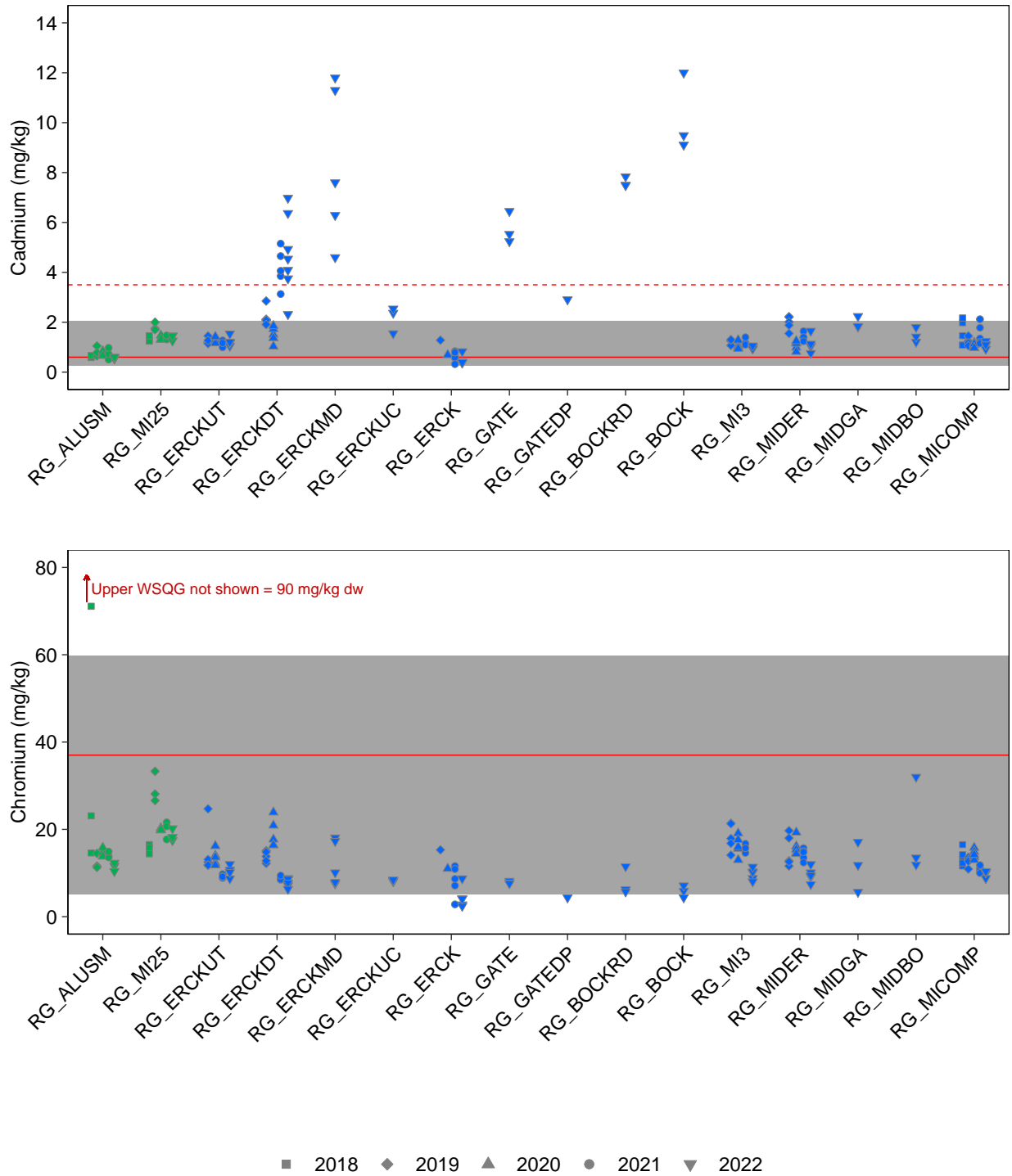


Figure D.32: Sediment Metal and Polycyclic Aromatic Hydrocarbon (PAH) Concentrations in September, EVO LAEMP, 2018 to 2022

Notes: Green symbols represent reference areas and blue symbols represent exposed areas. Solid red line = Lower BC WSQG; broken red line = Upper BC WSQG. BC WSQG = British Columbia Working Sediment Quality Guideline (BCMOECCS 2021a) and approved BC Sediment Quality Guideline for Selenium (BCMOECCS 2021b). Shading represents the normal range which represents the 2.5th to 97.5th percentiles of 2017 and 2020 regional reference area data. Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL value.

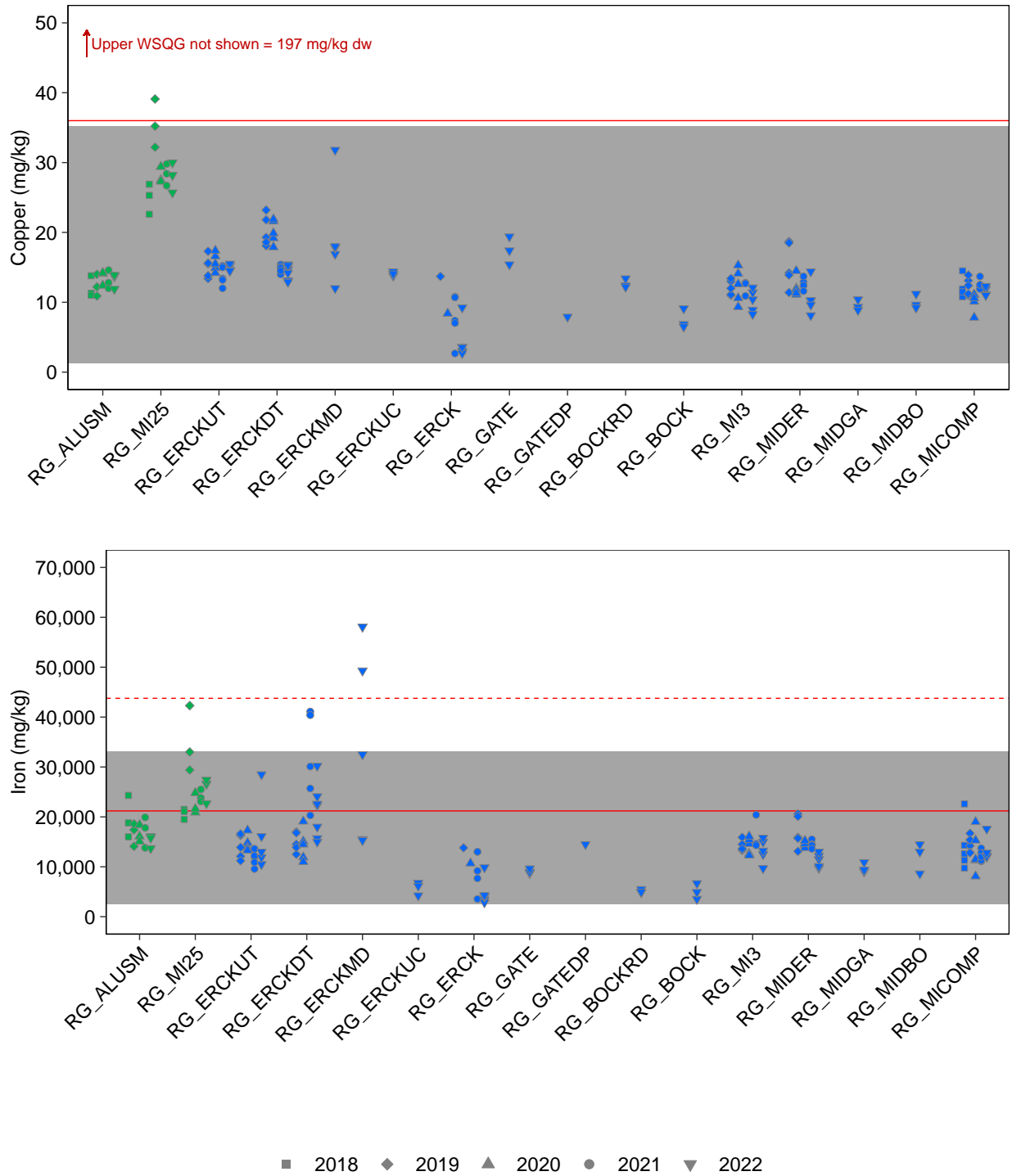


Figure D.32: Sediment Metal and Polycyclic Aromatic Hydrocarbon (PAH) Concentrations in September, EVO LAEMP, 2018 to 2022

Notes: Green symbols represent reference areas and blue symbols represent exposed areas. Solid red line = Lower BC WSQG; broken red line = Upper BC WSQG. BC WSQG = British Columbia Working Sediment Quality Guideline (BCMOECCS 2021a) and approved BC Sediment Quality Guideline for Selenium (BCMOECCS 2021b). Shading represents the normal range which represents the 2.5th to 97.5th percentiles of 2017 and 2020 regional reference area data. Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL value.

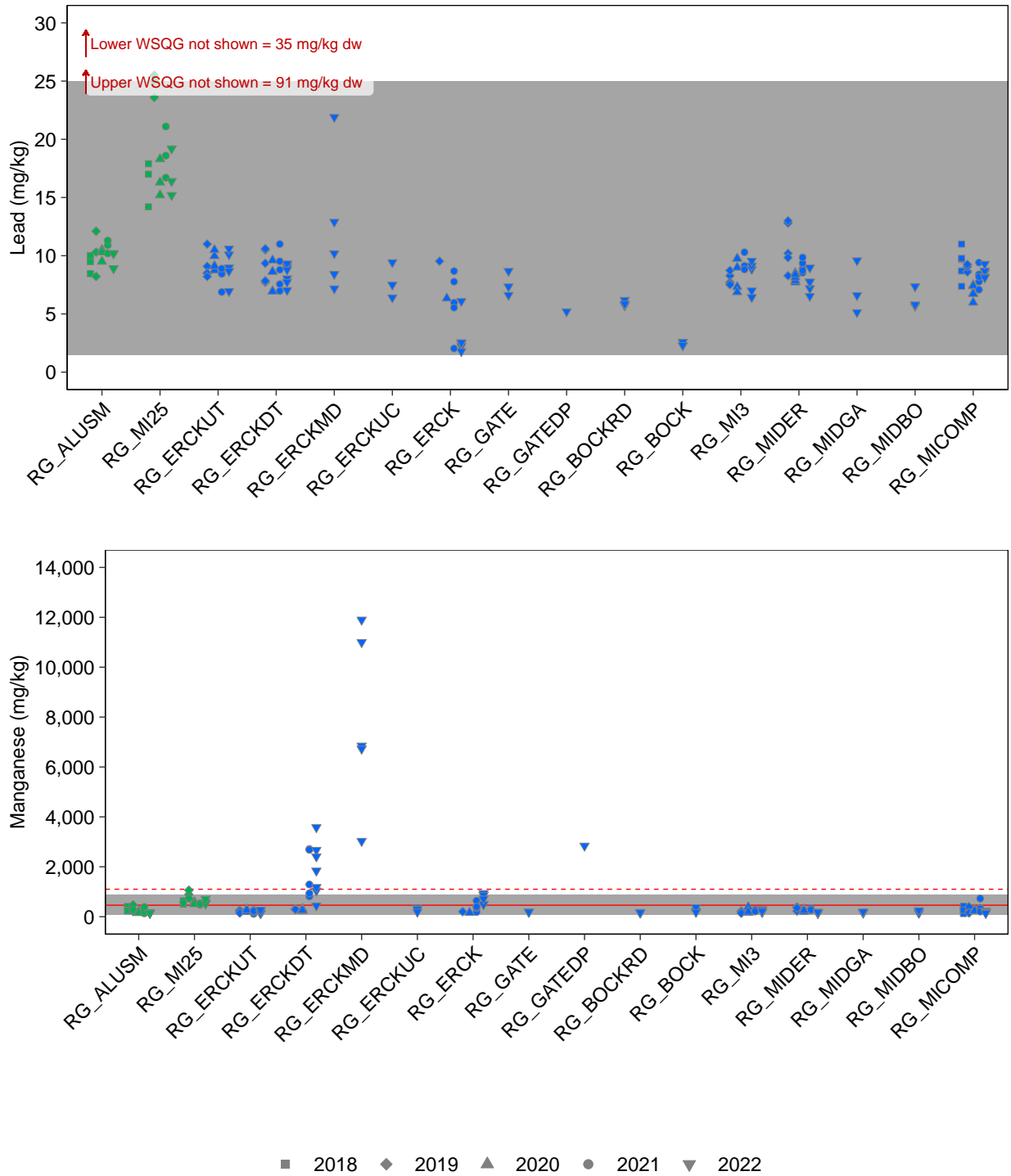


Figure D.32: Sediment Metal and Polycyclic Aromatic Hydrocarbon (PAH) Concentrations in September, EVO LAEMP, 2018 to 2022

Notes: Green symbols represent reference areas and blue symbols represent exposed areas. Solid red line = Lower BC WSQG; broken red line = Upper BC WSQG. BC WSQG = British Columbia Working Sediment Quality Guideline (BCMOECCS 2021a) and approved BC Sediment Quality Guideline for Selenium (BCMOECCS 2021b). Shading represents the normal range which represents the 2.5th to 97.5th percentiles of 2017 and 2020 regional reference area data. Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL value.

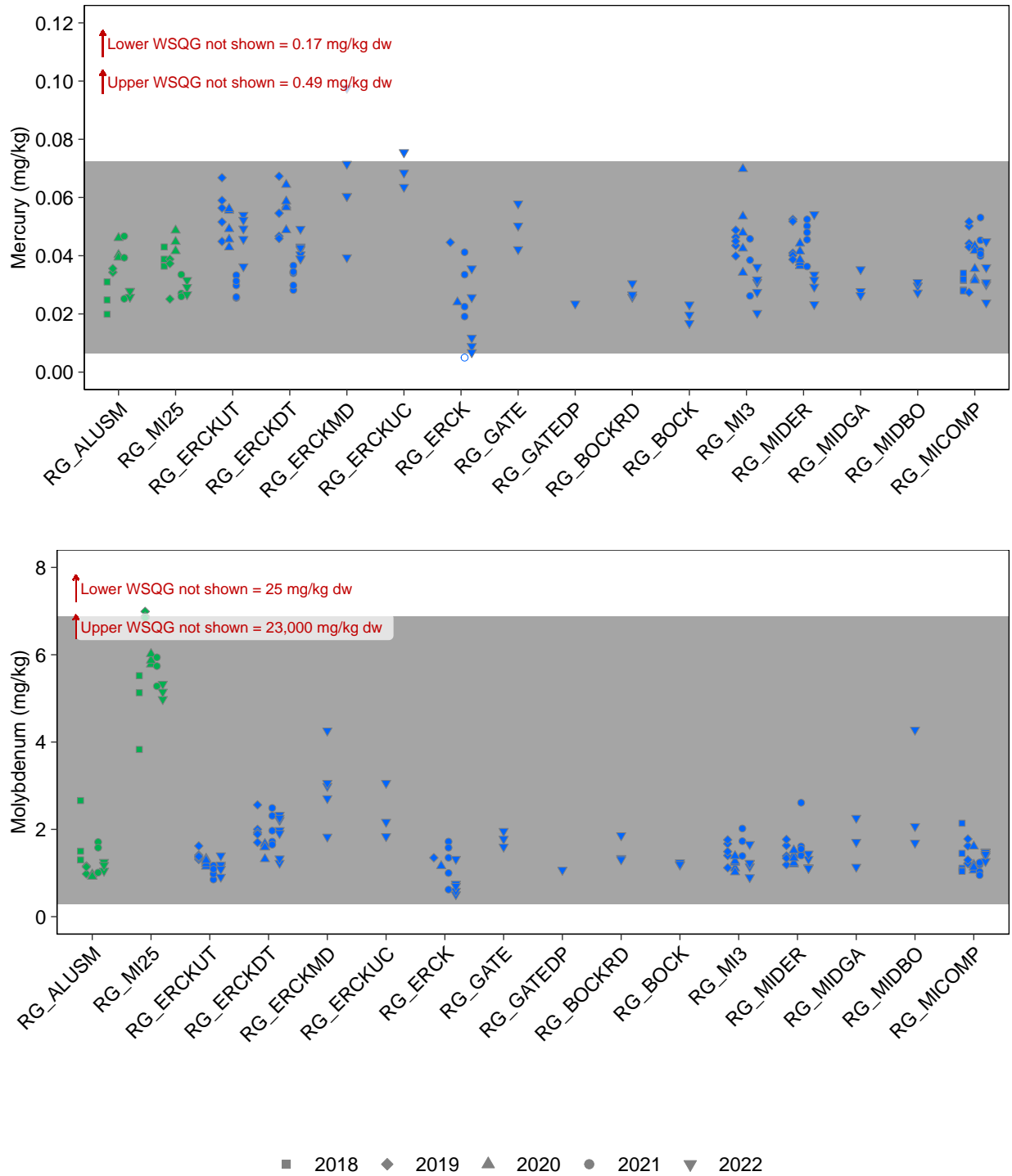


Figure D.32: Sediment Metal and Polycyclic Aromatic Hydrocarbon (PAH) Concentrations in September, EVO LAEMP, 2018 to 2022

Notes: Green symbols represent reference areas and blue symbols represent exposed areas. Solid red line = Lower BC WSQG; broken red line = Upper BC WSQG. BC WSQG = British Columbia Working Sediment Quality Guideline (BCMOECCS 2021a) and approved BC Sediment Quality Guideline for Selenium (BCMOECCS 2021b). Shading represents the normal range which represents the 2.5th to 97.5th percentiles of 2017 and 2020 regional reference area data. Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL value.

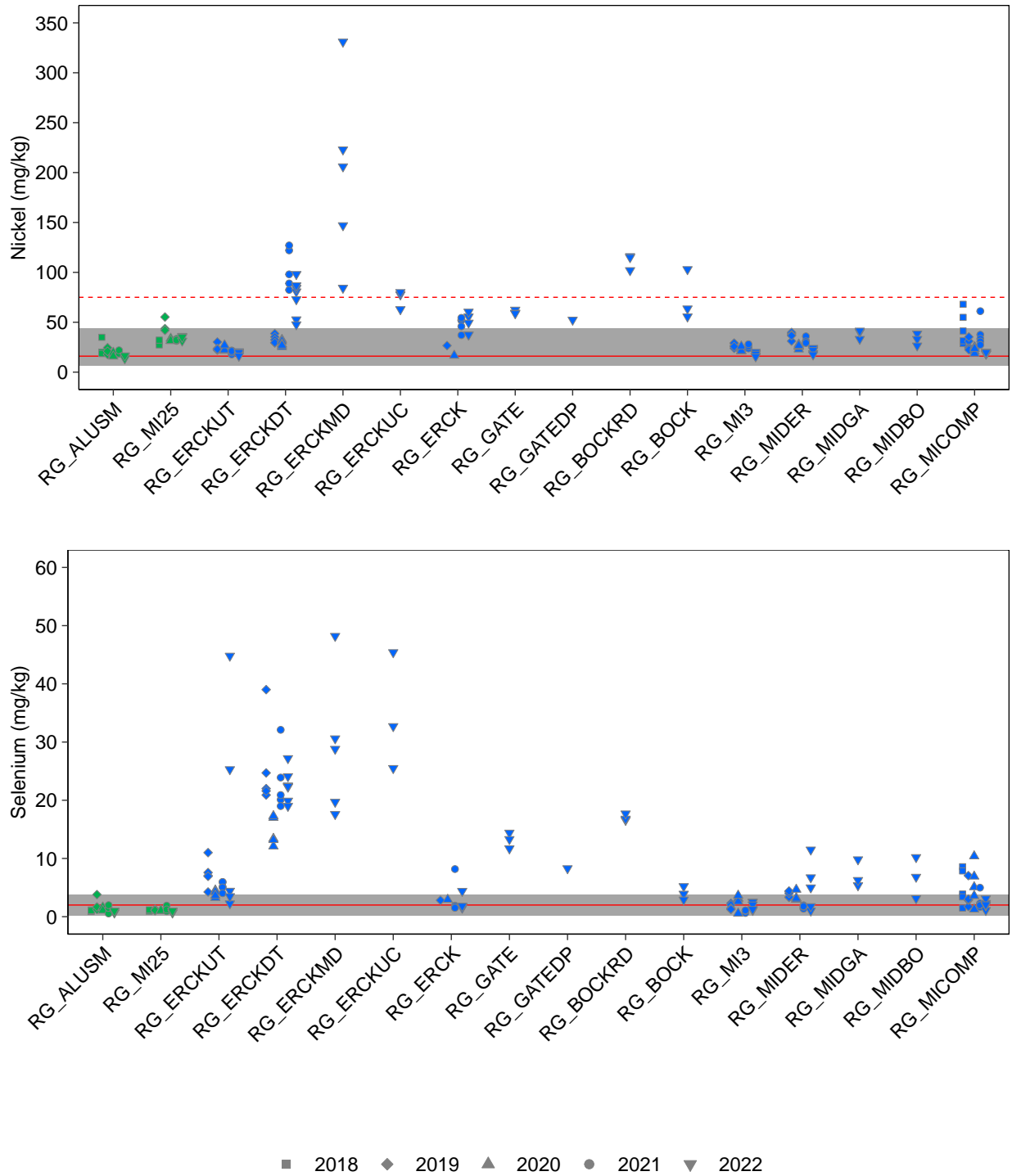


Figure D.32: Sediment Metal and Polycyclic Aromatic Hydrocarbon (PAH) Concentrations in September, EVO LAEMP, 2018 to 2022

Notes: Green symbols represent reference areas and blue symbols represent exposed areas. Solid red line = Lower BC WSQG; broken red line = Upper BC WSQG. BC WSQG = British Columbia Working Sediment Quality Guideline (BCMOECCS 2021a) and approved BC Sediment Quality Guideline for Selenium (BCMOECCS 2021b). Shading represents the normal range which represents the 2.5th to 97.5th percentiles of 2017 and 2020 regional reference area data. Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL value.

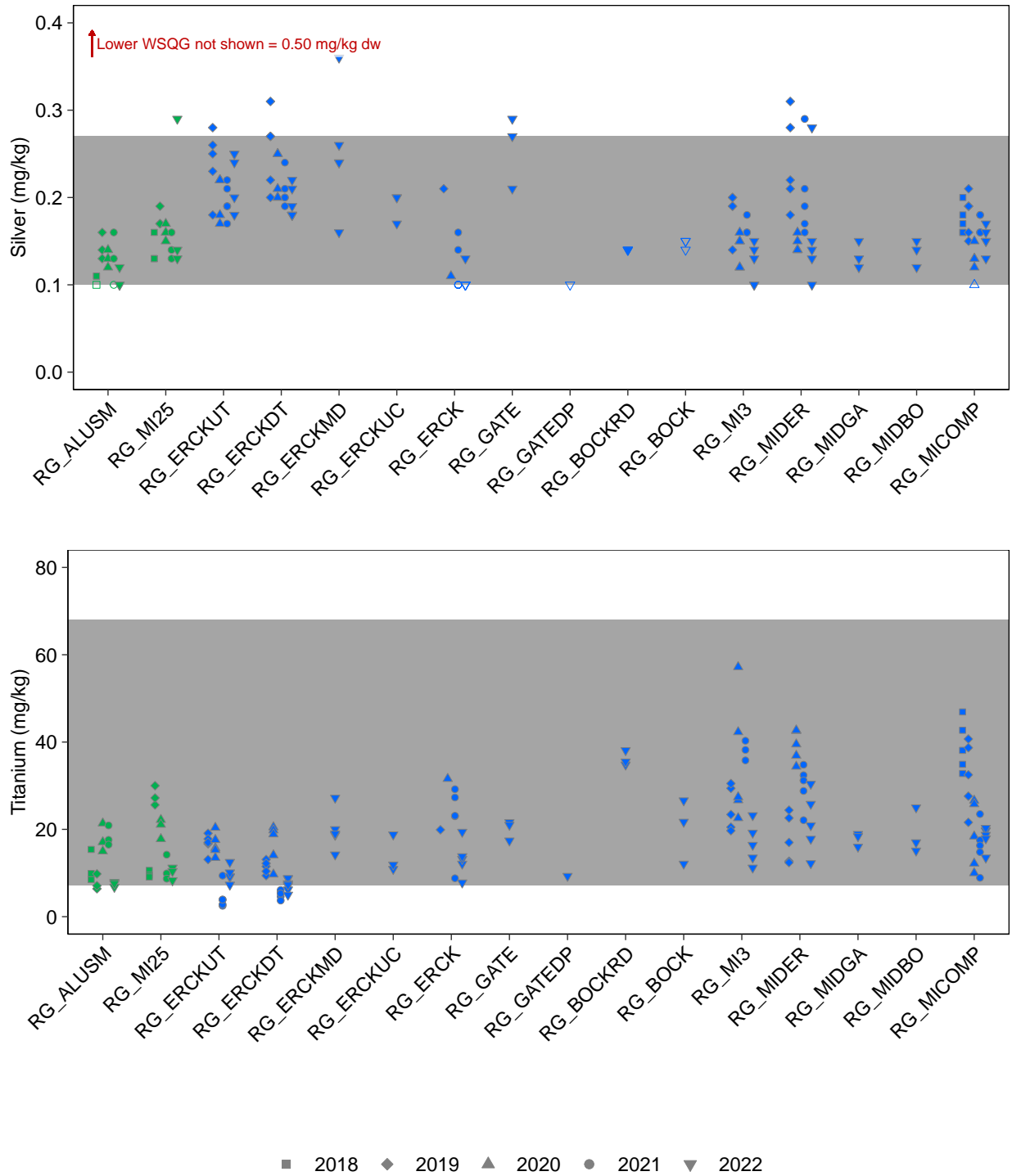


Figure D.32: Sediment Metal and Polycyclic Aromatic Hydrocarbon (PAH) Concentrations in September, EVO LAEMP, 2018 to 2022

Notes: Green symbols represent reference areas and blue symbols represent exposed areas. Solid red line = Lower BC WSQG; broken red line = Upper BC WSQG. BC WSQG = British Columbia Working Sediment Quality Guideline (BCMOECCS 2021a) and approved BC Sediment Quality Guideline for Selenium (BCMOECCS 2021b). Shading represents the normal range which represents the 2.5th to 97.5th percentiles of 2017 and 2020 regional reference area data. Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL value.

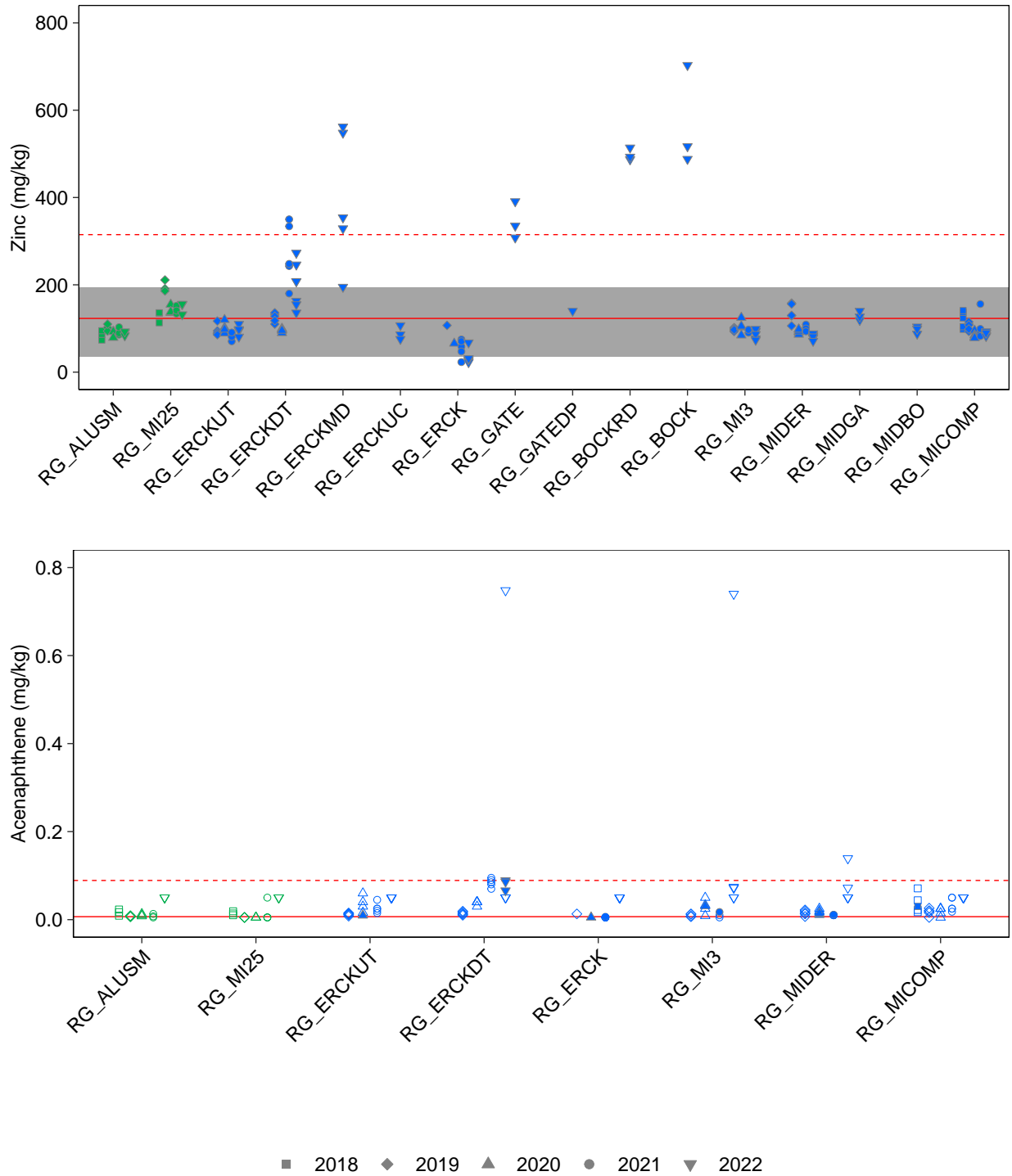


Figure D.32: Sediment Metal and Polycyclic Aromatic Hydrocarbon (PAH) Concentrations in September, EVO LAEMP, 2018 to 2022

Notes: Green symbols represent reference areas and blue symbols represent exposed areas. Solid red line = Lower BC WSQG; broken red line = Upper BC WSQG. BC WSQG = British Columbia Working Sediment Quality Guideline (BCMOECCS 2021a) and approved BC Sediment Quality Guideline for Selenium (BCMOECCS 2021b). Shading represents the normal range which represents the 2.5th to 97.5th percentiles of 2017 and 2020 regional reference area data. Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL value.

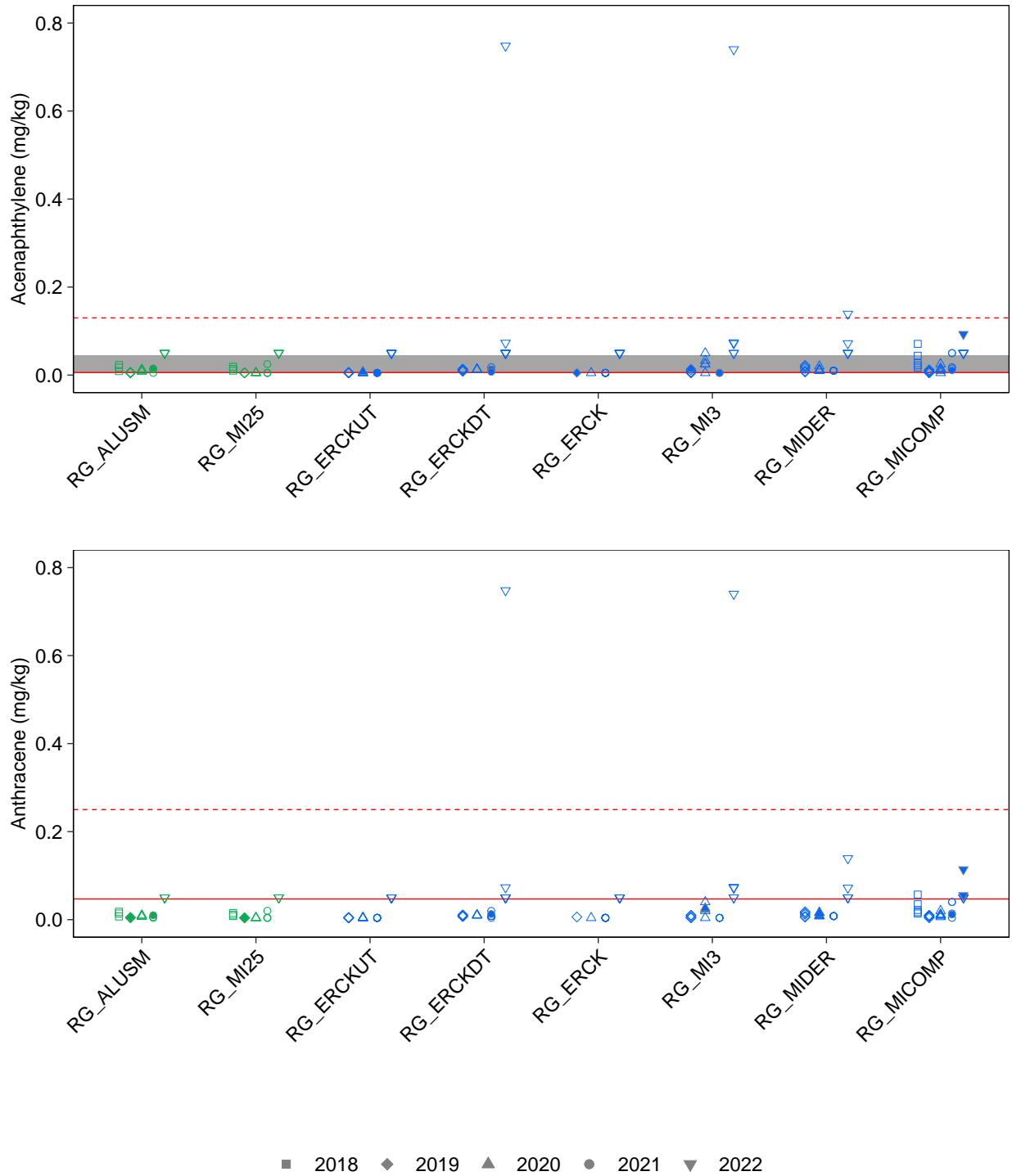


Figure D.32: Sediment Metal and Polycyclic Aromatic Hydrocarbon (PAH) Concentrations in September, EVO LAEMP, 2018 to 2022

Notes: Green symbols represent reference areas and blue symbols represent exposed areas. Solid red line = Lower BC WSQG; broken red line = Upper BC WSQG. BC WSQG = British Columbia Working Sediment Quality Guideline (BCMOECCS 2021a) and approved BC Sediment Quality Guideline for Selenium (BCMOECCS 2021b). Shading represents the normal range which represents the 2.5th to 97.5th percentiles of 2017 and 2020 regional reference area data. Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL value.

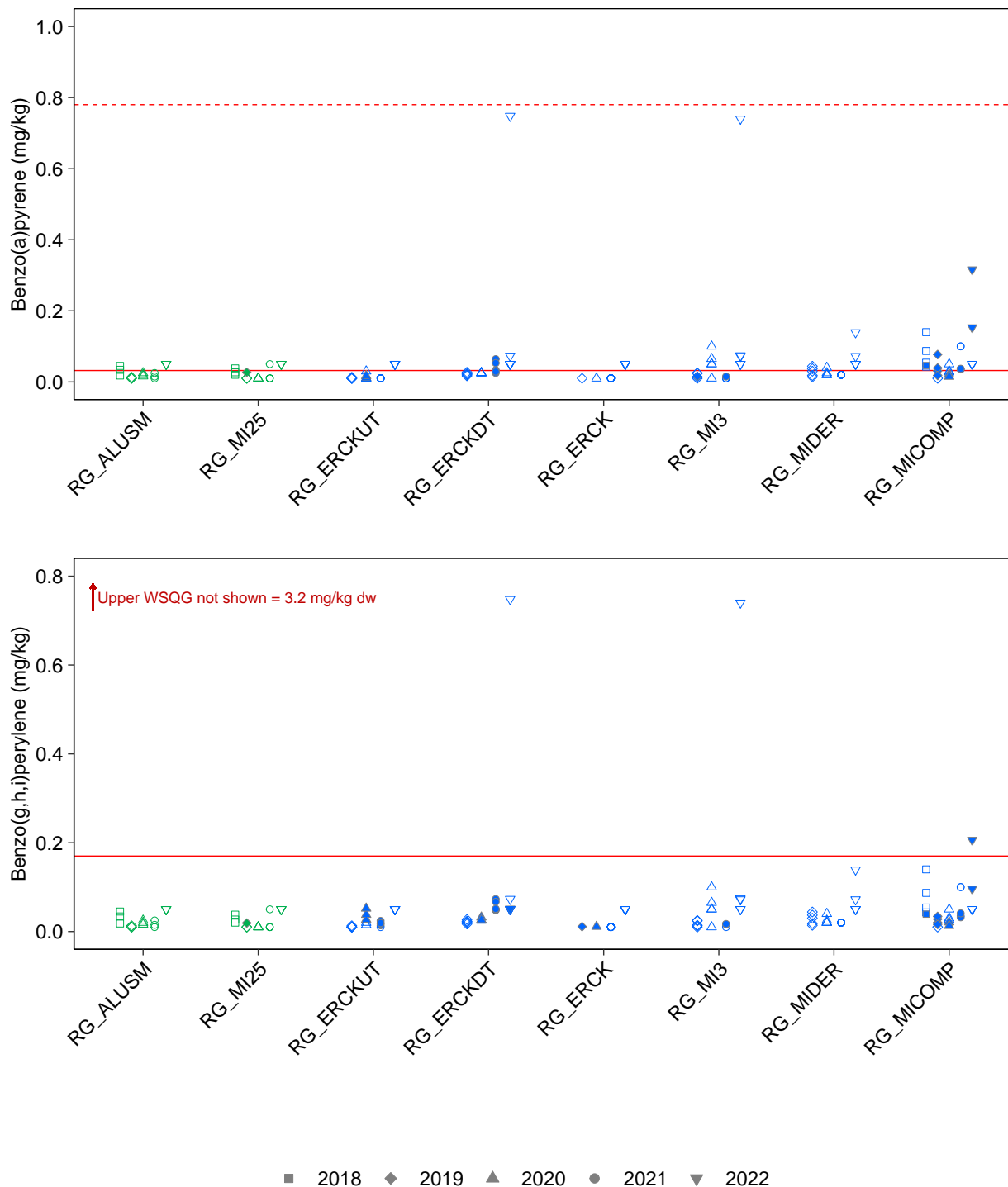


Figure D.32: Sediment Metal and Polycyclic Aromatic Hydrocarbon (PAH) Concentrations in September, EVO LAEMP, 2018 to 2022

Notes: Green symbols represent reference areas and blue symbols represent exposed areas. Solid red line = Lower BC WSQG; broken red line = Upper BC WSQG. BC WSQG = British Columbia Working Sediment Quality Guideline (BCMOECCS 2021a) and approved BC Sediment Quality Guideline for Selenium (BCMOECCS 2021b). Shading represents the normal range which represents the 2.5th to 97.5th percentiles of 2017 and 2020 regional reference area data. Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL value.

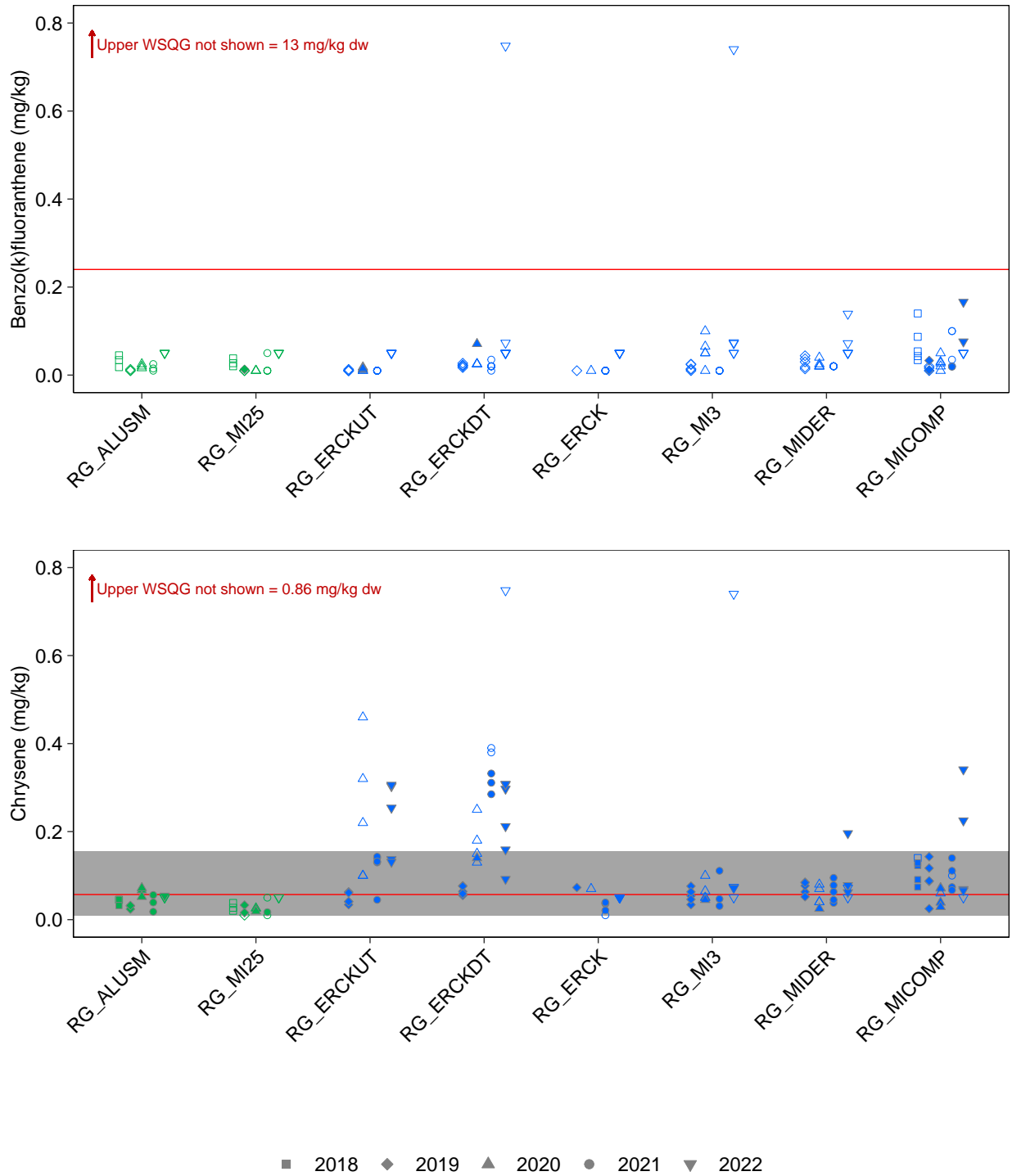


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Notes: Green symbols represent reference areas and blue symbols represent exposed areas. Solid red line = Lower BC WSQG; broken red line = Upper BC WSQG. BC WSQG = British Columbia Working Sediment Quality Guideline (BCMOECCS 2021a) and approved BC Sediment Quality Guideline for Selenium (BCMOECCS 2021b). Shading represents the normal range which represents the 2.5th to 97.5th percentiles of 2017 and 2020 regional reference area data. Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL value.

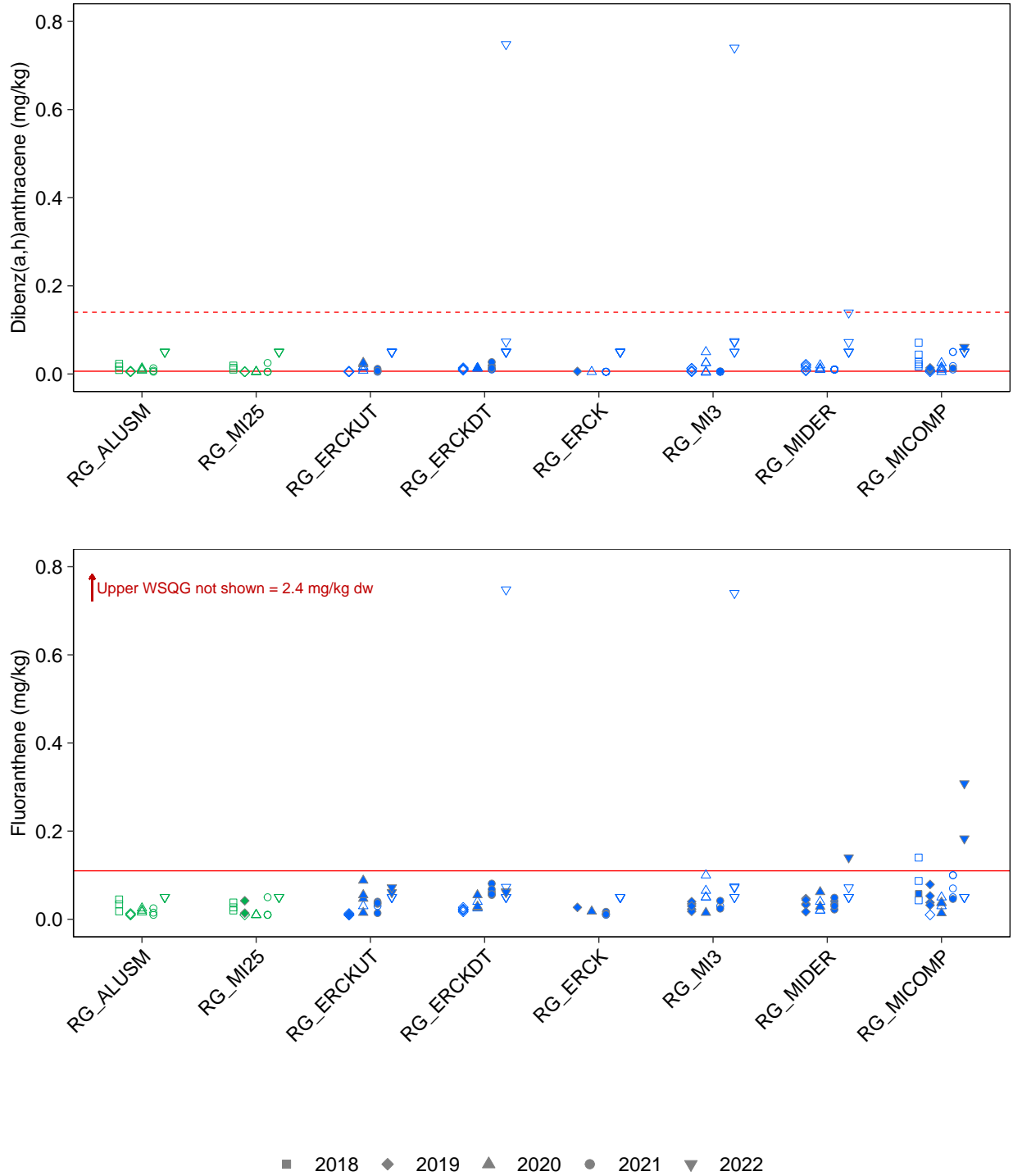


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Notes: Green symbols represent reference areas and blue symbols represent exposed areas. Solid red line = Lower BC WSQG; broken red line = Upper BC WSQG. BC WSQG = British Columbia Working Sediment Quality Guideline (BCMOECCS 2021a) and approved BC Sediment Quality Guideline for Selenium (BCMOECCS 2021b). Shading represents the normal range which represents the 2.5th to 97.5th percentiles of 2017 and 2020 regional reference area data. Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL value.

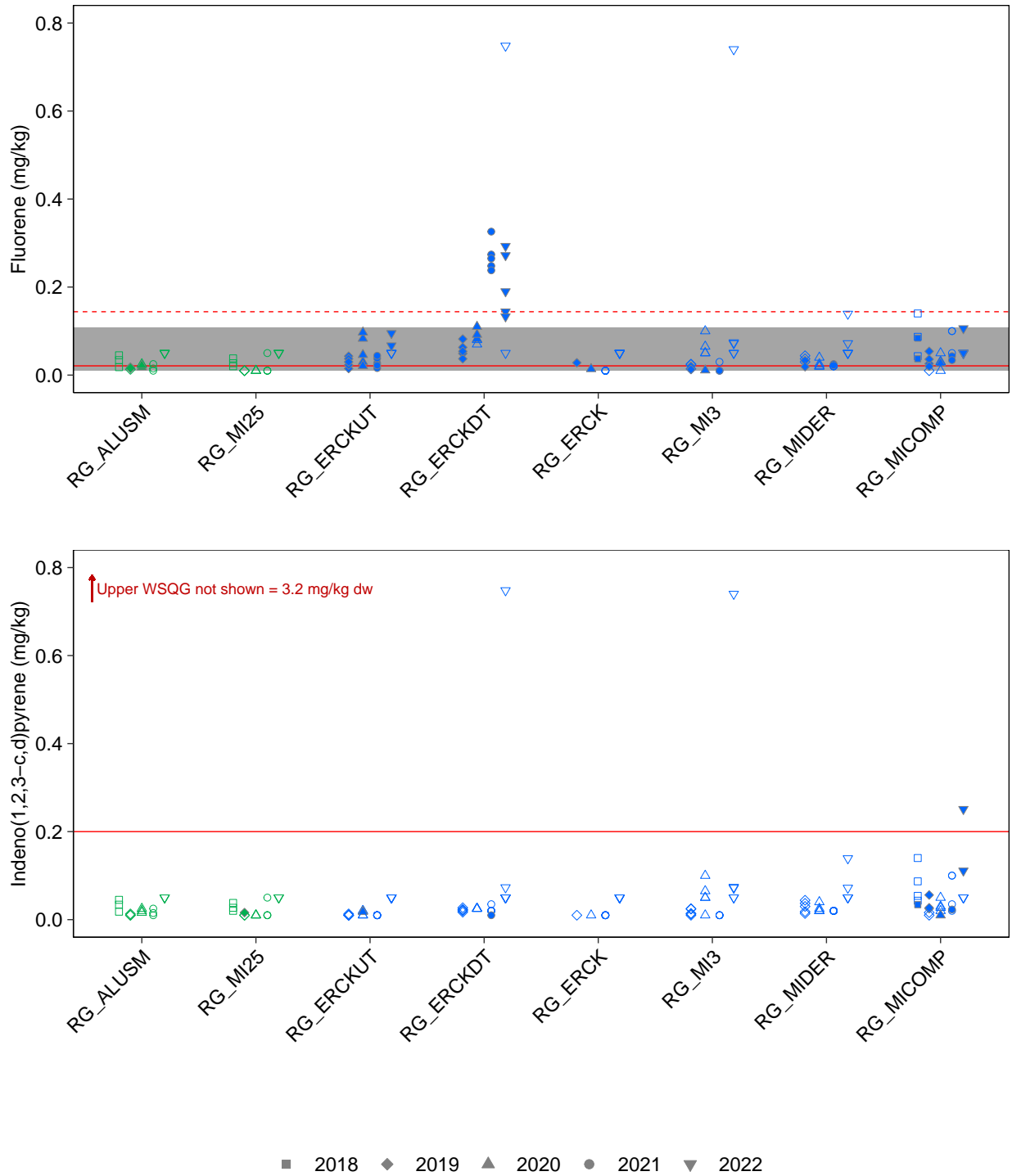


Figure D.32: Sediment Metal and Polycyclic Aromatic Hydrocarbon (PAH) Concentrations in September, EVO LAEMP, 2018 to 2022

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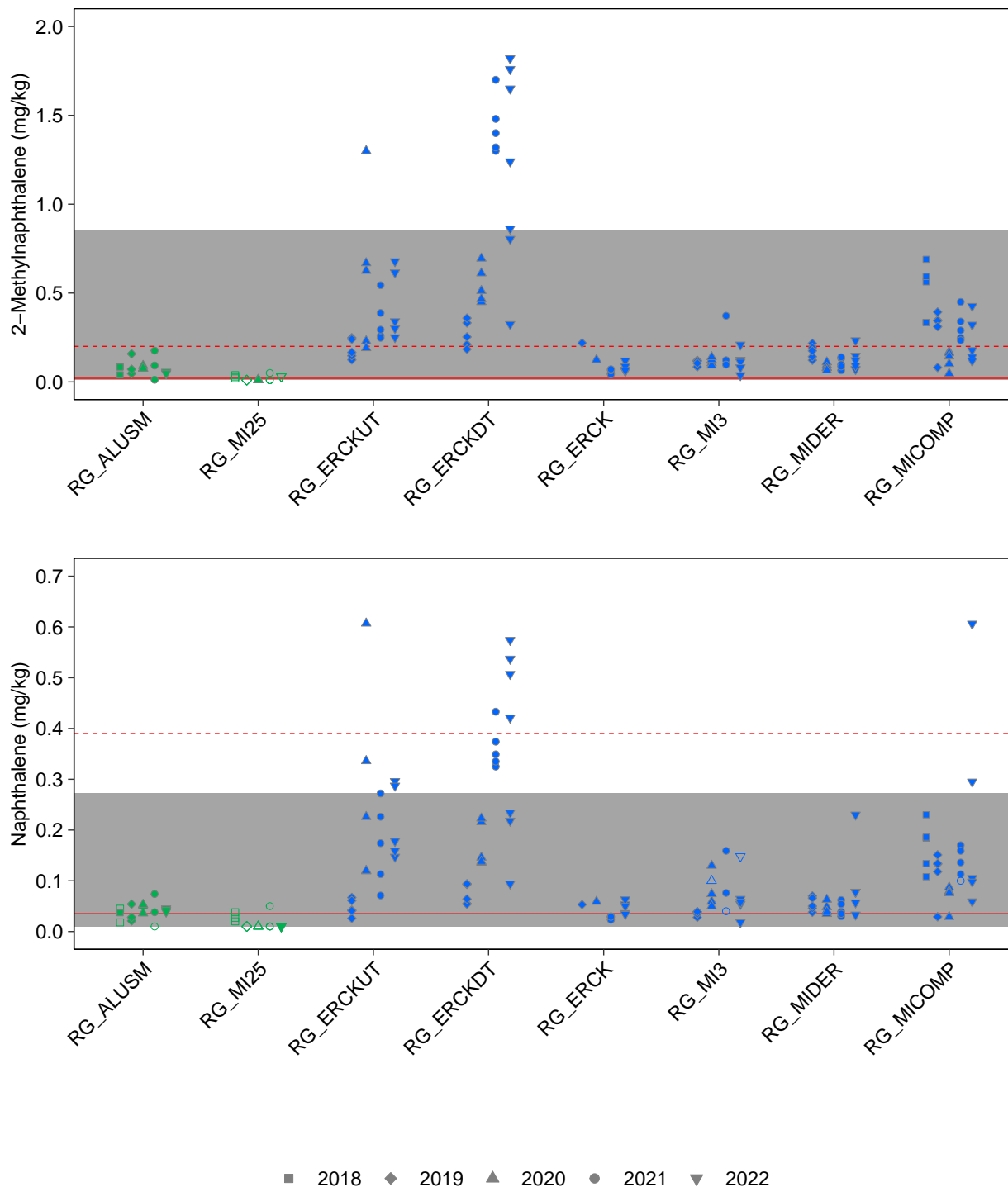


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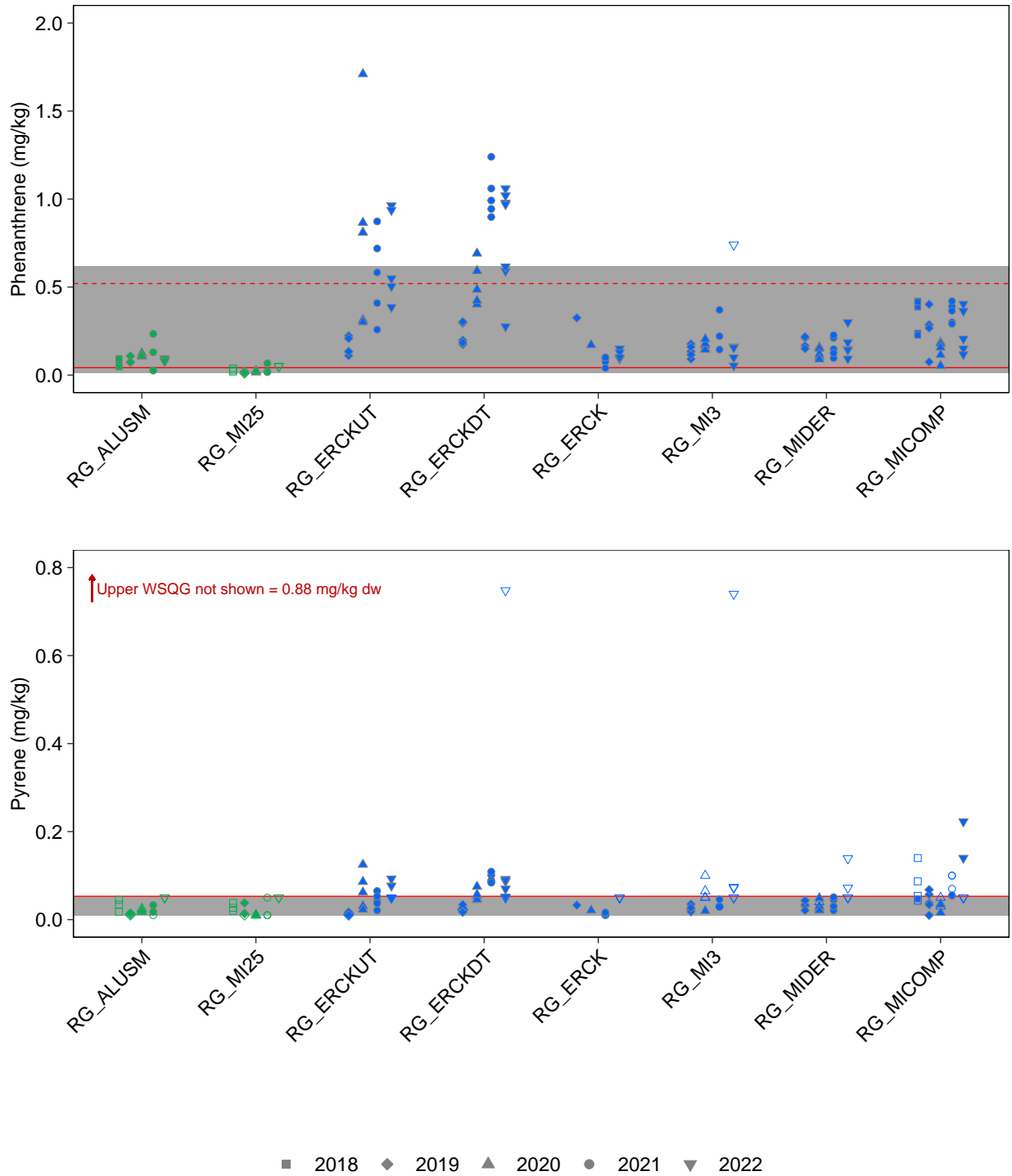


Figure D.32: Sediment Metal and Polycyclic Aromatic Hydrocarbon (PAH) Concentrations in September, EVO LAEMP, 2018 to 2022

Notes: Green symbols represent reference areas and blue symbols represent exposed areas. Solid red line = Lower BC WSQG; broken red line = Upper BC WSQG. BC WSQG = British Columbia Working Sediment Quality Guideline (BCMOECCS 2021a) and approved BC Sediment Quality Guideline for Selenium (BCMOECCS 2021b). Shading represents the normal range which represents the 2.5th to 97.5th percentiles of 2017 and 2020 regional reference area data. Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL value.

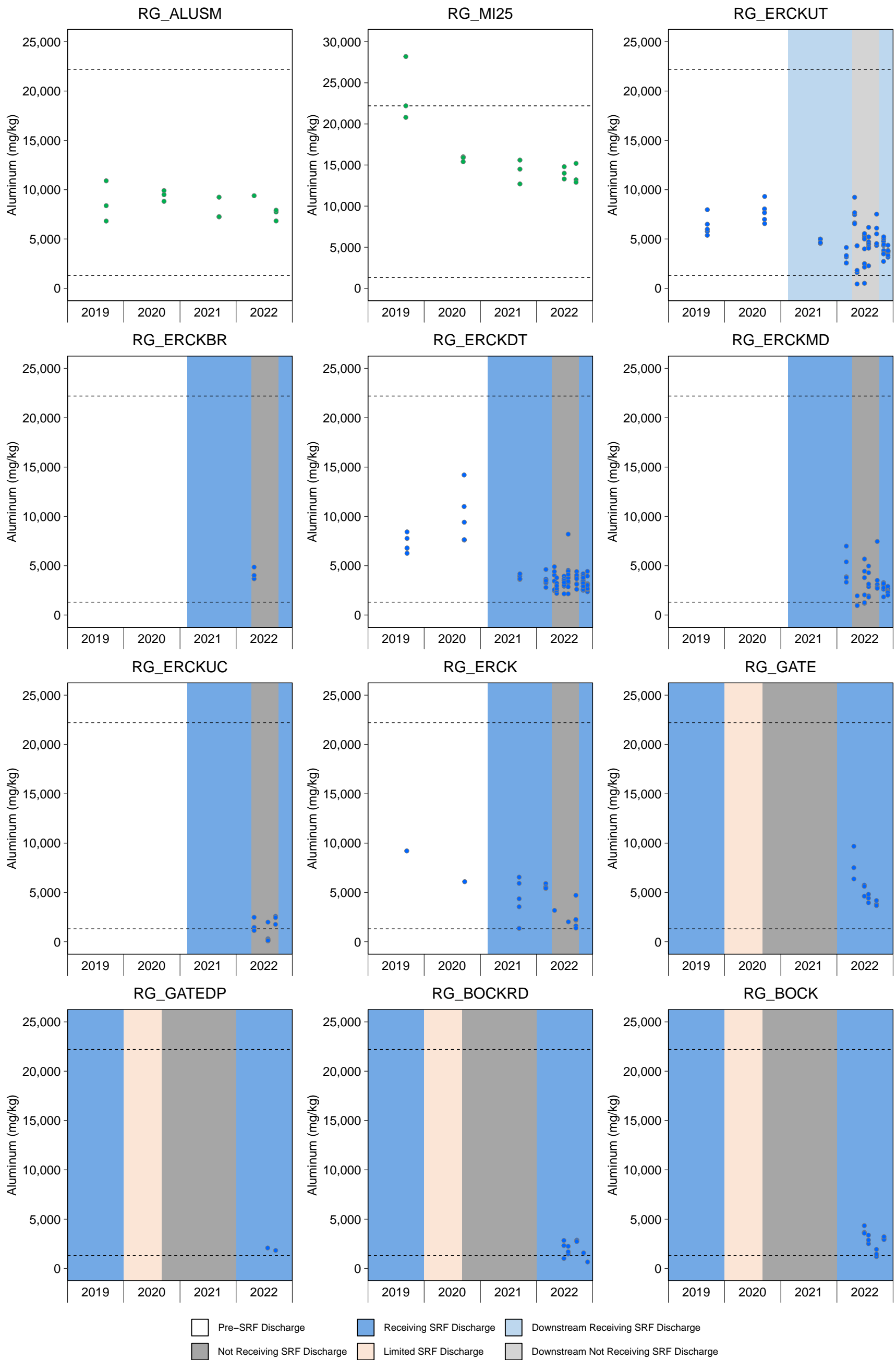


Figure D.33: Sediment Metal and Polycyclic Aromatic Hydrocarbon (PAH) Concentrations in September, EVO LAEMP, 2018 to 2022

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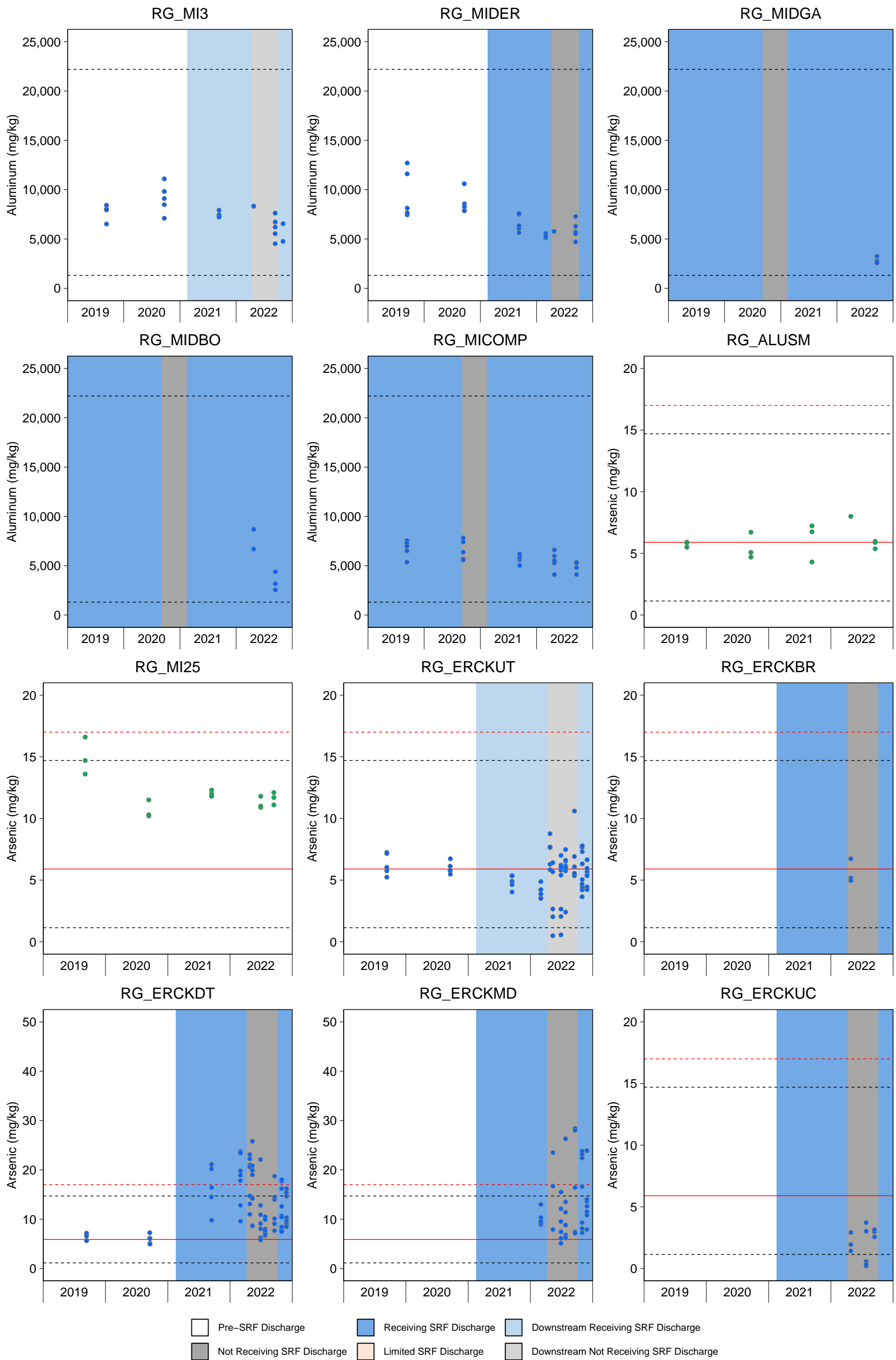


Figure D.33: Sediment Metal and Polycyclic Aromatic Hydrocarbon (PAH) Concentrations in September, EVO LAEMP, 2018 to 2022

Notes: Green symbols represent reference areas and blue symbols represent exposed areas. Solid red line = Lower BC WSQG; broken red line = Upper BC WSQG. BC WSQG = British Columbia Working Sediment Quality Guideline (BCMOECCS 2021a) and approved BC Sediment Quality Guideline for Selenium (BCMOECCS 2021b). Shading represents the normal range which represents the 2.5th to 97.5th percentiles of 2017 and 2020 regional reference area data. Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL value.

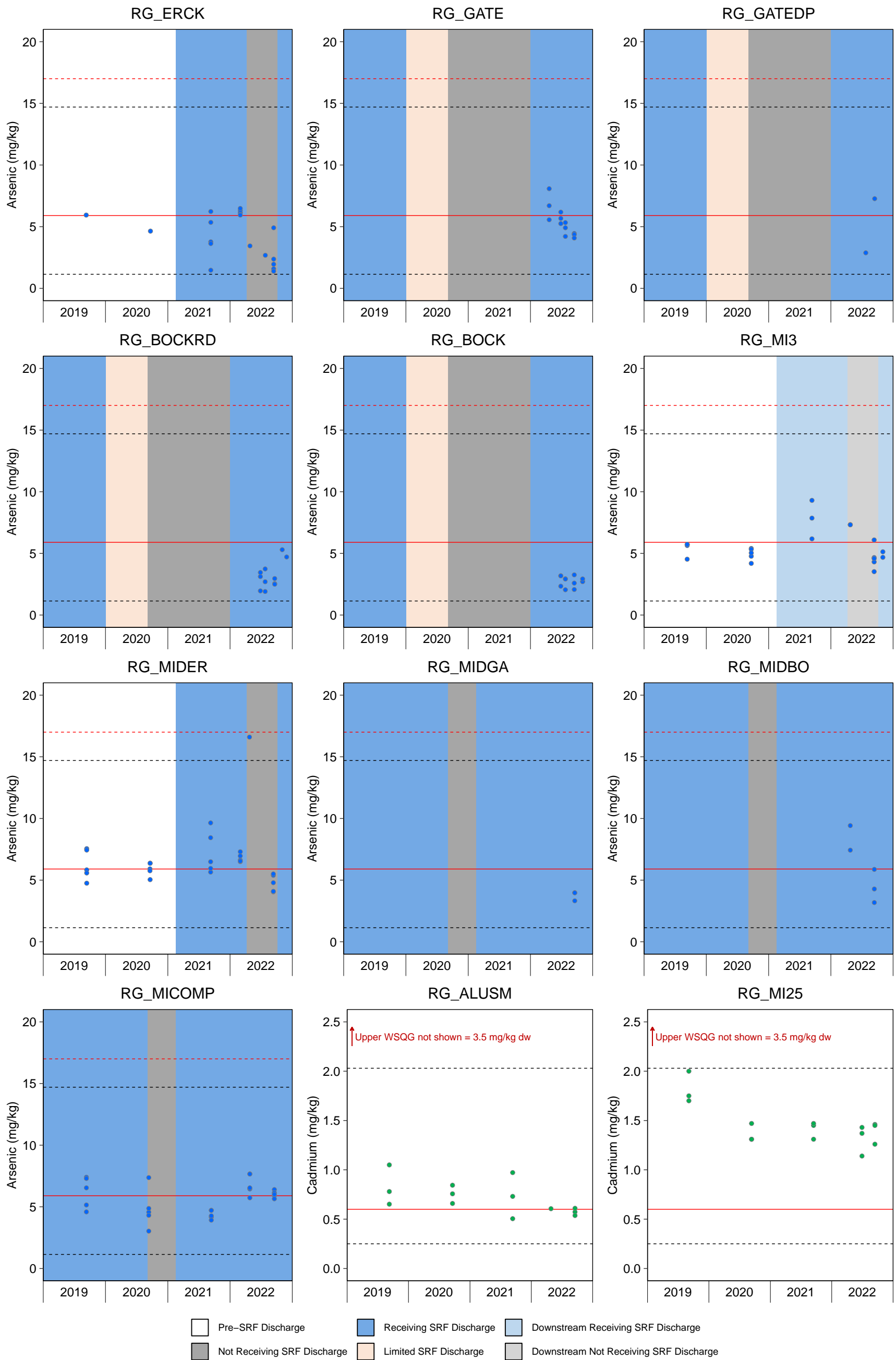


Figure D.33: Sediment Metal and Polycyclic Aromatic Hydrocarbon (PAH) Concentrations in September, EVO LAEMP, 2018 to 2022

Notes: Green symbols represent reference areas and blue symbols represent exposed areas. Solid red line = Lower BC WSQG; broken red line = Upper BC WSQG. BC WSQG = British Columbia Working Sediment Quality Guideline (BCMOECCS 2021a) and approved BC Sediment Quality Guideline for Selenium (BCMOECCS 2021b). Shading represents the normal range which represents the 2.5th to 97.5th percentiles of 2017 and 2020 regional reference area data. Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL value.

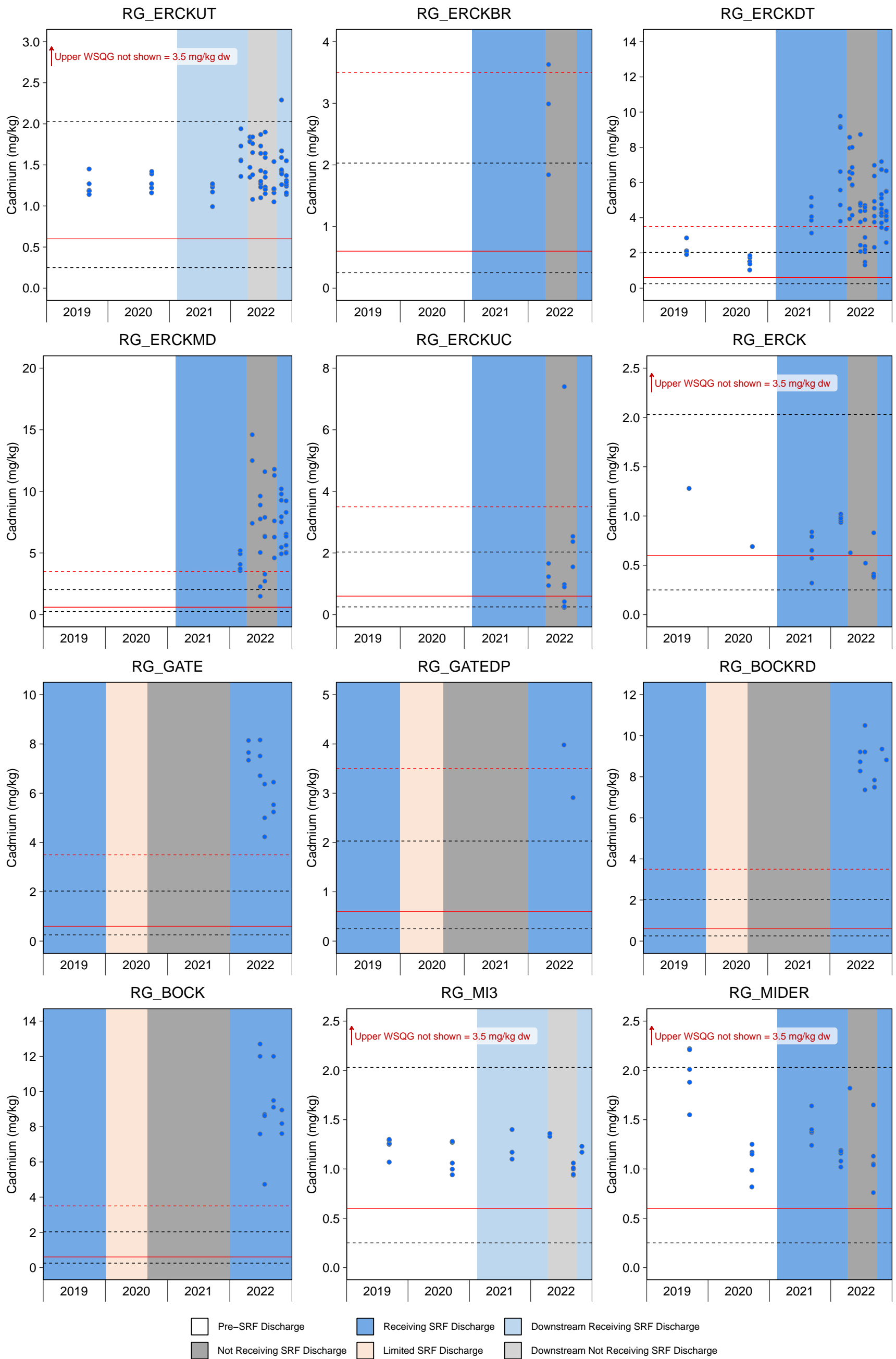


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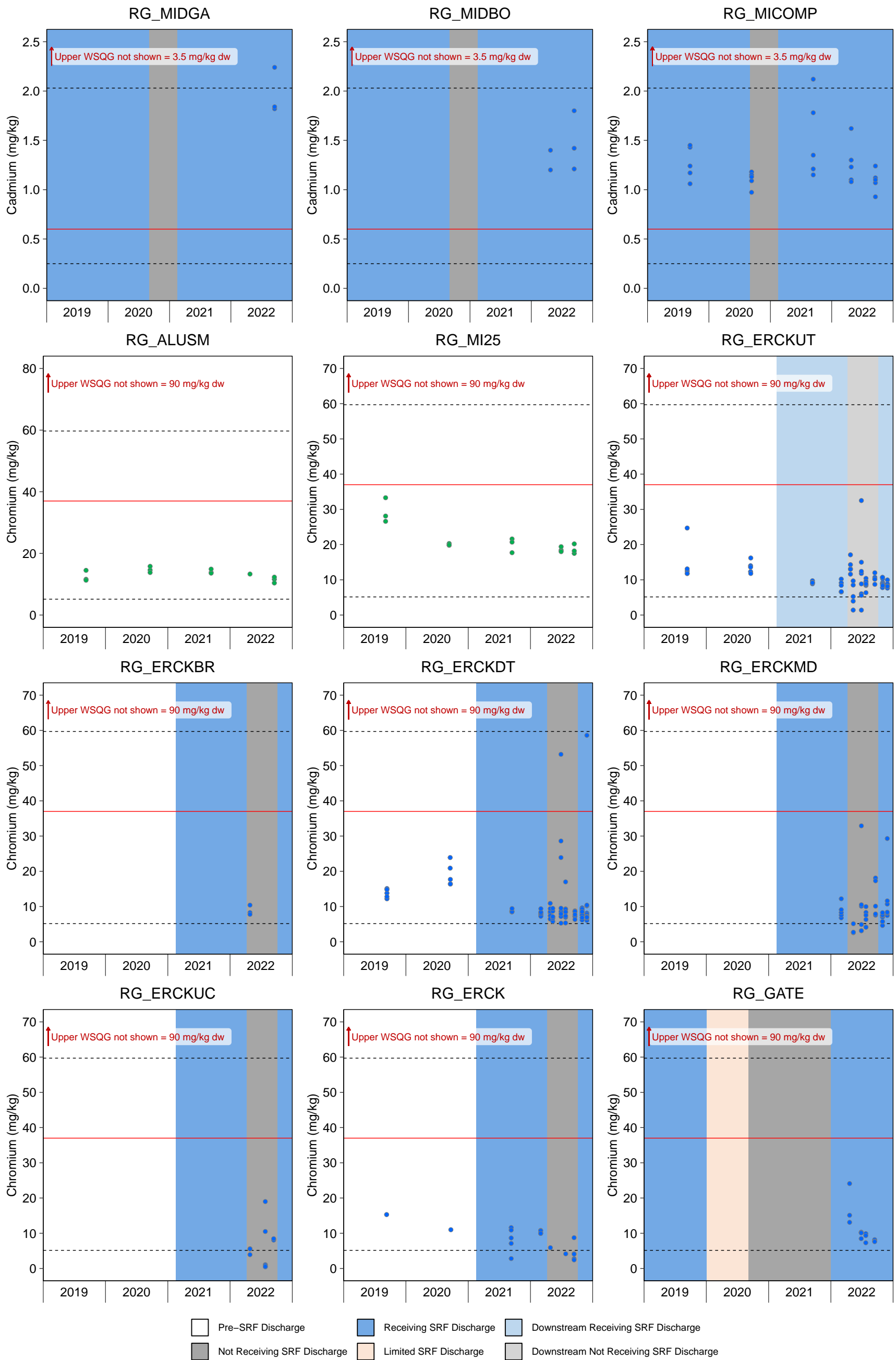


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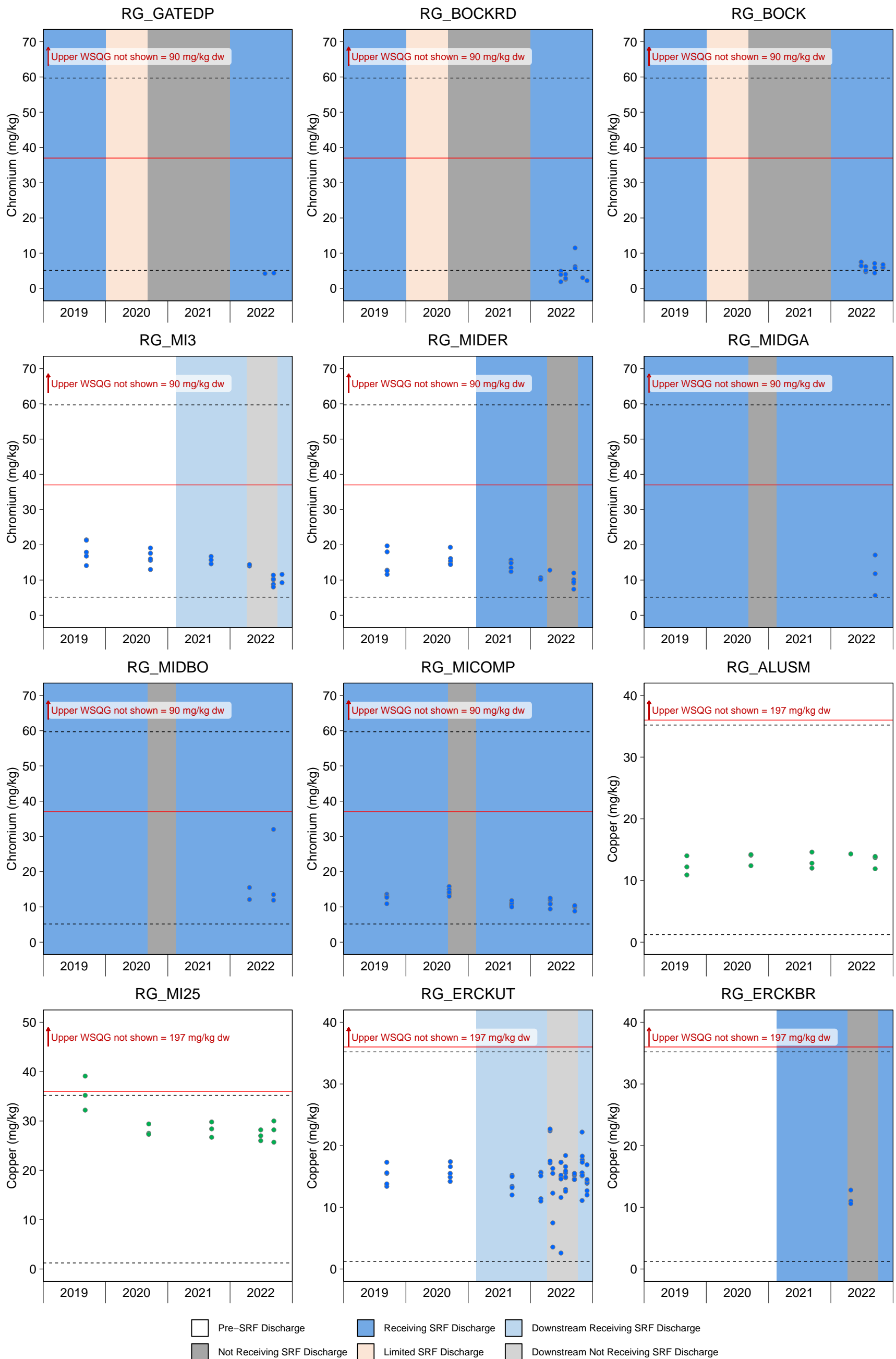


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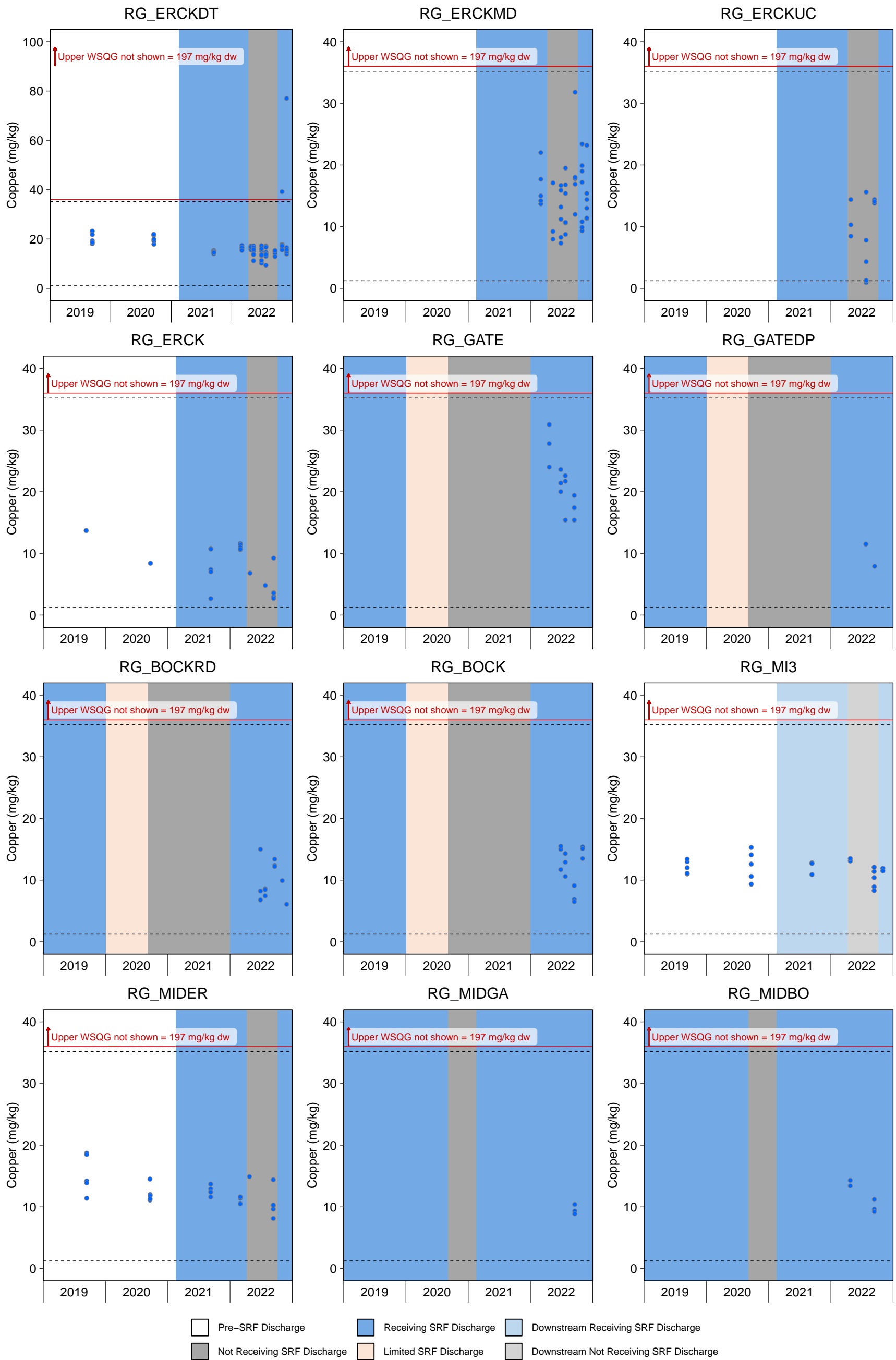


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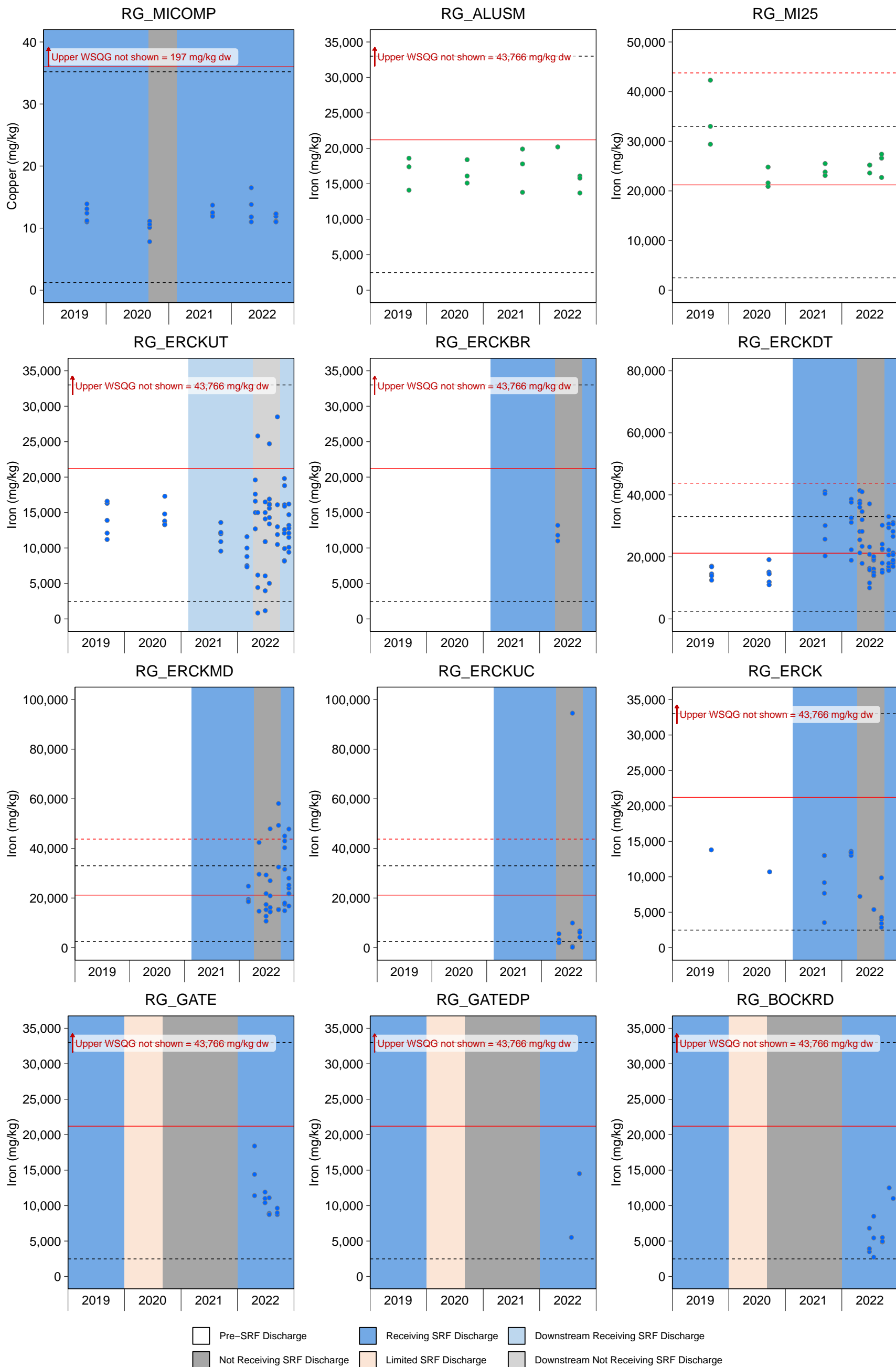


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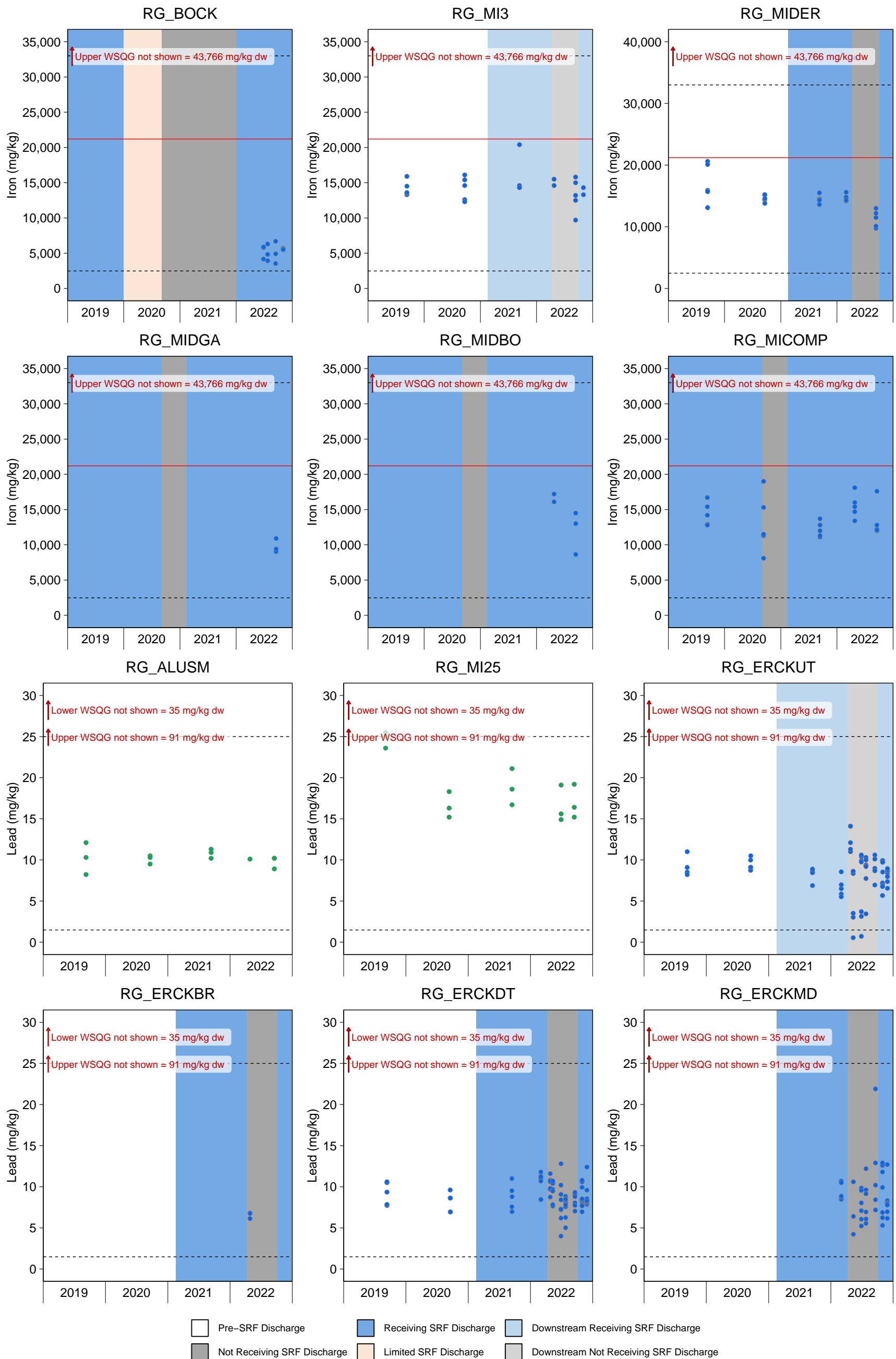


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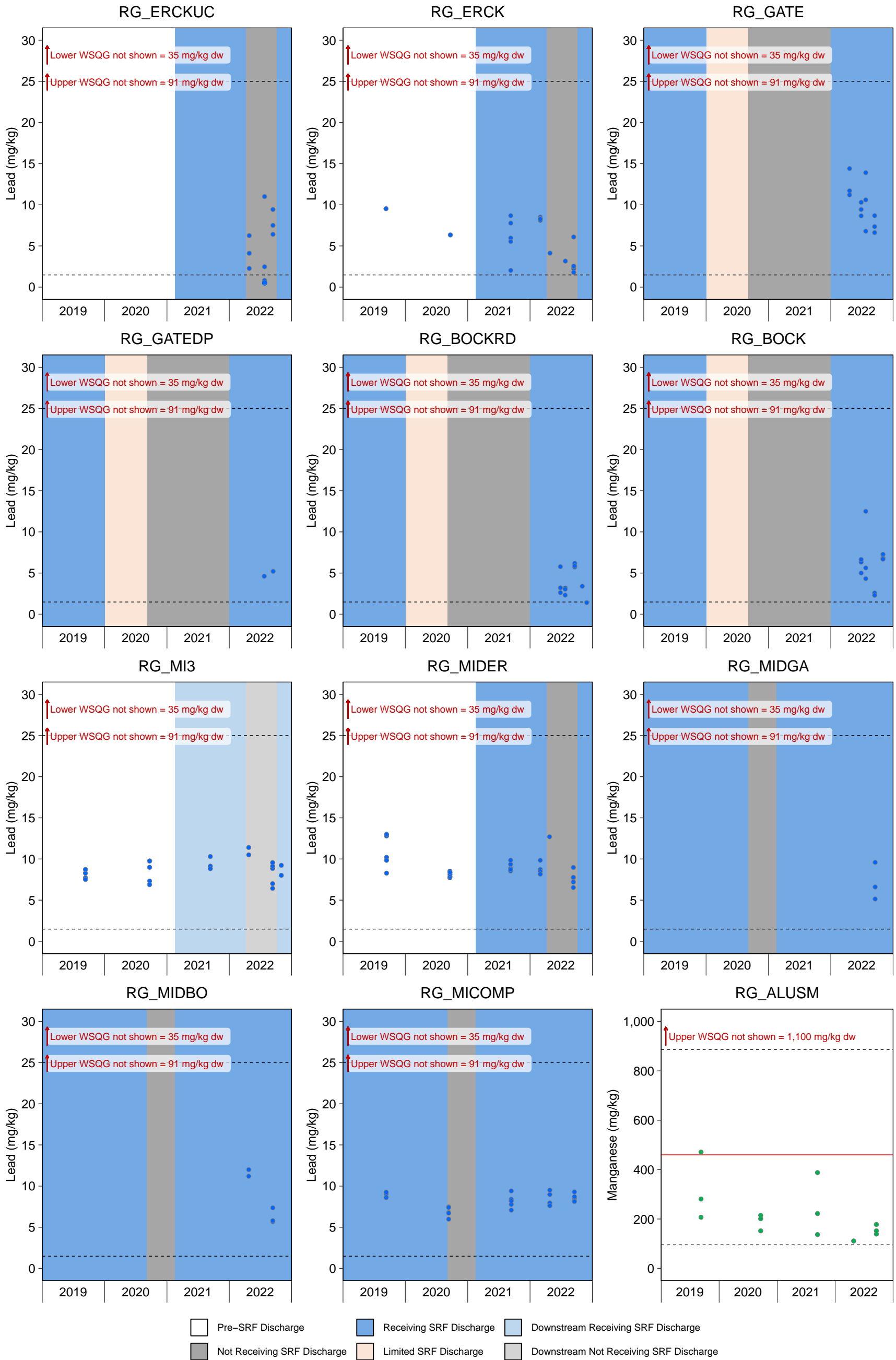


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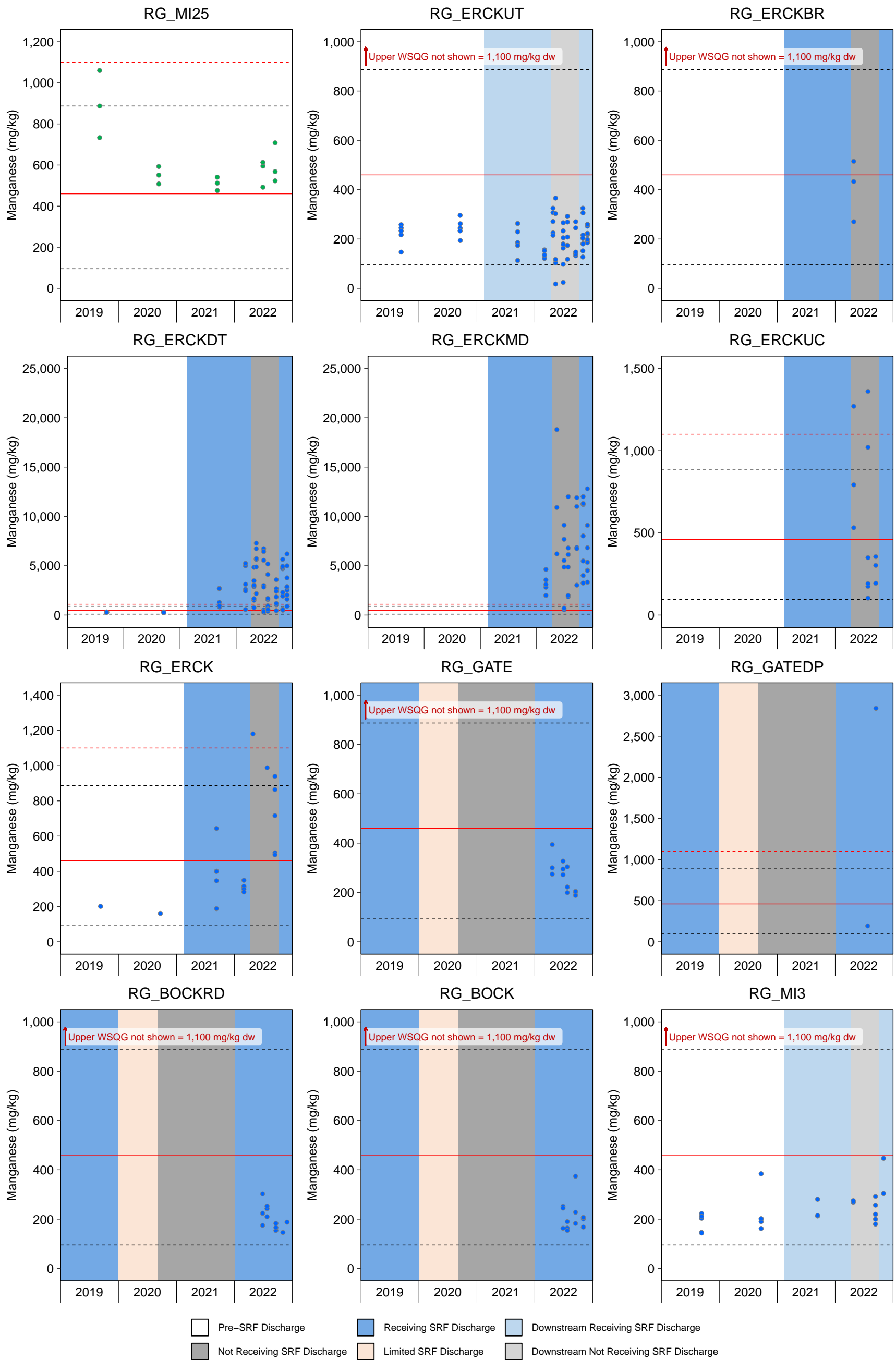


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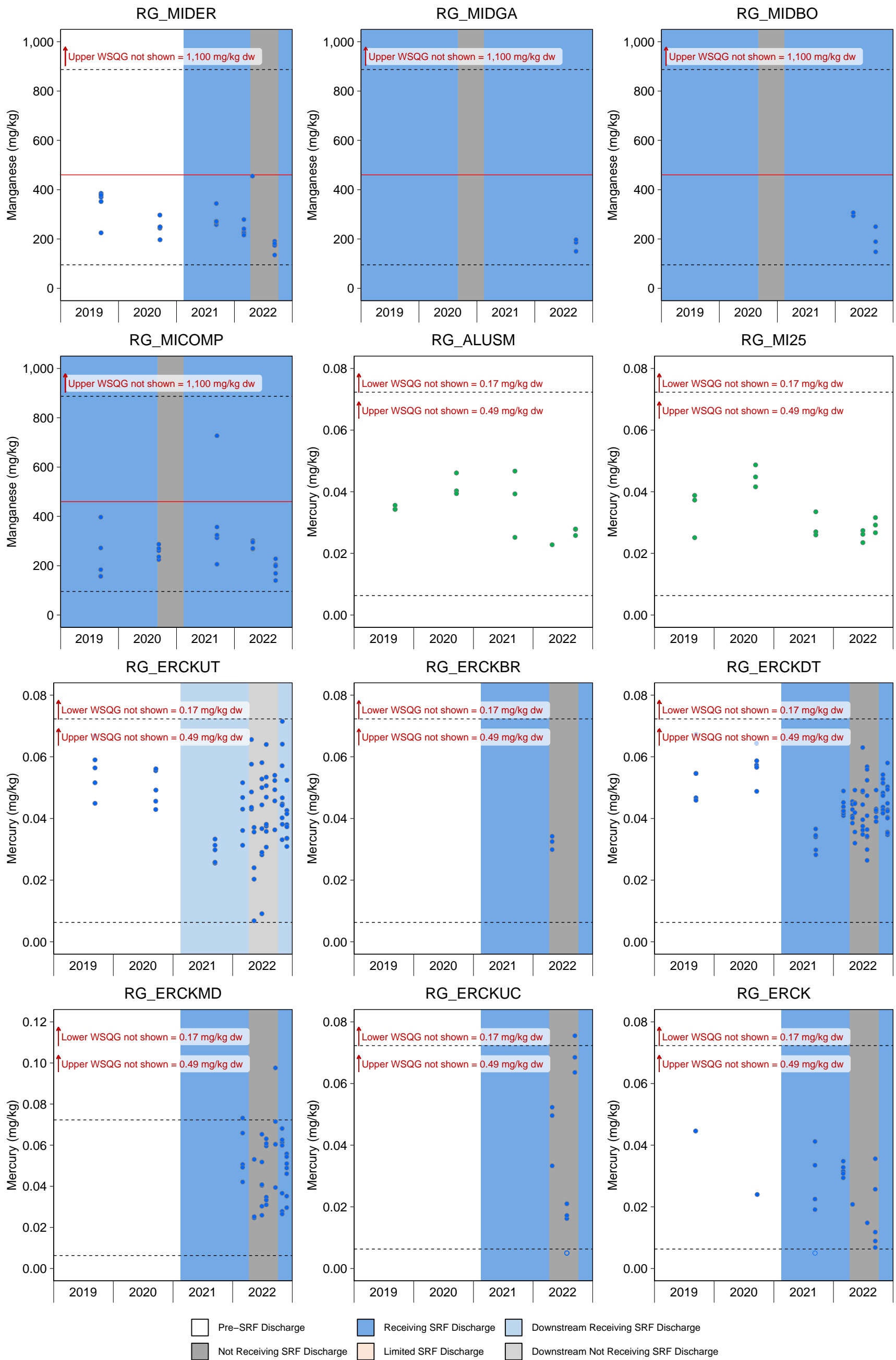


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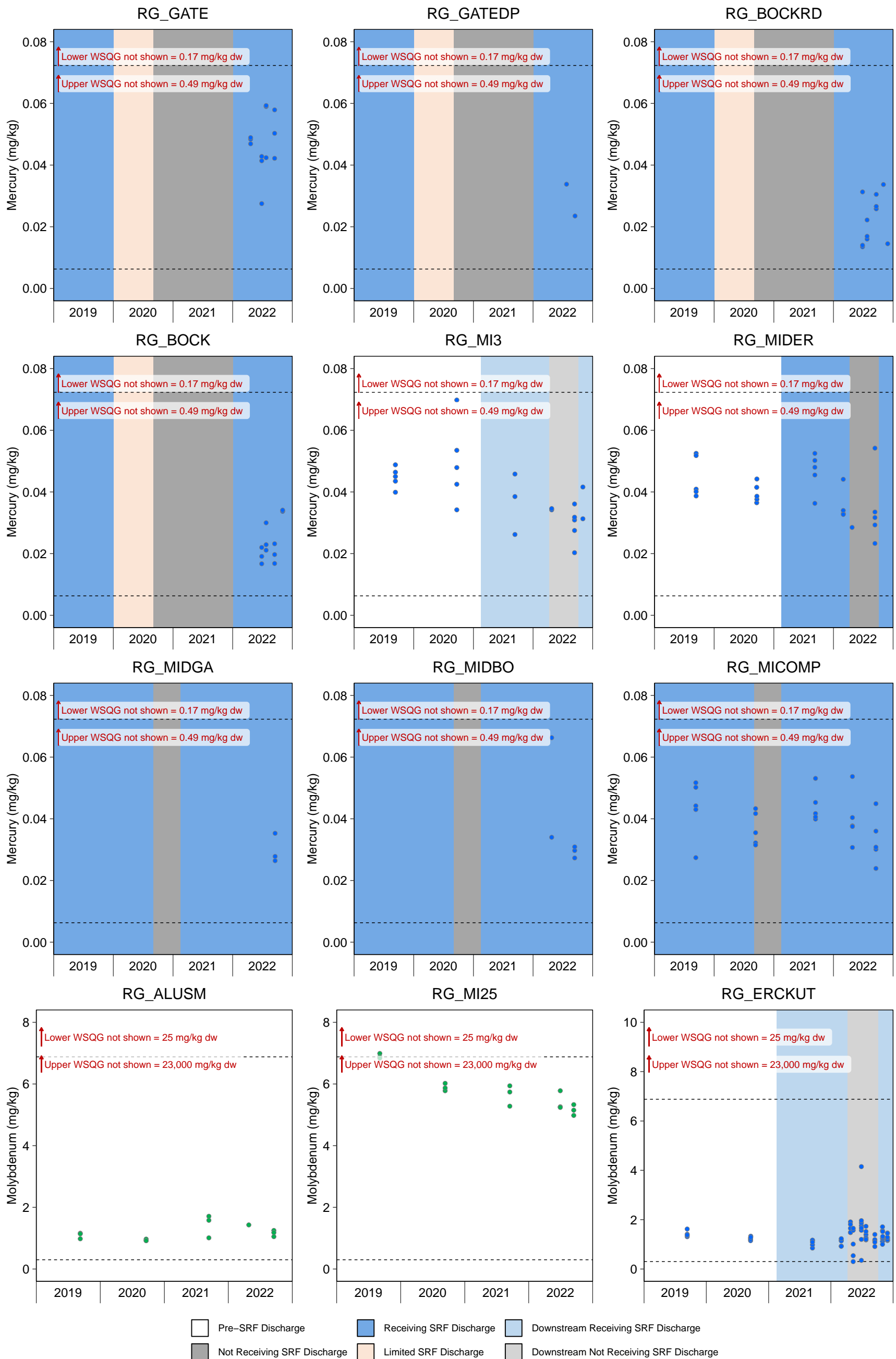


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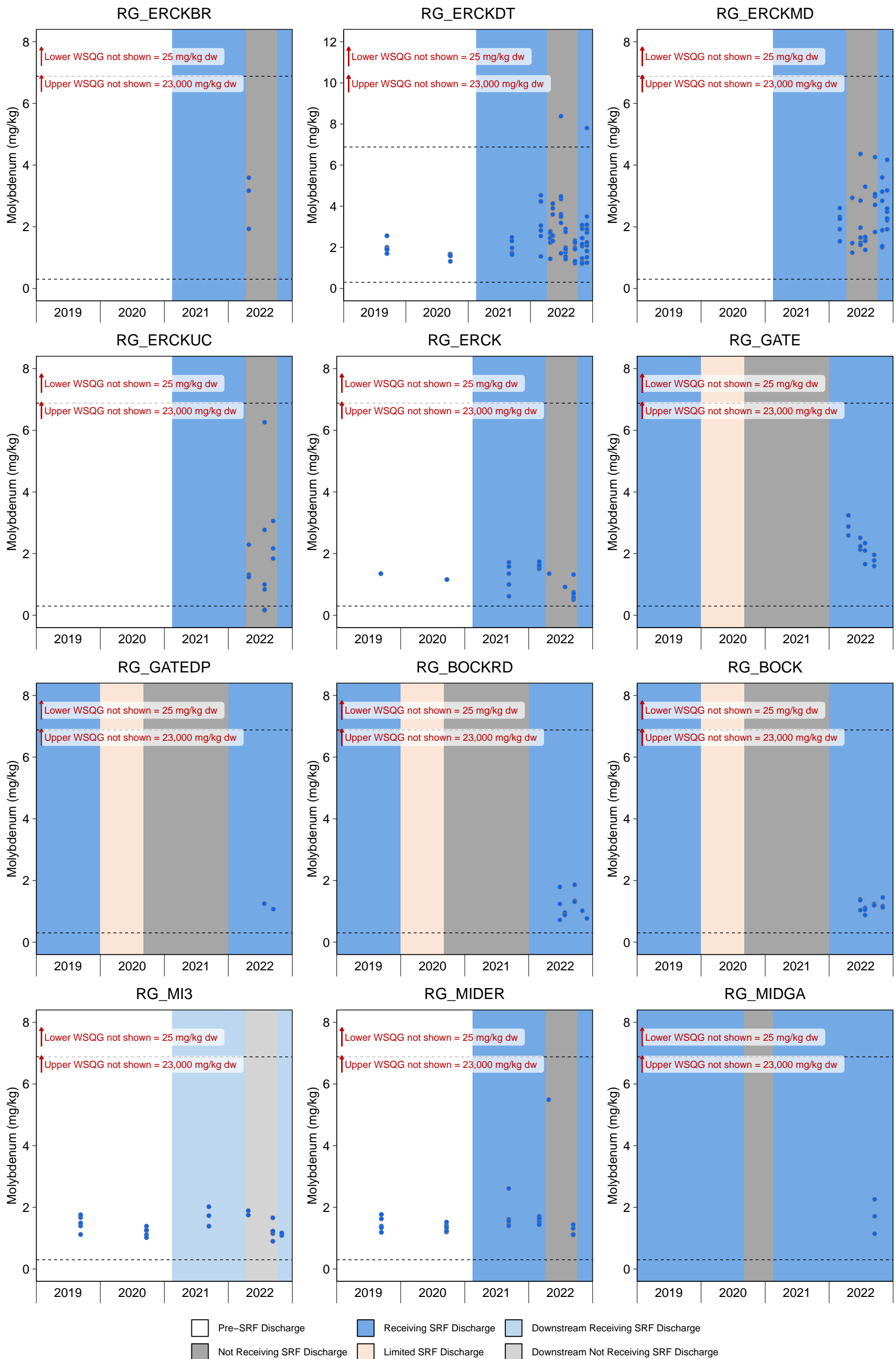


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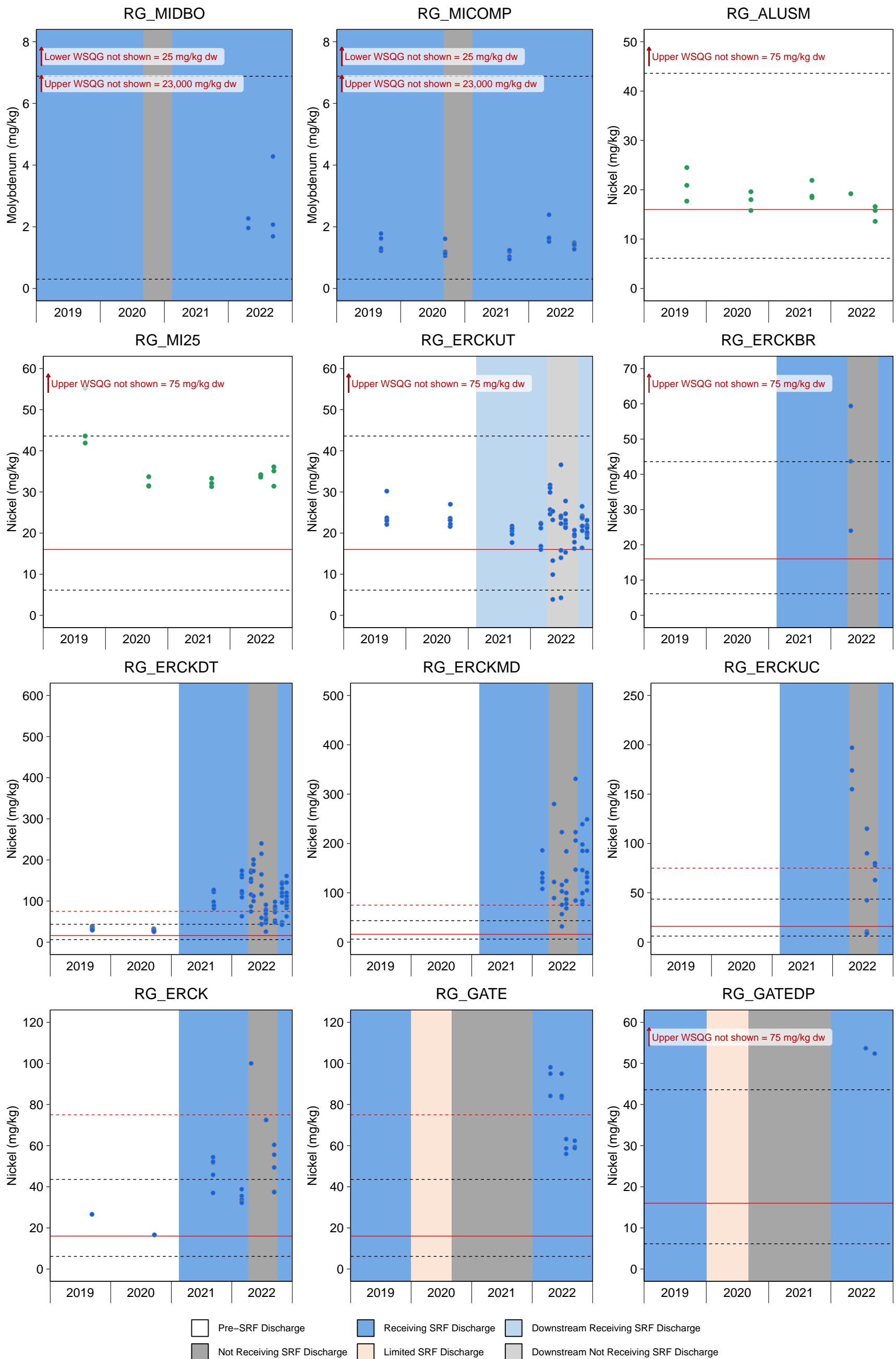


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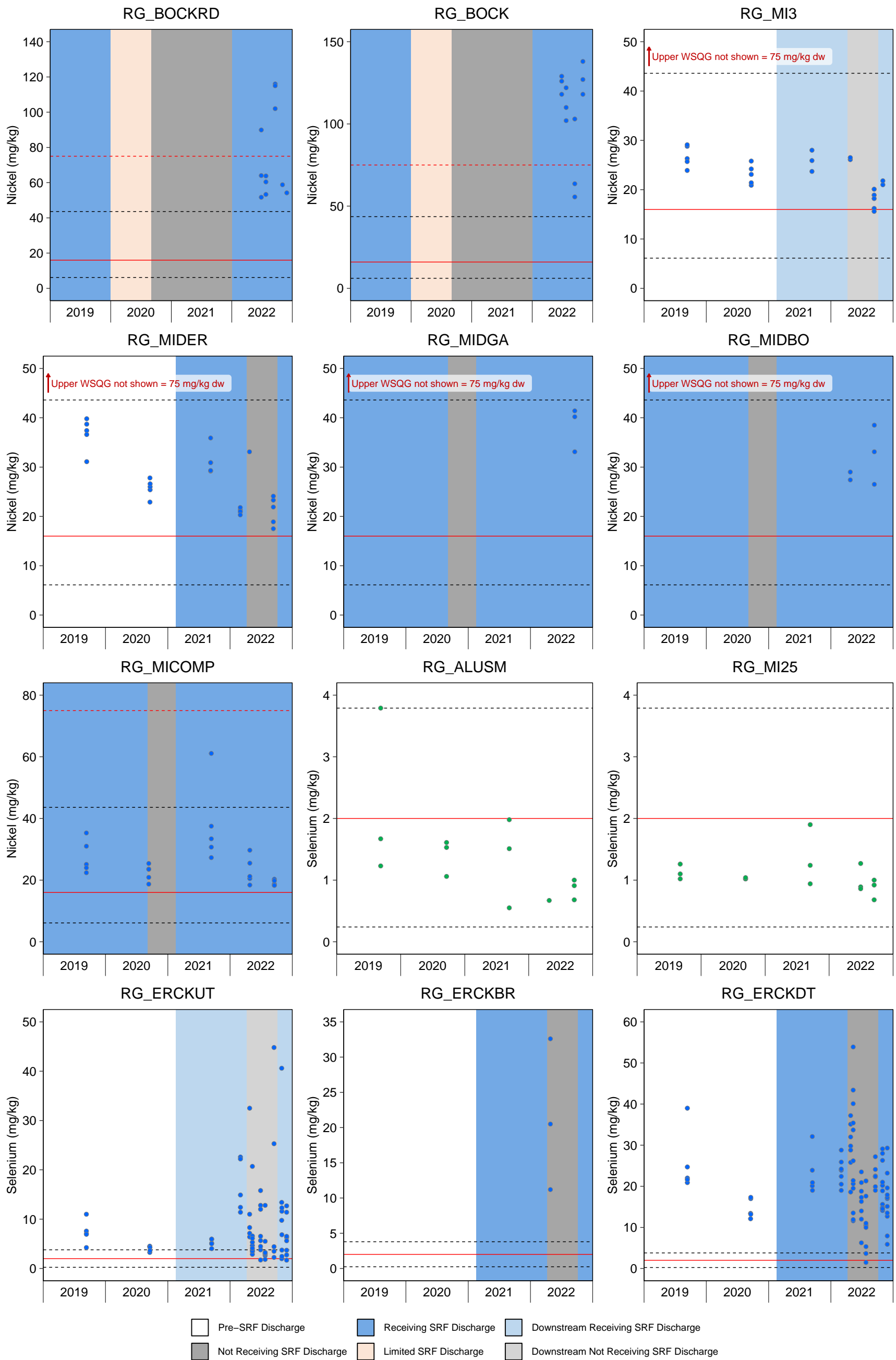


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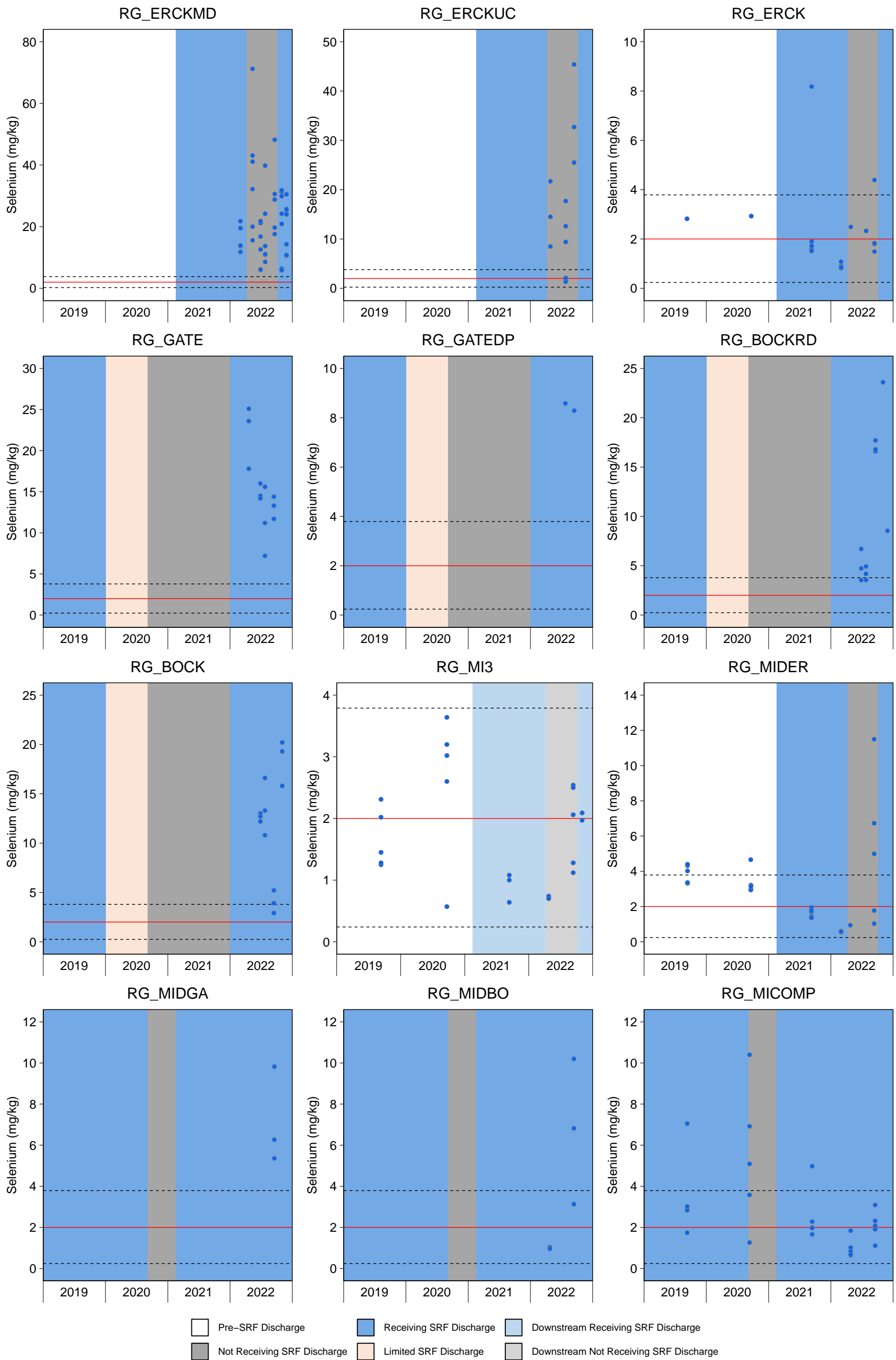


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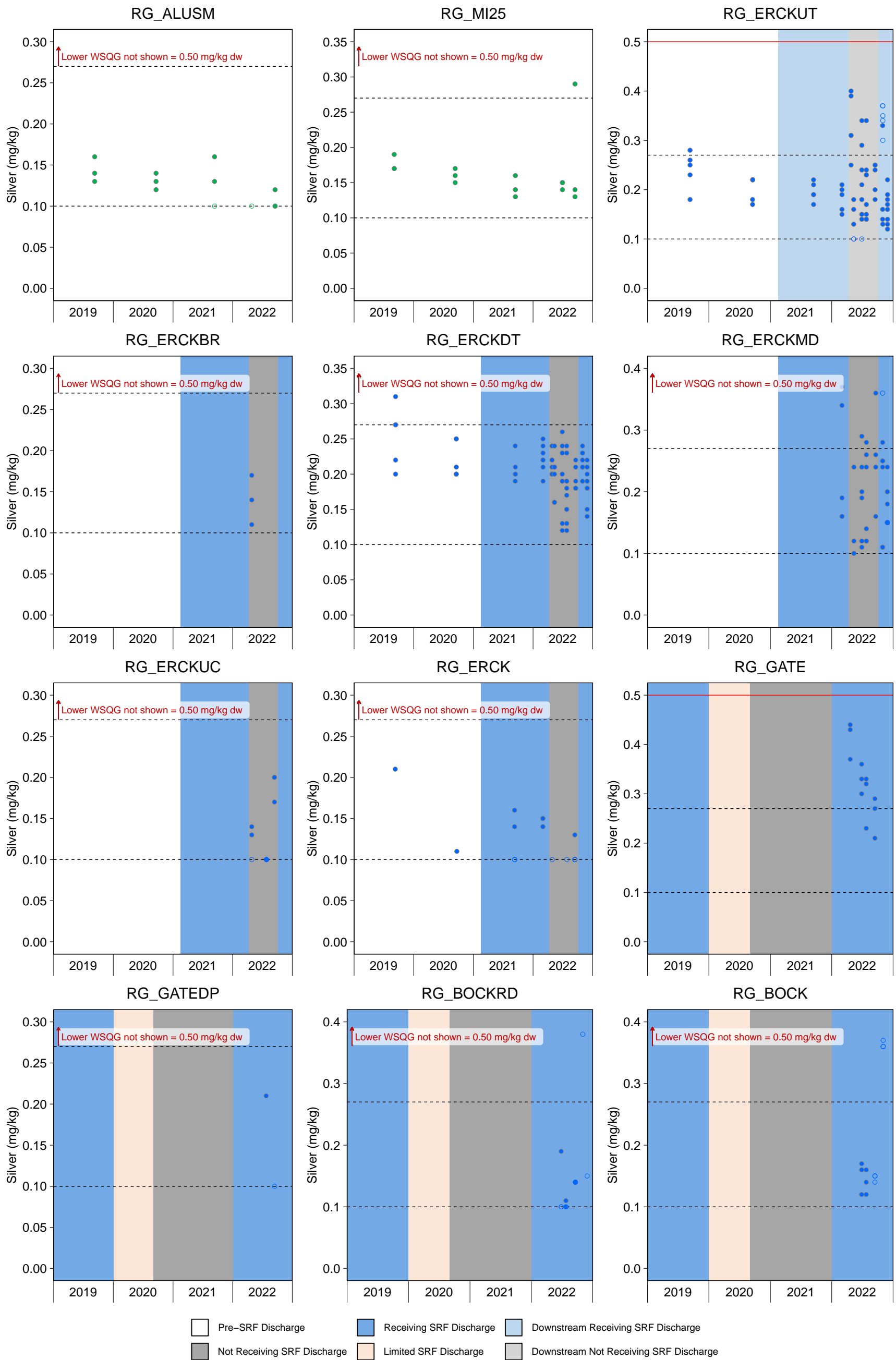


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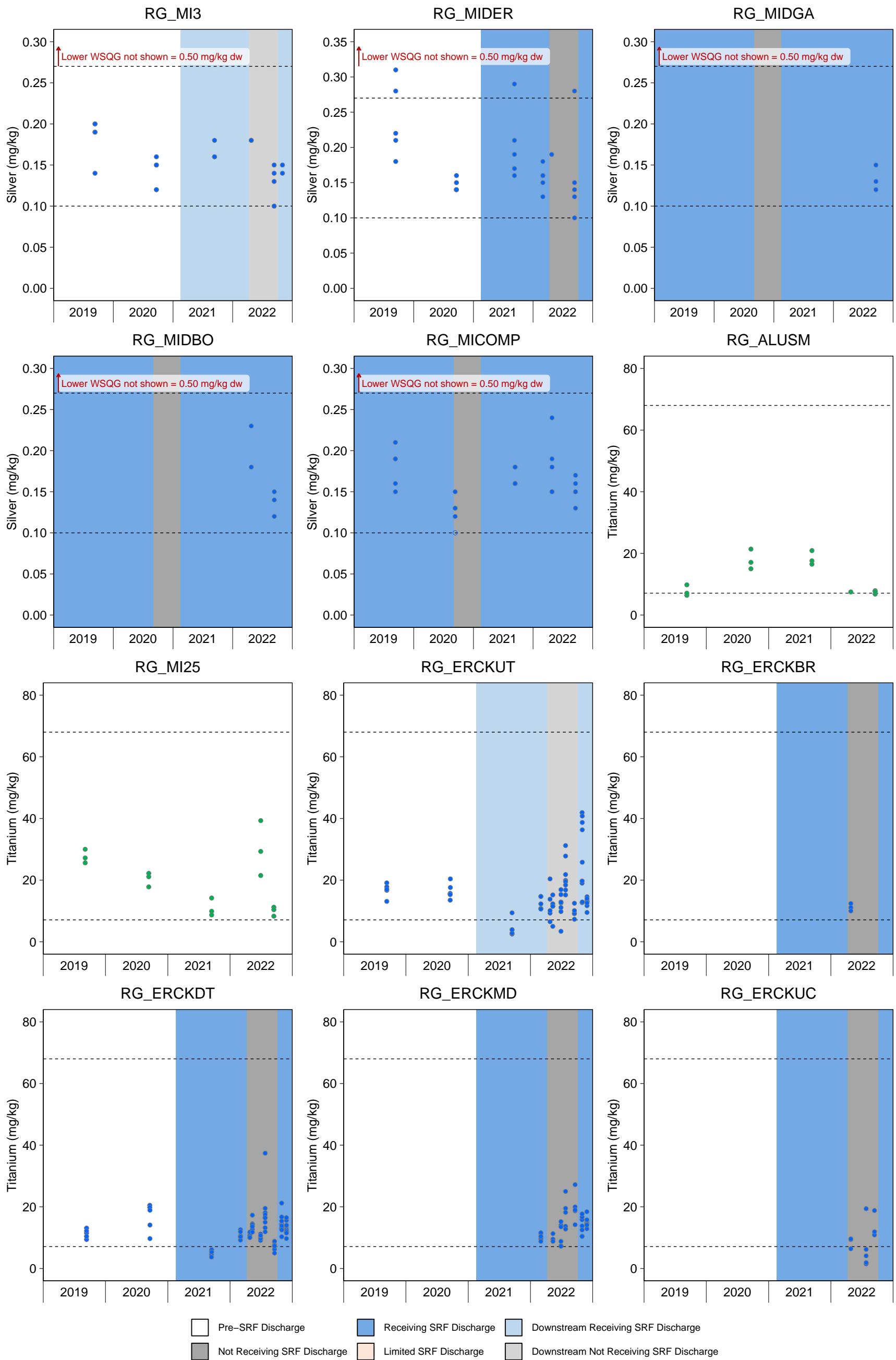


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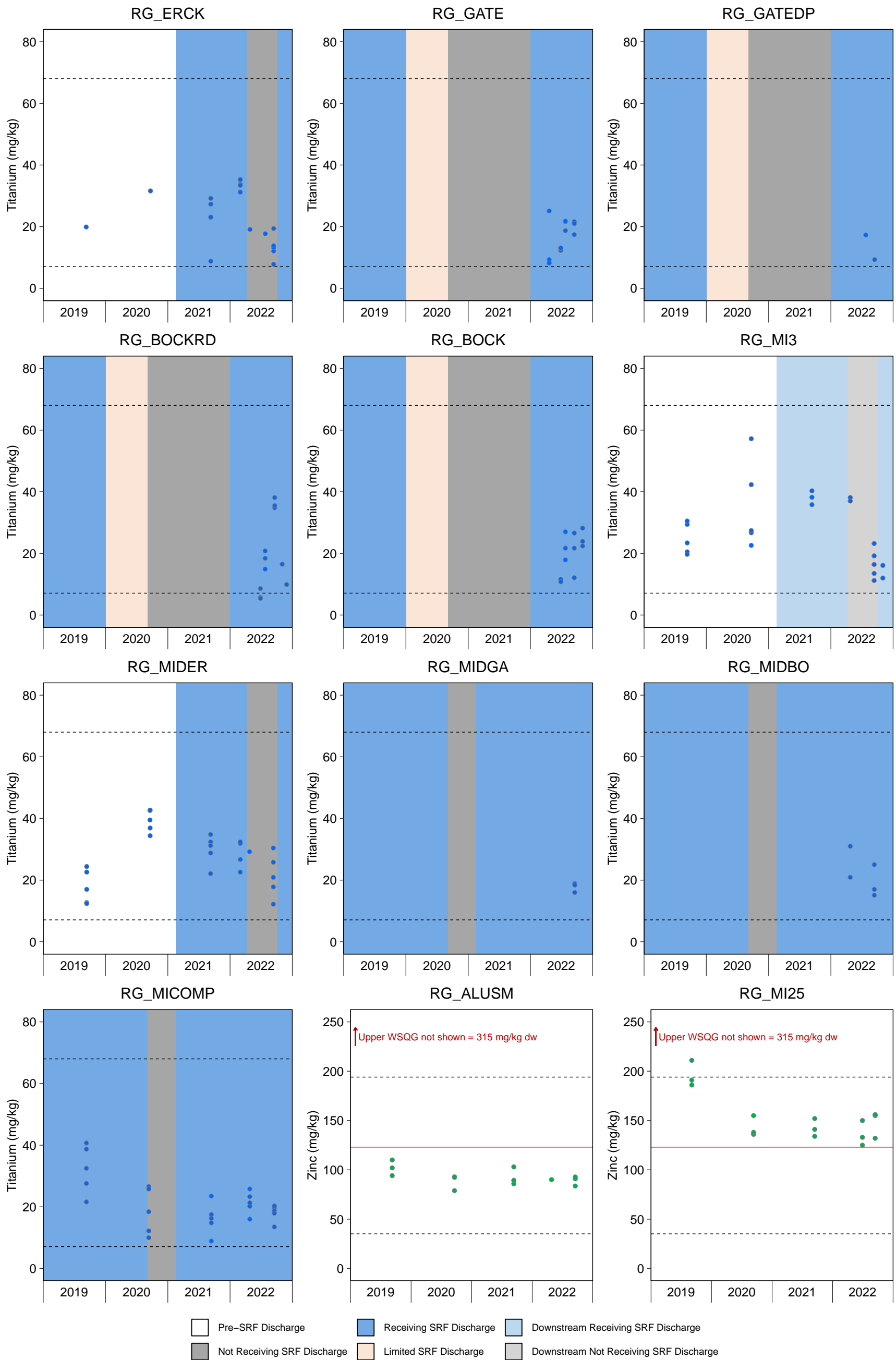


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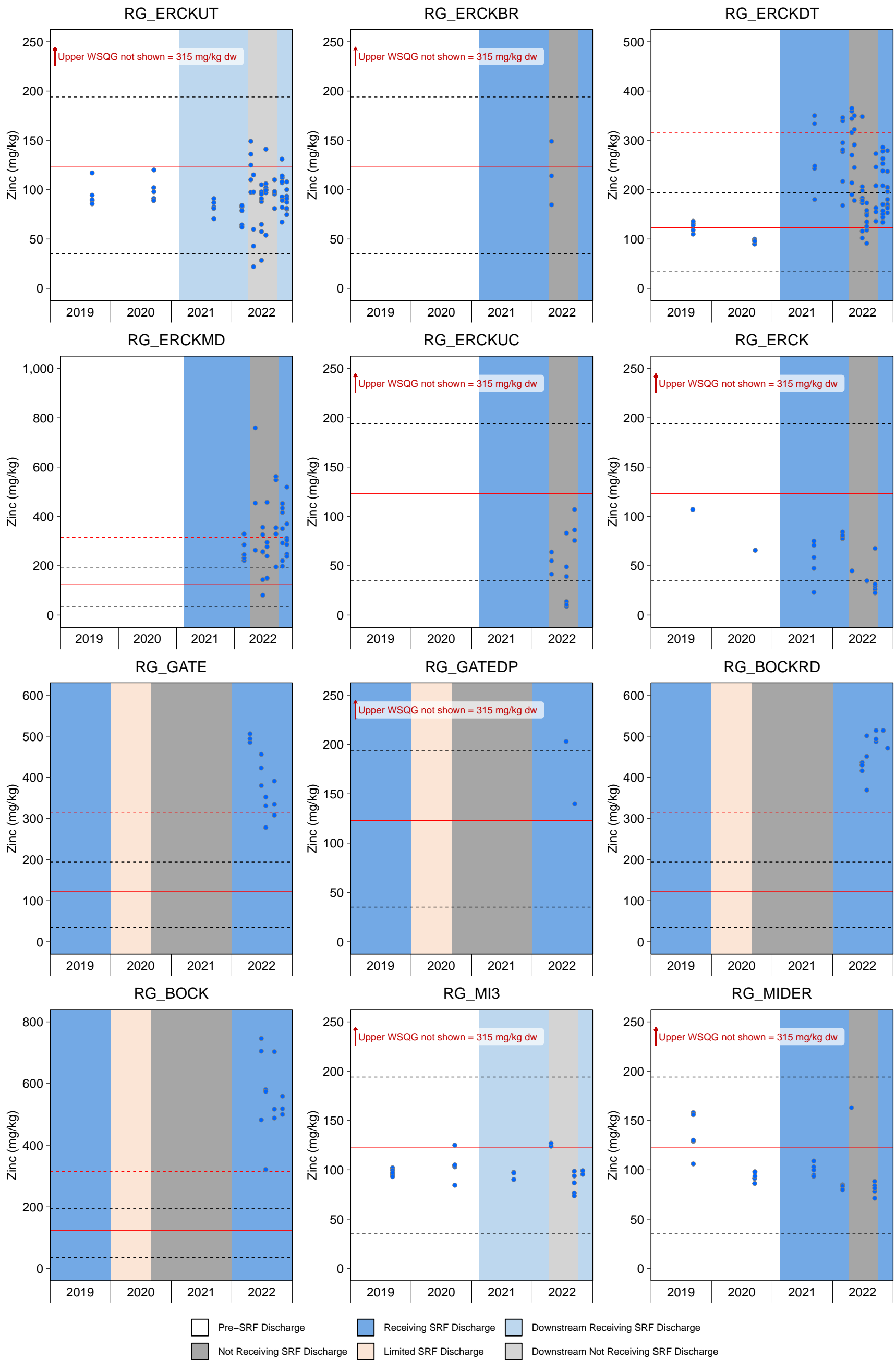


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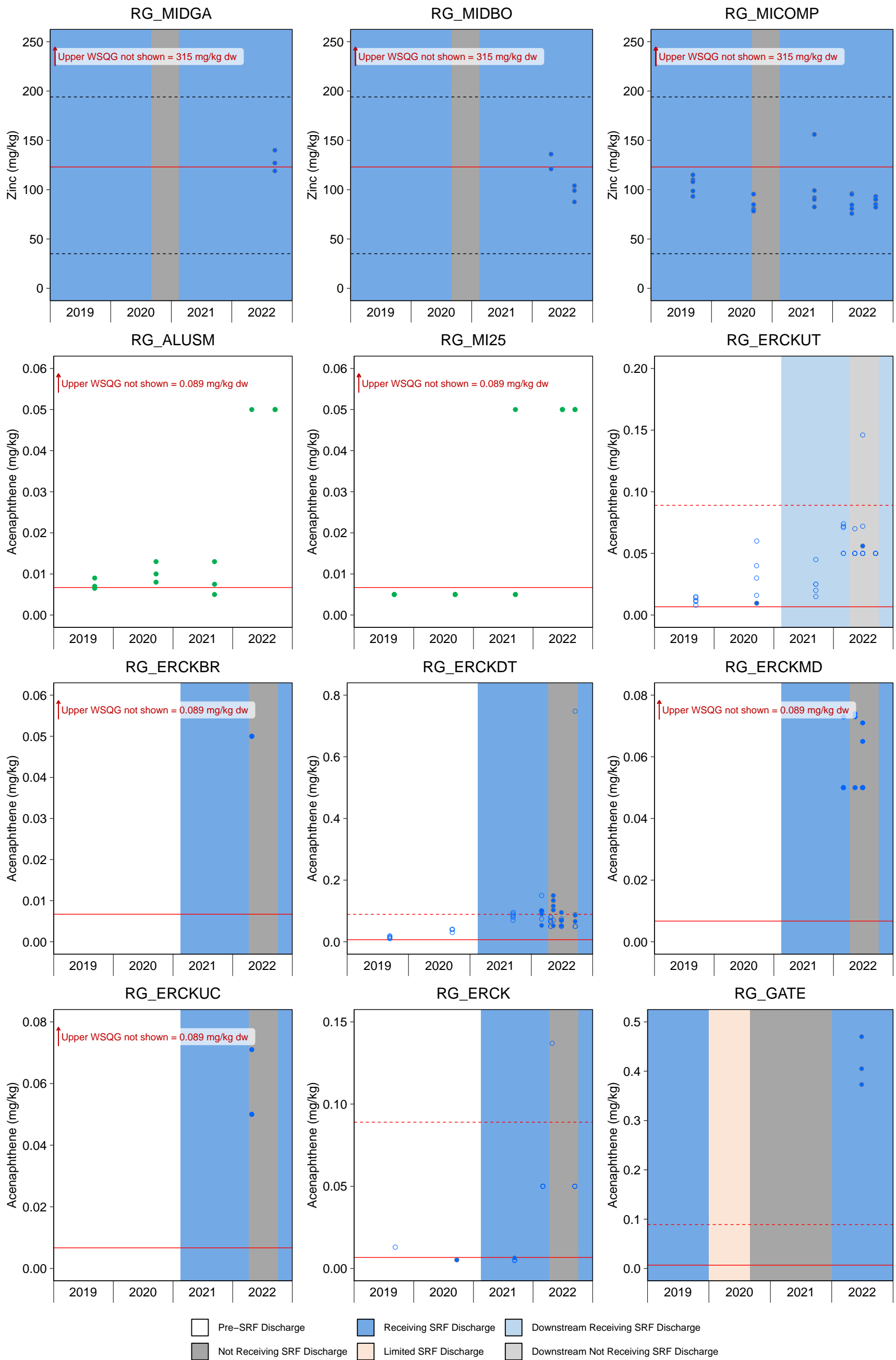


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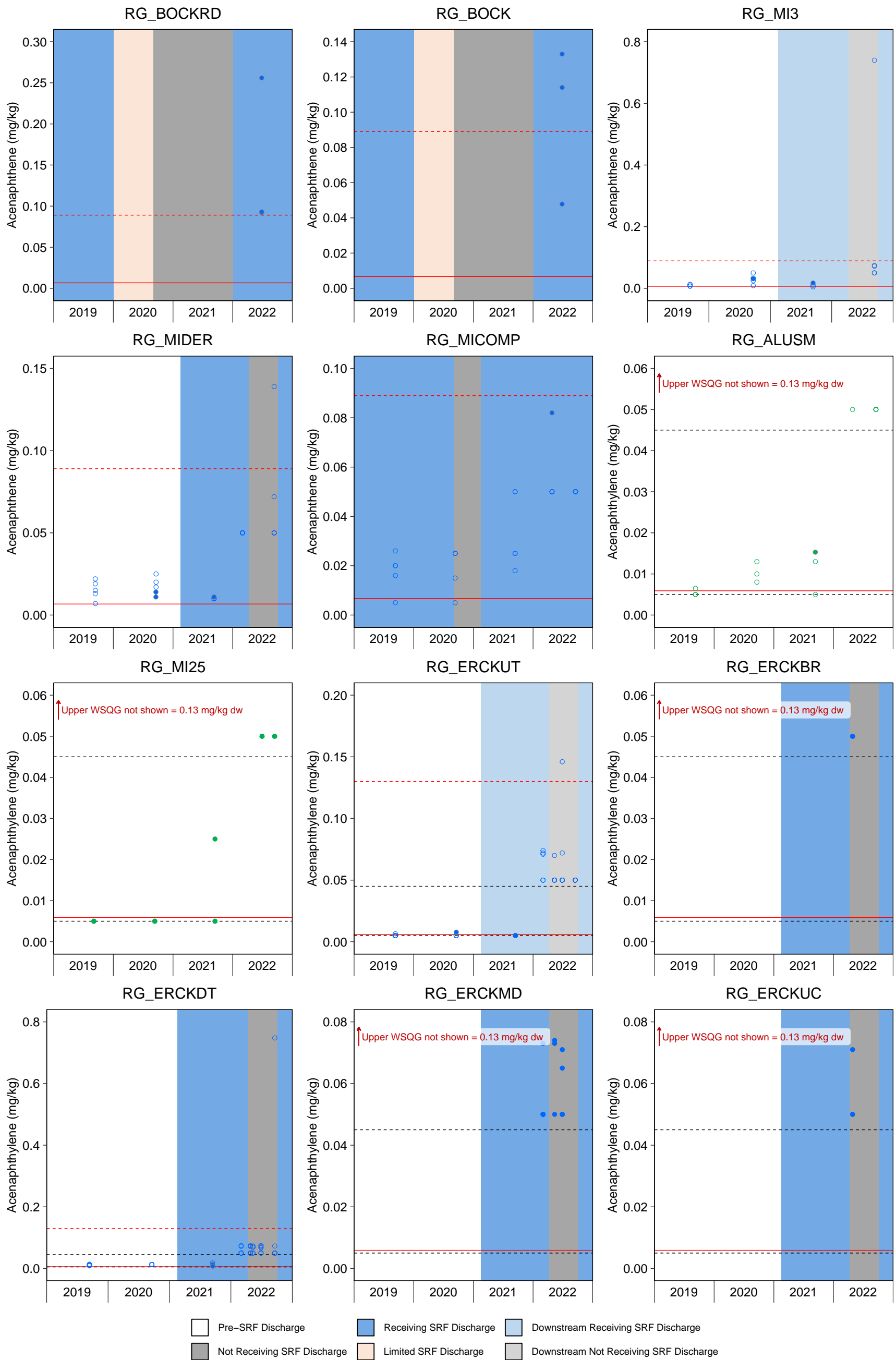


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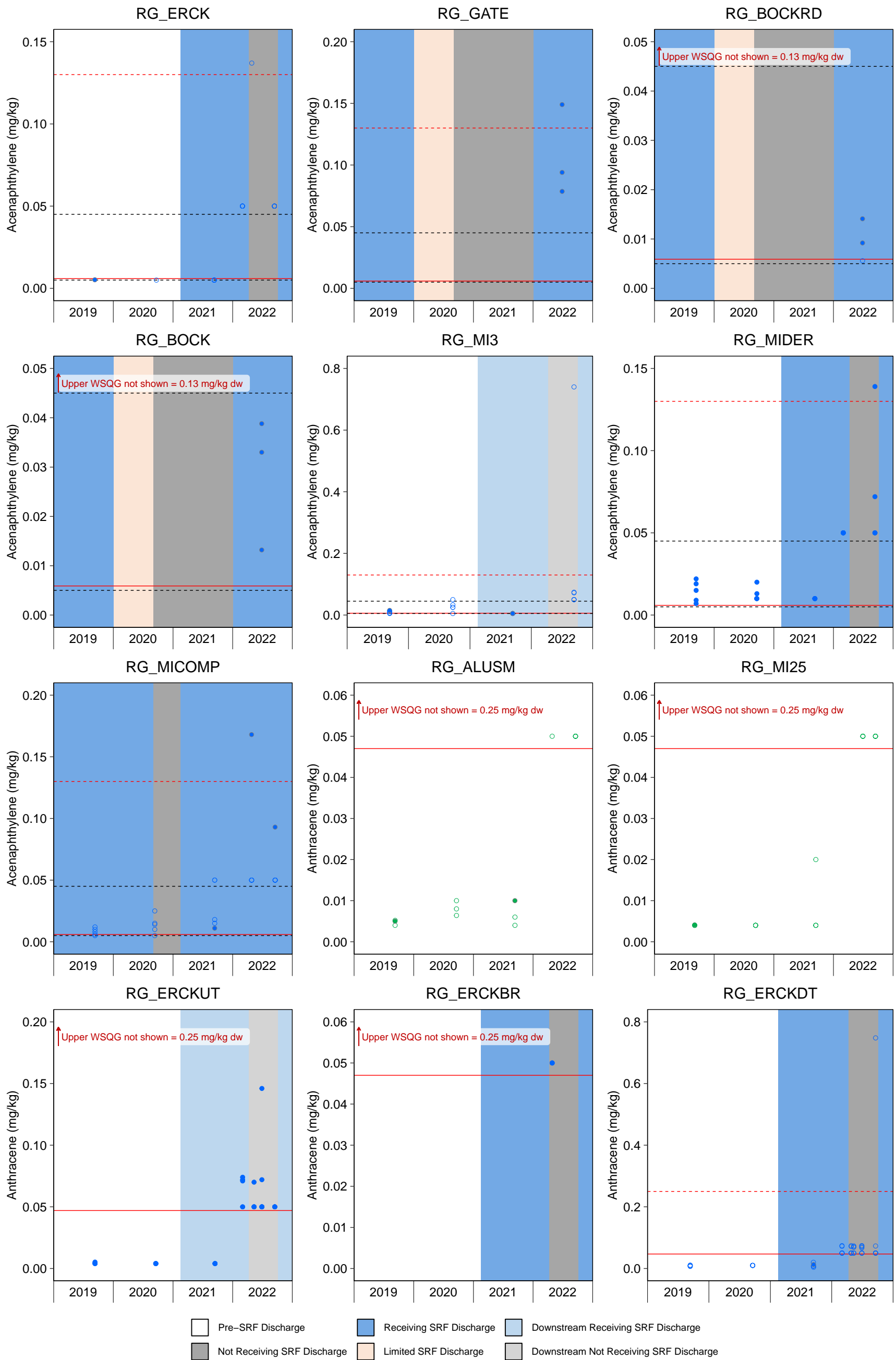


Figure D.33: Sediment Metal and Polycyclic Aromatic Hydrocarbon (PAH) Concentrations in September, EVO LAEMP, 2018 to 2022

Notes: Green symbols represent reference areas and blue symbols represent exposed areas. Solid red line = Lower BC WSQG; broken red line = Upper BC WSQG. BC WSQG = British Columbia Working Sediment Quality Guideline (BCMOECCS 2021a) and approved BC Sediment Quality Guideline for Selenium (BCMOECCS 2021b). Shading represents the normal range which represents the 2.5th to 97.5th percentiles of 2017 and 2020 regional reference area data. Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL value.

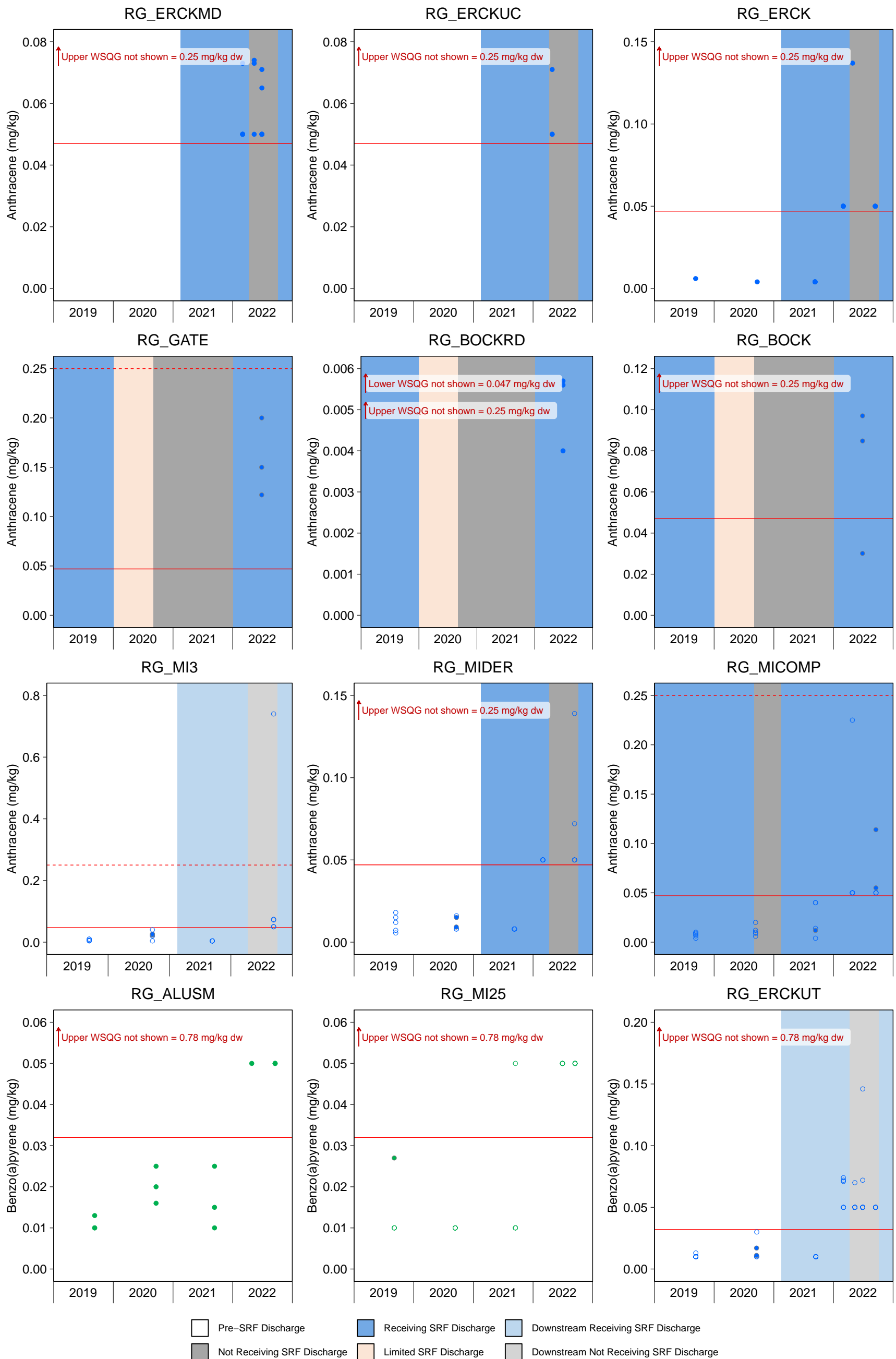


Figure D.33: Sediment Metal and Polycyclic Aromatic Hydrocarbon (PAH) Concentrations in September, EVO LAEMP, 2018 to 2022

Notes: Green symbols represent reference areas and blue symbols represent exposed areas. Solid red line = Lower BC WSQG; broken red line = Upper BC WSQG. BC WSQG = British Columbia Working Sediment Quality Guideline (BCMOECCS 2021a) and approved BC Sediment Quality Guideline for Selenium (BCMOECCS 2021b). Shading represents the normal range which represents the 2.5th to 97.5th percentiles of 2017 and 2020 regional reference area data. Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL value.

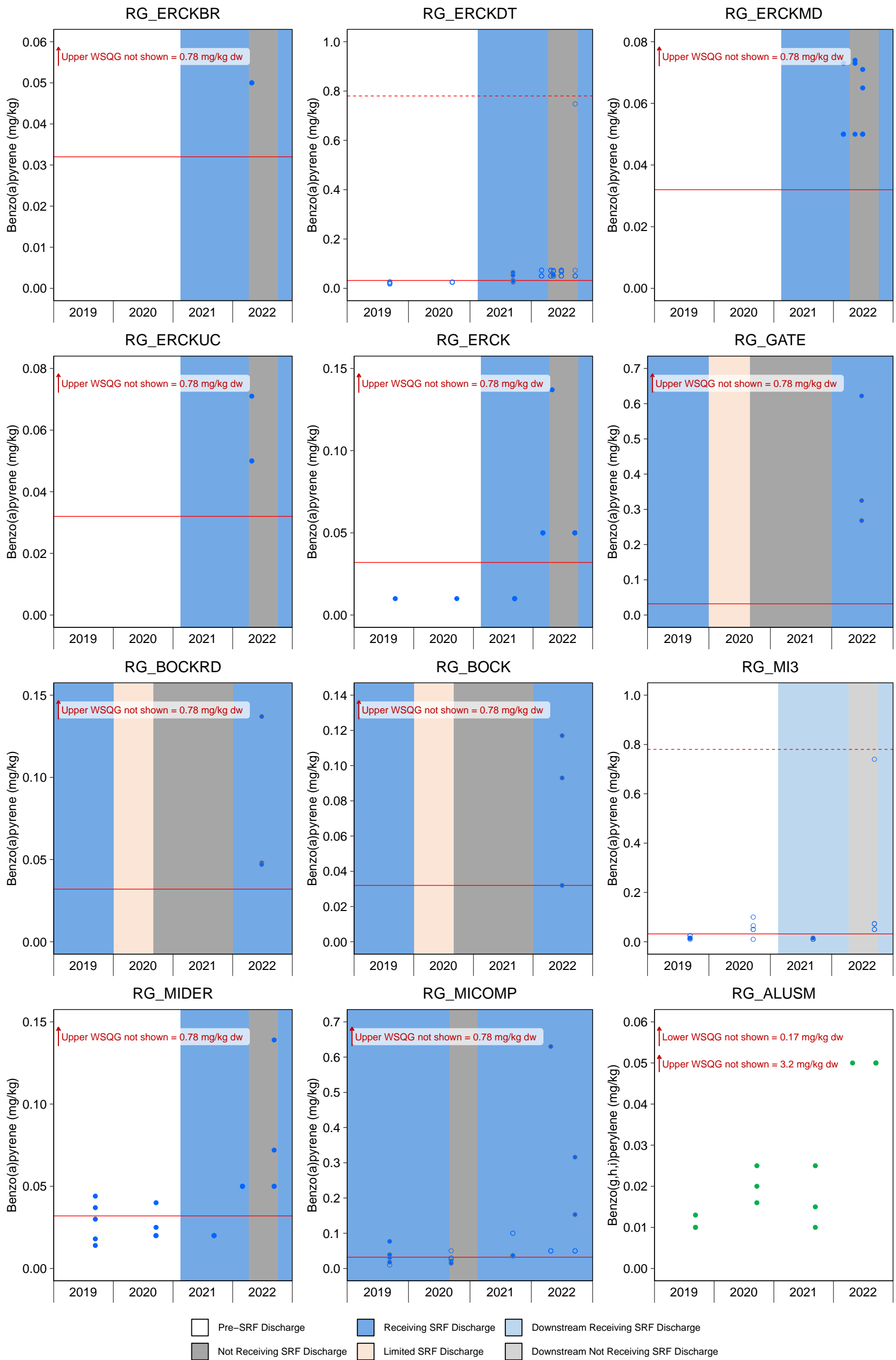


Figure D.33: Sediment Metal and Polycyclic Aromatic Hydrocarbon (PAH) Concentrations in September, EVO LAEMP, 2018 to 2022

Notes: Green symbols represent reference areas and blue symbols represent exposed areas. Solid red line = Lower BC WSQG; broken red line = Upper BC WSQG. BC WSQG = British Columbia Working Sediment Quality Guideline (BCMOECCS 2021a) and approved BC Sediment Quality Guideline for Selenium (BCMOECCS 2021b). Shading represents the normal range which represents the 2.5th to 97.5th percentiles of 2017 and 2020 regional reference area data. Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL value.

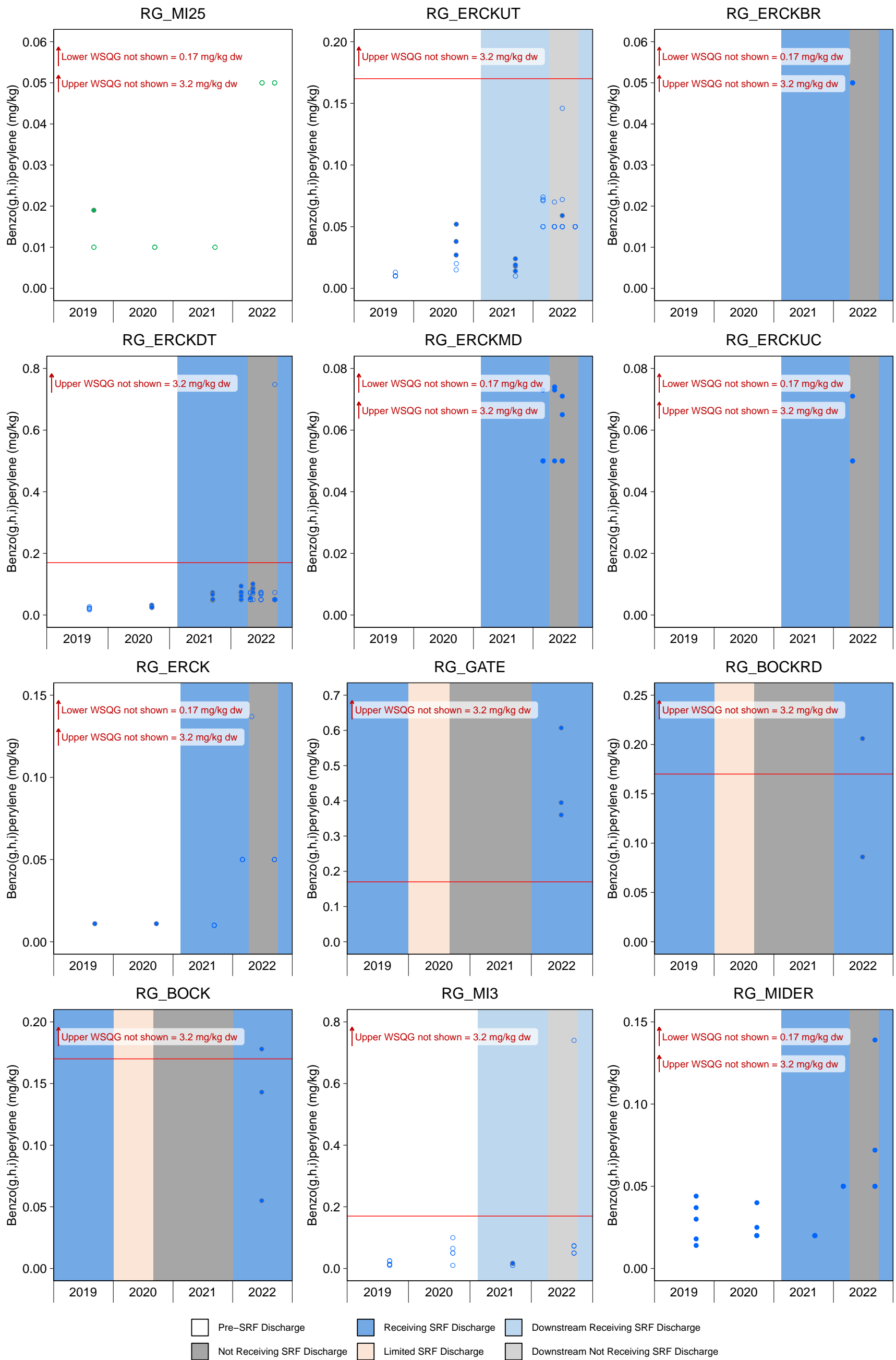


Figure D.33: Sediment Metal and Polycyclic Aromatic Hydrocarbon (PAH) Concentrations in September, EVO LAEMP, 2018 to 2022

Notes: Green symbols represent reference areas and blue symbols represent exposed areas. Solid red line = Lower BC WSQG; broken red line = Upper BC WSQG. BC WSQG = British Columbia Working Sediment Quality Guideline (BCMOECCS 2021a) and approved BC Sediment Quality Guideline for Selenium (BCMOECCS 2021b). Shading represents the normal range which represents the 2.5th to 97.5th percentiles of 2017 and 2020 regional reference area data. Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL value.

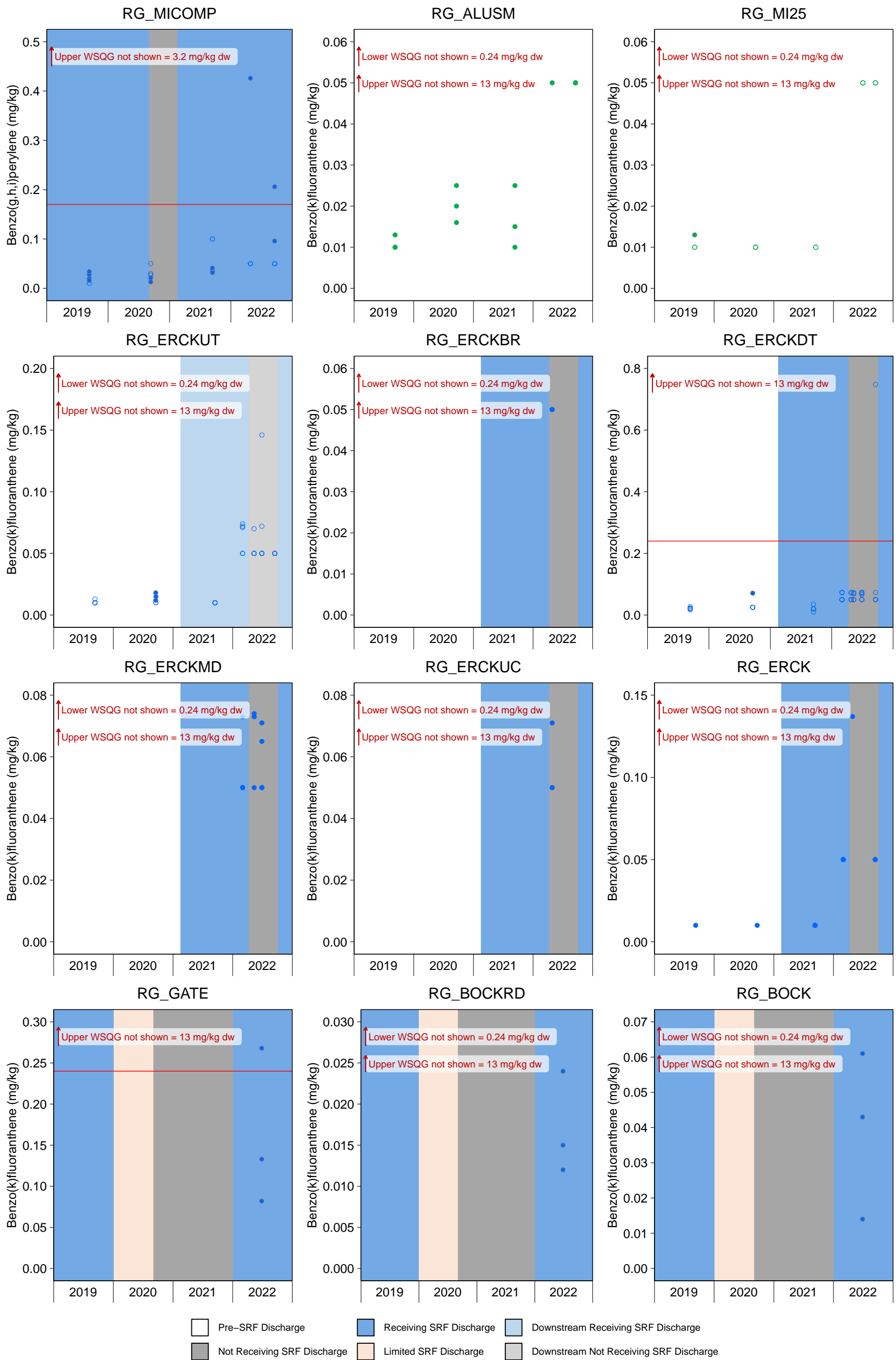


Figure D.33: Sediment Metal and Polycyclic Aromatic Hydrocarbon (PAH) Concentrations in September, EVO LAEMP, 2018 to 2022

Notes: Green symbols represent reference areas and blue symbols represent exposed areas. Solid red line = Lower BC WSQG; broken red line = Upper BC WSQG. BC WSQG = British Columbia Working Sediment Quality Guideline (BCMOECCS 2021a) and approved BC Sediment Quality Guideline for Selenium (BCMOECCS 2021b). Shading represents the normal range which represents the 2.5th to 97.5th percentiles of 2017 and 2020 regional reference area data. Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL value.

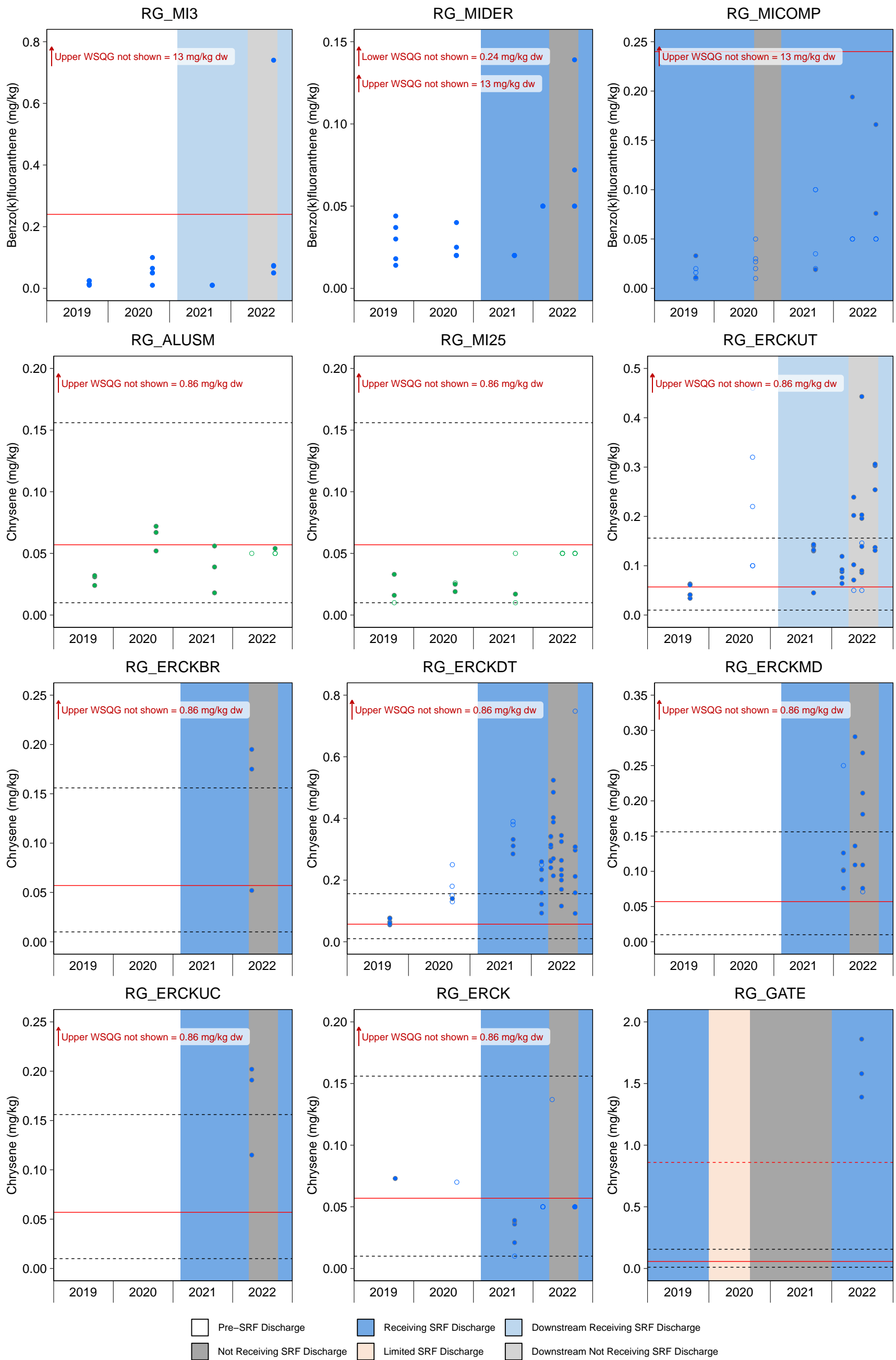


Figure D.33: Sediment Metal and Polycyclic Aromatic Hydrocarbon (PAH) Concentrations in September, EVO LAEMP, 2018 to 2022

Notes: Green symbols represent reference areas and blue symbols represent exposed areas. Solid red line = Lower BC WSQG; broken red line = Upper BC WSQG. BC WSQG = British Columbia Working Sediment Quality Guideline (BCMOECCS 2021a) and approved BC Sediment Quality Guideline for Selenium (BCMOECCS 2021b). Shading represents the normal range which represents the 2.5th to 97.5th percentiles of 2017 and 2020 regional reference area data. Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL value.

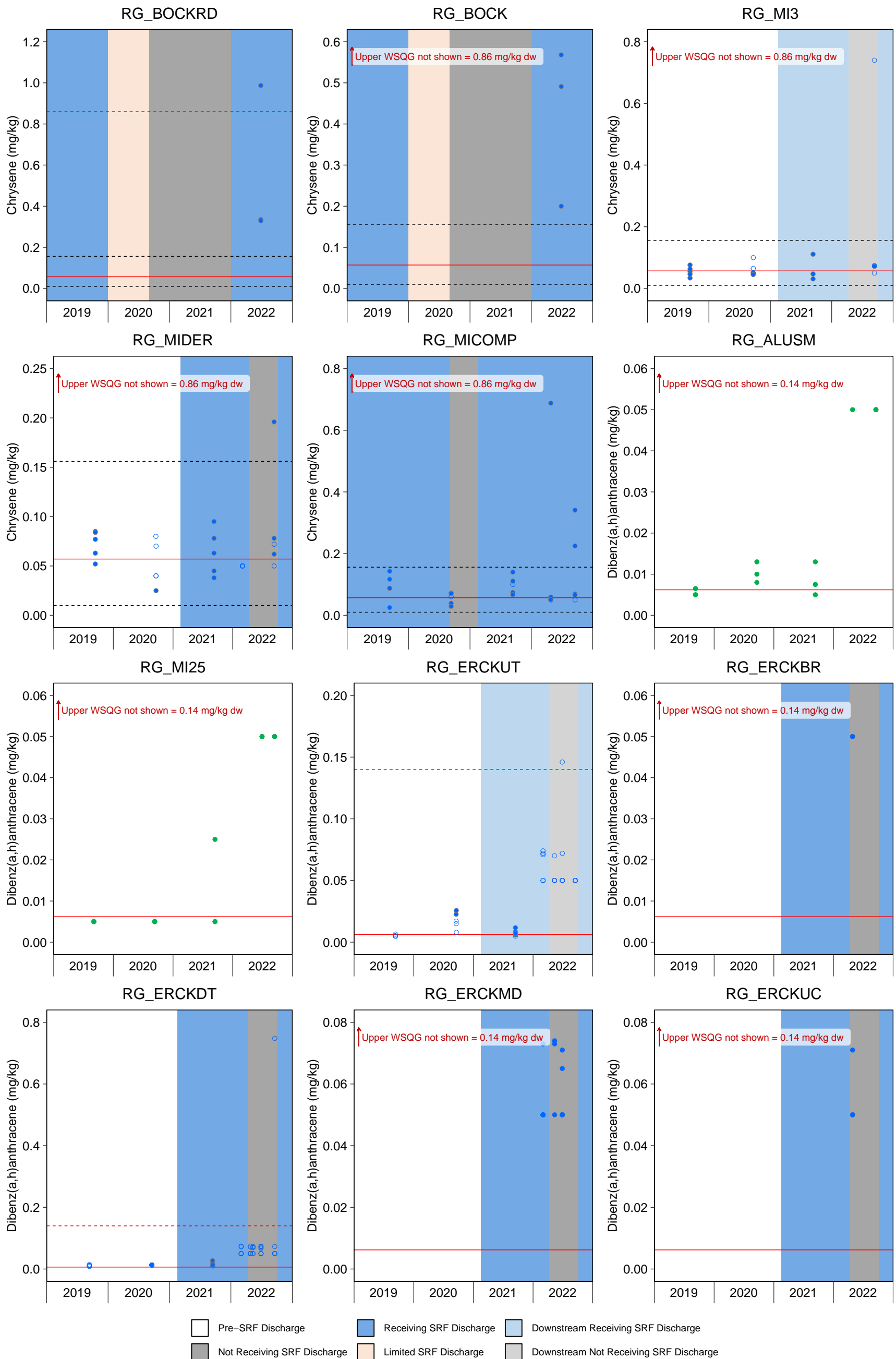


Figure D.33: Sediment Metal and Polycyclic Aromatic Hydrocarbon (PAH) Concentrations in September, EVO LAEMP, 2018 to 2022

Notes: Green symbols represent reference areas and blue symbols represent exposed areas. Solid red line = Lower BC WSQG; broken red line = Upper BC WSQG. BC WSQG = British Columbia Working Sediment Quality Guideline (BCMOECCS 2021a) and approved BC Sediment Quality Guideline for Selenium (BCMOECCS 2021b). Shading represents the normal range which represents the 2.5th to 97.5th percentiles of 2017 and 2020 regional reference area data. Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL value.

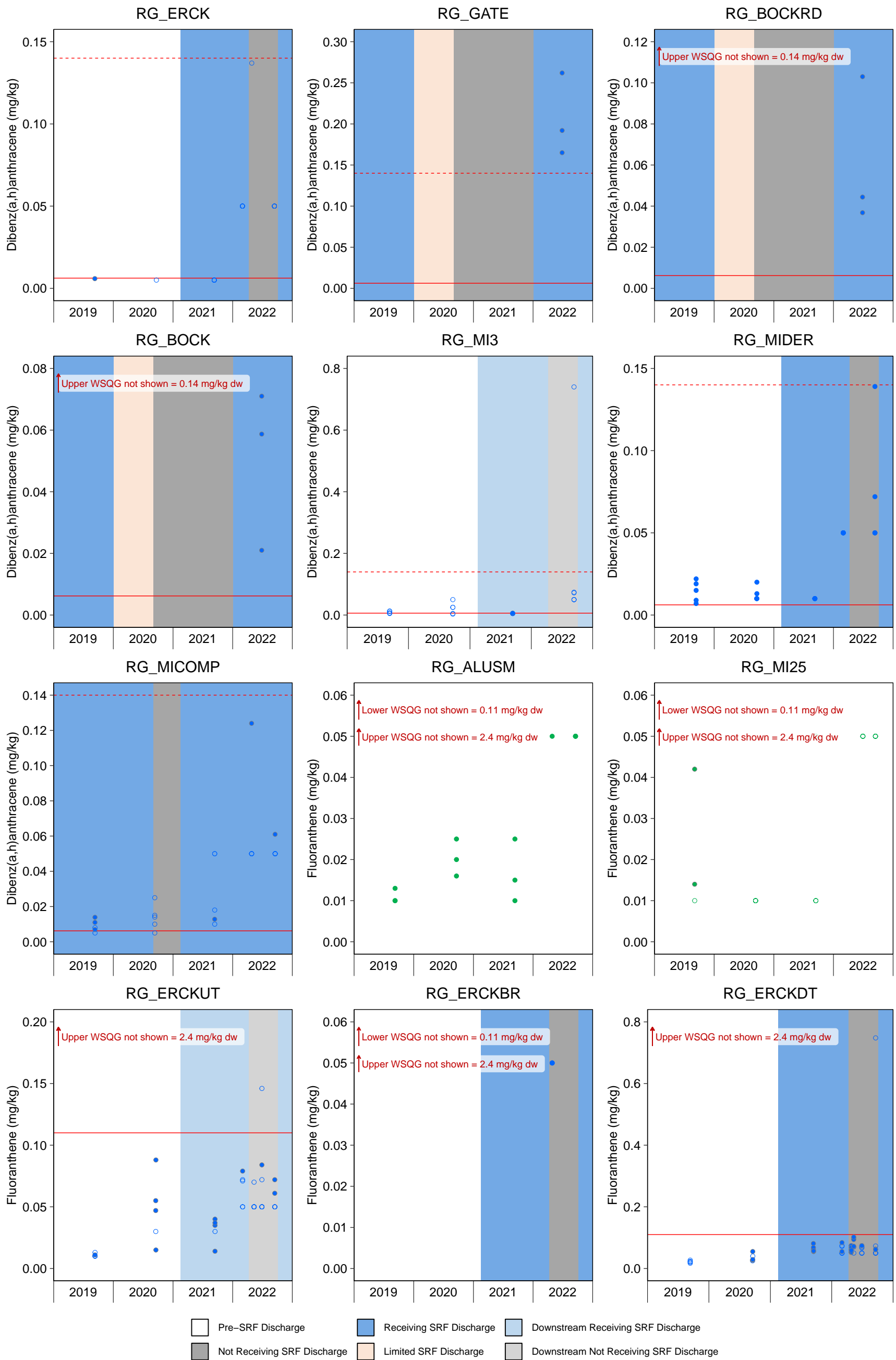


Figure D.33: Sediment Metal and Polycyclic Aromatic Hydrocarbon (PAH) Concentrations in September, EVO LAEMP, 2018 to 2022

Notes: Green symbols represent reference areas and blue symbols represent exposed areas. Solid red line = Lower BC WSQG; broken red line = Upper BC WSQG. BC WSQG = British Columbia Working Sediment Quality Guideline (BCMOECCS 2021a) and approved BC Sediment Quality Guideline for Selenium (BCMOECCS 2021b). Shading represents the normal range which represents the 2.5th to 97.5th percentiles of 2017 and 2020 regional reference area data. Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL value.

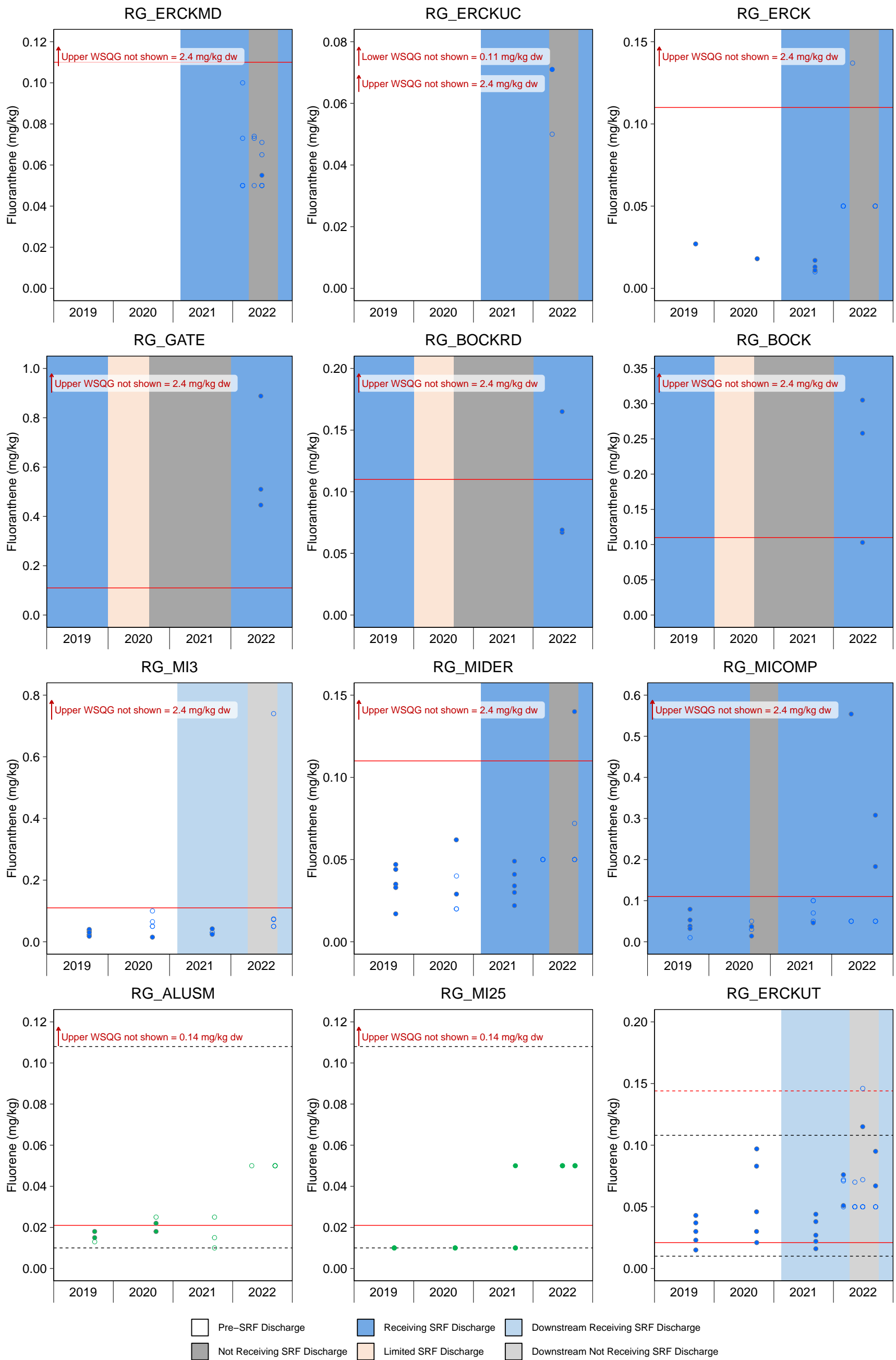


Figure D.33: Sediment Metal and Polycyclic Aromatic Hydrocarbon (PAH) Concentrations in September, EVO LAEMP, 2018 to 2022

Notes: Green symbols represent reference areas and blue symbols represent exposed areas. Solid red line = Lower BC WSQG; broken red line = Upper BC WSQG. BC WSQG = British Columbia Working Sediment Quality Guideline (BCMOECCS 2021a) and approved BC Sediment Quality Guideline for Selenium (BCMOECCS 2021b). Shading represents the normal range which represents the 2.5th to 97.5th percentiles of 2017 and 2020 regional reference area data. Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL value.

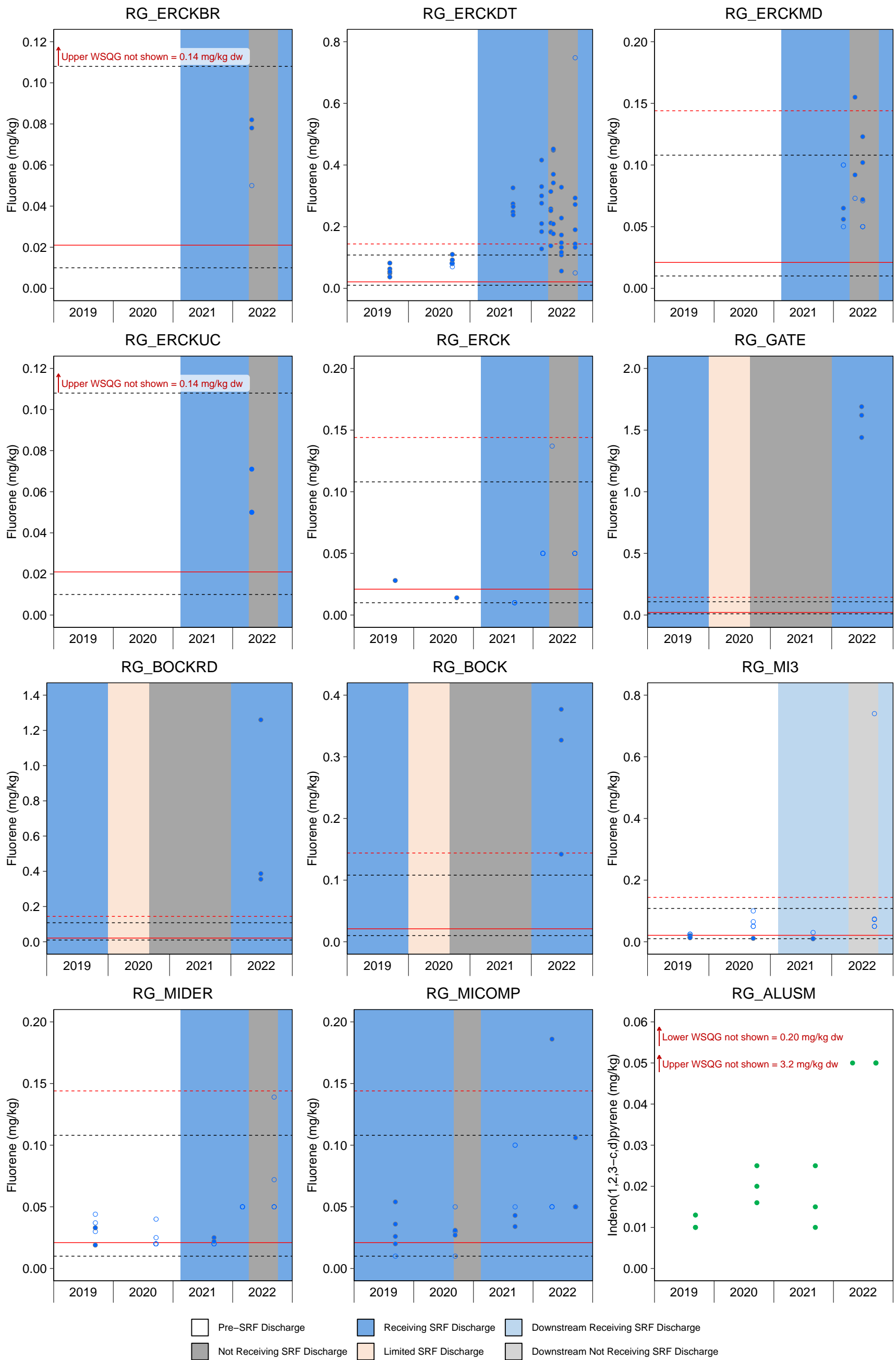


Figure D.33: Sediment Metal and Polycyclic Aromatic Hydrocarbon (PAH) Concentrations in September, EVO LAEMP, 2018 to 2022

Notes: Green symbols represent reference areas and blue symbols represent exposed areas. Solid red line = Lower BC WSQG; broken red line = Upper BC WSQG. BC WSQG = British Columbia Working Sediment Quality Guideline (BCMOECCS 2021a) and approved BC Sediment Quality Guideline for Selenium (BCMOECCS 2021b). Shading represents the normal range which represents the 2.5th to 97.5th percentiles of 2017 and 2020 regional reference area data. Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL value.

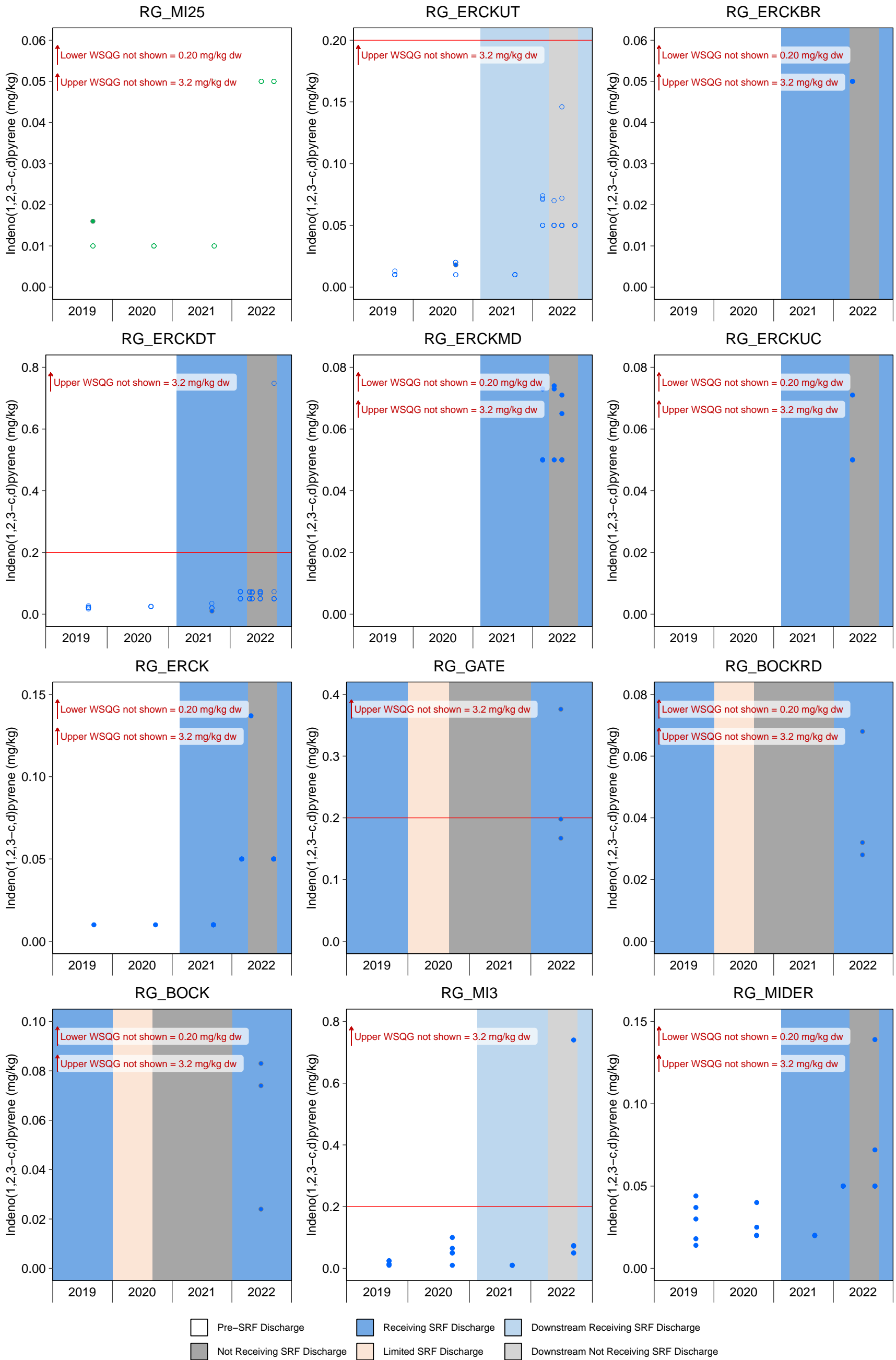


Figure D.33: Sediment Metal and Polycyclic Aromatic Hydrocarbon (PAH) Concentrations in September, EVO LAEMP, 2018 to 2022

Notes: Green symbols represent reference areas and blue symbols represent exposed areas. Solid red line = Lower BC WSQG; broken red line = Upper BC WSQG. BC WSQG = British Columbia Working Sediment Quality Guideline (BCMOECCS 2021a) and approved BC Sediment Quality Guideline for Selenium (BCMOECCS 2021b). Shading represents the normal range which represents the 2.5th to 97.5th percentiles of 2017 and 2020 regional reference area data. Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL value.

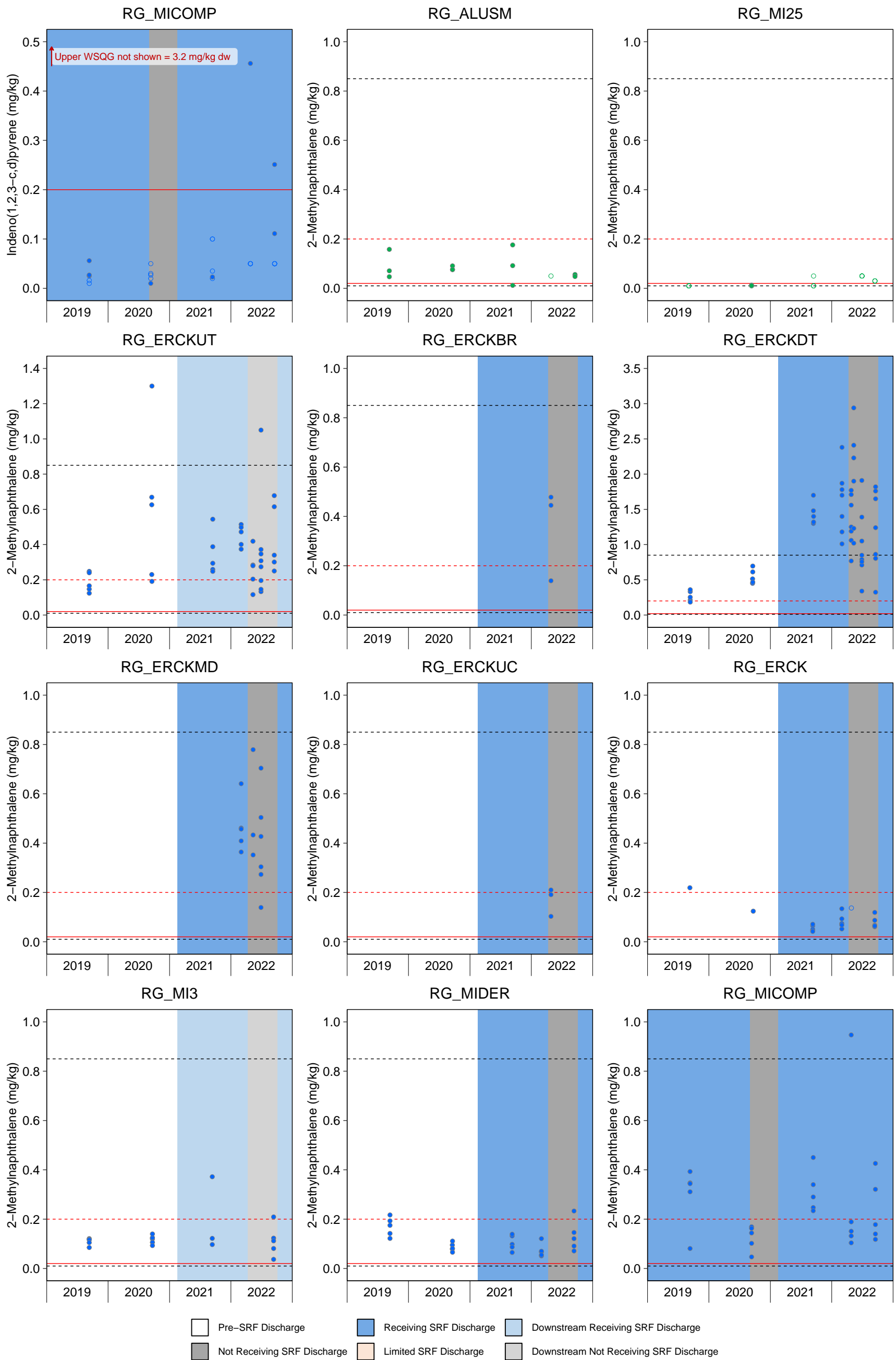


Figure D.33: Sediment Metal and Polycyclic Aromatic Hydrocarbon (PAH) Concentrations in September, EVO LAEMP, 2018 to 2022

Notes: Green symbols represent reference areas and blue symbols represent exposed areas. Solid red line = Lower BC WSQG; broken red line = Upper BC WSQG. BC WSQG = British Columbia Working Sediment Quality Guideline (BCMOECCS 2021a) and approved BC Sediment Quality Guideline for Selenium (BCMOECCS 2021b). Shading represents the normal range which represents the 2.5th to 97.5th percentiles of 2017 and 2020 regional reference area data. Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL value.

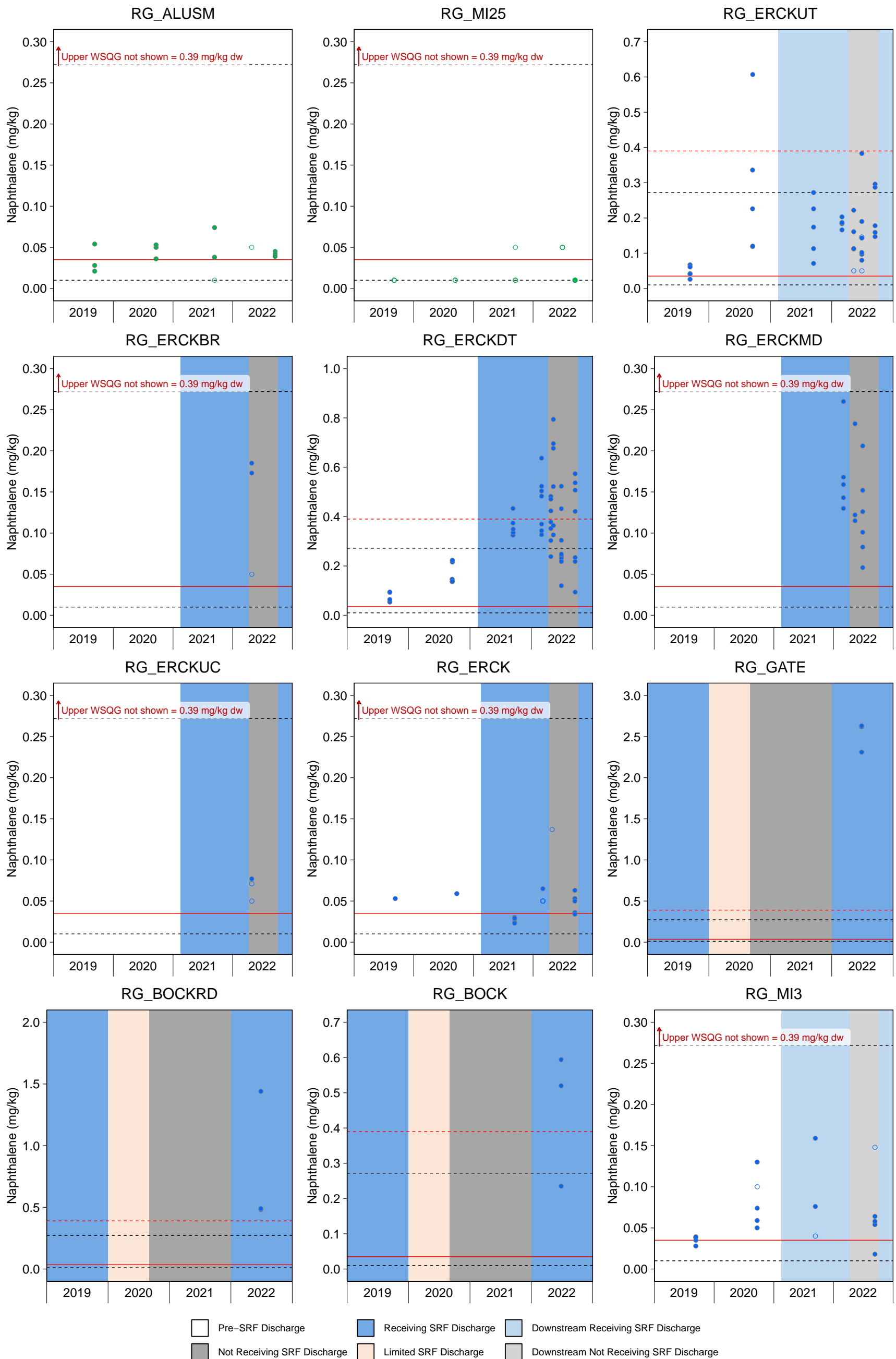


Figure D.33: Sediment Metal and Polycyclic Aromatic Hydrocarbon (PAH) Concentrations in September, EVO LAEMP, 2018 to 2022

Notes: Green symbols represent reference areas and blue symbols represent exposed areas. Solid red line = Lower BC WSQG; broken red line = Upper BC WSQG. BC WSQG = British Columbia Working Sediment Quality Guideline (BCMOECCS 2021a) and approved BC Sediment Quality Guideline for Selenium (BCMOECCS 2021b). Shading represents the normal range which represents the 2.5th to 97.5th percentiles of 2017 and 2020 regional reference area data. Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL value.

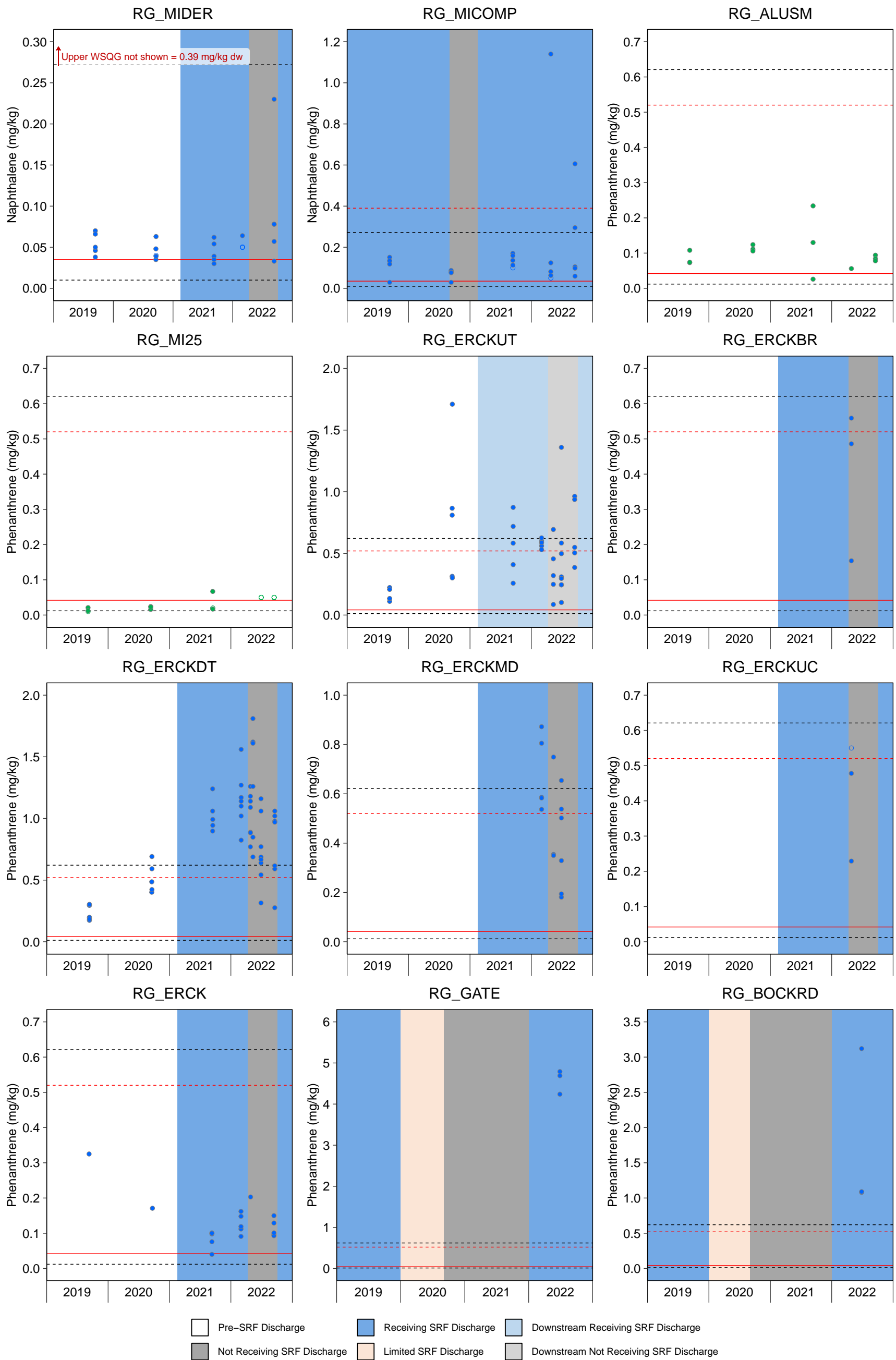


Figure D.33: Sediment Metal and Polycyclic Aromatic Hydrocarbon (PAH) Concentrations in September, EVO LAEMP, 2018 to 2022

Notes: Green symbols represent reference areas and blue symbols represent exposed areas. Solid red line = Lower BC WSQG; broken red line = Upper BC WSQG. BC WSQG = British Columbia Working Sediment Quality Guideline (BCMOECCS 2021a) and approved BC Sediment Quality Guideline for Selenium (BCMOECCS 2021b). Shading represents the normal range which represents the 2.5th to 97.5th percentiles of 2017 and 2020 regional reference area data. Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL value.

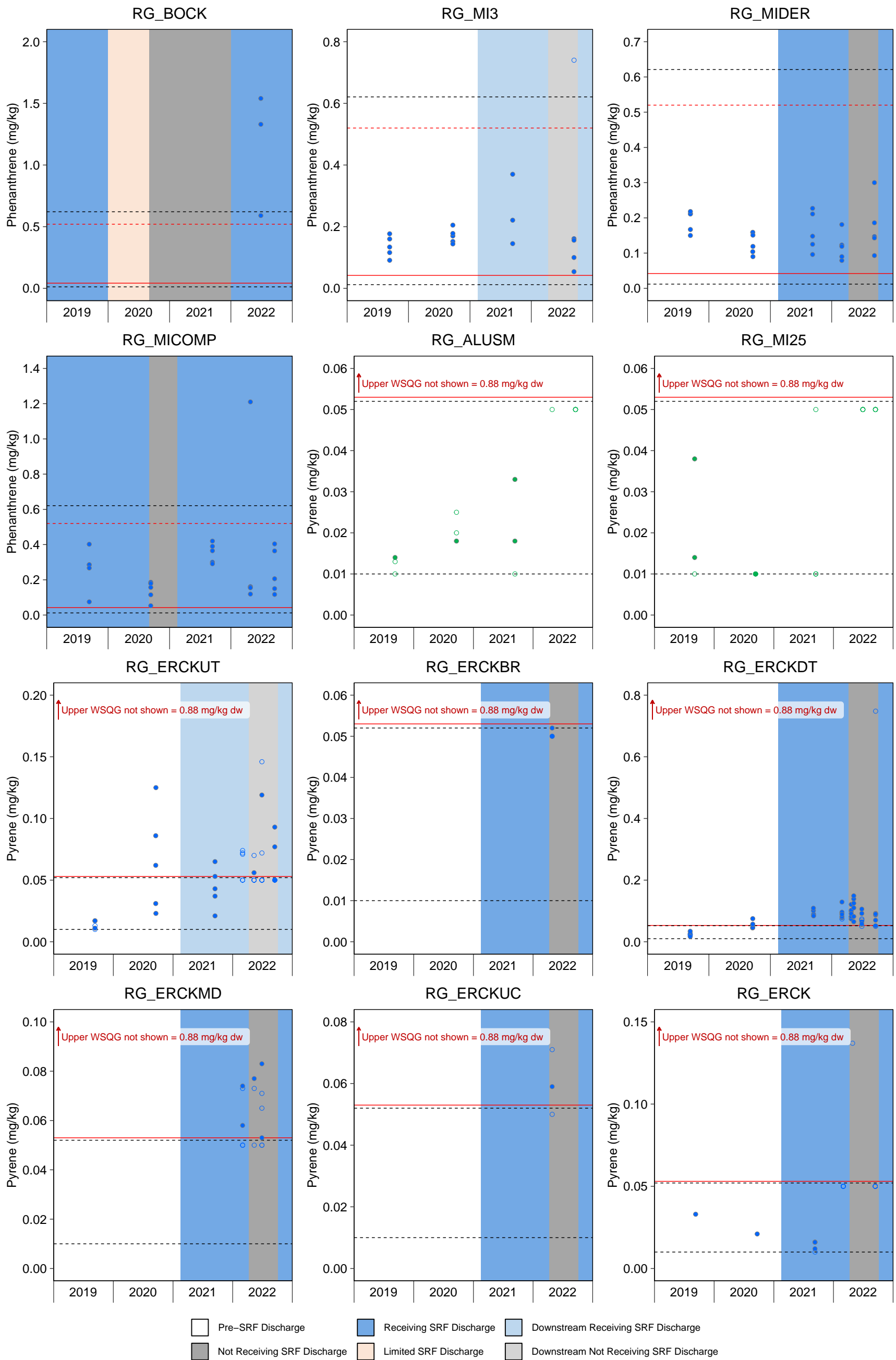


Figure D.33: Sediment Metal and Polycyclic Aromatic Hydrocarbon (PAH) Concentrations in September, EVO LAEMP, 2018 to 2022

Notes: Green symbols represent reference areas and blue symbols represent exposed areas. Solid red line = Lower BC WSQG; broken red line = Upper BC WSQG. BC WSQG = British Columbia Working Sediment Quality Guideline (BCMOECCS 2021a) and approved BC Sediment Quality Guideline for Selenium (BCMOECCS 2021b). Shading represents the normal range which represents the 2.5th to 97.5th percentiles of 2017 and 2020 regional reference area data. Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL value.

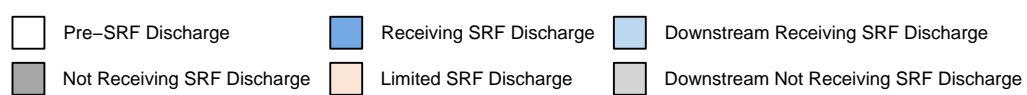
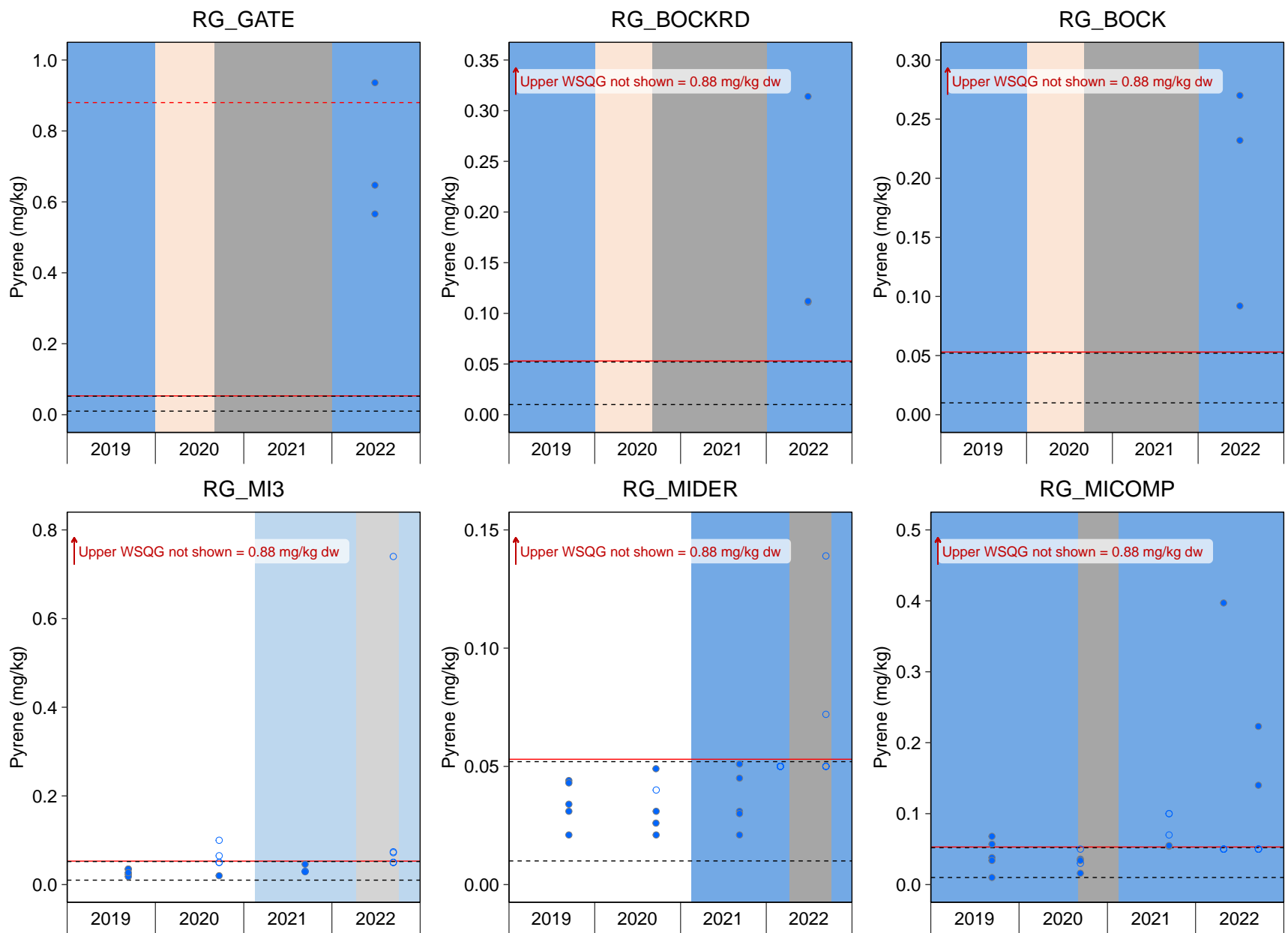


Figure D.33: Sediment Metal and Polycyclic Aromatic Hydrocarbon (PAH) Concentrations in September, EVO LAEMP, 2018 to 2022

Notes: Green symbols represent reference areas and blue symbols represent exposed areas. Solid red line = Lower BC WSQG; broken red line = Upper BC WSQG. BC WSQG = British Columbia Working Sediment Quality Guideline (BCMOECCS 2021a) and approved BC Sediment Quality Guideline for Selenium (BCMOECCS 2021b). Shading represents the normal range which represents the 2.5th to 97.5th percentiles of 2017 and 2020 regional reference area data. Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL value.

Table D.1: Comparison of Concentrations of Water Quality Constituents Upstream and Downstream of SRF Treatment on Erickson Creek, EVO LAEMP, 2019 to 2022

Parameter	Upstream Area	Downstream Area	Year	Month	SRF Status	Spatial Difference ^a	
						Magnitude of Difference	P-value
Nitrate (as N)	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2020	12	Pre-SRF Discharge	NS	0.613
Nitrate (as N)	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	2	Pre-SRF Discharge	NS	0.599
Nitrate (as N)	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	3	Receiving SRF Discharge	NS	0.296
Nitrate (as N)	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	4	Receiving SRF Discharge	-33	0.036
Nitrate (as N)	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	5	Receiving SRF Discharge	NS	0.062
Nitrate (as N)	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	6	Receiving SRF Discharge	NS	0.237
Nitrate (as N)	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	7	Receiving SRF Discharge	-45	0.002
Nitrate (as N)	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	8	Receiving SRF Discharge	-80	<0.001
Nitrate (as N)	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	9	Receiving SRF Discharge	-70	<0.001
Nitrate (as N)	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	10	Receiving SRF Discharge	-80	<0.001
Nitrate (as N)	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	11	Receiving SRF Discharge	-70	<0.001
Nitrate (as N)	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	12	Receiving SRF Discharge	NS	0.061
Nitrate (as N)	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	1	Receiving SRF Discharge	-45	0.005
Nitrate (as N)	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	2	Receiving SRF Discharge	-58	<0.001
Nitrate (as N)	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	3	Receiving SRF Discharge	-64	<0.001
Nitrate (as N)	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	4	Not Receiving SRF Discharge	NS	0.782
Nitrate (as N)	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	5	Not Receiving SRF Discharge	NS	0.871
Nitrate (as N)	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	6	Not Receiving SRF Discharge	NS	0.559
Nitrate (as N)	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	7	Not Receiving SRF Discharge	NS	0.967
Nitrate (as N)	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	8	Not Receiving SRF Discharge	NS	0.972
Nitrate (as N)	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	9	Not Receiving SRF Discharge	NS	0.995
Nitrate (as N)	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	10	Receiving SRF Discharge	NS	0.941
Nitrate (as N)	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	11	Receiving SRF Discharge	NS	0.480
Nitrate (as N)	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	12	Receiving SRF Discharge	NS	0.191
Total Phosphorus	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2020	12	Pre-SRF Discharge	78	<0.001
Total Phosphorus	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	2	Pre-SRF Discharge	38	0.020
Total Phosphorus	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	3	Receiving SRF Discharge	-26	0.002
Total Phosphorus	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	4	Receiving SRF Discharge	-32	<0.001
Total Phosphorus	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	5	Receiving SRF Discharge	-28	0.001
Total Phosphorus	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	6	Receiving SRF Discharge	-33	<0.001
Total Phosphorus	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	7	Receiving SRF Discharge	-47	<0.001
Total Phosphorus	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	8	Receiving SRF Discharge	-69	<0.001
Total Phosphorus	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	9	Receiving SRF Discharge	-59	<0.001
Total Phosphorus	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	10	Receiving SRF Discharge	-66	<0.001
Total Phosphorus	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	11	Receiving SRF Discharge	-55	<0.001
Total Phosphorus	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	12	Receiving SRF Discharge	-32	0.001
Total Phosphorus	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	1	Receiving SRF Discharge	-50	<0.001
Total Phosphorus	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	2	Receiving SRF Discharge	-54	<0.001
Total Phosphorus	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	3	Receiving SRF Discharge	-54	<0.001
Total Phosphorus	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	4	Not Receiving SRF Discharge	NS	0.553

Table D.1: Comparison of Concentrations of Water Quality Constituents Upstream and Downstream of SRF Treatment on Erickson Creek, EVO LAEMP, 2019 to 2022

Parameter	Upstream Area	Downstream Area	Year	Month	SRF Status	Spatial Difference ^a	
						Magnitude of Difference	P-value
Total Phosphorus	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	5	Not Receiving SRF Discharge	NS	0.540
Total Phosphorus	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	6	Not Receiving SRF Discharge	NS	0.214
Total Phosphorus	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	7	Not Receiving SRF Discharge	NS	0.591
Total Phosphorus	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	9	Not Receiving SRF Discharge	NS	0.885
Total Phosphorus	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	10	Receiving SRF Discharge	NS	0.486
Total Phosphorus	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	11	Receiving SRF Discharge	NS	0.177
Total Phosphorus	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	12	Receiving SRF Discharge	-33	0.002
Orthophosphate	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2020	12	Pre-SRF Discharge	NS	0.112
Orthophosphate	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	2	Pre-SRF Discharge	NS	0.583
Orthophosphate	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	3	Receiving SRF Discharge	-33	0.002
Orthophosphate	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	4	Receiving SRF Discharge	-41	<0.001
Orthophosphate	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	5	Receiving SRF Discharge	-35	<0.001
Orthophosphate	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	6	Receiving SRF Discharge	-56	<0.001
Orthophosphate	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	7	Receiving SRF Discharge	-65	<0.001
Orthophosphate	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	8	Receiving SRF Discharge	-92	<0.001
Orthophosphate	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	9	Receiving SRF Discharge	-79	<0.001
Orthophosphate	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	10	Receiving SRF Discharge	-84	<0.001
Orthophosphate	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	11	Receiving SRF Discharge	-76	<0.001
Orthophosphate	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	12	Receiving SRF Discharge	-38	0.001
Orthophosphate	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	1	Receiving SRF Discharge	-51	<0.001
Orthophosphate	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	2	Receiving SRF Discharge	-65	<0.001
Orthophosphate	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	3	Receiving SRF Discharge	-76	<0.001
Orthophosphate	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	4	Not Receiving SRF Discharge	NS	0.702
Orthophosphate	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	5	Not Receiving SRF Discharge	NS	0.683
Orthophosphate	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	6	Not Receiving SRF Discharge	NS	0.217
Orthophosphate	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	7	Not Receiving SRF Discharge	NS	0.264
Orthophosphate	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	9	Not Receiving SRF Discharge	NS	0.319
Orthophosphate	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	10	Receiving SRF Discharge	NS	0.697
Orthophosphate	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	11	Receiving SRF Discharge	NS	0.280
Orthophosphate	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	12	Receiving SRF Discharge	-29	0.046
Sulphate	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2020	12	Pre-SRF Discharge	NS	0.199
Sulphate	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	2	Pre-SRF Discharge	NS	0.177
Sulphate	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	3	Receiving SRF Discharge	5.0	0.028
Sulphate	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	4	Receiving SRF Discharge	NS	0.492
Sulphate	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	5	Receiving SRF Discharge	NS	0.733
Sulphate	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	6	Receiving SRF Discharge	NS	0.328
Sulphate	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	7	Receiving SRF Discharge	NS	0.641
Sulphate	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	8	Receiving SRF Discharge	NS	0.076
Sulphate	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	9	Receiving SRF Discharge	NS	0.180
Sulphate	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	10	Receiving SRF Discharge	NS	0.213

Table D.1: Comparison of Concentrations of Water Quality Constituents Upstream and Downstream of SRF Treatment on Erickson Creek, EVO LAEMP, 2019 to 2022

Parameter	Upstream Area	Downstream Area	Year	Month	SRF Status	Spatial Difference ^a	
						Magnitude of Difference	P-value
Sulphate	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	11	Receiving SRF Discharge	NS	0.741
Sulphate	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	12	Receiving SRF Discharge	NS	0.961
Sulphate	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	1	Receiving SRF Discharge	NS	0.385
Sulphate	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	2	Receiving SRF Discharge	NS	0.220
Sulphate	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	3	Receiving SRF Discharge	NS	0.903
Sulphate	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	4	Not Receiving SRF Discharge	NS	0.195
Sulphate	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	5	Not Receiving SRF Discharge	NS	0.300
Sulphate	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	6	Not Receiving SRF Discharge	22	<0.001
Sulphate	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	7	Not Receiving SRF Discharge	NS	0.498
Sulphate	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	8	Not Receiving SRF Discharge	NS	0.931
Sulphate	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	9	Not Receiving SRF Discharge	NS	0.822
Sulphate	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	10	Receiving SRF Discharge	NS	0.783
Sulphate	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	11	Receiving SRF Discharge	NS	0.370
Sulphate	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	12	Receiving SRF Discharge	NS	0.159
Total Dissolved Solids	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2020	12	Pre-SRF Discharge	NS	0.722
Total Dissolved Solids	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	2	Pre-SRF Discharge	NS	0.883
Total Dissolved Solids	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	3	Receiving SRF Discharge	NS	0.147
Total Dissolved Solids	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	4	Receiving SRF Discharge	NS	0.275
Total Dissolved Solids	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	5	Receiving SRF Discharge	NS	0.486
Total Dissolved Solids	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	6	Receiving SRF Discharge	NS	0.495
Total Dissolved Solids	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	7	Receiving SRF Discharge	NS	0.852
Total Dissolved Solids	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	8	Receiving SRF Discharge	NS	0.739
Total Dissolved Solids	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	9	Receiving SRF Discharge	NS	0.472
Total Dissolved Solids	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	10	Receiving SRF Discharge	NS	0.701
Total Dissolved Solids	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	11	Receiving SRF Discharge	NS	0.992
Total Dissolved Solids	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	12	Receiving SRF Discharge	NS	0.619
Total Dissolved Solids	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	1	Receiving SRF Discharge	NS	0.649
Total Dissolved Solids	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	2	Receiving SRF Discharge	NS	0.972
Total Dissolved Solids	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	3	Receiving SRF Discharge	NS	0.494
Total Dissolved Solids	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	4	Not Receiving SRF Discharge	NS	0.741
Total Dissolved Solids	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	5	Not Receiving SRF Discharge	NS	0.624
Total Dissolved Solids	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	6	Not Receiving SRF Discharge	NS	0.056
Total Dissolved Solids	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	7	Not Receiving SRF Discharge	NS	0.892
Total Dissolved Solids	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	9	Not Receiving SRF Discharge	NS	0.787
Total Dissolved Solids	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	10	Receiving SRF Discharge	NS	0.838
Total Dissolved Solids	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	11	Receiving SRF Discharge	NS	0.796
Total Dissolved Solids	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	12	Receiving SRF Discharge	NS	0.854
Total Antimony	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2020	12	Pre-SRF Discharge	NS	0.959
Total Antimony	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	3	Receiving SRF Discharge	NS	0.343
Total Antimony	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	4	Receiving SRF Discharge	NS	0.201

Table D.1: Comparison of Concentrations of Water Quality Constituents Upstream and Downstream of SRF Treatment on Erickson Creek, EVO LAEMP, 2019 to 2022

Parameter	Upstream Area	Downstream Area	Year	Month	SRF Status	Spatial Difference ^a	
						Magnitude of Difference	P-value
Total Antimony	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	5	Receiving SRF Discharge	NS	0.938
Total Antimony	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	6	Receiving SRF Discharge	22	0.008
Total Antimony	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	7	Receiving SRF Discharge	51	<0.001
Total Antimony	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	8	Receiving SRF Discharge	117	<0.001
Total Antimony	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	9	Receiving SRF Discharge	69	<0.001
Total Antimony	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	10	Receiving SRF Discharge	115	<0.001
Total Antimony	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	11	Receiving SRF Discharge	190	<0.001
Total Antimony	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	12	Receiving SRF Discharge	50	<0.001
Total Antimony	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	1	Receiving SRF Discharge	79	<0.001
Total Antimony	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	2	Receiving SRF Discharge	89	<0.001
Total Antimony	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	3	Receiving SRF Discharge	66	<0.001
Total Antimony	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	4	Not Receiving SRF Discharge	NS	0.580
Total Antimony	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	5	Not Receiving SRF Discharge	NS	0.882
Total Antimony	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	6	Not Receiving SRF Discharge	NS	0.798
Total Antimony	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	7	Not Receiving SRF Discharge	NS	0.845
Total Antimony	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	9	Not Receiving SRF Discharge	NS	0.883
Total Antimony	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	10	Receiving SRF Discharge	NS	0.338
Total Antimony	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	11	Receiving SRF Discharge	NS	0.196
Total Antimony	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	12	Receiving SRF Discharge	NS	0.930
Total Barium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2020	12	Pre-SRF Discharge	NS	0.219
Total Barium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	3	Receiving SRF Discharge	-32	0.006
Total Barium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	4	Receiving SRF Discharge	-30	0.011
Total Barium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	5	Receiving SRF Discharge	NS	0.110
Total Barium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	6	Receiving SRF Discharge	-33	0.003
Total Barium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	7	Receiving SRF Discharge	-38	0.002
Total Barium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	8	Receiving SRF Discharge	-67	<0.001
Total Barium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	9	Receiving SRF Discharge	-61	<0.001
Total Barium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	10	Receiving SRF Discharge	-72	<0.001
Total Barium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	11	Receiving SRF Discharge	-57	<0.001
Total Barium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	12	Receiving SRF Discharge	-26	0.042
Total Barium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	1	Receiving SRF Discharge	-41	<0.001
Total Barium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	2	Receiving SRF Discharge	-50	<0.001
Total Barium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	3	Receiving SRF Discharge	-60	<0.001
Total Barium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	4	Not Receiving SRF Discharge	NS	0.654
Total Barium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	5	Not Receiving SRF Discharge	NS	0.963
Total Barium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	6	Not Receiving SRF Discharge	NS	0.930
Total Barium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	7	Not Receiving SRF Discharge	NS	0.697
Total Barium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	9	Not Receiving SRF Discharge	NS	0.903
Total Barium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	10	Receiving SRF Discharge	NS	0.102
Total Barium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	11	Receiving SRF Discharge	NS	0.271

Table D.1: Comparison of Concentrations of Water Quality Constituents Upstream and Downstream of SRF Treatment on Erickson Creek, EVO LAEMP, 2019 to 2022

Parameter	Upstream Area	Downstream Area	Year	Month	SRF Status	Spatial Difference ^a	
						Magnitude of Difference	P-value
Total Barium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	12	Receiving SRF Discharge	NS	0.178
Total Boron	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2020	12	Pre-SRF Discharge	NS	0.367
Total Boron	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	3	Receiving SRF Discharge	96	<0.001
Total Boron	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	4	Receiving SRF Discharge	86	<0.001
Total Boron	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	5	Receiving SRF Discharge	46	0.003
Total Boron	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	6	Receiving SRF Discharge	85	<0.001
Total Boron	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	7	Receiving SRF Discharge	78	<0.001
Total Boron	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	8	Receiving SRF Discharge	134	<0.001
Total Boron	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	9	Receiving SRF Discharge	70	<0.001
Total Boron	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	10	Receiving SRF Discharge	85	0.005
Total Boron	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	11	Receiving SRF Discharge	66	0.016
Total Boron	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	12	Receiving SRF Discharge	51	0.005
Total Boron	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	1	Receiving SRF Discharge	75	<0.001
Total Boron	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	2	Receiving SRF Discharge	110	<0.001
Total Boron	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	3	Receiving SRF Discharge	72	<0.001
Total Boron	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	4	Not Receiving SRF Discharge	NS	0.913
Total Boron	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	5	Not Receiving SRF Discharge	NS	0.716
Total Boron	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	6	Not Receiving SRF Discharge	NS	0.982
Total Boron	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	7	Not Receiving SRF Discharge	NS	0.999
Total Boron	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	9	Not Receiving SRF Discharge	NS	0.991
Total Boron	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	10	Receiving SRF Discharge	NS	0.194
Total Boron	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	11	Receiving SRF Discharge	NS	0.203
Total Boron	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	12	Receiving SRF Discharge	51	0.012
Total Lithium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2020	12	Pre-SRF Discharge	NS	0.245
Total Lithium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	3	Receiving SRF Discharge	115	<0.001
Total Lithium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	4	Receiving SRF Discharge	93	<0.001
Total Lithium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	5	Receiving SRF Discharge	51	0.007
Total Lithium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	6	Receiving SRF Discharge	76	<0.001
Total Lithium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	7	Receiving SRF Discharge	62	0.003
Total Lithium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	8	Receiving SRF Discharge	106	<0.001
Total Lithium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	9	Receiving SRF Discharge	53	0.011
Total Lithium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	10	Receiving SRF Discharge	80	0.001
Total Lithium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	11	Receiving SRF Discharge	58	0.006
Total Lithium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	12	Receiving SRF Discharge	39	0.039
Total Lithium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	1	Receiving SRF Discharge	65	0.001
Total Lithium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	2	Receiving SRF Discharge	83	<0.001
Total Lithium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	3	Receiving SRF Discharge	68	<0.001
Total Lithium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	4	Not Receiving SRF Discharge	NS	0.893
Total Lithium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	5	Not Receiving SRF Discharge	NS	0.904
Total Lithium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	6	Not Receiving SRF Discharge	NS	0.608

Table D.1: Comparison of Concentrations of Water Quality Constituents Upstream and Downstream of SRF Treatment on Erickson Creek, EVO LAEMP, 2019 to 2022

Parameter	Upstream Area	Downstream Area	Year	Month	SRF Status	Spatial Difference ^a	
						Magnitude of Difference	P-value
Total Lithium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	7	Not Receiving SRF Discharge	NS	0.625
Total Lithium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	9	Not Receiving SRF Discharge	NS	0.849
Total Lithium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	10	Receiving SRF Discharge	NS	0.798
Total Lithium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	11	Receiving SRF Discharge	43	0.031
Total Lithium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	12	Receiving SRF Discharge	92	<0.001
Total Manganese	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2020	12	Pre-SRF Discharge	NS	0.424
Total Manganese	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	3	Receiving SRF Discharge	8,940	<0.001
Total Manganese	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	4	Receiving SRF Discharge	8,948	<0.001
Total Manganese	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	5	Receiving SRF Discharge	14,285	<0.001
Total Manganese	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	6	Receiving SRF Discharge	26,569	<0.001
Total Manganese	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	7	Receiving SRF Discharge	31,344	<0.001
Total Manganese	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	8	Receiving SRF Discharge	125,475	<0.001
Total Manganese	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	9	Receiving SRF Discharge	49,295	<0.001
Total Manganese	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	10	Receiving SRF Discharge	136,465	<0.001
Total Manganese	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	11	Receiving SRF Discharge	109,645	<0.001
Total Manganese	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	12	Receiving SRF Discharge	71,028	<0.001
Total Manganese	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	1	Receiving SRF Discharge	127,612	<0.001
Total Manganese	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	2	Receiving SRF Discharge	99,627	<0.001
Total Manganese	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	3	Receiving SRF Discharge	22,053	<0.001
Total Manganese	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	4	Not Receiving SRF Discharge	NS	0.290
Total Manganese	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	5	Not Receiving SRF Discharge	NS	0.087
Total Manganese	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	6	Not Receiving SRF Discharge	NS	0.995
Total Manganese	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	7	Not Receiving SRF Discharge	NS	0.996
Total Manganese	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	9	Not Receiving SRF Discharge	NS	0.995
Total Manganese	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	10	Receiving SRF Discharge	NS	0.460
Total Manganese	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	11	Receiving SRF Discharge	19,570	<0.001
Total Manganese	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	12	Receiving SRF Discharge	18,925	<0.001
Total Molybdenum	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2020	12	Pre-SRF Discharge	NS	0.481
Total Molybdenum	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	3	Receiving SRF Discharge	401	<0.001
Total Molybdenum	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	4	Receiving SRF Discharge	345	<0.001
Total Molybdenum	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	5	Receiving SRF Discharge	354	<0.001
Total Molybdenum	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	6	Receiving SRF Discharge	616	<0.001
Total Molybdenum	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	7	Receiving SRF Discharge	585	<0.001
Total Molybdenum	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	8	Receiving SRF Discharge	1,466	<0.001
Total Molybdenum	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	9	Receiving SRF Discharge	567	<0.001
Total Molybdenum	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	10	Receiving SRF Discharge	1,420	<0.001
Total Molybdenum	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	11	Receiving SRF Discharge	1,190	<0.001
Total Molybdenum	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	12	Receiving SRF Discharge	372	<0.001
Total Molybdenum	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	1	Receiving SRF Discharge	807	<0.001
Total Molybdenum	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	2	Receiving SRF Discharge	951	<0.001

Table D.1: Comparison of Concentrations of Water Quality Constituents Upstream and Downstream of SRF Treatment on Erickson Creek, EVO LAEMP, 2019 to 2022

Parameter	Upstream Area	Downstream Area	Year	Month	SRF Status	Spatial Difference ^a	
						Magnitude of Difference	P-value
Total Molybdenum	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	3	Receiving SRF Discharge	689	<0.001
Total Molybdenum	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	4	Not Receiving SRF Discharge	NS	0.494
Total Molybdenum	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	5	Not Receiving SRF Discharge	NS	0.954
Total Molybdenum	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	6	Not Receiving SRF Discharge	NS	0.903
Total Molybdenum	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	7	Not Receiving SRF Discharge	NS	0.992
Total Molybdenum	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	9	Not Receiving SRF Discharge	NS	0.888
Total Molybdenum	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	10	Receiving SRF Discharge	NS	0.277
Total Molybdenum	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	11	Receiving SRF Discharge	245	0.001
Total Molybdenum	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	12	Receiving SRF Discharge	459	<0.001
Dissolved Nickel	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2020	12	Pre-SRF Discharge	NS	0.291
Dissolved Nickel	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	2	Pre-SRF Discharge	449	<0.001
Dissolved Nickel	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	3	Receiving SRF Discharge	1,174	<0.001
Dissolved Nickel	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	4	Receiving SRF Discharge	1,133	<0.001
Dissolved Nickel	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	5	Receiving SRF Discharge	1,746	<0.001
Dissolved Nickel	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	6	Receiving SRF Discharge	2,259	<0.001
Dissolved Nickel	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	7	Receiving SRF Discharge	1,874	<0.001
Dissolved Nickel	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	8	Receiving SRF Discharge	5,476	<0.001
Dissolved Nickel	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	9	Receiving SRF Discharge	1,507	<0.001
Dissolved Nickel	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	10	Receiving SRF Discharge	5,506	<0.001
Dissolved Nickel	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	11	Receiving SRF Discharge	3,923	<0.001
Dissolved Nickel	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	12	Receiving SRF Discharge	1,228	<0.001
Dissolved Nickel	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	1	Receiving SRF Discharge	3,227	<0.001
Dissolved Nickel	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	2	Receiving SRF Discharge	3,713	<0.001
Dissolved Nickel	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	3	Receiving SRF Discharge	2,053	<0.001
Dissolved Nickel	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	4	Not Receiving SRF Discharge	NS	0.293
Dissolved Nickel	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	5	Not Receiving SRF Discharge	NS	0.654
Dissolved Nickel	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	6	Not Receiving SRF Discharge	NS	0.956
Dissolved Nickel	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	7	Not Receiving SRF Discharge	NS	0.950
Dissolved Nickel	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	8	Not Receiving SRF Discharge	NS	0.851
Dissolved Nickel	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	9	Not Receiving SRF Discharge	NS	0.991
Dissolved Nickel	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	10	Receiving SRF Discharge	192	0.003
Dissolved Nickel	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	11	Receiving SRF Discharge	1,032	<0.001
Dissolved Nickel	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	12	Receiving SRF Discharge	2,138	<0.001
Total Nickel	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2020	12	Pre-SRF Discharge	NS	0.298
Total Nickel	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	3	Receiving SRF Discharge	1,762	<0.001
Total Nickel	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	4	Receiving SRF Discharge	1,395	<0.001
Total Nickel	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	5	Receiving SRF Discharge	1,053	<0.001
Total Nickel	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	6	Receiving SRF Discharge	2,366	<0.001
Total Nickel	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	7	Receiving SRF Discharge	2,027	<0.001
Total Nickel	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	8	Receiving SRF Discharge	5,305	<0.001

Table D.1: Comparison of Concentrations of Water Quality Constituents Upstream and Downstream of SRF Treatment on Erickson Creek, EVO LAEMP, 2019 to 2022

Parameter	Upstream Area	Downstream Area	Year	Month	SRF Status	Spatial Difference ^a	
						Magnitude of Difference	P-value
Total Nickel	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	9	Receiving SRF Discharge	1,480	<0.001
Total Nickel	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	10	Receiving SRF Discharge	5,232	<0.001
Total Nickel	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	11	Receiving SRF Discharge	3,408	<0.001
Total Nickel	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	12	Receiving SRF Discharge	2,059	<0.001
Total Nickel	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	1	Receiving SRF Discharge	3,077	<0.001
Total Nickel	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	2	Receiving SRF Discharge	3,241	<0.001
Total Nickel	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	3	Receiving SRF Discharge	1,859	<0.001
Total Nickel	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	4	Not Receiving SRF Discharge	NS	0.445
Total Nickel	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	5	Not Receiving SRF Discharge	NS	0.970
Total Nickel	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	6	Not Receiving SRF Discharge	NS	0.885
Total Nickel	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	7	Not Receiving SRF Discharge	NS	0.772
Total Nickel	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	9	Not Receiving SRF Discharge	NS	0.966
Total Nickel	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	10	Receiving SRF Discharge	NS	0.356
Total Nickel	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	11	Receiving SRF Discharge	921	<0.001
Total Nickel	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	12	Receiving SRF Discharge	1,959	<0.001
Total Selenium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2020	12	Pre-SRF Discharge	NS	0.952
Total Selenium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	3	Receiving SRF Discharge	-43	0.013
Total Selenium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	4	Receiving SRF Discharge	-40	0.029
Total Selenium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	5	Receiving SRF Discharge	NS	0.205
Total Selenium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	6	Receiving SRF Discharge	-41	0.015
Total Selenium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	7	Receiving SRF Discharge	-41	0.018
Total Selenium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	8	Receiving SRF Discharge	-79	<0.001
Total Selenium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	9	Receiving SRF Discharge	-72	<0.001
Total Selenium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	10	Receiving SRF Discharge	-81	<0.001
Total Selenium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	11	Receiving SRF Discharge	-65	<0.001
Total Selenium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	12	Receiving SRF Discharge	-29	0.041
Total Selenium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	1	Receiving SRF Discharge	-51	<0.001
Total Selenium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	2	Receiving SRF Discharge	-53	0.003
Total Selenium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	3	Receiving SRF Discharge	-70	<0.001
Total Selenium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	4	Not Receiving SRF Discharge	NS	0.802
Total Selenium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	5	Not Receiving SRF Discharge	NS	0.956
Total Selenium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	6	Not Receiving SRF Discharge	NS	0.857
Total Selenium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	7	Not Receiving SRF Discharge	NS	0.938
Total Selenium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	9	Not Receiving SRF Discharge	NS	0.877
Total Selenium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	10	Receiving SRF Discharge	110	0.001
Total Selenium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	11	Receiving SRF Discharge	NS	0.322
Total Selenium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	12	Receiving SRF Discharge	NS	0.268
Total Uranium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2020	12	Pre-SRF Discharge	NS	0.787
Total Uranium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	3	Receiving SRF Discharge	31	0.011
Total Uranium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	4	Receiving SRF Discharge	31	0.015

Table D.1: Comparison of Concentrations of Water Quality Constituents Upstream and Downstream of SRF Treatment on Erickson Creek, EVO LAEMP, 2019 to 2022

Parameter	Upstream Area	Downstream Area	Year	Month	SRF Status	Spatial Difference ^a	
						Magnitude of Difference	P-value
Total Uranium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	5	Receiving SRF Discharge	NS	0.175
Total Uranium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	6	Receiving SRF Discharge	27	0.021
Total Uranium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	7	Receiving SRF Discharge	27	0.042
Total Uranium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	8	Receiving SRF Discharge	39	0.003
Total Uranium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	9	Receiving SRF Discharge	NS	0.104
Total Uranium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	10	Receiving SRF Discharge	35	0.025
Total Uranium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	11	Receiving SRF Discharge	NS	0.124
Total Uranium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	12	Receiving SRF Discharge	NS	0.274
Total Uranium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	1	Receiving SRF Discharge	NS	0.113
Total Uranium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	2	Receiving SRF Discharge	NS	0.057
Total Uranium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	3	Receiving SRF Discharge	NS	0.115
Total Uranium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	4	Not Receiving SRF Discharge	NS	0.515
Total Uranium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	5	Not Receiving SRF Discharge	NS	0.899
Total Uranium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	6	Not Receiving SRF Discharge	NS	0.383
Total Uranium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	7	Not Receiving SRF Discharge	NS	0.603
Total Uranium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	9	Not Receiving SRF Discharge	NS	0.896
Total Uranium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	10	Receiving SRF Discharge	NS	0.458
Total Uranium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	11	Receiving SRF Discharge	NS	0.477
Total Uranium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	12	Receiving SRF Discharge	NS	0.180
Dissolved Cadmium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2020	12	Pre-SRF Discharge	75	<0.001
Dissolved Cadmium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	2	Pre-SRF Discharge	53	0.002
Dissolved Cadmium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	3	Receiving SRF Discharge	66	<0.001
Dissolved Cadmium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	4	Receiving SRF Discharge	62	<0.001
Dissolved Cadmium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	5	Receiving SRF Discharge	49	<0.001
Dissolved Cadmium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	6	Receiving SRF Discharge	60	<0.001
Dissolved Cadmium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	7	Receiving SRF Discharge	71	<0.001
Dissolved Cadmium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	8	Receiving SRF Discharge	135	<0.001
Dissolved Cadmium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	9	Receiving SRF Discharge	96	<0.001
Dissolved Cadmium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	10	Receiving SRF Discharge	200	<0.001
Dissolved Cadmium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	11	Receiving SRF Discharge	140	<0.001
Dissolved Cadmium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	12	Receiving SRF Discharge	82	<0.001
Dissolved Cadmium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	1	Receiving SRF Discharge	169	<0.001
Dissolved Cadmium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	2	Receiving SRF Discharge	204	<0.001
Dissolved Cadmium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	3	Receiving SRF Discharge	145	<0.001
Dissolved Cadmium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	4	Not Receiving SRF Discharge	NS	0.133
Dissolved Cadmium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	5	Not Receiving SRF Discharge	NS	0.746
Dissolved Cadmium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	6	Not Receiving SRF Discharge	NS	0.655
Dissolved Cadmium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	7	Not Receiving SRF Discharge	NS	0.769
Dissolved Cadmium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	8	Not Receiving SRF Discharge	NS	0.701
Dissolved Cadmium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	9	Not Receiving SRF Discharge	NS	0.512

Table D.1: Comparison of Concentrations of Water Quality Constituents Upstream and Downstream of SRF Treatment on Erickson Creek, EVO LAEMP, 2019 to 2022

Parameter	Upstream Area	Downstream Area	Year	Month	SRF Status	Spatial Difference ^a	
						Magnitude of Difference	P-value
Dissolved Cadmium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	10	Receiving SRF Discharge	31	0.009
Dissolved Cadmium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	11	Receiving SRF Discharge	67	<0.001
Dissolved Cadmium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	12	Receiving SRF Discharge	122	<0.001
Dissolved Selenium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2020	12	Pre-SRF Discharge	NS	0.388
Dissolved Selenium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	2	Pre-SRF Discharge	NS	0.181
Dissolved Selenium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	3	Receiving SRF Discharge	-36	0.008
Dissolved Selenium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	4	Receiving SRF Discharge	-39	0.004
Dissolved Selenium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	5	Receiving SRF Discharge	-39	0.002
Dissolved Selenium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	6	Receiving SRF Discharge	-49	<0.001
Dissolved Selenium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	7	Receiving SRF Discharge	-45	<0.001
Dissolved Selenium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	8	Receiving SRF Discharge	-78	<0.001
Dissolved Selenium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	9	Receiving SRF Discharge	-75	<0.001
Dissolved Selenium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	10	Receiving SRF Discharge	-83	<0.001
Dissolved Selenium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	11	Receiving SRF Discharge	-71	<0.001

- Post-hoc p-value indicating significant difference between areas.
- Mine-exposed area significantly different from reference area for that year.
- Mine-exposed area significantly different from reference area for that year.

^aPlanned contrasts comparing the difference between each area in each year from a two-way ANOVA with terms for area and year. The Magnitude of Difference (MOD) was calculated as (mine-exposed-reference)/reference * 100%.

^b Post-hoc test comparing changes in the relative difference between areas among years. Years that do not share a letter differ in their relative difference. Letters are arranged such that the greatest difference between the areas have the highest letter (i.e., A).

Table D.1: Comparison of Concentrations of Water Quality Constituents Upstream and Downstream of SRF Treatment on Erickson Creek, EVO LAEMP, 2019 to 2022

Parameter	Upstream Area	Downstream Area	Year	Month	SRF Status	Spatial Difference ^a	
						Magnitude of Difference	P-value
Dissolved Selenium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2021	12	Receiving SRF Discharge	-34	0.002
Dissolved Selenium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	1	Receiving SRF Discharge	-54	<0.001
Dissolved Selenium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	2	Receiving SRF Discharge	-56	<0.001
Dissolved Selenium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	3	Receiving SRF Discharge	-70	<0.001
Dissolved Selenium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	4	Not Receiving SRF Discharge	NS	0.698
Dissolved Selenium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	5	Not Receiving SRF Discharge	NS	0.741
Dissolved Selenium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	6	Not Receiving SRF Discharge	NS	0.965
Dissolved Selenium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	7	Not Receiving SRF Discharge	NS	0.839
Dissolved Selenium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	8	Not Receiving SRF Discharge	NS	0.943
Dissolved Selenium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	9	Not Receiving SRF Discharge	NS	0.822
Dissolved Selenium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	10	Receiving SRF Discharge	NS	0.181
Dissolved Selenium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	11	Receiving SRF Discharge	-31	0.022
Dissolved Selenium	FC_ECIN (RG_ERCKUT)	EV_ECOUT (RG_ERCKDT)	2022	12	Receiving SRF Discharge	-36	0.008

- Post-hoc p-value indicating significant difference between areas.
- Mine-exposed area significantly different from reference area for that year.
- Mine-exposed area significantly different from reference area for that year.

^a Planned contrasts comparing the difference between each area in each year from a two-way ANOVA with terms for area and year. The Magnitude of Difference (MOD) was calculated as (mine-exposed-reference)/reference * 100%.

^b Post-hoc test comparing changes in the relative difference between areas among years. Years that do not share a letter differ in their relative difference. Letters are arranged such that the greatest difference between the areas have the highest letter (i.e., A).

Table D.2: Temporal Changes in Water Chemistry Constituents at Stations, EVO LAEMP, 2012 to 2022

Parameter	Area Type	Area	Annual Variation ^a		Q1. Is there a positive or negative change in concentrations since the base year (b) of monitoring? Magnitude of Difference (MOD) ^b and Significance (bolded) from Base Year (b) ^c											Q2. Is the 2022 annual mean greater or less than all annual historical means (2012 to 2021) and the previous year (2021)? ^c															
			DF	P-Value	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2022 vs. 2021-2021	2022 vs. 2021			
																													Trend	MOD	
Iron (Fe)-Dissolved	Reference	CM_MC1 (RG_MI25)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No	No	-			
	Mine-Exposed	FC_ECIN (RG_ERCKUT)	1	0.015	-	-	-	-	-	-	-	-	-	b	-24.9	-	-	-	-	-	-	-	-	-	-	A	B	↓	↓	-24.9	
		EV_ECOUT (RG_ERCKDT)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No	No	-		
		EV_EC1 (RG_ERCK)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No	No	-		
		EV_GT1 (RG_GATEDP)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No	No	-		
		EV_BC1 (RG_BOCK)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No	No	-		
		EV_MC3 (RG_MI3)	2	0.906	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
		EV_MC3A (RG_MIDER)	1	0.128	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
		EV_MC2 (RG_MICOMP)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No	No	-	
EV_MC2a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No	No	-			
EV_ER1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No	No	-			
Selenium (Se)-Dissolved	Reference	CM_MC1 (RG_MI25)	10	0.001	b	6.89	12.5	6.69	0.855	15.8	15.0	24.2	26.1	28.2	41.9	DE	CDE	BCDE	CDE	E	BCD	BCDE	BC	B	AB	A	No	No	10.7		
	Mine-Exposed	FC_ECIN (RG_ERCKUT)	1	0.933	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
		EV_ECOUT (RG_ERCKDT)	1	0.001	-	-	-	-	-	-	-	-	-	b	63.9	-	-	-	-	-	-	-	-	-	-	B	A	↑	↑	63.9	
		EV_EC1 (RG_ERCK)	10	0.001	b	10.9	16.3	21.4	43.4	46.4	52.4	69.1	54.4	-33.6	18.5	BC	B	AB	AB	AB	AB	AB	A	AB	C	B	No	↑	78.4		
		EV_GT1 (RG_GATEDP)	10	0.001	b	-2.38	-31.7	-5.37	-31.1	-3.33	-29.1	-2.08	65.8	60.9	-19.7	BCDE	BC	DE	BC	DE	BCD	E	B	A	A	CDE	No	↓	-50.1		
		EV_BC1 (RG_BOCK)	10	0.001	b	43.0	44.7	-53.5	-64.1	-36.4	-65.0	-41.4	-8.59	0.988	-57.3	AB	A	A	DE	EF	CD	F	C	B	B	E	No	↓	-57.7		
		EV_MC3 (RG_MI3)	10	0.001	b	11.2	4.02	23.3	31.5	55.3	57.9	60.6	63.9	72.0	71.1	D	D	D	CD	BCD	ABC	ABC	AB	AB	A	A	No	No	-0.478		
		EV_MC3A (RG_MIDER)	3	0.001	-	-	b	-45.6	-45.2	-	-	-	-	-	-55.8	-	-	A	B	B	-	-	-	-	-	B	No	No	0		
		EV_MC2 (RG_MICOMP)	7	0.001	-	-	-	b	-1.88	7.41	42.6	-9.20	-5.08	-28.8	-1.78	-	-	-	B	B	B	A	B	B	C	B	No	↑	38.0		
EV_MC2a	7	0.001	-	-	-	b	-32.0	6.07	13.2	-8.13	-9.30	-44.2	-7.36	-	-	-	AB	CD	AB	A	B	BC	D	ABC	No	↑	66.0				
EV_ER1	10	0.001	b	8.70	22.2	22.2	18.4	23.9	52.8	38.9	40.1	55.0	54.8	C	C	BC	BC	BC	BC	BC	A	AB	AB	A	A	No	No	-0.119			

- P-value < 0.05 (annual variation).
- > 20% Decrease in concentration.
- > 33% Decrease in concentration.
- > 43% Decrease in concentration.
- > 50% Decrease in concentration.
- > 25% Increase in concentration.
- > 50% Increase in concentration.
- > 75% Increase in concentration.
- > 100% Increase in concentration.

***Bold** Significant increase or decrease from base year ^b.

Notes: "ns" = not significant; "-" insufficient data for comparison, where insufficient data is less than 6 months of recorded data or > 75% LRL data in a given year. "nc" = post-hoc test not conducted because of non-significant year term.




^a The presence of annual variation was determined by a significant Year term (α = 0.05) using an ANOVA with factors Year and Month.

^b Magnitude of Difference (MOD) was calculated as the concentrations in each year (or 2022) minus the concentration in the first year (or 2021) divided by the concentration in the first year (or 2021) × 100.

^c Significance between each year determined using all pairwise comparisons with Tukey correction.

Table D.3: Summary of Water Chemistry Data for Key Constituents at Monitoring Stations Monitoring Stations, EVO LAEMP, 2022

Station	Summary Statistic	Total Dissolved Solids (mg/L)	Lab pH	Field pH	Dissolved Oxygen (mg/L)	Alkalinity (mg/L)	Nitrate-N (mg/L)	Nitrite-N (mg/L)	Ammonia (mg/L)	Sulphate (mg/L)	Total Aluminum (mg/L)	Total Chloride (mg/L)	Total Fluoride (mg/L)	Total Antimony (mg/L)	Total Arsenic (mg/L)	Total Barium (mg/L)	
EV_AC2 (RG_ALUSM)	n	11	11	8	14	11	11	11	11	11	11	11	11	11	11	11	
	Annual Minimum	134	8.1	7.9	10	129	<0.005	<0.001	<0.005	6.5	0.006	0.35	0.096	<0.0001	<0.0001	0.046	
	Annual Maximum	225	8.5	8.5	110	184	0.071	0.0022	0.0051	18	0.28	3.5	0.17	<0.0001	0.00024	0.079	
	Annual Mean	176	8.3	8.2	46	159	0.033	0.0011	0.005	14	0.052	1.1	0.14	<0.0001	0.00015	0.066	
	Annual Median	176	8.3	8.3	13	166	0.026	0.001	0.005	16	0.011	0.97	0.15	<0.0001	0.00013	0.069	
	% < LRL	0%	0%	0%	0%	0%	9%	91%	91%	0%	0%	0%	0%	100%	9%	0%	
	% > BCWQG ^a	-	-	0%	0%	0%	0%	0%	0%	0%	0%	18%	0%	-	0%	-	0%
	% > BCWQG ^b	-	-	-	0%	-	0%	0%	0%	0%	-	-	0%	0%	-	0%	-
	% > Level 1 Benchmark/UEC	0%	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-
	% > Level 2 Benchmark/UEC	-	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-
% > Level 3 Benchmark/UEC	-	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-	
CM_MC1 (RG_MI25)	n	41	41	43	47	41	41	41	41	41	41	41	41	41	41	41	
	Annual Minimum	100	7.7	6.6	9	90	<0.005	<0.001	<0.005	4.6	0.0036	<0.1	0.038	<0.0001	0.00016	0.026	
	Annual Maximum	206	8.4	8.3	104	167	0.11	0.0012	0.006	17	0.4	0.75	0.077	<0.0001	0.0004	0.057	
	Annual Mean	156	8.2	8	20	135	0.019	0.001	0.005	12	0.051	0.33	0.058	<0.0001	0.00023	0.045	
	Annual Median	157	8.2	8.1	15	141	0.016	0.001	0.005	14	0.0093	0.33	0.059	<0.0001	0.00021	0.048	
	% < LRL	0%	0%	0%	0%	0%	12%	98%	98%	0%	2%	5%	0%	100%	0%	0%	
	% > BCWQG ^a	-	-	0%	0%	0%	0%	0%	0%	0%	5%	0%	-	0%	-	0%	
	% > BCWQG ^b	-	-	-	0%	-	0%	0%	0%	-	-	0%	0%	-	0%	-	-
	% > Level 1 Benchmark/UEC	0%	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-
	% > Level 2 Benchmark/UEC	-	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-
% > Level 3 Benchmark/UEC	-	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-	
F2_NWPI	n	351	351	351	351	351	349	349	351	349	53	349	349	53	53	53	
	Annual Minimum	1220	7	7	3.2	228	15	0.043	0.082	693	<0.003	12	<0.1	0.0018	0.00014	0.026	
	Annual Maximum	1850	8.3	9.6	65	330	31	0.22	0.6	1000	0.041	22	0.48	0.0025	0.00035	0.052	
	Annual Mean	1564	8	7.5	6.8	287	26	0.11	0.25	842	0.018	16	0.34	0.0021	0.00023	0.038	
	Annual Median	1560	8	7.4	6.2	287	26	0.099	0.21	837	0.016	16	0.36	0.0021	0.00022	0.039	
	% < LRL	0%	0%	0%	0%	0%	0.0%	0.0%	0%	0%	4%	0%	0%	0%	11%	0%	
	% > BCWQG ^a	-	-	1%	80%	0%	100%	1%	1%	100%	0%	0%	-	0%	-	0%	
	% > BCWQG ^b	-	-	-	5%	-	0%	0%	0%	-	-	0%	0%	-	0%	-	
	% > Level 1 Benchmark/UEC	100%	-	-	-	-	0%	-	-	100%	-	-	-	-	-	-	
	% > Level 2 Benchmark/UEC	-	-	-	-	-	0%	-	-	99%	-	-	-	-	-	-	
% > Level 3 Benchmark/UEC	-	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-		
FC_ECIN (RG_ERCKUT)	n	193	193	194	206	193	195	195	194	195	39	195	195	39	39	39	
	Annual Minimum	1350	7.6	7.2	8.5	280	0.41	<0.005	<0.005	662	<0.003	4.3	<0.1	0.0002	0.00018	0.013	
	Annual Maximum	1820	8.3	9.1	101	528	21	0.026	0.46	974	0.023	14	0.27	0.00028	0.0008	0.08	
	Annual Mean	1616	8	7.6	15	459	17	0.0055	0.0091	803	0.0041	5.9	0.11	0.00021	0.00029	0.063	
	Annual Median	1630	8	7.5	11	463	17	0.005	0.005	799	0.0033	5.6	0.11	0.00021	0.00027	0.064	
	% < LRL	0%	0%	0%	0%	0%	0.0%	91%	84%	0%	67%	0%	39%	5%	3%	0%	
	% > BCWQG ^a	-	-	1%	0%	0%	99%	0%	0%	100%	0%	0%	-	0%	-	0%	
	% > BCWQG ^b	-	-	-	0%	-	0%	0%	0%	-	-	0%	0%	-	0%	-	
	% > Level 1 Benchmark/UEC	100%	-	-	-	-	0%	-	-	100%	-	-	-	-	-	-	
	% > Level 2 Benchmark/UEC	-	-	-	-	-	0%	-	-	79%	-	-	-	-	-	-	
% > Level 3 Benchmark/UEC	-	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-		
RG_ERCKBR	n	4	4	4	8	4	4	4	4	4	4	4	4	4	4	4	
	Annual Minimum	1470	7.9	7.3	10	436	15	<0.005	<0.005	747	<0.003	5.1	<0.1	0.0002	0.00024	0.059	
	Annual Maximum	1660	8.2	7.6	90	481	18	<0.005	<0.005	842	0.0091	7.2	0.11	0.00023	0.00031	0.07	
	Annual Mean	1572	8.1	7.4	49	448	17	<0.005	<0.005	806	0.0054	6	0.11	0.00022	0.00028	0.064	
	Annual Median	1580	8.1	7.4	46	438	18	<0.005	<0.005	818	0.0048	5.9	0.11	0.00022	0.00028	0.064	
	% < LRL	0%	0%	0%	0%	0%	0.0%	100%	100%	0%	25%	0%	25%	0%	0%	0%	
	% > BCWQG ^a	-	-	0%	0%	0%	100%	0%	0%	100%	0%	0%	-	0%	-	0%	
	% > BCWQG ^b	-	-	-	0%	-	0%	0%	0%	-	-	0%	0%	-	0%	-	
	% > Level 1 Benchmark/UEC	100%	-	-	-	-	0%	-	-	100%	-	-	-	-	-	-	
% > Level 2 Benchmark/UEC	-	-	-	-	-	0%	-	-	75%	-	-	-	-	-	-		
% > Level 3 Benchmark/UEC	-	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-		

 > 5% of samples exceed the guideline or benchmark.
 > 50% of samples exceed the guideline or benchmark.
 > 95% of samples exceed the guideline or benchmark.




Notes: "UEC" = Updated Effects Concentration. "LRL" = laboratory reporting limit. "BCWQG" = British Columbia Working or Accepted Water Quality Guideline. UEC's are shown for Nitrate, Sulphate, and Dissolved Nickel, and EVWQP benchmarks are shown for all other relevant parameters. For guidelines dependent on other analytes (e.g., hardness or chloride), guidelines were screened using concurrent concentrations. When concurrent hardness or chloride concentrations were not measured, the most conservative concentration observed for that station was used to estimate the guidelines or benchmark. All summary statistics are reported to 3 significant figures. When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and tabulated together with the biological monitoring area depicted in parenthesis.

^a Long-term average BCQWG for the Protection of Aquatic Life.

^b Short-term maximum BCQWG for the Protection of Aquatic Life.

Table D.3: Summary of Water Chemistry Data for Key Constituents at Monitoring Stations Monitoring Stations, EVO LAEMP, 2022

Station	Summary Statistic	Total Dissolved Solids (mg/L)	Lab pH	Field pH	Dissolved Oxygen (mg/L)	Alkalinity (mg/L)	Nitrate-N (mg/L)	Nitrite-N (mg/L)	Ammonia (mg/L)	Sulphate (mg/L)	Total Aluminum (mg/L)	Total Chloride (mg/L)	Total Fluoride (mg/L)	Total Antimony (mg/L)	Total Arsenic (mg/L)	Total Barium (mg/L)
EV_ECOUT (RG_ERCKDT)	n	66	66	74	84	66	70	70	66	70	66	70	70	66	66	66
	Annual Minimum	179	7.7	7.3	9.7	278	0.66	<0.001	<0.005	26	<0.003	0.84	0.074	0.00019	0.00021	0.012
	Annual Maximum	1820	8.3	8.6	108	539	20	0.078	0.088	964	2	8.8	0.2	0.00049	0.0017	0.11
	Annual Mean	1551	8	7.6	21	451	15	0.0055	0.02	786	0.035	6.1	0.11	0.00025	0.00032	0.057
	Annual Median	1600	8	7.6	11	455	16	0.0018	0.005	802	0.0033	6.1	0.11	0.00021	0.00028	0.062
	% < LRL	0%	0%	0%	0%	0%	0%	61%	56%	0%	42%	0%	24%	0%	0%	0%
	% > BCWQG ^a	-	-	0%	0%	0%	97%	1%	0%	99%	2%	0%	-	0%	-	0%
	% > BCWQG ^b	-	-	-	0%	-	0%	0%	0%	-	-	0%	0%	-	0%	-
	% > Level 1 Benchmark/UEC	98%	-	-	-	-	4%	-	-	99%	-	-	-	-	-	-
% > Level 2 Benchmark/UEC	-	-	-	-	-	4%	-	-	70%	-	-	-	-	-	-	
% > Level 3 Benchmark/UEC	-	-	-	-	-	1%	-	-	0%	-	-	-	-	-	-	
RG_ERCKMD	n	9	9	10	19	9	11	11	9	11	9	11	11	9	9	9
	Annual Minimum	1480	7.9	7.6	11	378	2.8	<0.005	<0.005	712	<0.003	5.1	<0.1	0.00019	0.00027	0.019
	Annual Maximum	1650	8.4	8.2	108	488	20	0.03	0.019	939	0.0078	9.5	0.24	0.00045	0.00039	0.069
	Annual Mean	1568	8.2	7.9	50	439	14	0.008	0.0068	790	0.0045	6.3	0.13	0.00024	0.00032	0.054
	Annual Median	1570	8.2	7.9	13	430	16	0.005	0.005	769	0.0034	5.5	0.11	0.00021	0.00032	0.063
	% < LRL	0%	0%	0%	0%	0%	0.0%	82%	78%	0%	56%	0%	27%	11%	0%	0%
	% > BCWQG ^a	-	-	0%	0%	0%	91%	0%	0%	100%	0%	0%	-	0%	-	0%
	% > BCWQG ^b	-	-	-	0%	-	0%	0%	0%	-	-	0%	0%	-	0%	-
	% > Level 1 Benchmark/UEC	100%	-	-	-	-	0%	-	-	100%	-	-	-	-	-	-
% > Level 2 Benchmark/UEC	-	-	-	-	-	0%	-	-	55%	-	-	-	-	-	-	
% > Level 3 Benchmark/UEC	-	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	
RG_ERCKUC	n	7	7	8	15	7	7	7	7	7	7	7	7	7	7	7
	Annual Minimum	1380	8	7.8	11	342	8.6	<0.005	<0.005	705	<0.003	5	<0.1	0.00021	0.00022	0.033
	Annual Maximum	1590	8.4	8.2	108	412	18	<0.005	<0.005	868	0.0051	8.5	0.18	0.00024	0.00039	0.054
	Annual Mean	1481	8.2	8	49	370	14	<0.005	<0.005	772	0.0037	6.3	0.12	0.00022	0.00029	0.045
	Annual Median	1460	8.2	8	14	369	15	<0.005	<0.005	780	0.003	6	0.1	0.00022	0.00029	0.047
	% < LRL	0%	0%	0%	0%	0%	0.0%	100%	100%	0%	71%	0%	29%	0%	0%	0%
	% > BCWQG ^a	-	-	0%	0%	0%	100%	0%	0%	100%	0%	0%	-	0%	-	0%
	% > BCWQG ^b	-	-	-	0%	-	0%	0%	0%	-	-	0%	0%	-	0%	-
	% > Level 1 Benchmark/UEC	100%	-	-	-	-	0%	-	-	100%	-	-	-	-	-	-
% > Level 2 Benchmark/UEC	-	-	-	-	-	0%	-	-	57%	-	-	-	-	-	-	
% > Level 3 Benchmark/UEC	-	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	
EV_EC1 (RG_ERCK)	n	85	85	208	218	85	204	89	85	89	68	88	88	68	68	68
	Annual Minimum	1310	8	7.1	9.8	226	2.9	0.0012	<0.005	641	<0.003	1	0.081	0.00019	0.00019	0.02
	Annual Maximum	1780	8.4	9.8	110	461	19	0.08	0.062	902	0.016	9.6	0.48	0.00047	0.0005	0.057
	Annual Mean	1538	8.2	8.1	16	377	15	0.0031	0.0061	783	0.0039	6.3	0.11	0.00025	0.0003	0.041
	Annual Median	1540	8.2	8	12	372	16	0.0012	0.005	788	0.003	6	0.081	0.00022	0.00029	0.044
	% < LRL	0%	0%	0%	0%	0%	0.0%	83%	87%	0%	74%	0%	51%	3%	0%	0%
	% > BCWQG ^a	-	-	2%	0%	0%	100%	0%	0%	100%	0%	0%	-	0%	-	0%
	% > BCWQG ^b	-	-	-	0%	-	0%	0%	0%	-	-	0%	0%	-	0%	-
	% > Level 1 Benchmark/UEC	100%	-	-	-	-	0%	-	-	100%	-	-	-	-	-	-
% > Level 2 Benchmark/UEC	-	-	-	-	-	0%	-	-	66%	-	-	-	-	-	-	
% > Level 3 Benchmark/UEC	-	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	
RG_GATE	n	8	8	11	19	8	8	8	8	8	8	8	8	8	8	8
	Annual Minimum	1580	8	8.1	9.6	273	7.2	<0.005	0.098	923	<0.006	9.7	0.2	0.00044	0.0003	0.15
	Annual Maximum	1910	8.3	8.4	111	395	27	0.041	0.36	1140	0.022	15	0.3	0.0012	0.00046	0.42
	Annual Mean	1729	8.2	8.3	45	349	11	0.014	0.19	974	0.014	13	0.23	0.00073	0.00036	0.3
	Annual Median	1755	8.3	8.3	12	365	7.7	0.0094	0.17	954	0.014	13	0.21	0.00068	0.00036	0.29
	% < LRL	0%	0%	0%	0%	0%	0.0%	25%	0%	0%	12%	0%	0%	0%	0%	0%
	% > BCWQG ^a	-	-	0%	0%	0%	100%	0%	0%	100%	0%	0%	-	0%	-	0%
	% > BCWQG ^b	-	-	-	0%	-	0%	0%	0%	-	-	0%	0%	-	0%	-
	% > Level 1 Benchmark/UEC	100%	-	-	-	-	0%	-	-	100%	-	-	-	-	-	-
% > Level 2 Benchmark/UEC	-	-	-	-	-	0%	-	-	100%	-	-	-	-	-	-	
% > Level 3 Benchmark/UEC	-	-	-	-	-	0%	-	-	12%	-	-	-	-	-	-	

 > 5% of samples exceed the guideline or benchmark.
 > 50% of samples exceed the guideline or benchmark.
 > 95% of samples exceed the guideline or benchmark.

Notes: "UEC" = Updated Effects Concentration. "LRL" = laboratory reporting limit. "BCWQG" = British Columbia Working or Accepted Water Quality Guideline. UEC's are shown for Nitrate, Sulphate, and Dissolved Nickel, and EVWQP benchmarks are shown for all other relevant parameters. For guidelines dependent on other analytes (e.g., hardness or chloride), guidelines were screened using concurrent concentrations. When concurrent hardness or chloride concentrations were not measured, the most conservative concentration observed for that station was used to estimate the guidelines or benchmark. All summary statistics are reported to 3 significant figures. When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and tabulated together with the biological monitoring area depicted in parenthesis.

^a Long-term average BCQWG for the Protection of Aquatic Life.
^b Short-term maximum BCQWG for the Protection of Aquatic Life.

Table D.3: Summary of Water Chemistry Data for Key Constituents at Monitoring Stations Monitoring Stations, EVO LAEMP, 2022

Station	Summary Statistic	Total Dissolved Solids (mg/L)	Lab pH	Field pH	Dissolved Oxygen (mg/L)	Alkalinity (mg/L)	Nitrate-N (mg/L)	Nitrite-N (mg/L)	Ammonia (mg/L)	Sulphate (mg/L)	Total Aluminum (mg/L)	Total Chloride (mg/L)	Total Fluoride (mg/L)	Total Antimony (mg/L)	Total Arsenic (mg/L)	Total Barium (mg/L)	
EV_GT1 (RG_GATEDP)	n	50	50	52	60	50	50	50	50	50	50	50	50	50	50	50	
	Annual Minimum	1140	7.7	8	9.6	222	6.3	<0.005	0.012	575	0.0037	2.1	<0.1	0.00042	0.00029	0.049	
	Annual Maximum	1820	8.5	9	109	434	24	0.15	0.31	1050	0.41	41	0.39	0.0012	0.00072	0.4	
	Annual Mean	1610	8.3	8.3	22	330	10	0.019	0.11	905	0.035	12	0.22	0.00072	0.00039	0.23	
	Annual Median	1630	8.3	8.3	11	337	9.1	0.013	0.1	924	0.011	11	0.22	0.00074	0.00036	0.25	
	% < LRL	0%	0%	0%	0%	0%	0%	0.0%	4%	0%	0%	6%	0%	2%	0%	0%	0%
	% > BCWQG ^a	-	-	0%	0%	0%	0%	100%	2%	0%	100%	6%	0%	-	0%	-	0%
	% > BCWQG ^b	-	-	-	0%	-	0%	0%	0%	0%	-	-	0%	0%	-	0%	-
	% > Level 1 Benchmark/UEC	100%	-	-	-	-	0%	-	-	-	98%	-	-	-	-	-	-
% > Level 2 Benchmark/UEC	-	-	-	-	-	0%	-	-	-	94%	-	-	-	-	-	-	
% > Level 3 Benchmark/UEC	-	-	-	-	-	0%	-	-	-	0%	-	-	-	-	-	-	
EV_BRD_LOT3 (RG_BOCKRD)	n	7	7	7	14	7	7	7	7	7	7	7	7	7	7	7	
	Annual Minimum	1640	8	7.7	9.5	310	7.2	<0.005	<0.005	979	<0.006	12	0.2	0.00046	0.00031	0.016	
	Annual Maximum	2500	8.4	8.5	109	410	46	0.0064	0.66	1420	0.012	21	0.31	0.0012	0.00046	0.34	
	Annual Mean	1857	8.2	8.3	51	377	15	0.0052	0.2	1061	0.007	15	0.24	0.00086	0.00038	0.098	
	Annual Median	1750	8.3	8.4	48	385	8	0.005	0.022	1000	0.0062	14	0.23	0.00087	0.00038	0.067	
	% < LRL	0%	0%	0%	0%	0%	0.0%	86%	29%	0%	43%	0%	0%	0%	0%	0%	0%
	% > BCWQG ^a	-	-	0%	0%	0%	0%	100%	0%	0%	100%	0%	0%	-	0%	-	0%
	% > BCWQG ^b	-	-	-	0%	-	-	14%	0%	0%	-	-	0%	0%	-	0%	-
	% > Level 1 Benchmark/UEC	100%	-	-	-	-	0%	-	-	-	100%	-	-	-	-	-	-
% > Level 2 Benchmark/UEC	-	-	-	-	-	0%	-	-	-	100%	-	-	-	-	-	-	
% > Level 3 Benchmark/UEC	-	-	-	-	-	0%	-	-	-	14%	-	-	-	-	-	-	
EV_BC1 (RG_BOCK)	n	50	50	52	60	50	50	50	50	50	50	50	50	50	50	50	
	Annual Minimum	1310	7.4	7.7	7.2	227	6	0.0056	<0.005	816	0.003	13	<0.1	0.00045	0.00019	0.045	
	Annual Maximum	2060	8.4	8.6	108	415	37	0.18	0.94	1140	0.048	58	0.29	0.001	0.00045	0.24	
	Annual Mean	1636	8.2	8	21	317	13	0.039	0.091	930	0.009	22	0.21	0.0008	0.00028	0.11	
	Annual Median	1620	8.2	8	10	311	11	0.029	0.045	918	0.0053	20	0.2	0.00082	0.00027	0.081	
	% < LRL	0%	0%	0%	0%	0%	0.0%	0%	4%	0%	26%	0%	2%	0%	4%	0%	0%
	% > BCWQG ^a	-	-	0%	8%	0%	0%	100%	0%	-	100%	0%	0%	-	0%	-	0%
	% > BCWQG ^b	-	-	-	0%	-	4%	0%	0%	-	-	0%	0%	-	0%	-	-
	% > Level 1 Benchmark/UEC	100%	-	-	-	-	2%	-	-	-	100%	-	-	-	-	-	-
% > Level 2 Benchmark/UEC	-	-	-	-	-	0%	-	-	-	100%	-	-	-	-	-	-	
% > Level 3 Benchmark/UEC	-	-	-	-	-	0%	-	-	-	2%	-	-	-	-	-	-	
EV_MC3 (RG_MI3)	n	72	72	73	80	72	73	73	72	73	72	72	72	72	72	72	
	Annual Minimum	113	7.5	7.8	8.8	75	0.014	<0.001	<0.005	18	0.003	0.2	0.071	<0.0001	0.00014	0.051	
	Annual Maximum	1700	8.5	9.4	111	419	17	0.015	0.053	755	1.7	5.6	0.17	0.0002	0.00071	0.14	
	Annual Mean	230	8.2	8.3	19	139	0.37	0.0013	0.007	58	0.21	1.1	0.11	0.00011	0.00028	0.096	
	Annual Median	227	8.2	8.3	12	149	0.12	0.001	0.005	53	0.052	1	0.1	0.0001	0.00024	0.1	
	% < LRL	0%	0%	0%	0%	0%	0.0%	77%	67%	0%	0%	0%	1%	53%	0%	0%	0%
	% > BCWQG ^a	-	-	4%	0%	0%	0%	1%	0%	-	1%	22%	0%	-	0%	-	0%
	% > BCWQG ^b	-	-	-	0%	-	0%	0%	0%	-	-	-	0%	0%	-	0%	-
	% > Level 1 Benchmark/UEC	1%	-	-	-	-	0%	-	-	-	1%	-	-	-	-	-	-
% > Level 2 Benchmark/UEC	-	-	-	-	-	0%	-	-	-	0%	-	-	-	-	-	-	
% > Level 3 Benchmark/UEC	-	-	-	-	-	0%	-	-	-	0%	-	-	-	-	-	-	
EV_MC3A (RG_MIDER)	n	14	14	11	21	14	14	14	14	14	14	14	14	14	14	14	
	Annual Minimum	138	8.1	8	9.9	94	0.04	<0.001	<0.005	22	0.0045	0.32	0.088	<0.0001	0.00014	0.053	
	Annual Maximum	411	8.5	8.6	112	198	2.6	0.0036	0.0068	156	0.27	1.9	0.16	0.00011	0.00032	0.11	
	Annual Mean	237	8.3	8.3	46	150	0.41	0.0012	0.0052	64	0.072	1.2	0.13	0.0001	0.00022	0.092	
	Annual Median	224	8.3	8.2	13	148	0.21	0.001	0.005	64	0.016	1.3	0.13	0.0001	0.0002	0.1	
	% < LRL	0%	0%	0%	0%	0%	0.0%	86%	79%	0%	0%	0%	0%	86%	0%	0%	0%
	% > BCWQG ^a	-	-	0%	0%	0%	0%	0%	0%	0%	0%	7%	0%	-	0%	-	0%
	% > BCWQG ^b	-	-	-	0%	-	0%	0%	0%	0%	-	-	0%	0%	-	0%	-
	% > Level 1 Benchmark/UEC	0%	-	-	-	-	0%	-	-	-	0%	-	-	-	-	-	-
% > Level 2 Benchmark/UEC	-	-	-	-	-	0%	-	-	-	0%	-	-	-	-	-	-	
% > Level 3 Benchmark/UEC	-	-	-	-	-	0%	-	-	-	0%	-	-	-	-	-	-	

> 5% of samples exceed the guideline or benchmark.
 > 50% of samples exceed the guideline or benchmark.
 > 95% of samples exceed the guideline or benchmark.

Notes: "UEC" = Updated Effects Concentration. "LRL" = laboratory reporting limit. "BCWQG" = British Columbia Working or Accepted Water Quality Guideline. UEC's are shown for Nitrate, Sulphate, and Dissolved Nickel, and EVWQP benchmarks are shown for all other relevant parameters. For guidelines dependent on other analytes (e.g., hardness or chloride), guidelines were screened using concurrent concentrations. When concurrent hardness or chloride concentrations were not measured, the most conservative concentration observed for that station was used to estimate the guidelines or benchmark. All summary statistics are reported to 3 significant figures. When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and tabulated together with the biological monitoring area depicted in parenthesis.

^a Long-term average BCQWG for the Protection of Aquatic Life.
^b Short-term maximum BCQWG for the Protection of Aquatic Life.

Table D.3: Summary of Water Chemistry Data for Key Constituents at Monitoring Stations Monitoring Stations, EVO LAEMP, 2022

Station	Summary Statistic	Total Dissolved Solids (mg/L)	Lab pH	Field pH	Dissolved Oxygen (mg/L)	Alkalinity (mg/L)	Nitrate-N (mg/L)	Nitrite-N (mg/L)	Ammonia (mg/L)	Sulphate (mg/L)	Total Aluminum (mg/L)	Total Chloride (mg/L)	Total Fluoride (mg/L)	Total Antimony (mg/L)	Total Arsenic (mg/L)	Total Barium (mg/L)	
RG_MIDGA	n	8	8	9	17	8	8	8	8	8	8	8	8	8	8	8	
	Annual Minimum	206	8	8	10	118	0.56	0.001	<0.005	60	0.005	0.98	0.098	0.0001	0.00015	0.058	
	Annual Maximum	968	8.4	8.5	111	266	4.6	0.015	0.063	473	0.23	7.6	0.2	0.00044	0.00033	0.28	
	Annual Mean	490	8.3	8.3	50	189	1.9	0.0037	0.023	208	0.062	3.3	0.14	0.00019	0.00025	0.14	
	Annual Median	450	8.3	8.3	50	188	1.8	0.002	0.012	180	0.015	2.8	0.13	0.00014	0.00024	0.12	
	% < LRL	0%	0%	0%	0%	0%	0%	0%	12%	25%	0%	0%	0%	0%	12%	0%	0%
	% > BCWQG ^a	-	-	0%	0%	0%	0%	12%	0%	0%	12%	0%	0%	0%	0%	0%	0%
	% > BCWQG ^b	-	-	-	0%	-	0%	0%	0%	0%	-	-	0%	0%	-	0%	-
	% > Level 1 Benchmark/UEC	0%	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-
	% > Level 2 Benchmark/UEC	-	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-
% > Level 3 Benchmark/UEC	-	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-	
RG_MIDBO	n	8	8	9	17	8	8	8	8	8	8	8	8	8	8	8	
	Annual Minimum	175	7.9	8	10	106	0.4	<0.001	<0.005	40	0.0038	0.64	0.095	0.00011	0.00017	0.054	
	Annual Maximum	478	8.6	8.7	110	211	1.6	0.44	0.02	182	0.26	3.3	0.16	0.00015	0.00033	0.14	
	Annual Mean	321	8.3	8.3	51	167	1	0.056	0.0088	111	0.069	1.9	0.13	0.00013	0.00024	0.1	
	Annual Median	323	8.3	8.2	15	174	0.94	0.0016	0.0061	110	0.014	2.1	0.13	0.00012	0.00024	0.11	
	% < LRL	0%	0%	0%	0%	0%	0.0%	12%	38%	0%	0%	0%	0%	0%	0%	0%	0%
	% > BCWQG ^a	-	-	0%	0%	0%	0%	12%	-	0%	12%	0%	-	0%	-	0%	0%
	% > BCWQG ^b	-	-	-	0%	-	0%	12%	-	-	-	0%	0%	0%	-	0%	-
	% > Level 1 Benchmark/UEC	0%	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-
	% > Level 2 Benchmark/UEC	-	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-
% > Level 3 Benchmark/UEC	-	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-	
EV_MC2 (RG_MICOMP)	n	104	104	216	224	104	219	111	104	111	89	110	110	89	89	89	
	Annual Minimum	146	7.6	7.2	6.4	96	0.22	0.001	<0.005	19	<0.003	0.54	0.083	0.0001	0.00011	0.054	
	Annual Maximum	526	8.6	9.1	112	242	3.4	0.015	0.033	212	1	11	0.16	0.00017	0.00085	0.14	
	Annual Mean	333	8.2	8.1	14	171	1.2	0.0016	0.0071	114	0.1	3.9	0.12	0.00011	0.00024	0.1	
	Annual Median	345	8.2	8.1	11	182	1.2	0.0012	0.005	122	0.015	3.9	0.12	0.00011	0.0002	0.11	
	% < LRL	0%	0%	0%	0%	0%	0.0%	33%	51%	0%	1%	0%	0%	33%	0%	0%	0%
	% > BCWQG ^a	-	-	1%	1%	0%	0%	0%	0%	0%	13%	0%	-	0%	-	0%	0%
	% > BCWQG ^b	-	-	-	0%	-	0%	0%	0%	-	-	0%	0%	-	0%	-	-
	% > Level 1 Benchmark/UEC	0%	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-
	% > Level 2 Benchmark/UEC	-	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-
% > Level 3 Benchmark/UEC	-	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-	
EV_MC2a	n	35	35	36	36	35	36	36	35	36	35	35	35	35	35	35	
	Annual Minimum	127	7.6	7.8	9.6	86	0.2	<0.001	<0.005	20	0.0031	0.36	0.079	<0.0001	0.00015	0.054	
	Annual Maximum	413	8.5	9.1	16	211	1.8	0.015	0.019	134	0.78	3.4	0.16	0.00017	0.00061	0.13	
	Annual Mean	278	8.2	8.3	12	162	0.72	0.0016	0.0081	86	0.094	1.7	0.12	0.0001	0.00024	0.097	
	Annual Median	300	8.2	8.2	12	172	0.55	0.001	0.007	101	0.024	1.8	0.12	0.0001	0.00021	0.11	
	% < LRL	0%	0%	0%	0%	0%	0.0%	53%	29%	0%	0%	0%	0%	77%	0%	0%	0%
	% > BCWQG ^a	-	-	3%	0%	0%	0%	0%	0%	0%	11%	0%	-	0%	-	0%	0%
	% > BCWQG ^b	-	-	-	0%	-	0%	0%	-	-	-	0%	0%	-	0%	-	-
	% > Level 1 Benchmark/UEC	0%	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-
	% > Level 2 Benchmark/UEC	-	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-
% > Level 3 Benchmark/UEC	-	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-	
EV_ER1	n	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	
	Annual Minimum	116	7.6	7.8	9.5	78	0.1	<0.001	<0.005	18	0.0048	0.25	0.07	<0.0001	0.00016	0.054	
	Annual Maximum	380	8.7	8.9	17	195	3.6	0.0044	0.041	117	1.2	5.1	0.21	0.00018	0.0012	0.11	
	Annual Mean	288	8.3	8.3	12	163	2.1	0.0016	0.0065	80	0.14	2.8	0.16	0.00011	0.00029	0.076	
	Annual Median	316	8.3	8.3	12	172	2.4	0.0013	0.005	93	0.028	3	0.15	0.0001	0.00022	0.079	
	% < LRL	0%	0%	0%	0%	0%	0.0%	22%	79%	0%	0%	0%	0%	76%	0%	0%	0%
	% > BCWQG ^a	-	-	0%	0%	0%	14%	0%	-	0%	19%	0%	-	0%	-	0%	0%
	% > BCWQG ^b	-	-	-	0%	-	0%	0%	-	-	-	0%	0%	-	0%	-	-
	% > Level 1 Benchmark/UEC	0%	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-
	% > Level 2 Benchmark/UEC	-	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-
% > Level 3 Benchmark/UEC	-	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-	

> 5% of samples exceed the guideline or benchmark.
 > 50% of samples exceed the guideline or benchmark.
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Notes: "UEC" = Updated Effects Concentration. "LRL" = laboratory reporting limit. "BCWQG" = British Columbia Working or Accepted Water Quality Guideline. UEC's are shown for Nitrate, Sulphate, and Dissolved Nickel, and EVWQP benchmarks are shown for all other relevant parameters. For guidelines dependent on other analytes (e.g., hardness or chloride), guidelines were screened using concurrent concentrations. When concurrent hardness or chloride concentrations were not measured, the most conservative concentration observed for that station was used to estimate the guidelines or benchmark. All summary statistics are reported to 3 significant figures. When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and tabulated together with the biological monitoring area depicted in parenthesis.

^a Long-term average BCWQG for the Protection of Aquatic Life.
^b Short-term maximum BCWQG for the Protection of Aquatic Life.

Table D.3: Summary of Water Chemistry Data for Key Constituents at Monitoring Stations Monitoring Stations, EVO LAEMP, 2022

Station	Summary Statistic	Total Dissolved Solids (mg/L)	Lab pH	Field pH	Dissolved Oxygen (mg/L)	Alkalinity (mg/L)	Nitrate-N (mg/L)	Nitrite-N (mg/L)	Ammonia (mg/L)	Sulphate (mg/L)	Total Aluminum (mg/L)	Total Chloride (mg/L)	Total Fluoride (mg/L)	Total Antimony (mg/L)	Total Arsenic (mg/L)	Total Barium (mg/L)	
F2_BPO	n	363	363	364	364	363	364	364	364	362	60	362	362	60	60	60	
	Annual Minimum	1290	7.3	7	7.4	268	0.065	<0.005	0.059	714	<0.003	6.1	<0.1	<0.0002	0.00042	0.0098	
	Annual Maximum	1900	8.6	8	12	543	1.3	0.059	0.26	1030	0.013	15	0.34	0.00061	0.00086	0.013	
	Annual Mean	1638	8	7.5	9.2	472	0.35	0.0094	0.15	870	0.0042	11	0.23	0.00033	0.0006	0.011	
	Annual Median	1640	8.1	7.4	9.1	476	0.23	0.005	0.16	869	0.0035	12	0.23	0.00028	0.0006	0.011	
	% < LRL	0%	0%	0%	0%	0%	0.0%	61%	0%	0%	0%	55%	0%	1%	2%	0%	0%
	% > BCWQG ^a	-	-	0%	3%	0%	0%	0%	0%	0%	100%	0%	0%	-	0%	-	0%
	% > BCWQG ^b	-	-	-	0%	-	0%	0%	0%	0%	-	-	0%	0%	-	0%	-
	% > Level 1 Benchmark/UEC	100%	-	-	-	-	0%	-	-	-	100%	-	-	-	-	-	-
	% > Level 2 Benchmark/UEC	-	-	-	-	-	0%	-	-	-	99%	-	-	-	-	-	-
% > Level 3 Benchmark/UEC	-	-	-	-	-	0%	-	-	-	0%	-	-	-	-	-	-	

 > 5% of samples exceed the guideline or benchmark.

 > 50% of samples exceed the guideline or benchmark.

 > 95% of samples exceed the guideline or benchmark.

Notes: "UEC" = Updated Effects Concentration. "LRL" = laboratory reporting limit. "BCWQG" = British Columbia Working or Accepted Water Quality Guideline. UEC's are shown for Nitrate, Sulphate, and Dissolved Nickel, and EVWQP benchmarks are shown for all other relevant parameters. For guidelines dependent on other analytes (e.g., hardness or chloride), guidelines were screened using concurrent concentrations. When concurrent hardness or chloride concentrations were not measured, the most conservative concentration observed for that station was used to estimate the guidelines or benchmark. All summary statistics are reported to 3 significant figures. When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and tabulated together with the biological monitoring area depicted in parenthesis.

^a Long-term average BCQWG for the Protection of Aquatic Life.

^b Short-term maximum BCQWG for the Protection of Aquatic Life.

Table D.3: Summary of Water Chemistry Data for Key Constituents at Monitoring Stations Monitoring Stations, EVO LAEMP, 2022

Station	Summary Statistic	Total Beryllium (mg/L)	Total Boron (mg/L)	Total Chromium (mg/L)	Total Cobalt (ug/L)	Total Iron (mg/L)	Total Lead (mg/L)	Total Lithium (mg/L)	Total Manganese (mg/L)	Total Mercury (mg/L)	Total Molybdenum (mg/L)	Total Nickel (ug/L)	Total Selenium (ug/L)	Total Silver (mg/L)	Total Thallium (mg/L)	Total Uranium (mg/L)	Total Zinc (mg/L)	
EV_AC2 (RG_ALUSM)	n	11	11	11	11	11	11	11	11	9	11	11	12	11	11	11	11	
	Annual Minimum	<0.00002	<0.01	0.00019	<0.0001	<0.01	<0.00005	0.0021	0.00073	<0.0000005	0.00044	<0.5	0.42	<0.00001	<0.00001	0.0004	<0.003	
	Annual Maximum	<0.00002	<0.01	0.00045	0.00014	0.25	0.00022	0.0051	0.0084	<0.0000005	0.00073	0.53	0.81	<0.00001	<0.00001	0.00066	0.0051	
	Annual Mean	<0.00002	<0.01	0.00026	0.0001	0.054	0.000075	0.0036	0.0026	<0.0000005	0.00061	0.5	0.59	<0.00001	<0.00001	0.00055	0.0033	
	Annual Median	<0.00002	<0.01	0.00024	0.0001	0.017	0.00005	0.0036	0.0016	<0.0000005	0.00063	0.5	0.62	<0.00001	<0.00001	0.00055	0.003	
	% < LRL	100%	100%	0%	91%	18%	73%	0%	0%	0%	100%	0%	91%	0%	100%	100%	0%	82%
	% > BCWQG ^a	0%	0%	0%	0%	0%	0%	0%	0%	0%	89%	0%	0%	0%	0%	0%	0%	0%
	% > BCWQG ^b	-	-	-	0%	0%	0%	-	0%	-	-	0%	-	-	0%	-	-	0%
	% > Level 1 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
% > Level 2 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
% > Level 3 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
CM_MC1 (RG_MI25)	n	41	41	41	41	41	41	41	41	41	41	41	42	41	41	41	41	
	Annual Minimum	<0.00002	<0.01	0.00013	<0.0001	<0.01	<0.00005	0.0021	0.00016	<0.0000005	0.00051	<0.5	0.14	<0.00001	<0.00001	0.00012	<0.003	
	Annual Maximum	0.000033	0.019	0.00087	0.0002	0.42	0.00034	0.0061	0.016	0.0000013	0.0052	1	0.42	0.000052	0.000028	0.00033	0.0031	
	Annual Mean	0.000021	0.014	0.00027	0.0001	0.049	0.000066	0.0042	0.0018	0.0000006	0.001	0.52	0.26	0.000011	0.000011	0.00021	0.003	
	Annual Median	0.00002	0.015	0.00022	0.0001	0.01	0.00005	0.0047	0.00054	0.000005	0.00092	0.5	0.25	0.00001	0.00001	0.00022	0.003	
	% < LRL	93%	15%	0%	95%	59%	83%	0%	0%	0%	90%	0%	95%	0%	98%	85%	0%	98%
	% > BCWQG ^a	0%	0%	0%	0%	-	0%	-	0%	-	73%	0%	-	0%	2%	0%	0%	0%
	% > BCWQG ^b	-	-	-	0%	0%	0%	-	0%	-	-	0%	-	-	0%	-	-	0%
	% > Level 1 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
% > Level 2 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
% > Level 3 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
F2_NWPI	n	53	53	53	53	53	53	53	53	131	53	53	53	53	53	53	53	
	Annual Minimum	<0.00002	0.042	<0.0001	0.0039	0.01	<0.00005	0.15	0.026	<0.0000005	0.008	105	128	<0.00001	0.000073	0.0097	0.051	
	Annual Maximum	0.000038	0.053	0.00017	0.017	0.078	0.00071	0.21	0.12	0.000071	0.013	134	179	0.000054	0.00014	0.012	0.097	
	Annual Mean	0.00002	0.047	0.0001	0.01	0.039	0.000084	0.19	0.067	0.0000032	0.011	118	151	0.000012	0.000092	0.011	0.062	
	Annual Median	0.00002	0.047	0.0001	0.0091	0.038	0.000057	0.19	0.06	0.00000085	0.011	117	152	0.00001	0.000089	0.011	0.061	
	% < LRL	98%	0%	85%	0%	4%	42%	0%	0%	0%	34%	0%	0%	0%	89%	0%	0%	0%
	% > BCWQG ^a	0%	0%	0%	96%	-	0%	-	0%	0%	46%	0%	-	100%	0%	0%	100%	0%
	% > BCWQG ^b	-	-	-	0%	0%	0%	-	0%	-	-	0%	-	-	0%	-	-	0%
	% > Level 1 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
% > Level 2 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
% > Level 3 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
FC_ECIN (RG_ERCKUT)	n	39	39	39	39	39	39	39	39	64	39	39	44	39	39	39	39	
	Annual Minimum	<0.00002	0.012	<0.0001	<0.0001	<0.01	<0.00005	0.024	<0.0001	<0.0000005	0.00098	0.79	2.2	<0.00001	<0.00001	0.0074	<0.003	
	Annual Maximum	<0.00002	0.035	0.0013	0.015	0.67	0.0002	0.12	0.45	0.00000054	0.013	57	192	<0.00001	0.00042	0.013	0.069	
	Annual Mean	<0.00002	0.015	0.00025	0.00049	0.034	0.000058	0.031	0.012	0.0000005	0.0014	2.4	157	<0.00001	0.000021	0.0085	0.0054	
	Annual Median	<0.00002	0.014	0.00022	0.0001	0.01	0.00005	0.028	0.00024	0.0000005	0.0011	0.97	159	<0.00001	0.00001	0.0083	0.003	
	% < LRL	100%	18%	15%	97%	51%	92%	0%	18%	98%	0%	8%	0%	100%	97%	0%	79%	
	% > BCWQG ^a	0%	0%	3%	3%	-	0%	-	0%	0%	30%	0%	-	100%	0%	0%	49%	0%
	% > BCWQG ^b	-	-	-	0%	0%	0%	-	0%	-	0%	-	-	0%	-	-	-	0%
	% > Level 1 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
% > Level 2 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
% > Level 3 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
RG_ERCKBR	n	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
	Annual Minimum	<0.00002	0.013	0.0002	<0.0001	<0.01	<0.00005	0.026	0.0001	<0.0000005	0.0011	0.82	141	<0.00001	<0.00001	0.0077	<0.003	
	Annual Maximum	<0.00002	0.015	0.00025	<0.0001	<0.01	<0.00005	0.03	0.00042	<0.0000005	0.0012	0.99	177	<0.00001	<0.00001	0.0088	<0.003	
	Annual Mean	<0.00002	0.014	0.00022	<0.0001	<0.01	<0.00005	0.029	0.0002	<0.0000005	0.0011	0.91	160	<0.00001	<0.00001	0.0082	<0.003	
	Annual Median	<0.00002	0.014	0.00022	<0.0001	<0.01	<0.00005	0.03	0.00015	<0.0000005	0.0011	0.92	160	<0.00001	<0.00001	0.0082	<0.003	
	% < LRL	100%	0%	0%	100%	100%	100%	0%	25%	100%	0%	0%	0%	100%	100%	0%	100%	100%
	% > BCWQG ^a	0%	0%	0%	0%	-	0%	-	0%	0%	75%	0%	-	100%	0%	0%	50%	0%
	% > BCWQG ^b	-	-	-	0%	0%	0%	-	0%	-	-	0%	-	-	0%	-	-	0%
	% > Level 1 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
% > Level 2 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
% > Level 3 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

> 5% of samples exceed the guideline or benchmark.
 > 50% of samples exceed the guideline or benchmark.
 > 95% of samples exceed the guideline or benchmark.

Notes: "UEC" = Updated Effects Concentration. "LRL" = laboratory reporting limit. "BCWQG" = British Columbia Working or Accepted Water Quality Guideline. UEC's are shown for Nitrate, Sulphate, and Dissolved Nickel, and EVWQP benchmarks are shown for all other relevant parameters. For guidelines dependent on other analytes (e.g., hardness or chloride), guidelines were screened using concurrent concentrations. When concurrent hardness or chloride concentrations were not measured, the most conservative concentration observed for that station was used to estimate the guidelines or benchmark. All summary statistics are reported to 3 significant figures. When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and tabulated together with the biological monitoring area depicted in parenthesis.

^a Long-term average BCQWG for the Protection of Aquatic Life.
^b Short-term maximum BCQWG for the Protection of Aquatic Life.

Table D.3: Summary of Water Chemistry Data for Key Constituents at Monitoring Stations, EVO LAEMP, 2022

Station	Summary Statistic	Total Beryllium (mg/L)	Total Boron (mg/L)	Total Chromium (mg/L)	Total Cobalt (ug/L)	Total Iron (mg/L)	Total Lead (mg/L)	Total Lithium (mg/L)	Total Manganese (mg/L)	Total Mercury (mg/L)	Total Molybdenum (mg/L)	Total Nickel (ug/L)	Total Selenium (ug/L)	Total Silver (mg/L)	Total Thallium (mg/L)	Total Uranium (mg/L)	Total Zinc (mg/L)
EV_ECOUT (RG_ERCKDT)	n	66	66	66	66	66	66	66	66	66	66	66	76	66	66	66	66
	Annual Minimum	<0.00002	<0.01	<0.0001	<0.0001	<0.01	<0.00005	0.0066	<0.0001	<0.000005	0.00099	0.74	14	<0.00001	<0.00001	0.00091	<0.003
	Annual Maximum	0.00016	0.035	0.0043	0.014	3.2	0.002	0.064	0.36	0.00055	0.019	54	195	0.00018	0.00011	0.013	0.029
	Annual Mean	0.000022	0.016	0.00029	0.0021	0.086	0.00082	0.034	0.055	0.000023	0.0036	8.7	136	0.000014	0.000022	0.0087	0.0067
	Annual Median	0.00002	0.013	0.00021	0.0001	0.01	0.00005	0.028	0.00042	0.000005	0.0012	0.91	148	0.00001	0.00001	0.0083	0.003
	% < LRL	98%	6%	11%	65%	58%	89%	0%	11%	94%	0%	0%	0%	94%	70%	0%	58%
	% > BCWQG ^a	2%	0%	3%	21%	-	0%	-	0%	52%	0%	-	100%	0%	0%	38%	0%
	% > BCWQG ^b	-	-	-	0%	2%	0%	-	0%	-	0%	-	-	0%	-	-	-
	% > Level 1 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
% > Level 2 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
% > Level 3 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RG_ERCKMD	n	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
	Annual Minimum	<0.00002	0.012	<0.0001	<0.0001	<0.01	<0.00005	0.024	0.00076	<0.000005	0.001	1.2	26	<0.00001	<0.00001	0.0075	<0.003
	Annual Maximum	<0.00002	0.031	0.00029	0.0096	0.11	<0.00005	0.071	0.22	<0.000005	0.017	44	166	<0.00001	0.000074	0.012	0.016
	Annual Mean	<0.00002	0.018	0.00018	0.0026	0.058	<0.00005	0.04	0.062	<0.000005	0.0045	11	125	<0.00001	0.000028	0.0088	0.0066
	Annual Median	<0.00002	0.013	0.00018	0.00065	0.063	<0.00005	0.029	0.0062	<0.000005	0.0013	1.7	146	<0.00001	0.00001	0.0084	0.0032
	% < LRL	100%	11%	33%	22%	22%	100%	0%	0%	100%	0%	0%	0%	100%	67%	0%	56%
	% > BCWQG ^a	0%	0%	0%	33%	-	0%	-	0%	67%	0%	-	100%	0%	0%	44%	0%
	% > BCWQG ^b	-	-	-	0%	0%	0%	-	0%	-	0%	-	-	0%	-	-	-
	% > Level 1 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
% > Level 2 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
% > Level 3 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RG_ERCKUC	n	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
	Annual Minimum	<0.00002	0.012	<0.0001	<0.0001	<0.01	<0.00005	0.024	0.00018	<0.000005	0.0011	2.1	83	<0.00001	<0.00001	0.007	<0.003
	Annual Maximum	<0.00002	0.027	0.00023	0.0018	0.012	<0.00005	0.073	0.037	<0.000005	0.0088	17	162	<0.00001	0.000038	0.01	<0.003
	Annual Mean	<0.00002	0.017	0.00016	0.00046	0.01	<0.00005	0.039	0.0077	<0.000005	0.0033	6.6	136	<0.00001	0.000017	0.0082	<0.003
	Annual Median	<0.00002	0.014	0.00015	0.0001	0.01	<0.00005	0.027	0.00029	<0.000005	0.0012	3.2	151	<0.00001	0.00001	0.0078	<0.003
	% < LRL	100%	0%	29%	71%	86%	100%	0%	0%	100%	0%	0%	0%	100%	57%	0%	100%
	% > BCWQG ^a	0%	0%	0%	0%	-	0%	-	0%	100%	0%	-	100%	0%	0%	29%	0%
	% > BCWQG ^b	-	-	-	0%	0%	0%	-	0%	-	0%	-	-	0%	-	-	-
	% > Level 1 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
% > Level 2 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
% > Level 3 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
EV_EC1 (RG_ERCK)	n	68	68	68	68	68	68	68	68	68	68	68	212	68	68	68	68
	Annual Minimum	<0.00002	0.011	<0.0001	<0.0001	<0.01	<0.00005	0.021	0.00012	<0.000005	0.0011	1.8	30	<0.00001	<0.00001	0.0066	<0.003
	Annual Maximum	<0.00002	0.034	0.00041	0.0048	0.035	0.0001	0.075	0.1	0.00013	0.016	37	209	0.000014	0.000066	0.014	0.0092
	Annual Mean	<0.00002	0.018	0.00019	0.00082	0.01	0.00052	0.038	0.014	0.000028	0.0046	10	144	0.00001	0.000021	0.0087	0.0033
	Annual Median	<0.00002	0.014	0.0002	0.0001	0.01	0.00005	0.028	0.00051	0.000005	0.0014	4.8	154	0.00001	0.000012	0.0079	0.003
	% < LRL	100%	0%	19%	56%	94%	94%	0%	0%	94%	0%	0%	0%	97%	32%	0%	93%
	% > BCWQG ^a	0%	0%	0%	3%	-	0%	-	0%	59%	0%	-	100%	0%	0%	34%	0%
	% > BCWQG ^b	-	-	-	0%	0%	0%	-	0%	-	0%	-	-	0%	-	-	0%
	% > Level 1 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
% > Level 2 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
% > Level 3 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
RG_GATE	n	8	8	8	8	8	8	8	8	8	8	8	10	8	8	8	8
	Annual Minimum	<0.00002	0.034	<0.0001	0.00016	0.057	<0.00005	0.094	0.0047	0.0000054	0.0073	16	66	<0.00001	0.000032	0.0082	0.0064
	Annual Maximum	<0.00002	0.054	0.00041	0.00029	0.28	<0.00005	0.15	0.016	0.0000054	0.016	36	293	0.000023	0.000076	0.013	0.015
	Annual Mean	<0.00002	0.041	0.00015	0.0002	0.15	<0.00005	0.12	0.0088	0.0000054	0.013	28	121	0.000012	0.000048	0.011	0.0093
	Annual Median	<0.00002	0.04	0.0001	0.00019	0.14	<0.00005	0.11	0.0073	0.0000054	0.014	31	84	0.00001	0.000047	0.011	0.0087
	% < LRL	100%	0%	62%	12%	0%	100%	0%	0%	88%	0%	0%	88%	0%	0%	0%	0%
	% > BCWQG ^a	0%	0%	0%	0%	-	0%	-	0%	88%	0%	-	100%	0%	0%	88%	0%
	% > BCWQG ^b	-	-	-	0%	0%	0%	-	0%	-	0%	-	-	0%	-	-	0%
	% > Level 1 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
% > Level 2 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
% > Level 3 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

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 Notes: "UEC" = Updated Effects Concentration. "LRL" = laboratory reporting limit. "BCWQG" = British Columbia Working or Accepted Water Quality Guideline. UEC's are shown for Nitrate, Sulphate, and Dissolved Nickel, and EVWQP benchmarks are shown for all other relevant parameters. For guidelines dependent on other analytes (e.g., hardness or chloride), guidelines were screened using concurrent concentrations. When concurrent hardness or chloride concentrations were not measured, the most conservative concentration observed for that station was used to estimate the guidelines or benchmark. All summary statistics are reported to 3 significant figures. When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and tabulated together with the biological monitoring area depicted in parenthesis.
^a Long-term average BCQWG for the Protection of Aquatic Life.
^b Short-term maximum BCQWG for the Protection of Aquatic Life.

Table D.3: Summary of Water Chemistry Data for Key Constituents at Monitoring Stations Monitoring Stations, EVO LAEMP, 2022

Station	Summary Statistic	Total Beryllium (mg/L)	Total Boron (mg/L)	Total Chromium (mg/L)	Total Cobalt (ug/L)	Total Iron (mg/L)	Total Lead (mg/L)	Total Lithium (mg/L)	Total Manganese (mg/L)	Total Mercury (mg/L)	Total Molybdenum (mg/L)	Total Nickel (ug/L)	Total Selenium (ug/L)	Total Silver (mg/L)	Total Thallium (mg/L)	Total Uranium (mg/L)	Total Zinc (mg/L)	
EV_GT1 (RG_GATEDP)	n	50	50	50	50	50	50	50	50	50	50	50	52	50	50	50	50	
	Annual Minimum	<0.00002	0.019	<0.0001	0.00012	<0.02	<0.00005	0.052	0.0011	<0.0000005	0.006	6.9	61	<0.00001	0.000032	0.0052	<0.003	
	Annual Maximum	0.000039	0.054	0.00094	0.0008	0.5	0.0007	0.15	0.021	0.000025	0.017	34	243	0.000081	0.000085	0.014	0.016	
	Annual Mean	0.000022	0.036	0.00017	0.0002	0.12	0.000096	0.1	0.007	0.0000022	0.012	24	114	0.000013	0.000047	0.01	0.0075	
	Annual Median	0.00002	0.037	0.00018	0.00017	0.099	0.0001	0.1	0.0064	0.00000057	0.013	27	92	0.00001	0.000046	0.011	0.0072	
	% < LRL	94%	8%	66%	32%	2%	84%	0%	0%	0%	64%	0%	0%	0%	92%	0%	0%	10%
	% > BCWQG ^a	0%	0%	0%	0%	-	0%	-	0%	0%	60%	0%	-	100%	0%	0%	74%	0%
	% > BCWQG ^b	-	-	-	0%	0%	0%	0%	-	0%	-	0%	-	-	0%	-	-	0%
	% > Level 1 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
% > Level 2 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
% > Level 3 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
EV_BRD_LOT3 (RG_BOCKRD)	n	7	7	7	7	7	7	7	7	7	7	7	8	7	7	7	7	
	Annual Minimum	<0.00002	0.036	<0.0001	0.00016	0.039	<0.00005	0.1	0.0017	<0.0000005	0.0082	26	57	<0.00001	0.000033	0.011	0.0072	
	Annual Maximum	<0.00002	0.054	<0.0001	0.00034	0.5	<0.00005	0.17	0.032	<0.0000005	0.018	40	484	<0.00001	0.00008	0.015	0.013	
	Annual Mean	<0.00002	0.044	<0.0001	0.00023	0.15	<0.00005	0.14	0.013	<0.0000005	0.015	35	133	<0.00001	0.000051	0.013	0.011	
	Annual Median	<0.00002	0.042	<0.0001	0.00018	0.075	<0.00005	0.13	0.0048	<0.0000005	0.016	35	71	<0.00001	0.000048	0.013	0.012	
	% < LRL	100%	0%	100%	29%	0%	100%	0%	0%	0%	100%	0%	0%	0%	100%	0%	0%	0%
	% > BCWQG ^a	0%	0%	0%	0%	-	0%	-	0%	0%	86%	0%	-	100%	0%	0%	100%	0%
	% > BCWQG ^b	-	-	-	0%	0%	0%	-	0%	-	-	0%	-	-	0%	-	-	0%
	% > Level 1 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
% > Level 2 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
% > Level 3 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
EV_BC1 (RG_BOCK)	n	50	50	50	50	50	50	50	50	50	50	50	53	50	50	50	50	
	Annual Minimum	<0.00002	0.037	<0.0001	<0.0001	<0.01	<0.00005	0.09	0.00021	<0.0000005	0.0066	21	52	<0.00001	0.000025	0.0079	<0.003	
	Annual Maximum	0.0002	0.074	0.00021	0.00053	0.14	0.00018	0.17	0.033	0.000026	0.017	33	352	0.000019	0.000059	0.012	0.016	
	Annual Mean	0.000024	0.048	0.00011	0.00017	0.036	0.000064	0.13	0.0049	0.0000019	0.013	26	119	0.00001	0.000039	0.011	0.0046	
	Annual Median	0.00002	0.046	0.0001	0.00011	0.022	0.00005	0.13	0.002	0.0000005	0.014	24	96	0.00001	0.00004	0.011	0.0039	
	% < LRL	98%	0%	84%	52%	26%	84%	0%	0%	0%	82%	0%	0%	0%	98%	0%	0%	68%
	% > BCWQG ^a	2%	0%	0%	0%	-	0%	-	0%	0%	58%	0%	-	100%	0%	0%	96%	0%
	% > BCWQG ^b	-	-	-	0%	0%	0%	-	0%	-	-	0%	-	-	0%	-	-	0%
	% > Level 1 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
% > Level 2 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
% > Level 3 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
EV_MC3 (RG_MI3)	n	72	72	72	72	72	72	72	72	72	72	72	73	72	72	72	72	
	Annual Minimum	<0.00002	<0.01	0.00013	<0.0001	<0.01	<0.00005	0.0028	0.00027	<0.0000005	0.00039	<0.5	0.92	<0.00001	<0.00001	0.00035	<0.003	
	Annual Maximum	0.000084	0.014	0.00026	0.0011	1.2	0.0012	0.024	0.076	0.000021	0.0011	3.7	86	0.000036	0.00005	0.0087	0.04	
	Annual Mean	0.000026	0.01	0.00043	0.00019	0.2	0.00017	0.0053	0.0067	0.000003	0.00068	1.3	2.6	0.000013	0.000015	0.00074	0.0046	
	Annual Median	0.00002	0.01	0.00022	0.0001	0.054	0.00005	0.0054	0.0022	0.0000016	0.0007	0.93	1.4	0.00001	0.00001	0.0007	0.003	
	% < LRL	75%	60%	1%	54%	18%	51%	0%	0%	0%	50%	0%	22%	0%	76%	60%	0%	58%
	% > BCWQG ^a	0%	0%	11%	0%	-	0%	-	0%	0%	75%	0%	-	11%	0%	0%	1%	3%
	% > BCWQG ^b	-	-	-	0%	4%	0%	-	0%	-	-	0%	-	-	0%	-	-	0%
	% > Level 1 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
% > Level 2 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
% > Level 3 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
EV_MC3A (RG_MIDER)	n	14	14	14	14	14	14	14	14	13	14	14	14	14	14	14	14	
	Annual Minimum	<0.00002	<0.01	0.00011	<0.0001	<0.01	<0.00005	0.0031	0.0008	<0.0000005	0.00054	<0.5	1	<0.00001	<0.00001	0.00039	<0.003	
	Annual Maximum	<0.00002	0.014	0.00045	0.00021	0.25	0.00017	0.009	0.0072	<0.0000005	0.001	1.7	25	<0.00001	0.000014	0.0018	0.0073	
	Annual Mean	<0.00002	0.01	0.00024	0.00012	0.07	0.000079	0.006	0.0027	<0.0000005	0.00076	0.9	4.4	<0.00001	0.000011	0.00083	0.0035	
	Annual Median	<0.00002	0.01	0.00018	0.0001	0.018	0.00005	0.006	0.0016	<0.0000005	0.00078	0.75	2.5	<0.00001	0.00001	0.00078	0.003	
	% < LRL	100%	57%	0%	79%	43%	64%	0%	0%	0%	100%	0%	7%	0%	100%	71%	0%	79%
	% > BCWQG ^a	0%	0%	0%	0%	-	0%	-	0%	0%	85%	0%	-	57%	0%	0%	0%	0%
	% > BCWQG ^b	-	-	-	0%	0%	0%	-	0%	-	-	0%	-	-	0%	-	-	0%
	% > Level 1 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
% > Level 2 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
% > Level 3 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

> 5% of samples exceed the guideline or benchmark.
 > 50% of samples exceed the guideline or benchmark.
 > 95% of samples exceed the guideline or benchmark.

Notes: "UEC" = Updated Effects Concentration. "LRL" = laboratory reporting limit. "BCWQG" = British Columbia Working or Accepted Water Quality Guideline. UEC's are shown for Nitrate, Sulphate, and Dissolved Nickel, and EVWQP benchmarks are shown for all other relevant parameters. For guidelines dependent on other analytes (e.g., hardness or chloride), guidelines were screened using concurrent concentrations. When concurrent hardness or chloride concentrations were not measured, the most conservative concentration observed for that station was used to estimate the guidelines or benchmark. All summary statistics are reported to 3 significant figures. When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and tabulated together with the biological monitoring area depicted in parenthesis.

^a Long-term average BCQWG for the Protection of Aquatic Life.

^b Short-term maximum BCQWG for the Protection of Aquatic Life.

Table D.3: Summary of Water Chemistry Data for Key Constituents at Monitoring Stations Monitoring Stations, EVO LAEMP, 2022

Station	Summary Statistic	Total Beryllium (mg/L)	Total Boron (mg/L)	Total Chromium (mg/L)	Total Cobalt (ug/L)	Total Iron (mg/L)	Total Lead (mg/L)	Total Lithium (mg/L)	Total Manganese (mg/L)	Total Mercury (mg/L)	Total Molybdenum (mg/L)	Total Nickel (ug/L)	Total Selenium (ug/L)	Total Silver (mg/L)	Total Thallium (mg/L)	Total Uranium (mg/L)	Total Zinc (mg/L)	
RG_MIDGA	n	8	8	8	8	8	8	8	8	7	8	8	9	8	8	8	8	
	Annual Minimum	<0.00002	<0.01	0.00011	<0.0001	<0.01	<0.00005	0.0068	0.002	<0.000005	0.0008	0.58	5.4	<0.00001	<0.00001	0.00091	<0.003	
	Annual Maximum	<0.00002	0.027	0.00048	0.00019	0.26	0.00017	0.061	0.0079	<0.000005	0.0065	12	42	<0.00001	0.000032	0.0052	0.0034	
	Annual Mean	<0.00002	0.016	0.00023	0.00012	0.085	0.000076	0.025	0.0042	<0.000005	0.0028	5.1	20	<0.00001	0.000016	0.0025	0.0031	
	Annual Median	<0.00002	0.014	0.00016	0.0001	0.057	0.00005	0.014	0.0036	<0.000005	0.0017	3.2	18	<0.00001	0.000012	0.0017	0.003	
	% < LRL	100%	25%	0%	62%	12%	75%	0%	0%	100%	0%	0%	0%	100%	38%	0%	0%	75%
	% > BCWQG ^a	0%	0%	0%	0%	-	0%	-	0%	100%	0%	-	100%	0%	0%	0%	0%	0%
	% > BCWQG ^b	-	-	-	0%	0%	0%	-	0%	-	0%	-	-	0%	-	-	-	0%
	% > Level 1 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
% > Level 2 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
% > Level 3 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
RG_MIDBO	n	8	8	8	8	8	8	8	8	7	8	8	9	8	8	8	8	
	Annual Minimum	<0.00002	<0.01	0.00011	<0.0001	0.01	<0.00005	0.0046	0.0018	<0.000005	0.00072	1.2	3.7	<0.00001	<0.00001	0.00065	<0.003	
	Annual Maximum	<0.00002	0.015	0.00052	0.00021	0.28	0.00019	0.021	0.008	<0.000005	0.0025	3.7	17	<0.00001	0.000014	0.0024	0.0031	
	Annual Mean	<0.00002	0.013	0.00024	0.00012	0.08	0.000086	0.012	0.0037	<0.000005	0.0013	1.9	11	<0.00001	0.000011	0.0014	0.003	
	Annual Median	<0.00002	0.013	0.00017	0.0001	0.024	0.00005	0.012	0.0027	<0.000005	0.0012	1.7	12	<0.00001	0.00001	0.0014	0.003	
	% < LRL	100%	25%	0%	75%	12%	62%	0%	0%	100%	0%	0%	0%	100%	50%	0%	0%	88%
	% > BCWQG ^a	0%	0%	0%	0%	-	0%	-	0%	100%	0%	-	100%	0%	0%	0%	0%	0%
	% > BCWQG ^b	-	-	-	0%	0%	0%	-	0%	-	0%	-	-	0%	-	-	-	0%
	% > Level 1 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
% > Level 2 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
% > Level 3 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
EV_MC2 (RG_MICOMP)	n	89	89	89	89	89	89	89	89	83	89	89	220	89	89	89	89	
	Annual Minimum	<0.00002	<0.01	0.00011	<0.0001	<0.01	<0.00005	0.0037	0.0012	<0.000005	0.00049	0.95	2.2	<0.00001	<0.00001	0.00046	<0.003	
	Annual Maximum	0.00008	0.019	0.0026	0.00089	1.4	0.0011	0.025	0.052	0.000023	0.0025	3.8	24	0.000034	0.00005	0.0023	0.1	
	Annual Mean	0.000023	0.013	0.00031	0.00016	0.12	0.00013	0.012	0.0058	0.0000018	0.0012	1.8	11	0.000011	0.000012	0.0013	0.006	
	Annual Median	0.00002	0.013	0.00019	0.0001	0.024	0.00005	0.013	0.0027	0.00000069	0.0011	1.6	12	0.00001	0.00001	0.0014	0.003	
	% < LRL	88%	20%	1%	55%	12%	61%	0%	0%	66%	0%	0%	0%	92%	76%	0%	0%	72%
	% > BCWQG ^a	0%	0%	5%	0%	-	0%	-	0%	70%	0%	-	100%	0%	0%	0%	0%	1%
	% > BCWQG ^b	-	-	-	0%	3%	0%	-	0%	-	0%	-	-	0%	-	-	-	1%
	% > Level 1 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
% > Level 2 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
% > Level 3 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
EV_MC2a	n	35	35	35	35	35	35	35	35	35	35	35	36	35	35	35	35	
	Annual Minimum	<0.00002	0.01	0.00012	<0.0001	0.01	<0.00005	0.0026	0.0012	<0.0000005	0.00032	<0.5	1.6	<0.00001	<0.00001	0.00038	<0.003	
	Annual Maximum	0.000058	0.014	0.0012	0.00069	1.1	0.00079	0.013	0.033	0.000031	0.0018	3	17	0.000028	0.000044	0.0016	0.14	
	Annual Mean	0.000022	0.011	0.00027	0.00015	0.11	0.00011	0.0075	0.0056	0.0000026	0.00097	1.4	7.2	0.000011	0.000012	0.0011	0.0084	
	Annual Median	0.00002	0.011	0.00019	0.0001	0.024	0.00005	0.0078	0.0035	0.00000079	0.00082	1.4	5.9	0.00001	0.00001	0.0012	0.003	
	% < LRL	89%	31%	3%	51%	6%	66%	0%	0%	57%	0%	6%	0%	89%	86%	0%	0%	77%
	% > BCWQG ^a	0%	0%	3%	0%	-	0%	-	0%	66%	0%	-	94%	0%	0%	0%	0%	0%
	% > BCWQG ^b	-	-	-	0%	3%	0%	-	0%	-	0%	-	-	0%	-	-	-	0%
	% > Level 1 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
% > Level 2 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
% > Level 3 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
EV_ER1	n	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	
	Annual Minimum	<0.00002	<0.01	0.00023	<0.0001	<0.01	<0.00005	0.0026	0.0018	<0.0000005	0.00049	<0.5	0.95	<0.00001	<0.00001	0.00032	<0.003	
	Annual Maximum	0.000096	0.011	0.0033	0.00089	2	0.0013	0.014	0.11	0.000027	0.0016	4.1	19	0.000035	0.00006	0.0016	0.034	
	Annual Mean	0.000024	0.01	0.00057	0.00016	0.19	0.00017	0.0095	0.011	0.0000019	0.0012	1.1	11	0.000012	0.000013	0.0012	0.0045	
	Annual Median	0.00002	0.01	0.00032	0.0001	0.04	0.00005	0.01	0.0034	0.00000068	0.0013	0.8	12	0.00001	0.00001	0.0014	0.003	
	% < LRL	83%	86%	2%	71%	9%	53%	0%	0%	64%	0%	3%	0%	90%	83%	0%	0%	69%
	% > BCWQG ^a	0%	0%	10%	0%	-	0%	-	0%	53%	0%	-	98%	0%	0%	0%	0%	0%
	% > BCWQG ^b	-	-	-	0%	5%	0%	-	0%	-	0%	-	-	0%	-	-	-	0%
	% > Level 1 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
% > Level 2 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
% > Level 3 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

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Table D.3: Summary of Water Chemistry Data for Key Constituents at Monitoring Stations Monitoring Stations, EVO LAEMP, 2022

Station	Summary Statistic	Total Beryllium (mg/L)	Total Boron (mg/L)	Total Chromium (mg/L)	Total Cobalt (ug/L)	Total Iron (mg/L)	Total Lead (mg/L)	Total Lithium (mg/L)	Total Manganese (mg/L)	Total Mercury (mg/L)	Total Molybdenum (mg/L)	Total Nickel (ug/L)	Total Selenium (ug/L)	Total Silver (mg/L)	Total Thallium (mg/L)	Total Uranium (mg/L)	Total Zinc (mg/L)	
F2_BPO	n	60	60	60	60	60	60	60	60	132	60	60	364	60	60	60	60	
	Annual Minimum	<0.00002	0.029	<0.0001	0.0086	0.026	<0.00005	0.061	0.27	<0.0000005	0.0034	37	0.77	<0.00001	0.000076	0.01	0.012	
	Annual Maximum	<0.00002	0.047	0.00057	0.018	0.45	0.00049	0.16	0.56	0.000048	0.028	68	9.4	0.000041	0.00013	0.014	0.038	
	Annual Mean	<0.00002	0.038	0.00011	0.016	0.32	0.00011	0.1	0.43	0.000003	0.018	60	3.5	0.000011	0.00011	0.012	0.024	
	Annual Median	<0.00002	0.039	0.0001	0.016	0.33	0.000088	0.11	0.44	0.0000005	0.018	60	2.3	0.00001	0.00011	0.012	0.024	
	% < LRL	100%	0%	97%	0%	0%	27%	0%	0%	0%	82%	0%	0%	95%	0%	0%	0%	0%
	% > BCWQG ^a	0%	0%	0%	100%	-	0%	-	0%	0%	44%	0%	-	65%	0%	0%	100%	0%
	% > BCWQG ^b	-	-	-	0%	0%	0%	-	0%	0%	-	0%	-	-	0%	-	-	0%
	% > Level 1 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	% > Level 2 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
% > Level 3 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

 > 5% of samples exceed the guideline or benchmark.

 > 50% of samples exceed the guideline or benchmark.

 > 95% of samples exceed the guideline or benchmark.

Notes: "UEC" = Updated Effects Concentration. "LRL" = laboratory reporting limit. "BCWQG" = British Columbia Working or Accepted Water Quality Guideline. UEC's are shown for Nitrate, Sulphate, and Dissolved Nickel, and EVWQP benchmarks are shown for all other relevant parameters. For guidelines dependent on other analytes (e.g., hardness or chloride), guidelines were screened using concurrent concentrations. When concurrent hardness or chloride concentrations were not measured, the most conservative concentration observed for that station was used to estimate the guidelines or benchmark. All summary statistics are reported to 3 significant figures. When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and tabulated together with the biological monitoring area depicted in parenthesis.

^a Long-term average BCQWG for the Protection of Aquatic Life.

^b Short-term maximum BCQWG for the Protection of Aquatic Life.

Table D.3: Summary of Water Chemistry Data for Key Constituents at Monitoring Stations Monitoring Stations, EVO LAEMP, 2022

Station	Summary Statistic	Dissolved Cadmium (ug/L)	Dissolved Copper (mg/L)	Dissolved Iron (mg/L)	Dissolved Nickel (ug/L)
EV_AC2 (RG_ALUSM)	n	9	9	9	7
	Annual Minimum	<0.005	<0.0002	<0.01	<0.5
	Annual Maximum	0.0074	0.00039	<0.01	<0.5
	Annual Mean	0.0054	0.00022	<0.01	<0.5
	Annual Median	0.005	0.0002	<0.01	<0.5
	% < LRL	78%	89%	100%	100%
	% > BCWQG ^a	0%	0%	-	-
	% > BCWQG ^b	0%	0%	0%	-
	% > Level 1 Benchmark/UEC	0%	-	-	0%
% > Level 2 Benchmark/UEC	-	-	-	0%	
% > Level 3 Benchmark/UEC	-	-	-	0%	
CM_MC1 (RG_MI25)	n	41	41	41	12
	Annual Minimum	<0.005	<0.0002	<0.01	<0.5
	Annual Maximum	0.018	0.0011	0.012	<0.5
	Annual Mean	0.0097	0.00025	0.01	<0.5
	Annual Median	0.0091	0.0002	0.01	<0.5
	% < LRL	2%	59%	95%	100%
	% > BCWQG ^a	0%	2%	-	-
	% > BCWQG ^b	0%	0%	0%	-
	% > Level 1 Benchmark/UEC	0%	-	-	0%
% > Level 2 Benchmark/UEC	-	-	-	0%	
% > Level 3 Benchmark/UEC	-	-	-	0%	
F2_NWPI	n	153	153	153	12
	Annual Minimum	0.62	<0.0002	0.01	103
	Annual Maximum	1.1	0.00068	0.035	126
	Annual Mean	0.81	0.00038	0.012	114
	Annual Median	0.82	0.00038	0.011	114
	% < LRL	0%	25%	72%	0%
	% > BCWQG ^a	100%	77%	-	-
	% > BCWQG ^b	0%	0%	0%	-
	% > Level 1 Benchmark/UEC	3%	-	-	100%
% > Level 2 Benchmark/UEC	-	-	-	100%	
% > Level 3 Benchmark/UEC	-	-	-	100%	
FC_ECIN (RG_ERCKUT)	n	93	93	93	12
	Annual Minimum	0.06	<0.0002	<0.01	0.77
	Annual Maximum	0.43	0.00071	0.044	5.1
	Annual Mean	0.088	0.00022	0.012	1.2
	Annual Median	0.085	0.0002	0.012	0.89
	% < LRL	0%	88%	65%	8%
	% > BCWQG ^a	0%	20%	-	-
	% > BCWQG ^b	0%	0%	0%	-
	% > Level 1 Benchmark/UEC	0%	-	-	8%
% > Level 2 Benchmark/UEC	-	-	-	8%	
% > Level 3 Benchmark/UEC	-	-	-	0%	
RG_ERCKBR	n	4	4	4	3
	Annual Minimum	0.085	<0.0002	<0.01	0.82
	Annual Maximum	0.094	<0.0002	<0.01	0.93
	Annual Mean	0.089	<0.0002	<0.01	0.86
	Annual Median	0.089	<0.0002	<0.01	0.84
	% < LRL	0%	100%	100%	0%
	% > BCWQG ^a	0%	0%	-	-
	% > BCWQG ^b	0%	0%	0%	-
	% > Level 1 Benchmark/UEC	0%	-	-	0%
% > Level 2 Benchmark/UEC	-	-	-	0%	
% > Level 3 Benchmark/UEC	-	-	-	0%	

> 5% of samples exceed the guideline or benchmark.

> 50% of samples exceed the guideline or benchmark.

> 95% of samples exceed the guideline or benchmark.

Notes: "UEC" = Updated Effects Concentration. "LRL" = laboratory reporting limit. "BCWQG" = British Columbia Working or Accepted Water Quality Guideline. UEC's are shown for Nitrate, Sulphate, and Dissolved Nickel, and EVWQP benchmarks are shown for all other relevant parameters. For guidelines dependent on other analytes (e.g., hardness or chloride), guidelines were screened using concurrent concentrations. When concurrent hardness or chloride concentrations were not measured, the most conservative concentration observed for that station was used to estimate the guidelines or benchmark. All summary statistics are reported to 3 significant figures. When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and tabulated together with the biological monitoring area depicted in parenthesis.

^a Long-term average BCQWG for the Protection of Aquatic Life.

^b Short-term maximum BCQWG for the Protection of Aquatic Life.

Table D.3: Summary of Water Chemistry Data for Key Constituents at Monitoring Stations Monitoring Stations, EVO LAEMP, 2022

Station	Summary Statistic	Dissolved Cadmium (ug/L)	Dissolved Copper (mg/L)	Dissolved Iron (mg/L)	Dissolved Nickel (ug/L)
EV_ECOUT (RG_ERCKDT)	n	67	67	67	12
	Annual Minimum	0.014	<0.0002	<0.01	0.8
	Annual Maximum	0.36	0.00053	0.032	36
	Annual Mean	0.12	0.00022	0.011	12
	Annual Median	0.088	0.0002	0.01	4.3
	% < LRL	2%	88%	81%	0%
	% > BCWQG ^a	0%	12%	-	-
	% > BCWQG ^b	0%	0%	0%	-
	% > Level 1 Benchmark/UEC	0%	-	-	50%
	% > Level 2 Benchmark/UEC	-	-	-	50%
% > Level 3 Benchmark/UEC	-	-	-	42%	
RG_ERCKMD	n	11	11	11	9
	Annual Minimum	0.076	<0.0002	<0.01	0.98
	Annual Maximum	0.31	0.00072	0.011	43
	Annual Mean	0.13	0.00028	0.01	11
	Annual Median	0.086	0.00025	0.01	1.4
	% < LRL	0%	73%	91%	0%
	% > BCWQG ^a	0%	18%	-	-
	% > BCWQG ^b	0%	0%	0%	-
	% > Level 1 Benchmark/UEC	0%	-	-	33%
	% > Level 2 Benchmark/UEC	-	-	-	33%
% > Level 3 Benchmark/UEC	-	-	-	33%	
RG_ERCKUC	n	7	7	7	5
	Annual Minimum	<0.005	<0.0002	<0.01	1.8
	Annual Maximum	0.0097	<0.0002	<0.01	14
	Annual Mean	0.0069	<0.0002	<0.01	5.3
	Annual Median	0.0061	<0.0002	<0.01	2.6
	% < LRL	57%	100%	100%	0%
	% > BCWQG ^a	0%	0%	-	-
	% > BCWQG ^b	0%	0%	0%	-
	% > Level 1 Benchmark/UEC	0%	-	-	20%
	% > Level 2 Benchmark/UEC	-	-	-	20%
% > Level 3 Benchmark/UEC	-	-	-	20%	
EV_EC1 (RG_ERCK)	n	68	68	68	12
	Annual Minimum	<0.005	<0.0002	<0.01	1.9
	Annual Maximum	0.025	0.0013	0.016	31
	Annual Mean	0.0094	0.00024	0.01	13
	Annual Median	0.0071	0.0002	0.01	8.3
	% < LRL	26%	84%	96%	0%
	% > BCWQG ^a	0%	3%	-	-
	% > BCWQG ^b	0%	0%	0%	-
	% > Level 1 Benchmark/UEC	0%	-	-	58%
	% > Level 2 Benchmark/UEC	-	-	-	58%
% > Level 3 Benchmark/UEC	-	-	-	42%	
RG_GATE	n	8	8	8	6
	Annual Minimum	0.08	0.00024	<0.02	14
	Annual Maximum	0.22	0.00036	0.031	31
	Annual Mean	0.15	0.0003	0.025	26
	Annual Median	0.15	0.0003	0.024	28
	% < LRL	0%	75%	50%	0%
	% > BCWQG ^a	0%	0%	-	-
	% > BCWQG ^b	0%	0%	0%	-
	% > Level 1 Benchmark/UEC	0%	-	-	100%
	% > Level 2 Benchmark/UEC	-	-	-	100%
% > Level 3 Benchmark/UEC	-	-	-	83%	

> 5% of samples exceed the guideline or benchmark.

> 50% of samples exceed the guideline or benchmark.

> 95% of samples exceed the guideline or benchmark.

Notes: "UEC" = Updated Effects Concentration. "LRL" = laboratory reporting limit. "BCWQG" = British Columbia Working or Accepted Water Quality Guideline. UEC's are shown for Nitrate, Sulphate, and Dissolved Nickel, and EVWQP benchmarks are shown for all other relevant parameters. For guidelines dependent on other analytes (e.g., hardness or chloride), guidelines were screened using concurrent concentrations. When concurrent hardness or chloride concentrations were not measured, the most conservative concentration observed for that station was used to estimate the guidelines or benchmark. All summary statistics are reported to 3 significant figures. When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and tabulated together with the biological monitoring area depicted in parenthesis.

^a Long-term average BCQWG for the Protection of Aquatic Life.

^b Short-term maximum BCQWG for the Protection of Aquatic Life.

Table D.3: Summary of Water Chemistry Data for Key Constituents at Monitoring Stations Monitoring Stations, EVO LAEMP, 2022

Station	Summary Statistic	Dissolved Cadmium (ug/L)	Dissolved Copper (mg/L)	Dissolved Iron (mg/L)	Dissolved Nickel (ug/L)
EV_GT1 (RG_GATEDP)	n	50	50	50	12
	Annual Minimum	<0.01	<0.0002	<0.01	7
	Annual Maximum	0.2	0.00084	0.026	33
	Annual Mean	0.11	0.00031	0.014	22
	Annual Median	0.11	0.00028	0.014	25
	% < LRL	2%	32%	40%	0%
	% > BCWQG ^a	0%	0%	-	-
	% > BCWQG ^b	0%	0%	0%	-
	% > Level 1 Benchmark/UEC	0%	-	-	92%
	% > Level 2 Benchmark/UEC	-	-	-	92%
% > Level 3 Benchmark/UEC	-	-	-	67%	
EV_BRD_LOT3 (RG_BOCKRD)	n	7	7	7	5
	Annual Minimum	0.11	0.0002	0.012	23
	Annual Maximum	0.28	0.00026	0.21	37
	Annual Mean	0.19	0.00023	0.074	32
	Annual Median	0.19	0.00022	0.048	34
	% < LRL	0%	57%	14%	0%
	% > BCWQG ^a	0%	0%	-	-
	% > BCWQG ^b	0%	0%	0%	-
	% > Level 1 Benchmark/UEC	0%	-	-	100%
	% > Level 2 Benchmark/UEC	-	-	-	100%
% > Level 3 Benchmark/UEC	-	-	-	100%	
EV_BC1 (RG_BOCK)	n	50	50	50	12
	Annual Minimum	<0.005	<0.0002	<0.01	21
	Annual Maximum	0.12	0.0031	<0.01	31
	Annual Mean	0.026	0.0003	<0.01	25
	Annual Median	0.015	0.00021	<0.01	24
	% < LRL	32%	62%	100%	0%
	% > BCWQG ^a	0%	2%	-	-
	% > BCWQG ^b	0%	0%	0%	-
	% > Level 1 Benchmark/UEC	0%	-	-	100%
	% > Level 2 Benchmark/UEC	-	-	-	100%
% > Level 3 Benchmark/UEC	-	-	-	100%	
EV_MC3 (RG_MI3)	n	72	72	72	12
	Annual Minimum	0.0064	<0.0002	<0.01	<0.5
	Annual Maximum	0.085	0.0011	0.19	1.4
	Annual Mean	0.022	0.00032	0.018	0.75
	Annual Median	0.02	0.00027	0.01	0.53
	% < LRL	0%	33%	78%	25%
	% > BCWQG ^a	0%	0%	-	-
	% > BCWQG ^b	0%	0%	0%	-
	% > Level 1 Benchmark/UEC	0%	-	-	0%
	% > Level 2 Benchmark/UEC	-	-	-	0%
% > Level 3 Benchmark/UEC	-	-	-	0%	
EV_MC3A (RG_MIDER)	n	14	14	14	9
	Annual Minimum	0.012	<0.0002	<0.01	<0.5
	Annual Maximum	0.024	0.00055	<0.01	1.2
	Annual Mean	0.018	0.00026	<0.01	0.74
	Annual Median	0.017	0.0002	<0.01	0.65
	% < LRL	0%	57%	100%	33%
	% > BCWQG ^a	0%	7%	-	-
	% > BCWQG ^b	0%	7%	0%	-
	% > Level 1 Benchmark/UEC	0%	-	-	0%
	% > Level 2 Benchmark/UEC	-	-	-	0%
% > Level 3 Benchmark/UEC	-	-	-	0%	

- > 5% of samples exceed the guideline or benchmark.
- > 50% of samples exceed the guideline or benchmark.
- > 95% of samples exceed the guideline or benchmark.

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Table D.3: Summary of Water Chemistry Data for Key Constituents at Monitoring Stations Monitoring Stations, EVO LAEMP, 2022

Station	Summary Statistic	Dissolved Cadmium (ug/L)	Dissolved Copper (mg/L)	Dissolved Iron (mg/L)	Dissolved Nickel (ug/L)
RG_MIDGA	n	8	8	8	6
	Annual Minimum	0.015	<0.0002	<0.01	0.93
	Annual Maximum	0.059	0.00067	<0.01	11
	Annual Mean	0.032	0.0003	<0.01	4.9
	Annual Median	0.03	0.00022	<0.01	4.5
	% < LRL	0%	50%	100%	0%
	% > BCWQG ^a	0%	0%	-	-
	% > BCWQG ^b	0%	0%	0%	-
	% > Level 1 Benchmark/UEC	0%	-	-	50%
	% > Level 2 Benchmark/UEC	-	-	-	33%
% > Level 3 Benchmark/UEC	-	-	-	0%	
RG_MIDBO	n	8	8	8	6
	Annual Minimum	0.016	<0.0002	<0.01	1
	Annual Maximum	0.027	0.00033	<0.01	3.4
	Annual Mean	0.021	0.00024	<0.01	1.8
	Annual Median	0.02	0.0002	<0.01	1.5
	% < LRL	0%	50%	100%	0%
	% > BCWQG ^a	0%	0%	-	-
	% > BCWQG ^b	0%	0%	0%	-
	% > Level 1 Benchmark/UEC	0%	-	-	17%
	% > Level 2 Benchmark/UEC	-	-	-	0%
% > Level 3 Benchmark/UEC	-	-	-	0%	
EV_MC2 (RG_MICOMP)	n	83	83	83	12
	Annual Minimum	0.017	<0.0002	<0.01	1
	Annual Maximum	0.047	0.0016	0.03	2.6
	Annual Mean	0.024	0.00029	0.011	1.6
	Annual Median	0.023	0.00022	0.01	1.4
	% < LRL	0%	42%	80%	0%
	% > BCWQG ^a	0%	0%	-	-
	% > BCWQG ^b	0%	0%	0%	-
	% > Level 1 Benchmark/UEC	0%	-	-	0%
	% > Level 2 Benchmark/UEC	-	-	-	0%
% > Level 3 Benchmark/UEC	-	-	-	0%	
EV_MC2a	n	35	35	35	11
	Annual Minimum	0.012	<0.0002	<0.01	0.53
	Annual Maximum	0.034	0.00046	0.051	2
	Annual Mean	0.019	0.00025	0.012	1.2
	Annual Median	0.018	0.00022	0.01	1
	% < LRL	0%	51%	77%	0%
	% > BCWQG ^a	0%	3%	-	-
	% > BCWQG ^b	0%	0%	0%	-
	% > Level 1 Benchmark/UEC	0%	-	-	0%
	% > Level 2 Benchmark/UEC	-	-	-	0%
% > Level 3 Benchmark/UEC	-	-	-	0%	
EV_ER1	n	58	58	58	12
	Annual Minimum	0.0098	<0.0002	<0.01	0.53
	Annual Maximum	0.03	0.0011	0.031	0.84
	Annual Mean	0.015	0.00024	0.011	0.67
	Annual Median	0.015	0.0002	0.01	0.67
	% < LRL	0%	71%	90%	0%
	% > BCWQG ^a	0%	0%	-	-
	% > BCWQG ^b	0%	0%	0%	-
	% > Level 1 Benchmark/UEC	0%	-	-	0%
	% > Level 2 Benchmark/UEC	-	-	-	0%
% > Level 3 Benchmark/UEC	-	-	-	0%	

> 5% of samples exceed the guideline or benchmark.
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 > 95% of samples exceed the guideline or benchmark.

Notes: "UEC" = Updated Effects Concentration. "LRL" = laboratory reporting limit. "BCWQG" = British Columbia Working or Accepted Water Quality Guideline. UEC's are shown for Nitrate, Sulphate, and Dissolved Nickel, and EVWQP benchmarks are shown for all other relevant parameters. For guidelines dependent on other analytes (e.g., hardness or chloride), guidelines were screened using concurrent concentrations. When concurrent hardness or chloride concentrations were not measured, the most conservative concentration observed for that station was used to estimate the guidelines or benchmark. All summary statistics are reported to 3 significant figures. When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and tabulated together with the biological monitoring area depicted in parenthesis.

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^b Short-term maximum BCQWG for the Protection of Aquatic Life.

Table D.3: Summary of Water Chemistry Data for Key Constituents at Monitoring Stations Monitoring Stations, EVO LAEMP, 2022

Station	Summary Statistic	Dissolved Cadmium (ug/L)	Dissolved Copper (mg/L)	Dissolved Iron (mg/L)	Dissolved Nickel (ug/L)
F2_BPO	n	158	158	158	12
	Annual Minimum	0.15	<0.0002	<0.01	46
	Annual Maximum	0.5	0.0012	0.53	63
	Annual Mean	0.34	0.00021	0.039	57
	Annual Median	0.34	0.0002	0.032	58
	% < LRL	0%	97%	7%	0%
	% > BCWQG ^a	4%	14%	-	-
	% > BCWQG ^b	0%	0%	1%	-
	% > Level 1 Benchmark/UEC	0%	-	-	100%
	% > Level 2 Benchmark/UEC	-	-	-	100%
% > Level 3 Benchmark/UEC	-	-	-	100%	

 > 5% of samples exceed the guideline or benchmark.

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Notes: "UEC" = Updated Effects Concentration. "LRL" = laboratory reporting limit. "BCWQG" = British Columbia Working or Accepted Water Quality Guideline. UEC's are shown for Nitrate, Sulphate, and Dissolved Nickel, and EVWQP benchmarks are shown for all other relevant parameters. For guidelines dependent on other analytes (e.g., hardness or chloride), guidelines were screened using concurrent concentrations. When concurrent hardness or chloride concentrations were not measured, the most conservative concentration observed for that station was used to estimate the guidelines or benchmark. All summary statistics are reported to 3 significant figures. When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and tabulated together with the biological monitoring area depicted in parenthesis.

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Table D.4: Comparison of Water Quality Concentrations Upstream and Downstream of SRF Treatment on Michel Creek, EVO LAEMP, 2017 to 2022

Parameter	Upstream Area	Downstream Area	Year	Month	SRF Status	Spatial Difference ^a	
						Magnitude of Difference	P-value
Nitrate (as N)	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	3	Pre-SRF Discharge	321	<0.001
Nitrate (as N)	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	4	Pre-SRF Discharge	253	<0.001
Nitrate (as N)	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	5	Pre-SRF Discharge	182	<0.001
Nitrate (as N)	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	6	Pre-SRF Discharge	441	<0.001
Nitrate (as N)	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	10	Pre-SRF Discharge	1,008	<0.001
Nitrate (as N)	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	1	Pre-SRF Discharge	722	<0.001
Nitrate (as N)	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	2	Pre-SRF Discharge	964	<0.001
Nitrate (as N)	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	3	Receiving SRF Discharge	1,085	<0.001
Nitrate (as N)	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	4	Receiving SRF Discharge	758	<0.001
Nitrate (as N)	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	5	Receiving SRF Discharge	258	<0.001
Nitrate (as N)	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	6	Receiving SRF Discharge	466	<0.001
Nitrate (as N)	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	7	Receiving SRF Discharge	995	<0.001
Nitrate (as N)	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	8	Receiving SRF Discharge	960	<0.001
Nitrate (as N)	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	9	Receiving SRF Discharge	812	<0.001
Nitrate (as N)	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	10	Receiving SRF Discharge	694	<0.001
Nitrate (as N)	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	11	Receiving SRF Discharge	773	<0.001
Nitrate (as N)	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	12	Receiving SRF Discharge	766	<0.001
Nitrate (as N)	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	1	Receiving SRF Discharge	771	<0.001
Nitrate (as N)	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	2	Receiving SRF Discharge	683	<0.001
Nitrate (as N)	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	3	Receiving SRF Discharge	524	<0.001
Nitrate (as N)	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	4	Receiving SRF Discharge	405	<0.001
Nitrate (as N)	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	5	Receiving SRF Discharge	258	<0.001
Nitrate (as N)	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	6	Receiving SRF Discharge	436	<0.001
Nitrate (as N)	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	7	Receiving SRF Discharge	1,298	<0.001
Nitrate (as N)	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	8	Receiving SRF Discharge	2,315	<0.001
Nitrate (as N)	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	9	Receiving SRF Discharge	625	<0.001
Nitrate (as N)	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	10	Receiving SRF Discharge	430	<0.001
Nitrate (as N)	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	11	Receiving SRF Discharge	427	<0.001
Nitrate (as N)	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	12	Receiving SRF Discharge	429	<0.001
Nitrate (as N)	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	1	Receiving SRF Discharge	499	<0.001
Nitrate (as N)	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	2	Receiving SRF Discharge	509	<0.001
Nitrate (as N)	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	3	Receiving SRF Discharge	498	<0.001
Nitrate (as N)	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	4	Receiving SRF Discharge	522	<0.001
Nitrate (as N)	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	5	Receiving SRF Discharge	215	<0.001
Nitrate (as N)	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	6	Receiving SRF Discharge	171	<0.001
Nitrate (as N)	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	7	Receiving SRF Discharge	349	<0.001
Nitrate (as N)	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	8	Receiving SRF Discharge	573	<0.001
Nitrate (as N)	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	9	Not Receiving SRF Discharge	715	<0.001
Nitrate (as N)	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	10	Not Receiving SRF Discharge	2,111	<0.001
Nitrate (as N)	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	11	Not Receiving SRF Discharge	445	<0.001
Nitrate (as N)	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	2	Not Receiving SRF Discharge	579	<0.001
Nitrate (as N)	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	3	Receiving SRF Discharge	434	<0.001
Nitrate (as N)	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	4	Receiving SRF Discharge	510	<0.001
Nitrate (as N)	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	5	Receiving SRF Discharge	152	<0.001
Nitrate (as N)	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	6	Receiving SRF Discharge	456	<0.001
Nitrate (as N)	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	7	Receiving SRF Discharge	1,124	<0.001
Nitrate (as N)	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	8	Receiving SRF Discharge	421	<0.001
Nitrate (as N)	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	9	Receiving SRF Discharge	1,312	<0.001
Nitrate (as N)	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	10	Receiving SRF Discharge	880	<0.001
Nitrate (as N)	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	11	Receiving SRF Discharge	59	0.018
Nitrate (as N)	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	12	Receiving SRF Discharge	147	<0.001

Table D.4: Comparison of Water Quality Concentrations Upstream and Downstream of SRF Treatment on Michel Creek, EVO LAEMP, 2017 to 2022

Parameter	Upstream Area	Downstream Area	Year	Month	SRF Status	Spatial Difference ^a	
						Magnitude of Difference	P-value
Nitrate (as N)	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	1	Receiving SRF Discharge	133	0.002
Nitrate (as N)	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	2	Receiving SRF Discharge	475	<0.001
Nitrate (as N)	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	3	Receiving SRF Discharge	882	<0.001
Nitrate (as N)	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	4	Receiving SRF Discharge	1,133	<0.001
Nitrate (as N)	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	5	Receiving SRF Discharge	298	<0.001
Nitrate (as N)	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	6	Receiving SRF Discharge	110	<0.001
Nitrate (as N)	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	7	Receiving SRF Discharge	1,455	<0.001
Nitrate (as N)	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	8	Receiving SRF Discharge	1,566	<0.001
Nitrate (as N)	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	9	Receiving SRF Discharge	1,875	<0.001
Nitrate (as N)	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	10	Receiving SRF Discharge	2,320	<0.001
Nitrate (as N)	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	11	Receiving SRF Discharge	773	<0.001
Total Phosphorus	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	3	Pre-SRF Discharge	NS	0.073
Total Phosphorus	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	4	Pre-SRF Discharge	NS	0.485
Total Phosphorus	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	5	Pre-SRF Discharge	NS	0.328
Total Phosphorus	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	6	Pre-SRF Discharge	NS	0.703
Total Phosphorus	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	10	Pre-SRF Discharge	NS	0.309
Total Phosphorus	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	1	Pre-SRF Discharge	NS	0.951
Total Phosphorus	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	2	Pre-SRF Discharge	NS	0.625
Total Phosphorus	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	3	Receiving SRF Discharge	NS	0.455
Total Phosphorus	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	4	Receiving SRF Discharge	NS	0.165
Total Phosphorus	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	5	Receiving SRF Discharge	NS	0.053
Total Phosphorus	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	6	Receiving SRF Discharge	NS	0.476
Total Phosphorus	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	7	Receiving SRF Discharge	NS	0.951
Total Phosphorus	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	8	Receiving SRF Discharge	NS	0.941
Total Phosphorus	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	9	Receiving SRF Discharge	NS	0.491
Total Phosphorus	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	10	Receiving SRF Discharge	NS	0.712
Total Phosphorus	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	11	Receiving SRF Discharge	NS	0.271
Total Phosphorus	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	12	Receiving SRF Discharge	NS	0.907
Total Phosphorus	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	1	Receiving SRF Discharge	NS	0.226
Total Phosphorus	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	2	Receiving SRF Discharge	NS	0.612
Total Phosphorus	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	3	Receiving SRF Discharge	NS	0.975
Total Phosphorus	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	4	Receiving SRF Discharge	NS	0.757
Total Phosphorus	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	5	Receiving SRF Discharge	-56	0.019
Total Phosphorus	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	6	Receiving SRF Discharge	NS	0.597
Total Phosphorus	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	7	Receiving SRF Discharge	NS	0.075
Total Phosphorus	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	8	Receiving SRF Discharge	NS	0.238
Total Phosphorus	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	9	Receiving SRF Discharge	-70	0.016
Total Phosphorus	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	10	Receiving SRF Discharge	-96	<0.001
Total Phosphorus	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	11	Receiving SRF Discharge	NS	0.746
Total Phosphorus	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	12	Receiving SRF Discharge	NS	0.936
Total Phosphorus	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	1	Receiving SRF Discharge	NS	0.745
Total Phosphorus	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	2	Receiving SRF Discharge	NS	0.510
Total Phosphorus	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	3	Receiving SRF Discharge	NS	0.264
Total Phosphorus	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	4	Receiving SRF Discharge	NS	0.480
Total Phosphorus	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	5	Receiving SRF Discharge	NS	0.737
Total Phosphorus	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	6	Receiving SRF Discharge	NS	0.609
Total Phosphorus	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	7	Receiving SRF Discharge	NS	0.284
Total Phosphorus	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	8	Receiving SRF Discharge	NS	0.381
Total Phosphorus	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	9	Not Receiving SRF Discharge	-72	0.012
Total Phosphorus	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	10	Not Receiving SRF Discharge	NS	0.060
Total Phosphorus	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	11	Not Receiving SRF Discharge	-78	0.027

Table D.4: Comparison of Water Quality Concentrations Upstream and Downstream of SRF Treatment on Michel Creek, EVO LAEMP, 2017 to 2022

Parameter	Upstream Area	Downstream Area	Year	Month	SRF Status	Spatial Difference ^a	
						Magnitude of Difference	P-value
Total Phosphorus	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	2	Not Receiving SRF Discharge	NS	0.987
Total Phosphorus	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	3	Receiving SRF Discharge	NS	0.288
Total Phosphorus	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	4	Receiving SRF Discharge	NS	0.216
Total Phosphorus	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	5	Receiving SRF Discharge	NS	0.573
Total Phosphorus	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	6	Receiving SRF Discharge	NS	0.245
Total Phosphorus	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	7	Receiving SRF Discharge	NS	0.714
Total Phosphorus	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	8	Receiving SRF Discharge	NS	0.966
Total Phosphorus	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	9	Receiving SRF Discharge	NS	0.222
Total Phosphorus	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	10	Receiving SRF Discharge	NS	0.748
Total Phosphorus	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	11	Receiving SRF Discharge	NS	0.358
Total Phosphorus	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	12	Receiving SRF Discharge	NS	0.646
Total Phosphorus	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	1	Receiving SRF Discharge	NS	0.939
Total Phosphorus	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	2	Receiving SRF Discharge	NS	0.729
Total Phosphorus	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	3	Receiving SRF Discharge	NS	0.363
Total Phosphorus	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	4	Receiving SRF Discharge	-46	0.012
Total Phosphorus	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	5	Receiving SRF Discharge	-43	0.011
Total Phosphorus	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	6	Receiving SRF Discharge	NS	0.407
Total Phosphorus	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	7	Receiving SRF Discharge	NS	0.591
Total Phosphorus	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	8	Receiving SRF Discharge	NS	0.105
Total Phosphorus	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	9	Receiving SRF Discharge	NS	0.428
Total Phosphorus	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	10	Receiving SRF Discharge	NS	0.777
Total Phosphorus	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	11	Receiving SRF Discharge	NS	0.115
Orthophosphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	3	Pre-SRF Discharge	NS	0.658
Orthophosphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	4	Pre-SRF Discharge	NS	0.272
Orthophosphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	5	Pre-SRF Discharge	NS	0.583
Orthophosphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	6	Pre-SRF Discharge	NS	0.308
Orthophosphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	10	Pre-SRF Discharge	NS	0.370
Orthophosphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	1	Pre-SRF Discharge	NS	0.180
Orthophosphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	2	Pre-SRF Discharge	NS	0.105
Orthophosphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	3	Receiving SRF Discharge	-58	0.026
Orthophosphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	4	Receiving SRF Discharge	-64	0.003
Orthophosphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	5	Receiving SRF Discharge	NS	0.497
Orthophosphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	6	Receiving SRF Discharge	NS	0.112
Orthophosphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	7	Receiving SRF Discharge	NS	0.362
Orthophosphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	8	Receiving SRF Discharge	NS	0.115
Orthophosphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	9	Receiving SRF Discharge	NS	0.325
Orthophosphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	10	Receiving SRF Discharge	NS	0.992
Orthophosphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	11	Receiving SRF Discharge	NS	0.127
Orthophosphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	12	Receiving SRF Discharge	NS	0.532
Orthophosphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	1	Receiving SRF Discharge	NS	0.235
Orthophosphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	2	Receiving SRF Discharge	NS	0.670
Orthophosphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	3	Receiving SRF Discharge	NS	0.899
Orthophosphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	4	Receiving SRF Discharge	NS	0.064
Orthophosphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	5	Receiving SRF Discharge	NS	0.938
Orthophosphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	6	Receiving SRF Discharge	NS	0.281
Orthophosphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	7	Receiving SRF Discharge	NS	0.066
Orthophosphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	8	Receiving SRF Discharge	NS	0.325
Orthophosphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	9	Receiving SRF Discharge	NS	0.583
Orthophosphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	10	Receiving SRF Discharge	-75	0.023
Orthophosphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	11	Receiving SRF Discharge	NS	0.697
Orthophosphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	12	Receiving SRF Discharge	NS	0.968

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Parameter	Upstream Area	Downstream Area	Year	Month	SRF Status	Spatial Difference ^a	
						Magnitude of Difference	P-value
Orthophosphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	1	Receiving SRF Discharge	NS	0.673
Orthophosphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	2	Receiving SRF Discharge	NS	0.174
Orthophosphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	3	Receiving SRF Discharge	NS	0.332
Orthophosphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	4	Receiving SRF Discharge	NS	0.165
Orthophosphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	5	Receiving SRF Discharge	NS	0.288
Orthophosphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	6	Receiving SRF Discharge	NS	0.611
Orthophosphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	7	Receiving SRF Discharge	-62	0.037
Orthophosphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	8	Receiving SRF Discharge	NS	0.327
Orthophosphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	9	Not Receiving SRF Discharge	NS	0.230
Orthophosphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	10	Not Receiving SRF Discharge	NS	0.998
Orthophosphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	11	Not Receiving SRF Discharge	NS	0.087
Orthophosphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	2	Not Receiving SRF Discharge	NS	0.121
Orthophosphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	3	Receiving SRF Discharge	-46	0.034
Orthophosphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	4	Receiving SRF Discharge	NS	0.066
Orthophosphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	5	Receiving SRF Discharge	NS	0.137
Orthophosphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	6	Receiving SRF Discharge	-44	0.023
Orthophosphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	7	Receiving SRF Discharge	NS	0.113
Orthophosphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	8	Receiving SRF Discharge	-54	0.014
Orthophosphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	9	Receiving SRF Discharge	-56	0.025
Orthophosphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	10	Receiving SRF Discharge	NS	0.242
Orthophosphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	11	Receiving SRF Discharge	NS	0.500
Orthophosphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	12	Receiving SRF Discharge	NS	0.634
Orthophosphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	1	Receiving SRF Discharge	NS	0.369
Orthophosphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	2	Receiving SRF Discharge	NS	0.356
Orthophosphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	3	Receiving SRF Discharge	NS	0.839
Orthophosphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	4	Receiving SRF Discharge	NS	0.622
Orthophosphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	5	Receiving SRF Discharge	-36	0.021
Orthophosphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	6	Receiving SRF Discharge	NS	0.463
Orthophosphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	7	Receiving SRF Discharge	-59	0.008
Orthophosphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	8	Receiving SRF Discharge	-66	0.013
Orthophosphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	9	Receiving SRF Discharge	NS	1.000
Orthophosphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	10	Receiving SRF Discharge	NS	1.000
Orthophosphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	11	Receiving SRF Discharge	NS	0.507
Sulphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	3	Pre-SRF Discharge	109	<0.001
Sulphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	4	Pre-SRF Discharge	79	<0.001
Sulphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	5	Pre-SRF Discharge	80	<0.001
Sulphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	6	Pre-SRF Discharge	109	<0.001
Sulphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	10	Pre-SRF Discharge	172	<0.001
Sulphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	1	Pre-SRF Discharge	190	<0.001
Sulphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	2	Pre-SRF Discharge	248	<0.001
Sulphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	3	Receiving SRF Discharge	283	<0.001
Sulphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	4	Receiving SRF Discharge	212	<0.001
Sulphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	5	Receiving SRF Discharge	105	<0.001
Sulphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	6	Receiving SRF Discharge	126	<0.001
Sulphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	7	Receiving SRF Discharge	127	<0.001
Sulphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	8	Receiving SRF Discharge	182	<0.001
Sulphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	9	Receiving SRF Discharge	164	<0.001
Sulphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	10	Receiving SRF Discharge	151	<0.001
Sulphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	11	Receiving SRF Discharge	192	<0.001
Sulphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	12	Receiving SRF Discharge	213	<0.001
Sulphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	1	Receiving SRF Discharge	221	<0.001

Table D.4: Comparison of Water Quality Concentrations Upstream and Downstream of SRF Treatment on Michel Creek, EVO LAEMP, 2017 to 2022

Parameter	Upstream Area	Downstream Area	Year	Month	SRF Status	Spatial Difference ^a	
						Magnitude of Difference	P-value
Sulphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	2	Receiving SRF Discharge	182	<0.001
Sulphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	3	Receiving SRF Discharge	164	<0.001
Sulphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	4	Receiving SRF Discharge	87	<0.001
Sulphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	5	Receiving SRF Discharge	49	0.003
Sulphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	6	Receiving SRF Discharge	55	0.003
Sulphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	7	Receiving SRF Discharge	63	0.003
Sulphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	8	Receiving SRF Discharge	142	<0.001
Sulphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	9	Receiving SRF Discharge	126	<0.001
Sulphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	10	Receiving SRF Discharge	101	0.008
Sulphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	11	Receiving SRF Discharge	123	0.002
Sulphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	12	Receiving SRF Discharge	124	0.002
Sulphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	1	Receiving SRF Discharge	131	0.002
Sulphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	2	Receiving SRF Discharge	138	<0.001
Sulphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	3	Receiving SRF Discharge	110	<0.001
Sulphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	4	Receiving SRF Discharge	101	<0.001
Sulphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	5	Receiving SRF Discharge	64	0.001
Sulphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	6	Receiving SRF Discharge	36	0.029
Sulphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	7	Receiving SRF Discharge	64	0.014
Sulphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	8	Receiving SRF Discharge	70	0.038
Sulphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	9	Not Receiving SRF Discharge	131	<0.001
Sulphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	10	Not Receiving SRF Discharge	96	0.009
Sulphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	11	Not Receiving SRF Discharge	106	0.005
Sulphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	2	Not Receiving SRF Discharge	123	<0.001
Sulphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	3	Receiving SRF Discharge	123	<0.001
Sulphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	4	Receiving SRF Discharge	88	<0.001
Sulphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	5	Receiving SRF Discharge	73	<0.001
Sulphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	6	Receiving SRF Discharge	80	<0.001
Sulphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	7	Receiving SRF Discharge	84	<0.001
Sulphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	8	Receiving SRF Discharge	67	<0.001
Sulphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	9	Receiving SRF Discharge	132	<0.001
Sulphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	10	Receiving SRF Discharge	131	<0.001
Sulphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	11	Receiving SRF Discharge	NS	0.718
Sulphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	12	Receiving SRF Discharge	52	0.022
Sulphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	1	Receiving SRF Discharge	74	0.003
Sulphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	2	Receiving SRF Discharge	119	<0.001
Sulphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	3	Receiving SRF Discharge	113	<0.001
Sulphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	4	Receiving SRF Discharge	106	<0.001
Sulphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	5	Receiving SRF Discharge	79	<0.001
Sulphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	6	Receiving SRF Discharge	NS	0.597
Sulphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	7	Receiving SRF Discharge	105	<0.001
Sulphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	8	Receiving SRF Discharge	118	<0.001
Sulphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	9	Receiving SRF Discharge	130	<0.001
Sulphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	10	Receiving SRF Discharge	131	<0.001
Sulphate	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	11	Receiving SRF Discharge	170	<0.001
Total Dissolved Solids	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	3	Pre-SRF Discharge	57	<0.001
Total Dissolved Solids	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	4	Pre-SRF Discharge	32	0.026
Total Dissolved Solids	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	5	Pre-SRF Discharge	34	0.009
Total Dissolved Solids	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	6	Pre-SRF Discharge	46	0.002
Total Dissolved Solids	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	10	Pre-SRF Discharge	73	0.004
Total Dissolved Solids	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	1	Pre-SRF Discharge	81	0.002
Total Dissolved Solids	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	2	Pre-SRF Discharge	123	<0.001

Table D.4: Comparison of Water Quality Concentrations Upstream and Downstream of SRF Treatment on Michel Creek, EVO LAEMP, 2017 to 2022

Parameter	Upstream Area	Downstream Area	Year	Month	SRF Status	Spatial Difference ^a	
						Magnitude of Difference	P-value
Total Dissolved Solids	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	3	Receiving SRF Discharge	116	<0.001
Total Dissolved Solids	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	4	Receiving SRF Discharge	94	<0.001
Total Dissolved Solids	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	5	Receiving SRF Discharge	47	<0.001
Total Dissolved Solids	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	6	Receiving SRF Discharge	74	<0.001
Total Dissolved Solids	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	7	Receiving SRF Discharge	64	<0.001
Total Dissolved Solids	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	8	Receiving SRF Discharge	87	<0.001
Total Dissolved Solids	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	9	Receiving SRF Discharge	76	0.003
Total Dissolved Solids	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	10	Receiving SRF Discharge	68	0.006
Total Dissolved Solids	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	11	Receiving SRF Discharge	80	0.002
Total Dissolved Solids	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	12	Receiving SRF Discharge	109	<0.001
Total Dissolved Solids	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	1	Receiving SRF Discharge	98	<0.001
Total Dissolved Solids	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	2	Receiving SRF Discharge	87	<0.001
Total Dissolved Solids	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	3	Receiving SRF Discharge	73	<0.001
Total Dissolved Solids	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	4	Receiving SRF Discharge	38	0.002
Total Dissolved Solids	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	5	Receiving SRF Discharge	22	0.041
Total Dissolved Solids	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	6	Receiving SRF Discharge	25	0.038
Total Dissolved Solids	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	7	Receiving SRF Discharge	37	0.008
Total Dissolved Solids	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	8	Receiving SRF Discharge	57	0.016
Total Dissolved Solids	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	9	Receiving SRF Discharge	56	0.001
Total Dissolved Solids	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	10	Receiving SRF Discharge	79	0.002
Total Dissolved Solids	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	11	Receiving SRF Discharge	61	0.010
Total Dissolved Solids	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	12	Receiving SRF Discharge	NS	0.097
Total Dissolved Solids	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	1	Receiving SRF Discharge	67	0.008
Total Dissolved Solids	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	2	Receiving SRF Discharge	64	0.008
Total Dissolved Solids	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	3	Receiving SRF Discharge	50	<0.001
Total Dissolved Solids	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	4	Receiving SRF Discharge	47	0.001
Total Dissolved Solids	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	5	Receiving SRF Discharge	NS	0.070
Total Dissolved Solids	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	6	Receiving SRF Discharge	26	0.026
Total Dissolved Solids	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	7	Receiving SRF Discharge	40	0.020
Total Dissolved Solids	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	8	Receiving SRF Discharge	49	0.032
Total Dissolved Solids	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	9	Not Receiving SRF Discharge	56	0.001
Total Dissolved Solids	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	10	Not Receiving SRF Discharge	52	0.024
Total Dissolved Solids	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	11	Not Receiving SRF Discharge	68	0.006
Total Dissolved Solids	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	2	Not Receiving SRF Discharge	53	0.002
Total Dissolved Solids	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	3	Receiving SRF Discharge	69	<0.001
Total Dissolved Solids	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	4	Receiving SRF Discharge	41	<0.001
Total Dissolved Solids	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	5	Receiving SRF Discharge	35	<0.001
Total Dissolved Solids	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	6	Receiving SRF Discharge	34	<0.001
Total Dissolved Solids	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	7	Receiving SRF Discharge	28	0.013
Total Dissolved Solids	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	8	Receiving SRF Discharge	21	0.048
Total Dissolved Solids	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	9	Receiving SRF Discharge	56	<0.001
Total Dissolved Solids	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	10	Receiving SRF Discharge	62	<0.001
Total Dissolved Solids	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	11	Receiving SRF Discharge	NS	0.733
Total Dissolved Solids	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	12	Receiving SRF Discharge	39	0.013
Total Dissolved Solids	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	1	Receiving SRF Discharge	54	0.001
Total Dissolved Solids	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	2	Receiving SRF Discharge	60	0.001
Total Dissolved Solids	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	3	Receiving SRF Discharge	52	<0.001
Total Dissolved Solids	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	4	Receiving SRF Discharge	50	<0.001
Total Dissolved Solids	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	5	Receiving SRF Discharge	33	<0.001
Total Dissolved Solids	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	6	Receiving SRF Discharge	NS	0.773
Total Dissolved Solids	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	7	Receiving SRF Discharge	40	<0.001

Table D.4: Comparison of Water Quality Concentrations Upstream and Downstream of SRF Treatment on Michel Creek, EVO LAEMP, 2017 to 2022

Parameter	Upstream Area	Downstream Area	Year	Month	SRF Status	Spatial Difference ^a	
						Magnitude of Difference	P-value
Total Dissolved Solids	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	8	Receiving SRF Discharge	60	<0.001
Total Dissolved Solids	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	9	Receiving SRF Discharge	69	<0.001
Total Dissolved Solids	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	10	Receiving SRF Discharge	61	<0.001
Total Dissolved Solids	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	11	Receiving SRF Discharge	74	<0.001
Total Barium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	3	Pre-SRF Discharge	NS	0.928
Total Barium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	4	Pre-SRF Discharge	NS	0.656
Total Barium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	5	Pre-SRF Discharge	-16	0.029
Total Barium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	6	Pre-SRF Discharge	NS	0.469
Total Barium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	10	Pre-SRF Discharge	NS	0.426
Total Barium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	1	Pre-SRF Discharge	NS	0.908
Total Barium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	2	Pre-SRF Discharge	NS	0.995
Total Barium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	3	Receiving SRF Discharge	NS	0.147
Total Barium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	4	Receiving SRF Discharge	NS	0.984
Total Barium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	5	Receiving SRF Discharge	NS	0.174
Total Barium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	6	Receiving SRF Discharge	NS	0.865
Total Barium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	7	Receiving SRF Discharge	NS	0.561
Total Barium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	8	Receiving SRF Discharge	NS	0.515
Total Barium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	9	Receiving SRF Discharge	NS	0.265
Total Barium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	10	Receiving SRF Discharge	NS	0.724
Total Barium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	11	Receiving SRF Discharge	NS	0.447
Total Barium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	12	Receiving SRF Discharge	NS	0.541
Total Barium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	1	Receiving SRF Discharge	NS	0.844
Total Barium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	2	Receiving SRF Discharge	NS	0.714
Total Barium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	3	Receiving SRF Discharge	NS	0.943
Total Barium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	4	Receiving SRF Discharge	NS	0.641
Total Barium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	5	Receiving SRF Discharge	NS	0.436
Total Barium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	6	Receiving SRF Discharge	NS	0.651
Total Barium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	7	Receiving SRF Discharge	NS	0.985
Total Barium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	8	Receiving SRF Discharge	NS	0.718
Total Barium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	9	Receiving SRF Discharge	NS	0.477
Total Barium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	10	Receiving SRF Discharge	NS	0.184
Total Barium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	11	Receiving SRF Discharge	NS	0.718
Total Barium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	12	Receiving SRF Discharge	NS	0.405
Total Barium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	1	Receiving SRF Discharge	NS	0.870
Total Barium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	2	Receiving SRF Discharge	NS	0.927
Total Barium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	3	Receiving SRF Discharge	NS	0.849
Total Barium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	4	Receiving SRF Discharge	NS	0.922
Total Barium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	5	Receiving SRF Discharge	NS	0.482
Total Barium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	6	Receiving SRF Discharge	15	0.048
Total Barium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	7	Receiving SRF Discharge	NS	0.230
Total Barium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	8	Receiving SRF Discharge	NS	0.805
Total Barium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	9	Not Receiving SRF Discharge	NS	0.257
Total Barium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	10	Not Receiving SRF Discharge	NS	0.251
Total Barium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	11	Not Receiving SRF Discharge	NS	0.118
Total Barium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	2	Not Receiving SRF Discharge	NS	0.961
Total Barium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	3	Receiving SRF Discharge	NS	0.488
Total Barium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	4	Receiving SRF Discharge	NS	0.611
Total Barium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	5	Receiving SRF Discharge	19	0.004
Total Barium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	6	Receiving SRF Discharge	NS	0.776
Total Barium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	7	Receiving SRF Discharge	NS	0.537
Total Barium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	8	Receiving SRF Discharge	NS	0.111

Table D.4: Comparison of Water Quality Concentrations Upstream and Downstream of SRF Treatment on Michel Creek, EVO LAEMP, 2017 to 2022

Parameter	Upstream Area	Downstream Area	Year	Month	SRF Status	Spatial Difference ^a	
						Magnitude of Difference	P-value
Total Barium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	9	Receiving SRF Discharge	NS	0.820
Total Barium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	10	Receiving SRF Discharge	NS	0.439
Total Barium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	11	Receiving SRF Discharge	NS	0.416
Total Barium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	12	Receiving SRF Discharge	NS	0.799
Total Barium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	1	Receiving SRF Discharge	NS	0.403
Total Barium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	2	Receiving SRF Discharge	NS	0.346
Total Barium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	3	Receiving SRF Discharge	NS	0.080
Total Barium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	4	Receiving SRF Discharge	NS	0.460
Total Barium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	5	Receiving SRF Discharge	NS	0.935
Total Barium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	6	Receiving SRF Discharge	NS	0.079
Total Barium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	7	Receiving SRF Discharge	NS	0.128
Total Barium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	8	Receiving SRF Discharge	NS	0.480
Total Barium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	9	Receiving SRF Discharge	NS	0.508
Total Barium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	10	Receiving SRF Discharge	NS	0.580
Total Barium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	11	Receiving SRF Discharge	NS	0.504
Total Iron	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	3	Pre-SRF Discharge	NS	0.083
Total Iron	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	4	Pre-SRF Discharge	NS	0.099
Total Iron	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	5	Pre-SRF Discharge	NS	0.395
Total Iron	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	6	Pre-SRF Discharge	NS	0.502
Total Iron	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	10	Pre-SRF Discharge	NS	0.903
Total Iron	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	1	Pre-SRF Discharge	NS	0.997
Total Iron	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	2	Pre-SRF Discharge	NS	0.997
Total Iron	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	3	Receiving SRF Discharge	NS	0.408
Total Iron	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	4	Receiving SRF Discharge	NS	0.143
Total Iron	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	5	Receiving SRF Discharge	NS	0.182
Total Iron	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	6	Receiving SRF Discharge	NS	0.957
Total Iron	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	7	Receiving SRF Discharge	NS	0.802
Total Iron	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	8	Receiving SRF Discharge	NS	0.710
Total Iron	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	9	Receiving SRF Discharge	NS	0.988
Total Iron	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	10	Receiving SRF Discharge	NS	0.997
Total Iron	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	11	Receiving SRF Discharge	NS	0.368
Total Iron	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	12	Receiving SRF Discharge	NS	0.997
Total Iron	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	1	Receiving SRF Discharge	NS	1.000
Total Iron	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	2	Receiving SRF Discharge	NS	0.709
Total Iron	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	3	Receiving SRF Discharge	NS	0.948
Total Iron	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	4	Receiving SRF Discharge	NS	0.499
Total Iron	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	5	Receiving SRF Discharge	NS	0.586
Total Iron	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	6	Receiving SRF Discharge	NS	0.916
Total Iron	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	7	Receiving SRF Discharge	NS	0.962
Total Iron	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	8	Receiving SRF Discharge	NS	0.676
Total Iron	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	9	Receiving SRF Discharge	NS	0.828
Total Iron	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	10	Receiving SRF Discharge	-98	<0.001
Total Iron	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	11	Receiving SRF Discharge	NS	0.997
Total Iron	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	12	Receiving SRF Discharge	NS	0.876
Total Iron	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	1	Receiving SRF Discharge	NS	0.997
Total Iron	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	2	Receiving SRF Discharge	NS	0.391
Total Iron	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	3	Receiving SRF Discharge	NS	0.657
Total Iron	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	4	Receiving SRF Discharge	NS	0.483
Total Iron	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	5	Receiving SRF Discharge	NS	0.704
Total Iron	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	6	Receiving SRF Discharge	NS	0.644
Total Iron	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	7	Receiving SRF Discharge	NS	0.511

Table D.4: Comparison of Water Quality Concentrations Upstream and Downstream of SRF Treatment on Michel Creek, EVO LAEMP, 2017 to 2022

Parameter	Upstream Area	Downstream Area	Year	Month	SRF Status	Spatial Difference ^a	
						Magnitude of Difference	P-value
Total Iron	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	8	Receiving SRF Discharge	NS	0.364
Total Iron	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	9	Not Receiving SRF Discharge	NS	0.634
Total Iron	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	10	Not Receiving SRF Discharge	NS	0.997
Total Iron	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	11	Not Receiving SRF Discharge	NS	0.573
Total Iron	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	2	Not Receiving SRF Discharge	NS	0.995
Total Iron	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	3	Receiving SRF Discharge	NS	0.509
Total Iron	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	4	Receiving SRF Discharge	NS	0.301
Total Iron	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	5	Receiving SRF Discharge	NS	0.892
Total Iron	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	6	Receiving SRF Discharge	NS	0.579
Total Iron	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	7	Receiving SRF Discharge	NS	0.777
Total Iron	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	8	Receiving SRF Discharge	NS	0.888
Total Iron	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	9	Receiving SRF Discharge	NS	0.615
Total Iron	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	10	Receiving SRF Discharge	NS	0.896
Total Iron	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	11	Receiving SRF Discharge	NS	0.891
Total Iron	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	12	Receiving SRF Discharge	NS	0.786
Total Iron	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	1	Receiving SRF Discharge	NS	0.576
Total Iron	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	2	Receiving SRF Discharge	NS	0.894
Total Iron	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	3	Receiving SRF Discharge	NS	0.405
Total Iron	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	4	Receiving SRF Discharge	NS	0.369
Total Iron	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	5	Receiving SRF Discharge	-49	0.045
Total Iron	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	6	Receiving SRF Discharge	109	0.048
Total Iron	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	7	Receiving SRF Discharge	NS	0.945
Total Iron	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	8	Receiving SRF Discharge	NS	0.826
Total Iron	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	9	Receiving SRF Discharge	NS	0.844
Total Iron	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	10	Receiving SRF Discharge	NS	0.411
Total Iron	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	11	Receiving SRF Discharge	NS	0.416
Total Lithium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	3	Pre-SRF Discharge	164	<0.001
Total Lithium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	4	Pre-SRF Discharge	75	<0.001
Total Lithium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	5	Pre-SRF Discharge	48	0.003
Total Lithium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	6	Pre-SRF Discharge	171	<0.001
Total Lithium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	10	Pre-SRF Discharge	138	<0.001
Total Lithium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	1	Pre-SRF Discharge	280	<0.001
Total Lithium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	2	Pre-SRF Discharge	348	<0.001
Total Lithium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	3	Receiving SRF Discharge	402	<0.001
Total Lithium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	4	Receiving SRF Discharge	239	<0.001
Total Lithium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	5	Receiving SRF Discharge	77	<0.001
Total Lithium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	6	Receiving SRF Discharge	178	<0.001
Total Lithium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	7	Receiving SRF Discharge	194	<0.001
Total Lithium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	8	Receiving SRF Discharge	262	<0.001
Total Lithium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	9	Receiving SRF Discharge	233	<0.001
Total Lithium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	10	Receiving SRF Discharge	206	<0.001
Total Lithium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	11	Receiving SRF Discharge	268	<0.001
Total Lithium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	12	Receiving SRF Discharge	278	<0.001
Total Lithium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	1	Receiving SRF Discharge	263	<0.001
Total Lithium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	2	Receiving SRF Discharge	209	<0.001
Total Lithium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	3	Receiving SRF Discharge	137	<0.001
Total Lithium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	4	Receiving SRF Discharge	133	<0.001
Total Lithium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	5	Receiving SRF Discharge	65	<0.001
Total Lithium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	6	Receiving SRF Discharge	63	<0.001
Total Lithium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	7	Receiving SRF Discharge	63	<0.001
Total Lithium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	8	Receiving SRF Discharge	115	<0.001

Table D.4: Comparison of Water Quality Concentrations Upstream and Downstream of SRF Treatment on Michel Creek, EVO LAEMP, 2017 to 2022

Parameter	Upstream Area	Downstream Area	Year	Month	SRF Status	Spatial Difference ^a	
						Magnitude of Difference	P-value
Total Lithium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	9	Receiving SRF Discharge	107	<0.001
Total Lithium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	10	Receiving SRF Discharge	94	0.004
Total Lithium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	11	Receiving SRF Discharge	164	<0.001
Total Lithium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	12	Receiving SRF Discharge	128	<0.001
Total Lithium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	1	Receiving SRF Discharge	212	<0.001
Total Lithium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	2	Receiving SRF Discharge	191	<0.001
Total Lithium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	3	Receiving SRF Discharge	163	<0.001
Total Lithium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	4	Receiving SRF Discharge	150	<0.001
Total Lithium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	5	Receiving SRF Discharge	109	<0.001
Total Lithium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	6	Receiving SRF Discharge	68	<0.001
Total Lithium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	7	Receiving SRF Discharge	60	0.008
Total Lithium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	8	Receiving SRF Discharge	71	0.016
Total Lithium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	9	Not Receiving SRF Discharge	104	<0.001
Total Lithium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	10	Not Receiving SRF Discharge	69	0.019
Total Lithium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	11	Not Receiving SRF Discharge	102	0.002
Total Lithium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	2	Not Receiving SRF Discharge	131	<0.001
Total Lithium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	3	Receiving SRF Discharge	188	<0.001
Total Lithium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	4	Receiving SRF Discharge	102	<0.001
Total Lithium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	5	Receiving SRF Discharge	98	<0.001
Total Lithium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	6	Receiving SRF Discharge	87	<0.001
Total Lithium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	7	Receiving SRF Discharge	105	<0.001
Total Lithium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	8	Receiving SRF Discharge	93	<0.001
Total Lithium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	9	Receiving SRF Discharge	133	<0.001
Total Lithium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	10	Receiving SRF Discharge	164	<0.001
Total Lithium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	11	Receiving SRF Discharge	46	0.003
Total Lithium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	12	Receiving SRF Discharge	63	0.002
Total Lithium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	1	Receiving SRF Discharge	95	<0.001
Total Lithium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	2	Receiving SRF Discharge	164	<0.001
Total Lithium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	3	Receiving SRF Discharge	129	<0.001
Total Lithium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	4	Receiving SRF Discharge	92	<0.001
Total Lithium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	5	Receiving SRF Discharge	56	<0.001
Total Lithium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	6	Receiving SRF Discharge	30	0.006
Total Lithium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	7	Receiving SRF Discharge	107	<0.001
Total Lithium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	8	Receiving SRF Discharge	118	<0.001
Total Lithium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	9	Receiving SRF Discharge	156	<0.001
Total Lithium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	10	Receiving SRF Discharge	145	<0.001
Total Lithium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	11	Receiving SRF Discharge	190	<0.001
Total Manganese	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	3	Pre-SRF Discharge	NS	0.120
Total Manganese	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	4	Pre-SRF Discharge	NS	0.391
Total Manganese	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	5	Pre-SRF Discharge	NS	0.270
Total Manganese	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	6	Pre-SRF Discharge	NS	0.514
Total Manganese	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	10	Pre-SRF Discharge	NS	0.626
Total Manganese	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	1	Pre-SRF Discharge	NS	0.319
Total Manganese	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	2	Pre-SRF Discharge	NS	0.152
Total Manganese	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	3	Receiving SRF Discharge	NS	0.313
Total Manganese	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	4	Receiving SRF Discharge	NS	0.360
Total Manganese	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	5	Receiving SRF Discharge	NS	0.061
Total Manganese	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	6	Receiving SRF Discharge	NS	0.905
Total Manganese	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	7	Receiving SRF Discharge	NS	0.787
Total Manganese	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	8	Receiving SRF Discharge	NS	0.949
Total Manganese	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	9	Receiving SRF Discharge	NS	0.463

Table D.4: Comparison of Water Quality Concentrations Upstream and Downstream of SRF Treatment on Michel Creek, EVO LAEMP, 2017 to 2022

Parameter	Upstream Area	Downstream Area	Year	Month	SRF Status	Spatial Difference ^a	
						Magnitude of Difference	P-value
Total Manganese	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	10	Receiving SRF Discharge	NS	0.533
Total Manganese	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	11	Receiving SRF Discharge	NS	0.782
Total Manganese	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	12	Receiving SRF Discharge	NS	0.370
Total Manganese	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	1	Receiving SRF Discharge	NS	0.494
Total Manganese	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	2	Receiving SRF Discharge	NS	0.314
Total Manganese	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	3	Receiving SRF Discharge	NS	0.119
Total Manganese	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	4	Receiving SRF Discharge	NS	0.870
Total Manganese	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	5	Receiving SRF Discharge	NS	0.788
Total Manganese	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	6	Receiving SRF Discharge	NS	0.621
Total Manganese	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	7	Receiving SRF Discharge	NS	0.721
Total Manganese	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	8	Receiving SRF Discharge	NS	0.967
Total Manganese	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	9	Receiving SRF Discharge	NS	0.816
Total Manganese	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	10	Receiving SRF Discharge	-95	<0.001
Total Manganese	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	11	Receiving SRF Discharge	NS	0.244
Total Manganese	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	12	Receiving SRF Discharge	NS	0.259
Total Manganese	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	1	Receiving SRF Discharge	NS	0.180
Total Manganese	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	2	Receiving SRF Discharge	NS	0.581
Total Manganese	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	3	Receiving SRF Discharge	NS	0.386
Total Manganese	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	4	Receiving SRF Discharge	NS	0.987
Total Manganese	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	5	Receiving SRF Discharge	NS	0.377
Total Manganese	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	6	Receiving SRF Discharge	NS	0.450
Total Manganese	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	7	Receiving SRF Discharge	NS	0.841
Total Manganese	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	8	Receiving SRF Discharge	NS	0.981
Total Manganese	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	9	Not Receiving SRF Discharge	NS	0.217
Total Manganese	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	10	Not Receiving SRF Discharge	NS	0.316
Total Manganese	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	11	Not Receiving SRF Discharge	NS	0.809
Total Manganese	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	2	Not Receiving SRF Discharge	NS	0.076
Total Manganese	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	3	Receiving SRF Discharge	160	0.002
Total Manganese	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	4	Receiving SRF Discharge	NS	0.138
Total Manganese	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	5	Receiving SRF Discharge	NS	0.281
Total Manganese	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	6	Receiving SRF Discharge	NS	0.911
Total Manganese	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	7	Receiving SRF Discharge	NS	0.288
Total Manganese	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	8	Receiving SRF Discharge	NS	0.192
Total Manganese	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	9	Receiving SRF Discharge	118	0.048
Total Manganese	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	10	Receiving SRF Discharge	138	0.033
Total Manganese	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	11	Receiving SRF Discharge	NS	0.624
Total Manganese	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	12	Receiving SRF Discharge	NS	0.351
Total Manganese	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	1	Receiving SRF Discharge	395	<0.001
Total Manganese	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	2	Receiving SRF Discharge	413	<0.001
Total Manganese	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	3	Receiving SRF Discharge	129	0.005
Total Manganese	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	4	Receiving SRF Discharge	NS	0.851
Total Manganese	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	5	Receiving SRF Discharge	-42	0.024
Total Manganese	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	6	Receiving SRF Discharge	124	0.002
Total Manganese	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	7	Receiving SRF Discharge	NS	0.773
Total Manganese	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	8	Receiving SRF Discharge	NS	0.535
Total Manganese	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	9	Receiving SRF Discharge	NS	0.080
Total Manganese	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	10	Receiving SRF Discharge	122	0.017
Total Manganese	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	11	Receiving SRF Discharge	151	0.010
Total Molybdenum	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	3	Pre-SRF Discharge	36	0.005
Total Molybdenum	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	4	Pre-SRF Discharge	NS	0.757
Total Molybdenum	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	5	Pre-SRF Discharge	NS	0.622

Table D.4: Comparison of Water Quality Concentrations Upstream and Downstream of SRF Treatment on Michel Creek, EVO LAEMP, 2017 to 2022

Parameter	Upstream Area	Downstream Area	Year	Month	SRF Status	Spatial Difference ^a	
						Magnitude of Difference	P-value
Total Molybdenum	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	6	Pre-SRF Discharge	39	0.003
Total Molybdenum	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	10	Pre-SRF Discharge	NS	0.645
Total Molybdenum	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	1	Pre-SRF Discharge	116	<0.001
Total Molybdenum	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	2	Pre-SRF Discharge	91	<0.001
Total Molybdenum	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	3	Receiving SRF Discharge	148	<0.001
Total Molybdenum	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	4	Receiving SRF Discharge	43	<0.001
Total Molybdenum	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	5	Receiving SRF Discharge	NS	0.222
Total Molybdenum	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	6	Receiving SRF Discharge	26	0.015
Total Molybdenum	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	7	Receiving SRF Discharge	80	<0.001
Total Molybdenum	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	8	Receiving SRF Discharge	118	<0.001
Total Molybdenum	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	9	Receiving SRF Discharge	80	<0.001
Total Molybdenum	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	10	Receiving SRF Discharge	40	0.043
Total Molybdenum	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	11	Receiving SRF Discharge	52	0.011
Total Molybdenum	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	12	Receiving SRF Discharge	NS	0.071
Total Molybdenum	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	1	Receiving SRF Discharge	52	0.010
Total Molybdenum	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	2	Receiving SRF Discharge	NS	0.059
Total Molybdenum	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	3	Receiving SRF Discharge	34	0.005
Total Molybdenum	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	4	Receiving SRF Discharge	34	0.002
Total Molybdenum	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	5	Receiving SRF Discharge	NS	0.320
Total Molybdenum	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	6	Receiving SRF Discharge	NS	0.597
Total Molybdenum	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	7	Receiving SRF Discharge	NS	0.976
Total Molybdenum	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	8	Receiving SRF Discharge	NS	0.192
Total Molybdenum	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	9	Receiving SRF Discharge	NS	0.157
Total Molybdenum	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	10	Receiving SRF Discharge	NS	0.277
Total Molybdenum	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	11	Receiving SRF Discharge	NS	0.096
Total Molybdenum	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	12	Receiving SRF Discharge	NS	0.261
Total Molybdenum	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	1	Receiving SRF Discharge	41	0.043
Total Molybdenum	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	2	Receiving SRF Discharge	51	0.011
Total Molybdenum	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	3	Receiving SRF Discharge	41	<0.001
Total Molybdenum	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	4	Receiving SRF Discharge	40	0.001
Total Molybdenum	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	5	Receiving SRF Discharge	45	<0.001
Total Molybdenum	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	6	Receiving SRF Discharge	24	0.016
Total Molybdenum	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	7	Receiving SRF Discharge	NS	0.540
Total Molybdenum	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	8	Receiving SRF Discharge	NS	0.825
Total Molybdenum	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	9	Not Receiving SRF Discharge	NS	0.353
Total Molybdenum	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	10	Not Receiving SRF Discharge	NS	0.419
Total Molybdenum	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	11	Not Receiving SRF Discharge	NS	0.321
Total Molybdenum	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	2	Not Receiving SRF Discharge	37	0.008
Total Molybdenum	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	3	Receiving SRF Discharge	92	<0.001
Total Molybdenum	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	4	Receiving SRF Discharge	43	<0.001
Total Molybdenum	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	5	Receiving SRF Discharge	30	<0.001
Total Molybdenum	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	6	Receiving SRF Discharge	23	0.003
Total Molybdenum	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	7	Receiving SRF Discharge	74	<0.001
Total Molybdenum	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	8	Receiving SRF Discharge	113	<0.001
Total Molybdenum	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	9	Receiving SRF Discharge	112	<0.001
Total Molybdenum	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	10	Receiving SRF Discharge	122	<0.001
Total Molybdenum	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	11	Receiving SRF Discharge	NS	0.329
Total Molybdenum	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	12	Receiving SRF Discharge	50	<0.001
Total Molybdenum	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	1	Receiving SRF Discharge	93	<0.001
Total Molybdenum	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	2	Receiving SRF Discharge	111	<0.001
Total Molybdenum	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	3	Receiving SRF Discharge	102	<0.001

Table D.4: Comparison of Water Quality Concentrations Upstream and Downstream of SRF Treatment on Michel Creek, EVO LAEMP, 2017 to 2022

Parameter	Upstream Area	Downstream Area	Year	Month	SRF Status	Spatial Difference ^a	
						Magnitude of Difference	P-value
Total Molybdenum	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	4	Receiving SRF Discharge	43	<0.001
Total Molybdenum	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	5	Receiving SRF Discharge	17	0.010
Total Molybdenum	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	6	Receiving SRF Discharge	NS	0.481
Total Molybdenum	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	7	Receiving SRF Discharge	28	0.006
Total Molybdenum	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	8	Receiving SRF Discharge	33	0.003
Total Molybdenum	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	9	Receiving SRF Discharge	49	<0.001
Total Molybdenum	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	10	Receiving SRF Discharge	76	<0.001
Total Molybdenum	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	11	Receiving SRF Discharge	112	<0.001
Dissolved Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	3	Pre-SRF Discharge	64	0.017
Dissolved Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	4	Pre-SRF Discharge	NS	0.688
Dissolved Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	5	Pre-SRF Discharge	NS	0.440
Dissolved Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	6	Pre-SRF Discharge	NS	0.923
Dissolved Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	10	Pre-SRF Discharge	NS	0.999
Dissolved Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	1	Pre-SRF Discharge	NS	0.998
Dissolved Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	2	Pre-SRF Discharge	NS	0.998
Dissolved Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	3	Receiving SRF Discharge	NS	0.996
Dissolved Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	4	Receiving SRF Discharge	243	<0.001
Dissolved Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	5	Receiving SRF Discharge	NS	0.657
Dissolved Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	6	Receiving SRF Discharge	NS	0.952
Dissolved Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	7	Receiving SRF Discharge	NS	0.123
Dissolved Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	8	Receiving SRF Discharge	207	<0.001
Dissolved Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	9	Receiving SRF Discharge	NS	0.998
Dissolved Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	10	Receiving SRF Discharge	NS	0.998
Dissolved Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	11	Receiving SRF Discharge	172	0.001
Dissolved Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	12	Receiving SRF Discharge	NS	0.998
Dissolved Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	1	Receiving SRF Discharge	NS	0.998
Dissolved Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	2	Receiving SRF Discharge	NS	0.998
Dissolved Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	3	Receiving SRF Discharge	NS	0.997
Dissolved Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	4	Receiving SRF Discharge	207	<0.001
Dissolved Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	5	Receiving SRF Discharge	NS	0.619
Dissolved Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	6	Receiving SRF Discharge	NS	0.543
Dissolved Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	7	Receiving SRF Discharge	NS	0.804
Dissolved Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	8	Receiving SRF Discharge	99	0.027
Dissolved Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	9	Receiving SRF Discharge	95	0.008
Dissolved Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	10	Receiving SRF Discharge	NS	0.922
Dissolved Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	11	Receiving SRF Discharge	97	0.028
Dissolved Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	12	Receiving SRF Discharge	NS	0.999
Dissolved Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	1	Receiving SRF Discharge	NS	0.999
Dissolved Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	2	Receiving SRF Discharge	106	0.020
Dissolved Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	3	Receiving SRF Discharge	NS	0.997
Dissolved Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	4	Receiving SRF Discharge	137	<0.001
Dissolved Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	5	Receiving SRF Discharge	NS	0.616
Dissolved Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	6	Receiving SRF Discharge	NS	0.294
Dissolved Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	7	Receiving SRF Discharge	NS	0.120
Dissolved Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	8	Receiving SRF Discharge	NS	0.146
Dissolved Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	9	Not Receiving SRF Discharge	NS	0.404
Dissolved Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	10	Not Receiving SRF Discharge	NS	0.999
Dissolved Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	11	Not Receiving SRF Discharge	NS	0.999
Dissolved Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	2	Not Receiving SRF Discharge	NS	0.998
Dissolved Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	3	Receiving SRF Discharge	NS	0.996
Dissolved Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	4	Receiving SRF Discharge	177	<0.001

Table D.4: Comparison of Water Quality Concentrations Upstream and Downstream of SRF Treatment on Michel Creek, EVO LAEMP, 2017 to 2022

Parameter	Upstream Area	Downstream Area	Year	Month	SRF Status	Spatial Difference ^a	
						Magnitude of Difference	P-value
Dissolved Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	5	Receiving SRF Discharge	NS	0.626
Dissolved Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	6	Receiving SRF Discharge	NS	0.573
Dissolved Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	7	Receiving SRF Discharge	44	0.030
Dissolved Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	8	Receiving SRF Discharge	155	<0.001
Dissolved Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	9	Receiving SRF Discharge	NS	0.997
Dissolved Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	10	Receiving SRF Discharge	NS	0.997
Dissolved Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	11	Receiving SRF Discharge	NS	0.614
Dissolved Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	12	Receiving SRF Discharge	NS	0.359
Dissolved Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	1	Receiving SRF Discharge	219	<0.001
Dissolved Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	2	Receiving SRF Discharge	430	<0.001
Dissolved Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	3	Receiving SRF Discharge	435	<0.001
Dissolved Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	4	Receiving SRF Discharge	139	<0.001
Dissolved Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	5	Receiving SRF Discharge	NS	0.978
Dissolved Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	6	Receiving SRF Discharge	NS	0.102
Dissolved Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	7	Receiving SRF Discharge	NS	0.936
Dissolved Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	8	Receiving SRF Discharge	NS	0.100
Dissolved Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	9	Receiving SRF Discharge	213	<0.001
Dissolved Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	10	Receiving SRF Discharge	NS	0.997
Dissolved Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	11	Receiving SRF Discharge	NS	0.996
Total Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	3	Pre-SRF Discharge	NS	0.591
Total Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	4	Pre-SRF Discharge	NS	0.214
Total Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	5	Pre-SRF Discharge	NS	0.077
Total Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	6	Pre-SRF Discharge	NS	0.905
Total Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	10	Pre-SRF Discharge	NS	0.824
Total Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	1	Pre-SRF Discharge	NS	0.996
Total Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	2	Pre-SRF Discharge	NS	0.996
Total Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	3	Receiving SRF Discharge	NS	0.992
Total Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	4	Receiving SRF Discharge	207	<0.001
Total Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	5	Receiving SRF Discharge	NS	0.071
Total Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	6	Receiving SRF Discharge	NS	0.979
Total Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	7	Receiving SRF Discharge	NS	0.260
Total Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	8	Receiving SRF Discharge	163	0.013
Total Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	9	Receiving SRF Discharge	417	<0.001
Total Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	10	Receiving SRF Discharge	369	<0.001
Total Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	11	Receiving SRF Discharge	141	0.021
Total Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	12	Receiving SRF Discharge	234	0.002
Total Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	1	Receiving SRF Discharge	NS	0.996
Total Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	2	Receiving SRF Discharge	NS	0.997
Total Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	3	Receiving SRF Discharge	208	<0.001
Total Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	4	Receiving SRF Discharge	153	<0.001
Total Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	5	Receiving SRF Discharge	NS	0.634
Total Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	6	Receiving SRF Discharge	NS	0.715
Total Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	7	Receiving SRF Discharge	NS	0.812
Total Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	8	Receiving SRF Discharge	NS	0.522
Total Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	9	Receiving SRF Discharge	96	0.026
Total Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	10	Receiving SRF Discharge	-74	<0.001
Total Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	11	Receiving SRF Discharge	NS	0.082
Total Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	12	Receiving SRF Discharge	NS	0.997
Total Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	1	Receiving SRF Discharge	NS	0.997
Total Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	2	Receiving SRF Discharge	179	0.007
Total Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	3	Receiving SRF Discharge	182	<0.001

Table D.4: Comparison of Water Quality Concentrations Upstream and Downstream of SRF Treatment on Michel Creek, EVO LAEMP, 2017 to 2022

Parameter	Upstream Area	Downstream Area	Year	Month	SRF Status	Spatial Difference ^a	
						Magnitude of Difference	P-value
Total Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	4	Receiving SRF Discharge	108	0.002
Total Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	5	Receiving SRF Discharge	NS	0.939
Total Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	6	Receiving SRF Discharge	NS	0.818
Total Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	7	Receiving SRF Discharge	NS	0.243
Total Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	8	Receiving SRF Discharge	NS	0.173
Total Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	9	Not Receiving SRF Discharge	NS	0.283
Total Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	10	Not Receiving SRF Discharge	NS	0.592
Total Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	11	Not Receiving SRF Discharge	NS	0.465
Total Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	2	Not Receiving SRF Discharge	NS	0.996
Total Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	3	Receiving SRF Discharge	310	<0.001
Total Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	4	Receiving SRF Discharge	104	<0.001
Total Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	5	Receiving SRF Discharge	NS	0.307
Total Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	6	Receiving SRF Discharge	NS	0.525
Total Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	7	Receiving SRF Discharge	NS	0.249
Total Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	8	Receiving SRF Discharge	139	<0.001
Total Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	9	Receiving SRF Discharge	NS	0.993
Total Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	10	Receiving SRF Discharge	NS	0.994
Total Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	11	Receiving SRF Discharge	NS	0.394
Total Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	12	Receiving SRF Discharge	NS	0.382
Total Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	1	Receiving SRF Discharge	201	<0.001
Total Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	2	Receiving SRF Discharge	303	<0.001
Total Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	3	Receiving SRF Discharge	253	<0.001
Total Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	4	Receiving SRF Discharge	85	<0.001
Total Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	5	Receiving SRF Discharge	NS	0.153
Total Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	6	Receiving SRF Discharge	NS	0.578
Total Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	7	Receiving SRF Discharge	NS	0.748
Total Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	8	Receiving SRF Discharge	NS	0.086
Total Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	9	Receiving SRF Discharge	235	<0.001
Total Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	10	Receiving SRF Discharge	271	<0.001
Total Nickel	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	11	Receiving SRF Discharge	399	<0.001
Total Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	3	Pre-SRF Discharge	698	<0.001
Total Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	4	Pre-SRF Discharge	507	<0.001
Total Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	5	Pre-SRF Discharge	245	<0.001
Total Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	6	Pre-SRF Discharge	400	<0.001
Total Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	10	Pre-SRF Discharge	1,229	<0.001
Total Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	1	Pre-SRF Discharge	939	<0.001
Total Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	2	Pre-SRF Discharge	1,332	<0.001
Total Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	3	Receiving SRF Discharge	1,285	<0.001
Total Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	4	Receiving SRF Discharge	1,312	<0.001
Total Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	5	Receiving SRF Discharge	281	<0.001
Total Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	6	Receiving SRF Discharge	591	<0.001
Total Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	7	Receiving SRF Discharge	672	<0.001
Total Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	8	Receiving SRF Discharge	1,499	<0.001
Total Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	9	Receiving SRF Discharge	1,427	<0.001
Total Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	10	Receiving SRF Discharge	1,050	<0.001
Total Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	11	Receiving SRF Discharge	1,020	<0.001
Total Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	12	Receiving SRF Discharge	1,155	<0.001
Total Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	1	Receiving SRF Discharge	1,218	<0.001
Total Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	2	Receiving SRF Discharge	1,114	<0.001
Total Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	3	Receiving SRF Discharge	1,067	<0.001
Total Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	4	Receiving SRF Discharge	473	<0.001

Table D.4: Comparison of Water Quality Concentrations Upstream and Downstream of SRF Treatment on Michel Creek, EVO LAEMP, 2017 to 2022

Parameter	Upstream Area	Downstream Area	Year	Month	SRF Status	Spatial Difference ^a	
						Magnitude of Difference	P-value
Total Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	5	Receiving SRF Discharge	158	<0.001
Total Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	6	Receiving SRF Discharge	232	<0.001
Total Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	7	Receiving SRF Discharge	360	<0.001
Total Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	8	Receiving SRF Discharge	735	<0.001
Total Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	9	Receiving SRF Discharge	655	<0.001
Total Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	10	Receiving SRF Discharge	462	<0.001
Total Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	11	Receiving SRF Discharge	666	<0.001
Total Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	12	Receiving SRF Discharge	679	<0.001
Total Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	1	Receiving SRF Discharge	755	<0.001
Total Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	2	Receiving SRF Discharge	856	<0.001
Total Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	3	Receiving SRF Discharge	861	<0.001
Total Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	4	Receiving SRF Discharge	775	<0.001
Total Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	5	Receiving SRF Discharge	292	<0.001
Total Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	6	Receiving SRF Discharge	181	<0.001
Total Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	7	Receiving SRF Discharge	321	<0.001
Total Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	8	Receiving SRF Discharge	673	<0.001
Total Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	9	Not Receiving SRF Discharge	1,047	<0.001
Total Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	10	Not Receiving SRF Discharge	808	<0.001
Total Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	11	Not Receiving SRF Discharge	614	<0.001
Total Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	2	Not Receiving SRF Discharge	720	<0.001
Total Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	3	Receiving SRF Discharge	562	<0.001
Total Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	4	Receiving SRF Discharge	421	<0.001
Total Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	5	Receiving SRF Discharge	202	<0.001
Total Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	6	Receiving SRF Discharge	233	<0.001
Total Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	7	Receiving SRF Discharge	393	<0.001
Total Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	8	Receiving SRF Discharge	380	<0.001
Total Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	9	Receiving SRF Discharge	791	<0.001
Total Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	10	Receiving SRF Discharge	552	<0.001
Total Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	11	Receiving SRF Discharge	123	<0.001
Total Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	12	Receiving SRF Discharge	203	<0.001
Total Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	1	Receiving SRF Discharge	289	<0.001
Total Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	2	Receiving SRF Discharge	533	<0.001
Total Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	3	Receiving SRF Discharge	483	<0.001
Total Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	4	Receiving SRF Discharge	653	<0.001
Total Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	5	Receiving SRF Discharge	306	<0.001
Total Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	6	Receiving SRF Discharge	101	<0.001
Total Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	7	Receiving SRF Discharge	588	<0.001
Total Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	8	Receiving SRF Discharge	1,007	<0.001
Total Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	9	Receiving SRF Discharge	1,263	<0.001
Total Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	10	Receiving SRF Discharge	1,201	<0.001
Total Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	11	Receiving SRF Discharge	819	<0.001
Total Uranium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	3	Pre-SRF Discharge	60	<0.001
Total Uranium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	4	Pre-SRF Discharge	NS	0.103
Total Uranium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	5	Pre-SRF Discharge	NS	0.249
Total Uranium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	6	Pre-SRF Discharge	75	<0.001
Total Uranium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	10	Pre-SRF Discharge	69	0.016
Total Uranium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	1	Pre-SRF Discharge	109	<0.001
Total Uranium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	2	Pre-SRF Discharge	140	<0.001
Total Uranium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	3	Receiving SRF Discharge	228	<0.001
Total Uranium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	4	Receiving SRF Discharge	108	<0.001
Total Uranium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	5	Receiving SRF Discharge	32	0.020

Table D.4: Comparison of Water Quality Concentrations Upstream and Downstream of SRF Treatment on Michel Creek, EVO LAEMP, 2017 to 2022

Parameter	Upstream Area	Downstream Area	Year	Month	SRF Status	Spatial Difference ^a	
						Magnitude of Difference	P-value
Total Uranium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	6	Receiving SRF Discharge	71	<0.001
Total Uranium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	7	Receiving SRF Discharge	109	<0.001
Total Uranium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	8	Receiving SRF Discharge	159	<0.001
Total Uranium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	9	Receiving SRF Discharge	137	<0.001
Total Uranium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	10	Receiving SRF Discharge	122	<0.001
Total Uranium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	11	Receiving SRF Discharge	135	<0.001
Total Uranium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	12	Receiving SRF Discharge	103	0.001
Total Uranium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	1	Receiving SRF Discharge	141	<0.001
Total Uranium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	2	Receiving SRF Discharge	121	<0.001
Total Uranium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	3	Receiving SRF Discharge	110	<0.001
Total Uranium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	4	Receiving SRF Discharge	64	<0.001
Total Uranium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	5	Receiving SRF Discharge	34	0.009
Total Uranium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	6	Receiving SRF Discharge	33	0.021
Total Uranium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	7	Receiving SRF Discharge	39	0.016
Total Uranium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	8	Receiving SRF Discharge	92	0.002
Total Uranium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	9	Receiving SRF Discharge	63	0.002
Total Uranium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	10	Receiving SRF Discharge	68	0.018
Total Uranium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	11	Receiving SRF Discharge	97	0.001
Total Uranium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	12	Receiving SRF Discharge	78	0.006
Total Uranium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	1	Receiving SRF Discharge	92	0.003
Total Uranium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	2	Receiving SRF Discharge	96	0.002
Total Uranium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	3	Receiving SRF Discharge	72	<0.001
Total Uranium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	4	Receiving SRF Discharge	68	<0.001
Total Uranium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	5	Receiving SRF Discharge	55	<0.001
Total Uranium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	6	Receiving SRF Discharge	39	0.005
Total Uranium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	7	Receiving SRF Discharge	50	0.015
Total Uranium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	8	Receiving SRF Discharge	55	0.038
Total Uranium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	9	Not Receiving SRF Discharge	71	<0.001
Total Uranium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	10	Not Receiving SRF Discharge	68	0.016
Total Uranium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	11	Not Receiving SRF Discharge	70	0.013
Total Uranium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	2	Not Receiving SRF Discharge	86	<0.001
Total Uranium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	3	Receiving SRF Discharge	104	<0.001
Total Uranium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	4	Receiving SRF Discharge	67	<0.001
Total Uranium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	5	Receiving SRF Discharge	64	<0.001
Total Uranium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	6	Receiving SRF Discharge	46	<0.001
Total Uranium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	7	Receiving SRF Discharge	79	<0.001
Total Uranium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	8	Receiving SRF Discharge	80	<0.001
Total Uranium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	9	Receiving SRF Discharge	105	<0.001
Total Uranium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	10	Receiving SRF Discharge	110	<0.001
Total Uranium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	11	Receiving SRF Discharge	NS	0.414
Total Uranium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	12	Receiving SRF Discharge	55	0.004
Total Uranium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	1	Receiving SRF Discharge	74	<0.001
Total Uranium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	2	Receiving SRF Discharge	106	<0.001
Total Uranium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	3	Receiving SRF Discharge	90	<0.001
Total Uranium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	4	Receiving SRF Discharge	71	<0.001
Total Uranium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	5	Receiving SRF Discharge	47	<0.001
Total Uranium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	6	Receiving SRF Discharge	NS	0.547
Total Uranium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	7	Receiving SRF Discharge	72	<0.001
Total Uranium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	8	Receiving SRF Discharge	86	<0.001
Total Uranium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	9	Receiving SRF Discharge	112	<0.001
Total Uranium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	10	Receiving SRF Discharge	119	<0.001

Table D.4: Comparison of Water Quality Concentrations Upstream and Downstream of SRF Treatment on Michel Creek, EVO LAEMP, 2017 to 2022

Parameter	Upstream Area	Downstream Area	Year	Month	SRF Status	Spatial Difference ^a	
						Magnitude of Difference	P-value
Total Uranium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	11	Receiving SRF Discharge	122	<0.001
Dissolved Cadmium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	3	Pre-SRF Discharge	63	0.002
Dissolved Cadmium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	4	Pre-SRF Discharge	NS	0.094
Dissolved Cadmium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	5	Pre-SRF Discharge	NS	0.886
Dissolved Cadmium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	6	Pre-SRF Discharge	NS	0.770
Dissolved Cadmium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	10	Pre-SRF Discharge	NS	0.992
Dissolved Cadmium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	1	Pre-SRF Discharge	107	0.003
Dissolved Cadmium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	2	Pre-SRF Discharge	97	0.005
Dissolved Cadmium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	3	Receiving SRF Discharge	157	<0.001
Dissolved Cadmium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	4	Receiving SRF Discharge	82	<0.001
Dissolved Cadmium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	5	Receiving SRF Discharge	NS	0.927
Dissolved Cadmium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	6	Receiving SRF Discharge	31	0.047
Dissolved Cadmium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	7	Receiving SRF Discharge	112	<0.001
Dissolved Cadmium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	8	Receiving SRF Discharge	217	<0.001
Dissolved Cadmium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	9	Receiving SRF Discharge	110	0.002
Dissolved Cadmium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	10	Receiving SRF Discharge	102	0.003
Dissolved Cadmium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	11	Receiving SRF Discharge	93	0.006
Dissolved Cadmium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	12	Receiving SRF Discharge	78	0.017
Dissolved Cadmium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	1	Receiving SRF Discharge	61	0.044
Dissolved Cadmium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	2	Receiving SRF Discharge	NS	0.348
Dissolved Cadmium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	3	Receiving SRF Discharge	NS	0.291
Dissolved Cadmium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	4	Receiving SRF Discharge	42	0.010
Dissolved Cadmium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	5	Receiving SRF Discharge	NS	0.619
Dissolved Cadmium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	6	Receiving SRF Discharge	NS	0.333
Dissolved Cadmium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	7	Receiving SRF Discharge	NS	0.618
Dissolved Cadmium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	8	Receiving SRF Discharge	NS	0.068
Dissolved Cadmium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	9	Receiving SRF Discharge	46	0.031
Dissolved Cadmium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	10	Receiving SRF Discharge	NS	0.845
Dissolved Cadmium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	11	Receiving SRF Discharge	NS	0.368
Dissolved Cadmium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	12	Receiving SRF Discharge	NS	0.073
Dissolved Cadmium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	1	Receiving SRF Discharge	132	<0.001
Dissolved Cadmium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	2	Receiving SRF Discharge	NS	0.150
Dissolved Cadmium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	3	Receiving SRF Discharge	50	0.005
Dissolved Cadmium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	4	Receiving SRF Discharge	NS	0.058
Dissolved Cadmium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	5	Receiving SRF Discharge	NS	0.790
Dissolved Cadmium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	6	Receiving SRF Discharge	NS	0.992
Dissolved Cadmium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	7	Receiving SRF Discharge	NS	0.378
Dissolved Cadmium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	8	Receiving SRF Discharge	NS	0.827
Dissolved Cadmium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	9	Not Receiving SRF Discharge	49	0.022
Dissolved Cadmium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	10	Not Receiving SRF Discharge	NS	0.596
Dissolved Cadmium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	11	Not Receiving SRF Discharge	NS	0.323
Dissolved Cadmium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	2	Not Receiving SRF Discharge	NS	0.346
Dissolved Cadmium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	3	Receiving SRF Discharge	47	<0.001
Dissolved Cadmium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	4	Receiving SRF Discharge	NS	0.104
Dissolved Cadmium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	5	Receiving SRF Discharge	NS	0.730
Dissolved Cadmium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	6	Receiving SRF Discharge	NS	0.763
Dissolved Cadmium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	7	Receiving SRF Discharge	NS	0.080
Dissolved Cadmium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	8	Receiving SRF Discharge	NS	0.286
Dissolved Cadmium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	9	Receiving SRF Discharge	44	0.015
Dissolved Cadmium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	10	Receiving SRF Discharge	60	0.002
Dissolved Cadmium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	11	Receiving SRF Discharge	NS	0.178

Table D.4: Comparison of Water Quality Concentrations Upstream and Downstream of SRF Treatment on Michel Creek, EVO LAEMP, 2017 to 2022

Parameter	Upstream Area	Downstream Area	Year	Month	SRF Status	Spatial Difference ^a	
						Magnitude of Difference	P-value
Dissolved Cadmium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	12	Receiving SRF Discharge	NS	0.812
Dissolved Cadmium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	1	Receiving SRF Discharge	NS	0.305
Dissolved Cadmium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	2	Receiving SRF Discharge	52	0.024
Dissolved Cadmium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	3	Receiving SRF Discharge	NS	0.129
Dissolved Cadmium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	4	Receiving SRF Discharge	57	<0.001
Dissolved Cadmium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	5	Receiving SRF Discharge	NS	0.120
Dissolved Cadmium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	6	Receiving SRF Discharge	-21	0.020
Dissolved Cadmium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	7	Receiving SRF Discharge	NS	0.263
Dissolved Cadmium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	8	Receiving SRF Discharge	43	0.011
Dissolved Cadmium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	9	Receiving SRF Discharge	NS	0.113
Dissolved Cadmium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	10	Receiving SRF Discharge	51	0.003
Dissolved Cadmium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	11	Receiving SRF Discharge	71	<0.001
Dissolved Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	3	Pre-SRF Discharge	691	<0.001
Dissolved Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	4	Pre-SRF Discharge	528	<0.001
Dissolved Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	5	Pre-SRF Discharge	281	<0.001
Dissolved Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	6	Pre-SRF Discharge	379	<0.001
Dissolved Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2017	10	Pre-SRF Discharge	1,105	<0.001
Dissolved Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	1	Pre-SRF Discharge	1,027	<0.001
Dissolved Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	2	Pre-SRF Discharge	1,254	<0.001
Dissolved Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	3	Receiving SRF Discharge	1,278	<0.001
Dissolved Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	4	Receiving SRF Discharge	1,325	<0.001
Dissolved Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	5	Receiving SRF Discharge	313	<0.001
Dissolved Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	6	Receiving SRF Discharge	605	<0.001
Dissolved Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	7	Receiving SRF Discharge	732	<0.001
Dissolved Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	8	Receiving SRF Discharge	1,478	<0.001
Dissolved Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	9	Receiving SRF Discharge	1,318	<0.001
Dissolved Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	10	Receiving SRF Discharge	963	<0.001
Dissolved Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	11	Receiving SRF Discharge	1,066	<0.001
Dissolved Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2018	12	Receiving SRF Discharge	1,173	<0.001
Dissolved Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	1	Receiving SRF Discharge	1,220	<0.001
Dissolved Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	2	Receiving SRF Discharge	1,142	<0.001
Dissolved Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	3	Receiving SRF Discharge	1,004	<0.001
Dissolved Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	4	Receiving SRF Discharge	477	<0.001
Dissolved Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	5	Receiving SRF Discharge	164	<0.001
Dissolved Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	6	Receiving SRF Discharge	241	<0.001
Dissolved Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	7	Receiving SRF Discharge	356	<0.001
Dissolved Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	8	Receiving SRF Discharge	757	<0.001
Dissolved Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	9	Receiving SRF Discharge	667	<0.001
Dissolved Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	10	Receiving SRF Discharge	557	<0.001
Dissolved Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	11	Receiving SRF Discharge	689	<0.001
Dissolved Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2019	12	Receiving SRF Discharge	679	<0.001
Dissolved Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	1	Receiving SRF Discharge	738	<0.001
Dissolved Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	2	Receiving SRF Discharge	515	<0.001
Dissolved Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	3	Receiving SRF Discharge	864	<0.001
Dissolved Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	4	Receiving SRF Discharge	744	<0.001
Dissolved Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	5	Receiving SRF Discharge	315	<0.001
Dissolved Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	6	Receiving SRF Discharge	200	<0.001
Dissolved Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	7	Receiving SRF Discharge	334	<0.001
Dissolved Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	8	Receiving SRF Discharge	604	<0.001
Dissolved Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	9	Not Receiving SRF Discharge	1,034	<0.001
Dissolved Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	10	Not Receiving SRF Discharge	880	<0.001

Table D.4: Comparison of Water Quality Concentrations Upstream and Downstream of SRF Treatment on Michel Creek, EVO LAEMP, 2017 to 2022

Parameter	Upstream Area	Downstream Area	Year	Month	SRF Status	Spatial Difference ^a	
						Magnitude of Difference	P-value
Dissolved Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2020	11	Not Receiving SRF Discharge	732	<0.001
Dissolved Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	2	Not Receiving SRF Discharge	724	<0.001
Dissolved Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	3	Receiving SRF Discharge	555	<0.001
Dissolved Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	4	Receiving SRF Discharge	431	<0.001
Dissolved Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	5	Receiving SRF Discharge	181	<0.001
Dissolved Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	6	Receiving SRF Discharge	241	<0.001
Dissolved Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	7	Receiving SRF Discharge	388	<0.001
Dissolved Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	8	Receiving SRF Discharge	356	<0.001
Dissolved Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	9	Receiving SRF Discharge	700	<0.001
Dissolved Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	10	Receiving SRF Discharge	600	<0.001
Dissolved Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	11	Receiving SRF Discharge	122	<0.001
Dissolved Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2021	12	Receiving SRF Discharge	210	<0.001
Dissolved Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	1	Receiving SRF Discharge	292	<0.001
Dissolved Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	2	Receiving SRF Discharge	529	<0.001
Dissolved Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	3	Receiving SRF Discharge	474	<0.001
Dissolved Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	4	Receiving SRF Discharge	617	<0.001
Dissolved Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	5	Receiving SRF Discharge	332	<0.001
Dissolved Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	6	Receiving SRF Discharge	117	<0.001
Dissolved Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	7	Receiving SRF Discharge	592	<0.001
Dissolved Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	8	Receiving SRF Discharge	1,095	<0.001
Dissolved Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	9	Receiving SRF Discharge	1,363	<0.001
Dissolved Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	10	Receiving SRF Discharge	1,307	<0.001
Dissolved Selenium	EV_MC3 (RG_MI3)	EV_MC2 (RG_MICOMP)	2022	11	Receiving SRF Discharge	787	<0.001

- Post-hoc p-value indicating significant difference between areas.
- Mine-exposed area significantly different from reference area for that year.
- Mine-exposed area significantly different from reference area for that year.

^a Planned contrasts comparing the difference between each area in each year from a two-way ANOVA with terms for area and year. The Magnitude of Difference (MOD) was calculated as (mine-exposed-reference)/reference * 100%.

^b Post-hoc test comparing changes in the relative difference between areas among years. Years that do not share a letter differ in their relative difference. Letters are arranged such that the greatest difference between the areas have the highest letter (i.e., A).

Table D.5: Comparison of Water Quality Concentrations Upstream and Downstream of SRF Treatment on Michel Creek, EVO LAEMP, 2017 to 2022

Parameter	Upstream Area	Downstream Area	Year	Month	SRF Status	Spatial Difference ^a	
						Magnitude of Difference	P-value
Nitrate (as N)	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	3	Pre-SRF Discharge	6,363	<0.001
Nitrate (as N)	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	4	Pre-SRF Discharge	7,484	<0.001
Nitrate (as N)	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	5	Pre-SRF Discharge	7,661	<0.001
Nitrate (as N)	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	6	Pre-SRF Discharge	5,294	<0.001
Nitrate (as N)	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	7	Pre-SRF Discharge	19,147	<0.001
Nitrate (as N)	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	8	Pre-SRF Discharge	15,775	<0.001
Nitrate (as N)	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	9	Pre-SRF Discharge	20,626	<0.001
Nitrate (as N)	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	10	Pre-SRF Discharge	10,089	<0.001
Nitrate (as N)	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	1	Pre-SRF Discharge	11,817	<0.001
Nitrate (as N)	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	2	Pre-SRF Discharge	9,060	<0.001
Nitrate (as N)	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	3	Receiving SRF Discharge	10,976	<0.001
Nitrate (as N)	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	4	Receiving SRF Discharge	8,556	<0.001
Nitrate (as N)	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	5	Receiving SRF Discharge	10,249	<0.001
Nitrate (as N)	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	6	Receiving SRF Discharge	4,947	<0.001
Nitrate (as N)	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	7	Receiving SRF Discharge	33,098	<0.001
Nitrate (as N)	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	8	Receiving SRF Discharge	19,760	<0.001
Nitrate (as N)	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	9	Receiving SRF Discharge	15,954	<0.001
Nitrate (as N)	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	10	Receiving SRF Discharge	26,600	<0.001
Nitrate (as N)	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	11	Receiving SRF Discharge	17,460	<0.001
Nitrate (as N)	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	12	Receiving SRF Discharge	10,884	<0.001
Nitrate (as N)	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	1	Receiving SRF Discharge	6,076	<0.001
Nitrate (as N)	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	2	Receiving SRF Discharge	4,553	<0.001
Nitrate (as N)	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	3	Receiving SRF Discharge	3,150	<0.001
Nitrate (as N)	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	4	Receiving SRF Discharge	3,363	<0.001
Nitrate (as N)	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	5	Receiving SRF Discharge	6,179	<0.001
Nitrate (as N)	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	6	Receiving SRF Discharge	4,909	<0.001
Nitrate (as N)	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	7	Receiving SRF Discharge	8,078	<0.001
Nitrate (as N)	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	8	Receiving SRF Discharge	13,282	<0.001
Nitrate (as N)	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	9	Receiving SRF Discharge	6,307	<0.001
Nitrate (as N)	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	10	Receiving SRF Discharge	14,164	<0.001
Nitrate (as N)	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	11	Receiving SRF Discharge	8,485	<0.001
Nitrate (as N)	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	12	Receiving SRF Discharge	4,753	<0.001
Nitrate (as N)	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	1	Receiving SRF Discharge	5,665	<0.001
Nitrate (as N)	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	2	Receiving SRF Discharge	6,734	<0.001
Nitrate (as N)	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	3	Receiving SRF Discharge	5,084	<0.001
Nitrate (as N)	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	4	Receiving SRF Discharge	5,350	<0.001
Nitrate (as N)	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	5	Receiving SRF Discharge	6,652	<0.001
Nitrate (as N)	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	6	Receiving SRF Discharge	5,976	<0.001
Nitrate (as N)	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	7	Receiving SRF Discharge	9,641	<0.001
Nitrate (as N)	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	8	Receiving SRF Discharge	11,418	<0.001
Nitrate (as N)	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	9	Not Receiving SRF Discharge	7,056	<0.001
Nitrate (as N)	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	10	Not Receiving SRF Discharge	8,489	<0.001
Nitrate (as N)	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	11	Not Receiving SRF Discharge	12,350	<0.001
Nitrate (as N)	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	2	Not Receiving SRF Discharge	3,582	<0.001
Nitrate (as N)	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	3	Receiving SRF Discharge	2,895	<0.001
Nitrate (as N)	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	4	Receiving SRF Discharge	3,093	<0.001
Nitrate (as N)	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	5	Receiving SRF Discharge	2,837	<0.001
Nitrate (as N)	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	6	Receiving SRF Discharge	6,502	<0.001
Nitrate (as N)	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	7	Receiving SRF Discharge	3,046	<0.001
Nitrate (as N)	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	8	Receiving SRF Discharge	4,477	<0.001
Nitrate (as N)	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	9	Receiving SRF Discharge	6,901	<0.001

Table D.5: Comparison of Water Quality Concentrations Upstream and Downstream of SRF Treatment on Michel Creek, EVO LAEMP, 2017 to 2022

Parameter	Upstream Area	Downstream Area	Year	Month	SRF Status	Spatial Difference ^a	
						Magnitude of Difference	P-value
Nitrate (as N)	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	10	Receiving SRF Discharge	8,935	<0.001
Nitrate (as N)	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	11	Receiving SRF Discharge	3,102	<0.001
Nitrate (as N)	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	1	Receiving SRF Discharge	3,077	<0.001
Nitrate (as N)	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	2	Receiving SRF Discharge	4,339	<0.001
Nitrate (as N)	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	3	Receiving SRF Discharge	5,380	<0.001
Nitrate (as N)	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	4	Receiving SRF Discharge	16,946	<0.001
Nitrate (as N)	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	5	Receiving SRF Discharge	7,750	<0.001
Nitrate (as N)	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	6	Receiving SRF Discharge	5,348	<0.001
Nitrate (as N)	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	7	Receiving SRF Discharge	10,429	<0.001
Nitrate (as N)	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	8	Receiving SRF Discharge	8,563	<0.001
Nitrate (as N)	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	9	Receiving SRF Discharge	9,834	<0.001
Nitrate (as N)	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	10	Receiving SRF Discharge	9,257	<0.001
Nitrate (as N)	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	11	Receiving SRF Discharge	1,984	<0.001
Total Phosphorus	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	3	Pre-SRF Discharge	NS	0.136
Total Phosphorus	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	4	Pre-SRF Discharge	133	0.040
Total Phosphorus	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	5	Pre-SRF Discharge	151	0.012
Total Phosphorus	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	6	Pre-SRF Discharge	NS	0.199
Total Phosphorus	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	7	Pre-SRF Discharge	-84	<0.001
Total Phosphorus	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	8	Pre-SRF Discharge	NS	0.724
Total Phosphorus	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	9	Pre-SRF Discharge	NS	0.351
Total Phosphorus	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	10	Pre-SRF Discharge	NS	0.813
Total Phosphorus	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	1	Pre-SRF Discharge	NS	0.776
Total Phosphorus	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	2	Pre-SRF Discharge	NS	0.138
Total Phosphorus	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	3	Receiving SRF Discharge	NS	0.960
Total Phosphorus	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	4	Receiving SRF Discharge	NS	0.165
Total Phosphorus	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	5	Receiving SRF Discharge	178	0.003
Total Phosphorus	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	6	Receiving SRF Discharge	NS	0.950
Total Phosphorus	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	7	Receiving SRF Discharge	-65	0.002
Total Phosphorus	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	8	Receiving SRF Discharge	NS	0.799
Total Phosphorus	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	9	Receiving SRF Discharge	NS	0.306
Total Phosphorus	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	10	Receiving SRF Discharge	NS	0.860
Total Phosphorus	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	11	Receiving SRF Discharge	NS	0.333
Total Phosphorus	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	12	Receiving SRF Discharge	NS	0.995
Total Phosphorus	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	1	Receiving SRF Discharge	NS	0.427
Total Phosphorus	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	2	Receiving SRF Discharge	NS	0.516
Total Phosphorus	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	3	Receiving SRF Discharge	NS	0.056
Total Phosphorus	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	4	Receiving SRF Discharge	NS	0.248
Total Phosphorus	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	5	Receiving SRF Discharge	NS	0.267
Total Phosphorus	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	6	Receiving SRF Discharge	NS	0.569
Total Phosphorus	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	7	Receiving SRF Discharge	NS	0.951
Total Phosphorus	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	8	Receiving SRF Discharge	NS	0.323
Total Phosphorus	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	9	Receiving SRF Discharge	NS	0.441
Total Phosphorus	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	10	Receiving SRF Discharge	NS	0.339
Total Phosphorus	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	11	Receiving SRF Discharge	NS	0.761
Total Phosphorus	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	12	Receiving SRF Discharge	NS	0.770
Total Phosphorus	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	1	Receiving SRF Discharge	NS	0.954
Total Phosphorus	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	2	Receiving SRF Discharge	NS	0.400
Total Phosphorus	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	3	Receiving SRF Discharge	NS	0.244
Total Phosphorus	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	4	Receiving SRF Discharge	NS	0.353
Total Phosphorus	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	5	Receiving SRF Discharge	164	0.008
Total Phosphorus	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	6	Receiving SRF Discharge	338	<0.001

Table D.5: Comparison of Water Quality Concentrations Upstream and Downstream of SRF Treatment on Michel Creek, EVO LAEMP, 2017 to 2022

Parameter	Upstream Area	Downstream Area	Year	Month	SRF Status	Spatial Difference ^a	
						Magnitude of Difference	P-value
Total Phosphorus	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	7	Receiving SRF Discharge	NS	0.710
Total Phosphorus	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	8	Receiving SRF Discharge	NS	0.059
Total Phosphorus	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	9	Not Receiving SRF Discharge	-62	0.008
Total Phosphorus	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	10	Not Receiving SRF Discharge	NS	0.099
Total Phosphorus	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	11	Not Receiving SRF Discharge	NS	0.180
Total Phosphorus	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	2	Not Receiving SRF Discharge	NS	0.991
Total Phosphorus	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	3	Receiving SRF Discharge	NS	0.109
Total Phosphorus	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	4	Receiving SRF Discharge	NS	0.144
Total Phosphorus	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	5	Receiving SRF Discharge	158	0.007
Total Phosphorus	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	6	Receiving SRF Discharge	123	0.012
Total Phosphorus	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	7	Receiving SRF Discharge	NS	0.282
Total Phosphorus	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	8	Receiving SRF Discharge	NS	0.857
Total Phosphorus	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	9	Receiving SRF Discharge	NS	0.143
Total Phosphorus	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	10	Receiving SRF Discharge	NS	0.329
Total Phosphorus	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	11	Receiving SRF Discharge	NS	0.151
Total Phosphorus	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	1	Receiving SRF Discharge	NS	0.255
Total Phosphorus	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	2	Receiving SRF Discharge	NS	0.653
Total Phosphorus	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	3	Receiving SRF Discharge	NS	0.883
Total Phosphorus	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	4	Receiving SRF Discharge	NS	0.917
Total Phosphorus	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	5	Receiving SRF Discharge	194	<0.001
Total Phosphorus	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	6	Receiving SRF Discharge	266	<0.001
Total Phosphorus	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	7	Receiving SRF Discharge	NS	0.555
Total Phosphorus	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	8	Receiving SRF Discharge	NS	0.089
Total Phosphorus	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	9	Receiving SRF Discharge	NS	0.061
Total Phosphorus	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	10	Receiving SRF Discharge	NS	0.277
Total Phosphorus	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	11	Receiving SRF Discharge	NS	0.172
Orthophosphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	3	Pre-SRF Discharge	NS	0.226
Orthophosphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	4	Pre-SRF Discharge	NS	0.877
Orthophosphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	5	Pre-SRF Discharge	203	<0.001
Orthophosphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	6	Pre-SRF Discharge	136	0.015
Orthophosphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	7	Pre-SRF Discharge	-82	<0.001
Orthophosphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	8	Pre-SRF Discharge	NS	0.997
Orthophosphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	9	Pre-SRF Discharge	NS	0.279
Orthophosphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	10	Pre-SRF Discharge	-63	0.002
Orthophosphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	1	Pre-SRF Discharge	NS	0.841
Orthophosphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	2	Pre-SRF Discharge	NS	0.055
Orthophosphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	3	Receiving SRF Discharge	-52	0.022
Orthophosphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	4	Receiving SRF Discharge	-47	0.040
Orthophosphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	5	Receiving SRF Discharge	325	<0.001
Orthophosphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	6	Receiving SRF Discharge	NS	0.086
Orthophosphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	7	Receiving SRF Discharge	-46	0.039
Orthophosphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	8	Receiving SRF Discharge	-58	0.007
Orthophosphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	9	Receiving SRF Discharge	NS	0.062
Orthophosphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	10	Receiving SRF Discharge	NS	0.247
Orthophosphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	11	Receiving SRF Discharge	-48	0.034
Orthophosphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	12	Receiving SRF Discharge	NS	0.768
Orthophosphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	1	Receiving SRF Discharge	NS	0.070
Orthophosphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	2	Receiving SRF Discharge	NS	0.554
Orthophosphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	3	Receiving SRF Discharge	NS	0.103
Orthophosphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	4	Receiving SRF Discharge	NS	0.058
Orthophosphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	5	Receiving SRF Discharge	NS	0.392

Table D.5: Comparison of Water Quality Concentrations Upstream and Downstream of SRF Treatment on Michel Creek, EVO LAEMP, 2017 to 2022

Parameter	Upstream Area	Downstream Area	Year	Month	SRF Status	Spatial Difference ^a	
						Magnitude of Difference	P-value
Orthophosphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	6	Receiving SRF Discharge	NS	0.992
Orthophosphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	7	Receiving SRF Discharge	-65	<0.001
Orthophosphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	8	Receiving SRF Discharge	-69	<0.001
Orthophosphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	9	Receiving SRF Discharge	-49	0.024
Orthophosphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	10	Receiving SRF Discharge	NS	0.240
Orthophosphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	11	Receiving SRF Discharge	NS	0.218
Orthophosphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	12	Receiving SRF Discharge	NS	0.305
Orthophosphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	1	Receiving SRF Discharge	NS	0.583
Orthophosphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	2	Receiving SRF Discharge	NS	0.640
Orthophosphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	3	Receiving SRF Discharge	-50	0.033
Orthophosphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	4	Receiving SRF Discharge	NS	0.139
Orthophosphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	5	Receiving SRF Discharge	132	0.007
Orthophosphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	6	Receiving SRF Discharge	182	<0.001
Orthophosphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	7	Receiving SRF Discharge	NS	0.061
Orthophosphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	8	Receiving SRF Discharge	-81	<0.001
Orthophosphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	9	Not Receiving SRF Discharge	-69	<0.001
Orthophosphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	10	Not Receiving SRF Discharge	-76	<0.001
Orthophosphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	11	Not Receiving SRF Discharge	NS	0.150
Orthophosphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	2	Not Receiving SRF Discharge	NS	0.117
Orthophosphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	3	Receiving SRF Discharge	NS	0.574
Orthophosphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	4	Receiving SRF Discharge	NS	0.883
Orthophosphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	5	Receiving SRF Discharge	148	0.002
Orthophosphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	6	Receiving SRF Discharge	88	0.023
Orthophosphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	7	Receiving SRF Discharge	-59	0.032
Orthophosphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	8	Receiving SRF Discharge	-57	0.002
Orthophosphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	9	Receiving SRF Discharge	-76	<0.001
Orthophosphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	10	Receiving SRF Discharge	-52	0.018
Orthophosphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	11	Receiving SRF Discharge	NS	0.203
Orthophosphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	1	Receiving SRF Discharge	NS	0.955
Orthophosphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	2	Receiving SRF Discharge	-67	0.007
Orthophosphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	3	Receiving SRF Discharge	-71	<0.001
Orthophosphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	4	Receiving SRF Discharge	-61	<0.001
Orthophosphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	5	Receiving SRF Discharge	192	<0.001
Orthophosphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	6	Receiving SRF Discharge	393	<0.001
Orthophosphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	7	Receiving SRF Discharge	NS	0.181
Orthophosphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	8	Receiving SRF Discharge	-68	0.003
Orthophosphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	9	Receiving SRF Discharge	NS	0.992
Orthophosphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	10	Receiving SRF Discharge	NS	0.994
Orthophosphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	11	Receiving SRF Discharge	-77	0.002
Sulphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	3	Pre-SRF Discharge	771	<0.001
Sulphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	4	Pre-SRF Discharge	608	<0.001
Sulphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	5	Pre-SRF Discharge	538	<0.001
Sulphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	6	Pre-SRF Discharge	572	<0.001
Sulphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	7	Pre-SRF Discharge	870	<0.001
Sulphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	8	Pre-SRF Discharge	947	<0.001
Sulphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	9	Pre-SRF Discharge	1,236	<0.001
Sulphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	10	Pre-SRF Discharge	560	<0.001
Sulphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	1	Pre-SRF Discharge	990	<0.001
Sulphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	2	Pre-SRF Discharge	970	<0.001
Sulphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	3	Receiving SRF Discharge	1,126	<0.001
Sulphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	4	Receiving SRF Discharge	810	<0.001

Table D.5: Comparison of Water Quality Concentrations Upstream and Downstream of SRF Treatment on Michel Creek, EVO LAEMP, 2017 to 2022

Parameter	Upstream Area	Downstream Area	Year	Month	SRF Status	Spatial Difference ^a	
						Magnitude of Difference	P-value
Sulphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	5	Receiving SRF Discharge	654	<0.001
Sulphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	6	Receiving SRF Discharge	875	<0.001
Sulphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	7	Receiving SRF Discharge	971	<0.001
Sulphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	8	Receiving SRF Discharge	1,205	<0.001
Sulphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	9	Receiving SRF Discharge	1,229	<0.001
Sulphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	10	Receiving SRF Discharge	1,015	<0.001
Sulphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	11	Receiving SRF Discharge	1,093	<0.001
Sulphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	12	Receiving SRF Discharge	1,102	<0.001
Sulphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	1	Receiving SRF Discharge	987	<0.001
Sulphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	2	Receiving SRF Discharge	893	<0.001
Sulphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	3	Receiving SRF Discharge	735	<0.001
Sulphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	4	Receiving SRF Discharge	425	<0.001
Sulphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	5	Receiving SRF Discharge	441	<0.001
Sulphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	6	Receiving SRF Discharge	444	<0.001
Sulphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	7	Receiving SRF Discharge	454	<0.001
Sulphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	8	Receiving SRF Discharge	695	<0.001
Sulphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	9	Receiving SRF Discharge	659	<0.001
Sulphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	10	Receiving SRF Discharge	586	<0.001
Sulphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	11	Receiving SRF Discharge	858	<0.001
Sulphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	12	Receiving SRF Discharge	774	<0.001
Sulphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	1	Receiving SRF Discharge	797	<0.001
Sulphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	2	Receiving SRF Discharge	803	<0.001
Sulphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	3	Receiving SRF Discharge	780	<0.001
Sulphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	4	Receiving SRF Discharge	647	<0.001
Sulphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	5	Receiving SRF Discharge	556	<0.001
Sulphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	6	Receiving SRF Discharge	515	<0.001
Sulphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	7	Receiving SRF Discharge	581	<0.001
Sulphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	8	Receiving SRF Discharge	741	<0.001
Sulphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	9	Not Receiving SRF Discharge	736	<0.001
Sulphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	10	Not Receiving SRF Discharge	777	<0.001
Sulphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	11	Not Receiving SRF Discharge	767	<0.001
Sulphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	2	Not Receiving SRF Discharge	675	<0.001
Sulphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	3	Receiving SRF Discharge	672	<0.001
Sulphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	4	Receiving SRF Discharge	396	<0.001
Sulphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	5	Receiving SRF Discharge	575	<0.001
Sulphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	6	Receiving SRF Discharge	661	<0.001
Sulphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	7	Receiving SRF Discharge	666	<0.001
Sulphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	8	Receiving SRF Discharge	760	<0.001
Sulphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	9	Receiving SRF Discharge	781	<0.001
Sulphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	10	Receiving SRF Discharge	846	<0.001
Sulphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	11	Receiving SRF Discharge	541	<0.001
Sulphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	1	Receiving SRF Discharge	761	<0.001
Sulphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	2	Receiving SRF Discharge	917	<0.001
Sulphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	3	Receiving SRF Discharge	817	<0.001
Sulphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	4	Receiving SRF Discharge	671	<0.001
Sulphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	5	Receiving SRF Discharge	605	<0.001
Sulphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	6	Receiving SRF Discharge	548	<0.001
Sulphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	7	Receiving SRF Discharge	690	<0.001
Sulphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	8	Receiving SRF Discharge	963	<0.001
Sulphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	9	Receiving SRF Discharge	979	<0.001
Sulphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	10	Receiving SRF Discharge	966	<0.001

Table D.5: Comparison of Water Quality Concentrations Upstream and Downstream of SRF Treatment on Michel Creek, EVO LAEMP, 2017 to 2022

Parameter	Upstream Area	Downstream Area	Year	Month	SRF Status	Spatial Difference ^a	
						Magnitude of Difference	P-value
Sulphate	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	11	Receiving SRF Discharge	1,012	<0.001
Total Dissolved Solids	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	3	Pre-SRF Discharge	124	<0.001
Total Dissolved Solids	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	4	Pre-SRF Discharge	71	<0.001
Total Dissolved Solids	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	5	Pre-SRF Discharge	70	<0.001
Total Dissolved Solids	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	6	Pre-SRF Discharge	86	<0.001
Total Dissolved Solids	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	7	Pre-SRF Discharge	122	<0.001
Total Dissolved Solids	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	8	Pre-SRF Discharge	147	<0.001
Total Dissolved Solids	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	9	Pre-SRF Discharge	175	<0.001
Total Dissolved Solids	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	10	Pre-SRF Discharge	138	<0.001
Total Dissolved Solids	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	1	Pre-SRF Discharge	137	<0.001
Total Dissolved Solids	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	2	Pre-SRF Discharge	157	<0.001
Total Dissolved Solids	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	3	Receiving SRF Discharge	238	<0.001
Total Dissolved Solids	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	4	Receiving SRF Discharge	159	<0.001
Total Dissolved Solids	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	5	Receiving SRF Discharge	62	<0.001
Total Dissolved Solids	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	6	Receiving SRF Discharge	117	<0.001
Total Dissolved Solids	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	7	Receiving SRF Discharge	125	<0.001
Total Dissolved Solids	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	8	Receiving SRF Discharge	178	<0.001
Total Dissolved Solids	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	9	Receiving SRF Discharge	218	<0.001
Total Dissolved Solids	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	10	Receiving SRF Discharge	217	<0.001
Total Dissolved Solids	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	11	Receiving SRF Discharge	170	<0.001
Total Dissolved Solids	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	12	Receiving SRF Discharge	225	<0.001
Total Dissolved Solids	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	1	Receiving SRF Discharge	186	<0.001
Total Dissolved Solids	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	2	Receiving SRF Discharge	149	<0.001
Total Dissolved Solids	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	3	Receiving SRF Discharge	143	<0.001
Total Dissolved Solids	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	4	Receiving SRF Discharge	64	<0.001
Total Dissolved Solids	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	5	Receiving SRF Discharge	36	<0.001
Total Dissolved Solids	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	6	Receiving SRF Discharge	43	<0.001
Total Dissolved Solids	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	7	Receiving SRF Discharge	57	<0.001
Total Dissolved Solids	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	8	Receiving SRF Discharge	120	<0.001
Total Dissolved Solids	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	9	Receiving SRF Discharge	103	<0.001
Total Dissolved Solids	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	10	Receiving SRF Discharge	94	<0.001
Total Dissolved Solids	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	11	Receiving SRF Discharge	117	<0.001
Total Dissolved Solids	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	12	Receiving SRF Discharge	171	<0.001
Total Dissolved Solids	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	1	Receiving SRF Discharge	144	<0.001
Total Dissolved Solids	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	2	Receiving SRF Discharge	119	<0.001
Total Dissolved Solids	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	3	Receiving SRF Discharge	130	<0.001
Total Dissolved Solids	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	4	Receiving SRF Discharge	102	<0.001
Total Dissolved Solids	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	5	Receiving SRF Discharge	27	0.008
Total Dissolved Solids	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	6	Receiving SRF Discharge	59	<0.001
Total Dissolved Solids	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	7	Receiving SRF Discharge	66	<0.001
Total Dissolved Solids	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	8	Receiving SRF Discharge	119	<0.001
Total Dissolved Solids	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	9	Not Receiving SRF Discharge	127	<0.001
Total Dissolved Solids	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	10	Not Receiving SRF Discharge	109	<0.001
Total Dissolved Solids	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	11	Not Receiving SRF Discharge	130	<0.001
Total Dissolved Solids	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	2	Not Receiving SRF Discharge	139	<0.001
Total Dissolved Solids	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	3	Receiving SRF Discharge	142	<0.001
Total Dissolved Solids	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	4	Receiving SRF Discharge	66	<0.001
Total Dissolved Solids	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	5	Receiving SRF Discharge	44	<0.001
Total Dissolved Solids	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	6	Receiving SRF Discharge	61	<0.001
Total Dissolved Solids	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	7	Receiving SRF Discharge	104	<0.001
Total Dissolved Solids	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	8	Receiving SRF Discharge	81	<0.001

Table D.5: Comparison of Water Quality Concentrations Upstream and Downstream of SRF Treatment on Michel Creek, EVO LAEMP, 2017 to 2022

Parameter	Upstream Area	Downstream Area	Year	Month	SRF Status	Spatial Difference ^a	
						Magnitude of Difference	P-value
Total Dissolved Solids	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	9	Receiving SRF Discharge	126	<0.001
Total Dissolved Solids	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	10	Receiving SRF Discharge	140	<0.001
Total Dissolved Solids	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	11	Receiving SRF Discharge	68	<0.001
Total Dissolved Solids	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	1	Receiving SRF Discharge	143	<0.001
Total Dissolved Solids	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	2	Receiving SRF Discharge	158	<0.001
Total Dissolved Solids	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	3	Receiving SRF Discharge	145	<0.001
Total Dissolved Solids	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	4	Receiving SRF Discharge	118	<0.001
Total Dissolved Solids	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	5	Receiving SRF Discharge	50	<0.001
Total Dissolved Solids	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	6	Receiving SRF Discharge	49	<0.001
Total Dissolved Solids	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	7	Receiving SRF Discharge	84	<0.001
Total Dissolved Solids	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	8	Receiving SRF Discharge	128	<0.001
Total Dissolved Solids	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	9	Receiving SRF Discharge	132	<0.001
Total Dissolved Solids	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	10	Receiving SRF Discharge	151	<0.001
Total Dissolved Solids	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	11	Receiving SRF Discharge	133	<0.001
Total Barium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	3	Pre-SRF Discharge	111	<0.001
Total Barium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	4	Pre-SRF Discharge	116	<0.001
Total Barium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	5	Pre-SRF Discharge	125	<0.001
Total Barium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	6	Pre-SRF Discharge	110	<0.001
Total Barium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	7	Pre-SRF Discharge	100	<0.001
Total Barium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	8	Pre-SRF Discharge	100	<0.001
Total Barium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	9	Pre-SRF Discharge	104	<0.001
Total Barium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	10	Pre-SRF Discharge	116	<0.001
Total Barium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	1	Pre-SRF Discharge	116	<0.001
Total Barium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	2	Pre-SRF Discharge	114	<0.001
Total Barium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	3	Receiving SRF Discharge	121	<0.001
Total Barium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	4	Receiving SRF Discharge	117	<0.001
Total Barium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	5	Receiving SRF Discharge	129	<0.001
Total Barium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	6	Receiving SRF Discharge	103	<0.001
Total Barium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	7	Receiving SRF Discharge	79	<0.001
Total Barium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	8	Receiving SRF Discharge	98	<0.001
Total Barium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	9	Receiving SRF Discharge	117	<0.001
Total Barium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	10	Receiving SRF Discharge	141	<0.001
Total Barium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	11	Receiving SRF Discharge	132	<0.001
Total Barium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	12	Receiving SRF Discharge	136	<0.001
Total Barium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	1	Receiving SRF Discharge	105	<0.001
Total Barium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	2	Receiving SRF Discharge	129	<0.001
Total Barium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	3	Receiving SRF Discharge	88	<0.001
Total Barium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	4	Receiving SRF Discharge	94	<0.001
Total Barium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	5	Receiving SRF Discharge	110	<0.001
Total Barium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	6	Receiving SRF Discharge	97	<0.001
Total Barium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	7	Receiving SRF Discharge	86	<0.001
Total Barium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	8	Receiving SRF Discharge	93	<0.001
Total Barium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	9	Receiving SRF Discharge	105	<0.001
Total Barium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	10	Receiving SRF Discharge	106	<0.001
Total Barium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	11	Receiving SRF Discharge	129	<0.001
Total Barium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	12	Receiving SRF Discharge	144	<0.001
Total Barium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	1	Receiving SRF Discharge	134	<0.001
Total Barium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	2	Receiving SRF Discharge	151	<0.001
Total Barium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	3	Receiving SRF Discharge	130	<0.001
Total Barium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	4	Receiving SRF Discharge	132	<0.001
Total Barium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	5	Receiving SRF Discharge	99	<0.001

Table D.5: Comparison of Water Quality Concentrations Upstream and Downstream of SRF Treatment on Michel Creek, EVO LAEMP, 2017 to 2022

Parameter	Upstream Area	Downstream Area	Year	Month	SRF Status	Spatial Difference ^a	
						Magnitude of Difference	P-value
Total Barium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	6	Receiving SRF Discharge	144	<0.001
Total Barium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	7	Receiving SRF Discharge	109	<0.001
Total Barium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	8	Receiving SRF Discharge	104	<0.001
Total Barium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	9	Not Receiving SRF Discharge	120	<0.001
Total Barium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	10	Not Receiving SRF Discharge	126	<0.001
Total Barium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	11	Not Receiving SRF Discharge	135	<0.001
Total Barium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	2	Not Receiving SRF Discharge	129	<0.001
Total Barium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	3	Receiving SRF Discharge	103	<0.001
Total Barium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	4	Receiving SRF Discharge	92	<0.001
Total Barium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	5	Receiving SRF Discharge	120	<0.001
Total Barium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	6	Receiving SRF Discharge	96	<0.001
Total Barium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	7	Receiving SRF Discharge	97	<0.001
Total Barium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	8	Receiving SRF Discharge	101	<0.001
Total Barium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	9	Receiving SRF Discharge	112	<0.001
Total Barium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	10	Receiving SRF Discharge	108	<0.001
Total Barium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	11	Receiving SRF Discharge	111	<0.001
Total Barium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	1	Receiving SRF Discharge	144	<0.001
Total Barium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	2	Receiving SRF Discharge	137	<0.001
Total Barium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	3	Receiving SRF Discharge	115	<0.001
Total Barium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	4	Receiving SRF Discharge	116	<0.001
Total Barium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	5	Receiving SRF Discharge	115	<0.001
Total Barium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	6	Receiving SRF Discharge	132	<0.001
Total Barium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	7	Receiving SRF Discharge	99	<0.001
Total Barium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	8	Receiving SRF Discharge	102	<0.001
Total Barium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	9	Receiving SRF Discharge	118	<0.001
Total Barium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	10	Receiving SRF Discharge	122	<0.001
Total Barium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	11	Receiving SRF Discharge	126	<0.001
Total Boron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	3	Pre-SRF Discharge	NS	0.783
Total Boron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	4	Pre-SRF Discharge	-26	<0.001
Total Boron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	5	Pre-SRF Discharge	-17	0.012
Total Boron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	6	Pre-SRF Discharge	NS	1.000
Total Boron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	7	Pre-SRF Discharge	NS	0.509
Total Boron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	8	Pre-SRF Discharge	NS	0.374
Total Boron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	9	Pre-SRF Discharge	NS	0.985
Total Boron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	10	Pre-SRF Discharge	NS	0.524
Total Boron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	1	Pre-SRF Discharge	NS	0.052
Total Boron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	2	Pre-SRF Discharge	NS	0.976
Total Boron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	3	Receiving SRF Discharge	21	0.003
Total Boron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	4	Receiving SRF Discharge	NS	0.815
Total Boron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	5	Receiving SRF Discharge	NS	0.625
Total Boron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	6	Receiving SRF Discharge	NS	0.248
Total Boron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	7	Receiving SRF Discharge	-11	0.028
Total Boron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	8	Receiving SRF Discharge	NS	0.636
Total Boron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	9	Receiving SRF Discharge	NS	0.488
Total Boron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	10	Receiving SRF Discharge	NS	0.667
Total Boron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	11	Receiving SRF Discharge	NS	0.132
Total Boron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	12	Receiving SRF Discharge	NS	0.202
Total Boron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	1	Receiving SRF Discharge	NS	0.458
Total Boron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	2	Receiving SRF Discharge	NS	0.843
Total Boron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	3	Receiving SRF Discharge	-15	0.004
Total Boron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	4	Receiving SRF Discharge	-25	<0.001

Table D.5: Comparison of Water Quality Concentrations Upstream and Downstream of SRF Treatment on Michel Creek, EVO LAEMP, 2017 to 2022

Parameter	Upstream Area	Downstream Area	Year	Month	SRF Status	Spatial Difference ^a	
						Magnitude of Difference	P-value
Total Boron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	5	Receiving SRF Discharge	NS	0.993
Total Boron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	6	Receiving SRF Discharge	NS	0.993
Total Boron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	7	Receiving SRF Discharge	-36	<0.001
Total Boron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	8	Receiving SRF Discharge	-28	<0.001
Total Boron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	9	Receiving SRF Discharge	-28	<0.001
Total Boron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	10	Receiving SRF Discharge	-29	<0.001
Total Boron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	11	Receiving SRF Discharge	-14	0.007
Total Boron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	12	Receiving SRF Discharge	-17	0.001
Total Boron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	1	Receiving SRF Discharge	NS	0.196
Total Boron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	2	Receiving SRF Discharge	-21	<0.001
Total Boron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	3	Receiving SRF Discharge	-14	0.012
Total Boron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	4	Receiving SRF Discharge	-22	<0.001
Total Boron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	5	Receiving SRF Discharge	-21	0.001
Total Boron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	6	Receiving SRF Discharge	NS	0.994
Total Boron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	7	Receiving SRF Discharge	NS	0.188
Total Boron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	8	Receiving SRF Discharge	-20	<0.001
Total Boron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	9	Not Receiving SRF Discharge	-21	<0.001
Total Boron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	10	Not Receiving SRF Discharge	-18	0.002
Total Boron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	11	Not Receiving SRF Discharge	-12	0.023
Total Boron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	2	Not Receiving SRF Discharge	-22	0.003
Total Boron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	3	Receiving SRF Discharge	-13	0.009
Total Boron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	4	Receiving SRF Discharge	-26	<0.001
Total Boron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	5	Receiving SRF Discharge	-16	0.004
Total Boron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	6	Receiving SRF Discharge	-15	0.017
Total Boron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	7	Receiving SRF Discharge	-18	0.008
Total Boron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	8	Receiving SRF Discharge	-16	<0.001
Total Boron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	9	Receiving SRF Discharge	-22	0.002
Total Boron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	10	Receiving SRF Discharge	NS	0.229
Total Boron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	11	Receiving SRF Discharge	-32	<0.001
Total Boron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	1	Receiving SRF Discharge	-22	0.018
Total Boron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	2	Receiving SRF Discharge	NS	0.818
Total Boron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	3	Receiving SRF Discharge	NS	0.099
Total Boron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	4	Receiving SRF Discharge	-21	<0.001
Total Boron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	5	Receiving SRF Discharge	-21	<0.001
Total Boron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	6	Receiving SRF Discharge	NS	0.994
Total Boron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	7	Receiving SRF Discharge	NS	0.075
Total Boron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	8	Receiving SRF Discharge	-17	0.002
Total Boron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	9	Receiving SRF Discharge	-15	0.010
Total Boron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	10	Receiving SRF Discharge	-14	0.005
Total Boron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	11	Receiving SRF Discharge	-20	0.003
Total Iron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	3	Pre-SRF Discharge	NS	0.230
Total Iron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	4	Pre-SRF Discharge	334	0.016
Total Iron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	5	Pre-SRF Discharge	582	<0.001
Total Iron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	6	Pre-SRF Discharge	NS	0.911
Total Iron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	7	Pre-SRF Discharge	NS	0.221
Total Iron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	8	Pre-SRF Discharge	NS	0.999
Total Iron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	9	Pre-SRF Discharge	NS	0.750
Total Iron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	10	Pre-SRF Discharge	NS	0.997
Total Iron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	1	Pre-SRF Discharge	NS	0.583
Total Iron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	2	Pre-SRF Discharge	NS	0.777
Total Iron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	3	Receiving SRF Discharge	NS	0.998

Table D.5: Comparison of Water Quality Concentrations Upstream and Downstream of SRF Treatment on Michel Creek, EVO LAEMP, 2017 to 2022

Parameter	Upstream Area	Downstream Area	Year	Month	SRF Status	Spatial Difference ^a	
						Magnitude of Difference	P-value
Total Iron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	4	Receiving SRF Discharge	528	<0.001
Total Iron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	5	Receiving SRF Discharge	NS	0.143
Total Iron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	6	Receiving SRF Discharge	NS	0.830
Total Iron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	7	Receiving SRF Discharge	NS	0.249
Total Iron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	8	Receiving SRF Discharge	NS	0.315
Total Iron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	9	Receiving SRF Discharge	NS	0.782
Total Iron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	10	Receiving SRF Discharge	NS	0.998
Total Iron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	11	Receiving SRF Discharge	NS	0.998
Total Iron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	12	Receiving SRF Discharge	NS	0.999
Total Iron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	1	Receiving SRF Discharge	NS	1.000
Total Iron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	2	Receiving SRF Discharge	NS	0.998
Total Iron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	3	Receiving SRF Discharge	283	0.032
Total Iron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	4	Receiving SRF Discharge	NS	0.128
Total Iron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	5	Receiving SRF Discharge	NS	0.624
Total Iron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	6	Receiving SRF Discharge	NS	0.866
Total Iron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	7	Receiving SRF Discharge	NS	0.862
Total Iron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	8	Receiving SRF Discharge	NS	0.998
Total Iron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	9	Receiving SRF Discharge	NS	0.997
Total Iron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	10	Receiving SRF Discharge	NS	0.994
Total Iron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	11	Receiving SRF Discharge	NS	0.353
Total Iron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	12	Receiving SRF Discharge	NS	0.831
Total Iron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	1	Receiving SRF Discharge	NS	0.998
Total Iron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	2	Receiving SRF Discharge	NS	0.081
Total Iron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	3	Receiving SRF Discharge	340	0.021
Total Iron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	4	Receiving SRF Discharge	318	0.014
Total Iron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	5	Receiving SRF Discharge	NS	0.079
Total Iron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	6	Receiving SRF Discharge	177	0.040
Total Iron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	7	Receiving SRF Discharge	NS	0.746
Total Iron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	8	Receiving SRF Discharge	NS	0.998
Total Iron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	9	Not Receiving SRF Discharge	NS	0.998
Total Iron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	10	Not Receiving SRF Discharge	NS	0.998
Total Iron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	11	Not Receiving SRF Discharge	NS	0.898
Total Iron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	2	Not Receiving SRF Discharge	NS	1.000
Total Iron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	3	Receiving SRF Discharge	227	0.025
Total Iron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	4	Receiving SRF Discharge	NS	0.997
Total Iron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	5	Receiving SRF Discharge	NS	0.067
Total Iron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	6	Receiving SRF Discharge	NS	0.920
Total Iron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	7	Receiving SRF Discharge	NS	0.330
Total Iron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	8	Receiving SRF Discharge	293	0.017
Total Iron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	9	Receiving SRF Discharge	NS	0.425
Total Iron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	10	Receiving SRF Discharge	NS	0.998
Total Iron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	11	Receiving SRF Discharge	NS	0.319
Total Iron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	1	Receiving SRF Discharge	NS	0.999
Total Iron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	2	Receiving SRF Discharge	NS	0.998
Total Iron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	3	Receiving SRF Discharge	290	0.010
Total Iron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	4	Receiving SRF Discharge	NS	0.997
Total Iron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	5	Receiving SRF Discharge	190	0.022
Total Iron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	6	Receiving SRF Discharge	249	0.004
Total Iron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	7	Receiving SRF Discharge	NS	0.168
Total Iron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	8	Receiving SRF Discharge	NS	0.339
Total Iron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	9	Receiving SRF Discharge	NS	0.998

Table D.5: Comparison of Water Quality Concentrations Upstream and Downstream of SRF Treatment on Michel Creek, EVO LAEMP, 2017 to 2022

Parameter	Upstream Area	Downstream Area	Year	Month	SRF Status	Spatial Difference ^a	
						Magnitude of Difference	P-value
Total Iron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	10	Receiving SRF Discharge	NS	0.998
Total Iron	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	11	Receiving SRF Discharge	NS	0.643
Total Lithium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	3	Pre-SRF Discharge	233	<0.001
Total Lithium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	4	Pre-SRF Discharge	109	<0.001
Total Lithium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	5	Pre-SRF Discharge	86	<0.001
Total Lithium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	6	Pre-SRF Discharge	276	<0.001
Total Lithium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	7	Pre-SRF Discharge	261	<0.001
Total Lithium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	8	Pre-SRF Discharge	283	<0.001
Total Lithium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	9	Pre-SRF Discharge	371	<0.001
Total Lithium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	10	Pre-SRF Discharge	222	<0.001
Total Lithium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	1	Pre-SRF Discharge	297	<0.001
Total Lithium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	2	Pre-SRF Discharge	383	<0.001
Total Lithium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	3	Receiving SRF Discharge	485	<0.001
Total Lithium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	4	Receiving SRF Discharge	284	<0.001
Total Lithium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	5	Receiving SRF Discharge	136	<0.001
Total Lithium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	6	Receiving SRF Discharge	260	<0.001
Total Lithium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	7	Receiving SRF Discharge	253	<0.001
Total Lithium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	8	Receiving SRF Discharge	371	<0.001
Total Lithium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	9	Receiving SRF Discharge	341	<0.001
Total Lithium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	10	Receiving SRF Discharge	292	<0.001
Total Lithium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	11	Receiving SRF Discharge	360	<0.001
Total Lithium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	12	Receiving SRF Discharge	386	<0.001
Total Lithium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	1	Receiving SRF Discharge	343	<0.001
Total Lithium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	2	Receiving SRF Discharge	305	<0.001
Total Lithium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	3	Receiving SRF Discharge	177	<0.001
Total Lithium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	4	Receiving SRF Discharge	120	<0.001
Total Lithium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	5	Receiving SRF Discharge	62	<0.001
Total Lithium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	6	Receiving SRF Discharge	91	<0.001
Total Lithium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	7	Receiving SRF Discharge	70	<0.001
Total Lithium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	8	Receiving SRF Discharge	130	<0.001
Total Lithium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	9	Receiving SRF Discharge	110	<0.001
Total Lithium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	10	Receiving SRF Discharge	94	<0.001
Total Lithium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	11	Receiving SRF Discharge	198	<0.001
Total Lithium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	12	Receiving SRF Discharge	171	<0.001
Total Lithium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	1	Receiving SRF Discharge	259	<0.001
Total Lithium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	2	Receiving SRF Discharge	210	<0.001
Total Lithium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	3	Receiving SRF Discharge	222	<0.001
Total Lithium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	4	Receiving SRF Discharge	168	<0.001
Total Lithium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	5	Receiving SRF Discharge	99	<0.001
Total Lithium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	6	Receiving SRF Discharge	113	<0.001
Total Lithium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	7	Receiving SRF Discharge	119	<0.001
Total Lithium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	8	Receiving SRF Discharge	140	<0.001
Total Lithium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	9	Not Receiving SRF Discharge	143	<0.001
Total Lithium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	10	Not Receiving SRF Discharge	137	<0.001
Total Lithium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	11	Not Receiving SRF Discharge	154	<0.001
Total Lithium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	2	Not Receiving SRF Discharge	180	<0.001
Total Lithium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	3	Receiving SRF Discharge	243	<0.001
Total Lithium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	4	Receiving SRF Discharge	101	<0.001
Total Lithium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	5	Receiving SRF Discharge	130	<0.001
Total Lithium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	6	Receiving SRF Discharge	149	<0.001
Total Lithium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	7	Receiving SRF Discharge	153	<0.001

Table D.5: Comparison of Water Quality Concentrations Upstream and Downstream of SRF Treatment on Michel Creek, EVO LAEMP, 2017 to 2022

Parameter	Upstream Area	Downstream Area	Year	Month	SRF Status	Spatial Difference ^a	
						Magnitude of Difference	P-value
Total Lithium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	8	Receiving SRF Discharge	139	<0.001
Total Lithium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	9	Receiving SRF Discharge	180	<0.001
Total Lithium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	10	Receiving SRF Discharge	217	<0.001
Total Lithium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	11	Receiving SRF Discharge	114	<0.001
Total Lithium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	1	Receiving SRF Discharge	161	<0.001
Total Lithium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	2	Receiving SRF Discharge	221	<0.001
Total Lithium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	3	Receiving SRF Discharge	194	<0.001
Total Lithium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	4	Receiving SRF Discharge	126	<0.001
Total Lithium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	5	Receiving SRF Discharge	90	<0.001
Total Lithium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	6	Receiving SRF Discharge	109	<0.001
Total Lithium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	7	Receiving SRF Discharge	151	<0.001
Total Lithium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	8	Receiving SRF Discharge	203	<0.001
Total Lithium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	9	Receiving SRF Discharge	180	<0.001
Total Lithium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	10	Receiving SRF Discharge	213	<0.001
Total Lithium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	11	Receiving SRF Discharge	245	<0.001
Total Manganese	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	3	Pre-SRF Discharge	438	0.012
Total Manganese	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	4	Pre-SRF Discharge	339	<0.001
Total Manganese	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	5	Pre-SRF Discharge	452	<0.001
Total Manganese	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	6	Pre-SRF Discharge	NS	0.493
Total Manganese	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	7	Pre-SRF Discharge	165	0.033
Total Manganese	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	8	Pre-SRF Discharge	377	0.018
Total Manganese	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	9	Pre-SRF Discharge	NS	0.056
Total Manganese	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	10	Pre-SRF Discharge	605	<0.001
Total Manganese	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	1	Pre-SRF Discharge	NS	0.133
Total Manganese	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	2	Pre-SRF Discharge	324	<0.001
Total Manganese	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	3	Receiving SRF Discharge	916	<0.001
Total Manganese	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	4	Receiving SRF Discharge	487	<0.001
Total Manganese	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	5	Receiving SRF Discharge	103	0.049
Total Manganese	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	6	Receiving SRF Discharge	NS	0.099
Total Manganese	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	7	Receiving SRF Discharge	NS	0.566
Total Manganese	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	8	Receiving SRF Discharge	215	0.003
Total Manganese	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	9	Receiving SRF Discharge	NS	0.095
Total Manganese	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	10	Receiving SRF Discharge	351	0.002
Total Manganese	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	11	Receiving SRF Discharge	419	<0.001
Total Manganese	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	12	Receiving SRF Discharge	484	0.007
Total Manganese	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	1	Receiving SRF Discharge	268	<0.001
Total Manganese	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	2	Receiving SRF Discharge	353	0.002
Total Manganese	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	3	Receiving SRF Discharge	966	<0.001
Total Manganese	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	4	Receiving SRF Discharge	125	0.015
Total Manganese	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	5	Receiving SRF Discharge	NS	0.304
Total Manganese	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	6	Receiving SRF Discharge	NS	0.243
Total Manganese	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	7	Receiving SRF Discharge	100	0.043
Total Manganese	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	8	Receiving SRF Discharge	219	0.005
Total Manganese	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	9	Receiving SRF Discharge	484	<0.001
Total Manganese	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	10	Receiving SRF Discharge	NS	0.068
Total Manganese	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	11	Receiving SRF Discharge	565	<0.001
Total Manganese	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	12	Receiving SRF Discharge	222	0.001
Total Manganese	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	1	Receiving SRF Discharge	621	<0.001
Total Manganese	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	2	Receiving SRF Discharge	726	<0.001
Total Manganese	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	3	Receiving SRF Discharge	939	<0.001
Total Manganese	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	4	Receiving SRF Discharge	606	<0.001

Table D.5: Comparison of Water Quality Concentrations Upstream and Downstream of SRF Treatment on Michel Creek, EVO LAEMP, 2017 to 2022

Parameter	Upstream Area	Downstream Area	Year	Month	SRF Status	Spatial Difference ^a	
						Magnitude of Difference	P-value
Total Manganese	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	5	Receiving SRF Discharge	191	0.005
Total Manganese	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	6	Receiving SRF Discharge	208	0.001
Total Manganese	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	7	Receiving SRF Discharge	NS	0.123
Total Manganese	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	8	Receiving SRF Discharge	510	<0.001
Total Manganese	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	9	Not Receiving SRF Discharge	672	<0.001
Total Manganese	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	10	Not Receiving SRF Discharge	831	<0.001
Total Manganese	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	11	Not Receiving SRF Discharge	282	<0.001
Total Manganese	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	2	Not Receiving SRF Discharge	1,881	<0.001
Total Manganese	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	3	Receiving SRF Discharge	1,771	<0.001
Total Manganese	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	4	Receiving SRF Discharge	2,408	<0.001
Total Manganese	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	5	Receiving SRF Discharge	205	0.002
Total Manganese	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	6	Receiving SRF Discharge	118	0.018
Total Manganese	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	7	Receiving SRF Discharge	386	0.001
Total Manganese	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	8	Receiving SRF Discharge	448	<0.001
Total Manganese	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	9	Receiving SRF Discharge	312	0.005
Total Manganese	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	10	Receiving SRF Discharge	1,070	<0.001
Total Manganese	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	11	Receiving SRF Discharge	269	0.009
Total Manganese	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	1	Receiving SRF Discharge	1,734	<0.001
Total Manganese	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	2	Receiving SRF Discharge	2,064	<0.001
Total Manganese	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	3	Receiving SRF Discharge	1,079	<0.001
Total Manganese	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	4	Receiving SRF Discharge	712	<0.001
Total Manganese	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	5	Receiving SRF Discharge	164	0.003
Total Manganese	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	6	Receiving SRF Discharge	243	<0.001
Total Manganese	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	7	Receiving SRF Discharge	179	0.016
Total Manganese	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	8	Receiving SRF Discharge	232	0.001
Total Manganese	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	9	Receiving SRF Discharge	272	0.002
Total Manganese	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	10	Receiving SRF Discharge	358	<0.001
Total Manganese	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	11	Receiving SRF Discharge	244	0.012
Total Molybdenum	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	3	Pre-SRF Discharge	NS	0.084
Total Molybdenum	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	4	Pre-SRF Discharge	NS	0.251
Total Molybdenum	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	5	Pre-SRF Discharge	NS	0.494
Total Molybdenum	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	6	Pre-SRF Discharge	32	0.012
Total Molybdenum	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	7	Pre-SRF Discharge	63	<0.001
Total Molybdenum	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	8	Pre-SRF Discharge	46	0.026
Total Molybdenum	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	9	Pre-SRF Discharge	57	0.009
Total Molybdenum	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	10	Pre-SRF Discharge	NS	0.307
Total Molybdenum	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	1	Pre-SRF Discharge	56	0.009
Total Molybdenum	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	2	Pre-SRF Discharge	64	<0.001
Total Molybdenum	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	3	Receiving SRF Discharge	114	<0.001
Total Molybdenum	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	4	Receiving SRF Discharge	21	0.027
Total Molybdenum	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	5	Receiving SRF Discharge	NS	0.343
Total Molybdenum	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	6	Receiving SRF Discharge	31	0.005
Total Molybdenum	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	7	Receiving SRF Discharge	55	<0.001
Total Molybdenum	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	8	Receiving SRF Discharge	100	<0.001
Total Molybdenum	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	9	Receiving SRF Discharge	40	0.008
Total Molybdenum	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	10	Receiving SRF Discharge	NS	0.238
Total Molybdenum	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	11	Receiving SRF Discharge	37	<0.001
Total Molybdenum	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	12	Receiving SRF Discharge	NS	0.223
Total Molybdenum	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	1	Receiving SRF Discharge	25	0.011
Total Molybdenum	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	2	Receiving SRF Discharge	31	0.033
Total Molybdenum	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	3	Receiving SRF Discharge	NS	0.196

Table D.5: Comparison of Water Quality Concentrations Upstream and Downstream of SRF Treatment on Michel Creek, EVO LAEMP, 2017 to 2022

Parameter	Upstream Area	Downstream Area	Year	Month	SRF Status	Spatial Difference ^a	
						Magnitude of Difference	P-value
Total Molybdenum	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	4	Receiving SRF Discharge	NS	0.292
Total Molybdenum	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	5	Receiving SRF Discharge	NS	0.598
Total Molybdenum	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	6	Receiving SRF Discharge	NS	0.578
Total Molybdenum	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	7	Receiving SRF Discharge	NS	0.051
Total Molybdenum	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	8	Receiving SRF Discharge	NS	0.730
Total Molybdenum	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	9	Receiving SRF Discharge	NS	0.432
Total Molybdenum	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	10	Receiving SRF Discharge	NS	0.918
Total Molybdenum	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	11	Receiving SRF Discharge	NS	0.479
Total Molybdenum	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	12	Receiving SRF Discharge	NS	0.499
Total Molybdenum	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	1	Receiving SRF Discharge	NS	0.147
Total Molybdenum	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	2	Receiving SRF Discharge	22	0.040
Total Molybdenum	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	3	Receiving SRF Discharge	NS	0.163
Total Molybdenum	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	4	Receiving SRF Discharge	NS	0.470
Total Molybdenum	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	5	Receiving SRF Discharge	NS	0.199
Total Molybdenum	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	6	Receiving SRF Discharge	NS	0.393
Total Molybdenum	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	7	Receiving SRF Discharge	NS	0.784
Total Molybdenum	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	8	Receiving SRF Discharge	NS	0.443
Total Molybdenum	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	9	Not Receiving SRF Discharge	NS	0.421
Total Molybdenum	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	10	Not Receiving SRF Discharge	NS	0.393
Total Molybdenum	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	11	Not Receiving SRF Discharge	NS	0.262
Total Molybdenum	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	2	Not Receiving SRF Discharge	NS	0.698
Total Molybdenum	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	3	Receiving SRF Discharge	54	<0.001
Total Molybdenum	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	4	Receiving SRF Discharge	NS	0.499
Total Molybdenum	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	5	Receiving SRF Discharge	NS	0.100
Total Molybdenum	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	6	Receiving SRF Discharge	NS	0.141
Total Molybdenum	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	7	Receiving SRF Discharge	50	0.001
Total Molybdenum	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	8	Receiving SRF Discharge	72	<0.001
Total Molybdenum	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	9	Receiving SRF Discharge	77	<0.001
Total Molybdenum	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	10	Receiving SRF Discharge	80	<0.001
Total Molybdenum	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	11	Receiving SRF Discharge	36	0.018
Total Molybdenum	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	1	Receiving SRF Discharge	85	<0.001
Total Molybdenum	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	2	Receiving SRF Discharge	77	<0.001
Total Molybdenum	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	3	Receiving SRF Discharge	61	<0.001
Total Molybdenum	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	4	Receiving SRF Discharge	NS	0.172
Total Molybdenum	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	5	Receiving SRF Discharge	-48	<0.001
Total Molybdenum	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	6	Receiving SRF Discharge	NS	0.921
Total Molybdenum	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	7	Receiving SRF Discharge	NS	0.257
Total Molybdenum	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	8	Receiving SRF Discharge	NS	0.251
Total Molybdenum	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	9	Receiving SRF Discharge	-21	0.030
Total Molybdenum	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	10	Receiving SRF Discharge	55	<0.001
Total Molybdenum	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	11	Receiving SRF Discharge	84	<0.001
Total Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	3	Pre-SRF Discharge	4,668	<0.001
Total Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	4	Pre-SRF Discharge	2,886	<0.001
Total Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	5	Pre-SRF Discharge	2,193	<0.001
Total Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	6	Pre-SRF Discharge	3,152	<0.001
Total Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	7	Pre-SRF Discharge	5,268	<0.001
Total Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	8	Pre-SRF Discharge	8,326	<0.001
Total Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	9	Pre-SRF Discharge	10,954	<0.001
Total Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	10	Pre-SRF Discharge	7,660	<0.001
Total Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	1	Pre-SRF Discharge	7,320	<0.001
Total Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	2	Pre-SRF Discharge	8,613	<0.001

Table D.5: Comparison of Water Quality Concentrations Upstream and Downstream of SRF Treatment on Michel Creek, EVO LAEMP, 2017 to 2022

Parameter	Upstream Area	Downstream Area	Year	Month	SRF Status	Spatial Difference ^a	
						Magnitude of Difference	P-value
Total Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	3	Receiving SRF Discharge	8,239	<0.001
Total Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	4	Receiving SRF Discharge	7,379	<0.001
Total Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	5	Receiving SRF Discharge	2,232	<0.001
Total Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	6	Receiving SRF Discharge	4,445	<0.001
Total Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	7	Receiving SRF Discharge	5,215	<0.001
Total Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	8	Receiving SRF Discharge	10,381	<0.001
Total Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	9	Receiving SRF Discharge	11,002	<0.001
Total Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	10	Receiving SRF Discharge	8,403	<0.001
Total Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	11	Receiving SRF Discharge	6,646	<0.001
Total Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	12	Receiving SRF Discharge	9,144	<0.001
Total Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	1	Receiving SRF Discharge	6,813	<0.001
Total Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	2	Receiving SRF Discharge	6,935	<0.001
Total Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	3	Receiving SRF Discharge	6,244	<0.001
Total Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	4	Receiving SRF Discharge	2,753	<0.001
Total Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	5	Receiving SRF Discharge	1,498	<0.001
Total Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	6	Receiving SRF Discharge	1,711	<0.001
Total Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	7	Receiving SRF Discharge	2,618	<0.001
Total Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	8	Receiving SRF Discharge	5,929	<0.001
Total Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	9	Receiving SRF Discharge	5,322	<0.001
Total Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	10	Receiving SRF Discharge	3,911	<0.001
Total Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	11	Receiving SRF Discharge	5,195	<0.001
Total Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	12	Receiving SRF Discharge	5,428	<0.001
Total Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	1	Receiving SRF Discharge	5,023	<0.001
Total Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	2	Receiving SRF Discharge	5,630	<0.001
Total Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	3	Receiving SRF Discharge	5,471	<0.001
Total Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	4	Receiving SRF Discharge	4,221	<0.001
Total Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	5	Receiving SRF Discharge	2,189	<0.001
Total Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	6	Receiving SRF Discharge	1,484	<0.001
Total Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	7	Receiving SRF Discharge	2,299	<0.001
Total Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	8	Receiving SRF Discharge	4,619	<0.001
Total Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	9	Not Receiving SRF Discharge	6,483	<0.001
Total Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	10	Not Receiving SRF Discharge	5,843	<0.001
Total Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	11	Not Receiving SRF Discharge	4,992	<0.001
Total Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	2	Not Receiving SRF Discharge	4,505	<0.001
Total Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	3	Receiving SRF Discharge	3,467	<0.001
Total Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	4	Receiving SRF Discharge	2,515	<0.001
Total Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	5	Receiving SRF Discharge	1,627	<0.001
Total Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	6	Receiving SRF Discharge	1,811	<0.001
Total Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	7	Receiving SRF Discharge	2,885	<0.001
Total Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	8	Receiving SRF Discharge	3,186	<0.001
Total Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	9	Receiving SRF Discharge	6,040	<0.001
Total Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	10	Receiving SRF Discharge	5,027	<0.001
Total Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	11	Receiving SRF Discharge	2,413	<0.001
Total Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	1	Receiving SRF Discharge	2,915	<0.001
Total Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	2	Receiving SRF Discharge	3,964	<0.001
Total Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	3	Receiving SRF Discharge	3,413	<0.001
Total Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	4	Receiving SRF Discharge	4,111	<0.001
Total Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	5	Receiving SRF Discharge	1,885	<0.001
Total Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	6	Receiving SRF Discharge	1,382	<0.001
Total Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	7	Receiving SRF Discharge	3,714	<0.001
Total Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	8	Receiving SRF Discharge	7,381	<0.001

Table D.5: Comparison of Water Quality Concentrations Upstream and Downstream of SRF Treatment on Michel Creek, EVO LAEMP, 2017 to 2022

Parameter	Upstream Area	Downstream Area	Year	Month	SRF Status	Spatial Difference ^a	
						Magnitude of Difference	P-value
Total Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	9	Receiving SRF Discharge	8,621	<0.001
Total Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	10	Receiving SRF Discharge	9,218	<0.001
Total Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	11	Receiving SRF Discharge	5,591	<0.001
Total Uranium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	3	Pre-SRF Discharge	359	<0.001
Total Uranium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	4	Pre-SRF Discharge	268	<0.001
Total Uranium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	5	Pre-SRF Discharge	309	<0.001
Total Uranium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	6	Pre-SRF Discharge	380	<0.001
Total Uranium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	7	Pre-SRF Discharge	472	<0.001
Total Uranium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	8	Pre-SRF Discharge	525	<0.001
Total Uranium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	9	Pre-SRF Discharge	558	<0.001
Total Uranium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	10	Pre-SRF Discharge	412	<0.001
Total Uranium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	1	Pre-SRF Discharge	562	<0.001
Total Uranium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	2	Pre-SRF Discharge	625	<0.001
Total Uranium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	3	Receiving SRF Discharge	838	<0.001
Total Uranium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	4	Receiving SRF Discharge	504	<0.001
Total Uranium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	5	Receiving SRF Discharge	313	<0.001
Total Uranium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	6	Receiving SRF Discharge	434	<0.001
Total Uranium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	7	Receiving SRF Discharge	477	<0.001
Total Uranium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	8	Receiving SRF Discharge	702	<0.001
Total Uranium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	9	Receiving SRF Discharge	682	<0.001
Total Uranium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	10	Receiving SRF Discharge	580	<0.001
Total Uranium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	11	Receiving SRF Discharge	604	<0.001
Total Uranium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	12	Receiving SRF Discharge	618	<0.001
Total Uranium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	1	Receiving SRF Discharge	624	<0.001
Total Uranium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	2	Receiving SRF Discharge	695	<0.001
Total Uranium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	3	Receiving SRF Discharge	577	<0.001
Total Uranium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	4	Receiving SRF Discharge	353	<0.001
Total Uranium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	5	Receiving SRF Discharge	227	<0.001
Total Uranium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	6	Receiving SRF Discharge	243	<0.001
Total Uranium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	7	Receiving SRF Discharge	259	<0.001
Total Uranium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	8	Receiving SRF Discharge	370	<0.001
Total Uranium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	9	Receiving SRF Discharge	390	<0.001
Total Uranium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	10	Receiving SRF Discharge	338	<0.001
Total Uranium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	11	Receiving SRF Discharge	456	<0.001
Total Uranium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	12	Receiving SRF Discharge	422	<0.001
Total Uranium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	1	Receiving SRF Discharge	474	<0.001
Total Uranium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	2	Receiving SRF Discharge	438	<0.001
Total Uranium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	3	Receiving SRF Discharge	451	<0.001
Total Uranium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	4	Receiving SRF Discharge	394	<0.001
Total Uranium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	5	Receiving SRF Discharge	252	<0.001
Total Uranium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	6	Receiving SRF Discharge	280	<0.001
Total Uranium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	7	Receiving SRF Discharge	342	<0.001
Total Uranium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	8	Receiving SRF Discharge	442	<0.001
Total Uranium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	9	Not Receiving SRF Discharge	427	<0.001
Total Uranium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	10	Not Receiving SRF Discharge	407	<0.001
Total Uranium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	11	Not Receiving SRF Discharge	391	<0.001
Total Uranium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	2	Not Receiving SRF Discharge	435	<0.001
Total Uranium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	3	Receiving SRF Discharge	495	<0.001
Total Uranium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	4	Receiving SRF Discharge	303	<0.001
Total Uranium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	5	Receiving SRF Discharge	294	<0.001
Total Uranium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	6	Receiving SRF Discharge	298	<0.001

Table D.5: Comparison of Water Quality Concentrations Upstream and Downstream of SRF Treatment on Michel Creek, EVO LAEMP, 2017 to 2022

Parameter	Upstream Area	Downstream Area	Year	Month	SRF Status	Spatial Difference ^a	
						Magnitude of Difference	P-value
Total Uranium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	7	Receiving SRF Discharge	454	<0.001
Total Uranium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	8	Receiving SRF Discharge	476	<0.001
Total Uranium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	9	Receiving SRF Discharge	524	<0.001
Total Uranium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	10	Receiving SRF Discharge	523	<0.001
Total Uranium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	11	Receiving SRF Discharge	353	<0.001
Total Uranium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	1	Receiving SRF Discharge	566	<0.001
Total Uranium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	2	Receiving SRF Discharge	619	<0.001
Total Uranium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	3	Receiving SRF Discharge	534	<0.001
Total Uranium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	4	Receiving SRF Discharge	403	<0.001
Total Uranium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	5	Receiving SRF Discharge	301	<0.001
Total Uranium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	6	Receiving SRF Discharge	292	<0.001
Total Uranium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	7	Receiving SRF Discharge	382	<0.001
Total Uranium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	8	Receiving SRF Discharge	451	<0.001
Total Uranium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	9	Receiving SRF Discharge	621	<0.001
Total Uranium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	10	Receiving SRF Discharge	600	<0.001
Total Uranium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	11	Receiving SRF Discharge	724	<0.001
Dissolved Cadmium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	3	Pre-SRF Discharge	312	<0.001
Dissolved Cadmium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	4	Pre-SRF Discharge	181	<0.001
Dissolved Cadmium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	5	Pre-SRF Discharge	55	0.001
Dissolved Cadmium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	6	Pre-SRF Discharge	142	<0.001
Dissolved Cadmium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	7	Pre-SRF Discharge	170	<0.001
Dissolved Cadmium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	8	Pre-SRF Discharge	248	<0.001
Dissolved Cadmium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	9	Pre-SRF Discharge	365	<0.001
Dissolved Cadmium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	10	Pre-SRF Discharge	169	<0.001
Dissolved Cadmium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	1	Pre-SRF Discharge	309	<0.001
Dissolved Cadmium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	2	Pre-SRF Discharge	420	<0.001
Dissolved Cadmium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	3	Receiving SRF Discharge	404	<0.001
Dissolved Cadmium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	4	Receiving SRF Discharge	343	<0.001
Dissolved Cadmium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	5	Receiving SRF Discharge	213	<0.001
Dissolved Cadmium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	6	Receiving SRF Discharge	207	<0.001
Dissolved Cadmium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	7	Receiving SRF Discharge	193	<0.001
Dissolved Cadmium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	8	Receiving SRF Discharge	330	<0.001
Dissolved Cadmium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	9	Receiving SRF Discharge	244	<0.001
Dissolved Cadmium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	10	Receiving SRF Discharge	279	<0.001
Dissolved Cadmium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	11	Receiving SRF Discharge	239	<0.001
Dissolved Cadmium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	12	Receiving SRF Discharge	356	<0.001
Dissolved Cadmium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	1	Receiving SRF Discharge	238	<0.001
Dissolved Cadmium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	2	Receiving SRF Discharge	150	<0.001
Dissolved Cadmium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	3	Receiving SRF Discharge	123	<0.001
Dissolved Cadmium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	4	Receiving SRF Discharge	154	<0.001
Dissolved Cadmium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	5	Receiving SRF Discharge	79	<0.001
Dissolved Cadmium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	6	Receiving SRF Discharge	64	<0.001
Dissolved Cadmium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	7	Receiving SRF Discharge	70	<0.001
Dissolved Cadmium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	8	Receiving SRF Discharge	82	<0.001
Dissolved Cadmium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	9	Receiving SRF Discharge	126	<0.001
Dissolved Cadmium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	10	Receiving SRF Discharge	99	<0.001
Dissolved Cadmium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	11	Receiving SRF Discharge	168	<0.001
Dissolved Cadmium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	12	Receiving SRF Discharge	207	<0.001
Dissolved Cadmium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	1	Receiving SRF Discharge	293	<0.001
Dissolved Cadmium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	2	Receiving SRF Discharge	223	<0.001
Dissolved Cadmium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	3	Receiving SRF Discharge	274	<0.001

Table D.5: Comparison of Water Quality Concentrations Upstream and Downstream of SRF Treatment on Michel Creek, EVO LAEMP, 2017 to 2022

Parameter	Upstream Area	Downstream Area	Year	Month	SRF Status	Spatial Difference ^a	
						Magnitude of Difference	P-value
Dissolved Cadmium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	4	Receiving SRF Discharge	258	<0.001
Dissolved Cadmium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	5	Receiving SRF Discharge	136	<0.001
Dissolved Cadmium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	6	Receiving SRF Discharge	176	<0.001
Dissolved Cadmium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	7	Receiving SRF Discharge	79	0.001
Dissolved Cadmium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	8	Receiving SRF Discharge	100	<0.001
Dissolved Cadmium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	9	Not Receiving SRF Discharge	133	<0.001
Dissolved Cadmium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	10	Not Receiving SRF Discharge	94	<0.001
Dissolved Cadmium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	11	Not Receiving SRF Discharge	147	<0.001
Dissolved Cadmium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	2	Not Receiving SRF Discharge	165	<0.001
Dissolved Cadmium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	3	Receiving SRF Discharge	278	<0.001
Dissolved Cadmium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	4	Receiving SRF Discharge	143	<0.001
Dissolved Cadmium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	5	Receiving SRF Discharge	129	<0.001
Dissolved Cadmium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	6	Receiving SRF Discharge	107	<0.001
Dissolved Cadmium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	7	Receiving SRF Discharge	96	<0.001
Dissolved Cadmium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	8	Receiving SRF Discharge	124	<0.001
Dissolved Cadmium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	9	Receiving SRF Discharge	125	<0.001
Dissolved Cadmium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	10	Receiving SRF Discharge	209	<0.001
Dissolved Cadmium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	11	Receiving SRF Discharge	174	<0.001
Dissolved Cadmium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	1	Receiving SRF Discharge	206	<0.001
Dissolved Cadmium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	2	Receiving SRF Discharge	280	<0.001
Dissolved Cadmium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	3	Receiving SRF Discharge	180	<0.001
Dissolved Cadmium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	4	Receiving SRF Discharge	188	<0.001
Dissolved Cadmium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	5	Receiving SRF Discharge	99	<0.001
Dissolved Cadmium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	6	Receiving SRF Discharge	117	<0.001
Dissolved Cadmium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	7	Receiving SRF Discharge	133	<0.001
Dissolved Cadmium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	8	Receiving SRF Discharge	139	<0.001
Dissolved Cadmium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	9	Receiving SRF Discharge	145	<0.001
Dissolved Cadmium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	10	Receiving SRF Discharge	178	<0.001
Dissolved Cadmium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	11	Receiving SRF Discharge	120	<0.001
Dissolved Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	3	Pre-SRF Discharge	3,977	<0.001
Dissolved Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	4	Pre-SRF Discharge	3,482	<0.001
Dissolved Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	5	Pre-SRF Discharge	2,034	<0.001
Dissolved Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	6	Pre-SRF Discharge	2,614	<0.001
Dissolved Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	7	Pre-SRF Discharge	5,229	<0.001
Dissolved Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	8	Pre-SRF Discharge	9,484	<0.001
Dissolved Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	9	Pre-SRF Discharge	12,831	<0.001
Dissolved Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2017	10	Pre-SRF Discharge	8,750	<0.001
Dissolved Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	1	Pre-SRF Discharge	7,699	<0.001
Dissolved Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	2	Pre-SRF Discharge	8,356	<0.001
Dissolved Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	3	Receiving SRF Discharge	9,226	<0.001
Dissolved Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	4	Receiving SRF Discharge	7,480	<0.001
Dissolved Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	5	Receiving SRF Discharge	2,124	<0.001
Dissolved Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	6	Receiving SRF Discharge	4,897	<0.001
Dissolved Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	7	Receiving SRF Discharge	5,863	<0.001
Dissolved Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	8	Receiving SRF Discharge	11,489	<0.001

Table D.5: Comparison of Water Quality Concentrations Upstream and Downstream of SRF Treatment on Michel Creek, EVO LAEMP, 2017 to 2022

Parameter	Upstream Area	Downstream Area	Year	Month	SRF Status	Spatial Difference ^a	
						Magnitude of Difference	P-value
Dissolved Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	9	Receiving SRF Discharge	10,490	<0.001
Dissolved Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	10	Receiving SRF Discharge	8,706	<0.001
Dissolved Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	11	Receiving SRF Discharge	7,639	<0.001
Dissolved Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2018	12	Receiving SRF Discharge	8,271	<0.001
Dissolved Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	1	Receiving SRF Discharge	7,952	<0.001
Dissolved Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	2	Receiving SRF Discharge	7,580	<0.001
Dissolved Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	3	Receiving SRF Discharge	6,676	<0.001
Dissolved Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	4	Receiving SRF Discharge	2,776	<0.001
Dissolved Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	5	Receiving SRF Discharge	1,525	<0.001
Dissolved Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	6	Receiving SRF Discharge	1,744	<0.001
Dissolved Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	7	Receiving SRF Discharge	2,379	<0.001
Dissolved Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	8	Receiving SRF Discharge	5,401	<0.001
Dissolved Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	9	Receiving SRF Discharge	6,165	<0.001
Dissolved Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	10	Receiving SRF Discharge	3,761	<0.001
Dissolved Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	11	Receiving SRF Discharge	5,709	<0.001
Dissolved Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2019	12	Receiving SRF Discharge	5,952	<0.001
Dissolved Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	1	Receiving SRF Discharge	5,433	<0.001
Dissolved Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	2	Receiving SRF Discharge	5,555	<0.001
Dissolved Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	3	Receiving SRF Discharge	5,488	<0.001
Dissolved Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	4	Receiving SRF Discharge	4,499	<0.001
Dissolved Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	5	Receiving SRF Discharge	2,369	<0.001
Dissolved Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	6	Receiving SRF Discharge	1,466	<0.001
Dissolved Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	7	Receiving SRF Discharge	2,663	<0.001
Dissolved Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	8	Receiving SRF Discharge	4,685	<0.001
Dissolved Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	9	Not Receiving SRF Discharge	6,937	<0.001
Dissolved Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	10	Not Receiving SRF Discharge	7,155	<0.001
Dissolved Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2020	11	Not Receiving SRF Discharge	5,509	<0.001
Dissolved Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	2	Not Receiving SRF Discharge	4,935	<0.001
Dissolved Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	3	Receiving SRF Discharge	3,453	<0.001
Dissolved Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	4	Receiving SRF Discharge	2,626	<0.001
Dissolved Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	5	Receiving SRF Discharge	1,484	<0.001
Dissolved Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	6	Receiving SRF Discharge	1,940	<0.001
Dissolved Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	7	Receiving SRF Discharge	2,688	<0.001
Dissolved Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	8	Receiving SRF Discharge	3,374	<0.001
Dissolved Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	9	Receiving SRF Discharge	5,065	<0.001
Dissolved Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	10	Receiving SRF Discharge	4,779	<0.001
Dissolved Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2021	11	Receiving SRF Discharge	2,321	<0.001
Dissolved Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	1	Receiving SRF Discharge	2,783	<0.001
Dissolved Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	2	Receiving SRF Discharge	4,149	<0.001
Dissolved Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	3	Receiving SRF Discharge	3,530	<0.001
Dissolved Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	4	Receiving SRF Discharge	4,206	<0.001
Dissolved Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	5	Receiving SRF Discharge	2,104	<0.001
Dissolved Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	6	Receiving SRF Discharge	1,233	<0.001
Dissolved Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	7	Receiving SRF Discharge	2,874	<0.001
Dissolved Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	8	Receiving SRF Discharge	6,432	<0.001
Dissolved Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	9	Receiving SRF Discharge	8,870	<0.001
Dissolved Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	10	Receiving SRF Discharge	8,515	<0.001
Dissolved Selenium	CM_MC1 (RG_MI25)	EV_MC2 (RG_MICOMP)	2022	11	Receiving SRF Discharge	5,384	<0.001

- Post-hoc p-value indicating significant difference between areas.
- Mine-exposed area significantly different from reference area for that year.
- Mine-exposed area significantly different from reference area for that year.

^a Planned contrasts comparing the difference between each area in each year from a two-way ANOVA with terms for area and year. The Magnitude of Difference (MOD) was calculated as (mine-exposed-reference)/reference * 100%.

^b Post-hoc test comparing changes in the relative difference between areas among years. Years that do not share a letter differ in their relative difference. Letters are arranged such that the greatest difference between the areas have the highest letter (i.e., A).

Table D.7: Summary of 2022 Acute Toxicity Results, EVO LAEMP

EMS ID	Area	Sample Date	Endpoint	Result 96-Hour Rainbow Trout	Result 48-Hour <i>Daphnia magna</i>
E102685	EV_BC1	3-Jan-22	% Mortality	0	0
		18-Jan-22		0	0
		18-Jan-22		0	0
		1-Feb-22		0	0
		15-Feb-22		0	0
		1-Mar-22		0	0
		15-Mar-22		0	0
		29-Mar-22		0	0
		12-Apr-22		0	0
		12-Apr-22		0	0
		26-Apr-22		0	0
		10-May-22		0	0
		24-May-22		0	0
		7-Jun-22		0	0
		21-Jun-22		0	0
		5-Jul-22		0	0
		19-Jul-22		0	0
		2-Aug-22		0	0
		10-Aug-22		0	10
		16-Aug-22		0	0
		30-Aug-22		0	0
		13-Sep-22		0	0
		27-Sep-22		0	0
		4-Oct-22		0	0
		6-Oct-22		0	0
		18-Oct-22		0	0
		1-Nov-22		0	0
		15-Nov-22		0	0
29-Nov-22	0	0			
13-Dec-22	0	0			
28-Dec-22	0	0			
200097	EV_EC1	17-Jan-22	% Mortality	0	0
		28-Jan-22		0	0
		14-Feb-22		0	0
		16-Feb-22		0	3
		28-Feb-22		0	0
		14-Mar-22		0	0
		28-Mar-22		0	0
		11-Apr-22		0	0
		13-Apr-22		0	0
		25-Apr-22		0	0
		4-May-22		0	0
		5-May-22		0	0
		6-May-22		0	0
		7-May-22		0	3
		8-May-22		0	0
		9-May-22		0	0
		9-May-22		0	0
		10-May-22		0	0
		23-May-22		0	3
		2-Jun-22		10	0
		6-Jun-22		0	53
		9-Jun-22		10	0
		10-Jun-22		20	4
		11-Jun-22		0	0
		12-Jun-22		0	0
		13-Jun-22		0	0
		14-Jun-22		0	0
		15-Jun-22		0	0
		16-Jun-22		0	0
		20-Jun-22		0	0
		4-Jul-22		0	3
		18-Jul-22		0	3
		1-Aug-22		0	13
		9-Aug-22		0	0
		15-Aug-22		0	0
		29-Aug-22		0	0
		12-Sep-22		0	0
		26-Sep-22		0	0
		3-Oct-22		0	0
		5-Oct-22		0	0
		17-Oct-22		0	0
		31-Oct-22		0	0
14-Nov-22	0	0			
28-Nov-22	0	0			
12-Dec-22	0	0			
27-Dec-22	0	0			

Table D.7: Summary of 2022 Acute Toxicity Results, EVO LAEMP

EMS ID	Area	Sample Date	Endpoint	Result 96-Hour Rainbow Trout	Result 48-Hour <i>Daphnia magna</i>
E321814	EV_ECOUT	17-Jan-22	% Mortality	0	0
		31-Jan-22		0	0
		14-Feb-22		0	0
		28-Feb-22		0	0
		14-Mar-22		0	0
		28-Mar-22		0	0
		11-Apr-22		0	7
		25-Apr-22		0	0
		4-May-22		0	0
		5-May-22		0	0
		6-May-22		0	0
		7-May-22		0	0
		8-May-22		0	0
		9-May-22		0	0
		9-May-22		0	3
		10-May-22		0	7
		10-May-22		0	0
		2-Jun-22		0	0
		6-Jun-22		0	0
		9-Jun-22		10	0
		16-Jun-22		0	0
		20-Jun-22		0	0
		4-Jul-22		0	0
		18-Jul-22		0	7
		1-Aug-22		0	3
		15-Aug-22		0	0
		29-Aug-22		0	0
		12-Sep-22		10	0
		26-Sep-22		10	0
		3-Oct-22		20	0
		9-Oct-22		0	0
		17-Oct-22		0	0
31-Oct-22		0			
31-Oct-22	10				
14-Nov-22	0	0			
28-Nov-22	0	0			
12-Dec-22	0	0			
27-Dec-22	0	0			
E206231	EV_GT1	3-Jan-22	% Mortality	0	0
		17-Jan-22		0	0
		18-Jan-22		0	0
		1-Feb-22		0	0
		15-Feb-22		0	0
		1-Mar-22		0	0
		15-Mar-22		0	0
		29-Mar-22		0	0
		12-Apr-22		0	0
		12-Apr-22		0	0
		26-Apr-22		0	0
		10-May-22		0	0
		24-May-22		0	0
		7-Jun-22		0	0
		21-Jun-22		0	0
		5-Jul-22		0	0
		19-Jul-22		0	0
		2-Aug-22		0	0
		10-Aug-22		0	0
		16-Aug-22		0	0
		30-Aug-22		0	0
		13-Sep-22		0	0
		27-Sep-22		0	0
		4-Oct-22		0	0
		6-Oct-22		0	0
		18-Oct-22		0	0
		1-Nov-22		0	0
		15-Nov-22		0	0
		29-Nov-22		0	0
		13-Dec-22		0	0
		28-Dec-22		0	0

Table D.8: Sediment Physical and Chemical Data and Summary Statistics for EVO LAEMP, 2022

Analyte	Units	LRL	BC Sediment Quality Guidelines		RG_ERCKMD														
			Lower WSQG	Upper WSQG	Median	Maximum	Mean	Standard Deviation	RG_ERCKMD_1	RG_ERCKMD_2	RG_ERCKMD_3	RG_ERCKMD_4	RG_ERCKMD_5	Minimum	Median	Maximum	Mean	Standard Deviation	
									20-Sep	20-Sep	20-Sep	20-Sep	20-Sep						
Acenaphthene	mg/kg	0.005	0.0067	0.0889	0.052	0.15	0.0681	0.0284	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-
Acenaphthylene	mg/kg	0.005	0.0059	0.128	<0.05	<0.05	<0.05	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-
Acridine	mg/kg	0.01	-	-	0.098	0.229	0.116	0.0577	-	-	-	-	-	-	<0.05	0.073	0.093	0.0572	0.021
Anthracene	mg/kg	0.004	0.0469	0.245	<0.05	<0.05	<0.05	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-
Benzo(a)anthracene	mg/kg	0.01	0.0317	0.385	0.052	0.221	0.0735	0.0443	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-
Benzo(a)pyrene	mg/kg	0.01	0.0319	0.782	0.05	0.054	0.0502	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-
Benzo(b&j)fluoranthene	mg/kg	0.01	-	-	0.128	0.225	0.128	0.0413	-	-	-	-	-	-	<0.05	0.0915	0.138	0.09	0.0343
Benzo(b+j+k)fluoranthene	mg/kg	0.015	-	-	0.128	0.225	0.13	0.0402	-	-	-	-	-	-	<0.075	0.095	0.138	0.0994	0.0204
Benzo(e)pyrene	mg/kg	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(g,h,i)perylene	mg/kg	0.01	0.17	3.2	0.062	0.101	0.0573	0.015	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-
Benzo(k)fluoranthene	mg/kg	0.01	0.24	13.4	<0.05	<0.05	<0.05	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-
Chrysene	mg/kg	0.01	0.0571	0.862	0.26	0.524	0.26	0.104	-	-	-	-	-	-	<0.071	0.109	0.291	0.141	0.0724
Dibenz(a,h)anthracene	mg/kg	0.005	0.0062	0.135	<0.05	<0.05	<0.05	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-
Fluoranthene	mg/kg	0.01	0.111	2.355	0.054	0.102	0.0605	0.0152	-	-	-	-	-	-	<0.05	0.055	0.055	0.0506	-
Fluorene	mg/kg	0.01	0.021	0.144	0.21	0.452	0.228	0.106	-	-	-	-	-	-	<0.05	0.065	0.155	0.0748	0.0326
Indeno(1,2,3-c,d)pyrene	mg/kg	0.01	0.2	3.2	<0.05	<0.05	<0.05	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-
1-Methylnaphthalene	mg/kg	0.01	-	-	0.689	1.46	0.725	0.294	-	-	-	-	-	-	0.091	0.24	0.448	0.266	0.0956
2-Methylnaphthalene	mg/kg	0.01	0.0202	0.201	1.25	2.94	1.39	0.6	-	-	-	-	-	-	0.139	0.43	0.779	0.446	0.171
Naphthalene	mg/kg	0.01	0.0346	0.391	0.378	0.794	0.403	0.165	-	-	-	-	-	-	0.058	0.136	0.26	0.147	0.056
Perylene	mg/kg	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phenanthrene	mg/kg	0.01	0.0419	0.515	1.02	1.81	0.985	0.352	-	-	-	-	-	-	0.181	0.538	0.872	0.517	0.215
Pyrene	mg/kg	0.01	0.053	0.875	0.0845	0.149	0.086	0.0264	-	-	-	-	-	-	<0.05	0.065	0.083	0.0572	0.0115
Quinoline	mg/kg	0.01	-	-	<0.05	<0.05	<0.05	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-
d10-Acenaphthene	%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
d12-Chrysene	%	-	-	-	122	130	118	10.7	-	-	-	-	-	-	100	116	128	113	9.48
d8-Naphthalene	%	-	-	-	117	125	112	12.6	-	-	-	-	-	-	85.4	115	129	109	17
d10-Phenanthrene	%	-	-	-	120	129	116	12.2	-	-	-	-	-	-	93.8	109	126	108	11.3
B(a)P Total Potency Equivalent	mg/kg	0.02	-	-	0.085	0.905	0.11	0.139	-	-	-	-	-	-	<0.065	0.0745	0.106	0.0789	0.0124

Indicates values is greater than the lower British Columbia Working Sediment Quality Guidelines.

Indicates values is greater than the upper British Columbia Working Sediment Quality Guidelines.

Notes: "-" indicates data not available. LRL = laboratory reporting limit. BC WSQG = British Columbia Working Sediment Quality Guidelines (BCMOECCS 2021b) and approved BC Sediment Quality Guideline for Selenium (BCMOECCS 2021a). All data and summary statistics are displayed to three significant digits.

Table D.8: Sediment Physical and Chemical Data and Summary Statistics for EVO LAEMP, 2022

Analyte	Units	LRL	BC Sediment Quality Guidelines		Mine-exposed										
			Lower WSQG	Upper WSQG	RG_ERCK					Minimum	Median	Maximum	Mean	Standard Deviation	
					RG_ERCK_1	RG_ERCK_2	RG_ERCK_3	RG_ERCK_4	RG_ERCK_5						
					14-Sep	14-Sep	14-Sep	14-Sep	14-Sep						
Polycyclic Aromatic Hydrocarbons	Acenaphthene	mg/kg	0.005	0.0067	0.0889	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
	Acenaphthylene	mg/kg	0.005	0.0059	0.128	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
	Acridine	mg/kg	0.01	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
	Anthracene	mg/kg	0.004	0.0469	0.245	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
	Benzo(a)anthracene	mg/kg	0.01	0.0317	0.385	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
	Benzo(a)pyrene	mg/kg	0.01	0.0319	0.782	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
	Benzo(b&j)fluoranthene	mg/kg	0.01	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
	Benzo(b+j+k)fluoranthene	mg/kg	0.015	-	-	<0.075	<0.075	<0.075	<0.075	<0.075	<0.075	<0.075	<0.075	<0.075	-
	Benzo(e)pyrene	mg/kg	0.01	-	-	-	-	-	-	-	-	-	-	-	-
	Benzo(g,h,i)perylene	mg/kg	0.01	0.17	3.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
	Benzo(k)fluoranthene	mg/kg	0.01	0.24	13.4	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
	Chrysene	mg/kg	0.01	0.0571	0.862	<0.05	0.05	<0.05	<0.05	<0.05	<0.05	0.05	0.05	0.05	-
	Dibenz(a,h)anthracene	mg/kg	0.005	0.0062	0.135	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
	Fluoranthene	mg/kg	0.01	0.111	2.355	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
	Fluorene	mg/kg	0.01	0.021	0.144	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
	Indeno(1,2,3-c,d)pyrene	mg/kg	0.01	0.2	3.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
	1-Methylnaphthalene	mg/kg	0.01	-	-	0.056	0.098	0.052	0.073	0.054	<0.05	0.061	0.104	0.0682	0.0199
	2-Methylnaphthalene	mg/kg	0.01	0.0202	0.201	0.067	0.119	0.061	0.087	0.064	0.052	0.071	0.134	0.0819	0.0279
	Naphthalene	mg/kg	0.01	0.0346	0.391	0.053	0.063	0.036	0.05	0.034	0.034	0.036	0.065	0.0441	0.0137
	Perylene	mg/kg	0.01	-	-	-	-	-	-	-	-	-	-	-	-
	Phenanthrene	mg/kg	0.01	0.0419	0.515	0.097	0.15	0.093	0.129	0.101	0.091	0.119	0.203	0.128	0.0351
Pyrene	mg/kg	0.01	0.053	0.875	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	
Quinoline	mg/kg	0.01	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	
d10-Acenaphthene	%	-	-	-	-	-	-	-	-	-	-	-	-	-	
d12-Chrysene	%	-	-	-	129	127	126	121	120	83	120	129	108	19.3	
d8-Naphthalene	%	-	-	-	121	121	125	124	106	76.2	106	125	102	21	
d10-Phenanthrene	%	-	-	-	127	128	126	121	110	81.5	110	128	106	20.1	
B(a)P Total Potency Equivalent	mg/kg	0.02	-	-	<0.065	<0.065	<0.065	<0.065	<0.065	<0.065	0.065	0.166	0.0742	-	

Indicates values is greater than the lower British Columbia Working Sediment Quality Guidelines.

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Table D.8: Sediment Physical and Chemical Data and Summary Statistics for EVO LAEMP, 2022

Analyte	Units	LRL	BC Sediment Quality Guidelines		Maximum	Mean	Standard Deviation	
			Lower WSQG	Upper WSQG				
Physical Tests	% Moisture	%	0.25	-	-	92.6	45.7	26.3
	pH (1:2 soil:water)	pH	0.1	-	-	8.49	8.03	0.324
Particle Size	% Gravel (>2mm)	%	1	-	-	43.8	10.4	17.8
	% Sand (2.00mm - 1.00mm)	%	1	-	-	7.6	3.22	3.17
	% Sand (1.00mm - 0.50mm)	%	1	-	-	15.7	5.82	5.46
	% Sand (0.50mm - 0.25mm)	%	1	-	-	34.7	13.2	11.6
	% Sand (0.25mm - 0.125mm)	%	1	-	-	33.4	15.9	10.6
	% Sand (0.125mm - 0.063mm)	%	1	-	-	28.4	13.3	9.79
	% Silt (0.063mm - 0.0312mm)	%	1	-	-	32.8	16.4	11.2
	% Silt (0.0312mm - 0.004mm)	%	1	-	-	36.2	17.6	12.7
% Clay (<4um)	%	1	-	-	7.8	4.45	2.47	
Organic Carbon	Total Organic Carbon	%	0.05	-	-	9.36	3.15	2.85
Metals	Aluminum	mg/kg	50	-	-	7280	5643	674
	Antimony	mg/kg	0.1	-	-	2.38	0.94	0.518
	Arsenic	mg/kg	0.1	5.9	17	16.6	6.76	3.45
	Barium	mg/kg	0.5	-	-	234	187	26.6
	Beryllium	mg/kg	0.1	-	-	0.73	0.528	0.088
	Bismuth	mg/kg	0.2	-	-	<0.2	<0.2	-
	Boron	mg/kg	5	-	-	9.1	5.68	1.09
	Cadmium	mg/kg	0.02	0.6	3.5	1.82	1.19	0.297
	Calcium	mg/kg	50	-	-	82600	37691	21268
	Chromium	mg/kg	0.5	37.3	90	12.8	10.3	1.42
	Cobalt	mg/kg	0.1	-	-	7.24	5.08	0.89
	Copper	mg/kg	0.5	35.7	197	14.9	11.3	1.96
	Iron	mg/kg	50	21200	43766	37400	15195	7609
	Lead	mg/kg	0.5	35	91.3	12.7	8.57	1.63
	Lithium	mg/kg	2	-	-	10	7.82	1.11
	Magnesium	mg/kg	20	-	-	7650	5235	1081
	Manganese	mg/kg	1	460	1100	455	227	85
	Mercury	mg/kg	0.005	0.17	0.486	0.0542	0.0343	0.00828
	Molybdenum	mg/kg	0.1	25	23000	5.49	1.77	1.25
	Nickel	mg/kg	0.5	16	75	33.1	22.2	4.05
	Phosphorus	mg/kg	50	-	-	1840	1192	229
	Potassium	mg/kg	100	-	-	1250	1002	111
	Selenium	mg/kg	0.2	-	2	11.5	2.72	3.58
	Silver	mg/kg	0.1	0.5	-	0.28	0.161	0.0466
	Sodium	mg/kg	50	-	-	298	93.2	73.8
	Strontium	mg/kg	0.5	-	-	87.9	61.2	14.7
	Sulphur	mg/kg	1,000	-	-	3200	1218	813
	Thallium	mg/kg	0.05	-	-	0.247	0.189	0.0255
	Tin	mg/kg	2	-	-	<2	<2	-
	Titanium	mg/kg	1	-	-	32.4	25.6	6.6
Tungsten	mg/kg	0.5	-	-	<0.5	<0.5	-	
Uranium	mg/kg	0.05	-	-	1.48	1.09	0.16	
Vanadium	mg/kg	0.2	-	-	52.4	30.1	9.2	
Zinc	mg/kg	2	123	315	163	89.3	24.9	
Zirconium	mg/kg	1	-	-	1.7	1.34	0.194	

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Table D.8: Sediment Physical and Chemical Data and Summary Statistics for EVO LAEMP, 2022

Analyte	Units	LRL	BC Sediment Quality Guidelines		Maximum	Mean	Standard Deviation	
			Lower WSQG	Upper WSQG				
Polycyclic Aromatic Hydrocarbons	Acenaphthene	mg/kg	0.005	0.0067	0.0889	<0.05	<0.05	-
	Acenaphthylene	mg/kg	0.005	0.0059	0.128	<0.05	<0.05	-
	Acridine	mg/kg	0.01	-	-	<0.05	<0.05	-
	Anthracene	mg/kg	0.004	0.0469	0.245	<0.05	<0.05	-
	Benzo(a)anthracene	mg/kg	0.01	0.0317	0.385	<0.05	<0.05	-
	Benzo(a)pyrene	mg/kg	0.01	0.0319	0.782	<0.05	<0.05	-
	Benzo(b&j)fluoranthene	mg/kg	0.01	-	-	0.162	0.0612	-
	Benzo(b+j+k)fluoranthene	mg/kg	0.015	-	-	<0.075	<0.075	-
	Benzo(e)pyrene	mg/kg	0.01	-	-	-	-	-
	Benzo(g,h,i)perylene	mg/kg	0.01	0.17	3.2	<0.05	<0.05	-
	Benzo(k)fluoranthene	mg/kg	0.01	0.24	13.4	<0.05	<0.05	-
	Chrysene	mg/kg	0.01	0.0571	0.862	0.196	0.0688	0.0489
	Dibenz(a,h)anthracene	mg/kg	0.005	0.0062	0.135	<0.05	<0.05	-
	Fluoranthene	mg/kg	0.01	0.111	2.355	0.14	0.059	-
	Fluorene	mg/kg	0.01	0.021	0.144	<0.05	<0.05	-
	Indeno(1,2,3-c,d)pyrene	mg/kg	0.01	0.2	3.2	<0.05	<0.05	-
	1-Methylnaphthalene	mg/kg	0.01	-	-	0.189	0.0839	0.0447
	2-Methylnaphthalene	mg/kg	0.01	0.0202	0.201	0.233	0.103	0.0557
	Naphthalene	mg/kg	0.01	0.0346	0.391	0.23	0.0672	0.0626
	Perylene	mg/kg	0.01	-	-	-	-	-
	Phenanthrene	mg/kg	0.01	0.0419	0.515	0.3	0.146	0.0652
	Pyrene	mg/kg	0.01	0.053	0.875	<0.05	<0.05	-
	Quinoline	mg/kg	0.01	-	-	<0.05	<0.05	-
d10-Acenaphthene	%	-	-	-	-	-	-	
d12-Chrysene	%	-	-	-	114	92.8	8.84	
d8-Naphthalene	%	-	-	-	86.5	82.6	2.84	
d10-Phenanthrene	%	-	-	-	101	87.4	5.64	
B(a)P Total Potency Equivalent	mg/kg	0.02	-	-	0.179	0.0786	0.039	

Indicates values is greater than the lower British Columbia Working Sediment Quality Guidelines.

Indicates values is greater than the upper British Columbia Working Sediment Quality Guidelines.

Notes: "-" indicates data not available. LRL = laboratory reporting limit. BC WSQG = British Columbia Working Sediment Quality Guidelines (BCMOECCS 2021b) and approved BC Sediment Quality Guideline for Selenium (BCMOECCS 2021a). All data and summary statistics are displayed to three significant digits.

Table D.8: Sediment Physical and Chemical Data and Summary Statistics for EVO LAEMP, 2022

Analyte	Units	LRL	BC Sediment Quality Guidelines		Mine-exposed										
					RG_MICOMP					Minimum	Median	Maximum	Mean	Standard Deviation	
					RG_MICOMP_1	RG_MICOMP_2	RG_MICOMP_3	RG_MICOMP_4	RG_MICOMP_5						
Lower WSQG	Upper WSQG	18-Sep	18-Sep	18-Sep	18-Sep	18-Sep									
Polycyclic Aromatic Hydrocarbons	Acenaphthene	mg/kg	0.005	0.0067	0.0889	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	0.082	0.0532	-
	Acenaphthylene	mg/kg	0.005	0.0059	0.128	0.093	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	0.168	0.0661	0.0318
	Acridine	mg/kg	0.01	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	0.111	0.0561	-
	Anthracene	mg/kg	0.004	0.0469	0.245	0.114	<0.05	<0.05	<0.05	0.055	<0.05	0.05	0.114	0.0577	0.0276
	Benzo(a)anthracene	mg/kg	0.01	0.0317	0.385	0.246	<0.05	<0.05	<0.05	0.122	<0.05	0.05	0.45	0.117	0.124
	Benzo(a)pyrene	mg/kg	0.01	0.0319	0.782	0.316	<0.05	<0.05	<0.05	0.153	<0.05	0.05	0.63	0.145	0.179
	Benzo(b&j)fluoranthene	mg/kg	0.01	-	-	0.536	<0.05	0.068	<0.05	0.27	<0.05	0.0565	1.18	0.237	0.386
	Benzo(b+j+k)fluoranthene	mg/kg	0.015	-	-	0.702	<0.075	<0.075	<0.075	0.346	<0.075	0.075	1.37	0.294	0.384
	Benzo(e)pyrene	mg/kg	0.01	-	-	-	-	-	-	-	-	-	-	-	-
	Benzo(g,h,i)perylene	mg/kg	0.01	0.17	3.2	0.206	<0.05	<0.05	<0.05	0.096	<0.05	0.05	0.426	0.108	0.123
	Benzo(k)fluoranthene	mg/kg	0.01	0.24	13.4	0.166	<0.05	<0.05	<0.05	0.076	<0.05	0.05	0.194	0.0786	0.0515
	Chrysene	mg/kg	0.01	0.0571	0.862	0.341	0.069	0.066	<0.05	0.225	<0.05	0.0625	0.688	0.166	0.211
	Dibenz(a,h)anthracene	mg/kg	0.005	0.0062	0.135	0.061	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	0.124	0.0585	0.0267
	Fluoranthene	mg/kg	0.01	0.111	2.355	0.308	<0.05	<0.05	<0.05	0.183	<0.05	0.05	0.554	0.14	0.139
	Fluorene	mg/kg	0.01	0.021	0.144	0.106	<0.05	<0.05	<0.05	0.05	<0.05	0.05	0.186	0.0692	0.0519
	Indeno(1,2,3-c,d)pyrene	mg/kg	0.01	0.2	3.2	0.251	<0.05	<0.05	<0.05	0.111	<0.05	0.05	0.456	0.117	0.131
	1-Methylnaphthalene	mg/kg	0.01	-	-	0.229	0.14	0.099	0.085	0.234	0.07	0.112	0.574	0.174	0.152
	2-Methylnaphthalene	mg/kg	0.01	0.0202	0.201	0.426	0.178	0.14	0.118	0.321	0.104	0.164	0.947	0.271	0.258
	Naphthalene	mg/kg	0.01	0.0346	0.391	0.606	0.105	0.098	0.059	0.295	<0.05	0.102	1.14	0.262	0.354
	Perylene	mg/kg	0.01	-	-	-	-	-	-	-	-	-	-	-	-
	Phenanthrene	mg/kg	0.01	0.0419	0.515	0.404	0.206	0.15	0.117	0.364	0.117	0.16	1.21	0.305	0.333
	Pyrene	mg/kg	0.01	0.053	0.875	0.223	<0.05	<0.05	<0.05	0.14	<0.05	0.05	0.397	0.111	0.096
	Quinoline	mg/kg	0.01	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
d10-Acenaphthene	%	-	-	-	-	-	-	-	-	-	-	-	-	-	
d12-Chrysene	%	-	-	-	111	106	118	110	104	104	114	125	114	6.11	
d8-Naphthalene	%	-	-	-	111	107	115	105	105	98.6	105	115	105	5.18	
d10-Phenanthrene	%	-	-	-	102	96.2	107	101	96	96	108	121	107	8.43	
B(a)P Total Potency Equivalent	mg/kg	0.02	-	-	0.502	<0.065	0.065	<0.065	0.239	<0.065	0.065	0.993	0.219	0.336	

Indicates values is greater than the lower British Columbia Working Sediment Quality Guidelines.

Indicates values is greater than the upper British Columbia Working Sediment Quality Guidelines.

Notes: "-" indicates data not available. LRL = laboratory reporting limit. BC WSQG = British Columbia Working Sediment Quality Guidelines (BCMOECCS 2021b) and approved BC Sediment Quality Guideline for Selenium (BCMOECCS 2021a). All data and summary statistics are displayed to three significant digits.

APPENDIX E
PERIPHYTON

Table E.1: Visual Periphyton Coverage Scores from EVO LAEMP, September 2022

Area Type	Biological Area Code	Station					Mean	Standard Deviation
		1	2	3	4	5		
Reference	RG_ALUSM	3	3	3	-	-	3.00	0
Mine-Exposed	RG_ERCKUT	2	2	2	-	-	2.00	0
Mine-Exposed	RG_ERCKDT	3	3	3	-	-	3.00	0
Mine-Exposed	RG_ERCK	5	-	-	-	-	5.00	-
Mine-Exposed	RG_GATE	2	2	-	-	-	2.00	0
Mine-Exposed	RG_BOCK	1	1	1	-	-	1.00	0
Mine-Exposed	RG_MI3	2	2	2	-	-	2.00	0
Mine-Exposed	RG_MIDER	2	2	2	-	-	2.00	0
Mine-Exposed	RG_MIDBO	2	2	2	-	-	2.00	0
Mine-Exposed	RG_MIDGA	2	2	2	-	-	2.00	0
Mine-Exposed	RG_MICOMP	3	3	3	3	3	3.00	0

Notes: Periphyton Coverage Scores (Environment Canada, 2012b):

1 = Rocks not slippery, no obvious colour (<0.5mm thick)

2 = Rocks slightly slippery, yellow-brown to light green colour (0.5-1mm thick)

3 = Rocks have noticeable slippery feel, patches of thicker green to brown algae (1-5mm thick)

4 = Rocks are very slippery, numerous clumps (5-20mm thick)

5 = Rocks mostly obscured by algae mat, may have long strands (>20mm thick)

^aThe mean score of five individual assessments at the station.

APPENDIX F
BIT, HESS, and BIC

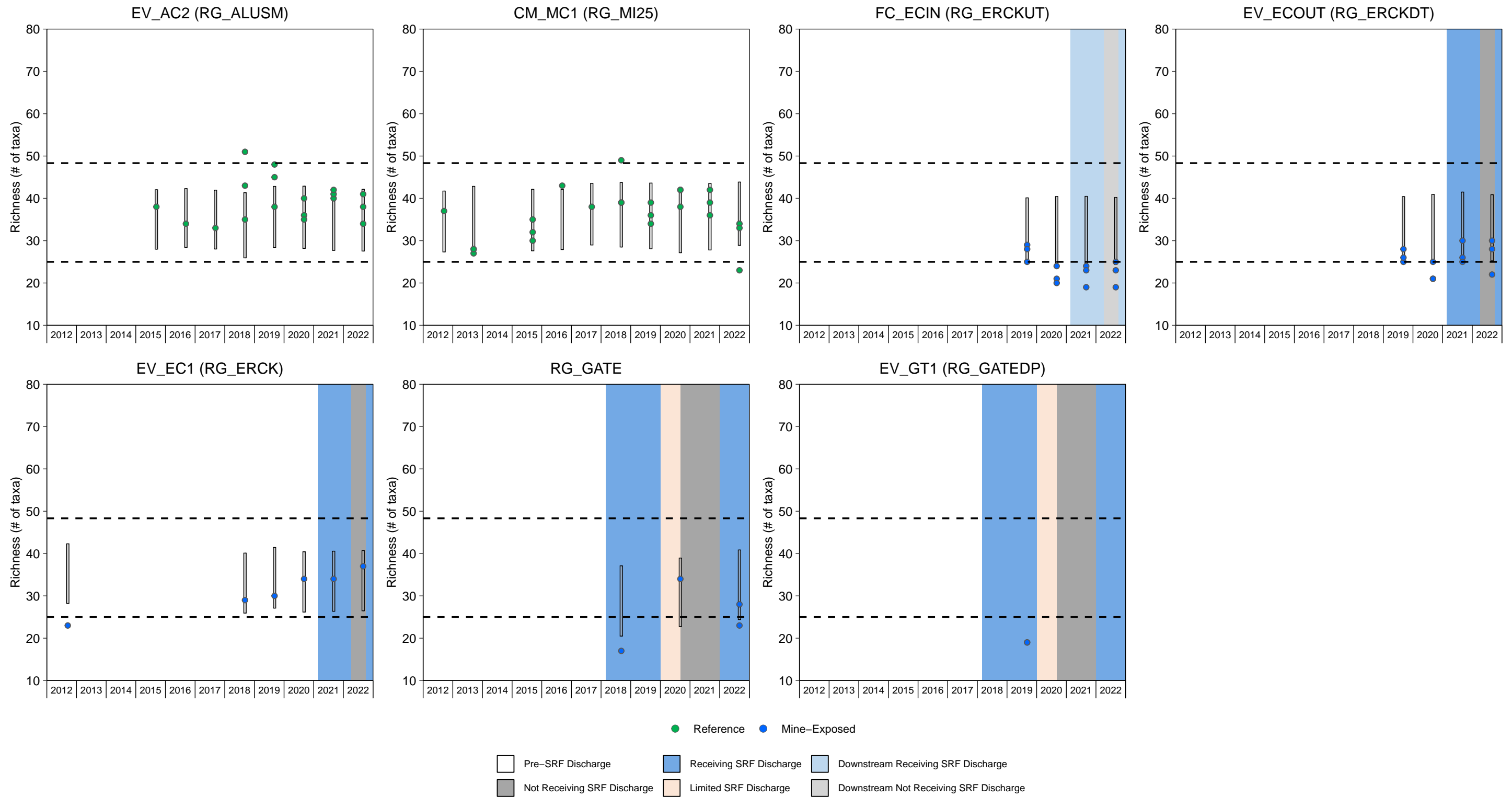


Figure F.1: Benthic Invertebrate Community Endpoints from EVO LAEMP Sampling Areas, September 2012 to 2022

Notes: Site specific normal ranges using regression models shown with grey shading and black rectangle (when available). Normal ranges using percentiles of reference areas from 2012 to 2019 shown as dashed horizontal lines. Values that were close to or equal to 0 were plotted as 1 on the y-axis (on a log10-scale) for abundance

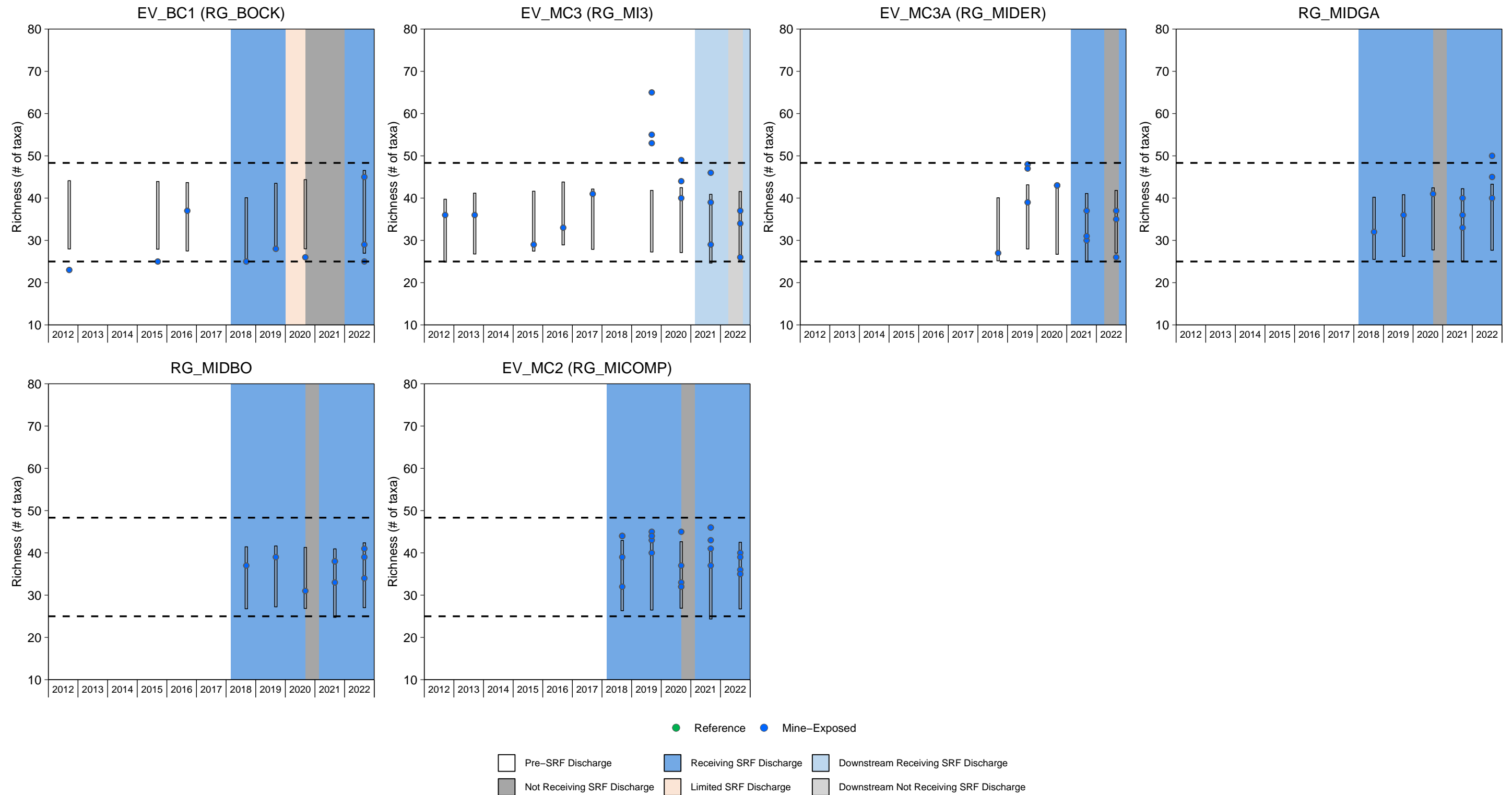


Figure F.1: Benthic Invertebrate Community Endpoints from EVO LAEMP Sampling Areas, September 2012 to 2022

Notes: Site specific normal ranges using regression models shown with grey shading and black rectangle (when available). Normal ranges using percentiles of reference areas from 2012 to 2019 shown as dashed horizontal lines. Values that were close to or equal to 0 were plotted as 1 on the y-axis (on a log₁₀-scale) for abundance

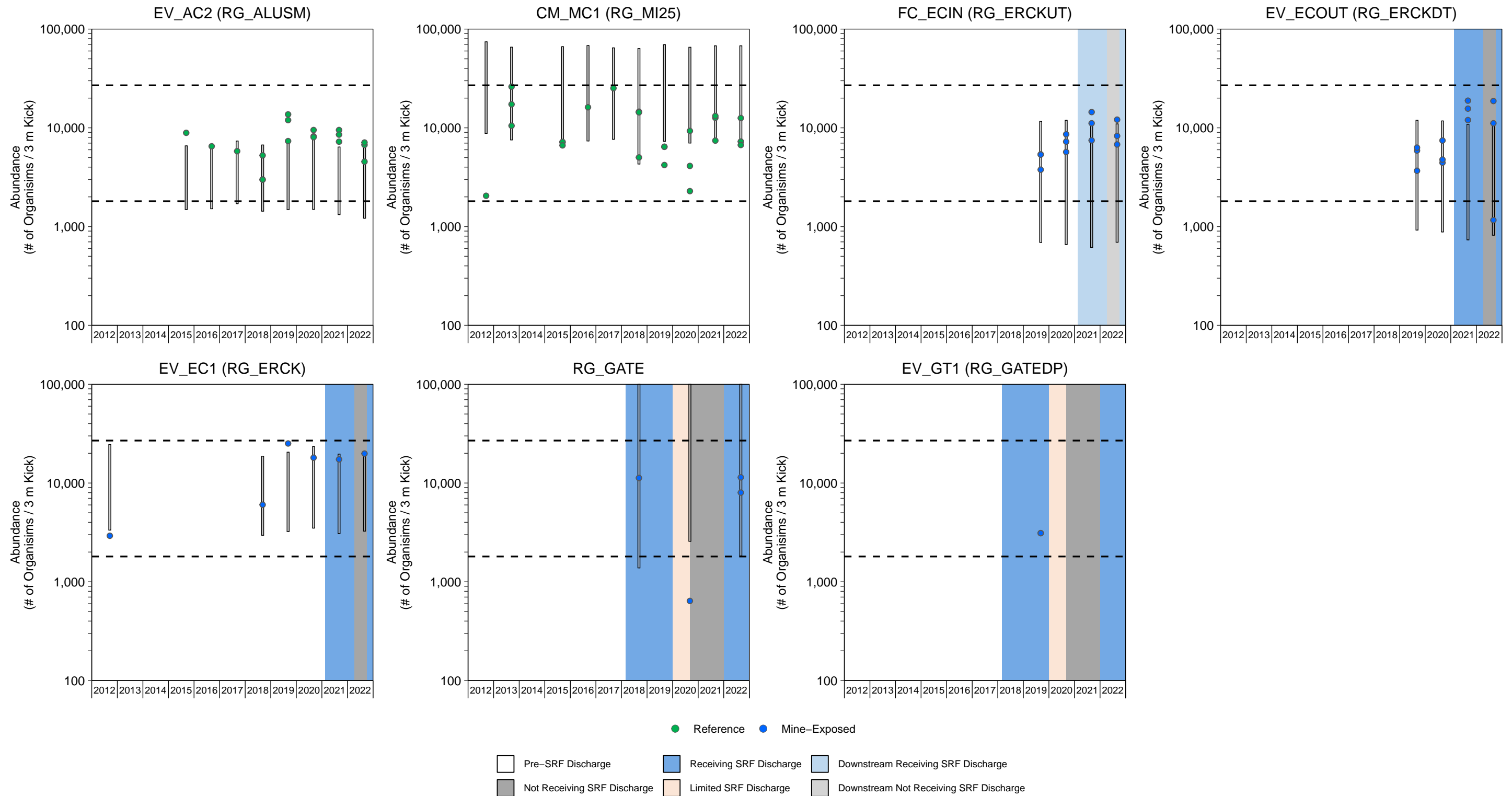


Figure F.2: Benthic Invertebrate Community Endpoints from EVO LAEMP Sampling Areas, September 2012 to 2022

Notes: Site specific normal ranges using regression models shown with grey shading and black rectangle (when available). Normal ranges using percentiles of reference areas from 2012 to 2019 shown as dashed horizontal lines. Values that were close to or equal to 0 were plotted as 1 on the y-axis (on a log10-scale) for abundance

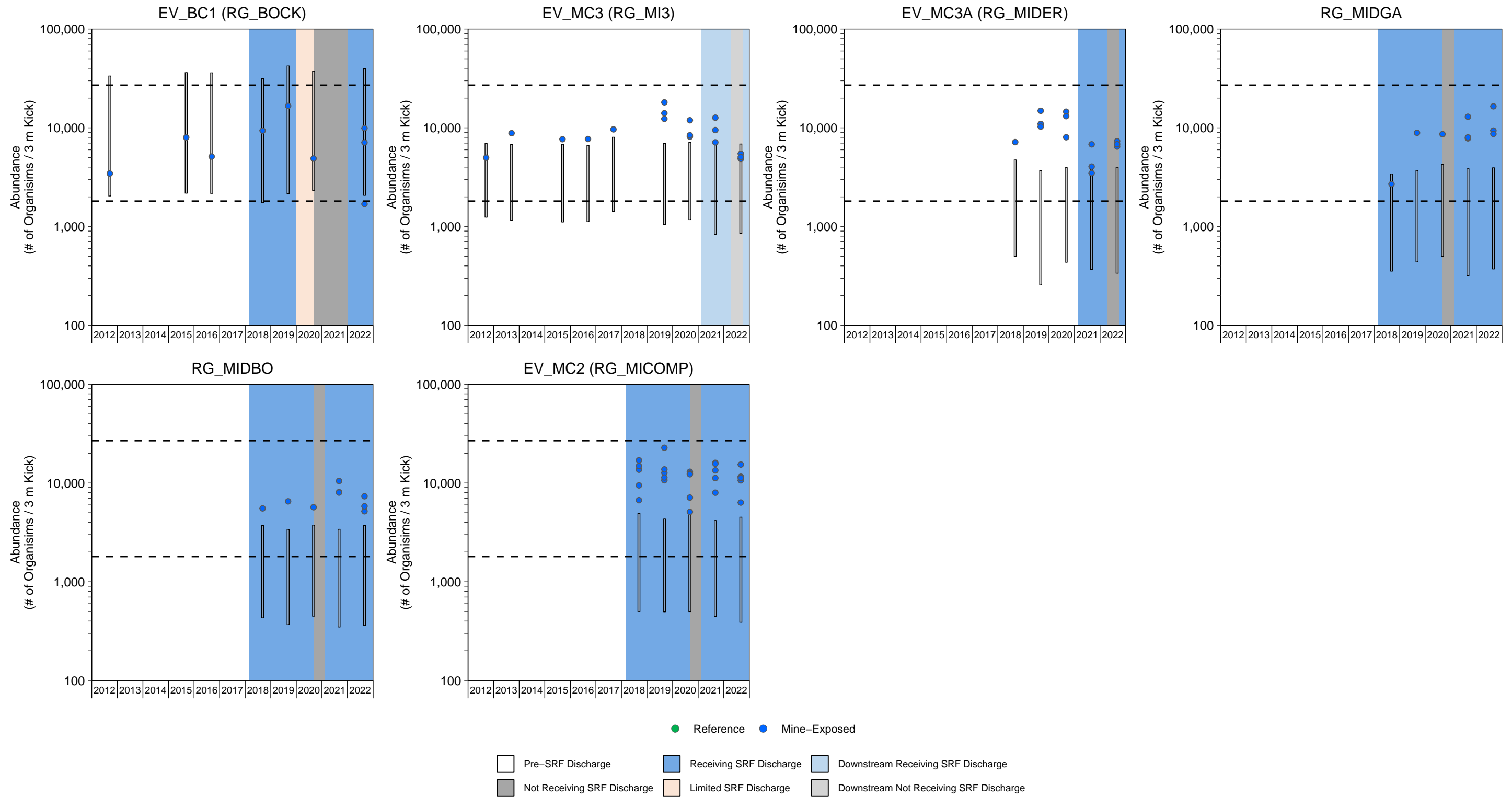


Figure F.2: Benthic Invertebrate Community Endpoints from EVO LAEMP Sampling Areas, September 2012 to 2022

Notes: Site specific normal ranges using regression models shown with grey shading and black rectangle (when available). Normal ranges using percentiles of reference areas from 2012 to 2019 shown as dashed horizontal lines. Values that were close to or equal to 0 were plotted as 1 on the y-axis (on a log₁₀-scale) for abundance

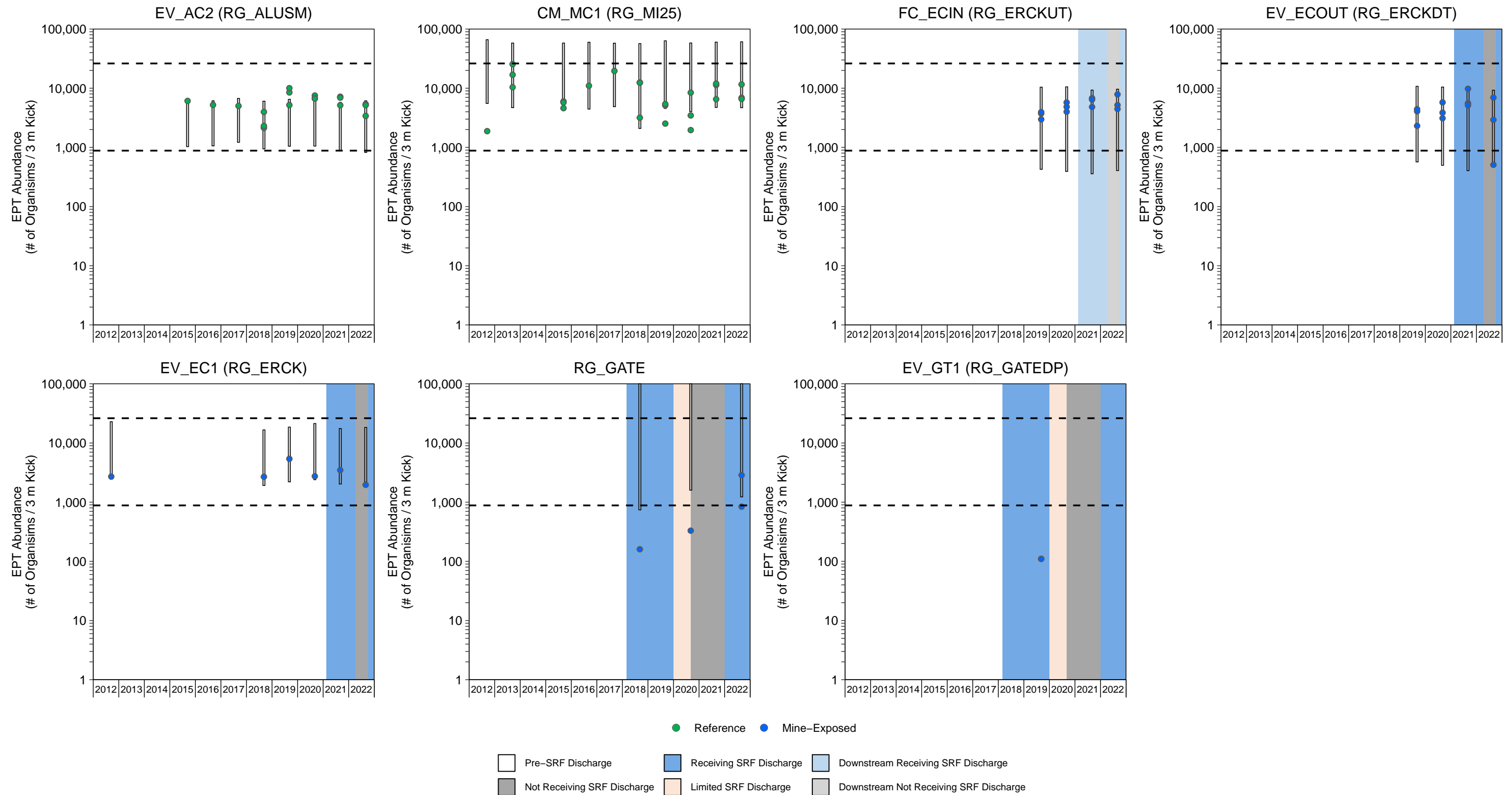


Figure F.3: Benthic Invertebrate Community Endpoints from EVO LAEMP Sampling Areas, September 2012 to 2022

Notes: Site specific normal ranges using regression models shown with grey shading and black rectangle (when available). Normal ranges using percentiles of reference areas from 2012 to 2019 shown as dashed horizontal lines. Values that were close to or equal to 0 were plotted as 1 on the y-axis (on a log₁₀-scale) for abundance

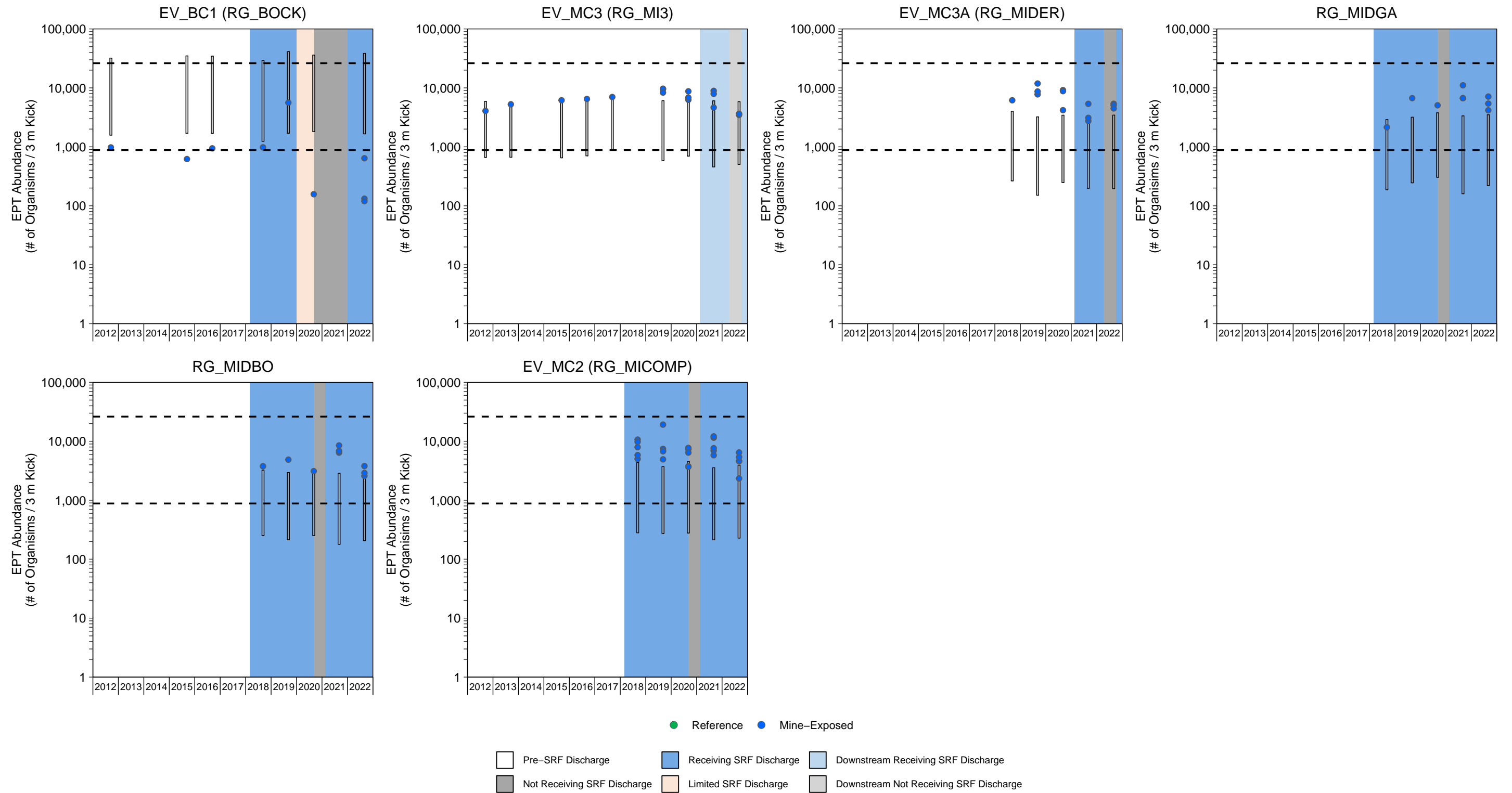


Figure F.3: Benthic Invertebrate Community Endpoints from EVO LAEMP Sampling Areas, September 2012 to 2022

Notes: Site specific normal ranges using regression models shown with grey shading and black rectangle (when available). Normal ranges using percentiles of reference areas from 2012 to 2019 shown as dashed horizontal lines. Values that were close to or equal to 0 were plotted as 1 on the y-axis (on a log₁₀-scale) for abundance

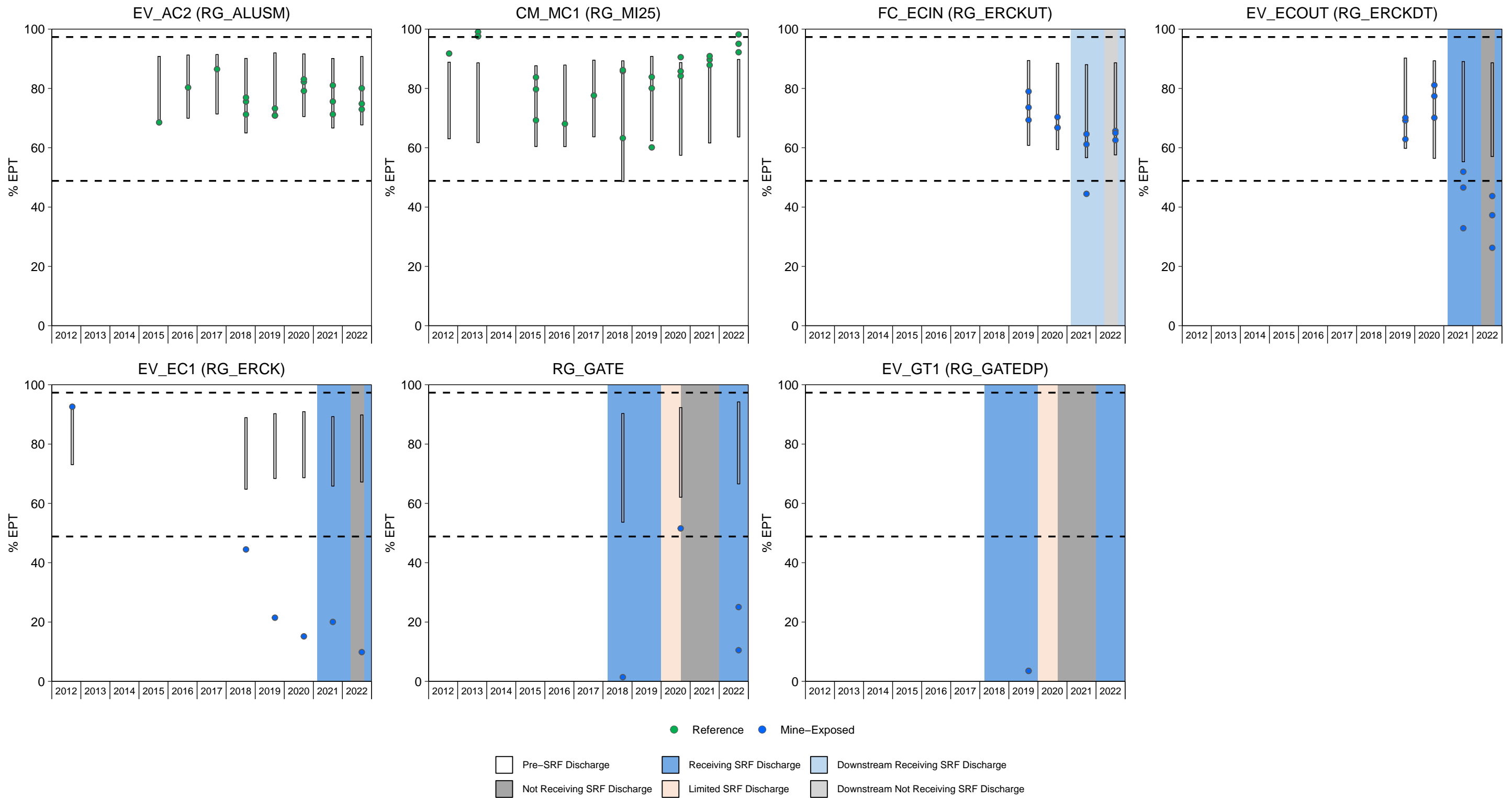


Figure F.4: Benthic Invertebrate Community Endpoints from EVO LAEMP Sampling Areas, September 2012 to 2022

Notes: Site specific normal ranges using regression models shown with grey shading and black rectangle (when available). Normal ranges using percentiles of reference areas from 2012 to 2019 shown as dashed horizontal lines. Values that were close to or equal to 0 were plotted as 1 on the y-axis (on a log₁₀-scale) for abundance

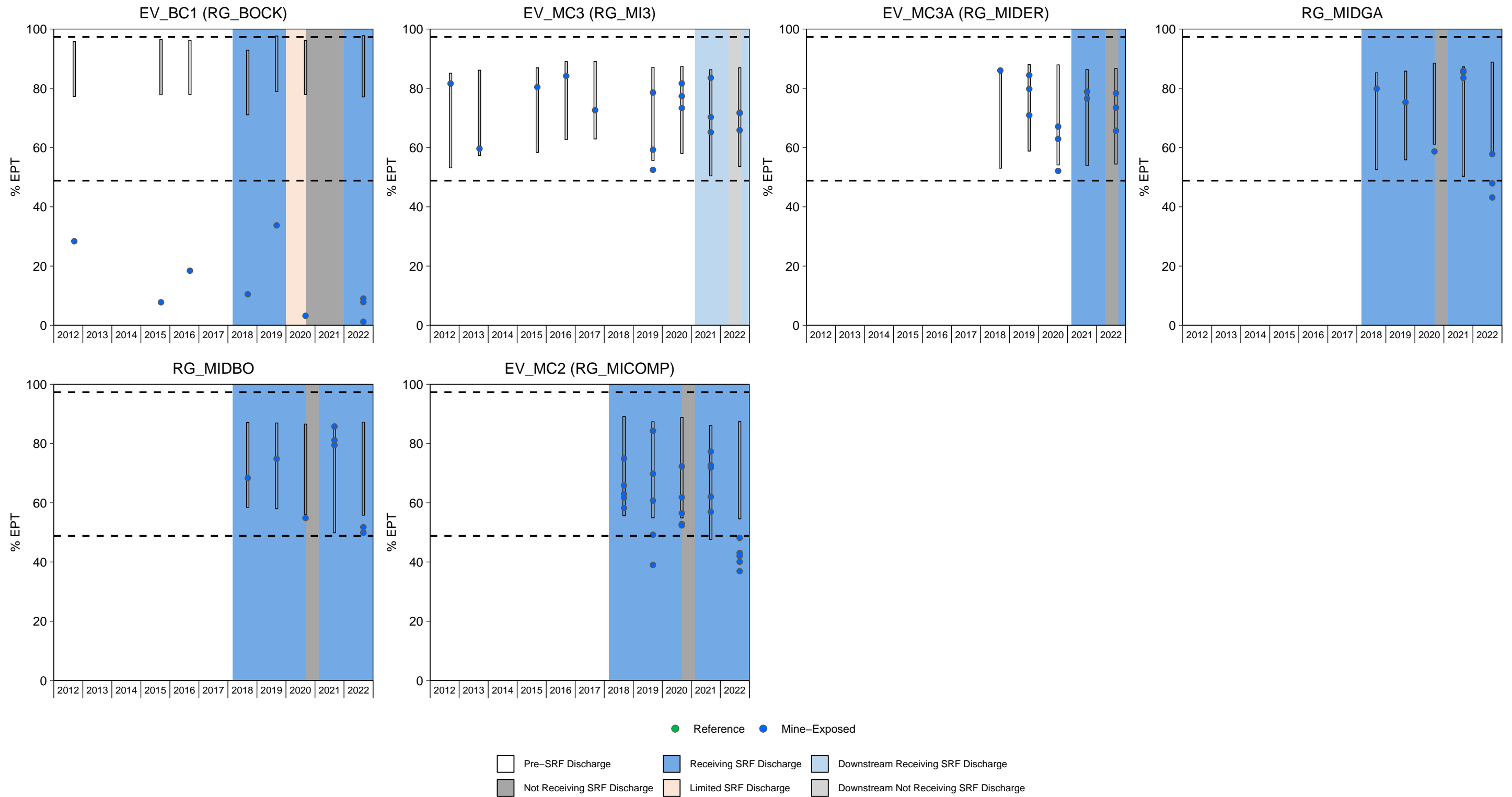


Figure F.4: Benthic Invertebrate Community Endpoints from EVO LAEMP Sampling Areas, September 2012 to 2022

Notes: Site specific normal ranges using regression models shown with grey shading and black rectangle (when available). Normal ranges using percentiles of reference areas from 2012 to 2019 shown as dashed horizontal lines. Values that were close to or equal to 0 were plotted as 1 on the y-axis (on a log₁₀-scale) for abundance

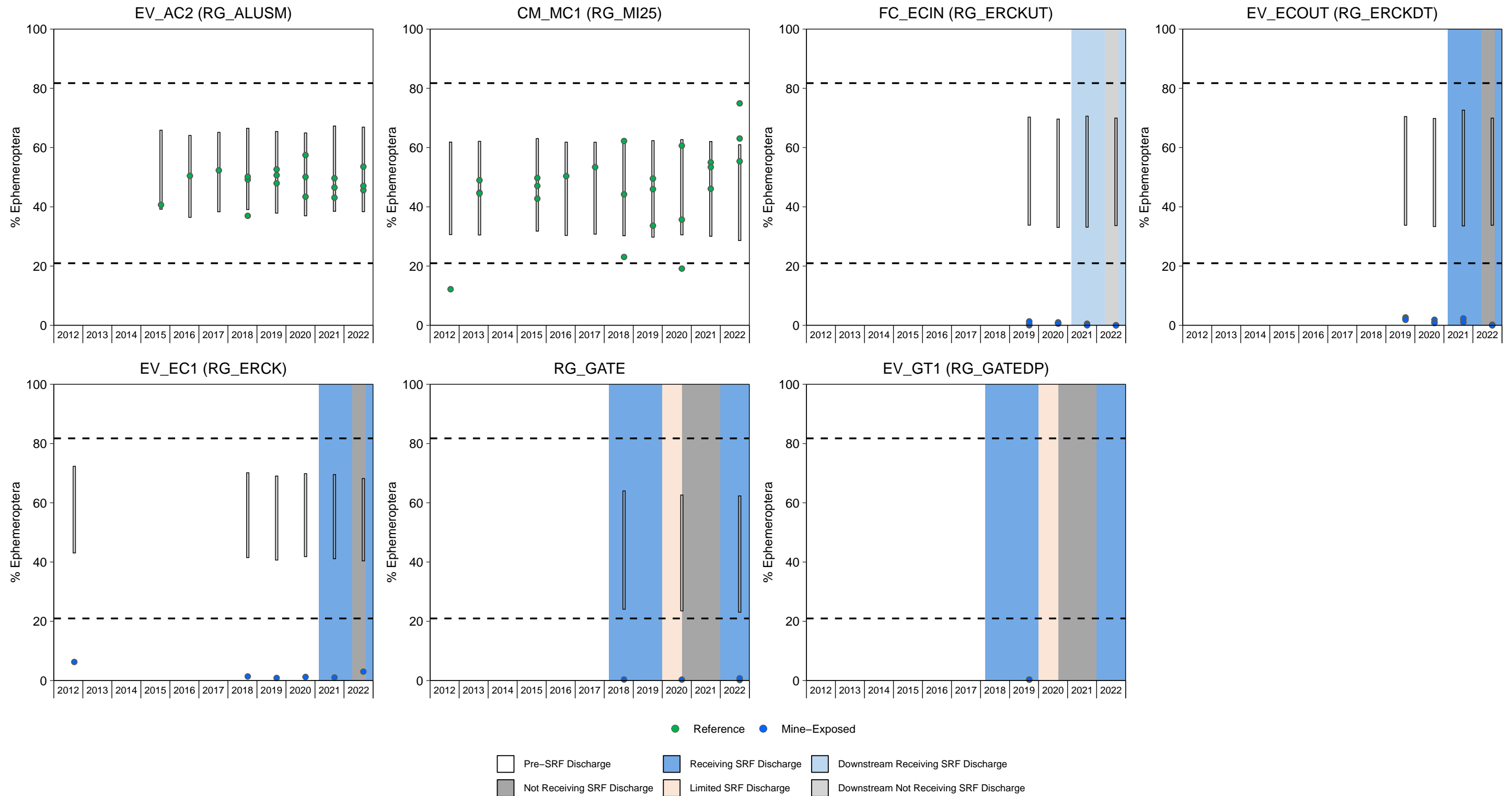


Figure F.5: Benthic Invertebrate Community Endpoints from EVO LAEMP Sampling Areas, September 2012 to 2022

Notes: Site specific normal ranges using regression models shown with grey shading and black rectangle (when available). Normal ranges using percentiles of reference areas from 2012 to 2019 shown as dashed horizontal lines. Values that were close to or equal to 0 were plotted as 1 on the y-axis (on a log₁₀-scale) for abundance

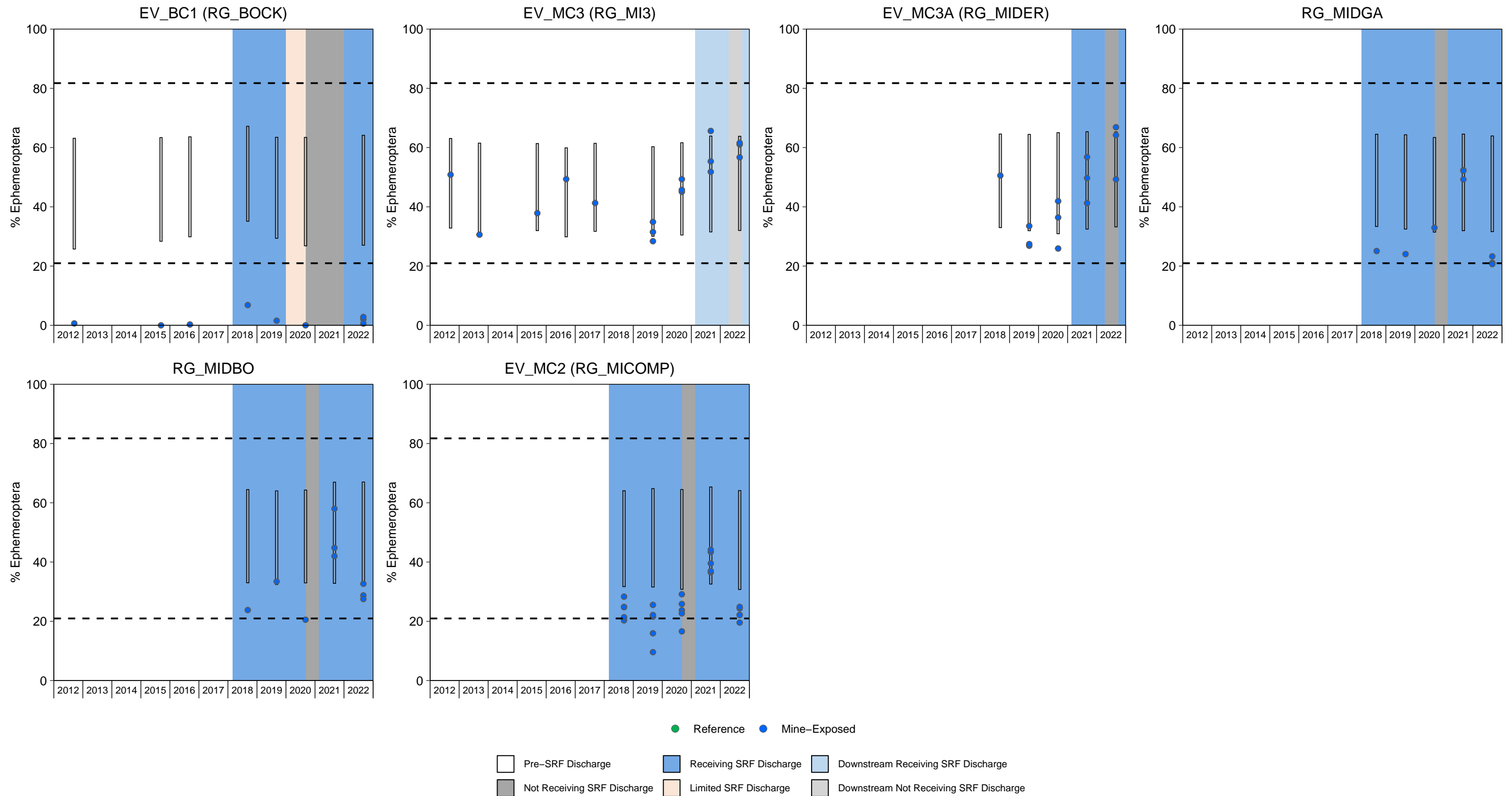


Figure F.5: Benthic Invertebrate Community Endpoints from EVO LAEMP Sampling Areas, September 2012 to 2022

Notes: Site specific normal ranges using regression models shown with grey shading and black rectangle (when available). Normal ranges using percentiles of reference areas from 2012 to 2019 shown as dashed horizontal lines. Values that were close to or equal to 0 were plotted as 1 on the y-axis (on a log₁₀-scale) for abundance

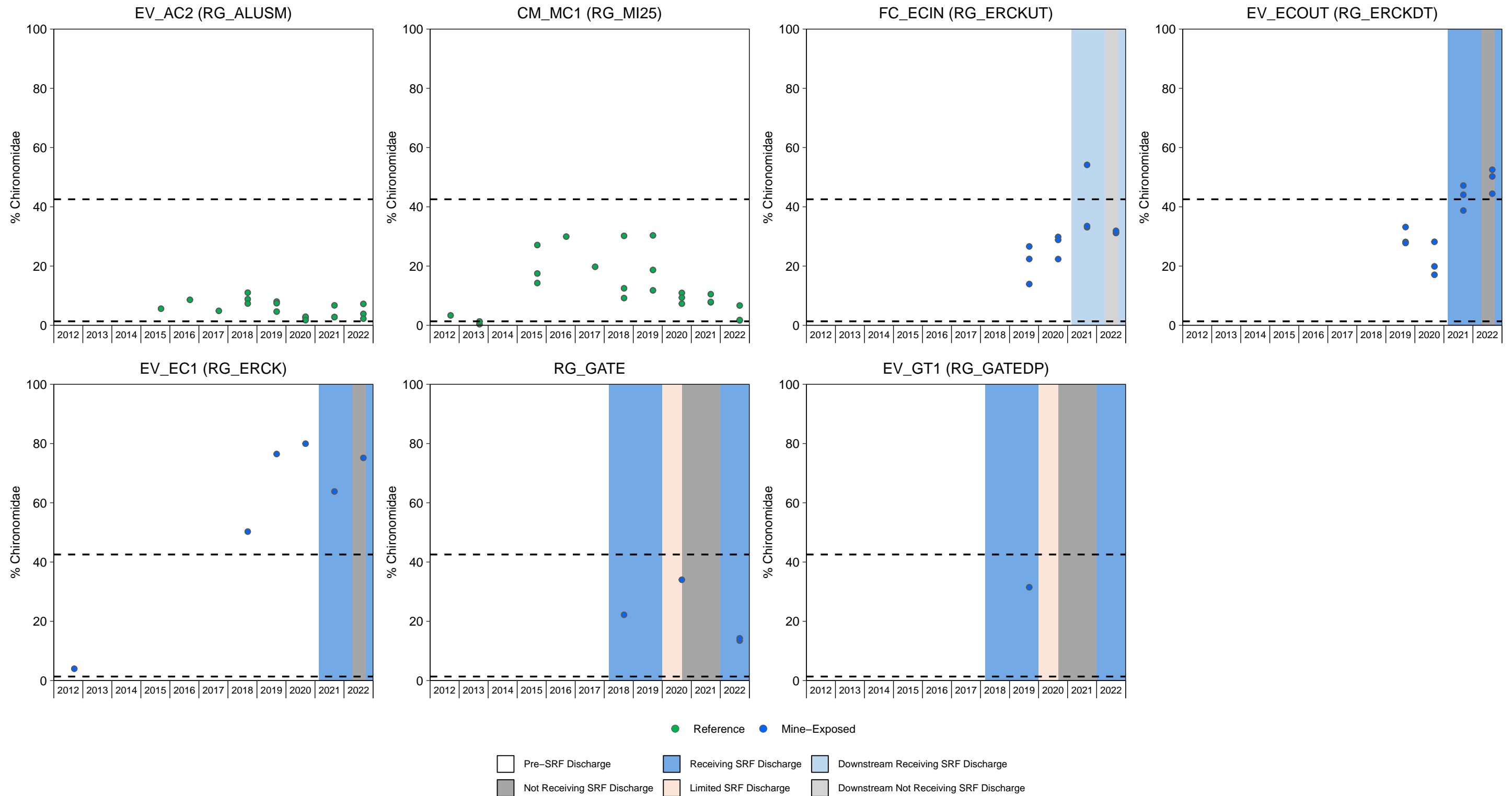


Figure F.6: Benthic Invertebrate Community Endpoints from EVO LAEMP Sampling Areas, September 2012 to 2022

Notes: Site specific normal ranges using regression models shown with grey shading and black rectangle (when available). Normal ranges using percentiles of reference areas from 2012 to 2019 shown as dashed horizontal lines. Values that were close to or equal to 0 were plotted as 1 on the y-axis (on a log₁₀-scale) for abundance

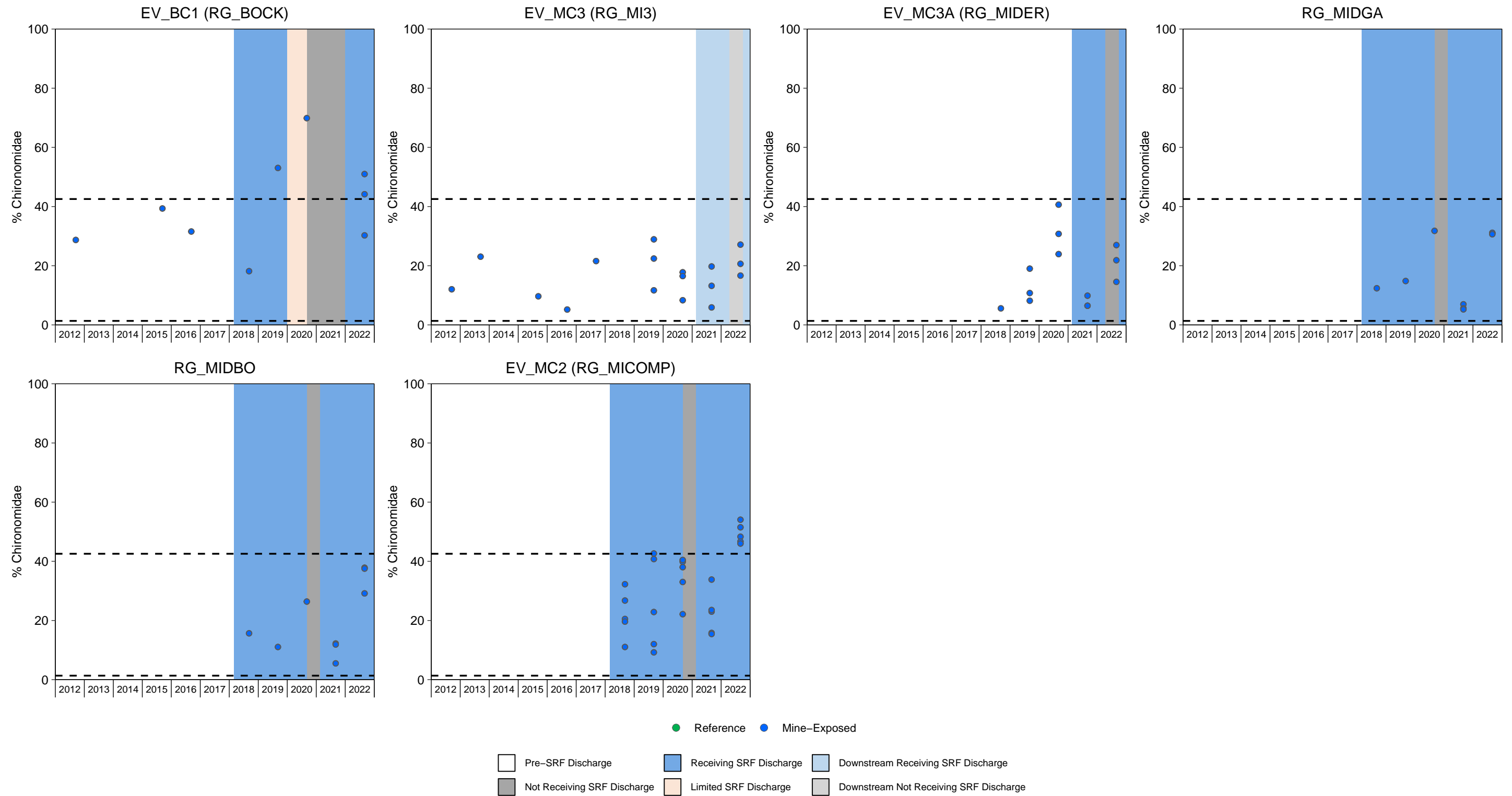


Figure F.6: Benthic Invertebrate Community Endpoints from EVO LAEMP Sampling Areas, September 2012 to 2022

Notes: Site specific normal ranges using regression models shown with grey shading and black rectangle (when available). Normal ranges using percentiles of reference areas from 2012 to 2019 shown as dashed horizontal lines. Values that were close to or equal to 0 were plotted as 1 on the y-axis (on a log₁₀-scale) for abundance

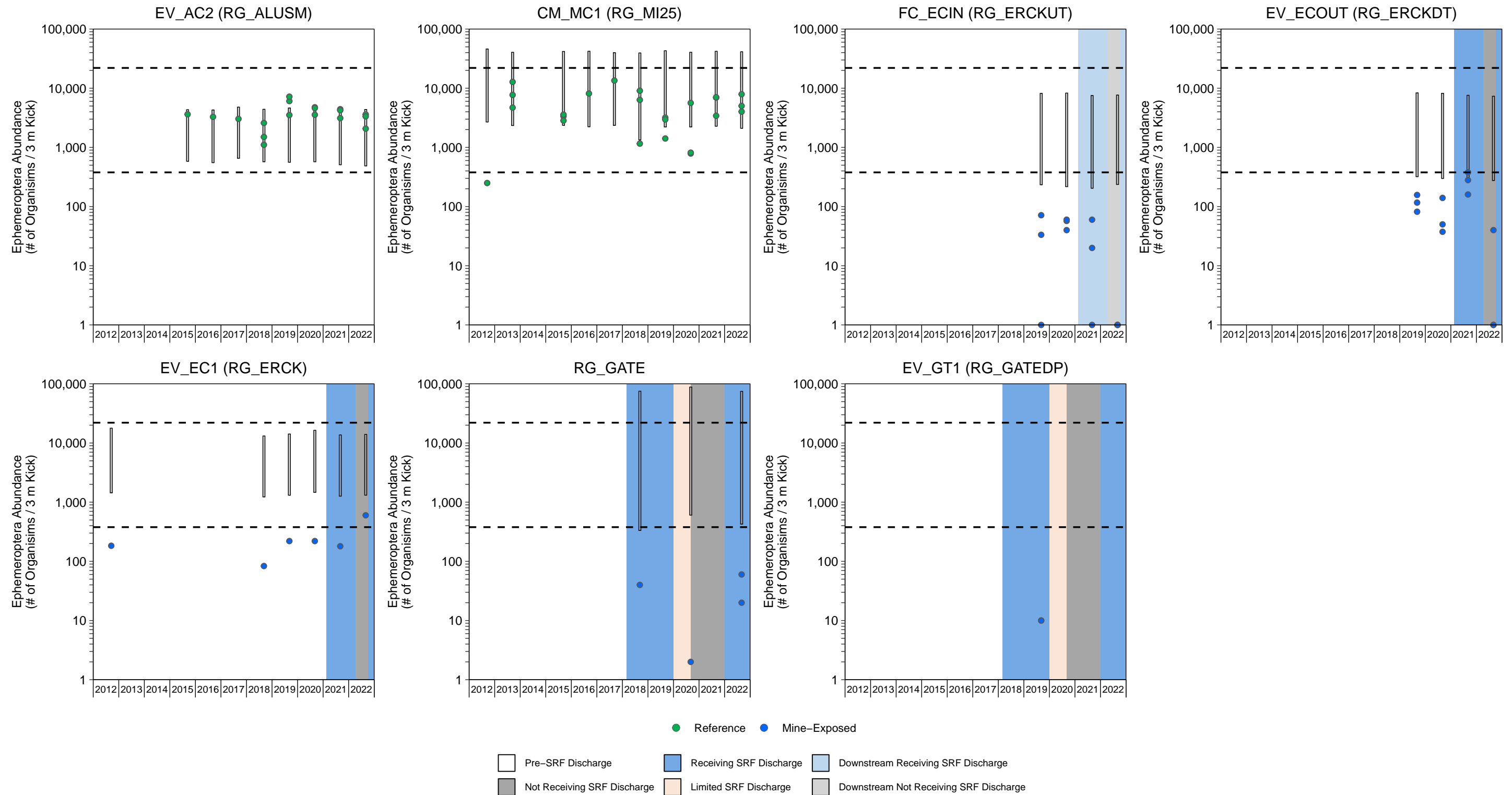


Figure F.7: Benthic Invertebrate Community Endpoints from EVO LAEMP Sampling Areas, September 2012 to 2022

Notes: Site specific normal ranges using regression models shown with grey shading and black rectangle (when available). Normal ranges using percentiles of reference areas from 2012 to 2019 shown as dashed horizontal lines. Values that were close to or equal to 0 were plotted as 1 on the y-axis (on a log10-scale) for abundance

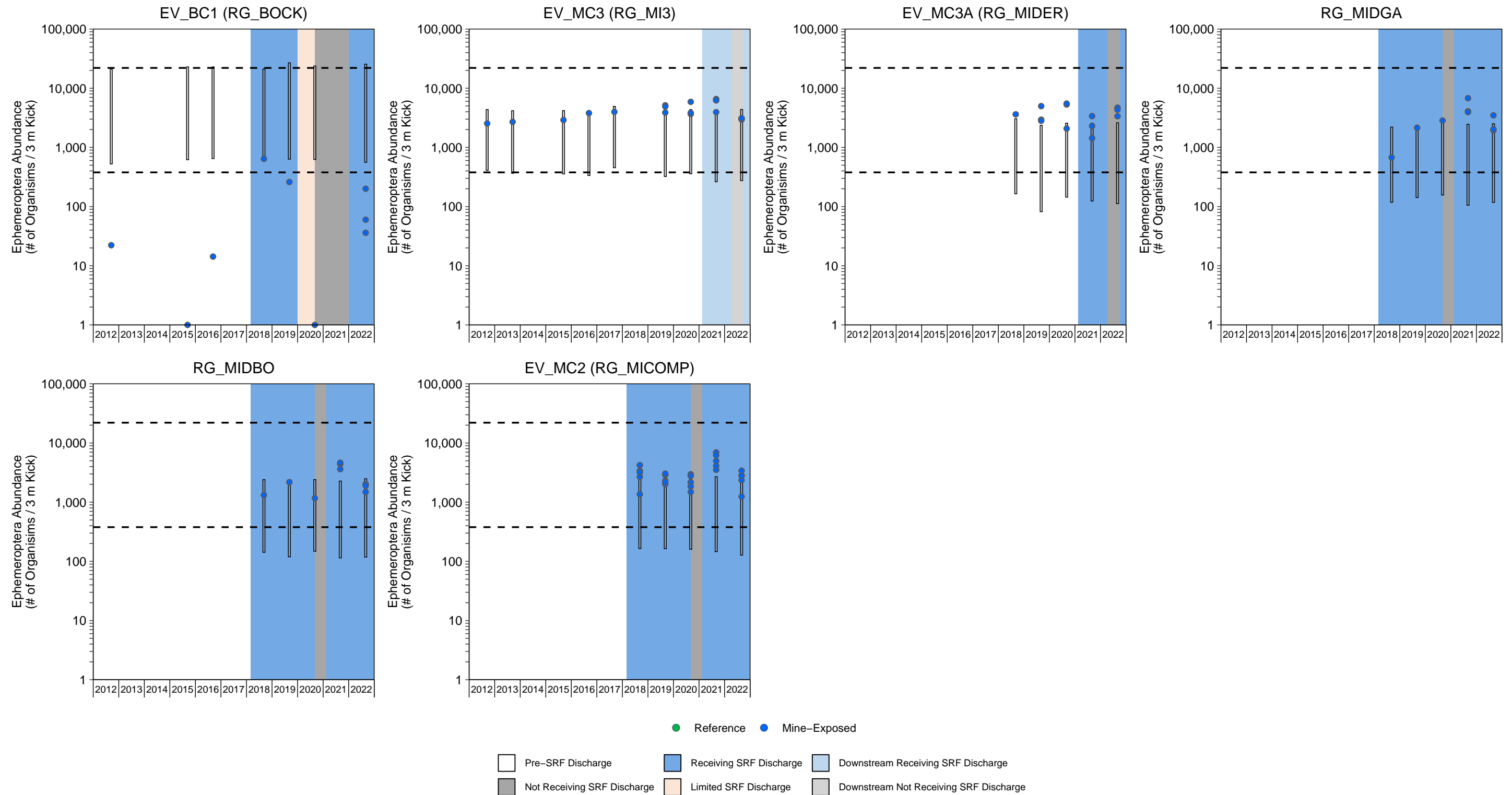


Figure F.7: Benthic Invertebrate Community Endpoints from EVO LAEMP Sampling Areas, September 2012 to 2022

Notes: Site specific normal ranges using regression models shown with grey shading and black rectangle (when available). Normal ranges using percentiles of reference areas from 2012 to 2019 shown as dashed horizontal lines. Values that were close to or equal to 0 were plotted as 1 on the y-axis (on a log₁₀-scale) for abundance

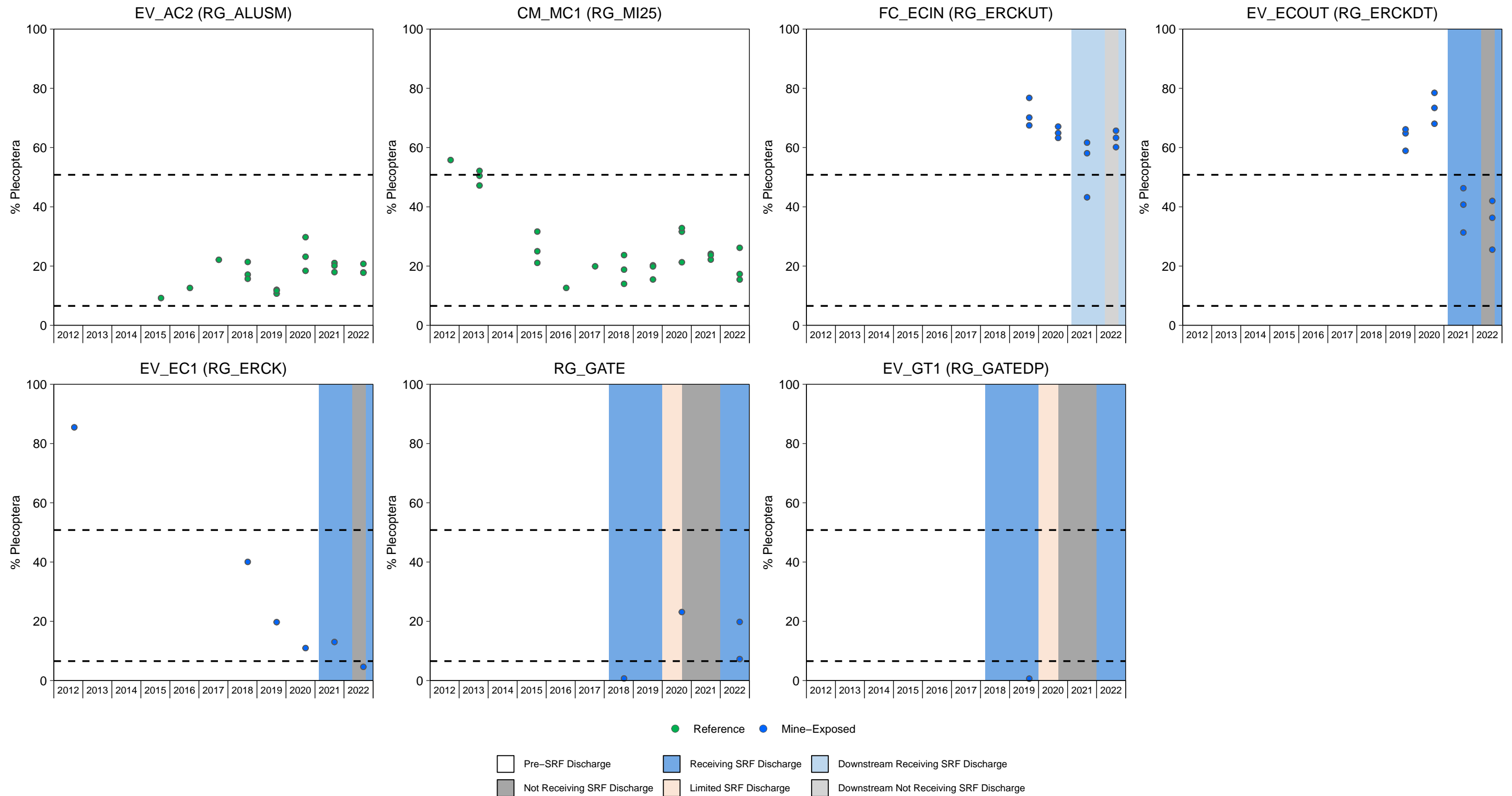


Figure F.8: Benthic Invertebrate Community Endpoints from EVO LAEMP Sampling Areas, September 2012 to 2022

Notes: Site specific normal ranges using regression models shown with grey shading and black rectangle (when available). Normal ranges using percentiles of reference areas from 2012 to 2019 shown as dashed horizontal lines. Values that were close to or equal to 0 were plotted as 1 on the y-axis (on a log₁₀-scale) for abundance

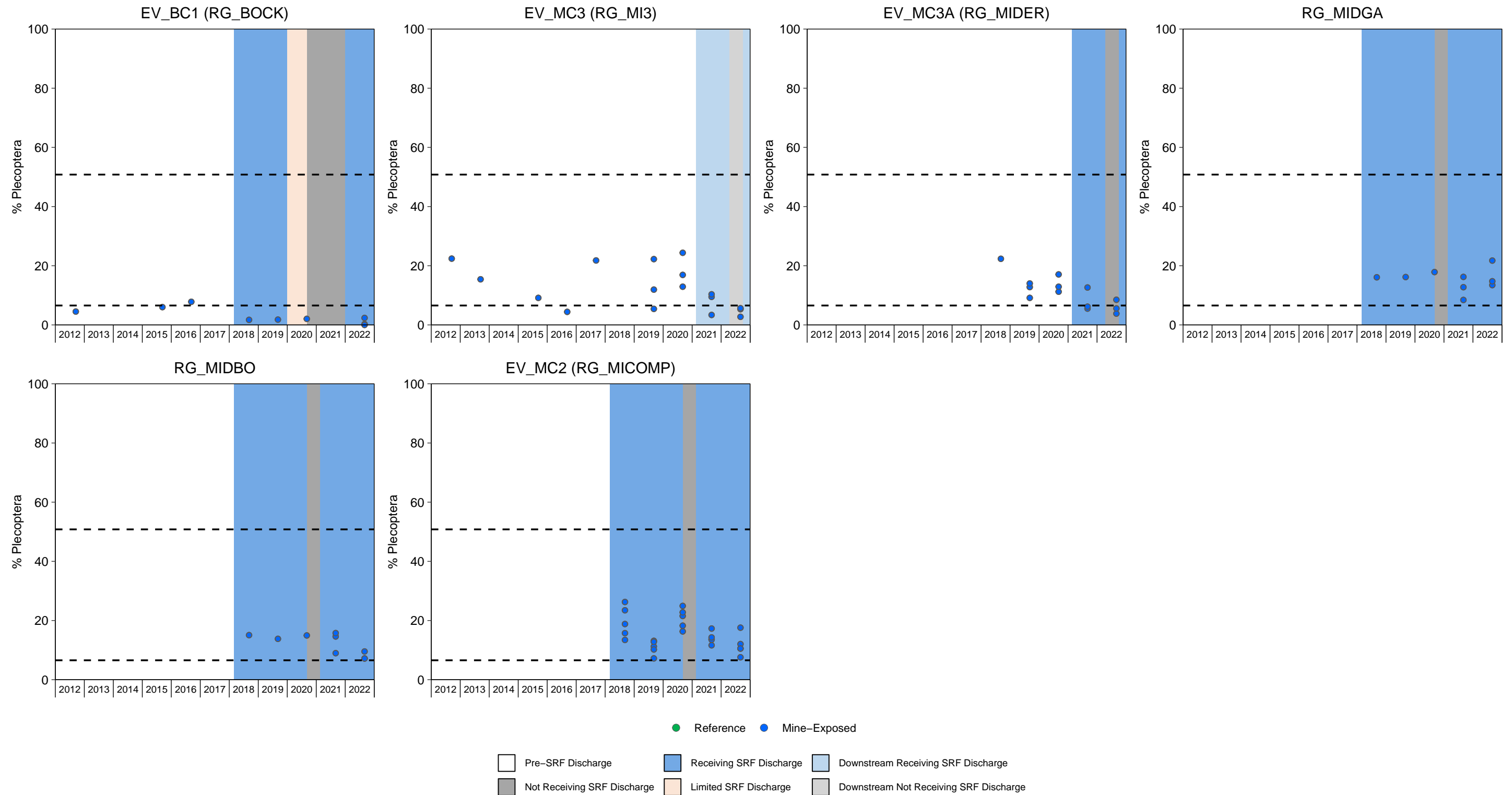


Figure F.8: Benthic Invertebrate Community Endpoints from EVO LAEMP Sampling Areas, September 2012 to 2022

Notes: Site specific normal ranges using regression models shown with grey shading and black rectangle (when available). Normal ranges using percentiles of reference areas from 2012 to 2019 shown as dashed horizontal lines. Values that were close to or equal to 0 were plotted as 1 on the y-axis (on a log₁₀-scale) for abundance

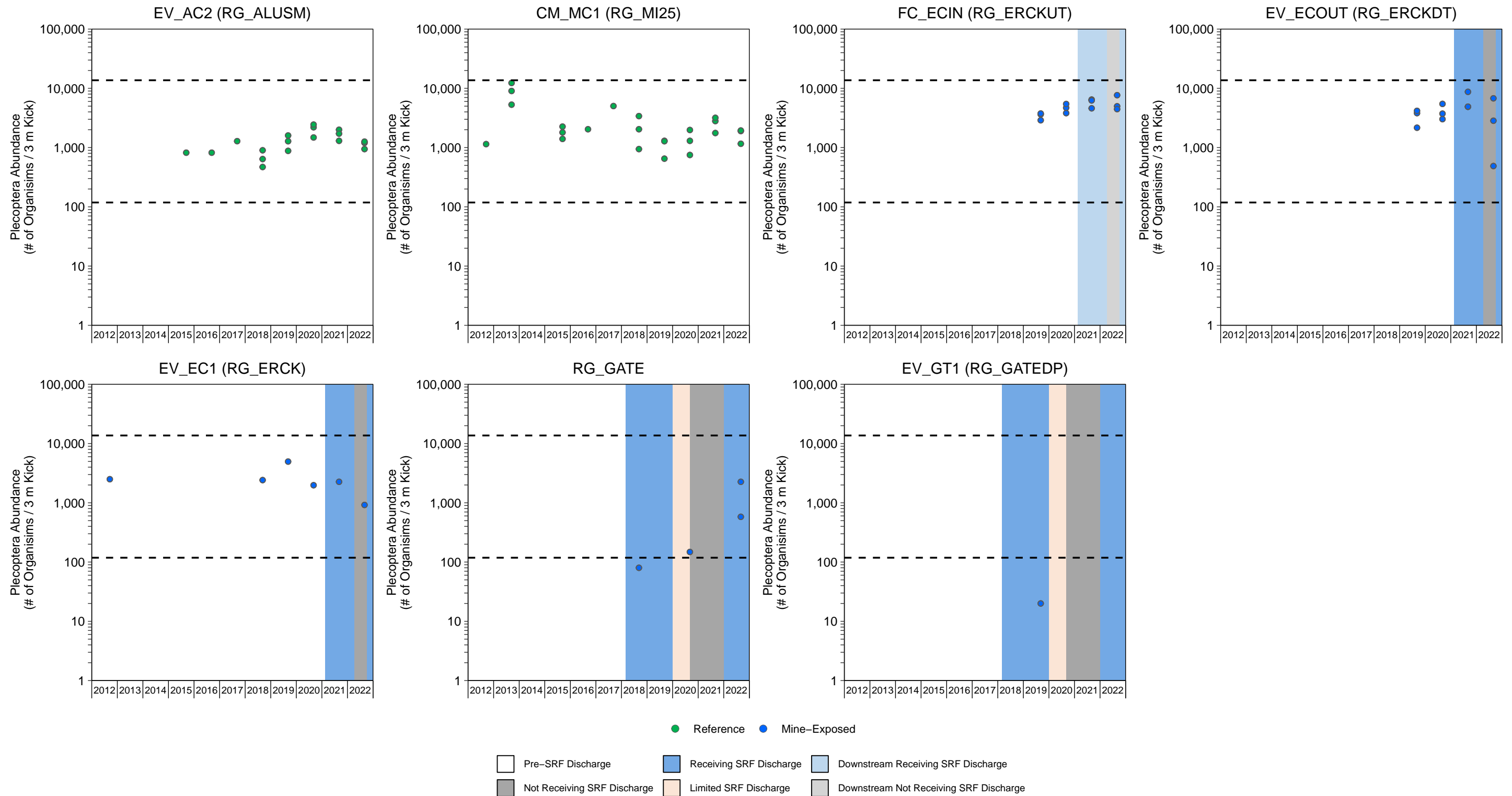


Figure 9.9: Benthic Invertebrate Community Endpoints from EVO LAEMP Sampling Areas, September 2012 to 2022

Notes: Site specific normal ranges using regression models shown with grey shading and black rectangle (when available). Normal ranges using percentiles of reference areas from 2012 to 2019 shown as dashed horizontal lines. Values that were close to or equal to 0 were plotted as 1 on the y-axis (on a log₁₀-scale) for abundance

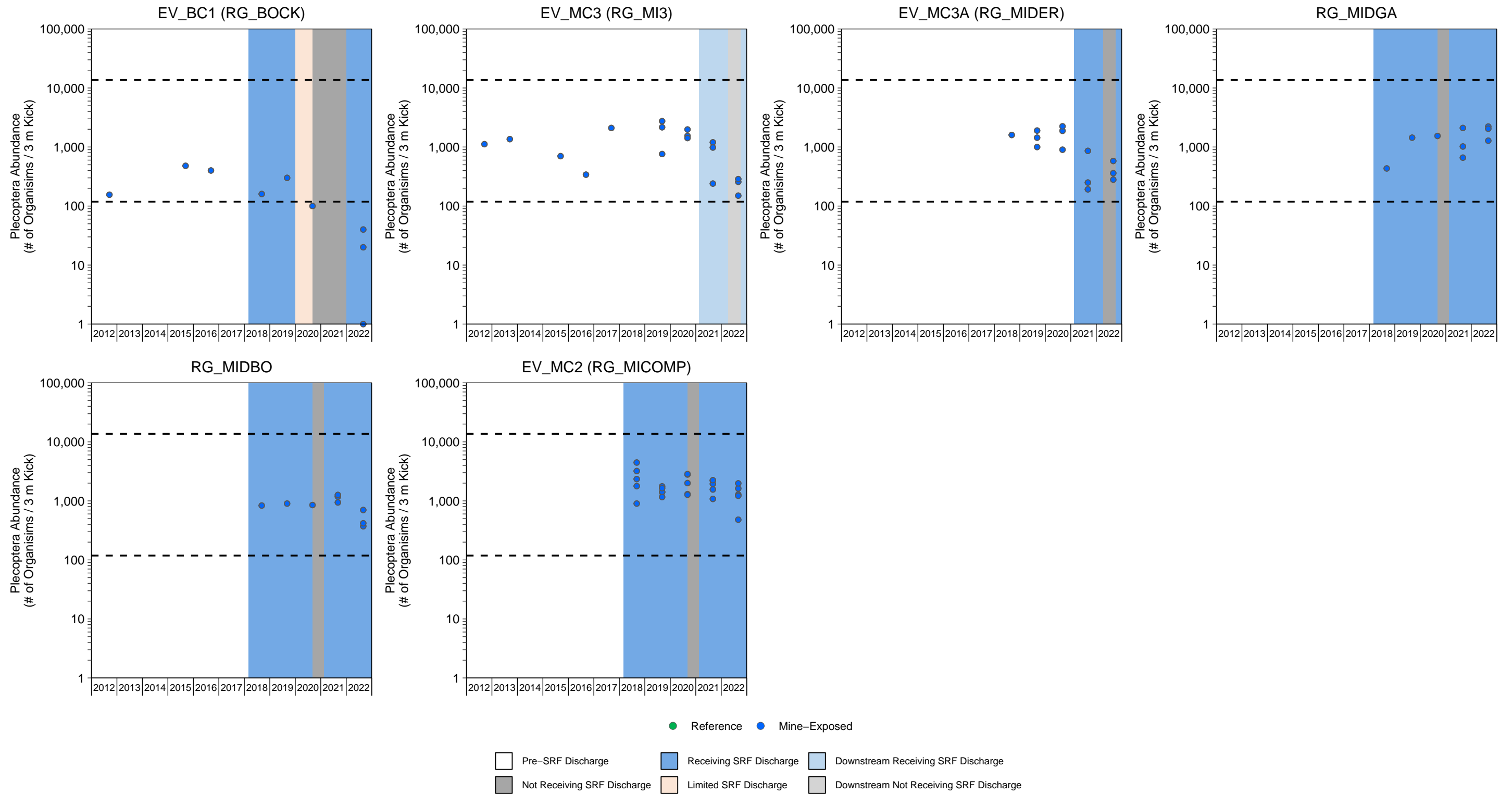


Figure F.9: Benthic Invertebrate Community Endpoints from EVO LAEMP Sampling Areas, September 2012 to 2022

Notes: Site specific normal ranges using regression models shown with grey shading and black rectangle (when available). Normal ranges using percentiles of reference areas from 2012 to 2019 shown as dashed horizontal lines. Values that were close to or equal to 0 were plotted as 1 on the y-axis (on a log₁₀-scale) for abundance

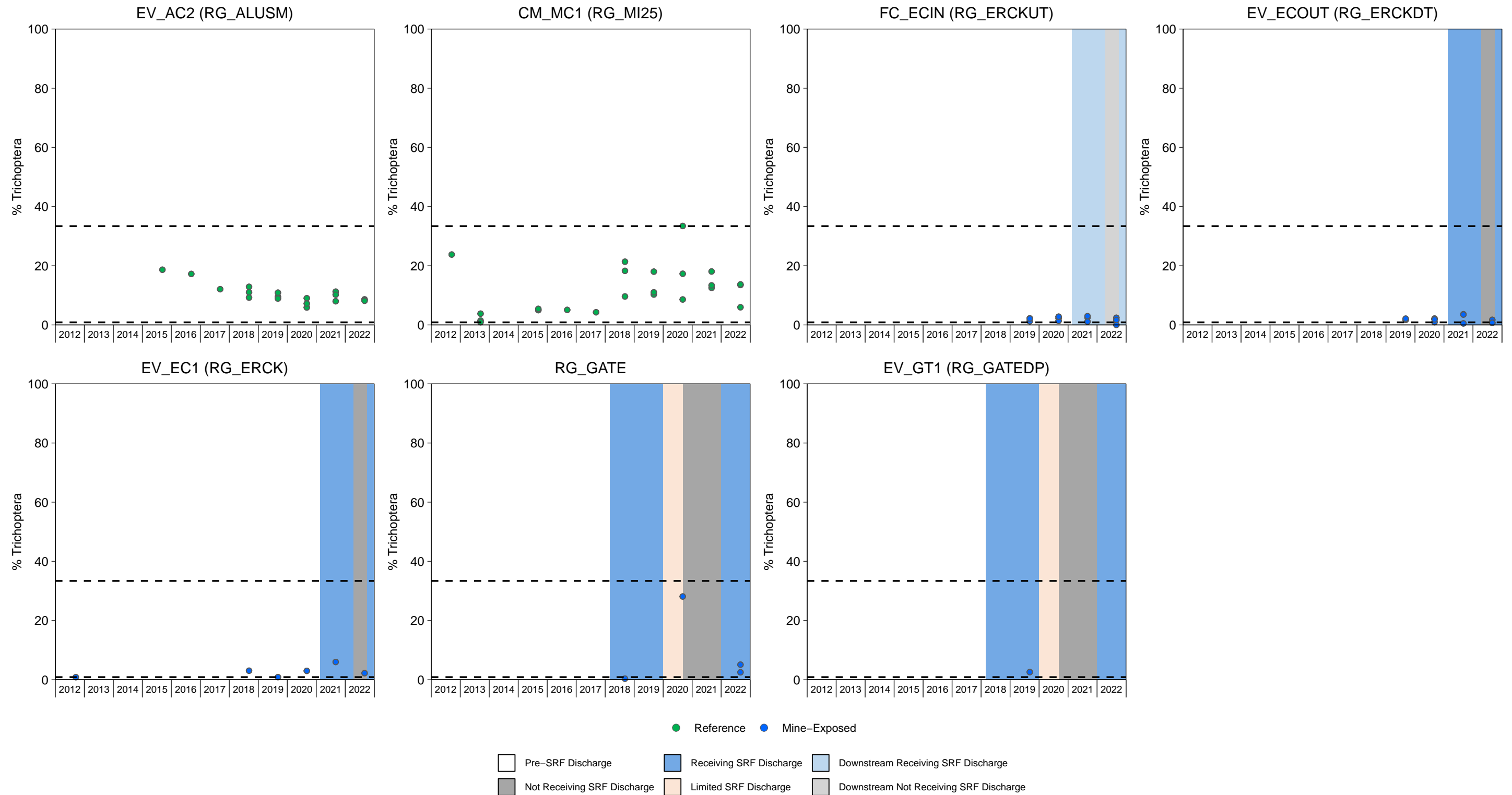


Figure F.10: Benthic Invertebrate Community Endpoints from EVO LAEMP Sampling Areas, September 2012 to 2022

Notes: Site specific normal ranges using regression models shown with grey shading and black rectangle (when available). Normal ranges using percentiles of reference areas from 2012 to 2019 shown as dashed horizontal lines. Values that were close to or equal to 0 were plotted as 1 on the y-axis (on a log₁₀-scale) for abundance

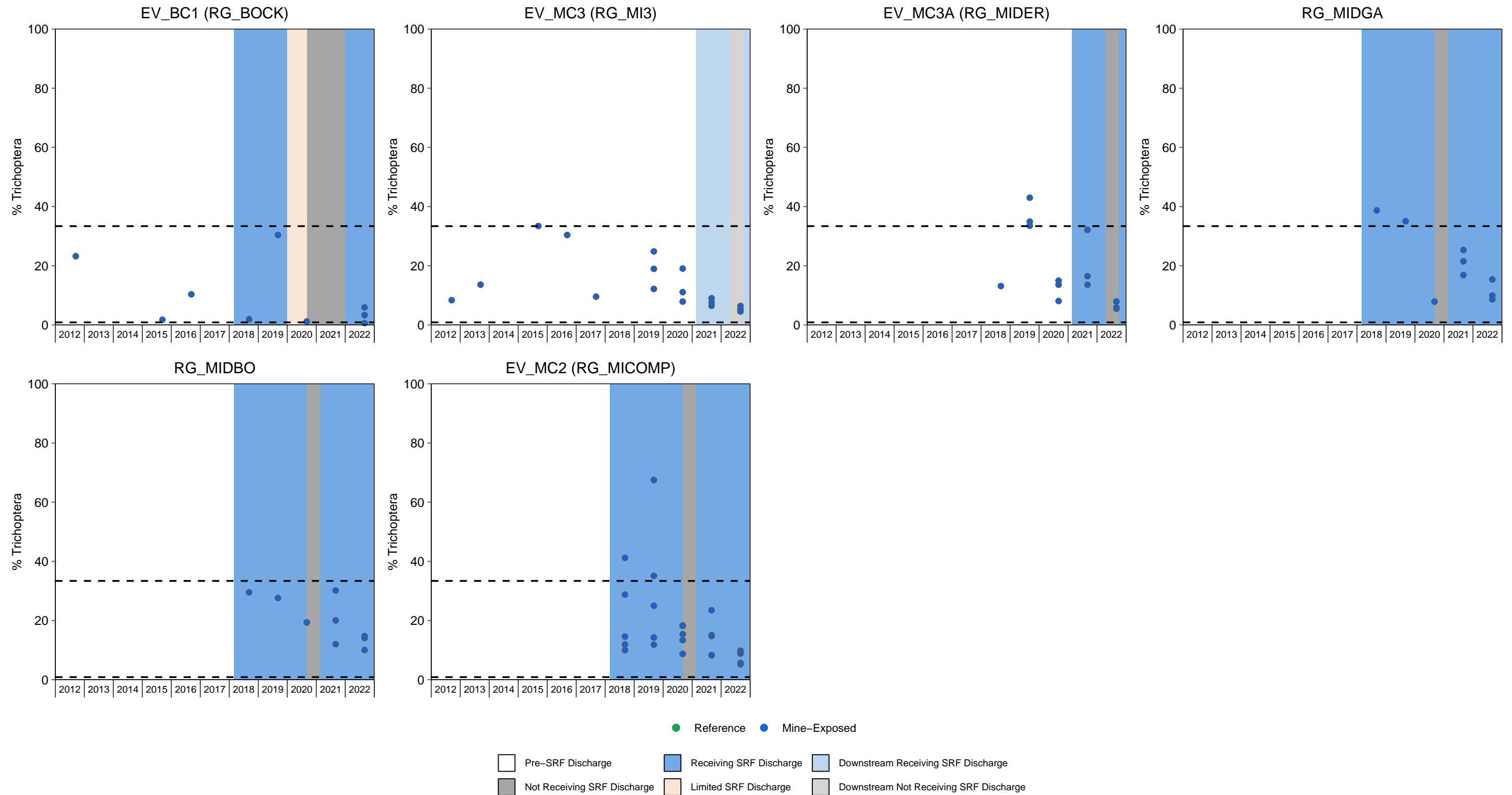


Figure F.10: Benthic Invertebrate Community Endpoints from EVO LAEMP Sampling Areas, September 2012 to 2022

Notes: Site specific normal ranges using regression models shown with grey shading and black rectangle (when available). Normal ranges using percentiles of reference areas from 2012 to 2019 shown as dashed horizontal lines. Values that were close to or equal to 0 were plotted as 1 on the y-axis (on a log₁₀-scale) for abundance

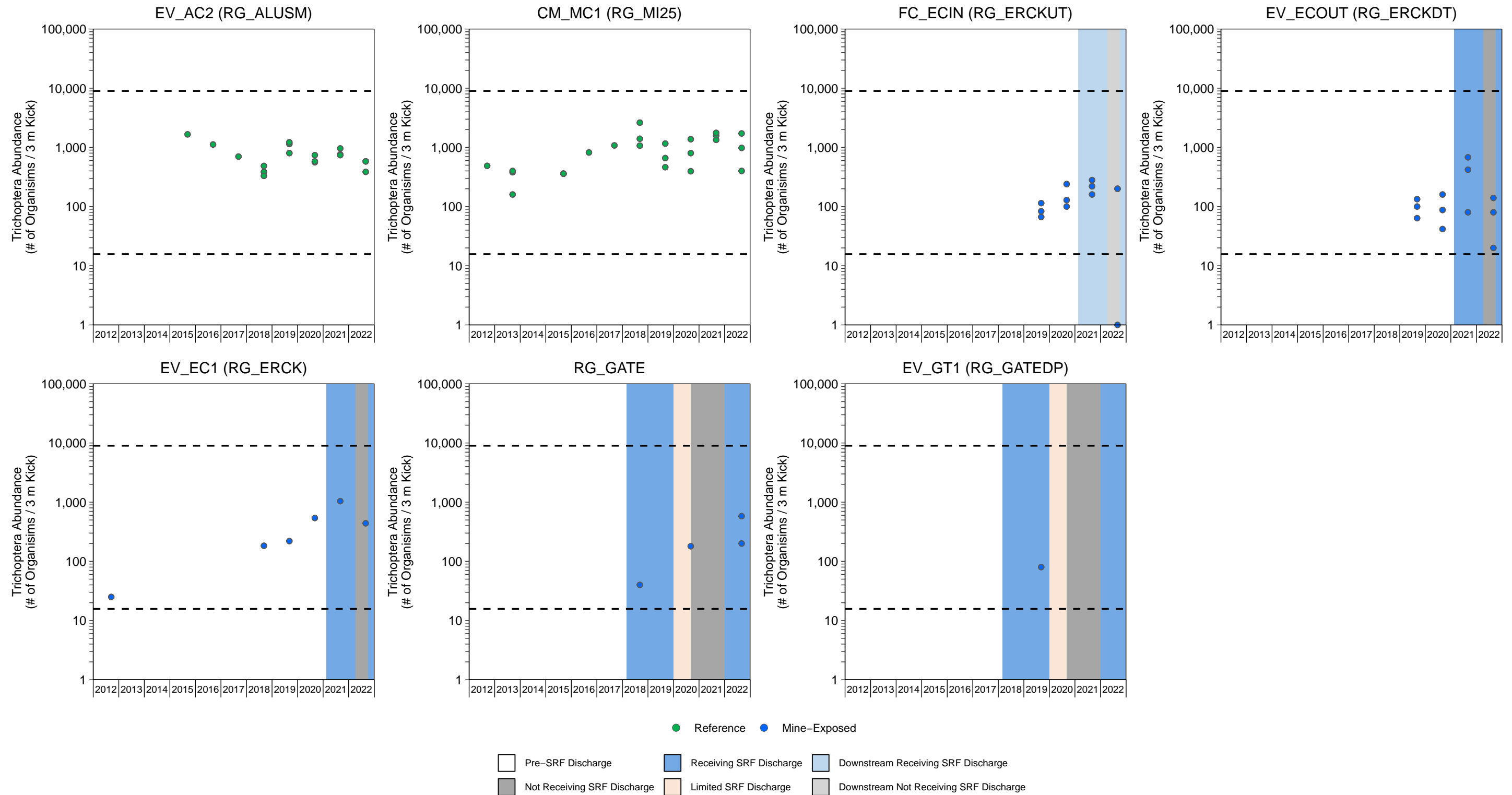


Figure F.11: Benthic Invertebrate Community Endpoints from EVO LAEMP Sampling Areas, September 2012 to 2022

Notes: Site specific normal ranges using regression models shown with grey shading and black rectangle (when available). Normal ranges using percentiles of reference areas from 2012 to 2019 shown as dashed horizontal lines. Values that were close to or equal to 0 were plotted as 1 on the y-axis (on a log₁₀-scale) for abundance

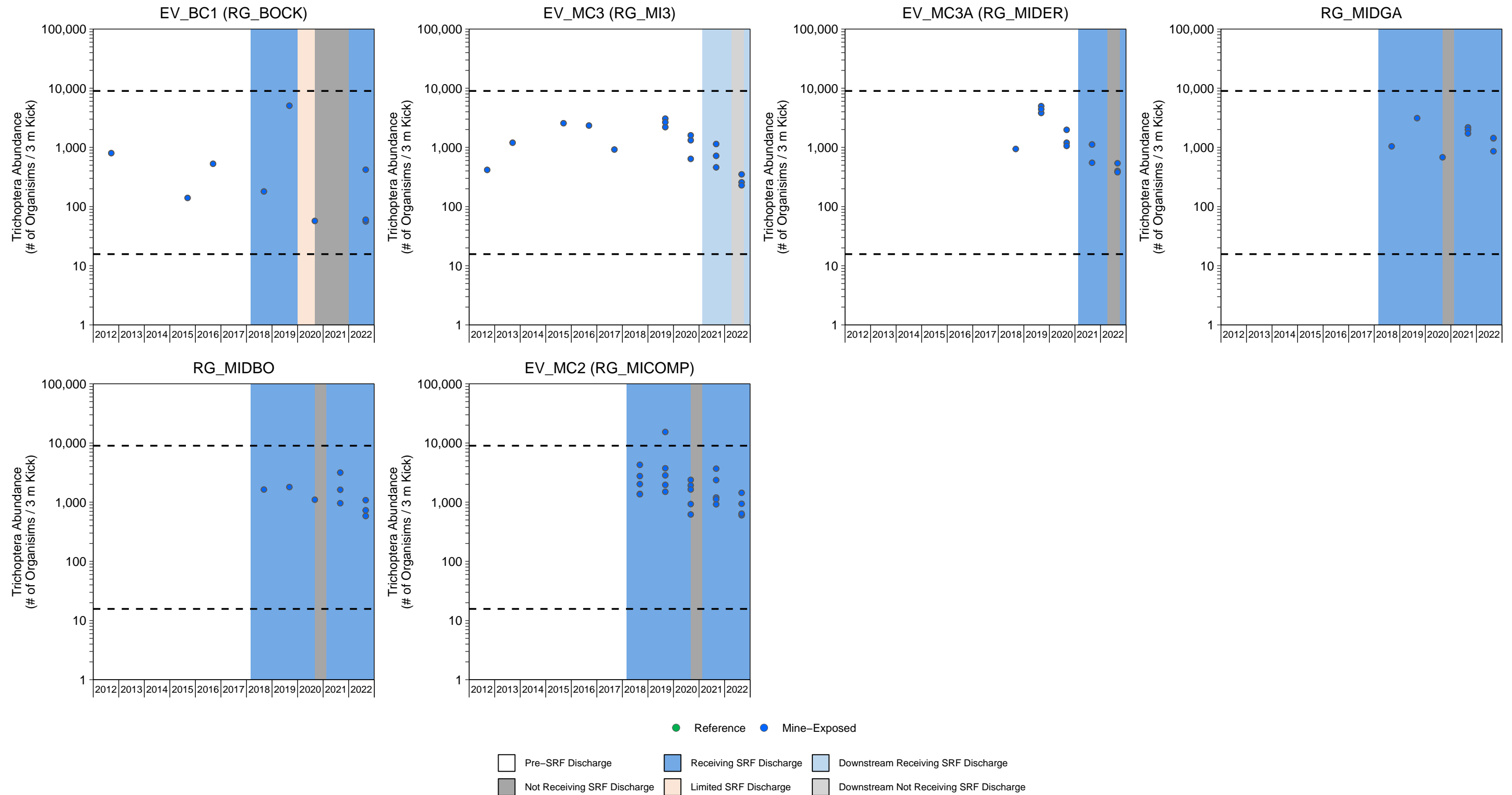


Figure F.11: Benthic Invertebrate Community Endpoints from EVO LAEMP Sampling Areas, September 2012 to 2022

Notes: Site specific normal ranges using regression models shown with grey shading and black rectangle (when available). Normal ranges using percentiles of reference areas from 2012 to 2019 shown as dashed horizontal lines. Values that were close to or equal to 0 were plotted as 1 on the y-axis (on a log₁₀-scale) for abundance

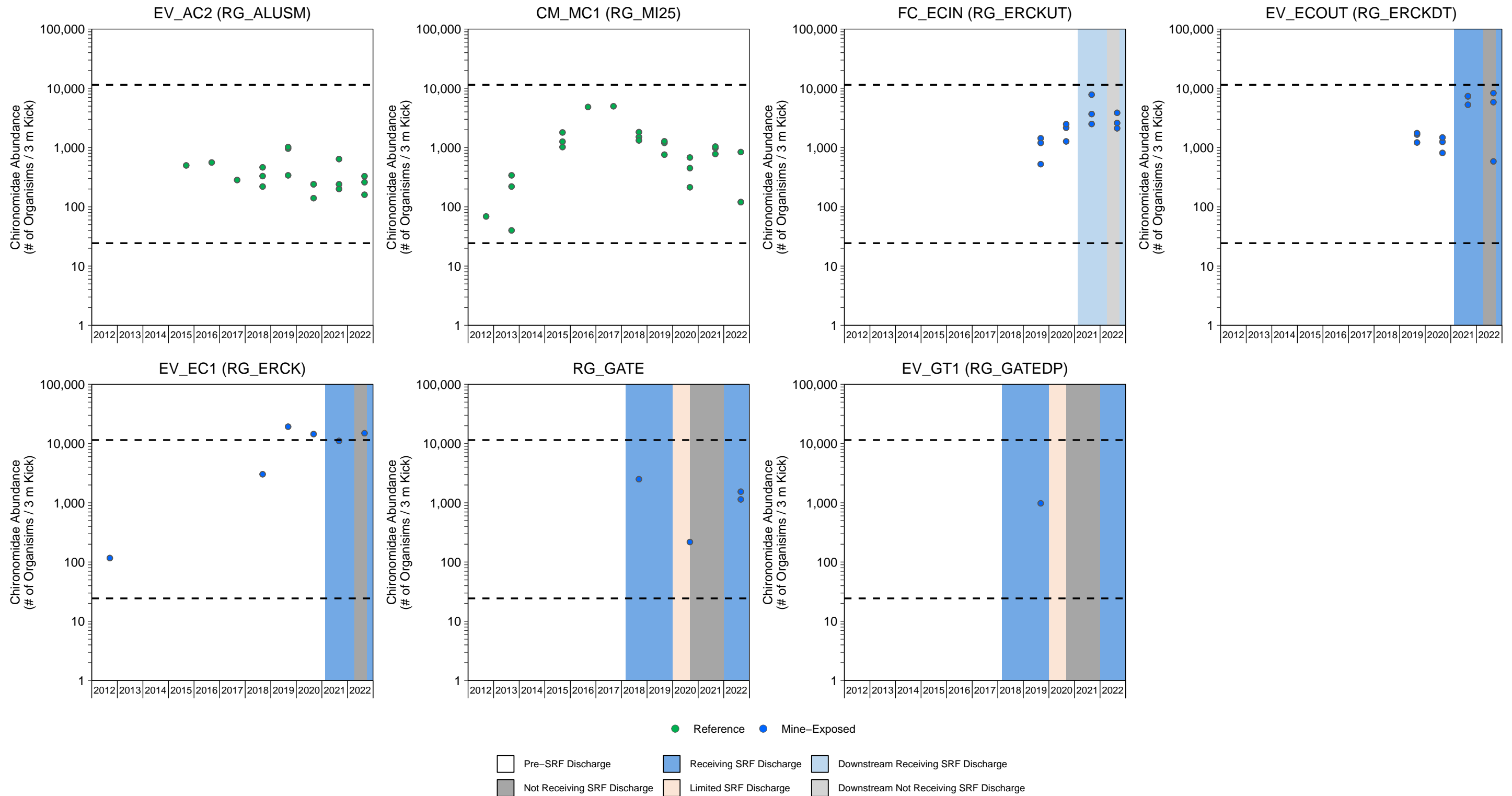


Figure F.12: Benthic Invertebrate Community Endpoints from EVO LAEMP Sampling Areas, September 2012 to 2022

Notes: Site specific normal ranges using regression models shown with grey shading and black rectangle (when available). Normal ranges using percentiles of reference areas from 2012 to 2019 shown as dashed horizontal lines. Values that were close to or equal to 0 were plotted as 1 on the y-axis (on a log₁₀-scale) for abundance

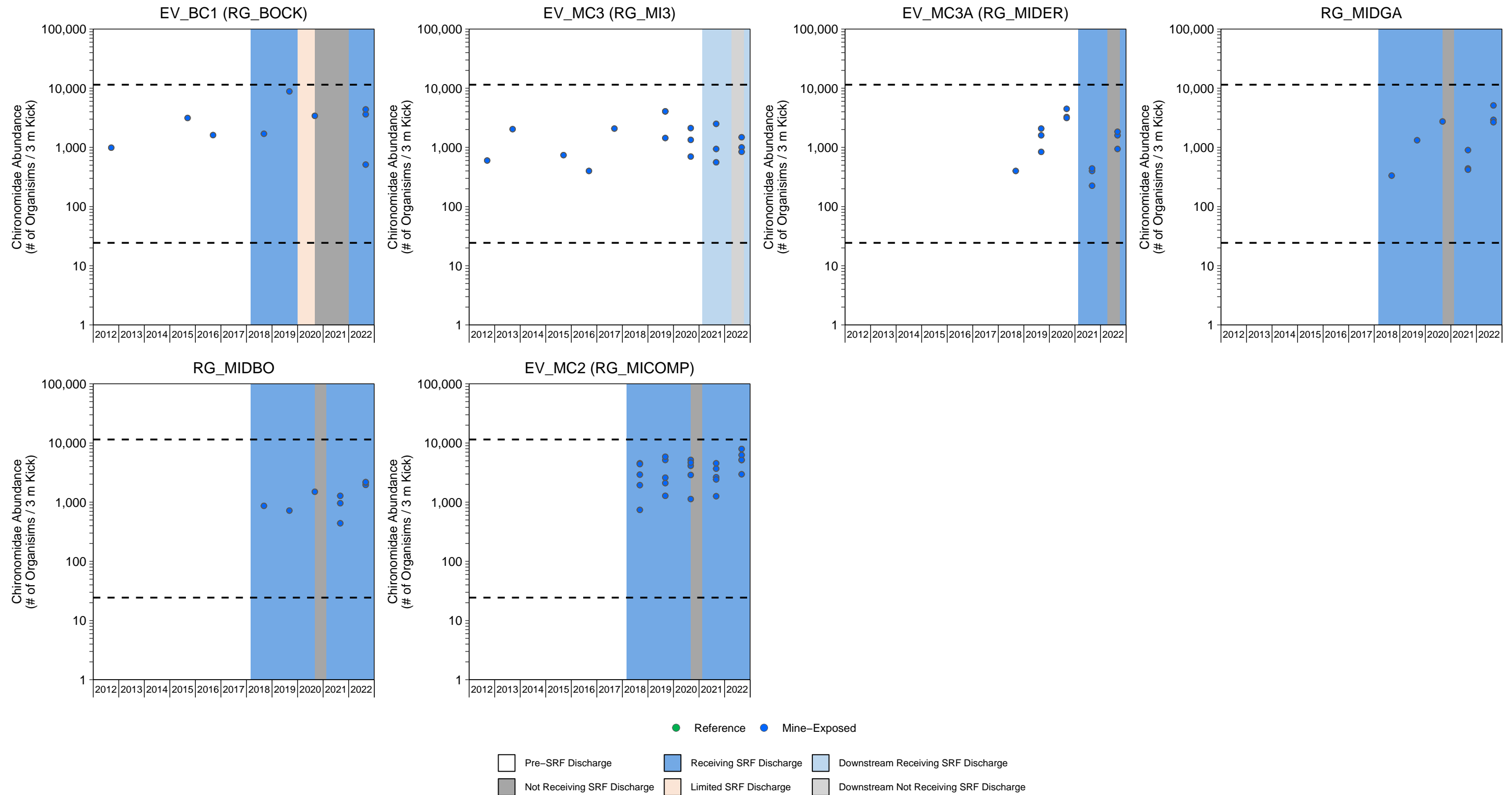


Figure F.12: Benthic Invertebrate Community Endpoints from EVO LAEMP Sampling Areas, September 2012 to 2022

Notes: Site specific normal ranges using regression models shown with grey shading and black rectangle (when available). Normal ranges using percentiles of reference areas from 2012 to 2019 shown as dashed horizontal lines. Values that were close to or equal to 0 were plotted as 1 on the y-axis (on a log₁₀-scale) for abundance

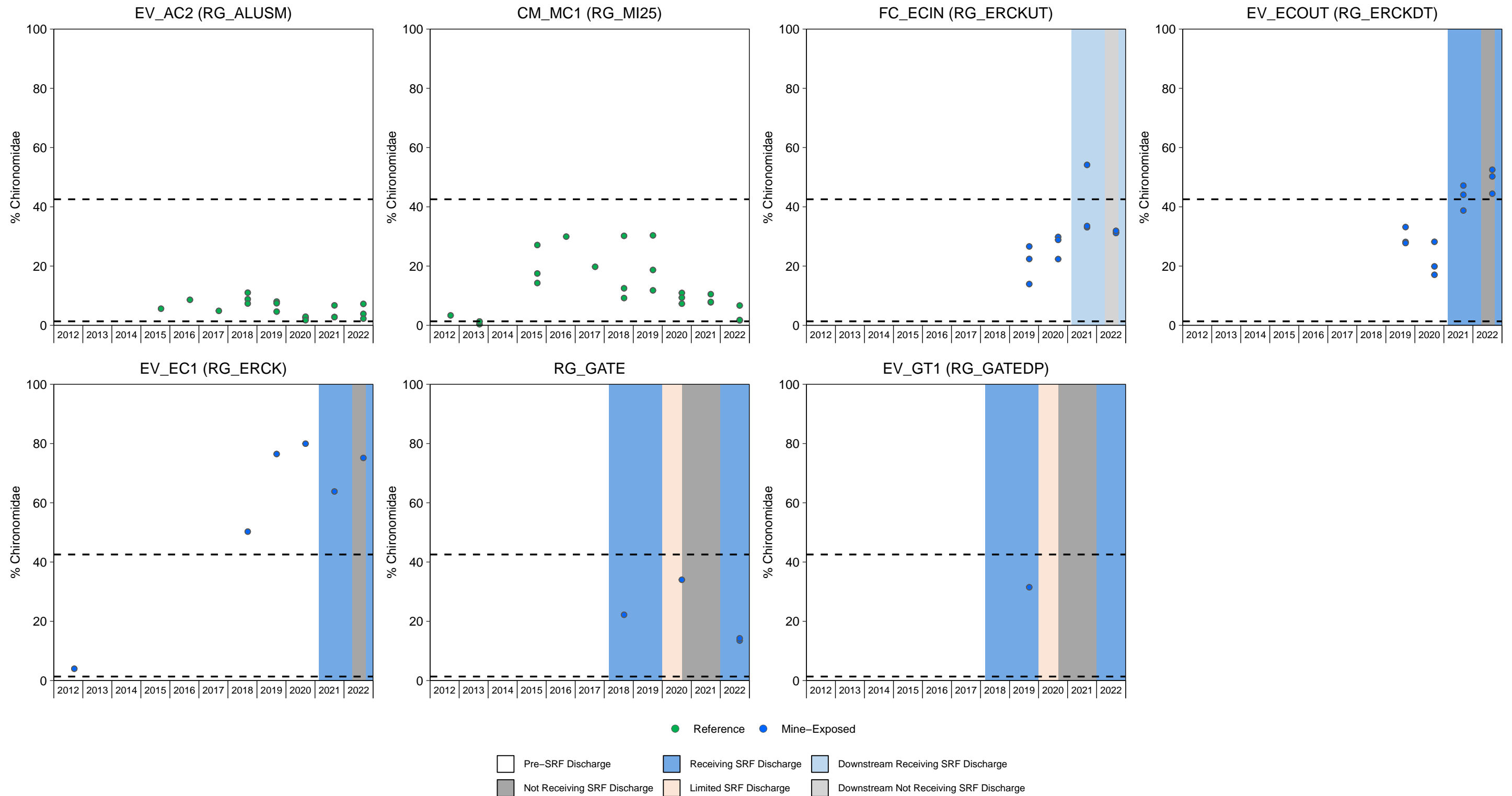


Figure F.13: Benthic Invertebrate Community Endpoints from EVO LAEMP Sampling Areas, September 2012 to 2022

Notes: Site specific normal ranges using regression models shown with grey shading and black rectangle (when available). Normal ranges using percentiles of reference areas from 2012 to 2019 shown as dashed horizontal lines. Values that were close to or equal to 0 were plotted as 1 on the y-axis (on a log₁₀-scale) for abundance

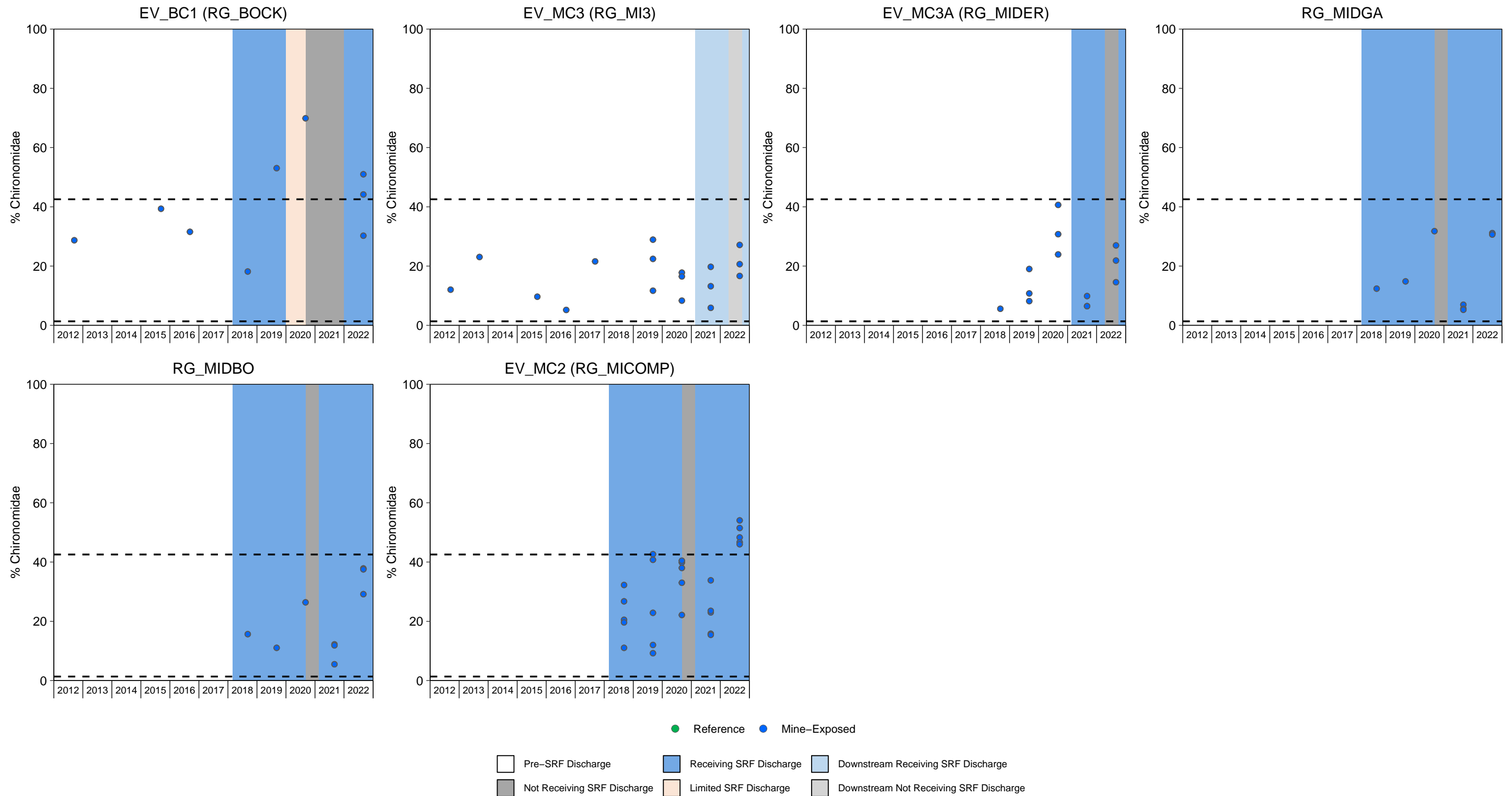


Figure F.13: Benthic Invertebrate Community Endpoints from EVO LAEMP Sampling Areas, September 2012 to 2022

Notes: Site specific normal ranges using regression models shown with grey shading and black rectangle (when available). Normal ranges using percentiles of reference areas from 2012 to 2019 shown as dashed horizontal lines. Values that were close to or equal to 0 were plotted as 1 on the y-axis (on a log₁₀-scale) for abundance

Table F.1: Selenium Tissue Concentration Summary Table, EVO LAEMP, 2019 to 2022

Biological Station Code	Description	Teck Water Station Code	Replicate	2022								
				March	April (21-29)	May (12-13)	May 30-June 2	June (27-29)	July (25-27)	September (14-20)	October 31-November 3	November 28-December 2
RG_ALUSM	Alexander Creek	EV_AC2	1	-	7.3	-	6.0	5.0	5.4	4.1	3.9	-
			2	-	6.9	-	5.7	5.6	5.4	6.0	4.3	-
			3	-	4.0	-	5.3	6.0	6.2	6.2	3.8	-
RG_MI25	Michel Creek (upstream of Coal Mountain Operations)	CM_MC1	1	-	-	-	5.7	9.2	4.7	4.2	-	-
			2	-	-	-	4.8	6.8	6.0	4.8	-	-
			3	-	-	-	5.2	7.6	6.3	3.6	-	-
RG_ERCKUT	Erickson Creek (upstream of outfall)	FC_ECIN	1	5.2	4.8	6.7	6.4	6.3	13.0	5.4	5.7	8.8
			2	6.1	4.9	11.0	6.0	6.1	5.0	6.4	4.5	6.4
			3	5.1	5.0	6.8	6.0	5.9	6.1	5.9	5.6	8.0
			4	6.0	5.5	9.0	5.8	3.7	6.1	4.9	6.4	7.4
			5	5.3	5.9	6.5	7.0	6.4	5.4	4.5	4.0	5.2
RG_ERCKDT	Erickson Creek d/s of SRF Outfall	EV_ECOUT	1	23.0	33.0	15.0	14.0	21.0	25.0	13.0	7.1	9.3
			2	20.0	22.0	31.0	17.0	23.0	11.0	8.1	8.7	12.0
			3	27.0	33.0	20.0	18.0	16.0	22.0	6.9	6.7	18.0
			4	38.0	42.0	13.0	9.3	23.0	11.0	14.0	4.0	17.0
			5	21.0	30.0	10.0	6.6	14.0	9.0	11.0	7.1	8.8
			6	17.0	24.0	-	-	9.9	8.4	6.9	7.2	8.7
RG_ERCKMD (EV_EC_FLOW2)	Midway between RG_ERCKDT and RG_ERCK (also location of temperature logger)	-	1	7.9	6.6	9.1	8.6	8.2	8.2	5.9	5.8	13.0
			2	10.0	10.0	6.4	8.0	14.0	7.5	6.5	8.5	9.7
			3	6.7	6.2	7.0	9.7	6.6	11.0	6.8	6.3	12.0
			4	13.0	13.0	7.0	-	9.1	7.3	5.4	5.6	15.0
RG_ERCKUC	Erickson Creek (~100 m upstream of RG_ERCK)	-	1	-	6.2	4.4	3.6	4.3	5.9	5.7	7.1	5.6
			2	-	3.4	5.1	10.0	3.8	25.0	5.2	5.9	6.2
			3	-	4.6	5.1	4.5	6.6	6.3	4.9	8.9	5.6
RG_ERCK	Erickson Creek at Mouth (discharge to Michel Creek)	EV_EC1	1	4.9	3.7	-	6.5	8.2	7.5	7.6	5.6	7.5
			2	5.3	3.7	-	6.2	3.9	4.8	6.8	5.0	8.0
			3	6.0	3.4	-	5.5	4.3	23.0	7.0	5.4	6.2
RG_GATE	Gate Creek (upstream of settling pond)	-	1	-	24.0	-	21.0	40.0	21.0	22.0	11.0	13.0
			2	-	24.0	-	26.0	20.0	25.0	15.0	20.0	27.0
			3	-	30.0	-	21.0	49.0	26.0	19.0	19.0	13.0
RG_GATEDP	Gate Creek Sedimentation Pond Decant	EV_GT1	1	-	26.0	-	13.0	13.0	27.0	27.0	62.0	63.0
			2	-	38.0	-	8.1	-	-	37.0	-	-
			3	-	11.0	-	131.0	-	-	53.0	-	-
RG_BOCKRD (EV_BR_LOT2)	Bodie Creek (upstream of settling pond)	-	1	-	7.2	-	5.0	16.0	13.0	3.2	4.4	6.6
			2	-	11.0	-	2.7	8.7	6.3	5.1	7.8	18.0
			3	-	13.0	-	6.7	9.6	14.0	3.7	40.0	8.5
RG_BOCK	Bodie Creek Sedimentation Pond Decant	EV_BC1	1	-	18.0	-	53.0	155.0	133.0	59.0	67.0	30.0
			2	-	22.0	-	83.0	77.0	39.0	27.0	230.0	-
			3	-	17.0	-	73.0	82.0	61.0	50.0	-	-
RG_MI3	Michel Creek u/s of Erickson Creek	EV_MC3	1	-	5.9	-	5.5	8.9	4.6	14.0	5.6	6.9
			2	-	5.7	-	6.6	4.6	4.3	8.8	8.6	5.9
			3	-	5.9	-	4.6	7.2	4.2	8.9	6.4	4.3
RG_MIDER	Michel Creek downstream of Erickson Creek	--	1	3.6	3.6	-	5.7	5.5	5.3	9.9	9.9	7.9
			2	5.4	5.4	-	5.8	4.9	3.7	9.5	5.8	6.2
			3	4.4	4.4	-	3.9	5.9	5.3	8.7	7.1	4.3
RG_MIDGA	Michel Creek downstream of Gate Creek	--	1	-	7.1	-	5.6	6.9	5.0	12.0	8.5	11.0
			2	-	6.8	-	7.0	6.7	4.0	7.5	4.5	9.5
			3	-	6.1	-	8.3	6.9	7.3	5.4	7.4	13.0
RG_MIDBO	Michel Creek downstream of Bodie Creek	--	1	-	5.7	-	7.0	8.1	6.8	8.1	9.3	-
			2	-	7.1	-	6.8	6.0	5.9	10.0	8.4	-
			3	-	4.1	-	6.4	6.8	8.7	11.0	8.0	-
RG_MICOMP	Michel Creek d/s of Hwy #3 Bridge (Compliance Point)	EV_MC2	1	-	9.4	-	4.7	8.5	4.3	8.6	7.3	7.1
			2	-	6.4	-	6.1	6.4	4.2	8.7	11.0	8.7
			3	-	6.3	-	5.4	8.6	6.2	7.7	7.0	5.9
			4	-	7.6	-	-	7.5	3.7	10.0	7.1	8.7
			5	-	7.7	-	-	7.2	5.2	11.0	7.0	9.9

Tissue concentrations in benthic Invertebrates is equal to or exceeds the level 1 benchmark for growth, reproduction, and survival of benthic invertebrates (13 mg/kg dw).
 Tissue concentrations in benthic Invertebrates is equal to or exceeds the level 2 benchmark for growth, reproduction, and survival of benthic invertebrates (20 mg/kg dw).
 Tissue concentrations in benthic Invertebrates is equal to or exceeds the level 3 benchmark for growth, reproduction, and survival of benthic invertebrates (27 mg/kg dw).
 Sample contained annelids, separate annelid only sample available and composite sample without annelids.

Notes: "-" indicates no samples collected; SRF = Saturated Rock Fill; d/s = downstream; Hwy = highway; m = metres

Table F.2: Temporal Changes in Benthic Invertebrate Selenium Tissue Concentration for Reference and Mine-exposed Areas in the EVO LAEMP, September, 2012 to 2022

Status	Area	Year P-value ^a	Q1. Is there a positive or negative change since the base year (b) of monitoring?									Q2. Is the 2022 annual mean greater or less than all annual historical means (2012 to 2021) and the last year (2021)? ^c											
			Magnitude of Difference (MOD) ^b and Significance (bolded) from Base Year (b) ^c									2012	2015	2016	2017	2018	2019	2020	2021	2022	2012 to 2021	2021	
			2012	2015	2016	2017	2018	2019	2020	2021	2022												
Reference	RG_ALUSM	0.108	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	No
	RG_MI25	0.209	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	No
Mine-Exposed	RG_ERCKUT	0.997	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	No
	RG_ERCKDT	0.002	-	-	-	-	-	b	8.69	121	29.6	-	-	-	-	-	B	B	A	B	No	↓	
	RG_ERCK	0.201	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	No
	RG_GATE	0.208	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	No
	RG_GATEDP	0.529	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	No
	RG_BOCK	<0.001	b	535	350	-	42.7	596	498	504	284	C	A	AB	-	BC	A	A	A	A	A	No	No
	RG_MI3	<0.001	b	-48.6	-	21.4	-	3.67	77.6	-5.05	128	ABC	C	-	ABC	-	BC	AB	BC	A	No	↑	
	RG_MIDER	0.225	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	No
	RG_MIDGA	<0.001	-	-	-	-	b	-18.0	-85.0	-31.1	-21.4	-	-	-	-	A	A	B	A	A	A	No	No
RG_MIDBO	0.373	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	No	
RG_MICOMP	<0.001	-	-	-	-	b	-36.6	14.2	-54.8	5.16	-	-	-	-	AB	BC	A	C	AB	No	↑		

- P-value < 0.05 (annual variation).
- > 20% Decrease in concentration.
- > 33% Decrease in concentration.
- > 43% Decrease in concentration.
- > 50% Decrease in concentration.
- > 25% Increase in concentration.
- > 50% Increase in concentration.
- > 75% Increase in concentration.
- > 100% Increase in concentration.

- *Bold Significant increase or decrease from base year (b).
- Significantly less than all historical years (or 2021).
- Significantly greater than all historical years (or 2021).

Notes: "ns" = not significant; "-" insufficient data for comparison.

^a Minimum p-value from post-hoc contrasts with corresponding station

^b Magnitude of Difference (MOD) = $[\text{Mean}_{\text{given year}} - \text{Mean}_{\text{year b}}] / \text{Mean}_{\text{year b}} \times 100\%$.

^c Significance among year determined using all pairwise comparisons using Tukey's honestly significant differences method. Years that share a letter are not significantly different. Letters assigned such that the mean with highest magnitude is assigned "A".

Table F.3: Statistical Analyses for Benthic Invertebrate Tissue Selenium Concentrations, EVO LAEMP, September 2018 to 2022

Group		Year	SRF Status	Spatial Difference ^a		Temporal Relative Difference ^b
Reference/Upstream Areas	Exposed/Downstream Areas			MOD	P-value	Relative Letter
RG_ERCKUT	RG_ERCKDT	2019	Pre-SRF Discharge	47.2	0.024	B
		2020	Pre-SRF Discharge	73.6	0.002	B
		2021	Receiving SRF Discharge	210	<0.001	A
		2022	Not Receiving SRF Discharge	78.1	<0.001	B
RG_MI3	RG_MIDER	2019	Pre-SRF Discharge	ns	0.368	A
		2020	Pre-SRF Discharge	ns	0.916	A
		2021	Receiving SRF Discharge	ns	0.086	A
		2022	Not Receiving SRF Discharge	ns	0.569	A
	RG_MICOMP	2019	Pre-SRF Discharge	ns	0.275	A
		2020	Pre-SRF Discharge	ns	0.154	A
		2021	Downstream Receiving SRF Discharge	ns	0.524	A
		2022	Downstream Not Receiving SRF Discharge	ns	0.398	A
	RG_MIDBO	2019	Pre-SRF Discharge	ns	0.142	A
		2020	Pre-SRF Discharge	ns	0.391	A
		2021	Downstream Receiving SRF Discharge	ns	0.081	A
		2022	Downstream Not Receiving SRF Discharge	ns	0.696	A
RG_ALUSM	RG_MI3	2017	Pre-SRF Discharge	ns	0.444	AB
		2019	Pre-SRF Discharge	ns	0.278	B
		2020	Pre-SRF Discharge	ns	0.051	AB
		2021	Downstream Receiving SRF Discharge	ns	0.166	B
		2022	Downstream Not Receiving SRF Discharge	83.6	0.002	A
	RG_MICOMP	2018	Receiving SRF Discharge	ns	0.242	B
		2019	Receiving SRF Discharge	ns	0.809	B
		2020	Not Receiving SRF Discharge	75.2	<0.001	A
		2021	Receiving SRF Discharge	-28.4	0.009	B
		2022	Receiving SRF Discharge	62.5	<0.001	A
	RG_MIDBO	2018	Receiving SRF Discharge	ns	0.189	B
		2019	Receiving SRF Discharge	ns	0.294	AB
		2020	Not Receiving SRF Discharge	76.7	0.007	A
		2021	Receiving SRF Discharge	ns	0.505	AB
2022		Receiving SRF Discharge	71.3	<0.001	A	
RG_MI25	RG_MI3	2012	Pre-SRF Discharge	ns	0.987	ABC
		2015	Pre-SRF Discharge	-49.5	0.037	C
		2017	Pre-SRF Discharge	120	0.018	AB
		2019	Pre-SRF Discharge	ns	0.885	BC
		2020	Pre-SRF Discharge	115	<0.001	AB
		2021	Downstream Receiving SRF Discharge	61.3	0.014	AB
		2022	Downstream Not Receiving SRF Discharge	147	<0.001	A
	RG_MICOMP	2018	Receiving SRF Discharge	97.0	<0.001	ABC
		2019	Receiving SRF Discharge	ns	0.152	C
		2020	Not Receiving SRF Discharge	165	<0.001	A
		2021	Receiving SRF Discharge	47.2	0.004	BC
		2022	Receiving SRF Discharge	119	<0.001	AB
	RG_MIDBO	2018	Receiving SRF Discharge	77.0	0.013	A
		2019	Receiving SRF Discharge	ns	0.059	A
		2020	Not Receiving SRF Discharge	167	<0.001	A
		2021	Receiving SRF Discharge	124	<0.001	A
2022		Receiving SRF Discharge	131	<0.001	A	

Post-hoc p-value indicating a significant difference between areas.
 Upstream/mine-exposed area significantly higher than downstream/reference area for that year.
 Upstream/Mine-exposed area significantly lower than downstream/reference area for that year.

^a Planned contrasts comparing the difference between each area in each year from a two-way ANOVA with terms for Area and Year and their interaction. The Magnitude of Difference (MOD) was calculated as (mine-exposed-reference)/reference * 100%.

^b Post-hoc test comparing changes in the relative difference between areas among years. Years that do not share a letter differ in their relative difference between those two years and letters are arranged such that the greatest difference between the areas have the highest letter (i.e., A).

Notes: ns = not significant; SRF = saturated rock fill; MOD = magnitude of difference

Table F.4: Statistical Analyses for Benthic Invertebrate Tissue Selenium Concentrations, EVO LAEMP, 2022

Group		Month	SRF Status	Spatial Difference ^a		Temporal Relative Difference ^b
Reference/Upstream Areas	Exposed/Downstream Areas			MOD	P-value	Relative Letter
RG_ERCKUT	RG_ERCKDT	3	Receiving SRF Discharge	325	<0.001	A
		4	Not Receiving SRF Discharge	476	<0.001	A
		5		89.1	<0.001	BC
		6		206	<0.001	AB
		7		96.7	<0.001	BC
		9	78.1	<0.001	BC	
		10	Receiving SRF Discharge	ns	0.142	C
		11		66.6	0.003	BC
12	94.2	<0.001		BC		
RG_MI3	RG_MIDER	4	Not Receiving SRF Discharge	ns	0.435	A
		5		ns	0.617	A
		6		ns	0.237	A
		7		ns	0.665	A
		9		ns	0.571	A
		10	Receiving SRF Discharge	ns	0.589	A
	11	ns		0.720	A	
	12	ns		0.102	A	
	RG_MIDBO	Downstream Not Receiving SRF Discharge	4	ns	0.717	A
			5	ns	0.228	A
			6	ns	0.817	A
		7	61.4	0.006	A	
		9	ns	0.674	A	
		10	Downstream Receiving SRF Discharge	ns	0.161	A
	11	-		-	-	
	12	45.2		0.029	A	
	RG_MICOMP	Downstream Not Receiving SRF Discharge	4	ns	0.091	A
			5	ns	0.871	A
			6	ns	0.343	A
		7	ns	0.656	A	
		9	ns	0.381	A	
		10	Downstream Receiving SRF Discharge	ns	0.325	A
	11	41.8		0.015	A	
	12	58.3		0.005	A	
RG_ALUSM	RG_MI3	4	Downstream Not Receiving SRF Discharge	ns	0.976	AB
		5		ns	0.874	AB
		6		ns	0.281	AB
		7		ns	0.140	B
		9	83.6	0.001	A	
	10	Downstream Receiving SRF Discharge	69.1	0.005	AB	
	RG_MIDBO	Receiving SRF Discharge	4	ns	0.662	B
			5	ns	0.247	AB
			6	ns	0.135	AB
			7	ns	0.146	AB
			9	71.3	0.001	AB
	10	114	<0.001	A		
	RG_MICOMP	Receiving SRF Discharge	4	ns	0.074	ABC
			5	ns	0.713	BC
			6	37.6	0.016	ABC
			7	ns	0.128	C
			9	62.5	<0.001	AB
	10	94.0	<0.001	A		
RG_MI25	RG_MI3	5	Downstream Not Receiving SRF Discharge	ns	0.744	B
		6		ns	0.335	B
		7		ns	0.131	B
		9		147	<0.001	A
	RG_MIDBO	Receiving SRF Discharge	5	ns	0.063	AB
			6	ns	0.360	B
			7	ns	0.097	B
			9	131	<0.001	A
	RG_MICOMP	Receiving SRF Discharge	5	ns	0.831	B
			6	ns	0.817	B
			7	ns	0.111	B
			9	119	<0.001	A

Post-hoc p-value indicating a significant difference between areas.
 Upstream/mine-exposed area significantly higher than downstream/reference area for that month.
 Upstream/Mine-exposed area significantly lower than downstream/reference area for that month.

^a Planned contrasts comparing the difference between each area in each month from a two-way ANOVA with terms for Area and Month and their interaction. The Magnitude of Difference (MOD) was calculated as (mine-exposed-reference)/reference * 100%.

^b Post-hoc test comparing changes in the relative difference between areas among years. Months that do not share a letter differ in their relative difference between those two months and letters are arranged such that the greatest difference between the areas have the highest letter (i.e., A).

Notes: "-" indicates insufficient data for comparison; ns = not significant; SRF = saturated rock fill; MOD = magnitude of difference

Table F.5: Selenium Species Bioaccumulation Tool^a Predicted Benthic Invertebrate Tissue Selenium Concentrations Compared with Field Measurements, EVO LAEMP, 2021

Area	B-tool Prediction		Field Measurements	
	Date	Predicted Benthic Invertebrate Tissue Selenium Concentration	Date	Mean Benthic Invertebrate Tissue Selenium Concentration
		µg/g dw		µg/g dw
RG_ALUSM	12-Sep-21	5.87	12-Sep-21	5.50
RG_MI25	13-Sep-21	4.69	13-Sep-21	2.70
RG_ERCKUT	15-Sep-21	5.20	15-Sep-21	5.34
RG_ERCKUT	14-Dec-21	5.44	15-Dec-21	4.03
RG_ERCKDT	15-Sep-21	5.61	14-Sep-21	16.6
RG_ERCKDT	15-Dec-21	5.15	15-Dec-21	18.2
RG_ERCKMD	15-Dec-21	5.82	15-Dec-21	11.0
RG_ERCK	10-Sep-21	9.99	10-Sep-21	3.30
RG_ERCK	14-Dec-21	6.80	14-Dec-21	5.23
RG_GATE	16-Sep-21	10.7	16-Sep-21	26.3
RG_GATEDP	27-Aug-21	11.8	27-Aug-21	39.3
RG_GATEDP	16-Sep-21	14.1	16-Sep-21	15.6
RG_BOCK	16-Sep-21	25.3	16-Sep-21	70.0
RG_BOCK	27-Aug-21	10.2	27-Aug-21	48.7
RG_MI3	10-Sep-21	5.17	10-Sep-21	4.47
RG_MIDER	9-Sep-21	5.17	9-Sep-21	5.90
RG_MIDGA	11-Sep-21	4.46	11-Sep-21	7.13
RG_MIDBO	11-Sep-21	6.84	11-Sep-21	6.03
RG_MICOMP	13-Sep-21	6.93	13-Sep-21	4.02
F2_BPO	20-Sep-21	8.10	14-Sep-21	16.6
F2_BPO	16-Dec-21	6.37	15-Dec-21	18.2

Notes: B-tool = bioaccumulation tool, µg/g dw = micrograms per gram dry weight.

^a Values derived from Bruyn and Luoma (2021) using selenium speciation data and sulphate concentrations for each area on each date to predict benthic invertebrate tissue selenium concentrations.

Table F.6: Statistical Analyses for Benthic Community Endpoints, EVO LAEMP, September 2012 to 2022

Group			Endpoints	Spatial Difference ^a					Temporal Relative Difference ^b				
Creeks	Reference / Upstream Areas	Exposed / Downstream Areas		2018	2019	2020	2021	2022	2018	2019	2020	2021	2022
	RG_MI25	RG_MICOMP	SRF Status	Receiving SRF Discharge	Receiving SRF Discharge	Not Receiving SRF Discharge	Receiving SRF Discharge	Receiving SRF Discharge	Receiving SRF Discharge	Receiving SRF Discharge	Not Receiving SRF Discharge	Receiving SRF Discharge	Receiving SRF Discharge
			Abundance (# of individuals)	ns	3.65	1.06	ns	ns	A	A	A	A	A
			Richness (# of taxa)	ns	2.73	ns	ns	1.15	AB	A	B	AB	A
			% EPT	-1.05	-1.01	-5.37	-9.22	-6.32	A	A	A	A	B
			% Ephemeroptera	-0.994	-3.41	-0.703	ns	-4.16	AB	AB	A	A	B
			% Plecoptera	ns	-3.34	-1.27	-10.6	-1.72	A	A	A	A	A
			% Trichoptera	ns	2.88	ns	ns	ns	A	A	A	A	A
			% Chironomidae	ns	ns	8.29	6.18	6.07	BC	C	B	BC	A
			EPT Abundance(# of individuals)	ns	1.56	ns	ns	-1.90	AB	A	AB	AB	B
			Ephemeroptera Abundance(# of individuals)	ns	ns	ns	ns	-2.37	A	A	A	A	A
			Plecoptera Abundance(# of individuals)	ns	ns	ns	ns	ns	A	A	A	A	A
			Trichoptera Abundance(# of individuals)	ns	3.41	ns	ns	ns	AB	A	AB	AB	B
			Chironomidae Abundance(# of individuals)	ns	3.61	3.53	6.96	2.79	C	BC	AB	BC	A
			Michel Creek	RG_MI3	RG_MIDBO	SRF Status	-	Pre-SRF Discharge	Pre-SRF Discharge	Downstream Receiving SRF Discharge	Downstream Not Receiving SRF Discharge	-	Pre-SRF Discharge
Abundance (# of individuals)	-	-4.13				-2.33	ns	ns	-	B	AB	A	A
Richness (# of taxa)	-	-2.90				-2.96	ns	ns	-	B	AB	AB	A
% EPT	-	ns				-4.46	ns	-5.22	-	A	B	A	B
% Ephemeroptera	-	ns				-13.0	-1.28	-11.4	-	A	B	A	B
% Plecoptera	-	ns				ns	ns	ns	-	A	A	A	A
% Trichoptera	-	ns				ns	6.73	5.81	-	A	A	A	A
% Chironomidae	-	ns				ns	ns	2.23	-	A	A	A	A
EPT Abundance(# of individuals)	-	-7.61				-4.91	ns	ns	-	AB	B	A	AB
Ephemeroptera Abundance(# of individuals)	-	-4.97				-5.05	ns	-18.7	-	AB	B	A	A
Plecoptera Abundance(# of individuals)	-	ns				ns	ns	2.21	-	A	A	A	A
Trichoptera Abundance(# of individuals)	-	ns				ns	1.89	4.71	-	A	A	A	A
Chironomidae Abundance(# of individuals)	-	-2.31				ns	ns	ns	-	B	AB	AB	A
	RG_MI3	RG_MICOMP				SRF Status	-	Pre-SRF Discharge	Pre-SRF Discharge	Downstream Receiving SRF Discharge	Downstream Not Receiving SRF Discharge	-	Pre-SRF Discharge
			Abundance (# of individuals)	-	ns	ns	ns	11.9	-	B	AB	AB	A
			Richness (# of taxa)	-	-2.25	-1.89	ns	ns	-	B	B	A	A
			% EPT	-	ns	-3.65	ns	-7.44	-	A	A	A	A
			% Ephemeroptera	-	-4.69	-11.3	-2.39	-14.6	-	A	AB	A	B
			% Plecoptera	-	ns	ns	1.28	2.96	-	B	AB	AB	A
			% Trichoptera	-	ns	ns	ns	ns	-	A	A	A	A
			% Chironomidae	-	ns	2.71	1.10	4.25	-	A	A	A	A
			EPT Abundance(# of individuals)	-	ns	ns	ns	ns	-	A	A	A	A
			Ephemeroptera Abundance(# of individuals)	-	-4.18	-2.66	ns	ns	-	A	A	A	A
			Plecoptera Abundance(# of individuals)	-	ns	ns	1.12	4.87	-	B	B	AB	A
			Trichoptera Abundance(# of individuals)	-	ns	ns	1.76	4.86	-	A	A	A	A
			Chironomidae Abundance(# of individuals)	-	ns	1.66	1.17	5.45	-	B	AB	AB	A

Upstream/mine-exposed area significantly and ecologically higher than downstream/reference area for that year (<-2SD).

Upstream/Mine-exposed area significantly and ecologically lower than downstream/reference area for that year (>2SD).

^a Planned contrasts comparing the difference between each area in each year from a two-way ANOVA with terms for Area and Year and their interaction. The Magnitude of Difference (MOD) was calculated as (mine-exposed-reference)/estimated standard deviation of the errors from ANOVA model. Calculations conducted on the transformed scale.

^b Post-hoc test comparing changes in the relative difference between areas among years. Years that do not share a letter differ in their relative difference between those two years and letters are arranged such that the greatest difference between the areas have the highest letter (i.e., A).

Table F.7: Temporal Changes in Benthic Invertebrate Abundance for Reference and Mine-exposed Areas in the EVO LAEMP, September, 2012 to 2022

Status	Area	Year P-value ^a	Q1. Is there a positive or negative change since the base year (b) of monitoring?									Q2. Is the 2022 annual mean greater or less than all annual historical means (2012 to 2021) and the last year (2021)? ^c											
			Magnitude of Difference (MOD) ^b and Significance (bolded) from Base Year (b) ^c									2012	2015	2016	2017	2018	2019	2020	2021	2022	2012 to 2021	2021	
			2012	2015	2016	2017	2018	2019	2020	2021	2022	2012	2015	2016	2017	2018	2019	2020	2021	2022	2012 to 2021	2021	
Reference	RG_ALUSM	0.048	-	b	-0.775	-1.06	-2.23	0.438	-0.0973	-0.150	-0.970	-	AB	AB	AB	A	B	AB	AB	AB	No	No	
	RG_MI25	<0.001	b	3.03	5.09	6.19	3.95	2.47	1.91	4.08	3.50	A	ABC	BC	C	BC	AB	AB	BC	BC	No	No	
Mine-Exposed	RG_ERCKUT	0.328	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	No	
	RG_ERCKDT	0.046	-	-	-	-	-	b	0.117	2.68	0.471	-	-	-	-	A	A	B	AB	No	No		
	RG_ERCK	0.011	b	-	-	-	1.79	5.31	4.49	4.39	4.73	A	-	-	-	AB	B	B	B	No	No		
	RG_GATE	<0.001	-	-	-	-	b	-	-7.07	-	-0.404	-	-	-	-	B	-	A	-	B	No	-	
	RG_GATEDP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	RG_BOCK	0.171	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	-
	RG_MI3	0.061	b	1.06	1.07	1.63	-	2.66	1.55	1.59	0.0647	0.0647	AB	AB	AB	AB	-	B	AB	AB	A	No	No
	RG_MIDER	0.127	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	No
	RG_MIDGA	0.092	-	-	-	-	b	2.95	2.87	3.06	3.48	3.48	-	-	-	-	A	AB	AB	AB	B	No	No
	RG_MIDBO	0.980	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	No
RG_MICOMP	0.898	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	No	

- P-value < 0.1 (annual variation).
- > 2 SD Increase.
- > 3 SD Increase.
- > 4 SD Increase.
- > 5 SD Increase.
- > 2 SD Decrease.
- > 3 SD Decrease.
- > 3 SD Decrease.
- > 5 SD Decrease.
- *Bold Significant increase or decrease from base year (b).
- Significantly less than all historical years (or 2021).
- Significantly greater than all historical years (or 2021).

Notes: "nc" = no post-hoc comparison; "-" insufficient data for comparison.

^a Minimum p-value from post-hoc contrasts with corresponding station.

^b Magnitude of Difference (MOD) = [Mean_{given year} - Mean_{year b}] / Residual Standard Deviation.

^c Significance among year determined using all pairwise comparisons using Tukey's honestly significant differences method. Years that share a letter are not significantly different. Letters assigned such that the mean with highest magnitude is assigned "A".

Table F.8: Temporal Changes in Benthic Invertebrate EPT Abundance for Reference and Mine-exposed Areas in the EVO LAEMP, September, 2012 to 2022

Status	Area	Year P-value ^a	Q1. Is there a positive or negative change since the base year (b) of monitoring?									Q2. Is the 2022 annual mean greater or less than all annual historical means (2012 to 2021) and the last year (2021)? ^c											
			Magnitude of Difference (MOD) ^b and Significance (bolded) from Base Year (b) ^c									2012	2015	2016	2017	2018	2019	2020	2021	2022	2012 to 2021	2021	
			2012	2015	2016	2017	2018	2019	2020	2021	2022												
Reference	RG_ALUSM	0.098	-	b	-0.365	-0.458	-1.92	0.520	0.312	0.0952	-0.683	-	AB	AB	AB	A	B	AB	AB	AB	AB	No	No
	RG_MI25	0.001	b	2.47	4.14	5.49	3.36	1.84	1.68	3.82	3.41	A	ABC	ABCD	CD	ABCD	AB	AB	BCD	ABCD	No	No	
Mine-Exposed	RG_ERCKUT	0.888	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	No
	RG_ERCKDT	0.063	-	-	-	-	-	b	0.399	1.49	-1.09	-	-	-	-	-	AB	AB	B	A	No	No	
	RG_ERCK	0.804	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	No
	RG_GATE	0.002	-	-	-	-	b	-	1.69	-	5.31	-	-	-	-	A	-	AB	-	B	No	-	
	RG_GATEDP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	RG_BOCK	<0.001	b	-1.07	-0.0852	-	0.00532	4.10	-4.27	-	-3.52	BC	AB	ABC	-	BC	C	A	-	A	No	-	
	RG_MI3	0.188	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	No
	RG_MIDER	0.174	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	No
	RG_MIDGA	0.213	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	No
	RG_MIDBO	0.302	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	No
RG_MICOMP	0.352	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	No	

- P-value < 0.1 (annual variation).
- > 2 SD Increase.
- > 3 SD Increase.
- > 4 SD Increase.
- > 5 SD Increase.
- > 2 SD Decrease.
- > 3 SD Decrease.
- > 3 SD Decrease.
- > 5 SD Decrease.
- *Bold Significant increase or decrease from base year (b).
- Significantly less than all historical years (or 2021).
- Significantly greater than all historical years (or 2021).

Notes: "nc" = no post-hoc comparison; "-" insufficient data for comparison.

^a Minimum p-value from post-hoc contrasts with corresponding station.

^b Magnitude of Difference (MOD) = [Mean_{given year} - Mean_{year b}] / Residual Standard Deviation.

^c Significance among year determined using all pairwise comparisons using Tukey's honestly significant differences method. Years that share a letter are not significantly different. Letters assigned such that the mean with highest magnitude is assigned "A".

Table F.9: Temporal Changes in Benthic Invertebrate % EPT for Reference and Mine-exposed Areas in the EVO LAEMP, September, 2012 to 2022

Status	Area	Year P-value ^a	Q1. Is there a positive or negative change since the base year (b) of monitoring?									Q2. Is the 2022 annual mean greater or less than all annual historical means (2012 to 2021) and the last year (2021)? ^c											
			Magnitude of Difference (MOD) ^b and Significance (bolded) from Base Year (b) ^c									2012	2015	2016	2017	2018	2019	2020	2021	2022	2012 to 2021	2021	
			2012	2015	2016	2017	2018	2019	2020	2021	2022												
Reference	RG_ALUSM	0.601	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	No
	RG_MI25	<0.001	b	-2.70	-4.01	-2.76	-2.42	-3.02	-1.14	-0.584	1.30	ABCD	AB	AB	AB	AB	A	AB	BC	CD		No	No
Mine-Exposed	RG_ERCKUT	0.297	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	No
	RG_ERCKDT	<0.001	-	-	-	-	-	b	1.16	-2.59	-3.49	-	-	-	-	B	B	A	A		No	No	
	RG_ERCK	<0.001	b	-	-	-	-6.82	-9.61	-10.6	-9.82	-11.8	C	-	-	-	B	AB	AB	AB	A		No	No
	RG_GATE	<0.001	-	-	-	-	b	-	9.09	-	4.79	-	-	-	A	-	C	-	B		No	-	
	RG_GATEDP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	RG_BOCK	<0.001	b	-3.71	-1.42	-	-2.99	0.648	-5.44	-	-4.57	BC	AB	ABC	-	ABC	C	A	-	A		No	-
	RG_MI3	0.350	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	No
	RG_MIDER	0.091	-	-	-	-	b	-1.23	-3.49	-1.34	-2.08	-	-	-	-	B	AB	A	AB	AB		No	No
	RG_MIDGA	<0.001	-	-	-	-	b	-0.669	-2.65	0.873	-3.61	-	-	-	-	BC	ABC	AB	C	A		No	↓
RG_MIDBO	<0.001	-	-	-	-	b	0.823	-1.51	1.93	-1.96	-	-	-	-	AB	AB	A	B	A		No	↓	
RG_MICOMP	<0.001	-	-	-	-	b	-0.343	-0.621	0.422	-2.47	-	-	-	-	B	B	AB	B	A		No	↓	

- P-value < 0.1 (annual variation).
- > 2 SD Increase.
- > 3 SD Increase.
- > 4 SD Increase.
- > 5 SD Increase.
- > 2 SD Decrease.
- > 3 SD Decrease.
- > 3 SD Decrease.
- > 5 SD Decrease.
- *Bold Significant increase or decrease from base year (b).
- Significantly less than all historical years (or 2021).
- Significantly greater than all historical years (or 2021).

Notes: "nc" = no post-hoc comparison; "-" insufficient data for comparison.

^a Minimum p-value from post-hoc contrasts with corresponding station.

^b Magnitude of Difference (MOD) = $[\text{Mean}_{\text{given year}} - \text{Mean}_{\text{year b}}] / \text{Residual Standard Deviation}$.

^c Significance among year determined using all pairwise comparisons using Tukey's honestly significant differences method. Years that share a letter are not significantly different. Letters assigned such that the mean with highest magnitude is assigned "A".

Table F.10: Temporal Changes in Benthic Invertebrate % Ephemeroptera for Reference and Mine-exposed Areas in the EVO LAEMP, September, 2012 to 2022

Status	Area	Year P-value ^a	Q1. Is there a positive or negative change since the base year (b) of monitoring?									Q2. Is the 2022 annual mean greater or less than all annual historical means (2012 to 2021) and the last year (2021)? ^c											
			Magnitude of Difference (MOD) ^b and Significance (bolded) from Base Year (b) ^c									2012	2015	2016	2017	2018	2019	2020	2021	2022	2012 to 2021	2021	
			2012	2015	2016	2017	2018	2019	2020	2021	2022												
Reference	RG_ALUSM	0.976	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	No
	RG_MI25	<0.001	b	6.03	6.56	6.98	5.46	5.53	4.72	6.71	8.60	A	B	BC	BC	B	B	B	BC	C	No	No	
Mine-Exposed	RG_ERCKUT	0.980	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	No
	RG_ERCKDT	0.193	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	No
	RG_ERCK	0.278	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	No
	RG_GATE	1.000	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	-
	RG_GATEDP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	RG_BOCK	0.029	b	-0.812	-0.439	-	4.05	0.919	-0.812	-	1.09	AB	A	A	-	B	AB	A	-	AB	No	-	
	RG_MI3	<0.001	b	-1.81	-0.203	-1.32	-	-2.75	-0.566	0.947	1.24	AB	AB	AB	AB	-	A	AB	B	B	No	No	
	RG_MIDER	<0.001	-	-	-	-	b	-3.09	-2.27	-0.181	1.35	-	-	-	-	ABC	A	AB	BC	C	No	No	
	RG_MIDGA	<0.001	-	-	-	-	b	-0.184	1.28	3.88	-0.628	-	-	-	-	A	A	AB	B	A	No	↓	
RG_MIDBO	0.012	-	-	-	-	b	1.59	-0.621	3.70	0.990	-	-	-	-	A	AB	A	B	A	No	↓		
RG_MICOMP	<0.001	-	-	-	-	b	-1.09	-0.0851	2.55	-0.233	-	-	-	-	A	A	A	B	A	No	↓		

- P-value < 0.1 (annual variation).
- > 2 SD Increase.
- > 3 SD Increase.
- > 4 SD Increase.
- > 5 SD Increase.
- > 2 SD Decrease.
- > 3 SD Decrease.
- > 3 SD Decrease.
- > 5 SD Decrease.
- *Bold Significant increase or decrease from base year (b).
- Significantly less than all historical years (or 2021).
- Significantly greater than all historical years (or 2021).

Notes: "nc" = no post-hoc comparison; "-" insufficient data for comparison.

^a Minimum p-value from post-hoc contrasts with corresponding station.

^b Magnitude of Difference (MOD) = [Mean_{given year} - Mean_{year b}] / Residual Standard Deviation.

^c Significance among year determined using all pairwise comparisons using Tukey's honestly significant differences method. Years that share a letter are not significantly different. Letters assigned such that the mean with highest magnitude is assigned "A".

Table F.11: Temporal Changes in Benthic Invertebrate % Plecoptera for Reference and Mine-exposed Areas in the EVO LAEMP, September, 2012 to 2022

Status	Area	Year P-value ^a	Q1. Is there a positive or negative change since the base year (b) of monitoring?									Q2. Is the 2022 annual mean greater or less than all annual historical means (2012 to 2021) and the last year (2021)? ^c											
			Magnitude of Difference (MOD) ^b and Significance (bolded) from Base Year (b) ^c																				
			2012	2015	2016	2017	2018	2019	2020	2021	2022	2012	2015	2016	2017	2018	2019	2020	2021	2022	2012 to 2021	2021	
Reference	RG_ALUSM	0.039	-	b	1.04	3.17	2.34	0.708	3.43	2.70	2.50	-	AB	AB	AB	AB	A	B	AB	AB	No	No	
	RG_MI25	<0.001	b	-4.37	-7.15	-5.45	-5.73	-5.75	-3.93	-4.79	-5.57	B	A	A	A	A	A	A	A	A	No	No	
Mine-Exposed	RG_ERCKUT	0.074	-	-	-	-	-	b	-1.01	-2.53	-1.31	-	-	-	-	-	B	AB	A	AB	No	No	
	RG_ERCKDT	<0.001	-	-	-	-	-	b	1.59	-3.34	-4.06	-	-	-	-	B	B	A	A	No	No		
	RG_ERCK	<0.001	b	-	-	-	-7.23	-10.6	-12.7	-12.1	-15.2	D	-	-	-	C	BC	AB	AB	A	No	No	
	RG_GATE	<0.001	-	-	-	-	b	-	8.21	-	5.84	-	-	-	-	A	-	B	-	B	No	-	
	RG_GATEDP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	RG_BOCK	0.012	b	0.737	1.48	-	-1.89	-1.81	-1.61	-	-2.82	-	AB	B	B	-	AB	AB	AB	-	A	No	-
	RG_MI3	<0.001	b	-3.25	-5.27	-0.118	-	-2.39	-0.958	-3.96	-5.25	-	C	ABC	AB	C	-	BC	C	AB	A	No	No
	RG_MIDER	0.006	-	-	-	-	b	-2.39	-1.92	-3.75	-4.58	-	-	-	-	C	ABC	BC	AB	A	No	No	
	RG_MIDGA	0.949	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	No
	RG_MIDBO	0.654	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	No
RG_MICOMP	0.011	-	-	-	-	b	-2.09	0.293	-1.18	-1.91	-	-	-	-	B	A	B	AB	A	No	No		

- P-value < 0.1 (annual variation).
- > 2 SD Increase.
- > 3 SD Increase.
- > 4 SD Increase.
- > 5 SD Increase.
- > 2 SD Decrease.
- > 3 SD Decrease.
- > 3 SD Decrease.
- > 5 SD Decrease.
- *Bold Significant increase or decrease from base year (b).
- Significantly less than all historical years (or 2021).
- Significantly greater than all historical years (or 2021).

Notes: "nc" = no post-hoc comparison; "-" insufficient data for comparison.

^a Minimum p-value from post-hoc contrasts with corresponding station.

^b Magnitude of Difference (MOD) = [Mean_{given year} - Mean_{year b}] / Residual Standard Deviation.

^c Significance among year determined using all pairwise comparisons using Tukey's honestly significant differences method. Years that share a letter are not significantly different. Letters assigned such that the mean with highest magnitude is assigned "A".

Table F.12: Temporal Changes in Benthic Invertebrate % Trichoptera for Reference and Mine-exposed Areas in the EVO LAEMP, September, 2012 to 2022

Status	Area	Year P-value ^a	Q1. Is there a positive or negative change since the base year (b) of monitoring?									Q2. Is the 2022 annual mean greater or less than all annual historical means (2012 to 2021) and the last year (2021)? ^c											
			Magnitude of Difference (MOD) ^b and Significance (bolded) from Base Year (b) ^c									2012	2015	2016	2017	2018	2019	2020	2021	2022	2012 to 2021	2021	
			2012	2015	2016	2017	2018	2019	2020	2021	2022												
Reference	RG_ALUSM	0.652	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	No
	RG_MI25	<0.001	b	-3.59	-3.61	-3.91	-1.14	-1.67	-0.792	-1.36	-2.12	C	AB	ABC	ABC	C	BC	C	BC	BC	BC	No	No
Mine-Exposed	RG_ERCKUT	1.000	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	No
	RG_ERCKDT	0.994	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	No
	RG_ERCK	0.796	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	No
	RG_GATE	<0.001	-	-	-	-	b	-	6.63	-	1.95	-	-	-	-	A	-	B	-	A	No	-	
	RG_GATEDP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	RG_BOCK	<0.001	b	-5.04	-2.10	-	-4.94	0.847	-5.41	-	-4.44	B	A	AB	-	A	B	A	-	A	No	-	
	RG_MI3	0.005	b	3.75	3.42	0.287	-	1.87	0.834	-0.189	-0.871	ABC	C	C	ABC	-	BC	ABC	AB	A	No	No	
	RG_MIDER	<0.001	-	-	-	-	b	3.09	-0.230	1.08	-1.58	-	-	-	-	ABC	C	AB	BC	A	No	↓	
	RG_MIDGA	0.061	-	-	-	-	b	-0.370	-4.41	-2.00	-3.67	-	-	-	-	B	AB	A	AB	A	No	No	
RG_MIDBO	0.578	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	No	
RG_MICOMP	<0.001	-	-	-	-	b	1.12	-0.776	-0.998	-2.25	-	-	-	-	BC	C	AB	AB	A	No	No		

- P-value < 0.1 (annual variation).
- > 2 SD Increase.
- > 3 SD Increase.
- > 4 SD Increase.
- > 5 SD Increase.
- > 2 SD Decrease.
- > 3 SD Decrease.
- > 3 SD Decrease.
- > 5 SD Decrease.
- *Bold Significant increase or decrease from base year (b).
- Significantly less than all historical years (or 2021).
- Significantly greater than all historical years (or 2021).

Notes: "nc" = no post-hoc comparison; "-" insufficient data for comparison.

^a Minimum p-value from post-hoc contrasts with corresponding station.

^b Magnitude of Difference (MOD) = $[\text{Mean}_{\text{given year}} - \text{Mean}_{\text{year b}}] / \text{Residual Standard Deviation}$.

^c Significance among year determined using all pairwise comparisons using Tukey's honestly significant differences method. Years that share a letter are not significantly different. Letters assigned such that the mean with highest magnitude is assigned "A".

Table F.13: Temporal Changes in Benthic Invertebrate % Chironomidae for Reference and Mine-exposed Areas in the EVO LAEMP, September, 2012 to 2022

Status	Area	Year P-value ^a	Q1. Is there a positive or negative change since the base year (b) of monitoring?									Q2. Is the 2022 annual mean greater or less than all annual historical means (2012 to 2021) and the last year (2021)? ^c										
			Magnitude of Difference (MOD) ^b and Significance (bolded) from Base Year (b) ^c									2012	2015	2016	2017	2018	2019	2020	2021	2022	2012 to 2021	2021
			2012	2015	2016	2017	2018	2019	2020	2021	2022	2012	2015	2016	2017	2018	2019	2020	2021	2022	2012 to 2021	2021
Reference	RG_ALUSM	0.098	-	b	0.914	-0.269	1.01	0.325	-1.43	-0.678	-0.552	-	AB	AB	AB	B	AB	A	AB	AB	No	No
	RG_MI25	<0.001	b	3.93	5.37	4.02	3.38	3.96	1.97	1.85	-0.172	ABC	DE	E	CDE	CDE	DE	BCDE	BCD	AB	No	No
Mine-Exposed	RG_ERCKUT	0.125	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	No
	RG_ERCKDT	0.007	-	-	-	-	-	b	-1.08	1.50	2.09	-	-	-	-	-	AB	A	B	B	No	No
	RG_ERCK	<0.001	b	-	-	-	7.27	10.2	10.7	8.68	10.0	A	-	-	-	B	B	B	B	B	No	No
	RG_GATE	0.393	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	-
	RG_GATEDP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	RG_BOCK	0.003	b	1.20	0.339	-	-1.46	2.61	4.43	-	1.43	A	AB	AB	-	A	AB	B	-	AB	No	-
	RG_MI3	0.095	b	-0.544	-1.88	1.64	-	1.43	0.340	-0.00586	1.59	AB	AB	A	AB	-	AB	AB	AB	B	No	No
	RG_MIDER	<0.001	-	-	-	-	b	1.75	4.64	0.615	3.25	-	-	-	-	AB	AB	C	A	BC	No	No
	RG_MIDGA	<0.001	-	-	-	-	b	0.478	2.87	-1.69	2.77	-	-	-	-	AB	AB	B	A	B	No	↑
RG_MIDBO	<0.001	-	-	-	-	b	-0.918	1.59	-1.29	2.58	-	-	-	-	AB	A	AB	A	B	No	↑	
RG_MICOMP	<0.001	-	-	-	-	b	0.253	1.64	0.0728	3.22	-	-	-	-	A	A	AB	A	B	No	↑	

- P-value < 0.1 (annual variation).
- > 2 SD Increase.
- > 3 SD Increase.
- > 4 SD Increase.
- > 5 SD Increase.
- > 2 SD Decrease.
- > 3 SD Decrease.
- > 3 SD Decrease.
- > 5 SD Decrease.
- *Bold Significant increase or decrease from base year (b).
- Significantly less than all historical years (or 2021).
- Significantly greater than all historical years (or 2021).

Notes: "nc" = no post-hoc comparison; "-" insufficient data for comparison.

^a Minimum p-value from post-hoc contrasts with corresponding station.

^b Magnitude of Difference (MOD) = $[\text{Mean}_{\text{given year}} - \text{Mean}_{\text{year b}}] / \text{Residual Standard Deviation}$.

^c Significance among year determined using all pairwise comparisons using Tukey's honestly significant differences method. Years that share a letter are not significantly different. Letters assigned such that the mean with highest magnitude is assigned "A".

Table F.14: Temporal Changes in Benthic Invertebrate Ephemeroptera Abundance for Reference and Mine-exposed Areas in the EVO LAEMP, September, 2012 to 2022

Status	Area	Year P-value ^a	Q1. Is there a positive or negative change since the base year (b) of monitoring?									Q2. Is the 2022 annual mean greater or less than all annual historical means (2012 to 2021) and the last year (2021)? ^c											
			Magnitude of Difference (MOD) ^b and Significance (bolded) from Base Year (b) ^c									2012	2015	2016	2017	2018	2019	2020	2021	2022	2012 to 2021	2021	
			2012	2015	2016	2017	2018	2019	2020	2021	2022												
Reference	RG_ALUSM	0.565	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	No
	RG_MI25	0.003	b	3.60	4.89	5.60	3.91	3.15	2.55	4.34	4.32	A	B	B	B	B	AB	AB	B	B	B	No	No
Mine-Exposed	RG_ERCKUT	<0.001	-	-	-	-	-	b	1.91	-0.311	-3.66	-	-	-	-	-	B	B	B	A	↓	↓	
	RG_ERCKDT	<0.001	-	-	-	-	-	b	-0.804	1.13	-4.93	-	-	-	-	-	B	B	B	A	↓	↓	
	RG_ERCK	0.635	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	No
	RG_GATE	0.138	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	-
	RG_GATEDP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	RG_BOCK	<0.001	b	-4.42	-0.588	-	4.66	3.40	-4.42	-	1.68	B	A	AB	-	C	BC	A	-	BC	No	-	
	RG_MI3	0.992	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	No
	RG_MIDER	0.989	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	No
	RG_MIDGA	0.351	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	No
	RG_MIDBO	0.865	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	No
RG_MICOMP	0.706	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	No	

- P-value < 0.1 (annual variation).
- > 2 SD Increase.
- > 3 SD Increase.
- > 4 SD Increase.
- > 5 SD Increase.
- > 2 SD Decrease.
- > 3 SD Decrease.
- > 3 SD Decrease.
- > 5 SD Decrease.
- *Bold Significant increase or decrease from base year (b).
- ↓ Significantly less than all historical years (or 2021).
- ↑ Significantly greater than all historical years (or 2021).

Notes: "nc" = no post-hoc comparison; "-" insufficient data for comparison.

^a Minimum p-value from post-hoc contrasts with corresponding station.

^b Magnitude of Difference (MOD) = [Mean_{given year} - Mean_{year b}] / Residual Standard Deviation.

^c Significance among year determined using all pairwise comparisons using Tukey's honestly significant differences method. Years that share a letter are not significantly different. Letters assigned such that the mean with highest magnitude is assigned "A".

Table F.15: Temporal Changes in Benthic Invertebrate Plecoptera Abundance for Reference and Mine-exposed Areas in the EVO LAEMP, September, 2012 to 2022

Status	Area	Year P-value ^a	Q1. Is there a positive or negative change since the base year (b) of monitoring?									Q2. Is the 2022 annual mean greater or less than all annual historical means (2012 to 2021) and the last year (2021)? ^c											
			Magnitude of Difference (MOD) ^b and Significance (bolded) from Base Year (b) ^c									2012	2015	2016	2017	2018	2019	2020	2021	2022	2012 to 2021	2021	
			2012	2015	2016	2017	2018	2019	2020	2021	2022												
Reference	RG_ALUSM	0.281	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	No
	RG_MI25	<0.001	b	0.809	1.05	2.69	0.893	-0.196	0.154	1.42	0.636	A	A	AB	AB	A	A	A	AB	A	No	No	
Mine-Exposed	RG_ERCKUT	0.978	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	No
	RG_ERCKDT	0.401	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	No
	RG_ERCK	0.489	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	No
	RG_GATE	0.006	-	-	-	-	b	-	1.11	-	4.81	-	-	-	-	A	-	A	-	B	No	-	
	RG_GATEDP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	RG_BOCK	<0.001	b	2.04	1.71	-	0.0509	1.19	-0.796	-	-5.09	B	B	B	-	B	B	B	-	A	↓	-	
	RG_MI3	0.001	b	-0.848	-2.16	1.15	-	0.710	0.687	-0.965	-2.92	AB	AB	AB	B	-	B	B	AB	A	No	No	
	RG_MIDER	0.038	-	-	-	-	b	-0.244	-0.0469	-2.78	-2.57	-	-	-	-	ABC	BC	C	A	AB	No	No	
	RG_MIDGA	0.442	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	No
	RG_MIDBO	0.673	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	No
RG_MICOMP	0.745	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	No	

- P-value < 0.1 (annual variation).
- > 2 SD Increase.
- > 3 SD Increase.
- > 4 SD Increase.
- > 5 SD Increase.
- > 2 SD Decrease.
- > 3 SD Decrease.
- > 3 SD Decrease.
- > 5 SD Decrease.
- *Bold Significant increase or decrease from base year (b).
- Significantly less than all historical years (or 2021).
- Significantly greater than all historical years (or 2021).

Notes: "nc" = no post-hoc comparison; "-" insufficient data for comparison.

^a Minimum p-value from post-hoc contrasts with corresponding station.

^b Magnitude of Difference (MOD) = [Mean_{given year} - Mean_{year b}] / Residual Standard Deviation.

^c Significance among year determined using all pairwise comparisons using Tukey's honestly significant differences method. Years that share a letter are not significantly different. Letters assigned such that the mean with highest magnitude is assigned "A".

Table F.16: Temporal Changes in Benthic Invertebrate Trichoptera Abundance for Reference and Mine-exposed Areas in the EVO LAEMP, September, 2012 to 2022

Status	Area	Year P-value ^a	Q1. Is there a positive or negative change since the base year (b) of monitoring?									Q2. Is the 2022 annual mean greater or less than all annual historical means (2012 to 2021) and the last year (2021)? ^c											
			Magnitude of Difference (MOD) ^b and Significance (bolded) from Base Year (b) ^c									2012	2015	2016	2017	2018	2019	2020	2021	2022	2012 to 2021	2021	
			2012	2015	2016	2017	2018	2019	2020	2021	2022												
Reference	RG_ALUSM	0.742	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	No
	RG_MI25	0.099	b	-0.435	0.747	1.14	1.69	0.535	0.633	1.66	0.844	AB	AB	AB	AB	B	AB	AB	AB	AB	AB	No	No
Mine-Exposed	RG_ERCKUT	0.051	-	-	-	-	-	b	0.752	1.31	-1.34	-	-	-	-	-	AB	AB	B	A	No	No	
	RG_ERCKDT	0.195	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	No
	RG_ERCK	0.011	b	-	-	-	2.82	3.08	4.37	5.31	4.07	A	-	-	-	AB	AB	B	B	AB	No	No	
	RG_GATE	0.287	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	-
	RG_GATEDP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	RG_BOCK	<0.001	b	-2.50	-0.596	-	-2.14	2.65	-3.78	-	-2.81	AB	A	AB	-	A	B	A	-	A	No	-	
	RG_MI3	0.005	b	2.61	2.48	1.14	-	2.64	1.40	0.792	-0.601	AB	AB	AB	AB	-	B	AB	AB	A	No	No	
	RG_MIDER	0.004	-	-	-	-	b	2.21	0.532	-0.0903	-1.11	-	-	-	-	AB	B	AB	AB	A	No	No	
	RG_MIDGA	0.868	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	No
RG_MIDBO	0.927	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	No	
RG_MICOMP	0.040	-	-	-	-	b	0.682	-0.673	-0.411	-1.42	-	-	-	-	AB	B	AB	AB	A	No	No		

- P-value < 0.1 (annual variation).
- > 2 SD Increase.
- > 3 SD Increase.
- > 4 SD Increase.
- > 5 SD Increase.
- > 2 SD Decrease.
- > 3 SD Decrease.
- > 3 SD Decrease.
- > 5 SD Decrease.
- *Bold Significant increase or decrease from base year (b).
- Significantly less than all historical years (or 2021).
- Significantly greater than all historical years (or 2021).

Notes: "nc" = no post-hoc comparison; "-" insufficient data for comparison.

^a Minimum p-value from post-hoc contrasts with corresponding station.

^b Magnitude of Difference (MOD) = [Mean_{given year} - Mean_{year b}] / Residual Standard Deviation.

^c Significance among year determined using all pairwise comparisons using Tukey's honestly significant differences method. Years that share a letter are not significantly different. Letters assigned such that the mean with highest magnitude is assigned "A".

Table F.17: Temporal Changes in Benthic Invertebrate Chironomidae Abundance for Reference and Mine-exposed Areas in the EVO LAEMP, September, 2012 to 2022

Status	Area	Year P-value ^a	Q1. Is there a positive or negative change since the base year (b) of monitoring?									Q2. Is the 2022 annual mean greater or less than all annual historical means (2012 to 2021) and the last year (2021)? ^c												
			Magnitude of Difference (MOD) ^b and Significance (bolded) from Base Year (b) ^c																					
			2012	2015	2016	2017	2018	2019	2020	2021	2022	2012	2015	2016	2017	2018	2019	2020	2021	2022	2012 to 2021	2021		
Reference	RG_ALUSM	0.227	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	No	
	RG_MI25	<0.001	b	5.08	7.32	7.37	5.34	4.68	3.03	4.47	2.07	A	CD	D	D	CD	CD	ABC	BCD	AB	No	No		
Mine-Exposed	RG_ERCKUT	0.077	-	-	-	-	-	b	1.16	2.52	1.81	-	-	-	-	-	A	AB	B	AB	No	No		
	RG_ERCKDT	0.013	-	-	-	-	-	b	-0.491	2.52	1.20	-	-	-	-	-	A	A	B	AB	No	No		
	RG_ERCK	<0.001	b	-	-	-	5.61	8.80	8.30	7.84	8.36	A	-	-	-	B	B	B	B	B	No	No		
	RG_GATE	0.102	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	-	
	RG_GATEDP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	RG_BOCK	0.202	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	-
	RG_MI3	0.109	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	No
	RG_MIDER	<0.001	-	-	-	-	b	2.17	3.78	-0.275	2.16	-	-	-	-	AB	BC	C	A	BC	No	No		
	RG_MIDGA	0.008	-	-	-	-	b	2.37	3.63	0.862	4.01	-	-	-	-	A	AB	AB	A	B	No	↑		
	RG_MIDBO	0.608	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	No	
RG_MICOMP	0.535	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	No		

- P-value < 0.1 (annual variation).
- > 2 SD Increase.
- > 3 SD Increase.
- > 4 SD Increase.
- > 5 SD Increase.
- > 2 SD Decrease.
- > 3 SD Decrease.
- > 3 SD Decrease.
- > 5 SD Decrease.
- *Bold Significant increase or decrease from base year (b).
- Significantly less than all historical years (or 2021).
- Significantly greater than all historical years (or 2021).

Notes: "nc" = no post-hoc comparison; "-" insufficient data for comparison.

^a Minimum p-value from post-hoc contrasts with corresponding station.

^b Magnitude of Difference (MOD) = [Mean_{given year} - Mean_{year b}] / Residual Standard Deviation.

^c Significance among year determined using all pairwise comparisons using Tukey's honestly significant differences method. Years that share a letter are not significantly different. Letters assigned such that the mean with highest magnitude is assigned "A".

Table F.18: Temporal Changes in Benthic Invertebrate Richness for Reference and Mine-exposed Areas in the EVO LAEMP, September, 2012 to 2022

Status	Area	Year P-value ^a	Q1. Is there a positive or negative change since the base year (b) of monitoring?									Q2. Is the 2022 annual mean greater or less than all annual historical means (2012 to 2021) and the last year (2021)? ^c											
			Magnitude of Difference (MOD) ^b and Significance (bolded) from Base Year (b) ^c									2012	2015	2016	2017	2018	2019	2020	2021	2022	2012 to 2021	2021	
			2012	2015	2016	2017	2018	2019	2020	2021	2022												
Reference	RG_ALUSM	0.536	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	No	
	RG_MI25	0.004	b	-1.06	1.36	0.227	1.21	-0.151	0.831	0.453	-1.59	ABC	ABC	BC	ABC	C	ABC	BC	BC	AB	No	No	
Mine-Exposed	RG_ERCKUT	0.857	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	No	
	RG_ERCKDT	0.952	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	No	
	RG_ERCK	0.435	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	No	
	RG_GATE	0.180	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	-	
	RG_GATEDP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	RG_BOCK	0.435	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	-
	RG_MI3	<0.001	b	-1.59	-0.680	1.13	-	4.91	1.89	0.453	-0.831	AB	A	AB	AB	-	C	B	AB	A	No	No	
	RG_MIDER	0.027	-	-	-	-	b	4.01	3.63	1.28	1.28	-	-	-	-	A	C	BC	AB	AB	No	No	
	RG_MIDGA	0.256	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	No	
	RG_MIDBO	0.932	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	No	
RG_MICOMP	0.210	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	No		

- P-value < 0.1 (annual variation).
- > 2 SD Increase.
- > 3 SD Increase.
- > 4 SD Increase.
- > 5 SD Increase.
- > 2 SD Decrease.
- > 3 SD Decrease.
- > 3 SD Decrease.
- > 5 SD Decrease.
- *Bold Significant increase or decrease from base year (b).
- Significantly less than all historical years (or 2021).
- Significantly greater than all historical years (or 2021).

Notes: "nc" = no post-hoc comparison; "-" insufficient data for comparison.

^a Minimum p-value from post-hoc contrasts with corresponding station.

^b Magnitude of Difference (MOD) = [Mean_{given year} - Mean_{year b}] / Residual Standard Deviation.

^c Significance among year determined using all pairwise comparisons using Tukey's honestly significant differences method. Years that share a letter are not significantly different. Letters assigned such that the mean with highest magnitude is assigned "A".

APPENDIX G
BIOTRIGGERS

APPENDIX G BIOLOGICAL TRIGGERS

G1	INTRODUCTION	1
G1.1	Background.....	1
G2	METHODS	3
G2.1	Overview.....	3
G2.2	Percent EPT	3
G2.3	Benthic Invertebrate Tissue Selenium (BIT Se).....	4
G3	RESULTS	6
G3.1	Percent EPT	6
G3.2	Benthic Invertebrate Tissue Selenium (BIT Se).....	6
G4	SUMMARY	8
G5	REFERENCES	9



G1 INTRODUCTION

G1.1 Background

Biological triggers were developed and implemented to assist with identifying and communicating unexpected and potentially important changes in aquatic ecosystem conditions and are required as part of Teck's Adaptive Management Plan (AMP; Teck 2018). Biological triggers were developed in consultation with the EMC for a subset of the biological monitoring endpoints that are effective indicators of changes at the ecosystem level. The purpose of the biological triggers is to quickly identify biological monitoring areas where unexpected biological conditions may be occurring that may require management action. Additionally, information provided from the analysis of biological triggers may lead to responses under the AMP response framework.

Draft biological triggers were developed in the 2018 AMP (Teck 2018) under Management Question 5, with these initially reported on in 2021 in the 2020 LAEMP reports and RAEMP data package, and summarized in the 2020 Annual AMP Report (Teck 2021a). When the 2018 AMP was approved, there was an expectation that the 2018 AMP draft/interim biological triggers would be finalized, through engagement with the EMC, prior to December 15, 2021 AMP Update. The biological triggers were finalized in 2021 (Teck 2021b) and the methods applied in this report reflect the finalized biological triggers (Teck 2021b). It is important to note that the process and/or biological triggers may adjust over time as the purpose of the biological triggers is to be reflective of not only changes in the Elk Valley, but also the current state of knowledge in the area.

The finalized biological triggers (Teck 2021b) include three measurement endpoints:

- Percent EPT (% EPT; Ephemeroptera, Plecoptera, and Trichoptera) – based on travelling kick samples (CABIN protocol), generally three replicates per location per sampling event.
- Benthic invertebrate tissue selenium (BIT Se) – generally several replicates collected per location per sampling event, where each replicate is a composite sample of invertebrates (i.e., composite-taxa sample).
- Westslope cutthroat trout muscle tissue selenium (WCT Se) – generally 8 replicates collected per location per sampling event, where each replicate corresponds to a sample from a single fish.

Evaluation of these three biological trigger endpoints is complementary to the fulsome evaluation of biological endpoints that is integrated into the Local Aquatic Effects



Monitoring Program (LAEMP) and the Regional Aquatic Effects Monitoring Program (RAEMP) data evaluations. The more fulsome evaluation of biological endpoints is used to support answering the specific LAEMP and RAEMP study questions through the consideration of not only the endpoints used in the biological trigger evaluation, but also a full suite of additional biological, chemical, and physical endpoints. Biological triggers do not provide information on cause and effect, report on trends, or feed directly into decision-making processes. Instead, the biological triggers act to flag areas for further evaluation, which would then take place under existing monitoring programs, through the development of supporting studies or through the response framework, as necessary.

Biological monitoring data are compared to triggers annually, and summaries of the LAEMP and RAEMP trigger evaluations and responses are summarized within annual AMP reports.



G2 METHODS

G2.1 Overview

As outlined in Section G1.1, analyses for biological triggers are meant to be complementary to other analyses conducted in the LAEMPs and RAEMP. Biological trigger analyses included two of three trigger endpoints (%EPT and BIT Se [collected under the 2022 EVO LAEMP], as WCT were not sampled as part of the EVO LAEMP.

For the purpose of application of the biological triggers, expectations for the endpoints evaluated (%EPT and BIT Se) were based on projected water quality, not on measured water quality. Thus, the triggers should detect biological results that were unexpected, regardless of whether those results are due to unexpected water quality or due to unexpected relationships between water quality and biological endpoints. Biological triggers were therefore only applied at locations where water quality projections were available. Specifically, five of the mine-exposed areas (RG_ERCK, RG_GATE, RG_BOCK, RG_MI3, and RG_MICOMP) included in the EVO LAEMP were evaluated for benthic invertebrate tissue selenium trigger events and three mine-exposed areas (RG_ERCK, RG_MI3 and RG_MICOMP) were evaluated for the percent EPT biological trigger. Data for other areas studied under the EVO LAEMP were not evaluated relative to biological triggers but were assessed elsewhere as part of the main EVO LAEMP report.

Methodological details are discussed for each of the biological trigger metrics below.

G2.2 Percent EPT

Data for percent EPT were compared to:

- Normal range: The lower limit of habitat-adjusted normal range (2.5th percentile). Up-to-date limits of normal ranges¹ are provided in the RAEMP and LAEMPs, where they are recalculated as needed as new data become available (Teck 2019). The derivation of habitat-adjusted normal ranges is described in Appendix J of the 2020 RAEMP, and was based on consideration of more than 30 habitat, substrate, GIS, and land cover variables (Minnow 2020).
- Expectations: The lower limit of the range of %EPT corresponds to the predicted aquatic data integration tool (ADIT) score. The predicted ADIT scores correspond to potential effects on benthic invertebrate community (BIC) endpoints, based on

¹ The normal range will be updated as part of the three-year reporting cycle of the RAEMP (Minnow 2021b).



relationships between water quality projections (for nitrate, sulphate and cadmium)² and invertebrate toxicity endpoints originally developed for the EVWQP (Teck 2014; Golder 2020a). A predicted ADIT score of 3 corresponds to 50% or greater effects to reproduction of the water flea *Ceriodaphnia dubia*, 2 corresponds to 20 to 50% effects, 1 corresponds to 10 to 20% effects, and 0 corresponds to effect levels of 10% or less. Once %EPT is actually measured, the measured results are converted to a measured ADIT score in relation to the habitat adjusted normal range as follows: An ADIT score of 0 corresponds to expected %EPT \geq the 10th percentile of the habitat-adjusted normal range; an ADIT score of 1 corresponds to expected %EPT between the 10th percentile and the 2.5th percentile of the habitat-adjusted normal range (and is therefore identical in application to the lower limit of normal range); an ADIT score of 2 corresponds to expected %EPT between the 2.5th percentile and half of the 2.5th percentile of the habitat-adjusted normal range; finally, an ADIT score of 3 corresponds to expected %EPT \leq half of the 2.5th percentile and ≥ 0 . Individual replicate habitat-adjusted normal ranges were used at each location for establishing the %EPT limits associated with each ADIT score. In summary, this component of the biological trigger for %EPT asks whether the measured ADIT score – calculated based on measured %EPT relative to normal ranges – is greater than the ADIT score that was predicted based on water quality projections.

Benthic invertebrate community data for %EPT collected in the fall (September) for the 2022 EVO LAEMP were included in the biological trigger analysis.

G2.3 Benthic Invertebrate Tissue Selenium (BIT Se)

Data for BIT Se were compared to:

- **Normal range:** The upper limit of regional normal range (97.5th percentile) for individual replicates. Up-to-date limits of normal ranges³ are provided in the RAEMP and LAEMPs, where they are recalculated as needed as new data become available (Teck 2019).
- **Expectations:** The upper limit of the 95% prediction interval based on the water to BIT bioaccumulation model for lotic environments. The model originally developed in the EVWQP (Golder 2014) was updated (Golder 2020b) and the updated data set was used to calculate prediction intervals for individual replicates. Methodology for estimating the upper limit of the 95% prediction for BIT Se (given any projected value

² Selenium was not included because selenium effects on BIC endpoints are not expected. Projections were based on the highest maximum monthly mean across all flow scenarios (low, average, and high).

³ The normal range will be updated as part of the three-year reporting cycle of the RAEMP (Minnow 2021b).



of aqueous selenium) is discussed further in the Biological Trigger Development for the Elk Valley Adaptive Management Plan (Azimuth 2021 [In Preparation]).

Benthic invertebrate tissue selenium data from sampling events completed throughout 2022 for the EVO LAEMP (April, June, August, September and November [RG_BOCK], March, April, June, July, September, November [RG_ERCK], April, June, July, Aug, September and November [RG_GATE], April, June, July, September and November [RG_MICOMP]), and December [RG_ERCK] were included in the biological trigger analysis although normal range information is based on fall (September) information.

Although effects benchmarks are not part of the trigger, they are relevant for interpreting potential significance and responses. Consequently, the level 1, 2 and 3 benchmarks for the most sensitive receptor (juvenile fish via dietary exposure) are included in plots (11, 18, and 26 mg/kg, respectively).



G3 RESULTS

G3.1 Percent EPT

Individual replicates for the %EPT endpoint for each of the three mine-exposed areas (RG_ERCK, RG_MI3, and RG_MICOMP) were each assessed against their respective biological triggers for the September sampling period (Appendix Table G.1 and Appendix Figure G.1). The mine-exposed area, RG_ERCK, had a % EPT of 9.86%, which was lower than the biological trigger value of 67.2%. However, only one replicate was measured at this location. RG_ERCK is located just upstream of the confluence of Erickson Creek and Michel Creek and downstream from the saturated rock fille (SRF). Another mine-exposed area RG_MICOMP, which is downstream of the confluences of Erickson, Gate, and Bodie Creeks with Michel Creek, also had %EPT values in five replicates (43.0%, 36.9%, 40.1%, 42.0%, and 48.1%) lower than the biological triggers (55.2%, 58.6%, 54.6%, 57.6%, and 57.9%, respectively). The third mine-exposed areas in Michel Creek, RG_MI3 (which is above the confluence of Erickson and Michel Creek) had results above their biological trigger value in all replicates and the lower 2.5th percentile of habitat-adjusted normal range.

G3.2 Benthic Invertebrate Tissue Selenium (BIT Se)

Benthic invertebrate tissue selenium concentrations for each mine-exposed area was assessed against their respective biological trigger for individual replicate samples from each of the three sampling events in 2022 (March, April, June, July, August, September, and November; Appendix Table G.2 and Appendix Figure G.2). At RG_GATE, benthic invertebrate tissue selenium concentrations for all April, June, and July, and one replicate in August, two in September, and three in November exceeded the biological trigger value, ranging from 21 to 49 mg/kg. These values were higher than both the upper 95% prediction limit of 15.2 mg/kg (as based on predicted water quality) and the upper 97.5th percentile of normal range, which was 8.7 mg/kg. At RG_BOCK, all replicates had benthic invertebrate tissue selenium concentrations which exceeded the biological trigger values in April (reported concentrations of 17 to 22 mg/kg), June (reported concentrations of 53 to 83 mg/kg), and September (reported concentrations of 27 to 59 mg/kg), and November (reported concentrations of 31 and 35 mg/kg). In August, all but one replicate exceeded the biological trigger (reported concentrations of 28 and 35 mg/kg). Benthic invertebrate tissue selenium concentrations, however, did not exceed the biological trigger value at RG_ERCK (the confluence of Erickson Creek and Michel Creek) in any sampling event (March, April, June, July, September or November), as concentrations of benthic invertebrate tissue selenium ranged from 3.4 to 8.2 mg/kg in 2022. Benthic invertebrate tissue selenium concentrations in Michel Creek,



specifically RG_MICOMP (3.7 to 11 mg/kg), were all below their respective biological trigger value.



G4 SUMMARY

A single replicate from RG_ERCK was lower than the %EPT biological trigger and at RG_MICOMP, which is downstream of the confluences of Erickson, Gate, and Bodie Creeks with Michel Creek, all replicates were lower than the biological triggers. The %EPT results for these mine-exposed areas was consistent with results classified as 'unexpected' in the most recent RAEMP (Minnow 2020). Additionally, the biological trigger for benthic invertebrate tissue selenium concentrations was exceeded in most replicates from both RG_BOCK and RG_GATE (during the all sampling events). The BIT selenium concentration at RG_ERCK in Erickson Creek and the area evaluated in Michel Creek (RG_MICOMP), were below the biological trigger threshold in all samples.

The results from the biological triggers evaluation are consistent with the findings of the EVO LAEMP. Current biological triggers were sufficient to identify monitoring areas where biological responses are occurring, based on the integrated assessment conducted in the LAEMP, and no additional triggers are recommended at this time. In an effort to resolve uncertainty around the combined and individual effects of water quality, habitat, and other mine-related stressors on benthic invertebrate communities in lotic areas in the Elk River watershed, Minnow is developing a predictive model for benthic invertebrate community endpoints. Uncertainties are expected to be reduced through these efforts, and additional monitoring or potential management responses will continue to be assessed through Teck's adaptive management framework.



G5 REFERENCES

- Azimuth (Azimuth Consulting Group Inc). 2021 (In Prep). Development of biological triggers for the Elk Valley Adaptive Management Plan. Prepared for Teck Coal Limited. December.
- Golder (Golder Associates). 2014. Benchmark Derivation Report for Selenium. Annex E of the Elk Valley Water Quality Plan. Prepared for Teck Coal Limited. July.
- Golder. 2020a. User's Manual Aquatic Data Integration Tool (ADIT) for the Elk Valley. Prepared for Teck Coal Ltd. 15 September 2020.
- Golder. 2020b. Updates to the lotic and lentic statistical bioaccumulation models for selenium in the Elk Valley. Technical memorandum to Teck Coal Limited. 27 November 2020.
- Minnow (Minnow Environmental Inc). 2020. Regional Aquatic Effects Monitoring Program (RAEMP) Report, 2017 to 2019. Prepared for Teck Coal Ltd. November 2020.
- Minnow. 2021b. Study Design for the Regional Aquatic Effects Monitoring Program, 2021 to 2023. Prepared for Teck Coal Limited, Sparwood, BC. March. Project 207202.0006.
- Teck (Teck Coal Limited). 2014. Elk Valley Water Quality Plan. Submitted to the British Columbia Minister of Environment for approval on July 22, 2014.
- Teck. 2018. Water Quality Adaptive Management Plan for Teck Coal Operations in the Elk Valley. December 21, 2018.
- Teck. 2019. Elk Valley Water Quality Plan 2019 Implementation Plan Adjustment. July 2019.
- Teck. 2021a. Water Quality Adaptive Management Plan for Teck Coal Operations in the Elk Valley – 2020 Annual Report. Prepared by Teck Coal Limited. July 31, 2021.
- Teck. 2021b. Water Quality Adaptive Management Plan for Teck Coal Operations in the Elk Valley – 2021 Update. Prepared by Teck Coal Limited. December 15, 2021.



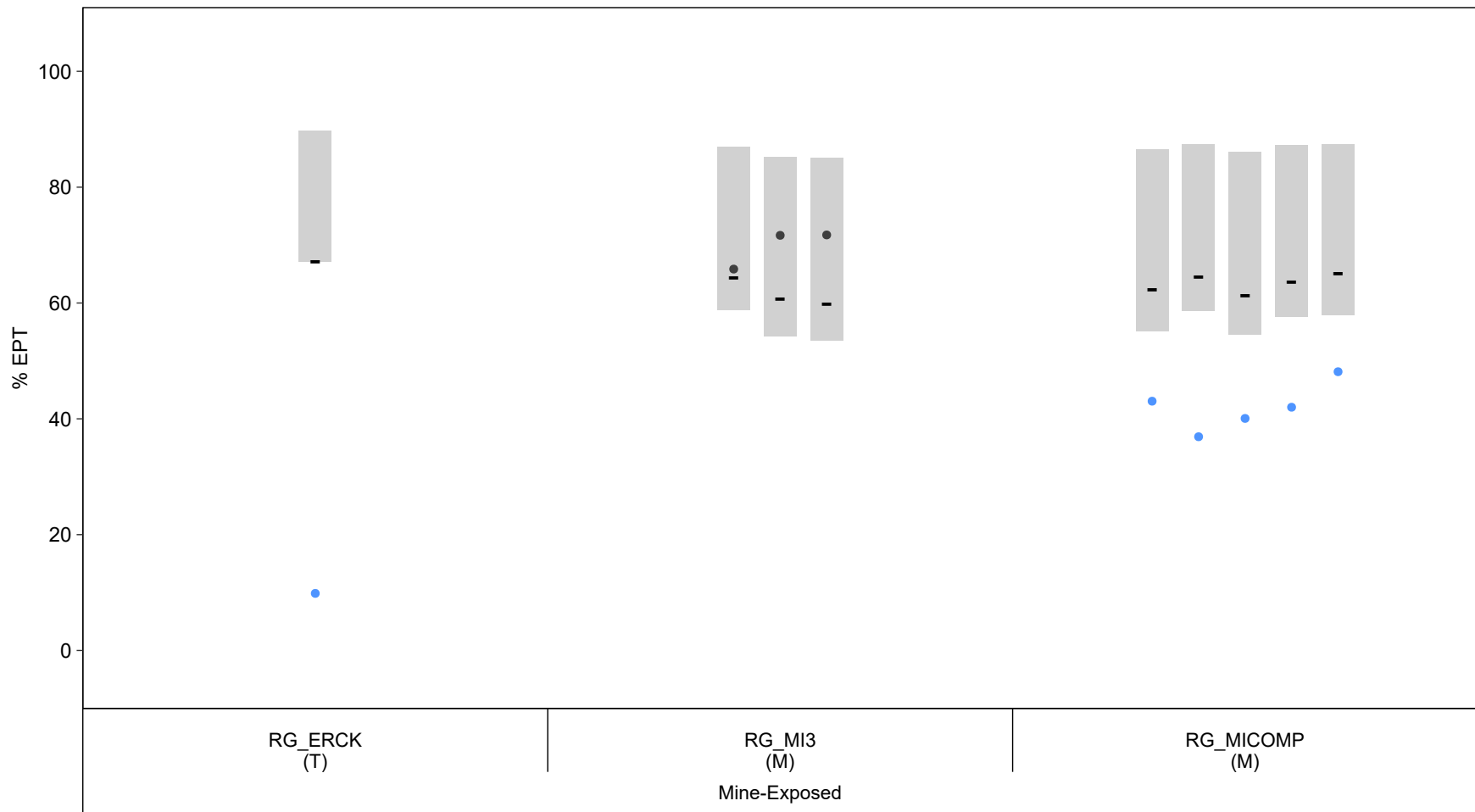


Figure G.1: % EPT Compared to Predicted Values, EVO LAEMP, 2022

Notes: Black bars indicate the lower limit of the predicted ADIT score for the location. Blue dots represent values exceeding the trigger (below 2.5th percentile of NR and below lower limit of predicted ADIT score). Gray shading represents the habitat-adjusted normal range for each replicate. T = Tributary, M = Mainstem.

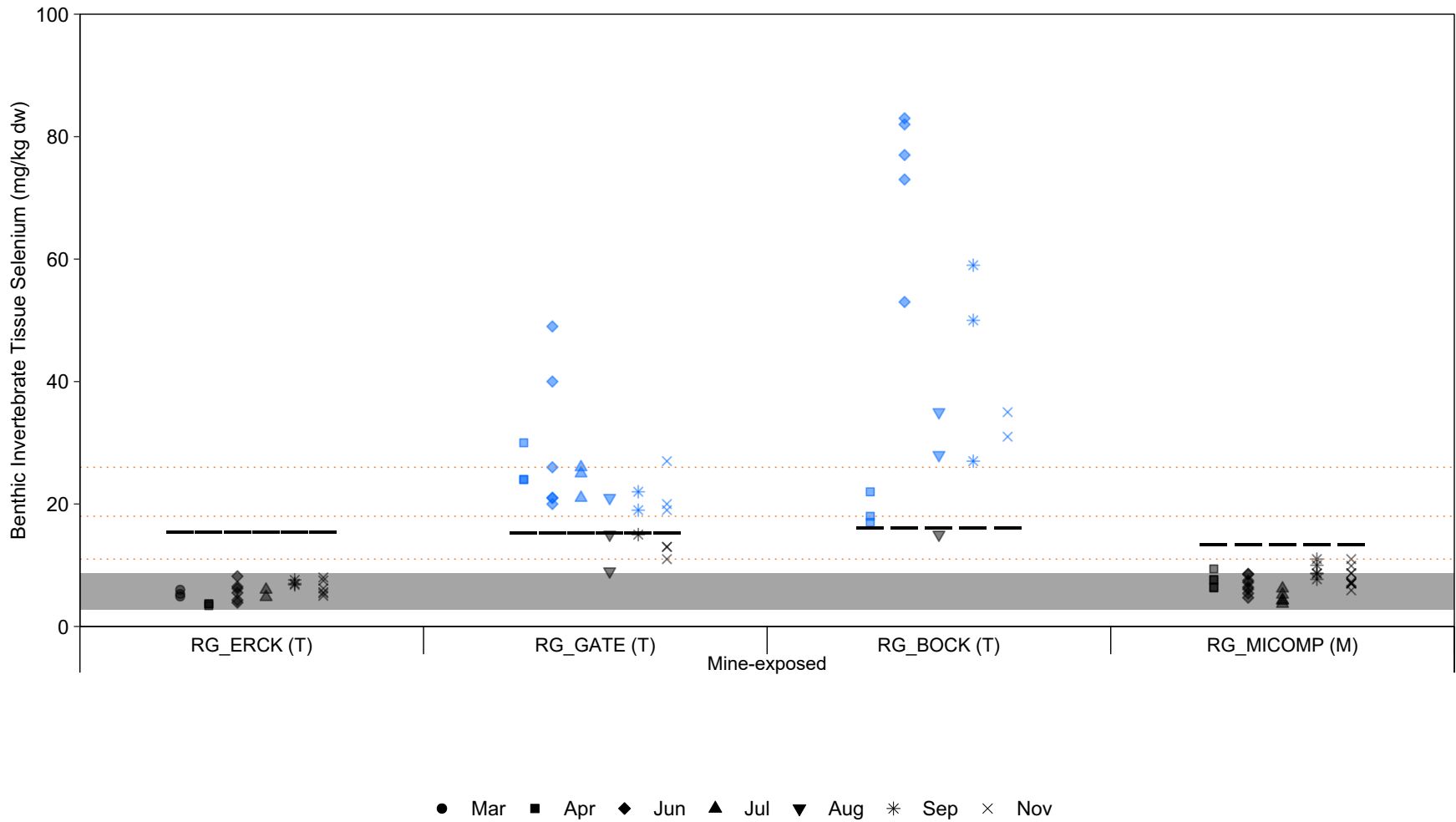


Figure G.2: Selenium Concentrations in Benthic Invertebrate Composite-Taxa Samples Compared to Predicted Values, EVO LAEMP, 2022

Notes: Black bars indicate the upper 95th prediction interval of the bioaccumulation model. Blue dots represent values exceeding the trigger (above the 97.5th percentile of normal range and above upper 95% prediction interval). Dotted lines indicate EVWQP benchmarks (11, 18, and 26 mg/kg respectively) for juvenile fish. Gray shading represents the reference area normal range defined as the 2.5th and 97.5th percentiles of the distribution of reference area data (pooled 1996 to 2019 data) reported in the RAEMP.

Table G.1: Biological Trigger Analysis for %EPT in EVO LAEMP, September 2022

Exposure	Area	Type	rep	Reported Value	ADIT Value ^a	Lower 2.5th Percentile of the Habitat Adjusted Normal Range
Mine-exposed	RG_ERCK	T	1	9.86	67.2	67.2
	RG_MI3	M	1	65.8	64.3	58.8
	RG_MI3	M	2	71.7	60.7	54.3
	RG_MI3	M	3	71.8	59.9	53.6
	RG_MICOMP	M	1	43.0	62.3	55.2
	RG_MICOMP	M	2	36.9	64.5	58.6
	RG_MICOMP	M	3	40.1	61.2	54.6
	RG_MICOMP	M	4	42.0	63.6	57.6
	RG_MICOMP	M	5	48.1	65.1	57.9

Shaded cells signify those individual replicates that were associated with a biological trigger (i.e. lower than both the ADIT value [as based on predicted water quality] and the lower 2.5th percentile of habitat-adjusted normal range).

Notes: M= Mainstem and T = Tributary.

^a Information pertaining to the calculation of the ADIT value is shown in Section E3.1.

Table G.2: Biological Trigger Analysis for Selenium Concentrations in Benthic Invertebrate Tissue, EVO LAEMP, 2022

Waterbody	Stream Type	Area	Date	Predicted Selenium Water Concentration (mg/L)	Benthic Invertebrate Selenium Tissue			
					Upper 95% Prediction Limit (mg/kg dw)	Upper 97.5th Percentile of Normal Range (mg/kg dw)	Reported Concentration (mg/kg dw)	
Michel Creek	Mine-Exposed	T	RG_ERCK (T)	2-Mar-22	190	15.4	8.7	4.9
		T	RG_ERCK (T)	2-Mar-22	190	15.4	8.7	5.3
		T	RG_ERCK (T)	2-Mar-22	190	15.4	8.7	6.0
		T	RG_ERCK (T)	28-Apr-22	190	15.4	8.7	3.7
		T	RG_ERCK (T)	28-Apr-22	190	15.4	8.7	3.7
		T	RG_ERCK (T)	28-Apr-22	190	15.4	8.7	3.4
		T	RG_ERCK (T)	2-Jun-22	190	15.4	8.7	6.5
		T	RG_ERCK (T)	2-Jun-22	190	15.4	8.7	6.2
		T	RG_ERCK (T)	2-Jun-22	190	15.4	8.7	5.5
		T	RG_ERCK (T)	30-Jun-22	190	15.4	8.7	8.2
		T	RG_ERCK (T)	30-Jun-22	190	15.4	8.7	3.9
		T	RG_ERCK (T)	30-Jun-22	190	15.4	8.7	4.3
		T	RG_ERCK (T)	27-Jul-22	190	15.4	8.7	4.8
		T	RG_ERCK (T)	27-Jul-22	190	15.4	8.7	6.0
		T	RG_ERCK (T)	14-Sep-22	190	15.4	8.7	7.6
		T	RG_ERCK (T)	14-Sep-22	190	15.4	8.7	6.8
		T	RG_ERCK (T)	14-Sep-22	190	15.4	8.7	7.0
		T	RG_ERCK (T)	1-Nov-22	190	15.4	8.7	5.6
		T	RG_ERCK (T)	1-Nov-22	190	15.4	8.7	5.0
		T	RG_ERCK (T)	1-Nov-22	190	15.4	8.7	5.4
T	RG_ERCK (T)	30-Nov-22	190	15.4	8.7	7.5		
T	RG_ERCK (T)	30-Nov-22	190	15.4	8.7	8.0		
T	RG_ERCK (T)	30-Nov-22	190	15.4	8.7	6.2		
Michel Creek	Mine-Exposed	T	RG_GATE (T)	21-Apr-22	169	15.2	8.7	24.0
		T	RG_GATE (T)	21-Apr-22	169	15.2	8.7	24.0
		T	RG_GATE (T)	21-Apr-22	169	15.2	8.7	30.0
		T	RG_GATE (T)	2-Jun-22	169	15.2	8.7	21.0
		T	RG_GATE (T)	2-Jun-22	169	15.2	8.7	26.0
		T	RG_GATE (T)	2-Jun-22	169	15.2	8.7	21.0
		T	RG_GATE (T)	28-Jun-22	169	15.2	8.7	40.0
		T	RG_GATE (T)	28-Jun-22	169	15.2	8.7	20.0
		T	RG_GATE (T)	28-Jun-22	169	15.2	8.7	49.0
		T	RG_GATE (T)	25-Jul-22	169	15.2	8.7	21.0
		T	RG_GATE (T)	25-Jul-22	169	15.2	8.7	25.0
		T	RG_GATE (T)	25-Jul-22	169	15.2	8.7	26.0
		T	RG_GATE (T)	11-Aug-22	169	15.2	8.7	21.0
		T	RG_GATE (T)	11-Aug-22	169	15.2	8.7	9.0
		T	RG_GATE (T)	11-Aug-22	169	15.2	8.7	15.0
		T	RG_GATE (T)	15-Sep-22	169	15.2	8.7	22.0
		T	RG_GATE (T)	15-Sep-22	169	15.2	8.7	15.0
		T	RG_GATE (T)	15-Sep-22	169	15.2	8.7	19.0
		T	RG_GATE (T)	3-Nov-22	169	15.2	8.7	11.0
		T	RG_GATE (T)	3-Nov-22	169	15.2	8.7	20.0
T	RG_GATE (T)	3-Nov-22	169	15.2	8.7	19.0		
T	RG_GATE (T)	29-Nov-22	169	15.2	8.7	13.0		
T	RG_GATE (T)	29-Nov-22	169	15.2	8.7	27.0		
T	RG_GATE (T)	29-Nov-22	169	15.2	8.7	13.0		
Michel Creek	Mine-Exposed	T	RG_BOCK (T)	21-Apr-22	371	16.1	8.7	18.0
		T	RG_BOCK (T)	21-Apr-22	371	16.1	8.7	22.0
		T	RG_BOCK (T)	21-Apr-22	371	16.1	8.7	17.0
		T	RG_BOCK (T)	3-Jun-22	371	16.1	8.7	53.0
		T	RG_BOCK (T)	3-Jun-22	371	16.1	8.7	83.0
		T	RG_BOCK (T)	3-Jun-22	371	16.1	8.7	73.0
		T	RG_BOCK (T)	28-Jun-22	371	16.1	8.7	77.0
		T	RG_BOCK (T)	28-Jun-22	371	16.1	8.7	82.0
		T	RG_BOCK (T)	11-Aug-22	371	16.1	8.7	15.0
		T	RG_BOCK (T)	11-Aug-22	371	16.1	8.7	28.0
		T	RG_BOCK (T)	11-Aug-22	371	16.1	8.7	35.0
		T	RG_BOCK (T)	15-Sep-22	371	16.1	8.7	59.0
		T	RG_BOCK (T)	15-Sep-22	371	16.1	8.7	27.0
		T	RG_BOCK (T)	15-Sep-22	371	16.1	8.7	50.0
		T	RG_BOCK (T)	3-Nov-22	371	16.1	8.7	35.0
T	RG_BOCK (T)	29-Nov-22	371	16.1	8.7	31.0		

Shaded cells signify those individual replicates that were associated with a biological trigger (i.e. higher than both the upper 95% prediction limit [as based on predicted water quality] and the upper 97.5th percentile of normal range).

Notes: M= Mainstem and T = Tributary.

Table G.2: Biological Trigger Analysis for Selenium Concentrations in Benthic Invertebrate Tissue, EVO LAEMP, 2022

Waterbody	Stream Type	Area	Date	Predicted Selenium Water Concentration (mg/L)	Benthic Invertebrate Selenium Tissue			
					Upper 95% Prediction Limit (mg/kg dw)	Upper 97.5th Percentile of Normal Range (mg/kg dw)	Reported Concentration (mg/kg dw)	
Michel Creek	Mine-Exposed	M	RG_MICOMP (M)	27-Apr-22	28.3	13.4	8.7	9.4
		M	RG_MICOMP (M)	28-Apr-22	28.3	13.4	8.7	6.4
		M	RG_MICOMP (M)	28-Apr-22	28.3	13.4	8.7	6.3
		M	RG_MICOMP (M)	28-Apr-22	28.3	13.4	8.7	7.6
		M	RG_MICOMP (M)	28-Apr-22	28.3	13.4	8.7	7.7
		M	RG_MICOMP (M)	2-Jun-22	28.3	13.4	8.7	4.7
		M	RG_MICOMP (M)	2-Jun-22	28.3	13.4	8.7	6.1
		M	RG_MICOMP (M)	2-Jun-22	28.3	13.4	8.7	5.4
		M	RG_MICOMP (M)	29-Jun-22	28.3	13.4	8.7	8.5
		M	RG_MICOMP (M)	29-Jun-22	28.3	13.4	8.7	6.4
		M	RG_MICOMP (M)	29-Jun-22	28.3	13.4	8.7	8.6
		M	RG_MICOMP (M)	29-Jun-22	28.3	13.4	8.7	7.5
		M	RG_MICOMP (M)	29-Jun-22	28.3	13.4	8.7	7.2
		M	RG_MICOMP (M)	25-Jul-22	28.3	13.4	8.7	3.7
		M	RG_MICOMP (M)	25-Jul-22	28.3	13.4	8.7	5.2
		M	RG_MICOMP (M)	25-Jul-22	28.3	13.4	8.7	4.3
		M	RG_MICOMP (M)	25-Jul-22	28.3	13.4	8.7	4.2
		M	RG_MICOMP (M)	25-Jul-22	28.3	13.4	8.7	6.2
		M	RG_MICOMP (M)	18-Sep-22	28.3	13.4	8.7	8.6
		M	RG_MICOMP (M)	18-Sep-22	28.3	13.4	8.7	8.7
		M	RG_MICOMP (M)	18-Sep-22	28.3	13.4	8.7	7.7
		M	RG_MICOMP (M)	18-Sep-22	28.3	13.4	8.7	10
		M	RG_MICOMP (M)	18-Sep-22	28.3	13.4	8.7	11
		M	RG_MICOMP (M)	2-Nov-22	28.3	13.4	8.7	7.3
		M	RG_MICOMP (M)	2-Nov-22	28.3	13.4	8.7	11
		M	RG_MICOMP (M)	2-Nov-22	28.3	13.4	8.7	7.0
		M	RG_MICOMP (M)	2-Nov-22	28.3	13.4	8.7	7.1
		M	RG_MICOMP (M)	2-Nov-22	28.3	13.4	8.7	7.0
		M	RG_MICOMP (M)	30-Nov-22	28.3	13.4	8.7	7.1
		M	RG_MICOMP (M)	30-Nov-22	28.3	13.4	8.7	8.7
M	RG_MICOMP (M)	30-Nov-22	28.3	13.4	8.7	5.9		
M	RG_MICOMP (M)	30-Nov-22	28.3	13.4	8.7	8.7		
M	RG_MICOMP (M)	30-Nov-22	28.3	13.4	8.7	9.9		

Shaded cells signify those individual replicates that were associated with a biological trigger (i.e. higher than both the upper 95% prediction limit [as based on predicted water quality] and the upper 97.5th percentile of normal range).

Notes: M= Mainstem and T = Tributary.

APPENDIX H
LABORATORY REPORTS

WATER CHEMISTRY

ALS Laboratory Reports



CERTIFICATE OF ANALYSIS

Work Order : CG2202405
Client : Teck Coal Limited
Contact : Allie Ferguson
Address : Eagle 4 Facility 421 Pine Avenue
Sparwood BC Canada V0B 2G0
Telephone : ---
Project : F2 SRF FST
PO : VPO00816101
C-O-C number : March EVO LAEMP 2022
Sampler : Alex McClymont/ Minnow
Site : ---
Quote number : Teck Coal Master Quote
No. of samples received : 1
No. of samples analysed : 1

Page : 1 of 6
Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
Calgary AB Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 03-Mar-2022 09:05
Date Analysis Commenced : 03-Mar-2022
Issue Date : 15-Mar-2022 15:25

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Table with 3 columns: Signatories, Position, Laboratory Department. Lists names like Angela Ren, Caleb Deroche, Dan Gebert, Erin Sanchez, Harpreet Chawla, Kim Jensen, Lindsay Gung, Oscar Ruiz, Owen Cheng, Ruifang Zheng, Sara Niroomand and their respective roles and departments.



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

<i>Unit</i>	<i>Description</i>
-	No Unit
%	percent
µg/L	micrograms per litre
µS/cm	Microsiemens per centimetre
meq/L	milliequivalents per litre
mg/L	milligrams per litre
mV	millivolts
NTU	nephelometric turbidity units
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

<i>Qualifier</i>	<i>Description</i>
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).



Analytical Results

Sub-Matrix: Water					Client sample ID				
(Matrix: Water)					F2_OUTF_WS_ LAEMP_EVO_2 022-03_NP	---	---	---	---
Client sampling date / time					02-Mar-2022 13:45	---	---	---	---
Analyte	CAS Number	Method	LOR	Unit	CG2202405-001	-----	-----	-----	-----
					Result	---	---	---	---
Physical Tests									
acidity (as CaCO3)	---	E283	2.0	mg/L	<10.0 ^{DLM}	---	---	---	---
alkalinity, bicarbonate (as CaCO3)	---	E290	1.0	mg/L	482	---	---	---	---
alkalinity, bicarbonate (as HCO3)	71-52-3	E290	1.0	mg/L	587	---	---	---	---
alkalinity, carbonate (as CaCO3)	---	E290	1.0	mg/L	<1.0	---	---	---	---
alkalinity, carbonate (as CO3)	3812-32-6	E290	1.0	mg/L	<1.0	---	---	---	---
alkalinity, hydroxide (as CaCO3)	---	E290	1.0	mg/L	<1.0	---	---	---	---
alkalinity, hydroxide (as OH)	14280-30-9	E290	1.0	mg/L	<1.0	---	---	---	---
alkalinity, total (as CaCO3)	---	E290	1.0	mg/L	482	---	---	---	---
conductivity	---	E100	2.0	µS/cm	1930	---	---	---	---
hardness (as CaCO3), dissolved	---	EC100	0.50	mg/L	1380	---	---	---	---
oxidation-reduction potential [ORP]	---	E125	0.10	mV	440	---	---	---	---
pH	---	E108	0.10	pH units	8.20	---	---	---	---
solids, total dissolved [TDS]	---	E162	10	mg/L	1710	---	---	---	---
solids, total suspended [TSS]	---	E160-L	1.0	mg/L	1.7	---	---	---	---
turbidity	---	E121	0.10	NTU	1.73	---	---	---	---
Anions and Nutrients									
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.112	---	---	---	---
bromide	24959-67-9	E235.Br-L	0.050	mg/L	0.458	---	---	---	---
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	7.91	---	---	---	---
fluoride	16984-48-8	E235.F	0.020	mg/L	0.186	---	---	---	---
Kjeldahl nitrogen, total [TKN]	---	E318	0.050	mg/L	0.229	---	---	---	---
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.822	---	---	---	---
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	0.0182	---	---	---	---
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	---	---	---	---
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0026	---	---	---	---
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	865	---	---	---	---
Organic / Inorganic Carbon									
carbon, dissolved organic [DOC]	---	E358-L	0.50	mg/L	1.00	---	---	---	---



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	---	---	---	---
					F2_OUTF_WS_ LAEMP_EVO_2 022-03_NP				
Client sampling date / time					02-Mar-2022 13:45	---	---	---	---
Analyte	CAS Number	Method	LOR	Unit	CG2202405-001	-----	-----	-----	-----
					Result	---	---	---	---
Organic / Inorganic Carbon									
carbon, total organic [TOC]	---	E355-L	0.50	mg/L	1.08	---	---	---	---
Ion Balance									
anion sum	---	EC101	0.10	meq/L	27.9	---	---	---	---
cation sum	---	EC101	0.10	meq/L	28.1	---	---	---	---
ion balance (cations/anions)	---	EC101	0.010	%	101	---	---	---	---
ion balance (APHA)	---	EC101	0.010	%	0.357	---	---	---	---
Total Metals									
aluminum, total	7429-90-5	E420	0.0030	mg/L	<0.0030	---	---	---	---
antimony, total	7440-36-0	E420	0.00010	mg/L	0.00052	---	---	---	---
arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00046	---	---	---	---
barium, total	7440-39-3	E420	0.00010	mg/L	0.0109	---	---	---	---
beryllium, total	7440-41-7	E420	0.020	µg/L	<0.020	---	---	---	---
bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	---	---	---	---
boron, total	7440-42-8	E420	0.010	mg/L	0.032	---	---	---	---
cadmium, total	7440-43-9	E420	0.0050	µg/L	0.477	---	---	---	---
calcium, total	7440-70-2	E420	0.050	mg/L	293	---	---	---	---
chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	0.00041	---	---	---	---
cobalt, total	7440-48-4	E420	0.10	µg/L	13.8	---	---	---	---
copper, total	7440-50-8	E420	0.00050	mg/L	<0.00050	---	---	---	---
iron, total	7439-89-6	E420	0.010	mg/L	0.196	---	---	---	---
lead, total	7439-92-1	E420	0.000050	mg/L	0.000086	---	---	---	---
lithium, total	7439-93-2	E420	0.0010	mg/L	0.0634	---	---	---	---
magnesium, total	7439-95-4	E420	0.0050	mg/L	155	---	---	---	---
manganese, total	7439-96-5	E420	0.00010	mg/L	0.330	---	---	---	---
mercury, total	7439-97-6	E508-L	0.00050	µg/L	<0.00050	---	---	---	---
molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.0198	---	---	---	---
nickel, total	7440-02-0	E420	0.00050	mg/L	0.0532	---	---	---	---
potassium, total	7440-09-7	E420	0.050	mg/L	4.38	---	---	---	---
selenium, total	7782-49-2	E420	0.050	µg/L	6.33	---	---	---	---



Analytical Results

Sub-Matrix: Water					Client sample ID	---	---	---	---
(Matrix: Water)					F2_OUTF_WS_ LAEMP_EVO_2 022-03_NP	---	---	---	---
Client sampling date / time					02-Mar-2022 13:45	---	---	---	---
Analyte	CAS Number	Method	LOR	Unit	CG2202405-001	-----	-----	-----	-----
					Result	---	---	---	---
Total Metals									
silicon, total	7440-21-3	E420	0.10	mg/L	3.06	---	---	---	---
silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	---	---	---	---
sodium, total	7440-23-5	E420	0.050	mg/L	6.65	---	---	---	---
strontium, total	7440-24-6	E420	0.00020	mg/L	0.422	---	---	---	---
sulfur, total	7704-34-9	E420	0.50	mg/L	280	---	---	---	---
thallium, total	7440-28-0	E420	0.000010	mg/L	0.000113	---	---	---	---
tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	---	---	---	---
titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00030	---	---	---	---
uranium, total	7440-61-1	E420	0.000010	mg/L	0.0119	---	---	---	---
vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	---	---	---	---
zinc, total	7440-66-6	E420	0.0030	mg/L	0.0261	---	---	---	---
Dissolved Metals									
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0016	---	---	---	---
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00048	---	---	---	---
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00039	---	---	---	---
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0111	---	---	---	---
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.020	---	---	---	---
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	---	---	---	---
boron, dissolved	7440-42-8	E421	0.010	mg/L	0.036	---	---	---	---
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.372	---	---	---	---
calcium, dissolved	7440-70-2	E421	0.050	mg/L	276	---	---	---	---
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00010	---	---	---	---
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	15.4	---	---	---	---
copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00020	---	---	---	---
iron, dissolved	7439-89-6	E421	0.010	mg/L	0.026	---	---	---	---
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	---	---	---	---
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0696	---	---	---	---
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	169	---	---	---	---
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.355	---	---	---	---



Analytical Results

Sub-Matrix: Water					Client sample ID				
(Matrix: Water)					F2_OUTF_WS_ LAEMP_EVO_2 022-03_NP	----	----	----	----
Client sampling date / time					02-Mar-2022 13:45	----	----	----	----
Analyte	CAS Number	Method	LOR	Unit	CG2202405-001	-----	-----	-----	-----
					Result	----	----	----	----
Dissolved Metals									
mercury, dissolved	7439-97-6	E509	0.000050	mg/L	<0.000050	----	----	----	----
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.0188	----	----	----	----
nickel, dissolved	7440-02-0	E421	0.000050	mg/L	0.0577	----	----	----	----
potassium, dissolved	7440-09-7	E421	0.050	mg/L	4.70	----	----	----	----
selenium, dissolved	7782-49-2	E421	0.050	µg/L	8.13	----	----	----	----
silicon, dissolved	7440-21-3	E421	0.050	mg/L	3.05	----	----	----	----
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	----	----	----	----
sodium, dissolved	7440-23-5	E421	0.050	mg/L	7.22	----	----	----	----
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.376	----	----	----	----
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	303	----	----	----	----
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	0.000103	----	----	----	----
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	----	----	----	----
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	----	----	----	----
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.0127	----	----	----	----
vanadium, dissolved	7440-62-2	E421	0.000050	mg/L	<0.000050	----	----	----	----
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0245	----	----	----	----
dissolved mercury filtration location	----	EP509	-	-	Field	----	----	----	----
dissolved metals filtration location	----	EP421	-	-	Field	----	----	----	----

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: CG2202405	Page	: 1 of 13
Client	: Teck Coal Limited	Laboratory	: Calgary - Environmental
Contact	: Allie Ferguson	Account Manager	: Lyudmyla Shvets
Address	: Eagle 4 Facility 421 Pine Avenue Sparwood BC Canada V0B 2G0	Address	: 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5
Telephone	: ----	Telephone	: +1 403 407 1800
Project	: F2 SRF FST	Date Samples Received	: 03-Mar-2022 09:05
PO	: VPO00816101	Issue Date	: 15-Mar-2022 15:25
C-O-C number	: March EVO LAEMP 2022		
Sampler	: Alex McClymont/ Minnow		
Site	: ----		
Quote number	: Teck Coal Master Quote		
No. of samples received	: 1		
No. of samples analysed	: 1		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) F2_OUTF_WS_LAEMP_EVO_2022-03_NP	E298	02-Mar-2022	04-Mar-2022	28 days	2 days	✓	04-Mar-2022	26 days	0 days	✓	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE F2_OUTF_WS_LAEMP_EVO_2022-03_NP	E235.Br-L	02-Mar-2022	----	----	----		03-Mar-2022	28 days	1 days	✓	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE F2_OUTF_WS_LAEMP_EVO_2022-03_NP	E235.Cl-L	02-Mar-2022	----	----	----		03-Mar-2022	28 days	1 days	✓	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level)											
HDPE F2_OUTF_WS_LAEMP_EVO_2022-03_NP	E378-U	02-Mar-2022	----	----	----		03-Mar-2022	3 days	1 days	✓	
Anions and Nutrients : Fluoride in Water by IC											
HDPE F2_OUTF_WS_LAEMP_EVO_2022-03_NP	E235.F	02-Mar-2022	----	----	----		03-Mar-2022	28 days	1 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE F2_OUTF_WS_LAEMP_EVO_2022-03_NP	E235.NO3-L	02-Mar-2022	----	----	----		03-Mar-2022	3 days	1 days	✓	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE F2_OUTF_WS_LAEMP_EVO_2022-03_NP	E235.NO2-L	02-Mar-2022	----	----	----		03-Mar-2022	3 days	1 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec Actual		Eval	Analysis Date	Holding Times Rec Actual		Eval
Anions and Nutrients : Sulfate in Water by IC										
HDPE F2_OUTF_WS_LAEMP_EVO_2022-03_NP	E235.SO4	02-Mar-2022	----	----	----		03-Mar-2022	28 days	1 days	✔
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) F2_OUTF_WS_LAEMP_EVO_2022-03_NP	E318	02-Mar-2022	10-Mar-2022	28 days	8 days	✔	14-Mar-2022	20 days	4 days	✔
Anions and Nutrients : Total Phosphorus by Colourimetry (Ultra Trace)										
Amber glass total (sulfuric acid) F2_OUTF_WS_LAEMP_EVO_2022-03_NP	E372-U	02-Mar-2022	04-Mar-2022	28 days	2 days	✔	04-Mar-2022	26 days	0 days	✔
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)										
HDPE dissolved (nitric acid) F2_OUTF_WS_LAEMP_EVO_2022-03_NP	E421.Cr-L	02-Mar-2022	08-Mar-2022	180 days	6 days	✔	09-Mar-2022	174 days	1 days	✔
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid) F2_OUTF_WS_LAEMP_EVO_2022-03_NP	E509	02-Mar-2022	10-Mar-2022	28 days	8 days	✔	10-Mar-2022	20 days	0 days	✔
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) F2_OUTF_WS_LAEMP_EVO_2022-03_NP	E421	02-Mar-2022	08-Mar-2022	180 days	6 days	✔	09-Mar-2022	174 days	1 days	✔
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) F2_OUTF_WS_LAEMP_EVO_2022-03_NP	E358-L	02-Mar-2022	03-Mar-2022	28 days	1 days	✔	04-Mar-2022	27 days	1 days	✔
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) F2_OUTF_WS_LAEMP_EVO_2022-03_NP	E355-L	02-Mar-2022	03-Mar-2022	28 days	1 days	✔	04-Mar-2022	27 days	1 days	✔
Physical Tests : Acidity by Titration										
HDPE F2_OUTF_WS_LAEMP_EVO_2022-03_NP	E283	02-Mar-2022	----	----	----		03-Mar-2022	14 days	1 days	✔



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Alkalinity Species by Titration											
HDPE F2_OUTF_WS_LAEMP_EVO_2022-03_NP	E290	02-Mar-2022	----	----	----		03-Mar-2022	14 days	1 days	✓	
Physical Tests : Conductivity in Water											
HDPE F2_OUTF_WS_LAEMP_EVO_2022-03_NP	E100	02-Mar-2022	----	----	----		03-Mar-2022	28 days	1 days	✓	
Physical Tests : ORP by Electrode											
HDPE F2_OUTF_WS_LAEMP_EVO_2022-03_NP	E125	02-Mar-2022	----	----	----		07-Mar-2022	0 hrs	121 hrs	* EHTR-FM	
Physical Tests : pH by Meter											
HDPE F2_OUTF_WS_LAEMP_EVO_2022-03_NP	E108	02-Mar-2022	----	----	----		03-Mar-2022	0 hrs	25 hrs	* EHTR-FM	
Physical Tests : TDS by Gravimetry											
HDPE F2_OUTF_WS_LAEMP_EVO_2022-03_NP	E162	02-Mar-2022	----	----	----		08-Mar-2022	7 days	6 days	✓	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE [TSS-WB] F2_OUTF_WS_LAEMP_EVO_2022-03_NP	E160-L	02-Mar-2022	----	----	----		08-Mar-2022	7 days	6 days	✓	
Physical Tests : Turbidity by Nephelometry											
HDPE F2_OUTF_WS_LAEMP_EVO_2022-03_NP	E121	02-Mar-2022	----	----	----		05-Mar-2022	3 days	3 days	✓	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) F2_OUTF_WS_LAEMP_EVO_2022-03_NP	E420.Cr-L	02-Mar-2022	----	----	----		08-Mar-2022	180 days	6 days	✓	
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)											
Pre-cleaned amber glass - total (lab preserved) F2_OUTF_WS_LAEMP_EVO_2022-03_NP	E508-L	02-Mar-2022	----	----	----		08-Mar-2022	28 days	6 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		
				Rec	Actual			Rec	Actual	Eval
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) F2_OUTF_WS_LAEMP_EVO_2022-03_NP	E420	02-Mar-2022	----	----	----		08-Mar-2022	180 days	6 days	✔

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended

Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
Analytical Methods							
Laboratory Duplicates (DUP)							
Acidity by Titration	E283	422842	1	19	5.2	5.0	✓
Alkalinity Species by Titration	E290	423056	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	423933	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	423043	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	423044	1	20	5.0	5.0	✓
Conductivity in Water	E100	423054	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	426724	1	18	5.5	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	428421	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	426725	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	422958	1	9	11.1	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level)	E378-U	423041	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	423047	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	423045	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	423046	1	20	5.0	5.0	✓
ORP by Electrode	E125	426070	1	20	5.0	5.0	✓
pH by Meter	E108	423055	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	423042	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	424313	1	20	5.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	426631	1	20	5.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	428426	1	20	5.0	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	427027	1	12	8.3	5.0	✓
Total Metals in Water by CRC ICPMS	E420	426632	1	20	5.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	422959	1	9	11.1	5.0	✓
Total Phosphorus by Colourimetry (Ultra Trace)	E372-U	422977	1	13	7.6	5.0	✓
Turbidity by Nephelometry	E121	424662	1	20	5.0	5.0	✓
Laboratory Control Samples (LCS)							
Acidity by Titration	E283	422842	1	19	5.2	5.0	✓
Alkalinity Species by Titration	E290	423056	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	423933	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	423043	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	423044	1	20	5.0	5.0	✓
Conductivity in Water	E100	423054	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	426724	1	18	5.5	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	428421	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	426725	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	422958	1	9	11.1	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level)	E378-U	423041	1	20	5.0	5.0	✓



Matrix: **Water**

Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
<i>Analytical Methods</i>							
Laboratory Control Samples (LCS) - Continued							
Fluoride in Water by IC	E235.F	423047	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	423045	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	423046	1	20	5.0	5.0	✓
ORP by Electrode	E125	426070	1	20	5.0	5.0	✓
pH by Meter	E108	423055	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	423042	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	424313	1	20	5.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	426631	1	20	5.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	428426	1	20	5.0	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	427027	1	12	8.3	5.0	✓
Total Metals in Water by CRC ICPMS	E420	426632	1	20	5.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	422959	1	9	11.1	5.0	✓
Total Phosphorus by Colourimetry (Ultra Trace)	E372-U	422977	1	13	7.6	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	424309	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121	424662	1	20	5.0	5.0	✓
Method Blanks (MB)							
Acidity by Titration	E283	422842	1	19	5.2	5.0	✓
Alkalinity Species by Titration	E290	423056	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	423933	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	423043	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	423044	1	20	5.0	5.0	✓
Conductivity in Water	E100	423054	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	426724	1	18	5.5	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	428421	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	426725	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	422958	1	9	11.1	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level)	E378-U	423041	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	423047	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	423045	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	423046	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	423042	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	424313	1	20	5.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	426631	1	20	5.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	428426	1	20	5.0	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	427027	1	12	8.3	5.0	✓
Total Metals in Water by CRC ICPMS	E420	426632	1	20	5.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	422959	1	9	11.1	5.0	✓
Total Phosphorus by Colourimetry (Ultra Trace)	E372-U	422977	1	13	7.6	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	424309	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121	424662	1	20	5.0	5.0	✓



Matrix: **Water**

Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
<i>Analytical Methods</i>							
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	423933	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	423043	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	423044	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	426724	1	18	5.5	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	428421	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	426725	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	422958	1	9	11.1	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level)	E378-U	423041	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	423047	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	423045	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	423046	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	423042	1	20	5.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	426631	1	20	5.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	428426	1	20	5.0	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	427027	1	12	8.3	5.0	✓
Total Metals in Water by CRC ICPMS	E420	426632	1	20	5.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	422959	1	9	11.1	5.0	✓
Total Phosphorus by Colourimetry (Ultra Trace)	E372-U	422977	1	13	7.6	5.0	✓



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 Calgary - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 Calgary - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 Calgary - Environmental	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
ORP by Electrode	E125 Calgary - Environmental	Water	ASTM D1498 (mod)	Oxidation reduction potential is reported as the oxidation-reduction potential of the platinum metal-reference electrode employed, measured in mV. For high accuracy test results, it is recommended that this analysis be conducted in the field.
TSS by Gravimetry (Low Level)	E160-L Calgary - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 Calgary - Environmental	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC (Low Level)	E235.Cl-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Acidity by Titration	E283 Calgary - Environmental	Water	APHA 2310 B (mod)	Acidity is determined by potentiometric titration to pH endpoint of 8.3



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Alkalinity Species by Titration	E290 Calgary - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 Calgary - Environmental	Water	J. Environ. Monit., 2005, 7, 37-42 (mod)	Ammonia in water is analyzed by flow-injection analysis with fluorescence detection after reaction with orthophthaldialdehyde (OPA).
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 Vancouver - Environmental	Water	APHA 4500-Norg D (mod)	Total Kjeldahl Nitrogen is determined using block digestion followed by flow-injection analysis with fluorescence detection.
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L Calgary - Environmental	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Dissolved Organic Carbon by Combustion (Low Level)	E358-L Calgary - Environmental	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total Phosphorus by Colourimetry (Ultra Trace)	E372-U Calgary - Environmental	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level)	E378-U Calgary - Environmental	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Total Metals in Water by CRC ICPMS	E420 Vancouver - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L Vancouver - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS.
Dissolved Metals in Water by CRC ICPMS	E421 Vancouver - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L Vancouver - Environmental	Water	APHA 3030 B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L Vancouver - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAFS.
Dissolved Mercury in Water by CVAAS	E509 Vancouver - Environmental	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
Dissolved Hardness (Calculated)	EC100 Vancouver - Environmental	Water	APHA 2340B	"Hardness (as CaCO ₃), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Ion Balance using Dissolved Metals	EC101 Calgary - Environmental	Water	APHA 1030E	Cation Sum, Anion Sum, and Ion Balance are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present. Ion Balance cannot be calculated accurately for waters with very low electrical conductivity (EC).

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 Calgary - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 Vancouver - Environmental	Water	APHA 4500-Norg D (mod)	Samples are digested using block digestion with Copper Sulfate Digestion Reagent.
Preparation for Total Organic Carbon by Combustion	EP355 Calgary - Environmental	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon for Combustion	EP358 Calgary - Environmental	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Phosphorus in water	EP372 Calgary - Environmental	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Dissolved Metals Water Filtration	EP421 Vancouver - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO ₃ .



<i>Preparation Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
Dissolved Mercury Water Filtration	EP509 Vancouver - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.

QUALITY CONTROL REPORT

Work Order : **CG2202405**

Page : 1 of 18

Client : Teck Coal Limited
Contact : Allie Ferguson
Address : Eagle 4 Facility 421 Pine Avenue
 Sparwood BC Canada V0B 2G0
Telephone : ----
Project : F2 SRF FST
PO : VPO00816101
C-O-C number : March EVO LAEMP 2022
Sampler : Alex McClymont/ Minnow
Site : ----
Quote number : Teck Coal Master Quote
No. of samples received : 1
No. of samples analysed : 1

Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
 Calgary, Alberta Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 03-Mar-2022 09:05
Date Analysis Commenced : 03-Mar-2022
Issue Date : 15-Mar-2022 15:25

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits
- Reference Material (RM) Report; Recovery and Acceptance Limits
- Method Blank (MB) Report; Recovery and Acceptance Limits
- Laboratory Control Sample (LCS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Angela Ren	Team Leader - Metals	Metals, Burnaby, British Columbia
Caleb Deroche	Lab Analyst	Metals, Burnaby, British Columbia
Dan Gebert	Laboratory Analyst	Metals, Burnaby, British Columbia
Erin Sanchez		Inorganics, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Kim Jensen	Department Manager - Metals	Metals, Burnaby, British Columbia
Lindsay Gung	Supervisor - Water Chemistry	Inorganics, Burnaby, British Columbia
Oscar Ruiz	Lab Assistant	Inorganics, Calgary, Alberta
Owen Cheng		Metals, Burnaby, British Columbia
Ruifang Zheng	Analyst	Inorganics, Calgary, Alberta
Sara Niroomand		Inorganics, Calgary, Alberta



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Services number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percentage Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test specific).

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 422842)											
CG2202400-018	Anonymous	acidity (as CaCO ₃)	----	E283	10.0	mg/L	18.9	18.0	0.9	Diff <2x LOR	----
Physical Tests (QC Lot: 423054)											
CG2202400-021	Anonymous	conductivity	----	E100	2.0	µS/cm	1840	1840	0.217%	10%	----
Physical Tests (QC Lot: 423055)											
CG2202400-021	Anonymous	pH	----	E108	0.10	pH units	8.04	8.03	0.124%	4%	----
Physical Tests (QC Lot: 423056)											
CG2202400-021	Anonymous	alkalinity, bicarbonate (as CaCO ₃)	----	E290	1.0	mg/L	490	489	0.163%	20%	----
		alkalinity, carbonate (as CaCO ₃)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, hydroxide (as CaCO ₃)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, total (as CaCO ₃)	----	E290	1.0	mg/L	490	489	0.163%	20%	----
Physical Tests (QC Lot: 424313)											
CG2202364-001	Anonymous	solids, total dissolved [TDS]	----	E162	20	mg/L	606	615	1.39%	20%	----
Physical Tests (QC Lot: 424662)											
CG2202364-002	Anonymous	turbidity	----	E121	0.10	NTU	<0.10	<0.10	0	Diff <2x LOR	----
Physical Tests (QC Lot: 426070)											
CG2202400-035	Anonymous	oxidation-reduction potential [ORP]	----	E125	0.10	mV	483	482	0.311%	15%	----
Anions and Nutrients (QC Lot: 422977)											
CG2202400-033	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 423041)											
CG2202405-001	F2_OUTF_WS_LAEMP_E VO_2022-03_NP	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 423042)											
CG2202405-001	F2_OUTF_WS_LAEMP_E VO_2022-03_NP	sulfate (as SO ₄)	14808-79-8	E235.SO4	1.50	mg/L	865	872	0.789%	20%	----
Anions and Nutrients (QC Lot: 423043)											
CG2202405-001	F2_OUTF_WS_LAEMP_E VO_2022-03_NP	bromide	24959-67-9	E235.Br-L	0.250	mg/L	0.458	0.388	0.070	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 423044)											
CG2202405-001	F2_OUTF_WS_LAEMP_E VO_2022-03_NP	chloride	16887-00-6	E235.Cl-L	0.50	mg/L	7.91	7.77	1.79%	20%	----
Anions and Nutrients (QC Lot: 423045)											



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 423045) - continued											
CG2202405-001	F2_OUTF_WS_LAEMP_E VO_2022-03_NP	nitrate (as N)	14797-55-8	E235.NO3-L	0.0250	mg/L	0.822	0.830	0.920%	20%	----
Anions and Nutrients (QC Lot: 423046)											
CG2202405-001	F2_OUTF_WS_LAEMP_E VO_2022-03_NP	nitrite (as N)	14797-65-0	E235.NO2-L	0.0050	mg/L	0.0182	0.0242	0.0060	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 423047)											
CG2202405-001	F2_OUTF_WS_LAEMP_E VO_2022-03_NP	fluoride	16984-48-8	E235.F	0.100	mg/L	0.186	0.180	0.005	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 423933)											
CG2202400-019	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.146	0.145	0.206%	20%	----
Anions and Nutrients (QC Lot: 428426)											
CG2202395-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 422958)											
CG2202405-001	F2_OUTF_WS_LAEMP_E VO_2022-03_NP	carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	1.00	1.09	0.09	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 422959)											
CG2202405-001	F2_OUTF_WS_LAEMP_E VO_2022-03_NP	carbon, total organic [TOC]	----	E355-L	0.50	mg/L	1.08	1.08	0	Diff <2x LOR	----
Total Metals (QC Lot: 426631)											
CG2202400-020	Anonymous	chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
Total Metals (QC Lot: 426632)											
CG2202400-020	Anonymous	aluminum, total	7429-90-5	E420	0.0030	mg/L	<0.0030	<0.0030	0	Diff <2x LOR	----
		antimony, total	7440-36-0	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00089	0.00094	0.00005	Diff <2x LOR	----
		barium, total	7440-39-3	E420	0.00010	mg/L	0.0106	0.0106	0.0542%	20%	----
		beryllium, total	7440-41-7	E420	0.020	mg/L	<0.020 µg/L	<0.000020	0	Diff <2x LOR	----
		bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, total	7440-42-8	E420	0.010	mg/L	0.029	0.029	0.0005	Diff <2x LOR	----
		cadmium, total	7440-43-9	E420	0.0050	mg/L	0.0395 µg/L	0.0000391	0.0000004	Diff <2x LOR	----
		calcium, total	7440-70-2	E420	0.050	mg/L	260	263	0.946%	20%	----
		cobalt, total	7440-48-4	E420	0.10	mg/L	6.20 µg/L	0.00645	3.95%	20%	----
		copper, total	7440-50-8	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		iron, total	7439-89-6	E420	0.010	mg/L	0.884	0.909	2.82%	20%	----
		lead, total	7439-92-1	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		lithium, total	7439-93-2	E420	0.0010	mg/L	0.0599	0.0605	1.04%	20%	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (QC Lot: 426632) - continued											
CG2202400-020	Anonymous	magnesium, total	7439-95-4	E420	0.0050	mg/L	158	162	2.92%	20%	----
		manganese, total	7439-96-5	E420	0.00010	mg/L	0.361	0.373	3.07%	20%	----
		molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.00276	0.00280	1.51%	20%	----
		nickel, total	7440-02-0	E420	0.00050	mg/L	0.0169	0.0177	4.60%	20%	----
		potassium, total	7440-09-7	E420	0.050	mg/L	5.72	5.92	3.49%	20%	----
		selenium, total	7782-49-2	E420	0.050	mg/L	1.22 µg/L	0.00125	2.10%	20%	----
		silicon, total	7440-21-3	E420	0.10	mg/L	3.13	3.32	5.89%	20%	----
		silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, total	7440-23-5	E420	0.050	mg/L	5.14	5.34	3.81%	20%	----
		strontium, total	7440-24-6	E420	0.00020	mg/L	0.525	0.537	2.29%	20%	----
		sulfur, total	7704-34-9	E420	0.50	mg/L	265	274	3.36%	20%	----
		thallium, total	7440-28-0	E420	0.000010	mg/L	0.000094	0.000095	0.000001	Diff <2x LOR	----
		tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		uranium, total	7440-61-1	E420	0.000010	mg/L	0.00908	0.00930	2.47%	20%	----
		vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		zinc, total	7440-66-6	E420	0.0030	mg/L	0.0038	<0.0030	0.0008	Diff <2x LOR	----
Total Metals (QC Lot: 427027)											
CG2202353-001	Anonymous	mercury, total	7439-97-6	E508-L	0.00050	ng/L	0.00054 µg/L	0.55	0.01	Diff <2x LOR	----
Dissolved Metals (QC Lot: 426724)											
CG2202405-001	F2_OUTF_WS_LAEMP_E VO_2022-03_NP	chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 426725)											
CG2202405-001	F2_OUTF_WS_LAEMP_E VO_2022-03_NP	aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0016	0.0010	0.0005	Diff <2x LOR	----
		antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00048	0.00048	0.000002	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00039	0.00036	0.00003	Diff <2x LOR	----
		barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0111	0.0110	0.613%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.020	mg/L	<0.020 µg/L	<0.000020	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.010	mg/L	0.036	0.036	0.0003	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E421	0.0050	mg/L	0.372 µg/L	0.000368	0.985%	20%	----
		calcium, dissolved	7440-70-2	E421	0.050	mg/L	276	279	1.08%	20%	----
		cobalt, dissolved	7440-48-4	E421	0.10	mg/L	15.4 µg/L	0.0156	1.63%	20%	----
		copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 426725) - continued											
CG2202405-001	F2_OUTF_WS_LAEMP_E VO_2022-03_NP	iron, dissolved	7439-89-6	E421	0.010	mg/L	0.026	0.026	0.0004	Diff <2x LOR	----
		lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0696	0.0683	2.00%	20%	----
		magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	169	168	1.03%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.355	0.357	0.548%	20%	----
		molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.0188	0.0188	0.164%	20%	----
		nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.0577	0.0589	2.07%	20%	----
		potassium, dissolved	7440-09-7	E421	0.050	mg/L	4.70	4.83	2.90%	20%	----
		selenium, dissolved	7782-49-2	E421	0.050	mg/L	8.13 µg/L	0.00857	5.22%	20%	----
		silicon, dissolved	7440-21-3	E421	0.050	mg/L	3.05	3.10	1.54%	20%	----
		silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E421	0.050	mg/L	7.22	7.28	0.806%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.376	0.372	1.18%	20%	----
		sulfur, dissolved	7704-34-9	E421	0.50	mg/L	303	299	1.47%	20%	----
		thallium, dissolved	7440-28-0	E421	0.000010	mg/L	0.000103	0.000105	2.00%	20%	----
		tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
	uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.0127	0.0123	3.10%	20%	----	
	vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----	
	zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0245	0.0248	1.13%	20%	----	
Dissolved Metals (QC Lot: 428421)											
CG2202400-031	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 422842)						
acidity (as CaCO3)	----	E283	2	mg/L	<2.0	----
Physical Tests (QCLot: 423054)						
conductivity	----	E100	1	µS/cm	<1.0	----
Physical Tests (QCLot: 423056)						
alkalinity, bicarbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, carbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, hydroxide (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 424309)						
solids, total suspended [TSS]	----	E160-L	1	mg/L	<1.0	----
Physical Tests (QCLot: 424313)						
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 424662)						
turbidity	----	E121	0.1	NTU	<0.10	----
Anions and Nutrients (QCLot: 422977)						
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 423041)						
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 423042)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 423043)						
bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 423044)						
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	----
Anions and Nutrients (QCLot: 423045)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 423046)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 423047)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 423933)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 428426)						



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 428426) - continued						
Kjeldahl nitrogen, total [TKN]	---	E318	0.05	mg/L	<0.050	---
Organic / Inorganic Carbon (QCLot: 422958)						
carbon, dissolved organic [DOC]	---	E358-L	0.5	mg/L	<0.50	---
Organic / Inorganic Carbon (QCLot: 422959)						
carbon, total organic [TOC]	---	E355-L	0.5	mg/L	<0.50	---
Total Metals (QCLot: 426631)						
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	<0.00010	---
Total Metals (QCLot: 426632)						
aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	---
antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	---
arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	---
barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	---
beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	---
bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	---
boron, total	7440-42-8	E420	0.01	mg/L	<0.010	---
cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	---
calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	---
cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	---
copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	---
iron, total	7439-89-6	E420	0.01	mg/L	<0.010	---
lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	---
lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	---
magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	---
manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	---
molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	---
nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	---
potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	---
selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	---
silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	---
silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	---
sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	---
strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	---
sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	---
thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	---
tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	---
titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	---



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 426632) - continued						
uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	---
vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	---
zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	---
Total Metals (QCLot: 427027)						
mercury, total	7439-97-6	E508-L	0.5	ng/L	<0.50	---
Dissolved Metals (QCLot: 426724)						
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	<0.00010	---
Dissolved Metals (QCLot: 426725)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	---
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	---
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	---
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	---
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	---
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	---
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	---
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	---
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	---
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	---
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	---
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	---
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	---
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	---
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	---
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	---
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	---
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	---
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	---
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	---
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	---
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	---
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	---
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	---
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	---
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	---
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	---
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	---

Page : 10 of 18
Work Order : CG2202405
Client : Teck Coal Limited
Project : F2 SRF FST



Sub-Matrix: **Water**

<i>Analyte</i>	<i>CAS Number</i>	<i>Method</i>	<i>LOR</i>	<i>Unit</i>	<i>Result</i>	<i>Qualifier</i>
Dissolved Metals (QCLot: 426725) - continued						
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
Dissolved Metals (QCLot: 428421)						
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 422842)									
acidity (as CaCO ₃)	----	E283	2	mg/L	50 mg/L	104	85.0	115	----
Physical Tests (QCLot: 423054)									
conductivity	----	E100	1	µS/cm	146.9 µS/cm	99.9	90.0	110	----
Physical Tests (QCLot: 423055)									
pH	----	E108	----	pH units	7 pH units	99.8	98.6	101	----
Physical Tests (QCLot: 423056)									
alkalinity, total (as CaCO ₃)	----	E290	1	mg/L	500 mg/L	101	85.0	115	----
Physical Tests (QCLot: 424309)									
solids, total suspended [TSS]	----	E160-L	1	mg/L	150 mg/L	103	85.0	115	----
Physical Tests (QCLot: 424313)									
solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	104	85.0	115	----
Physical Tests (QCLot: 424662)									
turbidity	----	E121	0.1	NTU	200 NTU	99.6	85.0	115	----
Physical Tests (QCLot: 426070)									
oxidation-reduction potential [ORP]	----	E125	----	mV	220 mV	101	95.4	104	----
Anions and Nutrients (QCLot: 422977)									
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	8.02 mg/L	104	80.0	120	----
Anions and Nutrients (QCLot: 423041)									
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.02 mg/L	97.7	80.0	120	----
Anions and Nutrients (QCLot: 423042)									
sulfate (as SO ₄)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 423043)									
bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	98.9	85.0	115	----
Anions and Nutrients (QCLot: 423044)									
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	97.3	90.0	110	----
Anions and Nutrients (QCLot: 423045)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	97.9	90.0	110	----
Anions and Nutrients (QCLot: 423046)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	96.0	90.0	110	----
Anions and Nutrients (QCLot: 423047)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	94.6	90.0	110	----
Anions and Nutrients (QCLot: 423933)									



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Anions and Nutrients (QCLot: 423933) - continued									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	102	85.0	115	----
Anions and Nutrients (QCLot: 428426)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	99.3	75.0	125	----
Organic / Inorganic Carbon (QCLot: 422958)									
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	100	80.0	120	----
Organic / Inorganic Carbon (QCLot: 422959)									
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	108	80.0	120	----
Total Metals (QCLot: 426631)									
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	0.25 mg/L	98.8	80.0	120	----
Total Metals (QCLot: 426632)									
aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	98.9	80.0	120	----
antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	109	80.0	120	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	100	80.0	120	----
barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	95.8	80.0	120	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	97.6	80.0	120	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	117	80.0	120	----
boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	93.6	80.0	120	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	97.6	80.0	120	----
calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	102	80.0	120	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	95.8	80.0	120	----
copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	96.4	80.0	120	----
iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	85.6	80.0	120	----
lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	105	80.0	120	----
lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	92.3	80.0	120	----
magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	94.8	80.0	120	----
manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	98.5	80.0	120	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	107	80.0	120	----
nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	95.1	80.0	120	----
potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	96.2	80.0	120	----
selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	101	80.0	120	----
silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	106	80.0	120	----
silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	97.3	80.0	120	----
sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	98.0	80.0	120	----
strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	103	80.0	120	----
sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	99.4	80.0	120	----



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Total Metals (QCLot: 426632) - continued									
thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	106	80.0	120	----
tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	103	80.0	120	----
titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	101	80.0	120	----
uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	104	80.0	120	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	99.1	80.0	120	----
zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	102	80.0	120	----
Total Metals (QCLot: 427027)									
mercury, total	7439-97-6	E508-L	0.5	ng/L	5 ng/L	103	80.0	120	----
Dissolved Metals (QCLot: 426724)									
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	0.25 mg/L	101	80.0	120	----
Dissolved Metals (QCLot: 426725)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	108	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	105	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	105	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	103	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	103	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	98.0	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	102	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	101	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	103	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	102	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	101	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	103	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	98.6	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	100	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	104	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	102	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	100	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	102	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	105	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	106	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	107	80.0	120	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	91.1	80.0	120	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	105	80.0	120	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	97.3	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	98.2	80.0	120	----



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 426725) - continued									
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	101	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	103	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	108	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	100	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	105	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	103	80.0	120	----
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	102	80.0	120	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	Target	MS	Low	High	
Anions and Nutrients (QCLot: 422977)										
CG2202400-034	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0642 mg/L	0.0676 mg/L	94.9	70.0	130	----
Anions and Nutrients (QCLot: 423041)										
CG2202406-001	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0522 mg/L	0.05 mg/L	104	70.0	130	----
Anions and Nutrients (QCLot: 423042)										
CG2202406-007	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	ND mg/L	100 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 423043)										
CG2202406-007	Anonymous	bromide	24959-67-9	E235.Br-L	0.454 mg/L	0.5 mg/L	90.7	75.0	125	----
Anions and Nutrients (QCLot: 423044)										
CG2202406-007	Anonymous	chloride	16887-00-6	E235.Cl-L	98.0 mg/L	100 mg/L	98.0	75.0	125	----
Anions and Nutrients (QCLot: 423045)										
CG2202406-007	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	2.43 mg/L	2.5 mg/L	97.2	75.0	125	----
Anions and Nutrients (QCLot: 423046)										
CG2202406-007	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.482 mg/L	0.5 mg/L	96.4	75.0	125	----
Anions and Nutrients (QCLot: 423047)										
CG2202406-007	Anonymous	fluoride	16984-48-8	E235.F	0.846 mg/L	1 mg/L	84.6	75.0	125	----
Anions and Nutrients (QCLot: 423933)										
CG2202400-020	Anonymous	ammonia, total (as N)	7664-41-7	E298	ND mg/L	0.1 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 428426)										
CG2202395-002	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.55 mg/L	2.5 mg/L	102	70.0	130	----
Organic / Inorganic Carbon (QCLot: 422958)										
CG2202405-001	F2_OUTF_WS_LAEMP_EV O_2022-03_NP	carbon, dissolved organic [DOC]	----	E358-L	5.31 mg/L	5 mg/L	106	70.0	130	----
Organic / Inorganic Carbon (QCLot: 422959)										
CG2202405-001	F2_OUTF_WS_LAEMP_EV O_2022-03_NP	carbon, total organic [TOC]	----	E355-L	5.23 mg/L	5 mg/L	105	70.0	130	----
Total Metals (QCLot: 426631)										
CG2202400-021	Anonymous	chromium, total	7440-47-3	E420.Cr-L	0.0387 mg/L	0.04 mg/L	96.8	70.0	130	----



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 426632)										
CG2202400-021	Anonymous	aluminum, total	7429-90-5	E420	0.188 mg/L	0.2 mg/L	94.3	70.0	130	----
		antimony, total	7440-36-0	E420	0.0208 mg/L	0.02 mg/L	104	70.0	130	----
		arsenic, total	7440-38-2	E420	0.0190 mg/L	0.02 mg/L	95.0	70.0	130	----
		barium, total	7440-39-3	E420	0.0172 mg/L	0.02 mg/L	86.1	70.0	130	----
		beryllium, total	7440-41-7	E420	0.0353 mg/L	0.04 mg/L	88.4	70.0	130	----
		bismuth, total	7440-69-9	E420	0.00929 mg/L	0.01 mg/L	92.9	70.0	130	----
		boron, total	7440-42-8	E420	0.091 mg/L	0.1 mg/L	91.0	70.0	130	----
		cadmium, total	7440-43-9	E420	0.00363 mg/L	0.004 mg/L	90.7	70.0	130	----
		calcium, total	7440-70-2	E420	ND mg/L	4 mg/L	ND	70.0	130	----
		cobalt, total	7440-48-4	E420	0.0176 mg/L	0.02 mg/L	88.1	70.0	130	----
		copper, total	7440-50-8	E420	0.0173 mg/L	0.02 mg/L	86.6	70.0	130	----
		iron, total	7439-89-6	E420	1.87 mg/L	2 mg/L	93.6	70.0	130	----
		lead, total	7439-92-1	E420	0.0187 mg/L	0.02 mg/L	93.3	70.0	130	----
		lithium, total	7439-93-2	E420	0.0918 mg/L	0.1 mg/L	91.8	70.0	130	----
		magnesium, total	7439-95-4	E420	ND mg/L	1 mg/L	ND	70.0	130	----
		manganese, total	7439-96-5	E420	ND mg/L	0.02 mg/L	ND	70.0	130	----
		molybdenum, total	7439-98-7	E420	0.0213 mg/L	0.02 mg/L	106	70.0	130	----
		nickel, total	7440-02-0	E420	0.0346 mg/L	0.04 mg/L	86.4	70.0	130	----
		potassium, total	7440-09-7	E420	ND mg/L	4 mg/L	ND	70.0	130	----
		selenium, total	7782-49-2	E420	0.0422 mg/L	0.04 mg/L	105	70.0	130	----
		silicon, total	7440-21-3	E420	9.56 mg/L	10 mg/L	95.6	70.0	130	----
		silver, total	7440-22-4	E420	0.00392 mg/L	0.004 mg/L	98.0	70.0	130	----
		sodium, total	7440-23-5	E420	ND mg/L	2 mg/L	ND	70.0	130	----
		strontium, total	7440-24-6	E420	ND mg/L	0.02 mg/L	ND	70.0	130	----
		sulfur, total	7704-34-9	E420	ND mg/L	20 mg/L	ND	70.0	130	----
		thallium, total	7440-28-0	E420	0.00379 mg/L	0.004 mg/L	94.6	70.0	130	----
		tin, total	7440-31-5	E420	0.0199 mg/L	0.02 mg/L	99.4	70.0	130	----
		titanium, total	7440-32-6	E420	0.0391 mg/L	0.04 mg/L	97.7	70.0	130	----
		uranium, total	7440-61-1	E420	ND mg/L	0.004 mg/L	ND	70.0	130	----
		vanadium, total	7440-62-2	E420	0.0960 mg/L	0.1 mg/L	96.0	70.0	130	----
		zinc, total	7440-66-6	E420	0.374 mg/L	0.4 mg/L	93.5	70.0	130	----
Total Metals (QCLot: 427027)										
CG2202396-001	Anonymous	mercury, total	7439-97-6	E508-L	4.90 ng/L	5 ng/L	98.0	70.0	130	----
Dissolved Metals (QCLot: 426724)										
CG2202414-001	Anonymous	chromium, dissolved	7440-47-3	E421.Cr-L	0.0816 mg/L	0.08 mg/L	102	70.0	130	----
Dissolved Metals (QCLot: 426725)										



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 426725) - continued										
CG2202414-001	Anonymous	aluminum, dissolved	7429-90-5	E421	0.411 mg/L	0.4 mg/L	103	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.0406 mg/L	0.04 mg/L	101	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.0427 mg/L	0.04 mg/L	107	70.0	130	----
		barium, dissolved	7440-39-3	E421	0.0367 mg/L	0.04 mg/L	91.7	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.0798 mg/L	0.08 mg/L	99.8	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.0173 mg/L	0.02 mg/L	86.5	70.0	130	----
		boron, dissolved	7440-42-8	E421	0.204 mg/L	0.2 mg/L	102	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.00796 mg/L	0.008 mg/L	99.5	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	8 mg/L	ND	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.0390 mg/L	0.04 mg/L	97.6	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.0384 mg/L	0.04 mg/L	95.9	70.0	130	----
		iron, dissolved	7439-89-6	E421	4.05 mg/L	4 mg/L	101	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.0374 mg/L	0.04 mg/L	93.4	70.0	130	----
		lithium, dissolved	7439-93-2	E421	ND mg/L	0.2 mg/L	ND	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	2 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E421	0.0399 mg/L	0.04 mg/L	99.9	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.0422 mg/L	0.04 mg/L	106	70.0	130	----
		nickel, dissolved	7440-02-0	E421	0.0730 mg/L	0.08 mg/L	91.2	70.0	130	----
		potassium, dissolved	7440-09-7	E421	7.55 mg/L	8 mg/L	94.4	70.0	130	----
		selenium, dissolved	7782-49-2	E421	ND mg/L	0.08 mg/L	ND	70.0	130	----
		silicon, dissolved	7440-21-3	E421	19.4 mg/L	20 mg/L	96.8	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.00750 mg/L	0.008 mg/L	93.8	70.0	130	----
		sodium, dissolved	7440-23-5	E421	ND mg/L	4 mg/L	ND	70.0	130	----
		strontium, dissolved	7440-24-6	E421	ND mg/L	0.04 mg/L	ND	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	ND mg/L	40 mg/L	ND	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.00734 mg/L	0.008 mg/L	91.7	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.0414 mg/L	0.04 mg/L	104	70.0	130	----
		titanium, dissolved	7440-32-6	E421	0.0832 mg/L	0.08 mg/L	104	70.0	130	----
		uranium, dissolved	7440-61-1	E421	ND mg/L	0.008 mg/L	ND	70.0	130	----
		vanadium, dissolved	7440-62-2	E421	0.212 mg/L	0.2 mg/L	106	70.0	130	----
		zinc, dissolved	7440-66-6	E421	0.791 mg/L	0.8 mg/L	98.9	70.0	130	----
Dissolved Metals (QCLot: 428421)										
CG2202400-032	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000971 mg/L	0.0001 mg/L	97.1	70.0	130	----



COC ID: March EVO LAEMP 2022

TURNAROUND TIME:

PROJECT/CLIENT INFO				LABORATORY			
Facility Name / Job#	F2 SRF			Lab Name	ALS Calgary		
Project Manager	Allie Ferguson			Lab Contact	Lyudmyla Shvets		
Email	allie.ferguson@teck.com			Email	lyudmyla.shvets@alsglobal.com		
Address	421 Pine Avenue			Address	2539 29 Street NE		
City	Sparwood	Province	BC	City	Calgary	Province	AB
Postal Code	V0B 2G0	Country	Canada	Postal Code	T1Y 7B5	Country	Canada
Phone Number	250-425-8202			Phone Number	1 403 407 1794		

SAMPLE DETAILS								ANALYSIS REQUESTED						
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	TECKCOAL-ROUTINE-VA	ALS_Package-DOC	ALS_Package-TKN/TOC	HG-T-U-CVAF-VA	HG-D-CVAF-VA	TECKCOAL-MET-T-VA	TECKCOAL-MET-D-VA
F2_OUT_WS_LAEMP_EVO_2022-03_NP	F2_OUT	WS	No	3/2/2022	13:45	G	7	X	X	X	X	X	X	

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
ALS PO 750546	Alex McClymont/Minnow	March 2, 2022	<i>[Signature]</i> 9:05 MAR 2 2022
NE OF BOTTLES RETURNED/DESCRIPTION Regular (default) <input checked="" type="checkbox"/> Priority (2-3 business days) - 50% surcharge Emergency (1 Business Day) - 100% surcharge For Emergency <1 Day, ASAP or Weekend - Contact ALS	Sampler's Name Alex McClymont	Sampler's Signature AMC	Mobile # 780-293-6750 Date/Time March 2, 2022

Environmental Division
 Calgary
 Work Order Reference
CG2202405





CERTIFICATE OF ANALYSIS

Work Order : **CG2202406**
Client : **Teck Coal Limited**
Contact : Mike Pope
Address : RR#1 HWY#3
Sparwood BC Canada V0B 2G1
Telephone : ----
Project : REGIONAL EFFECTS PROGRAM
PO : VPO00816101
C-O-C number : March EVO LAEMP 2022
Sampler : AMC
Site : ----
Quote number : Teck Coal Master Quote
No. of samples received : 8
No. of samples analysed : 8

Page : 1 of 11
Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
Calgary AB Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 03-Mar-2022 09:05
Date Analysis Commenced : 03-Mar-2022
Issue Date : 18-Mar-2022 11:33

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
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General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
 LOR: Limit of Reporting (detection limit).

Unit	Description
-	No Unit
%	percent
µg/L	micrograms per litre
µS/cm	Microsiemens per centimetre
meq/L	milliequivalents per litre
mg/L	milligrams per litre
mV	millivolts
NTU	nephelometric turbidity units
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Sample Comments

Sample	Client Id	Comment
CG2202406-003	RG_TRIP_WS_LAEMP_EVO_2 022-03_NP	Sample 3 (Trip blank): dissolved metals, mercury samples not received. Analyses cancelled.

Qualifiers

Qualifier	Description
DLDS	Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
DTC	Dissolved concentration exceeds total. Results were confirmed by re-analysis.



RRV *Reported result verified by repeat analysis.*
TKNI *TKN result may be biased low due to Nitrate interference. Nitrate-N is > 10x TKN.*



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKMD_ WS_LAEMP_EV O_2022-03_NP	RG_RIVER_WS _LAEMP_EVO_ 2022-03_NP	RG_TRIP_WS_L AEMP_EVO_20 22-03_NP	RG_ERCKUT_W S_LAEMP_EVO _2022-03_NP	RG_ERCK_WS_ LAEMP_EVO_2 022-03_NP
Client sampling date / time					02-Mar-2022 13:30	02-Mar-2022 16:00	02-Mar-2022 16:00	02-Mar-2022 13:00	02-Mar-2022 10:30	
Analyte	CAS Number	Method	LOR	Unit	CG2202406-001 Result	CG2202406-002 Result	CG2202406-003 Result	CG2202406-004 Result	CG2202406-005 Result	
Physical Tests										
acidity (as CaCO3)	----	E283	2.0	mg/L	8.8	<2.0	<2.0	19.1	3.8	
alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	456	134	<1.0	452	404	
alkalinity, bicarbonate (as HCO3)	71-52-3	E290	1.0	mg/L	556	163	<1.0	551	493	
alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	20.0	4.4	<1.0	<1.0	19.2	
alkalinity, carbonate (as CO3)	3812-32-6	E290	1.0	mg/L	12.0	2.6	<1.0	<1.0	11.5	
alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
alkalinity, hydroxide (as OH)	14280-30-9	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	476	138	<1.0	452	423	
conductivity	----	E100	2.0	µS/cm	1910	365	<2.0	1970	1860	
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	1380	210	----	1360	1370	
oxidation-reduction potential [ORP]	----	E125	0.10	mV	429	446	509	477	440	
pH	----	E108	0.10	pH units	8.37	8.36	5.22	8.11	8.36	
solids, total dissolved [TDS]	----	E162	10	mg/L	1640	232	<10	1780	1640	
solids, total suspended [TSS]	----	E160-L	1.0	mg/L	<1.0	2.9	<1.0	2.3	1.8	
turbidity	----	E121	0.10	NTU	0.50	2.63	<0.10	0.26	0.13	
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
bromide	24959-67-9	E235.Br-L	0.050	mg/L	0.349	<0.050 ^{RRV}	<0.050	<0.250 ^{DLDS}	0.394	
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	7.28	1.40 ^{RRV}	<0.10	5.20	7.04	
fluoride	16984-48-8	E235.F	0.020	mg/L	0.172	0.103 ^{RRV}	<0.020	<0.100 ^{DLDS}	0.152	
Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	0.289	0.060	<0.050	<0.050 ^{TKNI}	0.323 ^{TKNI}	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	2.85	0.131 ^{RRV}	<0.0050	18.1	3.24	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0050 ^{DLDS}	<0.0010 ^{RRV}	<0.0010	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0033	<0.0010	<0.0010	0.0219	0.0015	
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0057	0.0053	<0.0020	0.0268	0.0027	
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	861	64.4 ^{RRV}	<0.30	834	853	
Organic / Inorganic Carbon										
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	1.30	1.12	<0.50	0.68	1.10	
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	1.21	1.08	<0.50	0.94	0.90	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKMD_ WS_LAEMP_EV O_2022-03_NP	RG_RIVER_WS LAEMP_EVO_ 2022-03_NP	RG_TRIP_WS_L AEMP_EVO_20 22-03_NP	RG_ERCKUT_W S_LAEMP_EVO _2022-03_NP	RG_ERCK_WS_ LAEMP_EVO_2 022-03_NP
Client sampling date / time					02-Mar-2022 13:30	02-Mar-2022 16:00	02-Mar-2022 16:00	02-Mar-2022 13:00	02-Mar-2022 10:30	
Analyte	CAS Number	Method	LOR	Unit	CG2202406-001	CG2202406-002	CG2202406-003	CG2202406-004	CG2202406-005	
					Result	Result	Result	Result	Result	
Ion Balance										
anion sum	----	EC101	0.10	meq/L	27.8	4.15	----	27.8	26.6	
cation sum	----	EC101	0.10	meq/L	27.9	4.37	----	27.4	27.7	
ion balance (cations/anions)	----	EC101	0.010	%	100	105	----	98.6	104	
ion balance (APHA)	----	EC101	0.010	%	0.180	2.58	----	0.725	2.02	
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L	<0.0030	0.0581	<0.0030	<0.0030	<0.0030	
antimony, total	7440-36-0	E420	0.00010	mg/L	0.00045	<0.00010	<0.00010	0.00020	0.00041	
arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00030	0.00018	<0.00010	0.00026	0.00026	
barium, total	7440-39-3	E420	0.00010	mg/L	0.0189	0.0956	<0.00010	0.0666	0.0202	
beryllium, total	7440-41-7	E420	0.020	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	
bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
boron, total	7440-42-8	E420	0.010	mg/L	0.031	<0.010	<0.010	0.014	0.029	
cadmium, total	7440-43-9	E420	0.0050	µg/L	0.314	0.0232	<0.0050	0.0969	0.0153	
calcium, total	7440-70-2	E420	0.050	mg/L	279	56.2	<0.050	268	259	
chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	<0.00010	0.00030	<0.00010	0.00025	<0.00010	
cobalt, total	7440-48-4	E420	0.10	µg/L	9.55	<0.10	<0.10	<0.10	3.05	
copper, total	7440-50-8	E420	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
iron, total	7439-89-6	E420	0.010	mg/L	0.038	0.045	<0.010	<0.010	<0.010	
lead, total	7439-92-1	E420	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
lithium, total	7439-93-2	E420	0.0010	mg/L	0.0568	0.0053	<0.0010	0.0301	0.0551	
magnesium, total	7439-95-4	E420	0.0050	mg/L	157	16.0	<0.0050	171	154	
manganese, total	7439-96-5	E420	0.00010	mg/L	0.219	0.00207	<0.00010	<0.00010	0.0528	
mercury, total	7439-97-6	E508-L	0.00050	µg/L	<0.00050	0.00081	<0.00050	<0.00050	<0.00050	
molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.0167	0.000756	<0.000050	0.00105	0.0162	
nickel, total	7440-02-0	E420	0.00050	mg/L	0.0435	<0.00050	<0.00050	0.00093	0.0299	
potassium, total	7440-09-7	E420	0.050	mg/L	4.23	0.591	<0.050	3.13	3.96	
selenium, total	7782-49-2	E420	0.050	µg/L	27.7	1.84	<0.050	184	30.9	
silicon, total	7440-21-3	E420	0.10	mg/L	3.24	2.18	<0.10	4.23	3.15	
silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
sodium, total	7440-23-5	E420	0.050	mg/L	6.22	3.85	<0.050	3.65	5.95	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKMD_ WS_LAEMP_EV O_2022-03_NP	RG_RIVER_WS _LAEMP_EVO_ 2022-03_NP	RG_TRIP_WS_L AEMP_EVO_20 22-03_NP	RG_ERCKUT_W S_LAEMP_EVO _2022-03_NP	RG_ERCK_WS_ LAEMP_EVO_2 022-03_NP
Client sampling date / time					02-Mar-2022 13:30	02-Mar-2022 16:00	02-Mar-2022 16:00	02-Mar-2022 13:00	02-Mar-2022 10:30	
Analyte	CAS Number	Method	LOR	Unit	CG2202406-001 Result	CG2202406-002 Result	CG2202406-003 Result	CG2202406-004 Result	CG2202406-005 Result	
Total Metals										
strontium, total	7440-24-6	E420	0.00020	mg/L	0.356	0.157	<0.00020	0.245	0.340	
sulfur, total	7704-34-9	E420	0.50	mg/L	296	22.6	<0.50	318	289	
thallium, total	7440-28-0	E420	0.000010	mg/L	0.000071	<0.000010	<0.000010	<0.000010	0.000054	
tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00030	<0.00120 ^{DLM}	<0.00030	<0.00030	<0.00030	
uranium, total	7440-61-1	E420	0.000010	mg/L	0.0115	0.000774	<0.000010	0.00868	0.0117	
vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
zinc, total	7440-66-6	E420	0.0030	mg/L	0.0161	<0.0030	<0.0030	<0.0030	<0.0030	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0011	0.0025	----	0.0092 ^{DTC}	0.0033	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00045	<0.00010	----	0.00022	0.00044	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00030	0.00014	----	0.00027	0.00030	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0198	0.0951	----	0.0698	0.0219	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.020	<0.020	----	<0.020	<0.020	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	----	<0.000050	<0.000050	
boron, dissolved	7440-42-8	E421	0.010	mg/L	0.028	<0.010	----	0.014	0.028	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.307	0.0144	----	0.109	<0.0200 ^{DLM}	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	288	56.4	----	270	273	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00010	0.00036	----	0.00020	<0.00010	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	9.24	<0.10	----	<0.10	3.26	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00020	0.00026	----	0.00032	<0.00020	
iron, dissolved	7439-89-6	E421	0.010	mg/L	0.011	<0.010	----	0.018	<0.010	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	----	<0.000050	<0.000050	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0594	0.0049	----	0.0284	0.0584	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	160	16.7	----	166	167	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.212	0.00052	----	0.00100 ^{DTC}	0.0559	
mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	----	<0.0000050	<0.0000050	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.0166	0.000728	----	0.00113	0.0161	
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.0434	0.00057	----	0.00099	0.0319	
potassium, dissolved	7440-09-7	E421	0.050	mg/L	4.14	0.588	----	3.13	4.41	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKMD_ WS_LAEMP_EV O_2022-03_NP	RG_RIVER_WS _LAEMP_EVO_ 2022-03_NP	RG_TRIP_WS_L AEMP_EVO_20 22-03_NP	RG_ERCKUT_W S_LAEMP_EVO _2022-03_NP	RG_ERCK_WS_ LAEMP_EVO_2 022-03_NP
Client sampling date / time					02-Mar-2022 13:30	02-Mar-2022 16:00	02-Mar-2022 16:00	02-Mar-2022 13:00	02-Mar-2022 10:30	
Analyte	CAS Number	Method	LOR	Unit	CG2202406-001	CG2202406-002	CG2202406-003	CG2202406-004	CG2202406-005	
					Result	Result	Result	Result	Result	
Dissolved Metals										
selenium, dissolved	7782-49-2	E421	0.050	µg/L	32.3	2.05	----	206	35.6	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	3.11	1.89	----	3.95	3.22	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	----	<0.000010	<0.000010	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	6.22	3.89	----	3.59	6.34	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.379	0.160	----	0.248	0.367	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	292	20.8	----	296	294	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	0.000077	<0.000010	----	<0.000010	0.000057	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	----	<0.00010	<0.00010	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	----	<0.00030	<0.00030	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.0115	0.000758	----	0.00864	0.0116	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	----	<0.00050	<0.00050	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0162	<0.0010	----	0.0028	0.0018	
dissolved mercury filtration location	----	EP509	-	-	Field	Field	----	Field	Field	
dissolved metals filtration location	----	EP421	-	-	Field	Field	----	Field	Field	

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_FBLANK_W S_LAEMP_EVO _2022-03_NP	RG_ERCKDT_W S_LAEMP_EVO _2022-03_NP	RG_MIDER_WS _LAEMP_EVO_ 2022-03_NP	----	----
Client sampling date / time					02-Mar-2022 14:30	02-Mar-2022 16:00	02-Mar-2022 16:00	----	----	
Analyte	CAS Number	Method	LOR	Unit	CG2202406-006 Result	CG2202406-007 Result	CG2202406-008 Result	----- ----	----- ----	
Physical Tests										
acidity (as CaCO3)	----	E283	2.0	mg/L	<2.0 ^{RRV}	15.4 ^{RRV}	<2.0	----	----	
alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	476	139	----	----	
alkalinity, bicarbonate (as HCO3)	71-52-3	E290	1.0	mg/L	<1.0	580	170	----	----	
alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	4.4	----	----	
alkalinity, carbonate (as CO3)	3812-32-6	E290	1.0	mg/L	<1.0	<1.0	2.6	----	----	
alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	<1.0	----	----	
alkalinity, hydroxide (as OH)	14280-30-9	E290	1.0	mg/L	<1.0	<1.0	<1.0	----	----	
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	<1.0	476	144	----	----	
conductivity	----	E100	2.0	µS/cm	<2.0	1930	368	----	----	
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	<0.50	1440	200	----	----	
oxidation-reduction potential [ORP]	----	E125	0.10	mV	500	426	461	----	----	
pH	----	E108	0.10	pH units	5.15	8.24	8.36	----	----	
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	1660	224	----	----	
solids, total suspended [TSS]	----	E160-L	1.0	mg/L	<1.0	2.7	3.5	----	----	
turbidity	----	E121	0.10	NTU	<0.10	1.68	2.39	----	----	
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	0.0877	<0.0050	----	----	
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	0.443	<0.050 ^{RRV}	----	----	
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	<0.10	8.09	1.34 ^{RRV}	----	----	
fluoride	16984-48-8	E235.F	0.020	mg/L	<0.020	0.182	0.104 ^{RRV}	----	----	
Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	<0.050	0.361	0.063	----	----	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	<0.0050	1.69	0.132 ^{RRV}	----	----	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	0.0230	<0.0010 ^{RRV}	----	----	
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	<0.0010	----	----	
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	<0.0020	0.0047	0.0074	----	----	
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	<0.30	822	63.8 ^{RRV}	----	----	
Organic / Inorganic Carbon										
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	<0.50	0.84 ^{RRV}	1.09	----	----	
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	<0.50	0.94 ^{RRV}	1.47	----	----	
Ion Balance										



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_FBLANK_W S_LAEMP_EVO _2022-03_NP	RG_ERCKDT_W S_LAEMP_EVO _2022-03_NP	RG_MIDER_WS _LAEMP_EVO_ 2022-03_NP	----	----
Client sampling date / time					02-Mar-2022 14:30	02-Mar-2022 16:00	02-Mar-2022 16:00	----	----	
Analyte	CAS Number	Method	LOR	Unit	CG2202406-006	CG2202406-007	CG2202406-008	-----	-----	
					Result	Result	Result	----	----	
Ion Balance										
anion sum	----	EC101	0.10	meq/L	<0.10	27.0	4.26	----	----	
cation sum	----	EC101	0.10	meq/L	<0.10	29.1	4.16	----	----	
ion balance (cations/anions)	----	EC101	0.010	%	100	108	97.6	----	----	
ion balance (APHA)	----	EC101	0.010	%	<0.010	3.74	1.19	----	----	
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L	<0.0030	<0.0030	0.0380	----	----	
antimony, total	7440-36-0	E420	0.00010	mg/L	<0.00010	0.00049	<0.00010	----	----	
arsenic, total	7440-38-2	E420	0.00010	mg/L	<0.00010	0.00042	0.00017	----	----	
barium, total	7440-39-3	E420	0.00010	mg/L	<0.00010	0.0122	0.0921	----	----	
beryllium, total	7440-41-7	E420	0.020	µg/L	<0.020	<0.020	<0.020	----	----	
bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	<0.000050	----	----	
boron, total	7440-42-8	E420	0.010	mg/L	<0.010	0.033	<0.010	----	----	
cadmium, total	7440-43-9	E420	0.0050	µg/L	<0.0050	0.454	0.0202	----	----	
calcium, total	7440-70-2	E420	0.050	mg/L	<0.050	288	55.6	----	----	
chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	<0.00010	<0.00010	0.00042	----	----	
cobalt, total	7440-48-4	E420	0.10	µg/L	<0.10	13.5	<0.10	----	----	
copper, total	7440-50-8	E420	0.00050	mg/L	<0.00050	<0.00050	<0.00050	----	----	
iron, total	7439-89-6	E420	0.010	mg/L	<0.010	0.195	0.035	----	----	
lead, total	7439-92-1	E420	0.000050	mg/L	<0.000050	0.000083	<0.000050	----	----	
lithium, total	7439-93-2	E420	0.0010	mg/L	<0.0010	0.0638	0.0049	----	----	
magnesium, total	7439-95-4	E420	0.0050	mg/L	<0.0050	158	15.7	----	----	
manganese, total	7439-96-5	E420	0.00010	mg/L	<0.00010	0.318	0.00192	----	----	
mercury, total	7439-97-6	E508-L	0.00050	µg/L	<0.00050	<0.00050	<0.00050	----	----	
molybdenum, total	7439-98-7	E420	0.000050	mg/L	<0.000050	0.0193	0.000806	----	----	
nickel, total	7440-02-0	E420	0.00050	mg/L	<0.00050	0.0510	0.00052	----	----	
potassium, total	7440-09-7	E420	0.050	mg/L	<0.050	4.29	0.619	----	----	
selenium, total	7782-49-2	E420	0.050	µg/L	<0.050	13.8	2.05	----	----	
silicon, total	7440-21-3	E420	0.10	mg/L	<0.10	3.19	2.02	----	----	
silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	<0.000010	----	----	
sodium, total	7440-23-5	E420	0.050	mg/L	<0.050	6.59	3.75	----	----	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_FBLANK_WS S_LAEMP_EVO _2022-03_NP	RG_ERCKDT_WS S_LAEMP_EVO _2022-03_NP	RG_MIDER_WS _LAEMP_EVO_ 2022-03_NP	----	----
Client sampling date / time					02-Mar-2022 14:30	02-Mar-2022 16:00	02-Mar-2022 16:00	----	----	
Analyte	CAS Number	Method	LOR	Unit	CG2202406-006 Result	CG2202406-007 Result	CG2202406-008 Result	-----	-----	
Total Metals										
strontium, total	7440-24-6	E420	0.00020	mg/L	<0.00020	0.388	0.156	----	----	
sulfur, total	7704-34-9	E420	0.50	mg/L	<0.50	303	21.6	----	----	
thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	0.000113	<0.000010	----	----	
tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	<0.00010	----	----	
titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00030	<0.00030	0.00087	----	----	
uranium, total	7440-61-1	E420	0.000010	mg/L	<0.000010	0.0124	0.000797	----	----	
vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	<0.00050	<0.00050	----	----	
zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	0.0236	0.0038	----	----	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	<0.0010	0.0040 ^{DTC}	0.0011	----	----	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00010	0.00051	<0.00010	----	----	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	<0.00010	0.00041	0.00012	----	----	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	<0.00010	0.0139	0.0884	----	----	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.020	<0.020	<0.020	----	----	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	<0.000050	----	----	
boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.010	0.030	<0.010	----	----	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	<0.0050	0.358	0.0166	----	----	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	<0.050	300	54.2	----	----	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00010	<0.00010	0.00013	----	----	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	<0.10	13.6	<0.10	----	----	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00020	<0.00020	<0.00020	----	----	
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	0.032	<0.010	----	----	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	<0.000050	----	----	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	<0.0010	0.0624	0.0046	----	----	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	<0.0050	167	15.6	----	----	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	<0.00010	0.320	0.00042	----	----	
mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	----	----	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	<0.000050	0.0185	0.000750	----	----	
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	<0.00050	0.0525	<0.00050	----	----	
potassium, dissolved	7440-09-7	E421	0.050	mg/L	<0.050	4.62	0.547	----	----	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_FBLANK_WS_LAEMP_EVO_2022-03_NP	RG_ERCKDT_WS_LAEMP_EVO_2022-03_NP	RG_MIDER_WS_LAEMP_EVO_2022-03_NP	----	----
Client sampling date / time					02-Mar-2022 14:30	02-Mar-2022 16:00	02-Mar-2022 16:00	----	----	
Analyte	CAS Number	Method	LOR	Unit	CG2202406-006	CG2202406-007	CG2202406-008	-----	-----	
					Result	Result	Result	----	----	
Dissolved Metals										
selenium, dissolved	7782-49-2	E421	0.050	µg/L	<0.050	20.0 ^{DTC}	1.88	----	----	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	<0.050	3.00	1.91	----	----	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	<0.000010	----	----	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	<0.050	6.74	3.59	----	----	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	<0.00020	0.413	0.153	----	----	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	<0.50	294	21.1	----	----	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	0.000114	<0.000010	----	----	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	<0.00010	----	----	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	<0.00030	----	----	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	<0.000010	0.0119	0.000724	----	----	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	<0.00050	----	----	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0010	0.0267	<0.0010	----	----	
dissolved mercury filtration location	----	EP509	-	-	Field	Field	Field	----	----	
dissolved metals filtration location	----	EP421	-	-	Field	Field	Field	----	----	

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: CG2202406	Page	: 1 of 33
Client	: Teck Coal Limited	Laboratory	: Calgary - Environmental
Contact	: Mike Pope	Account Manager	: Lyudmyla Shvets
Address	: RR#1 HWY#3 Sparwood BC Canada V0B 2G1	Address	: 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5
Telephone	: ----	Telephone	: +1 403 407 1800
Project	: REGIONAL EFFECTS PROGRAM	Date Samples Received	: 03-Mar-2022 09:05
PO	: VPO00816101	Issue Date	: 18-Mar-2022 11:34
C-O-C number	: March EVO LAEMP 2022		
Sampler	: AMC		
Site	: ----		
Quote number	: Teck Coal Master Quote		
No. of samples received	: 8		
No. of samples analysed	: 8		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

- Anonymous:** Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_ERCK_WS_LAEMP_EVO_2022-03_NP	E298	02-Mar-2022	04-Mar-2022	28 days	2 days	✓	04-Mar-2022	26 days	0 days	✓	
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-03_NP	E298	02-Mar-2022	04-Mar-2022	28 days	2 days	✓	04-Mar-2022	26 days	0 days	✓	
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP	E298	02-Mar-2022	04-Mar-2022	28 days	2 days	✓	04-Mar-2022	26 days	0 days	✓	
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-03_NP	E298	02-Mar-2022	04-Mar-2022	28 days	2 days	✓	04-Mar-2022	26 days	0 days	✓	
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_FBLANK_WS_LAEMP_EVO_2022-03_NP	E298	02-Mar-2022	04-Mar-2022	28 days	2 days	✓	04-Mar-2022	26 days	0 days	✓	
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_MIDER_WS_LAEMP_EVO_2022-03_NP	E298	02-Mar-2022	04-Mar-2022	28 days	2 days	✓	04-Mar-2022	26 days	0 days	✓	
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-03_NP	E298	02-Mar-2022	04-Mar-2022	28 days	2 days	✓	04-Mar-2022	26 days	0 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times Rec Actual		Eval	Analysis Date	Holding Times Rec Actual		Eval	
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_TRIP_WS_LAEMP_EVO_2022-03_NP	E298	02-Mar-2022	04-Mar-2022	28 days	2 days	✔	04-Mar-2022	26 days	0 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-03_NP	E235.Br-L	02-Mar-2022	----	----	----		03-Mar-2022	28 days	1 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-03_NP	E235.Br-L	02-Mar-2022	----	----	----		03-Mar-2022	28 days	1 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP	E235.Br-L	02-Mar-2022	----	----	----		03-Mar-2022	28 days	1 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-03_NP	E235.Br-L	02-Mar-2022	----	----	----		03-Mar-2022	28 days	1 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-03_NP	E235.Br-L	02-Mar-2022	----	----	----		03-Mar-2022	28 days	1 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-03_NP	E235.Br-L	02-Mar-2022	----	----	----		03-Mar-2022	28 days	1 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-03_NP	E235.Br-L	02-Mar-2022	----	----	----		03-Mar-2022	28 days	1 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-03_NP	E235.Br-L	02-Mar-2022	----	----	----		03-Mar-2022	28 days	1 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-03_NP	E235.CI-L	02-Mar-2022	----	----	----		03-Mar-2022	28 days	1 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-03_NP	E235.CI-L	02-Mar-2022	----	----	----		03-Mar-2022	28 days	1 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP	E235.CI-L	02-Mar-2022	----	----	----		03-Mar-2022	28 days	1 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-03_NP	E235.CI-L	02-Mar-2022	----	----	----		03-Mar-2022	28 days	1 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-03_NP	E235.CI-L	02-Mar-2022	----	----	----		03-Mar-2022	28 days	1 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-03_NP	E235.CI-L	02-Mar-2022	----	----	----		03-Mar-2022	28 days	1 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-03_NP	E235.CI-L	02-Mar-2022	----	----	----		03-Mar-2022	28 days	1 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-03_NP	E235.CI-L	02-Mar-2022	----	----	----		03-Mar-2022	28 days	1 days	✔	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level)											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-03_NP	E378-U	02-Mar-2022	----	----	----		03-Mar-2022	3 days	1 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
Rec	Actual	Rec		Actual							
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level)											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-03_NP	E378-U	02-Mar-2022	----	----	----		03-Mar-2022	3 days	1 days	✓	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level)											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP	E378-U	02-Mar-2022	----	----	----		03-Mar-2022	3 days	1 days	✓	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level)											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-03_NP	E378-U	02-Mar-2022	----	----	----		03-Mar-2022	3 days	1 days	✓	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level)											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-03_NP	E378-U	02-Mar-2022	----	----	----		03-Mar-2022	3 days	1 days	✓	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level)											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-03_NP	E378-U	02-Mar-2022	----	----	----		03-Mar-2022	3 days	1 days	✓	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-03_NP	E378-U	02-Mar-2022	----	----	----		03-Mar-2022	3 days	1 days	✓	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level)											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-03_NP	E378-U	02-Mar-2022	----	----	----		03-Mar-2022	3 days	1 days	✓	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-03_NP	E235.F	02-Mar-2022	----	----	----		03-Mar-2022	28 days	1 days	✓	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-03_NP	E235.F	02-Mar-2022	----	----	----		03-Mar-2022	28 days	1 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP	E235.F	02-Mar-2022	----	----	----		03-Mar-2022	28 days	1 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-03_NP	E235.F	02-Mar-2022	----	----	----		03-Mar-2022	28 days	1 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-03_NP	E235.F	02-Mar-2022	----	----	----		03-Mar-2022	28 days	1 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-03_NP	E235.F	02-Mar-2022	----	----	----		03-Mar-2022	28 days	1 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-03_NP	E235.F	02-Mar-2022	----	----	----		03-Mar-2022	28 days	1 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-03_NP	E235.F	02-Mar-2022	----	----	----		03-Mar-2022	28 days	1 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-03_NP	E235.NO3-L	02-Mar-2022	----	----	----		03-Mar-2022	3 days	1 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-03_NP	E235.NO3-L	02-Mar-2022	----	----	----		03-Mar-2022	3 days	1 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP	E235.NO3-L	02-Mar-2022	----	----	----		03-Mar-2022	3 days	1 days	✔	



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-03_NP	E235.NO3-L	02-Mar-2022	----	----	----		03-Mar-2022	3 days	1 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-03_NP	E235.NO3-L	02-Mar-2022	----	----	----		03-Mar-2022	3 days	1 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-03_NP	E235.NO3-L	02-Mar-2022	----	----	----		03-Mar-2022	3 days	1 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-03_NP	E235.NO3-L	02-Mar-2022	----	----	----		03-Mar-2022	3 days	1 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-03_NP	E235.NO3-L	02-Mar-2022	----	----	----		03-Mar-2022	3 days	1 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-03_NP	E235.NO2-L	02-Mar-2022	----	----	----		03-Mar-2022	3 days	1 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-03_NP	E235.NO2-L	02-Mar-2022	----	----	----		03-Mar-2022	3 days	1 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP	E235.NO2-L	02-Mar-2022	----	----	----		03-Mar-2022	3 days	1 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-03_NP	E235.NO2-L	02-Mar-2022	----	----	----		03-Mar-2022	3 days	1 days	✔	



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-03_NP	E235.NO2-L	02-Mar-2022	----	----	----		03-Mar-2022	3 days	1 days	✔
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE RG_MIDER_WS_LAEMP_EVO_2022-03_NP	E235.NO2-L	02-Mar-2022	----	----	----		03-Mar-2022	3 days	1 days	✔
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE RG_RIVER_WS_LAEMP_EVO_2022-03_NP	E235.NO2-L	02-Mar-2022	----	----	----		03-Mar-2022	3 days	1 days	✔
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE RG_TRIP_WS_LAEMP_EVO_2022-03_NP	E235.NO2-L	02-Mar-2022	----	----	----		03-Mar-2022	3 days	1 days	✔
Anions and Nutrients : Sulfate in Water by IC										
HDPE RG_ERCK_WS_LAEMP_EVO_2022-03_NP	E235.SO4	02-Mar-2022	----	----	----		03-Mar-2022	28 days	1 days	✔
Anions and Nutrients : Sulfate in Water by IC										
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-03_NP	E235.SO4	02-Mar-2022	----	----	----		03-Mar-2022	28 days	1 days	✔
Anions and Nutrients : Sulfate in Water by IC										
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP	E235.SO4	02-Mar-2022	----	----	----		03-Mar-2022	28 days	1 days	✔
Anions and Nutrients : Sulfate in Water by IC										
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-03_NP	E235.SO4	02-Mar-2022	----	----	----		03-Mar-2022	28 days	1 days	✔
Anions and Nutrients : Sulfate in Water by IC										
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-03_NP	E235.SO4	02-Mar-2022	----	----	----		03-Mar-2022	28 days	1 days	✔



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-03_NP	E235.SO4	02-Mar-2022	----	----	----		03-Mar-2022	28 days	1 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-03_NP	E235.SO4	02-Mar-2022	----	----	----		03-Mar-2022	28 days	1 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-03_NP	E235.SO4	02-Mar-2022	----	----	----		03-Mar-2022	28 days	1 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_ERCK_WS_LAEMP_EVO_2022-03_NP	E318	02-Mar-2022	10-Mar-2022	28 days	8 days	✔	14-Mar-2022	20 days	4 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-03_NP	E318	02-Mar-2022	10-Mar-2022	28 days	8 days	✔	14-Mar-2022	20 days	4 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP	E318	02-Mar-2022	10-Mar-2022	28 days	8 days	✔	14-Mar-2022	20 days	4 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-03_NP	E318	02-Mar-2022	10-Mar-2022	28 days	8 days	✔	14-Mar-2022	20 days	4 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_FBLANK_WS_LAEMP_EVO_2022-03_NP	E318	02-Mar-2022	10-Mar-2022	28 days	8 days	✔	14-Mar-2022	20 days	4 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_MIDER_WS_LAEMP_EVO_2022-03_NP	E318	02-Mar-2022	10-Mar-2022	28 days	8 days	✔	14-Mar-2022	20 days	4 days	✔	



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			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-03_NP	E318	02-Mar-2022	10-Mar-2022	28 days	8 days	✔	14-Mar-2022	20 days	4 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_TRIP_WS_LAEMP_EVO_2022-03_NP	E318	02-Mar-2022	10-Mar-2022	28 days	8 days	✔	14-Mar-2022	20 days	4 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (Ultra Trace)											
Amber glass total (sulfuric acid) RG_ERCK_WS_LAEMP_EVO_2022-03_NP	E372-U	02-Mar-2022	04-Mar-2022	28 days	2 days	✔	04-Mar-2022	26 days	0 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (Ultra Trace)											
Amber glass total (sulfuric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-03_NP	E372-U	02-Mar-2022	04-Mar-2022	28 days	2 days	✔	04-Mar-2022	26 days	0 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (Ultra Trace)											
Amber glass total (sulfuric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP	E372-U	02-Mar-2022	04-Mar-2022	28 days	2 days	✔	04-Mar-2022	26 days	0 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (Ultra Trace)											
Amber glass total (sulfuric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-03_NP	E372-U	02-Mar-2022	04-Mar-2022	28 days	2 days	✔	04-Mar-2022	26 days	0 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (Ultra Trace)											
Amber glass total (sulfuric acid) RG_FBLANK_WS_LAEMP_EVO_2022-03_NP	E372-U	02-Mar-2022	04-Mar-2022	28 days	2 days	✔	04-Mar-2022	26 days	0 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (Ultra Trace)											
Amber glass total (sulfuric acid) RG_MIDER_WS_LAEMP_EVO_2022-03_NP	E372-U	02-Mar-2022	04-Mar-2022	28 days	2 days	✔	04-Mar-2022	26 days	0 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (Ultra Trace)											
Amber glass total (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-03_NP	E372-U	02-Mar-2022	04-Mar-2022	28 days	2 days	✔	04-Mar-2022	26 days	0 days	✔	



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Total Phosphorus by Colourimetry (Ultra Trace)											
Amber glass total (sulfuric acid) RG_TRIP_WS_LAEMP_EVO_2022-03_NP	E372-U	02-Mar-2022	04-Mar-2022	28 days	2 days	✔	04-Mar-2022	26 days	0 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_ERCK_WS_LAEMP_EVO_2022-03_NP	E421.Cr-L	02-Mar-2022	08-Mar-2022	180 days	6 days	✔	08-Mar-2022	174 days	1 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-03_NP	E421.Cr-L	02-Mar-2022	08-Mar-2022	180 days	6 days	✔	08-Mar-2022	174 days	1 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
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Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-03_NP	E421.Cr-L	02-Mar-2022	08-Mar-2022	180 days	6 days	✔	08-Mar-2022	174 days	1 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_FBLANK_WS_LAEMP_EVO_2022-03_NP	E421.Cr-L	02-Mar-2022	08-Mar-2022	180 days	6 days	✔	08-Mar-2022	174 days	1 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_MIDER_WS_LAEMP_EVO_2022-03_NP	E421.Cr-L	02-Mar-2022	08-Mar-2022	180 days	6 days	✔	08-Mar-2022	174 days	1 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_RIVER_WS_LAEMP_EVO_2022-03_NP	E421.Cr-L	02-Mar-2022	08-Mar-2022	180 days	6 days	✔	08-Mar-2022	174 days	1 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-03_NP	E509	02-Mar-2022	09-Mar-2022	28 days	6 days	✔	09-Mar-2022	22 days	0 days	✔	



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_FBLANK_WS_LAEMP_EVO_2022-03_NP	E509	02-Mar-2022	09-Mar-2022	28 days	6 days	✔	09-Mar-2022	22 days	0 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_MIDER_WS_LAEMP_EVO_2022-03_NP	E509	02-Mar-2022	09-Mar-2022	28 days	6 days	✔	09-Mar-2022	22 days	0 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_RIVER_WS_LAEMP_EVO_2022-03_NP	E509	02-Mar-2022	09-Mar-2022	28 days	6 days	✔	09-Mar-2022	22 days	0 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_ERCK_WS_LAEMP_EVO_2022-03_NP	E509	02-Mar-2022	09-Mar-2022	28 days	7 days	✔	09-Mar-2022	21 days	0 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP	E509	02-Mar-2022	09-Mar-2022	28 days	7 days	✔	09-Mar-2022	21 days	0 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-03_NP	E509	02-Mar-2022	09-Mar-2022	28 days	7 days	✔	09-Mar-2022	21 days	0 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_ERCK_WS_LAEMP_EVO_2022-03_NP	E421	02-Mar-2022	08-Mar-2022	180 days	6 days	✔	08-Mar-2022	174 days	1 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-03_NP	E421	02-Mar-2022	08-Mar-2022	180 days	6 days	✔	08-Mar-2022	174 days	1 days	✔	
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			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-03_NP	E421	02-Mar-2022	08-Mar-2022	180 days	6 days	✔	08-Mar-2022	174 days	1 days	✔
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) RG_FBLANK_WS_LAEMP_EVO_2022-03_NP	E421	02-Mar-2022	08-Mar-2022	180 days	6 days	✔	08-Mar-2022	174 days	1 days	✔
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) RG_MIDER_WS_LAEMP_EVO_2022-03_NP	E421	02-Mar-2022	08-Mar-2022	180 days	6 days	✔	08-Mar-2022	174 days	1 days	✔
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) RG_RIVER_WS_LAEMP_EVO_2022-03_NP	E421	02-Mar-2022	08-Mar-2022	180 days	6 days	✔	08-Mar-2022	174 days	1 days	✔
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) RG_ERCK_WS_LAEMP_EVO_2022-03_NP	E358-L	02-Mar-2022	03-Mar-2022	28 days	1 days	✔	04-Mar-2022	27 days	1 days	✔
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-03_NP	E358-L	02-Mar-2022	03-Mar-2022	28 days	1 days	✔	04-Mar-2022	27 days	1 days	✔
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP	E358-L	02-Mar-2022	03-Mar-2022	28 days	1 days	✔	04-Mar-2022	27 days	1 days	✔
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-03_NP	E358-L	02-Mar-2022	03-Mar-2022	28 days	1 days	✔	04-Mar-2022	27 days	1 days	✔
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) RG_FBLANK_WS_LAEMP_EVO_2022-03_NP	E358-L	02-Mar-2022	03-Mar-2022	28 days	1 days	✔	04-Mar-2022	27 days	1 days	✔



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			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_MIDER_WS_LAEMP_EVO_2022-03_NP	E358-L	02-Mar-2022	03-Mar-2022	28 days	1 days	✔	04-Mar-2022	27 days	1 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-03_NP	E358-L	02-Mar-2022	03-Mar-2022	28 days	1 days	✔	04-Mar-2022	27 days	1 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_TRIP_WS_LAEMP_EVO_2022-03_NP	E358-L	02-Mar-2022	03-Mar-2022	28 days	1 days	✔	04-Mar-2022	27 days	1 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_ERCK_WS_LAEMP_EVO_2022-03_NP	E355-L	02-Mar-2022	03-Mar-2022	28 days	1 days	✔	04-Mar-2022	27 days	1 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-03_NP	E355-L	02-Mar-2022	03-Mar-2022	28 days	1 days	✔	04-Mar-2022	27 days	1 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP	E355-L	02-Mar-2022	03-Mar-2022	28 days	1 days	✔	04-Mar-2022	27 days	1 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-03_NP	E355-L	02-Mar-2022	03-Mar-2022	28 days	1 days	✔	04-Mar-2022	27 days	1 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_FBLANK_WS_LAEMP_EVO_2022-03_NP	E355-L	02-Mar-2022	03-Mar-2022	28 days	1 days	✔	04-Mar-2022	27 days	1 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_MIDER_WS_LAEMP_EVO_2022-03_NP	E355-L	02-Mar-2022	03-Mar-2022	28 days	1 days	✔	04-Mar-2022	27 days	1 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-03_NP	E355-L	02-Mar-2022	03-Mar-2022	28 days	1 days	✔	04-Mar-2022	27 days	1 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_TRIP_WS_LAEMP_EVO_2022-03_NP	E355-L	02-Mar-2022	03-Mar-2022	28 days	1 days	✔	04-Mar-2022	27 days	1 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-03_NP	E283	02-Mar-2022	----	----	----		04-Mar-2022	14 days	2 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-03_NP	E283	02-Mar-2022	----	----	----		04-Mar-2022	14 days	2 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP	E283	02-Mar-2022	----	----	----		04-Mar-2022	14 days	2 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-03_NP	E283	02-Mar-2022	----	----	----		04-Mar-2022	14 days	2 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-03_NP	E283	02-Mar-2022	----	----	----		04-Mar-2022	14 days	2 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-03_NP	E283	02-Mar-2022	----	----	----		04-Mar-2022	14 days	2 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-03_NP	E283	02-Mar-2022	----	----	----		04-Mar-2022	14 days	2 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec Actual		Eval	Analysis Date	Holding Times Rec Actual		Eval
Physical Tests : Acidity by Titration										
HDPE RG_TRIP_WS_LAEMP_EVO_2022-03_NP	E283	02-Mar-2022	----	----	----		04-Mar-2022	14 days	2 days	✔
Physical Tests : Alkalinity Species by Titration										
HDPE RG_ERCK_WS_LAEMP_EVO_2022-03_NP	E290	02-Mar-2022	----	----	----		03-Mar-2022	14 days	1 days	✔
Physical Tests : Alkalinity Species by Titration										
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-03_NP	E290	02-Mar-2022	----	----	----		03-Mar-2022	14 days	1 days	✔
Physical Tests : Alkalinity Species by Titration										
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP	E290	02-Mar-2022	----	----	----		03-Mar-2022	14 days	1 days	✔
Physical Tests : Alkalinity Species by Titration										
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-03_NP	E290	02-Mar-2022	----	----	----		03-Mar-2022	14 days	1 days	✔
Physical Tests : Alkalinity Species by Titration										
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-03_NP	E290	02-Mar-2022	----	----	----		03-Mar-2022	14 days	1 days	✔
Physical Tests : Alkalinity Species by Titration										
HDPE RG_MIDER_WS_LAEMP_EVO_2022-03_NP	E290	02-Mar-2022	----	----	----		03-Mar-2022	14 days	1 days	✔
Physical Tests : Alkalinity Species by Titration										
HDPE RG_RIVER_WS_LAEMP_EVO_2022-03_NP	E290	02-Mar-2022	----	----	----		03-Mar-2022	14 days	1 days	✔
Physical Tests : Alkalinity Species by Titration										
HDPE RG_TRIP_WS_LAEMP_EVO_2022-03_NP	E290	02-Mar-2022	----	----	----		03-Mar-2022	14 days	1 days	✔



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Conductivity in Water											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-03_NP	E100	02-Mar-2022	----	----	----		03-Mar-2022	28 days	1 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-03_NP	E100	02-Mar-2022	----	----	----		03-Mar-2022	28 days	1 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP	E100	02-Mar-2022	----	----	----		03-Mar-2022	28 days	1 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-03_NP	E100	02-Mar-2022	----	----	----		03-Mar-2022	28 days	1 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-03_NP	E100	02-Mar-2022	----	----	----		03-Mar-2022	28 days	1 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-03_NP	E100	02-Mar-2022	----	----	----		03-Mar-2022	28 days	1 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-03_NP	E100	02-Mar-2022	----	----	----		03-Mar-2022	28 days	1 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-03_NP	E100	02-Mar-2022	----	----	----		03-Mar-2022	28 days	1 days	✓	
Physical Tests : ORP by Electrode											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-03_NP	E125	02-Mar-2022	----	----	----		07-Mar-2022	0 hrs	119 hrs	* EHTR-FM	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times Rec Actual		Eval	Analysis Date	Holding Times Rec Actual		Eval	
Physical Tests : ORP by Electrode											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-03_NP	E125	02-Mar-2022	----	----	----		07-Mar-2022	0 hrs	119 hrs	*	EHTR-FM
Physical Tests : ORP by Electrode											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-03_NP	E125	02-Mar-2022	----	----	----		07-Mar-2022	0 hrs	119 hrs	*	EHTR-FM
Physical Tests : ORP by Electrode											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-03_NP	E125	02-Mar-2022	----	----	----		07-Mar-2022	0 hrs	119 hrs	*	EHTR-FM
Physical Tests : ORP by Electrode											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-03_NP	E125	02-Mar-2022	----	----	----		07-Mar-2022	0 hrs	121 hrs	*	EHTR-FM
Physical Tests : ORP by Electrode											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP	E125	02-Mar-2022	----	----	----		07-Mar-2022	0 hrs	122 hrs	*	EHTR-FM
Physical Tests : ORP by Electrode											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-03_NP	E125	02-Mar-2022	----	----	----		07-Mar-2022	0 hrs	122 hrs	*	EHTR-FM
Physical Tests : ORP by Electrode											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-03_NP	E125	02-Mar-2022	----	----	----		07-Mar-2022	0 hrs	125 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-03_NP	E108	02-Mar-2022	----	----	----		03-Mar-2022	0 hrs	23 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-03_NP	E108	02-Mar-2022	----	----	----		03-Mar-2022	0 hrs	23 hrs	*	EHTR-FM



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : pH by Meter											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-03_NP	E108	02-Mar-2022	----	----	----		03-Mar-2022	0 hrs	23 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-03_NP	E108	02-Mar-2022	----	----	----		03-Mar-2022	0 hrs	23 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-03_NP	E108	02-Mar-2022	----	----	----		03-Mar-2022	0 hrs	25 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP	E108	02-Mar-2022	----	----	----		03-Mar-2022	0 hrs	26 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-03_NP	E108	02-Mar-2022	----	----	----		03-Mar-2022	0 hrs	26 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-03_NP	E108	02-Mar-2022	----	----	----		03-Mar-2022	0 hrs	29 hrs	*	EHTR-FM
Physical Tests : TDS by Gravimetry											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-03_NP	E162	02-Mar-2022	----	----	----		08-Mar-2022	7 days	6 days	✓	
Physical Tests : TDS by Gravimetry											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-03_NP	E162	02-Mar-2022	----	----	----		08-Mar-2022	7 days	6 days	✓	
Physical Tests : TDS by Gravimetry											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP	E162	02-Mar-2022	----	----	----		08-Mar-2022	7 days	6 days	✓	



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : TDS by Gravimetry											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-03_NP	E162	02-Mar-2022	----	----	----		08-Mar-2022	7 days	6 days	✔	
Physical Tests : TDS by Gravimetry											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-03_NP	E162	02-Mar-2022	----	----	----		08-Mar-2022	7 days	6 days	✔	
Physical Tests : TDS by Gravimetry											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-03_NP	E162	02-Mar-2022	----	----	----		08-Mar-2022	7 days	6 days	✔	
Physical Tests : TDS by Gravimetry											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-03_NP	E162	02-Mar-2022	----	----	----		08-Mar-2022	7 days	6 days	✔	
Physical Tests : TDS by Gravimetry											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-03_NP	E162	02-Mar-2022	----	----	----		08-Mar-2022	7 days	6 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-03_NP	E160-L	02-Mar-2022	----	----	----		08-Mar-2022	7 days	6 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-03_NP	E160-L	02-Mar-2022	----	----	----		08-Mar-2022	7 days	6 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP	E160-L	02-Mar-2022	----	----	----		08-Mar-2022	7 days	6 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-03_NP	E160-L	02-Mar-2022	----	----	----		08-Mar-2022	7 days	6 days	✔	



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-03_NP	E160-L	02-Mar-2022	----	----	----		08-Mar-2022	7 days	6 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-03_NP	E160-L	02-Mar-2022	----	----	----		08-Mar-2022	7 days	6 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-03_NP	E160-L	02-Mar-2022	----	----	----		08-Mar-2022	7 days	6 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-03_NP	E160-L	02-Mar-2022	----	----	----		08-Mar-2022	7 days	6 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-03_NP	E121	02-Mar-2022	----	----	----		05-Mar-2022	3 days	3 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-03_NP	E121	02-Mar-2022	----	----	----		05-Mar-2022	3 days	3 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP	E121	02-Mar-2022	----	----	----		05-Mar-2022	3 days	3 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-03_NP	E121	02-Mar-2022	----	----	----		05-Mar-2022	3 days	3 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-03_NP	E121	02-Mar-2022	----	----	----		05-Mar-2022	3 days	3 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
Rec	Actual	Rec		Actual							
Physical Tests : Turbidity by Nephelometry											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-03_NP	E121	02-Mar-2022	----	----	----		05-Mar-2022	3 days	3 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-03_NP	E121	02-Mar-2022	----	----	----		05-Mar-2022	3 days	3 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-03_NP	E121	02-Mar-2022	----	----	----		05-Mar-2022	3 days	3 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_ERCK_WS_LAEMP_EVO_2022-03_NP	E420.Cr-L	02-Mar-2022	----	----	----		08-Mar-2022	180 days	6 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-03_NP	E420.Cr-L	02-Mar-2022	----	----	----		08-Mar-2022	180 days	6 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP	E420.Cr-L	02-Mar-2022	----	----	----		08-Mar-2022	180 days	6 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-03_NP	E420.Cr-L	02-Mar-2022	----	----	----		08-Mar-2022	180 days	6 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_FBLANK_WS_LAEMP_EVO_2022-03_NP	E420.Cr-L	02-Mar-2022	----	----	----		08-Mar-2022	180 days	6 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_MIDER_WS_LAEMP_EVO_2022-03_NP	E420.Cr-L	02-Mar-2022	----	----	----		08-Mar-2022	180 days	6 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times Rec Actual		Eval	Analysis Date	Holding Times Rec Actual		Eval	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_RIVER_WS_LAEMP_EVO_2022-03_NP	E420.Cr-L	02-Mar-2022	----	----	----		08-Mar-2022	180 days	6 days	✓	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_TRIP_WS_LAEMP_EVO_2022-03_NP	E420.Cr-L	02-Mar-2022	----	----	----		08-Mar-2022	180 days	6 days	✓	
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)											
Pre-cleaned amber glass - total (lab preserved) RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP	E508-L	02-Mar-2022	----	----	----		08-Mar-2022	28 days	6 days	✓	
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)											
Pre-cleaned amber glass - total (lab preserved) RG_RIVER_WS_LAEMP_EVO_2022-03_NP	E508-L	02-Mar-2022	----	----	----		08-Mar-2022	28 days	6 days	✓	
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)											
Pre-cleaned amber glass - total (lab preserved) RG_TRIP_WS_LAEMP_EVO_2022-03_NP	E508-L	02-Mar-2022	----	----	----		08-Mar-2022	28 days	6 days	✓	
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)											
Pre-cleaned amber glass - total (lab preserved) RG_ERCK_WS_LAEMP_EVO_2022-03_NP	E508-L	02-Mar-2022	----	----	----		09-Mar-2022	28 days	7 days	✓	
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)											
Pre-cleaned amber glass - total (lab preserved) RG_ERCKDT_WS_LAEMP_EVO_2022-03_NP	E508-L	02-Mar-2022	----	----	----		09-Mar-2022	28 days	7 days	✓	
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)											
Pre-cleaned amber glass - total (lab preserved) RG_ERCKUT_WS_LAEMP_EVO_2022-03_NP	E508-L	02-Mar-2022	----	----	----		09-Mar-2022	28 days	7 days	✓	
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)											
Pre-cleaned amber glass - total (lab preserved) RG_FBLANK_WS_LAEMP_EVO_2022-03_NP	E508-L	02-Mar-2022	----	----	----		09-Mar-2022	28 days	7 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved) RG_MIDER_WS_LAEMP_EVO_2022-03_NP	E508-L	02-Mar-2022	----	----	----		09-Mar-2022	28 days	7 days	✔
Total Metals : Total Metals in Water by CRC ICPCS										
HDPE total (nitric acid) RG_ERCK_WS_LAEMP_EVO_2022-03_NP	E420	02-Mar-2022	----	----	----		08-Mar-2022	180 days	6 days	✔
Total Metals : Total Metals in Water by CRC ICPCS										
HDPE total (nitric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-03_NP	E420	02-Mar-2022	----	----	----		08-Mar-2022	180 days	6 days	✔
Total Metals : Total Metals in Water by CRC ICPCS										
HDPE total (nitric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP	E420	02-Mar-2022	----	----	----		08-Mar-2022	180 days	6 days	✔
Total Metals : Total Metals in Water by CRC ICPCS										
HDPE total (nitric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-03_NP	E420	02-Mar-2022	----	----	----		08-Mar-2022	180 days	6 days	✔
Total Metals : Total Metals in Water by CRC ICPCS										
HDPE total (nitric acid) RG_FBLANK_WS_LAEMP_EVO_2022-03_NP	E420	02-Mar-2022	----	----	----		08-Mar-2022	180 days	6 days	✔
Total Metals : Total Metals in Water by CRC ICPCS										
HDPE total (nitric acid) RG_MIDER_WS_LAEMP_EVO_2022-03_NP	E420	02-Mar-2022	----	----	----		08-Mar-2022	180 days	6 days	✔
Total Metals : Total Metals in Water by CRC ICPCS										
HDPE total (nitric acid) RG_RIVER_WS_LAEMP_EVO_2022-03_NP	E420	02-Mar-2022	----	----	----		08-Mar-2022	180 days	6 days	✔
Total Metals : Total Metals in Water by CRC ICPCS										
HDPE total (nitric acid) RG_TRIP_WS_LAEMP_EVO_2022-03_NP	E420	02-Mar-2022	----	----	----		08-Mar-2022	180 days	6 days	✔

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended

Page : 26 of 33
Work Order : CG2202406
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
Analytical Methods							
Laboratory Duplicates (DUP)							
Acidity by Titration	E283	423829	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290	423056	2	40	5.0	5.0	✓
Ammonia by Fluorescence	E298	423933	2	26	7.6	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	423043	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	423044	1	20	5.0	5.0	✓
Conductivity in Water	E100	423054	2	40	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	426307	1	16	6.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	427233	1	19	5.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	426308	1	16	6.2	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	422958	1	9	11.1	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level)	E378-U	423041	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	423047	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	423045	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	423046	1	20	5.0	5.0	✓
ORP by Electrode	E125	426070	1	20	5.0	5.0	✓
pH by Meter	E108	423055	2	40	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	423042	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	424313	2	40	5.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	426296	1	15	6.6	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	428426	1	20	5.0	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	427027	2	23	8.7	5.0	✓
Total Metals in Water by CRC ICPMS	E420	426297	1	16	6.2	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	422959	1	9	11.1	5.0	✓
Total Phosphorus by Colourimetry (Ultra Trace)	E372-U	422977	1	13	7.6	5.0	✓
Turbidity by Nephelometry	E121	424577	3	60	5.0	5.0	✓
Laboratory Control Samples (LCS)							
Acidity by Titration	E283	423829	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290	423056	2	40	5.0	5.0	✓
Ammonia by Fluorescence	E298	423933	2	26	7.6	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	423043	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	423044	1	20	5.0	5.0	✓
Conductivity in Water	E100	423054	2	40	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	426307	1	16	6.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	427233	1	19	5.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	426308	1	16	6.2	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	422958	1	9	11.1	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level)	E378-U	423041	1	20	5.0	5.0	✓



Matrix: **Water**

Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
<i>Analytical Methods</i>							
Laboratory Control Samples (LCS) - Continued							
Fluoride in Water by IC	E235.F	423047	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	423045	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	423046	1	20	5.0	5.0	✓
ORP by Electrode	E125	426070	1	20	5.0	5.0	✓
pH by Meter	E108	423055	2	40	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	423042	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	424313	2	40	5.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	426296	1	15	6.6	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	428426	1	20	5.0	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	427027	2	23	8.7	5.0	✓
Total Metals in Water by CRC ICPMS	E420	426297	1	16	6.2	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	422959	1	9	11.1	5.0	✓
Total Phosphorus by Colourimetry (Ultra Trace)	E372-U	422977	1	13	7.6	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	424309	2	40	5.0	5.0	✓
Turbidity by Nephelometry	E121	424577	3	60	5.0	5.0	✓
Method Blanks (MB)							
Acidity by Titration	E283	423829	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290	423056	2	40	5.0	5.0	✓
Ammonia by Fluorescence	E298	423933	2	26	7.6	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	423043	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	423044	1	20	5.0	5.0	✓
Conductivity in Water	E100	423054	2	40	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	426307	1	16	6.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	427233	1	19	5.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	426308	1	16	6.2	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	422958	1	9	11.1	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level)	E378-U	423041	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	423047	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	423045	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	423046	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	423042	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	424313	2	40	5.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	426296	1	15	6.6	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	428426	1	20	5.0	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	427027	2	23	8.7	5.0	✓
Total Metals in Water by CRC ICPMS	E420	426297	1	16	6.2	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	422959	1	9	11.1	5.0	✓
Total Phosphorus by Colourimetry (Ultra Trace)	E372-U	422977	1	13	7.6	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	424309	2	40	5.0	5.0	✓
Turbidity by Nephelometry	E121	424577	3	60	5.0	5.0	✓



Matrix: **Water**

Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
<i>Analytical Methods</i>							
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	423933	2	26	7.6	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	423043	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	423044	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	426307	1	16	6.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	427233	1	19	5.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	426308	1	16	6.2	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	422958	1	9	11.1	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level)	E378-U	423041	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	423047	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	423045	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	423046	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	423042	1	20	5.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	426296	1	15	6.6	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	428426	1	20	5.0	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	427027	2	23	8.7	5.0	✓
Total Metals in Water by CRC ICPMS	E420	426297	1	16	6.2	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	422959	1	9	11.1	5.0	✓
Total Phosphorus by Colourimetry (Ultra Trace)	E372-U	422977	1	13	7.6	5.0	✓



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 Calgary - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 Calgary - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 Calgary - Environmental	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
ORP by Electrode	E125 Calgary - Environmental	Water	ASTM D1498 (mod)	Oxidation reduction potential is reported as the oxidation-reduction potential of the platinum metal-reference electrode employed, measured in mV. For high accuracy test results, it is recommended that this analysis be conducted in the field.
TSS by Gravimetry (Low Level)	E160-L Calgary - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 Calgary - Environmental	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC (Low Level)	E235.Cl-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Acidity by Titration	E283 Calgary - Environmental	Water	APHA 2310 B (mod)	Acidity is determined by potentiometric titration to pH endpoint of 8.3



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Alkalinity Species by Titration	E290 Calgary - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 Calgary - Environmental	Water	J. Environ. Monit., 2005, 7, 37-42 (mod)	Ammonia in water is analyzed by flow-injection analysis with fluorescence detection after reaction with orthophthaldialdehyde (OPA).
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 Vancouver - Environmental	Water	APHA 4500-Norg D (mod)	Total Kjeldahl Nitrogen is determined using block digestion followed by flow-injection analysis with fluorescence detection.
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L Calgary - Environmental	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Dissolved Organic Carbon by Combustion (Low Level)	E358-L Calgary - Environmental	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total Phosphorus by Colourimetry (Ultra Trace)	E372-U Calgary - Environmental	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level)	E378-U Calgary - Environmental	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Total Metals in Water by CRC ICPMS	E420 Vancouver - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L Vancouver - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS.
Dissolved Metals in Water by CRC ICPMS	E421 Vancouver - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L Vancouver - Environmental	Water	APHA 3030 B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L Vancouver - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAFS.
Dissolved Mercury in Water by CVAAS	E509 Vancouver - Environmental	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
Dissolved Hardness (Calculated)	EC100 Vancouver - Environmental	Water	APHA 2340B	"Hardness (as CaCO ₃), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Ion Balance using Dissolved Metals	EC101 Calgary - Environmental	Water	APHA 1030E	Cation Sum, Anion Sum, and Ion Balance are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present. Ion Balance cannot be calculated accurately for waters with very low electrical conductivity (EC).

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 Calgary - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 Vancouver - Environmental	Water	APHA 4500-Norg D (mod)	Samples are digested using block digestion with Copper Sulfate Digestion Reagent.
Preparation for Total Organic Carbon by Combustion	EP355 Calgary - Environmental	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon for Combustion	EP358 Calgary - Environmental	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Phosphorus in water	EP372 Calgary - Environmental	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Dissolved Metals Water Filtration	EP421 Vancouver - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO ₃ .



<i>Preparation Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
Dissolved Mercury Water Filtration	EP509 Vancouver - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.



QUALITY CONTROL REPORT

Work Order : CG2202406

Page : 1 of 18

Client : Teck Coal Limited
Contact : Mike Pope
Address : RR#1 HWY#3
Sparwood BC Canada V0B 2G1
Telephone : ---
Project : REGIONAL EFFECTS PROGRAM
PO : VPO00816101
C-O-C number : March EVO LAEMP 2022
Sampler : AMC
Site : ---
Quote number : Teck Coal Master Quote
No. of samples received : 8
No. of samples analysed : 8

Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
Calgary, Alberta Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 03-Mar-2022 09:05
Date Analysis Commenced : 03-Mar-2022
Issue Date : 18-Mar-2022 11:33

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
● Matrix Spike (MS) Report; Recovery and Acceptance Limits
● Reference Material (RM) Report; Recovery and Acceptance Limits
● Method Blank (MB) Report; Recovery and Acceptance Limits
● Laboratory Control Sample (LCS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Table with 3 columns: Signatories, Position, Laboratory Department. Lists names like Angela Ren, Caleb Deroche, Erin Sanchez, Harpreet Chawla, Kevin Duarte, Kinny Wu, Lindsay Gung, Oscar Ruiz, Owen Cheng, Ruby Pham, Ruifang Zheng, Sara Niroomand and their respective roles and departments.

Page : 2 of 18
Work Order : CG2202406
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Services number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percentage Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test specific).

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 423054)											
CG2202400-021	Anonymous	conductivity	----	E100	2.0	µS/cm	1840	1840	0.217%	10%	----
Physical Tests (QC Lot: 423055)											
CG2202400-021	Anonymous	pH	----	E108	0.10	pH units	8.04	8.03	0.124%	4%	----
Physical Tests (QC Lot: 423056)											
CG2202400-021	Anonymous	alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	490	489	0.163%	20%	----
		alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	490	489	0.163%	20%	----
Physical Tests (QC Lot: 423057)											
CG2202406-005	RG_ERCK_WS_LAEMP_E VO_2022-03_NP	alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	404	424	4.74%	20%	----
		alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	19.2	17.6	8.70%	20%	----
		alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	423	441	4.16%	20%	----
Physical Tests (QC Lot: 423058)											
CG2202406-005	RG_ERCK_WS_LAEMP_E VO_2022-03_NP	conductivity	----	E100	2.0	µS/cm	1860	1860	0.00%	10%	----
Physical Tests (QC Lot: 423059)											
CG2202406-005	RG_ERCK_WS_LAEMP_E VO_2022-03_NP	pH	----	E108	0.10	pH units	8.36	8.36	0.00%	4%	----
Physical Tests (QC Lot: 423829)											
CG2202406-001	RG_ERCKMD_WS_LAEM P_EVO_2022-03_NP	acidity (as CaCO3)	----	E283	2.0	mg/L	8.8	8.7	0.06	Diff <2x LOR	----
Physical Tests (QC Lot: 424313)											
CG2202364-001	Anonymous	solids, total dissolved [TDS]	----	E162	20	mg/L	606	615	1.39%	20%	----
Physical Tests (QC Lot: 424314)											
CG2202406-004	RG_ERCKUT_WS_LAEMP _EVO_2022-03_NP	solids, total dissolved [TDS]	----	E162	40	mg/L	1780	1710	4.13%	20%	----
Physical Tests (QC Lot: 424577)											
CG2202400-033	Anonymous	turbidity	----	E121	0.10	NTU	0.53	0.52	0.007	Diff <2x LOR	----
Physical Tests (QC Lot: 424662)											
CG2202364-002	Anonymous	turbidity	----	E121	0.10	NTU	<0.10	<0.10	0	Diff <2x LOR	----
Physical Tests (QC Lot: 424760)											
CG2202364-004	Anonymous	turbidity	----	E121	0.10	NTU	0.98	1.00	0.02	Diff <2x LOR	----



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 426070)											
CG2202400-035	Anonymous	oxidation-reduction potential [ORP]	----	E125	0.10	mV	483	482	0.311%	15%	----
Anions and Nutrients (QC Lot: 422977)											
CG2202400-033	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 423041)											
CG2202405-001	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 423042)											
CG2202405-001	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	1.50	mg/L	865	872	0.789%	20%	----
Anions and Nutrients (QC Lot: 423043)											
CG2202405-001	Anonymous	bromide	24959-67-9	E235.Br-L	0.250	mg/L	0.458	0.388	0.070	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 423044)											
CG2202405-001	Anonymous	chloride	16887-00-6	E235.Cl-L	0.50	mg/L	7.91	7.77	1.79%	20%	----
Anions and Nutrients (QC Lot: 423045)											
CG2202405-001	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	0.0250	mg/L	0.822	0.830	0.920%	20%	----
Anions and Nutrients (QC Lot: 423046)											
CG2202405-001	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.0050	mg/L	0.0182	0.0242	0.0060	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 423047)											
CG2202405-001	Anonymous	fluoride	16984-48-8	E235.F	0.100	mg/L	0.186	0.180	0.005	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 423933)											
CG2202400-019	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.146	0.145	0.206%	20%	----
Anions and Nutrients (QC Lot: 423934)											
CG2202406-003	RG_TRIP_WS_LAEMP_EV O_2022-03_NP	ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 428426)											
CG2202395-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 422958)											
CG2202405-001	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	1.00	1.09	0.09	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 422959)											
CG2202405-001	Anonymous	carbon, total organic [TOC]	----	E355-L	0.50	mg/L	1.08	1.08	0	Diff <2x LOR	----
Total Metals (QC Lot: 426296)											
CG2202406-001	RG_ERCKMD_WS_LAEM P_EVO_2022-03_NP	chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
Total Metals (QC Lot: 426297)											
CG2202406-001	RG_ERCKMD_WS_LAEM P_EVO_2022-03_NP	aluminum, total	7429-90-5	E420	0.0030	mg/L	<0.0030	<0.0030	0	Diff <2x LOR	----
		antimony, total	7440-36-0	E420	0.00010	mg/L	0.00045	0.00046	0.000008	Diff <2x LOR	----
		arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00030	0.00035	0.00005	Diff <2x LOR	----
		barium, total	7440-39-3	E420	0.00010	mg/L	0.0189	0.0202	6.58%	20%	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (QC Lot: 426297) - continued											
CG2202406-001	RG_ERCKMD_WS_LAEM P_EVO_2022-03_NP	beryllium, total	7440-41-7	E420	0.020	mg/L	<0.020 µg/L	<0.000020	0	Diff <2x LOR	----
		bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, total	7440-42-8	E420	0.010	mg/L	0.031	0.033	0.002	Diff <2x LOR	----
		cadmium, total	7440-43-9	E420	0.0050	mg/L	0.314 µg/L	0.000338	7.23%	20%	----
		calcium, total	7440-70-2	E420	0.050	mg/L	279	290	4.05%	20%	----
		cobalt, total	7440-48-4	E420	0.10	mg/L	9.55 µg/L	0.00991	3.67%	20%	----
		copper, total	7440-50-8	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		iron, total	7439-89-6	E420	0.010	mg/L	0.038	0.035	0.003	Diff <2x LOR	----
		lead, total	7439-92-1	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		lithium, total	7439-93-2	E420	0.0010	mg/L	0.0568	0.0605	6.33%	20%	----
		magnesium, total	7439-95-4	E420	0.0050	mg/L	157	166	5.98%	20%	----
		manganese, total	7439-96-5	E420	0.00010	mg/L	0.219	0.226	3.20%	20%	----
		molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.0167	0.0173	3.40%	20%	----
		nickel, total	7440-02-0	E420	0.00050	mg/L	0.0435	0.0458	5.06%	20%	----
		potassium, total	7440-09-7	E420	0.050	mg/L	4.23	4.39	3.58%	20%	----
		selenium, total	7782-49-2	E420	0.050	mg/L	27.7 µg/L	0.0274	1.05%	20%	----
		silicon, total	7440-21-3	E420	0.10	mg/L	3.24	3.36	3.57%	20%	----
		silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, total	7440-23-5	E420	0.050	mg/L	6.22	6.58	5.64%	20%	----
		strontium, total	7440-24-6	E420	0.00020	mg/L	0.356	0.372	4.56%	20%	----
		sulfur, total	7704-34-9	E420	0.50	mg/L	296	301	1.75%	20%	----
		thallium, total	7440-28-0	E420	0.000010	mg/L	0.000071	0.000077	0.000006	Diff <2x LOR	----
		tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		uranium, total	7440-61-1	E420	0.000010	mg/L	0.0115	0.0119	3.51%	20%	----
		vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		zinc, total	7440-66-6	E420	0.0030	mg/L	0.0161	0.0167	0.0006	Diff <2x LOR	----
Total Metals (QC Lot: 427027)											
CG2202353-001	Anonymous	mercury, total	7439-97-6	E508-L	0.00050	ng/L	0.00054 µg/L	0.55	0.01	Diff <2x LOR	----
Total Metals (QC Lot: 427515)											
CG2202368-001	Anonymous	mercury, total	7439-97-6	E508-L	0.50	ng/L	<0.50	<0.50	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 426307)											
CG2202406-001	RG_ERCKMD_WS_LAEM P_EVO_2022-03_NP	chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 426308)											



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 426308) - continued											
CG2202406-001	RG_ERCKMD_WS_LAEM P_EVO_2022-03_NP	aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0011	<0.0010	0.0001	Diff <2x LOR	----
		antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00045	0.00046	0.000008	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00030	0.00032	0.00001	Diff <2x LOR	----
		barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0198	0.0209	5.58%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.020	mg/L	<0.020 µg/L	<0.000020	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.010	mg/L	0.028	0.028	0.0004	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E421	0.0050	mg/L	0.307 µg/L	0.000323	5.14%	20%	----
		calcium, dissolved	7440-70-2	E421	0.050	mg/L	288	295	2.58%	20%	----
		cobalt, dissolved	7440-48-4	E421	0.10	mg/L	9.24 µg/L	0.00984	6.33%	20%	----
		copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		iron, dissolved	7439-89-6	E421	0.010	mg/L	0.011	0.012	0.0001	Diff <2x LOR	----
		lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0594	0.0592	0.233%	20%	----
		magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	160	168	4.99%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.212	0.222	4.28%	20%	----
		molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.0166	0.0169	1.50%	20%	----
		nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.0434	0.0449	3.53%	20%	----
		potassium, dissolved	7440-09-7	E421	0.050	mg/L	4.14	4.44	6.96%	20%	----
		selenium, dissolved	7782-49-2	E421	0.050	mg/L	32.3 µg/L	0.0323	0.0410%	20%	----
		silicon, dissolved	7440-21-3	E421	0.050	mg/L	3.11	3.06	1.77%	20%	----
		silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E421	0.050	mg/L	6.22	6.45	3.68%	20%	----
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.379	0.387	2.09%	20%	----		
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	292	286	1.89%	20%	----		
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	0.000077	0.000071	0.000006	Diff <2x LOR	----		
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----		
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----		
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.0115	0.0113	1.45%	20%	----		
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----		
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0162	0.0172	6.28%	20%	----		
Dissolved Metals (QC Lot: 427233)											
CG2202390-006	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 423054)						
conductivity	---	E100	1	µS/cm	<1.0	---
Physical Tests (QCLot: 423056)						
alkalinity, bicarbonate (as CaCO3)	---	E290	1	mg/L	<1.0	---
alkalinity, carbonate (as CaCO3)	---	E290	1	mg/L	<1.0	---
alkalinity, hydroxide (as CaCO3)	---	E290	1	mg/L	<1.0	---
alkalinity, total (as CaCO3)	---	E290	1	mg/L	<1.0	---
Physical Tests (QCLot: 423057)						
alkalinity, bicarbonate (as CaCO3)	---	E290	1	mg/L	<1.0	---
alkalinity, carbonate (as CaCO3)	---	E290	1	mg/L	<1.0	---
alkalinity, hydroxide (as CaCO3)	---	E290	1	mg/L	<1.0	---
alkalinity, total (as CaCO3)	---	E290	1	mg/L	<1.0	---
Physical Tests (QCLot: 423058)						
conductivity	---	E100	1	µS/cm	<1.0	---
Physical Tests (QCLot: 423829)						
acidity (as CaCO3)	---	E283	2	mg/L	<2.0	---
Physical Tests (QCLot: 424309)						
solids, total suspended [TSS]	---	E160-L	1	mg/L	<1.0	---
Physical Tests (QCLot: 424310)						
solids, total suspended [TSS]	---	E160-L	1	mg/L	<1.0	---
Physical Tests (QCLot: 424313)						
solids, total dissolved [TDS]	---	E162	10	mg/L	<10	---
Physical Tests (QCLot: 424314)						
solids, total dissolved [TDS]	---	E162	10	mg/L	<10	---
Physical Tests (QCLot: 424577)						
turbidity	---	E121	0.1	NTU	<0.10	---
Physical Tests (QCLot: 424662)						
turbidity	---	E121	0.1	NTU	<0.10	---
Physical Tests (QCLot: 424760)						
turbidity	---	E121	0.1	NTU	<0.10	---
Anions and Nutrients (QCLot: 422977)						
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	---
Anions and Nutrients (QCLot: 423041)						
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	---



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 423042)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	---
Anions and Nutrients (QCLot: 423043)						
bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	---
Anions and Nutrients (QCLot: 423044)						
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	---
Anions and Nutrients (QCLot: 423045)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	---
Anions and Nutrients (QCLot: 423046)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	---
Anions and Nutrients (QCLot: 423047)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	---
Anions and Nutrients (QCLot: 423933)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	---
Anions and Nutrients (QCLot: 423934)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	---
Anions and Nutrients (QCLot: 428426)						
Kjeldahl nitrogen, total [TKN]	---	E318	0.05	mg/L	<0.050	---
Organic / Inorganic Carbon (QCLot: 422958)						
carbon, dissolved organic [DOC]	---	E358-L	0.5	mg/L	<0.50	---
Organic / Inorganic Carbon (QCLot: 422959)						
carbon, total organic [TOC]	---	E355-L	0.5	mg/L	<0.50	---
Total Metals (QCLot: 426296)						
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	<0.00010	---
Total Metals (QCLot: 426297)						
aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	---
antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	---
arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	---
barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	---
beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	---
bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	---
boron, total	7440-42-8	E420	0.01	mg/L	<0.010	---
cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	---
calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	---
cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	---
copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	---
iron, total	7439-89-6	E420	0.01	mg/L	<0.010	---



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 426297) - continued						
lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	---
lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	---
magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	---
manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	---
molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	---
nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	---
potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	---
selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	---
silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	---
silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	---
sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	---
strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	---
sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	---
thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	---
tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	---
titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	---
uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	---
vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	---
zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	---
Total Metals (QCLot: 427027)						
mercury, total	7439-97-6	E508-L	0.5	ng/L	<0.50	---
Total Metals (QCLot: 427515)						
mercury, total	7439-97-6	E508-L	0.5	ng/L	<0.50	---
Dissolved Metals (QCLot: 426307)						
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	<0.00010	---
Dissolved Metals (QCLot: 426308)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	---
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	---
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	---
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	---
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	---
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	---
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	---
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	---
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	---
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	---



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 426308) - continued						
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
Dissolved Metals (QCLot: 427233)						
mercury, dissolved	7439-97-6	E509	0.00005	mg/L	<0.000050	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Physical Tests (QCLot: 423054)									
conductivity	---	E100	1	µS/cm	146.9 µS/cm	99.9	90.0	110	---
Physical Tests (QCLot: 423055)									
pH	---	E108	---	pH units	7 pH units	99.8	98.6	101	---
Physical Tests (QCLot: 423056)									
alkalinity, total (as CaCO3)	---	E290	1	mg/L	500 mg/L	101	85.0	115	---
Physical Tests (QCLot: 423057)									
alkalinity, total (as CaCO3)	---	E290	1	mg/L	500 mg/L	103	85.0	115	---
Physical Tests (QCLot: 423058)									
conductivity	---	E100	1	µS/cm	146.9 µS/cm	100	90.0	110	---
Physical Tests (QCLot: 423059)									
pH	---	E108	---	pH units	7 pH units	100	98.6	101	---
Physical Tests (QCLot: 423829)									
acidity (as CaCO3)	---	E283	2	mg/L	50 mg/L	103	85.0	115	---
Physical Tests (QCLot: 424309)									
solids, total suspended [TSS]	---	E160-L	1	mg/L	150 mg/L	103	85.0	115	---
Physical Tests (QCLot: 424310)									
solids, total suspended [TSS]	---	E160-L	1	mg/L	150 mg/L	103	85.0	115	---
Physical Tests (QCLot: 424313)									
solids, total dissolved [TDS]	---	E162	10	mg/L	1000 mg/L	104	85.0	115	---
Physical Tests (QCLot: 424314)									
solids, total dissolved [TDS]	---	E162	10	mg/L	1000 mg/L	104	85.0	115	---
Physical Tests (QCLot: 424577)									
turbidity	---	E121	0.1	NTU	200 NTU	99.5	85.0	115	---
Physical Tests (QCLot: 424662)									
turbidity	---	E121	0.1	NTU	200 NTU	99.6	85.0	115	---
Physical Tests (QCLot: 424760)									
turbidity	---	E121	0.1	NTU	200 NTU	98.8	85.0	115	---
Physical Tests (QCLot: 426070)									
oxidation-reduction potential [ORP]	---	E125	---	mV	220 mV	101	95.4	104	---
Anions and Nutrients (QCLot: 422977)									
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	8.02 mg/L	104	80.0	120	---
Anions and Nutrients (QCLot: 423041)									



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Anions and Nutrients (QCLot: 423041) - continued									
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.02 mg/L	97.7	80.0	120	----
Anions and Nutrients (QCLot: 423042)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 423043)									
bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	98.9	85.0	115	----
Anions and Nutrients (QCLot: 423044)									
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	97.3	90.0	110	----
Anions and Nutrients (QCLot: 423045)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	97.9	90.0	110	----
Anions and Nutrients (QCLot: 423046)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	96.0	90.0	110	----
Anions and Nutrients (QCLot: 423047)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	94.6	90.0	110	----
Anions and Nutrients (QCLot: 423933)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	102	85.0	115	----
Anions and Nutrients (QCLot: 423934)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	99.4	85.0	115	----
Anions and Nutrients (QCLot: 428426)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	99.3	75.0	125	----
Organic / Inorganic Carbon (QCLot: 422958)									
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	100	80.0	120	----
Organic / Inorganic Carbon (QCLot: 422959)									
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	108	80.0	120	----
Total Metals (QCLot: 426296)									
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	0.25 mg/L	97.1	80.0	120	----
Total Metals (QCLot: 426297)									
aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	98.0	80.0	120	----
antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	103	80.0	120	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	97.5	80.0	120	----
barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	93.7	80.0	120	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	93.1	80.0	120	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	102	80.0	120	----
boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	91.3	80.0	120	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	97.0	80.0	120	----
calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	99.9	80.0	120	----



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Total Metals (QCLot: 426297) - continued									
cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	92.2	80.0	120	----
copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	93.8	80.0	120	----
iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	90.0	80.0	120	----
lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	100	80.0	120	----
lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	91.2	80.0	120	----
magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	93.0	80.0	120	----
manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	96.3	80.0	120	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	104	80.0	120	----
nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	91.4	80.0	120	----
potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	94.9	80.0	120	----
selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	97.3	80.0	120	----
silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	103	80.0	120	----
silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	94.7	80.0	120	----
sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	93.0	80.0	120	----
strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	99.1	80.0	120	----
sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	91.3	80.0	120	----
thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	101	80.0	120	----
tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	98.7	80.0	120	----
titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	91.0	80.0	120	----
uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	99.2	80.0	120	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	95.7	80.0	120	----
zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	97.3	80.0	120	----
Total Metals (QCLot: 427027)									
mercury, total	7439-97-6	E508-L	0.5	ng/L	5 ng/L	103	80.0	120	----
Total Metals (QCLot: 427515)									
mercury, total	7439-97-6	E508-L	0.5	ng/L	5 ng/L	86.0	80.0	120	----
Dissolved Metals (QCLot: 426307)									
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	0.25 mg/L	100	80.0	120	----
Dissolved Metals (QCLot: 426308)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	96.7	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	103	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	102	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	98.9	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	94.9	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	108	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	96.2	80.0	120	----



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Dissolved Metals (QCLot: 426308) - continued									
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	95.9	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	102	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	95.8	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	97.6	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	87.6	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	100.0	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	95.4	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	98.0	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	95.0	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	102	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	96.1	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	99.7	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	96.9	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	104	80.0	120	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	96.5	80.0	120	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	98.8	80.0	120	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	99.2	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	91.8	80.0	120	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	102	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	99.4	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	97.8	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	99.9	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	98.6	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	101	80.0	120	----
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	98.3	80.0	120	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 422977)										
CG2202400-034	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0642 mg/L	0.0676 mg/L	94.9	70.0	130	----
Anions and Nutrients (QCLot: 423041)										
CG2202406-001	RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0522 mg/L	0.05 mg/L	104	70.0	130	----
Anions and Nutrients (QCLot: 423042)										
CG2202406-007	RG_ERCKDT_WS_LAEMP_EVO_2022-03_NP	sulfate (as SO4)	14808-79-8	E235.SO4	ND mg/L	100 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 423043)										
CG2202406-007	RG_ERCKDT_WS_LAEMP_EVO_2022-03_NP	bromide	24959-67-9	E235.Br-L	0.454 mg/L	0.5 mg/L	90.7	75.0	125	----
Anions and Nutrients (QCLot: 423044)										
CG2202406-007	RG_ERCKDT_WS_LAEMP_EVO_2022-03_NP	chloride	16887-00-6	E235.Cl-L	98.0 mg/L	100 mg/L	98.0	75.0	125	----
Anions and Nutrients (QCLot: 423045)										
CG2202406-007	RG_ERCKDT_WS_LAEMP_EVO_2022-03_NP	nitrate (as N)	14797-55-8	E235.NO3-L	2.43 mg/L	2.5 mg/L	97.2	75.0	125	----
Anions and Nutrients (QCLot: 423046)										
CG2202406-007	RG_ERCKDT_WS_LAEMP_EVO_2022-03_NP	nitrite (as N)	14797-65-0	E235.NO2-L	0.482 mg/L	0.5 mg/L	96.4	75.0	125	----
Anions and Nutrients (QCLot: 423047)										
CG2202406-007	RG_ERCKDT_WS_LAEMP_EVO_2022-03_NP	fluoride	16984-48-8	E235.F	0.846 mg/L	1 mg/L	84.6	75.0	125	----
Anions and Nutrients (QCLot: 423933)										
CG2202400-020	Anonymous	ammonia, total (as N)	7664-41-7	E298	ND mg/L	0.1 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 423934)										
CG2202406-003	RG_TRIP_WS_LAEMP_EV_O_2022-03_NP	ammonia, total (as N)	7664-41-7	E298	0.113 mg/L	0.1 mg/L	113	75.0	125	----
Anions and Nutrients (QCLot: 428426)										
CG2202395-002	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.55 mg/L	2.5 mg/L	102	70.0	130	----
Organic / Inorganic Carbon (QCLot: 422958)										
CG2202405-001	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	5.31 mg/L	5 mg/L	106	70.0	130	----
Organic / Inorganic Carbon (QCLot: 422959)										



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Organic / Inorganic Carbon (QCLot: 422959) - continued										
CG2202405-001	Anonymous	carbon, total organic [TOC]	----	E355-L	5.23 mg/L	5 mg/L	105	70.0	130	----
Total Metals (QCLot: 426296)										
CG2202406-002	RG_RIVER_WS_LAEMP_E VO_2022-03_NP	chromium, total	7440-47-3	E420.Cr-L	0.0392 mg/L	0.04 mg/L	98.0	70.0	130	----
Total Metals (QCLot: 426297)										
CG2202406-002	RG_RIVER_WS_LAEMP_E VO_2022-03_NP	aluminum, total	7429-90-5	E420	0.186 mg/L	0.2 mg/L	93.1	70.0	130	----
		antimony, total	7440-36-0	E420	0.0202 mg/L	0.02 mg/L	101	70.0	130	----
		arsenic, total	7440-38-2	E420	0.0201 mg/L	0.02 mg/L	100	70.0	130	----
		barium, total	7440-39-3	E420	ND mg/L	0.02 mg/L	ND	70.0	130	----
		beryllium, total	7440-41-7	E420	0.0371 mg/L	0.04 mg/L	92.8	70.0	130	----
		bismuth, total	7440-69-9	E420	0.00960 mg/L	0.01 mg/L	96.0	70.0	130	----
		boron, total	7440-42-8	E420	0.095 mg/L	0.1 mg/L	95.3	70.0	130	----
		cadmium, total	7440-43-9	E420	0.00392 mg/L	0.004 mg/L	98.1	70.0	130	----
		calcium, total	7440-70-2	E420	ND mg/L	4 mg/L	ND	70.0	130	----
		cobalt, total	7440-48-4	E420	0.0183 mg/L	0.02 mg/L	91.6	70.0	130	----
		copper, total	7440-50-8	E420	0.0184 mg/L	0.02 mg/L	91.8	70.0	130	----
		iron, total	7439-89-6	E420	1.93 mg/L	2 mg/L	96.6	70.0	130	----
		lead, total	7439-92-1	E420	0.0190 mg/L	0.02 mg/L	95.3	70.0	130	----
		lithium, total	7439-93-2	E420	0.0909 mg/L	0.1 mg/L	90.9	70.0	130	----
		magnesium, total	7439-95-4	E420	ND mg/L	1 mg/L	ND	70.0	130	----
		manganese, total	7439-96-5	E420	0.0195 mg/L	0.02 mg/L	97.4	70.0	130	----
		molybdenum, total	7439-98-7	E420	0.0203 mg/L	0.02 mg/L	102	70.0	130	----
		nickel, total	7440-02-0	E420	0.0366 mg/L	0.04 mg/L	91.5	70.0	130	----
		potassium, total	7440-09-7	E420	3.83 mg/L	4 mg/L	95.7	70.0	130	----
		selenium, total	7782-49-2	E420	0.0404 mg/L	0.04 mg/L	101	70.0	130	----
		silicon, total	7440-21-3	E420	9.44 mg/L	10 mg/L	94.4	70.0	130	----
		silver, total	7440-22-4	E420	0.00393 mg/L	0.004 mg/L	98.3	70.0	130	----
		sodium, total	7440-23-5	E420	ND mg/L	2 mg/L	ND	70.0	130	----
		strontium, total	7440-24-6	E420	ND mg/L	0.02 mg/L	ND	70.0	130	----
		sulfur, total	7704-34-9	E420	ND mg/L	20 mg/L	ND	70.0	130	----
		thallium, total	7440-28-0	E420	0.00387 mg/L	0.004 mg/L	96.8	70.0	130	----
		tin, total	7440-31-5	E420	0.0196 mg/L	0.02 mg/L	98.0	70.0	130	----
		titanium, total	7440-32-6	E420	0.0374 mg/L	0.04 mg/L	93.6	70.0	130	----
		uranium, total	7440-61-1	E420	0.00387 mg/L	0.004 mg/L	96.7	70.0	130	----
		vanadium, total	7440-62-2	E420	0.0968 mg/L	0.1 mg/L	96.8	70.0	130	----
		zinc, total	7440-66-6	E420	0.385 mg/L	0.4 mg/L	96.3	70.0	130	----



Sub-Matrix: **Water**

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	Target	MS	Low	High	
Total Metals (QCLot: 427027)										
CG2202396-001	Anonymous	mercury, total	7439-97-6	E508-L	4.90 ng/L	5 ng/L	98.0	70.0	130	----
Total Metals (QCLot: 427515)										
CG2202368-003	Anonymous	mercury, total	7439-97-6	E508-L	17.5 ng/L	20 ng/L	87.5	70.0	130	----
Dissolved Metals (QCLot: 426307)										
CG2202406-002	RG_RIVER_WS_LAEMP_E VO_2022-03_NP	chromium, dissolved	7440-47-3	E421.Cr-L	0.0382 mg/L	0.04 mg/L	95.6	70.0	130	----
Dissolved Metals (QCLot: 426308)										
CG2202406-002	RG_RIVER_WS_LAEMP_E VO_2022-03_NP	aluminum, dissolved	7429-90-5	E421	0.182 mg/L	0.2 mg/L	90.9	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.0209 mg/L	0.02 mg/L	105	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.0194 mg/L	0.02 mg/L	96.8	70.0	130	----
		barium, dissolved	7440-39-3	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.0362 mg/L	0.04 mg/L	90.4	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.00921 mg/L	0.01 mg/L	92.1	70.0	130	----
		boron, dissolved	7440-42-8	E421	0.089 mg/L	0.1 mg/L	89.2	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.00378 mg/L	0.004 mg/L	94.6	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	4 mg/L	ND	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.0179 mg/L	0.02 mg/L	89.5	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.0181 mg/L	0.02 mg/L	90.3	70.0	130	----
		iron, dissolved	7439-89-6	E421	1.84 mg/L	2 mg/L	92.2	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.0199 mg/L	0.02 mg/L	99.4	70.0	130	----
		lithium, dissolved	7439-93-2	E421	0.0936 mg/L	0.1 mg/L	93.6	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	1 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E421	0.0186 mg/L	0.02 mg/L	93.2	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.0207 mg/L	0.02 mg/L	103	70.0	130	----
		nickel, dissolved	7440-02-0	E421	0.0357 mg/L	0.04 mg/L	89.2	70.0	130	----
		potassium, dissolved	7440-09-7	E421	3.68 mg/L	4 mg/L	92.1	70.0	130	----
		selenium, dissolved	7782-49-2	E421	0.0388 mg/L	0.04 mg/L	97.0	70.0	130	----
		silicon, dissolved	7440-21-3	E421	8.90 mg/L	10 mg/L	89.0	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.00394 mg/L	0.004 mg/L	98.6	70.0	130	----
		sodium, dissolved	7440-23-5	E421	ND mg/L	2 mg/L	ND	70.0	130	----
		strontium, dissolved	7440-24-6	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	ND mg/L	20 mg/L	ND	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.00398 mg/L	0.004 mg/L	99.5	70.0	130	----
tin, dissolved	7440-31-5	E421	0.0199 mg/L	0.02 mg/L	99.5	70.0	130	----		
titanium, dissolved	7440-32-6	E421	0.0382 mg/L	0.04 mg/L	95.5	70.0	130	----		
uranium, dissolved	7440-61-1	E421	0.00405 mg/L	0.004 mg/L	101	70.0	130	----		



Sub-Matrix: **Water**

					<i>Matrix Spike (MS) Report</i>					
					<i>Spike</i>		<i>Recovery (%)</i>	<i>Recovery Limits (%)</i>		
<i>Laboratory sample ID</i>	<i>Client sample ID</i>	<i>Analyte</i>	<i>CAS Number</i>	<i>Method</i>	<i>Concentration</i>	<i>Target</i>	<i>MS</i>	<i>Low</i>	<i>High</i>	<i>Qualifier</i>
Dissolved Metals (QCLot: 426308) - continued										
CG2202406-002	RG_RIVER_WS_LAEMP_E VO_2022-03_NP	vanadium, dissolved	7440-62-2	E421	0.0946 mg/L	0.1 mg/L	94.6	70.0	130	----
		zinc, dissolved	7440-66-6	E421	0.376 mg/L	0.4 mg/L	93.9	70.0	130	----
Dissolved Metals (QCLot: 427233)										
CG2202390-007	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000910 mg/L	0.0001 mg/L	91.0	70.0	130	----

Teck

COC ID: **March EVO LAEMP 2022** TURNAROUND TIME:

PROJECT/CLIENT INFO				LABORATORY			
Facility Name / Job#	Regional Effects Program			Lab Name	ALS Calgary		
Project Manager	Mike Pope			Lab Contact	Lyudmyla Shvets		
Email	m.pope@teck.com			Email	lyudmyla.shvets@alsglobal.com		
Address	421 Pine Avenue			Address	2559 29 Street NE		
	Sparwood	Province	BC	City	Calgary	Province	AB
	V0B 2G0	Country	Canada	Postal Code	T1Y 7B5	Country	Canada
	905			Phone Number	1 403 407 1794		

Environmental Division
Calgary
Work Order Reference
CG2202406



Telephone : +1 403 407 1800

SAMPLE DETAILS								ANALYSIS REQUESTED							
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	PH	N	F	N	N	F	N	F
								PRECIPITATION	H2SO4	H2SO4		HCL	HNO3	HNO3	
								ANALYSIS	TECKCOAL-ROUTINE-VA	ALS_Package-DOC	ALS_Package-TKN/TOC	HG-T-U-CVAF-VA	HG-D-CVAF-VA	TECKCOAL-MET-T-VA	TECKCOAL-MET-D-VA
RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP	RG_ERCKMD	WS	No	3/2/2022	13:30	G	7		X	X	X	X	X	X	X
RG_RIVER_WS_LAEMP_EVO_2022-03_NP	RG_RIVER	WS	No	3/2/2022	16:00	G	7		X	X	X	X	X	X	X
RG_TRIP_WS_LAEMP_EVO_2022-03_NP	RG_TRIP	WS	No	3/2/2022	16:00	G	7		X	X	X	X	X	X	X
RG_ERCKUT_WS_LAEMP_EVO_2022-03_NP	RG_ERCKUT	WS	No	3/2/2022	13:00	G	7		X	X	X	X	X	X	X
RG_ERCK_WS_LAEMP_EVO_2022-03_NP	RG_ERCK	WS	No	3/2/2022	10:30	G	7		X	X	X	X	X	X	X
RG_ERCKDT_WS_LAEMP_EVO_2022-03_NP	RG_ERCKDT	WS	No	3/2/2022	14:30	G	7		X	X	X	X	X	X	X
RG_FBLANK_WS_LAEMP_EVO_2022-03_NP	RG_FBLANK	WS	No	3/2/2022	16:00	G	7		X	X	X	X	X	X	X
RG_MIDER_WS_LAEMP_EVO_2022-03_NP	RG_MIDER	WS	No	3/2/2022	16:00	G	7		X	X	X	X	X	X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
ALS PO 748510	Alex McClymont/Minnow	March 2, 2022	

NO OF BOTTLES RETURNED/DESCRIPTION	Sampler's Name	Mobile #
Regular (default) x	Alex McClymont	780-293-6750
Priority (2-3 business days) - 50% surcharge		
Emergency (1 Business Day) - 100% surcharge		
For Emergency <1 Day, ASAP or Weekend - Contact ALS	Sampler's Signature	Date/Time
	AMC	March 2, 2022



CERTIFICATE OF ANALYSIS

Work Order : **CG2202409**
Client : **Teck Coal Limited**
Contact : Mike Pope
Address : 421 PINE AVE
 Sparwood BC Canada V0B 2G0
Telephone : ----
Project : ELKVIEW OPERATIONS
PO : VPO00816101
C-O-C number : MARCH EVO LAEMP 2022
Sampler : AMC
Site : ----
Quote number : Teck Coal Master Quote
No. of samples received : 1
No. of samples analysed : 1

Page : 1 of 6
Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
 Calgary AB Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 03-Mar-2022 09:05
Date Analysis Commenced : 03-Mar-2022
Issue Date : 15-Mar-2022 17:51

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Angela Ren	Team Leader - Metals	Metals, Burnaby, British Columbia
Caleb Deroche	Lab Analyst	Metals, Burnaby, British Columbia
Elke Tabora		Inorganics, Calgary, Alberta
Erin Sanchez		Inorganics, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Lindsay Gung	Supervisor - Water Chemistry	Inorganics, Burnaby, British Columbia
Owen Cheng		Metals, Burnaby, British Columbia
Ruby Pham	Lab Assistant	Metals, Burnaby, British Columbia
Ruifang Zheng	Analyst	Inorganics, Calgary, Alberta
Sara Niroomand		Inorganics, Calgary, Alberta



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

<i>Unit</i>	<i>Description</i>
-	No Unit
%	percent
µg/L	micrograms per litre
µS/cm	Microsiemens per centimetre
meq/L	milliequivalents per litre
mg/L	milligrams per litre
mV	millivolts
NTU	nephelometric turbidity units
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

<i>Qualifier</i>	<i>Description</i>
DLDS	Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.
DLIS	Detection Limit Adjusted due to insufficient sample.
TKNI	TKN result may be biased low due to Nitrate interference. Nitrate-N is > 10x TKN.



Analytical Results

Sub-Matrix: Water					Client sample ID	EV_EC_BRIDGE	---	---	---	---
(Matrix: Water)						_WS_LAEMP_E				
						VO_2022-03_N				
						P				
					Client sampling date / time	02-Mar-2022	---	---	---	---
					13:30	---	---	---	---	---
Analyte	CAS Number	Method	LOR	Unit	CG2202409-001	-----	-----	-----	-----	-----
					Result	---	---	---	---	---
Physical Tests										
acidity (as CaCO3)	---	E283	2.0	mg/L	11.2	---	---	---	---	---
alkalinity, bicarbonate (as CaCO3)	---	E290	1.0	mg/L	481	---	---	---	---	---
alkalinity, bicarbonate (as HCO3)	71-52-3	E290	1.0	mg/L	587	---	---	---	---	---
alkalinity, carbonate (as CaCO3)	---	E290	1.0	mg/L	<1.0	---	---	---	---	---
alkalinity, carbonate (as CO3)	3812-32-6	E290	1.0	mg/L	<1.0	---	---	---	---	---
alkalinity, hydroxide (as CaCO3)	---	E290	1.0	mg/L	<1.0	---	---	---	---	---
alkalinity, hydroxide (as OH)	14280-30-9	E290	1.0	mg/L	<1.0	---	---	---	---	---
alkalinity, total (as CaCO3)	---	E290	1.0	mg/L	481	---	---	---	---	---
conductivity	---	E100	2.0	µS/cm	1980	---	---	---	---	---
hardness (as CaCO3), dissolved	---	EC100	0.50	mg/L	1330	---	---	---	---	---
oxidation-reduction potential [ORP]	---	E125	0.10	mV	348	---	---	---	---	---
pH	---	E108	0.10	pH units	7.89	---	---	---	---	---
solids, total dissolved [TDS]	---	E162	10	mg/L	1500 ^{DLIS}	---	---	---	---	---
solids, total suspended [TSS]	---	E160-L	1.0	mg/L	4.6	---	---	---	---	---
turbidity	---	E121	0.10	NTU	1.12	---	---	---	---	---
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	---	---	---	---	---
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.250 ^{DLDS}	---	---	---	---	---
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	5.77	---	---	---	---	---
fluoride	16984-48-8	E235.F	0.020	mg/L	0.109	---	---	---	---	---
Kjeldahl nitrogen, total [TKN]	---	E318	0.050	mg/L	0.409 ^{TKNI}	---	---	---	---	---
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	18.1	---	---	---	---	---
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0050 ^{DLDS}	---	---	---	---	---
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0138	---	---	---	---	---
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0230	---	---	---	---	---
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	842	---	---	---	---	---
Organic / Inorganic Carbon										
carbon, dissolved organic [DOC]	---	E358-L	0.50	mg/L	0.75	---	---	---	---	---



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	EV_EC_BRIDGE _WS_LAEMP_E VO_2022-03_N P	----	----	----	----
Client sampling date / time					02-Mar-2022 13:30	----	----	----	----	
Analyte	CAS Number	Method	LOR	Unit	CG2202409-001	-----	-----	-----	-----	
					Result	----	----	----	----	
Organic / Inorganic Carbon										
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	0.62	----	----	----	----	
Ion Balance										
anion sum	----	EC101	0.10	meq/L	28.6	----	----	----	----	
cation sum	----	EC101	0.10	meq/L	26.8	----	----	----	----	
ion balance (cations/anions)	----	EC101	0.010	%	93.7	----	----	----	----	
ion balance (APHA)	----	EC101	0.010	%	3.25	----	----	----	----	
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0091	----	----	----	----	
antimony, total	7440-36-0	E420	0.00010	mg/L	0.00020	----	----	----	----	
arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00026	----	----	----	----	
barium, total	7440-39-3	E420	0.00010	mg/L	0.0588	----	----	----	----	
beryllium, total	7440-41-7	E420	0.020	µg/L	<0.020	----	----	----	----	
bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	----	----	----	----	
boron, total	7440-42-8	E420	0.010	mg/L	0.013	----	----	----	----	
cadmium, total	7440-43-9	E420	0.0050	µg/L	0.0901	----	----	----	----	
calcium, total	7440-70-2	E420	0.050	mg/L	283	----	----	----	----	
chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	0.00025	----	----	----	----	
cobalt, total	7440-48-4	E420	0.10	µg/L	<0.10	----	----	----	----	
copper, total	7440-50-8	E420	0.00050	mg/L	<0.00050	----	----	----	----	
iron, total	7439-89-6	E420	0.010	mg/L	<0.010	----	----	----	----	
lead, total	7439-92-1	E420	0.000050	mg/L	<0.000050	----	----	----	----	
lithium, total	7439-93-2	E420	0.0010	mg/L	0.0262	----	----	----	----	
magnesium, total	7439-95-4	E420	0.0050	mg/L	154	----	----	----	----	
manganese, total	7439-96-5	E420	0.00010	mg/L	0.00042	----	----	----	----	
mercury, total	7439-97-6	E508-L	0.00050	µg/L	<0.00050	----	----	----	----	
molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.00106	----	----	----	----	
nickel, total	7440-02-0	E420	0.00050	mg/L	0.00082	----	----	----	----	
potassium, total	7440-09-7	E420	0.050	mg/L	2.56	----	----	----	----	
selenium, total	7782-49-2	E420	0.050	µg/L	164	----	----	----	----	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	EV_EC_BRIDGE _WS_LAEMP_E VO_2022-03_N P	----	----	----	----
Client sampling date / time					02-Mar-2022 13:30	----	----	----	----	
Analyte	CAS Number	Method	LOR	Unit	CG2202409-001	-----	-----	-----	-----	
					Result	----	----	----	----	
Total Metals										
silicon, total	7440-21-3	E420	0.10	mg/L	3.89	----	----	----	----	
silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	----	----	----	----	
sodium, total	7440-23-5	E420	0.050	mg/L	3.05	----	----	----	----	
strontium, total	7440-24-6	E420	0.00020	mg/L	0.238	----	----	----	----	
sulfur, total	7704-34-9	E420	0.50	mg/L	277	----	----	----	----	
thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	----	----	----	----	
tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	----	----	----	----	
titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00030	----	----	----	----	
uranium, total	7440-61-1	E420	0.000010	mg/L	0.00859	----	----	----	----	
vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	----	----	----	----	
zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	----	----	----	----	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0011	----	----	----	----	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00018	----	----	----	----	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00021	----	----	----	----	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0628	----	----	----	----	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.020	----	----	----	----	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	----	----	----	----	
boron, dissolved	7440-42-8	E421	0.010	mg/L	0.013	----	----	----	----	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.0941	----	----	----	----	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	265	----	----	----	----	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	0.00019	----	----	----	----	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	<0.10	----	----	----	----	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00020	----	----	----	----	
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	----	----	----	----	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	----	----	----	----	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0276	----	----	----	----	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	162	----	----	----	----	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	<0.00010	----	----	----	----	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	EV_EC_BRIDGE _WS_LAEMP_E VO_2022-03_N P	----	----	----	----
Client sampling date / time					02-Mar-2022 13:30	----	----	----	----	
Analyte	CAS Number	Method	LOR	Unit	CG2202409-001	-----	-----	-----	-----	
					Result	----	----	----	----	
Dissolved Metals										
mercury, dissolved	7439-97-6	E509	0.000050	mg/L	<0.000050	----	----	----	----	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00103	----	----	----	----	
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00082	----	----	----	----	
potassium, dissolved	7440-09-7	E421	0.050	mg/L	2.77	----	----	----	----	
selenium, dissolved	7782-49-2	E421	0.050	µg/L	161	----	----	----	----	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	3.68	----	----	----	----	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	----	----	----	----	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	3.15	----	----	----	----	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.222	----	----	----	----	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	262	----	----	----	----	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	----	----	----	----	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	----	----	----	----	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	----	----	----	----	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00841	----	----	----	----	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	----	----	----	----	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0029	----	----	----	----	
dissolved mercury filtration location	----	EP509	-	-	Field	----	----	----	----	
dissolved metals filtration location	----	EP421	-	-	Field	----	----	----	----	

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: CG2202409	Page	: 1 of 13
Client	: Teck Coal Limited	Laboratory	: Calgary - Environmental
Contact	: Mike Pope	Account Manager	: Lyudmyla Shvets
Address	: 421 PINE AVE Sparwood BC Canada V0B 2G0	Address	: 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5
Telephone	: ----	Telephone	: +1 403 407 1800
Project	: ELKVIEW OPERATIONS	Date Samples Received	: 03-Mar-2022 09:05
PO	: VPO00816101	Issue Date	: 15-Mar-2022 17:51
C-O-C number	: MARCH EVO LAEMP 2022		
Sampler	: AMC		
Site	: ----		
Quote number	: Teck Coal Master Quote		
No. of samples received	: 1		
No. of samples analysed	: 1		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

- Anonymous:** Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) EV_EC_BRIDGE_WS_LAEMP_EVO_2022-03_NP	E298	02-Mar-2022	04-Mar-2022	28 days	2 days	✓	04-Mar-2022	26 days	0 days	✓	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE EV_EC_BRIDGE_WS_LAEMP_EVO_2022-03_NP	E235.Br-L	02-Mar-2022	----	----	----		03-Mar-2022	28 days	1 days	✓	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE EV_EC_BRIDGE_WS_LAEMP_EVO_2022-03_NP	E235.Cl-L	02-Mar-2022	----	----	----		03-Mar-2022	28 days	1 days	✓	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level)											
HDPE EV_EC_BRIDGE_WS_LAEMP_EVO_2022-03_NP	E378-U	02-Mar-2022	----	----	----		04-Mar-2022	3 days	2 days	✓	
Anions and Nutrients : Fluoride in Water by IC											
HDPE EV_EC_BRIDGE_WS_LAEMP_EVO_2022-03_NP	E235.F	02-Mar-2022	----	----	----		03-Mar-2022	28 days	1 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE EV_EC_BRIDGE_WS_LAEMP_EVO_2022-03_NP	E235.NO3-L	02-Mar-2022	----	----	----		03-Mar-2022	3 days	1 days	✓	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE EV_EC_BRIDGE_WS_LAEMP_EVO_2022-03_NP	E235.NO2-L	02-Mar-2022	----	----	----		03-Mar-2022	3 days	1 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times Rec Actual		Eval	Analysis Date	Holding Times Rec Actual		Eval	
Anions and Nutrients : Sulfate in Water by IC											
HDPE EV_EC_BRIDGE_WS_LAEMP_EVO_2022-03_NP	E235.SO4	02-Mar-2022	----	----	----		03-Mar-2022	28 days	1 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) EV_EC_BRIDGE_WS_LAEMP_EVO_2022-03_NP	E318	02-Mar-2022	10-Mar-2022	28 days	8 days	✔	14-Mar-2022	20 days	4 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (Ultra Trace)											
Amber glass total (sulfuric acid) EV_EC_BRIDGE_WS_LAEMP_EVO_2022-03_NP	E372-U	02-Mar-2022	05-Mar-2022	28 days	3 days	✔	05-Mar-2022	25 days	0 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) EV_EC_BRIDGE_WS_LAEMP_EVO_2022-03_NP	E421.Cr-L	02-Mar-2022	08-Mar-2022	180 days	6 days	✔	08-Mar-2022	174 days	1 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) EV_EC_BRIDGE_WS_LAEMP_EVO_2022-03_NP	E509	02-Mar-2022	09-Mar-2022	28 days	7 days	✔	09-Mar-2022	21 days	0 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) EV_EC_BRIDGE_WS_LAEMP_EVO_2022-03_NP	E421	02-Mar-2022	08-Mar-2022	180 days	6 days	✔	08-Mar-2022	174 days	1 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) EV_EC_BRIDGE_WS_LAEMP_EVO_2022-03_NP	E358-L	02-Mar-2022	04-Mar-2022	28 days	2 days	✔	05-Mar-2022	26 days	1 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) EV_EC_BRIDGE_WS_LAEMP_EVO_2022-03_NP	E355-L	02-Mar-2022	04-Mar-2022	28 days	2 days	✔	05-Mar-2022	26 days	1 days	✔	
Physical Tests : Acidity by Titration											
HDPE EV_EC_BRIDGE_WS_LAEMP_EVO_2022-03_NP	E283	02-Mar-2022	----	----	----		04-Mar-2022	14 days	2 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
Rec	Actual	Rec		Actual							
Physical Tests : Alkalinity Species by Titration											
HDPE EV_EC_BRIDGE_WS_LAEMP_EVO_2022-03_NP	E290	02-Mar-2022	----	----	----		04-Mar-2022	14 days	2 days	✓	
Physical Tests : Conductivity in Water											
HDPE EV_EC_BRIDGE_WS_LAEMP_EVO_2022-03_NP	E100	02-Mar-2022	----	----	----		04-Mar-2022	28 days	2 days	✓	
Physical Tests : ORP by Electrode											
HDPE EV_EC_BRIDGE_WS_LAEMP_EVO_2022-03_NP	E125	02-Mar-2022	----	----	----		07-Mar-2022	0 hrs	122 hrs	* EHTR-FM	
Physical Tests : pH by Meter											
HDPE EV_EC_BRIDGE_WS_LAEMP_EVO_2022-03_NP	E108	02-Mar-2022	----	----	----		04-Mar-2022	0 hrs	45 hrs	* EHTR-FM	
Physical Tests : TDS by Gravimetry											
HDPE EV_EC_BRIDGE_WS_LAEMP_EVO_2022-03_NP	E162	02-Mar-2022	----	----	----		08-Mar-2022	7 days	6 days	✓	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE EV_EC_BRIDGE_WS_LAEMP_EVO_2022-03_NP	E160-L	02-Mar-2022	----	----	----		08-Mar-2022	7 days	6 days	✓	
Physical Tests : Turbidity by Nephelometry											
HDPE EV_EC_BRIDGE_WS_LAEMP_EVO_2022-03_NP	E121	02-Mar-2022	----	----	----		05-Mar-2022	3 days	3 days	✓	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) EV_EC_BRIDGE_WS_LAEMP_EVO_2022-03_NP	E420.Cr-L	02-Mar-2022	----	----	----		08-Mar-2022	180 days	6 days	✓	
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)											
Pre-cleaned amber glass - total (lab preserved) EV_EC_BRIDGE_WS_LAEMP_EVO_2022-03_NP	E508-L	02-Mar-2022	----	----	----		09-Mar-2022	28 days	7 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) EV_EC_BRIDGE_WS_LAEMP_EVO_2022-03_NP	E420	02-Mar-2022	----	----	----		08-Mar-2022	180 days	6 days	✔

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended

Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
Analytical Methods							
Laboratory Duplicates (DUP)							
Acidity by Titration	E283	423829	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290	423834	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	424040	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	423223	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	423224	1	20	5.0	5.0	✓
Conductivity in Water	E100	423833	1	14	7.1	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	426307	1	16	6.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	427233	1	19	5.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	426308	1	16	6.2	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	423675	1	7	14.2	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level)	E378-U	423845	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	423227	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	423225	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	423226	1	20	5.0	5.0	✓
ORP by Electrode	E125	426070	1	20	5.0	5.0	✓
pH by Meter	E108	423832	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	423222	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	424344	1	19	5.2	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	426296	1	15	6.6	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	428459	1	12	8.3	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	428023	1	19	5.2	5.0	✓
Total Metals in Water by CRC ICPMS	E420	426297	1	16	6.2	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	423676	1	7	14.2	5.0	✓
Total Phosphorus by Colourimetry (Ultra Trace)	E372-U	423254	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121	424662	1	20	5.0	5.0	✓
Laboratory Control Samples (LCS)							
Acidity by Titration	E283	423829	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290	423834	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	424040	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	423223	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	423224	1	20	5.0	5.0	✓
Conductivity in Water	E100	423833	1	14	7.1	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	426307	1	16	6.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	427233	1	19	5.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	426308	1	16	6.2	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	423675	1	7	14.2	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level)	E378-U	423845	1	20	5.0	5.0	✓



Matrix: **Water**

Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
<i>Analytical Methods</i>							
Laboratory Control Samples (LCS) - Continued							
Fluoride in Water by IC	E235.F	423227	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	423225	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	423226	1	20	5.0	5.0	✓
ORP by Electrode	E125	426070	1	20	5.0	5.0	✓
pH by Meter	E108	423832	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	423222	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	424344	1	19	5.2	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	426296	1	15	6.6	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	428459	1	12	8.3	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	428023	1	19	5.2	5.0	✓
Total Metals in Water by CRC ICPMS	E420	426297	1	16	6.2	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	423676	1	7	14.2	5.0	✓
Total Phosphorus by Colourimetry (Ultra Trace)	E372-U	423254	1	20	5.0	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	424310	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121	424662	1	20	5.0	5.0	✓
Method Blanks (MB)							
Acidity by Titration	E283	423829	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290	423834	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	424040	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	423223	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	423224	1	20	5.0	5.0	✓
Conductivity in Water	E100	423833	1	14	7.1	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	426307	1	16	6.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	427233	1	19	5.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	426308	1	16	6.2	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	423675	1	7	14.2	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level)	E378-U	423845	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	423227	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	423225	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	423226	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	423222	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	424344	1	19	5.2	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	426296	1	15	6.6	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	428459	1	12	8.3	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	428023	1	19	5.2	5.0	✓
Total Metals in Water by CRC ICPMS	E420	426297	1	16	6.2	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	423676	1	7	14.2	5.0	✓
Total Phosphorus by Colourimetry (Ultra Trace)	E372-U	423254	1	20	5.0	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	424310	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121	424662	1	20	5.0	5.0	✓



Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
<i>Analytical Methods</i>							
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	424040	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	423223	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	423224	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	426307	1	16	6.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	427233	1	19	5.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	426308	1	16	6.2	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	423675	1	7	14.2	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level)	E378-U	423845	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	423227	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	423225	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	423226	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	423222	1	20	5.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	426296	1	15	6.6	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	428459	1	12	8.3	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	428023	1	19	5.2	5.0	✓
Total Metals in Water by CRC ICPMS	E420	426297	1	16	6.2	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	423676	1	7	14.2	5.0	✓
Total Phosphorus by Colourimetry (Ultra Trace)	E372-U	423254	1	20	5.0	5.0	✓



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 Calgary - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 Calgary - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 Calgary - Environmental	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
ORP by Electrode	E125 Calgary - Environmental	Water	ASTM D1498 (mod)	Oxidation reduction potential is reported as the oxidation-reduction potential of the platinum metal-reference electrode employed, measured in mV. For high accuracy test results, it is recommended that this analysis be conducted in the field.
TSS by Gravimetry (Low Level)	E160-L Calgary - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 Calgary - Environmental	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC (Low Level)	E235.Cl-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Acidity by Titration	E283 Calgary - Environmental	Water	APHA 2310 B (mod)	Acidity is determined by potentiometric titration to pH endpoint of 8.3



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Alkalinity Species by Titration	E290 Calgary - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 Calgary - Environmental	Water	J. Environ. Monit., 2005, 7, 37-42 (mod)	Ammonia in water is analyzed by flow-injection analysis with fluorescence detection after reaction with orthophthaldialdehyde (OPA).
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 Vancouver - Environmental	Water	APHA 4500-Norg D (mod)	Total Kjeldahl Nitrogen is determined using block digestion followed by flow-injection analysis with fluorescence detection.
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L Calgary - Environmental	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Dissolved Organic Carbon by Combustion (Low Level)	E358-L Calgary - Environmental	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total Phosphorus by Colourimetry (Ultra Trace)	E372-U Calgary - Environmental	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level)	E378-U Calgary - Environmental	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Total Metals in Water by CRC ICPMS	E420 Vancouver - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L Vancouver - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS.
Dissolved Metals in Water by CRC ICPMS	E421 Vancouver - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L Vancouver - Environmental	Water	APHA 3030 B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L Vancouver - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAFS.
Dissolved Mercury in Water by CVAAS	E509 Vancouver - Environmental	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
Dissolved Hardness (Calculated)	EC100 Vancouver - Environmental	Water	APHA 2340B	"Hardness (as CaCO ₃), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Ion Balance using Dissolved Metals	EC101 Calgary - Environmental	Water	APHA 1030E	Cation Sum, Anion Sum, and Ion Balance are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present. Ion Balance cannot be calculated accurately for waters with very low electrical conductivity (EC).

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 Calgary - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 Vancouver - Environmental	Water	APHA 4500-Norg D (mod)	Samples are digested using block digestion with Copper Sulfate Digestion Reagent.
Preparation for Total Organic Carbon by Combustion	EP355 Calgary - Environmental	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon for Combustion	EP358 Calgary - Environmental	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Phosphorus in water	EP372 Calgary - Environmental	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Dissolved Metals Water Filtration	EP421 Vancouver - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO ₃ .

Page : 13 of 13
Work Order : CG2202409
Client : Teck Coal Limited
Project : ELKVIEW OPERATIONS



<i>Preparation Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
Dissolved Mercury Water Filtration	EP509 Vancouver - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.



QUALITY CONTROL REPORT

Work Order : CG2202409

Page : 1 of 17

Client : Teck Coal Limited
Contact : Mike Pope
Address : 421 PINE AVE
Sparwood BC Canada V0B 2G0
Telephone : ----
Project : ELKVIEW OPERATIONS
PO : VPO00816101
C-O-C number : MARCH EVO LAEMP 2022
Sampler : AMC
Site : ----
Quote number : Teck Coal Master Quote
No. of samples received : 1
No. of samples analysed : 1

Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
Calgary, Alberta Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 03-Mar-2022 09:05
Date Analysis Commenced : 03-Mar-2022
Issue Date : 15-Mar-2022 17:51

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
Matrix Spike (MS) Report; Recovery and Acceptance Limits
Reference Material (RM) Report; Recovery and Acceptance Limits
Method Blank (MB) Report; Recovery and Acceptance Limits
Laboratory Control Sample (LCS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Table with 3 columns: Signatories, Position, Laboratory Department. Lists names like Angela Ren, Caleb Deroche, Erin Sanchez, etc., along with their roles and departments.



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Services number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percentage Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test specific).

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 423829)											
CG2202406-001	Anonymous	acidity (as CaCO3)	----	E283	2.0	mg/L	8.8	8.7	0.06	Diff <2x LOR	----
Physical Tests (QC Lot: 423832)											
CG2202371-001	Anonymous	pH	----	E108	0.10	pH units	7.07	7.11	0.564%	4%	----
Physical Tests (QC Lot: 423833)											
CG2202409-001	EV_EC_BRIDGE_WS_LA EMP_EVO_2022-03_NP	conductivity	----	E100	2.0	µS/cm	1980	1960	1.12%	10%	----
Physical Tests (QC Lot: 423834)											
CG2202409-001	EV_EC_BRIDGE_WS_LA EMP_EVO_2022-03_NP	alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	481	465	3.49%	20%	----
		alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	481	465	3.49%	20%	----
Physical Tests (QC Lot: 424344)											
CG2202407-007	Anonymous	solids, total dissolved [TDS]	----	E162	10	mg/L	<10	<10	0	Diff <2x LOR	----
Physical Tests (QC Lot: 424662)											
CG2202364-002	Anonymous	turbidity	----	E121	0.10	NTU	<0.10	<0.10	0	Diff <2x LOR	----
Physical Tests (QC Lot: 426070)											
CG2202400-035	Anonymous	oxidation-reduction potential [ORP]	----	E125	0.10	mV	483	482	0.311%	15%	----
Anions and Nutrients (QC Lot: 423222)											
CG2202409-001	EV_EC_BRIDGE_WS_LA EMP_EVO_2022-03_NP	sulfate (as SO4)	14808-79-8	E235.SO4	1.50	mg/L	842	837	0.571%	20%	----
Anions and Nutrients (QC Lot: 423223)											
CG2202409-001	EV_EC_BRIDGE_WS_LA EMP_EVO_2022-03_NP	bromide	24959-67-9	E235.Br-L	0.250	mg/L	<0.250	<0.250	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 423224)											
CG2202409-001	EV_EC_BRIDGE_WS_LA EMP_EVO_2022-03_NP	chloride	16887-00-6	E235.Cl-L	0.50	mg/L	5.77	5.12	12.0%	20%	----
Anions and Nutrients (QC Lot: 423225)											
CG2202409-001	EV_EC_BRIDGE_WS_LA EMP_EVO_2022-03_NP	nitrate (as N)	14797-55-8	E235.NO3-L	0.0250	mg/L	18.1	18.0	0.405%	20%	----
Anions and Nutrients (QC Lot: 423226)											
CG2202409-001	EV_EC_BRIDGE_WS_LA EMP_EVO_2022-03_NP	nitrite (as N)	14797-65-0	E235.NO2-L	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 423227)											
CG2202409-001	EV_EC_BRIDGE_WS_LA EMP_EVO_2022-03_NP	fluoride	16984-48-8	E235.F	0.100	mg/L	0.109	<0.100	0.009	Diff <2x LOR	----



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 423254)											
CG2202407-001	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0098	0.0114	0.0016	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 423845)											
CG2202407-001	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0017	0.0016	0.0001	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 424040)											
CG2202396-001	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 428459)											
CG2202407-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	0.442	0.490	0.048	Diff <2x LOR	TKND
Organic / Inorganic Carbon (QC Lot: 423675)											
CG2202409-001	EV_EC_BRIDGE_WS_LA EMP_EVO_2022-03_NP	carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	0.75	0.80	0.05	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 423676)											
CG2202409-001	EV_EC_BRIDGE_WS_LA EMP_EVO_2022-03_NP	carbon, total organic [TOC]	----	E355-L	0.50	mg/L	0.62	0.60	0.02	Diff <2x LOR	----
Total Metals (QC Lot: 426296)											
CG2202406-001	Anonymous	chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
Total Metals (QC Lot: 426297)											
CG2202406-001	Anonymous	aluminum, total	7429-90-5	E420	0.0030	mg/L	<0.0030	<0.0030	0	Diff <2x LOR	----
		antimony, total	7440-36-0	E420	0.00010	mg/L	0.00045	0.00046	0.000008	Diff <2x LOR	----
		arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00030	0.00035	0.000005	Diff <2x LOR	----
		barium, total	7440-39-3	E420	0.00010	mg/L	0.0189	0.0202	6.58%	20%	----
		beryllium, total	7440-41-7	E420	0.020	mg/L	<0.020 µg/L	<0.000020	0	Diff <2x LOR	----
		bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, total	7440-42-8	E420	0.010	mg/L	0.031	0.033	0.002	Diff <2x LOR	----
		cadmium, total	7440-43-9	E420	0.0050	mg/L	0.314 µg/L	0.000338	7.23%	20%	----
		calcium, total	7440-70-2	E420	0.050	mg/L	279	290	4.05%	20%	----
		cobalt, total	7440-48-4	E420	0.10	mg/L	9.55 µg/L	0.00991	3.67%	20%	----
		copper, total	7440-50-8	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		iron, total	7439-89-6	E420	0.010	mg/L	0.038	0.035	0.003	Diff <2x LOR	----
		lead, total	7439-92-1	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		lithium, total	7439-93-2	E420	0.0010	mg/L	0.0568	0.0605	6.33%	20%	----
		magnesium, total	7439-95-4	E420	0.0050	mg/L	157	166	5.98%	20%	----
		manganese, total	7439-96-5	E420	0.00010	mg/L	0.219	0.226	3.20%	20%	----
		molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.0167	0.0173	3.40%	20%	----
		nickel, total	7440-02-0	E420	0.00050	mg/L	0.0435	0.0458	5.06%	20%	----
		potassium, total	7440-09-7	E420	0.050	mg/L	4.23	4.39	3.58%	20%	----
		selenium, total	7782-49-2	E420	0.050	mg/L	27.7 µg/L	0.0274	1.05%	20%	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (QC Lot: 426297) - continued											
CG2202406-001	Anonymous	silicon, total	7440-21-3	E420	0.10	mg/L	3.24	3.36	3.57%	20%	----
		silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, total	7440-23-5	E420	0.050	mg/L	6.22	6.58	5.64%	20%	----
		strontium, total	7440-24-6	E420	0.00020	mg/L	0.356	0.372	4.56%	20%	----
		sulfur, total	7704-34-9	E420	0.50	mg/L	296	301	1.75%	20%	----
		thallium, total	7440-28-0	E420	0.000010	mg/L	0.000071	0.000077	0.000006	Diff <2x LOR	----
		tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		uranium, total	7440-61-1	E420	0.000010	mg/L	0.0115	0.0119	3.51%	20%	----
		vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		zinc, total	7440-66-6	E420	0.0030	mg/L	0.0161	0.0167	0.0006	Diff <2x LOR	----
Total Metals (QC Lot: 428023)											
CG2202409-001	EV_EC_BRIDGE_WS_LA EMP_EVO_2022-03_NP	mercury, total	7439-97-6	E508-L	0.00050	ng/L	<0.00050 µg/L	<0.50	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 426307)											
CG2202406-001	Anonymous	chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 426308)											
CG2202406-001	Anonymous	aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0011	<0.0010	0.0001	Diff <2x LOR	----
		antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00045	0.00046	0.000008	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00030	0.00032	0.00001	Diff <2x LOR	----
		barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0198	0.0209	5.58%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.020	mg/L	<0.020 µg/L	<0.000020	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.010	mg/L	0.028	0.028	0.0004	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E421	0.0050	mg/L	0.307 µg/L	0.000323	5.14%	20%	----
		calcium, dissolved	7440-70-2	E421	0.050	mg/L	288	295	2.58%	20%	----
		cobalt, dissolved	7440-48-4	E421	0.10	mg/L	9.24 µg/L	0.00984	6.33%	20%	----
		copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		iron, dissolved	7439-89-6	E421	0.010	mg/L	0.011	0.012	0.0001	Diff <2x LOR	----
		lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0594	0.0592	0.233%	20%	----
		magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	160	168	4.99%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.212	0.222	4.28%	20%	----
		molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.0166	0.0169	1.50%	20%	----
		nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.0434	0.0449	3.53%	20%	----
		potassium, dissolved	7440-09-7	E421	0.050	mg/L	4.14	4.44	6.96%	20%	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 426308) - continued											
CG2202406-001	Anonymous	selenium, dissolved	7782-49-2	E421	0.050	mg/L	32.3 µg/L	0.0323	0.0410%	20%	----
		silicon, dissolved	7440-21-3	E421	0.050	mg/L	3.11	3.06	1.77%	20%	----
		silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E421	0.050	mg/L	6.22	6.45	3.68%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.379	0.387	2.09%	20%	----
		sulfur, dissolved	7704-34-9	E421	0.50	mg/L	292	286	1.89%	20%	----
		thallium, dissolved	7440-28-0	E421	0.000010	mg/L	0.000077	0.000071	0.000006	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.0115	0.0113	1.45%	20%	----
		vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0162	0.0172	6.28%	20%	----
Dissolved Metals (QC Lot: 427233)											
CG2202390-006	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----

Qualifiers

Qualifier	Description
TKND	TKN duplication was poor due to interference from high nitrate, which causes negative bias on TKN.



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 423829)						
acidity (as CaCO3)	----	E283	2	mg/L	<2.0	----
Physical Tests (QCLot: 423833)						
conductivity	----	E100	1	µS/cm	<1.0	----
Physical Tests (QCLot: 423834)						
alkalinity, bicarbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, carbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, hydroxide (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 424310)						
solids, total suspended [TSS]	----	E160-L	1	mg/L	<1.0	----
Physical Tests (QCLot: 424344)						
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 424662)						
turbidity	----	E121	0.1	NTU	<0.10	----
Anions and Nutrients (QCLot: 423222)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 423223)						
bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 423224)						
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	----
Anions and Nutrients (QCLot: 423225)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 423226)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 423227)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 423254)						
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 423845)						
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 424040)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 428459)						



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 428459) - continued						
Kjeldahl nitrogen, total [TKN]	---	E318	0.05	mg/L	<0.050	---
Organic / Inorganic Carbon (QCLot: 423675)						
carbon, dissolved organic [DOC]	---	E358-L	0.5	mg/L	<0.50	---
Organic / Inorganic Carbon (QCLot: 423676)						
carbon, total organic [TOC]	---	E355-L	0.5	mg/L	<0.50	---
Total Metals (QCLot: 426296)						
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	<0.00010	---
Total Metals (QCLot: 426297)						
aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	---
antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	---
arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	---
barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	---
beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	---
bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	---
boron, total	7440-42-8	E420	0.01	mg/L	<0.010	---
cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	---
calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	---
cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	---
copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	---
iron, total	7439-89-6	E420	0.01	mg/L	<0.010	---
lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	---
lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	---
magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	---
manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	---
molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	---
nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	---
potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	---
selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	---
silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	---
silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	---
sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	---
strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	---
sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	---
thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	---
tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	---
titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	---



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 426297) - continued						
uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	---
vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	---
zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	---
Total Metals (QCLot: 428023)						
mercury, total	7439-97-6	E508-L	0.5	ng/L	<0.50	---
Dissolved Metals (QCLot: 426307)						
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	<0.00010	---
Dissolved Metals (QCLot: 426308)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	---
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	---
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	---
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	---
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	---
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	---
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	---
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	---
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	---
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	---
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	---
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	---
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	---
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	---
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	---
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	---
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	---
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	---
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	---
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	---
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	---
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	---
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	---
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	---
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	---
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	---
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	---
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	---



Sub-Matrix: **Water**

<i>Analyte</i>	<i>CAS Number</i>	<i>Method</i>	<i>LOR</i>	<i>Unit</i>	<i>Result</i>	<i>Qualifier</i>
Dissolved Metals (QCLot: 426308) - continued						
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
Dissolved Metals (QCLot: 427233)						
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Physical Tests (QCLot: 423829)									
acidity (as CaCO3)	----	E283	2	mg/L	50 mg/L	103	85.0	115	----
Physical Tests (QCLot: 423832)									
pH	----	E108	----	pH units	7 pH units	99.3	98.6	101	----
Physical Tests (QCLot: 423833)									
conductivity	----	E100	1	µS/cm	146.9 µS/cm	101	90.0	110	----
Physical Tests (QCLot: 423834)									
alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	104	85.0	115	----
Physical Tests (QCLot: 424310)									
solids, total suspended [TSS]	----	E160-L	1	mg/L	150 mg/L	103	85.0	115	----
Physical Tests (QCLot: 424344)									
solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	99.2	85.0	115	----
Physical Tests (QCLot: 424662)									
turbidity	----	E121	0.1	NTU	200 NTU	99.6	85.0	115	----
Physical Tests (QCLot: 426070)									
oxidation-reduction potential [ORP]	----	E125	----	mV	220 mV	101	95.4	104	----
Anions and Nutrients (QCLot: 423222)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 423223)									
bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	101	85.0	115	----
Anions and Nutrients (QCLot: 423224)									
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	99.2	90.0	110	----
Anions and Nutrients (QCLot: 423225)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 423226)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	99.2	90.0	110	----
Anions and Nutrients (QCLot: 423227)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 423254)									
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	8.02 mg/L	99.8	80.0	120	----
Anions and Nutrients (QCLot: 423845)									
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.02 mg/L	88.7	80.0	120	----
Anions and Nutrients (QCLot: 424040)									



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Anions and Nutrients (QCLot: 424040) - continued									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	100	85.0	115	----
Anions and Nutrients (QCLot: 428459)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	98.4	75.0	125	----
Organic / Inorganic Carbon (QCLot: 423675)									
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	89.2	80.0	120	----
Organic / Inorganic Carbon (QCLot: 423676)									
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	99.6	80.0	120	----
Total Metals (QCLot: 426296)									
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	0.25 mg/L	97.1	80.0	120	----
Total Metals (QCLot: 426297)									
aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	98.0	80.0	120	----
antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	103	80.0	120	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	97.5	80.0	120	----
barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	93.7	80.0	120	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	93.1	80.0	120	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	102	80.0	120	----
boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	91.3	80.0	120	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	97.0	80.0	120	----
calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	99.9	80.0	120	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	92.2	80.0	120	----
copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	93.8	80.0	120	----
iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	90.0	80.0	120	----
lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	100	80.0	120	----
lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	91.2	80.0	120	----
magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	93.0	80.0	120	----
manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	96.3	80.0	120	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	104	80.0	120	----
nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	91.4	80.0	120	----
potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	94.9	80.0	120	----
selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	97.3	80.0	120	----
silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	103	80.0	120	----
silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	94.7	80.0	120	----
sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	93.0	80.0	120	----
strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	99.1	80.0	120	----
sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	91.3	80.0	120	----



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Total Metals (QCLot: 426297) - continued									
thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	101	80.0	120	----
tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	98.7	80.0	120	----
titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	91.0	80.0	120	----
uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	99.2	80.0	120	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	95.7	80.0	120	----
zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	97.3	80.0	120	----
Total Metals (QCLot: 428023)									
mercury, total	7439-97-6	E508-L	0.5	ng/L	5 ng/L	92.0	80.0	120	----
Dissolved Metals (QCLot: 426307)									
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	0.25 mg/L	100	80.0	120	----
Dissolved Metals (QCLot: 426308)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	96.7	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	103	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	102	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	98.9	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	94.9	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	108	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	96.2	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	95.9	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	102	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	95.8	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	97.6	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	87.6	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	100.0	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	95.4	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	98.0	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	95.0	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	102	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	96.1	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	99.7	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	96.9	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	104	80.0	120	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	96.5	80.0	120	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	98.8	80.0	120	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	99.2	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	91.8	80.0	120	----



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 426308) - continued									
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	102	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	99.4	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	97.8	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	99.9	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	98.6	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	101	80.0	120	----
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	98.3	80.0	120	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 423222)										
CG2202415-001	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	ND mg/L	100 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 423223)										
CG2202415-001	Anonymous	bromide	24959-67-9	E235.Br-L	0.554 mg/L	0.5 mg/L	111	75.0	125	----
Anions and Nutrients (QCLot: 423224)										
CG2202415-001	Anonymous	chloride	16887-00-6	E235.Cl-L	102 mg/L	100 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 423225)										
CG2202415-001	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	2.56 mg/L	2.5 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 423226)										
CG2202415-001	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.509 mg/L	0.5 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 423227)										
CG2202415-001	Anonymous	fluoride	16984-48-8	E235.F	0.852 mg/L	1 mg/L	85.2	75.0	125	----
Anions and Nutrients (QCLot: 423254)										
CG2202407-002	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0596 mg/L	0.0676 mg/L	88.1	70.0	130	----
Anions and Nutrients (QCLot: 423845)										
CG2202407-002	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0515 mg/L	0.05 mg/L	103	70.0	130	----
Anions and Nutrients (QCLot: 424040)										
CG2202396-002	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.104 mg/L	0.1 mg/L	104	75.0	125	----
Anions and Nutrients (QCLot: 428459)										
CG2202407-002	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.53 mg/L	2.5 mg/L	101	70.0	130	----
Organic / Inorganic Carbon (QCLot: 423675)										
CG2202409-001	EV_EC_BRIDGE_WS_LAE MP_EVO_2022-03_NP	carbon, dissolved organic [DOC]	----	E358-L	4.69 mg/L	5 mg/L	93.7	70.0	130	----
Organic / Inorganic Carbon (QCLot: 423676)										
CG2202409-001	EV_EC_BRIDGE_WS_LAE MP_EVO_2022-03_NP	carbon, total organic [TOC]	----	E355-L	5.08 mg/L	5 mg/L	102	70.0	130	----
Total Metals (QCLot: 426296)										
CG2202406-002	Anonymous	chromium, total	7440-47-3	E420.Cr-L	0.0392 mg/L	0.04 mg/L	98.0	70.0	130	----
Total Metals (QCLot: 426297)										
CG2202406-002	Anonymous	aluminum, total	7429-90-5	E420	0.186 mg/L	0.2 mg/L	93.1	70.0	130	----



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 426297) - continued										
CG2202406-002	Anonymous	antimony, total	7440-36-0	E420	0.0202 mg/L	0.02 mg/L	101	70.0	130	----
		arsenic, total	7440-38-2	E420	0.0201 mg/L	0.02 mg/L	100	70.0	130	----
		barium, total	7440-39-3	E420	ND mg/L	0.02 mg/L	ND	70.0	130	----
		beryllium, total	7440-41-7	E420	0.0371 mg/L	0.04 mg/L	92.8	70.0	130	----
		bismuth, total	7440-69-9	E420	0.00960 mg/L	0.01 mg/L	96.0	70.0	130	----
		boron, total	7440-42-8	E420	0.095 mg/L	0.1 mg/L	95.3	70.0	130	----
		cadmium, total	7440-43-9	E420	0.00392 mg/L	0.004 mg/L	98.1	70.0	130	----
		calcium, total	7440-70-2	E420	ND mg/L	4 mg/L	ND	70.0	130	----
		cobalt, total	7440-48-4	E420	0.0183 mg/L	0.02 mg/L	91.6	70.0	130	----
		copper, total	7440-50-8	E420	0.0184 mg/L	0.02 mg/L	91.8	70.0	130	----
		iron, total	7439-89-6	E420	1.93 mg/L	2 mg/L	96.6	70.0	130	----
		lead, total	7439-92-1	E420	0.0190 mg/L	0.02 mg/L	95.3	70.0	130	----
		lithium, total	7439-93-2	E420	0.0909 mg/L	0.1 mg/L	90.9	70.0	130	----
		magnesium, total	7439-95-4	E420	ND mg/L	1 mg/L	ND	70.0	130	----
		manganese, total	7439-96-5	E420	0.0195 mg/L	0.02 mg/L	97.4	70.0	130	----
		molybdenum, total	7439-98-7	E420	0.0203 mg/L	0.02 mg/L	102	70.0	130	----
		nickel, total	7440-02-0	E420	0.0366 mg/L	0.04 mg/L	91.5	70.0	130	----
		potassium, total	7440-09-7	E420	3.83 mg/L	4 mg/L	95.7	70.0	130	----
		selenium, total	7782-49-2	E420	0.0404 mg/L	0.04 mg/L	101	70.0	130	----
		silicon, total	7440-21-3	E420	9.44 mg/L	10 mg/L	94.4	70.0	130	----
		silver, total	7440-22-4	E420	0.00393 mg/L	0.004 mg/L	98.3	70.0	130	----
		sodium, total	7440-23-5	E420	ND mg/L	2 mg/L	ND	70.0	130	----
		strontium, total	7440-24-6	E420	ND mg/L	0.02 mg/L	ND	70.0	130	----
		sulfur, total	7704-34-9	E420	ND mg/L	20 mg/L	ND	70.0	130	----
		thallium, total	7440-28-0	E420	0.00387 mg/L	0.004 mg/L	96.8	70.0	130	----
		tin, total	7440-31-5	E420	0.0196 mg/L	0.02 mg/L	98.0	70.0	130	----
		titanium, total	7440-32-6	E420	0.0374 mg/L	0.04 mg/L	93.6	70.0	130	----
		uranium, total	7440-61-1	E420	0.00387 mg/L	0.004 mg/L	96.7	70.0	130	----
		vanadium, total	7440-62-2	E420	0.0968 mg/L	0.1 mg/L	96.8	70.0	130	----
		zinc, total	7440-66-6	E420	0.385 mg/L	0.4 mg/L	96.3	70.0	130	----
Total Metals (QCLot: 428023)										
CG2202414-001	Anonymous	mercury, total	7439-97-6	E508-L	4.14 ng/L	5 ng/L	82.7	70.0	130	----
Dissolved Metals (QCLot: 426307)										
CG2202406-002	Anonymous	chromium, dissolved	7440-47-3	E421.Cr-L	0.0382 mg/L	0.04 mg/L	95.6	70.0	130	----
Dissolved Metals (QCLot: 426308)										
CG2202406-002	Anonymous	aluminum, dissolved	7429-90-5	E421	0.182 mg/L	0.2 mg/L	90.9	70.0	130	----



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 426308) - continued										
CG2202406-002	Anonymous	antimony, dissolved	7440-36-0	E421	0.0209 mg/L	0.02 mg/L	105	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.0194 mg/L	0.02 mg/L	96.8	70.0	130	----
		barium, dissolved	7440-39-3	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.0362 mg/L	0.04 mg/L	90.4	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.00921 mg/L	0.01 mg/L	92.1	70.0	130	----
		boron, dissolved	7440-42-8	E421	0.089 mg/L	0.1 mg/L	89.2	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.00378 mg/L	0.004 mg/L	94.6	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	4 mg/L	ND	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.0179 mg/L	0.02 mg/L	89.5	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.0181 mg/L	0.02 mg/L	90.3	70.0	130	----
		iron, dissolved	7439-89-6	E421	1.84 mg/L	2 mg/L	92.2	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.0199 mg/L	0.02 mg/L	99.4	70.0	130	----
		lithium, dissolved	7439-93-2	E421	0.0936 mg/L	0.1 mg/L	93.6	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	1 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E421	0.0186 mg/L	0.02 mg/L	93.2	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.0207 mg/L	0.02 mg/L	103	70.0	130	----
		nickel, dissolved	7440-02-0	E421	0.0357 mg/L	0.04 mg/L	89.2	70.0	130	----
		potassium, dissolved	7440-09-7	E421	3.68 mg/L	4 mg/L	92.1	70.0	130	----
		selenium, dissolved	7782-49-2	E421	0.0388 mg/L	0.04 mg/L	97.0	70.0	130	----
		silicon, dissolved	7440-21-3	E421	8.90 mg/L	10 mg/L	89.0	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.00394 mg/L	0.004 mg/L	98.6	70.0	130	----
		sodium, dissolved	7440-23-5	E421	ND mg/L	2 mg/L	ND	70.0	130	----
		strontium, dissolved	7440-24-6	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	ND mg/L	20 mg/L	ND	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.00398 mg/L	0.004 mg/L	99.5	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.0199 mg/L	0.02 mg/L	99.5	70.0	130	----
		titanium, dissolved	7440-32-6	E421	0.0382 mg/L	0.04 mg/L	95.5	70.0	130	----
		uranium, dissolved	7440-61-1	E421	0.00405 mg/L	0.004 mg/L	101	70.0	130	----
		vanadium, dissolved	7440-62-2	E421	0.0946 mg/L	0.1 mg/L	94.6	70.0	130	----
		zinc, dissolved	7440-66-6	E421	0.376 mg/L	0.4 mg/L	93.9	70.0	130	----
Dissolved Metals (QCLot: 427233)										
CG2202390-007	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000910 mg/L	0.0001 mg/L	91.0	70.0	130	----

Teck

COC ID: **March EVO LAEMP 2022** TURNAROUND TIME:

PROJECT/CLIENT INFO				LABORATORY			
Facility Name / Job#	Elkview Operations	Lab Name	ALS Calgary	Excel	PDF	EDD	
Project Manager	Mike Pope	Lab Contact	Lyudmyla Shvets				
Email	als@teck.com	Email	lyudmyla.shvets@alsglobal.com				
Address	421 Pine Avenue	Address	2559 29 Street NE				
City	Sparwood	City	Calgary				
Province	BC	Province	AB				
Postal Code	V0B 2G0	Postal Code	T1Y 7B5				
Country	Canada	Country	Canada				
Phone Number	250-425-8202	Phone Number	403 407 1794				

SAMPLE DETAILS								ANALYSIS REQUESTED																
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	TECKCOAL-ROUTINE-VA	ALS_Package-DOC	ALS_Package-TKN/TOC	HG-T-U-CVAF-VA	HG-D-CVAF-VA	TECKCOAL-MET-T-VA	TECKCOAL-MET-D-VA	PH	N	F	N	N	F	N	F		
EV_EC_BRIDGE_WS_LAEMP_EVO_2022-03_NP	EV_EC_BRIDGE	WS	No	3/2/2022	13:30	G	7	X	X	X	X	X	X	X										

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
ALS PO 748510	Alex McClymont/Minnow	March 2, 2022	

DESCRIPTION	Sampler's Name	Mobile #
Regular (default) x Priority (2-3 business days) - 50% surcharge Emergency (1 Business Day) - 100% surcharge mergency <1 Day, ASAP or Weekend - Contact ALS	Alex McClymont	780-293-6750
	Sampler's Signature	Date/Time
	AMC	March 2, 2022

Environmental Division
Calgary
Work Order Reference
CG2202409



Telephone : +1 403 407 1800



CERTIFICATE OF ANALYSIS

Work Order : **CG2204611**
Client : **Teck Coal Limited**
Contact : Mike Pope
Address : RR#1 HWY#3
Sparwood BC Canada V0B 2G1
Telephone : ----
Project : REGIONAL EFFECTS PROGRAMS
PO : VPO00816101
C-O-C number : April EVO LAEMP 2022
Sampler : AM
Site : ----
Quote number : Teck Coal Master Quote
No. of samples received : 6
No. of samples analysed : 6

Page : 1 of 12
Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
Calgary AB Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 22-Apr-2022 10:20
Date Analysis Commenced : 22-Apr-2022
Issue Date : 06-May-2022 11:59

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Anthony Calero	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Caleb Deroche	Lab Analyst	Metals, Burnaby, British Columbia
Dan Gebert	Laboratory Analyst	Metals, Burnaby, British Columbia
Dee Lee	Analyst	Metals, Burnaby, British Columbia
Delson Resende	Lab Assistant	Metals, Burnaby, British Columbia
Elke Tabora		Inorganics, Calgary, Alberta
Erin Sanchez		Inorganics, Calgary, Alberta
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Ruifang Zheng	Analyst	Inorganics, Calgary, Alberta
Russell Zhang		Metals, Burnaby, British Columbia
Sara Niroomand		Inorganics, Calgary, Alberta
Zakieh Lalonde		Inorganics, Calgary, Alberta



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
 LOR: Limit of Reporting (detection limit).

Unit	Description
-	No Unit
%	percent
µg/L	micrograms per litre
µS/cm	Microsiemens per centimetre
meq/L	milliequivalents per litre
mg/L	milligrams per litre
mV	millivolts
NTU	nephelometric turbidity units
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Sample Comments

Sample	Client Id	Comment
CG2204611-001	RG_RIVER_WS_LAEMP_EVO _2022-04-21_NP	Updated WO to rush TAT as per client.

Qualifiers

Qualifier	Description
DLA	Detection Limit adjusted for required dilution.
DLDS	Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).



DTC *Dissolved concentration exceeds total. Results were confirmed by re-analysis.*

DTS *Dissolved Sulfur concentration exceeds total. Negative bias on Total Sulfur suspected due to presence of volatile sulfur species lost during digestion.*

RRV *Reported result verified by repeat analysis.*

TKNI *TKN result may be biased low due to Nitrate interference. Nitrate-N is > 10x TKN.*



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_RIVER_WS _LAEMP_EVO_ 2022-04-21_NP	RG_TRIP_WS_L AEMP_EVO_20 22-04-21_NP	RG_FBLANK_W S_LAEMP_EVO _2022-04-21_N P	RG_GATE_WS_ LAEMP_EVO_2 022-04-21_NP	RG_BOCK_WS_ LAEMP_EVO_2 022-04-21_NP
Client sampling date / time					21-Apr-2022 09:00	21-Apr-2022 09:00	21-Apr-2022 09:00	21-Apr-2022 10:45	21-Apr-2022 15:00	
Analyte	CAS Number	Method	LOR	Unit	CG2204611-001	CG2204611-002	CG2204611-003	CG2204611-004	CG2204611-005	
					Result	Result	Result	Result	Result	
Physical Tests										
acidity (as CaCO3)	----	E283	2.0	mg/L	<2.0	<2.0	<2.0	<2.0	<2.0	
alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	312	<1.0	<1.0	283	306	
alkalinity, bicarbonate (as HCO3)	71-52-3	E290	1.0	mg/L	381	<1.0	<1.0	345	373	
alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	<1.0	6.8	<1.0	
alkalinity, carbonate (as CO3)	3812-32-6	E290	1.0	mg/L	<1.0	<1.0	<1.0	4.1	<1.0	
alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
alkalinity, hydroxide (as OH)	14280-30-9	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	312	<1.0	<1.0	290	306	
conductivity	----	E100	2.0	µS/cm	1880	<2.0	<2.0	1920	1920	
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	1210	<0.50	<0.50	1230	1150	
oxidation-reduction potential [ORP]	----	E125	0.10	mV	331	594	566	306	275	
pH	----	E108	0.10	pH units	8.22	5.31	5.54	8.33	8.20	
solids, total dissolved [TDS]	----	E162	10	mg/L	1640	<10	<10	1620	1620	
solids, total suspended [TSS]	----	E160-L	1.0	mg/L	2.2	<1.0	<1.0	2.9	2.4	
turbidity	----	E121	0.10	NTU	2.69	<0.10	<0.10	1.26	0.56	
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.112	<0.0050	<0.0050	0.244	<0.0050	
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.250 ^{DLDS}	<0.050	<0.050	<0.250 ^{DLDS}	<0.250 ^{DLDS}	
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	9.49	<0.10	<0.10	9.72	13.2	
fluoride	16984-48-8	E235.F	0.020	mg/L	0.187	<0.020	<0.020	0.201	0.186	
Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	0.230 ^{TKNI}	<0.050	<0.050	1.04 ^{TKNI}	2.04 ^{DLM}	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	10.4	<0.0050	<0.0050	15.4	12.0	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	0.0086	<0.0010	<0.0010	0.0281	0.0098	
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0023	<0.0010	<0.0010	0.0060	<0.0010	
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0086	<0.0020	<0.0020	0.0085	0.0036	
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	888	<0.30	<0.30	923	906	
Organic / Inorganic Carbon										
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	1.98	<0.50	<0.50	1.66	1.49 ^{DTC-RRV}	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_RIVER_WS _LAEMP_EVO_ 2022-04-21_NP	RG_TRIP_WS_L AEMP_EVO_20 22-04-21_NP	RG_FBLANK_W S_LAEMP_EVO _2022-04-21_N P	RG_GATE_WS_ LAEMP_EVO_2 022-04-21_NP	RG_BOCK_WS_ LAEMP_EVO_2 022-04-21_NP
Client sampling date / time					21-Apr-2022 09:00	21-Apr-2022 09:00	21-Apr-2022 09:00	21-Apr-2022 10:45	21-Apr-2022 15:00	
Analyte	CAS Number	Method	LOR	Unit	CG2204611-001	CG2204611-002	CG2204611-003	CG2204611-004	CG2204611-005	
					Result	Result	Result	Result	Result	
Organic / Inorganic Carbon										
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	1.86	<0.50	<0.50	1.95	1.14 ^{DTC, RRV}	
Ion Balance										
anion sum	----	EC101	0.10	meq/L	25.7	<0.10	<0.10	26.4	26.2	
cation sum	----	EC101	0.10	meq/L	24.6	<0.10	<0.10	24.8	23.4	
ion balance (cations/anions)	----	EC101	0.010	%	95.7	100	100	93.9	89.3	
ion balance (APHA)	----	EC101	0.010	%	2.19	<0.010	<0.010	3.12	5.64	
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0122	<0.0030	<0.0030	0.0219	<0.0030	
antimony, total	7440-36-0	E420	0.00010	mg/L	0.00075	<0.00010	<0.00010	0.00067	0.00093	
arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00040	<0.00010	<0.00010	0.00036	0.00024	
barium, total	7440-39-3	E420	0.00010	mg/L	0.227	<0.00010	<0.00010	0.277	0.0542	
beryllium, total	7440-41-7	E420	0.020	µg/L	<0.040 ^{DLA}	<0.020	<0.020	<0.020	<0.020	
bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000100 ^{DLA}	<0.000050	<0.000050	<0.000050	<0.000050	
boron, total	7440-42-8	E420	0.010	mg/L	0.035	<0.010	<0.010	0.034	0.042	
cadmium, total	7440-43-9	E420	0.0050	µg/L	0.163	<0.0050	<0.0050	0.160	<0.0100 ^{DLM}	
calcium, total	7440-70-2	E420	0.050	mg/L	228	<0.050	<0.050	228	217	
chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	<0.00020 ^{DLA}	<0.00010	<0.00010	<0.00010	<0.00010	
cobalt, total	7440-48-4	E420	0.10	µg/L	<0.20 ^{DLA}	<0.10	<0.10	0.18	<0.10	
copper, total	7440-50-8	E420	0.00050	mg/L	<0.00100 ^{DLA}	<0.00050	<0.00050	<0.00050	<0.00050	
iron, total	7439-89-6	E420	0.010	mg/L	0.121	<0.010	<0.010	0.170	0.016	
lead, total	7439-92-1	E420	0.000050	mg/L	<0.000100 ^{DLA}	<0.000050	<0.000050	<0.000050	<0.000050	
lithium, total	7439-93-2	E420	0.0010	mg/L	0.0858	<0.0010	<0.0010	0.0935	0.0994	
magnesium, total	7439-95-4	E420	0.0050	mg/L	177	<0.0050	<0.0050	169	181	
manganese, total	7439-96-5	E420	0.00010	mg/L	0.00662	<0.00010	<0.00010	0.0105	0.00127	
mercury, total	7439-97-6	E508-L	0.00050	µg/L	0.00070	---	<0.00050	0.00054	0.00097	
mercury, total	7439-97-6	E508	0.0000050	mg/L	---	<0.0000050	---	---	---	
molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.0129	<0.000050	<0.000050	0.00884	0.0141	
nickel, total	7440-02-0	E420	0.00050	mg/L	0.0217	<0.00050	<0.00050	0.0159	0.0237	
potassium, total	7440-09-7	E420	0.050	mg/L	4.82	<0.050	<0.050	4.38	5.23	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_RIVER_WS _LAEMP_EVO_ 2022-04-21_NP	RG_TRIP_WS_L AEMP_EVO_20 22-04-21_NP	RG_FBLANK_W S_LAEMP_EVO _2022-04-21_N P	RG_GATE_WS_ LAEMP_EVO_2 022-04-21_NP	RG_BOCK_WS_ LAEMP_EVO_2 022-04-21_NP
Client sampling date / time					21-Apr-2022 09:00	21-Apr-2022 09:00	21-Apr-2022 09:00	21-Apr-2022 10:45	21-Apr-2022 15:00	
Analyte	CAS Number	Method	LOR	Unit	CG2204611-001	CG2204611-002	CG2204611-003	CG2204611-004	CG2204611-005	
					Result	Result	Result	Result	Result	
Total Metals										
selenium, total	7782-49-2	E420	0.050	µg/L	121	<0.050	<0.050	192	109	
silicon, total	7440-21-3	E420	0.10	mg/L	2.58	<0.10	<0.10	2.76	2.04	
silver, total	7440-22-4	E420	0.000010	mg/L	<0.000020 ^{DLA}	<0.000010	<0.000010	<0.000010	<0.000010	
sodium, total	7440-23-5	E420	0.050	mg/L	6.04	<0.050	<0.050	4.88	7.15	
strontium, total	7440-24-6	E420	0.00020	mg/L	0.611	<0.00020	<0.00020	0.677	0.722	
sulfur, total	7704-34-9	E420	0.50	mg/L	328	<0.50	<0.50	333	323	
thallium, total	7440-28-0	E420	0.000010	mg/L	0.000034	<0.000010	<0.000010	0.000032	0.000027	
tin, total	7440-31-5	E420	0.00010	mg/L	<0.00020 ^{DLA}	<0.00010	<0.00010	<0.00010	<0.00010	
titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00060 ^{DLA}	<0.00030	<0.00030	<0.00060 ^{DLM}	<0.00030	
uranium, total	7440-61-1	E420	0.000010	mg/L	0.00968	<0.000010	<0.000010	0.00816	0.0111	
vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00100 ^{DLA}	<0.00050	<0.00050	<0.00050	<0.00050	
zinc, total	7440-66-6	E420	0.0030	mg/L	0.0072	<0.0030	<0.0030	0.0068	<0.0030	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	<0.0050 ^{DLA}	<0.0010	<0.0010	0.0029	<0.0010	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00072	<0.00010	<0.00010	0.00066	0.00090	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	<0.00050 ^{DLA}	<0.00010	<0.00010	0.00029	0.00023	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0458	<0.00010	<0.00010	0.316	0.0466	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.100 ^{DLA}	<0.020	<0.020	<0.040 ^{DLA}	<0.020	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000250 ^{DLA}	<0.000050	<0.000050	<0.000100 ^{DLA}	<0.000050	
boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.050 ^{DLA}	<0.010	<0.010	0.033	0.037	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.110	<0.0050	<0.0050	0.141	<0.0100 ^{DLM}	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	239	<0.050	<0.050	242	214	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00050 ^{DLA}	<0.00010	<0.00010	<0.00020 ^{DLA}	<0.00010	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	<0.50 ^{DLA}	<0.10	<0.10	<0.20 ^{DLA}	<0.10	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00100 ^{DLA}	<0.00020	<0.00020	<0.00040 ^{DLA}	<0.00020	
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.050 ^{DLA}	<0.010	<0.010	<0.020 ^{DLA}	<0.010	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000250 ^{DLA}	<0.000050	<0.000050	<0.000100 ^{DLA}	<0.000050	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0812	<0.0010	<0.0010	0.0933	0.0907	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	150	<0.0050	<0.0050	151	150	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_RIVER_WS _LAEMP_EVO_ 2022-04-21_NP	RG_TRIP_WS_L AEMP_EVO_20 22-04-21_NP	RG_FBLANK_W S_LAEMP_EVO _2022-04-21_N P	RG_GATE_WS_ LAEMP_EVO_2 022-04-21_NP	RG_BOCK_WS_ LAEMP_EVO_2 022-04-21_NP
Client sampling date / time					21-Apr-2022 09:00	21-Apr-2022 09:00	21-Apr-2022 09:00	21-Apr-2022 10:45	21-Apr-2022 15:00	
Analyte	CAS Number	Method	LOR	Unit	CG2204611-001 Result	CG2204611-002 Result	CG2204611-003 Result	CG2204611-004 Result	CG2204611-005 Result	
Dissolved Metals										
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00523	<0.00010	<0.00010	0.00956	0.00095	
mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.0121	<0.000050	<0.000050	0.00853	0.0132	
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.0185	<0.00050	<0.00050	0.0140	0.0204	
potassium, dissolved	7440-09-7	E421	0.050	mg/L	4.30	<0.050	<0.050	4.09	4.94	
selenium, dissolved	7782-49-2	E421	0.050	µg/L	118	<0.050	<0.050	182	111	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	2.33	<0.050	<0.050	2.60	1.85	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000050 ^{DLA}	<0.000010	<0.000010	<0.000020 ^{DLA}	<0.000010	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	5.23	<0.050	<0.050	4.43	6.38	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.603	<0.00020	<0.00020	0.728	0.745	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	1180 ^{DTS}	<0.50	<0.50	313	294	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000050 ^{DLA}	<0.000010	<0.000010	0.000032	0.000025	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.000050 ^{DLA}	<0.00010	<0.00010	<0.00020 ^{DLA}	<0.00010	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00150 ^{DLA}	<0.00030	<0.00030	<0.00060 ^{DLA}	<0.00030	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.0103	<0.000010	<0.000010	0.00861	0.0115	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00250 ^{DLA}	<0.00050	<0.00050	<0.00100 ^{DLA}	<0.00050	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0064	<0.0010	<0.0010	0.0052	<0.0010	
dissolved mercury filtration location	----	EP509	-	-	Field	Field	Field	Field	Field	
dissolved metals filtration location	----	EP421	-	-	Field	Field	Field	Field	Field	

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_GATEDP_W S_LAEMP_EVO _2022-04-21_N P	----	----	----	----
Client sampling date / time					21-Apr-2022 09:00	----	----	----	----	
Analyte	CAS Number	Method	LOR	Unit	CG2204611-006	-----	-----	-----	-----	
					Result	----	----	----	----	
Physical Tests										
acidity (as CaCO3)	----	E283	2.0	mg/L	<2.0	----	----	----	----	
alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	314	----	----	----	----	
alkalinity, bicarbonate (as HCO3)	71-52-3	E290	1.0	mg/L	383	----	----	----	----	
alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	----	----	----	----	
alkalinity, carbonate (as CO3)	3812-32-6	E290	1.0	mg/L	<1.0	----	----	----	----	
alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	----	----	----	----	
alkalinity, hydroxide (as OH)	14280-30-9	E290	1.0	mg/L	<1.0	----	----	----	----	
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	314	----	----	----	----	
conductivity	----	E100	2.0	µS/cm	1890	----	----	----	----	
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	1190	----	----	----	----	
oxidation-reduction potential [ORP]	----	E125	0.10	mV	265	----	----	----	----	
pH	----	E108	0.10	pH units	8.24	----	----	----	----	
solids, total dissolved [TDS]	----	E162	10	mg/L	1630	----	----	----	----	
solids, total suspended [TSS]	----	E160-L	1.0	mg/L	5.1	----	----	----	----	
turbidity	----	E121	0.10	NTU	2.49	----	----	----	----	
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.118	----	----	----	----	
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.250 ^{DLDS}	----	----	----	----	
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	9.68	----	----	----	----	
fluoride	16984-48-8	E235.F	0.020	mg/L	0.206	----	----	----	----	
Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	0.164	----	----	----	----	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	10.6	----	----	----	----	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	0.0096	----	----	----	----	
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0026	----	----	----	----	
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0085	----	----	----	----	
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	906	----	----	----	----	
Organic / Inorganic Carbon										
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	1.62	----	----	----	----	
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	1.46	----	----	----	----	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_GATEDP_W S_LAEMP_EVO _2022-04-21_N P	----	----	----	----
Client sampling date / time					21-Apr-2022 09:00	----	----	----	----	
Analyte	CAS Number	Method	LOR	Unit	CG2204611-006	-----	-----	-----	-----	
					Result	----	----	----	----	
Ion Balance										
anion sum	----	EC101	0.10	meq/L	26.2	----	----	----	----	
cation sum	----	EC101	0.10	meq/L	24.2	----	----	----	----	
ion balance (cations/anions)	----	EC101	0.010	%	92.4	----	----	----	----	
ion balance (APHA)	----	EC101	0.010	%	3.97	----	----	----	----	
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0170	----	----	----	----	
antimony, total	7440-36-0	E420	0.00010	mg/L	0.00077	----	----	----	----	
arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00034	----	----	----	----	
barium, total	7440-39-3	E420	0.00010	mg/L	0.246	----	----	----	----	
beryllium, total	7440-41-7	E420	0.020	µg/L	<0.040 ^{DLA}	----	----	----	----	
bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000100 ^{DLA}	----	----	----	----	
boron, total	7440-42-8	E420	0.010	mg/L	0.036	----	----	----	----	
cadmium, total	7440-43-9	E420	0.0050	µg/L	0.177	----	----	----	----	
calcium, total	7440-70-2	E420	0.050	mg/L	246	----	----	----	----	
chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	<0.00020 ^{DLA}	----	----	----	----	
cobalt, total	7440-48-4	E420	0.10	µg/L	<0.20 ^{DLA}	----	----	----	----	
copper, total	7440-50-8	E420	0.00050	mg/L	<0.00100 ^{DLA}	----	----	----	----	
iron, total	7439-89-6	E420	0.010	mg/L	0.133	----	----	----	----	
lead, total	7439-92-1	E420	0.000050	mg/L	<0.000100 ^{DLA}	----	----	----	----	
lithium, total	7439-93-2	E420	0.0010	mg/L	0.0910	----	----	----	----	
magnesium, total	7439-95-4	E420	0.0050	mg/L	180	----	----	----	----	
manganese, total	7439-96-5	E420	0.00010	mg/L	0.00720	----	----	----	----	
mercury, total	7439-97-6	E508-L	0.00050	µg/L	0.00067	----	----	----	----	
molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.0134	----	----	----	----	
nickel, total	7440-02-0	E420	0.00050	mg/L	0.0229	----	----	----	----	
potassium, total	7440-09-7	E420	0.050	mg/L	4.99	----	----	----	----	
selenium, total	7782-49-2	E420	0.050	µg/L	127	----	----	----	----	
silicon, total	7440-21-3	E420	0.10	mg/L	2.62	----	----	----	----	
silver, total	7440-22-4	E420	0.000010	mg/L	<0.000020 ^{DLA}	----	----	----	----	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_GATEDP_W S_LAEMP_EVO _2022-04-21_N P	----	----	----	----
Client sampling date / time					21-Apr-2022 09:00	----	----	----	----	
Analyte	CAS Number	Method	LOR	Unit	CG2204611-006	-----	-----	-----	-----	
					Result	----	----	----	----	
Total Metals										
sodium, total	7440-23-5	E420	0.050	mg/L	6.20	----	----	----	----	
strontium, total	7440-24-6	E420	0.00020	mg/L	0.627	----	----	----	----	
sulfur, total	7704-34-9	E420	0.50	mg/L	330	----	----	----	----	
thallium, total	7440-28-0	E420	0.000010	mg/L	0.000040	----	----	----	----	
tin, total	7440-31-5	E420	0.00010	mg/L	<0.00020 ^{DLA}	----	----	----	----	
titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00060 ^{DLA}	----	----	----	----	
uranium, total	7440-61-1	E420	0.000010	mg/L	0.0107	----	----	----	----	
vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00100 ^{DLA}	----	----	----	----	
zinc, total	7440-66-6	E420	0.0030	mg/L	0.0110	----	----	----	----	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	<0.0010	----	----	----	----	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00072	----	----	----	----	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00025	----	----	----	----	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.290	----	----	----	----	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.020	----	----	----	----	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	----	----	----	----	
boron, dissolved	7440-42-8	E421	0.010	mg/L	0.032	----	----	----	----	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.130	----	----	----	----	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	241	----	----	----	----	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00010	----	----	----	----	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	0.13	----	----	----	----	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00024	----	----	----	----	
iron, dissolved	7439-89-6	E421	0.010	mg/L	0.011	----	----	----	----	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	----	----	----	----	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0848	----	----	----	----	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	144	----	----	----	----	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00498	----	----	----	----	
mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	----	----	----	----	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.0121	----	----	----	----	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_GATEDP_W S_LAEMP_EVO _2022-04-21_N P	----	----	----	----
Client sampling date / time					21-Apr-2022 09:00	----	----	----	----	
Analyte	CAS Number	Method	LOR	Unit	CG2204611-006	-----	-----	-----	-----	
					Result	----	----	----	----	
Dissolved Metals										
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.0182	----	----	----	----	
potassium, dissolved	7440-09-7	E421	0.050	mg/L	4.36	----	----	----	----	
selenium, dissolved	7782-49-2	E421	0.050	µg/L	131	----	----	----	----	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	2.40	----	----	----	----	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	----	----	----	----	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	5.32	----	----	----	----	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.607	----	----	----	----	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	310	----	----	----	----	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	0.000036	----	----	----	----	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	----	----	----	----	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	----	----	----	----	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.0101	----	----	----	----	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	----	----	----	----	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0055	----	----	----	----	
dissolved mercury filtration location	----	EP509	-	-	Field	----	----	----	----	
dissolved metals filtration location	----	EP421	-	-	Field	----	----	----	----	

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: CG2204611	Page	: 1 of 27
Client	: Teck Coal Limited	Laboratory	: Calgary - Environmental
Contact	: Mike Pope	Account Manager	: Lyudmyla Shvets
Address	: RR#1 HWY#3 Sparwood BC Canada V0B 2G1	Address	: 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5
Telephone	: ----	Telephone	: +1 403 407 1800
Project	: REGIONAL EFFECTS PROGRAMS	Date Samples Received	: 22-Apr-2022 10:20
PO	: VPO00816101	Issue Date	: 06-May-2022 12:00
C-O-C number	: April EVO LAEMP 2022		
Sampler	: AM		
Site	: ----		
Quote number	: Teck Coal Master Quote		
No. of samples received	: 6		
No. of samples analysed	: 6		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_BOCK_WS_LAEMP_EVO_2022-04-21_NP	E298	21-Apr-2022	23-Apr-2022	----	----		23-Apr-2022	28 days	2 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_FBLANK_WS_LAEMP_EVO_2022-04-21_NP	E298	21-Apr-2022	23-Apr-2022	----	----		23-Apr-2022	28 days	2 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_GATE_WS_LAEMP_EVO_2022-04-21_NP	E298	21-Apr-2022	23-Apr-2022	----	----		23-Apr-2022	28 days	2 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_GATEDP_WS_LAEMP_EVO_2022-04-21_NP	E298	21-Apr-2022	23-Apr-2022	----	----		23-Apr-2022	28 days	2 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-04-21_NP	E298	21-Apr-2022	23-Apr-2022	----	----		23-Apr-2022	28 days	2 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_TRIP_WS_LAEMP_EVO_2022-04-21_NP	E298	21-Apr-2022	23-Apr-2022	----	----		23-Apr-2022	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_BOCK_WS_LAEMP_EVO_2022-04-21_NP	E235.Br-L	21-Apr-2022	----	----	----		23-Apr-2022	28 days	2 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-04-21_NP	E235.Br-L	21-Apr-2022	----	----	----		23-Apr-2022	28 days	2 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_GATE_WS_LAEMP_EVO_2022-04-21_NP	E235.Br-L	21-Apr-2022	----	----	----		23-Apr-2022	28 days	2 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-04-21_NP	E235.Br-L	21-Apr-2022	----	----	----		23-Apr-2022	28 days	2 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-04-21_NP	E235.Br-L	21-Apr-2022	----	----	----		23-Apr-2022	28 days	2 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-04-21_NP	E235.Br-L	21-Apr-2022	----	----	----		23-Apr-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-04-21_NP	E235.Cl-L	21-Apr-2022	----	----	----		23-Apr-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-04-21_NP	E235.Cl-L	21-Apr-2022	----	----	----		23-Apr-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_GATE_WS_LAEMP_EVO_2022-04-21_NP	E235.Cl-L	21-Apr-2022	----	----	----		23-Apr-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-04-21_NP	E235.Cl-L	21-Apr-2022	----	----	----		23-Apr-2022	28 days	2 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-04-21_NP	E235.CI-L	21-Apr-2022	----	----	----		23-Apr-2022	28 days	2 days	✓	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-04-21_NP	E235.CI-L	21-Apr-2022	----	----	----		23-Apr-2022	28 days	2 days	✓	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-04-21_NP	E378-U	21-Apr-2022	----	----	----		22-Apr-2022	3 days	1 days	✓	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-04-21_NP	E378-U	21-Apr-2022	----	----	----		22-Apr-2022	3 days	1 days	✓	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_GATE_WS_LAEMP_EVO_2022-04-21_NP	E378-U	21-Apr-2022	----	----	----		22-Apr-2022	3 days	1 days	✓	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-04-21_NP	E378-U	21-Apr-2022	----	----	----		22-Apr-2022	3 days	1 days	✓	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-04-21_NP	E378-U	21-Apr-2022	----	----	----		22-Apr-2022	3 days	1 days	✓	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-04-21_NP	E378-U	21-Apr-2022	----	----	----		22-Apr-2022	3 days	1 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-04-21_NP	E235.F	21-Apr-2022	----	----	----		23-Apr-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-04-21_NP	E235.F	21-Apr-2022	----	----	----		23-Apr-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_GATE_WS_LAEMP_EVO_2022-04-21_NP	E235.F	21-Apr-2022	----	----	----		23-Apr-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-04-21_NP	E235.F	21-Apr-2022	----	----	----		23-Apr-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-04-21_NP	E235.F	21-Apr-2022	----	----	----		23-Apr-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-04-21_NP	E235.F	21-Apr-2022	----	----	----		23-Apr-2022	28 days	2 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-04-21_NP	E235.NO3-L	21-Apr-2022	----	----	----		23-Apr-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-04-21_NP	E235.NO3-L	21-Apr-2022	----	----	----		23-Apr-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_GATE_WS_LAEMP_EVO_2022-04-21_NP	E235.NO3-L	21-Apr-2022	----	----	----		23-Apr-2022	3 days	2 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
Rec	Actual	Rec		Actual							
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-04-21_NP	E235.NO3-L	21-Apr-2022	----	----	----		23-Apr-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-04-21_NP	E235.NO3-L	21-Apr-2022	----	----	----		23-Apr-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-04-21_NP	E235.NO3-L	21-Apr-2022	----	----	----		23-Apr-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-04-21_NP	E235.NO2-L	21-Apr-2022	----	----	----		23-Apr-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-04-21_NP	E235.NO2-L	21-Apr-2022	----	----	----		23-Apr-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_GATE_WS_LAEMP_EVO_2022-04-21_NP	E235.NO2-L	21-Apr-2022	----	----	----		23-Apr-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-04-21_NP	E235.NO2-L	21-Apr-2022	----	----	----		23-Apr-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-04-21_NP	E235.NO2-L	21-Apr-2022	----	----	----		23-Apr-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-04-21_NP	E235.NO2-L	21-Apr-2022	----	----	----		23-Apr-2022	3 days	2 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-04-21_NP	E235.S04	21-Apr-2022	----	----	----		23-Apr-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-04-21_NP	E235.S04	21-Apr-2022	----	----	----		23-Apr-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_GATE_WS_LAEMP_EVO_2022-04-21_NP	E235.S04	21-Apr-2022	----	----	----		23-Apr-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-04-21_NP	E235.S04	21-Apr-2022	----	----	----		23-Apr-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-04-21_NP	E235.S04	21-Apr-2022	----	----	----		23-Apr-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-04-21_NP	E235.S04	21-Apr-2022	----	----	----		23-Apr-2022	28 days	2 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_BOCK_WS_LAEMP_EVO_2022-04-21_NP	E318	21-Apr-2022	27-Apr-2022	----	----		27-Apr-2022	28 days	6 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_FBLANK_WS_LAEMP_EVO_2022-04-21_NP	E318	21-Apr-2022	27-Apr-2022	----	----		27-Apr-2022	28 days	6 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_GATE_WS_LAEMP_EVO_2022-04-21_NP	E318	21-Apr-2022	27-Apr-2022	----	----		27-Apr-2022	28 days	6 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_GATEDP_WS_LAEMP_EVO_2022-04-21_NP	E318	21-Apr-2022	27-Apr-2022	----	----		27-Apr-2022	28 days	6 days	✓	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-04-21_NP	E318	21-Apr-2022	27-Apr-2022	----	----		27-Apr-2022	28 days	6 days	✓	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_TRIP_WS_LAEMP_EVO_2022-04-21_NP	E318	21-Apr-2022	27-Apr-2022	----	----		27-Apr-2022	28 days	6 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_BOCK_WS_LAEMP_EVO_2022-04-21_NP	E372-U	21-Apr-2022	27-Apr-2022	----	----		27-Apr-2022	28 days	6 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_FBLANK_WS_LAEMP_EVO_2022-04-21_NP	E372-U	21-Apr-2022	27-Apr-2022	----	----		27-Apr-2022	28 days	6 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_GATE_WS_LAEMP_EVO_2022-04-21_NP	E372-U	21-Apr-2022	27-Apr-2022	----	----		27-Apr-2022	28 days	6 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_GATEDP_WS_LAEMP_EVO_2022-04-21_NP	E372-U	21-Apr-2022	27-Apr-2022	----	----		27-Apr-2022	28 days	6 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-04-21_NP	E372-U	21-Apr-2022	27-Apr-2022	----	----		27-Apr-2022	28 days	6 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_TRIP_WS_LAEMP_EVO_2022-04-21_NP	E372-U	21-Apr-2022	27-Apr-2022	----	----		27-Apr-2022	28 days	6 days	✓	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_BOCK_WS_LAEMP_EVO_2022-04-21_NP	E421.Cr-L	21-Apr-2022	29-Apr-2022	----	----		01-May-2022	180 days	10 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_GATE_WS_LAEMP_EVO_2022-04-21_NP	E421.Cr-L	21-Apr-2022	29-Apr-2022	----	----		01-May-2022	180 days	10 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_FBLANK_WS_LAEMP_EVO_2022-04-21_NP	E421.Cr-L	21-Apr-2022	29-Apr-2022	----	----		01-May-2022	180 days	11 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_GATEDP_WS_LAEMP_EVO_2022-04-21_NP	E421.Cr-L	21-Apr-2022	29-Apr-2022	----	----		01-May-2022	180 days	11 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_RIVER_WS_LAEMP_EVO_2022-04-21_NP	E421.Cr-L	21-Apr-2022	29-Apr-2022	----	----		01-May-2022	180 days	11 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_TRIP_WS_LAEMP_EVO_2022-04-21_NP	E421.Cr-L	21-Apr-2022	29-Apr-2022	----	----		01-May-2022	180 days	11 days	✓	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_RIVER_WS_LAEMP_EVO_2022-04-21_NP	E509	21-Apr-2022	26-Apr-2022	----	----		26-Apr-2022	28 days	5 days	✓	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_TRIP_WS_LAEMP_EVO_2022-04-21_NP	E509	21-Apr-2022	26-Apr-2022	----	----		26-Apr-2022	28 days	5 days	✓	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_BOCK_WS_LAEMP_EVO_2022-04-21_NP	E509	21-Apr-2022	27-Apr-2022	----	----		27-Apr-2022	28 days	6 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_FBLANK_WS_LAEMP_EVO_2022-04-21_NP	E509	21-Apr-2022	27-Apr-2022	----	----		27-Apr-2022	28 days	6 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_GATE_WS_LAEMP_EVO_2022-04-21_NP	E509	21-Apr-2022	27-Apr-2022	----	----		27-Apr-2022	28 days	6 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_GATEDP_WS_LAEMP_EVO_2022-04-21_NP	E509	21-Apr-2022	27-Apr-2022	----	----		27-Apr-2022	28 days	6 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_BOCK_WS_LAEMP_EVO_2022-04-21_NP	E421	21-Apr-2022	29-Apr-2022	----	----		01-May-2022	180 days	10 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_GATE_WS_LAEMP_EVO_2022-04-21_NP	E421	21-Apr-2022	29-Apr-2022	----	----		01-May-2022	180 days	10 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_FBLANK_WS_LAEMP_EVO_2022-04-21_NP	E421	21-Apr-2022	29-Apr-2022	----	----		01-May-2022	180 days	11 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_GATEDP_WS_LAEMP_EVO_2022-04-21_NP	E421	21-Apr-2022	29-Apr-2022	----	----		01-May-2022	180 days	11 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_RIVER_WS_LAEMP_EVO_2022-04-21_NP	E421	21-Apr-2022	29-Apr-2022	----	----		01-May-2022	180 days	11 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_TRIP_WS_LAEMP_EVO_2022-04-21_NP	E421	21-Apr-2022	29-Apr-2022	----	----		01-May-2022	180 days	11 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_BOCK_WS_LAEMP_EVO_2022-04-21_NP	E358-L	21-Apr-2022	24-Apr-2022	----	----		25-Apr-2022	28 days	4 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_FBLANK_WS_LAEMP_EVO_2022-04-21_NP	E358-L	21-Apr-2022	24-Apr-2022	----	----		25-Apr-2022	28 days	4 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_GATE_WS_LAEMP_EVO_2022-04-21_NP	E358-L	21-Apr-2022	24-Apr-2022	----	----		25-Apr-2022	28 days	4 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_GATEDP_WS_LAEMP_EVO_2022-04-21_NP	E358-L	21-Apr-2022	24-Apr-2022	----	----		25-Apr-2022	28 days	4 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_TRIP_WS_LAEMP_EVO_2022-04-21_NP	E358-L	21-Apr-2022	24-Apr-2022	----	----		25-Apr-2022	28 days	4 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-04-21_NP	E358-L	21-Apr-2022	24-Apr-2022	----	----		26-Apr-2022	28 days	5 days	✓	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_BOCK_WS_LAEMP_EVO_2022-04-21_NP	E355-L	21-Apr-2022	24-Apr-2022	----	----		25-Apr-2022	28 days	4 days	✓	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_FBLANK_WS_LAEMP_EVO_2022-04-21_NP	E355-L	21-Apr-2022	24-Apr-2022	----	----		25-Apr-2022	28 days	4 days	✓	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_GATE_WS_LAEMP_EVO_2022-04-21_NP	E355-L	21-Apr-2022	24-Apr-2022	----	----		25-Apr-2022	28 days	4 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_GATEDP_WS_LAEMP_EVO_2022-04-21_NP	E355-L	21-Apr-2022	24-Apr-2022	----	----		25-Apr-2022	28 days	4 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-04-21_NP	E355-L	21-Apr-2022	24-Apr-2022	----	----		25-Apr-2022	28 days	4 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_TRIP_WS_LAEMP_EVO_2022-04-21_NP	E355-L	21-Apr-2022	24-Apr-2022	----	----		25-Apr-2022	28 days	4 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-04-21_NP	E283	21-Apr-2022	----	----	----		25-Apr-2022	14 days	4 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-04-21_NP	E283	21-Apr-2022	----	----	----		25-Apr-2022	14 days	4 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_GATE_WS_LAEMP_EVO_2022-04-21_NP	E283	21-Apr-2022	----	----	----		25-Apr-2022	14 days	4 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-04-21_NP	E283	21-Apr-2022	----	----	----		25-Apr-2022	14 days	4 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-04-21_NP	E283	21-Apr-2022	----	----	----		25-Apr-2022	14 days	4 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-04-21_NP	E283	21-Apr-2022	----	----	----		25-Apr-2022	14 days	4 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Alkalinity Species by Titration											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-04-21_NP	E290	21-Apr-2022	----	----	----		25-Apr-2022	14 days	4 days	✓	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-04-21_NP	E290	21-Apr-2022	----	----	----		25-Apr-2022	14 days	4 days	✓	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_GATE_WS_LAEMP_EVO_2022-04-21_NP	E290	21-Apr-2022	----	----	----		25-Apr-2022	14 days	4 days	✓	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-04-21_NP	E290	21-Apr-2022	----	----	----		25-Apr-2022	14 days	4 days	✓	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-04-21_NP	E290	21-Apr-2022	----	----	----		25-Apr-2022	14 days	4 days	✓	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-04-21_NP	E290	21-Apr-2022	----	----	----		25-Apr-2022	14 days	4 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-04-21_NP	E100	21-Apr-2022	----	----	----		25-Apr-2022	28 days	4 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-04-21_NP	E100	21-Apr-2022	----	----	----		25-Apr-2022	28 days	4 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_GATE_WS_LAEMP_EVO_2022-04-21_NP	E100	21-Apr-2022	----	----	----		25-Apr-2022	28 days	4 days	✓	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Conductivity in Water											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-04-21_NP	E100	21-Apr-2022	----	----	----		25-Apr-2022	28 days	4 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-04-21_NP	E100	21-Apr-2022	----	----	----		25-Apr-2022	28 days	4 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-04-21_NP	E100	21-Apr-2022	----	----	----		25-Apr-2022	28 days	4 days	✓	
Physical Tests : ORP by Electrode											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-04-21_NP	E125	21-Apr-2022	----	----	----		28-Apr-2022	0.25 hrs	166 hrs	* EHTR-FM	
Physical Tests : ORP by Electrode											
HDPE RG_GATE_WS_LAEMP_EVO_2022-04-21_NP	E125	21-Apr-2022	----	----	----		28-Apr-2022	0.25 hrs	170 hrs	* EHTR-FM	
Physical Tests : ORP by Electrode											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-04-21_NP	E125	21-Apr-2022	----	----	----		28-Apr-2022	0.25 hrs	172 hrs	* EHTR-FM	
Physical Tests : ORP by Electrode											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-04-21_NP	E125	21-Apr-2022	----	----	----		28-Apr-2022	0.25 hrs	172 hrs	* EHTR-FM	
Physical Tests : ORP by Electrode											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-04-21_NP	E125	21-Apr-2022	----	----	----		28-Apr-2022	0.25 hrs	172 hrs	* EHTR-FM	
Physical Tests : ORP by Electrode											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-04-21_NP	E125	21-Apr-2022	----	----	----		28-Apr-2022	0.25 hrs	172 hrs	* EHTR-FM	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
Rec	Actual	Rec		Actual							
Physical Tests : pH by Meter											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-04-21_NP	E108	21-Apr-2022	----	----	----		25-Apr-2022	0.25 hrs	91 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_GATE_WS_LAEMP_EVO_2022-04-21_NP	E108	21-Apr-2022	----	----	----		25-Apr-2022	0.25 hrs	95 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-04-21_NP	E108	21-Apr-2022	----	----	----		25-Apr-2022	0.25 hrs	97 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-04-21_NP	E108	21-Apr-2022	----	----	----		25-Apr-2022	0.25 hrs	97 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-04-21_NP	E108	21-Apr-2022	----	----	----		25-Apr-2022	0.25 hrs	97 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-04-21_NP	E108	21-Apr-2022	----	----	----		25-Apr-2022	0.25 hrs	97 hrs	*	EHTR-FM
Physical Tests : TDS by Gravimetry											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-04-21_NP	E162	21-Apr-2022	----	----	----		26-Apr-2022	7 days	5 days	✓	
Physical Tests : TDS by Gravimetry											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-04-21_NP	E162	21-Apr-2022	----	----	----		26-Apr-2022	7 days	5 days	✓	
Physical Tests : TDS by Gravimetry											
HDPE RG_GATE_WS_LAEMP_EVO_2022-04-21_NP	E162	21-Apr-2022	----	----	----		26-Apr-2022	7 days	5 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
Rec	Actual	Rec		Actual							
Physical Tests : TDS by Gravimetry											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-04-21_NP	E162	21-Apr-2022	----	----	----		26-Apr-2022	7 days	5 days	✔	
Physical Tests : TDS by Gravimetry											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-04-21_NP	E162	21-Apr-2022	----	----	----		26-Apr-2022	7 days	5 days	✔	
Physical Tests : TDS by Gravimetry											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-04-21_NP	E162	21-Apr-2022	----	----	----		26-Apr-2022	7 days	5 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-04-21_NP	E160-L	21-Apr-2022	----	----	----		26-Apr-2022	7 days	5 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-04-21_NP	E160-L	21-Apr-2022	----	----	----		26-Apr-2022	7 days	5 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_GATE_WS_LAEMP_EVO_2022-04-21_NP	E160-L	21-Apr-2022	----	----	----		26-Apr-2022	7 days	5 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-04-21_NP	E160-L	21-Apr-2022	----	----	----		26-Apr-2022	7 days	5 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-04-21_NP	E160-L	21-Apr-2022	----	----	----		26-Apr-2022	7 days	5 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-04-21_NP	E160-L	21-Apr-2022	----	----	----		26-Apr-2022	7 days	5 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
Rec	Actual	Rec		Actual							
Physical Tests : Turbidity by Nephelometry											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-04-21_NP	E121	21-Apr-2022	----	----	----		22-Apr-2022	3 days	1 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-04-21_NP	E121	21-Apr-2022	----	----	----		22-Apr-2022	3 days	1 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_GATE_WS_LAEMP_EVO_2022-04-21_NP	E121	21-Apr-2022	----	----	----		22-Apr-2022	3 days	1 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-04-21_NP	E121	21-Apr-2022	----	----	----		22-Apr-2022	3 days	1 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-04-21_NP	E121	21-Apr-2022	----	----	----		22-Apr-2022	3 days	1 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-04-21_NP	E121	21-Apr-2022	----	----	----		22-Apr-2022	3 days	1 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_BOCK_WS_LAEMP_EVO_2022-04-21_NP	E420.Cr-L	21-Apr-2022	----	----	----		01-May-2022	180 days	10 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_FBLANK_WS_LAEMP_EVO_2022-04-21_NP	E420.Cr-L	21-Apr-2022	----	----	----		01-May-2022	180 days	10 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_GATE_WS_LAEMP_EVO_2022-04-21_NP	E420.Cr-L	21-Apr-2022	----	----	----		01-May-2022	180 days	10 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_GATEDP_WS_LAEMP_EVO_2022-04-21_NP	E420.Cr-L	21-Apr-2022	----	----	----		01-May-2022	180 days	10 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_RIVER_WS_LAEMP_EVO_2022-04-21_NP	E420.Cr-L	21-Apr-2022	----	----	----		01-May-2022	180 days	10 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_TRIP_WS_LAEMP_EVO_2022-04-21_NP	E420.Cr-L	21-Apr-2022	----	----	----		01-May-2022	180 days	10 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_TRIP_WS_LAEMP_EVO_2022-04-21_NP	E508	21-Apr-2022	----	----	----		27-Apr-2022	28 days	6 days	✔	
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)											
Pre-cleaned amber glass - total (lab preserved) RG_BOCK_WS_LAEMP_EVO_2022-04-21_NP	E508-L	21-Apr-2022	----	----	----		29-Apr-2022	28 days	8 days	✔	
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)											
Pre-cleaned amber glass - total (lab preserved) RG_FBLANK_WS_LAEMP_EVO_2022-04-21_NP	E508-L	21-Apr-2022	----	----	----		29-Apr-2022	28 days	8 days	✔	
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)											
Pre-cleaned amber glass - total (lab preserved) RG_GATE_WS_LAEMP_EVO_2022-04-21_NP	E508-L	21-Apr-2022	----	----	----		29-Apr-2022	28 days	8 days	✔	
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)											
Pre-cleaned amber glass - total (lab preserved) RG_GATEDP_WS_LAEMP_EVO_2022-04-21_NP	E508-L	21-Apr-2022	----	----	----		29-Apr-2022	28 days	8 days	✔	
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)											
Pre-cleaned amber glass - total (lab preserved) RG_RIVER_WS_LAEMP_EVO_2022-04-21_NP	E508-L	21-Apr-2022	----	----	----		29-Apr-2022	28 days	8 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) RG_BOCK_WS_LAEMP_EVO_2022-04-21_NP	E420	21-Apr-2022	----	----	----		01-May-2022	180 days	10 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) RG_FBLANK_WS_LAEMP_EVO_2022-04-21_NP	E420	21-Apr-2022	----	----	----		01-May-2022	180 days	10 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) RG_GATE_WS_LAEMP_EVO_2022-04-21_NP	E420	21-Apr-2022	----	----	----		01-May-2022	180 days	10 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) RG_GATEDP_WS_LAEMP_EVO_2022-04-21_NP	E420	21-Apr-2022	----	----	----		01-May-2022	180 days	10 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) RG_RIVER_WS_LAEMP_EVO_2022-04-21_NP	E420	21-Apr-2022	----	----	----		01-May-2022	180 days	10 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) RG_TRIP_WS_LAEMP_EVO_2022-04-21_NP	E420	21-Apr-2022	----	----	----		01-May-2022	180 days	10 days	✓

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended
 Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
Analytical Methods							
Laboratory Duplicates (DUP)							
Acidity by Titration	E283	467277	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290	467100	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	466139	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	466114	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	466115	1	20	5.0	5.0	✓
Conductivity in Water	E100	467099	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	472807	1	19	5.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	468958	2	40	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	472806	1	19	5.2	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	466771	1	14	7.1	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	465596	1	19	5.2	5.0	✓
Fluoride in Water by IC	E235.F	466118	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	466116	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	466117	1	20	5.0	5.0	✓
ORP by Electrode	E125	468553	1	20	5.0	5.0	✓
pH by Meter	E108	467098	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	466113	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	466751	2	40	5.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	471543	1	19	5.2	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	468365	1	17	5.8	5.0	✓
Total Mercury in Water by CVAAS	E508	470327	1	20	5.0	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	472081	1	18	5.5	5.0	✓
Total Metals in Water by CRC ICPMS	E420	471542	1	19	5.2	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	466772	1	14	7.1	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	466041	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121	465585	1	16	6.2	5.0	✓
Laboratory Control Samples (LCS)							
Acidity by Titration	E283	467277	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290	467100	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	466139	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	466114	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	466115	1	20	5.0	5.0	✓
Conductivity in Water	E100	467099	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	472807	1	19	5.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	468958	2	40	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	472806	1	19	5.2	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	466771	1	14	7.1	5.0	✓



Matrix: **Water**

Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
Analytical Methods							
Laboratory Control Samples (LCS) - Continued							
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	465596	1	19	5.2	5.0	✓
Fluoride in Water by IC	E235.F	466118	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	466116	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	466117	1	20	5.0	5.0	✓
ORP by Electrode	E125	468553	1	20	5.0	5.0	✓
pH by Meter	E108	467098	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	466113	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	466751	2	40	5.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	471543	1	19	5.2	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	468365	1	17	5.8	5.0	✓
Total Mercury in Water by CVAAS	E508	470327	1	20	5.0	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	472081	1	18	5.5	5.0	✓
Total Metals in Water by CRC ICPMS	E420	471542	1	19	5.2	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	466772	1	14	7.1	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	466041	1	20	5.0	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	466755	2	40	5.0	5.0	✓
Turbidity by Nephelometry	E121	465585	1	16	6.2	5.0	✓
Method Blanks (MB)							
Acidity by Titration	E283	467277	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290	467100	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	466139	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	466114	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	466115	1	20	5.0	5.0	✓
Conductivity in Water	E100	467099	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	472807	1	19	5.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	468958	2	40	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	472806	1	19	5.2	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	466771	1	14	7.1	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	465596	1	19	5.2	5.0	✓
Fluoride in Water by IC	E235.F	466118	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	466116	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	466117	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	466113	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	466751	2	40	5.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	471543	1	19	5.2	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	468365	1	17	5.8	5.0	✓
Total Mercury in Water by CVAAS	E508	470327	1	20	5.0	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	472081	1	18	5.5	5.0	✓
Total Metals in Water by CRC ICPMS	E420	471542	1	19	5.2	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	466772	1	14	7.1	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	466041	1	20	5.0	5.0	✓



Matrix: **Water**

Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
<i>Analytical Methods</i>							
Method Blanks (MB) - Continued							
TSS by Gravimetry (Low Level)	E160-L	466755	2	40	5.0	5.0	✓
Turbidity by Nephelometry	E121	465585	1	16	6.2	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	466139	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	466114	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	466115	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	472807	1	19	5.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	468958	2	40	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	472806	1	19	5.2	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	466771	1	14	7.1	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	465596	1	19	5.2	5.0	✓
Fluoride in Water by IC	E235.F	466118	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	466116	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	466117	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	466113	1	20	5.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	471543	1	19	5.2	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	468365	1	17	5.8	5.0	✓
Total Mercury in Water by CVAAS	E508	470327	1	20	5.0	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	472081	1	18	5.5	5.0	✓
Total Metals in Water by CRC ICPMS	E420	471542	1	19	5.2	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	466772	1	14	7.1	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	466041	1	20	5.0	5.0	✓



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 Calgary - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 Calgary - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 Calgary - Environmental	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
ORP by Electrode	E125 Calgary - Environmental	Water	ASTM D1498 (mod)	Oxidation reduction potential is reported as the oxidation-reduction potential of the platinum metal-reference electrode employed, measured in mV. For high accuracy test results, it is recommended that this analysis be conducted in the field.
TSS by Gravimetry (Low Level)	E160-L Calgary - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 Calgary - Environmental	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC (Low Level)	E235.Cl-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Acidity by Titration	E283 Calgary - Environmental	Water	APHA 2310 B (mod)	Acidity is determined by potentiometric titration to pH endpoint of 8.3



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Alkalinity Species by Titration	E290 Calgary - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 Calgary - Environmental	Water	J. Environ. Monit., 2005, 7, 37-42 (mod)	Ammonia in water is analyzed by flow-injection analysis with fluorescence detection after reaction with orthophthaldialdehyde (OPA).
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 Calgary - Environmental	Water	APHA 4500-Norg D (mod)	Total Kjeldahl Nitrogen is determined using block digestion followed by flow-injection analysis with fluorescence detection.
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L Calgary - Environmental	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Dissolved Organic Carbon by Combustion (Low Level)	E358-L Calgary - Environmental	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U Calgary - Environmental	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U Calgary - Environmental	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Total Metals in Water by CRC ICPMS	E420 Vancouver - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L Vancouver - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS.
Dissolved Metals in Water by CRC ICPMS	E421 Vancouver - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L Vancouver - Environmental	Water	APHA 3030 B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS
Total Mercury in Water by CVAAS	E508 Vancouver - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L Vancouver - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAFS.
Dissolved Mercury in Water by CVAAS	E509 Vancouver - Environmental	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
Dissolved Hardness (Calculated)	EC100 Vancouver - Environmental	Water	APHA 2340B	"Hardness (as CaCO ₃), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Ion Balance using Dissolved Metals	EC101 Calgary - Environmental	Water	APHA 1030E	Cation Sum, Anion Sum, and Ion Balance are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present. Ion Balance cannot be calculated accurately for waters with very low electrical conductivity (EC).

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 Calgary - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 Calgary - Environmental	Water	APHA 4500-Norg D (mod)	Samples are digested using block digestion with Copper Sulfate Digestion Reagent.
Preparation for Total Organic Carbon by Combustion	EP355 Calgary - Environmental	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon for Combustion	EP358 Calgary - Environmental	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Phosphorus in water	EP372 Calgary - Environmental	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Dissolved Metals Water Filtration	EP421	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO ₃ .

Page : 27 of 27
Work Order : CG2204611
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAMS



<i>Preparation Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
	Vancouver - Environmental			
Dissolved Mercury Water Filtration	EP509	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.
	Vancouver - Environmental			



QUALITY CONTROL REPORT

Work Order : **CG2204611**

Page : 1 of 19

Client : Teck Coal Limited
 Contact : Mike Pope
 Address : RR#1 HWY#3
 Sparwood BC Canada V0B 2G1
 Telephone : ----
 Project : REGIONAL EFFECTS PROGRAMS
 PO : VPO00816101
 C-O-C number : April EVO LAEMP 2022
 Sampler : AM
 Site : ----
 Quote number : Teck Coal Master Quote
 No. of samples received : 6
 No. of samples analysed : 6

Laboratory : Calgary - Environmental
 Account Manager : Lyudmyla Shvets
 Address : 2559 29th Street NE
 Calgary, Alberta Canada T1Y 7B5
 Telephone : +1 403 407 1800
 Date Samples Received : 22-Apr-2022 10:20
 Date Analysis Commenced : 22-Apr-2022
 Issue Date : 06-May-2022 12:00

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits
- Reference Material (RM) Report; Recovery and Acceptance Limits
- Method Blank (MB) Report; Recovery and Acceptance Limits
- Laboratory Control Sample (LCS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Anthony Calero	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Caleb Deroche	Lab Analyst	Metals, Burnaby, British Columbia
Dan Gebert	Laboratory Analyst	Metals, Burnaby, British Columbia
Dee Lee	Analyst	Metals, Burnaby, British Columbia
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Harpreet Chawla	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Owen Cheng		Metals, Burnaby, British Columbia
Parker Sgarbossa	Laboratory Analyst	Inorganics, Calgary, Alberta
Robin Weeks	Team Leader - Metals	Metals, Burnaby, British Columbia
Ruifang Zheng	Analyst	Inorganics, Calgary, Alberta
Russell Zhang		Metals, Burnaby, British Columbia
Sara Niroomand		Inorganics, Calgary, Alberta



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Services number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percentage Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test specific).

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 465585)											
CG2204611-001	RG_RIVER_WS_LAEMP_EVO_2022-04-21_NP	turbidity	----	E121	0.10	NTU	2.69	2.59	3.63%	15%	----
Physical Tests (QC Lot: 466751)											
CG2204609-008	Anonymous	solids, total dissolved [TDS]	----	E162	10	mg/L	<10	<10	0	Diff <2x LOR	----
Physical Tests (QC Lot: 467098)											
CG2204608-012	Anonymous	pH	----	E108	0.10	pH units	7.64	7.65	0.131%	4%	----
Physical Tests (QC Lot: 467099)											
CG2204608-012	Anonymous	conductivity	----	E100	2.0	µS/cm	1940	1930	0.413%	10%	----
Physical Tests (QC Lot: 467100)											
CG2204608-012	Anonymous	alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	493	487	1.24%	20%	----
		alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	493	487	1.24%	20%	----
Physical Tests (QC Lot: 467277)											
CG2204608-012	Anonymous	acidity (as CaCO3)	----	E283	10.0	mg/L	<10.0	<10.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 467512)											
CG2204611-005	RG_BOCK_WS_LAEMP_EVO_2022-04-21_NP	solids, total dissolved [TDS]	----	E162	20	mg/L	1620	1650	1.56%	20%	----
Physical Tests (QC Lot: 468553)											
CG2204609-001	Anonymous	oxidation-reduction potential [ORP]	----	E125	0.10	mV	480	475	0.901%	15%	----
Anions and Nutrients (QC Lot: 465596)											
CG2204609-008	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 466041)											
CG2204611-001	RG_RIVER_WS_LAEMP_EVO_2022-04-21_NP	phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0086	0.0085	0.0002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 466113)											
CG2204474-003	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	<0.30	<0.30	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 466114)											
CG2204474-003	Anonymous	bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 466115)											
CG2204474-003	Anonymous	chloride	16887-00-6	E235.Cl-L	0.10	mg/L	<0.10	<0.10	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 466116)											
CG2204474-003	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 466117)											
CG2204474-003	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 466118)											
CG2204474-003	Anonymous	fluoride	16984-48-8	E235.F	0.020	mg/L	<0.020	<0.020	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 466139)											
CG2204474-003	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 468365)											
CG2204611-001	RG_RIVER_WS_LAEMP_ EVO_2022-04-21_NP	Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	0.230	0.298	0.069	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 466771)											
CG2204611-001	RG_RIVER_WS_LAEMP_ EVO_2022-04-21_NP	carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	1.98	2.32	0.34	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 466772)											
CG2204611-001	RG_RIVER_WS_LAEMP_ EVO_2022-04-21_NP	carbon, total organic [TOC]	----	E355-L	0.50	mg/L	1.86	1.83	0.03	Diff <2x LOR	----
Total Metals (QC Lot: 470327)											
CG2204611-002	RG_TRIP_WS_LAEMP_EV O_2022-04-21_NP	mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Total Metals (QC Lot: 471542)											
CG2204572-001	Anonymous	aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0056	0.0038	0.0018	Diff <2x LOR	----
		antimony, total	7440-36-0	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		arsenic, total	7440-38-2	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		barium, total	7440-39-3	E420	0.00010	mg/L	0.139	0.138	1.17%	20%	----
		beryllium, total	7440-41-7	E420	0.020	mg/L	<0.020 µg/L	<0.000020	0	Diff <2x LOR	----
		bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, total	7440-42-8	E420	0.010	mg/L	0.026	0.027	0.0005	Diff <2x LOR	----
		cadmium, total	7440-43-9	E420	0.0050	mg/L	0.0365 µg/L	0.0000328	0.0000037	Diff <2x LOR	----
		calcium, total	7440-70-2	E420	0.050	mg/L	92.0	93.3	1.45%	20%	----
		cobalt, total	7440-48-4	E420	0.10	mg/L	<0.10 µg/L	0.00021	0.00011	Diff <2x LOR	----
		copper, total	7440-50-8	E420	0.00050	mg/L	0.0282	0.0290	2.91%	20%	----
		iron, total	7439-89-6	E420	0.010	mg/L	0.122	0.133	8.66%	20%	----
		lead, total	7439-92-1	E420	0.000050	mg/L	0.000192	0.000193	0.000001	Diff <2x LOR	----
		lithium, total	7439-93-2	E420	0.0010	mg/L	0.0165	0.0169	2.34%	20%	----
		magnesium, total	7439-95-4	E420	0.0050	mg/L	24.2	24.9	2.73%	20%	----
		manganese, total	7439-96-5	E420	0.00010	mg/L	0.00552	0.00551	0.258%	20%	----
		molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.000847	0.000857	1.23%	20%	----
		nickel, total	7440-02-0	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		potassium, total	7440-09-7	E420	0.050	mg/L	1.47	1.51	2.76%	20%	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (QC Lot: 471542) - continued											
CG2204572-001	Anonymous	selenium, total	7782-49-2	E420	0.050	mg/L	3.85 µg/L	0.00402	4.20%	20%	----
		silicon, total	7440-21-3	E420	0.10	mg/L	4.06	4.18	2.94%	20%	----
		silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, total	7440-23-5	E420	0.050	mg/L	20.5	20.6	0.340%	20%	----
		strontium, total	7440-24-6	E420	0.00020	mg/L	0.409	0.422	3.08%	20%	----
		sulfur, total	7704-34-9	E420	0.50	mg/L	20.0	20.8	3.94%	20%	----
		thallium, total	7440-28-0	E420	0.000010	mg/L	0.000014	0.000013	0.0000003	Diff <2x LOR	----
		tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		uranium, total	7440-61-1	E420	0.000010	mg/L	0.000632	0.000673	6.15%	20%	----
		vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		zinc, total	7440-66-6	E420	0.0030	mg/L	0.0064	0.0070	0.0006	Diff <2x LOR	----
Total Metals (QC Lot: 471543)											
CG2204572-001	Anonymous	chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	0.00020	0.00020	0.000004	Diff <2x LOR	----
Total Metals (QC Lot: 472081)											
CG2204611-001	RG_RIVER_WS_LAEMP_EVO_2022-04-21_NP	mercury, total	7439-97-6	E508-L	0.00050	ng/L	0.00070 µg/L	1.58	0.89	Diff <2x LOR	----
Dissolved Metals (QC Lot: 468958)											
CG2204611-001	RG_RIVER_WS_LAEMP_EVO_2022-04-21_NP	mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 470398)											
CG2204587-001	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 472806)											
CG2204608-007	Anonymous	aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00026	0.00025	0.00001	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00057	0.00056	0.00001	Diff <2x LOR	----
		barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.00966	0.00918	5.13%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.020	mg/L	<0.020 µg/L	<0.000020	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.010	mg/L	0.029	0.028	0.0006	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E421	0.0050	mg/L	0.218 µg/L	0.000220	1.23%	20%	----
		calcium, dissolved	7440-70-2	E421	0.050	mg/L	269	260	3.47%	20%	----
		cobalt, dissolved	7440-48-4	E421	0.10	mg/L	8.43 µg/L	0.00844	0.165%	20%	----
		copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		iron, dissolved	7439-89-6	E421	0.010	mg/L	0.042	0.041	0.0006	Diff <2x LOR	----
		lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 472806) - continued											
CG2204608-007	Anonymous	lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0670	0.0677	0.980%	20%	----
		magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	153	149	2.59%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.270	0.267	1.07%	20%	----
		molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00413	0.00400	3.32%	20%	----
		nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.0371	0.0367	1.23%	20%	----
		potassium, dissolved	7440-09-7	E421	0.050	mg/L	4.65	4.61	0.766%	20%	----
		selenium, dissolved	7782-49-2	E421	0.050	mg/L	4.27 µg/L	0.00455	6.38%	20%	----
		silicon, dissolved	7440-21-3	E421	0.050	mg/L	2.72	2.73	0.292%	20%	----
		silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E421	0.050	mg/L	5.80	5.70	1.71%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.407	0.405	0.603%	20%	----
		sulfur, dissolved	7704-34-9	E421	0.50	mg/L	270	271	0.280%	20%	----
		thallium, dissolved	7440-28-0	E421	0.000010	mg/L	0.000085	0.000083	0.000002	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.0113	0.0111	2.08%	20%	----
		vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0144	0.0144	0.443%	20%	----
Dissolved Metals (QC Lot: 472807)											
CG2204608-007	Anonymous	chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 465585)						
turbidity	----	E121	0.1	NTU	<0.10	----
Physical Tests (QCLot: 466751)						
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 466755)						
solids, total suspended [TSS]	----	E160-L	1	mg/L	<1.0	----
Physical Tests (QCLot: 467099)						
conductivity	----	E100	1	µS/cm	<1.0	----
Physical Tests (QCLot: 467100)						
alkalinity, bicarbonate (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
alkalinity, carbonate (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
alkalinity, hydroxide (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
alkalinity, total (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 467277)						
acidity (as CaCO ₃)	----	E283	2	mg/L	<2.0	----
Physical Tests (QCLot: 467504)						
solids, total suspended [TSS]	----	E160-L	1	mg/L	<1.0	----
Physical Tests (QCLot: 467512)						
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Anions and Nutrients (QCLot: 465596)						
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 466041)						
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 466113)						
sulfate (as SO ₄)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 466114)						
bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 466115)						
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	----
Anions and Nutrients (QCLot: 466116)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 466117)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 466118)						



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 466118) - continued						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	---
Anions and Nutrients (QCLot: 466139)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	---
Anions and Nutrients (QCLot: 468365)						
Kjeldahl nitrogen, total [TKN]	---	E318	0.05	mg/L	<0.050	---
Organic / Inorganic Carbon (QCLot: 466771)						
carbon, dissolved organic [DOC]	---	E358-L	0.5	mg/L	<0.50	---
Organic / Inorganic Carbon (QCLot: 466772)						
carbon, total organic [TOC]	---	E355-L	0.5	mg/L	<0.50	---
Total Metals (QCLot: 470327)						
mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	---
Total Metals (QCLot: 471542)						
aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	---
antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	---
arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	---
barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	---
beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	---
bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	---
boron, total	7440-42-8	E420	0.01	mg/L	<0.010	---
cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	---
calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	---
cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	---
copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	---
iron, total	7439-89-6	E420	0.01	mg/L	<0.010	---
lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	---
lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	---
magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	---
manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	---
molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	---
nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	---
potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	---
selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	---
silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	---
silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	---
sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	---
strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	---



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 471542) - continued						
sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	---
thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	---
tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	---
titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	---
uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	---
vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	---
zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	---
Total Metals (QCLot: 471543)						
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	<0.00010	---
Total Metals (QCLot: 472081)						
mercury, total	7439-97-6	E508-L	0.5	ng/L	<0.50	---
Dissolved Metals (QCLot: 468958)						
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	---
Dissolved Metals (QCLot: 470398)						
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	---
Dissolved Metals (QCLot: 472806)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	---
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	---
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	---
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	---
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	---
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	---
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	---
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	---
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	---
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	---
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	---
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	---
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	---
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	---
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	---
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	---
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	---
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	---
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	---
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	---



Sub-Matrix: **Water**

<i>Analyte</i>	<i>CAS Number</i>	<i>Method</i>	<i>LOR</i>	<i>Unit</i>	<i>Result</i>	<i>Qualifier</i>
Dissolved Metals (QCLot: 472806) - continued						
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
Dissolved Metals (QCLot: 472807)						
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	<0.00010	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Physical Tests (QCLot: 465585)									
turbidity	---	E121	0.1	NTU	200 NTU	98.8	85.0	115	---
Physical Tests (QCLot: 466751)									
solids, total dissolved [TDS]	---	E162	10	mg/L	1000 mg/L	98.0	85.0	115	---
Physical Tests (QCLot: 466755)									
solids, total suspended [TSS]	---	E160-L	1	mg/L	150 mg/L	98.0	85.0	115	---
Physical Tests (QCLot: 467098)									
pH	---	E108	---	pH units	7 pH units	101	98.6	101	---
Physical Tests (QCLot: 467099)									
conductivity	---	E100	1	µS/cm	146.9 µS/cm	94.9	90.0	110	---
Physical Tests (QCLot: 467100)									
alkalinity, total (as CaCO ₃)	---	E290	1	mg/L	500 mg/L	106	85.0	115	---
Physical Tests (QCLot: 467277)									
acidity (as CaCO ₃)	---	E283	2	mg/L	50 mg/L	102	85.0	115	---
Physical Tests (QCLot: 467504)									
solids, total suspended [TSS]	---	E160-L	1	mg/L	150 mg/L	96.9	85.0	115	---
Physical Tests (QCLot: 467512)									
solids, total dissolved [TDS]	---	E162	10	mg/L	1000 mg/L	99.0	85.0	115	---
Physical Tests (QCLot: 468553)									
oxidation-reduction potential [ORP]	---	E125	---	mV	220 mV	98.0	95.4	104	---
Anions and Nutrients (QCLot: 465596)									
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.02 mg/L	96.8	80.0	120	---
Anions and Nutrients (QCLot: 466041)									
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	8.02 mg/L	100	80.0	120	---
Anions and Nutrients (QCLot: 466113)									
sulfate (as SO ₄)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	100	90.0	110	---
Anions and Nutrients (QCLot: 466114)									
bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	94.3	85.0	115	---
Anions and Nutrients (QCLot: 466115)									
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	102	90.0	110	---
Anions and Nutrients (QCLot: 466116)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	102	90.0	110	---
Anions and Nutrients (QCLot: 466117)									



Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Anions and Nutrients (QCLot: 466117) - continued									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	103	90.0	110	----
Anions and Nutrients (QCLot: 466118)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	99.6	90.0	110	----
Anions and Nutrients (QCLot: 466139)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	93.7	85.0	115	----
Anions and Nutrients (QCLot: 468365)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	84.2	75.0	125	----
Organic / Inorganic Carbon (QCLot: 466771)									
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	111	80.0	120	----
Organic / Inorganic Carbon (QCLot: 466772)									
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	116	80.0	120	----
Total Metals (QCLot: 470327)									
mercury, total	7439-97-6	E508	0.000005	mg/L	0.0001 mg/L	97.0	80.0	120	----
Total Metals (QCLot: 471542)									
aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	107	80.0	120	----
antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	108	80.0	120	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	104	80.0	120	----
barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	102	80.0	120	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	102	80.0	120	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	102	80.0	120	----
boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	97.6	80.0	120	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	103	80.0	120	----
calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	99.2	80.0	120	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	101	80.0	120	----
copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	103	80.0	120	----
iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	102	80.0	120	----
lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	102	80.0	120	----
lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	102	80.0	120	----
magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	98.7	80.0	120	----
manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	103	80.0	120	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	104	80.0	120	----
nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	103	80.0	120	----
potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	105	80.0	120	----
selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	107	80.0	120	----
silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	101	80.0	120	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Total Metals (QCLot: 471542) - continued									
silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	95.8	80.0	120	----
sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	107	80.0	120	----
strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	99.4	80.0	120	----
sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	99.0	80.0	120	----
thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	105	80.0	120	----
tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	102	80.0	120	----
titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	94.8	80.0	120	----
uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	103	80.0	120	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	102	80.0	120	----
zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	108	80.0	120	----
Total Metals (QCLot: 471543)									
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	0.25 mg/L	102	80.0	120	----
Total Metals (QCLot: 472081)									
mercury, total	7439-97-6	E508-L	0.5	ng/L	5 ng/L	105	80.0	120	----
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	98.8	80.0	120	----
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	99.2	80.0	120	----
Dissolved Metals (QCLot: 472806)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	101	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	103	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	97.2	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	92.0	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	98.6	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	106	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	98.3	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	95.2	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	97.5	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	97.4	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	96.3	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	113	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	103	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	97.0	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	90.5	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	97.6	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	102	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	97.0	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	98.3	80.0	120	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report					
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier	
					Concentration	LCS	Low	High		
Dissolved Metals (QCLot: 472806) - continued										
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	102	80.0	120	----	
silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	103	80.0	120	----	
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	94.2	80.0	120	----	
sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	102	80.0	120	----	
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	102	80.0	120	----	
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	91.9	80.0	120	----	
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	106	80.0	120	----	
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	96.5	80.0	120	----	
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	98.3	80.0	120	----	
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	109	80.0	120	----	
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	94.3	80.0	120	----	
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	100	80.0	120	----	
Dissolved Metals (QCLot: 472807)										
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	0.25 mg/L	97.2	80.0	120	----	



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 465596)										
CG2204611-001	RG_RIVER_WS_LAEMP_EVO_2022-04-21_NP	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0502 mg/L	0.05 mg/L	100	70.0	130	----
Anions and Nutrients (QCLot: 466041)										
CG2204611-002	RG_TRIP_WS_LAEMP_EVO_2022-04-21_NP	phosphorus, total	7723-14-0	E372-U	0.0551 mg/L	0.0676 mg/L	81.5	70.0	130	----
Anions and Nutrients (QCLot: 466113)										
CG2204474-009	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	104 mg/L	100 mg/L	104	75.0	125	----
Anions and Nutrients (QCLot: 466114)										
CG2204474-009	Anonymous	bromide	24959-67-9	E235.Br-L	0.461 mg/L	0.5 mg/L	92.2	75.0	125	----
Anions and Nutrients (QCLot: 466115)										
CG2204474-009	Anonymous	chloride	16887-00-6	E235.Cl-L	103 mg/L	100 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 466116)										
CG2204474-009	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	2.62 mg/L	2.5 mg/L	105	75.0	125	----
Anions and Nutrients (QCLot: 466117)										
CG2204474-009	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.522 mg/L	0.5 mg/L	104	75.0	125	----
Anions and Nutrients (QCLot: 466118)										
CG2204474-009	Anonymous	fluoride	16984-48-8	E235.F	1.06 mg/L	1 mg/L	106	75.0	125	----
Anions and Nutrients (QCLot: 466139)										
CG2204474-009	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0943 mg/L	0.1 mg/L	94.3	75.0	125	----
Anions and Nutrients (QCLot: 468365)										
CG2204611-002	RG_TRIP_WS_LAEMP_EVO_2022-04-21_NP	Kjeldahl nitrogen, total [TKN]	----	E318	2.12 mg/L	2.5 mg/L	84.9	70.0	130	----
Organic / Inorganic Carbon (QCLot: 466771)										
CG2204611-001	RG_RIVER_WS_LAEMP_EVO_2022-04-21_NP	carbon, dissolved organic [DOC]	----	E358-L	6.10 mg/L	5 mg/L	122	70.0	130	----
Organic / Inorganic Carbon (QCLot: 466772)										
CG2204611-001	RG_RIVER_WS_LAEMP_EVO_2022-04-21_NP	carbon, total organic [TOC]	----	E355-L	5.16 mg/L	5 mg/L	103	70.0	130	----
Total Metals (QCLot: 470327)										
CG2204624-001	Anonymous	mercury, total	7439-97-6	E508	0.0000953 mg/L	0.0001 mg/L	95.3	70.0	130	----



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 471542)										
CG2204611-001	RG_RIVER_WS_LAEMP_EVO_2022-04-21_NP	aluminum, total	7429-90-5	E420	0.407 mg/L	0.4 mg/L	102	70.0	130	----
		antimony, total	7440-36-0	E420	0.0425 mg/L	0.04 mg/L	106	70.0	130	----
		arsenic, total	7440-38-2	E420	0.0408 mg/L	0.04 mg/L	102	70.0	130	----
		barium, total	7440-39-3	E420	ND mg/L	0.02 mg/L	ND	70.0	130	----
		beryllium, total	7440-41-7	E420	0.0747 mg/L	0.08 mg/L	93.4	70.0	130	----
		bismuth, total	7440-69-9	E420	0.0184 mg/L	0.02 mg/L	91.8	70.0	130	----
		boron, total	7440-42-8	E420	0.194 mg/L	0.2 mg/L	96.8	70.0	130	----
		cadmium, total	7440-43-9	E420	0.00827 mg/L	0.008 mg/L	103	70.0	130	----
		calcium, total	7440-70-2	E420	ND mg/L	4 mg/L	ND	70.0	130	----
		cobalt, total	7440-48-4	E420	0.0388 mg/L	0.04 mg/L	96.9	70.0	130	----
		copper, total	7440-50-8	E420	0.0390 mg/L	0.04 mg/L	97.5	70.0	130	----
		iron, total	7439-89-6	E420	3.92 mg/L	4 mg/L	97.9	70.0	130	----
		lead, total	7439-92-1	E420	0.0382 mg/L	0.04 mg/L	95.4	70.0	130	----
		lithium, total	7439-93-2	E420	0.183 mg/L	0.2 mg/L	91.6	70.0	130	----
		magnesium, total	7439-95-4	E420	ND mg/L	1 mg/L	ND	70.0	130	----
		manganese, total	7439-96-5	E420	0.0394 mg/L	0.04 mg/L	98.5	70.0	130	----
		molybdenum, total	7439-98-7	E420	0.0432 mg/L	0.04 mg/L	108	70.0	130	----
		nickel, total	7440-02-0	E420	0.0777 mg/L	0.08 mg/L	97.1	70.0	130	----
		potassium, total	7440-09-7	E420	ND mg/L	4 mg/L	ND	70.0	130	----
		selenium, total	7782-49-2	E420	ND mg/L	0.04 mg/L	ND	70.0	130	----
		silicon, total	7440-21-3	E420	18.7 mg/L	20 mg/L	93.6	70.0	130	----
		silver, total	7440-22-4	E420	0.00837 mg/L	0.008 mg/L	104	70.0	130	----
		sodium, total	7440-23-5	E420	ND mg/L	2 mg/L	ND	70.0	130	----
strontium, total	7440-24-6	E420	ND mg/L	0.02 mg/L	ND	70.0	130	----		
sulfur, total	7704-34-9	E420	ND mg/L	20 mg/L	ND	70.0	130	----		
thallium, total	7440-28-0	E420	0.00747 mg/L	0.008 mg/L	93.3	70.0	130	----		
tin, total	7440-31-5	E420	0.0421 mg/L	0.04 mg/L	105	70.0	130	----		
titanium, total	7440-32-6	E420	0.0789 mg/L	0.08 mg/L	98.6	70.0	130	----		
uranium, total	7440-61-1	E420	ND mg/L	0.004 mg/L	ND	70.0	130	----		
vanadium, total	7440-62-2	E420	0.205 mg/L	0.2 mg/L	102	70.0	130	----		
zinc, total	7440-66-6	E420	0.785 mg/L	0.8 mg/L	98.1	70.0	130	----		
Total Metals (QCLot: 471543)										
CG2204611-001	RG_RIVER_WS_LAEMP_EVO_2022-04-21_NP	chromium, total	7440-47-3	E420.Cr-L	0.0788 mg/L	0.08 mg/L	98.4	70.0	130	----
Total Metals (QCLot: 472081)										
CG2204611-003	RG_FBLANK_WS_LAEMP_EVO_2022-04-21_NP	mercury, total	7439-97-6	E508-L	5.67 ng/L	5 ng/L	113	70.0	130	----



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 468958)										
CG2204611-002	RG_TRIP_WS_LAEMP_EV O_2022-04-21_NP	mercury, dissolved	7439-97-6	E509	0.0000938 mg/L	0.0001 mg/L	93.8	70.0	130	----
Dissolved Metals (QCLot: 470398)										
CG2204587-002	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000904 mg/L	0.0001 mg/L	90.4	70.0	130	----
Dissolved Metals (QCLot: 472806)										
CG2204608-008	Anonymous	aluminum, dissolved	7429-90-5	E421	0.177 mg/L	0.2 mg/L	88.6	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.0208 mg/L	0.02 mg/L	104	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.0188 mg/L	0.02 mg/L	94.2	70.0	130	----
		barium, dissolved	7440-39-3	E421	0.0167 mg/L	0.02 mg/L	83.6	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.0388 mg/L	0.04 mg/L	96.9	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.00893 mg/L	0.01 mg/L	89.3	70.0	130	----
		boron, dissolved	7440-42-8	E421	0.097 mg/L	0.1 mg/L	97.4	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.00354 mg/L	0.004 mg/L	88.5	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	4 mg/L	ND	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.0171 mg/L	0.02 mg/L	85.5	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.0169 mg/L	0.02 mg/L	84.7	70.0	130	----
		iron, dissolved	7439-89-6	E421	1.81 mg/L	2 mg/L	90.7	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.0194 mg/L	0.02 mg/L	97.3	70.0	130	----
		lithium, dissolved	7439-93-2	E421	0.0964 mg/L	0.1 mg/L	96.4	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	1 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.0210 mg/L	0.02 mg/L	105	70.0	130	----
		nickel, dissolved	7440-02-0	E421	ND mg/L	0.04 mg/L	ND	70.0	130	----
		potassium, dissolved	7440-09-7	E421	ND mg/L	4 mg/L	ND	70.0	130	----
		selenium, dissolved	7782-49-2	E421	0.0413 mg/L	0.04 mg/L	103	70.0	130	----
		silicon, dissolved	7440-21-3	E421	8.97 mg/L	10 mg/L	89.7	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.00390 mg/L	0.004 mg/L	97.6	70.0	130	----
		sodium, dissolved	7440-23-5	E421	ND mg/L	2 mg/L	ND	70.0	130	----
		strontium, dissolved	7440-24-6	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	ND mg/L	20 mg/L	ND	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.00398 mg/L	0.004 mg/L	99.6	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.0184 mg/L	0.02 mg/L	92.1	70.0	130	----
		titanium, dissolved	7440-32-6	E421	0.0316 mg/L	0.04 mg/L	79.1	70.0	130	----
		uranium, dissolved	7440-61-1	E421	ND mg/L	0.004 mg/L	ND	70.0	130	----
		vanadium, dissolved	7440-62-2	E421	0.0896 mg/L	0.1 mg/L	89.6	70.0	130	----
		zinc, dissolved	7440-66-6	E421	0.349 mg/L	0.4 mg/L	87.3	70.0	130	----

Page : 19 of 19
 Work Order : CG2204611
 Client : Teck Coal Limited
 Project : REGIONAL EFFECTS PROGRAMS



Sub-Matrix: **Water**

					<i>Matrix Spike (MS) Report</i>					
					<i>Spike</i>		<i>Recovery (%)</i>	<i>Recovery Limits (%)</i>		
<i>Laboratory sample ID</i>	<i>Client sample ID</i>	<i>Analyte</i>	<i>CAS Number</i>	<i>Method</i>	<i>Concentration</i>	<i>Target</i>	<i>MS</i>	<i>Low</i>	<i>High</i>	<i>Qualifier</i>
Dissolved Metals (QCLot: 472807)										
CG2204608-008	Anonymous	chromium, dissolved	7440-47-3	E421.Cr-L	0.0358 mg/L	0.04 mg/L	89.6	70.0	130	----

COC ID: April EVO LAEMP 2022

TURNAROUND TIME:

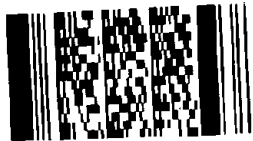
PROJECT/CLIENT INFO				LABORATORY			
Facility Name / Job#	Regional EVO LAEMP			Lab Name	ALS Calgary		
Project Manager	Mike Pope			Lab Contact	Lyudmyla Shvets		
Email	m.pope@teck.com			Email	lyudmyla.shvets@alsglobal.com		
Address	421 Pine Avenue			Address	2559 29 Street NE		
City	Sparwood	Province	BC	City	Calgary	Province	AB
Postal Code	V0B 2G0	Country	Canada	Postal Code	T1Y 7B5	Country	Canada
Phone Number	343-333-3905			Phone Number	1 403 407 1794		

SAMPLE DETAILS								ANALYSIS REQUESTED									
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	TECKCOAL-ROUTINE-VA	ALS_Package-DOC	ALS_Package-TKN/TOC	HG-T-U-CVAF-VA	HG-D-CVAF-VA	TECKCOAL-MET-T-VA	TECKCOAL-MET-D-VA	Excel	PDF	EDD
RG_RIVER_WS_LAEMP_EVO_2022-04-21_NP	RG_RIVER	WS	No	4/21/2022	9:00	G	7	X	X	X	X	X	X	X			
RG_TRIP_WS_LAEMP_EVO_2022-04-21_NP	RG_TRIP	WS	No	4/21/2022	9:00	G	7	X	X	X	X	X	X	X			
RG_FBLANK_WS_LAEMP_EVO_2022-04-21_NP	RG_FBLANK	WS	No	4/21/2022	9:00	G	7	X	X	X	X	X	X	X			
RG_GATE_WS_LAEMP_EVO_2022-04-21_NP	RG_GATE	WS	No	4/21/2022	10:45	G	7	X	X	X	X	X	X	X			
RG_BOCK_WS_LAEMP_EVO_2022-04-21_NP	RG_BOCK	WS	No	4/21/2022	15:00	G	7	X	X	X	X	X	X	X			
RG_GATEDP_WS_LAEMP_EVO_2022-04-21_NP	RG_GATEDP	WS	No	4/21/2022	9:00	G	7	X	X	X	X	X	X	X			

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
ALS PO 750546			<i>NAL</i> 4/22 10:20

NO OF BOTTLES RETURNED/DESCRIPTION	Sampler's Name	Mobile #
Regular (default) x Priority (2-3 business days) - 50% surcharge Emergency (1 Business Day) - 100% surcharge For Emergency <1 Day, ASAP or Weekend - Contact ALS	<i>Alex M. Chapman</i>	780-293-6750
	Sampler's Signature	Date/Time
	<i>[Signature]</i>	21-Apr-22

Environmental Division
Calgary
Work Order Reference
CG2204611



Telephone : +1 403 407 1800

30



CERTIFICATE OF ANALYSIS

Work Order : **CG2204613**
Client : **Teck Coal Limited**
Contact : Mike Pope
Address : 421 PINE AVE
Sparwood BC Canada V0B 2G0
Telephone : ----
Project : ELKVIEW OPERATIONS
PO : VPO00816101
C-O-C number : EVO LAEMP_2022_APR_ALS
Sampler : AM
Site : ----
Quote number : Teck Coal Master Quote
No. of samples received : 1
No. of samples analysed : 1

Page : 1 of 6
Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
Calgary AB Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 22-Apr-2022 10:20
Date Analysis Commenced : 22-Apr-2022
Issue Date : 05-May-2022 08:36

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Anthony Calero	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Dee Lee	Analyst	Metals, Burnaby, British Columbia
Delson Resende	Lab Assistant	Metals, Burnaby, British Columbia
Dwayne Bennett	Supervisor - Inorganic	Inorganics, Calgary, Alberta
Elke Tabora		Inorganics, Calgary, Alberta
Erin Sanchez		Inorganics, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Ruifang Zheng	Analyst	Inorganics, Calgary, Alberta
Sara Niroomand		Inorganics, Calgary, Alberta
Zakieh Lalonde		Inorganics, Calgary, Alberta



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
 LOR: Limit of Reporting (detection limit).

Unit	Description
-	No Unit
%	percent
µg/L	micrograms per litre
µS/cm	Microsiemens per centimetre
meq/L	milliequivalents per litre
mg/L	milligrams per litre
mV	millivolts
NTU	nephelometric turbidity units
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Sample Comments

Sample	Client Id	Comment
CG2204613-001	EV_BRD_LOT2_WS_LAEMP_ EVO_2022-04-21_NP	Updated WO to rush TAT as per client.

Qualifiers

Qualifier	Description
DLA	Detection Limit adjusted for required dilution.
DLDS	Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.



Analytical Results

Sub-Matrix: Water					Client sample ID	EV_BRD_LOT2_	---	---	---	---
(Matrix: Water)						WS_LAEMP_EV				
						O_2022-04-21_				
						NP				
					Client sampling date / time	22-Apr-2022	---	---	---	---
Analyte	CAS Number	Method	LOR	Unit	CG2204613-001	-----	-----	-----	-----	-----
					Result	---	---	---	---	---
Physical Tests										
acidity (as CaCO3)	---	E283	2.0	mg/L	<2.0	---	---	---	---	---
alkalinity, bicarbonate (as CaCO3)	---	E290	1.0	mg/L	336	---	---	---	---	---
alkalinity, bicarbonate (as HCO3)	71-52-3	E290	1.0	mg/L	409	---	---	---	---	---
alkalinity, carbonate (as CaCO3)	---	E290	1.0	mg/L	<1.0	---	---	---	---	---
alkalinity, carbonate (as CO3)	3812-32-6	E290	1.0	mg/L	<1.0	---	---	---	---	---
alkalinity, hydroxide (as CaCO3)	---	E290	1.0	mg/L	<1.0	---	---	---	---	---
alkalinity, hydroxide (as OH)	14280-30-9	E290	1.0	mg/L	<1.0	---	---	---	---	---
alkalinity, total (as CaCO3)	---	E290	1.0	mg/L	336	---	---	---	---	---
conductivity	---	E100	2.0	µS/cm	2060	---	---	---	---	---
hardness (as CaCO3), dissolved	---	EC100	0.50	mg/L	1340	---	---	---	---	---
oxidation-reduction potential [ORP]	---	E125	0.10	mV	340	---	---	---	---	---
pH	---	E108	0.10	pH units	8.27	---	---	---	---	---
solids, total dissolved [TDS]	---	E162	10	mg/L	1740	---	---	---	---	---
solids, total suspended [TSS]	---	E160-L	1.0	mg/L	7.6	---	---	---	---	---
turbidity	---	E121	0.10	NTU	1.75	---	---	---	---	---
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.590	---	---	---	---	---
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.250 ^{DLDS}	---	---	---	---	---
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	17.5	---	---	---	---	---
fluoride	16984-48-8	E235.F	0.020	mg/L	0.228	---	---	---	---	---
Kjeldahl nitrogen, total [TKN]	---	E318	0.050	mg/L	2.42	---	---	---	---	---
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	20.2	---	---	---	---	---
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0050 ^{DLDS}	---	---	---	---	---
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	---	---	---	---	---
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0038	---	---	---	---	---
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	985	---	---	---	---	---
Organic / Inorganic Carbon										
carbon, dissolved organic [DOC]	---	E358-L	0.50	mg/L	1.18	---	---	---	---	---
carbon, total organic [TOC]	---	E355-L	0.50	mg/L	1.24	---	---	---	---	---



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	EV_BRD_LOT2_	----	----	----	----
					WS_LAEMP_EV					
					O_2022-04-21_					
					NP					
					Client sampling date / time	22-Apr-2022	----	----	----	----
Analyte	CAS Number	Method	LOR	Unit	CG2204613-001	-----	-----	-----	-----	-----
					Result	----	----	----	----	----
Ion Balance										
anion sum	----	EC101	0.10	meq/L	29.2	----	----	----	----	----
cation sum	----	EC101	0.10	meq/L	27.3	----	----	----	----	----
ion balance (cations/anions)	----	EC101	0.010	%	93.5	----	----	----	----	----
ion balance (APHA)	----	EC101	0.010	%	3.36	----	----	----	----	----
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L	<0.0060 ^{DLA}	----	----	----	----	----
antimony, total	7440-36-0	E420	0.00010	mg/L	0.00087	----	----	----	----	----
arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00042	----	----	----	----	----
barium, total	7440-39-3	E420	0.00010	mg/L	0.110	----	----	----	----	----
beryllium, total	7440-41-7	E420	0.020	µg/L	<0.040 ^{DLA}	----	----	----	----	----
bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000100 ^{DLA}	----	----	----	----	----
boron, total	7440-42-8	E420	0.010	mg/L	0.054	----	----	----	----	----
cadmium, total	7440-43-9	E420	0.0050	µg/L	0.146	----	----	----	----	----
calcium, total	7440-70-2	E420	0.050	mg/L	259	----	----	----	----	----
chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	<0.00020 ^{DLA}	----	----	----	----	----
cobalt, total	7440-48-4	E420	0.10	µg/L	0.29	----	----	----	----	----
copper, total	7440-50-8	E420	0.00050	mg/L	<0.00100 ^{DLA}	----	----	----	----	----
iron, total	7439-89-6	E420	0.010	mg/L	0.498	----	----	----	----	----
lead, total	7439-92-1	E420	0.000050	mg/L	<0.000100 ^{DLA}	----	----	----	----	----
lithium, total	7439-93-2	E420	0.0010	mg/L	0.131	----	----	----	----	----
magnesium, total	7439-95-4	E420	0.0050	mg/L	197	----	----	----	----	----
manganese, total	7439-96-5	E420	0.00010	mg/L	0.0225	----	----	----	----	----
mercury, total	7439-97-6	E508-L	0.00050	µg/L	<0.00050	----	----	----	----	----
molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.0110	----	----	----	----	----
nickel, total	7440-02-0	E420	0.00050	mg/L	0.0262	----	----	----	----	----
potassium, total	7440-09-7	E420	0.050	mg/L	5.93	----	----	----	----	----
selenium, total	7782-49-2	E420	0.050	µg/L	190	----	----	----	----	----
silicon, total	7440-21-3	E420	0.10	mg/L	2.68	----	----	----	----	----
silver, total	7440-22-4	E420	0.000010	mg/L	<0.000020 ^{DLA}	----	----	----	----	----
sodium, total	7440-23-5	E420	0.050	mg/L	7.37	----	----	----	----	----



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	EV_BRD_LOT2_ WS_LAEMP_EV O_2022-04-21_ NP	----	----	----	----
Client sampling date / time					22-Apr-2022	----	----	----	----	
Analyte	CAS Number	Method	LOR	Unit	CG2204613-001	-----	-----	-----	-----	
					Result	----	----	----	----	
Total Metals										
strontium, total	7440-24-6	E420	0.00020	mg/L	1.11	----	----	----	----	
sulfur, total	7704-34-9	E420	0.50	mg/L	361	----	----	----	----	
thallium, total	7440-28-0	E420	0.000010	mg/L	0.000033	----	----	----	----	
tin, total	7440-31-5	E420	0.00010	mg/L	<0.00020 ^{DLA}	----	----	----	----	
titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00060 ^{DLA}	----	----	----	----	
uranium, total	7440-61-1	E420	0.000010	mg/L	0.0108	----	----	----	----	
vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00100 ^{DLA}	----	----	----	----	
zinc, total	7440-66-6	E420	0.0030	mg/L	0.0081	----	----	----	----	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0022	----	----	----	----	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00087	----	----	----	----	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00032	----	----	----	----	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.126	----	----	----	----	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.040 ^{DLA}	----	----	----	----	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000100 ^{DLA}	----	----	----	----	
boron, dissolved	7440-42-8	E421	0.010	mg/L	0.050	----	----	----	----	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.113	----	----	----	----	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	261	----	----	----	----	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00020 ^{DLA}	----	----	----	----	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	0.27	----	----	----	----	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00040 ^{DLA}	----	----	----	----	
iron, dissolved	7439-89-6	E421	0.010	mg/L	0.210	----	----	----	----	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000100 ^{DLA}	----	----	----	----	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.127	----	----	----	----	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	168	----	----	----	----	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.0209	----	----	----	----	
mercury, dissolved	7439-97-6	E509	0.000050	mg/L	<0.000050	----	----	----	----	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.0106	----	----	----	----	
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.0229	----	----	----	----	
potassium, dissolved	7440-09-7	E421	0.050	mg/L	5.53	----	----	----	----	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	EV_BRD_LOT2_	----	----	----	----
					WS_LAEMP_EV					
					O_2022-04-21_					
					NP					
					Client sampling date / time	22-Apr-2022	----	----	----	----
Analyte	CAS Number	Method	LOR	Unit	CG2204613-001	-----	-----	-----	-----	
					Result	----	----	----	----	
Dissolved Metals										
selenium, dissolved	7782-49-2	E421	0.050	µg/L	183	----	----	----	----	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	2.51	----	----	----	----	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000020 ^{DLA}	----	----	----	----	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	6.63	----	----	----	----	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	1.14	----	----	----	----	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	333	----	----	----	----	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	0.000032	----	----	----	----	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00020 ^{DLA}	----	----	----	----	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00060 ^{DLA}	----	----	----	----	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.0109	----	----	----	----	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00100 ^{DLA}	----	----	----	----	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0067	----	----	----	----	
dissolved mercury filtration location	----	EP509	-	-	Field	----	----	----	----	
dissolved metals filtration location	----	EP421	-	-	Field	----	----	----	----	

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: CG2204613	Page	: 1 of 13
Client	: Teck Coal Limited	Laboratory	: Calgary - Environmental
Contact	: Mike Pope	Account Manager	: Lyudmyla Shvets
Address	: 421 PINE AVE Sparwood BC Canada V0B 2G0	Address	: 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5
Telephone	: ----	Telephone	: +1 403 407 1800
Project	: ELKVIEW OPERATIONS	Date Samples Received	: 22-Apr-2022 10:20
PO	: VPO00816101	Issue Date	: 05-May-2022 08:37
C-O-C number	: EVO LAEMP_2022_APR_ALS		
Sampler	: AM		
Site	: ----		
Quote number	: Teck Coal Master Quote		
No. of samples received	: 1		
No. of samples analysed	: 1		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) EV_BRD_LOT2_WS_LAEMP_EVO_2022-04-21_NP	E298	22-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	1 days	✓	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE EV_BRD_LOT2_WS_LAEMP_EVO_2022-04-21_NP	E235.Br-L	22-Apr-2022	----	----	----		23-Apr-2022	28 days	2 days	✓	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE EV_BRD_LOT2_WS_LAEMP_EVO_2022-04-21_NP	E235.Cl-L	22-Apr-2022	----	----	----		23-Apr-2022	28 days	2 days	✓	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE EV_BRD_LOT2_WS_LAEMP_EVO_2022-04-21_NP	E378-U	22-Apr-2022	----	----	----		22-Apr-2022	3 days	1 days	✓	
Anions and Nutrients : Fluoride in Water by IC											
HDPE EV_BRD_LOT2_WS_LAEMP_EVO_2022-04-21_NP	E235.F	22-Apr-2022	----	----	----		23-Apr-2022	28 days	2 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE EV_BRD_LOT2_WS_LAEMP_EVO_2022-04-21_NP	E235.NO3-L	22-Apr-2022	----	----	----		23-Apr-2022	3 days	2 days	✓	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE EV_BRD_LOT2_WS_LAEMP_EVO_2022-04-21_NP	E235.NO2-L	22-Apr-2022	----	----	----		23-Apr-2022	3 days	2 days	✓	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times Rec Actual		Eval	Analysis Date	Holding Times Rec Actual		Eval	
Anions and Nutrients : Sulfate in Water by IC											
HDPE EV_BRD_LOT2_WS_LAEMP_EVO_2022-04-21_NP	E235.SO4	22-Apr-2022	----	----	----		23-Apr-2022	28 days	2 days	✓	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) EV_BRD_LOT2_WS_LAEMP_EVO_2022-04-21_NP	E318	22-Apr-2022	27-Apr-2022	----	----		27-Apr-2022	28 days	5 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) EV_BRD_LOT2_WS_LAEMP_EVO_2022-04-21_NP	E372-U	22-Apr-2022	26-Apr-2022	----	----		26-Apr-2022	28 days	4 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) EV_BRD_LOT2_WS_LAEMP_EVO_2022-04-21_NP	E421.Cr-L	22-Apr-2022	29-Apr-2022	----	----		01-May-2022	180 days	10 days	✓	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) EV_BRD_LOT2_WS_LAEMP_EVO_2022-04-21_NP	E509	22-Apr-2022	26-Apr-2022	----	----		26-Apr-2022	28 days	5 days	✓	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) EV_BRD_LOT2_WS_LAEMP_EVO_2022-04-21_NP	E421	22-Apr-2022	29-Apr-2022	----	----		01-May-2022	180 days	10 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) EV_BRD_LOT2_WS_LAEMP_EVO_2022-04-21_NP	E358-L	22-Apr-2022	22-Apr-2022	----	----		25-Apr-2022	28 days	4 days	✓	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) EV_BRD_LOT2_WS_LAEMP_EVO_2022-04-21_NP	E355-L	22-Apr-2022	22-Apr-2022	----	----		25-Apr-2022	28 days	4 days	✓	
Physical Tests : Acidity by Titration											
HDPE EV_BRD_LOT2_WS_LAEMP_EVO_2022-04-21_NP	E283	22-Apr-2022	----	----	----		25-Apr-2022	14 days	4 days	✓	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
Rec	Actual	Rec		Actual							
Physical Tests : Alkalinity Species by Titration											
HDPE EV_BRD_LOT2_WS_LAEMP_EVO_2022-04-21_NP	E290	22-Apr-2022	----	----	----		25-Apr-2022	14 days	3 days	✓	
Physical Tests : Conductivity in Water											
HDPE EV_BRD_LOT2_WS_LAEMP_EVO_2022-04-21_NP	E100	22-Apr-2022	----	----	----		25-Apr-2022	28 days	3 days	✓	
Physical Tests : ORP by Electrode											
HDPE EV_BRD_LOT2_WS_LAEMP_EVO_2022-04-21_NP	E125	22-Apr-2022	----	----	----		28-Apr-2022	0.25 hrs	157 hrs	* EHTR-FM	
Physical Tests : pH by Meter											
HDPE EV_BRD_LOT2_WS_LAEMP_EVO_2022-04-21_NP	E108	22-Apr-2022	----	----	----		25-Apr-2022	0.25 hrs	82 hrs	* EHTR-FM	
Physical Tests : TDS by Gravimetry											
HDPE EV_BRD_LOT2_WS_LAEMP_EVO_2022-04-21_NP	E162	22-Apr-2022	----	----	----		26-Apr-2022	7 days	5 days	✓	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE EV_BRD_LOT2_WS_LAEMP_EVO_2022-04-21_NP	E160-L	22-Apr-2022	----	----	----		26-Apr-2022	7 days	5 days	✓	
Physical Tests : Turbidity by Nephelometry											
HDPE EV_BRD_LOT2_WS_LAEMP_EVO_2022-04-21_NP	E121	22-Apr-2022	----	----	----		22-Apr-2022	3 days	1 days	✓	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) EV_BRD_LOT2_WS_LAEMP_EVO_2022-04-21_NP	E420.Cr-L	22-Apr-2022	----	----	----		01-May-2022	180 days	10 days	✓	
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)											
Pre-cleaned amber glass - total (lab preserved) EV_BRD_LOT2_WS_LAEMP_EVO_2022-04-21_NP	E508-L	22-Apr-2022	----	----	----		29-Apr-2022	28 days	7 days	✓	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) EV_BRD_LOT2_WS_LAEMP_EVO_2022-04-21_NP	E420	22-Apr-2022	----	----	----		01-May-2022	180 days	10 days	✓

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended

Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
Analytical Methods							
Laboratory Duplicates (DUP)							
Acidity by Titration	E283	467277	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290	467100	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	465605	1	19	5.2	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	466218	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	466219	1	16	6.2	5.0	✓
Conductivity in Water	E100	467099	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	472807	1	19	5.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	468816	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	472806	1	19	5.2	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	465507	1	9	11.1	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	465596	1	19	5.2	5.0	✓
Fluoride in Water by IC	E235.F	466222	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	466220	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	466221	1	20	5.0	5.0	✓
ORP by Electrode	E125	468553	1	20	5.0	5.0	✓
pH by Meter	E108	467098	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	466217	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	467512	1	20	5.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	471543	1	18	5.5	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	468365	1	17	5.8	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	472081	1	18	5.5	5.0	✓
Total Metals in Water by CRC ICPMS	E420	471542	1	19	5.2	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	465508	1	9	11.1	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	465603	1	19	5.2	5.0	✓
Turbidity by Nephelometry	E121	465480	1	16	6.2	5.0	✓
Laboratory Control Samples (LCS)							
Acidity by Titration	E283	467277	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290	467100	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	465605	1	19	5.2	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	466218	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	466219	1	16	6.2	5.0	✓
Conductivity in Water	E100	467099	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	472807	1	19	5.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	468816	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	472806	1	19	5.2	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	465507	1	9	11.1	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	465596	1	19	5.2	5.0	✓



Matrix: **Water**

Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
<i>Analytical Methods</i>							
Laboratory Control Samples (LCS) - Continued							
Fluoride in Water by IC	E235.F	466222	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	466220	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	466221	1	20	5.0	5.0	✓
ORP by Electrode	E125	468553	1	20	5.0	5.0	✓
pH by Meter	E108	467098	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	466217	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	467512	1	20	5.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	471543	1	18	5.5	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	468365	1	17	5.8	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	472081	1	18	5.5	5.0	✓
Total Metals in Water by CRC ICPMS	E420	471542	1	19	5.2	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	465508	1	9	11.1	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	465603	1	19	5.2	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	467504	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121	465480	1	16	6.2	5.0	✓
Method Blanks (MB)							
Acidity by Titration	E283	467277	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290	467100	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	465605	1	19	5.2	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	466218	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	466219	1	16	6.2	5.0	✓
Conductivity in Water	E100	467099	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	472807	1	19	5.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	468816	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	472806	1	19	5.2	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	465507	1	9	11.1	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	465596	1	19	5.2	5.0	✓
Fluoride in Water by IC	E235.F	466222	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	466220	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	466221	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	466217	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	467512	1	20	5.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	471543	1	18	5.5	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	468365	1	17	5.8	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	472081	1	18	5.5	5.0	✓
Total Metals in Water by CRC ICPMS	E420	471542	1	19	5.2	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	465508	1	9	11.1	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	465603	1	19	5.2	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	467504	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121	465480	1	16	6.2	5.0	✓



Matrix: **Water** Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
<i>Analytical Methods</i>							
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	465605	1	19	5.2	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	466218	1	20	5.0	5.0	✔
Chloride in Water by IC (Low Level)	E235.Cl-L	466219	1	16	6.2	5.0	✔
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	472807	1	19	5.2	5.0	✔
Dissolved Mercury in Water by CVAAS	E509	468816	1	20	5.0	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	472806	1	19	5.2	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	465507	1	9	11.1	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	465596	1	19	5.2	5.0	✔
Fluoride in Water by IC	E235.F	466222	1	20	5.0	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	466220	1	20	5.0	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	466221	1	20	5.0	5.0	✔
Sulfate in Water by IC	E235.SO4	466217	1	20	5.0	5.0	✔
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	471543	1	18	5.5	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	468365	1	17	5.8	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	472081	1	18	5.5	5.0	✔
Total Metals in Water by CRC ICPMS	E420	471542	1	19	5.2	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	465508	1	9	11.1	5.0	✔
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	465603	1	19	5.2	5.0	✔



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 Calgary - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 Calgary - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 Calgary - Environmental	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
ORP by Electrode	E125 Calgary - Environmental	Water	ASTM D1498 (mod)	Oxidation reduction potential is reported as the oxidation-reduction potential of the platinum metal-reference electrode employed, measured in mV. For high accuracy test results, it is recommended that this analysis be conducted in the field.
TSS by Gravimetry (Low Level)	E160-L Calgary - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 Calgary - Environmental	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC (Low Level)	E235.Cl-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Acidity by Titration	E283 Calgary - Environmental	Water	APHA 2310 B (mod)	Acidity is determined by potentiometric titration to pH endpoint of 8.3



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Alkalinity Species by Titration	E290 Calgary - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 Calgary - Environmental	Water	J. Environ. Monit., 2005, 7, 37-42 (mod)	Ammonia in water is analyzed by flow-injection analysis with fluorescence detection after reaction with orthophthaldialdehyde (OPA).
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 Calgary - Environmental	Water	APHA 4500-Norg D (mod)	Total Kjeldahl Nitrogen is determined using block digestion followed by flow-injection analysis with fluorescence detection.
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L Calgary - Environmental	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Dissolved Organic Carbon by Combustion (Low Level)	E358-L Calgary - Environmental	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U Calgary - Environmental	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U Calgary - Environmental	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Total Metals in Water by CRC ICPMS	E420 Vancouver - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L Vancouver - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS.
Dissolved Metals in Water by CRC ICPMS	E421 Vancouver - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L Vancouver - Environmental	Water	APHA 3030 B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L Vancouver - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAFS.
Dissolved Mercury in Water by CVAAS	E509 Vancouver - Environmental	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
Dissolved Hardness (Calculated)	EC100 Vancouver - Environmental	Water	APHA 2340B	"Hardness (as CaCO ₃), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Ion Balance using Dissolved Metals	EC101 Calgary - Environmental	Water	APHA 1030E	Cation Sum, Anion Sum, and Ion Balance are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present. Ion Balance cannot be calculated accurately for waters with very low electrical conductivity (EC).

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 Calgary - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 Calgary - Environmental	Water	APHA 4500-Norg D (mod)	Samples are digested using block digestion with Copper Sulfate Digestion Reagent.
Preparation for Total Organic Carbon by Combustion	EP355 Calgary - Environmental	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon for Combustion	EP358 Calgary - Environmental	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Phosphorus in water	EP372 Calgary - Environmental	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Dissolved Metals Water Filtration	EP421 Vancouver - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO ₃ .
Dissolved Mercury Water Filtration	EP509	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.

Page : 13 of 13
Work Order : CG2204613
Client : Teck Coal Limited
Project : ELKVIEW OPERATIONS



<i>Preparation Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
	Vancouver - Environmental			



QUALITY CONTROL REPORT

Work Order : CG2204613

Page : 1 of 18

Client : Teck Coal Limited
Contact : Mike Pope
Address : 421 PINE AVE
Sparwood BC Canada V0B 2G0
Telephone : ----
Project : ELKVIEW OPERATIONS
PO : VPO00816101
C-O-C number : EVO LAEMP_2022_APR_ALS
Sampler : AM
Site : ----
Quote number : Teck Coal Master Quote
No. of samples received : 1
No. of samples analysed : 1

Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
Calgary, Alberta Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 22-Apr-2022 10:20
Date Analysis Commenced : 22-Apr-2022
Issue Date : 05-May-2022 08:37

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
● Matrix Spike (MS) Report; Recovery and Acceptance Limits
● Reference Material (RM) Report; Recovery and Acceptance Limits
● Method Blank (MB) Report; Recovery and Acceptance Limits
● Laboratory Control Sample (LCS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Table with 3 columns: Signatories, Position, Laboratory Department. Lists names like Anthony Calero, Dee Lee, Delson Resende, etc., along with their roles and departments.



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Services number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percentage Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test specific).

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 465480)											
CG2204521-005	Anonymous	turbidity	----	E121	0.10	NTU	404	395	2.35%	15%	----
Physical Tests (QC Lot: 467098)											
CG2204608-012	Anonymous	pH	----	E108	0.10	pH units	7.64	7.65	0.131%	4%	----
Physical Tests (QC Lot: 467099)											
CG2204608-012	Anonymous	conductivity	----	E100	2.0	µS/cm	1940	1930	0.413%	10%	----
Physical Tests (QC Lot: 467100)											
CG2204608-012	Anonymous	alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	493	487	1.24%	20%	----
		alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	493	487	1.24%	20%	----
Physical Tests (QC Lot: 467277)											
CG2204608-012	Anonymous	acidity (as CaCO3)	----	E283	10.0	mg/L	<10.0	<10.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 467512)											
CG2204611-005	Anonymous	solids, total dissolved [TDS]	----	E162	20	mg/L	1620	1650	1.56%	20%	----
Physical Tests (QC Lot: 468553)											
CG2204609-001	Anonymous	oxidation-reduction potential [ORP]	----	E125	0.10	mV	480	475	0.901%	15%	----
Anions and Nutrients (QC Lot: 465596)											
CG2204609-008	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 465603)											
CG2204609-005	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0200	mg/L	0.570	0.581	1.94%	20%	----
Anions and Nutrients (QC Lot: 465605)											
CG2204609-005	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.125	mg/L	3.64	3.51	3.64%	20%	----
Anions and Nutrients (QC Lot: 466217)											
CG2204613-001	EV_BRD_LOT2_WS_LAE MP_EVO_2022-04-21_NP	sulfate (as SO4)	14808-79-8	E235.SO4	1.50	mg/L	985	973	1.19%	20%	----
Anions and Nutrients (QC Lot: 466218)											
CG2204613-001	EV_BRD_LOT2_WS_LAE MP_EVO_2022-04-21_NP	bromide	24959-67-9	E235.Br-L	0.250	mg/L	<0.250	<0.250	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 466219)											
CG2204613-001	EV_BRD_LOT2_WS_LAE MP_EVO_2022-04-21_NP	chloride	16887-00-6	E235.Cl-L	0.50	mg/L	17.5	17.1	2.23%	20%	----
Anions and Nutrients (QC Lot: 466220)											



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 466220) - continued											
CG2204613-001	EV_BRD_LOT2_WS_LAE MP_EVO_2022-04-21_NP	nitrate (as N)	14797-55-8	E235.NO3-L	0.0250	mg/L	20.2	20.0	1.02%	20%	----
Anions and Nutrients (QC Lot: 466221)											
CG2204613-001	EV_BRD_LOT2_WS_LAE MP_EVO_2022-04-21_NP	nitrite (as N)	14797-65-0	E235.NO2-L	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 466222)											
CG2204613-001	EV_BRD_LOT2_WS_LAE MP_EVO_2022-04-21_NP	fluoride	16984-48-8	E235.F	0.100	mg/L	0.228	0.228	0.00008	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 468365)											
CG2204611-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	0.230	0.298	0.069	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 465507)											
CG2204609-001	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	1.53	1.44	0.09	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 465508)											
CG2204609-001	Anonymous	carbon, total organic [TOC]	----	E355-L	0.50	mg/L	1.45	1.44	0.005	Diff <2x LOR	----
Total Metals (QC Lot: 471542)											
CG2204572-001	Anonymous	aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0056	0.0038	0.0018	Diff <2x LOR	----
		antimony, total	7440-36-0	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		arsenic, total	7440-38-2	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		barium, total	7440-39-3	E420	0.00010	mg/L	0.139	0.138	1.17%	20%	----
		beryllium, total	7440-41-7	E420	0.020	mg/L	<0.020 µg/L	<0.000020	0	Diff <2x LOR	----
		bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, total	7440-42-8	E420	0.010	mg/L	0.026	0.027	0.0005	Diff <2x LOR	----
		cadmium, total	7440-43-9	E420	0.0050	mg/L	0.0365 µg/L	0.0000328	0.0000037	Diff <2x LOR	----
		calcium, total	7440-70-2	E420	0.050	mg/L	92.0	93.3	1.45%	20%	----
		cobalt, total	7440-48-4	E420	0.10	mg/L	<0.10 µg/L	0.00021	0.00011	Diff <2x LOR	----
		copper, total	7440-50-8	E420	0.00050	mg/L	0.0282	0.0290	2.91%	20%	----
		iron, total	7439-89-6	E420	0.010	mg/L	0.122	0.133	8.66%	20%	----
		lead, total	7439-92-1	E420	0.000050	mg/L	0.000192	0.000193	0.000001	Diff <2x LOR	----
		lithium, total	7439-93-2	E420	0.0010	mg/L	0.0165	0.0169	2.34%	20%	----
		magnesium, total	7439-95-4	E420	0.0050	mg/L	24.2	24.9	2.73%	20%	----
		manganese, total	7439-96-5	E420	0.00010	mg/L	0.00552	0.00551	0.258%	20%	----
		molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.000847	0.000857	1.23%	20%	----
		nickel, total	7440-02-0	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		potassium, total	7440-09-7	E420	0.050	mg/L	1.47	1.51	2.76%	20%	----
		selenium, total	7782-49-2	E420	0.050	mg/L	3.85 µg/L	0.00402	4.20%	20%	----
		silicon, total	7440-21-3	E420	0.10	mg/L	4.06	4.18	2.94%	20%	----
		silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (QC Lot: 471542) - continued											
CG2204572-001	Anonymous	sodium, total	7440-23-5	E420	0.050	mg/L	20.5	20.6	0.340%	20%	----
		strontium, total	7440-24-6	E420	0.00020	mg/L	0.409	0.422	3.08%	20%	----
		sulfur, total	7704-34-9	E420	0.50	mg/L	20.0	20.8	3.94%	20%	----
		thallium, total	7440-28-0	E420	0.000010	mg/L	0.000014	0.000013	0.0000003	Diff <2x LOR	----
		tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		uranium, total	7440-61-1	E420	0.000010	mg/L	0.000632	0.000673	6.15%	20%	----
		vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		zinc, total	7440-66-6	E420	0.0030	mg/L	0.0064	0.0070	0.0006	Diff <2x LOR	----
Total Metals (QC Lot: 471543)											
CG2204572-001	Anonymous	chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	0.00020	0.00020	0.000004	Diff <2x LOR	----
Total Metals (QC Lot: 472081)											
CG2204611-001	Anonymous	mercury, total	7439-97-6	E508-L	0.00050	ng/L	0.00070 µg/L	1.58	0.89	Diff <2x LOR	----
Dissolved Metals (QC Lot: 468816)											
CG2204608-007	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 472806)											
CG2204608-007	Anonymous	aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00026	0.00025	0.00001	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00057	0.00056	0.00001	Diff <2x LOR	----
		barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.00966	0.00918	5.13%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.020	mg/L	<0.020 µg/L	<0.000020	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.010	mg/L	0.029	0.028	0.0006	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E421	0.0050	mg/L	0.218 µg/L	0.000220	1.23%	20%	----
		calcium, dissolved	7440-70-2	E421	0.050	mg/L	269	260	3.47%	20%	----
		cobalt, dissolved	7440-48-4	E421	0.10	mg/L	8.43 µg/L	0.00844	0.165%	20%	----
		copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		iron, dissolved	7439-89-6	E421	0.010	mg/L	0.042	0.041	0.0006	Diff <2x LOR	----
		lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0670	0.0677	0.980%	20%	----
		magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	153	149	2.59%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.270	0.267	1.07%	20%	----
		molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00413	0.00400	3.32%	20%	----
		nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.0371	0.0367	1.23%	20%	----
		potassium, dissolved	7440-09-7	E421	0.050	mg/L	4.65	4.61	0.766%	20%	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 472806) - continued											
CG2204608-007	Anonymous	selenium, dissolved	7782-49-2	E421	0.050	mg/L	4.27 µg/L	0.00455	6.38%	20%	----
		silicon, dissolved	7440-21-3	E421	0.050	mg/L	2.72	2.73	0.292%	20%	----
		silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E421	0.050	mg/L	5.80	5.70	1.71%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.407	0.405	0.603%	20%	----
		sulfur, dissolved	7704-34-9	E421	0.50	mg/L	270	271	0.280%	20%	----
		thallium, dissolved	7440-28-0	E421	0.000010	mg/L	0.000085	0.000083	0.00002	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.0113	0.0111	2.08%	20%	----
		vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0144	0.0144	0.443%	20%	----
Dissolved Metals (QC Lot: 472807)											
CG2204608-007	Anonymous	chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 465480)						
turbidity	----	E121	0.1	NTU	<0.10	----
Physical Tests (QCLot: 467099)						
conductivity	----	E100	1	µS/cm	<1.0	----
Physical Tests (QCLot: 467100)						
alkalinity, bicarbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, carbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, hydroxide (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 467277)						
acidity (as CaCO3)	----	E283	2	mg/L	<2.0	----
Physical Tests (QCLot: 467504)						
solids, total suspended [TSS]	----	E160-L	1	mg/L	<1.0	----
Physical Tests (QCLot: 467512)						
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Anions and Nutrients (QCLot: 465596)						
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 465603)						
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 465605)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 466217)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 466218)						
bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 466219)						
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	----
Anions and Nutrients (QCLot: 466220)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 466221)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 466222)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 468365)						



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 468365) - continued						
Kjeldahl nitrogen, total [TKN]	---	E318	0.05	mg/L	<0.050	---
Organic / Inorganic Carbon (QCLot: 465507)						
carbon, dissolved organic [DOC]	---	E358-L	0.5	mg/L	<0.50	---
Organic / Inorganic Carbon (QCLot: 465508)						
carbon, total organic [TOC]	---	E355-L	0.5	mg/L	<0.50	---
Total Metals (QCLot: 471542)						
aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	---
antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	---
arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	---
barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	---
beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	---
bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	---
boron, total	7440-42-8	E420	0.01	mg/L	<0.010	---
cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	---
calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	---
cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	---
copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	---
iron, total	7439-89-6	E420	0.01	mg/L	<0.010	---
lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	---
lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	---
magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	---
manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	---
molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	---
nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	---
potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	---
selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	---
silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	---
silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	---
sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	---
strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	---
sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	---
thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	---
tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	---
titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	---
uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	---
vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	---



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 471542) - continued						
zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	---
Total Metals (QCLot: 471543)						
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	<0.00010	---
Total Metals (QCLot: 472081)						
mercury, total	7439-97-6	E508-L	0.5	ng/L	<0.50	---
Dissolved Metals (QCLot: 468816)						
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	---
Dissolved Metals (QCLot: 472806)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	---
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	---
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	---
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	---
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	---
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	---
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	---
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	---
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	---
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	---
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	---
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	---
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	---
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	---
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	---
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	---
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	---
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	---
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	---
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	---
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	---
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	---
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	---
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	---
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	---
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	---
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	---
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	---

Page : 10 of 18
Work Order : CG2204613
Client : Teck Coal Limited
Project : ELKVIEW OPERATIONS



Sub-Matrix: **Water**

<i>Analyte</i>	<i>CAS Number</i>	<i>Method</i>	<i>LOR</i>	<i>Unit</i>	<i>Result</i>	<i>Qualifier</i>
Dissolved Metals (QCLot: 472806) - continued						
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
Dissolved Metals (QCLot: 472807)						
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	<0.00010	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Physical Tests (QCLot: 465480)									
turbidity	---	E121	0.1	NTU	200 NTU	101	85.0	115	---
Physical Tests (QCLot: 467098)									
pH	---	E108	---	pH units	7 pH units	101	98.6	101	---
Physical Tests (QCLot: 467099)									
conductivity	---	E100	1	µS/cm	146.9 µS/cm	94.9	90.0	110	---
Physical Tests (QCLot: 467100)									
alkalinity, total (as CaCO3)	---	E290	1	mg/L	500 mg/L	106	85.0	115	---
Physical Tests (QCLot: 467277)									
acidity (as CaCO3)	---	E283	2	mg/L	50 mg/L	102	85.0	115	---
Physical Tests (QCLot: 467504)									
solids, total suspended [TSS]	---	E160-L	1	mg/L	150 mg/L	96.9	85.0	115	---
Physical Tests (QCLot: 467512)									
solids, total dissolved [TDS]	---	E162	10	mg/L	1000 mg/L	99.0	85.0	115	---
Physical Tests (QCLot: 468553)									
oxidation-reduction potential [ORP]	---	E125	---	mV	220 mV	98.0	95.4	104	---
Anions and Nutrients (QCLot: 465596)									
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.02 mg/L	96.8	80.0	120	---
Anions and Nutrients (QCLot: 465603)									
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	8.02 mg/L	101	80.0	120	---
Anions and Nutrients (QCLot: 465605)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	110	85.0	115	---
Anions and Nutrients (QCLot: 466217)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	102	90.0	110	---
Anions and Nutrients (QCLot: 466218)									
bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	94.0	85.0	115	---
Anions and Nutrients (QCLot: 466219)									
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	102	90.0	110	---
Anions and Nutrients (QCLot: 466220)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	107	90.0	110	---
Anions and Nutrients (QCLot: 466221)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	95.7	90.0	110	---
Anions and Nutrients (QCLot: 466222)									



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Anions and Nutrients (QCLot: 466222) - continued									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	99.9	90.0	110	----
Anions and Nutrients (QCLot: 468365)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	84.2	75.0	125	----
Organic / Inorganic Carbon (QCLot: 465507)									
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	104	80.0	120	----
Organic / Inorganic Carbon (QCLot: 465508)									
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	102	80.0	120	----
Total Metals (QCLot: 471542)									
aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	107	80.0	120	----
antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	108	80.0	120	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	104	80.0	120	----
barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	102	80.0	120	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	102	80.0	120	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	102	80.0	120	----
boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	97.6	80.0	120	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	103	80.0	120	----
calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	99.2	80.0	120	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	101	80.0	120	----
copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	103	80.0	120	----
iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	102	80.0	120	----
lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	102	80.0	120	----
lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	102	80.0	120	----
magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	98.7	80.0	120	----
manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	103	80.0	120	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	104	80.0	120	----
nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	103	80.0	120	----
potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	105	80.0	120	----
selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	107	80.0	120	----
silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	101	80.0	120	----
silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	95.8	80.0	120	----
sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	107	80.0	120	----
strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	99.4	80.0	120	----
sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	99.0	80.0	120	----
thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	105	80.0	120	----
tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	102	80.0	120	----



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 471542) - continued									
titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	94.8	80.0	120	----
uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	103	80.0	120	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	102	80.0	120	----
zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	108	80.0	120	----
Total Metals (QCLot: 471543)									
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	0.25 mg/L	102	80.0	120	----
Total Metals (QCLot: 472081)									
mercury, total	7439-97-6	E508-L	0.5	ng/L	5 ng/L	105	80.0	120	----
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	101	80.0	120	----
Dissolved Metals (QCLot: 472806)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	101	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	103	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	97.2	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	92.0	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	98.6	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	106	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	98.3	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	95.2	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	97.5	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	97.4	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	96.3	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	113	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	103	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	97.0	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	90.5	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	97.6	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	102	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	97.0	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	98.3	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	102	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	103	80.0	120	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	94.2	80.0	120	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	102	80.0	120	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	102	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	91.9	80.0	120	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	106	80.0	120	----



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 472806) - continued									
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	96.5	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	98.3	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	109	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	94.3	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	100	80.0	120	----
Dissolved Metals (QCLot: 472807)									
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	0.25 mg/L	97.2	80.0	120	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 465596)										
CG2204611-001	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0502 mg/L	0.05 mg/L	100	70.0	130	----
Anions and Nutrients (QCLot: 465603)										
CG2204609-006	Anonymous	phosphorus, total	7723-14-0	E372-U	ND mg/L	0.0676 mg/L	ND	70.0	130	----
Anions and Nutrients (QCLot: 465605)										
CG2204609-006	Anonymous	ammonia, total (as N)	7664-41-7	E298	ND mg/L	0.1 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 466217)										
CG2204618-001	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	ND mg/L	100 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 466218)										
CG2204618-001	Anonymous	bromide	24959-67-9	E235.Br-L	0.561 mg/L	0.5 mg/L	112	75.0	125	----
Anions and Nutrients (QCLot: 466219)										
CG2204618-001	Anonymous	chloride	16887-00-6	E235.Cl-L	96.6 mg/L	100 mg/L	96.6	75.0	125	----
Anions and Nutrients (QCLot: 466220)										
CG2204618-001	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	ND mg/L	2.5 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 466221)										
CG2204618-001	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.488 mg/L	0.5 mg/L	97.5	75.0	125	----
Anions and Nutrients (QCLot: 466222)										
CG2204618-001	Anonymous	fluoride	16984-48-8	E235.F	0.910 mg/L	1 mg/L	91.0	75.0	125	----
Anions and Nutrients (QCLot: 468365)										
CG2204611-002	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.12 mg/L	2.5 mg/L	84.9	70.0	130	----
Organic / Inorganic Carbon (QCLot: 465507)										
CG2204609-001	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	4.98 mg/L	5 mg/L	99.7	70.0	130	----
Organic / Inorganic Carbon (QCLot: 465508)										
CG2204609-001	Anonymous	carbon, total organic [TOC]	----	E355-L	5.50 mg/L	5 mg/L	110	70.0	130	----
Total Metals (QCLot: 471542)										
CG2204611-001	Anonymous	aluminum, total	7429-90-5	E420	0.407 mg/L	0.4 mg/L	102	70.0	130	----
		antimony, total	7440-36-0	E420	0.0425 mg/L	0.04 mg/L	106	70.0	130	----
		arsenic, total	7440-38-2	E420	0.0408 mg/L	0.04 mg/L	102	70.0	130	----
		barium, total	7440-39-3	E420	ND mg/L	0.02 mg/L	ND	70.0	130	----



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 471542) - continued										
CG2204611-001	Anonymous	beryllium, total	7440-41-7	E420	0.0747 mg/L	0.08 mg/L	93.4	70.0	130	----
		bismuth, total	7440-69-9	E420	0.0184 mg/L	0.02 mg/L	91.8	70.0	130	----
		boron, total	7440-42-8	E420	0.194 mg/L	0.2 mg/L	96.8	70.0	130	----
		cadmium, total	7440-43-9	E420	0.00827 mg/L	0.008 mg/L	103	70.0	130	----
		calcium, total	7440-70-2	E420	ND mg/L	4 mg/L	ND	70.0	130	----
		cobalt, total	7440-48-4	E420	0.0388 mg/L	0.04 mg/L	96.9	70.0	130	----
		copper, total	7440-50-8	E420	0.0390 mg/L	0.04 mg/L	97.5	70.0	130	----
		iron, total	7439-89-6	E420	3.92 mg/L	4 mg/L	97.9	70.0	130	----
		lead, total	7439-92-1	E420	0.0382 mg/L	0.04 mg/L	95.4	70.0	130	----
		lithium, total	7439-93-2	E420	0.183 mg/L	0.2 mg/L	91.6	70.0	130	----
		magnesium, total	7439-95-4	E420	ND mg/L	1 mg/L	ND	70.0	130	----
		manganese, total	7439-96-5	E420	0.0394 mg/L	0.04 mg/L	98.5	70.0	130	----
		molybdenum, total	7439-98-7	E420	0.0432 mg/L	0.04 mg/L	108	70.0	130	----
		nickel, total	7440-02-0	E420	0.0777 mg/L	0.08 mg/L	97.1	70.0	130	----
		potassium, total	7440-09-7	E420	ND mg/L	4 mg/L	ND	70.0	130	----
		selenium, total	7782-49-2	E420	ND mg/L	0.04 mg/L	ND	70.0	130	----
		silicon, total	7440-21-3	E420	18.7 mg/L	20 mg/L	93.6	70.0	130	----
		silver, total	7440-22-4	E420	0.00837 mg/L	0.008 mg/L	104	70.0	130	----
		sodium, total	7440-23-5	E420	ND mg/L	2 mg/L	ND	70.0	130	----
		strontium, total	7440-24-6	E420	ND mg/L	0.02 mg/L	ND	70.0	130	----
		sulfur, total	7704-34-9	E420	ND mg/L	20 mg/L	ND	70.0	130	----
		thallium, total	7440-28-0	E420	0.00747 mg/L	0.008 mg/L	93.3	70.0	130	----
		tin, total	7440-31-5	E420	0.0421 mg/L	0.04 mg/L	105	70.0	130	----
		titanium, total	7440-32-6	E420	0.0789 mg/L	0.08 mg/L	98.6	70.0	130	----
		uranium, total	7440-61-1	E420	ND mg/L	0.004 mg/L	ND	70.0	130	----
		vanadium, total	7440-62-2	E420	0.205 mg/L	0.2 mg/L	102	70.0	130	----
		zinc, total	7440-66-6	E420	0.785 mg/L	0.8 mg/L	98.1	70.0	130	----
Total Metals (QCLot: 471543)										
CG2204611-001	Anonymous	chromium, total	7440-47-3	E420.Cr-L	0.0788 mg/L	0.08 mg/L	98.4	70.0	130	----
Total Metals (QCLot: 472081)										
CG2204611-003	Anonymous	mercury, total	7439-97-6	E508-L	5.67 ng/L	5 ng/L	113	70.0	130	----
Dissolved Metals (QCLot: 468816)										
CG2204608-008	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000960 mg/L	0.0001 mg/L	96.0	70.0	130	----
Dissolved Metals (QCLot: 472806)										
CG2204608-008	Anonymous	aluminum, dissolved	7429-90-5	E421	0.177 mg/L	0.2 mg/L	88.6	70.0	130	----



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 472806) - continued										
CG2204608-008	Anonymous	antimony, dissolved	7440-36-0	E421	0.0208 mg/L	0.02 mg/L	104	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.0188 mg/L	0.02 mg/L	94.2	70.0	130	----
		barium, dissolved	7440-39-3	E421	0.0167 mg/L	0.02 mg/L	83.6	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.0388 mg/L	0.04 mg/L	96.9	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.00893 mg/L	0.01 mg/L	89.3	70.0	130	----
		boron, dissolved	7440-42-8	E421	0.097 mg/L	0.1 mg/L	97.4	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.00354 mg/L	0.004 mg/L	88.5	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	4 mg/L	ND	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.0171 mg/L	0.02 mg/L	85.5	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.0169 mg/L	0.02 mg/L	84.7	70.0	130	----
		iron, dissolved	7439-89-6	E421	1.81 mg/L	2 mg/L	90.7	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.0194 mg/L	0.02 mg/L	97.3	70.0	130	----
		lithium, dissolved	7439-93-2	E421	0.0964 mg/L	0.1 mg/L	96.4	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	1 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.0210 mg/L	0.02 mg/L	105	70.0	130	----
		nickel, dissolved	7440-02-0	E421	ND mg/L	0.04 mg/L	ND	70.0	130	----
		potassium, dissolved	7440-09-7	E421	ND mg/L	4 mg/L	ND	70.0	130	----
		selenium, dissolved	7782-49-2	E421	0.0413 mg/L	0.04 mg/L	103	70.0	130	----
		silicon, dissolved	7440-21-3	E421	8.97 mg/L	10 mg/L	89.7	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.00390 mg/L	0.004 mg/L	97.6	70.0	130	----
		sodium, dissolved	7440-23-5	E421	ND mg/L	2 mg/L	ND	70.0	130	----
		strontium, dissolved	7440-24-6	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	ND mg/L	20 mg/L	ND	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.00398 mg/L	0.004 mg/L	99.6	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.0184 mg/L	0.02 mg/L	92.1	70.0	130	----
		titanium, dissolved	7440-32-6	E421	0.0316 mg/L	0.04 mg/L	79.1	70.0	130	----
		uranium, dissolved	7440-61-1	E421	ND mg/L	0.004 mg/L	ND	70.0	130	----
		vanadium, dissolved	7440-62-2	E421	0.0896 mg/L	0.1 mg/L	89.6	70.0	130	----
		zinc, dissolved	7440-66-6	E421	0.349 mg/L	0.4 mg/L	87.3	70.0	130	----
Dissolved Metals (QCLot: 472807)										
CG2204608-008	Anonymous	chromium, dissolved	7440-47-3	E421.Cr-L	0.0358 mg/L	0.04 mg/L	89.6	70.0	130	----



PROJECT INFORMATION Facility Name / Job# Elview Operations Project Manager Mike Pope Email mike.pope@teck.com Address 421 Pine Ave City Sparwood Postal Code V0B 2G0 Phone Number 250-425-8202		LAB INFORMATION Lab Name ALS Calgary Lab Contact Lyndyia Shvets Email lyndyia.shvets@alsglobal.com Address 2559 29 Street NE City Calgary Postal Code T1Y 7B5 Phone Number 403 407 1794		OTHER INFO Report Format / Distribution Excel PDF EDD Email 1: mike.pope@teck.com Email 2: lyndyia.shvets@alsglobal.com Email 3: tecklab@teck.com Email 4: audis.seal@teck.com Email 5: reporting@teck.com Email 6: 735260	
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Sample ID	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com P	# Of Cont.	TECKCOAL-ROUTINE-VA	ALS_Package-DOC	ALS_Package-TKN/TOC	HG-T-U-CVAF-VA	HG-D-CVAF-VA	TECKCOAL-MET-T-VA	TECKCOAL-MET-D-VA
EV_BRD_LOT2_WS_LAEMP_EVO_2022-04-21_NP	WS	No	21-Apr-22	12:30	G	7	X	X	X	X	X	X	X

ADDITIONAL COMMENTS/INSTRUCTIONS

REINQUISHED/RECALIBRATION

DATE/TIME

DATE/TIME

DATE/TIME

DATE/TIME

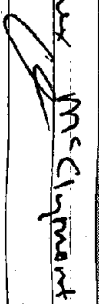
All samples field filtered and preserved

Alex McCliment

MLL

4/22/22

10:20

Regular (default) X Priority (2-3 business days) - 50% surcharge Urgency (1 Business Day) - 100% surcharge < 1 Day, ASAP or Weekend - Contact ALS	Sampler's Name Alex McCliment	Mobile # 780-293-6450
	Sampler's Signature 	Date/Time 20 Apr 22

Environmental Division
 Calgary
 Work Order Reference
CG2204613



Telephone : +1 403 407 1800

3C



CERTIFICATE OF ANALYSIS

Work Order : **CG2204866**
Client : **Teck Coal Limited**
Contact : Mike Pope
Address : RR#1 HWY#3
Sparwood BC Canada V0B 2G1
Telephone : ----
Project : REGIONAL EFFECTS PROGRAM
PO : VPO00816101
C-O-C number : April EVO LAEMP 2022
Sampler : AM
Site : ----
Quote number : Teck Coal Master Quote
No. of samples received : 8
No. of samples analysed : 8

Page : 1 of 10
Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
Calgary AB Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 27-Apr-2022 10:10
Date Analysis Commenced : 28-Apr-2022
Issue Date : 11-May-2022 17:01

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Anthony Calero	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Caleb Deroche	Lab Analyst	Metals, Burnaby, British Columbia
Elke Tabora		Inorganics, Calgary, Alberta
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Kim Jensen	Department Manager - Metals	Metals, Burnaby, British Columbia
Kyle Chang	Lab Assistant	Metals, Burnaby, British Columbia
Oscar Ruiz	Lab Assistant	Inorganics, Calgary, Alberta
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Ruifang Zheng	Analyst	Inorganics, Calgary, Alberta
Sara Niroomand		Inorganics, Calgary, Alberta
Shaneel Dayal	Analyst	Metals, Burnaby, British Columbia



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
 LOR: Limit of Reporting (detection limit).

<i>Unit</i>	<i>Description</i>
-	No Unit
%	percent
µg/L	micrograms per litre
µS/cm	Microsiemens per centimetre
meq/L	milliequivalents per litre
mg/L	milligrams per litre
mV	millivolts
NTU	nephelometric turbidity units
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

<i>Qualifier</i>	<i>Description</i>
DLDS	Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
DTC	Dissolved concentration exceeds total. Results were confirmed by re-analysis.
TKNI	TKN result may be biased low due to Nitrate interference. Nitrate-N is > 10x TKN.



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_MIDER_WS _LAEMP_EVO_ 2022-04_NP	RG_TRIP_WS_L AEMP_EVO_20 22-04_NP	RG_MI3_WS_L AEMP_EVO_20 22-04_NP	RG_FBLANK_W S_LAEMP_EVO _2022-03_NP	RG_MIDBO_WS _LAEMP_EVO_ 2022-04_NP
Client sampling date / time					25-Apr-2022 11:30	25-Apr-2022 14:00	25-Apr-2022 09:00	25-Apr-2022 14:00	25-Apr-2022 14:00	
Analyte	CAS Number	Method	LOR	Unit	CG2204866-001 Result	CG2204866-002 Result	CG2204866-003 Result	CG2204866-004 Result	CG2204866-005 Result	
Physical Tests										
acidity (as CaCO3)	----	E283	2.0	mg/L	<2.0	<2.0	<2.0	<2.0	<2.0	
alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	148	<1.0	133	<1.0	158	
alkalinity, bicarbonate (as HCO3)	71-52-3	E290	1.0	mg/L	181	<1.0	162	<1.0	193	
alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	3.4	<1.0	2.8	<1.0	8.0	
alkalinity, carbonate (as CO3)	3812-32-6	E290	1.0	mg/L	2.0	<1.0	1.7	<1.0	4.8	
alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
alkalinity, hydroxide (as OH)	14280-30-9	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	152	<1.0	136	<1.0	166	
conductivity	----	E100	2.0	µS/cm	359	<2.0	356	<2.0	498	
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	202	<0.50	186	<0.50	267	
oxidation-reduction potential [ORP]	----	E125	0.10	mV	500	495	467	530	456	
pH	----	E108	0.10	pH units	8.34	5.57	8.31	5.67	8.41	
solids, total dissolved [TDS]	----	E162	10	mg/L	246	<10	216	<10	332	
solids, total suspended [TSS]	----	E160-L	1.0	mg/L	4.1	<1.0	7.5	<1.0	5.0	
turbidity	----	E121	0.10	NTU	1.83	<0.10	1.92	<0.10	3.51	
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	0.0054	
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	1.46	<0.10	1.49	<0.10	2.30	
fluoride	16984-48-8	E235.F	0.020	mg/L	0.101	<0.020	0.096	<0.020	0.124	
Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	0.129	<0.050	0.197	<0.050	0.352	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.0635	<0.0050	0.0890	<0.0050	1.04	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	<0.0010	0.0013	<0.0010	0.0017	
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0024	<0.0010	<0.0010	<0.0010	<0.0010	
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0065	<0.0020	0.0085	<0.0020	0.0070	
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	49.7	<0.30	58.3	<0.30	111	
Organic / Inorganic Carbon										
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	2.45	<0.50	2.63	<0.50	2.09	
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	2.34	<0.50	2.59	<0.50	1.99	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_MIDER_WS _LAEMP_EVO_ 2022-04_NP	RG_TRIP_WS_L AEMP_EVO_20 22-04_NP	RG_MI3_WS_L AEMP_EVO_20 22-04_NP	RG_FBLANK_W S_LAEMP_EVO _2022-03_NP	RG_MIDBO_WS _LAEMP_EVO_ 2022-04_NP
Client sampling date / time					25-Apr-2022 11:30	25-Apr-2022 14:00	25-Apr-2022 09:00	25-Apr-2022 14:00	25-Apr-2022 14:00	
Analyte	CAS Number	Method	LOR	Unit	CG2204866-001	CG2204866-002	CG2204866-003	CG2204866-004	CG2204866-005	
					Result	Result	Result	Result	Result	
Ion Balance										
anion sum	----	EC101	0.10	meq/L	4.12	<0.10	3.98	<0.10	5.77	
cation sum	----	EC101	0.10	meq/L	4.25	<0.10	3.93	<0.10	5.54	
ion balance (cations/anions)	----	EC101	0.010	%	103	100	98.7	100	96.0	
ion balance (APHA)	----	EC101	0.010	%	1.55	<0.010	0.632	<0.010	2.03	
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0491	<0.0030	0.0875	<0.0030	0.0434	
antimony, total	7440-36-0	E420	0.00010	mg/L	<0.00010	<0.00010	0.00011	<0.00010	0.00012	
arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00018	<0.00010	0.00022	<0.00010	0.00017	
barium, total	7440-39-3	E420	0.00010	mg/L	0.105	<0.00010	0.113	<0.00010	0.109	
beryllium, total	7440-41-7	E420	0.020	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	
bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
boron, total	7440-42-8	E420	0.010	mg/L	<0.010	<0.010	0.011	<0.010	0.012	
cadmium, total	7440-43-9	E420	0.0050	µg/L	0.0263	<0.0050	0.0300	<0.0050	0.0299	
calcium, total	7440-70-2	E420	0.050	mg/L	50.1	<0.050	50.1	<0.050	66.9	
chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	0.00015	<0.00010	0.00019	<0.00010	0.00016	
cobalt, total	7440-48-4	E420	0.10	µg/L	<0.10	<0.10	<0.10	<0.10	<0.10	
copper, total	7440-50-8	E420	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
iron, total	7439-89-6	E420	0.010	mg/L	0.049	<0.010	0.085	<0.010	0.046	
lead, total	7439-92-1	E420	0.000050	mg/L	<0.000050	<0.000050	0.000067	<0.000050	<0.000050	
lithium, total	7439-93-2	E420	0.0010	mg/L	0.0057	<0.0010	0.0060	<0.0010	0.0100	
magnesium, total	7439-95-4	E420	0.0050	mg/L	16.2	<0.0050	16.6	<0.0050	27.7	
manganese, total	7439-96-5	E420	0.00010	mg/L	0.00161	<0.00010	0.00216	<0.00010	0.00255	
mercury, total	7439-97-6	E508-L	0.00050	µg/L	----	<0.00050	0.00125	<0.00050	----	
molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.000772	0.000120	0.000742	<0.000050	0.00113	
nickel, total	7440-02-0	E420	0.00050	mg/L	0.00058	<0.00050	0.00079	<0.00050	0.00144	
potassium, total	7440-09-7	E420	0.050	mg/L	0.646	<0.050	0.806	<0.050	0.889	
selenium, total	7782-49-2	E420	0.050	µg/L	1.76	<0.050	1.74	<0.050	12.4	
silicon, total	7440-21-3	E420	0.10	mg/L	1.91	<0.10	1.84	<0.10	1.95	
silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
sodium, total	7440-23-5	E420	0.050	mg/L	4.20	<0.050	4.70	<0.050	4.03	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_MIDER_WS _LAEMP_EVO_ 2022-04_NP	RG_TRIP_WS_L AEMP_EVO_20 22-04_NP	RG_MI3_WS_L AEMP_EVO_20 22-04_NP	RG_FBLANK_W S_LAEMP_EVO _2022-03_NP	RG_MIDBO_WS _LAEMP_EVO_ 2022-04_NP
Client sampling date / time					25-Apr-2022 11:30	25-Apr-2022 14:00	25-Apr-2022 09:00	25-Apr-2022 14:00	25-Apr-2022 14:00	
Analyte	CAS Number	Method	LOR	Unit	CG2204866-001 Result	CG2204866-002 Result	CG2204866-003 Result	CG2204866-004 Result	CG2204866-005 Result	
Total Metals										
strontium, total	7440-24-6	E420	0.00020	mg/L	0.158	<0.00020	0.162	<0.00020	0.173	
sulfur, total	7704-34-9	E420	0.50	mg/L	17.8	<0.50	19.3	<0.50	36.0	
thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00090 ^{DLM}	<0.00030	0.00131	<0.00030	<0.00090 ^{DLM}	
uranium, total	7440-61-1	E420	0.000010	mg/L	0.000718	<0.000010	0.000700	<0.000010	0.00130	
vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	<0.00050	0.00051	<0.00050	<0.00050	
zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	<0.0030	0.0142	<0.0030	<0.0030	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0020	<0.0010	0.0037	<0.0010	0.0026	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00011	<0.00010	<0.00010	<0.00010	0.00012	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00017	<0.00010	0.00018	<0.00010	0.00015	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.112	<0.00010	0.110	<0.00010	0.107	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	0.010	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.0245	<0.0050	0.0197	<0.0050	0.0228	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	52.4	<0.050	48.0	<0.050	63.0	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	<0.10	<0.10	<0.10	<0.10	<0.10	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00042	<0.00020	0.00052	<0.00020	0.00033	
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0060	<0.0010	0.0057	<0.0010	0.0098	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	17.2	<0.0050	16.1	<0.0050	26.7	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00072	<0.00010	0.00080	<0.00010	0.00154	
mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.000662	<0.000050	0.000692	<0.000050	0.00118	
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00051	<0.00050	0.00060	<0.00050	0.00132	
potassium, dissolved	7440-09-7	E421	0.050	mg/L	0.803	<0.050	0.735	<0.050	0.893	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_MIDER_WS _LAEMP_EVO_ 2022-04_NP	RG_TRIP_WS_L AEMP_EVO_20 22-04_NP	RG_MI3_WS_L AEMP_EVO_20 22-04_NP	RG_FBLANK_W S_LAEMP_EVO _2022-03_NP	RG_MIDBO_WS _LAEMP_EVO_ 2022-04_NP
Client sampling date / time					25-Apr-2022 11:30	25-Apr-2022 14:00	25-Apr-2022 09:00	25-Apr-2022 14:00	25-Apr-2022 14:00	
Analyte	CAS Number	Method	LOR	Unit	CG2204866-001	CG2204866-002	CG2204866-003	CG2204866-004	CG2204866-005	
					Result	Result	Result	Result	Result	
Dissolved Metals										
selenium, dissolved	7782-49-2	E421	0.050	µg/L	1.65	<0.050	1.79	<0.050	13.2	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	1.70	<0.050	1.58	<0.050	1.82	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	4.52	<0.050	4.43	<0.050	4.15	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.164	<0.00020	0.162	<0.00020	0.168	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	16.0	<0.50	18.4	<0.50	34.4	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.000622	<0.000010	0.000681	<0.000010	0.00123	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0011	<0.0010	0.0020	<0.0010	0.0021	
dissolved mercury filtration location	----	EP509	-	-	Field	Field	Field	Field	Field	
dissolved metals filtration location	----	EP421	-	-	Field	Field	Field	Field	Field	

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_MIDGA_WS _LAEMP_EVO_ 2022-04_NP	RG_ERCKUT_W S_LAEMP_EVO_ 2022-04_NP	RG_ERCKMD_ WS_LAEMP_EV O_2022-04_NP	----	----
Client sampling date / time					25-Apr-2022 11:30	26-Apr-2022 11:00	26-Apr-2022 14:00	----	----	
Analyte	CAS Number	Method	LOR	Unit	CG2204866-006 Result	CG2204866-007 Result	CG2204866-008 Result	----- ----	----- ----	
Physical Tests										
acidity (as CaCO3)	----	E283	2.0	mg/L	<2.0	17.7	6.7	----	----	
alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	171	448	426	----	----	
alkalinity, bicarbonate (as HCO3)	71-52-3	E290	1.0	mg/L	209	547	519	----	----	
alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	8.6	<1.0	<1.0	----	----	
alkalinity, carbonate (as CO3)	3812-32-6	E290	1.0	mg/L	5.2	<1.0	<1.0	----	----	
alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	<1.0	----	----	
alkalinity, hydroxide (as OH)	14280-30-9	E290	1.0	mg/L	<1.0	<1.0	<1.0	----	----	
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	180	448	426	----	----	
conductivity	----	E100	2.0	µS/cm	666	1970	1890	----	----	
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	371	1340	1250	----	----	
oxidation-reduction potential [ORP]	----	E125	0.10	mV	451	422	406	----	----	
pH	----	E108	0.10	pH units	8.41	8.20	8.26	----	----	
solids, total dissolved [TDS]	----	E162	10	mg/L	459	1610	1570	----	----	
solids, total suspended [TSS]	----	E160-L	1.0	mg/L	5.7	1.5	<1.0	----	----	
turbidity	----	E121	0.10	NTU	1.29	0.17	0.17	----	----	
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0182	<0.0050	<0.0050	----	----	
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	<0.250 ^{DLDS}	<0.250 ^{DLDS}	----	----	
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	3.09	6.78	5.40	----	----	
fluoride	16984-48-8	E235.F	0.020	mg/L	0.130	<0.100 ^{DLDS}	<0.100 ^{DLDS}	----	----	
Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	0.297	0.480 ^{TKNI}	0.123	----	----	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	2.02	17.6	15.6	----	----	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	0.0032	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	----	----	
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0017	0.0237	0.0174	----	----	
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0074	0.0275	0.0184 ^{DLM}	----	----	
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	191	848	747	----	----	
Organic / Inorganic Carbon										
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	1.99	0.98	1.02	----	----	
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	1.89	1.01	1.11	----	----	
Ion Balance										



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_MIDGA_WS _LAEMP_EVO_ 2022-04_NP	RG_ERCKUT_W S_LAEMP_EVO_ 2022-04_NP	RG_ERCKMD_ WS_LAEMP_EV O_2022-04_NP	----	----
Client sampling date / time					25-Apr-2022 11:30	26-Apr-2022 11:00	26-Apr-2022 14:00	----	----	
Analyte	CAS Number	Method	LOR	Unit	CG2204866-006	CG2204866-007	CG2204866-008	-----	-----	
					Result	Result	Result	----	----	
Ion Balance										
anion sum	----	EC101	0.10	meq/L	7.81	28.0	25.3	----	----	
cation sum	----	EC101	0.10	meq/L	7.62	27.0	25.2	----	----	
ion balance (cations/anions)	----	EC101	0.010	%	97.6	96.4	99.6	----	----	
ion balance (APHA)	----	EC101	0.010	%	1.23	1.82	0.198	----	----	
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0365	0.0058	<0.0030	----	----	
antimony, total	7440-36-0	E420	0.00010	mg/L	0.00018	0.00028	0.00022	----	----	
arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00022	0.00022	0.00027	----	----	
barium, total	7440-39-3	E420	0.00010	mg/L	0.138	0.0620	0.0627	----	----	
beryllium, total	7440-41-7	E420	0.020	µg/L	<0.020	<0.020	<0.020	----	----	
bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	<0.000050	----	----	
boron, total	7440-42-8	E420	0.010	mg/L	0.014	0.013	0.013	----	----	
cadmium, total	7440-43-9	E420	0.0050	µg/L	0.0414	0.100	0.0879	----	----	
calcium, total	7440-70-2	E420	0.050	mg/L	83.9	256	255	----	----	
chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	0.00016	0.00018	0.00018	----	----	
cobalt, total	7440-48-4	E420	0.10	µg/L	<0.10	<0.10	<0.10	----	----	
copper, total	7440-50-8	E420	0.00050	mg/L	<0.00050	<0.00050	<0.00050	----	----	
iron, total	7439-89-6	E420	0.010	mg/L	0.060	0.011	<0.010	----	----	
lead, total	7439-92-1	E420	0.000050	mg/L	<0.000050	<0.000050	<0.000050	----	----	
lithium, total	7439-93-2	E420	0.0010	mg/L	0.0192	0.0290	0.0282	----	----	
magnesium, total	7439-95-4	E420	0.0050	mg/L	44.0	155	158	----	----	
manganese, total	7439-96-5	E420	0.00010	mg/L	0.00316	0.00064	0.00076	----	----	
mercury, total	7439-97-6	E508-L	0.00050	µg/L	----	----	<0.00050	----	----	
molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.00222	0.00106	0.00114	----	----	
nickel, total	7440-02-0	E420	0.00050	mg/L	0.00352	0.00090	0.00187	----	----	
potassium, total	7440-09-7	E420	0.050	mg/L	1.29	2.72	2.74	----	----	
selenium, total	7782-49-2	E420	0.050	µg/L	24.9	172	174	----	----	
silicon, total	7440-21-3	E420	0.10	mg/L	2.07	3.74	3.81	----	----	
silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	<0.000010	----	----	
sodium, total	7440-23-5	E420	0.050	mg/L	4.34	3.22	3.49	----	----	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_MIDGA_WS _LAEMP_EVO_ 2022-04_NP	RG_ERCKUT_W S_LAEMP_EVO_ 2022-04_NP	RG_ERCKMD_ WS_LAEMP_EV O_2022-04_NP	----	----
Client sampling date / time					25-Apr-2022 11:30	26-Apr-2022 11:00	26-Apr-2022 14:00	----	----	
Analyte	CAS Number	Method	LOR	Unit	CG2204866-006	CG2204866-007	CG2204866-008	-----	-----	
					Result	Result	Result	----	----	
Total Metals										
strontium, total	7440-24-6	E420	0.00020	mg/L	0.217	0.223	0.230	----	----	
sulfur, total	7704-34-9	E420	0.50	mg/L	64.6	274	273	----	----	
thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	<0.000010	----	----	
tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	<0.00010	----	----	
titanium, total	7440-32-6	E420	0.00030	mg/L	0.00061	<0.00030	<0.00030	----	----	
uranium, total	7440-61-1	E420	0.000010	mg/L	0.00215	0.00788	0.00836	----	----	
vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	<0.00050	<0.00050	----	----	
zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	<0.0030	<0.0030	----	----	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0022	0.0012	0.0029	----	----	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00018	0.00023	0.00021	----	----	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00015	0.00026	0.00026	----	----	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.130	0.0645	0.0639	----	----	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.020	<0.020	<0.020	----	----	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	<0.000050	----	----	
boron, dissolved	7440-42-8	E421	0.010	mg/L	0.012	0.012	0.012	----	----	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.0323	0.0994	0.0847	----	----	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	79.2	270	249	----	----	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00010	0.00022	0.00016	----	----	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	<0.10	<0.10	<0.10	----	----	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00037	0.00026	0.00044	----	----	
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	<0.010	<0.010	----	----	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	<0.000050	----	----	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0176	0.0299	0.0274	----	----	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	42.0	162	153	----	----	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00186	0.00016	0.00072	----	----	
mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0.0000068	----	----	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00207	0.00125	0.00115	----	----	
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00329	0.00088	0.00186	----	----	
potassium, dissolved	7440-09-7	E421	0.050	mg/L	1.27	2.96	2.74	----	----	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_MIDGA_WS _LAEMP_EVO_ 2022-04_NP	RG_ERCKUT_W S_LAEMP_EVO_ _2022-04_NP	RG_ERCKMD_ WS_LAEMP_EV O_2022-04_NP	----	----
Client sampling date / time					25-Apr-2022 11:30	26-Apr-2022 11:00	26-Apr-2022 14:00	----	----	
Analyte	CAS Number	Method	LOR	Unit	CG2204866-006	CG2204866-007	CG2204866-008	-----	-----	
					Result	Result	Result	----	----	
Dissolved Metals										
selenium, dissolved	7782-49-2	E421	0.050	µg/L	24.4	206	191	----	----	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	1.79	3.60	3.57	----	----	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	<0.000010	----	----	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	4.22	3.36	3.34	----	----	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.210	0.232	0.225	----	----	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	61.4	268	258	----	----	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	<0.000010	----	----	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	<0.00010	----	----	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	<0.00030	----	----	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00200	0.00776	0.00763	----	----	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	<0.00050	----	----	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0022	0.0035	0.0171 ^{DTC}	----	----	
dissolved mercury filtration location	----	EP509	-	-	Field	Field	Field	----	----	
dissolved metals filtration location	----	EP421	-	-	Field	Field	Field	----	----	

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: CG2204866	Page	: 1 of 34
Client	: Teck Coal Limited	Laboratory	: Calgary - Environmental
Contact	: Mike Pope	Account Manager	: Lyudmyla Shvets
Address	: RR#1 HWY#3 Sparwood BC Canada V0B 2G1	Address	: 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5
Telephone	: ----	Telephone	: +1 403 407 1800
Project	: REGIONAL EFFECTS PROGRAM	Date Samples Received	: 27-Apr-2022 10:10
PO	: VPO00816101	Issue Date	: 11-May-2022 17:01
C-O-C number	: April EVO LAEMP 2022		
Sampler	: AM		
Site	: ----		
Quote number	: Teck Coal Master Quote		
No. of samples received	: 8		
No. of samples analysed	: 8		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

- Anonymous:** Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- Matrix Spike outliers occur - please see following pages for full details.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **Water**

Analyte Group	Laboratory sample ID	Client/Ref Sample ID	Analyte	CAS Number	Method	Result	Limits	Comment
Matrix Spike (MS) Recoveries								
Anions and Nutrients	CG2204866-007	RG_ERCKUT_WS_L AEMP_EVO_2022-04 _NP	Kjeldahl nitrogen, total [TKN]	----	E318	68.0 % MSTN	70.0-130%	Recovery less than lower data quality objective

Result Qualifiers

Qualifier	Description
MSTN	TKN Matrix Spike recovery was low due to interference from high nitrate, which causes negative bias on TKN.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-04_NP	E298	26-Apr-2022	28-Apr-2022	----	----		28-Apr-2022	28 days	2 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-04_NP	E298	26-Apr-2022	28-Apr-2022	----	----		28-Apr-2022	28 days	2 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_FBLANK_WS_LAEMP_EVO_2022-03_NP	E298	25-Apr-2022	28-Apr-2022	----	----		28-Apr-2022	28 days	3 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_MI3_WS_LAEMP_EVO_2022-04_NP	E298	25-Apr-2022	28-Apr-2022	----	----		28-Apr-2022	28 days	3 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_MIDBO_WS_LAEMP_EVO_2022-04_NP	E298	25-Apr-2022	28-Apr-2022	----	----		28-Apr-2022	28 days	3 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_MIDER_WS_LAEMP_EVO_2022-04_NP	E298	25-Apr-2022	28-Apr-2022	----	----		28-Apr-2022	28 days	3 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_MIDGA_WS_LAEMP_EVO_2022-04_NP	E298	25-Apr-2022	28-Apr-2022	----	----		28-Apr-2022	28 days	3 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_TRIP_WS_LAEMP_EVO_2022-04_NP	E298	25-Apr-2022	28-Apr-2022	----	----		28-Apr-2022	28 days	3 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-04_NP	E235.Br-L	26-Apr-2022	----	----	----		28-Apr-2022	28 days	2 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-04_NP	E235.Br-L	26-Apr-2022	----	----	----		28-Apr-2022	28 days	2 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-03_NP	E235.Br-L	25-Apr-2022	----	----	----		28-Apr-2022	28 days	3 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_MI3_WS_LAEMP_EVO_2022-04_NP	E235.Br-L	25-Apr-2022	----	----	----		28-Apr-2022	28 days	3 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-04_NP	E235.Br-L	25-Apr-2022	----	----	----		28-Apr-2022	28 days	3 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-04_NP	E235.Br-L	25-Apr-2022	----	----	----		28-Apr-2022	28 days	3 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-04_NP	E235.Br-L	25-Apr-2022	----	----	----		28-Apr-2022	28 days	3 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-04_NP	E235.Br-L	25-Apr-2022	----	----	----		28-Apr-2022	28 days	3 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-04_NP	E235.CI-L	26-Apr-2022	----	----	----		28-Apr-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-04_NP	E235.CI-L	26-Apr-2022	----	----	----		28-Apr-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-03_NP	E235.CI-L	25-Apr-2022	----	----	----		28-Apr-2022	28 days	3 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_MI3_WS_LAEMP_EVO_2022-04_NP	E235.CI-L	25-Apr-2022	----	----	----		28-Apr-2022	28 days	3 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-04_NP	E235.CI-L	25-Apr-2022	----	----	----		28-Apr-2022	28 days	3 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-04_NP	E235.CI-L	25-Apr-2022	----	----	----		28-Apr-2022	28 days	3 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-04_NP	E235.CI-L	25-Apr-2022	----	----	----		28-Apr-2022	28 days	3 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-04_NP	E235.CI-L	25-Apr-2022	----	----	----		28-Apr-2022	28 days	3 days	✔	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-04_NP	E378-U	26-Apr-2022	----	----	----		28-Apr-2022	3 days	2 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-04_NP	E378-U	26-Apr-2022	----	----	----		28-Apr-2022	3 days	2 days	✓	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-03_NP	E378-U	25-Apr-2022	----	----	----		28-Apr-2022	3 days	3 days	✓	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_MI3_WS_LAEMP_EVO_2022-04_NP	E378-U	25-Apr-2022	----	----	----		28-Apr-2022	3 days	3 days	✓	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-04_NP	E378-U	25-Apr-2022	----	----	----		28-Apr-2022	3 days	3 days	✓	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-04_NP	E378-U	25-Apr-2022	----	----	----		28-Apr-2022	3 days	3 days	✓	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-04_NP	E378-U	25-Apr-2022	----	----	----		28-Apr-2022	3 days	3 days	✓	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-04_NP	E378-U	25-Apr-2022	----	----	----		28-Apr-2022	3 days	3 days	✓	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-04_NP	E235.F	26-Apr-2022	----	----	----		28-Apr-2022	28 days	2 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-04_NP	E235.F	26-Apr-2022	----	----	----		28-Apr-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-03_NP	E235.F	25-Apr-2022	----	----	----		28-Apr-2022	28 days	3 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_MI3_WS_LAEMP_EVO_2022-04_NP	E235.F	25-Apr-2022	----	----	----		28-Apr-2022	28 days	3 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-04_NP	E235.F	25-Apr-2022	----	----	----		28-Apr-2022	28 days	3 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-04_NP	E235.F	25-Apr-2022	----	----	----		28-Apr-2022	28 days	3 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-04_NP	E235.F	25-Apr-2022	----	----	----		28-Apr-2022	28 days	3 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-04_NP	E235.F	25-Apr-2022	----	----	----		28-Apr-2022	28 days	3 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-04_NP	E235.NO3-L	26-Apr-2022	----	----	----		28-Apr-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-04_NP	E235.NO3-L	26-Apr-2022	----	----	----		28-Apr-2022	3 days	2 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-03_NP	E235.NO3-L	25-Apr-2022	----	----	----		28-Apr-2022	3 days	3 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_MI3_WS_LAEMP_EVO_2022-04_NP	E235.NO3-L	25-Apr-2022	----	----	----		28-Apr-2022	3 days	3 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-04_NP	E235.NO3-L	25-Apr-2022	----	----	----		28-Apr-2022	3 days	3 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-04_NP	E235.NO3-L	25-Apr-2022	----	----	----		28-Apr-2022	3 days	3 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-04_NP	E235.NO3-L	25-Apr-2022	----	----	----		28-Apr-2022	3 days	3 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-04_NP	E235.NO3-L	25-Apr-2022	----	----	----		28-Apr-2022	3 days	3 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-04_NP	E235.NO2-L	26-Apr-2022	----	----	----		28-Apr-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-04_NP	E235.NO2-L	26-Apr-2022	----	----	----		28-Apr-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-03_NP	E235.NO2-L	25-Apr-2022	----	----	----		28-Apr-2022	3 days	3 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_MI3_WS_LAEMP_EVO_2022-04_NP	E235.NO2-L	25-Apr-2022	----	----	----		28-Apr-2022	3 days	3 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-04_NP	E235.NO2-L	25-Apr-2022	----	----	----		28-Apr-2022	3 days	3 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-04_NP	E235.NO2-L	25-Apr-2022	----	----	----		28-Apr-2022	3 days	3 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-04_NP	E235.NO2-L	25-Apr-2022	----	----	----		28-Apr-2022	3 days	3 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-04_NP	E235.NO2-L	25-Apr-2022	----	----	----		28-Apr-2022	3 days	3 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-04_NP	E235.SO4	26-Apr-2022	----	----	----		28-Apr-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-04_NP	E235.SO4	26-Apr-2022	----	----	----		28-Apr-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-03_NP	E235.SO4	25-Apr-2022	----	----	----		28-Apr-2022	28 days	3 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_MI3_WS_LAEMP_EVO_2022-04_NP	E235.SO4	25-Apr-2022	----	----	----		28-Apr-2022	28 days	3 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-04_NP	E235.SO4	25-Apr-2022	----	----	----		28-Apr-2022	28 days	3 days	✓	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-04_NP	E235.SO4	25-Apr-2022	----	----	----		28-Apr-2022	28 days	3 days	✓	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-04_NP	E235.SO4	25-Apr-2022	----	----	----		28-Apr-2022	28 days	3 days	✓	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-04_NP	E235.SO4	25-Apr-2022	----	----	----		28-Apr-2022	28 days	3 days	✓	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-04_NP	E318	26-Apr-2022	01-May-2022	----	----		01-May-2022	28 days	5 days	✓	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-04_NP	E318	26-Apr-2022	01-May-2022	----	----		01-May-2022	28 days	5 days	✓	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_FBLANK_WS_LAEMP_EVO_2022-03_NP	E318	25-Apr-2022	01-May-2022	----	----		01-May-2022	28 days	6 days	✓	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_MI3_WS_LAEMP_EVO_2022-04_NP	E318	25-Apr-2022	01-May-2022	----	----		01-May-2022	28 days	6 days	✓	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_MIDBO_WS_LAEMP_EVO_2022-04_NP	E318	25-Apr-2022	01-May-2022	----	----		01-May-2022	28 days	6 days	✓	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_MIDER_WS_LAEMP_EVO_2022-04_NP	E318	25-Apr-2022	01-May-2022	----	----		01-May-2022	28 days	6 days	✓	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_MIDGA_WS_LAEMP_EVO_2022-04_NP	E318	25-Apr-2022	01-May-2022	----	----		01-May-2022	28 days	6 days	✓	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_TRIP_WS_LAEMP_EVO_2022-04_NP	E318	25-Apr-2022	01-May-2022	----	----		01-May-2022	28 days	6 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-04_NP	E372-U	26-Apr-2022	30-Apr-2022	----	----		30-Apr-2022	28 days	4 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-04_NP	E372-U	26-Apr-2022	30-Apr-2022	----	----		30-Apr-2022	28 days	4 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_FBLANK_WS_LAEMP_EVO_2022-03_NP	E372-U	25-Apr-2022	30-Apr-2022	----	----		30-Apr-2022	28 days	5 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_MI3_WS_LAEMP_EVO_2022-04_NP	E372-U	25-Apr-2022	30-Apr-2022	----	----		30-Apr-2022	28 days	5 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_MIDBO_WS_LAEMP_EVO_2022-04_NP	E372-U	25-Apr-2022	30-Apr-2022	----	----		30-Apr-2022	28 days	5 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_MIDER_WS_LAEMP_EVO_2022-04_NP	E372-U	25-Apr-2022	30-Apr-2022	----	----		30-Apr-2022	28 days	5 days	✓	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_MIDGA_WS_LAEMP_EVO_2022-04_NP	E372-U	25-Apr-2022	30-Apr-2022	----	----		30-Apr-2022	28 days	5 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_TRIP_WS_LAEMP_EVO_2022-04_NP	E372-U	25-Apr-2022	30-Apr-2022	----	----		30-Apr-2022	28 days	5 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-04_NP	E421.Cr-L	26-Apr-2022	03-May-2022	----	----		03-May-2022	180 days	7 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-04_NP	E421.Cr-L	26-Apr-2022	03-May-2022	----	----		03-May-2022	180 days	7 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_FBLANK_WS_LAEMP_EVO_2022-03_NP	E421.Cr-L	25-Apr-2022	03-May-2022	----	----		03-May-2022	180 days	8 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_MI3_WS_LAEMP_EVO_2022-04_NP	E421.Cr-L	25-Apr-2022	03-May-2022	----	----		03-May-2022	180 days	8 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_MIDBO_WS_LAEMP_EVO_2022-04_NP	E421.Cr-L	25-Apr-2022	03-May-2022	----	----		03-May-2022	180 days	8 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_MIDER_WS_LAEMP_EVO_2022-04_NP	E421.Cr-L	25-Apr-2022	03-May-2022	----	----		03-May-2022	180 days	8 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_MIDGA_WS_LAEMP_EVO_2022-04_NP	E421.Cr-L	25-Apr-2022	03-May-2022	----	----		03-May-2022	180 days	8 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_TRIP_WS_LAEMP_EVO_2022-04_NP	E421.Cr-L	25-Apr-2022	03-May-2022	----	----		03-May-2022	180 days	8 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-04_NP	E509	26-Apr-2022	29-Apr-2022	----	----		29-Apr-2022	28 days	3 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-04_NP	E509	26-Apr-2022	29-Apr-2022	----	----		29-Apr-2022	28 days	3 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_FBLANK_WS_LAEMP_EVO_2022-03_NP	E509	25-Apr-2022	29-Apr-2022	----	----		29-Apr-2022	28 days	4 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_MI3_WS_LAEMP_EVO_2022-04_NP	E509	25-Apr-2022	29-Apr-2022	----	----		29-Apr-2022	28 days	4 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_MIDBO_WS_LAEMP_EVO_2022-04_NP	E509	25-Apr-2022	29-Apr-2022	----	----		29-Apr-2022	28 days	4 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_MIDER_WS_LAEMP_EVO_2022-04_NP	E509	25-Apr-2022	29-Apr-2022	----	----		29-Apr-2022	28 days	4 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_MIDGA_WS_LAEMP_EVO_2022-04_NP	E509	25-Apr-2022	29-Apr-2022	----	----		29-Apr-2022	28 days	4 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_TRIP_WS_LAEMP_EVO_2022-04_NP	E509	25-Apr-2022	29-Apr-2022	----	----		29-Apr-2022	28 days	4 days	✔	



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-04_NP	E421	26-Apr-2022	03-May-2022	----	----		03-May-2022	180 days	7 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-04_NP	E421	26-Apr-2022	03-May-2022	----	----		03-May-2022	180 days	7 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_FBLANK_WS_LAEMP_EVO_2022-03_NP	E421	25-Apr-2022	03-May-2022	----	----		03-May-2022	180 days	8 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_MI3_WS_LAEMP_EVO_2022-04_NP	E421	25-Apr-2022	03-May-2022	----	----		03-May-2022	180 days	8 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_MIDBO_WS_LAEMP_EVO_2022-04_NP	E421	25-Apr-2022	03-May-2022	----	----		03-May-2022	180 days	8 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_MIDER_WS_LAEMP_EVO_2022-04_NP	E421	25-Apr-2022	03-May-2022	----	----		03-May-2022	180 days	8 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_MIDGA_WS_LAEMP_EVO_2022-04_NP	E421	25-Apr-2022	03-May-2022	----	----		03-May-2022	180 days	8 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_TRIP_WS_LAEMP_EVO_2022-04_NP	E421	25-Apr-2022	03-May-2022	----	----		03-May-2022	180 days	8 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-04_NP	E358-L	26-Apr-2022	28-Apr-2022	----	----		29-Apr-2022	28 days	3 days	✔	



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-04_NP	E358-L	26-Apr-2022	28-Apr-2022	----	----		29-Apr-2022	28 days	3 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_FBLANK_WS_LAEMP_EVO_2022-03_NP	E358-L	25-Apr-2022	28-Apr-2022	----	----		29-Apr-2022	28 days	4 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_MI3_WS_LAEMP_EVO_2022-04_NP	E358-L	25-Apr-2022	28-Apr-2022	----	----		29-Apr-2022	28 days	4 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_MIDBO_WS_LAEMP_EVO_2022-04_NP	E358-L	25-Apr-2022	28-Apr-2022	----	----		29-Apr-2022	28 days	4 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_MIDER_WS_LAEMP_EVO_2022-04_NP	E358-L	25-Apr-2022	28-Apr-2022	----	----		29-Apr-2022	28 days	4 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_MIDGA_WS_LAEMP_EVO_2022-04_NP	E358-L	25-Apr-2022	28-Apr-2022	----	----		29-Apr-2022	28 days	4 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_TRIP_WS_LAEMP_EVO_2022-04_NP	E358-L	25-Apr-2022	28-Apr-2022	----	----		29-Apr-2022	28 days	4 days	✓	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-04_NP	E355-L	26-Apr-2022	28-Apr-2022	----	----		29-Apr-2022	28 days	3 days	✓	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-04_NP	E355-L	26-Apr-2022	28-Apr-2022	----	----		29-Apr-2022	28 days	3 days	✓	



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_FBLANK_WS_LAEMP_EVO_2022-03_NP	E355-L	25-Apr-2022	28-Apr-2022	----	----		29-Apr-2022	28 days	4 days	✓	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_MI3_WS_LAEMP_EVO_2022-04_NP	E355-L	25-Apr-2022	28-Apr-2022	----	----		29-Apr-2022	28 days	4 days	✓	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_MIDBO_WS_LAEMP_EVO_2022-04_NP	E355-L	25-Apr-2022	28-Apr-2022	----	----		29-Apr-2022	28 days	4 days	✓	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_MIDER_WS_LAEMP_EVO_2022-04_NP	E355-L	25-Apr-2022	28-Apr-2022	----	----		29-Apr-2022	28 days	4 days	✓	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_MIDGA_WS_LAEMP_EVO_2022-04_NP	E355-L	25-Apr-2022	28-Apr-2022	----	----		29-Apr-2022	28 days	4 days	✓	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_TRIP_WS_LAEMP_EVO_2022-04_NP	E355-L	25-Apr-2022	28-Apr-2022	----	----		29-Apr-2022	28 days	4 days	✓	
Physical Tests : Acidity by Titration											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-04_NP	E283	26-Apr-2022	----	----	----		29-Apr-2022	14 days	3 days	✓	
Physical Tests : Acidity by Titration											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-04_NP	E283	26-Apr-2022	----	----	----		29-Apr-2022	14 days	3 days	✓	
Physical Tests : Acidity by Titration											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-03_NP	E283	25-Apr-2022	----	----	----		29-Apr-2022	14 days	4 days	✓	



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
Rec	Actual	Rec		Actual							
Physical Tests : Acidity by Titration											
HDPE RG_MI3_WS_LAEMP_EVO_2022-04_NP	E283	25-Apr-2022	----	----	----		29-Apr-2022	14 days	4 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-04_NP	E283	25-Apr-2022	----	----	----		29-Apr-2022	14 days	4 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-04_NP	E283	25-Apr-2022	----	----	----		29-Apr-2022	14 days	4 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-04_NP	E283	25-Apr-2022	----	----	----		29-Apr-2022	14 days	4 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-04_NP	E283	25-Apr-2022	----	----	----		29-Apr-2022	14 days	4 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-04_NP	E290	26-Apr-2022	----	----	----		28-Apr-2022	14 days	2 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-04_NP	E290	26-Apr-2022	----	----	----		28-Apr-2022	14 days	2 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-03_NP	E290	25-Apr-2022	----	----	----		28-Apr-2022	14 days	3 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_MI3_WS_LAEMP_EVO_2022-04_NP	E290	25-Apr-2022	----	----	----		28-Apr-2022	14 days	3 days	✔	



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Alkalinity Species by Titration											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-04_NP	E290	25-Apr-2022	----	----	----		28-Apr-2022	14 days	3 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-04_NP	E290	25-Apr-2022	----	----	----		28-Apr-2022	14 days	3 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-04_NP	E290	25-Apr-2022	----	----	----		28-Apr-2022	14 days	3 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-04_NP	E290	25-Apr-2022	----	----	----		28-Apr-2022	14 days	3 days	✔	
Physical Tests : Conductivity in Water											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-04_NP	E100	26-Apr-2022	----	----	----		28-Apr-2022	28 days	2 days	✔	
Physical Tests : Conductivity in Water											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-04_NP	E100	26-Apr-2022	----	----	----		28-Apr-2022	28 days	2 days	✔	
Physical Tests : Conductivity in Water											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-03_NP	E100	25-Apr-2022	----	----	----		28-Apr-2022	28 days	3 days	✔	
Physical Tests : Conductivity in Water											
HDPE RG_MI3_WS_LAEMP_EVO_2022-04_NP	E100	25-Apr-2022	----	----	----		28-Apr-2022	28 days	3 days	✔	
Physical Tests : Conductivity in Water											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-04_NP	E100	25-Apr-2022	----	----	----		28-Apr-2022	28 days	3 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
Rec	Actual	Rec		Actual							
Physical Tests : Conductivity in Water											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-04_NP	E100	25-Apr-2022	----	----	----		28-Apr-2022	28 days	3 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-04_NP	E100	25-Apr-2022	----	----	----		28-Apr-2022	28 days	3 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-04_NP	E100	25-Apr-2022	----	----	----		28-Apr-2022	28 days	3 days	✓	
Physical Tests : ORP by Electrode											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-04_NP	E125	26-Apr-2022	----	----	----		03-May-2022	0.25 hrs	172 hrs	* EHTR-FM	
Physical Tests : ORP by Electrode											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-04_NP	E125	26-Apr-2022	----	----	----		03-May-2022	0.25 hrs	175 hrs	* EHTR-FM	
Physical Tests : ORP by Electrode											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-03_NP	E125	25-Apr-2022	----	----	----		03-May-2022	0.25 hrs	196 hrs	* EHTR-FM	
Physical Tests : ORP by Electrode											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-04_NP	E125	25-Apr-2022	----	----	----		03-May-2022	0.25 hrs	196 hrs	* EHTR-FM	
Physical Tests : ORP by Electrode											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-04_NP	E125	25-Apr-2022	----	----	----		03-May-2022	0.25 hrs	196 hrs	* EHTR-FM	
Physical Tests : ORP by Electrode											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-04_NP	E125	25-Apr-2022	----	----	----		03-May-2022	0.25 hrs	198 hrs	* EHTR-FM	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : ORP by Electrode											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-04_NP	E125	25-Apr-2022	----	----	----		03-May-2022	0.25 hrs	198 hrs	*	EHTR-FM
Physical Tests : ORP by Electrode											
HDPE RG_MI3_WS_LAEMP_EVO_2022-04_NP	E125	25-Apr-2022	----	----	----		03-May-2022	0.25 hrs	201 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-04_NP	E108	26-Apr-2022	----	----	----		28-Apr-2022	0.25 hrs	47 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-04_NP	E108	26-Apr-2022	----	----	----		28-Apr-2022	0.25 hrs	50 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-03_NP	E108	25-Apr-2022	----	----	----		28-Apr-2022	0.25 hrs	71 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-04_NP	E108	25-Apr-2022	----	----	----		28-Apr-2022	0.25 hrs	71 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-04_NP	E108	25-Apr-2022	----	----	----		28-Apr-2022	0.25 hrs	71 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-04_NP	E108	25-Apr-2022	----	----	----		28-Apr-2022	0.25 hrs	73 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-04_NP	E108	25-Apr-2022	----	----	----		28-Apr-2022	0.25 hrs	73 hrs	*	EHTR-FM



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
Rec	Actual	Rec		Actual							
Physical Tests : pH by Meter											
HDPE RG_MI3_WS_LAEMP_EVO_2022-04_NP	E108	25-Apr-2022	----	----	----		28-Apr-2022	0.25 hrs	76 hrs	*	EHTR-FM
Physical Tests : TDS by Gravimetry											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-04_NP	E162	26-Apr-2022	----	----	----		01-May-2022	7 days	5 days	✓	
Physical Tests : TDS by Gravimetry											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-04_NP	E162	26-Apr-2022	----	----	----		01-May-2022	7 days	5 days	✓	
Physical Tests : TDS by Gravimetry											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-03_NP	E162	25-Apr-2022	----	----	----		01-May-2022	7 days	6 days	✓	
Physical Tests : TDS by Gravimetry											
HDPE RG_MI3_WS_LAEMP_EVO_2022-04_NP	E162	25-Apr-2022	----	----	----		01-May-2022	7 days	6 days	✓	
Physical Tests : TDS by Gravimetry											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-04_NP	E162	25-Apr-2022	----	----	----		01-May-2022	7 days	6 days	✓	
Physical Tests : TDS by Gravimetry											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-04_NP	E162	25-Apr-2022	----	----	----		01-May-2022	7 days	6 days	✓	
Physical Tests : TDS by Gravimetry											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-04_NP	E162	25-Apr-2022	----	----	----		01-May-2022	7 days	6 days	✓	
Physical Tests : TDS by Gravimetry											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-04_NP	E162	25-Apr-2022	----	----	----		01-May-2022	7 days	6 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-04_NP	E160-L	26-Apr-2022	----	----	----		01-May-2022	7 days	4 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-04_NP	E160-L	26-Apr-2022	----	----	----		01-May-2022	7 days	5 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-03_NP	E160-L	25-Apr-2022	----	----	----		01-May-2022	7 days	5 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-04_NP	E160-L	25-Apr-2022	----	----	----		01-May-2022	7 days	5 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-04_NP	E160-L	25-Apr-2022	----	----	----		01-May-2022	7 days	5 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_MI3_WS_LAEMP_EVO_2022-04_NP	E160-L	25-Apr-2022	----	----	----		01-May-2022	7 days	6 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-04_NP	E160-L	25-Apr-2022	----	----	----		01-May-2022	7 days	6 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-04_NP	E160-L	25-Apr-2022	----	----	----		01-May-2022	7 days	6 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-04_NP	E121	26-Apr-2022	----	----	----		29-Apr-2022	3 days	3 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
Rec	Actual	Rec		Actual							
Physical Tests : Turbidity by Nephelometry											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-04_NP	E121	26-Apr-2022	----	----	----		29-Apr-2022	3 days	3 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-03_NP	E121	25-Apr-2022	----	----	----		28-Apr-2022	3 days	3 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_MI3_WS_LAEMP_EVO_2022-04_NP	E121	25-Apr-2022	----	----	----		28-Apr-2022	3 days	3 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-04_NP	E121	25-Apr-2022	----	----	----		28-Apr-2022	3 days	3 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-04_NP	E121	25-Apr-2022	----	----	----		28-Apr-2022	3 days	3 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-04_NP	E121	25-Apr-2022	----	----	----		28-Apr-2022	3 days	3 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-04_NP	E121	25-Apr-2022	----	----	----		28-Apr-2022	3 days	3 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-04_NP	E420.Cr-L	26-Apr-2022	----	----	----		03-May-2022	180 days	7 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-04_NP	E420.Cr-L	26-Apr-2022	----	----	----		03-May-2022	180 days	7 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times Rec Actual		Eval	Analysis Date	Holding Times Rec Actual		Eval	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_FBLANK_WS_LAEMP_EVO_2022-03_NP	E420.Cr-L	25-Apr-2022	----	----	----		03-May-2022	180 days	8 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_MIDBO_WS_LAEMP_EVO_2022-04_NP	E420.Cr-L	25-Apr-2022	----	----	----		03-May-2022	180 days	8 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_MIDER_WS_LAEMP_EVO_2022-04_NP	E420.Cr-L	25-Apr-2022	----	----	----		03-May-2022	180 days	8 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_MIDGA_WS_LAEMP_EVO_2022-04_NP	E420.Cr-L	25-Apr-2022	----	----	----		03-May-2022	180 days	8 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_TRIP_WS_LAEMP_EVO_2022-04_NP	E420.Cr-L	25-Apr-2022	----	----	----		03-May-2022	180 days	8 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_MI3_WS_LAEMP_EVO_2022-04_NP	E420.Cr-L	25-Apr-2022	----	----	----		03-May-2022	180 days	9 days	✔	
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)											
Pre-cleaned amber glass - total (lab preserved) RG_ERCKMD_WS_LAEMP_EVO_2022-04_NP	E508-L	26-Apr-2022	----	----	----		04-May-2022	28 days	8 days	✔	
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)											
Pre-cleaned amber glass - total (lab preserved) RG_FBLANK_WS_LAEMP_EVO_2022-03_NP	E508-L	25-Apr-2022	----	----	----		04-May-2022	28 days	9 days	✔	
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)											
Pre-cleaned amber glass - total (lab preserved) RG_MI3_WS_LAEMP_EVO_2022-04_NP	E508-L	25-Apr-2022	----	----	----		04-May-2022	28 days	9 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)											
Pre-cleaned amber glass - total (lab preserved) RG_TRIP_WS_LAEMP_EVO_2022-04_NP	E508-L	25-Apr-2022	----	----	----		04-May-2022	28 days	9 days	✔	
Total Metals : Total Metals in Water by CRC ICPCS											
HDPE total (nitric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-04_NP	E420	26-Apr-2022	----	----	----		03-May-2022	180 days	7 days	✔	
Total Metals : Total Metals in Water by CRC ICPCS											
HDPE total (nitric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-04_NP	E420	26-Apr-2022	----	----	----		03-May-2022	180 days	7 days	✔	
Total Metals : Total Metals in Water by CRC ICPCS											
HDPE total (nitric acid) RG_FBLANK_WS_LAEMP_EVO_2022-03_NP	E420	25-Apr-2022	----	----	----		03-May-2022	180 days	8 days	✔	
Total Metals : Total Metals in Water by CRC ICPCS											
HDPE total (nitric acid) RG_MIDBO_WS_LAEMP_EVO_2022-04_NP	E420	25-Apr-2022	----	----	----		03-May-2022	180 days	8 days	✔	
Total Metals : Total Metals in Water by CRC ICPCS											
HDPE total (nitric acid) RG_MIDER_WS_LAEMP_EVO_2022-04_NP	E420	25-Apr-2022	----	----	----		03-May-2022	180 days	8 days	✔	
Total Metals : Total Metals in Water by CRC ICPCS											
HDPE total (nitric acid) RG_MIDGA_WS_LAEMP_EVO_2022-04_NP	E420	25-Apr-2022	----	----	----		03-May-2022	180 days	8 days	✔	
Total Metals : Total Metals in Water by CRC ICPCS											
HDPE total (nitric acid) RG_TRIP_WS_LAEMP_EVO_2022-04_NP	E420	25-Apr-2022	----	----	----		03-May-2022	180 days	8 days	✔	
Total Metals : Total Metals in Water by CRC ICPCS											
HDPE total (nitric acid) RG_MI3_WS_LAEMP_EVO_2022-04_NP	E420	25-Apr-2022	----	----	----		03-May-2022	180 days	9 days	✔	

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended

Page : 27 of 34
Work Order : CG2204866
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
Analytical Methods							
Laboratory Duplicates (DUP)							
Acidity by Titration	E283	472129	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290	471087	2	38	5.2	5.0	✓
Ammonia by Fluorescence	E298	470867	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	470691	1	16	6.2	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	470692	1	16	6.2	5.0	✓
Conductivity in Water	E100	471085	2	38	5.2	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	475217	1	20	5.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	472858	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	475216	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	471144	1	16	6.2	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	470821	2	40	5.0	5.0	✓
Fluoride in Water by IC	E235.F	470689	1	16	6.2	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	470687	1	19	5.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	470688	1	17	5.8	5.0	✓
ORP by Electrode	E125	473415	1	20	5.0	5.0	✓
pH by Meter	E108	471086	2	38	5.2	5.0	✓
Sulfate in Water by IC	E235.SO4	470690	1	16	6.2	5.0	✓
TDS by Gravimetry	E162	471233	1	20	5.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	474670	1	17	5.8	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	471038	2	40	5.0	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	476581	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	474669	2	17	11.7	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	471145	1	16	6.2	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	470864	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121	470970	4	56	7.1	5.0	✓
Laboratory Control Samples (LCS)							
Acidity by Titration	E283	472129	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290	471087	2	38	5.2	5.0	✓
Ammonia by Fluorescence	E298	470867	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	470691	1	16	6.2	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	470692	1	16	6.2	5.0	✓
Conductivity in Water	E100	471085	2	38	5.2	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	475217	1	20	5.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	472858	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	475216	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	471144	1	16	6.2	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	470821	2	40	5.0	5.0	✓



Matrix: **Water**

Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
<i>Analytical Methods</i>							
Laboratory Control Samples (LCS) - Continued							
Fluoride in Water by IC	E235.F	470689	1	16	6.2	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	470687	1	19	5.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	470688	1	17	5.8	5.0	✓
ORP by Electrode	E125	473415	1	20	5.0	5.0	✓
pH by Meter	E108	471086	2	38	5.2	5.0	✓
Sulfate in Water by IC	E235.SO4	470690	1	16	6.2	5.0	✓
TDS by Gravimetry	E162	471233	1	20	5.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	474670	1	17	5.8	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	471038	2	40	5.0	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	476581	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	474669	1	17	5.8	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	471145	1	16	6.2	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	470864	1	20	5.0	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	471237	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121	470970	4	56	7.1	5.0	✓
Method Blanks (MB)							
Acidity by Titration	E283	472129	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290	471087	2	38	5.2	5.0	✓
Ammonia by Fluorescence	E298	470867	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	470691	1	16	6.2	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	470692	1	16	6.2	5.0	✓
Conductivity in Water	E100	471085	2	38	5.2	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	475217	1	20	5.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	472858	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	475216	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	471144	1	16	6.2	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	470821	2	40	5.0	5.0	✓
Fluoride in Water by IC	E235.F	470689	1	16	6.2	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	470687	1	19	5.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	470688	1	17	5.8	5.0	✓
Sulfate in Water by IC	E235.SO4	470690	1	16	6.2	5.0	✓
TDS by Gravimetry	E162	471233	1	20	5.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	474670	1	17	5.8	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	471038	2	40	5.0	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	476581	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	474669	1	17	5.8	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	471145	1	16	6.2	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	470864	1	20	5.0	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	471237	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121	470970	4	56	7.1	5.0	✓



Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
<i>Analytical Methods</i>							
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	470867	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	470691	1	16	6.2	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	470692	1	16	6.2	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	475217	1	20	5.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	472858	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	475216	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	471144	1	16	6.2	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	470821	2	40	5.0	5.0	✓
Fluoride in Water by IC	E235.F	470689	1	16	6.2	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	470687	1	19	5.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	470688	1	17	5.8	5.0	✓
Sulfate in Water by IC	E235.SO4	470690	1	16	6.2	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	474670	1	17	5.8	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	471038	2	40	5.0	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	476581	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	474669	1	17	5.8	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	471145	1	16	6.2	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	470864	1	20	5.0	5.0	✓



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 Calgary - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 Calgary - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 Calgary - Environmental	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
ORP by Electrode	E125 Calgary - Environmental	Water	ASTM D1498 (mod)	Oxidation reduction potential is reported as the oxidation-reduction potential of the platinum metal-reference electrode employed, measured in mV. For high accuracy test results, it is recommended that this analysis be conducted in the field.
TSS by Gravimetry (Low Level)	E160-L Calgary - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 Calgary - Environmental	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC (Low Level)	E235.Cl-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Acidity by Titration	E283 Calgary - Environmental	Water	APHA 2310 B (mod)	Acidity is determined by potentiometric titration to pH endpoint of 8.3



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Alkalinity Species by Titration	E290 Calgary - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 Calgary - Environmental	Water	J. Environ. Monit., 2005, 7, 37-42 (mod)	Ammonia in water is analyzed by flow-injection analysis with fluorescence detection after reaction with orthophthaldialdehyde (OPA).
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 Calgary - Environmental	Water	APHA 4500-Norg D (mod)	Total Kjeldahl Nitrogen is determined using block digestion followed by flow-injection analysis with fluorescence detection.
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L Calgary - Environmental	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Dissolved Organic Carbon by Combustion (Low Level)	E358-L Calgary - Environmental	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U Calgary - Environmental	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U Calgary - Environmental	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Total Metals in Water by CRC ICPMS	E420 Vancouver - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L Vancouver - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS.
Dissolved Metals in Water by CRC ICPMS	E421 Vancouver - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L Vancouver - Environmental	Water	APHA 3030 B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L Vancouver - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAFS.
Dissolved Mercury in Water by CVAAS	E509 Vancouver - Environmental	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
Dissolved Hardness (Calculated)	EC100 Vancouver - Environmental	Water	APHA 2340B	"Hardness (as CaCO ₃), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Ion Balance using Dissolved Metals	EC101 Calgary - Environmental	Water	APHA 1030E	Cation Sum, Anion Sum, and Ion Balance are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present. Ion Balance cannot be calculated accurately for waters with very low electrical conductivity (EC).

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 Calgary - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 Calgary - Environmental	Water	APHA 4500-Norg D (mod)	Samples are digested using block digestion with Copper Sulfate Digestion Reagent.
Preparation for Total Organic Carbon by Combustion	EP355 Calgary - Environmental	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon for Combustion	EP358 Calgary - Environmental	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Phosphorus in water	EP372 Calgary - Environmental	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Dissolved Metals Water Filtration	EP421 Vancouver - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO ₃ .
Dissolved Mercury Water Filtration	EP509	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.



<i>Preparation Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
	Vancouver - Environmental			



QUALITY CONTROL REPORT

Work Order : CG2204866

Page : 1 of 18

Client : Teck Coal Limited
Contact : Mike Pope
Address : RR#1 HWY#3
Sparwood BC Canada V0B 2G1
Telephone : ----
Project : REGIONAL EFFECTS PROGRAM
PO : VPO00816101
C-O-C number : April EVO LAEMP 2022
Sampler : AM
Site : ----
Quote number : Teck Coal Master Quote
No. of samples received : 8
No. of samples analysed : 8

Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
Calgary, Alberta Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 27-Apr-2022 10:10
Date Analysis Commenced : 28-Apr-2022
Issue Date : 11-May-2022 17:01

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
Matrix Spike (MS) Report; Recovery and Acceptance Limits
Reference Material (RM) Report; Recovery and Acceptance Limits
Method Blank (MB) Report; Recovery and Acceptance Limits
Laboratory Control Sample (LCS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Table with 3 columns: Signatories, Position, Laboratory Department. Lists names like Anthony Calero, Caleb Deroche, etc., and their roles and departments.



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Services number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percentage Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test specific).

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 470970)											
CG2204866-001	RG_MIDER_WS_LAEMP_EVO_2022-04_NP	turbidity	----	E121	0.10	NTU	1.83	1.64	11.3%	15%	----
Physical Tests (QC Lot: 471085)											
CG2204847-008	Anonymous	conductivity	----	E100	2.0	µS/cm	1860	1880	0.642%	10%	----
Physical Tests (QC Lot: 471086)											
CG2204847-008	Anonymous	pH	----	E108	0.10	pH units	8.21	8.22	0.122%	4%	----
Physical Tests (QC Lot: 471087)											
CG2204847-008	Anonymous	alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	478	472	1.30%	20%	----
		alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	478	472	1.30%	20%	----
Physical Tests (QC Lot: 471088)											
CG2204866-005	RG_MIDBO_WS_LAEMP_EVO_2022-04_NP	pH	----	E108	0.10	pH units	8.41	8.42	0.119%	4%	----
Physical Tests (QC Lot: 471089)											
CG2204866-005	RG_MIDBO_WS_LAEMP_EVO_2022-04_NP	conductivity	----	E100	2.0	µS/cm	498	497	0.201%	10%	----
Physical Tests (QC Lot: 471090)											
CG2204866-005	RG_MIDBO_WS_LAEMP_EVO_2022-04_NP	alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	158	161	1.63%	20%	----
		alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	8.0	7.6	0.4	Diff <2x LOR	----
		alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	166	169	1.31%	20%	----
Physical Tests (QC Lot: 471233)											
CG2204866-001	RG_MIDER_WS_LAEMP_EVO_2022-04_NP	solids, total dissolved [TDS]	----	E162	20	mg/L	246	236	4.14%	20%	----
Physical Tests (QC Lot: 471315)											
CG2204775-001	Anonymous	turbidity	----	E121	0.10	NTU	0.60	0.57	0.04	Diff <2x LOR	----
Physical Tests (QC Lot: 472018)											
CG2204844-002	Anonymous	turbidity	----	E121	0.10	NTU	6.25	6.63	5.99%	15%	----
Physical Tests (QC Lot: 472129)											
CG2204866-001	RG_MIDER_WS_LAEMP_EVO_2022-04_NP	acidity (as CaCO3)	----	E283	2.0	mg/L	<2.0	<2.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 472222)											
CG2204832-002	Anonymous	turbidity	----	E121	0.10	NTU	0.49	0.54	0.05	Diff <2x LOR	----



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 473415)											
CG2204866-001	RG_MIDER_WS_LAEMP_EVO_2022-04_NP	oxidation-reduction potential [ORP]	----	E125	0.10	mV	500	504	0.837%	15%	----
Anions and Nutrients (QC Lot: 470687)											
CG2204866-001	RG_MIDER_WS_LAEMP_EVO_2022-04_NP	nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.0635	0.0631	0.632%	20%	----
Anions and Nutrients (QC Lot: 470688)											
CG2204866-001	RG_MIDER_WS_LAEMP_EVO_2022-04_NP	nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 470689)											
CG2204866-001	RG_MIDER_WS_LAEMP_EVO_2022-04_NP	fluoride	16984-48-8	E235.F	0.020	mg/L	0.101	0.112	0.011	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 470690)											
CG2204866-001	RG_MIDER_WS_LAEMP_EVO_2022-04_NP	sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	49.7	53.1	6.69%	20%	----
Anions and Nutrients (QC Lot: 470691)											
CG2204866-001	RG_MIDER_WS_LAEMP_EVO_2022-04_NP	bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 470692)											
CG2204866-001	RG_MIDER_WS_LAEMP_EVO_2022-04_NP	chloride	16887-00-6	E235.Cl-L	0.10	mg/L	1.46	1.52	4.32%	20%	----
Anions and Nutrients (QC Lot: 470821)											
CG2204858-001	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0100	mg/L	0.662	0.669	1.05%	20%	----
Anions and Nutrients (QC Lot: 470822)											
CG2204866-006	RG_MIDGA_WS_LAEMP_EVO_2022-04_NP	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0017	0.0018	0.00008	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 470864)											
CG2204829-008	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 470867)											
CG2204829-008	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.125	mg/L	1.72	1.72	0.180%	20%	----
Anions and Nutrients (QC Lot: 471038)											
CG2204843-002	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	1.08	1.02	6.29%	20%	----
Anions and Nutrients (QC Lot: 471039)											
CG2204866-006	RG_MIDGA_WS_LAEMP_EVO_2022-04_NP	Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	0.297	0.315	0.018	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 471144)											
CG2204857-001	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	1.67	1.47	0.21	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 471145)											
CG2204857-001	Anonymous	carbon, total organic [TOC]	----	E355-L	0.50	mg/L	1.49	1.38	0.11	Diff <2x LOR	----
Total Metals (QC Lot: 474669)											
CG2204866-002	RG_TRIP_WS_LAEMP_EV_O_2022-04_NP	molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.000120	0.000119	0.000001	Diff <2x LOR	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (QC Lot: 474669) - continued											
CG2204866-002	RG_TRIP_WS_LAEMP_EV O_2022-04_NP	aluminum, total	7429-90-5	E420	0.0030	mg/L	<0.0030	<0.0030	0	Diff <2x LOR	----
		antimony, total	7440-36-0	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		arsenic, total	7440-38-2	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		barium, total	7440-39-3	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		beryllium, total	7440-41-7	E420	0.020	mg/L	<0.020 µg/L	<0.000020	0	Diff <2x LOR	----
		bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, total	7440-42-8	E420	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		cadmium, total	7440-43-9	E420	0.0050	mg/L	<0.0050 µg/L	<0.000050	0	Diff <2x LOR	----
		calcium, total	7440-70-2	E420	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		cobalt, total	7440-48-4	E420	0.10	mg/L	<0.10 µg/L	<0.00010	0	Diff <2x LOR	----
		copper, total	7440-50-8	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		iron, total	7439-89-6	E420	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		lead, total	7439-92-1	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		lithium, total	7439-93-2	E420	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		magnesium, total	7439-95-4	E420	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
		manganese, total	7439-96-5	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		nickel, total	7440-02-0	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		potassium, total	7440-09-7	E420	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		selenium, total	7782-49-2	E420	0.050	mg/L	<0.050 µg/L	<0.000050	0	Diff <2x LOR	----
		silicon, total	7440-21-3	E420	0.10	mg/L	<0.10	<0.10	0	Diff <2x LOR	----
		silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, total	7440-23-5	E420	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		strontium, total	7440-24-6	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		sulfur, total	7704-34-9	E420	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
		thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		uranium, total	7440-61-1	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	<0.0030	0	Diff <2x LOR	----
Total Metals (QC Lot: 474670)											
CG2204866-002	RG_TRIP_WS_LAEMP_EV O_2022-04_NP	chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
Total Metals (QC Lot: 476581)											
CG2204847-011	Anonymous	mercury, total	7439-97-6	E508-L	0.00050	ng/L	<0.00050 µg/L	<0.50	0	Diff <2x LOR	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 472858)											
CG2204856-001	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 475216)											
CG2204858-006	Anonymous	aluminum, dissolved	7429-90-5	E421	0.0020	mg/L	<0.0020	0.0028	0.0008	Diff <2x LOR	----
		antimony, dissolved	7440-36-0	E421	0.00020	mg/L	0.00588	0.00590	0.251%	20%	----
		arsenic, dissolved	7440-38-2	E421	0.00020	mg/L	0.00446	0.00448	0.379%	20%	----
		barium, dissolved	7440-39-3	E421	0.00020	mg/L	0.0170	0.0175	2.67%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.040	mg/L	<0.040 µg/L	<0.000040	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.020	mg/L	0.096	0.095	0.001	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E421	0.0100	mg/L	1.03 µg/L	0.00102	0.634%	20%	----
		calcium, dissolved	7440-70-2	E421	0.100	mg/L	521	536	2.77%	20%	----
		cobalt, dissolved	7440-48-4	E421	0.20	mg/L	69.0 µg/L	0.0690	0.0580%	20%	----
		copper, dissolved	7440-50-8	E421	0.00040	mg/L	0.00066	0.00065	0.000008	Diff <2x LOR	----
		iron, dissolved	7439-89-6	E421	0.020	mg/L	0.052	0.053	0.0004	Diff <2x LOR	----
		lead, dissolved	7439-92-1	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0020	mg/L	1.30	1.26	3.24%	20%	----
		magnesium, dissolved	7439-95-4	E421	0.0100	mg/L	254	257	1.12%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00020	mg/L	0.293	0.292	0.378%	20%	----
		molybdenum, dissolved	7439-98-7	E421	0.000100	mg/L	0.0218	0.0222	1.52%	20%	----
		nickel, dissolved	7440-02-0	E421	0.00100	mg/L	0.378	0.380	0.540%	20%	----
		potassium, dissolved	7440-09-7	E421	0.100	mg/L	18.9	18.7	1.41%	20%	----
		selenium, dissolved	7782-49-2	E421	0.100	mg/L	34.9 µg/L	0.0353	1.31%	20%	----
		silicon, dissolved	7440-21-3	E421	0.100	mg/L	2.92	2.92	0.00550%	20%	----
		silver, dissolved	7440-22-4	E421	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E421	0.100	mg/L	55.2	54.4	1.44%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00040	mg/L	1.34	1.34	0.463%	20%	----
		sulfur, dissolved	7704-34-9	E421	1.00	mg/L	434	427	1.59%	20%	----
		thallium, dissolved	7440-28-0	E421	0.000020	mg/L	0.000264	0.000274	3.69%	20%	----
		tin, dissolved	7440-31-5	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.00060	mg/L	<0.00060	<0.00060	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000020	mg/L	0.0440	0.0432	1.71%	20%	----
		vanadium, dissolved	7440-62-2	E421	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E421	0.0020	mg/L	0.0634	0.0643	1.41%	20%	----
Dissolved Metals (QC Lot: 475217)											
CG2204858-006	Anonymous	chromium, dissolved	7440-47-3	E421.Cr-L	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 470970)						
turbidity	---	E121	0.1	NTU	<0.10	---
Physical Tests (QCLot: 471085)						
conductivity	---	E100	1	µS/cm	<1.0	---
Physical Tests (QCLot: 471087)						
alkalinity, bicarbonate (as CaCO3)	---	E290	1	mg/L	<1.0	---
alkalinity, carbonate (as CaCO3)	---	E290	1	mg/L	<1.0	---
alkalinity, hydroxide (as CaCO3)	---	E290	1	mg/L	<1.0	---
alkalinity, total (as CaCO3)	---	E290	1	mg/L	<1.0	---
Physical Tests (QCLot: 471089)						
conductivity	---	E100	1	µS/cm	1.1	---
Physical Tests (QCLot: 471090)						
alkalinity, bicarbonate (as CaCO3)	---	E290	1	mg/L	<1.0	---
alkalinity, carbonate (as CaCO3)	---	E290	1	mg/L	<1.0	---
alkalinity, hydroxide (as CaCO3)	---	E290	1	mg/L	<1.0	---
alkalinity, total (as CaCO3)	---	E290	1	mg/L	<1.0	---
Physical Tests (QCLot: 471233)						
solids, total dissolved [TDS]	---	E162	10	mg/L	<10	---
Physical Tests (QCLot: 471237)						
solids, total suspended [TSS]	---	E160-L	1	mg/L	<1.0	---
Physical Tests (QCLot: 471315)						
turbidity	---	E121	0.1	NTU	<0.10	---
Physical Tests (QCLot: 472018)						
turbidity	---	E121	0.1	NTU	<0.10	---
Physical Tests (QCLot: 472129)						
acidity (as CaCO3)	---	E283	2	mg/L	<2.0	---
Physical Tests (QCLot: 472222)						
turbidity	---	E121	0.1	NTU	<0.10	---
Anions and Nutrients (QCLot: 470687)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	---
Anions and Nutrients (QCLot: 470688)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	---
Anions and Nutrients (QCLot: 470689)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	---



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 470690)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	---
Anions and Nutrients (QCLot: 470691)						
bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	---
Anions and Nutrients (QCLot: 470692)						
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	---
Anions and Nutrients (QCLot: 470821)						
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	---
Anions and Nutrients (QCLot: 470822)						
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	---
Anions and Nutrients (QCLot: 470864)						
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	---
Anions and Nutrients (QCLot: 470867)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	---
Anions and Nutrients (QCLot: 471038)						
Kjeldahl nitrogen, total [TKN]	---	E318	0.05	mg/L	<0.050	---
Anions and Nutrients (QCLot: 471039)						
Kjeldahl nitrogen, total [TKN]	---	E318	0.05	mg/L	<0.050	---
Organic / Inorganic Carbon (QCLot: 471144)						
carbon, dissolved organic [DOC]	---	E358-L	0.5	mg/L	<0.50	---
Organic / Inorganic Carbon (QCLot: 471145)						
carbon, total organic [TOC]	---	E355-L	0.5	mg/L	<0.50	---
Total Metals (QCLot: 474669)						
aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	---
antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	---
arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	---
barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	---
beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	---
bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	---
boron, total	7440-42-8	E420	0.01	mg/L	<0.010	---
cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	---
calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	---
cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	---
copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	---
iron, total	7439-89-6	E420	0.01	mg/L	<0.010	---
lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	---
lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	---



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 474669) - continued						
magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	---
manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	---
molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	---
nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	---
potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	---
selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	---
silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	---
silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	---
sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	---
strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	---
sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	---
thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	---
tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	---
titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	---
uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	---
vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	---
zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	---
Total Metals (QCLot: 474670)						
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	<0.00010	---
Total Metals (QCLot: 476581)						
mercury, total	7439-97-6	E508-L	0.5	ng/L	<0.50	---
Dissolved Metals (QCLot: 472858)						
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	---
Dissolved Metals (QCLot: 475216)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	---
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	---
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	---
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	---
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	---
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	---
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	---
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	---
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	---
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	---
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	---
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	---



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 475216) - continued						
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
Dissolved Metals (QCLot: 475217)						
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	<0.00010	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Physical Tests (QCLot: 470970)									
turbidity	---	E121	0.1	NTU	200 NTU	100	85.0	115	---
Physical Tests (QCLot: 471085)									
conductivity	---	E100	1	µS/cm	146.9 µS/cm	99.4	90.0	110	---
Physical Tests (QCLot: 471086)									
pH	---	E108	---	pH units	7 pH units	100	98.6	101	---
Physical Tests (QCLot: 471087)									
alkalinity, total (as CaCO3)	---	E290	1	mg/L	500 mg/L	103	85.0	115	---
Physical Tests (QCLot: 471088)									
pH	---	E108	---	pH units	7 pH units	100	98.6	101	---
Physical Tests (QCLot: 471089)									
conductivity	---	E100	1	µS/cm	146.9 µS/cm	98.7	90.0	110	---
Physical Tests (QCLot: 471090)									
alkalinity, total (as CaCO3)	---	E290	1	mg/L	500 mg/L	106	85.0	115	---
Physical Tests (QCLot: 471233)									
solids, total dissolved [TDS]	---	E162	10	mg/L	1000 mg/L	102	85.0	115	---
Physical Tests (QCLot: 471237)									
solids, total suspended [TSS]	---	E160-L	1	mg/L	150 mg/L	105	85.0	115	---
Physical Tests (QCLot: 471315)									
turbidity	---	E121	0.1	NTU	200 NTU	101	85.0	115	---
Physical Tests (QCLot: 472018)									
turbidity	---	E121	0.1	NTU	200 NTU	108	85.0	115	---
Physical Tests (QCLot: 472129)									
acidity (as CaCO3)	---	E283	2	mg/L	50 mg/L	108	85.0	115	---
Physical Tests (QCLot: 472222)									
turbidity	---	E121	0.1	NTU	200 NTU	109	85.0	115	---
Physical Tests (QCLot: 473415)									
oxidation-reduction potential [ORP]	---	E125	---	mV	220 mV	101	95.4	104	---
Anions and Nutrients (QCLot: 470687)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	103	90.0	110	---
Anions and Nutrients (QCLot: 470688)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	103	90.0	110	---
Anions and Nutrients (QCLot: 470689)									



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Anions and Nutrients (QCLot: 470689) - continued									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	104	90.0	110	----
Anions and Nutrients (QCLot: 470690)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	103	90.0	110	----
Anions and Nutrients (QCLot: 470691)									
bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	99.7	85.0	115	----
Anions and Nutrients (QCLot: 470692)									
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 470821)									
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.02 mg/L	102	80.0	120	----
Anions and Nutrients (QCLot: 470822)									
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.02 mg/L	103	80.0	120	----
Anions and Nutrients (QCLot: 470864)									
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	8.02 mg/L	100	80.0	120	----
Anions and Nutrients (QCLot: 470867)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	87.6	85.0	115	----
Anions and Nutrients (QCLot: 471038)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 471039)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	99.0	75.0	125	----
Organic / Inorganic Carbon (QCLot: 471144)									
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	86.5	80.0	120	----
Organic / Inorganic Carbon (QCLot: 471145)									
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	90.4	80.0	120	----
Total Metals (QCLot: 474669)									
aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	101	80.0	120	----
antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	109	80.0	120	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	102	80.0	120	----
barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	106	80.0	120	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	96.2	80.0	120	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	97.0	80.0	120	----
boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	95.3	80.0	120	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	102	80.0	120	----
calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	103	80.0	120	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	99.7	80.0	120	----
copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	99.6	80.0	120	----



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Total Metals (QCLot: 474669) - continued									
iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	117	80.0	120	----
lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	102	80.0	120	----
lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	103	80.0	120	----
magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	102	80.0	120	----
manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	103	80.0	120	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	102	80.0	120	----
nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	100	80.0	120	----
potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	103	80.0	120	----
selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	104	80.0	120	----
silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	97.9	80.0	120	----
silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	94.0	80.0	120	----
sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	98.8	80.0	120	----
strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	104	80.0	120	----
sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	91.2	80.0	120	----
thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	103	80.0	120	----
tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	100	80.0	120	----
titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	96.6	80.0	120	----
uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	105	80.0	120	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	104	80.0	120	----
zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	92.7	80.0	120	----
Total Metals (QCLot: 474670)									
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	0.25 mg/L	99.3	80.0	120	----
Total Metals (QCLot: 476581)									
mercury, total	7439-97-6	E508-L	0.5	ng/L	5 ng/L	96.0	80.0	120	----
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	98.2	80.0	120	----
Dissolved Metals (QCLot: 475216)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	103	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	101	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	106	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	105	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	94.7	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	94.4	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	95.2	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	106	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	102	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	102	80.0	120	----



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Dissolved Metals (QCLot: 475216) - continued									
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	102	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	113	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	101	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	102	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	107	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	104	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	97.0	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	104	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	106	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	104	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	93.4	80.0	120	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	89.8	80.0	120	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	105	80.0	120	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	102	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	91.0	80.0	120	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	100	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	97.8	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	98.6	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	105	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	105	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	101	80.0	120	----
Dissolved Metals (QCLot: 475217)									
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	0.25 mg/L	102	80.0	120	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 470687)										
CG2204866-002	RG_TRIP_WS_LAEMP_EV O_2022-04_NP	nitrate (as N)	14797-55-8	E235.NO3-L	2.26 mg/L	2.5 mg/L	90.4	75.0	125	----
Anions and Nutrients (QCLot: 470688)										
CG2204866-002	RG_TRIP_WS_LAEMP_EV O_2022-04_NP	nitrite (as N)	14797-65-0	E235.NO2-L	0.458 mg/L	0.5 mg/L	91.6	75.0	125	----
Anions and Nutrients (QCLot: 470689)										
CG2204866-002	RG_TRIP_WS_LAEMP_EV O_2022-04_NP	fluoride	16984-48-8	E235.F	0.913 mg/L	1 mg/L	91.3	75.0	125	----
Anions and Nutrients (QCLot: 470690)										
CG2204866-002	RG_TRIP_WS_LAEMP_EV O_2022-04_NP	sulfate (as SO4)	14808-79-8	E235.SO4	90.3 mg/L	100 mg/L	90.3	75.0	125	----
Anions and Nutrients (QCLot: 470691)										
CG2204866-002	RG_TRIP_WS_LAEMP_EV O_2022-04_NP	bromide	24959-67-9	E235.Br-L	0.457 mg/L	0.5 mg/L	91.4	75.0	125	----
Anions and Nutrients (QCLot: 470692)										
CG2204866-002	RG_TRIP_WS_LAEMP_EV O_2022-04_NP	chloride	16887-00-6	E235.Cl-L	89.8 mg/L	100 mg/L	89.8	75.0	125	----
Anions and Nutrients (QCLot: 470821)										
CG2204858-002	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	ND mg/L	0.05 mg/L	ND	70.0	130	----
Anions and Nutrients (QCLot: 470822)										
CG2204866-007	RG_ERCKUT_WS_LAEMP_ EVO_2022-04_NP	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0512 mg/L	0.05 mg/L	102	70.0	130	----
Anions and Nutrients (QCLot: 470864)										
CG2204832-002	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0682 mg/L	0.0676 mg/L	101	70.0	130	----
Anions and Nutrients (QCLot: 470867)										
CG2204832-002	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.106 mg/L	0.1 mg/L	106	75.0	125	----
Anions and Nutrients (QCLot: 471038)										
CG2204850-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.97 mg/L	2.5 mg/L	119	70.0	130	----
Anions and Nutrients (QCLot: 471039)										
CG2204866-007	RG_ERCKUT_WS_LAEMP_ EVO_2022-04_NP	Kjeldahl nitrogen, total [TKN]	----	E318	1.70 mg/L	2.5 mg/L	68.0	70.0	130	MSTN
Organic / Inorganic Carbon (QCLot: 471144)										



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Organic / Inorganic Carbon (QCLot: 471144) - continued										
CG2204857-001	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	5.75 mg/L	5 mg/L	115	70.0	130	----
Organic / Inorganic Carbon (QCLot: 471145)										
CG2204857-001	Anonymous	carbon, total organic [TOC]	----	E355-L	6.03 mg/L	5 mg/L	121	70.0	130	----
Total Metals (QCLot: 474669)										
CG2204866-001	RG_MIDER_WS_LAEMP_EVO_2022-04_NP	aluminum, total	7429-90-5	E420	0.195 mg/L	0.2 mg/L	97.5	70.0	130	----
		antimony, total	7440-36-0	E420	0.0209 mg/L	0.02 mg/L	105	70.0	130	----
		arsenic, total	7440-38-2	E420	0.0207 mg/L	0.02 mg/L	104	70.0	130	----
		barium, total	7440-39-3	E420	ND mg/L	0.02 mg/L	ND	70.0	130	----
		beryllium, total	7440-41-7	E420	0.0396 mg/L	0.04 mg/L	99.1	70.0	130	----
		bismuth, total	7440-69-9	E420	0.00947 mg/L	0.01 mg/L	94.7	70.0	130	----
		boron, total	7440-42-8	E420	0.097 mg/L	0.1 mg/L	96.8	70.0	130	----
		cadmium, total	7440-43-9	E420	0.00414 mg/L	0.004 mg/L	103	70.0	130	----
		calcium, total	7440-70-2	E420	ND mg/L	4 mg/L	ND	70.0	130	----
		cobalt, total	7440-48-4	E420	0.0193 mg/L	0.02 mg/L	96.6	70.0	130	----
		copper, total	7440-50-8	E420	0.0191 mg/L	0.02 mg/L	95.7	70.0	130	----
		iron, total	7439-89-6	E420	2.00 mg/L	2 mg/L	100	70.0	130	----
		lead, total	7439-92-1	E420	0.0198 mg/L	0.02 mg/L	99.2	70.0	130	----
		lithium, total	7439-93-2	E420	0.100 mg/L	0.1 mg/L	100	70.0	130	----
		magnesium, total	7439-95-4	E420	ND mg/L	1 mg/L	ND	70.0	130	----
		manganese, total	7439-96-5	E420	0.0194 mg/L	0.02 mg/L	96.8	70.0	130	----
		molybdenum, total	7439-98-7	E420	0.0203 mg/L	0.02 mg/L	101	70.0	130	----
		nickel, total	7440-02-0	E420	0.0388 mg/L	0.04 mg/L	96.9	70.0	130	----
		potassium, total	7440-09-7	E420	4.01 mg/L	4 mg/L	100	70.0	130	----
		selenium, total	7782-49-2	E420	0.0439 mg/L	0.04 mg/L	110	70.0	130	----
		silicon, total	7440-21-3	E420	9.48 mg/L	10 mg/L	94.8	70.0	130	----
		silver, total	7440-22-4	E420	0.00409 mg/L	0.004 mg/L	102	70.0	130	----
		sodium, total	7440-23-5	E420	ND mg/L	2 mg/L	ND	70.0	130	----
		strontium, total	7440-24-6	E420	ND mg/L	0.02 mg/L	ND	70.0	130	----
sulfur, total	7704-34-9	E420	19.6 mg/L	20 mg/L	98.2	70.0	130	----		
thallium, total	7440-28-0	E420	0.00379 mg/L	0.004 mg/L	94.7	70.0	130	----		
tin, total	7440-31-5	E420	0.0198 mg/L	0.02 mg/L	99.1	70.0	130	----		
titanium, total	7440-32-6	E420	0.0383 mg/L	0.04 mg/L	95.7	70.0	130	----		
uranium, total	7440-61-1	E420	0.00409 mg/L	0.004 mg/L	102	70.0	130	----		
vanadium, total	7440-62-2	E420	0.102 mg/L	0.1 mg/L	102	70.0	130	----		
zinc, total	7440-66-6	E420	0.370 mg/L	0.4 mg/L	92.4	70.0	130	----		
Total Metals (QCLot: 474670)										



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 474670) - continued										
CG2204866-001	RG_MIDER_WS_LAEMP_E VO_2022-04_NP	chromium, total	7440-47-3	E420.Cr-L	0.0392 mg/L	0.04 mg/L	97.9	70.0	130	----
Total Metals (QCLot: 476581)										
CG2204857-001	Anonymous	mercury, total	7439-97-6	E508-L	5.65 ng/L	5 ng/L	113	70.0	130	----
Dissolved Metals (QCLot: 472858)										
CG2204856-002	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000919 mg/L	0.0001 mg/L	91.9	70.0	130	----
Dissolved Metals (QCLot: 475216)										
CG2204858-007	Anonymous	aluminum, dissolved	7429-90-5	E421	0.389 mg/L	0.4 mg/L	97.3	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.0425 mg/L	0.04 mg/L	106	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.0393 mg/L	0.04 mg/L	98.2	70.0	130	----
		barium, dissolved	7440-39-3	E421	0.0375 mg/L	0.04 mg/L	93.7	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.0730 mg/L	0.08 mg/L	91.2	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.0169 mg/L	0.02 mg/L	84.5	70.0	130	----
		boron, dissolved	7440-42-8	E421	0.176 mg/L	0.2 mg/L	88.2	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.00746 mg/L	0.008 mg/L	93.3	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	8 mg/L	ND	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	ND mg/L	0.04 mg/L	ND	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.0342 mg/L	0.04 mg/L	85.6	70.0	130	----
		iron, dissolved	7439-89-6	E421	3.84 mg/L	4 mg/L	96.0	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.0368 mg/L	0.04 mg/L	92.0	70.0	130	----
		lithium, dissolved	7439-93-2	E421	ND mg/L	0.2 mg/L	ND	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	2 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E421	ND mg/L	0.04 mg/L	ND	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.0422 mg/L	0.04 mg/L	106	70.0	130	----
		nickel, dissolved	7440-02-0	E421	ND mg/L	0.08 mg/L	ND	70.0	130	----
		potassium, dissolved	7440-09-7	E421	ND mg/L	8 mg/L	ND	70.0	130	----
		selenium, dissolved	7782-49-2	E421	0.0866 mg/L	0.08 mg/L	108	70.0	130	----
		silicon, dissolved	7440-21-3	E421	18.3 mg/L	20 mg/L	91.6	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.00779 mg/L	0.008 mg/L	97.3	70.0	130	----
		sodium, dissolved	7440-23-5	E421	ND mg/L	4 mg/L	ND	70.0	130	----
		strontium, dissolved	7440-24-6	E421	ND mg/L	0.04 mg/L	ND	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	ND mg/L	40 mg/L	ND	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.00730 mg/L	0.008 mg/L	91.2	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.0390 mg/L	0.04 mg/L	97.6	70.0	130	----
		titanium, dissolved	7440-32-6	E421	0.0750 mg/L	0.08 mg/L	93.7	70.0	130	----
		uranium, dissolved	7440-61-1	E421	ND mg/L	0.008 mg/L	ND	70.0	130	----

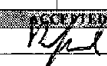


Sub-Matrix: **Water**

					<i>Matrix Spike (MS) Report</i>					
					<i>Spike</i>		<i>Recovery (%)</i>	<i>Recovery Limits (%)</i>		
<i>Laboratory sample ID</i>	<i>Client sample ID</i>	<i>Analyte</i>	<i>CAS Number</i>	<i>Method</i>	<i>Concentration</i>	<i>Target</i>	<i>MS</i>	<i>Low</i>	<i>High</i>	<i>Qualifier</i>
Dissolved Metals (QCLot: 475216) - continued										
CG2204858-007	Anonymous	vanadium, dissolved	7440-62-2	E421	0.198 mg/L	0.2 mg/L	99.1	70.0	130	----
		zinc, dissolved	7440-66-6	E421	0.664 mg/L	0.8 mg/L	83.0	70.0	130	----
Dissolved Metals (QCLot: 475217)										
CG2204858-007	Anonymous	chromium, dissolved	7440-47-3	E421.Cr-L	0.0744 mg/L	0.08 mg/L	93.0	70.0	130	----

Qualifiers

<i>Qualifier</i>	<i>Description</i>
MSTN	TKN Matrix Spike recovery was low due to interference from high nitrate, which causes negative bias on TKN.

COC ID:		April EVO LAEMP 2022				TURNAROUND TIME:								
PROJECT/CLIENT INFO		LABORATORY						Excel	PDF	EDD				
Facility Name / Job#	Regional EVO LAEMP				Lab Name	ALS Calgary								
Project Manager	Mike Pope				Lab Contact	Lyudmyla Shvets								
Email					Email	lyudmyla.shvets@alsglobal.com								
Address	421 Pine Avenue				Address	2559 29 Street NE								
City	Sparwood		Province	BC	City	Calgary	Province	AB						
Postal Code	V0B 2G0		Country	Canada	Postal Code	T1Y 7B5	Country	Canada						
Phone Number	343-333-3905				Phone Number	1 403 407 1794								
SAMPLE DETAILS					ANALYSIS REQUESTED									
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	TECKCOAL-ROUTINE-VA	ALS_Package-DOC	ALS_Package-TKN/TOC	HG-TU-CVAF-VA	HC-D-CVAF-VA	TECKCOAL-MET-T-VA	TECKCOAL-MET-D-VA
RG_MIDER_WS_LAEMP_EVO_2022-04_NP	RG_MIDER	WS	No	4/25/2022	11:30	G	7	X	X	X	X	X	X	X
RG_TRIP_WS_LAEMP_EVO_2022-04_NP	RG_TRIP	WS	No	4/25/2022	14:00	G	7							
RG_M13_WS_LAEMP_EVO_2022-04_NP	RG_M13	WS	No	4/25/2022	9:00	G	7	X	X	X	X	X	X	X
RG_FBLANK_WS_LAEMP_EVO_2022-04_NP	RG_FBLANK	WS	No	4/25/2022	14:00	G	7	X	X	X	X	X	X	X
RG_MIDBO_WS_LAEMP_EVO_2022-04_NP	RG_MIDBO	WS	No	4/25/2022	14:00	G	7	X	X	X	X	X	X	X
RG_MIDGA_WS_LAEMP_EVO_2022-04_NP	RG_MIDGA	WS	No	4/25/2022	11:30	G	7	X	X	X	X	X	X	X
RG_ERCKUT_WS_LAEMP_EVO_2022-04_NP	RG_ERCKUT	WS	No	4/26/2022	11:00	G	7	X	X	X	X	X	X	X
RG_ERCKMD_WS_LAEMP_EVO_2022-04_NP	RG_ERCKMD	WS	No	4/26/2022	14:00	G	7	X	X	X	X	X	X	X
ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS				RELINQUISHED BY/ACQUITTANCE		DATE/TIME		ACCEPTED BY/ACQUITTANCE						
ALS PO VPO00816101				Alex McClymont		April 26, 2022		 4/27/22 LG-10						
NO OF BOTTLES RETURNED/DESCRIPTION				SAMPLER'S NAME		MOBILE #		DATE/TIME						
Regular (default) x Priority (2-3 business days) - 50% surcharge Emergency (1 Business Day) - 100% surcharge For Emergency <1 Day, ASAP, or Weekends				Alex McClymont		780-293-6750		April 26, 2022						

Environmental Division
 Calgary
 Work Order Reference
CG2204866



Telephone: +1 403 407 1800

213.078

7c



Environmental

CERTIFICATE OF ANALYSIS

Work Order : **CG2204876**
Client : **Teck Coal Limited**
Contact : Mike Pope
Address : 421 PINE AVE
Sparwood BC Canada V0B 2G0
Telephone : ----
Project : ELKVIEW OPERATIONS
PO : VPO00816101
C-O-C number : EVO LAEMP_2022_APR_ALS
Sampler : Alex McClymont
Site : ----
Quote number : Teck Coal Master Quote
No. of samples received : 1
No. of samples analysed : 1

Page : 1 of 7
Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
Calgary AB Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 27-Apr-2022 10:10
Date Analysis Commenced : 28-Apr-2022
Issue Date : 05-May-2022 17:26

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Anthony Calero	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Dan Gebert	Laboratory Analyst	Metals, Burnaby, British Columbia
Elke Tabora		Inorganics, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Kim Jensen	Department Manager - Metals	Metals, Burnaby, British Columbia
Owen Cheng		Metals, Burnaby, British Columbia
Ruifang Zheng	Analyst	Inorganics, Calgary, Alberta
Sara Niroomand		Inorganics, Calgary, Alberta
Shaneel Dayal	Analyst	Metals, Burnaby, British Columbia



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
 LOR: Limit of Reporting (detection limit).

Unit	Description
-	No Unit
%	percent
µg/L	micrograms per litre
µS/cm	Microsiemens per centimetre
meq/L	milliequivalents per litre
mg/L	milligrams per litre
mV	millivolts
NTU	nephelometric turbidity units
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Sample Comments

Sample	Client Id	Comment
CG2204876-001	EV_EC_BRIDGE_WS_LAEMP_ EVO_2022-04_NP	Updated WO to rush TAT as per client.
CG2204876-001	EV_EC_BRIDGE_WS_LAEMP_ EVO_2022-04_NP	Water sample for total mercury analysis was not submitted in glass or PTFE container with HCl preservative. Results may be biased low.

Qualifiers

Qualifier	Description
DLDS	Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.
TKNI	TKN result may be biased low due to Nitrate interference. Nitrate-N is > 10x TKN.





Analytical Results

Sub-Matrix: Water					Client sample ID	EV_EC_BRIDGE	----	----	----	----
(Matrix: Water)						_WS_LAEMP_E				
					Client sampling date / time	26-Apr-2022	----	----	----	----
					15:45					
Analyte	CAS Number	Method	LOR	Unit	CG2204876-001	-----	-----	-----	-----	-----
					Result	---	---	---	---	---
Physical Tests										
acidity (as CaCO3)	----	E283	2.0	mg/L	8.4	----	----	----	----	----
alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	436	----	----	----	----	----
alkalinity, bicarbonate (as HCO3)	71-52-3	E290	1.0	mg/L	532	----	----	----	----	----
alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	----	----	----	----	----
alkalinity, carbonate (as CO3)	3812-32-6	E290	1.0	mg/L	<1.0	----	----	----	----	----
alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	----	----	----	----	----
alkalinity, hydroxide (as OH)	14280-30-9	E290	1.0	mg/L	<1.0	----	----	----	----	----
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	436	----	----	----	----	----
conductivity	----	E100	2.0	µS/cm	1960	----	----	----	----	----
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	1350	----	----	----	----	----
oxidation-reduction potential [ORP]	----	E125	0.10	mV	512	----	----	----	----	----
pH	----	E108	0.10	pH units	8.14	----	----	----	----	----
solids, total dissolved [TDS]	----	E162	10	mg/L	1660	----	----	----	----	----
solids, total suspended [TSS]	----	E160-L	1.0	mg/L	<1.0	----	----	----	----	----
turbidity	----	E121	0.10	NTU	0.30	----	----	----	----	----
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	----	----	----	----	----
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.250 ^{DLDS}	----	----	----	----	----
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	6.05	----	----	----	----	----
fluoride	16984-48-8	E235.F	0.020	mg/L	<0.100 ^{DLDS}	----	----	----	----	----
Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	0.125 ^{TKNI}	----	----	----	----	----
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	17.5	----	----	----	----	----
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0050 ^{DLDS}	----	----	----	----	----
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0218	----	----	----	----	----
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0224	----	----	----	----	----
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	805	----	----	----	----	----
Organic / Inorganic Carbon										
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	0.71	----	----	----	----	----



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	EV_EC_BRIDGE _WS_LAEMP_E VO_2022-04_N P	----	----	----	----
Client sampling date / time					26-Apr-2022 15:45	----	----	----	----	
Analyte	CAS Number	Method	LOR	Unit	CG2204876-001	-----	-----	-----	-----	
					Result	----	----	----	----	
Organic / Inorganic Carbon										
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	0.65	----	----	----	----	
Ion Balance										
anion sum	----	EC101	0.10	meq/L	26.9	----	----	----	----	
cation sum	----	EC101	0.10	meq/L	27.2	----	----	----	----	
ion balance (cations/anions)	----	EC101	0.010	%	101	----	----	----	----	
ion balance (APHA)	----	EC101	0.010	%	0.554	----	----	----	----	
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0033	----	----	----	----	
antimony, total	7440-36-0	E420	0.00010	mg/L	0.00023	----	----	----	----	
arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00030	----	----	----	----	
barium, total	7440-39-3	E420	0.00010	mg/L	0.0705	----	----	----	----	
beryllium, total	7440-41-7	E420	0.020	µg/L	<0.020	----	----	----	----	
bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	----	----	----	----	
boron, total	7440-42-8	E420	0.010	mg/L	0.015	----	----	----	----	
cadmium, total	7440-43-9	E420	0.0050	µg/L	0.102	----	----	----	----	
calcium, total	7440-70-2	E420	0.050	mg/L	291	----	----	----	----	
chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	0.00024	----	----	----	----	
cobalt, total	7440-48-4	E420	0.10	µg/L	<0.10	----	----	----	----	
copper, total	7440-50-8	E420	0.00050	mg/L	<0.00050	----	----	----	----	
iron, total	7439-89-6	E420	0.010	mg/L	<0.010	----	----	----	----	
lead, total	7439-92-1	E420	0.000050	mg/L	<0.000050	----	----	----	----	
lithium, total	7439-93-2	E420	0.0010	mg/L	0.0301	----	----	----	----	
magnesium, total	7439-95-4	E420	0.0050	mg/L	177	----	----	----	----	
manganese, total	7439-96-5	E420	0.00010	mg/L	0.00010	----	----	----	----	
mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	----	----	----	----	
molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.00123	----	----	----	----	
nickel, total	7440-02-0	E420	0.00050	mg/L	0.00099	----	----	----	----	
potassium, total	7440-09-7	E420	0.050	mg/L	3.23	----	----	----	----	
selenium, total	7782-49-2	E420	0.050	µg/L	206	----	----	----	----	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	EV_EC_BRIDGE _WS_LAEMP_E VO_2022-04_N P	----	----	----	----
Client sampling date / time					26-Apr-2022 15:45	----	----	----	----	
Analyte	CAS Number	Method	LOR	Unit	CG2204876-001	-----	-----	-----	-----	
					Result	----	----	----	----	
Total Metals										
silicon, total	7440-21-3	E420	0.10	mg/L	4.49	----	----	----	----	
silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	----	----	----	----	
sodium, total	7440-23-5	E420	0.050	mg/L	3.90	----	----	----	----	
strontium, total	7440-24-6	E420	0.00020	mg/L	0.261	----	----	----	----	
sulfur, total	7704-34-9	E420	0.50	mg/L	325	----	----	----	----	
thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	----	----	----	----	
tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	----	----	----	----	
titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00030	----	----	----	----	
uranium, total	7440-61-1	E420	0.000010	mg/L	0.00884	----	----	----	----	
vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	----	----	----	----	
zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	----	----	----	----	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0022	----	----	----	----	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00022	----	----	----	----	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00026	----	----	----	----	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0641	----	----	----	----	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.020	----	----	----	----	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	----	----	----	----	
boron, dissolved	7440-42-8	E421	0.010	mg/L	0.012	----	----	----	----	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.0847	----	----	----	----	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	265	----	----	----	----	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	0.00022	----	----	----	----	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	<0.10	----	----	----	----	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00020	----	----	----	----	
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	----	----	----	----	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	----	----	----	----	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0294	----	----	----	----	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	167	----	----	----	----	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	<0.00010	----	----	----	----	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	EV_EC_BRIDGE _WS_LAEMP_E VO_2022-04_N P	----	----	----	----
Client sampling date / time					26-Apr-2022 15:45	----	----	----	----	
Analyte	CAS Number	Method	LOR	Unit	CG2204876-001	-----	-----	-----	-----	
					Result	----	----	----	----	
Dissolved Metals										
mercury, dissolved	7439-97-6	E509	0.000050	mg/L	<0.000050	----	----	----	----	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00110	----	----	----	----	
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00086	----	----	----	----	
potassium, dissolved	7440-09-7	E421	0.050	mg/L	2.84	----	----	----	----	
selenium, dissolved	7782-49-2	E421	0.050	µg/L	205	----	----	----	----	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	3.68	----	----	----	----	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	----	----	----	----	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	3.42	----	----	----	----	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.238	----	----	----	----	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	267	----	----	----	----	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	----	----	----	----	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	----	----	----	----	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	----	----	----	----	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00834	----	----	----	----	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	----	----	----	----	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0017	----	----	----	----	
dissolved mercury filtration location	----	EP509	-	-	Field	----	----	----	----	
dissolved metals filtration location	----	EP421	-	-	Field	----	----	----	----	

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: CG2204876	Page	: 1 of 13
Client	: Teck Coal Limited	Laboratory	: Calgary - Environmental
Contact	: Mike Pope	Account Manager	: Lyudmyla Shvets
Address	: 421 PINE AVE Sparwood BC Canada V0B 2G0	Address	: 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5
Telephone	: ----	Telephone	: +1 403 407 1800
Project	: ELKVIEW OPERATIONS	Date Samples Received	: 27-Apr-2022 10:10
PO	: VPO00816101	Issue Date	: 05-May-2022 17:26
C-O-C number	: EVO LAEMP_2022_APR_ALS		
Sampler	: Alex McClymont		
Site	: ----		
Quote number	: Teck Coal Master Quote		
No. of samples received	: 1		
No. of samples analysed	: 1		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) EV_EC_BRIDGE_WS_LAEMP_EVO_2022-04_NP	E298	26-Apr-2022	28-Apr-2022	----	----		28-Apr-2022	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE EV_EC_BRIDGE_WS_LAEMP_EVO_2022-04_NP	E235.Br-L	26-Apr-2022	----	----	----		28-Apr-2022	28 days	2 days	✓
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE EV_EC_BRIDGE_WS_LAEMP_EVO_2022-04_NP	E235.Cl-L	26-Apr-2022	----	----	----		28-Apr-2022	28 days	2 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE EV_EC_BRIDGE_WS_LAEMP_EVO_2022-04_NP	E378-U	26-Apr-2022	----	----	----		28-Apr-2022	3 days	2 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE EV_EC_BRIDGE_WS_LAEMP_EVO_2022-04_NP	E235.F	26-Apr-2022	----	----	----		28-Apr-2022	28 days	2 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE EV_EC_BRIDGE_WS_LAEMP_EVO_2022-04_NP	E235.NO3-L	26-Apr-2022	----	----	----		28-Apr-2022	3 days	2 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE EV_EC_BRIDGE_WS_LAEMP_EVO_2022-04_NP	E235.NO2-L	26-Apr-2022	----	----	----		28-Apr-2022	3 days	2 days	✓



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Sulfate in Water by IC											
HDPE EV_EC_BRIDGE_WS_LAEMP_EVO_2022-04_NP	E235.SO4	26-Apr-2022	----	----	----		28-Apr-2022	28 days	2 days	✓	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) EV_EC_BRIDGE_WS_LAEMP_EVO_2022-04_NP	E318	26-Apr-2022	02-May-2022	----	----		02-May-2022	28 days	6 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) EV_EC_BRIDGE_WS_LAEMP_EVO_2022-04_NP	E372-U	26-Apr-2022	30-Apr-2022	----	----		30-Apr-2022	28 days	4 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) EV_EC_BRIDGE_WS_LAEMP_EVO_2022-04_NP	E421.Cr-L	26-Apr-2022	02-May-2022	----	----		03-May-2022	180 days	7 days	✓	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) EV_EC_BRIDGE_WS_LAEMP_EVO_2022-04_NP	E509	26-Apr-2022	29-Apr-2022	----	----		29-Apr-2022	28 days	3 days	✓	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) EV_EC_BRIDGE_WS_LAEMP_EVO_2022-04_NP	E421	26-Apr-2022	02-May-2022	----	----		03-May-2022	180 days	7 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) EV_EC_BRIDGE_WS_LAEMP_EVO_2022-04_NP	E358-L	26-Apr-2022	28-Apr-2022	----	----		28-Apr-2022	28 days	2 days	✓	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) EV_EC_BRIDGE_WS_LAEMP_EVO_2022-04_NP	E355-L	26-Apr-2022	28-Apr-2022	----	----		28-Apr-2022	28 days	2 days	✓	
Physical Tests : Acidity by Titration											
HDPE EV_EC_BRIDGE_WS_LAEMP_EVO_2022-04_NP	E283	26-Apr-2022	----	----	----		28-Apr-2022	14 days	2 days	✓	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Alkalinity Species by Titration											
HDPE EV_EC_BRIDGE_WS_LAEMP_EVO_2022-04_NP	E290	26-Apr-2022	----	----	----		28-Apr-2022	14 days	2 days		✓
Physical Tests : Conductivity in Water											
HDPE EV_EC_BRIDGE_WS_LAEMP_EVO_2022-04_NP	E100	26-Apr-2022	----	----	----		28-Apr-2022	28 days	2 days		✓
Physical Tests : ORP by Electrode											
HDPE EV_EC_BRIDGE_WS_LAEMP_EVO_2022-04_NP	E125	26-Apr-2022	----	----	----		04-May-2022	0.25 hrs	192 hrs		* EHTR-FM
Physical Tests : pH by Meter											
HDPE EV_EC_BRIDGE_WS_LAEMP_EVO_2022-04_NP	E108	26-Apr-2022	----	----	----		28-Apr-2022	0.25 hrs	48 hrs		* EHTR-FM
Physical Tests : TDS by Gravimetry											
HDPE EV_EC_BRIDGE_WS_LAEMP_EVO_2022-04_NP	E162	26-Apr-2022	----	----	----		01-May-2022	7 days	5 days		✓
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE EV_EC_BRIDGE_WS_LAEMP_EVO_2022-04_NP	E160-L	26-Apr-2022	----	----	----		01-May-2022	7 days	5 days		✓
Physical Tests : Turbidity by Nephelometry											
HDPE EV_EC_BRIDGE_WS_LAEMP_EVO_2022-04_NP	E121	26-Apr-2022	----	----	----		29-Apr-2022	3 days	3 days		✓
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) EV_EC_BRIDGE_WS_LAEMP_EVO_2022-04_NP	E420.Cr-L	26-Apr-2022	----	----	----		01-May-2022	180 days	5 days		✓
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) EV_EC_BRIDGE_WS_LAEMP_EVO_2022-04_NP	E508	26-Apr-2022	----	----	----		30-Apr-2022	28 days	3 days		✓



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) EV_EC_BRIDGE_WS_LAEMP_EVO_2022-04_NP	E420	26-Apr-2022	----	----	----		01-May-2022	180 days	5 days	✓

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended

Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
Analytical Methods							
Laboratory Duplicates (DUP)							
Acidity by Titration	E283	471469	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290	471464	1	15	6.6	5.0	✓
Ammonia by Fluorescence	E298	470869	1	17	5.8	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	470814	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	470815	1	20	5.0	5.0	✓
Conductivity in Water	E100	471466	1	9	11.1	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	474313	1	19	5.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	472860	1	5	20.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	474306	1	19	5.2	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	471636	1	13	7.6	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	470823	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	470812	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	470816	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	470817	1	20	5.0	5.0	✓
ORP by Electrode	E125	475449	1	20	5.0	5.0	✓
pH by Meter	E108	471465	1	13	7.6	5.0	✓
Sulfate in Water by IC	E235.SO4	470813	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	471235	1	5	20.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	473158	1	10	10.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	471617	1	19	5.2	5.0	✓
Total Mercury in Water by CVAAS	E508	472885	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	473159	1	19	5.2	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	471637	1	14	7.1	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	470866	1	17	5.8	5.0	✓
Turbidity by Nephelometry	E121	472222	1	20	5.0	5.0	✓
Laboratory Control Samples (LCS)							
Acidity by Titration	E283	471469	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290	471464	1	15	6.6	5.0	✓
Ammonia by Fluorescence	E298	470869	1	17	5.8	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	470814	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	470815	1	20	5.0	5.0	✓
Conductivity in Water	E100	471466	1	9	11.1	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	474313	1	19	5.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	472860	1	5	20.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	474306	1	19	5.2	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	471636	1	13	7.6	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	470823	1	20	5.0	5.0	✓



Matrix: **Water**

Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
<i>Analytical Methods</i>							
Laboratory Control Samples (LCS) - Continued							
Fluoride in Water by IC	E235.F	470812	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	470816	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	470817	1	20	5.0	5.0	✓
ORP by Electrode	E125	475449	1	20	5.0	5.0	✓
pH by Meter	E108	471465	1	13	7.6	5.0	✓
Sulfate in Water by IC	E235.SO4	470813	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	471235	1	5	20.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	473158	1	10	10.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	471617	1	19	5.2	5.0	✓
Total Mercury in Water by CVAAS	E508	472885	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	473159	1	19	5.2	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	471637	1	14	7.1	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	470866	1	17	5.8	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	471240	1	4	25.0	5.0	✓
Turbidity by Nephelometry	E121	472222	1	20	5.0	5.0	✓
Method Blanks (MB)							
Acidity by Titration	E283	471469	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290	471464	1	15	6.6	5.0	✓
Ammonia by Fluorescence	E298	470869	1	17	5.8	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	470814	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	470815	1	20	5.0	5.0	✓
Conductivity in Water	E100	471466	1	9	11.1	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	474313	1	19	5.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	472860	1	5	20.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	474306	1	19	5.2	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	471636	1	13	7.6	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	470823	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	470812	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	470816	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	470817	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	470813	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	471235	1	5	20.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	473158	1	10	10.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	471617	1	19	5.2	5.0	✓
Total Mercury in Water by CVAAS	E508	472885	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	473159	1	19	5.2	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	471637	1	14	7.1	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	470866	1	17	5.8	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	471240	1	4	25.0	5.0	✓
Turbidity by Nephelometry	E121	472222	1	20	5.0	5.0	✓



Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
<i>Analytical Methods</i>							
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	470869	1	17	5.8	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	470814	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	470815	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	474313	1	19	5.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	472860	1	5	20.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	474306	1	19	5.2	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	471636	1	13	7.6	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	470823	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	470812	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	470816	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	470817	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	470813	1	20	5.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	473158	1	10	10.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	471617	1	19	5.2	5.0	✓
Total Mercury in Water by CVAAS	E508	472885	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	473159	1	19	5.2	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	471637	1	14	7.1	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	470866	1	17	5.8	5.0	✓



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 Calgary - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 Calgary - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 Calgary - Environmental	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
ORP by Electrode	E125 Calgary - Environmental	Water	ASTM D1498 (mod)	Oxidation reduction potential is reported as the oxidation-reduction potential of the platinum metal-reference electrode employed, measured in mV. For high accuracy test results, it is recommended that this analysis be conducted in the field.
TSS by Gravimetry (Low Level)	E160-L Calgary - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 Calgary - Environmental	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC (Low Level)	E235.Cl-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Acidity by Titration	E283 Calgary - Environmental	Water	APHA 2310 B (mod)	Acidity is determined by potentiometric titration to pH endpoint of 8.3



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Alkalinity Species by Titration	E290 Calgary - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 Calgary - Environmental	Water	J. Environ. Monit., 2005, 7, 37-42 (mod)	Ammonia in water is analyzed by flow-injection analysis with fluorescence detection after reaction with orthophthaldialdehyde (OPA).
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 Calgary - Environmental	Water	APHA 4500-Norg D (mod)	Total Kjeldahl Nitrogen is determined using block digestion followed by flow-injection analysis with fluorescence detection.
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L Calgary - Environmental	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Dissolved Organic Carbon by Combustion (Low Level)	E358-L Calgary - Environmental	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U Calgary - Environmental	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U Calgary - Environmental	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Total Metals in Water by CRC ICPMS	E420 Vancouver - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L Vancouver - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS.
Dissolved Metals in Water by CRC ICPMS	E421 Vancouver - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L Vancouver - Environmental	Water	APHA 3030 B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS
Total Mercury in Water by CVAAS	E508 Vancouver - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS
Dissolved Mercury in Water by CVAAS	E509 Vancouver - Environmental	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
Dissolved Hardness (Calculated)	EC100 Vancouver - Environmental	Water	APHA 2340B	"Hardness (as CaCO ₃), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Ion Balance using Dissolved Metals	EC101 Calgary - Environmental	Water	APHA 1030E	Cation Sum, Anion Sum, and Ion Balance are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present. Ion Balance cannot be calculated accurately for waters with very low electrical conductivity (EC).

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 Calgary - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 Calgary - Environmental	Water	APHA 4500-Norg D (mod)	Samples are digested using block digestion with Copper Sulfate Digestion Reagent.
Preparation for Total Organic Carbon by Combustion	EP355 Calgary - Environmental	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon for Combustion	EP358 Calgary - Environmental	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Phosphorus in water	EP372 Calgary - Environmental	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Dissolved Metals Water Filtration	EP421 Vancouver - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO ₃ .
Dissolved Mercury Water Filtration	EP509	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.

Page : 13 of 13
Work Order : CG2204876
Client : Teck Coal Limited
Project : ELKVIEW OPERATIONS



<i>Preparation Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
	Vancouver - Environmental			



QUALITY CONTROL REPORT

Work Order : CG2204876

Page : 1 of 17

Client : Teck Coal Limited
Contact : Mike Pope
Address : 421 PINE AVE
Sparwood BC Canada V0B 2G0
Telephone : ----
Project : ELKVIEW OPERATIONS
PO : VPO00816101
C-O-C number : EVO LAEMP_2022_APR_ALS
Sampler : Alex McClymont
Site : ----
Quote number : Teck Coal Master Quote
No. of samples received : 1
No. of samples analysed : 1

Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
Calgary, Alberta Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 27-Apr-2022 10:10
Date Analysis Commenced : 28-Apr-2022
Issue Date : 05-May-2022 17:26

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
Matrix Spike (MS) Report; Recovery and Acceptance Limits
Reference Material (RM) Report; Recovery and Acceptance Limits
Method Blank (MB) Report; Recovery and Acceptance Limits
Laboratory Control Sample (LCS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Table with 3 columns: Signatories, Position, Laboratory Department. Lists names like Anthony Calero, Dan Gebert, etc., and their roles and departments.

Page : 2 of 17
Work Order : CG2204876
Client : Teck Coal Limited
Project : ELKVIEW OPERATIONS



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Services number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percentage Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test specific).

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 471235)											
CG2204874-001	Anonymous	solids, total dissolved [TDS]	----	E162	20	mg/L	406	396	2.37%	20%	----
Physical Tests (QC Lot: 471464)											
CG2204873-002	Anonymous	alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	94.5	95.2	0.738%	20%	----
		alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	94.5	95.2	0.738%	20%	----
Physical Tests (QC Lot: 471465)											
CG2204874-004	Anonymous	pH	----	E108	0.10	pH units	8.07	8.06	0.124%	4%	----
Physical Tests (QC Lot: 471466)											
CG2204874-004	Anonymous	conductivity	----	E100	2.0	µS/cm	573	573	0.00%	10%	----
Physical Tests (QC Lot: 471469)											
CG2204870-001	Anonymous	acidity (as CaCO3)	----	E283	2.0	mg/L	<2.0	<2.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 472222)											
CG2204832-002	Anonymous	turbidity	----	E121	0.10	NTU	0.49	0.54	0.05	Diff <2x LOR	----
Physical Tests (QC Lot: 475449)											
CG2204872-002	Anonymous	oxidation-reduction potential [ORP]	----	E125	0.10	mV	474	473	0.0634%	15%	----
Anions and Nutrients (QC Lot: 470812)											
CG2204867-001	Anonymous	fluoride	16984-48-8	E235.F	0.100	mg/L	0.214	0.216	0.001	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 470813)											
CG2204867-001	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	1.50	mg/L	1210	1180	1.94%	20%	----
Anions and Nutrients (QC Lot: 470814)											
CG2204867-001	Anonymous	bromide	24959-67-9	E235.Br-L	0.250	mg/L	<0.250	<0.250	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 470815)											
CG2204867-001	Anonymous	chloride	16887-00-6	E235.Cl-L	0.50	mg/L	7.62	7.54	0.967%	20%	----
Anions and Nutrients (QC Lot: 470816)											
CG2204867-001	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	0.0250	mg/L	48.0	47.0	2.18%	20%	----
Anions and Nutrients (QC Lot: 470817)											
CG2204867-001	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 470823)											
CG2204870-001	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0070	0.0072	0.0002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 470866)											



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 470866) - continued											
CG2204871-001	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0345	0.0341	1.15%	20%	----
Anions and Nutrients (QC Lot: 470869)											
CG2204871-001	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0933	0.0941	0.854%	20%	----
Anions and Nutrients (QC Lot: 471617)											
CG2204872-002	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	0.209	0.173	0.036	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 471636)											
CG2204870-001	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	5.14	5.46	5.89%	20%	----
Organic / Inorganic Carbon (QC Lot: 471637)											
CG2204870-001	Anonymous	carbon, total organic [TOC]	----	E355-L	0.50	mg/L	5.69	5.43	4.64%	20%	----
Total Metals (QC Lot: 472885)											
CG2204867-006	Anonymous	mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Total Metals (QC Lot: 473158)											
CG2204844-005	Anonymous	chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	0.00045	0.00049	0.00004	Diff <2x LOR	----
Total Metals (QC Lot: 473159)											
CG2204844-005	Anonymous	aluminum, total	7429-90-5	E420	0.0030	mg/L	0.227	0.228	0.647%	20%	----
		antimony, total	7440-36-0	E420	0.00010	mg/L	0.00014	0.00010	0.00004	Diff <2x LOR	----
		arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00030	0.00029	0.00004	Diff <2x LOR	----
		barium, total	7440-39-3	E420	0.00010	mg/L	0.103	0.102	1.02%	20%	----
		beryllium, total	7440-41-7	E420	0.020	mg/L	<0.020 µg/L	<0.000020	0	Diff <2x LOR	----
		bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, total	7440-42-8	E420	0.010	mg/L	0.010	0.010	0.0000009	Diff <2x LOR	----
		cadmium, total	7440-43-9	E420	0.0050	mg/L	0.0286 µg/L	0.0000289	0.0000002	Diff <2x LOR	----
		calcium, total	7440-70-2	E420	0.050	mg/L	61.5	62.8	2.18%	20%	----
		cobalt, total	7440-48-4	E420	0.10	mg/L	0.10 µg/L	<0.00010	0.000001	Diff <2x LOR	----
		copper, total	7440-50-8	E420	0.00050	mg/L	0.00054	0.00058	0.00004	Diff <2x LOR	----
		iron, total	7439-89-6	E420	0.010	mg/L	0.181	0.195	7.63%	20%	----
		lead, total	7439-92-1	E420	0.000050	mg/L	0.000124	0.000131	0.000006	Diff <2x LOR	----
		lithium, total	7439-93-2	E420	0.0010	mg/L	0.0098	0.0096	0.0001	Diff <2x LOR	----
		magnesium, total	7439-95-4	E420	0.0050	mg/L	20.8	21.0	1.17%	20%	----
		manganese, total	7439-96-5	E420	0.00010	mg/L	0.00738	0.00752	1.86%	20%	----
		molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.00111	0.00112	1.26%	20%	----
		nickel, total	7440-02-0	E420	0.00050	mg/L	0.00077	0.00085	0.00009	Diff <2x LOR	----
		potassium, total	7440-09-7	E420	0.050	mg/L	0.831	0.846	1.74%	20%	----
		selenium, total	7782-49-2	E420	0.050	mg/L	10.5 µg/L	0.0110	4.15%	20%	----
		silicon, total	7440-21-3	E420	0.10	mg/L	2.07	2.08	0.370%	20%	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (QC Lot: 473159) - continued											
CG2204844-005	Anonymous	silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, total	7440-23-5	E420	0.050	mg/L	3.71	3.69	0.541%	20%	----
		strontium, total	7440-24-6	E420	0.00020	mg/L	0.218	0.222	2.00%	20%	----
		sulfur, total	7704-34-9	E420	0.50	mg/L	24.9	25.2	1.22%	20%	----
		thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, total	7440-32-6	E420	0.00030	mg/L	0.00322	0.00264	0.00058	Diff <2x LOR	----
		uranium, total	7440-61-1	E420	0.000010	mg/L	0.00106	0.00106	0.147%	20%	----
		vanadium, total	7440-62-2	E420	0.00050	mg/L	0.00085	0.00085	0.000007	Diff <2x LOR	----
		zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	<0.0030	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 472860)											
CG2204873-004	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 474306)											
CG2204797-001	Anonymous	aluminum, dissolved	7429-90-5	E421	0.0020	mg/L	0.0024	0.0027	0.0003	Diff <2x LOR	----
		antimony, dissolved	7440-36-0	E421	0.00020	mg/L	0.00282	0.00287	1.73%	20%	----
		arsenic, dissolved	7440-38-2	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		barium, dissolved	7440-39-3	E421	0.00020	mg/L	0.0176	0.0170	3.26%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.040	mg/L	<0.040 µg/L	<0.000040	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.020	mg/L	0.098	0.098	0.0008	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E421	0.0100	mg/L	1.66 µg/L	0.00167	0.585%	20%	----
		calcium, dissolved	7440-70-2	E421	0.100	mg/L	588	589	0.0926%	20%	----
		cobalt, dissolved	7440-48-4	E421	0.20	mg/L	60.0 µg/L	0.0609	1.46%	20%	----
		copper, dissolved	7440-50-8	E421	0.00040	mg/L	<0.00040	<0.00040	0	Diff <2x LOR	----
		iron, dissolved	7439-89-6	E421	0.020	mg/L	0.041	0.040	0.001	Diff <2x LOR	----
		lead, dissolved	7439-92-1	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0020	mg/L	1.06	1.04	2.80%	20%	----
		magnesium, dissolved	7439-95-4	E421	0.0100	mg/L	243	248	2.10%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00020	mg/L	0.368	0.375	2.01%	20%	----
		molybdenum, dissolved	7439-98-7	E421	0.000100	mg/L	0.00520	0.00529	1.66%	20%	----
		nickel, dissolved	7440-02-0	E421	0.00100	mg/L	0.456	0.459	0.615%	20%	----
		potassium, dissolved	7440-09-7	E421	0.100	mg/L	17.4	18.0	3.86%	20%	----
		selenium, dissolved	7782-49-2	E421	0.100	mg/L	67.6 µg/L	0.0687	1.75%	20%	----
		silicon, dissolved	7440-21-3	E421	0.100	mg/L	2.79	2.76	1.01%	20%	----
		silver, dissolved	7440-22-4	E421	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 474306) - continued											
CG2204797-001	Anonymous	sodium, dissolved	7440-23-5	E421	0.100	mg/L	34.3	34.1	0.586%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00040	mg/L	1.68	1.71	1.49%	20%	----
		sulfur, dissolved	7704-34-9	E421	1.00	mg/L	469	475	1.14%	20%	----
		thallium, dissolved	7440-28-0	E421	0.000020	mg/L	0.000150	0.000150	0.0000007	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.00060	mg/L	<0.00060	<0.00060	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000020	mg/L	0.0335	0.0334	0.167%	20%	----
		vanadium, dissolved	7440-62-2	E421	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E421	0.0020	mg/L	0.116	0.117	0.792%	20%	----
Dissolved Metals (QC Lot: 474313)											
CG2204797-001	Anonymous	chromium, dissolved	7440-47-3	E421.Cr-L	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 471235)						
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 471240)						
solids, total suspended [TSS]	----	E160-L	1	mg/L	<1.0	----
Physical Tests (QCLot: 471464)						
alkalinity, bicarbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, carbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, hydroxide (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 471466)						
conductivity	----	E100	1	µS/cm	<1.0	----
Physical Tests (QCLot: 471469)						
acidity (as CaCO3)	----	E283	2	mg/L	<2.0	----
Physical Tests (QCLot: 472222)						
turbidity	----	E121	0.1	NTU	<0.10	----
Anions and Nutrients (QCLot: 470812)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 470813)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 470814)						
bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 470815)						
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	----
Anions and Nutrients (QCLot: 470816)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 470817)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 470823)						
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 470866)						
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 470869)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 471617)						



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 471617) - continued						
Kjeldahl nitrogen, total [TKN]	---	E318	0.05	mg/L	<0.050	---
Organic / Inorganic Carbon (QCLot: 471636)						
carbon, dissolved organic [DOC]	---	E358-L	0.5	mg/L	<0.50	---
Organic / Inorganic Carbon (QCLot: 471637)						
carbon, total organic [TOC]	---	E355-L	0.5	mg/L	<0.50	---
Total Metals (QCLot: 472885)						
mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	---
Total Metals (QCLot: 473158)						
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	<0.00010	---
Total Metals (QCLot: 473159)						
aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	---
antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	---
arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	---
barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	---
beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	---
bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	---
boron, total	7440-42-8	E420	0.01	mg/L	<0.010	---
cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	---
calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	---
cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	---
copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	---
iron, total	7439-89-6	E420	0.01	mg/L	<0.010	---
lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	---
lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	---
magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	---
manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	---
molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	---
nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	---
potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	---
selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	---
silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	---
silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	---
sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	---
strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	---
sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	---
thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	---



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 473159) - continued						
tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	---
titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	---
uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	---
vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	---
zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	---
Dissolved Metals (QCLot: 472860)						
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	---
Dissolved Metals (QCLot: 474306)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	---
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	---
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	---
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	---
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	---
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	---
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	---
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	---
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	---
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	---
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	---
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	---
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	---
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	---
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	---
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	---
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	---
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	---
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	---
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	---
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	---
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	---
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	---
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	---
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	---
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	---
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	---
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	---



Sub-Matrix: **Water**

<i>Analyte</i>	<i>CAS Number</i>	<i>Method</i>	<i>LOR</i>	<i>Unit</i>	<i>Result</i>	<i>Qualifier</i>
Dissolved Metals (QCLot: 474306) - continued						
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
Dissolved Metals (QCLot: 474313)						
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	<0.00010	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Water					Laboratory Control Sample (LCS) Report				
					Spike Concentration	Recovery (%)	Recovery Limits (%)		Qualifier
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 471235)									
solids, total dissolved [TDS]	---	E162	10	mg/L	1000 mg/L	97.7	85.0	115	----
Physical Tests (QCLot: 471240)									
solids, total suspended [TSS]	---	E160-L	1	mg/L	150 mg/L	107	85.0	115	----
Physical Tests (QCLot: 471464)									
alkalinity, total (as CaCO3)	---	E290	1	mg/L	500 mg/L	103	85.0	115	----
Physical Tests (QCLot: 471465)									
pH	---	E108	----	pH units	7 pH units	100	98.6	101	----
Physical Tests (QCLot: 471466)									
conductivity	---	E100	1	µS/cm	146.9 µS/cm	101	90.0	110	----
Physical Tests (QCLot: 471469)									
acidity (as CaCO3)	---	E283	2	mg/L	50 mg/L	101	85.0	115	----
Physical Tests (QCLot: 472222)									
turbidity	---	E121	0.1	NTU	200 NTU	109	85.0	115	----
Physical Tests (QCLot: 475449)									
oxidation-reduction potential [ORP]	---	E125	----	mV	220 mV	102	95.4	104	----
Anions and Nutrients (QCLot: 470812)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 470813)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 470814)									
bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	98.0	85.0	115	----
Anions and Nutrients (QCLot: 470815)									
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 470816)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 470817)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	103	90.0	110	----
Anions and Nutrients (QCLot: 470823)									
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.02 mg/L	104	80.0	120	----
Anions and Nutrients (QCLot: 470866)									
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	8.02 mg/L	103	80.0	120	----
Anions and Nutrients (QCLot: 470869)									



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Anions and Nutrients (QCLot: 470869) - continued									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	89.6	85.0	115	----
Anions and Nutrients (QCLot: 471617)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	104	75.0	125	----
Organic / Inorganic Carbon (QCLot: 471636)									
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	89.3	80.0	120	----
Organic / Inorganic Carbon (QCLot: 471637)									
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	95.4	80.0	120	----
Total Metals (QCLot: 472885)									
mercury, total	7439-97-6	E508	0.000005	mg/L	0.0001 mg/L	96.9	80.0	120	----
Total Metals (QCLot: 473158)									
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	0.25 mg/L	105	80.0	120	----
Total Metals (QCLot: 473159)									
aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	102	80.0	120	----
antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	111	80.0	120	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	105	80.0	120	----
barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	105	80.0	120	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	102	80.0	120	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	104	80.0	120	----
boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	101	80.0	120	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	104	80.0	120	----
calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	108	80.0	120	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	105	80.0	120	----
copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	105	80.0	120	----
iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	105	80.0	120	----
lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	103	80.0	120	----
lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	99.0	80.0	120	----
magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	100	80.0	120	----
manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	105	80.0	120	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	109	80.0	120	----
nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	106	80.0	120	----
potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	105	80.0	120	----
selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	103	80.0	120	----
silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	105	80.0	120	----
silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	98.6	80.0	120	----
sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	105	80.0	120	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Total Metals (QCLot: 473159) - continued									
strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	110	80.0	120	----
sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	96.8	80.0	120	----
thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	105	80.0	120	----
tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	106	80.0	120	----
titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	100	80.0	120	----
uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	106	80.0	120	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	106	80.0	120	----
zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	105	80.0	120	----
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	98.3	80.0	120	----
Dissolved Metals (QCLot: 474306)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	109	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	98.8	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	104	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	99.9	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	95.2	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	94.1	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	98.6	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	103	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	105	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	100	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	100	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	110	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	98.1	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	102	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	108	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	100	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	97.5	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	104	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	101	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	105	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	100	80.0	120	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	90.7	80.0	120	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	104	80.0	120	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	102	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	86.7	80.0	120	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	96.0	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	97.7	80.0	120	----



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 474306) - continued									
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	99.6	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	102	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	104	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	95.3	80.0	120	----
Dissolved Metals (QCLot: 474313)									
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	0.25 mg/L	101	80.0	120	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 470812)										
CG2204872-004	Anonymous	fluoride	16984-48-8	E235.F	1.05 mg/L	1 mg/L	105	75.0	125	----
Anions and Nutrients (QCLot: 470813)										
CG2204872-004	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	106 mg/L	100 mg/L	106	75.0	125	----
Anions and Nutrients (QCLot: 470814)										
CG2204872-004	Anonymous	bromide	24959-67-9	E235.Br-L	0.514 mg/L	0.5 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 470815)										
CG2204872-004	Anonymous	chloride	16887-00-6	E235.Cl-L	107 mg/L	100 mg/L	107	75.0	125	----
Anions and Nutrients (QCLot: 470816)										
CG2204872-004	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	2.68 mg/L	2.5 mg/L	107	75.0	125	----
Anions and Nutrients (QCLot: 470817)										
CG2204872-004	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.546 mg/L	0.5 mg/L	109	75.0	125	----
Anions and Nutrients (QCLot: 470823)										
CG2204870-002	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0500 mg/L	0.05 mg/L	100	70.0	130	----
Anions and Nutrients (QCLot: 470866)										
CG2204872-002	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0579 mg/L	0.0676 mg/L	85.6	70.0	130	----
Anions and Nutrients (QCLot: 470869)										
CG2204872-002	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0907 mg/L	0.1 mg/L	90.7	75.0	125	----
Anions and Nutrients (QCLot: 471617)										
CG2204872-004	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.40 mg/L	2.5 mg/L	96.1	70.0	130	----
Organic / Inorganic Carbon (QCLot: 471636)										
CG2204870-001	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	ND mg/L	5 mg/L	ND	70.0	130	----
Organic / Inorganic Carbon (QCLot: 471637)										
CG2204870-001	Anonymous	carbon, total organic [TOC]	----	E355-L	ND mg/L	5 mg/L	ND	70.0	130	----
Total Metals (QCLot: 472885)										
CG2204867-007	Anonymous	mercury, total	7439-97-6	E508	0.0000936 mg/L	0.0001 mg/L	93.6	70.0	130	----
Total Metals (QCLot: 473158)										
CG2204844-006	Anonymous	chromium, total	7440-47-3	E420.Cr-L	0.0396 mg/L	0.04 mg/L	99.1	70.0	130	----



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 473159)										
CG2204844-006	Anonymous	aluminum, total	7429-90-5	E420	0.190 mg/L	0.2 mg/L	95.0	70.0	130	----
		antimony, total	7440-36-0	E420	0.0202 mg/L	0.02 mg/L	101	70.0	130	----
		arsenic, total	7440-38-2	E420	0.0202 mg/L	0.02 mg/L	101	70.0	130	----
		barium, total	7440-39-3	E420	0.0196 mg/L	0.02 mg/L	98.0	70.0	130	----
		beryllium, total	7440-41-7	E420	0.0397 mg/L	0.04 mg/L	99.2	70.0	130	----
		bismuth, total	7440-69-9	E420	0.00995 mg/L	0.01 mg/L	99.5	70.0	130	----
		boron, total	7440-42-8	E420	0.098 mg/L	0.1 mg/L	98.2	70.0	130	----
		cadmium, total	7440-43-9	E420	0.00407 mg/L	0.004 mg/L	102	70.0	130	----
		calcium, total	7440-70-2	E420	3.89 mg/L	4 mg/L	97.3	70.0	130	----
		cobalt, total	7440-48-4	E420	0.0201 mg/L	0.02 mg/L	101	70.0	130	----
		copper, total	7440-50-8	E420	0.0202 mg/L	0.02 mg/L	101	70.0	130	----
		iron, total	7439-89-6	E420	1.90 mg/L	2 mg/L	95.1	70.0	130	----
		lead, total	7439-92-1	E420	0.0197 mg/L	0.02 mg/L	98.6	70.0	130	----
		lithium, total	7439-93-2	E420	0.0948 mg/L	0.1 mg/L	94.8	70.0	130	----
		magnesium, total	7439-95-4	E420	0.967 mg/L	1 mg/L	96.7	70.0	130	----
		manganese, total	7439-96-5	E420	0.0199 mg/L	0.02 mg/L	99.7	70.0	130	----
		molybdenum, total	7439-98-7	E420	0.0202 mg/L	0.02 mg/L	101	70.0	130	----
		nickel, total	7440-02-0	E420	0.0410 mg/L	0.04 mg/L	102	70.0	130	----
		potassium, total	7440-09-7	E420	3.98 mg/L	4 mg/L	99.5	70.0	130	----
		selenium, total	7782-49-2	E420	0.0412 mg/L	0.04 mg/L	103	70.0	130	----
		silicon, total	7440-21-3	E420	9.58 mg/L	10 mg/L	95.8	70.0	130	----
		silver, total	7440-22-4	E420	0.00419 mg/L	0.004 mg/L	105	70.0	130	----
		sodium, total	7440-23-5	E420	2.00 mg/L	2 mg/L	99.8	70.0	130	----
		strontium, total	7440-24-6	E420	0.0212 mg/L	0.02 mg/L	106	70.0	130	----
		sulfur, total	7704-34-9	E420	18.2 mg/L	20 mg/L	91.1	70.0	130	----
		thallium, total	7440-28-0	E420	0.00385 mg/L	0.004 mg/L	96.3	70.0	130	----
		tin, total	7440-31-5	E420	0.0194 mg/L	0.02 mg/L	97.2	70.0	130	----
		titanium, total	7440-32-6	E420	0.0383 mg/L	0.04 mg/L	95.7	70.0	130	----
		uranium, total	7440-61-1	E420	0.00390 mg/L	0.004 mg/L	97.6	70.0	130	----
		vanadium, total	7440-62-2	E420	0.0996 mg/L	0.1 mg/L	99.6	70.0	130	----
		zinc, total	7440-66-6	E420	0.424 mg/L	0.4 mg/L	106	70.0	130	----
Dissolved Metals (QCLot: 472860)										
CG2204873-005	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000933 mg/L	0.0001 mg/L	93.3	70.0	130	----
Dissolved Metals (QCLot: 474306)										
CG2204797-002	Anonymous	aluminum, dissolved	7429-90-5	E421	0.404 mg/L	0.4 mg/L	101	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.0431 mg/L	0.04 mg/L	108	70.0	130	----



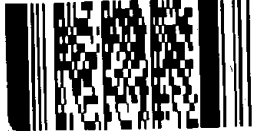
Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 474306) - continued										
CG2204797-002	Anonymous	arsenic, dissolved	7440-38-2	E421	0.0414 mg/L	0.04 mg/L	103	70.0	130	----
		barium, dissolved	7440-39-3	E421	0.0365 mg/L	0.04 mg/L	91.2	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.0759 mg/L	0.08 mg/L	94.8	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.0167 mg/L	0.02 mg/L	83.4	70.0	130	----
		boron, dissolved	7440-42-8	E421	ND mg/L	0.1 mg/L	ND	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.00738 mg/L	0.008 mg/L	92.2	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	4 mg/L	ND	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.0353 mg/L	0.04 mg/L	88.2	70.0	130	----
		iron, dissolved	7439-89-6	E421	3.85 mg/L	4 mg/L	96.3	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.0365 mg/L	0.04 mg/L	91.2	70.0	130	----
		lithium, dissolved	7439-93-2	E421	ND mg/L	0.1 mg/L	ND	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	1 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.0440 mg/L	0.04 mg/L	110	70.0	130	----
		nickel, dissolved	7440-02-0	E421	ND mg/L	0.04 mg/L	ND	70.0	130	----
		potassium, dissolved	7440-09-7	E421	ND mg/L	4 mg/L	ND	70.0	130	----
		selenium, dissolved	7782-49-2	E421	ND mg/L	0.04 mg/L	ND	70.0	130	----
		silicon, dissolved	7440-21-3	E421	18.7 mg/L	20 mg/L	93.4	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.00797 mg/L	0.008 mg/L	99.6	70.0	130	----
		sodium, dissolved	7440-23-5	E421	ND mg/L	2 mg/L	ND	70.0	130	----
		strontium, dissolved	7440-24-6	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	ND mg/L	20 mg/L	ND	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.00734 mg/L	0.008 mg/L	91.8	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.0392 mg/L	0.04 mg/L	98.0	70.0	130	----
		titanium, dissolved	7440-32-6	E421	0.0804 mg/L	0.08 mg/L	100	70.0	130	----
		uranium, dissolved	7440-61-1	E421	ND mg/L	0.004 mg/L	ND	70.0	130	----
		vanadium, dissolved	7440-62-2	E421	0.210 mg/L	0.2 mg/L	105	70.0	130	----
		zinc, dissolved	7440-66-6	E421	0.725 mg/L	0.8 mg/L	90.7	70.0	130	----
Dissolved Metals (QCLot: 474313)										
CG2204797-002	Anonymous	chromium, dissolved	7440-47-3	E421.Cr-L	0.0789 mg/L	0.08 mg/L	98.6	70.0	130	----

COC ID: EVO LAEMP 2022 APR ALS TURN AROUND TIME: RUSH:

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name / Job#		Elkview Operations		Lab Name		ALS Calgary		Report Format / Distribution			
Project Manager		Mike Pope		Lab Contact		Lyudmyla Shvets		Email 1:			
Email		mike.pope@teck.com		Email		lyudmyla.shvets@alsglobal.com		Email 2:			
Address		421 Pine Ave		Address		2559 29 Street NE		Email 3:			
City		Sparwood		City		Calgary		Email 4:			
Provincial Code		V0B 2G0		Provincial Code		AB		Email 5:			
Country		Canada		Country		Canada		Email 6:			
Phone Number		250-425-8202		Phone Number		1 403 407 1794		PO number			

Environmental Division
Calgary
Work Order Reference
CG2204876



Telephone: +1 403 407 1800

Environmental Division
Calgary
Work Order Reference
CG2204876



Sample ID	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com p	# Of Cont.	ANALYSIS REQUESTED												
								N	P	N	N	F	N	F						
								H2SO4	H2SO4		HCL	HNO3	HNO3							
TECKCOAL-ROUTINE-VA	ALS_Package-DOC	ALS_Package-TKN/TOC	HG-T-U-CVAF-VA	HG-D-CVAF-VA	TECKCOAL-MET-T-VA	TECKCOAL-MET-D-VA														
EV_EC_BRIDGE_WS_LAEMP_EVO_2022-04_NP	EV_EC_BRIDGE	WS	No	26-Apr-22	15:45	G	7	X	X	X	X	X	X							

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELEASED BY/AFILIATION	DATE/TIME	ACCEPTED BY/AFILIATION	DATE/TIME
PO: VPO00816101	Alex McClymont	April 26, 2022	<i>[Signature]</i>	4/27 10:10

SERVICE REQUEST (check subject to availability)	Sampler's Name	Mobile #
Regular (default) <input checked="" type="checkbox"/>	Alex McClymont	780-293-6750
Priority (2-3 business days) - 50% surcharge		
Emergency (1 Business Day) - 100% surcharge		
For Emergency <1 Day, ASAP or Weekend - Contact ALS		

[Signature]

72



CERTIFICATE OF ANALYSIS

Work Order : **CG2205002**
Client : **Teck Coal Limited**
Contact : Mike Pope
Address : 421 PINE AVE
Sparwood BC Canada V0B 2G0
Telephone : ----
Project : REGIONAL EFFECTS PROGRAM
PO : VPO00816101
C-O-C number : April EVO LAEMP 2022
Sampler : Alex McClymont
Site : ----
Quote number : Teck Coal Master Quote
No. of samples received : 8
No. of samples analysed : 8

Page : 1 of 11
Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
Calgary AB Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 29-Apr-2022 09:45
Date Analysis Commenced : 30-Apr-2022
Issue Date : 06-May-2022 13:09

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Angela Ren	Team Leader - Metals	Metals, Burnaby, British Columbia
Anthony Calero	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Elke Tabora		Inorganics, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Metals, Calgary, Alberta
Kim Jensen	Department Manager - Metals	Metals, Burnaby, British Columbia
Owen Cheng		Metals, Burnaby, British Columbia
Parker Sgarbossa	Laboratory Analyst	Inorganics, Calgary, Alberta
Ruby Pham	Lab Assistant	Metals, Burnaby, British Columbia
Ruifang Zheng	Analyst	Inorganics, Calgary, Alberta
Sara Niroomand		Inorganics, Calgary, Alberta
Zakieh Lalonde		Inorganics, Calgary, Alberta



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

<i>Unit</i>	<i>Description</i>
-	No Unit
%	percent
µg/L	micrograms per litre
µS/cm	Microsiemens per centimetre
meq/L	milliequivalents per litre
mg/L	milligrams per litre
mV	millivolts
NTU	nephelometric turbidity units
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Workorder Comments

Samples 1-3,6 no Ultra but in COC , 4,7,8 No Total HG but Inc. COC

Sample Comments

<i>Sample</i>	<i>Client Id</i>	<i>Comment</i>
CG2205002-001	RG_MICOMP_WS_LAEMP_EV O_2022-04_NP	Updated WO to rush TAT as per client.



Qualifiers

Qualifier	Description
DLDS	Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
DTC	Dissolved concentration exceeds total. Results were confirmed by re-analysis.
DTMF	Dissolved concentration exceeds total for field-filtered metals sample. Metallic contaminants may have been introduced to dissolved sample during field filtration.
HTD	Hold time exceeded for re-analysis or dilution, but initial testing was conducted within hold time.
RRV	Reported result verified by repeat analysis.
TKNI	TKN result may be biased low due to Nitrate interference. Nitrate-N is > 10x TKN.



Analytical Results

Sub-Matrix: Water					Client sample ID				
(Matrix: Water)					RG_MICOMP_W S_LAEMP_EVO _2022-04_NP	RG_ERCKDT_W S_LAEMP_EVO _2022-04_NP	RG_ERCKBR_W S_LAEMP_EVO _2022-04_NP	RG_RIVER_WS _LAEMP_EVO_ 2022-04_NP	RG_ERCKUC_W S_LAEMP_EVO _2022-04_NP
Client sampling date / time					27-Apr-2022 15:30	27-Apr-2022 11:15	28-Apr-2022 10:30	28-Apr-2022 08:30	28-Apr-2022 10:55
Analyte	CAS Number	Method	LOR	Unit	CG2205002-001	CG2205002-002	CG2205002-003	CG2205002-004	CG2205002-005
					Result	Result	Result	Result	Result
Physical Tests									
acidity (as CaCO3)	----	E283	2.0	mg/L	<2.0	15.8	18.6	18.2	6.5
alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	149	432	438	434	350
alkalinity, bicarbonate (as HCO3)	71-52-3	E290	1.0	mg/L	182	528	534	530	427
alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	8.6	<1.0	<1.0	<1.0	10.2
alkalinity, carbonate (as CO3)	3812-32-6	E290	1.0	mg/L	5.2	<1.0	<1.0	<1.0	6.1
alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0
alkalinity, hydroxide (as OH)	14280-30-9	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	158	432	438	434	361
conductivity	----	E100	2.0	µS/cm	428	1940	1960	1930	1810
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	214	1250	1250	1230	1120
oxidation-reduction potential [ORP]	----	E125	0.10	mV	500	493	487	499	513
pH	----	E108	0.10	pH units	8.45	8.20	8.17	7.72	8.34
solids, total dissolved [TDS]	----	E162	10	mg/L	282	1640	1660	1670	1540
solids, total suspended [TSS]	----	E160-L	1.0	mg/L	47.3	6.5	3.3	4.0	4.1
turbidity	----	E121	0.10	NTU	3.51	<0.10	<0.10	0.17	0.52
Anions and Nutrients									
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0057	<0.0050	<0.0050	0.0486	<0.0050
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	2.07	6.03	7.22	6.10	6.00
fluoride	16984-48-8	E235.F	0.020	mg/L	0.122	0.104	0.105	0.103	0.103
Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	0.428	1.52 ^{TKNI}	1.12 ^{TKNI}	1.23 ^{TKNI}	0.869 ^{TKNI}
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.703	17.4	17.7	17.5	16.5
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	0.0015	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	0.0199	0.0202	0.0194	<0.0010
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0088	0.0210	0.0214 ^{DLM}	0.0204 ^{DLM}	0.0033
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	80.2	813	830	816	793
Organic / Inorganic Carbon									
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	2.48	0.64	0.60	1.04	1.16
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	2.70	0.57	0.52	1.03	1.09



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_MICOMP_W S_LAEMP_EVO _2022-04_NP	RG_ERCKDT_W S_LAEMP_EVO _2022-04_NP	RG_ERCKBR_W S_LAEMP_EVO _2022-04_NP	RG_RIVER_WS _LAEMP_EVO_ 2022-04_NP	RG_ERCKUC_W S_LAEMP_EVO _2022-04_NP
Client sampling date / time					27-Apr-2022 15:30	27-Apr-2022 11:15	28-Apr-2022 10:30	28-Apr-2022 08:30	28-Apr-2022 10:55	
Analyte	CAS Number	Method	LOR	Unit	CG2205002-001	CG2205002-002	CG2205002-003	CG2205002-004	CG2205002-005	
					Result	Result	Result	Result	Result	
Ion Balance										
anion sum	----	EC101	0.10	meq/L	4.94	27.0	27.5	27.1	25.1	
cation sum	----	EC101	0.10	meq/L	4.47	25.2	25.2	24.9	22.7	
ion balance (cations/anions)	----	EC101	0.010	%	90.5	93.3	91.6	91.9	90.4	
ion balance (APHA)	----	EC101	0.010	%	4.99	3.45	4.36	4.23	5.02	
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L	0.170	<0.0030	<0.0030	<0.0030	<0.0030	
antimony, total	7440-36-0	E420	0.00010	mg/L	0.00012	0.00021	0.00021	0.00021	0.00023	
arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00023	0.00022	0.00024	0.00020	0.00022	
barium, total	7440-39-3	E420	0.00010	mg/L	0.0978	0.0629	0.0636	0.0626	0.0419	
beryllium, total	7440-41-7	E420	0.020	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	
bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
boron, total	7440-42-8	E420	0.010	mg/L	0.011	0.014	0.014	0.014	0.014	
cadmium, total	7440-43-9	E420	0.0050	µg/L	0.0452	0.0883	0.0900	0.0803	0.0075	
calcium, total	7440-70-2	E420	0.050	mg/L	52.1	255	260	265	225	
chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	0.00035	0.00016	0.00021	0.00018	0.00015	
cobalt, total	7440-48-4	E420	0.10	µg/L	0.10	<0.10	<0.10	<0.10	<0.10	
copper, total	7440-50-8	E420	0.00050	mg/L	0.00053	<0.00050	<0.00050	<0.00050	<0.00050	
iron, total	7439-89-6	E420	0.010	mg/L	0.142	<0.010	<0.010	<0.010	<0.010	
lead, total	7439-92-1	E420	0.000050	mg/L	0.000111	<0.000050	<0.000050	<0.000050	<0.000050	
lithium, total	7439-93-2	E420	0.0010	mg/L	0.0076	0.0286	0.0292	0.0296	0.0280	
magnesium, total	7439-95-4	E420	0.0050	mg/L	20.1	148	152	147	140	
manganese, total	7439-96-5	E420	0.00010	mg/L	0.00456	0.00034	<0.00010	0.00011	0.00060	
mercury, total	7439-97-6	E508-L	0.00050	µg/L	----	----	----	<0.00050	----	
mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	----	<0.0000050	
molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.000892	0.00117	0.00114	0.00108	0.00142	
nickel, total	7440-02-0	E420	0.00050	mg/L	0.00119	0.00096	0.00086	0.00082	0.00570	
potassium, total	7440-09-7	E420	0.050	mg/L	0.859	2.85	2.91	2.83	2.76	
selenium, total	7782-49-2	E420	0.050	µg/L	8.55	167	170	169	164	
silicon, total	7440-21-3	E420	0.10	mg/L	2.54	3.94	4.02	3.98	3.85	
silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_MICOMP_W S_LAEMP_EVO _2022-04_NP	RG_ERCKDT_W S_LAEMP_EVO _2022-04_NP	RG_ERCKBR_W S_LAEMP_EVO _2022-04_NP	RG_RIVER_WS _LAEMP_EVO_ 2022-04_NP	RG_ERCKUC_W S_LAEMP_EVO _2022-04_NP
Client sampling date / time					27-Apr-2022 15:30	27-Apr-2022 11:15	28-Apr-2022 10:30	28-Apr-2022 08:30	28-Apr-2022 10:55	
Analyte	CAS Number	Method	LOR	Unit	CG2205002-001	CG2205002-002	CG2205002-003	CG2205002-004	CG2205002-005	
					Result	Result	Result	Result	Result	
Total Metals										
sodium, total	7440-23-5	E420	0.050	mg/L	3.76	3.23	3.36	3.18	3.12	
strontium, total	7440-24-6	E420	0.00020	mg/L	0.154	0.228	0.232	0.227	0.217	
sulfur, total	7704-34-9	E420	0.50	mg/L	31.1	318	320	320	305	
thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	0.000011	
tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
titanium, total	7440-32-6	E420	0.00030	mg/L	0.00331	<0.00030	<0.00030	<0.00030	<0.00030	
uranium, total	7440-61-1	E420	0.000010	mg/L	0.000963	0.00786	0.00774	0.00783	0.00743	
vanadium, total	7440-62-2	E420	0.00050	mg/L	0.00085	<0.00050	<0.00050	<0.00050	<0.00050	
zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0088	0.0011	<0.0010	<0.0010	<0.0010	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00010	0.00020	0.00019	0.00019	0.00022	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00014	0.00022	0.00023	0.00024	0.00024	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0940	0.0630	0.0631	0.0632	0.0419	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
boron, dissolved	7440-42-8	E421	0.010	mg/L	0.010	0.014	0.013	0.013	0.014	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.0218	0.0889	0.0886	0.0856	0.0072	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	52.5	260	250	250	220	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	0.00011	0.00019	0.00019	0.00018	0.00015	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	<0.10	0.11	<0.10	<0.10	<0.10	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00036	<0.00020	<0.00020	<0.00020	<0.00020	
iron, dissolved	7439-89-6	E421	0.010	mg/L	0.011	0.014	<0.010	<0.010	<0.010	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0076	0.0282	0.0280	0.0278	0.0273	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	20.2	146	152	148	140	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00132	0.00173 ^{DTMF}	<0.00010	<0.00010	0.00057	
mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	0.0000056	<0.0000050	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.000813	0.00108	0.00108	0.00105	0.00147	
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00091	0.00100	0.00083	0.00080	0.00548	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_MICOMP_W S_LAEMP_EVO _2022-04_NP	RG_ERCKDT_W S_LAEMP_EVO _2022-04_NP	RG_ERCKBR_W S_LAEMP_EVO _2022-04_NP	RG_RIVER_WS _LAEMP_EVO_ 2022-04_NP	RG_ERCKUC_W S_LAEMP_EVO _2022-04_NP
Client sampling date / time					27-Apr-2022 15:30	27-Apr-2022 11:15	28-Apr-2022 10:30	28-Apr-2022 08:30	28-Apr-2022 10:55	
Analyte	CAS Number	Method	LOR	Unit	CG2205002-001 Result	CG2205002-002 Result	CG2205002-003 Result	CG2205002-004 Result	CG2205002-005 Result	
Dissolved Metals										
potassium, dissolved	7440-09-7	E421	0.050	mg/L	0.808	2.82	2.84	2.83	2.73	
selenium, dissolved	7782-49-2	E421	0.050	µg/L	8.94	192	193	198	180	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	2.19	3.94	3.87	3.88	3.61	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	3.82	3.24	3.34	3.36	3.17	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.142	0.221	0.220	0.221	0.217	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	29.5	302	299	303	286	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	0.000012	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00060 ^{DLM}	<0.00030	<0.00030	<0.00030	<0.00030	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.000932	0.00778	0.00792	0.00770	0.00741	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0010	0.0021	0.0023	0.0021	<0.0010	
dissolved mercury filtration location	----	EP509	-	-	Field	Field	Field	Laboratory	Field	
dissolved metals filtration location	----	EP421	-	-	Field	Field	Field	Field	Field	

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCK_WS_ LAEMP_EVO_2 022-04_NP	RG_ERCKIG_W S_LAEMP_EVO _2022-04_NP	RG_ALUSM_W S_LAEMP_EVO _2022-04_NP	----	----
Client sampling date / time					28-Apr-2022 08:50	28-Apr-2022 08:30	28-Apr-2022 14:00	----	----	
Analyte	CAS Number	Method	LOR	Unit	CG2205002-006 Result	CG2205002-007 Result	CG2205002-008 Result	----- ----	----- ----	
Physical Tests										
acidity (as CaCO3)	----	E283	2.0	mg/L	6.6	17.7	<2.0	----	----	
alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	346	424	158	----	----	
alkalinity, bicarbonate (as HCO3)	71-52-3	E290	1.0	mg/L	422	517	192	----	----	
alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	9.4	----	----	
alkalinity, carbonate (as CO3)	3812-32-6	E290	1.0	mg/L	<1.0	<1.0	5.6	----	----	
alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	<1.0	----	----	
alkalinity, hydroxide (as OH)	14280-30-9	E290	1.0	mg/L	<1.0	<1.0	<1.0	----	----	
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	346	424	167	----	----	
conductivity	----	E100	2.0	µS/cm	1800	1950	325	----	----	
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	1130	1240	169	----	----	
oxidation-reduction potential [ORP]	----	E125	0.10	mV	485	533	493	----	----	
pH	----	E108	0.10	pH units	8.26	8.14	8.48	----	----	
solids, total dissolved [TDS]	----	E162	10	mg/L	1710	1690	215	----	----	
solids, total suspended [TSS]	----	E160-L	1.0	mg/L	22.6	4.7	4.0	----	----	
turbidity	----	E121	0.10	NTU	0.28	0.13	0.16	----	----	
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0058	<0.0050	<0.0050	----	----	
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.050	----	----	
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	6.39	6.23	1.33	----	----	
fluoride	16984-48-8	E235.F	0.020	mg/L	<0.100 ^{DLDS}	0.104	0.149	----	----	
Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	1.65 ^{TKNI}	1.33 ^{TKNI}	<0.050	----	----	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	16.7	17.8	0.0159 ^{HTD}	----	----	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	0.0084	<0.0050 ^{DLDS}	<0.0010 ^{HTD}	----	----	
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	0.0193	<0.0010	----	----	
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0075	0.0226	0.0036	----	----	
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	804	831	18.2	----	----	
Organic / Inorganic Carbon										
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	1.77	1.31 ^{DTC_RRV}	1.33	----	----	
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	1.98	1.00 ^{DTC_RRV}	1.40	----	----	
Ion Balance										



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCK_WS_ LAEMP_EVO_2 022-04_NP	RG_ERCKIG_W S_LAEMP_EVO _2022-04_NP	RG_ALUSM_W S_LAEMP_EVO _2022-04_NP	----	----
Client sampling date / time					28-Apr-2022 08:50	28-Apr-2022 08:30	28-Apr-2022 14:00	----	----	
Analyte	CAS Number	Method	LOR	Unit	CG2205002-006	CG2205002-007	CG2205002-008	-----	-----	
					Result	Result	Result	----	----	
Ion Balance										
anion sum	----	EC101	0.10	meq/L	25.0	27.2	3.76	----	----	
cation sum	----	EC101	0.10	meq/L	22.7	24.9	3.47	----	----	
ion balance (cations/anions)	----	EC101	0.010	%	90.8	91.5	92.3	----	----	
ion balance (APHA)	----	EC101	0.010	%	4.82	4.41	4.01	----	----	
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0031	0.0033	0.0106	----	----	
antimony, total	7440-36-0	E420	0.00010	mg/L	0.00023	0.00021	<0.00010	----	----	
arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00028	0.00026	0.00012	----	----	
barium, total	7440-39-3	E420	0.00010	mg/L	0.0413	0.0632	0.0688	----	----	
beryllium, total	7440-41-7	E420	0.020	µg/L	<0.020	<0.020	<0.020	----	----	
bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	<0.000050	----	----	
boron, total	7440-42-8	E420	0.010	mg/L	0.014	0.014	<0.010	----	----	
cadmium, total	7440-43-9	E420	0.0050	µg/L	0.0080	0.0866	0.0072	----	----	
calcium, total	7440-70-2	E420	0.050	mg/L	226	263	47.7	----	----	
chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	0.00016	0.00019	0.00019	----	----	
cobalt, total	7440-48-4	E420	0.10	µg/L	0.25	<0.10	<0.10	----	----	
copper, total	7440-50-8	E420	0.00050	mg/L	<0.00050	<0.00050	<0.00050	----	----	
iron, total	7439-89-6	E420	0.010	mg/L	<0.010	<0.010	0.021	----	----	
lead, total	7439-92-1	E420	0.000050	mg/L	<0.000050	<0.000050	<0.000050	----	----	
lithium, total	7439-93-2	E420	0.0010	mg/L	0.0281	0.0289	0.0043	----	----	
magnesium, total	7439-95-4	E420	0.0050	mg/L	141	148	12.7	----	----	
manganese, total	7439-96-5	E420	0.00010	mg/L	0.00580	0.00017	0.00193	----	----	
mercury, total	7439-97-6	E508-L	0.00050	µg/L	----	<0.00050	<0.00050	----	----	
mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	----	----	----	----	
molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.00143	0.00113	0.000690	----	----	
nickel, total	7440-02-0	E420	0.00050	mg/L	0.00627	0.00087	<0.00050	----	----	
potassium, total	7440-09-7	E420	0.050	mg/L	2.87	2.86	0.417	----	----	
selenium, total	7782-49-2	E420	0.050	µg/L	162	168	0.636	----	----	
silicon, total	7440-21-3	E420	0.10	mg/L	3.72	4.05	2.37	----	----	
silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	<0.000010	----	----	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCK_WS_ LAEMP_EVO_2 022-04_NP	RG_ERCKIG_W S_LAEMP_EVO _2022-04_NP	RG_ALUSM_W S_LAEMP_EVO _2022-04_NP	----	----
Client sampling date / time					28-Apr-2022 08:50	28-Apr-2022 08:30	28-Apr-2022 14:00	----	----	
Analyte	CAS Number	Method	LOR	Unit	CG2205002-006 Result	CG2205002-007 Result	CG2205002-008 Result	----- ----	----- ----	
Total Metals										
sodium, total	7440-23-5	E420	0.050	mg/L	3.22	3.28	2.01	----	----	
strontium, total	7440-24-6	E420	0.00020	mg/L	0.215	0.231	0.137	----	----	
sulfur, total	7704-34-9	E420	0.50	mg/L	298	322	7.12	----	----	
thallium, total	7440-28-0	E420	0.000010	mg/L	0.000013	<0.000010	<0.000010	----	----	
tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	<0.00010	----	----	
titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00030	<0.00030	<0.00030	----	----	
uranium, total	7440-61-1	E420	0.000010	mg/L	0.00719	0.00801	0.000583	----	----	
vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	<0.00050	<0.00050	----	----	
zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	<0.0030	<0.0030	----	----	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	<0.0010	0.0013	0.0013	----	----	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00022	0.00020	<0.00010	----	----	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00022	0.00020	0.00011	----	----	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0417	0.0627	0.0687	----	----	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.020	<0.020	<0.020	----	----	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	<0.000050	----	----	
boron, dissolved	7440-42-8	E421	0.010	mg/L	0.013	0.013	<0.010	----	----	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.0082	0.0927	<0.0050	----	----	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	217	256	46.7	----	----	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	0.00017	0.00020	0.00017	----	----	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	<0.10	<0.10	<0.10	----	----	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00020	<0.00020	0.00039	----	----	
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	<0.010	<0.010	----	----	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	<0.000050	----	----	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0268	0.0284	0.0042	----	----	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	142	145	12.7	----	----	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00063	<0.00010	0.00088	----	----	
mercury, dissolved	7439-97-6	E509	0.000050	mg/L	<0.000050	<0.000050	<0.000050	----	----	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00146	0.00106	0.000682	----	----	
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00574	0.00090	<0.00050	----	----	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCK_WS_ LAEMP_EVO_2 022-04_NP	RG_ERCKIG_W S_LAEMP_EVO _2022-04_NP	RG_ALUSM_W S_LAEMP_EVO _2022-04_NP	----	----
Client sampling date / time					28-Apr-2022 08:50	28-Apr-2022 08:30	28-Apr-2022 14:00	----	----	
Analyte	CAS Number	Method	LOR	Unit	CG2205002-006	CG2205002-007	CG2205002-008	-----	-----	
					Result	Result	Result	----	----	
Dissolved Metals										
potassium, dissolved	7440-09-7	E421	0.050	mg/L	2.83	2.82	0.411	----	----	
selenium, dissolved	7782-49-2	E421	0.050	µg/L	180	169	0.707	----	----	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	3.59	3.85	2.25	----	----	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	<0.000010	----	----	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	3.22	3.22	2.02	----	----	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.214	0.220	0.135	----	----	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	286	303	6.79	----	----	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	0.000013	<0.000010	<0.000010	----	----	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	<0.00010	----	----	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	<0.00030	----	----	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00730	0.00791	0.000571	----	----	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	<0.00050	----	----	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0010	0.0022	<0.0010	----	----	
dissolved mercury filtration location	----	EP509	-	-	Field	Laboratory	Laboratory	----	----	
dissolved metals filtration location	----	EP421	-	-	Field	Field	Field	----	----	

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: CG2205002	Page	: 1 of 33
Client	: Teck Coal Limited	Laboratory	: Calgary - Environmental
Contact	: Mike Pope	Account Manager	: Lyudmyla Shvets
Address	: 421 PINE AVE Sparwood BC Canada V0B 2G0	Address	: 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5
Telephone	: ----	Telephone	: +1 403 407 1800
Project	: REGIONAL EFFECTS PROGRAM	Date Samples Received	: 29-Apr-2022 09:45
PO	: VPO00816101	Issue Date	: 06-May-2022 13:09
C-O-C number	: April EVO LAEMP 2022		
Sampler	: Alex McClymont		
Site	: ----		
Quote number	: Teck Coal Master Quote		
No. of samples received	: 8		
No. of samples analysed	: 8		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_ALUSM_WS_LAEMP_EVO_2022-04_NP	E298	28-Apr-2022	02-May-2022	----	----		02-May-2022	28 days	4 days	✓	
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_ERCK_WS_LAEMP_EVO_2022-04_NP	E298	28-Apr-2022	02-May-2022	----	----		02-May-2022	28 days	4 days	✓	
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_ERCKBR_WS_LAEMP_EVO_2022-04_NP	E298	28-Apr-2022	02-May-2022	----	----		02-May-2022	28 days	4 days	✓	
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_ERCKIG_WS_LAEMP_EVO_2022-04_NP	E298	28-Apr-2022	02-May-2022	----	----		02-May-2022	28 days	4 days	✓	
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_ERCKUC_WS_LAEMP_EVO_2022-04_NP	E298	28-Apr-2022	02-May-2022	----	----		02-May-2022	28 days	4 days	✓	
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-04_NP	E298	28-Apr-2022	02-May-2022	----	----		02-May-2022	28 days	4 days	✓	
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-04_NP	E298	27-Apr-2022	02-May-2022	----	----		02-May-2022	28 days	5 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times Rec Actual		Eval	Analysis Date	Holding Times Rec Actual		Eval	
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_MICOMP_WS_LAEMP_EVO_2022-04_NP	E298	27-Apr-2022	02-May-2022	----	----		02-May-2022	28 days	5 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-04_NP	E235.Br-L	28-Apr-2022	----	----	----		30-Apr-2022	28 days	2 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-04_NP	E235.Br-L	28-Apr-2022	----	----	----		30-Apr-2022	28 days	2 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKBR_WS_LAEMP_EVO_2022-04_NP	E235.Br-L	28-Apr-2022	----	----	----		30-Apr-2022	28 days	2 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKIG_WS_LAEMP_EVO_2022-04_NP	E235.Br-L	28-Apr-2022	----	----	----		30-Apr-2022	28 days	2 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-04_NP	E235.Br-L	28-Apr-2022	----	----	----		30-Apr-2022	28 days	2 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-04_NP	E235.Br-L	28-Apr-2022	----	----	----		30-Apr-2022	28 days	2 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-04_NP	E235.Br-L	27-Apr-2022	----	----	----		30-Apr-2022	28 days	3 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-04_NP	E235.Br-L	27-Apr-2022	----	----	----		30-Apr-2022	28 days	3 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-04_NP	E235.CI-L	28-Apr-2022	----	----	----		30-Apr-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-04_NP	E235.CI-L	28-Apr-2022	----	----	----		30-Apr-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKBR_WS_LAEMP_EVO_2022-04_NP	E235.CI-L	28-Apr-2022	----	----	----		30-Apr-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKIG_WS_LAEMP_EVO_2022-04_NP	E235.CI-L	28-Apr-2022	----	----	----		30-Apr-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-04_NP	E235.CI-L	28-Apr-2022	----	----	----		30-Apr-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-04_NP	E235.CI-L	28-Apr-2022	----	----	----		30-Apr-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-04_NP	E235.CI-L	27-Apr-2022	----	----	----		30-Apr-2022	28 days	3 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-04_NP	E235.CI-L	27-Apr-2022	----	----	----		30-Apr-2022	28 days	3 days	✔	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-04_NP	E378-U	28-Apr-2022	----	----	----		30-Apr-2022	3 days	2 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-04_NP	E378-U	28-Apr-2022	----	----	----		30-Apr-2022	3 days	2 days	✓	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_ERCKBR_WS_LAEMP_EVO_2022-04_NP	E378-U	28-Apr-2022	----	----	----		30-Apr-2022	3 days	2 days	✓	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_ERCKIG_WS_LAEMP_EVO_2022-04_NP	E378-U	28-Apr-2022	----	----	----		30-Apr-2022	3 days	2 days	✓	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-04_NP	E378-U	28-Apr-2022	----	----	----		30-Apr-2022	3 days	2 days	✓	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-04_NP	E378-U	28-Apr-2022	----	----	----		30-Apr-2022	3 days	2 days	✓	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-04_NP	E378-U	27-Apr-2022	----	----	----		30-Apr-2022	3 days	3 days	✓	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-04_NP	E378-U	27-Apr-2022	----	----	----		30-Apr-2022	3 days	3 days	✓	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-04_NP	E235.F	28-Apr-2022	----	----	----		30-Apr-2022	28 days	2 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-04_NP	E235.F	28-Apr-2022	----	----	----		30-Apr-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKBR_WS_LAEMP_EVO_2022-04_NP	E235.F	28-Apr-2022	----	----	----		30-Apr-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKIG_WS_LAEMP_EVO_2022-04_NP	E235.F	28-Apr-2022	----	----	----		30-Apr-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-04_NP	E235.F	28-Apr-2022	----	----	----		30-Apr-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-04_NP	E235.F	28-Apr-2022	----	----	----		30-Apr-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-04_NP	E235.F	27-Apr-2022	----	----	----		30-Apr-2022	28 days	3 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-04_NP	E235.F	27-Apr-2022	----	----	----		30-Apr-2022	28 days	3 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-04_NP	E235.NO3-L	28-Apr-2022	----	----	----		30-Apr-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKBR_WS_LAEMP_EVO_2022-04_NP	E235.NO3-L	28-Apr-2022	----	----	----		30-Apr-2022	3 days	2 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKIG_WS_LAEMP_EVO_2022-04_NP	E235.NO3-L	28-Apr-2022	----	----	----		30-Apr-2022	3 days	2 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-04_NP	E235.NO3-L	28-Apr-2022	----	----	----		30-Apr-2022	3 days	2 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-04_NP	E235.NO3-L	28-Apr-2022	----	----	----		30-Apr-2022	3 days	2 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-04_NP	E235.NO3-L	27-Apr-2022	----	----	----		30-Apr-2022	3 days	3 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-04_NP	E235.NO3-L	27-Apr-2022	----	----	----		30-Apr-2022	3 days	3 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-04_NP	E235.NO3-L	28-Apr-2022	----	----	----		02-May-2022	3 days	4 days	* EHT	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-04_NP	E235.NO2-L	28-Apr-2022	----	----	----		30-Apr-2022	3 days	2 days	✓	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKBR_WS_LAEMP_EVO_2022-04_NP	E235.NO2-L	28-Apr-2022	----	----	----		30-Apr-2022	3 days	2 days	✓	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKIG_WS_LAEMP_EVO_2022-04_NP	E235.NO2-L	28-Apr-2022	----	----	----		30-Apr-2022	3 days	2 days	✓	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-04_NP	E235.NO2-L	28-Apr-2022	----	----	----		30-Apr-2022	3 days	2 days	✓	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-04_NP	E235.NO2-L	28-Apr-2022	----	----	----		30-Apr-2022	3 days	2 days	✓	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-04_NP	E235.NO2-L	27-Apr-2022	----	----	----		30-Apr-2022	3 days	3 days	✓	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-04_NP	E235.NO2-L	27-Apr-2022	----	----	----		30-Apr-2022	3 days	3 days	✓	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-04_NP	E235.NO2-L	28-Apr-2022	----	----	----		02-May-2022	3 days	4 days	* EHT	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-04_NP	E235.SO4	28-Apr-2022	----	----	----		30-Apr-2022	28 days	2 days	✓	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-04_NP	E235.SO4	28-Apr-2022	----	----	----		30-Apr-2022	28 days	2 days	✓	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKBR_WS_LAEMP_EVO_2022-04_NP	E235.SO4	28-Apr-2022	----	----	----		30-Apr-2022	28 days	2 days	✓	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKIG_WS_LAEMP_EVO_2022-04_NP	E235.SO4	28-Apr-2022	----	----	----		30-Apr-2022	28 days	2 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-04_NP	E235.SO4	28-Apr-2022	----	----	----		30-Apr-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-04_NP	E235.SO4	28-Apr-2022	----	----	----		30-Apr-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-04_NP	E235.SO4	27-Apr-2022	----	----	----		30-Apr-2022	28 days	3 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-04_NP	E235.SO4	27-Apr-2022	----	----	----		30-Apr-2022	28 days	3 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_ALUSM_WS_LAEMP_EVO_2022-04_NP	E318	28-Apr-2022	02-May-2022	----	----		02-May-2022	28 days	4 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_ERCK_WS_LAEMP_EVO_2022-04_NP	E318	28-Apr-2022	02-May-2022	----	----		02-May-2022	28 days	4 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKBR_WS_LAEMP_EVO_2022-04_NP	E318	28-Apr-2022	02-May-2022	----	----		02-May-2022	28 days	4 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKIG_WS_LAEMP_EVO_2022-04_NP	E318	28-Apr-2022	02-May-2022	----	----		02-May-2022	28 days	4 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKUC_WS_LAEMP_EVO_2022-04_NP	E318	28-Apr-2022	02-May-2022	----	----		02-May-2022	28 days	4 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-04_NP	E318	28-Apr-2022	02-May-2022	----	----		02-May-2022	28 days	4 days	✓	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-04_NP	E318	27-Apr-2022	02-May-2022	----	----		02-May-2022	28 days	5 days	✓	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_MICOMP_WS_LAEMP_EVO_2022-04_NP	E318	27-Apr-2022	02-May-2022	----	----		02-May-2022	28 days	5 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_ALUSM_WS_LAEMP_EVO_2022-04_NP	E372-U	28-Apr-2022	04-May-2022	----	----		04-May-2022	28 days	6 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_ERCK_WS_LAEMP_EVO_2022-04_NP	E372-U	28-Apr-2022	04-May-2022	----	----		04-May-2022	28 days	6 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_ERCKBR_WS_LAEMP_EVO_2022-04_NP	E372-U	28-Apr-2022	04-May-2022	----	----		04-May-2022	28 days	6 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_ERCKIG_WS_LAEMP_EVO_2022-04_NP	E372-U	28-Apr-2022	04-May-2022	----	----		04-May-2022	28 days	6 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_ERCKUC_WS_LAEMP_EVO_2022-04_NP	E372-U	28-Apr-2022	04-May-2022	----	----		04-May-2022	28 days	6 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-04_NP	E372-U	28-Apr-2022	04-May-2022	----	----		04-May-2022	28 days	6 days	✓	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-04_NP	E372-U	27-Apr-2022	04-May-2022	----	----		04-May-2022	28 days	7 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_MICOMP_WS_LAEMP_EVO_2022-04_NP	E372-U	27-Apr-2022	04-May-2022	----	----		04-May-2022	28 days	7 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_ALUSM_WS_LAEMP_EVO_2022-04_NP	E421.Cr-L	28-Apr-2022	04-May-2022	----	----		04-May-2022	180 days	6 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_ERCK_WS_LAEMP_EVO_2022-04_NP	E421.Cr-L	28-Apr-2022	04-May-2022	----	----		04-May-2022	180 days	6 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_ERCKBR_WS_LAEMP_EVO_2022-04_NP	E421.Cr-L	28-Apr-2022	04-May-2022	----	----		04-May-2022	180 days	6 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_ERCKIG_WS_LAEMP_EVO_2022-04_NP	E421.Cr-L	28-Apr-2022	04-May-2022	----	----		04-May-2022	180 days	6 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_ERCKUC_WS_LAEMP_EVO_2022-04_NP	E421.Cr-L	28-Apr-2022	04-May-2022	----	----		04-May-2022	180 days	6 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_RIVER_WS_LAEMP_EVO_2022-04_NP	E421.Cr-L	28-Apr-2022	04-May-2022	----	----		04-May-2022	180 days	6 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-04_NP	E421.Cr-L	27-Apr-2022	04-May-2022	----	----		04-May-2022	180 days	7 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
Rec	Actual	Rec		Actual							
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_MICOMP_WS_LAEMP_EVO_2022-04_NP	E421.Cr-L	27-Apr-2022	04-May-2022	----	----		04-May-2022	180 days	7 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_ALUSM_WS_LAEMP_EVO_2022-04_NP	E509	28-Apr-2022	30-Apr-2022	----	----		02-May-2022	28 days	4 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_ERCKIG_WS_LAEMP_EVO_2022-04_NP	E509	28-Apr-2022	30-Apr-2022	----	----		02-May-2022	28 days	4 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_RIVER_WS_LAEMP_EVO_2022-04_NP	E509	28-Apr-2022	30-Apr-2022	----	----		02-May-2022	28 days	4 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_ERCK_WS_LAEMP_EVO_2022-04_NP	E509	28-Apr-2022	04-May-2022	----	----		04-May-2022	28 days	6 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_ERCKBR_WS_LAEMP_EVO_2022-04_NP	E509	28-Apr-2022	04-May-2022	----	----		04-May-2022	28 days	6 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_ERCKUC_WS_LAEMP_EVO_2022-04_NP	E509	28-Apr-2022	04-May-2022	----	----		04-May-2022	28 days	6 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-04_NP	E509	27-Apr-2022	04-May-2022	----	----		04-May-2022	28 days	7 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_MICOMP_WS_LAEMP_EVO_2022-04_NP	E509	27-Apr-2022	04-May-2022	----	----		04-May-2022	28 days	7 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_ALUSM_WS_LAEMP_EVO_2022-04_NP	E421	28-Apr-2022	04-May-2022	----	----		04-May-2022	180 days	6 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_ERCK_WS_LAEMP_EVO_2022-04_NP	E421	28-Apr-2022	04-May-2022	----	----		04-May-2022	180 days	6 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_ERCKBR_WS_LAEMP_EVO_2022-04_NP	E421	28-Apr-2022	04-May-2022	----	----		04-May-2022	180 days	6 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_ERCKIG_WS_LAEMP_EVO_2022-04_NP	E421	28-Apr-2022	04-May-2022	----	----		04-May-2022	180 days	6 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_ERCKUC_WS_LAEMP_EVO_2022-04_NP	E421	28-Apr-2022	04-May-2022	----	----		04-May-2022	180 days	6 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_RIVER_WS_LAEMP_EVO_2022-04_NP	E421	28-Apr-2022	04-May-2022	----	----		04-May-2022	180 days	6 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-04_NP	E421	27-Apr-2022	04-May-2022	----	----		04-May-2022	180 days	7 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_MICOMP_WS_LAEMP_EVO_2022-04_NP	E421	27-Apr-2022	04-May-2022	----	----		04-May-2022	180 days	7 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_ALUSM_WS_LAEMP_EVO_2022-04_NP	E358-L	28-Apr-2022	01-May-2022	----	----		03-May-2022	28 days	5 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_ERCK_WS_LAEMP_EVO_2022-04_NP	E358-L	28-Apr-2022	01-May-2022	----	----		03-May-2022	28 days	5 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_ERCKIG_WS_LAEMP_EVO_2022-04_NP	E358-L	28-Apr-2022	01-May-2022	----	----		03-May-2022	28 days	5 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_ERCKBR_WS_LAEMP_EVO_2022-04_NP	E358-L	28-Apr-2022	01-May-2022	----	----		04-May-2022	28 days	6 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_ERCKUC_WS_LAEMP_EVO_2022-04_NP	E358-L	28-Apr-2022	01-May-2022	----	----		04-May-2022	28 days	6 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-04_NP	E358-L	28-Apr-2022	01-May-2022	----	----		04-May-2022	28 days	6 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-04_NP	E358-L	27-Apr-2022	01-May-2022	----	----		04-May-2022	28 days	7 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_MICOMP_WS_LAEMP_EVO_2022-04_NP	E358-L	27-Apr-2022	01-May-2022	----	----		04-May-2022	28 days	7 days	✓	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_ALUSM_WS_LAEMP_EVO_2022-04_NP	E355-L	28-Apr-2022	01-May-2022	----	----		03-May-2022	28 days	5 days	✓	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_ERCK_WS_LAEMP_EVO_2022-04_NP	E355-L	28-Apr-2022	01-May-2022	----	----		03-May-2022	28 days	5 days	✓	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKIG_WS_LAEMP_EVO_2022-04_NP	E355-L	28-Apr-2022	01-May-2022	----	----		03-May-2022	28 days	5 days	✓	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKBR_WS_LAEMP_EVO_2022-04_NP	E355-L	28-Apr-2022	01-May-2022	----	----		04-May-2022	28 days	6 days	✓	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKUC_WS_LAEMP_EVO_2022-04_NP	E355-L	28-Apr-2022	01-May-2022	----	----		04-May-2022	28 days	6 days	✓	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-04_NP	E355-L	28-Apr-2022	01-May-2022	----	----		04-May-2022	28 days	6 days	✓	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-04_NP	E355-L	27-Apr-2022	01-May-2022	----	----		04-May-2022	28 days	7 days	✓	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_MICOMP_WS_LAEMP_EVO_2022-04_NP	E355-L	27-Apr-2022	01-May-2022	----	----		04-May-2022	28 days	7 days	✓	
Physical Tests : Acidity by Titration											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-04_NP	E283	28-Apr-2022	----	----	----		30-Apr-2022	14 days	2 days	✓	
Physical Tests : Acidity by Titration											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-04_NP	E283	28-Apr-2022	----	----	----		30-Apr-2022	14 days	2 days	✓	
Physical Tests : Acidity by Titration											
HDPE RG_ERCKBR_WS_LAEMP_EVO_2022-04_NP	E283	28-Apr-2022	----	----	----		30-Apr-2022	14 days	2 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Acidity by Titration											
HDPE RG_ERCKIG_WS_LAEMP_EVO_2022-04_NP	E283	28-Apr-2022	----	----	----		30-Apr-2022	14 days	2 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-04_NP	E283	28-Apr-2022	----	----	----		30-Apr-2022	14 days	2 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-04_NP	E283	28-Apr-2022	----	----	----		30-Apr-2022	14 days	2 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-04_NP	E283	27-Apr-2022	----	----	----		30-Apr-2022	14 days	3 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-04_NP	E283	27-Apr-2022	----	----	----		30-Apr-2022	14 days	3 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-04_NP	E290	28-Apr-2022	----	----	----		30-Apr-2022	14 days	2 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-04_NP	E290	28-Apr-2022	----	----	----		30-Apr-2022	14 days	2 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_ERCKBR_WS_LAEMP_EVO_2022-04_NP	E290	28-Apr-2022	----	----	----		30-Apr-2022	14 days	2 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_ERCKIG_WS_LAEMP_EVO_2022-04_NP	E290	28-Apr-2022	----	----	----		30-Apr-2022	14 days	2 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Alkalinity Species by Titration											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-04_NP	E290	28-Apr-2022	----	----	----		30-Apr-2022	14 days	2 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-04_NP	E290	28-Apr-2022	----	----	----		30-Apr-2022	14 days	2 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-04_NP	E290	27-Apr-2022	----	----	----		30-Apr-2022	14 days	3 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-04_NP	E290	27-Apr-2022	----	----	----		30-Apr-2022	14 days	3 days	✔	
Physical Tests : Conductivity in Water											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-04_NP	E100	28-Apr-2022	----	----	----		30-Apr-2022	28 days	2 days	✔	
Physical Tests : Conductivity in Water											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-04_NP	E100	28-Apr-2022	----	----	----		30-Apr-2022	28 days	2 days	✔	
Physical Tests : Conductivity in Water											
HDPE RG_ERCKBR_WS_LAEMP_EVO_2022-04_NP	E100	28-Apr-2022	----	----	----		30-Apr-2022	28 days	2 days	✔	
Physical Tests : Conductivity in Water											
HDPE RG_ERCKIG_WS_LAEMP_EVO_2022-04_NP	E100	28-Apr-2022	----	----	----		30-Apr-2022	28 days	2 days	✔	
Physical Tests : Conductivity in Water											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-04_NP	E100	28-Apr-2022	----	----	----		30-Apr-2022	28 days	2 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec Actual		Eval	Analysis Date	Holding Times Rec Actual		Eval
Physical Tests : Conductivity in Water										
HDPE RG_RIVER_WS_LAEMP_EVO_2022-04_NP	E100	28-Apr-2022	----	----	----		30-Apr-2022	28 days	2 days	✓
Physical Tests : Conductivity in Water										
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-04_NP	E100	27-Apr-2022	----	----	----		30-Apr-2022	28 days	3 days	✓
Physical Tests : Conductivity in Water										
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-04_NP	E100	27-Apr-2022	----	----	----		30-Apr-2022	28 days	3 days	✓
Physical Tests : ORP by Electrode										
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-04_NP	E125	28-Apr-2022	----	----	----		04-May-2022	0.25 hrs	145 hrs	* EHTR-FM
Physical Tests : ORP by Electrode										
HDPE RG_ERCKBR_WS_LAEMP_EVO_2022-04_NP	E125	28-Apr-2022	----	----	----		04-May-2022	0.25 hrs	147 hrs	* EHTR-FM
Physical Tests : ORP by Electrode										
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-04_NP	E125	28-Apr-2022	----	----	----		04-May-2022	0.25 hrs	147 hrs	* EHTR-FM
Physical Tests : ORP by Electrode										
HDPE RG_ERCK_WS_LAEMP_EVO_2022-04_NP	E125	28-Apr-2022	----	----	----		04-May-2022	0.25 hrs	149 hrs	* EHTR-FM
Physical Tests : ORP by Electrode										
HDPE RG_ERCKIG_WS_LAEMP_EVO_2022-04_NP	E125	28-Apr-2022	----	----	----		04-May-2022	0.25 hrs	149 hrs	* EHTR-FM
Physical Tests : ORP by Electrode										
HDPE RG_RIVER_WS_LAEMP_EVO_2022-04_NP	E125	28-Apr-2022	----	----	----		04-May-2022	0.25 hrs	149 hrs	* EHTR-FM



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec Actual		Eval	Analysis Date	Holding Times Rec Actual		Eval
Physical Tests : ORP by Electrode										
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-04_NP	E125	27-Apr-2022	----	----	----		04-May-2022	0.25 hrs	166 hrs	* EHTR-FM
Physical Tests : ORP by Electrode										
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-04_NP	E125	27-Apr-2022	----	----	----		04-May-2022	0.25 hrs	171 hrs	* EHTR-FM
Physical Tests : pH by Meter										
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-04_NP	E108	28-Apr-2022	----	----	----		30-Apr-2022	0.25 hrs	46 hrs	* EHTR-FM
Physical Tests : pH by Meter										
HDPE RG_ERCKBR_WS_LAEMP_EVO_2022-04_NP	E108	28-Apr-2022	----	----	----		30-Apr-2022	0.25 hrs	49 hrs	* EHTR-FM
Physical Tests : pH by Meter										
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-04_NP	E108	28-Apr-2022	----	----	----		30-Apr-2022	0.25 hrs	49 hrs	* EHTR-FM
Physical Tests : pH by Meter										
HDPE RG_ERCK_WS_LAEMP_EVO_2022-04_NP	E108	28-Apr-2022	----	----	----		30-Apr-2022	0.25 hrs	51 hrs	* EHTR-FM
Physical Tests : pH by Meter										
HDPE RG_ERCKIG_WS_LAEMP_EVO_2022-04_NP	E108	28-Apr-2022	----	----	----		30-Apr-2022	0.25 hrs	51 hrs	* EHTR-FM
Physical Tests : pH by Meter										
HDPE RG_RIVER_WS_LAEMP_EVO_2022-04_NP	E108	28-Apr-2022	----	----	----		30-Apr-2022	0.25 hrs	51 hrs	* EHTR-FM
Physical Tests : pH by Meter										
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-04_NP	E108	27-Apr-2022	----	----	----		30-Apr-2022	0.25 hrs	68 hrs	* EHTR-FM



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec Actual		Eval	Analysis Date	Holding Times Rec Actual		Eval
Physical Tests : pH by Meter										
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-04_NP	E108	27-Apr-2022	----	----	----		30-Apr-2022	0.25 hrs	72 hrs	* EHTR-FM
Physical Tests : TDS by Gravimetry										
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-04_NP	E162	28-Apr-2022	----	----	----		03-May-2022	7 days	5 days	✓
Physical Tests : TDS by Gravimetry										
HDPE RG_ERCK_WS_LAEMP_EVO_2022-04_NP	E162	28-Apr-2022	----	----	----		03-May-2022	7 days	5 days	✓
Physical Tests : TDS by Gravimetry										
HDPE RG_ERCKBR_WS_LAEMP_EVO_2022-04_NP	E162	28-Apr-2022	----	----	----		03-May-2022	7 days	5 days	✓
Physical Tests : TDS by Gravimetry										
HDPE RG_ERCKIG_WS_LAEMP_EVO_2022-04_NP	E162	28-Apr-2022	----	----	----		03-May-2022	7 days	5 days	✓
Physical Tests : TDS by Gravimetry										
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-04_NP	E162	28-Apr-2022	----	----	----		03-May-2022	7 days	5 days	✓
Physical Tests : TDS by Gravimetry										
HDPE RG_RIVER_WS_LAEMP_EVO_2022-04_NP	E162	28-Apr-2022	----	----	----		03-May-2022	7 days	5 days	✓
Physical Tests : TDS by Gravimetry										
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-04_NP	E162	27-Apr-2022	----	----	----		03-May-2022	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-04_NP	E162	27-Apr-2022	----	----	----		03-May-2022	7 days	6 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE [TSS-WB] RG_ALUSM_WS_LAEMP_EVO_2022-04_NP	E160-L	28-Apr-2022	----	----	----		03-May-2022	7 days	5 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE [TSS-WB] RG_ERCK_WS_LAEMP_EVO_2022-04_NP	E160-L	28-Apr-2022	----	----	----		03-May-2022	7 days	5 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE [TSS-WB] RG_ERCKBR_WS_LAEMP_EVO_2022-04_NP	E160-L	28-Apr-2022	----	----	----		03-May-2022	7 days	5 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE [TSS-WB] RG_ERCKIG_WS_LAEMP_EVO_2022-04_NP	E160-L	28-Apr-2022	----	----	----		03-May-2022	7 days	5 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE [TSS-WB] RG_ERCKUC_WS_LAEMP_EVO_2022-04_NP	E160-L	28-Apr-2022	----	----	----		03-May-2022	7 days	5 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE [TSS-WB] RG_RIVER_WS_LAEMP_EVO_2022-04_NP	E160-L	28-Apr-2022	----	----	----		03-May-2022	7 days	5 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE [TSS-WB] RG_ERCKDT_WS_LAEMP_EVO_2022-04_NP	E160-L	27-Apr-2022	----	----	----		03-May-2022	7 days	6 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE [TSS-WB] RG_MICOMP_WS_LAEMP_EVO_2022-04_NP	E160-L	27-Apr-2022	----	----	----		03-May-2022	7 days	6 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-04_NP	E121	28-Apr-2022	----	----	----		30-Apr-2022	3 days	2 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Turbidity by Nephelometry											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-04_NP	E121	28-Apr-2022	----	----	----		30-Apr-2022	3 days	2 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_ERCKBR_WS_LAEMP_EVO_2022-04_NP	E121	28-Apr-2022	----	----	----		30-Apr-2022	3 days	2 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_ERCKIG_WS_LAEMP_EVO_2022-04_NP	E121	28-Apr-2022	----	----	----		30-Apr-2022	3 days	2 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-04_NP	E121	28-Apr-2022	----	----	----		30-Apr-2022	3 days	2 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-04_NP	E121	28-Apr-2022	----	----	----		30-Apr-2022	3 days	2 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-04_NP	E121	27-Apr-2022	----	----	----		30-Apr-2022	3 days	3 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-04_NP	E121	27-Apr-2022	----	----	----		30-Apr-2022	3 days	3 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_ALUSM_WS_LAEMP_EVO_2022-04_NP	E420.Cr-L	28-Apr-2022	----	----	----		04-May-2022	180 days	6 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_ERCK_WS_LAEMP_EVO_2022-04_NP	E420.Cr-L	28-Apr-2022	----	----	----		04-May-2022	180 days	6 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
Rec	Actual	Rec		Actual							
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_ERCKBR_WS_LAEMP_EVO_2022-04_NP	E420.Cr-L	28-Apr-2022	----	----	----		04-May-2022	180 days	6 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_ERCKIG_WS_LAEMP_EVO_2022-04_NP	E420.Cr-L	28-Apr-2022	----	----	----		04-May-2022	180 days	6 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_ERCKUC_WS_LAEMP_EVO_2022-04_NP	E420.Cr-L	28-Apr-2022	----	----	----		04-May-2022	180 days	6 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_RIVER_WS_LAEMP_EVO_2022-04_NP	E420.Cr-L	28-Apr-2022	----	----	----		04-May-2022	180 days	6 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-04_NP	E420.Cr-L	27-Apr-2022	----	----	----		04-May-2022	180 days	7 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_MICOMP_WS_LAEMP_EVO_2022-04_NP	E420.Cr-L	27-Apr-2022	----	----	----		04-May-2022	180 days	7 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_ERCK_WS_LAEMP_EVO_2022-04_NP	E508	28-Apr-2022	----	----	----		04-May-2022	28 days	6 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_ERCKBR_WS_LAEMP_EVO_2022-04_NP	E508	28-Apr-2022	----	----	----		04-May-2022	28 days	6 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_ERCKUC_WS_LAEMP_EVO_2022-04_NP	E508	28-Apr-2022	----	----	----		04-May-2022	28 days	6 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-04_NP	E508	27-Apr-2022	----	----	----		04-May-2022	28 days	7 days	✔
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) RG_MICOMP_WS_LAEMP_EVO_2022-04_NP	E508	27-Apr-2022	----	----	----		04-May-2022	28 days	7 days	✔
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved) RG_ALUSM_WS_LAEMP_EVO_2022-04_NP	E508-L	28-Apr-2022	----	----	----		05-May-2022	28 days	7 days	✔
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved) RG_ERCKIG_WS_LAEMP_EVO_2022-04_NP	E508-L	28-Apr-2022	----	----	----		05-May-2022	28 days	7 days	✔
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved) RG_RIVER_WS_LAEMP_EVO_2022-04_NP	E508-L	28-Apr-2022	----	----	----		05-May-2022	28 days	7 days	✔
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) RG_ALUSM_WS_LAEMP_EVO_2022-04_NP	E420	28-Apr-2022	----	----	----		04-May-2022	180 days	6 days	✔
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) RG_ERCK_WS_LAEMP_EVO_2022-04_NP	E420	28-Apr-2022	----	----	----		04-May-2022	180 days	6 days	✔
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) RG_ERCKBR_WS_LAEMP_EVO_2022-04_NP	E420	28-Apr-2022	----	----	----		04-May-2022	180 days	6 days	✔
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) RG_ERCKIG_WS_LAEMP_EVO_2022-04_NP	E420	28-Apr-2022	----	----	----		04-May-2022	180 days	6 days	✔



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) RG_ERCKUC_WS_LAEMP_EVO_2022-04_NP	E420	28-Apr-2022	----	----	----		04-May-2022	180 days	6 days	✔
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) RG_RIVER_WS_LAEMP_EVO_2022-04_NP	E420	28-Apr-2022	----	----	----		04-May-2022	180 days	6 days	✔
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-04_NP	E420	27-Apr-2022	----	----	----		04-May-2022	180 days	7 days	✔
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) RG_MICOMP_WS_LAEMP_EVO_2022-04_NP	E420	27-Apr-2022	----	----	----		04-May-2022	180 days	7 days	✔

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended

EHT: Exceeded ALS recommended hold time prior to analysis.

Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
Analytical Methods							
Laboratory Duplicates (DUP)							
Acidity by Titration	E283	473208	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290	473192	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	474150	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	473230	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	473231	1	20	5.0	5.0	✓
Conductivity in Water	E100	473191	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	475887	1	20	5.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	474139	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	475886	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	473668	1	15	6.6	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	473251	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	473234	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	473232	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	473233	1	20	5.0	5.0	✓
ORP by Electrode	E125	475697	2	36	5.5	5.0	✓
pH by Meter	E108	473190	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	473229	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	473799	2	40	5.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	475853	1	20	5.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	473524	1	10	10.0	5.0	✓
Total Mercury in Water by CVAAS	E508	476163	1	20	5.0	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	477926	1	12	8.3	5.0	✓
Total Metals in Water by CRC ICPMS	E420	475854	1	20	5.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	473669	1	15	6.6	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	474401	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121	473143	1	20	5.0	5.0	✓
Laboratory Control Samples (LCS)							
Acidity by Titration	E283	473208	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290	473192	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	474150	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	473230	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	473231	1	20	5.0	5.0	✓
Conductivity in Water	E100	473191	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	475887	1	20	5.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	474139	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	475886	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	473668	1	15	6.6	5.0	✓



Matrix: **Water**

Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
Analytical Methods							
Laboratory Control Samples (LCS) - Continued							
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	473251	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	473234	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	473232	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	473233	1	20	5.0	5.0	✓
ORP by Electrode	E125	475697	2	36	5.5	5.0	✓
pH by Meter	E108	473190	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	473229	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	473799	2	40	5.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	475853	1	20	5.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	473524	1	10	10.0	5.0	✓
Total Mercury in Water by CVAAS	E508	476163	1	20	5.0	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	477926	1	12	8.3	5.0	✓
Total Metals in Water by CRC ICPMS	E420	475854	1	20	5.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	473669	1	15	6.6	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	474401	1	20	5.0	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	473795	2	40	5.0	5.0	✓
Turbidity by Nephelometry	E121	473143	1	20	5.0	5.0	✓
Method Blanks (MB)							
Acidity by Titration	E283	473208	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290	473192	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	474150	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	473230	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	473231	1	20	5.0	5.0	✓
Conductivity in Water	E100	473191	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	475887	1	20	5.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	474139	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	475886	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	473668	1	15	6.6	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	473251	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	473234	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	473232	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	473233	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	473229	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	473799	2	40	5.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	475853	1	20	5.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	473524	1	10	10.0	5.0	✓
Total Mercury in Water by CVAAS	E508	476163	1	20	5.0	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	477926	1	12	8.3	5.0	✓
Total Metals in Water by CRC ICPMS	E420	475854	1	20	5.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	473669	1	15	6.6	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	474401	1	20	5.0	5.0	✓



Matrix: **Water**

Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
<i>Analytical Methods</i>							
Method Blanks (MB) - Continued							
TSS by Gravimetry (Low Level)	E160-L	473795	2	40	5.0	5.0	✓
Turbidity by Nephelometry	E121	473143	1	20	5.0	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	474150	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	473230	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	473231	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	475887	1	20	5.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	474139	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	475886	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	473668	1	15	6.6	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	473251	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	473234	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	473232	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	473233	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	473229	1	20	5.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	475853	1	20	5.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	473524	1	10	10.0	5.0	✓
Total Mercury in Water by CVAAS	E508	476163	1	20	5.0	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	477926	1	12	8.3	5.0	✓
Total Metals in Water by CRC ICPMS	E420	475854	2	20	10.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	473669	1	15	6.6	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	474401	1	20	5.0	5.0	✓



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 Calgary - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 Calgary - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 Calgary - Environmental	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
ORP by Electrode	E125 Calgary - Environmental	Water	ASTM D1498 (mod)	Oxidation reduction potential is reported as the oxidation-reduction potential of the platinum metal-reference electrode employed, measured in mV. For high accuracy test results, it is recommended that this analysis be conducted in the field.
TSS by Gravimetry (Low Level)	E160-L Calgary - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 Calgary - Environmental	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC (Low Level)	E235.Cl-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Acidity by Titration	E283 Calgary - Environmental	Water	APHA 2310 B (mod)	Acidity is determined by potentiometric titration to pH endpoint of 8.3



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Alkalinity Species by Titration	E290 Calgary - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 Calgary - Environmental	Water	J. Environ. Monit., 2005, 7, 37-42 (mod)	Ammonia in water is analyzed by flow-injection analysis with fluorescence detection after reaction with orthophthaldialdehyde (OPA).
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 Calgary - Environmental	Water	APHA 4500-Norg D (mod)	Total Kjeldahl Nitrogen is determined using block digestion followed by flow-injection analysis with fluorescence detection.
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L Calgary - Environmental	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Dissolved Organic Carbon by Combustion (Low Level)	E358-L Calgary - Environmental	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U Calgary - Environmental	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U Calgary - Environmental	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Total Metals in Water by CRC ICPMS	E420 Vancouver - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L Vancouver - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS.
Dissolved Metals in Water by CRC ICPMS	E421 Vancouver - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L Vancouver - Environmental	Water	APHA 3030 B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS
Total Mercury in Water by CVAAS	E508 Vancouver - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L Vancouver - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAFS.
Dissolved Mercury in Water by CVAAS	E509 Calgary - Environmental	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
Dissolved Hardness (Calculated)	EC100 Vancouver - Environmental	Water	APHA 2340B	"Hardness (as CaCO ₃), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Ion Balance using Dissolved Metals	EC101 Calgary - Environmental	Water	APHA 1030E	Cation Sum, Anion Sum, and Ion Balance are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present. Ion Balance cannot be calculated accurately for waters with very low electrical conductivity (EC).
Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 Calgary - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 Calgary - Environmental	Water	APHA 4500-Norg D (mod)	Samples are digested using block digestion with Copper Sulfate Digestion Reagent.
Preparation for Total Organic Carbon by Combustion	EP355 Calgary - Environmental	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon by Combustion	EP358 Calgary - Environmental	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Phosphorus in water	EP372 Calgary - Environmental	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Dissolved Metals Water Filtration	EP421 Vancouver - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO ₃ .

Page : 33 of 33
Work Order : CG2205002
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



<i>Preparation Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
Dissolved Mercury Water Filtration	EP509 Calgary - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.



QUALITY CONTROL REPORT

Work Order : CG2205002

Page : 1 of 18

Client : Teck Coal Limited
Contact : Mike Pope
Address : 421 PINE AVE
Sparwood BC Canada V0B 2G0
Telephone : ----
Project : REGIONAL EFFECTS PROGRAM
PO : VPO00816101
C-O-C number : April EVO LAEMP 2022
Sampler : Alex McClymont
Site : ----
Quote number : Teck Coal Master Quote
No. of samples received : 8
No. of samples analysed : 8

Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
Calgary, Alberta Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 29-Apr-2022 09:45
Date Analysis Commenced : 30-Apr-2022
Issue Date : 06-May-2022 13:09

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
● Matrix Spike (MS) Report; Recovery and Acceptance Limits
● Reference Material (RM) Report; Recovery and Acceptance Limits
● Method Blank (MB) Report; Recovery and Acceptance Limits
● Laboratory Control Sample (LCS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Table with 3 columns: Signatories, Position, Laboratory Department. Lists names like Angela Ren, Anthony Calero, Elke Tabora, Harpreet Chawla, Kim Jensen, Owen Cheng, Parker Sgarbossa, Ruby Pham, Ruifang Zheng, Sara Niroomand, Zakieh Lalonde and their respective roles and departments.



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Services number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percentage Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test specific).

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 473143)											
CG2204965-001	Anonymous	turbidity	----	E121	0.10	NTU	<0.10	<0.10	0	Diff <2x LOR	----
Physical Tests (QC Lot: 473190)											
CG2204999-001	Anonymous	pH	----	E108	0.10	pH units	7.96	7.92	0.504%	4%	----
Physical Tests (QC Lot: 473191)											
CG2204999-001	Anonymous	conductivity	----	E100	2.0	µS/cm	2500	2500	0.00%	10%	----
Physical Tests (QC Lot: 473192)											
CG2204999-001	Anonymous	alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	449	472	5.00%	20%	----
		alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	449	472	5.00%	20%	----
Physical Tests (QC Lot: 473208)											
CG2204999-001	Anonymous	acidity (as CaCO3)	----	E283	2.0	mg/L	32.9	32.2	2.33%	20%	----
Physical Tests (QC Lot: 473799)											
CG2204950-002	Anonymous	solids, total dissolved [TDS]	----	E162	40	mg/L	2640	2730	3.39%	20%	----
Physical Tests (QC Lot: 474457)											
CG2205002-003	RG_ERCKBR_WS_LAEMP_P_EVO_2022-04_NP	solids, total dissolved [TDS]	----	E162	20	mg/L	1660	1680	1.14%	20%	----
Physical Tests (QC Lot: 475697)											
CG2204979-001	Anonymous	oxidation-reduction potential [ORP]	----	E125	0.10	mV	471	472	0.170%	15%	----
Physical Tests (QC Lot: 475698)											
CG2205002-008	RG_ALUSM_WS_LAEMP_EVO_2022-04_NP	oxidation-reduction potential [ORP]	----	E125	0.10	mV	493	502	1.85%	15%	----
Anions and Nutrients (QC Lot: 473229)											
CG2205002-001	RG_MICOMP_WS_LAEMP_EVO_2022-04_NP	sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	80.2	81.1	1.03%	20%	----
Anions and Nutrients (QC Lot: 473230)											
CG2205002-001	RG_MICOMP_WS_LAEMP_EVO_2022-04_NP	bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 473231)											
CG2205002-001	RG_MICOMP_WS_LAEMP_EVO_2022-04_NP	chloride	16887-00-6	E235.Cl-L	0.10	mg/L	2.07	2.18	4.94%	20%	----
Anions and Nutrients (QC Lot: 473232)											
CG2205002-001	RG_MICOMP_WS_LAEMP_EVO_2022-04_NP	nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.703	0.716	1.83%	20%	----
Anions and Nutrients (QC Lot: 473233)											



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 473233) - continued											
CG2205002-001	RG_MICOMP_WS_LAEMP_EVO_2022-04_NP	nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	0.0015	0.0020	0.0005	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 473234)											
CG2205002-001	RG_MICOMP_WS_LAEMP_EVO_2022-04_NP	fluoride	16984-48-8	E235.F	0.020	mg/L	0.122	0.122	0.0002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 473251)											
CG2205002-001	RG_MICOMP_WS_LAEMP_EVO_2022-04_NP	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 473524)											
CG2204999-004	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.500	mg/L	1.71	1.57	0.137	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 474150)											
CG2204999-001	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.125	mg/L	0.761	0.762	0.0012	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 474401)											
CG2205002-001	RG_MICOMP_WS_LAEMP_EVO_2022-04_NP	phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0088	0.0095	0.0007	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 473668)											
CG2205001-001	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	3.31	3.49	0.18	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 473669)											
CG2205001-001	Anonymous	carbon, total organic [TOC]	----	E355-L	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
Total Metals (QC Lot: 475853)											
CG2204953-004	Anonymous	chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	0.00027	0.00026	0.000003	Diff <2x LOR	----
Total Metals (QC Lot: 475854)											
CG2204953-004	Anonymous	aluminum, total	7429-90-5	E420	0.0030	mg/L	0.110	0.100	9.34%	20%	----
		antimony, total	7440-36-0	E420	0.00010	mg/L	0.00031	0.00031	0.000002	Diff <2x LOR	----
		arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00016	0.00015	0.00001	Diff <2x LOR	----
		barium, total	7440-39-3	E420	0.00010	mg/L	0.0726	0.0719	1.01%	20%	----
		beryllium, total	7440-41-7	E420	0.020	mg/L	<0.020 µg/L	<0.000020	0	Diff <2x LOR	----
		bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, total	7440-42-8	E420	0.010	mg/L	0.010	0.011	0.0003	Diff <2x LOR	----
		cadmium, total	7440-43-9	E420	0.0050	mg/L	0.237 µg/L	0.000229	3.54%	20%	----
		calcium, total	7440-70-2	E420	0.050	mg/L	116	117	0.971%	20%	----
		cobalt, total	7440-48-4	E420	0.10	mg/L	0.86 µg/L	0.00086	0.000005	Diff <2x LOR	----
		copper, total	7440-50-8	E420	0.00050	mg/L	0.00069	0.00058	0.00010	Diff <2x LOR	----
		iron, total	7439-89-6	E420	0.010	mg/L	0.105	0.108	2.41%	20%	----
		lead, total	7439-92-1	E420	0.000050	mg/L	0.000079	0.000078	0.000001	Diff <2x LOR	----
		lithium, total	7439-93-2	E420	0.0010	mg/L	0.0446	0.0454	1.80%	20%	----
		magnesium, total	7439-95-4	E420	0.0050	mg/L	51.8	50.5	2.41%	20%	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (QC Lot: 475854) - continued											
CG2204953-004	Anonymous	manganese, total	7439-96-5	E420	0.00010	mg/L	0.0145	0.0142	2.30%	20%	----
		molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.00166	0.00164	1.10%	20%	----
		nickel, total	7440-02-0	E420	0.00050	mg/L	0.0126	0.0126	0.327%	20%	----
		potassium, total	7440-09-7	E420	0.050	mg/L	2.01	1.92	4.52%	20%	----
		selenium, total	7782-49-2	E420	0.050	mg/L	75.1 µg/L	0.0745	0.811%	20%	----
		silicon, total	7440-21-3	E420	0.10	mg/L	2.12	2.02	4.53%	20%	----
		silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, total	7440-23-5	E420	0.050	mg/L	1.95	1.87	4.39%	20%	----
		strontium, total	7440-24-6	E420	0.00020	mg/L	0.150	0.152	1.64%	20%	----
		sulfur, total	7704-34-9	E420	0.50	mg/L	105	105	0.0146%	20%	----
		thallium, total	7440-28-0	E420	0.000010	mg/L	0.000015	0.000015	0.00000005	Diff <2x LOR	----
		tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, total	7440-32-6	E420	0.00030	mg/L	0.00278	0.00261	0.00016	Diff <2x LOR	----
		uranium, total	7440-61-1	E420	0.000010	mg/L	0.00309	0.00309	0.0880%	20%	----
		vanadium, total	7440-62-2	E420	0.00050	mg/L	0.00067	0.00066	0.000007	Diff <2x LOR	----
		zinc, total	7440-66-6	E420	0.0030	mg/L	0.0124	0.0120	0.0003	Diff <2x LOR	----
Total Metals (QC Lot: 476163)											
CG2204999-001	Anonymous	mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Total Metals (QC Lot: 477926)											
CG2204986-001	Anonymous	mercury, total	7439-97-6	E508-L	0.00050	ng/L	0.00057 µg/L	0.68	0.11	Diff <2x LOR	----
Dissolved Metals (QC Lot: 474139)											
CG2204875-001	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 475886)											
CG2204968-001	Anonymous	aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0026	0.0025	0.00009	Diff <2x LOR	----
		antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00046	0.00045	0.000007	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00026	0.00025	0.00001	Diff <2x LOR	----
		barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.146	0.145	0.634%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.020	mg/L	<0.020 µg/L	<0.000020	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E421	0.0050	mg/L	0.0960 µg/L	0.0000972	1.23%	20%	----
		calcium, dissolved	7440-70-2	E421	0.050	mg/L	52.1	53.0	1.80%	20%	----
		cobalt, dissolved	7440-48-4	E421	0.10	mg/L	<0.10 µg/L	<0.00010	0	Diff <2x LOR	----
		copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00029	0.00027	0.00001	Diff <2x LOR	----
		iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 475886) - continued											
CG2204968-001	Anonymous	lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0171	0.0168	1.93%	20%	----
		magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	19.7	20.0	1.56%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00070	0.00074	0.00003	Diff <2x LOR	----
		molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00448	0.00452	0.693%	20%	----
		nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00453	0.00461	0.00008	Diff <2x LOR	----
		potassium, dissolved	7440-09-7	E421	0.050	mg/L	1.54	1.57	1.94%	20%	----
		selenium, dissolved	7782-49-2	E421	0.050	mg/L	21.8 µg/L	0.0219	0.543%	20%	----
		silicon, dissolved	7440-21-3	E421	0.050	mg/L	2.50	2.57	2.64%	20%	----
		silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E421	0.050	mg/L	2.66	2.69	1.10%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.0781	0.0772	1.15%	20%	----
		sulfur, dissolved	7704-34-9	E421	0.50	mg/L	24.0	23.5	2.09%	20%	----
		thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00102	0.000987	3.38%	20%	----
		vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	0.00102	0.00100	0.00001	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0038	0.0037	0.00006	Diff <2x LOR	----
Dissolved Metals (QC Lot: 475887)											
CG2204968-001	Anonymous	chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 476172)											
CG2204999-001	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 473143)						
turbidity	----	E121	0.1	NTU	<0.10	----
Physical Tests (QCLot: 473191)						
conductivity	----	E100	1	µS/cm	<1.0	----
Physical Tests (QCLot: 473192)						
alkalinity, bicarbonate (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
alkalinity, carbonate (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
alkalinity, hydroxide (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
alkalinity, total (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 473208)						
acidity (as CaCO ₃)	----	E283	2	mg/L	<2.0	----
Physical Tests (QCLot: 473795)						
solids, total suspended [TSS]	----	E160-L	1	mg/L	<1.0	----
Physical Tests (QCLot: 473799)						
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 474449)						
solids, total suspended [TSS]	----	E160-L	1	mg/L	<1.0	----
Physical Tests (QCLot: 474457)						
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Anions and Nutrients (QCLot: 473229)						
sulfate (as SO ₄)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 473230)						
bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 473231)						
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	----
Anions and Nutrients (QCLot: 473232)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 473233)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 473234)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 473251)						
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 473524)						



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 473524) - continued						
Kjeldahl nitrogen, total [TKN]	---	E318	0.05	mg/L	<0.050	---
Anions and Nutrients (QCLot: 474150)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	---
Anions and Nutrients (QCLot: 474401)						
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	---
Organic / Inorganic Carbon (QCLot: 473668)						
carbon, dissolved organic [DOC]	---	E358-L	0.5	mg/L	<0.50	---
Organic / Inorganic Carbon (QCLot: 473669)						
carbon, total organic [TOC]	---	E355-L	0.5	mg/L	<0.50	---
Total Metals (QCLot: 475853)						
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	<0.00010	---
Total Metals (QCLot: 475854)						
aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	---
antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	---
arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	---
barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	---
beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	---
bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	---
boron, total	7440-42-8	E420	0.01	mg/L	<0.010	---
cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	---
calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	---
cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	---
copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	---
iron, total	7439-89-6	E420	0.01	mg/L	<0.010	---
lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	---
lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	---
magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	---
manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	---
molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	---
nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	---
potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	---
selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	---
silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	---
silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	---
sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	---
strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	---



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 475854) - continued						
sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	---
thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	---
tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	---
titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	---
uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	---
vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	---
zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	---
Total Metals (QCLot: 476163)						
mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	---
Total Metals (QCLot: 477926)						
mercury, total	7439-97-6	E508-L	0.5	ng/L	<0.50	---
Dissolved Metals (QCLot: 474139)						
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	---
Dissolved Metals (QCLot: 475886)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	---
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	---
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	---
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	---
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	---
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	---
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	---
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	---
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	---
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	---
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	---
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	---
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	---
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	---
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	---
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	---
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	---
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	---
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	---
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	---
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	---
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	---



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 475886) - continued						
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
Dissolved Metals (QCLot: 475887)						
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	<0.00010	----
Dissolved Metals (QCLot: 476172)						
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Physical Tests (QCLot: 473143)									
turbidity	----	E121	0.1	NTU	200 NTU	104	85.0	115	----
Physical Tests (QCLot: 473190)									
pH	----	E108	----	pH units	7 pH units	100	98.6	101	----
Physical Tests (QCLot: 473191)									
conductivity	----	E100	1	µS/cm	146.9 µS/cm	102	90.0	110	----
Physical Tests (QCLot: 473192)									
alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	103	85.0	115	----
Physical Tests (QCLot: 473208)									
acidity (as CaCO3)	----	E283	2	mg/L	50 mg/L	106	85.0	115	----
Physical Tests (QCLot: 473795)									
solids, total suspended [TSS]	----	E160-L	1	mg/L	150 mg/L	93.1	85.0	115	----
Physical Tests (QCLot: 473799)									
solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	88.6	85.0	115	----
Physical Tests (QCLot: 474449)									
solids, total suspended [TSS]	----	E160-L	1	mg/L	150 mg/L	108	85.0	115	----
Physical Tests (QCLot: 474457)									
solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	99.4	85.0	115	----
Physical Tests (QCLot: 475697)									
oxidation-reduction potential [ORP]	----	E125	----	mV	220 mV	101	95.4	104	----
Physical Tests (QCLot: 475698)									
oxidation-reduction potential [ORP]	----	E125	----	mV	220 mV	102	95.4	104	----
Anions and Nutrients (QCLot: 473229)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	103	90.0	110	----
Anions and Nutrients (QCLot: 473230)									
bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	102	85.0	115	----
Anions and Nutrients (QCLot: 473231)									
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 473232)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	106	90.0	110	----
Anions and Nutrients (QCLot: 473233)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 473234)									



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Anions and Nutrients (QCLot: 473234) - continued									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	104	90.0	110	----
Anions and Nutrients (QCLot: 473251)									
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.02 mg/L	108	80.0	120	----
Anions and Nutrients (QCLot: 473524)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	104	75.0	125	----
Anions and Nutrients (QCLot: 474150)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	97.8	85.0	115	----
Anions and Nutrients (QCLot: 474401)									
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	8.02 mg/L	105	80.0	120	----
Organic / Inorganic Carbon (QCLot: 473668)									
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	103	80.0	120	----
Organic / Inorganic Carbon (QCLot: 473669)									
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	107	80.0	120	----
Total Metals (QCLot: 475853)									
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	0.25 mg/L	97.3	80.0	120	----
Total Metals (QCLot: 475854)									
aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	102	80.0	120	----
antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	108	80.0	120	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	98.0	80.0	120	----
barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	101	80.0	120	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	96.4	80.0	120	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	103	80.0	120	----
boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	98.4	80.0	120	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	101	80.0	120	----
calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	100	80.0	120	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	98.1	80.0	120	----
copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	98.1	80.0	120	----
iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	107	80.0	120	----
lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	101	80.0	120	----
lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	102	80.0	120	----
magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	94.0	80.0	120	----
manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	98.5	80.0	120	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	104	80.0	120	----
nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	97.4	80.0	120	----
potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	103	80.0	120	----



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Total Metals (QCLot: 475854) - continued									
selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	101	80.0	120	----
silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	107	80.0	120	----
silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	96.7	80.0	120	----
sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	102	80.0	120	----
strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	106	80.0	120	----
sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	99.6	80.0	120	----
thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	102	80.0	120	----
tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	103	80.0	120	----
titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	98.1	80.0	120	----
uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	98.8	80.0	120	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	99.1	80.0	120	----
zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	101	80.0	120	----
Total Metals (QCLot: 476163)									
mercury, total	7439-97-6	E508	0.000005	mg/L	0.0001 mg/L	98.9	80.0	120	----
Total Metals (QCLot: 477926)									
mercury, total	7439-97-6	E508-L	0.5	ng/L	5 ng/L	106	80.0	120	----
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	101	80.0	120	----
Dissolved Metals (QCLot: 475886)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	106	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	107	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	105	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	107	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	103	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	97.6	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	101	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	106	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	105	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	103	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	102	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	112	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	106	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	108	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	101	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	104	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	104	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	101	80.0	120	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Dissolved Metals (QCLot: 475886) - continued									
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	110	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	107	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	107	80.0	120	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	98.4	80.0	120	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	105	80.0	120	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	106	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	96.2	80.0	120	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	106	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	104	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	106	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	106	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	105	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	109	80.0	120	----
Dissolved Metals (QCLot: 475887)									
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	0.25 mg/L	102	80.0	120	----
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	99.3	80.0	120	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 473229)										
CG2205002-002	RG_ERCKDT_WS_LAEMP_EVO_2022-04_NP	sulfate (as SO4)	14808-79-8	E235.SO4	ND mg/L	100 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 473230)										
CG2205002-002	RG_ERCKDT_WS_LAEMP_EVO_2022-04_NP	bromide	24959-67-9	E235.Br-L	0.496 mg/L	0.5 mg/L	99.2	75.0	125	----
Anions and Nutrients (QCLot: 473231)										
CG2205002-002	RG_ERCKDT_WS_LAEMP_EVO_2022-04_NP	chloride	16887-00-6	E235.Cl-L	100 mg/L	100 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 473232)										
CG2205002-002	RG_ERCKDT_WS_LAEMP_EVO_2022-04_NP	nitrate (as N)	14797-55-8	E235.NO3-L	ND mg/L	2.5 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 473233)										
CG2205002-002	RG_ERCKDT_WS_LAEMP_EVO_2022-04_NP	nitrite (as N)	14797-65-0	E235.NO2-L	0.496 mg/L	0.5 mg/L	99.3	75.0	125	----
Anions and Nutrients (QCLot: 473234)										
CG2205002-002	RG_ERCKDT_WS_LAEMP_EVO_2022-04_NP	fluoride	16984-48-8	E235.F	0.910 mg/L	1 mg/L	91.0	75.0	125	----
Anions and Nutrients (QCLot: 473251)										
CG2205002-002	RG_ERCKDT_WS_LAEMP_EVO_2022-04_NP	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0494 mg/L	0.05 mg/L	98.7	70.0	130	----
Anions and Nutrients (QCLot: 473524)										
CG2205001-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.50 mg/L	2.5 mg/L	99.9	70.0	130	----
Anions and Nutrients (QCLot: 474150)										
CG2204999-002	Anonymous	ammonia, total (as N)	7664-41-7	E298	ND mg/L	0.1 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 474401)										
CG2205002-002	RG_ERCKDT_WS_LAEMP_EVO_2022-04_NP	phosphorus, total	7723-14-0	E372-U	0.0565 mg/L	0.0676 mg/L	83.6	70.0	130	----
Organic / Inorganic Carbon (QCLot: 473668)										
CG2205001-001	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	5.40 mg/L	5 mg/L	108	70.0	130	----
Organic / Inorganic Carbon (QCLot: 473669)										
CG2205001-001	Anonymous	carbon, total organic [TOC]	----	E355-L	5.59 mg/L	5 mg/L	112	70.0	130	----
Total Metals (QCLot: 475853)										



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 475853) - continued										
CG2204953-005	Anonymous	chromium, total	7440-47-3	E420.Cr-L	0.0386 mg/L	0.04 mg/L	96.4	70.0	130	----
Total Metals (QCLot: 475854)										
CG2204953-005	Anonymous	aluminum, total	7429-90-5	E420	0.186 mg/L	0.2 mg/L	93.2	70.0	130	----
CG2204953-005	Anonymous	antimony, total	7440-36-0	E420	0.0203 mg/L	0.02 mg/L	101	70.0	130	----
		arsenic, total	7440-38-2	E420	0.0186 mg/L	0.02 mg/L	93.0	70.0	130	----
		barium, total	7440-39-3	E420	0.0192 mg/L	0.02 mg/L	96.1	70.0	130	----
		beryllium, total	7440-41-7	E420	0.0387 mg/L	0.04 mg/L	96.8	70.0	130	----
		bismuth, total	7440-69-9	E420	0.00981 mg/L	0.01 mg/L	98.1	70.0	130	----
		boron, total	7440-42-8	E420	0.101 mg/L	0.1 mg/L	101	70.0	130	----
		cadmium, total	7440-43-9	E420	0.00396 mg/L	0.004 mg/L	98.9	70.0	130	----
		calcium, total	7440-70-2	E420	3.93 mg/L	4 mg/L	98.4	70.0	130	----
		cobalt, total	7440-48-4	E420	0.0194 mg/L	0.02 mg/L	97.1	70.0	130	----
		copper, total	7440-50-8	E420	0.0196 mg/L	0.02 mg/L	98.0	70.0	130	----
		iron, total	7439-89-6	E420	1.95 mg/L	2 mg/L	97.3	70.0	130	----
		lead, total	7439-92-1	E420	0.0196 mg/L	0.02 mg/L	98.2	70.0	130	----
		lithium, total	7439-93-2	E420	0.0987 mg/L	0.1 mg/L	98.7	70.0	130	----
		magnesium, total	7439-95-4	E420	0.920 mg/L	1 mg/L	92.0	70.0	130	----
		manganese, total	7439-96-5	E420	0.0194 mg/L	0.02 mg/L	96.9	70.0	130	----
		molybdenum, total	7439-98-7	E420	0.0204 mg/L	0.02 mg/L	102	70.0	130	----
		nickel, total	7440-02-0	E420	0.0386 mg/L	0.04 mg/L	96.6	70.0	130	----
		potassium, total	7440-09-7	E420	3.92 mg/L	4 mg/L	98.1	70.0	130	----
		selenium, total	7782-49-2	E420	0.0399 mg/L	0.04 mg/L	99.8	70.0	130	----
		silicon, total	7440-21-3	E420	10.00 mg/L	10 mg/L	100.0	70.0	130	----
		silver, total	7440-22-4	E420	0.00428 mg/L	0.004 mg/L	107	70.0	130	----
		sodium, total	7440-23-5	E420	1.93 mg/L	2 mg/L	96.7	70.0	130	----
		strontium, total	7440-24-6	E420	0.0204 mg/L	0.02 mg/L	102	70.0	130	----
		sulfur, total	7704-34-9	E420	21.0 mg/L	20 mg/L	105	70.0	130	----
		thallium, total	7440-28-0	E420	0.00378 mg/L	0.004 mg/L	94.5	70.0	130	----
		tin, total	7440-31-5	E420	0.0195 mg/L	0.02 mg/L	97.7	70.0	130	----
		titanium, total	7440-32-6	E420	0.0376 mg/L	0.04 mg/L	94.0	70.0	130	----
		uranium, total	7440-61-1	E420	0.00372 mg/L	0.004 mg/L	92.9	70.0	130	----
		vanadium, total	7440-62-2	E420	0.0964 mg/L	0.1 mg/L	96.4	70.0	130	----
		zinc, total	7440-66-6	E420	0.392 mg/L	0.4 mg/L	97.9	70.0	130	----
Total Metals (QCLot: 476163)										
CG2204999-002	Anonymous	mercury, total	7439-97-6	E508	0.0000972 mg/L	0.0001 mg/L	97.2	70.0	130	----
Total Metals (QCLot: 477926)										



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 477926) - continued										
CG2204986-002	Anonymous	mercury, total	7439-97-6	E508-L	4.86 ng/L	5 ng/L	97.2	70.0	130	----
Dissolved Metals (QCLot: 474139)										
CG2204875-002	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000957 mg/L	0.0001 mg/L	95.7	70.0	130	----
Dissolved Metals (QCLot: 475886)										
CG2204968-002	Anonymous	aluminum, dissolved	7429-90-5	E421	0.192 mg/L	0.2 mg/L	96.1	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.0200 mg/L	0.02 mg/L	100	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.0192 mg/L	0.02 mg/L	95.8	70.0	130	----
		barium, dissolved	7440-39-3	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.0378 mg/L	0.04 mg/L	94.5	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.00884 mg/L	0.01 mg/L	88.4	70.0	130	----
		boron, dissolved	7440-42-8	E421	0.096 mg/L	0.1 mg/L	96.2	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.00390 mg/L	0.004 mg/L	97.4	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	4 mg/L	ND	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.0185 mg/L	0.02 mg/L	92.7	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.0182 mg/L	0.02 mg/L	91.0	70.0	130	----
		iron, dissolved	7439-89-6	E421	1.90 mg/L	2 mg/L	95.3	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.0189 mg/L	0.02 mg/L	94.4	70.0	130	----
		lithium, dissolved	7439-93-2	E421	0.0931 mg/L	0.1 mg/L	93.1	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	1 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E421	0.0187 mg/L	0.02 mg/L	93.6	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.0198 mg/L	0.02 mg/L	99.0	70.0	130	----
		nickel, dissolved	7440-02-0	E421	0.0360 mg/L	0.04 mg/L	89.9	70.0	130	----
		potassium, dissolved	7440-09-7	E421	3.60 mg/L	4 mg/L	90.1	70.0	130	----
		selenium, dissolved	7782-49-2	E421	0.0398 mg/L	0.04 mg/L	99.6	70.0	130	----
		silicon, dissolved	7440-21-3	E421	8.89 mg/L	10 mg/L	88.9	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.00411 mg/L	0.004 mg/L	103	70.0	130	----
		sodium, dissolved	7440-23-5	E421	ND mg/L	2 mg/L	ND	70.0	130	----
		strontium, dissolved	7440-24-6	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	ND mg/L	20 mg/L	ND	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.00375 mg/L	0.004 mg/L	93.7	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.0198 mg/L	0.02 mg/L	99.3	70.0	130	----
		titanium, dissolved	7440-32-6	E421	0.0384 mg/L	0.04 mg/L	95.9	70.0	130	----
		uranium, dissolved	7440-61-1	E421	0.00386 mg/L	0.004 mg/L	96.4	70.0	130	----
		vanadium, dissolved	7440-62-2	E421	0.0974 mg/L	0.1 mg/L	97.4	70.0	130	----
		zinc, dissolved	7440-66-6	E421	0.374 mg/L	0.4 mg/L	93.6	70.0	130	----
Dissolved Metals (QCLot: 475887)										

Page : 18 of 18
 Work Order : CG2205002
 Client : Teck Coal Limited
 Project : REGIONAL EFFECTS PROGRAM



Sub-Matrix: **Water**

					<i>Matrix Spike (MS) Report</i>					
					<i>Spike</i>		<i>Recovery (%)</i>	<i>Recovery Limits (%)</i>		
<i>Laboratory sample ID</i>	<i>Client sample ID</i>	<i>Analyte</i>	<i>CAS Number</i>	<i>Method</i>	<i>Concentration</i>	<i>Target</i>	<i>MS</i>	<i>Low</i>	<i>High</i>	<i>Qualifier</i>
Dissolved Metals (QCLot: 475887) - continued										
CG2204968-002	Anonymous	chromium, dissolved	7440-47-3	E421.Cr-L	0.0377 mg/L	0.04 mg/L	94.3	70.0	130	----
Dissolved Metals (QCLot: 476172)										
CG2204999-002	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000974 mg/L	0.0001 mg/L	97.4	70.0	130	----

COC ID: April EVO LAEMP 2022				TURNAROUND TIME:			
PROJECT/CLIENT INFO				LABORATORY			
Facility Name / Job#	Regional EVO LAEMP			Lab Name	ALS Calgary		
Project Manager	Mike Pope			Lab Contact	Lyudmyla Shvets		
Email	mike.pope@teck.com			Email	lyudmyla.shvets@alsglobal.com		
Address	421 Pine Avenue			Address	2559 29 Street NE		
City	Sparwood	Province	BC	City	Calgary	Province	AB
Postal Code	V0B 2G0	Country	Canada	Postal Code	T1V 7B5	Country	Canada
Phone Number	343-333-3905			Phone Number	1 403 407 1794		

SAMPLE DETAILS									ANALYSIS REQUESTED									
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.											
RG_MICOMP LAEMP_EVO_2022-04_NP	RG_MICOMP	WS	No	4/27/2022	15:30	G	7											
RG_ERCKDJ LAEMP_EVO_2022-04_NP	RG_ERCKDJ	WS	No	4/27/2022	11:15	G	7											
RG_ERCKBR LAEMP_EVO_2022-04_NP	RG_ERCKBR	WS	No	4/28/2022	10:30	G	7											
RG_RIVER WS LAEMP_EVO_2022-04_NP	RG_RIVER	WS	No	4/28/2022	8:30	G	7											
RG_ERCKUC WS LAEMP_EVO_2022-04_NP	RG_ERCKUC	WS	No	4/28/2022	10:55	G	7											
RG_ERCK WS LAEMP_EVO_2022-04_NP	RG_ERCK	WS	No	4/28/2022	8:50	G	7											
RG_ERCKIG WS LAEMP_EVO_2022-04_NP	RG_ERCKIG	WS	No	4/28/2022	8:30	G	7											
RG_ALUSM WS LAEMP_EVO_2022-04_NP	RG_ALUSM	WS	No	4/28/2022	14:00	G	7											

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
ALS PO VPO00816101	Alex McClymont	April 28, 2022	<i>Max</i> 4/29 9:45

NO. OF BOTTLES RETURNED/DESCRIPTION	Sampler's Name	Mobile #
Regular (default) <input checked="" type="checkbox"/> Priority (2-3 business days) - 50% surcharge Emergency (1 Business Day) - 100% surcharge For Emergency <1 Day, ASAP or Weekend - Contact ALS	Alex McClymont	780-293-6750
	Sampler's Signature	Date/Time
		April 29, 2022

9c

Environmental Division
Calgary
Work Order Reference
CG2205002



Environmental Division
Calgary
Work Order Reference
CG2205002



CERTIFICATE OF ANALYSIS

Work Order : **CG2205003**
Client : **Teck Coal Limited**
Contact : Mike Pope
Address : 421 PINE AVE
Sparwood BC Canada V0B 2G0
Telephone : ----
Project : ELKVIEW OPERATIONS
PO : VPO00816101
C-O-C number : EVO LAEMP_2022_APR_ALS
Sampler : Alex McClymont
Site : ----
Quote number : Teck Coal Master Quote
No. of samples received : 1
No. of samples analysed : 1

Page : 1 of 8
Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
Calgary AB Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 29-Apr-2022 09:45
Date Analysis Commenced : 30-Apr-2022
Issue Date : 06-May-2022 19:02

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Angela Ren	Team Leader - Metals	Metals, Burnaby, British Columbia
Anthony Calero	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Elke Tabora		Inorganics, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Janice Leung	Supervisor - Organics Instrumentation	Organics, Burnaby, British Columbia
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Kim Jensen	Department Manager - Metals	Metals, Burnaby, British Columbia
Kyle Chang	Lab Assistant	Metals, Burnaby, British Columbia
Owen Cheng		Metals, Burnaby, British Columbia
Parker Sgarbossa	Laboratory Analyst	Inorganics, Calgary, Alberta
Ruifang Zheng	Analyst	Inorganics, Calgary, Alberta
Sara Niroomand		Inorganics, Calgary, Alberta
Zakieh Lalonde		Inorganics, Calgary, Alberta



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
 LOR: Limit of Reporting (detection limit).

Unit	Description
-	No Unit
%	percent
µg/L	micrograms per litre
µS/cm	Microsiemens per centimetre
meq/L	milliequivalents per litre
mg/L	milligrams per litre
mV	millivolts
NTU	nephelometric turbidity units
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Sample Comments

Sample	Client Id	Comment
CG2205003-001	EV_MC3a_WS_LAEMP_EVO_ 2022-04_NP	Updated WO to rush TAT as per client.

Qualifiers

Qualifier	Description
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
DTMF	Dissolved concentration exceeds total for field-filtered metals sample. Metallic contaminants may have been introduced to dissolved sample during field filtration.

Page : 4 of 8
Work Order : CG2205003
Client : Teck Coal Limited
Project : ELKVIEW OPERATIONS



SESC

*Non-opaque sample container received for selenium speciation analysis.
Conversions of some selenium species can occur if samples are exposed to light*



Analytical Results

Sub-Matrix: Water					Client sample ID	EV_MC3a_WS_	----	----	----	----
(Matrix: Water)						LAEMP_EVO_2				
					Client sampling date / time	27-Apr-2022	---	---	---	---
						15:00				
Analyte	CAS Number	Method	LOR	Unit	CG2205003-001	-----	-----	-----	-----	-----
					Result	---	---	---	---	---
Physical Tests										
acidity (as CaCO3)	---	E283	2.0	mg/L	<2.0	---	---	---	---	---
alkalinity, bicarbonate (as CaCO3)	---	E290	1.0	mg/L	129	---	---	---	---	---
alkalinity, bicarbonate (as HCO3)	71-52-3	E290	1.0	mg/L	157	---	---	---	---	---
alkalinity, carbonate (as CaCO3)	---	E290	1.0	mg/L	9.2	---	---	---	---	---
alkalinity, carbonate (as CO3)	3812-32-6	E290	1.0	mg/L	5.5	---	---	---	---	---
alkalinity, hydroxide (as CaCO3)	---	E290	1.0	mg/L	<1.0	---	---	---	---	---
alkalinity, hydroxide (as OH)	14280-30-9	E290	1.0	mg/L	<1.0	---	---	---	---	---
alkalinity, total (as CaCO3)	---	E290	1.0	mg/L	138	---	---	---	---	---
conductivity	---	E100	2.0	µS/cm	348	---	---	---	---	---
hardness (as CaCO3), dissolved	---	EC100	0.50	mg/L	174	---	---	---	---	---
oxidation-reduction potential [ORP]	---	E125	0.10	mV	475	---	---	---	---	---
pH	---	E108	0.10	pH units	8.50	---	---	---	---	---
solids, total dissolved [TDS]	---	E162	10	mg/L	210	---	---	---	---	---
solids, total suspended [TSS]	---	E160-L	1.0	mg/L	13.3	---	---	---	---	---
turbidity	---	E121	0.10	NTU	4.07	---	---	---	---	---
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	---	---	---	---	---
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	---	---	---	---	---
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	1.38	---	---	---	---	---
fluoride	16984-48-8	E235.F	0.020	mg/L	0.118	---	---	---	---	---
Kjeldahl nitrogen, total [TKN]	---	E318	0.050	mg/L	0.180	---	---	---	---	---
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.220	---	---	---	---	---
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	---	---	---	---	---
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	---	---	---	---	---
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0121	---	---	---	---	---
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	55.7	---	---	---	---	---
Organic / Inorganic Carbon										
carbon, dissolved organic [DOC]	---	E358-L	0.50	mg/L	2.76	---	---	---	---	---
carbon, total organic [TOC]	---	E355-L	0.50	mg/L	2.74	---	---	---	---	---



Analytical Results

Sub-Matrix: Water					Client sample ID	EV_MC3a_WS_	----	----	----	----
(Matrix: Water)					LAEMP_EVO_2	----	----	----	----	----
					022-04_NP	----	----	----	----	----
					Client sampling date / time	27-Apr-2022	----	----	----	----
					15:00	----	----	----	----	----
Analyte	CAS Number	Method	LOR	Unit	CG2205003-001	-----	-----	-----	-----	-----
					Result	----	----	----	----	----
Ion Balance										
anion sum	----	EC101	0.10	meq/L	3.98	----	----	----	----	----
cation sum	----	EC101	0.10	meq/L	3.68	----	----	----	----	----
ion balance (cations/anions)	----	EC101	0.010	%	92.5	----	----	----	----	----
ion balance (APHA)	----	EC101	0.010	%	3.92	----	----	----	----	----
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L	0.234	----	----	----	----	----
antimony, total	7440-36-0	E420	0.00010	mg/L	0.00011	----	----	----	----	----
arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00024	----	----	----	----	----
barium, total	7440-39-3	E420	0.00010	mg/L	0.0980	----	----	----	----	----
beryllium, total	7440-41-7	E420	0.020	µg/L	<0.020	----	----	----	----	----
bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	----	----	----	----	----
boron, total	7440-42-8	E420	0.010	mg/L	0.010	----	----	----	----	----
cadmium, total	7440-43-9	E420	0.0050	µg/L	0.0404	----	----	----	----	----
calcium, total	7440-70-2	E420	0.050	mg/L	48.6	----	----	----	----	----
chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	0.00044	----	----	----	----	----
cobalt, total	7440-48-4	E420	0.10	µg/L	<0.10	----	----	----	----	----
copper, total	7440-50-8	E420	0.00050	mg/L	0.00082	----	----	----	----	----
iron, total	7439-89-6	E420	0.010	mg/L	0.185	----	----	----	----	----
lead, total	7439-92-1	E420	0.000050	mg/L	0.000122	----	----	----	----	----
lithium, total	7439-93-2	E420	0.0010	mg/L	0.0058	----	----	----	----	----
magnesium, total	7439-95-4	E420	0.0050	mg/L	15.5	----	----	----	----	----
manganese, total	7439-96-5	E420	0.00010	mg/L	0.00405	----	----	----	----	----
mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	----	----	----	----	----
molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.000781	----	----	----	----	----
nickel, total	7440-02-0	E420	0.00050	mg/L	0.00097	----	----	----	----	----
potassium, total	7440-09-7	E420	0.050	mg/L	0.774	----	----	----	----	----
selenium, total	7782-49-2	E420	0.050	µg/L	3.16	----	----	----	----	----
silicon, total	7440-21-3	E420	0.10	mg/L	2.75	----	----	----	----	----
silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	----	----	----	----	----
sodium, total	7440-23-5	E420	0.050	mg/L	3.84	----	----	----	----	----



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	EV_MC3a_WS_	----	----	----	----
					LAEMP_EVO_2					
					022-04_NP					
					Client sampling date / time	27-Apr-2022	----	----	----	----
					15:00					
Analyte	CAS Number	Method	LOR	Unit	CG2205003-001	-----	-----	-----	-----	-----
					Result	----	----	----	----	----
Total Metals										
strontium, total	7440-24-6	E420	0.00020	mg/L	0.154	----	----	----	----	----
sulfur, total	7704-34-9	E420	0.50	mg/L	21.0	----	----	----	----	----
thallium, total	7440-28-0	E420	0.000010	mg/L	0.000012	----	----	----	----	----
tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	----	----	----	----	----
titanium, total	7440-32-6	E420	0.00030	mg/L	0.00431	----	----	----	----	----
uranium, total	7440-61-1	E420	0.000010	mg/L	0.000771	----	----	----	----	----
vanadium, total	7440-62-2	E420	0.00050	mg/L	0.00106	----	----	----	----	----
zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	----	----	----	----	----
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0119	----	----	----	----	----
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00010	----	----	----	----	----
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00044	----	----	----	----	----
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0892	----	----	----	----	----
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.020	----	----	----	----	----
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	----	----	----	----	----
boron, dissolved	7440-42-8	E421	0.010	mg/L	0.072 ^{DTMF}	----	----	----	----	----
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.0124	----	----	----	----	----
calcium, dissolved	7440-70-2	E421	0.050	mg/L	45.6	----	----	----	----	----
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00010	----	----	----	----	----
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	<0.10	----	----	----	----	----
copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00055	----	----	----	----	----
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	----	----	----	----	----
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	----	----	----	----	----
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0054	----	----	----	----	----
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	14.7	----	----	----	----	----
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00093	----	----	----	----	----
mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	----	----	----	----	----
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.000748	----	----	----	----	----
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00055	----	----	----	----	----
potassium, dissolved	7440-09-7	E421	0.050	mg/L	0.655	----	----	----	----	----



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	EV_MC3a_WS_	----	----	----	----
					LAEMP_EVO_2					
					022-04_NP					
					Client sampling date / time	27-Apr-2022	----	----	----	----
					15:00					
Analyte	CAS Number	Method	LOR	Unit	CG2205003-001	-----	-----	-----	-----	
					Result	----	----	----	----	
Dissolved Metals										
selenium, dissolved	7782-49-2	E421	0.050	µg/L	3.42	----	----	----	----	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	2.38	----	----	----	----	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	----	----	----	----	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	4.08	----	----	----	----	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.139	----	----	----	----	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	16.4	----	----	----	----	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	----	----	----	----	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	----	----	----	----	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00060 ^{DLM}	----	----	----	----	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.000680	----	----	----	----	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	0.00084	----	----	----	----	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0010	----	----	----	----	
dissolved mercury filtration location	----	EP509	-	-	Field	----	----	----	----	
dissolved metals filtration location	----	EP421	-	-	Field	----	----	----	----	
Speciated Metals										
selenium species, unknown	----	E540	0.20	µg/L	<0.20 ^{SESC}	----	----	----	----	
selenium, hexavalent [Se VI]	----	E540	0.10	µg/L	2.93 ^{SESC}	----	----	----	----	
selenium, tetravalent [Se IV]	----	E540	0.10	µg/L	<0.10 ^{SESC}	----	----	----	----	
selenocyanate [SeCN], as Se	3425-46-5	E540	0.10	µg/L	<0.10 ^{SESC}	----	----	----	----	
Volatile Organic Compounds										
dimethyl diselenide [DMDSe], as Se	7101-31-7	E611.Se	5.0	µg/L	<5.0	----	----	----	----	
dimethyl selenide [DMSe], as Se	593-79-3	E611.Se	0.50	µg/L	<0.50	----	----	----	----	
Volatile Organic Compounds Surrogates										
bromofluorobenzene, 4-	460-00-4	E611.Se	1.0	%	71.3	----	----	----	----	
difluorobenzene, 1,4-	540-36-3	E611.Se	1.0	%	106	----	----	----	----	

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: CG2205003	Page	: 1 of 13
Client	: Teck Coal Limited	Laboratory	: Calgary - Environmental
Contact	: Mike Pope	Account Manager	: Lyudmyla Shvets
Address	: 421 PINE AVE Sparwood BC Canada V0B 2G0	Address	: 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5
Telephone	: ----	Telephone	: +1 403 407 1800
Project	: ELKVIEW OPERATIONS	Date Samples Received	: 29-Apr-2022 09:45
PO	: VPO00816101	Issue Date	: 06-May-2022 19:03
C-O-C number	: EVO LAEMP_2022_APR_ALS		
Sampler	: Alex McClymont		
Site	: ----		
Quote number	: Teck Coal Master Quote		
No. of samples received	: 1		
No. of samples analysed	: 1		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers occur - please see following pages for full details.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) EV_MC3a_WS_LAEMP_EVO_2022-04_NP	E298	27-Apr-2022	02-May-2022	----	----		02-May-2022	28 days	5 days	✓	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE EV_MC3a_WS_LAEMP_EVO_2022-04_NP	E235.Br-L	27-Apr-2022	----	----	----		30-Apr-2022	28 days	3 days	✓	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE EV_MC3a_WS_LAEMP_EVO_2022-04_NP	E235.Cl-L	27-Apr-2022	----	----	----		30-Apr-2022	28 days	3 days	✓	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE EV_MC3a_WS_LAEMP_EVO_2022-04_NP	E378-U	27-Apr-2022	----	----	----		30-Apr-2022	3 days	3 days	✓	
Anions and Nutrients : Fluoride in Water by IC											
HDPE EV_MC3a_WS_LAEMP_EVO_2022-04_NP	E235.F	27-Apr-2022	----	----	----		30-Apr-2022	28 days	3 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE EV_MC3a_WS_LAEMP_EVO_2022-04_NP	E235.NO3-L	27-Apr-2022	----	----	----		30-Apr-2022	3 days	3 days	✓	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE EV_MC3a_WS_LAEMP_EVO_2022-04_NP	E235.NO2-L	27-Apr-2022	----	----	----		30-Apr-2022	3 days	3 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
Rec	Actual	Rec		Actual							
Anions and Nutrients : Sulfate in Water by IC											
HDPE EV_MC3a_WS_LAEMP_EVO_2022-04_NP	E235.SO4	27-Apr-2022	----	----	----		30-Apr-2022	28 days	3 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) EV_MC3a_WS_LAEMP_EVO_2022-04_NP	E318	27-Apr-2022	03-May-2022	----	----		03-May-2022	28 days	6 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) EV_MC3a_WS_LAEMP_EVO_2022-04_NP	E372-U	27-Apr-2022	04-May-2022	----	----		04-May-2022	28 days	7 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) EV_MC3a_WS_LAEMP_EVO_2022-04_NP	E421.Cr-L	27-Apr-2022	04-May-2022	----	----		04-May-2022	180 days	7 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) EV_MC3a_WS_LAEMP_EVO_2022-04_NP	E509	27-Apr-2022	04-May-2022	----	----		04-May-2022	28 days	7 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) EV_MC3a_WS_LAEMP_EVO_2022-04_NP	E421	27-Apr-2022	04-May-2022	----	----		04-May-2022	180 days	7 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) EV_MC3a_WS_LAEMP_EVO_2022-04_NP	E358-L	27-Apr-2022	02-May-2022	----	----		03-May-2022	28 days	5 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) EV_MC3a_WS_LAEMP_EVO_2022-04_NP	E355-L	27-Apr-2022	02-May-2022	----	----		03-May-2022	28 days	5 days	✔	
Physical Tests : Acidity by Titration											
HDPE EV_MC3a_WS_LAEMP_EVO_2022-04_NP	E283	27-Apr-2022	----	----	----		30-Apr-2022	14 days	3 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
Rec	Actual	Rec		Actual							
Physical Tests : Alkalinity Species by Titration											
HDPE EV_MC3a_WS_LAEMP_EVO_2022-04_NP	E290	27-Apr-2022	----	----	----		30-Apr-2022	14 days	3 days	✓	
Physical Tests : Conductivity in Water											
HDPE EV_MC3a_WS_LAEMP_EVO_2022-04_NP	E100	27-Apr-2022	----	----	----		30-Apr-2022	28 days	3 days	✓	
Physical Tests : ORP by Electrode											
HDPE EV_MC3a_WS_LAEMP_EVO_2022-04_NP	E125	27-Apr-2022	----	----	----		04-May-2022	0.25 hrs	168 hrs	* EHTR-FM	
Physical Tests : pH by Meter											
HDPE EV_MC3a_WS_LAEMP_EVO_2022-04_NP	E108	27-Apr-2022	----	----	----		30-Apr-2022	0.25 hrs	69 hrs	* EHTR-FM	
Physical Tests : TDS by Gravimetry											
HDPE EV_MC3a_WS_LAEMP_EVO_2022-04_NP	E162	27-Apr-2022	----	----	----		03-May-2022	7 days	6 days	✓	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE EV_MC3a_WS_LAEMP_EVO_2022-04_NP	E160-L	27-Apr-2022	----	----	----		03-May-2022	7 days	6 days	✓	
Physical Tests : Turbidity by Nephelometry											
HDPE EV_MC3a_WS_LAEMP_EVO_2022-04_NP	E121	27-Apr-2022	----	----	----		30-Apr-2022	3 days	3 days	✓	
Speciated Metals : Selenium Species (SeIV, SeVI, SeCN) in Water by HPLC-ICPMS											
HDPE (nitric acid) EV_MC3a_WS_LAEMP_EVO_2022-04_NP	E540	27-Apr-2022	05-May-2022	30 days	8 days	✓	05-May-2022	22 days	0 days	✓	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) EV_MC3a_WS_LAEMP_EVO_2022-04_NP	E420.Cr-L	27-Apr-2022	----	----	----		04-May-2022	180 days	7 days	✓	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) EV_MC3a_WS_LAEMP_EVO_2022-04_NP	E508	27-Apr-2022	----	----	----		04-May-2022	28 days	7 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) EV_MC3a_WS_LAEMP_EVO_2022-04_NP	E420	27-Apr-2022	----	----	----		04-May-2022	180 days	7 days	✓
Volatile Organic Compounds : Volatile Selenium Species (DMSe, DMDSe) by Headspace GC-MS										
Amber glass (nitric acid) EV_MC3a_WS_LAEMP_EVO_2022-04_NP	E611.Se	27-Apr-2022	04-May-2022	----	----		04-May-2022	7 days	7 days	✓

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended
 Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
Analytical Methods							
Laboratory Duplicates (DUP)							
Acidity by Titration	E283	473208	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290	473192	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	474298	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	473037	1	15	6.6	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	473038	1	15	6.6	5.0	✓
Conductivity in Water	E100	473191	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	476759	1	1	100.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	476172	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	476760	1	1	100.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	474386	1	7	14.2	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	473251	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	473036	1	15	6.6	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	473035	1	16	6.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	473039	1	15	6.6	5.0	✓
ORP by Electrode	E125	475698	1	16	6.2	5.0	✓
pH by Meter	E108	473190	1	20	5.0	5.0	✓
Selenium Species (SeIV, SeVI, SeCN) in Water by HPLC-ICPMS	E540	478042	1	16	6.2	5.0	✓
Sulfate in Water by IC	E235.SO4	473040	1	15	6.6	5.0	✓
TDS by Gravimetry	E162	473799	1	20	5.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	476681	1	1	100.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	474318	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	476163	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	476682	1	7	14.2	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	474387	1	10	10.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	474401	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121	473143	1	20	5.0	5.0	✓
Volatile Selenium Species (DMSe, DMDSe) by Headspace GC-MS	E611.Se	476379	1	1	100.0	5.0	✓
Laboratory Control Samples (LCS)							
Acidity by Titration	E283	473208	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290	473192	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	474298	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	473037	1	15	6.6	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	473038	1	15	6.6	5.0	✓
Conductivity in Water	E100	473191	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	476759	1	1	100.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	476172	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	476760	1	1	100.0	5.0	✓



Matrix: **Water**

Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
Analytical Methods							
Laboratory Control Samples (LCS) - Continued							
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	474386	1	7	14.2	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	473251	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	473036	1	15	6.6	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	473035	1	16	6.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	473039	1	15	6.6	5.0	✓
ORP by Electrode	E125	475698	1	16	6.2	5.0	✓
pH by Meter	E108	473190	1	20	5.0	5.0	✓
Selenium Species (SeIV, SeVI, SeCN) in Water by HPLC-ICPMS	E540	478042	1	16	6.2	5.0	✓
Sulfate in Water by IC	E235.SO4	473040	1	15	6.6	5.0	✓
TDS by Gravimetry	E162	473799	1	20	5.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	476681	1	1	100.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	474318	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	476163	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	476682	1	7	14.2	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	474387	1	10	10.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	474401	1	20	5.0	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	473795	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121	473143	1	20	5.0	5.0	✓
Volatile Selenium Species (DMS _e , DMDSe) by Headspace GC-MS	E611.Se	476379	1	1	100.0	5.0	✓
Method Blanks (MB)							
Acidity by Titration	E283	473208	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290	473192	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	474298	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	473037	1	15	6.6	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	473038	1	15	6.6	5.0	✓
Conductivity in Water	E100	473191	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	476759	1	1	100.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	476172	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	476760	1	1	100.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	474386	1	7	14.2	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	473251	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	473036	1	15	6.6	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	473035	1	16	6.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	473039	1	15	6.6	5.0	✓
Selenium Species (SeIV, SeVI, SeCN) in Water by HPLC-ICPMS	E540	478042	1	16	6.2	5.0	✓
Sulfate in Water by IC	E235.SO4	473040	1	15	6.6	5.0	✓
TDS by Gravimetry	E162	473799	1	20	5.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	476681	1	1	100.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	474318	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	476163	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	476682	1	7	14.2	5.0	✓



Matrix: **Water**

Evaluation: ✘ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
Analytical Methods							
Method Blanks (MB) - Continued							
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	474387	1	10	10.0	5.0	✔
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	474401	1	20	5.0	5.0	✔
TSS by Gravimetry (Low Level)	E160-L	473795	1	20	5.0	5.0	✔
Turbidity by Nephelometry	E121	473143	1	20	5.0	5.0	✔
Volatile Selenium Species (DMS _e , DMDSe) by Headspace GC-MS	E611.Se	476379	1	1	100.0	5.0	✔
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	474298	1	20	5.0	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	473037	1	15	6.6	5.0	✔
Chloride in Water by IC (Low Level)	E235.Cl-L	473038	1	15	6.6	5.0	✔
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	476759	0	1	0.0	5.0	✘
Dissolved Mercury in Water by CVAAS	E509	476172	1	20	5.0	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	476760	0	1	0.0	5.0	✘
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	474386	1	7	14.2	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	473251	1	20	5.0	5.0	✔
Fluoride in Water by IC	E235.F	473036	1	15	6.6	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	473035	1	16	6.2	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	473039	1	15	6.6	5.0	✔
Selenium Species (SeIV, SeVI, SeCN) in Water by HPLC-ICPMS	E540	478042	1	16	6.2	5.0	✔
Sulfate in Water by IC	E235.SO4	473040	1	15	6.6	5.0	✔
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	476681	0	1	0.0	5.0	✘
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	474318	1	20	5.0	5.0	✔
Total Mercury in Water by CVAAS	E508	476163	1	20	5.0	5.0	✔
Total Metals in Water by CRC ICPMS	E420	476682	1	7	14.2	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	474387	1	10	10.0	5.0	✔
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	474401	1	20	5.0	5.0	✔
Volatile Selenium Species (DMS _e , DMDSe) by Headspace GC-MS	E611.Se	476379	1	1	100.0	5.0	✔



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 Calgary - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 Calgary - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 Calgary - Environmental	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
ORP by Electrode	E125 Calgary - Environmental	Water	ASTM D1498 (mod)	Oxidation reduction potential is reported as the oxidation-reduction potential of the platinum metal-reference electrode employed, measured in mV. For high accuracy test results, it is recommended that this analysis be conducted in the field.
TSS by Gravimetry (Low Level)	E160-L Calgary - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 Calgary - Environmental	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC (Low Level)	E235.Cl-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Acidity by Titration	E283 Calgary - Environmental	Water	APHA 2310 B (mod)	Acidity is determined by potentiometric titration to pH endpoint of 8.3



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Alkalinity Species by Titration	E290 Calgary - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 Calgary - Environmental	Water	J. Environ. Monit., 2005, 7, 37-42 (mod)	Ammonia in water is analyzed by flow-injection analysis with fluorescence detection after reaction with orthophthaldialdehyde (OPA).
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 Calgary - Environmental	Water	APHA 4500-Norg D (mod)	Total Kjeldahl Nitrogen is determined using block digestion followed by flow-injection analysis with fluorescence detection.
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L Calgary - Environmental	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Dissolved Organic Carbon by Combustion (Low Level)	E358-L Calgary - Environmental	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U Calgary - Environmental	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U Calgary - Environmental	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Total Metals in Water by CRC ICPMS	E420 Vancouver - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L Vancouver - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS.
Dissolved Metals in Water by CRC ICPMS	E421 Vancouver - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L Vancouver - Environmental	Water	APHA 3030 B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS
Total Mercury in Water by CVAAS	E508 Vancouver - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS
Dissolved Mercury in Water by CVAAS	E509 Vancouver - Environmental	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
Selenium Species (SeIV, SeVI, SeCN) in Water by HPLC-ICPMS	E540 Vancouver - Environmental	Water	Miekeley Spect. Acta B 60 (2005) 633-641	Instrumental analysis of Speciated Selenium (Se) is by Anion Exchange HPLC-ICPMS. Species quantified are Selenite (SeIV), Selenate (VI) and Selenocyanate (SeCN). Field filtration is recommended. Reported Total Unknown Se Species is semi-quantitative in nature and consists of a sum of all the unidentified Selenium peaks observed in the chromatogram. This included SeMet, MeSe, and DMSeO unless separately requested for identification and quantification. Undetectable unknown species indicates these other species are not present in the sample.
Volatile Selenium Species (DMSe, DMDSe) by Headspace GC-MS	E611.Se Vancouver - Environmental	Water	EPA 8260D (mod)	Dimethyl selenide and dimethyl diselenide are analyzed by static headspace GC-MS. Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler, causing VOCs to partition between the aqueous phase and the headspace in accordance with Henry's law..
Dissolved Hardness (Calculated)	EC100 Vancouver - Environmental	Water	APHA 2340B	"Hardness (as CaCO ₃), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Ion Balance using Dissolved Metals	EC101 Calgary - Environmental	Water	APHA 1030E	Cation Sum, Anion Sum, and Ion Balance are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present. Ion Balance cannot be calculated accurately for waters with very low electrical conductivity (EC).

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 Calgary - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 Calgary - Environmental	Water	APHA 4500-Norg D (mod)	Samples are digested using block digestion with Copper Sulfate Digestion Reagent.
Preparation for Total Organic Carbon by Combustion	EP355 Calgary - Environmental	Water		Preparation for Total Organic Carbon by Combustion



<i>Preparation Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
Preparation for Dissolved Organic Carbon for Combustion	EP358 Calgary - Environmental	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Phosphorus in water	EP372 Calgary - Environmental	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Dissolved Metals Water Filtration	EP421 Vancouver - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO ₃ .
Dissolved Mercury Water Filtration	EP509 Vancouver - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.
Selenium Species Preparation	EP540 Vancouver - Environmental	Water	Miekeley Spect. Acta B 60 (2005) 633-641	Instrumental analysis of Speciated Selenium (Se) is by Anion Exchange HPLC-ICPMS. Species quantified are Selenite (SeIV), Selenate (VI) and Selenocyanate (SeCN). Field filtration is recommended. Reported Total Unknown Se Species is semi-quantitative in nature and consists of a sum of all the unknown peaks observed in the chromatogram.
VOCs Preparation for Headspace Analysis	EP581 Vancouver - Environmental	Water	EPA 5021A (mod)	Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler. An aliquot of the headspace is then injected into the GC/MS-FID system.



QUALITY CONTROL REPORT

Work Order : CG2205003

Page : 1 of 17

Client : Teck Coal Limited
Contact : Mike Pope
Address : 421 PINE AVE
Sparwood BC Canada V0B 2G0
Telephone : ----
Project : ELKVIEW OPERATIONS
PO : VPO00816101
C-O-C number : EVO LAEMP_2022_APR_ALS
Sampler : Alex McClymont
Site : ----
Quote number : Teck Coal Master Quote
No. of samples received : 1
No. of samples analysed : 1

Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
Calgary, Alberta Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 29-Apr-2022 09:45
Date Analysis Commenced : 30-Apr-2022
Issue Date : 06-May-2022 19:03

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
● Matrix Spike (MS) Report; Recovery and Acceptance Limits
● Reference Material (RM) Report; Recovery and Acceptance Limits
● Method Blank (MB) Report; Recovery and Acceptance Limits
● Laboratory Control Sample (LCS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Table with 3 columns: Signatories, Position, Laboratory Department. Lists names like Angela Ren, Anthony Calero, Elke Tabora, Harpreet Chawla, Janice Leung, Kevin Duarte, Kim Jensen, Kyle Chang, Owen Cheng, Parker Sgarbossa, Ruifang Zheng, Sara Niroomand, Zakieh Lalonde and their respective roles and departments.

Page : 2 of 17
Work Order : CG2205003
Client : Teck Coal Limited
Project : ELKVIEW OPERATIONS



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Services number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percentage Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test specific).

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 473143)											
CG2204965-001	Anonymous	turbidity	----	E121	0.10	NTU	<0.10	<0.10	0	Diff <2x LOR	----
Physical Tests (QC Lot: 473190)											
CG2204999-001	Anonymous	pH	----	E108	0.10	pH units	7.96	7.92	0.504%	4%	----
Physical Tests (QC Lot: 473191)											
CG2204999-001	Anonymous	conductivity	----	E100	2.0	µS/cm	2500	2500	0.00%	10%	----
Physical Tests (QC Lot: 473192)											
CG2204999-001	Anonymous	alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	449	472	5.00%	20%	----
		alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	449	472	5.00%	20%	----
Physical Tests (QC Lot: 473208)											
CG2204999-001	Anonymous	acidity (as CaCO3)	----	E283	2.0	mg/L	32.9	32.2	2.33%	20%	----
Physical Tests (QC Lot: 473799)											
CG2204950-002	Anonymous	solids, total dissolved [TDS]	----	E162	40	mg/L	2640	2730	3.39%	20%	----
Physical Tests (QC Lot: 475698)											
CG2205002-008	Anonymous	oxidation-reduction potential [ORP]	----	E125	0.10	mV	493	502	1.85%	15%	----
Anions and Nutrients (QC Lot: 473035)											
CG2204975-001	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	0.0250	mg/L	<0.0250	<0.0250	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 473036)											
CG2204975-001	Anonymous	fluoride	16984-48-8	E235.F	0.100	mg/L	0.171	0.172	0.0004	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 473037)											
CG2204975-001	Anonymous	bromide	24959-67-9	E235.Br-L	0.250	mg/L	<0.250	<0.250	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 473038)											
CG2204975-001	Anonymous	chloride	16887-00-6	E235.Cl-L	0.50	mg/L	16.0	15.9	0.573%	20%	----
Anions and Nutrients (QC Lot: 473039)											
CG2204975-001	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 473040)											
CG2204975-001	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	1.50	mg/L	1520	1520	0.197%	20%	----
Anions and Nutrients (QC Lot: 473251)											
CG2205002-001	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 474298)											



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 474298) - continued											
CG2205000-001	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0960	0.0961	0.104%	20%	----
Anions and Nutrients (QC Lot: 474318)											
CG2205000-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	0.094	0.092	0.002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 474401)											
CG2205002-001	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0088	0.0095	0.0007	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 474386)											
CG2205000-001	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 474387)											
CG2205000-001	Anonymous	carbon, total organic [TOC]	----	E355-L	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
Total Metals (QC Lot: 476163)											
CG2204999-001	Anonymous	mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Total Metals (QC Lot: 476681)											
CG2205003-001	EV_MC3a_WS_LAEMP_E VO_2022-04_NP	chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	0.00044	0.00036	0.00008	Diff <2x LOR	----
Total Metals (QC Lot: 476682)											
CG2205003-001	EV_MC3a_WS_LAEMP_E VO_2022-04_NP	aluminum, total	7429-90-5	E420	0.0030	mg/L	0.234	0.204	13.9%	20%	----
		antimony, total	7440-36-0	E420	0.00010	mg/L	0.00011	0.00010	0.000007	Diff <2x LOR	----
		arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00024	0.00023	0.000009	Diff <2x LOR	----
		barium, total	7440-39-3	E420	0.00010	mg/L	0.0980	0.0964	1.62%	20%	----
		beryllium, total	7440-41-7	E420	0.020	mg/L	<0.020 µg/L	<0.000020	0	Diff <2x LOR	----
		bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, total	7440-42-8	E420	0.010	mg/L	0.010	0.010	0.0001	Diff <2x LOR	----
		cadmium, total	7440-43-9	E420	0.0050	mg/L	0.0404 µg/L	0.0000373	0.0000032	Diff <2x LOR	----
		calcium, total	7440-70-2	E420	0.050	mg/L	48.6	48.7	0.215%	20%	----
		cobalt, total	7440-48-4	E420	0.10	mg/L	<0.10 µg/L	<0.00010	0	Diff <2x LOR	----
		copper, total	7440-50-8	E420	0.00050	mg/L	0.00082	0.00076	0.00006	Diff <2x LOR	----
		iron, total	7439-89-6	E420	0.010	mg/L	0.185	0.174	5.91%	20%	----
		lead, total	7439-92-1	E420	0.000050	mg/L	0.000122	0.000115	0.000007	Diff <2x LOR	----
		lithium, total	7439-93-2	E420	0.0010	mg/L	0.0058	0.0058	0.00006	Diff <2x LOR	----
		magnesium, total	7439-95-4	E420	0.0050	mg/L	15.5	15.4	0.147%	20%	----
		manganese, total	7439-96-5	E420	0.00010	mg/L	0.00405	0.00397	2.09%	20%	----
		molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.000781	0.000747	4.55%	20%	----
		nickel, total	7440-02-0	E420	0.00050	mg/L	0.00097	0.00090	0.00007	Diff <2x LOR	----
		potassium, total	7440-09-7	E420	0.050	mg/L	0.774	0.771	0.368%	20%	----
		selenium, total	7782-49-2	E420	0.050	mg/L	3.16 µg/L	0.00315	0.371%	20%	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (QC Lot: 476682) - continued											
CG2205003-001	EV_MC3a_WS_LAEMP_EVO_2022-04_NP	silicon, total	7440-21-3	E420	0.10	mg/L	2.75	2.63	4.34%	20%	----
		silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, total	7440-23-5	E420	0.050	mg/L	3.84	3.78	1.34%	20%	----
		strontium, total	7440-24-6	E420	0.00020	mg/L	0.154	0.150	2.61%	20%	----
		sulfur, total	7704-34-9	E420	0.50	mg/L	21.0	20.7	1.27%	20%	----
		thallium, total	7440-28-0	E420	0.000010	mg/L	0.000012	<0.000010	0.000002	Diff <2x LOR	----
		tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, total	7440-32-6	E420	0.00030	mg/L	0.00431	0.00360	17.9%	20%	----
		uranium, total	7440-61-1	E420	0.000010	mg/L	0.000771	0.000758	1.74%	20%	----
		vanadium, total	7440-62-2	E420	0.00050	mg/L	0.00106	0.00096	0.00010	Diff <2x LOR	----
		zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	<0.0030	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 476172)											
CG2204999-001	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 476759)											
CG2205003-001	EV_MC3a_WS_LAEMP_EVO_2022-04_NP	chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00010	0.00012	0.00002	Diff <2x LOR	----
Dissolved Metals (QC Lot: 476760)											
CG2205003-001	EV_MC3a_WS_LAEMP_EVO_2022-04_NP	aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0119	0.0141	17.1%	20%	----
		antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00010	0.00010	0.0000004	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00044	0.00050	0.00006	Diff <2x LOR	----
		barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0892	0.0986	10.0%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.020	mg/L	<0.020 µg/L	<0.000020	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.010	mg/L	0.072	0.072	0.0002	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E421	0.0050	mg/L	0.0124 µg/L	0.0000121	0.0000003	Diff <2x LOR	----
		calcium, dissolved	7440-70-2	E421	0.050	mg/L	45.6	46.4	1.61%	20%	----
		cobalt, dissolved	7440-48-4	E421	0.10	mg/L	<0.10 µg/L	<0.00010	0	Diff <2x LOR	----
		copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00055	0.00062	0.00008	Diff <2x LOR	----
		iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	0.011	0.0008	Diff <2x LOR	----
		lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0054	0.0054	0.00008	Diff <2x LOR	----
		magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	14.7	16.2	9.52%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00093	0.00102	0.00009	Diff <2x LOR	----
		molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.000748	0.000755	0.894%	20%	----
		nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00055	0.00073	0.00018	Diff <2x LOR	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 476760) - continued											
CG2205003-001	EV_MC3a_WS_LAEMP_E VO_2022-04_NP	potassium, dissolved	7440-09-7	E421	0.050	mg/L	0.655	0.639	2.40%	20%	----
		selenium, dissolved	7782-49-2	E421	0.050	mg/L	3.42 µg/L	0.00348	1.84%	20%	----
		silicon, dissolved	7440-21-3	E421	0.050	mg/L	2.38	2.50	4.69%	20%	----
		silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E421	0.050	mg/L	4.08	4.36	6.58%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.139	0.142	2.28%	20%	----
		sulfur, dissolved	7704-34-9	E421	0.50	mg/L	16.4	17.2	4.93%	20%	----
		thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.00060	mg/L	<0.00060	<0.00060	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.000680	0.000719	5.61%	20%	----
		vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	0.00084	0.00090	0.00006	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Speciated Metals (QC Lot: 478042)											
FJ2201075-001	Anonymous	selenium species, unknown	----	E540	0.20	µg/L	<0.20	<0.20	0	Diff <2x LOR	----
		selenium, hexavalent [Se VI]	----	E540	0.10	µg/L	39.1	39.3	0.734%	20%	----
		selenium, tetravalent [Se IV]	----	E540	0.10	µg/L	3.86	3.87	0.149%	20%	----
		selenocyanate [SeCN], as Se	3425-46-5	E540	0.10	µg/L	0.23	0.23	0.002	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 473143)						
turbidity	----	E121	0.1	NTU	<0.10	----
Physical Tests (QCLot: 473191)						
conductivity	----	E100	1	µS/cm	<1.0	----
Physical Tests (QCLot: 473192)						
alkalinity, bicarbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, carbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, hydroxide (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 473208)						
acidity (as CaCO3)	----	E283	2	mg/L	<2.0	----
Physical Tests (QCLot: 473795)						
solids, total suspended [TSS]	----	E160-L	1	mg/L	<1.0	----
Physical Tests (QCLot: 473799)						
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Anions and Nutrients (QCLot: 473035)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 473036)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 473037)						
bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 473038)						
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	----
Anions and Nutrients (QCLot: 473039)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 473040)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 473251)						
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 474298)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 474318)						
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 474401)						



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 474401) - continued						
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	---
Organic / Inorganic Carbon (QCLot: 474386)						
carbon, dissolved organic [DOC]	---	E358-L	0.5	mg/L	<0.50	---
Organic / Inorganic Carbon (QCLot: 474387)						
carbon, total organic [TOC]	---	E355-L	0.5	mg/L	<0.50	---
Total Metals (QCLot: 476163)						
mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	---
Total Metals (QCLot: 476681)						
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	<0.00010	---
Total Metals (QCLot: 476682)						
aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	---
antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	---
arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	---
barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	---
beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	---
bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	---
boron, total	7440-42-8	E420	0.01	mg/L	<0.010	---
cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	---
calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	---
cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	---
copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	---
iron, total	7439-89-6	E420	0.01	mg/L	<0.010	---
lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	---
lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	---
magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	---
manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	---
molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	---
nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	---
potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	---
selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	---
silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	---
silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	---
sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	---
strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	---
sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	---
thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	---



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 476682) - continued						
tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	---
titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	---
uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	---
vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	---
zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	---
Dissolved Metals (QCLot: 476172)						
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	---
Dissolved Metals (QCLot: 476759)						
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	<0.00010	---
Dissolved Metals (QCLot: 476760)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	---
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	---
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	---
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	---
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	---
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	---
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	---
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	---
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	---
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	---
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	---
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	---
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	---
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	---
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	---
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	---
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	---
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	---
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	---
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	---
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	---
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	---
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	---
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	---
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	---
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	---



Sub-Matrix: **Water**

<i>Analyte</i>	<i>CAS Number</i>	<i>Method</i>	<i>LOR</i>	<i>Unit</i>	<i>Result</i>	<i>Qualifier</i>
Dissolved Metals (QCLot: 476760) - continued						
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
Speciated Metals (QCLot: 478042)						
selenium species, unknown	----	E540	0.2	µg/L	<0.20	----
selenium, hexavalent [Se VI]	----	E540	0.1	µg/L	<0.10	----
selenium, tetravalent [Se IV]	----	E540	0.1	µg/L	<0.10	----
selenocyanate [SeCN], as Se	3425-46-5	E540	0.1	µg/L	<0.10	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Physical Tests (QCLot: 473143)									
turbidity	----	E121	0.1	NTU	200 NTU	104	85.0	115	----
Physical Tests (QCLot: 473190)									
pH	----	E108	----	pH units	7 pH units	100	98.6	101	----
Physical Tests (QCLot: 473191)									
conductivity	----	E100	1	µS/cm	146.9 µS/cm	102	90.0	110	----
Physical Tests (QCLot: 473192)									
alkalinity, total (as CaCO ₃)	----	E290	1	mg/L	500 mg/L	103	85.0	115	----
Physical Tests (QCLot: 473208)									
acidity (as CaCO ₃)	----	E283	2	mg/L	50 mg/L	106	85.0	115	----
Physical Tests (QCLot: 473795)									
solids, total suspended [TSS]	----	E160-L	1	mg/L	150 mg/L	93.1	85.0	115	----
Physical Tests (QCLot: 473799)									
solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	88.6	85.0	115	----
Physical Tests (QCLot: 475698)									
oxidation-reduction potential [ORP]	----	E125	----	mV	220 mV	102	95.4	104	----
Anions and Nutrients (QCLot: 473035)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	103	90.0	110	----
Anions and Nutrients (QCLot: 473036)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	103	90.0	110	----
Anions and Nutrients (QCLot: 473037)									
bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	102	85.0	115	----
Anions and Nutrients (QCLot: 473038)									
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	105	90.0	110	----
Anions and Nutrients (QCLot: 473039)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	105	90.0	110	----
Anions and Nutrients (QCLot: 473040)									
sulfate (as SO ₄)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	105	90.0	110	----
Anions and Nutrients (QCLot: 473251)									
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.02 mg/L	108	80.0	120	----
Anions and Nutrients (QCLot: 474298)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	88.2	85.0	115	----
Anions and Nutrients (QCLot: 474318)									



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Anions and Nutrients (QCLot: 474318) - continued									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	96.1	75.0	125	----
Anions and Nutrients (QCLot: 474401)									
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	8.02 mg/L	105	80.0	120	----
Organic / Inorganic Carbon (QCLot: 474386)									
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	97.2	80.0	120	----
Organic / Inorganic Carbon (QCLot: 474387)									
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	102	80.0	120	----
Total Metals (QCLot: 476163)									
mercury, total	7439-97-6	E508	0.000005	mg/L	0.0001 mg/L	98.9	80.0	120	----
Total Metals (QCLot: 476681)									
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	0.25 mg/L	113	80.0	120	----
Total Metals (QCLot: 476682)									
aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	111	80.0	120	----
antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	114	80.0	120	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	110	80.0	120	----
barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	113	80.0	120	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	105	80.0	120	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	111	80.0	120	----
boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	104	80.0	120	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	111	80.0	120	----
calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	111	80.0	120	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	109	80.0	120	----
copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	109	80.0	120	----
iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	118	80.0	120	----
lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	114	80.0	120	----
lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	115	80.0	120	----
magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	110	80.0	120	----
manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	109	80.0	120	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	112	80.0	120	----
nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	108	80.0	120	----
potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	116	80.0	120	----
selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	111	80.0	120	----
silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	112	80.0	120	----
silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	105	80.0	120	----
sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	109	80.0	120	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Total Metals (QCLot: 476682) - continued									
strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	116	80.0	120	----
sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	107	80.0	120	----
thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	114	80.0	120	----
tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	111	80.0	120	----
titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	108	80.0	120	----
uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	110	80.0	120	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	112	80.0	120	----
zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	108	80.0	120	----
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	99.3	80.0	120	----
Dissolved Metals (QCLot: 476759)									
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	0.25 mg/L	99.2	80.0	120	----
Dissolved Metals (QCLot: 476760)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	99.6	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	102	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	99.4	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	99.7	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	95.7	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	99.0	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	92.8	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	103	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	99.6	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	97.5	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	99.0	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	111	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	103	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	102	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	101	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	95.1	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	103	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	99.6	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	99.6	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	102	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	98.0	80.0	120	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	94.3	80.0	120	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	104	80.0	120	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	102	80.0	120	----



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 476760) - continued									
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	92.3	80.0	120	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	104	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	100	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	95.4	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	106	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	102	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	102	80.0	120	----
Speciated Metals (QCLot: 478042)									
selenium, hexavalent [Se VI]	----	E540	0.1	µg/L	10 µg/L	97.9	80.0	120	----
selenium, tetravalent [Se IV]	----	E540	0.1	µg/L	10 µg/L	93.9	80.0	120	----
selenocyanate [SeCN], as Se	3425-46-5	E540	0.1	µg/L	10 µg/L	104	80.0	120	----
Volatile Organic Compounds (QCLot: 476379)									
dimethyl diselenide [DMDS _e], as Se	7101-31-7	E611.Se	----	µg/L	83.1 µg/L	99.7	70.0	130	----
dimethyl selenide [DMSe], as Se	593-79-3	E611.Se	----	µg/L	72.4 µg/L	89.4	70.0	130	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 473035)										
CG2204975-001	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	2.63 mg/L	2.5 mg/L	105	75.0	125	----
Anions and Nutrients (QCLot: 473036)										
CG2204975-001	Anonymous	fluoride	16984-48-8	E235.F	0.818 mg/L	1 mg/L	81.8	75.0	125	----
Anions and Nutrients (QCLot: 473037)										
CG2204975-001	Anonymous	bromide	24959-67-9	E235.Br-L	0.566 mg/L	0.5 mg/L	113	75.0	125	----
Anions and Nutrients (QCLot: 473038)										
CG2204975-001	Anonymous	chloride	16887-00-6	E235.Cl-L	105 mg/L	100 mg/L	105	75.0	125	----
Anions and Nutrients (QCLot: 473039)										
CG2204975-001	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.534 mg/L	0.5 mg/L	107	75.0	125	----
Anions and Nutrients (QCLot: 473040)										
CG2204975-001	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	ND mg/L	100 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 473251)										
CG2205002-002	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0494 mg/L	0.05 mg/L	98.7	70.0	130	----
Anions and Nutrients (QCLot: 474298)										
CG2205000-002	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0903 mg/L	0.1 mg/L	90.3	75.0	125	----
Anions and Nutrients (QCLot: 474318)										
CG2205000-002	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.43 mg/L	2.5 mg/L	97.1	70.0	130	----
Anions and Nutrients (QCLot: 474401)										
CG2205002-002	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0565 mg/L	0.0676 mg/L	83.6	70.0	130	----
Organic / Inorganic Carbon (QCLot: 474386)										
CG2205000-001	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	5.08 mg/L	5 mg/L	102	70.0	130	----
Organic / Inorganic Carbon (QCLot: 474387)										
CG2205000-001	Anonymous	carbon, total organic [TOC]	----	E355-L	5.22 mg/L	5 mg/L	104	70.0	130	----
Total Metals (QCLot: 476163)										
CG2204999-002	Anonymous	mercury, total	7439-97-6	E508	0.0000972 mg/L	0.0001 mg/L	97.2	70.0	130	----
Total Metals (QCLot: 476682)										
VA22A9329-001	Anonymous	aluminum, total	7429-90-5	E420	0.190 mg/L	0.2 mg/L	95.2	70.0	130	----
		antimony, total	7440-36-0	E420	0.0192 mg/L	0.02 mg/L	96.2	70.0	130	----



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 476682) - continued										
VA22A9329-001	Anonymous	arsenic, total	7440-38-2	E420	0.0188 mg/L	0.02 mg/L	93.9	70.0	130	----
		barium, total	7440-39-3	E420	0.0172 mg/L	0.02 mg/L	86.2	70.0	130	----
		beryllium, total	7440-41-7	E420	0.0378 mg/L	0.04 mg/L	94.6	70.0	130	----
		bismuth, total	7440-69-9	E420	0.00921 mg/L	0.01 mg/L	92.1	70.0	130	----
		boron, total	7440-42-8	E420	0.095 mg/L	0.1 mg/L	95.4	70.0	130	----
		cadmium, total	7440-43-9	E420	0.00383 mg/L	0.004 mg/L	95.9	70.0	130	----
		calcium, total	7440-70-2	E420	ND mg/L	4 mg/L	ND	70.0	130	----
		cobalt, total	7440-48-4	E420	0.0188 mg/L	0.02 mg/L	93.8	70.0	130	----
		copper, total	7440-50-8	E420	0.0180 mg/L	0.02 mg/L	90.0	70.0	130	----
		iron, total	7439-89-6	E420	1.83 mg/L	2 mg/L	91.6	70.0	130	----
		lead, total	7439-92-1	E420	0.0188 mg/L	0.02 mg/L	94.0	70.0	130	----
		lithium, total	7439-93-2	E420	0.0950 mg/L	0.1 mg/L	95.0	70.0	130	----
		magnesium, total	7439-95-4	E420	ND mg/L	1 mg/L	ND	70.0	130	----
		manganese, total	7439-96-5	E420	ND mg/L	0.02 mg/L	ND	70.0	130	----
		molybdenum, total	7439-98-7	E420	0.0204 mg/L	0.02 mg/L	102	70.0	130	----
		nickel, total	7440-02-0	E420	0.0365 mg/L	0.04 mg/L	91.3	70.0	130	----
		potassium, total	7440-09-7	E420	ND mg/L	4 mg/L	ND	70.0	130	----
		selenium, total	7782-49-2	E420	0.0383 mg/L	0.04 mg/L	95.8	70.0	130	----
		silicon, total	7440-21-3	E420	9.28 mg/L	10 mg/L	92.8	70.0	130	----
		silver, total	7440-22-4	E420	0.00394 mg/L	0.004 mg/L	98.6	70.0	130	----
		sodium, total	7440-23-5	E420	ND mg/L	2 mg/L	ND	70.0	130	----
		strontium, total	7440-24-6	E420	ND mg/L	0.02 mg/L	ND	70.0	130	----
		sulfur, total	7704-34-9	E420	ND mg/L	20 mg/L	ND	70.0	130	----
		thallium, total	7440-28-0	E420	0.00365 mg/L	0.004 mg/L	91.2	70.0	130	----
		tin, total	7440-31-5	E420	0.0192 mg/L	0.02 mg/L	96.0	70.0	130	----
		titanium, total	7440-32-6	E420	0.0377 mg/L	0.04 mg/L	94.3	70.0	130	----
		uranium, total	7440-61-1	E420	0.00373 mg/L	0.004 mg/L	93.2	70.0	130	----
		vanadium, total	7440-62-2	E420	0.0976 mg/L	0.1 mg/L	97.6	70.0	130	----
		zinc, total	7440-66-6	E420	0.370 mg/L	0.4 mg/L	92.5	70.0	130	----
Dissolved Metals (QCLot: 476172)										
CG2204999-002	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000974 mg/L	0.0001 mg/L	97.4	70.0	130	----
Speciated Metals (QCLot: 478042)										
FJ2201075-004	Anonymous	selenium, hexavalent [Se VI]	----	E540	24.7 µg/L	25 µg/L	98.8	70.0	130	----
		selenium, tetravalent [Se IV]	----	E540	25.2 µg/L	25 µg/L	101	70.0	130	----
		selenocyanate [SeCN], as Se	3425-46-5	E540	22.8 µg/L	25 µg/L	91.1	70.0	130	----
Volatile Organic Compounds (QCLot: 476379)										

Page : 17 of 17
 Work Order : CG2205003
 Client : Teck Coal Limited
 Project : ELKVIEW OPERATIONS



Sub-Matrix: **Water**

					<i>Matrix Spike (MS) Report</i>					
					<i>Spike</i>		<i>Recovery (%)</i>	<i>Recovery Limits (%)</i>		
<i>Laboratory sample ID</i>	<i>Client sample ID</i>	<i>Analyte</i>	<i>CAS Number</i>	<i>Method</i>	<i>Concentration</i>	<i>Target</i>	<i>MS</i>	<i>Low</i>	<i>High</i>	<i>Qualifier</i>
Volatile Organic Compounds (QCLot: 476379) - continued										
CG2205003-001	EV_MC3a_WS_LAEMP_EV O_2022-04_NP	dimethyl diselenide [DMDSe], as Se	7101-31-7	E611.Se	59.7 µg/L	83.1 µg/L	71.8	60.0	140	----
		dimethyl selenide [DMSe], as Se	593-79-3	E611.Se	68.4 µg/L	72.4 µg/L	94.4	60.0	140	----

COC ID: EVO LAEMP 2022 APR ALS TURNAROUND TIME: RUSH:

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name / Job#	Elkview Operations			Lab Name	ALS Calgary			Report Format / Distribution	E		
Project Manager	Mike Pope			Lab Contact	Lyudmyla Shvets			Email 1:			
Email	mike.pope@teck.com			Email	lyudmyla.shvets@alsglobal.com			Email 2:	teckcoal@teck.com		
Address	421 Pine Ave			Address	2559 29 Street NE			Email 3:	Teck Lab Results@teck.com		
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 4:	AquaScrub@teck.com		
Postal Code	V0B 2G0	Country	Canada	Postal Code	T1Y 7B5	Country	Canada	Email 5:	hshvets@miniscow.ca		
Phone Number	250-425-8202			Phone Number	1 403 407 1794			PO number	74854		

SAMPLE DETAILS								ANALYSIS REQUESTED									
Sample ID	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com p	# Of Cont.	TECKCOAL-ROUTINE-VA	ALS_Package-DOC	ALS_Package-TKN/TOC	HG-T-U-CVAF-VA	HG-D-CVAF-VA	TECKCOAL-MET-T-VA	TECKCOAL-MET-D-VA			
EV_MC3a_WS_LAEMP_EVO_2022-04_NP	EV_MC3a	WS	No	27-Apr-22	15:00	G	7	X	X	X	X	X	X	X			

Environmental Division
Calgary
Work Order Reference
CG2205003



Telephone : +1 403 407 1800

PO: VPO00816101

SPECIAL INSTRUCTIONS	RELENDISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
	Alex McClymont	April 28, 2022	<i>[Signature]</i>	4/28 9:45

SERVICE REQUEST (rush subject to availability)			
Regular (default)	X	Sampler's Name	Alex McClymont
Priority (2-3 business days) - 50% surcharge		Sampler's Signature	<i>[Signature]</i>
Emergency (1 Business Day) - 100% surcharge		Mobile #	780-293-6750
For Emergency <1 Day, ASAP or Weekend - Contact ALS		Date/Time	April 28, 2022

Environmental Division
Calgary
Work Order Reference
CG2205003



9c



CERTIFICATE OF ANALYSIS

Work Order : **CG2205788**
Amendment : **(Partial Results)**
Client : **Teck Coal Limited**
Contact : Mike Pope
Address : 421 Pine Avenue
Sparwood BC Canada V0B2G0
Telephone : ----
Project : REGIONAL EFFECTS PROGRAM
PO : VPO00816101
C-O-C number : April EVO LAEMP 2022
Sampler : Robbin Vallcau
Site : ----
Quote number : Teck Coal Master Quote
No. of samples received : 5
No. of samples analysed : 5

Page : 1 of 7
Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
Calgary AB Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 14-May-2022 09:25
Date Analysis Commenced : 15-May-2022
Issue Date : 19-May-2022 16:48

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Anthony Calero	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Caleb Deroche	Lab Analyst	Metals, Burnaby, British Columbia
Christopher Li	Lab Assistant	Metals, Burnaby, British Columbia
Kim Jensen	Department Manager - Metals	Metals, Burnaby, British Columbia
Oscar Ruiz	Lab Assistant	Inorganics, Calgary, Alberta
Parker Sgarbossa	Laboratory Analyst	Inorganics, Calgary, Alberta
Robin Weeks	Team Leader - Metals	Metals, Burnaby, British Columbia
Ruifang Zheng	Analyst	Inorganics, Calgary, Alberta
Russell Zhang		Metals, Burnaby, British Columbia
Sara Niroomand		Inorganics, Calgary, Alberta
Shirley Li		Inorganics, Calgary, Alberta
Zakieh Lalonde		Inorganics, Calgary, Alberta

(Partial Results)

Page : 3 of 7
Work Order : CG2205788
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

<i>Unit</i>	<i>Description</i>
-	No Unit
%	percent
µg/L	micrograms per litre
µS/cm	Microsiemens per centimetre
meq/L	milliequivalents per litre
mg/L	milligrams per litre
mV	millivolts
NTU	nephelometric turbidity units
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Workorder Comments

As per on the COC, Fraction 2 does not have any analysis requested. Sample on Hold

Qualifiers

<i>Qualifier</i>	<i>Description</i>
DLDS	Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
TKNI	TKN result may be biased low due to Nitrate interference. Nitrate-N is > 10x TKN.

(Partial Results)

Page : 4 of 7
 Work Order : CG2205788
 Client : Teck Coal Limited
 Project : REGIONAL EFFECTS PROGRAM



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

Client sample ID

					RG_ERCKDT_W S_LAEMP_EVO _2022-05_NP	RG_ERCKUT_W S_LAEMP_EVO _2022-05_NP	RG_RIVER_WS _LAEMP_EVO_ 2022-05_NP	RG_ERCKMD_ WS_LAEMP_EV O_2022-05_NP	RG_ERCK_WS_ LAEMP_EVO_2 022-05_NP
Client sampling date / time					12-May-2022 14:30	12-May-2022 10:00	13-May-2022 13:00	13-May-2022 09:30	13-May-2022 13:00
Analyte	CAS Number	Method	LOR	Unit	CG2205788-001	CG2205788-002	CG2205788-003	CG2205788-004	CG2205788-005
					Result	Result	Result	Result	Result
Physical Tests									
acidity (as CaCO3)	----	E283	2.0	mg/L	8.5	11.2	<2.0	2.8	<2.0
alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	431	437	342	428	362
alkalinity, bicarbonate (as HCO3)	71-52-3	E290	1.0	mg/L	526	533	417	523	441
alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0
alkalinity, carbonate (as CO3)	3812-32-6	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0
alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0
alkalinity, hydroxide (as OH)	14280-30-9	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	431	437	342	428	362
conductivity	----	E100	2.0	µS/cm	1930	1940	1780	1880	1800
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	1290	1270	1190	1250	1150
oxidation-reduction potential [ORP]	----	E125	0.10	mV	496	513	491	490	460
pH	----	E108	0.10	pH units	8.06	7.95	8.27	8.23	8.28
solids, total dissolved [TDS]	----	E162	10	mg/L	1600	1600	1520	1510	1510
solids, total suspended [TSS]	----	E160-L	1.0	mg/L	2.4	4.5	2.5	2.0	1.1
turbidity	----	E121	0.10	NTU	0.11	<0.10	<0.10	<0.10	<0.10
Anions and Nutrients									
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	0.0532	<0.0050	<0.0050
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	5.77	5.84	5.46	5.53	5.43
fluoride	16984-48-8	E235.F	0.020	mg/L	<0.100 ^{DLDS}	<0.100 ^{DLDS}	<0.100 ^{DLDS}	<0.100 ^{DLDS}	<0.100 ^{DLDS}
Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	<0.500 ^{DLM,TKNI}	0.881 ^{TKNI}	1.38 ^{TKNI}	0.877 ^{TKNI}	1.22 ^{TKNI}
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	16.7	17.3	16.2	16.5	16.1
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	0.0073	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0198	0.0216	<0.0010	0.0161	<0.0010
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0222	0.0221	0.0026	0.0178	0.0171
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	792	810	778	779	774
Organic / Inorganic Carbon									
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	<0.50	<0.50	0.88	0.71	0.77
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	<0.50	<0.50	0.78	0.59	1.62

(Partial Results)

Page : 5 of 7
 Work Order : CG2205788
 Client : Teck Coal Limited
 Project : REGIONAL EFFECTS PROGRAM



Analytical Results

Sub-Matrix: Water

(Matrix: Water)

Client sample ID

					RG_ERCKDT_W S_LAEMP_EVO _2022-05_NP	RG_ERCKUT_W S_LAEMP_EVO _2022-05_NP	RG_RIVER_WS _LAEMP_EVO_ 2022-05_NP	RG_ERCKMD_ WS_LAEMP_EV O_2022-05_NP	RG_ERCK_WS_ LAEMP_EVO_2 022-05_NP
Client sampling date / time					12-May-2022 14:30	12-May-2022 10:00	13-May-2022 13:00	13-May-2022 09:30	13-May-2022 13:00
Analyte	CAS Number	Method	LOR	Unit	CG2205788-001	CG2205788-002	CG2205788-003	CG2205788-004	CG2205788-005
					Result	Result	Result	Result	Result
Ion Balance									
anion sum	----	EC101	0.10	meq/L	26.4	27.0	24.3	26.1	24.6
cation sum	----	EC101	0.10	meq/L	25.9	25.6	24.0	25.1	23.2
ion balance (cations/anions)	----	EC101	0.010	%	98.1	94.8	98.8	96.2	94.3
ion balance (APHA)	----	EC101	0.010	%	0.956	2.66	0.621	1.95	2.93
Total Metals									
aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0039	<0.0030	<0.0030	<0.0030	0.0123
antimony, total	7440-36-0	E420	0.00010	mg/L	0.00021	0.00020	0.00022	0.00019	0.00022
arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00027	0.00032	0.00029	0.00032	0.00031
barium, total	7440-39-3	E420	0.00010	mg/L	0.0634	0.0628	0.0441	0.0613	0.0456
beryllium, total	7440-41-7	E420	0.020	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020
bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
boron, total	7440-42-8	E420	0.010	mg/L	0.013	0.012	0.013	0.012	0.013
cadmium, total	7440-43-9	E420	0.0050	µg/L	0.0988	0.0920	0.0070	0.0902	0.0208
calcium, total	7440-70-2	E420	0.050	mg/L	261	262	226	254	224
chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	0.00021	0.00020	0.00020	0.00018	0.00025
cobalt, total	7440-48-4	E420	0.10	µg/L	<0.10	<0.10	<0.10	<0.10	2.02
copper, total	7440-50-8	E420	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
iron, total	7439-89-6	E420	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	0.035
lead, total	7439-92-1	E420	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	0.000054
lithium, total	7439-93-2	E420	0.0010	mg/L	0.0274	0.0277	0.0260	0.0262	0.0257
magnesium, total	7439-95-4	E420	0.0050	mg/L	158	158	149	148	149
manganese, total	7439-96-5	E420	0.00010	mg/L	0.00034	0.00012	0.00060	0.00140	0.0435
mercury, total	7439-97-6	E508-L	-	µg/L	Not Authorised	Not Authorised	Not Authorised	Not Authorised	Not Authorised
molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.00112	0.00104	0.00134	0.00119	0.00131
nickel, total	7440-02-0	E420	0.00050	mg/L	0.00091	0.00089	0.00439	0.00165	0.00748
potassium, total	7440-09-7	E420	0.050	mg/L	2.68	2.66	2.64	2.57	2.61
selenium, total	7782-49-2	E420	0.050	µg/L	174	173	166	166	166
silicon, total	7440-21-3	E420	0.10	mg/L	3.78	3.85	3.60	3.67	3.65
silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010

(Partial Results)

Page : 6 of 7
Work Order : CG2205788
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Client sample ID

Table with columns: Analyte, CAS Number, Method, LOR, Unit, and five Client sample IDs (RG_ERCKDT_W, RG_ERCKUT_W, RG_RIVER_WS, RG_ERCKMD_W, RG_ERCK_WS). Rows include Total Metals (sodium, strontium, sulfur, thallium, tin, titanium, uranium, vanadium, zinc) and Dissolved Metals (aluminum, antimony, arsenic, barium, beryllium, bismuth, boron, cadmium, calcium, chromium, cobalt, copper, iron, lead, lithium, magnesium, manganese, mercury, molybdenum, nickel).

(Partial Results)

Page : 7 of 7
 Work Order : CG2205788
 Client : Teck Coal Limited
 Project : REGIONAL EFFECTS PROGRAM



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

Client sample ID

					RG_ERCKDT_W S_LAEMP_EVO _2022-05_NP	RG_ERCKUT_W S_LAEMP_EVO _2022-05_NP	RG_RIVER_WS _LAEMP_EVO_ 2022-05_NP	RG_ERCKMD_ WS_LAEMP_EV O_2022-05_NP	RG_ERCK_WS_ LAEMP_EVO_2 022-05_NP
Client sampling date / time					12-May-2022 14:30	12-May-2022 10:00	13-May-2022 13:00	13-May-2022 09:30	13-May-2022 13:00
Analyte	CAS Number	Method	LOR	Unit	CG2205788-001	CG2205788-002	CG2205788-003	CG2205788-004	CG2205788-005
					Result	Result	Result	Result	Result
Dissolved Metals									
potassium, dissolved	7440-09-7	E421	0.050	mg/L	2.72	2.69	2.72	2.62	2.62
selenium, dissolved	7782-49-2	E421	0.050	µg/L	194	194	185	189	190
silicon, dissolved	7440-21-3	E421	0.050	mg/L	3.73	3.64	3.58	3.67	3.57
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
sodium, dissolved	7440-23-5	E421	0.050	mg/L	3.21	3.31	3.18	3.14	3.18
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.223	0.222	0.211	0.222	0.212
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	278	278	273	270	272
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	0.000011	<0.000010	0.000010
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00781	0.00785	0.00751	0.00765	0.00748
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0020	0.0019	<0.0010	0.0022	0.0016
dissolved mercury filtration location	----	EP509	-	-	Field	Field	Field	Field	Field
dissolved metals filtration location	----	EP421	-	-	Field	Field	Field	Field	Field

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: CG2205788	Page	: 1 of 24
Amendment	: (Partial Results)		
Client	: Teck Coal Limited	Laboratory	: Calgary - Environmental
Contact	: Mike Pope	Account Manager	: Lyudmyla Shvets
Address	: 421 Pine Avenue Sparwood BC Canada V0B2G0	Address	: 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5
Telephone	: ----	Telephone	: +1 403 407 1800
Project	: REGIONAL EFFECTS PROGRAM	Date Samples Received	: 14-May-2022 09:25
PO	: VPO00816101	Issue Date	: 19-May-2022 16:49
C-O-C number	: April EVO LAEMP 2022		
Sampler	: Robbin Vallcau		
Site	: ----		
Quote number	: Teck Coal Master Quote		
No. of samples received	: 5		
No. of samples analysed	: 5		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

(Partial Results)

Page : 3 of 24
Work Order : CG2205788
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_ERCK_WS_LAEMP_EVO_2022-05_NP	E298	13-May-2022	16-May-2022	----	----		16-May-2022	28 days	3 days	✓	
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-05_NP	E298	13-May-2022	16-May-2022	----	----		16-May-2022	28 days	3 days	✓	
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-05_NP	E298	13-May-2022	16-May-2022	----	----		16-May-2022	28 days	3 days	✓	
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-05_NP	E298	12-May-2022	16-May-2022	----	----		16-May-2022	28 days	4 days	✓	
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-05_NP	E298	12-May-2022	16-May-2022	----	----		16-May-2022	28 days	4 days	✓	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-05_NP	E235.Br-L	13-May-2022	----	----	----		15-May-2022	28 days	2 days	✓	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-05_NP	E235.Br-L	13-May-2022	----	----	----		15-May-2022	28 days	2 days	✓	

(Partial Results)

Page : 4 of 24
Work Order : CG2205788
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



Matrix: Water Evaluation: x = Holding time exceedance ; v = Within Holding Time

Table with columns: Analyte Group, Method, Sampling Date, Extraction / Preparation (Preparation Date, Holding Times Rec/Actual, Eval), Analysis (Analysis Date, Holding Times Rec/Actual, Eval). Rows include various samples like RG_RIVER_WS_LAEMP_EVO_2022-05_NP and RG_ERCKDT_WS_LAEMP_EVO_2022-05_NP.

(Partial Results)

Page : 5 of 24
 Work Order : CG2205788
 Client : Teck Coal Limited
 Project : REGIONAL EFFECTS PROGRAM



Matrix: Water			Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time								
Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
Rec	Actual	Rec		Actual							
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-05_NP	E378-U	13-May-2022	----	----	----		15-May-2022	3 days	2 days	✓	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-05_NP	E378-U	13-May-2022	----	----	----		15-May-2022	3 days	2 days	✓	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-05_NP	E378-U	12-May-2022	----	----	----		15-May-2022	3 days	3 days	✓	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-05_NP	E378-U	12-May-2022	----	----	----		15-May-2022	3 days	3 days	✓	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-05_NP	E235.F	13-May-2022	----	----	----		15-May-2022	28 days	2 days	✓	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-05_NP	E235.F	13-May-2022	----	----	----		15-May-2022	28 days	2 days	✓	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-05_NP	E235.F	13-May-2022	----	----	----		15-May-2022	28 days	2 days	✓	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-05_NP	E235.F	12-May-2022	----	----	----		15-May-2022	28 days	3 days	✓	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-05_NP	E235.F	12-May-2022	----	----	----		15-May-2022	28 days	3 days	✓	

(Partial Results)

Page : 6 of 24
 Work Order : CG2205788
 Client : Teck Coal Limited
 Project : REGIONAL EFFECTS PROGRAM



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-05_NP	E235.NO3-L	13-May-2022	----	----	----		15-May-2022	3 days	2 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-05_NP	E235.NO3-L	13-May-2022	----	----	----		15-May-2022	3 days	2 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-05_NP	E235.NO3-L	13-May-2022	----	----	----		15-May-2022	3 days	2 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-05_NP	E235.NO3-L	12-May-2022	----	----	----		15-May-2022	3 days	3 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-05_NP	E235.NO3-L	12-May-2022	----	----	----		15-May-2022	3 days	3 days	✓	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-05_NP	E235.NO2-L	13-May-2022	----	----	----		15-May-2022	3 days	2 days	✓	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-05_NP	E235.NO2-L	13-May-2022	----	----	----		15-May-2022	3 days	2 days	✓	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-05_NP	E235.NO2-L	13-May-2022	----	----	----		15-May-2022	3 days	2 days	✓	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-05_NP	E235.NO2-L	12-May-2022	----	----	----		15-May-2022	3 days	3 days	✓	

(Partial Results)

Page : 7 of 24
Work Order : CG2205788
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
Rec	Actual	Rec		Actual							
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-05_NP	E235.NO2-L	12-May-2022	----	----	----		15-May-2022	3 days	3 days	✓	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-05_NP	E235.SO4	13-May-2022	----	----	----		15-May-2022	28 days	2 days	✓	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-05_NP	E235.SO4	13-May-2022	----	----	----		15-May-2022	28 days	2 days	✓	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-05_NP	E235.SO4	13-May-2022	----	----	----		15-May-2022	28 days	2 days	✓	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-05_NP	E235.SO4	12-May-2022	----	----	----		15-May-2022	28 days	3 days	✓	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-05_NP	E235.SO4	12-May-2022	----	----	----		15-May-2022	28 days	3 days	✓	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_ERCK_WS_LAEMP_EVO_2022-05_NP	E318	13-May-2022	17-May-2022	----	----		17-May-2022	28 days	4 days	✓	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-05_NP	E318	13-May-2022	17-May-2022	----	----		17-May-2022	28 days	4 days	✓	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-05_NP	E318	13-May-2022	17-May-2022	----	----		17-May-2022	28 days	4 days	✓	

(Partial Results)

Page : 8 of 24
Work Order : CG2205788
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-05_NP	E318	12-May-2022	17-May-2022	----	----		17-May-2022	28 days	5 days	✓	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-05_NP	E318	12-May-2022	17-May-2022	----	----		17-May-2022	28 days	5 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_ERCK_WS_LAEMP_EVO_2022-05_NP	E372-U	13-May-2022	17-May-2022	----	----		17-May-2022	28 days	4 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-05_NP	E372-U	13-May-2022	17-May-2022	----	----		17-May-2022	28 days	4 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-05_NP	E372-U	13-May-2022	17-May-2022	----	----		17-May-2022	28 days	4 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-05_NP	E372-U	12-May-2022	17-May-2022	----	----		17-May-2022	28 days	5 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-05_NP	E372-U	12-May-2022	17-May-2022	----	----		17-May-2022	28 days	5 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_ERCK_WS_LAEMP_EVO_2022-05_NP	E421.Cr-L	13-May-2022	17-May-2022	----	----		17-May-2022	180 days	4 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-05_NP	E421.Cr-L	13-May-2022	17-May-2022	----	----		17-May-2022	180 days	4 days	✓	

(Partial Results)

Page : 9 of 24
Work Order : CG2205788
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_RIVER_WS_LAEMP_EVO_2022-05_NP	E421.Cr-L	13-May-2022	17-May-2022	----	----		17-May-2022	180 days	4 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-05_NP	E421.Cr-L	12-May-2022	17-May-2022	----	----		17-May-2022	180 days	5 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-05_NP	E421.Cr-L	12-May-2022	17-May-2022	----	----		17-May-2022	180 days	5 days	✓	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_ERCK_WS_LAEMP_EVO_2022-05_NP	E509	13-May-2022	17-May-2022	----	----		17-May-2022	28 days	4 days	✓	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-05_NP	E509	13-May-2022	17-May-2022	----	----		17-May-2022	28 days	4 days	✓	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_RIVER_WS_LAEMP_EVO_2022-05_NP	E509	13-May-2022	17-May-2022	----	----		17-May-2022	28 days	4 days	✓	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-05_NP	E509	12-May-2022	17-May-2022	----	----		17-May-2022	28 days	5 days	✓	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-05_NP	E509	12-May-2022	17-May-2022	----	----		17-May-2022	28 days	5 days	✓	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_ERCK_WS_LAEMP_EVO_2022-05_NP	E421	13-May-2022	17-May-2022	----	----		17-May-2022	180 days	4 days	✓	

(Partial Results)

Page : 10 of 24
 Work Order : CG2205788
 Client : Teck Coal Limited
 Project : REGIONAL EFFECTS PROGRAM



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-05_NP	E421	13-May-2022	17-May-2022	----	----		17-May-2022	180 days	4 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_RIVER_WS_LAEMP_EVO_2022-05_NP	E421	13-May-2022	17-May-2022	----	----		17-May-2022	180 days	4 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-05_NP	E421	12-May-2022	17-May-2022	----	----		17-May-2022	180 days	5 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-05_NP	E421	12-May-2022	17-May-2022	----	----		17-May-2022	180 days	5 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_ERCK_WS_LAEMP_EVO_2022-05_NP	E358-L	13-May-2022	16-May-2022	----	----		16-May-2022	28 days	3 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-05_NP	E358-L	13-May-2022	16-May-2022	----	----		16-May-2022	28 days	3 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-05_NP	E358-L	13-May-2022	16-May-2022	----	----		16-May-2022	28 days	3 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-05_NP	E358-L	12-May-2022	16-May-2022	----	----		16-May-2022	28 days	4 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-05_NP	E358-L	12-May-2022	16-May-2022	----	----		16-May-2022	28 days	4 days	✔	

(Partial Results)

Page : 11 of 24
 Work Order : CG2205788
 Client : Teck Coal Limited
 Project : REGIONAL EFFECTS PROGRAM



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_ERCK_WS_LAEMP_EVO_2022-05_NP	E355-L	13-May-2022	16-May-2022	----	----		16-May-2022	28 days	3 days	✓	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-05_NP	E355-L	13-May-2022	16-May-2022	----	----		16-May-2022	28 days	3 days	✓	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-05_NP	E355-L	13-May-2022	16-May-2022	----	----		16-May-2022	28 days	3 days	✓	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-05_NP	E355-L	12-May-2022	16-May-2022	----	----		16-May-2022	28 days	4 days	✓	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-05_NP	E355-L	12-May-2022	16-May-2022	----	----		16-May-2022	28 days	4 days	✓	
Physical Tests : Acidity by Titration											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-05_NP	E283	13-May-2022	----	----	----		16-May-2022	14 days	3 days	✓	
Physical Tests : Acidity by Titration											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-05_NP	E283	13-May-2022	----	----	----		16-May-2022	14 days	3 days	✓	
Physical Tests : Acidity by Titration											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-05_NP	E283	13-May-2022	----	----	----		16-May-2022	14 days	3 days	✓	
Physical Tests : Acidity by Titration											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-05_NP	E283	12-May-2022	----	----	----		16-May-2022	14 days	4 days	✓	

(Partial Results)

Page : 12 of 24
Work Order : CG2205788
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



Matrix: Water Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Table with columns: Analyte Group, Method, Sampling Date, Extraction / Preparation (Preparation Date, Holding Times Rec/Actual, Eval), Analysis (Analysis Date, Holding Times Rec/Actual, Eval). Rows include Physical Tests for Acidity, Alkalinity, and Conductivity in Water.

(Partial Results)

Page : 13 of 24
 Work Order : CG2205788
 Client : Teck Coal Limited
 Project : REGIONAL EFFECTS PROGRAM



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Conductivity in Water											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-05_NP	E100	12-May-2022	----	----	----		16-May-2022	28 days	4 days		✓
Physical Tests : Conductivity in Water											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-05_NP	E100	12-May-2022	----	----	----		16-May-2022	28 days	4 days		✓
Physical Tests : ORP by Electrode											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-05_NP	E125	12-May-2022	----	----	----		16-May-2022	0.25 hrs	101 hrs		* EHTR-FM
Physical Tests : ORP by Electrode											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-05_NP	E125	12-May-2022	----	----	----		16-May-2022	0.25 hrs	106 hrs		* EHTR-FM
Physical Tests : ORP by Electrode											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-05_NP	E125	13-May-2022	----	----	----		16-May-2022	0.25 hrs	79 hrs		* EHTR-FM
Physical Tests : ORP by Electrode											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-05_NP	E125	13-May-2022	----	----	----		16-May-2022	0.25 hrs	79 hrs		* EHTR-FM
Physical Tests : ORP by Electrode											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-05_NP	E125	13-May-2022	----	----	----		16-May-2022	0.25 hrs	82 hrs		* EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-05_NP	E108	13-May-2022	----	----	----		16-May-2022	0.25 hrs	70 hrs		* EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-05_NP	E108	13-May-2022	----	----	----		16-May-2022	0.25 hrs	70 hrs		* EHTR-FM

(Partial Results)

Page : 14 of 24
 Work Order : CG2205788
 Client : Teck Coal Limited
 Project : REGIONAL EFFECTS PROGRAM



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : pH by Meter											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-05_NP	E108	13-May-2022	----	----	----		16-May-2022	0.25 hrs	73 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-05_NP	E108	12-May-2022	----	----	----		16-May-2022	0.25 hrs	92 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-05_NP	E108	12-May-2022	----	----	----		16-May-2022	0.25 hrs	97 hrs	*	EHTR-FM
Physical Tests : TDS by Gravimetry											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-05_NP	E162	13-May-2022	----	----	----		16-May-2022	7 days	3 days	✓	
Physical Tests : TDS by Gravimetry											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-05_NP	E162	13-May-2022	----	----	----		16-May-2022	7 days	3 days	✓	
Physical Tests : TDS by Gravimetry											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-05_NP	E162	13-May-2022	----	----	----		16-May-2022	7 days	3 days	✓	
Physical Tests : TDS by Gravimetry											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-05_NP	E162	12-May-2022	----	----	----		16-May-2022	7 days	4 days	✓	
Physical Tests : TDS by Gravimetry											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-05_NP	E162	12-May-2022	----	----	----		16-May-2022	7 days	4 days	✓	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-05_NP	E160-L	13-May-2022	----	----	----		16-May-2022	7 days	3 days	✓	

(Partial Results)

Page : 15 of 24
Work Order : CG2205788
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



Matrix: Water Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Table with columns: Analyte Group, Method, Sampling Date, Extraction / Preparation (Preparation Date, Holding Times Rec/Actual, Eval), Analysis (Analysis Date, Holding Times Rec/Actual, Eval). Rows include Physical Tests for TSS by Gravimetry and Turbidity by Nephelometry for various sample IDs like RG_ERCKMD, RG_RIVER, RG_ERCKDT, and RG_ERCKUT.

(Partial Results)

Page : 16 of 24
 Work Order : CG2205788
 Client : Teck Coal Limited
 Project : REGIONAL EFFECTS PROGRAM



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_ERCK_WS_LAEMP_EVO_2022-05_NP	E420.Cr-L	13-May-2022	----	----	----		17-May-2022	180 days	4 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_RIVER_WS_LAEMP_EVO_2022-05_NP	E420.Cr-L	13-May-2022	----	----	----		17-May-2022	180 days	4 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-05_NP	E420.Cr-L	12-May-2022	----	----	----		17-May-2022	180 days	5 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-05_NP	E420.Cr-L	13-May-2022	----	----	----		17-May-2022	180 days	5 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-05_NP	E420.Cr-L	12-May-2022	----	----	----		17-May-2022	180 days	6 days	✔	
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)											
Pre-cleaned amber glass - total (lab preserved) RG_ERCK_WS_LAEMP_EVO_2022-05_NP	E508-L	13-May-2022	----	----	----			28 days	6 days	✔	
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)											
Pre-cleaned amber glass - total (lab preserved) RG_ERCKMD_WS_LAEMP_EVO_2022-05_NP	E508-L	13-May-2022	----	----	----			28 days	6 days	✔	
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)											
Pre-cleaned amber glass - total (lab preserved) RG_RIVER_WS_LAEMP_EVO_2022-05_NP	E508-L	13-May-2022	----	----	----			28 days	6 days	✔	
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)											
Pre-cleaned amber glass - total (lab preserved) RG_ERCKDT_WS_LAEMP_EVO_2022-05_NP	E508-L	12-May-2022	----	----	----			28 days	7 days	✔	

(Partial Results)

Page : 17 of 24
Work Order : CG2205788
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)											
Pre-cleaned amber glass - total (lab preserved) RG_ERCKUT_WS_LAEMP_EVO_2022-05_NP	E508-L	12-May-2022	----	----	----			28 days	7 days	✓	
Total Metals : Total Metals in Water by CRC ICPCS											
HDPE total (nitric acid) RG_ERCK_WS_LAEMP_EVO_2022-05_NP	E420	13-May-2022	----	----	----		17-May-2022	180 days	4 days	✓	
Total Metals : Total Metals in Water by CRC ICPCS											
HDPE total (nitric acid) RG_RIVER_WS_LAEMP_EVO_2022-05_NP	E420	13-May-2022	----	----	----		17-May-2022	180 days	4 days	✓	
Total Metals : Total Metals in Water by CRC ICPCS											
HDPE total (nitric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-05_NP	E420	12-May-2022	----	----	----		17-May-2022	180 days	5 days	✓	
Total Metals : Total Metals in Water by CRC ICPCS											
HDPE total (nitric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-05_NP	E420	13-May-2022	----	----	----		17-May-2022	180 days	5 days	✓	
Total Metals : Total Metals in Water by CRC ICPCS											
HDPE total (nitric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-05_NP	E420	12-May-2022	----	----	----		17-May-2022	180 days	6 days	✓	

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended
Rec. HT: ALS recommended hold time (see units).

(Partial Results)

Page : 18 of 24
Work Order : CG2205788
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
Analytical Methods							
Laboratory Duplicates (DUP)							
Acidity by Titration	E283	489159	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290	489152	1	17	5.8	5.0	✓
Ammonia by Fluorescence	E298	489345	1	11	9.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	488347	1	15	6.6	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	488348	1	15	6.6	5.0	✓
Conductivity in Water	E100	489151	1	17	5.8	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	491084	1	5	20.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	491104	1	9	11.1	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	491085	2	5	40.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	489550	1	5	20.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	488456	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	488351	1	15	6.6	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	488349	1	15	6.6	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	488350	1	15	6.6	5.0	✓
ORP by Electrode	E125	489134	1	5	20.0	5.0	✓
pH by Meter	E108	489150	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	488346	1	15	6.6	5.0	✓
TDS by Gravimetry	E162	489720	1	11	9.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	491095	1	5	20.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	489191	1	7	14.2	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	493067	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	491096	2	5	40.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	489551	1	5	20.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	488675	2	26	7.6	5.0	✓
Turbidity by Nephelometry	E121	488345	1	9	11.1	5.0	✓
Laboratory Control Samples (LCS)							
Acidity by Titration	E283	489159	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290	489152	1	17	5.8	5.0	✓
Ammonia by Fluorescence	E298	489345	1	11	9.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	488347	1	15	6.6	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	488348	1	15	6.6	5.0	✓
Conductivity in Water	E100	489151	1	17	5.8	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	491084	1	5	20.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	491104	1	9	11.1	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	491085	1	5	20.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	489550	1	5	20.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	488456	1	20	5.0	5.0	✓

(Partial Results)

Page : 19 of 24
 Work Order : CG2205788
 Client : Teck Coal Limited
 Project : REGIONAL EFFECTS PROGRAM



Matrix: **Water**

Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
<i>Analytical Methods</i>							
Laboratory Control Samples (LCS) - Continued							
Fluoride in Water by IC	E235.F	488351	1	15	6.6	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	488349	1	15	6.6	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	488350	1	15	6.6	5.0	✓
ORP by Electrode	E125	489134	1	5	20.0	5.0	✓
pH by Meter	E108	489150	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	488346	1	15	6.6	5.0	✓
TDS by Gravimetry	E162	489720	1	11	9.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	491095	1	5	20.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	489191	1	7	14.2	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	493067	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	491096	1	5	20.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	489551	1	5	20.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	488675	2	26	7.6	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	489718	1	11	9.0	5.0	✓
Turbidity by Nephelometry	E121	488345	1	9	11.1	5.0	✓
Method Blanks (MB)							
Acidity by Titration	E283	489159	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290	489152	1	17	5.8	5.0	✓
Ammonia by Fluorescence	E298	489345	1	11	9.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	488347	1	15	6.6	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	488348	1	15	6.6	5.0	✓
Conductivity in Water	E100	489151	1	17	5.8	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	491084	1	5	20.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	491104	1	9	11.1	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	491085	2	5	40.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	489550	1	5	20.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	488456	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	488351	1	15	6.6	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	488349	1	15	6.6	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	488350	1	15	6.6	5.0	✓
Sulfate in Water by IC	E235.SO4	488346	1	15	6.6	5.0	✓
TDS by Gravimetry	E162	489720	1	11	9.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	491095	1	5	20.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	489191	1	7	14.2	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	493067	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	491096	1	5	20.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	489551	1	5	20.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	488675	2	26	7.6	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	489718	1	11	9.0	5.0	✓
Turbidity by Nephelometry	E121	488345	1	9	11.1	5.0	✓

(Partial Results)

Page : 20 of 24
Work Order : CG2205788
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
Analytical Methods							
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	489345	1	11	9.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	488347	1	15	6.6	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	488348	1	15	6.6	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	491084	1	5	20.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	491104	1	9	11.1	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	491085	1	5	20.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	489550	1	5	20.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	488456	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	488351	1	15	6.6	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	488349	1	15	6.6	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	488350	1	15	6.6	5.0	✓
Sulfate in Water by IC	E235.SO4	488346	1	15	6.6	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	491095	1	5	20.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	489191	1	7	14.2	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	493067	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	491096	2	5	40.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	489551	1	5	20.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	488675	2	26	7.6	5.0	✓

(Partial Results)

Page : 21 of 24
Work Order : CG2205788
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 Calgary - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 Calgary - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 Calgary - Environmental	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
ORP by Electrode	E125 Calgary - Environmental	Water	ASTM D1498 (mod)	Oxidation reduction potential is reported as the oxidation-reduction potential of the platinum metal-reference electrode employed, measured in mV. For high accuracy test results, it is recommended that this analysis be conducted in the field.
TSS by Gravimetry (Low Level)	E160-L Calgary - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 Calgary - Environmental	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC (Low Level)	E235.Cl-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Acidity by Titration	E283 Calgary - Environmental	Water	APHA 2310 B (mod)	Acidity is determined by potentiometric titration to pH endpoint of 8.3

(Partial Results)

Page : 22 of 24
 Work Order : CG2205788
 Client : Teck Coal Limited
 Project : REGIONAL EFFECTS PROGRAM



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Alkalinity Species by Titration	E290 Calgary - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 Calgary - Environmental	Water	J. Environ. Monit., 2005, 7, 37-42 (mod)	Ammonia in water is analyzed by flow-injection analysis with fluorescence detection after reaction with orthophthaldialdehyde (OPA).
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 Calgary - Environmental	Water	APHA 4500-Norg D (mod)	Total Kjeldahl Nitrogen is determined using block digestion followed by flow-injection analysis with fluorescence detection.
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L Calgary - Environmental	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Dissolved Organic Carbon by Combustion (Low Level)	E358-L Calgary - Environmental	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U Calgary - Environmental	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U Calgary - Environmental	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Total Metals in Water by CRC ICPMS	E420 Vancouver - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L Vancouver - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS.
Dissolved Metals in Water by CRC ICPMS	E421 Vancouver - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.

(Partial Results)

Page : 23 of 24
 Work Order : CG2205788
 Client : Teck Coal Limited
 Project : REGIONAL EFFECTS PROGRAM



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L Vancouver - Environmental	Water	APHA 3030 B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L Vancouver - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAFS.
Dissolved Mercury in Water by CVAAS	E509 Vancouver - Environmental	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
Dissolved Hardness (Calculated)	EC100 Vancouver - Environmental	Water	APHA 2340B	"Hardness (as CaCO ₃), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Ion Balance using Dissolved Metals	EC101 Calgary - Environmental	Water	APHA 1030E	Cation Sum, Anion Sum, and Ion Balance are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present. Ion Balance cannot be calculated accurately for waters with very low electrical conductivity (EC).

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 Calgary - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 Calgary - Environmental	Water	APHA 4500-Norg D (mod)	Samples are digested using block digestion with Copper Sulfate Digestion Reagent.
Preparation for Total Organic Carbon by Combustion	EP355 Calgary - Environmental	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon for Combustion	EP358 Calgary - Environmental	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Phosphorus in water	EP372 Calgary - Environmental	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Dissolved Metals Water Filtration	EP421 Vancouver - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO ₃ .
Dissolved Mercury Water Filtration	EP509	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.

(Partial Results)

Page : 24 of 24
Work Order : CG2205788
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



<i>Preparation Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
	Vancouver - Environmental			



QUALITY CONTROL REPORT

Work Order : CG2205788

Page : 1 of 18

Amendment : (Partial Results)

Client : Teck Coal Limited
Contact : Mike Pope
Address : 421 Pine Avenue
Sparwood BC Canada V0B2G0

Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
Calgary, Alberta Canada T1Y 7B5

Telephone : ----
Project : REGIONAL EFFECTS PROGRAM
PO : VPO00816101
C-O-C number : April EVO LAEMP 2022
Sampler : Robbin Vallcau
Site : ----
Quote number : Teck Coal Master Quote
No. of samples received : 5
No. of samples analysed : 5

Telephone : +1 403 407 1800
Date Samples Received : 14-May-2022 09:25
Date Analysis Commenced : 15-May-2022
Issue Date : 19-May-2022 16:49

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
● Matrix Spike (MS) Report; Recovery and Data Quality Objectives
● Method Blank (MB) Report; Recovery and Data Quality Objectives
● Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Table with 3 columns: Signatories, Position, Laboratory Department. Lists names like Anthony Calero, Caleb Deroche, Christopher Li, Kim Jensen, Oscar Ruiz, Parker Sgarbossa, Robin Weeks, Ruifang Zheng, Russell Zhang, Sara Niroomand, Shirley Li, Zakieh Lalonde and their respective roles and departments.

(Partial Results)

Page : 2 of 18
Work Order : CG2205788
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

(Partial Results)

Page : 3 of 18
Work Order : CG2205788
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 488345)											
CG2205788-001	RG_ERCKDT_WS_LAEMP_EVO_2022-05_NP	turbidity	----	E121	0.10	NTU	0.11	0.11	0.002	Diff <2x LOR	----
Physical Tests (QC Lot: 489134)											
CG2205788-001	RG_ERCKDT_WS_LAEMP_EVO_2022-05_NP	oxidation-reduction potential [ORP]	----	E125	0.10	mV	496	495	0.222%	15%	----
Physical Tests (QC Lot: 489150)											
CG2205722-002	Anonymous	pH	----	E108	0.10	pH units	7.92	7.93	0.126%	4%	----
Physical Tests (QC Lot: 489151)											
CG2205722-002	Anonymous	conductivity	----	E100	2.0	µS/cm	832	822	1.21%	10%	----
Physical Tests (QC Lot: 489152)											
CG2205722-002	Anonymous	alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	437	437	0.0915%	20%	----
		alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, total (as CaCO3)	----	E290	2.0	mg/L	437	437	0.0915%	20%	----
Physical Tests (QC Lot: 489159)											
CG2205757-001	Anonymous	acidity (as CaCO3)	----	E283	2.0	mg/L	<2.0	<2.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 489720)											
CG2205788-001	RG_ERCKDT_WS_LAEMP_EVO_2022-05_NP	solids, total dissolved [TDS]	----	E162	40	mg/L	1600	1600	0.437%	20%	----
Anions and Nutrients (QC Lot: 488346)											
CG2205782-014	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	1.50	mg/L	927	909	1.96%	20%	----
Anions and Nutrients (QC Lot: 488347)											
CG2205782-014	Anonymous	bromide	24959-67-9	E235.Br-L	0.250	mg/L	1.10	1.16	0.059	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 488348)											
CG2205782-014	Anonymous	chloride	16887-00-6	E235.Cl-L	0.50	mg/L	10.9	10.6	3.04%	20%	----
Anions and Nutrients (QC Lot: 488349)											
CG2205782-014	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	0.0250	mg/L	0.220	0.220	0.0005	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 488350)											
CG2205782-014	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.0050	mg/L	0.0283	0.0248	0.0035	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 488351)											
CG2205782-014	Anonymous	fluoride	16984-48-8	E235.F	0.100	mg/L	0.164	0.166	0.002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 488456)											
CG2205784-001	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----

(Partial Results)

Page : 4 of 18
 Work Order : CG2205788
 Client : Teck Coal Limited
 Project : REGIONAL EFFECTS PROGRAM



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 488675)											
CG2205782-021	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0244	0.0259	6.05%	20%	----
Anions and Nutrients (QC Lot: 488676)											
CG2205788-003	RG_RIVER_WS_LAEMP_EVO_2022-05_NP	phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0026	0.0025	0.00009	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 489191)											
CG2205788-001	RG_ERCKDT_WS_LAEMP_EVO_2022-05_NP	Kjeldahl nitrogen, total [TKN]	----	E318	0.500	mg/L	<0.500	<0.500	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 489345)											
CG2205788-001	RG_ERCKDT_WS_LAEMP_EVO_2022-05_NP	ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 489550)											
CG2205788-001	RG_ERCKDT_WS_LAEMP_EVO_2022-05_NP	carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 489551)											
CG2205788-001	RG_ERCKDT_WS_LAEMP_EVO_2022-05_NP	carbon, total organic [TOC]	----	E355-L	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
Total Metals (QC Lot: 491095)											
CG2205788-002	RG_ERCKUT_WS_LAEMP_EVO_2022-05_NP	chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	0.00020	0.00022	0.00002	Diff <2x LOR	----
Total Metals (QC Lot: 491096)											
CG2205788-002	RG_ERCKUT_WS_LAEMP_EVO_2022-05_NP	nickel, total	7440-02-0	E420	0.00050	mg/L	0.00089	0.00087	0.00001	Diff <2x LOR	----
CG2205788-002	RG_ERCKUT_WS_LAEMP_EVO_2022-05_NP	aluminum, total	7429-90-5	E420	0.0030	mg/L	<0.0030	<0.0030	0	Diff <2x LOR	----
		antimony, total	7440-36-0	E420	0.00010	mg/L	0.00020	0.00020	0.000006	Diff <2x LOR	----
		arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00032	0.00031	0.00001	Diff <2x LOR	----
		barium, total	7440-39-3	E420	0.00010	mg/L	0.0628	0.0604	3.82%	20%	----
		beryllium, total	7440-41-7	E420	0.000020	mg/L	<0.020 µg/L	<0.000020	0	Diff <2x LOR	----
		bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, total	7440-42-8	E420	0.010	mg/L	0.012	0.012	0.0002	Diff <2x LOR	----
		cadmium, total	7440-43-9	E420	0.000050	mg/L	0.0920 µg/L	0.0000874	5.17%	20%	----
		calcium, total	7440-70-2	E420	0.050	mg/L	262	261	0.0926%	20%	----
		cobalt, total	7440-48-4	E420	0.00010	mg/L	<0.10 µg/L	<0.00010	0	Diff <2x LOR	----
		copper, total	7440-50-8	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		iron, total	7439-89-6	E420	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		lead, total	7439-92-1	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		lithium, total	7439-93-2	E420	0.0010	mg/L	0.0277	0.0278	0.254%	20%	----
		magnesium, total	7439-95-4	E420	0.0050	mg/L	158	156	0.918%	20%	----
		manganese, total	7439-96-5	E420	0.00010	mg/L	0.00012	0.00015	0.00002	Diff <2x LOR	----
		molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.00104	0.00107	2.65%	20%	----

(Partial Results)

Page : 5 of 18
 Work Order : CG2205788
 Client : Teck Coal Limited
 Project : REGIONAL EFFECTS PROGRAM



Sub-Matrix: Water

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (QC Lot: 491096) - continued											
CG2205788-002	RG_ERCKUT_WS_LAEMP_EVO_2022-05_NP	potassium, total	7440-09-7	E420	0.050	mg/L	2.66	2.62	1.61%	20%	----
		selenium, total	7782-49-2	E420	0.000050	mg/L	173 µg/L	0.167	3.29%	20%	----
		silicon, total	7440-21-3	E420	0.10	mg/L	3.85	3.70	4.19%	20%	----
		silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, total	7440-23-5	E420	0.050	mg/L	3.25	3.20	1.71%	20%	----
		strontium, total	7440-24-6	E420	0.00020	mg/L	0.229	0.232	1.07%	20%	----
		sulfur, total	7704-34-9	E420	0.50	mg/L	284	273	4.06%	20%	----
		thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		uranium, total	7440-61-1	E420	0.000010	mg/L	0.00800	0.00798	0.199%	20%	----
		vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	<0.0030	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 491084)											
CG2205788-001	RG_ERCKDT_WS_LAEMP_EVO_2022-05_NP	chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	0.00020	0.00020	0.000002	Diff <2x LOR	----
Dissolved Metals (QC Lot: 491085)											
CG2205788-001	RG_ERCKDT_WS_LAEMP_EVO_2022-05_NP	copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
CG2205788-001	RG_ERCKDT_WS_LAEMP_EVO_2022-05_NP	aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00020	0.00019	0.000005	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00023	0.00023	0.0000004	Diff <2x LOR	----
		barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0638	0.0623	2.43%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.000020	mg/L	<0.020 µg/L	<0.000020	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.010	mg/L	0.012	0.012	0.0001	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	0.0933 µg/L	0.0000836	10.9%	20%	----
		calcium, dissolved	7440-70-2	E421	0.050	mg/L	252	254	0.703%	20%	----
		cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	<0.10 µg/L	<0.00010	0	Diff <2x LOR	----
		iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0266	0.0262	1.55%	20%	----
		magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	160	160	0.376%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00109	0.00111	1.27%	20%	----
		nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00103	0.00103	0.000003	Diff <2x LOR	----

(Partial Results)

Page : 6 of 18
Work Order : CG2205788
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



Sub-Matrix: Water

Laboratory Duplicate (DUP) Report

Table with columns: Laboratory sample ID, Client sample ID, Analyte, CAS Number, Method, LOR, Unit, Original Result, Duplicate Result, RPD(%) or Difference, Duplicate Limits, Qualifier. Includes sections for Dissolved Metals (QC Lot: 491085) and Dissolved Metals (QC Lot: 491104).

(Partial Results)



Page : 7 of 18
Work Order : CG2205788
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM

Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 488345)						
turbidity	----	E121	0.1	NTU	<0.10	----
Physical Tests (QCLot: 489151)						
conductivity	----	E100	1	µS/cm	<1.0	----
Physical Tests (QCLot: 489152)						
alkalinity, bicarbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, carbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, hydroxide (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 489159)						
acidity (as CaCO3)	----	E283	2	mg/L	<2.0	----
Physical Tests (QCLot: 489718)						
solids, total suspended [TSS]	----	E160-L	1	mg/L	<1.0	----
Physical Tests (QCLot: 489720)						
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Anions and Nutrients (QCLot: 488346)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 488347)						
bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 488348)						
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	----
Anions and Nutrients (QCLot: 488349)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 488350)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 488351)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 488456)						
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 488675)						
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 488676)						
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 489191)						

(Partial Results)

Page : 8 of 18
Work Order : CG2205788
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 489191) - continued						
Kjeldahl nitrogen, total [TKN]	---	E318	0.05	mg/L	<0.050	---
Anions and Nutrients (QCLot: 489345)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	---
Organic / Inorganic Carbon (QCLot: 489550)						
carbon, dissolved organic [DOC]	---	E358-L	0.5	mg/L	<0.50	---
Organic / Inorganic Carbon (QCLot: 489551)						
carbon, total organic [TOC]	---	E355-L	0.5	mg/L	<0.50	---
Total Metals (QCLot: 491095)						
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	<0.00010	---
Total Metals (QCLot: 491096)						
aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	---
antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	---
arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	---
barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	---
beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	---
bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	---
boron, total	7440-42-8	E420	0.01	mg/L	<0.010	---
cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	---
calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	---
cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	---
copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	---
iron, total	7439-89-6	E420	0.01	mg/L	<0.010	---
lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	---
lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	---
magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	---
manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	---
molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	---
nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	---
potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	---
selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	---
silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	---
silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	---
sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	---
strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	---
sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	---
thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	---

(Partial Results)

Page : 9 of 18
Work Order : CG2205788
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 491096) - continued						
tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	---
titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	---
uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	---
vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	---
zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	---
Dissolved Metals (QCLot: 491084)						
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	<0.00010	MBRR
Dissolved Metals (QCLot: 491085)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	---
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	---
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	---
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	---
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	---
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	---
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	---
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	---
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	---
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	---
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	MBRR
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	---
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	---
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	---
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	---
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	---
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	---
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	---
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	---
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	---
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	---
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	---
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	---
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	---
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	---
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	---
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	---
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	---

(Partial Results)



Page : 10 of 18
Work Order : CG2205788
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 491085) - continued						
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
Dissolved Metals (QCLot: 491104)						
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----

Qualifiers

Qualifier	Description
MBRR	Initial MB for this submission had positive results for flagged analyte (data not shown). Low level samples were repeated with new QC (2nd MB results shown). High level results (>5x initial MB level) and non-detect results were reported and are defensible

(Partial Results)

Page : 11 of 18
Work Order : CG2205788
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Water

Table with columns: Analyte, CAS Number, Method, LOR, Unit, Spike Concentration, Recovery (%), Recovery Limits (%), Qualifier. Rows include Physical Tests (turbidity, ORP, pH, conductivity, alkalinity, acidity, solids) and Anions and Nutrients (sulfate, bromide, chloride, nitrate, nitrite, fluoride, phosphate, phosphorus).

(Partial Results)

Page : 12 of 18
Work Order : CG2205788
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



Sub-Matrix: Water

Table with columns: Analyte, CAS Number, Method, LOR, Unit, Spike Concentration, Recovery (%), LCS, Recovery Limits (%), Qualifier. Includes sections for Anions and Nutrients, Organic / Inorganic Carbon, and Total Metals.

(Partial Results)

Page : 13 of 18
 Work Order : CG2205788
 Client : Teck Coal Limited
 Project : REGIONAL EFFECTS PROGRAM



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Total Metals (QCLot: 491096) - continued									
strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	101	80.0	120	----
sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	107	80.0	120	----
thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	99.7	80.0	120	----
tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	98.0	80.0	120	----
titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	99.6	80.0	120	----
uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	95.9	80.0	120	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	100	80.0	120	----
zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	90.1	80.0	120	----
Dissolved Metals (QCLot: 491084)									
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	0.25 mg/L	98.7	80.0	120	----
Dissolved Metals (QCLot: 491085)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	95.8	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	97.8	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	97.4	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	97.8	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	95.8	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	94.9	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	91.3	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	98.4	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	100	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	96.8	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	95.7	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	101	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	98.0	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	96.0	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	101	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	98.2	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	99.9	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	99.2	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	98.5	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	95.7	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	98.0	80.0	120	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	92.9	80.0	120	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	99.4	80.0	120	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	100	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	108	80.0	120	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	98.8	80.0	120	----

(Partial Results)

Page : 14 of 18
Work Order : CG2205788
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 491085) - continued									
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	97.3	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	90.4	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	96.7	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	98.1	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	95.0	80.0	120	----
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	103	80.0	120	----

(Partial Results)

Page : 15 of 18
Work Order : CG2205788
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level $\geq 1x$ spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 488346)										
CG2205782-015	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	104 mg/L	100 mg/L	104	75.0	125	----
Anions and Nutrients (QCLot: 488347)										
CG2205782-015	Anonymous	bromide	24959-67-9	E235.Br-L	0.516 mg/L	0.5 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 488348)										
CG2205782-015	Anonymous	chloride	16887-00-6	E235.Cl-L	97.0 mg/L	100 mg/L	97.0	75.0	125	----
Anions and Nutrients (QCLot: 488349)										
CG2205782-015	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	2.52 mg/L	2.5 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 488350)										
CG2205782-015	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.504 mg/L	0.5 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 488351)										
CG2205782-015	Anonymous	fluoride	16984-48-8	E235.F	0.995 mg/L	1 mg/L	99.5	75.0	125	----
Anions and Nutrients (QCLot: 488456)										
CG2205784-002	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0480 mg/L	0.05 mg/L	96.1	70.0	130	----
Anions and Nutrients (QCLot: 488675)										
CG2205784-001	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0593 mg/L	0.0676 mg/L	87.7	70.0	130	----
Anions and Nutrients (QCLot: 488676)										
CG2205788-004	RG_ERCKMD_WS_LAEMP_EVO_2022-05_NP	phosphorus, total	7723-14-0	E372-U	0.0583 mg/L	0.0676 mg/L	86.3	70.0	130	----
Anions and Nutrients (QCLot: 489191)										
CG2205788-002	RG_ERCKUT_WS_LAEMP_EVO_2022-05_NP	Kjeldahl nitrogen, total [TKN]	----	E318	2.65 mg/L	2.5 mg/L	106	70.0	130	----
Anions and Nutrients (QCLot: 489345)										
CG2205788-002	RG_ERCKUT_WS_LAEMP_EVO_2022-05_NP	ammonia, total (as N)	7664-41-7	E298	0.103 mg/L	0.1 mg/L	103	75.0	125	----
Organic / Inorganic Carbon (QCLot: 489550)										
CG2205788-001	RG_ERCKDT_WS_LAEMP_EVO_2022-05_NP	carbon, dissolved organic [DOC]	----	E358-L	4.87 mg/L	5 mg/L	97.5	70.0	130	----
Organic / Inorganic Carbon (QCLot: 489551)										
CG2205788-001	RG_ERCKDT_WS_LAEMP_EVO_2022-05_NP	carbon, total organic [TOC]	----	E355-L	5.25 mg/L	5 mg/L	105	70.0	130	----
Total Metals (QCLot: 491095)										

(Partial Results)

Page : 16 of 18
 Work Order : CG2205788
 Client : Teck Coal Limited
 Project : REGIONAL EFFECTS PROGRAM



Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		Qualifier
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	
Total Metals (QCLot: 491095) - continued										
CG2205788-001	RG_ERCKDT_WS_LAEMP_EVO_2022-05_NP	chromium, total	7440-47-3	E420.Cr-L	0.0408 mg/L	0.04 mg/L	102	70.0	130	----
Total Metals (QCLot: 491096)										
CG2205788-001	RG_ERCKDT_WS_LAEMP_EVO_2022-05_NP	nickel, total	7440-02-0	E420	0.0370 mg/L	0.04 mg/L	92.6	70.0	130	----
CG2205788-001	RG_ERCKDT_WS_LAEMP_EVO_2022-05_NP	aluminum, total	7429-90-5	E420	0.195 mg/L	0.2 mg/L	97.4	70.0	130	----
		antimony, total	7440-36-0	E420	0.0199 mg/L	0.02 mg/L	99.5	70.0	130	----
		arsenic, total	7440-38-2	E420	0.0205 mg/L	0.02 mg/L	102	70.0	130	----
		barium, total	7440-39-3	E420	ND mg/L	0.02 mg/L	ND	70.0	130	----
		beryllium, total	7440-41-7	E420	0.0383 mg/L	0.04 mg/L	95.8	70.0	130	----
		bismuth, total	7440-69-9	E420	0.00865 mg/L	0.01 mg/L	86.5	70.0	130	----
		boron, total	7440-42-8	E420	0.095 mg/L	0.1 mg/L	95.0	70.0	130	----
		cadmium, total	7440-43-9	E420	0.00387 mg/L	0.004 mg/L	96.8	70.0	130	----
		calcium, total	7440-70-2	E420	ND mg/L	4 mg/L	ND	70.0	130	----
		cobalt, total	7440-48-4	E420	0.0186 mg/L	0.02 mg/L	93.1	70.0	130	----
		copper, total	7440-50-8	E420	0.0181 mg/L	0.02 mg/L	90.5	70.0	130	----
		iron, total	7439-89-6	E420	1.92 mg/L	2 mg/L	96.0	70.0	130	----
		lead, total	7439-92-1	E420	0.0183 mg/L	0.02 mg/L	91.6	70.0	130	----
		lithium, total	7439-93-2	E420	0.0987 mg/L	0.1 mg/L	98.7	70.0	130	----
		magnesium, total	7439-95-4	E420	ND mg/L	1 mg/L	ND	70.0	130	----
		manganese, total	7439-96-5	E420	0.0189 mg/L	0.02 mg/L	94.5	70.0	130	----
		molybdenum, total	7439-98-7	E420	0.0211 mg/L	0.02 mg/L	106	70.0	130	----
		potassium, total	7440-09-7	E420	3.86 mg/L	4 mg/L	96.4	70.0	130	----
		selenium, total	7782-49-2	E420	ND mg/L	0.04 mg/L	ND	70.0	130	----
		silicon, total	7440-21-3	E420	9.52 mg/L	10 mg/L	95.2	70.0	130	----
silver, total	7440-22-4	E420	0.00402 mg/L	0.004 mg/L	101	70.0	130	----		
sodium, total	7440-23-5	E420	ND mg/L	2 mg/L	ND	70.0	130	----		
strontium, total	7440-24-6	E420	ND mg/L	0.02 mg/L	ND	70.0	130	----		
sulfur, total	7704-34-9	E420	ND mg/L	20 mg/L	ND	70.0	130	----		
thallium, total	7440-28-0	E420	0.00360 mg/L	0.004 mg/L	90.1	70.0	130	----		
tin, total	7440-31-5	E420	0.0193 mg/L	0.02 mg/L	96.6	70.0	130	----		
titanium, total	7440-32-6	E420	0.0401 mg/L	0.04 mg/L	100	70.0	130	----		
uranium, total	7440-61-1	E420	ND mg/L	0.004 mg/L	ND	70.0	130	----		
vanadium, total	7440-62-2	E420	0.101 mg/L	0.1 mg/L	101	70.0	130	----		
zinc, total	7440-66-6	E420	0.337 mg/L	0.4 mg/L	84.2	70.0	130	----		
Total Metals (QCLot: 493067)										
CG2205751-009	Anonymous	mercury, total	7439-97-6	E508-L		----		70.0	130	----

(Partial Results)

Page : 17 of 18
 Work Order : CG2205788
 Client : Teck Coal Limited
 Project : REGIONAL EFFECTS PROGRAM



Sub-Matrix: Water

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 491084)										
CG2205788-002	RG_ERCKUT_WS_LAEMP_EVO_2022-05_NP	chromium, dissolved	7440-47-3	E421.Cr-L	0.0393 mg/L	0.04 mg/L	98.3	70.0	130	----
Dissolved Metals (QCLot: 491085)										
CG2205788-002	RG_ERCKUT_WS_LAEMP_EVO_2022-05_NP	aluminum, dissolved	7429-90-5	E421	0.191 mg/L	0.2 mg/L	95.3	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.0203 mg/L	0.02 mg/L	102	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.0210 mg/L	0.02 mg/L	105	70.0	130	----
		barium, dissolved	7440-39-3	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.0375 mg/L	0.04 mg/L	93.7	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.00827 mg/L	0.01 mg/L	82.7	70.0	130	----
		boron, dissolved	7440-42-8	E421	0.090 mg/L	0.1 mg/L	89.8	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.00391 mg/L	0.004 mg/L	97.7	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	4 mg/L	ND	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.0183 mg/L	0.02 mg/L	91.4	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.0179 mg/L	0.02 mg/L	89.7	70.0	130	----
		iron, dissolved	7439-89-6	E421	1.92 mg/L	2 mg/L	95.8	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.0183 mg/L	0.02 mg/L	91.7	70.0	130	----
		lithium, dissolved	7439-93-2	E421	0.0929 mg/L	0.1 mg/L	92.9	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	1 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E421	0.0187 mg/L	0.02 mg/L	93.7	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.0207 mg/L	0.02 mg/L	104	70.0	130	----
		nickel, dissolved	7440-02-0	E421	0.0367 mg/L	0.04 mg/L	91.8	70.0	130	----
		potassium, dissolved	7440-09-7	E421	3.57 mg/L	4 mg/L	89.2	70.0	130	----
		selenium, dissolved	7782-49-2	E421	ND mg/L	0.04 mg/L	ND	70.0	130	----
		silicon, dissolved	7440-21-3	E421	9.13 mg/L	10 mg/L	91.3	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.00398 mg/L	0.004 mg/L	99.4	70.0	130	----
		sodium, dissolved	7440-23-5	E421	ND mg/L	2 mg/L	ND	70.0	130	----
		strontium, dissolved	7440-24-6	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	ND mg/L	20 mg/L	ND	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.00369 mg/L	0.004 mg/L	92.2	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.0196 mg/L	0.02 mg/L	98.1	70.0	130	----
		titanium, dissolved	7440-32-6	E421	0.0378 mg/L	0.04 mg/L	94.4	70.0	130	----
		uranium, dissolved	7440-61-1	E421	ND mg/L	0.004 mg/L	ND	70.0	130	----
		vanadium, dissolved	7440-62-2	E421	0.0986 mg/L	0.1 mg/L	98.6	70.0	130	----
		zinc, dissolved	7440-66-6	E421	0.354 mg/L	0.4 mg/L	88.5	70.0	130	----
Dissolved Metals (QCLot: 491104)										
CG2205737-011	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000988 mg/L	0.0001 mg/L	98.8	70.0	130	----

(Partial Results)

Page : 18 of 18
Work Order : CG2205788
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



Teck

COC ID: April EVO LAEMP 2022

TURNAROUND TIME:

PROJECT CLIENT INFO				LABORATORY			
Facility Name / Job#	Regional EVO LAEMP			Lab Name	ALS Calgary		
Project Manager	Mike Pope			Lab Contact	Lyudmyla Shvets		
Email	m.pope@teck.com			Email	lyudmyla.shvets@alsglobal.com		
Address	421 Pine Avenue			Address	2559 29 Street NE		
City	Sparwood	Province	BC	City	Calgary	Province	AB
Postal Code	V0B 2G0	Country	Canada	Postal Code	T1Y 7B5	Country	Canada
Phone Number	343-333-3905			Phone Number	1 403 407 1794		

SAMPLE DETAILS									ANALYSIS REQUESTED									
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.			TECKCOAL-ROUTINE-VA	ALS_Package-DOC	ALS_Package-TKN/DOC	HC-T-U-CVAF-VA	HC-D-CVAF-VA	TECKCOAL-MET-T-VA	TECKCOAL-MET-D-VA		
RG_ERCKDT_WS_LAEMP_EVO_2022-05_NP	RG_ERCKDT	WS	No	5/12/2022	14:30	G	7			X	X	X	X	X	X	X		
RG_ERCKUT_WS_LAEMP_EVO_2022-05_NP	RG_ERCKUT	WS	No	5/12/2022	10:00	G	7			X	X	X	X	X	X	X		
RG_RIVER_WS_LAEMP_EVO_2022-05_NP	RG_RIVER	WS	No	13/5/2022	13:00	G	7			X	X	X	X	X	X	X		
RG_ERCKMD_WS_LAEMP_EVO_2022-05_NP	RG_ERCKMD	WS	No	13/5/2022	9:30	G	7			X	X	X	X	X	X	X		
RG_ERCK_WS_LAEMP_EVO_2022-05_NP	RG_ERCK	WS	No	12/5/2022	13:00	G	7			X	X	X	X	X	X	X		

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	REQUISITIONED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
ALS PO VPO00816101	Robin Valleau	May 13/2022	<i>[Signature]</i> 11/1/05 9:25

NO OF BOTTLES RETURNED/DESCRIPTION	Sampler's Name	Mobile #	Date/Time
Regular (default) x Priority (2-3 business days) - 50% surcharge Emergency (1 Business Day) - 100% surcharge For Emergency <1 Day, ASAP or Weekend - Contact ALS	Robin Valleau	416-970-7535	April 26, 2022

Environmental Division

Work Order Reference
CG2205788



Telephone : +1 403 407 1600



CERTIFICATE OF ANALYSIS

Work Order : **CG2206177**
Client : **Teck Coal Limited**
Contact : Mike Pope
Address : 421 Pine Avenue
Sparwood BC Canada V0B2G0
Telephone : ----
Project : REGIONAL EFFECTS PROGRAM
PO : VPO00816101
C-O-C number : May EVO LAEMP 2022 WS
Sampler : Alex McClymont
Site : ----
Quote number : Teck Coal Master Quote
No. of samples received : 5
No. of samples analysed : 5

Page : 1 of 6
Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
Calgary AB Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 21-May-2022 09:10
Date Analysis Commenced : 22-May-2022
Issue Date : 31-May-2022 09:56

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Anshim Anshim	Lab Assistant	Metals, Burnaby, British Columbia
Anthony Calero	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Caleb Deroche	Lab Analyst	Metals, Burnaby, British Columbia
Dan Gebert	Laboratory Analyst	Metals, Burnaby, British Columbia
Elke Tabora		Inorganics, Calgary, Alberta
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Kim Jensen	Department Manager - Metals	Metals, Burnaby, British Columbia
Owen Cheng		Metals, Burnaby, British Columbia
Robin Weeks	Team Leader - Metals	Metals, Burnaby, British Columbia
Ruifang Zheng	Analyst	Inorganics, Calgary, Alberta
Sara Niroomand		Inorganics, Calgary, Alberta
Shirley Li		Inorganics, Calgary, Alberta



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
 LOR: Limit of Reporting (detection limit).

<i>Unit</i>	<i>Description</i>
-	No Unit
%	percent
µg/L	micrograms per litre
µS/cm	Microsiemens per centimetre
meq/L	milliequivalents per litre
mg/L	milligrams per litre
mV	millivolts
NTU	nephelometric turbidity units
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

<i>Qualifier</i>	<i>Description</i>
DLDS	Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
HTD	Hold time exceeded for re-analysis or dilution, but initial testing was conducted within hold time.
RRV	Reported result verified by repeat analysis.
TKNI	TKN result may be biased low due to Nitrate interference. Nitrate-N is > 10x TKN.



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKDT_W S_LAEMP_EVO _2022-05-19_N P	RG_ERCKUT_W S_LAEMP_EVO _2022-05-20_N P	RG_TRIP_WS_L AEMP_EVO_20 22-05-20_NP	RG_RIVER_WS _LAEMP_EVO_ 2022-05-20_NP	RG_FBLANK_W S_LAEMP_EVO _2022-05-20_N P
Client sampling date / time					19-May-2022 08:30	20-May-2022 10:30	20-May-2022 10:00	20-May-2022 10:30	20-May-2022 10:30	
Analyte	CAS Number	Method	LOR	Unit	CG2206177-001	CG2206177-002	CG2206177-003	CG2206177-004	CG2206177-005	
					Result	Result	Result	Result	Result	
Physical Tests										
acidity (as CaCO3)	----	E283	2.0	mg/L	6.0	10.4	<2.0	9.7	<2.0	
alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	421	427	<1.0	442	<1.0	
alkalinity, bicarbonate (as HCO3)	71-52-3	E290	1.0	mg/L	514	520	<1.0	540	<1.0	
alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
alkalinity, carbonate (as CO3)	3812-32-6	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
alkalinity, hydroxide (as OH)	14280-30-9	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	421	427	<1.0	442	<1.0	
conductivity	----	E100	2.0	µS/cm	1920	1940	<2.0	1940	<2.0	
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	1310	1290	<0.50	1300	<0.50	
oxidation-reduction potential [ORP]	----	E125	0.10	mV	395	391	534	384	489	
pH	----	E108	0.10	pH units	8.09	7.99	6.11	7.95	5.77	
solids, total dissolved [TDS]	----	E162	10	mg/L	1660	1650	<10	1660	<10	
solids, total suspended [TSS]	----	E160-L	1.0	mg/L	2.2	6.0	<1.0	1.6	<1.0	
turbidity	----	E121	0.10	NTU	0.11	0.20	<0.10	<0.10	<0.10	
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	0.0081	<0.0050	<0.0050	<0.0050	
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.050	<0.250 ^{DLDS}	<0.050	
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	5.70	5.74	<0.10	5.68	<0.10	
fluoride	16984-48-8	E235.F	0.020	mg/L	<0.100 ^{DLDS}	<0.100 ^{DLDS}	<0.020	<0.100 ^{DLDS}	<0.020	
Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	1.46 ^{TKNI}	0.999 ^{TKNI}	----	1.08 ^{TKNI}	<0.050	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	16.2	16.6	<0.0050 ^{HTD}	16.6	<0.0050 ^{HTD}	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	0.0779	0.0170	<0.0010	<0.0050 ^{DLDS}	<0.0010	
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0210	0.0222	<0.0010	0.0231	<0.0010	
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0207	0.0259	<0.0020	0.0242 ^{DLM}	<0.0020	
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	765	779	<0.30	782	<0.30	
Organic / Inorganic Carbon										
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	<0.50	<0.50	<0.50	0.57	<0.50	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKDT_W S_LAEMP_EVO _2022-05-19_N P	RG_ERCKUT_W S_LAEMP_EVO _2022-05-20_N P	RG_TRIP_WS_L AEMP_EVO_20 22-05-20_NP	RG_RIVER_WS LAEMP_EVO_ 2022-05-20_NP	RG_FBLANK_W S_LAEMP_EVO _2022-05-20_N P
Client sampling date / time					19-May-2022 08:30	20-May-2022 10:30	20-May-2022 10:00	20-May-2022 10:30	20-May-2022 10:30	
Analyte	CAS Number	Method	LOR	Unit	CG2206177-001	CG2206177-002	CG2206177-003	CG2206177-004	CG2206177-005	
					Result	Result	Result	Result	Result	
Organic / Inorganic Carbon										
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	<0.50	<0.50	----	0.54	<0.50	
Ion Balance										
anion sum	----	EC101	0.10	meq/L	25.7	26.1	<0.10	26.4	<0.10	
cation sum	----	EC101	0.10	meq/L	26.4	26.0	<0.10	26.2	<0.10	
ion balance (cations/anions)	----	EC101	0.010	%	103	99.6	100	99.2	100	
ion balance (APHA)	----	EC101	0.010	%	1.34	0.192	<0.010	0.380	<0.010	
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L	<0.0030	<0.0030	----	<0.0030	<0.0030	
antimony, total	7440-36-0	E420	0.00010	mg/L	0.00023	0.00022	----	0.00022	<0.00010	
arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00023	0.00023	----	0.00025	<0.00010	
barium, total	7440-39-3	E420	0.00010	mg/L	0.0635	0.0609	----	0.0617	0.00032 ^{RRV}	
beryllium, total	7440-41-7	E420	0.020	µg/L	<0.020	<0.020	----	<0.020	<0.020	
bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	----	<0.000050	<0.000050	
boron, total	7440-42-8	E420	0.010	mg/L	0.013	0.013	----	0.012	<0.010	
cadmium, total	7440-43-9	E420	0.0050	µg/L	0.0888	0.0951	----	0.0915	<0.0050	
calcium, total	7440-70-2	E420	0.050	mg/L	256	258	----	252	<0.050	
chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	0.00101	0.00023	----	0.00028	<0.00010	
cobalt, total	7440-48-4	E420	0.10	µg/L	<0.10	<0.10	----	<0.10	<0.10	
copper, total	7440-50-8	E420	0.00050	mg/L	<0.00050	<0.00050	----	<0.00050	<0.00050	
iron, total	7439-89-6	E420	0.010	mg/L	0.016	<0.010	----	<0.010	<0.010	
lead, total	7439-92-1	E420	0.000050	mg/L	<0.000050	<0.000050	----	<0.000050	<0.000050	
lithium, total	7439-93-2	E420	0.0010	mg/L	0.0279	0.0272	----	0.0263	<0.0010	
magnesium, total	7439-95-4	E420	0.0050	mg/L	159	158	----	160	<0.0050	
manganese, total	7439-96-5	E420	0.00010	mg/L	0.00063	<0.00010	----	<0.00010	<0.00010	
mercury, total	7439-97-6	E508-L	0.00050	µg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.00107	0.000994	----	0.00104	<0.000050	
nickel, total	7440-02-0	E420	0.00050	mg/L	0.00098	0.00092	----	0.00091	<0.00050	
potassium, total	7440-09-7	E420	0.050	mg/L	2.88	2.85	----	2.83	<0.050	
selenium, total	7782-49-2	E420	0.050	µg/L	178	182	----	181	<0.050	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKDT_W S_LAEMP_EVO _2022-05-19_N P	RG_ERCKUT_W S_LAEMP_EVO _2022-05-20_N P	RG_TRIP_WS_L AEMP_EVO_20 22-05-20_NP	RG_RIVER_WS LAEMP_EVO_ 2022-05-20_NP	RG_FBLANK_W S_LAEMP_EVO _2022-05-20_N P
Client sampling date / time					19-May-2022 08:30	20-May-2022 10:30	20-May-2022 10:00	20-May-2022 10:30	20-May-2022 10:30	
Analyte	CAS Number	Method	LOR	Unit	CG2206177-001	CG2206177-002	CG2206177-003	CG2206177-004	CG2206177-005	
					Result	Result	Result	Result	Result	
Total Metals										
silicon, total	7440-21-3	E420	0.10	mg/L	4.06	3.99	----	4.03	0.20 ^{RRV}	
silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	----	<0.000010	<0.000010	
sodium, total	7440-23-5	E420	0.050	mg/L	3.34	3.34	----	3.33	0.284 ^{RRV}	
strontium, total	7440-24-6	E420	0.00020	mg/L	0.240	0.229	----	0.234	0.00024 ^{RRV}	
sulfur, total	7704-34-9	E420	0.50	mg/L	292	297	----	293	<0.50	
thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	----	<0.000010	<0.000010	
tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	----	<0.00010	0.00017 ^{RRV}	
titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00030	<0.00030	----	<0.00030	<0.00030	
uranium, total	7440-61-1	E420	0.000010	mg/L	0.00826	0.00863	----	0.00861	<0.000010	
vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	<0.00050	----	<0.00050	<0.00050	
zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	<0.0030	----	<0.0030	<0.0030	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	0.0017 ^{RRV}	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00022	0.00021	<0.00010	0.00021	<0.00010	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00024	0.00022	<0.00010	0.00024	<0.00010	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0616	0.0610	<0.00010	0.0622	0.00034 ^{RRV}	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
boron, dissolved	7440-42-8	E421	0.010	mg/L	0.012	0.012	<0.010	0.012	<0.010	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.0897	0.0918	<0.0050	0.0876	<0.0050	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	267	267	<0.050	264	<0.050	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	0.00024	0.00022	<0.00010	0.00024	<0.00010	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	<0.10	<0.10	<0.10	<0.10	<0.10	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0274	0.0248	<0.0010	0.0251	<0.0010	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	156	152	<0.0050	156	<0.0050	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00012	0.00011	<0.00010	<0.00010	<0.00010	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKDT_W S_LAEMP_EVO _2022-05-19_N P	RG_ERCKUT_W S_LAEMP_EVO _2022-05-20_N P	RG_TRIP_WS_L AEMP_EVO_20 22-05-20_NP	RG_RIVER_WS LAEMP_EVO_ 2022-05-20_NP	RG_FBLANK_W S_LAEMP_EVO _2022-05-20_N P
Client sampling date / time					19-May-2022 08:30	20-May-2022 10:30	20-May-2022 10:00	20-May-2022 10:30	20-May-2022 10:30	
Analyte	CAS Number	Method	LOR	Unit	CG2206177-001	CG2206177-002	CG2206177-003	CG2206177-004	CG2206177-005	
					Result	Result	Result	Result	Result	
Dissolved Metals										
mercury, dissolved	7439-97-6	E509	0.000050	mg/L	<0.000050	<0.000050	----	<0.000050	<0.000050	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00109	0.00101	<0.000050	0.00105	<0.000050	
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00107	0.00113	<0.00050	0.00121	<0.00050	
potassium, dissolved	7440-09-7	E421	0.050	mg/L	2.70	2.68	<0.050	2.74	<0.050	
selenium, dissolved	7782-49-2	E421	0.050	µg/L	180	186	<0.050	189	<0.050	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	3.76	3.70	<0.050	3.85	0.227 ^{RRV}	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	3.14	3.14	<0.050	3.18	0.300 ^{RRV}	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.235	0.230	<0.00020	0.239	0.00025 ^{RRV}	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	279	277	<0.50	285	<0.50	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	0.00016 ^{RRV}	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00816	0.00824	<0.000010	0.00819	<0.000010	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0024	0.0028	<0.0010	0.0020	<0.0010	
dissolved mercury filtration location	----	EP509	-	-	Field	Field	----	Field	Field	
dissolved metals filtration location	----	EP421	-	-	Field	Field	Laboratory	Field	Field	

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: CG2206177	Page	: 1 of 24
Client	: Teck Coal Limited	Laboratory	: Calgary - Environmental
Contact	: Mike Pope	Account Manager	: Lyudmyla Shvets
Address	: 421 Pine Avenue Sparwood BC Canada V0B2G0	Address	: 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5
Telephone	: ----	Telephone	: +1 403 407 1800
Project	: REGIONAL EFFECTS PROGRAM	Date Samples Received	: 21-May-2022 09:10
PO	: VPO00816101	Issue Date	: 31-May-2022 09:57
C-O-C number	: May EVO LAEMP 2022 WS		
Sampler	: Alex McClymont		
Site	: ----		
Quote number	: Teck Coal Master Quote		
No. of samples received	: 5		
No. of samples analysed	: 5		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-05-20_NP	E298	20-May-2022	26-May-2022	----	----		26-May-2022	28 days	6 days	✓	
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_FBLANK_WS_LAEMP_EVO_2022-05-20_NP	E298	20-May-2022	26-May-2022	----	----		26-May-2022	28 days	6 days	✓	
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-05-20_NP	E298	20-May-2022	26-May-2022	----	----		26-May-2022	28 days	6 days	✓	
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_TRIP_WS_LAEMP_EVO_2022-05-20_NP	E298	20-May-2022	26-May-2022	----	----		26-May-2022	28 days	6 days	✓	
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-05-19_NP	E298	19-May-2022	26-May-2022	----	----		26-May-2022	28 days	7 days	✓	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-05-20_NP	E235.Br-L	20-May-2022	----	----	----		22-May-2022	28 days	2 days	✓	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-05-20_NP	E235.Br-L	20-May-2022	----	----	----		22-May-2022	28 days	2 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-05-20_NP	E235.Br-L	20-May-2022	----	----	----		22-May-2022	28 days	2 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-05-20_NP	E235.Br-L	20-May-2022	----	----	----		22-May-2022	28 days	2 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-05-19_NP	E235.Br-L	19-May-2022	----	----	----		22-May-2022	28 days	3 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-05-20_NP	E235.Cl-L	20-May-2022	----	----	----		22-May-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-05-20_NP	E235.Cl-L	20-May-2022	----	----	----		22-May-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-05-20_NP	E235.Cl-L	20-May-2022	----	----	----		22-May-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-05-20_NP	E235.Cl-L	20-May-2022	----	----	----		22-May-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-05-19_NP	E235.Cl-L	19-May-2022	----	----	----		22-May-2022	28 days	3 days	✔	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-05-20_NP	E378-U	20-May-2022	----	----	----		22-May-2022	3 days	2 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
Rec	Actual	Rec		Actual						
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-05-20_NP	E378-U	20-May-2022	----	----	----		22-May-2022	3 days	2 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE RG_RIVER_WS_LAEMP_EVO_2022-05-20_NP	E378-U	20-May-2022	----	----	----		22-May-2022	3 days	2 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE RG_TRIP_WS_LAEMP_EVO_2022-05-20_NP	E378-U	20-May-2022	----	----	----		22-May-2022	3 days	2 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-05-19_NP	E378-U	19-May-2022	----	----	----		22-May-2022	3 days	3 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-05-20_NP	E235.F	20-May-2022	----	----	----		22-May-2022	28 days	2 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-05-20_NP	E235.F	20-May-2022	----	----	----		22-May-2022	28 days	2 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE RG_RIVER_WS_LAEMP_EVO_2022-05-20_NP	E235.F	20-May-2022	----	----	----		22-May-2022	28 days	2 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE RG_TRIP_WS_LAEMP_EVO_2022-05-20_NP	E235.F	20-May-2022	----	----	----		22-May-2022	28 days	2 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-05-19_NP	E235.F	19-May-2022	----	----	----		22-May-2022	28 days	3 days	✓



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-05-20_NP	E235.NO3-L	20-May-2022	----	----	----		30-May-2022	3 days	10 days	*	EHT
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-05-20_NP	E235.NO3-L	20-May-2022	----	----	----		30-May-2022	3 days	10 days	*	EHT
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-05-20_NP	E235.NO3-L	20-May-2022	----	----	----		22-May-2022	3 days	2 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-05-20_NP	E235.NO3-L	20-May-2022	----	----	----		22-May-2022	3 days	2 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-05-19_NP	E235.NO3-L	19-May-2022	----	----	----		22-May-2022	3 days	3 days	✓	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-05-20_NP	E235.NO2-L	20-May-2022	----	----	----		22-May-2022	3 days	2 days	✓	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-05-20_NP	E235.NO2-L	20-May-2022	----	----	----		22-May-2022	3 days	2 days	✓	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-05-20_NP	E235.NO2-L	20-May-2022	----	----	----		22-May-2022	3 days	2 days	✓	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-05-20_NP	E235.NO2-L	20-May-2022	----	----	----		22-May-2022	3 days	2 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
Rec	Actual	Rec		Actual							
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-05-19_NP	E235.NO2-L	19-May-2022	----	----	----		22-May-2022	3 days	3 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-05-20_NP	E235.SO4	20-May-2022	----	----	----		22-May-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-05-20_NP	E235.SO4	20-May-2022	----	----	----		22-May-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-05-20_NP	E235.SO4	20-May-2022	----	----	----		22-May-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-05-20_NP	E235.SO4	20-May-2022	----	----	----		22-May-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-05-19_NP	E235.SO4	19-May-2022	----	----	----		22-May-2022	28 days	3 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-05-20_NP	E318	20-May-2022	27-May-2022	----	----		27-May-2022	28 days	7 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_FBLANK_WS_LAEMP_EVO_2022-05-20_NP	E318	20-May-2022	27-May-2022	----	----		27-May-2022	28 days	7 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-05-20_NP	E318	20-May-2022	27-May-2022	----	----		27-May-2022	28 days	7 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
Container / Client Sample ID(s)				Rec	Actual						Rec
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-05-19_NP	E318	19-May-2022	27-May-2022	----	----		27-May-2022	28 days	8 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-05-20_NP	E372-U	20-May-2022	26-May-2022	----	----		27-May-2022	28 days	7 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_FBLANK_WS_LAEMP_EVO_2022-05-20_NP	E372-U	20-May-2022	26-May-2022	----	----		27-May-2022	28 days	7 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-05-20_NP	E372-U	20-May-2022	26-May-2022	----	----		27-May-2022	28 days	7 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_TRIP_WS_LAEMP_EVO_2022-05-20_NP	E372-U	20-May-2022	26-May-2022	----	----		27-May-2022	28 days	7 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-05-19_NP	E372-U	19-May-2022	26-May-2022	----	----		27-May-2022	28 days	8 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-05-20_NP	E421.Cr-L	20-May-2022	29-May-2022	----	----		30-May-2022	180 days	10 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_FBLANK_WS_LAEMP_EVO_2022-05-20_NP	E421.Cr-L	20-May-2022	29-May-2022	----	----		30-May-2022	180 days	10 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_RIVER_WS_LAEMP_EVO_2022-05-20_NP	E421.Cr-L	20-May-2022	29-May-2022	----	----		30-May-2022	180 days	10 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_TRIP_WS_LAEMP_EVO_2022-05-20_NP	E421.Cr-L	20-May-2022	29-May-2022	----	----		30-May-2022	180 days	10 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-05-19_NP	E421.Cr-L	19-May-2022	29-May-2022	----	----		30-May-2022	180 days	11 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-05-20_NP	E509	20-May-2022	27-May-2022	----	----		27-May-2022	28 days	7 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_FBLANK_WS_LAEMP_EVO_2022-05-20_NP	E509	20-May-2022	27-May-2022	----	----		27-May-2022	28 days	7 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_RIVER_WS_LAEMP_EVO_2022-05-20_NP	E509	20-May-2022	27-May-2022	----	----		27-May-2022	28 days	7 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-05-19_NP	E509	19-May-2022	27-May-2022	----	----		27-May-2022	28 days	8 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-05-20_NP	E421	20-May-2022	29-May-2022	----	----		30-May-2022	180 days	10 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_FBLANK_WS_LAEMP_EVO_2022-05-20_NP	E421	20-May-2022	29-May-2022	----	----		30-May-2022	180 days	10 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_RIVER_WS_LAEMP_EVO_2022-05-20_NP	E421	20-May-2022	29-May-2022	----	----		30-May-2022	180 days	10 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_TRIP_WS_LAEMP_EVO_2022-05-20_NP	E421	20-May-2022	29-May-2022	----	----		30-May-2022	180 days	10 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-05-19_NP	E421	19-May-2022	29-May-2022	----	----		30-May-2022	180 days	11 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-05-20_NP	E358-L	20-May-2022	28-May-2022	----	----		28-May-2022	28 days	8 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_FBLANK_WS_LAEMP_EVO_2022-05-20_NP	E358-L	20-May-2022	28-May-2022	----	----		28-May-2022	28 days	8 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-05-20_NP	E358-L	20-May-2022	28-May-2022	----	----		28-May-2022	28 days	8 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_TRIP_WS_LAEMP_EVO_2022-05-20_NP	E358-L	20-May-2022	28-May-2022	----	----		28-May-2022	28 days	8 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-05-19_NP	E358-L	19-May-2022	28-May-2022	----	----		28-May-2022	28 days	9 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-05-20_NP	E355-L	20-May-2022	28-May-2022	----	----		28-May-2022	28 days	8 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_FBLANK_WS_LAEMP_EVO_2022-05-20_NP	E355-L	20-May-2022	28-May-2022	----	----		28-May-2022	28 days	8 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-05-20_NP	E355-L	20-May-2022	28-May-2022	----	----		28-May-2022	28 days	8 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-05-19_NP	E355-L	19-May-2022	28-May-2022	----	----		28-May-2022	28 days	9 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-05-20_NP	E283	20-May-2022	----	----	----		24-May-2022	14 days	4 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-05-20_NP	E283	20-May-2022	----	----	----		24-May-2022	14 days	4 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-05-20_NP	E283	20-May-2022	----	----	----		24-May-2022	14 days	4 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-05-20_NP	E283	20-May-2022	----	----	----		24-May-2022	14 days	4 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-05-19_NP	E283	19-May-2022	----	----	----		24-May-2022	14 days	5 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-05-20_NP	E290	20-May-2022	----	----	----		24-May-2022	14 days	4 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-05-20_NP	E290	20-May-2022	----	----	----		24-May-2022	14 days	4 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Alkalinity Species by Titration											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-05-20_NP	E290	20-May-2022	----	----	----		24-May-2022	14 days	4 days	✓	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-05-20_NP	E290	20-May-2022	----	----	----		24-May-2022	14 days	4 days	✓	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-05-19_NP	E290	19-May-2022	----	----	----		24-May-2022	14 days	5 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-05-20_NP	E100	20-May-2022	----	----	----		24-May-2022	28 days	4 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-05-20_NP	E100	20-May-2022	----	----	----		24-May-2022	28 days	4 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-05-20_NP	E100	20-May-2022	----	----	----		24-May-2022	28 days	4 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-05-20_NP	E100	20-May-2022	----	----	----		24-May-2022	28 days	4 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-05-19_NP	E100	19-May-2022	----	----	----		24-May-2022	28 days	5 days	✓	
Physical Tests : ORP by Electrode											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-05-20_NP	E125	20-May-2022	----	----	----		27-May-2022	0.25 hrs	172 hrs	* EHTR-FM	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : ORP by Electrode											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-05-20_NP	E125	20-May-2022	----	----	----		27-May-2022	0.25 hrs	172 hrs	*	EHTR-FM
Physical Tests : ORP by Electrode											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-05-20_NP	E125	20-May-2022	----	----	----		27-May-2022	0.25 hrs	172 hrs	*	EHTR-FM
Physical Tests : ORP by Electrode											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-05-20_NP	E125	20-May-2022	----	----	----		27-May-2022	0.25 hrs	172 hrs	*	EHTR-FM
Physical Tests : ORP by Electrode											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-05-19_NP	E125	19-May-2022	----	----	----		27-May-2022	0.25 hrs	198 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-05-19_NP	E108	19-May-2022	----	----	----		24-May-2022	0.25 hrs	122 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-05-20_NP	E108	20-May-2022	----	----	----		24-May-2022	0.25 hrs	96 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-05-20_NP	E108	20-May-2022	----	----	----		24-May-2022	0.25 hrs	96 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-05-20_NP	E108	20-May-2022	----	----	----		24-May-2022	0.25 hrs	96 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-05-20_NP	E108	20-May-2022	----	----	----		24-May-2022	0.25 hrs	97 hrs	*	EHTR-FM



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : TDS by Gravimetry											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-05-19_NP	E162	19-May-2022	----	----	----		25-May-2022	7 days	6 days	✔	
Physical Tests : TDS by Gravimetry											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-05-20_NP	E162	20-May-2022	----	----	----		26-May-2022	7 days	6 days	✔	
Physical Tests : TDS by Gravimetry											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-05-20_NP	E162	20-May-2022	----	----	----		26-May-2022	7 days	6 days	✔	
Physical Tests : TDS by Gravimetry											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-05-20_NP	E162	20-May-2022	----	----	----		26-May-2022	7 days	6 days	✔	
Physical Tests : TDS by Gravimetry											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-05-20_NP	E162	20-May-2022	----	----	----		26-May-2022	7 days	6 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-05-19_NP	E160-L	19-May-2022	----	----	----		26-May-2022	7 days	7 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-05-20_NP	E160-L	20-May-2022	----	----	----		27-May-2022	7 days	7 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-05-20_NP	E160-L	20-May-2022	----	----	----		27-May-2022	7 days	7 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-05-20_NP	E160-L	20-May-2022	----	----	----		27-May-2022	7 days	7 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
Rec	Actual	Rec		Actual							
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-05-20_NP	E160-L	20-May-2022	----	----	----		27-May-2022	7 days	7 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-05-20_NP	E121	20-May-2022	----	----	----		22-May-2022	3 days	2 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-05-20_NP	E121	20-May-2022	----	----	----		22-May-2022	3 days	2 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-05-20_NP	E121	20-May-2022	----	----	----		22-May-2022	3 days	2 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-05-20_NP	E121	20-May-2022	----	----	----		22-May-2022	3 days	2 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-05-19_NP	E121	19-May-2022	----	----	----		22-May-2022	3 days	3 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-05-20_NP	E420.Cr-L	20-May-2022	----	----	----		28-May-2022	180 days	8 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_FBLANK_WS_LAEMP_EVO_2022-05-20_NP	E420.Cr-L	20-May-2022	----	----	----		28-May-2022	180 days	8 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_RIVER_WS_LAEMP_EVO_2022-05-20_NP	E420.Cr-L	20-May-2022	----	----	----		28-May-2022	180 days	8 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec Actual		Eval	Analysis Date	Holding Times Rec Actual		Eval
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)										
HDPE total (nitric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-05-19_NP	E420.Cr-L	19-May-2022	----	----	----		28-May-2022	180 days	9 days	✔
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved) RG_ERCKUT_WS_LAEMP_EVO_2022-05-20_NP	E508-L	20-May-2022	----	----	----		27-May-2022	28 days	7 days	✔
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved) RG_FBLANK_WS_LAEMP_EVO_2022-05-20_NP	E508-L	20-May-2022	----	----	----		27-May-2022	28 days	7 days	✔
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved) RG_RIVER_WS_LAEMP_EVO_2022-05-20_NP	E508-L	20-May-2022	----	----	----		27-May-2022	28 days	7 days	✔
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved) RG_TRIP_WS_LAEMP_EVO_2022-05-20_NP	E508-L	20-May-2022	----	----	----		27-May-2022	28 days	7 days	✔
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved) RG_ERCKDT_WS_LAEMP_EVO_2022-05-19_NP	E508-L	19-May-2022	----	----	----		27-May-2022	28 days	8 days	✔
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-05-20_NP	E420	20-May-2022	----	----	----		28-May-2022	180 days	8 days	✔
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) RG_FBLANK_WS_LAEMP_EVO_2022-05-20_NP	E420	20-May-2022	----	----	----		28-May-2022	180 days	8 days	✔
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) RG_RIVER_WS_LAEMP_EVO_2022-05-20_NP	E420	20-May-2022	----	----	----		28-May-2022	180 days	8 days	✔



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		
				Rec	Actual			Rec	Actual	Eval
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-05-19_NP	E420	19-May-2022	----	----	----		28-May-2022	180 days	9 days	✔

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended

EHT: Exceeded ALS recommended hold time prior to analysis.

Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
Analytical Methods							
Laboratory Duplicates (DUP)							
Acidity by Titration	E283	497518	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290	497513	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	500386	1	19	5.2	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	496630	1	12	8.3	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	496631	1	12	8.3	5.0	✓
Conductivity in Water	E100	497512	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	501731	1	20	5.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	501477	1	16	6.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	501730	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	502726	1	15	6.6	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	496640	1	16	6.2	5.0	✓
Fluoride in Water by IC	E235.F	496634	1	12	8.3	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	496632	1	12	8.3	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	496633	1	12	8.3	5.0	✓
ORP by Electrode	E125	502081	1	5	20.0	5.0	✓
pH by Meter	E108	497511	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	496629	1	12	8.3	5.0	✓
TDS by Gravimetry	E162	497917	2	38	5.2	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	501575	1	20	5.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	498852	1	20	5.0	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	501656	1	19	5.2	5.0	✓
Total Metals in Water by CRC ICPMS	E420	501576	1	20	5.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	502729	1	16	6.2	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	496679	1	14	7.1	5.0	✓
Turbidity by Nephelometry	E121	496690	1	17	5.8	5.0	✓
Laboratory Control Samples (LCS)							
Acidity by Titration	E283	497518	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290	497513	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	500386	1	19	5.2	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	496630	1	12	8.3	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	496631	1	12	8.3	5.0	✓
Conductivity in Water	E100	497512	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	501731	1	20	5.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	501477	1	16	6.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	501730	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	502726	1	15	6.6	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	496640	1	16	6.2	5.0	✓



Matrix: **Water**

Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
<i>Analytical Methods</i>							
Laboratory Control Samples (LCS) - Continued							
Fluoride in Water by IC	E235.F	496634	1	12	8.3	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	496632	1	12	8.3	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	496633	1	12	8.3	5.0	✓
ORP by Electrode	E125	502081	1	5	20.0	5.0	✓
pH by Meter	E108	497511	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	496629	1	12	8.3	5.0	✓
TDS by Gravimetry	E162	497917	2	38	5.2	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	501575	1	20	5.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	498852	1	20	5.0	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	501656	1	19	5.2	5.0	✓
Total Metals in Water by CRC ICPMS	E420	501576	1	20	5.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	502729	1	16	6.2	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	496679	1	14	7.1	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	497912	2	40	5.0	5.0	✓
Turbidity by Nephelometry	E121	496690	1	17	5.8	5.0	✓
Method Blanks (MB)							
Acidity by Titration	E283	497518	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290	497513	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	500386	1	19	5.2	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	496630	1	12	8.3	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	496631	1	12	8.3	5.0	✓
Conductivity in Water	E100	497512	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	501731	1	20	5.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	501477	1	16	6.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	501730	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	502726	1	15	6.6	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	496640	1	16	6.2	5.0	✓
Fluoride in Water by IC	E235.F	496634	1	12	8.3	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	496632	1	12	8.3	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	496633	1	12	8.3	5.0	✓
Sulfate in Water by IC	E235.SO4	496629	1	12	8.3	5.0	✓
TDS by Gravimetry	E162	497917	2	38	5.2	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	501575	1	20	5.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	498852	1	20	5.0	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	501656	1	19	5.2	5.0	✓
Total Metals in Water by CRC ICPMS	E420	501576	1	20	5.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	502729	1	16	6.2	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	496679	1	14	7.1	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	497912	2	40	5.0	5.0	✓
Turbidity by Nephelometry	E121	496690	1	17	5.8	5.0	✓



Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
<i>Analytical Methods</i>							
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	500386	1	19	5.2	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	496630	1	12	8.3	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	496631	1	12	8.3	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	501731	1	20	5.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	501477	1	16	6.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	501730	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	502726	1	15	6.6	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	496640	1	16	6.2	5.0	✓
Fluoride in Water by IC	E235.F	496634	1	12	8.3	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	496632	1	12	8.3	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	496633	1	12	8.3	5.0	✓
Sulfate in Water by IC	E235.SO4	496629	1	12	8.3	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	501575	1	20	5.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	498852	1	20	5.0	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	501656	1	19	5.2	5.0	✓
Total Metals in Water by CRC ICPMS	E420	501576	1	20	5.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	502729	1	16	6.2	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	496679	1	14	7.1	5.0	✓



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 Calgary - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 Calgary - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 Calgary - Environmental	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
ORP by Electrode	E125 Calgary - Environmental	Water	ASTM D1498 (mod)	Oxidation reduction potential is reported as the oxidation-reduction potential of the platinum metal-reference electrode employed, measured in mV. For high accuracy test results, it is recommended that this analysis be conducted in the field.
TSS by Gravimetry (Low Level)	E160-L Calgary - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 Calgary - Environmental	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC (Low Level)	E235.Cl-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Acidity by Titration	E283 Calgary - Environmental	Water	APHA 2310 B (mod)	Acidity is determined by potentiometric titration to pH endpoint of 8.3



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Alkalinity Species by Titration	E290 Calgary - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 Calgary - Environmental	Water	J. Environ. Monit., 2005, 7, 37-42 (mod)	Ammonia in water is analyzed by flow-injection analysis with fluorescence detection after reaction with orthophthaldialdehyde (OPA).
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 Calgary - Environmental	Water	APHA 4500-Norg D (mod)	Total Kjeldahl Nitrogen is determined using block digestion followed by flow-injection analysis with fluorescence detection.
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L Calgary - Environmental	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Dissolved Organic Carbon by Combustion (Low Level)	E358-L Calgary - Environmental	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U Calgary - Environmental	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U Calgary - Environmental	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Total Metals in Water by CRC ICPMS	E420 Vancouver - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L Vancouver - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS.
Dissolved Metals in Water by CRC ICPMS	E421 Vancouver - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L Vancouver - Environmental	Water	APHA 3030 B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L Vancouver - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAFS.
Dissolved Mercury in Water by CVAAS	E509 Vancouver - Environmental	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
Dissolved Hardness (Calculated)	EC100 Vancouver - Environmental	Water	APHA 2340B	"Hardness (as CaCO ₃), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Ion Balance using Dissolved Metals	EC101 Calgary - Environmental	Water	APHA 1030E	Cation Sum, Anion Sum, and Ion Balance are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present. Ion Balance cannot be calculated accurately for waters with very low electrical conductivity (EC).

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 Calgary - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 Calgary - Environmental	Water	APHA 4500-Norg D (mod)	Samples are digested using block digestion with Copper Sulfate Digestion Reagent.
Preparation for Total Organic Carbon by Combustion	EP355 Calgary - Environmental	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon for Combustion	EP358 Calgary - Environmental	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Phosphorus in water	EP372 Calgary - Environmental	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Dissolved Metals Water Filtration	EP421 Vancouver - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO ₃ .
Dissolved Mercury Water Filtration	EP509	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.

Page : 24 of 24
Work Order : CG2206177
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



<i>Preparation Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
	Vancouver - Environmental			



QUALITY CONTROL REPORT

Work Order : **CG2206177**

Client : Teck Coal Limited

Contact : Mike Pope

Address : 421 Pine Avenue
Sparwood BC Canada V0B2G0

Telephone : ----

Project : REGIONAL EFFECTS PROGRAM

PO : VPO00816101

C-O-C number : May EVO LAEMP 2022 WS

Sampler : Alex McClymont

Site : ----

Quote number : Teck Coal Master Quote

No. of samples received : 5

No. of samples analysed : 5

Page : 1 of 18

Laboratory : Calgary - Environmental

Account Manager : Lyudmyla Shvets

Address : 2559 29th Street NE
Calgary, Alberta Canada T1Y 7B5

Telephone : +1 403 407 1800

Date Samples Received : 21-May-2022 09:10

Date Analysis Commenced : 22-May-2022

Issue Date : 31-May-2022 09:57

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Anshim Anshim	Lab Assistant	Vancouver Metals, Burnaby, British Columbia
Anthony Calero	Team Leader - Inorganics	Calgary Inorganics, Calgary, Alberta
Caleb Deroche	Lab Analyst	Vancouver Metals, Burnaby, British Columbia
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Page : 2 of 18
Work Order : CG2206177
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 496690)											
CG2206175-002	Anonymous	turbidity	----	E121	0.10	NTU	<0.10	<0.10	0	Diff <2x LOR	----
Physical Tests (QC Lot: 497511)											
CG2206175-001	Anonymous	pH	----	E108	0.10	pH units	7.82	7.83	0.128%	4%	----
Physical Tests (QC Lot: 497512)											
CG2206175-001	Anonymous	conductivity	----	E100	2.0	µS/cm	926	928	0.216%	10%	----
Physical Tests (QC Lot: 497513)											
CG2206175-001	Anonymous	alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	256	253	1.06%	20%	----
		alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	256	253	1.06%	20%	----
Physical Tests (QC Lot: 497518)											
CG2206175-001	Anonymous	acidity (as CaCO3)	----	E283	2.0	mg/L	6.3	6.4	0.06	Diff <2x LOR	----
Physical Tests (QC Lot: 497917)											
CG2206151-011	Anonymous	solids, total dissolved [TDS]	----	E162	10	mg/L	<10	<10	0	Diff <2x LOR	----
Physical Tests (QC Lot: 498789)											
CG2206170-003	Anonymous	solids, total dissolved [TDS]	----	E162	40	mg/L	1970	2100	6.62%	20%	----
Physical Tests (QC Lot: 502081)											
CG2206177-001	RG_ERCKDT_WS_LAEMP_EVO_2022-05-19_NP	oxidation-reduction potential [ORP]	----	E125	0.10	mV	395	390	1.25%	15%	----
Anions and Nutrients (QC Lot: 496629)											
CG2206176-001	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	1.50	mg/L	48.1	47.4	1.45%	20%	----
Anions and Nutrients (QC Lot: 496630)											
CG2206176-001	Anonymous	bromide	24959-67-9	E235.Br-L	0.250	mg/L	<0.250	<0.250	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 496631)											
CG2206176-001	Anonymous	chloride	16887-00-6	E235.Cl-L	0.50	mg/L	2.80	2.64	0.16	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 496632)											
CG2206176-001	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	0.0250	mg/L	2.97	2.90	2.46%	20%	----
Anions and Nutrients (QC Lot: 496633)											
CG2206176-001	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.0050	mg/L	4.98	4.93	1.07%	20%	----
Anions and Nutrients (QC Lot: 496634)											
CG2206176-001	Anonymous	fluoride	16984-48-8	E235.F	0.100	mg/L	0.338	0.333	0.004	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 496640)											



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 496640) - continued											
CG2206175-001	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 496679)											
CG2206175-003	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 498852)											
CG2206131-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	0.106	0.086	0.020	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 500386)											
CG2206172-001	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.125	mg/L	1.49	1.44	3.01%	20%	----
Organic / Inorganic Carbon (QC Lot: 502726)											
CG2206177-001	RG_ERCKDT_WS_LAEMP_EVO_2022-05-19_NP	carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 502729)											
CG2206177-001	RG_ERCKDT_WS_LAEMP_EVO_2022-05-19_NP	carbon, total organic [TOC]	----	E355-L	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
Total Metals (QC Lot: 501575)											
CG2206175-001	Anonymous	chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	0.00014	0.00010	0.00003	Diff <2x LOR	----
Total Metals (QC Lot: 501576)											
CG2206175-001	Anonymous	aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0076	0.0075	0.0001	Diff <2x LOR	----
		antimony, total	7440-36-0	E420	0.00010	mg/L	0.00016	0.00016	0.000001	Diff <2x LOR	----
		arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00029	0.00028	0.000009	Diff <2x LOR	----
		barium, total	7440-39-3	E420	0.00010	mg/L	0.0977	0.0972	0.595%	20%	----
		beryllium, total	7440-41-7	E420	0.000020	mg/L	<0.020 µg/L	<0.000020	0	Diff <2x LOR	----
		bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, total	7440-42-8	E420	0.010	mg/L	0.021	0.021	0.0002	Diff <2x LOR	----
		cadmium, total	7440-43-9	E420	0.0000050	mg/L	0.0140 µg/L	0.0000181	0.0000041	Diff <2x LOR	----
		calcium, total	7440-70-2	E420	0.050	mg/L	110	112	1.59%	20%	----
		cobalt, total	7440-48-4	E420	0.00010	mg/L	0.86 µg/L	0.00087	0.00002	Diff <2x LOR	----
		copper, total	7440-50-8	E420	0.00050	mg/L	0.00061	<0.00050	0.00011	Diff <2x LOR	----
		iron, total	7439-89-6	E420	0.010	mg/L	1.31	1.32	1.14%	20%	----
		lead, total	7439-92-1	E420	0.000050	mg/L	0.000066	0.000066	0.0000002	Diff <2x LOR	----
		lithium, total	7439-93-2	E420	0.0010	mg/L	0.0366	0.0357	2.68%	20%	----
		magnesium, total	7439-95-4	E420	0.0050	mg/L	51.3	52.2	1.68%	20%	----
		manganese, total	7439-96-5	E420	0.00010	mg/L	1.12	1.14	1.64%	20%	----
		molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.00636	0.00644	1.23%	20%	----
		nickel, total	7440-02-0	E420	0.00050	mg/L	0.00350	0.00355	0.00006	Diff <2x LOR	----
		potassium, total	7440-09-7	E420	0.050	mg/L	3.82	3.83	0.259%	20%	----
		selenium, total	7782-49-2	E420	0.000050	mg/L	0.945 µg/L	0.000946	0.0925%	20%	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (QC Lot: 501576) - continued											
CG2206175-001	Anonymous	silicon, total	7440-21-3	E420	0.10	mg/L	4.89	4.93	0.819%	20%	----
		silver, total	7440-22-4	E420	0.000010	mg/L	0.000024	0.000016	0.000008	Diff <2x LOR	----
		sodium, total	7440-23-5	E420	0.050	mg/L	12.0	12.2	1.90%	20%	----
		strontium, total	7440-24-6	E420	0.00020	mg/L	0.322	0.323	0.191%	20%	----
		sulfur, total	7704-34-9	E420	0.50	mg/L	95.1	96.5	1.42%	20%	----
		thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, total	7440-32-6	E420	0.00030	mg/L	0.00045	<0.00030	0.00015	Diff <2x LOR	----
		uranium, total	7440-61-1	E420	0.000010	mg/L	0.00361	0.00366	1.40%	20%	----
		vanadium, total	7440-62-2	E420	0.00050	mg/L	0.00056	0.00055	0.00002	Diff <2x LOR	----
		zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	<0.0030	0	Diff <2x LOR	----
Total Metals (QC Lot: 501656)											
CG2206122-001	Anonymous	mercury, total	7439-97-6	E508-L	0.50	ng/L	0.00081 µg/L	0.78	0.03	Diff <2x LOR	----
Dissolved Metals (QC Lot: 501477)											
CG2206174-002	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 501730)											
CG2206174-003	Anonymous	aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00256	0.00253	1.07%	20%	----
		arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00012	0.00012	0.0000002	Diff <2x LOR	----
		barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0370	0.0366	1.20%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.000020	mg/L	<0.020 µg/L	<0.000020	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.010	mg/L	0.052	0.051	0.002	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	0.316 µg/L	0.000309	2.35%	20%	----
		calcium, dissolved	7440-70-2	E421	0.050	mg/L	181	176	2.82%	20%	----
		cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	4.10 µg/L	0.00412	0.407%	20%	----
		copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00153	0.00152	0.00001	Diff <2x LOR	----
		iron, dissolved	7439-89-6	E421	0.010	mg/L	0.019	0.019	0.00007	Diff <2x LOR	----
		lead, dissolved	7439-92-1	E421	0.000050	mg/L	0.000096	0.000097	0.000002	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.115	0.110	4.64%	20%	----
		magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	92.0	91.6	0.448%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.232	0.232	0.0257%	20%	----
		molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00742	0.00727	1.99%	20%	----
		nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.0403	0.0402	0.436%	20%	----
		potassium, dissolved	7440-09-7	E421	0.050	mg/L	6.07	6.11	0.602%	20%	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 501730) - continued											
CG2206174-003	Anonymous	selenium, dissolved	7782-49-2	E421	0.000050	mg/L	79.5 µg/L	0.0840	5.45%	20%	----
		silicon, dissolved	7440-21-3	E421	0.050	mg/L	2.18	2.19	0.389%	20%	----
		silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E421	0.050	mg/L	3.38	3.42	1.21%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.278	0.277	0.550%	20%	----
		sulfur, dissolved	7704-34-9	E421	0.50	mg/L	144	142	1.35%	20%	----
		thallium, dissolved	7440-28-0	E421	0.000010	mg/L	0.000081	0.000081	0.0000005	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00716	0.00727	1.42%	20%	----
		vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0112	0.0113	1.20%	20%	----
Dissolved Metals (QC Lot: 501731)											
CG2206174-003	Anonymous	chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 496690)						
turbidity	----	E121	0.1	NTU	<0.10	----
Physical Tests (QCLot: 497512)						
conductivity	----	E100	1	µS/cm	<1.0	----
Physical Tests (QCLot: 497513)						
alkalinity, bicarbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, carbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, hydroxide (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 497518)						
acidity (as CaCO3)	----	E283	2	mg/L	<2.0	----
Physical Tests (QCLot: 497912)						
solids, total suspended [TSS]	----	E160-L	1	mg/L	<1.0	----
Physical Tests (QCLot: 497917)						
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 498789)						
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 498797)						
solids, total suspended [TSS]	----	E160-L	1	mg/L	<1.0	----
Anions and Nutrients (QCLot: 496629)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 496630)						
bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 496631)						
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	----
Anions and Nutrients (QCLot: 496632)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 496633)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 496634)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 496640)						
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 496679)						



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 496679) - continued						
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	---
Anions and Nutrients (QCLot: 498852)						
Kjeldahl nitrogen, total [TKN]	---	E318	0.05	mg/L	<0.050	---
Anions and Nutrients (QCLot: 500386)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	---
Organic / Inorganic Carbon (QCLot: 502726)						
carbon, dissolved organic [DOC]	---	E358-L	0.5	mg/L	<0.50	---
Organic / Inorganic Carbon (QCLot: 502729)						
carbon, total organic [TOC]	---	E355-L	0.5	mg/L	<0.50	---
Total Metals (QCLot: 501575)						
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	<0.00010	---
Total Metals (QCLot: 501576)						
aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	---
antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	---
arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	---
barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	---
beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	---
bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	---
boron, total	7440-42-8	E420	0.01	mg/L	<0.010	---
cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	---
calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	---
cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	---
copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	---
iron, total	7439-89-6	E420	0.01	mg/L	<0.010	---
lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	---
lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	---
magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	---
manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	---
molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	---
nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	---
potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	---
selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	---
silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	---
silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	---
sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	---
strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	---



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 501576) - continued						
sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	---
thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	---
tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	---
titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	---
uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	---
vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	---
zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	---
Total Metals (QCLot: 501656)						
mercury, total	7439-97-6	E508-L	0.5	ng/L	<0.50	---
Dissolved Metals (QCLot: 501477)						
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	---
Dissolved Metals (QCLot: 501730)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	---
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	---
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	---
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	---
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	---
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	---
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	---
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	---
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	---
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	---
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	---
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	---
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	---
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	---
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	---
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	---
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	---
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	---
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	---
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	---
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	---
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	---
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	---
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	---



Sub-Matrix: **Water**

<i>Analyte</i>	<i>CAS Number</i>	<i>Method</i>	<i>LOR</i>	<i>Unit</i>	<i>Result</i>	<i>Qualifier</i>
Dissolved Metals (QCLot: 501730) - continued						
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
Dissolved Metals (QCLot: 501731)						
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	<0.00010	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Physical Tests (QCLot: 496690)									
turbidity	----	E121	0.1	NTU	200 NTU	102	85.0	115	----
Physical Tests (QCLot: 497511)									
pH	----	E108	----	pH units	7 pH units	99.0	98.6	101	----
Physical Tests (QCLot: 497512)									
conductivity	----	E100	1	µS/cm	146.9 µS/cm	103	90.0	110	----
Physical Tests (QCLot: 497513)									
alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	100	85.0	115	----
Physical Tests (QCLot: 497518)									
acidity (as CaCO3)	----	E283	2	mg/L	50 mg/L	108	85.0	115	----
Physical Tests (QCLot: 497912)									
solids, total suspended [TSS]	----	E160-L	1	mg/L	150 mg/L	95.7	85.0	115	----
Physical Tests (QCLot: 497917)									
solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	90.3	85.0	115	----
Physical Tests (QCLot: 498789)									
solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	99.4	85.0	115	----
Physical Tests (QCLot: 498797)									
solids, total suspended [TSS]	----	E160-L	1	mg/L	150 mg/L	99.7	85.0	115	----
Physical Tests (QCLot: 502081)									
oxidation-reduction potential [ORP]	----	E125	----	mV	220 mV	101	95.4	104	----
Anions and Nutrients (QCLot: 496629)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	99.0	90.0	110	----
Anions and Nutrients (QCLot: 496630)									
bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	95.8	85.0	115	----
Anions and Nutrients (QCLot: 496631)									
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	96.8	90.0	110	----
Anions and Nutrients (QCLot: 496632)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	98.4	90.0	110	----
Anions and Nutrients (QCLot: 496633)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	96.4	90.0	110	----
Anions and Nutrients (QCLot: 496634)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	97.0	90.0	110	----
Anions and Nutrients (QCLot: 496640)									



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Anions and Nutrients (QCLot: 496640) - continued									
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.02 mg/L	98.5	80.0	120	----
Anions and Nutrients (QCLot: 496679)									
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	8.02 mg/L	111	80.0	120	----
Anions and Nutrients (QCLot: 498852)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 500386)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	97.2	85.0	115	----
Organic / Inorganic Carbon (QCLot: 502726)									
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	90.8	80.0	120	----
Organic / Inorganic Carbon (QCLot: 502729)									
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	91.2	80.0	120	----
Total Metals (QCLot: 501575)									
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	0.25 mg/L	99.0	80.0	120	----
Total Metals (QCLot: 501576)									
aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	101	80.0	120	----
antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	108	80.0	120	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	101	80.0	120	----
barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	99.1	80.0	120	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	97.2	80.0	120	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	100	80.0	120	----
boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	90.4	80.0	120	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	103	80.0	120	----
calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	97.5	80.0	120	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	98.9	80.0	120	----
copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	99.7	80.0	120	----
iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	102	80.0	120	----
lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	99.6	80.0	120	----
lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	97.0	80.0	120	----
magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	102	80.0	120	----
manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	99.0	80.0	120	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	97.2	80.0	120	----
nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	101	80.0	120	----
potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	108	80.0	120	----
selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	105	80.0	120	----
silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	106	80.0	120	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Total Metals (QCLot: 501576) - continued									
silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	98.0	80.0	120	----
sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	102	80.0	120	----
strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	106	80.0	120	----
sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	87.1	80.0	120	----
thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	103	80.0	120	----
tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	97.4	80.0	120	----
titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	98.9	80.0	120	----
uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	95.8	80.0	120	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	101	80.0	120	----
zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	101	80.0	120	----
Total Metals (QCLot: 501656)									
mercury, total	7439-97-6	E508-L	0.5	ng/L	5 ng/L	91.6	80.0	120	----
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	102	80.0	120	----
Dissolved Metals (QCLot: 501730)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	102	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	108	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	103	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	98.7	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	98.9	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	102	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	95.3	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	99.9	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	101	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	100	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	99.6	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	101	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	104	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	99.0	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	105	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	100	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	102	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	98.8	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	103	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	100	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	108	80.0	120	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	93.2	80.0	120	----



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 501730) - continued									
sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	104	80.0	120	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	101	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	89.6	80.0	120	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	106	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	99.5	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	97.5	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	101	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	102	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	97.1	80.0	120	----
Dissolved Metals (QCLot: 501731)									
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	0.25 mg/L	102	80.0	120	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 496629)										
CG2206177-005	RG_FBLANK_WS_LAEMP_EVO_2022-05-20_NP	sulfate (as SO4)	14808-79-8	E235.SO4	87.5 mg/L	100 mg/L	87.5	75.0	125	----
Anions and Nutrients (QCLot: 496630)										
CG2206177-005	RG_FBLANK_WS_LAEMP_EVO_2022-05-20_NP	bromide	24959-67-9	E235.Br-L	0.440 mg/L	0.5 mg/L	88.0	75.0	125	----
Anions and Nutrients (QCLot: 496631)										
CG2206177-005	RG_FBLANK_WS_LAEMP_EVO_2022-05-20_NP	chloride	16887-00-6	E235.Cl-L	86.1 mg/L	100 mg/L	86.1	75.0	125	----
Anions and Nutrients (QCLot: 496632)										
CG2206177-005	RG_FBLANK_WS_LAEMP_EVO_2022-05-20_NP	nitrate (as N)	14797-55-8	E235.NO3-L	2.19 mg/L	2.5 mg/L	87.5	75.0	125	----
Anions and Nutrients (QCLot: 496633)										
CG2206177-005	RG_FBLANK_WS_LAEMP_EVO_2022-05-20_NP	nitrite (as N)	14797-65-0	E235.NO2-L	0.442 mg/L	0.5 mg/L	88.4	75.0	125	----
Anions and Nutrients (QCLot: 496634)										
CG2206177-005	RG_FBLANK_WS_LAEMP_EVO_2022-05-20_NP	fluoride	16984-48-8	E235.F	0.861 mg/L	1 mg/L	86.1	75.0	125	----
Anions and Nutrients (QCLot: 496640)										
CG2206175-002	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0468 mg/L	0.05 mg/L	93.6	70.0	130	----
Anions and Nutrients (QCLot: 496679)										
CG2206175-004	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0597 mg/L	0.0676 mg/L	88.3	70.0	130	----
Anions and Nutrients (QCLot: 498852)										
CG2206131-002	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.57 mg/L	2.5 mg/L	103	70.0	130	----
Anions and Nutrients (QCLot: 500386)										
CG2206174-001	Anonymous	ammonia, total (as N)	7664-41-7	E298	ND mg/L	0.1 mg/L	ND	75.0	125	----
Organic / Inorganic Carbon (QCLot: 502726)										
CG2206177-001	RG_ERCKDT_WS_LAEMP_EVO_2022-05-19_NP	carbon, dissolved organic [DOC]	----	E358-L	4.72 mg/L	5 mg/L	94.4	70.0	130	----
Organic / Inorganic Carbon (QCLot: 502729)										
CG2206177-001	RG_ERCKDT_WS_LAEMP_EVO_2022-05-19_NP	carbon, total organic [TOC]	----	E355-L	4.98 mg/L	5 mg/L	99.6	70.0	130	----
Total Metals (QCLot: 501575)										
CG2206175-002	Anonymous	chromium, total	7440-47-3	E420.Cr-L	0.0396 mg/L	0.04 mg/L	99.0	70.0	130	----



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 501576)										
CG2206175-002	Anonymous	aluminum, total	7429-90-5	E420	0.197 mg/L	0.2 mg/L	98.7	70.0	130	----
		antimony, total	7440-36-0	E420	0.0197 mg/L	0.02 mg/L	98.4	70.0	130	----
		arsenic, total	7440-38-2	E420	0.0195 mg/L	0.02 mg/L	97.4	70.0	130	----
		barium, total	7440-39-3	E420	0.0194 mg/L	0.02 mg/L	97.0	70.0	130	----
		beryllium, total	7440-41-7	E420	0.0388 mg/L	0.04 mg/L	97.1	70.0	130	----
		bismuth, total	7440-69-9	E420	0.0106 mg/L	0.01 mg/L	106	70.0	130	----
		boron, total	7440-42-8	E420	0.092 mg/L	0.1 mg/L	92.3	70.0	130	----
		cadmium, total	7440-43-9	E420	0.00408 mg/L	0.004 mg/L	102	70.0	130	----
		calcium, total	7440-70-2	E420	3.85 mg/L	4 mg/L	96.2	70.0	130	----
		cobalt, total	7440-48-4	E420	0.0200 mg/L	0.02 mg/L	100	70.0	130	----
		copper, total	7440-50-8	E420	0.0199 mg/L	0.02 mg/L	99.4	70.0	130	----
		iron, total	7439-89-6	E420	2.00 mg/L	2 mg/L	99.8	70.0	130	----
		lead, total	7439-92-1	E420	0.0198 mg/L	0.02 mg/L	99.3	70.0	130	----
		lithium, total	7439-93-2	E420	0.0909 mg/L	0.1 mg/L	90.9	70.0	130	----
		magnesium, total	7439-95-4	E420	0.976 mg/L	1 mg/L	97.6	70.0	130	----
		manganese, total	7439-96-5	E420	0.0198 mg/L	0.02 mg/L	98.8	70.0	130	----
		molybdenum, total	7439-98-7	E420	0.0189 mg/L	0.02 mg/L	94.4	70.0	130	----
		nickel, total	7440-02-0	E420	0.0406 mg/L	0.04 mg/L	101	70.0	130	----
		potassium, total	7440-09-7	E420	4.16 mg/L	4 mg/L	104	70.0	130	----
		selenium, total	7782-49-2	E420	0.0407 mg/L	0.04 mg/L	102	70.0	130	----
		silicon, total	7440-21-3	E420	9.52 mg/L	10 mg/L	95.2	70.0	130	----
		silver, total	7440-22-4	E420	0.00421 mg/L	0.004 mg/L	105	70.0	130	----
		sodium, total	7440-23-5	E420	1.98 mg/L	2 mg/L	99.0	70.0	130	----
		strontium, total	7440-24-6	E420	0.0209 mg/L	0.02 mg/L	104	70.0	130	----
		sulfur, total	7704-34-9	E420	18.6 mg/L	20 mg/L	93.2	70.0	130	----
		thallium, total	7440-28-0	E420	0.00394 mg/L	0.004 mg/L	98.6	70.0	130	----
		tin, total	7440-31-5	E420	0.0188 mg/L	0.02 mg/L	94.2	70.0	130	----
		titanium, total	7440-32-6	E420	0.0403 mg/L	0.04 mg/L	101	70.0	130	----
		uranium, total	7440-61-1	E420	0.00373 mg/L	0.004 mg/L	93.2	70.0	130	----
		vanadium, total	7440-62-2	E420	0.0995 mg/L	0.1 mg/L	99.5	70.0	130	----
		zinc, total	7440-66-6	E420	0.407 mg/L	0.4 mg/L	102	70.0	130	----
Total Metals (QCLot: 501656)										
CG2206149-001	Anonymous	mercury, total	7439-97-6	E508-L	4.37 ng/L	5 ng/L	87.5	70.0	130	----
Dissolved Metals (QCLot: 501477)										
CG2206174-003	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000966 mg/L	0.0001 mg/L	96.6	70.0	130	----
Dissolved Metals (QCLot: 501730)										



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 501730) - continued										
CG2206175-001	Anonymous	aluminum, dissolved	7429-90-5	E421	0.204 mg/L	0.2 mg/L	102	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.0209 mg/L	0.02 mg/L	105	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.0214 mg/L	0.02 mg/L	107	70.0	130	----
		barium, dissolved	7440-39-3	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.0383 mg/L	0.04 mg/L	95.7	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.00868 mg/L	0.01 mg/L	86.8	70.0	130	----
		boron, dissolved	7440-42-8	E421	0.095 mg/L	0.1 mg/L	94.7	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.00397 mg/L	0.004 mg/L	99.2	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	4 mg/L	ND	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.0193 mg/L	0.02 mg/L	96.7	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.0188 mg/L	0.02 mg/L	93.9	70.0	130	----
		iron, dissolved	7439-89-6	E421	1.89 mg/L	2 mg/L	94.4	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.0189 mg/L	0.02 mg/L	94.6	70.0	130	----
		lithium, dissolved	7439-93-2	E421	0.0854 mg/L	0.1 mg/L	85.4	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	1 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.0209 mg/L	0.02 mg/L	105	70.0	130	----
		nickel, dissolved	7440-02-0	E421	0.0374 mg/L	0.04 mg/L	93.5	70.0	130	----
		potassium, dissolved	7440-09-7	E421	3.76 mg/L	4 mg/L	94.1	70.0	130	----
		selenium, dissolved	7782-49-2	E421	0.0446 mg/L	0.04 mg/L	111	70.0	130	----
		silicon, dissolved	7440-21-3	E421	9.36 mg/L	10 mg/L	93.6	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.00293 mg/L	0.004 mg/L	73.3	70.0	130	----
		sodium, dissolved	7440-23-5	E421	ND mg/L	2 mg/L	ND	70.0	130	----
		strontium, dissolved	7440-24-6	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	ND mg/L	20 mg/L	ND	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.00378 mg/L	0.004 mg/L	94.4	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.0202 mg/L	0.02 mg/L	101	70.0	130	----
		titanium, dissolved	7440-32-6	E421	0.0396 mg/L	0.04 mg/L	98.9	70.0	130	----
		uranium, dissolved	7440-61-1	E421	0.00383 mg/L	0.004 mg/L	95.8	70.0	130	----
		vanadium, dissolved	7440-62-2	E421	0.103 mg/L	0.1 mg/L	103	70.0	130	----
		zinc, dissolved	7440-66-6	E421	0.372 mg/L	0.4 mg/L	92.9	70.0	130	----
Dissolved Metals (QCLot: 501731)										
CG2206175-001	Anonymous	chromium, dissolved	7440-47-3	E421.Cr-L	0.0411 mg/L	0.04 mg/L	103	70.0	130	----



COC ID:	May EVO LAEMP 2022 WS		TURNAROUND TIME:				
PROJECT/CLIENT INFO			LABORATORY				
Facility Name / Job#	Regional EVO LAEMP		Lab Name	ALS Calgary			
Project Manager	Mike Pope		Lab Contact	Lyudmyla Shvets			
Email	m.pope@teck.com		Email	lyudmyla.shvets@alsglobal.com			
Address	421 Pine Avenue		Address	2559 29 Street NE			
City	Sparwood	Province	BC	City	Calgary	Province	AB
Postal Code	V0B 2G0	Country	Canada	Postal Code	T1Y 7B5	Country	Canada
Phone Number	343-333-3905		Phone Number	1 403 407 1794			

Environmental Division
 Calgary
 Work Order Reference
CG2206177

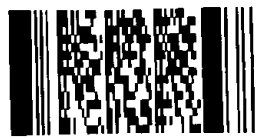
SAMPLE DETAILS								ANALYSIS REQUESTED						
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	N	P	N	N	P	N	P
								HSD1	HSD4	BCL	HNO3	HNO1		
								TECKCOAL-ROUTINE-VA	ALS Package DOC	ALS Package TKN/DOC	HG-T-U-CVAF-VA	HG-D-CVAF-VA	TECKCOAL-MET-T-VA	TECKCOAL-MET-D-VA
RG_ERCKDT_WS_LAEMP_EVO_2022-05-19_NP	RG_ERCKDT	WS	No	5/19/2022	8:30	G	7	X	X	X	X	X	X	X
RG_ERCKUT_WS_LAEMP_EVO_2022-05-20_NP	RG_ERCKUT	WS	No	5/20/2022	10:30	G	7	X	X	X	X	X	X	X
RG_TRIP_WS_LAEMP_EVO_2022-05-20_NP	RG_TRIP	WS	No	5/20/2022	10:00	G	7	X	X	X	X	X	X	X
RG_RIVER_WS_LAEMP_EVO_2022-05-20_NP	RG_RIVER	WS	No	5/20/2022	10:30	G	7	X	X	X	X	X	X	X
RG_FBLANK_WS_LAEMP_EVO_2022-05-20_NP	RG_FBLANK	WS	No	5/20/2022	10:30	G	7	X	X	X	X	X	X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
ALS PO VPO00816101	Alex McClymont	May 20, 2022	<i>[Signature]</i>
NO OF BOTTLES RETURNED/DESCRIPTION	Sampler's Name	Mobile #	
Regular (default) x	Alex McClymont	780-293-6750	
Priority (2-3 business days) - 50% surcharge	Sampler's Signature	Date/Time	
Emergency (1 Business Day) - 100% surcharge		May 20, 2022	
For Emergency <1 Day, ASAP or Weekend - Contact ALS			

Environmental Division
Calgary

Work Order Reference

CG2206177





CERTIFICATE OF ANALYSIS

Work Order : **CG2206947**
Client : **Teck Coal Limited**
Contact : Mike Pope
Address : RR#1 HWY#3
Sparwood BC Canada V0B 2G1
Telephone : ----
Project : REGIONAL EFFECTS PROGRAM
PO : VPO00816101
C-O-C number : MAY/JUNE EVO LAEMP 2022 WS
Sampler : ED
Site : ----
Quote number : Teck Coal Master Quote
No. of samples received : 4
No. of samples analysed : 4

Page : 1 of 6
Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
Calgary AB Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 04-Jun-2022 10:00
Date Analysis Commenced : 05-Jun-2022
Issue Date : 15-Jun-2022 15:18

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Angela Ren	Team Leader - Metals	Metals, Burnaby, British Columbia
Anthony Calero	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Benjamin Oke	Lab Assistant	Metals, Burnaby, British Columbia
Dan Gebert	Laboratory Analyst	Metals, Burnaby, British Columbia
Dee Lee	Analyst	Metals, Burnaby, British Columbia
Elke Tabora		Inorganics, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Kim Jensen	Department Manager - Metals	Metals, Burnaby, British Columbia
Kyle Chang	Lab Assistant	Metals, Burnaby, British Columbia
Owen Cheng		Metals, Burnaby, British Columbia
Ruifang Zheng	Analyst	Inorganics, Calgary, Alberta
Sara Niroomand		Inorganics, Calgary, Alberta
Shirley Li		Inorganics, Calgary, Alberta



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

<i>Unit</i>	<i>Description</i>
-	No Unit
%	percent
µg/L	micrograms per litre
µS/cm	Microsiemens per centimetre
meq/L	milliequivalents per litre
mg/L	milligrams per litre
mV	millivolts
NTU	nephelometric turbidity units
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

<i>Qualifier</i>	<i>Description</i>
DLDS	<i>Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.</i>
DLM	<i>Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).</i>



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_BOCKRD_ WS_LAEMP_EV O_2022-06-03_ NP	RG_ALUSM_W S_LAEMP_EVO _2022-06-03_ N P	RG_MI25_WS_ LAEMP_EVO_2 022-06-03_NP	RG_TRIP_WS_L AEMP_EVO_20 22-06-03_NP	----
Client sampling date / time					03-Jun-2022 08:56	03-Jun-2022 12:40	03-Jun-2022 14:43	03-Jun-2022 12:00	----	
Analyte	CAS Number	Method	LOR	Unit	CG2206947-001	CG2206947-002	CG2206947-003	CG2206947-004	-----	
					Result	Result	Result	Result	----	
Physical Tests										
acidity (as CaCO3)	----	E283	2.0	mg/L	<2.0	<2.0	<2.0	<2.0	----	
alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	410	140	102	<1.0	----	
alkalinity, bicarbonate (as HCO3)	71-52-3	E290	1.0	mg/L	500	171	124	<1.0	----	
alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	----	
alkalinity, carbonate (as CO3)	3812-32-6	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	----	
alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	----	
alkalinity, hydroxide (as OH)	14280-30-9	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	----	
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	410	140	102	<1.0	----	
conductivity	----	E100	2.0	µS/cm	2090	264	202	<2.0	----	
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	1310	132	95.6	<0.50	----	
oxidation-reduction potential [ORP]	----	E125	0.10	mV	478	399	404	505	----	
pH	----	E108	0.10	pH units	8.21	8.20	8.09	5.37	----	
solids, total dissolved [TDS]	----	E162	10	mg/L	1750	177	140	<10	----	
solids, total suspended [TSS]	----	E160-L	1.0	mg/L	4.9	22.1	4.0	<1.0	----	
turbidity	----	E121	0.10	NTU	1.11	8.29	3.67	<0.10	----	
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	----	
bromide	24959-67-9	E235.Br-L	0.050	mg/L	0.378	<0.050	<0.050	<0.050	----	
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	12.3	0.35	0.12	<0.10	----	
fluoride	16984-48-8	E235.F	0.020	mg/L	0.215	0.111	0.043	<0.020	----	
Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	1.14	<0.500 ^{DLM}	<0.500 ^{DLM}	<0.050	----	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	7.55	<0.0050	0.0105	<0.0050	----	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0050 ^{DLDS}	<0.0010	<0.0010	<0.0010	----	
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0015	0.0012	0.0021	<0.0010	----	
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0070	0.0180	0.0088	<0.0020	----	
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	979	7.81	5.33	<0.30	----	
Organic / Inorganic Carbon										
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	0.66	1.65	2.98	<0.50	----	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_BOCKRD_WS_LAEMP_EV_O_2022-06-03_NP	RG_ALUSM_WS_LAEMP_EVO_2022-06-03_NP	RG_MI25_WS_LAEMP_EVO_2022-06-03_NP	RG_TRIP_WS_LAEMP_EVO_2022-06-03_NP	----
Client sampling date / time					03-Jun-2022 08:56	03-Jun-2022 12:40	03-Jun-2022 14:43	03-Jun-2022 12:00	----	
Analyte	CAS Number	Method	LOR	Unit	CG2206947-001	CG2206947-002	CG2206947-003	CG2206947-004	-----	
					Result	Result	Result	Result	----	
Organic / Inorganic Carbon										
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	0.65	1.04	2.80	<0.50	----	
Ion Balance										
anion sum	----	EC101	0.10	meq/L	29.5	2.98	2.16	<0.10	----	
cation sum	----	EC101	0.10	meq/L	26.7	2.68	1.98	<0.10	----	
ion balance (cations/anions)	----	EC101	0.010	%	90.5	89.9	91.7	100	----	
ion balance (APHA)	----	EC101	0.010	%	4.98	5.30	4.35	<0.010	----	
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0062	0.278	0.163	<0.0030	----	
antimony, total	7440-36-0	E420	0.00010	mg/L	0.00087	<0.00010	<0.00010	<0.00010	----	
arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00033	0.00024	0.00029	<0.00010	----	
barium, total	7440-39-3	E420	0.00010	mg/L	0.0158	0.0555	0.0295	<0.00010	----	
beryllium, total	7440-41-7	E420	0.020	µg/L	<0.020	<0.020	<0.020	<0.020	----	
bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	----	
boron, total	7440-42-8	E420	0.010	mg/L	0.036	<0.010	<0.010	<0.010	----	
cadmium, total	7440-43-9	E420	0.0050	µg/L	0.330	0.0201	0.0208	<0.0050	----	
calcium, total	7440-70-2	E420	0.050	mg/L	256	37.7	26.2	<0.050	----	
chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	<0.00010	0.00045	0.00032	<0.00010	----	
cobalt, total	7440-48-4	E420	0.10	µg/L	0.18	0.14	<0.10	<0.10	----	
copper, total	7440-50-8	E420	0.00050	mg/L	<0.00050	0.00051	<0.00050	<0.00050	----	
iron, total	7439-89-6	E420	0.010	mg/L	0.065	0.254	0.128	<0.010	----	
lead, total	7439-92-1	E420	0.000050	mg/L	<0.000050	0.000216	0.000073	<0.000050	----	
lithium, total	7439-93-2	E420	0.0010	mg/L	0.101	0.0028	0.0026	<0.0010	----	
magnesium, total	7439-95-4	E420	0.0050	mg/L	177	9.74	7.60	<0.0050	----	
manganese, total	7439-96-5	E420	0.00010	mg/L	0.00174	0.00844	0.00387	<0.00010	----	
mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	----	
molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.0162	0.000461	0.000583	<0.000050	----	
nickel, total	7440-02-0	E420	0.00050	mg/L	0.0376	0.00053	<0.00050	<0.00050	----	
potassium, total	7440-09-7	E420	0.050	mg/L	5.08	0.433	0.408	<0.050	----	
selenium, total	7782-49-2	E420	0.050	µg/L	67.4	0.319	0.191	<0.050	----	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_BOCKRD_WS_LAEMP_EV_O_2022-06-03_NP	RG_ALUSM_WS_LAEMP_EVO_2022-06-03_NP	RG_MI25_WS_LAEMP_EVO_2022-06-03_NP	RG_TRIP_WS_LAEMP_EVO_2022-06-03_NP	----
Client sampling date / time					03-Jun-2022 08:56	03-Jun-2022 12:40	03-Jun-2022 14:43	03-Jun-2022 12:00	----	
Analyte	CAS Number	Method	LOR	Unit	CG2206947-001	CG2206947-002	CG2206947-003	CG2206947-004	-----	
					Result	Result	Result	Result	----	
Total Metals										
silicon, total	7440-21-3	E420	0.10	mg/L	2.71	2.32	2.44	<0.10	----	
silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	----	
sodium, total	7440-23-5	E420	0.050	mg/L	9.90	1.00	1.26	<0.050	----	
strontium, total	7440-24-6	E420	0.00020	mg/L	0.485	0.0905	0.0901	<0.00020	----	
sulfur, total	7704-34-9	E420	0.50	mg/L	357	3.12	2.15	<0.50	----	
thallium, total	7440-28-0	E420	0.000010	mg/L	0.000050	<0.000010	0.000011	<0.000010	----	
tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	----	
titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00030	0.00429	0.00219	<0.00030	----	
uranium, total	7440-61-1	E420	0.000010	mg/L	0.0139	0.000422	0.000140	<0.000010	----	
vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	0.00079	0.00051	<0.00050	----	
zinc, total	7440-66-6	E420	0.0030	mg/L	0.0118	<0.0030	<0.0030	<0.0030	----	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	<0.0010	0.0022	0.0104	<0.0010	----	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00087	<0.00010	<0.00010	<0.00010	----	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00033	0.00013	0.00020	<0.00010	----	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0138	0.0493	0.0282	<0.00010	----	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.020	<0.020	<0.020	<0.020	----	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	----	
boron, dissolved	7440-42-8	E421	0.010	mg/L	0.036	<0.010	<0.010	<0.010	----	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.229	<0.0050	0.0092	<0.0050	----	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	252	37.4	26.6	<0.050	----	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00010	0.00019	0.00019	<0.00010	----	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	0.12	<0.10	<0.10	<0.10	----	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00022	<0.00020	0.00027	<0.00020	----	
iron, dissolved	7439-89-6	E421	0.010	mg/L	0.012	<0.010	<0.010	<0.010	----	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	----	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.102	0.0027	0.0026	<0.0010	----	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	165	9.30	7.09	<0.0050	----	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00102	0.00063	0.00046	<0.00010	----	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_BOCKRD_WS_LAEMP_EV_O_2022-06-03_NP	RG_ALUSM_WS_LAEMP_EVO_2022-06-03_NP	RG_MI25_WS_LAEMP_EVO_2022-06-03_NP	RG_TRIP_WS_LAEMP_EVO_2022-06-03_NP	----
Client sampling date / time					03-Jun-2022 08:56	03-Jun-2022 12:40	03-Jun-2022 14:43	03-Jun-2022 12:00	----	
Analyte	CAS Number	Method	LOR	Unit	CG2206947-001	CG2206947-002	CG2206947-003	CG2206947-004	-----	
					Result	Result	Result	Result	----	
Dissolved Metals										
mercury, dissolved	7439-97-6	E509	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	----	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.0167	0.000451	0.000600	<0.000050	----	
nickel, dissolved	7440-02-0	E421	0.000050	mg/L	0.0361	<0.000050	<0.000050	<0.000050	----	
potassium, dissolved	7440-09-7	E421	0.050	mg/L	4.90	0.330	0.351	<0.050	----	
selenium, dissolved	7782-49-2	E421	0.050	µg/L	67.8	0.363	0.171	<0.050	----	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	2.68	1.82	2.17	<0.050	----	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	----	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	9.70	1.04	1.29	<0.050	----	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.492	0.0883	0.0892	<0.00020	----	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	342	2.82	1.85	<0.50	----	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	0.000053	<0.000010	<0.000010	<0.000010	----	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	----	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	----	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.0132	0.000392	0.000136	<0.000010	----	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	----	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0096	<0.0010	<0.0010	<0.0010	----	
dissolved mercury filtration location	----	EP509	-	-	Field	Field	Field	Field	----	
dissolved metals filtration location	----	EP421	-	-	Field	Field	Field	Field	----	

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: CG2206947	Page	: 1 of 21
Client	: Teck Coal Limited	Laboratory	: Calgary - Environmental
Contact	: Mike Pope	Account Manager	: Lyudmyla Shvets
Address	: RR#1 HWY#3 Sparwood BC Canada V0B 2G1	Address	: 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5
Telephone	: ----	Telephone	: +1 403 407 1800
Project	: REGIONAL EFFECTS PROGRAM	Date Samples Received	: 04-Jun-2022 10:00
PO	: VPO00816101	Issue Date	: 15-Jun-2022 15:18
C-O-C number	: MAY/JUNE EVO LAEMP 2022 WS		
Sampler	: ED		
Site	: ----		
Quote number	: Teck Coal Master Quote		
No. of samples received	: 4		
No. of samples analysed	: 4		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers***Outliers : Quality Control Samples***

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_ALUSM_WS_LAEMP_EVO_2022-06-03_NP	E298	03-Jun-2022	10-Jun-2022	----	----		10-Jun-2022	28 days	7 days	✓	
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_BOCKRD_WS_LAEMP_EVO_2022-06-03_NP	E298	03-Jun-2022	10-Jun-2022	----	----		10-Jun-2022	28 days	7 days	✓	
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_MI25_WS_LAEMP_EVO_2022-06-03_NP	E298	03-Jun-2022	10-Jun-2022	----	----		10-Jun-2022	28 days	7 days	✓	
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_TRIP_WS_LAEMP_EVO_2022-06-03_NP	E298	03-Jun-2022	10-Jun-2022	----	----		10-Jun-2022	28 days	7 days	✓	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-06-03_NP	E235.Br-L	03-Jun-2022	----	----	----		06-Jun-2022	28 days	3 days	✓	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-06-03_NP	E235.Br-L	03-Jun-2022	----	----	----		06-Jun-2022	28 days	3 days	✓	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_MI25_WS_LAEMP_EVO_2022-06-03_NP	E235.Br-L	03-Jun-2022	----	----	----		06-Jun-2022	28 days	3 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times Rec Actual		Eval	Analysis Date	Holding Times Rec Actual		Eval	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-06-03_NP	E235.Br-L	03-Jun-2022	----	----	----		06-Jun-2022	28 days	3 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-06-03_NP	E235.Cl-L	03-Jun-2022	----	----	----		06-Jun-2022	28 days	3 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-06-03_NP	E235.Cl-L	03-Jun-2022	----	----	----		06-Jun-2022	28 days	3 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_MI25_WS_LAEMP_EVO_2022-06-03_NP	E235.Cl-L	03-Jun-2022	----	----	----		06-Jun-2022	28 days	3 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-06-03_NP	E235.Cl-L	03-Jun-2022	----	----	----		06-Jun-2022	28 days	3 days	✔	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-06-03_NP	E378-U	03-Jun-2022	----	----	----		06-Jun-2022	3 days	3 days	✔	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-06-03_NP	E378-U	03-Jun-2022	----	----	----		06-Jun-2022	3 days	3 days	✔	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_MI25_WS_LAEMP_EVO_2022-06-03_NP	E378-U	03-Jun-2022	----	----	----		06-Jun-2022	3 days	3 days	✔	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-06-03_NP	E378-U	03-Jun-2022	----	----	----		06-Jun-2022	3 days	3 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
Rec	Actual	Rec		Actual						
Anions and Nutrients : Fluoride in Water by IC										
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-06-03_NP	E235.F	03-Jun-2022	----	----	----		06-Jun-2022	28 days	3 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-06-03_NP	E235.F	03-Jun-2022	----	----	----		06-Jun-2022	28 days	3 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE RG_MI25_WS_LAEMP_EVO_2022-06-03_NP	E235.F	03-Jun-2022	----	----	----		06-Jun-2022	28 days	3 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE RG_TRIP_WS_LAEMP_EVO_2022-06-03_NP	E235.F	03-Jun-2022	----	----	----		06-Jun-2022	28 days	3 days	✔
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-06-03_NP	E235.NO3-L	03-Jun-2022	----	----	----		06-Jun-2022	3 days	3 days	✔
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-06-03_NP	E235.NO3-L	03-Jun-2022	----	----	----		06-Jun-2022	3 days	3 days	✔
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE RG_MI25_WS_LAEMP_EVO_2022-06-03_NP	E235.NO3-L	03-Jun-2022	----	----	----		06-Jun-2022	3 days	3 days	✔
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE RG_TRIP_WS_LAEMP_EVO_2022-06-03_NP	E235.NO3-L	03-Jun-2022	----	----	----		06-Jun-2022	3 days	3 days	✔
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-06-03_NP	E235.NO2-L	03-Jun-2022	----	----	----		06-Jun-2022	3 days	3 days	✔



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-06-03_NP	E235.NO2-L	03-Jun-2022	----	----	----		06-Jun-2022	3 days	3 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_MI25_WS_LAEMP_EVO_2022-06-03_NP	E235.NO2-L	03-Jun-2022	----	----	----		06-Jun-2022	3 days	3 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-06-03_NP	E235.NO2-L	03-Jun-2022	----	----	----		06-Jun-2022	3 days	3 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-06-03_NP	E235.SO4	03-Jun-2022	----	----	----		06-Jun-2022	28 days	3 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-06-03_NP	E235.SO4	03-Jun-2022	----	----	----		06-Jun-2022	28 days	3 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_MI25_WS_LAEMP_EVO_2022-06-03_NP	E235.SO4	03-Jun-2022	----	----	----		06-Jun-2022	28 days	3 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-06-03_NP	E235.SO4	03-Jun-2022	----	----	----		06-Jun-2022	28 days	3 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_ALUSM_WS_LAEMP_EVO_2022-06-03_NP	E318	03-Jun-2022	09-Jun-2022	----	----		09-Jun-2022	28 days	6 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_BOCKRD_WS_LAEMP_EVO_2022-06-03_NP	E318	03-Jun-2022	09-Jun-2022	----	----		09-Jun-2022	28 days	6 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_MI25_WS_LAEMP_EVO_2022-06-03_NP	E318	03-Jun-2022	09-Jun-2022	----	----		09-Jun-2022	28 days	6 days	✓	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_TRIP_WS_LAEMP_EVO_2022-06-03_NP	E318	03-Jun-2022	09-Jun-2022	----	----		09-Jun-2022	28 days	6 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_ALUSM_WS_LAEMP_EVO_2022-06-03_NP	E372-U	03-Jun-2022	07-Jun-2022	----	----		10-Jun-2022	28 days	7 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_BOCKRD_WS_LAEMP_EVO_2022-06-03_NP	E372-U	03-Jun-2022	07-Jun-2022	----	----		10-Jun-2022	28 days	7 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_MI25_WS_LAEMP_EVO_2022-06-03_NP	E372-U	03-Jun-2022	07-Jun-2022	----	----		10-Jun-2022	28 days	7 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_TRIP_WS_LAEMP_EVO_2022-06-03_NP	E372-U	03-Jun-2022	07-Jun-2022	----	----		10-Jun-2022	28 days	7 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_ALUSM_WS_LAEMP_EVO_2022-06-03_NP	E421.Cr-L	03-Jun-2022	09-Jun-2022	----	----		09-Jun-2022	180 days	6 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_BOCKRD_WS_LAEMP_EVO_2022-06-03_NP	E421.Cr-L	03-Jun-2022	09-Jun-2022	----	----		09-Jun-2022	180 days	6 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_MI25_WS_LAEMP_EVO_2022-06-03_NP	E421.Cr-L	03-Jun-2022	09-Jun-2022	----	----		09-Jun-2022	180 days	6 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_TRIP_WS_LAEMP_EVO_2022-06-03_NP	E421.Cr-L	03-Jun-2022	09-Jun-2022	----	----		09-Jun-2022	180 days	6 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_ALUSM_WS_LAEMP_EVO_2022-06-03_NP	E509	03-Jun-2022	09-Jun-2022	----	----		09-Jun-2022	28 days	6 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_BOCKRD_WS_LAEMP_EVO_2022-06-03_NP	E509	03-Jun-2022	09-Jun-2022	----	----		09-Jun-2022	28 days	6 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_MI25_WS_LAEMP_EVO_2022-06-03_NP	E509	03-Jun-2022	09-Jun-2022	----	----		09-Jun-2022	28 days	6 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_TRIP_WS_LAEMP_EVO_2022-06-03_NP	E509	03-Jun-2022	09-Jun-2022	----	----		09-Jun-2022	28 days	6 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_ALUSM_WS_LAEMP_EVO_2022-06-03_NP	E421	03-Jun-2022	09-Jun-2022	----	----		09-Jun-2022	180 days	6 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_BOCKRD_WS_LAEMP_EVO_2022-06-03_NP	E421	03-Jun-2022	09-Jun-2022	----	----		09-Jun-2022	180 days	6 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_MI25_WS_LAEMP_EVO_2022-06-03_NP	E421	03-Jun-2022	09-Jun-2022	----	----		09-Jun-2022	180 days	6 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_TRIP_WS_LAEMP_EVO_2022-06-03_NP	E421	03-Jun-2022	09-Jun-2022	----	----		09-Jun-2022	180 days	6 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_ALUSM_WS_LAEMP_EVO_2022-06-03_NP	E358-L	03-Jun-2022	13-Jun-2022	----	----		14-Jun-2022	28 days	11 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_BOCKRD_WS_LAEMP_EVO_2022-06-03_NP	E358-L	03-Jun-2022	13-Jun-2022	----	----		14-Jun-2022	28 days	11 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_MI25_WS_LAEMP_EVO_2022-06-03_NP	E358-L	03-Jun-2022	13-Jun-2022	----	----		14-Jun-2022	28 days	11 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_TRIP_WS_LAEMP_EVO_2022-06-03_NP	E358-L	03-Jun-2022	13-Jun-2022	----	----		14-Jun-2022	28 days	11 days	✓	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_ALUSM_WS_LAEMP_EVO_2022-06-03_NP	E355-L	03-Jun-2022	13-Jun-2022	----	----		14-Jun-2022	28 days	11 days	✓	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_BOCKRD_WS_LAEMP_EVO_2022-06-03_NP	E355-L	03-Jun-2022	13-Jun-2022	----	----		14-Jun-2022	28 days	11 days	✓	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_MI25_WS_LAEMP_EVO_2022-06-03_NP	E355-L	03-Jun-2022	13-Jun-2022	----	----		14-Jun-2022	28 days	11 days	✓	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_TRIP_WS_LAEMP_EVO_2022-06-03_NP	E355-L	03-Jun-2022	13-Jun-2022	----	----		14-Jun-2022	28 days	11 days	✓	
Physical Tests : Acidity by Titration											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-06-03_NP	E283	03-Jun-2022	----	----	----		08-Jun-2022	14 days	5 days	✓	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Acidity by Titration											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-06-03_NP	E283	03-Jun-2022	----	----	----		08-Jun-2022	14 days	5 days	✓	
Physical Tests : Acidity by Titration											
HDPE RG_MI25_WS_LAEMP_EVO_2022-06-03_NP	E283	03-Jun-2022	----	----	----		08-Jun-2022	14 days	5 days	✓	
Physical Tests : Acidity by Titration											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-06-03_NP	E283	03-Jun-2022	----	----	----		08-Jun-2022	14 days	5 days	✓	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-06-03_NP	E290	03-Jun-2022	----	----	----		08-Jun-2022	14 days	5 days	✓	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-06-03_NP	E290	03-Jun-2022	----	----	----		08-Jun-2022	14 days	5 days	✓	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_MI25_WS_LAEMP_EVO_2022-06-03_NP	E290	03-Jun-2022	----	----	----		08-Jun-2022	14 days	5 days	✓	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-06-03_NP	E290	03-Jun-2022	----	----	----		08-Jun-2022	14 days	5 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-06-03_NP	E100	03-Jun-2022	----	----	----		08-Jun-2022	28 days	5 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-06-03_NP	E100	03-Jun-2022	----	----	----		08-Jun-2022	28 days	5 days	✓	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Conductivity in Water											
HDPE RG_MI25_WS_LAEMP_EVO_2022-06-03_NP	E100	03-Jun-2022	----	----	----		08-Jun-2022	28 days	5 days		✓
Physical Tests : Conductivity in Water											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-06-03_NP	E100	03-Jun-2022	----	----	----		08-Jun-2022	28 days	5 days		✓
Physical Tests : ORP by Electrode											
HDPE RG_MI25_WS_LAEMP_EVO_2022-06-03_NP	E125	03-Jun-2022	----	----	----		13-Jun-2022	0.25 hrs	241 hrs		* EHTR-FM
Physical Tests : ORP by Electrode											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-06-03_NP	E125	03-Jun-2022	----	----	----		13-Jun-2022	0.25 hrs	243 hrs		* EHTR-FM
Physical Tests : ORP by Electrode											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-06-03_NP	E125	03-Jun-2022	----	----	----		13-Jun-2022	0.25 hrs	244 hrs		* EHTR-FM
Physical Tests : ORP by Electrode											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-06-03_NP	E125	03-Jun-2022	----	----	----		13-Jun-2022	0.25 hrs	247 hrs		* EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_MI25_WS_LAEMP_EVO_2022-06-03_NP	E108	03-Jun-2022	----	----	----		08-Jun-2022	0.25 hrs	118 hrs		* EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-06-03_NP	E108	03-Jun-2022	----	----	----		08-Jun-2022	0.25 hrs	120 hrs		* EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-06-03_NP	E108	03-Jun-2022	----	----	----		08-Jun-2022	0.25 hrs	121 hrs		* EHTR-FM



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
Rec	Actual	Rec		Actual						
Physical Tests : pH by Meter										
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-06-03_NP	E108	03-Jun-2022	----	----	----		08-Jun-2022	0.25 hrs	124 hrs	* EHTR-FM
Physical Tests : TDS by Gravimetry										
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-06-03_NP	E162	03-Jun-2022	----	----	----		09-Jun-2022	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-06-03_NP	E162	03-Jun-2022	----	----	----		09-Jun-2022	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE RG_MI25_WS_LAEMP_EVO_2022-06-03_NP	E162	03-Jun-2022	----	----	----		09-Jun-2022	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE RG_TRIP_WS_LAEMP_EVO_2022-06-03_NP	E162	03-Jun-2022	----	----	----		09-Jun-2022	7 days	6 days	✓
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-06-03_NP	E160-L	03-Jun-2022	----	----	----		09-Jun-2022	7 days	6 days	✓
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-06-03_NP	E160-L	03-Jun-2022	----	----	----		09-Jun-2022	7 days	6 days	✓
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE RG_MI25_WS_LAEMP_EVO_2022-06-03_NP	E160-L	03-Jun-2022	----	----	----		09-Jun-2022	7 days	6 days	✓
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE RG_TRIP_WS_LAEMP_EVO_2022-06-03_NP	E160-L	03-Jun-2022	----	----	----		09-Jun-2022	7 days	6 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Turbidity by Nephelometry											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-06-03_NP	E121	03-Jun-2022	----	----	----		05-Jun-2022	3 days	2 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-06-03_NP	E121	03-Jun-2022	----	----	----		05-Jun-2022	3 days	2 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_MI25_WS_LAEMP_EVO_2022-06-03_NP	E121	03-Jun-2022	----	----	----		05-Jun-2022	3 days	2 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-06-03_NP	E121	03-Jun-2022	----	----	----		05-Jun-2022	3 days	2 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_ALUSM_WS_LAEMP_EVO_2022-06-03_NP	E420.Cr-L	03-Jun-2022	----	----	----		09-Jun-2022	180 days	6 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_MI25_WS_LAEMP_EVO_2022-06-03_NP	E420.Cr-L	03-Jun-2022	----	----	----		09-Jun-2022	180 days	6 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_TRIP_WS_LAEMP_EVO_2022-06-03_NP	E420.Cr-L	03-Jun-2022	----	----	----		09-Jun-2022	180 days	6 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_BOCKRD_WS_LAEMP_EVO_2022-06-03_NP	E420.Cr-L	03-Jun-2022	----	----	----		09-Jun-2022	180 days	7 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial - total (lab preserved) RG_ALUSM_WS_LAEMP_EVO_2022-06-03_NP	E508	03-Jun-2022	----	----	----		09-Jun-2022	28 days	6 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_BOCKRD_WS_LAEMP_EVO_2022-06-03_NP	E508	03-Jun-2022	----	----	----		09-Jun-2022	28 days	6 days	✓	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_MI25_WS_LAEMP_EVO_2022-06-03_NP	E508	03-Jun-2022	----	----	----		09-Jun-2022	28 days	6 days	✓	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_TRIP_WS_LAEMP_EVO_2022-06-03_NP	E508	03-Jun-2022	----	----	----		09-Jun-2022	28 days	6 days	✓	
Total Metals : Total Metals in Water by CRC ICPMS											
HDPE total (nitric acid) RG_ALUSM_WS_LAEMP_EVO_2022-06-03_NP	E420	03-Jun-2022	----	----	----		09-Jun-2022	180 days	6 days	✓	
Total Metals : Total Metals in Water by CRC ICPMS											
HDPE total (nitric acid) RG_MI25_WS_LAEMP_EVO_2022-06-03_NP	E420	03-Jun-2022	----	----	----		09-Jun-2022	180 days	6 days	✓	
Total Metals : Total Metals in Water by CRC ICPMS											
HDPE total (nitric acid) RG_TRIP_WS_LAEMP_EVO_2022-06-03_NP	E420	03-Jun-2022	----	----	----		09-Jun-2022	180 days	6 days	✓	
Total Metals : Total Metals in Water by CRC ICPMS											
HDPE total (nitric acid) RG_BOCKRD_WS_LAEMP_EVO_2022-06-03_NP	E420	03-Jun-2022	----	----	----		09-Jun-2022	180 days	7 days	✓	

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended
 Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water** Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
Analytical Methods							
Laboratory Duplicates (DUP)							
Acidity by Titration	E283	515615	2	40	5.0	5.0	✔
Alkalinity Species by Titration	E290	515621	2	40	5.0	5.0	✔
Ammonia by Fluorescence	E298	519180	1	20	5.0	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	512159	2	35	5.7	5.0	✔
Chloride in Water by IC (Low Level)	E235.Cl-L	512160	2	35	5.7	5.0	✔
Conductivity in Water	E100	515620	2	40	5.0	5.0	✔
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	516742	1	20	5.0	5.0	✔
Dissolved Mercury in Water by CVAAS	E509	518006	1	20	5.0	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	516741	2	20	10.0	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	521969	1	15	6.6	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	512447	1	20	5.0	5.0	✔
Fluoride in Water by IC	E235.F	512163	2	39	5.1	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	512161	2	36	5.5	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	512162	2	36	5.5	5.0	✔
ORP by Electrode	E125	517367	1	20	5.0	5.0	✔
pH by Meter	E108	515619	2	40	5.0	5.0	✔
Sulfate in Water by IC	E235.SO4	512158	2	39	5.1	5.0	✔
TDS by Gravimetry	E162	515760	1	20	5.0	5.0	✔
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	516357	1	20	5.0	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	514941	1	20	5.0	5.0	✔
Total Mercury in Water by CVAAS	E508	516365	1	12	8.3	5.0	✔
Total Metals in Water by CRC ICPMS	E420	516356	1	20	5.0	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	521968	1	15	6.6	5.0	✔
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	513720	1	20	5.0	5.0	✔
Turbidity by Nephelometry	E121	511691	1	19	5.2	5.0	✔
Laboratory Control Samples (LCS)							
Acidity by Titration	E283	515615	2	40	5.0	5.0	✔
Alkalinity Species by Titration	E290	515621	2	40	5.0	5.0	✔
Ammonia by Fluorescence	E298	519180	1	20	5.0	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	512159	2	35	5.7	5.0	✔
Chloride in Water by IC (Low Level)	E235.Cl-L	512160	2	35	5.7	5.0	✔
Conductivity in Water	E100	515620	2	40	5.0	5.0	✔
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	516742	1	20	5.0	5.0	✔
Dissolved Mercury in Water by CVAAS	E509	518006	1	20	5.0	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	516741	1	20	5.0	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	521969	1	15	6.6	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	512447	1	20	5.0	5.0	✔



Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
<i>Analytical Methods</i>							
Laboratory Control Samples (LCS) - Continued							
Fluoride in Water by IC	E235.F	512163	2	39	5.1	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	512161	2	36	5.5	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	512162	2	36	5.5	5.0	✓
ORP by Electrode	E125	517367	1	20	5.0	5.0	✓
pH by Meter	E108	515619	2	40	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	512158	2	39	5.1	5.0	✓
TDS by Gravimetry	E162	515760	1	20	5.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	516357	1	20	5.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	514941	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	516365	1	12	8.3	5.0	✓
Total Metals in Water by CRC ICPMS	E420	516356	1	20	5.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	521968	1	15	6.6	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	513720	1	20	5.0	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	515746	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121	511691	1	19	5.2	5.0	✓
Method Blanks (MB)							
Acidity by Titration	E283	515615	2	40	5.0	5.0	✓
Alkalinity Species by Titration	E290	515621	2	40	5.0	5.0	✓
Ammonia by Fluorescence	E298	519180	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	512159	2	35	5.7	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	512160	2	35	5.7	5.0	✓
Conductivity in Water	E100	515620	2	40	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	516742	1	20	5.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	518006	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	516741	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	521969	1	15	6.6	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	512447	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	512163	2	39	5.1	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	512161	2	36	5.5	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	512162	2	36	5.5	5.0	✓
Sulfate in Water by IC	E235.SO4	512158	2	39	5.1	5.0	✓
TDS by Gravimetry	E162	515760	1	20	5.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	516357	1	20	5.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	514941	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	516365	1	12	8.3	5.0	✓
Total Metals in Water by CRC ICPMS	E420	516356	1	20	5.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	521968	1	15	6.6	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	513720	1	20	5.0	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	515746	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121	511691	1	19	5.2	5.0	✓



Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
<i>Analytical Methods</i>							
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	519180	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	512159	2	35	5.7	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	512160	2	35	5.7	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	516742	1	20	5.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	518006	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	516741	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	521969	1	15	6.6	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	512447	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	512163	2	39	5.1	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	512161	2	36	5.5	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	512162	2	36	5.5	5.0	✓
Sulfate in Water by IC	E235.SO4	512158	2	39	5.1	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	516357	1	20	5.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	514941	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	516365	1	12	8.3	5.0	✓
Total Metals in Water by CRC ICPMS	E420	516356	1	20	5.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	521968	1	15	6.6	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	513720	1	20	5.0	5.0	✓



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 Calgary - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 Calgary - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 Calgary - Environmental	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
ORP by Electrode	E125 Calgary - Environmental	Water	ASTM D1498 (mod)	Oxidation reduction potential is reported as the oxidation-reduction potential of the platinum metal-reference electrode employed, measured in mV. For high accuracy test results, it is recommended that this analysis be conducted in the field.
TSS by Gravimetry (Low Level)	E160-L Calgary - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 Calgary - Environmental	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC (Low Level)	E235.Cl-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Acidity by Titration	E283 Calgary - Environmental	Water	APHA 2310 B (mod)	Acidity is determined by potentiometric titration to pH endpoint of 8.3



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Alkalinity Species by Titration	E290 Calgary - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 Calgary - Environmental	Water	J. Environ. Monit., 2005, 7, 37-42 (mod)	Ammonia in water is analyzed by flow-injection analysis with fluorescence detection after reaction with orthophthaldialdehyde (OPA).
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 Calgary - Environmental	Water	APHA 4500-Norg D (mod)	Total Kjeldahl Nitrogen is determined using block digestion followed by flow-injection analysis with fluorescence detection.
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L Calgary - Environmental	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Dissolved Organic Carbon by Combustion (Low Level)	E358-L Calgary - Environmental	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U Calgary - Environmental	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U Calgary - Environmental	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Total Metals in Water by CRC ICPMS	E420 Vancouver - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L Vancouver - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS.
Dissolved Metals in Water by CRC ICPMS	E421 Vancouver - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L Vancouver - Environmental	Water	APHA 3030 B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS
Total Mercury in Water by CVAAS	E508 Vancouver - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS
Dissolved Mercury in Water by CVAAS	E509 Vancouver - Environmental	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
Dissolved Hardness (Calculated)	EC100 Vancouver - Environmental	Water	APHA 2340B	"Hardness (as CaCO ₃), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Ion Balance using Dissolved Metals	EC101 Calgary - Environmental	Water	APHA 1030E	Cation Sum, Anion Sum, and Ion Balance are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present. Ion Balance cannot be calculated accurately for waters with very low electrical conductivity (EC).

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 Calgary - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 Calgary - Environmental	Water	APHA 4500-Norg D (mod)	Samples are digested using block digestion with Copper Sulfate Digestion Reagent.
Preparation for Total Organic Carbon by Combustion	EP355 Calgary - Environmental	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon for Combustion	EP358 Calgary - Environmental	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Phosphorus in water	EP372 Calgary - Environmental	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Dissolved Metals Water Filtration	EP421 Vancouver - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO ₃ .
Dissolved Mercury Water Filtration	EP509	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.

Page : 21 of 21
Work Order : CG2206947
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



<i>Preparation Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
	Vancouver - Environmental			



QUALITY CONTROL REPORT

Work Order : CG2206947
Client : Teck Coal Limited
Contact : Mike Pope
Address : RR#1 HWY#3
Sparwood BC Canada V0B 2G1
Telephone : ---
Project : REGIONAL EFFECTS PROGRAM
PO : VPO00816101
C-O-C number : MAY/JUNE EVO LAEMP 2022 WS
Sampler : ED
Site : ---
Quote number : Teck Coal Master Quote
No. of samples received : 4
No. of samples analysed : 4

Page : 1 of 18
Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
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Date Samples Received : 04-Jun-2022 10:00
Date Analysis Commenced : 05-Jun-2022
Issue Date : 15-Jun-2022 15:18

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
Matrix Spike (MS) Report; Recovery and Data Quality Objectives
Method Blank (MB) Report; Recovery and Data Quality Objectives
Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Table with 3 columns: Signatories, Position, Laboratory Department. Lists names like Angela Ren, Anthony Calero, Benjamin Oke, Dan Gebert, Dee Lee, Elke Tabora, Harpreet Chawla, Kim Jensen, Kyle Chang, Owen Cheng, Ruifang Zheng, Sara Niroomand, Shirley Li and their respective roles and departments.

Page : 2 of 18
Work Order : CG2206947
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 511691)											
CG2206944-001	Anonymous	turbidity	----	E121	0.10	NTU	0.69	0.73	0.04	Diff <2x LOR	----
Physical Tests (QC Lot: 515615)											
CG2206942-001	Anonymous	acidity (as CaCO3)	----	E283	2.0	mg/L	17.9	16.9	1.0	Diff <2x LOR	----
Physical Tests (QC Lot: 515616)											
CG2206947-003	RG_MI25_WS_LAEMP_EV O_2022-06-03_NP	acidity (as CaCO3)	----	E283	2.0	mg/L	<2.0	<2.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 515619)											
CG2206942-001	Anonymous	pH	----	E108	0.10	pH units	7.48	7.47	0.134%	4%	----
Physical Tests (QC Lot: 515620)											
CG2206942-001	Anonymous	conductivity	----	E100	2.0	µS/cm	1530	1540	0.522%	10%	----
Physical Tests (QC Lot: 515621)											
CG2206942-001	Anonymous	alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	319	316	1.10%	20%	----
		alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	319	316	1.10%	20%	----
Physical Tests (QC Lot: 515622)											
CG2206947-003	RG_MI25_WS_LAEMP_EV O_2022-06-03_NP	conductivity	----	E100	2.0	µS/cm	202	199	1.30%	10%	----
Physical Tests (QC Lot: 515623)											
CG2206947-003	RG_MI25_WS_LAEMP_EV O_2022-06-03_NP	pH	----	E108	0.10	pH units	8.09	8.10	0.124%	4%	----
Physical Tests (QC Lot: 515624)											
CG2206947-003	RG_MI25_WS_LAEMP_EV O_2022-06-03_NP	alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	102	98.5	3.10%	20%	----
		alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	102	98.5	3.10%	20%	----
Physical Tests (QC Lot: 515760)											
CG2206946-002	Anonymous	solids, total dissolved [TDS]	----	E162	10	mg/L	<10	<10	0	Diff <2x LOR	----
Physical Tests (QC Lot: 517367)											
CG2206947-001	RG_BOCKRD_WS_LAEM P_EVO_2022-06-03_NP	oxidation-reduction potential [ORP]	----	E125	0.10	mV	478	472	1.30%	15%	----
Anions and Nutrients (QC Lot: 512158)											
CG2206945-001	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	7.50	mg/L	19.4	20.1	0.72	Diff <2x LOR	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 512159)											
CG2206945-001	Anonymous	bromide	24959-67-9	E235.Br-L	1.25	mg/L	<1.25	<1.25	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 512160)											
CG2206945-001	Anonymous	chloride	16887-00-6	E235.Cl-L	2.50	mg/L	4400	4260	3.12%	20%	----
Anions and Nutrients (QC Lot: 512161)											
CG2206945-001	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	0.125	mg/L	265	262	0.858%	20%	----
Anions and Nutrients (QC Lot: 512162)											
CG2206945-001	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.0250	mg/L	5.38	5.23	2.78%	20%	----
Anions and Nutrients (QC Lot: 512163)											
CG2206945-001	Anonymous	fluoride	16984-48-8	E235.F	0.500	mg/L	0.746	0.618	0.128	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 512167)											
CG2206941-001	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	127	130	2.61%	20%	----
Anions and Nutrients (QC Lot: 512168)											
CG2206941-001	Anonymous	bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 512169)											
CG2206941-001	Anonymous	chloride	16887-00-6	E235.Cl-L	0.10	mg/L	0.90	0.91	0.006	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 512170)											
CG2206941-001	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	6.46	6.60	2.06%	20%	----
Anions and Nutrients (QC Lot: 512171)											
CG2206941-001	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 512172)											
CG2206941-001	Anonymous	fluoride	16984-48-8	E235.F	0.020	mg/L	0.150	0.152	0.002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 512447)											
CG2206941-001	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0026	0.0023	0.0002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 513720)											
CG2206946-010	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0042	0.0042	0.00008	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 514941)											
CG2206946-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.500	mg/L	<0.500	<0.500	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 519180)											
CG2206947-001	RG_BOCKRD_WS_LAEM P_EVO_2022-06-03_NP	ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 521968)											
CG2206946-001	Anonymous	carbon, total organic [TOC]	----	E355-L	0.50	mg/L	2.46	2.39	0.07	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 521969)											
CG2206946-001	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	2.33	2.52	0.19	Diff <2x LOR	----
Total Metals (QC Lot: 516356)											



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (QC Lot: 516356) - continued											
CG2206906-001	Anonymous	aluminum, total	7429-90-5	E420	0.0060	mg/L	<0.0060	<0.0060	0	Diff <2x LOR	----
		antimony, total	7440-36-0	E420	0.00020	mg/L	0.00254	0.00258	1.61%	20%	----
		arsenic, total	7440-38-2	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		barium, total	7440-39-3	E420	0.00020	mg/L	0.0209	0.0216	3.17%	20%	----
		beryllium, total	7440-41-7	E420	0.000040	mg/L	<0.040 µg/L	<0.000040	0	Diff <2x LOR	----
		bismuth, total	7440-69-9	E420	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		boron, total	7440-42-8	E420	0.020	mg/L	0.099	0.100	0.00005	Diff <2x LOR	----
		cadmium, total	7440-43-9	E420	0.0000100	mg/L	1.76 µg/L	0.00179	1.89%	20%	----
		calcium, total	7440-70-2	E420	0.100	mg/L	574	577	0.404%	20%	----
		cobalt, total	7440-48-4	E420	0.00020	mg/L	54.3 µg/L	0.0551	1.44%	20%	----
		copper, total	7440-50-8	E420	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		iron, total	7439-89-6	E420	0.020	mg/L	<0.020	<0.020	0	Diff <2x LOR	----
		lead, total	7439-92-1	E420	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		lithium, total	7439-93-2	E420	0.0020	mg/L	1.03	1.01	2.30%	20%	----
		magnesium, total	7439-95-4	E420	0.0100	mg/L	244	243	0.455%	20%	----
		manganese, total	7439-96-5	E420	0.00020	mg/L	0.313	0.313	0.0455%	20%	----
		molybdenum, total	7439-98-7	E420	0.000100	mg/L	0.00439	0.00448	1.91%	20%	----
		nickel, total	7440-02-0	E420	0.00100	mg/L	0.452	0.452	0.0268%	20%	----
		potassium, total	7440-09-7	E420	0.100	mg/L	16.2	16.1	0.644%	20%	----
		selenium, total	7782-49-2	E420	0.000100	mg/L	91.3 µg/L	0.0888	2.74%	20%	----
		silicon, total	7440-21-3	E420	0.20	mg/L	3.14	3.04	3.07%	20%	----
		silver, total	7440-22-4	E420	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		sodium, total	7440-23-5	E420	0.100	mg/L	31.8	31.2	2.16%	20%	----
		strontium, total	7440-24-6	E420	0.00040	mg/L	1.57	1.59	1.63%	20%	----
		sulfur, total	7704-34-9	E420	1.00	mg/L	497	484	2.75%	20%	----
		thallium, total	7440-28-0	E420	0.000020	mg/L	0.000155	0.000156	0.000002	Diff <2x LOR	----
		tin, total	7440-31-5	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		titanium, total	7440-32-6	E420	0.00060	mg/L	<0.00060	<0.00060	0	Diff <2x LOR	----
		uranium, total	7440-61-1	E420	0.000020	mg/L	0.0301	0.0294	2.14%	20%	----
		vanadium, total	7440-62-2	E420	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		zinc, total	7440-66-6	E420	0.0060	mg/L	0.116	0.116	0.0599%	20%	----
Total Metals (QC Lot: 516357)											
CG2206906-001	Anonymous	chromium, total	7440-47-3	E420.Cr-L	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Total Metals (QC Lot: 516365)											
CG2206946-010	Anonymous	mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 516741)											
CG2206939-020	Anonymous	selenium, dissolved	7782-49-2	E421	0.000050	mg/L	10.3 µg/L	0.00990	4.39%	20%	----
CG2206939-020	Anonymous	aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0026	0.0028	0.0002	Diff <2x LOR	----
		antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00026	0.00028	0.00002	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00153	0.00163	6.32%	20%	----
		barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0141	0.0146	3.47%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.000020	mg/L	<0.020 µg/L	<0.000020	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.010	mg/L	0.032	0.030	0.002	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	0.0112 µg/L	0.0000074	0.0000037	Diff <2x LOR	----
		calcium, dissolved	7440-70-2	E421	0.050	mg/L	222	221	0.759%	20%	----
		cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	0.48 µg/L	0.00049	0.000007	Diff <2x LOR	----
		copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		iron, dissolved	7439-89-6	E421	0.010	mg/L	0.209	0.214	2.72%	20%	----
		lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.129	0.121	6.47%	20%	----
		magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	151	153	1.19%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.389	0.398	2.32%	20%	----
		molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00298	0.00292	1.82%	20%	----
		nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00242	0.00249	0.00007	Diff <2x LOR	----
		potassium, dissolved	7440-09-7	E421	0.050	mg/L	4.76	4.97	4.36%	20%	----
		silicon, dissolved	7440-21-3	E421	0.050	mg/L	3.02	2.94	2.54%	20%	----
		silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E421	0.050	mg/L	11.3	11.9	4.81%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.602	0.605	0.535%	20%	----
		sulfur, dissolved	7704-34-9	E421	0.50	mg/L	282	291	3.17%	20%	----
		thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00764	0.00782	2.24%	20%	----
		vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	0.00079	0.00080	0.00002	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 516742)											
CG2206939-020	Anonymous	chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 518006)											
CG2206939-019	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	0.0000174	0.0000170	0.0000004	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 511691)						
turbidity	---	E121	0.1	NTU	<0.10	---
Physical Tests (QCLot: 515615)						
acidity (as CaCO3)	---	E283	2	mg/L	<2.0	---
Physical Tests (QCLot: 515616)						
acidity (as CaCO3)	---	E283	2	mg/L	<2.0	---
Physical Tests (QCLot: 515620)						
conductivity	---	E100	1	µS/cm	<1.0	---
Physical Tests (QCLot: 515621)						
alkalinity, bicarbonate (as CaCO3)	---	E290	1	mg/L	<1.0	---
alkalinity, carbonate (as CaCO3)	---	E290	1	mg/L	<1.0	---
alkalinity, hydroxide (as CaCO3)	---	E290	1	mg/L	<1.0	---
alkalinity, total (as CaCO3)	---	E290	1	mg/L	1.7	---
Physical Tests (QCLot: 515622)						
conductivity	---	E100	1	µS/cm	<1.0	---
Physical Tests (QCLot: 515624)						
alkalinity, bicarbonate (as CaCO3)	---	E290	1	mg/L	<1.0	---
alkalinity, carbonate (as CaCO3)	---	E290	1	mg/L	<1.0	---
alkalinity, hydroxide (as CaCO3)	---	E290	1	mg/L	<1.0	---
alkalinity, total (as CaCO3)	---	E290	1	mg/L	1.2	---
Physical Tests (QCLot: 515746)						
solids, total suspended [TSS]	---	E160-L	1	mg/L	<1.0	---
Physical Tests (QCLot: 515760)						
solids, total dissolved [TDS]	---	E162	10	mg/L	<10	---
Anions and Nutrients (QCLot: 512158)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	---
Anions and Nutrients (QCLot: 512159)						
bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	---
Anions and Nutrients (QCLot: 512160)						
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	---
Anions and Nutrients (QCLot: 512161)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	---
Anions and Nutrients (QCLot: 512162)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	---



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 512163)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	---
Anions and Nutrients (QCLot: 512167)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	---
Anions and Nutrients (QCLot: 512168)						
bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	---
Anions and Nutrients (QCLot: 512169)						
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	---
Anions and Nutrients (QCLot: 512170)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	---
Anions and Nutrients (QCLot: 512171)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	---
Anions and Nutrients (QCLot: 512172)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	---
Anions and Nutrients (QCLot: 512447)						
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	---
Anions and Nutrients (QCLot: 513720)						
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	---
Anions and Nutrients (QCLot: 514941)						
Kjeldahl nitrogen, total [TKN]	---	E318	0.05	mg/L	<0.050	---
Anions and Nutrients (QCLot: 519180)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	---
Organic / Inorganic Carbon (QCLot: 521968)						
carbon, total organic [TOC]	---	E355-L	0.5	mg/L	<0.50	---
Organic / Inorganic Carbon (QCLot: 521969)						
carbon, dissolved organic [DOC]	---	E358-L	0.5	mg/L	<0.50	---
Total Metals (QCLot: 516356)						
aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	---
antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	---
arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	---
barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	---
beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	---
bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	---
boron, total	7440-42-8	E420	0.01	mg/L	<0.010	---
cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	---
calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	---
cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	---



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 516356) - continued						
copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	---
iron, total	7439-89-6	E420	0.01	mg/L	<0.010	---
lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	---
lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	---
magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	---
manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	---
molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	---
nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	---
potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	---
selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	---
silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	---
silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	---
sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	---
strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	---
sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	---
thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	---
tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	---
titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	---
uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	---
vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	---
zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	---
Total Metals (QCLot: 516357)						
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	<0.00010	---
Total Metals (QCLot: 516365)						
mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	---
Dissolved Metals (QCLot: 516741)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	---
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	---
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	---
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	---
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	---
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	---
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	---
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	---
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	---
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	---



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 516741) - continued						
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
Dissolved Metals (QCLot: 516742)						
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	<0.00010	----
Dissolved Metals (QCLot: 518006)						
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Physical Tests (QCLot: 511691)									
turbidity	---	E121	0.1	NTU	200 NTU	100	85.0	115	---
Physical Tests (QCLot: 515615)									
acidity (as CaCO3)	---	E283	2	mg/L	50 mg/L	104	85.0	115	---
Physical Tests (QCLot: 515616)									
acidity (as CaCO3)	---	E283	2	mg/L	50 mg/L	106	85.0	115	---
Physical Tests (QCLot: 515619)									
pH	---	E108	---	pH units	7 pH units	99.6	98.6	101	---
Physical Tests (QCLot: 515620)									
conductivity	---	E100	1	µS/cm	146.9 µS/cm	110	90.0	110	---
Physical Tests (QCLot: 515621)									
alkalinity, total (as CaCO3)	---	E290	1	mg/L	500 mg/L	105	85.0	115	---
Physical Tests (QCLot: 515622)									
conductivity	---	E100	1	µS/cm	146.9 µS/cm	109	90.0	110	---
Physical Tests (QCLot: 515623)									
pH	---	E108	---	pH units	7 pH units	99.6	98.6	101	---
Physical Tests (QCLot: 515624)									
alkalinity, total (as CaCO3)	---	E290	1	mg/L	500 mg/L	106	85.0	115	---
Physical Tests (QCLot: 515746)									
solids, total suspended [TSS]	---	E160-L	1	mg/L	150 mg/L	94.3	85.0	115	---
Physical Tests (QCLot: 515760)									
solids, total dissolved [TDS]	---	E162	10	mg/L	1000 mg/L	97.3	85.0	115	---
Physical Tests (QCLot: 517367)									
oxidation-reduction potential [ORP]	---	E125	---	mV	220 mV	97.6	95.4	104	---
Anions and Nutrients (QCLot: 512158)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	102	90.0	110	---
Anions and Nutrients (QCLot: 512159)									
bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	101	85.0	115	---
Anions and Nutrients (QCLot: 512160)									
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	101	90.0	110	---
Anions and Nutrients (QCLot: 512161)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	104	90.0	110	---
Anions and Nutrients (QCLot: 512162)									



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				Qualifier
					Spike Concentration	Recovery (%) LCS	Recovery Limits (%)		
						Low	High		
Anions and Nutrients (QCLot: 512162) - continued									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	104	90.0	110	----
Anions and Nutrients (QCLot: 512163)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	99.9	90.0	110	----
Anions and Nutrients (QCLot: 512167)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	104	90.0	110	----
Anions and Nutrients (QCLot: 512168)									
bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	90.3	85.0	115	----
Anions and Nutrients (QCLot: 512169)									
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	94.3	90.0	110	----
Anions and Nutrients (QCLot: 512170)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	98.1	90.0	110	----
Anions and Nutrients (QCLot: 512171)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	99.2	90.0	110	----
Anions and Nutrients (QCLot: 512172)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	97.9	90.0	110	----
Anions and Nutrients (QCLot: 512447)									
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.02 mg/L	100	80.0	120	----
Anions and Nutrients (QCLot: 513720)									
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	8.02 mg/L	102	80.0	120	----
Anions and Nutrients (QCLot: 514941)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	99.7	75.0	125	----
Anions and Nutrients (QCLot: 519180)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	99.4	85.0	115	----
Organic / Inorganic Carbon (QCLot: 521968)									
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	88.7	80.0	120	----
Organic / Inorganic Carbon (QCLot: 521969)									
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	94.8	80.0	120	----
Total Metals (QCLot: 516356)									
aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	94.3	80.0	120	----
antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	101	80.0	120	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	96.1	80.0	120	----
barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	97.5	80.0	120	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	93.7	80.0	120	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	96.3	80.0	120	----
boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	91.2	80.0	120	----



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Total Metals (QCLot: 516356) - continued									
cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	95.0	80.0	120	----
calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	94.9	80.0	120	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	95.1	80.0	120	----
copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	95.0	80.0	120	----
iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	93.2	80.0	120	----
lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	95.4	80.0	120	----
lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	92.5	80.0	120	----
magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	95.3	80.0	120	----
manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	96.7	80.0	120	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	96.7	80.0	120	----
nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	93.7	80.0	120	----
potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	97.3	80.0	120	----
selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	95.8	80.0	120	----
silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	97.7	80.0	120	----
silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	92.1	80.0	120	----
sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	99.2	80.0	120	----
strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	97.3	80.0	120	----
sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	104	80.0	120	----
thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	98.7	80.0	120	----
tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	92.1	80.0	120	----
titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	92.9	80.0	120	----
uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	99.3	80.0	120	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	97.3	80.0	120	----
zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	93.7	80.0	120	----
Total Metals (QCLot: 516357)									
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	0.25 mg/L	95.0	80.0	120	----
Total Metals (QCLot: 516365)									
mercury, total	7439-97-6	E508	0.000005	mg/L	0.0001 mg/L	95.1	80.0	120	----
Dissolved Metals (QCLot: 516741)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	99.1	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	96.8	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	99.5	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	96.7	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	102	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	98.5	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	99.8	80.0	120	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Dissolved Metals (QCLot: 516741) - continued									
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	95.6	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	98.1	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	95.4	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	95.0	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	104	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	96.7	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	97.7	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	97.6	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	97.5	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	102	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	97.2	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	97.4	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	99.8	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	97.3	80.0	120	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	89.6	80.0	120	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	103	80.0	120	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	102	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	99.1	80.0	120	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	98.8	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	96.4	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	90.1	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	99.6	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	98.2	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	96.0	80.0	120	----
Dissolved Metals (QCLot: 516742)									
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	0.25 mg/L	98.5	80.0	120	----
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	97.2	80.0	120	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level $\geq 1x$ spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 512158)										
CG2206945-002	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	106 mg/L	100 mg/L	106	75.0	125	----
Anions and Nutrients (QCLot: 512159)										
CG2206945-002	Anonymous	bromide	24959-67-9	E235.Br-L	0.501 mg/L	0.5 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 512160)										
CG2206945-002	Anonymous	chloride	16887-00-6	E235.Cl-L	105 mg/L	100 mg/L	105	75.0	125	----
Anions and Nutrients (QCLot: 512161)										
CG2206945-002	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	2.64 mg/L	2.5 mg/L	106	75.0	125	----
Anions and Nutrients (QCLot: 512162)										
CG2206945-002	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.531 mg/L	0.5 mg/L	106	75.0	125	----
Anions and Nutrients (QCLot: 512163)										
CG2206945-002	Anonymous	fluoride	16984-48-8	E235.F	1.00 mg/L	1 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 512167)										
CG2206947-004	RG_TRIP_WS_LAEMP_EV O_2022-06-03_NP	sulfate (as SO4)	14808-79-8	E235.SO4	85.5 mg/L	100 mg/L	85.5	75.0	125	----
Anions and Nutrients (QCLot: 512168)										
CG2206947-004	RG_TRIP_WS_LAEMP_EV O_2022-06-03_NP	bromide	24959-67-9	E235.Br-L	0.375 mg/L	0.5 mg/L	75.0	75.0	125	----
Anions and Nutrients (QCLot: 512169)										
CG2206947-004	RG_TRIP_WS_LAEMP_EV O_2022-06-03_NP	chloride	16887-00-6	E235.Cl-L	83.0 mg/L	100 mg/L	83.0	75.0	125	----
Anions and Nutrients (QCLot: 512170)										
CG2206947-004	RG_TRIP_WS_LAEMP_EV O_2022-06-03_NP	nitrate (as N)	14797-55-8	E235.NO3-L	2.08 mg/L	2.5 mg/L	83.2	75.0	125	----
Anions and Nutrients (QCLot: 512171)										
CG2206947-004	RG_TRIP_WS_LAEMP_EV O_2022-06-03_NP	nitrite (as N)	14797-65-0	E235.NO2-L	0.417 mg/L	0.5 mg/L	83.4	75.0	125	----
Anions and Nutrients (QCLot: 512172)										
CG2206947-004	RG_TRIP_WS_LAEMP_EV O_2022-06-03_NP	fluoride	16984-48-8	E235.F	0.835 mg/L	1 mg/L	83.5	75.0	125	----
Anions and Nutrients (QCLot: 512447)										
CG2206942-001	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0493 mg/L	0.05 mg/L	98.6	70.0	130	----
Anions and Nutrients (QCLot: 513720)										



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 513720) - continued										
CG2206947-001	RG_BOCKRD_WS_LAEMP_EVO_2022-06-03_NP	phosphorus, total	7723-14-0	E372-U	0.0612 mg/L	0.0676 mg/L	90.5	70.0	130	----
Anions and Nutrients (QCLot: 514941)										
CG2206946-002	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.65 mg/L	2.5 mg/L	106	70.0	130	----
Anions and Nutrients (QCLot: 519180)										
CG2206947-002	RG_ALUSM_WS_LAEMP_EVO_2022-06-03_NP	ammonia, total (as N)	7664-41-7	E298	0.103 mg/L	0.1 mg/L	103	75.0	125	----
Organic / Inorganic Carbon (QCLot: 521968)										
CG2206946-001	Anonymous	carbon, total organic [TOC]	----	E355-L	5.06 mg/L	5 mg/L	101	70.0	130	----
Organic / Inorganic Carbon (QCLot: 521969)										
CG2206946-001	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	5.24 mg/L	5 mg/L	105	70.0	130	----
Total Metals (QCLot: 516356)										
CG2206906-002	Anonymous	aluminum, total	7429-90-5	E420	0.374 mg/L	0.4 mg/L	93.6	70.0	130	----
		antimony, total	7440-36-0	E420	0.0397 mg/L	0.04 mg/L	99.2	70.0	130	----
		arsenic, total	7440-38-2	E420	0.0403 mg/L	0.04 mg/L	101	70.0	130	----
		barium, total	7440-39-3	E420	0.0378 mg/L	0.04 mg/L	94.4	70.0	130	----
		beryllium, total	7440-41-7	E420	0.0728 mg/L	0.08 mg/L	91.0	70.0	130	----
		bismuth, total	7440-69-9	E420	0.0170 mg/L	0.02 mg/L	85.1	70.0	130	----
		boron, total	7440-42-8	E420	ND mg/L	0.1 mg/L	ND	70.0	130	----
		cadmium, total	7440-43-9	E420	0.00739 mg/L	0.008 mg/L	92.4	70.0	130	----
		calcium, total	7440-70-2	E420	ND mg/L	4 mg/L	ND	70.0	130	----
		cobalt, total	7440-48-4	E420	ND mg/L	0.02 mg/L	ND	70.0	130	----
		copper, total	7440-50-8	E420	0.0357 mg/L	0.04 mg/L	89.2	70.0	130	----
		iron, total	7439-89-6	E420	3.58 mg/L	4 mg/L	89.4	70.0	130	----
		lead, total	7439-92-1	E420	0.0340 mg/L	0.04 mg/L	85.0	70.0	130	----
		lithium, total	7439-93-2	E420	ND mg/L	0.1 mg/L	ND	70.0	130	----
		magnesium, total	7439-95-4	E420	ND mg/L	1 mg/L	ND	70.0	130	----
		manganese, total	7439-96-5	E420	ND mg/L	0.02 mg/L	ND	70.0	130	----
		molybdenum, total	7439-98-7	E420	0.0409 mg/L	0.04 mg/L	102	70.0	130	----
		nickel, total	7440-02-0	E420	ND mg/L	0.04 mg/L	ND	70.0	130	----
		potassium, total	7440-09-7	E420	ND mg/L	4 mg/L	ND	70.0	130	----
		selenium, total	7782-49-2	E420	ND mg/L	0.04 mg/L	ND	70.0	130	----
		silicon, total	7440-21-3	E420	18.8 mg/L	20 mg/L	94.3	70.0	130	----
		silver, total	7440-22-4	E420	0.00767 mg/L	0.008 mg/L	95.8	70.0	130	----
		sodium, total	7440-23-5	E420	ND mg/L	2 mg/L	ND	70.0	130	----
		strontium, total	7440-24-6	E420	ND mg/L	0.02 mg/L	ND	70.0	130	----



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 516356) - continued										
CG2206906-002	Anonymous	sulfur, total	7704-34-9	E420	ND mg/L	20 mg/L	ND	70.0	130	----
		thallium, total	7440-28-0	E420	0.00689 mg/L	0.008 mg/L	86.2	70.0	130	----
		tin, total	7440-31-5	E420	0.0372 mg/L	0.04 mg/L	93.1	70.0	130	----
		titanium, total	7440-32-6	E420	0.0755 mg/L	0.08 mg/L	94.4	70.0	130	----
		uranium, total	7440-61-1	E420	ND mg/L	0.008 mg/L	ND	70.0	130	----
		vanadium, total	7440-62-2	E420	0.199 mg/L	0.2 mg/L	99.4	70.0	130	----
		zinc, total	7440-66-6	E420	0.727 mg/L	0.8 mg/L	90.9	70.0	130	----
Total Metals (QCLot: 516357)										
CG2206906-002	Anonymous	chromium, total	7440-47-3	E420.Cr-L	0.0760 mg/L	0.08 mg/L	95.0	70.0	130	----
Total Metals (QCLot: 516365)										
CG2206947-001	RG_BOCKRD_WS_LAEMP_EVO_2022-06-03_NP	mercury, total	7439-97-6	E508	0.0000905 mg/L	0.0001 mg/L	90.5	70.0	130	----
Dissolved Metals (QCLot: 516741)										
CG2206939-021	Anonymous	aluminum, dissolved	7429-90-5	E421	0.190 mg/L	0.2 mg/L	95.1	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.0195 mg/L	0.02 mg/L	97.7	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.0215 mg/L	0.02 mg/L	107	70.0	130	----
		barium, dissolved	7440-39-3	E421	0.0195 mg/L	0.02 mg/L	97.6	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.0385 mg/L	0.04 mg/L	96.3	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.00872 mg/L	0.01 mg/L	87.2	70.0	130	----
		boron, dissolved	7440-42-8	E421	0.093 mg/L	0.1 mg/L	92.8	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.00370 mg/L	0.004 mg/L	92.4	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	4 mg/L	ND	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.0179 mg/L	0.02 mg/L	89.7	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.0174 mg/L	0.02 mg/L	87.1	70.0	130	----
		iron, dissolved	7439-89-6	E421	1.88 mg/L	2 mg/L	93.9	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.0184 mg/L	0.02 mg/L	92.2	70.0	130	----
		lithium, dissolved	7439-93-2	E421	ND mg/L	0.1 mg/L	ND	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	1 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.0208 mg/L	0.02 mg/L	104	70.0	130	----
		nickel, dissolved	7440-02-0	E421	0.0344 mg/L	0.04 mg/L	86.1	70.0	130	----
		potassium, dissolved	7440-09-7	E421	ND mg/L	4 mg/L	ND	70.0	130	----
		selenium, dissolved	7782-49-2	E421	ND mg/L	0.04 mg/L	ND	70.0	130	----
		silicon, dissolved	7440-21-3	E421	9.49 mg/L	10 mg/L	94.9	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.00384 mg/L	0.004 mg/L	96.1	70.0	130	----
		sodium, dissolved	7440-23-5	E421	ND mg/L	2 mg/L	ND	70.0	130	----



Sub-Matrix: **Water**

					<i>Matrix Spike (MS) Report</i>					
					<i>Spike</i>		<i>Recovery (%)</i>	<i>Recovery Limits (%)</i>		
<i>Laboratory sample ID</i>	<i>Client sample ID</i>	<i>Analyte</i>	<i>CAS Number</i>	<i>Method</i>	<i>Concentration</i>	<i>Target</i>	<i>MS</i>	<i>Low</i>	<i>High</i>	<i>Qualifier</i>
Dissolved Metals (QCLot: 516741) - continued										
CG2206939-021	Anonymous	strontium, dissolved	7440-24-6	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	ND mg/L	20 mg/L	ND	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.00386 mg/L	0.004 mg/L	96.4	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.0191 mg/L	0.02 mg/L	95.7	70.0	130	----
		titanium, dissolved	7440-32-6	E421	0.0380 mg/L	0.04 mg/L	95.1	70.0	130	----
		uranium, dissolved	7440-61-1	E421	ND mg/L	0.004 mg/L	ND	70.0	130	----
		vanadium, dissolved	7440-62-2	E421	0.0986 mg/L	0.1 mg/L	98.6	70.0	130	----
		zinc, dissolved	7440-66-6	E421	0.360 mg/L	0.4 mg/L	89.9	70.0	130	----
Dissolved Metals (QCLot: 516742)										
CG2206939-021	Anonymous	chromium, dissolved	7440-47-3	E421.Cr-L	0.0388 mg/L	0.04 mg/L	97.0	70.0	130	----
Dissolved Metals (QCLot: 518006)										
CG2206939-020	Anonymous	mercury, dissolved	7439-97-6	E509	ND mg/L	0.0001 mg/L	ND	70.0	130	----

COC ID: MAY/JUNE EVO LAEMP 2022 WS	TURNAROUND TIME:		
PROJECT/CLIENT INFO		LABORATORY	
Facility Name / Job# Regional Effects Program	Project Manager Mike Pope	Lab Name ALS Calgary	Lab Contact Lyudmyla Shvets
Email m.pope@teck.com	Address 421 Pine Avenue	Email lyudmyla.shvets@alsglobal.com	Address 2559 29 Street NE
City Sparwood	Province BC	City Calgary	Province AB
Postal Code VOB 2G0	Country Canada	Postal Code T1Y 7B5	Country Canada
Phone Number 343-333-3905		Phone Number 1 403 407 1794	

Environmental Division
 Calgary
 Work Order Reference
CG2206947

SAMPLE DETAILS								ANALYSIS REQUESTED						
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	TECKCOAL-ROUTINE-VA	ALS Package-DOC	ALS Package-TKN/TOC	HG-TU-CYAF-VA	HG-D-CYAF-VA	TECKCOAL-MET-T-VA	TECKCOAL-MET-D-VA
RG_BOCKRD_WS_LAEMP_EVO_2022-06-03_NP	RG_BOCKRD	WS	No	2022-06-03	8.56	G	7	X	X	X	X	X	X	X
RG_ALUSM_WS_LAEMP_EVO_2022-06-03_NP	RG_ALUSM	WS	No	2022-06-03	12.40	G	7	X	X	X	X	X	X	X
RG_MI25_WS_LAEMP_EVO_2022-06-03_NP	RG_MI25	WS	No	2022-06-03	14.43	G	7	X	X	X	X	X	X	X
RG_TRIP_WS_LAEMP_EVO_2022-06-03_NP	RG_TRIP	WS	No	2022-06-03	12.00	G	7	X	X	X	X	X	X	X
						G	7	X	X	X	X	X	X	X
						G	7	X	X	X	X	X	X	X
						G	7	X	X	X	X	X	X	X
						G	7	X	X	X	X	X	X	X
						G	7	X	X	X	X	X	X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
ALS PO VPO00816101	Emily Dutton	June 3, 2022	<i>[Signature]</i>

NB OF BOTTLES RETURNED/DESCRIPTION	Regular (default) x	Priority (2-3 business days) - 50% surcharge	Emergency (1 Business Day) - 100% surcharge	For Emergency <1 Day, ASAP or Weekend - Contact ALS
Sampler's Name	Emily Dutton	Mobile #		
Sampler's Signature	<i>[Signature]</i>	Date/Time	June 3, 2022	

Environmental Division
Calgary





CERTIFICATE OF ANALYSIS

Work Order : **CG2206841**
Client : **Teck Coal Limited**
Contact : Mike Pope
Address : 421 Pine Avenue
Sparwood BC Canada V0B2G0
Telephone : ----
Project : REGIONAL EFFECTS PROGRAM
PO : VPO00816101
C-O-C number : MAY/JUNE EVO LAEMP 2022 WS
Sampler : EMILY DUTTON
Site : ----
Quote number : Teck Coal Master Quote
No. of samples received : 8
No. of samples analysed : 8

Page : 1 of 10
Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
Calgary AB Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 02-Jun-2022 09:40
Date Analysis Commenced : 03-Jun-2022
Issue Date : 13-Jun-2022 14:59

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Angela Ren	Team Leader - Metals	Metals, Burnaby, British Columbia
Anshim Anshim	Lab Assistant	Metals, Burnaby, British Columbia
Anthony Calero	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Elke Tabora		Inorganics, Calgary, Alberta
Kim Jensen	Department Manager - Metals	Metals, Burnaby, British Columbia
Owen Cheng		Metals, Burnaby, British Columbia
Parker Sgarbossa	Laboratory Analyst	Inorganics, Calgary, Alberta
Ruby Pham	Lab Assistant	Metals, Burnaby, British Columbia
Ruifang Zheng	Analyst	Inorganics, Calgary, Alberta
Sara Niroomand		Inorganics, Calgary, Alberta
Shirley Li		Inorganics, Calgary, Alberta
Sofiya Ivanova	Lab Assistant	Inorganics, Calgary, Alberta
Zakieh Lalonde		Inorganics, Calgary, Alberta



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

<i>Unit</i>	<i>Description</i>
-	No Unit
%	percent
µg/L	micrograms per litre
µS/cm	Microsiemens per centimetre
meq/L	milliequivalents per litre
mg/L	milligrams per litre
mV	millivolts
NTU	nephelometric turbidity units
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

<i>Qualifier</i>	<i>Description</i>
DLDS	Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.
RRV	Reported result verified by repeat analysis.
TKNI	TKN result may be biased low due to Nitrate interference. Nitrate-N is > 10x TKN.



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKMD_ WS_LAEMP_EV O_2022-05-31_ NP	RG_ERCKUT_W S_LAEMP_EVO _2022-05-31_N P	RG_FBLANK_W S_LAEMP_EVO _2022-06-01_N P	RG_ERCKDT_W S_LAEMP_EVO _2022-06-01_N P	RG_GATEDP_W S_LAEMP_EVO _2022-06-01_N P
Client sampling date / time					31-May-2022 15:18	31-May-2022 12:45	01-Jun-2022 09:16	01-Jun-2022 14:47	01-Jun-2022 10:09	
Analyte	CAS Number	Method	LOR	Unit	CG2206841-001	CG2206841-002	CG2206841-003	CG2206841-004	CG2206841-005	
					Result	Result	Result	Result	Result	
Physical Tests										
acidity (as CaCO3)	----	E283	2.0	mg/L	7.2	6.1	<2.0	5.9	<2.0	
alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	378	409	<1.0	391	330	
alkalinity, bicarbonate (as HCO3)	71-52-3	E290	1.0	mg/L	462	499	<1.0	478	402	
alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
alkalinity, carbonate (as CO3)	3812-32-6	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
alkalinity, hydroxide (as OH)	14280-30-9	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	378	409	<1.0	391	330	
conductivity	----	E100	2.0	µS/cm	1910	1920	<2.0	1940	1950	
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	1220	1240	<0.50	1230	1230	
oxidation-reduction potential [ORP]	----	E125	0.10	mV	360	355	472	362	336	
pH	----	E108	0.10	pH units	8.08	8.13	5.32	8.12	8.19	
solids, total dissolved [TDS]	----	E162	10	mg/L	1650	1630	<10	1510	1520	
solids, total suspended [TSS]	----	E160-L	1.0	mg/L	3.0	1.1	<1.0	<1.0	2.2	
turbidity	----	E121	0.10	NTU	<0.10	<0.10	<0.10	<0.10	1.68	
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	0.135	
bromide	24959-67-9	E235.Br-L	0.050	mg/L	1.09	1.08	<0.050	<0.250 ^{DLDS}	0.411	
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	7.08	7.31	<0.10	7.81	14.2	
fluoride	16984-48-8	E235.F	0.020	mg/L	0.111	0.113	<0.020	0.108	0.233	
Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	1.46 ^{TKNI}	2.51	<0.050	<0.050 ^{TKNI}	0.222 ^{TKNI}	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	19.8	20.7	<0.0050	20.4	8.32	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	<0.0010	0.0095	0.0150	
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0190	0.0221	<0.0010	0.0219	0.0013	
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0212	0.0225	<0.0020	0.0232	0.0056	
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	939	974	<0.30	964	1050	
Organic / Inorganic Carbon										
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	<0.50	<0.50	<0.50	<0.50	0.65	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKMD_ WS_LAEMP_EV O_2022-05-31_ NP	RG_ERCKUT_W S_LAEMP_EVO _2022-05-31_N P	RG_FBLANK_W S_LAEMP_EVO _2022-06-01_N P	RG_ERCKDT_W S_LAEMP_EVO _2022-06-01_N P	RG_GATEDP_W S_LAEMP_EVO _2022-06-01_N P
Client sampling date / time					31-May-2022 15:18	31-May-2022 12:45	01-Jun-2022 09:16	01-Jun-2022 14:47	01-Jun-2022 10:09	
Analyte	CAS Number	Method	LOR	Unit	CG2206841-001	CG2206841-002	CG2206841-003	CG2206841-004	CG2206841-005	
					Result	Result	Result	Result	Result	
Organic / Inorganic Carbon										
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	<0.50	<0.50	<0.50	<0.50	0.81	
Ion Balance										
anion sum	----	EC101	0.10	meq/L	28.7	30.1	<0.10	29.6	29.5	
cation sum	----	EC101	0.10	meq/L	24.6	25.1	<0.10	24.7	25.1	
ion balance (cations/anions)	----	EC101	0.010	%	85.7	83.4	100 ^{RRV}	83.4	85.1	
ion balance (APHA)	----	EC101	0.010	%	7.69	9.06	<0.010	9.02	8.06	
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0034	<0.0030	<0.0030	0.0039	0.0064	
antimony, total	7440-36-0	E420	0.00010	mg/L	0.00021	0.00022	<0.00010	0.00021	0.00084	
arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00028	0.00025	<0.00010	0.00027	0.00044	
barium, total	7440-39-3	E420	0.00010	mg/L	0.0627	0.0653	<0.00010	0.0630	0.193	
beryllium, total	7440-41-7	E420	0.020	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	
bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
boron, total	7440-42-8	E420	0.010	mg/L	0.013	0.013	<0.010	0.013	0.041	
cadmium, total	7440-43-9	E420	0.0050	µg/L	0.101	0.0880	<0.0050	0.0907	0.221	
calcium, total	7440-70-2	E420	0.050	mg/L	261	260	<0.050	258	252	
chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	0.00022	0.00020	<0.00010	0.00021	<0.00010	
cobalt, total	7440-48-4	E420	0.10	µg/L	0.42	<0.10	<0.10	<0.10	0.21	
copper, total	7440-50-8	E420	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
iron, total	7439-89-6	E420	0.010	mg/L	0.044	<0.010	<0.010	<0.010	0.178	
lead, total	7439-92-1	E420	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
lithium, total	7439-93-2	E420	0.0010	mg/L	0.0285	0.0279	<0.0010	0.0277	0.106	
magnesium, total	7439-95-4	E420	0.0050	mg/L	152	155	<0.0050	153	172	
manganese, total	7439-96-5	E420	0.00010	mg/L	0.0118	<0.00010	<0.00010	0.00016	0.00804	
mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.00126	0.00111	<0.000050	0.00107	0.0148	
nickel, total	7440-02-0	E420	0.00050	mg/L	0.00145	0.00086	<0.00050	0.00089	0.0329	
potassium, total	7440-09-7	E420	0.050	mg/L	2.79	2.82	<0.050	2.79	5.28	
selenium, total	7782-49-2	E420	0.050	µg/L	178	185	<0.050	184	83.5	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKMD_ WS_LAEMP_EV O_2022-05-31_ NP	RG_ERCKUT_W S_LAEMP_EVO _2022-05-31_N P	RG_FBLANK_W S_LAEMP_EVO _2022-06-01_N P	RG_ERCKDT_W S_LAEMP_EVO _2022-06-01_N P	RG_GATEDP_W S_LAEMP_EVO _2022-06-01_N P
Client sampling date / time					31-May-2022 15:18	31-May-2022 12:45	01-Jun-2022 09:16	01-Jun-2022 14:47	01-Jun-2022 10:09	
Analyte	CAS Number	Method	LOR	Unit	CG2206841-001 Result	CG2206841-002 Result	CG2206841-003 Result	CG2206841-004 Result	CG2206841-005 Result	
Total Metals										
silicon, total	7440-21-3	E420	0.10	mg/L	4.10	4.10	<0.10	4.05	3.06	
silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
sodium, total	7440-23-5	E420	0.050	mg/L	3.35	3.34	<0.050	3.34	9.62	
strontium, total	7440-24-6	E420	0.00020	mg/L	0.234	0.232	<0.00020	0.233	0.602	
sulfur, total	7704-34-9	E420	0.50	mg/L	311	310	<0.50	311	356	
thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	0.000049	
tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	
uranium, total	7440-61-1	E420	0.000010	mg/L	0.00839	0.00869	<0.000010	0.00834	0.0121	
vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	<0.0030	<0.0030	<0.0030	0.0081	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	0.0014	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00020	0.00021	<0.00010	0.00020	0.00078	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00024	0.00023	<0.00010	0.00021	0.00030	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0639	0.0628	<0.00010	0.0617	0.192	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
boron, dissolved	7440-42-8	E421	0.010	mg/L	0.012	0.012	<0.010	0.012	0.038	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.0865	0.0888	<0.0050	0.0824	0.153	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	254	263	<0.050	256	240	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	0.00020	0.00020	<0.00010	0.00022	<0.00010	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	<0.10	<0.10	<0.10	<0.10	0.18	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	0.00023	
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	0.017	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0279	0.0287	<0.0010	0.0281	0.102	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	142	143	<0.0050	143	153	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00056	<0.00010	<0.00010	0.00029	0.00714	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKMD_ WS_LAEMP_EV O_2022-05-31_ NP	RG_ERCKUT_W S_LAEMP_EVO _2022-05-31_N P	RG_FBLANK_W S_LAEMP_EVO _2022-06-01_N P	RG_ERCKDT_W S_LAEMP_EVO _2022-06-01_N P	RG_GATEDP_W S_LAEMP_EVO _2022-06-01_N P
Client sampling date / time					31-May-2022 15:18	31-May-2022 12:45	01-Jun-2022 09:16	01-Jun-2022 14:47	01-Jun-2022 10:09	
Analyte	CAS Number	Method	LOR	Unit	CG2206841-001 Result	CG2206841-002 Result	CG2206841-003 Result	CG2206841-004 Result	CG2206841-005 Result	
Dissolved Metals										
mercury, dissolved	7439-97-6	E509	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00112	0.00108	<0.000050	0.00108	0.0136	
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00125	0.00084	<0.00050	0.00086	0.0309	
potassium, dissolved	7440-09-7	E421	0.050	mg/L	2.85	2.85	<0.050	2.82	4.96	
selenium, dissolved	7782-49-2	E421	0.050	µg/L	172	176	<0.050	166	74.4	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	3.91	3.87	<0.050	3.90	2.78	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	3.23	3.25	<0.050	3.28	8.82	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.220	0.221	<0.00020	0.222	0.560	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	278	282	<0.50	291	319	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	0.000044	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00768	0.00792	<0.000010	0.00790	0.0118	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0023	0.0018	0.0018 ^{RRV}	0.0020	0.0063	
dissolved mercury filtration location	----	EP509	-	-	Field	Field	Field	Field	Field	
dissolved metals filtration location	----	EP421	-	-	Field	Field	Field	Field	Field	

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_MIDBO_WS _LAEMP_EVO_ 2022-06-01_NP	RG_MIDGA_WS _LAEMP_EVO_ 2022-06-01_NP	RG_RIVER_WS _LAEMP_EVO_ 2022-06-01_NP	----	----
Client sampling date / time					01-Jun-2022 07:58	01-Jun-2022 09:16	01-Jun-2022 07:58	----	----	
Analyte	CAS Number	Method	LOR	Unit	CG2206841-006	CG2206841-007	CG2206841-008	-----	-----	
					Result	Result	Result	----	----	
Physical Tests										
acidity (as CaCO3)	----	E283	2.0	mg/L	<2.0	<2.0	<2.0	----	----	
alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	106	118	109	----	----	
alkalinity, bicarbonate (as HCO3)	71-52-3	E290	1.0	mg/L	130	144	133	----	----	
alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	<1.0	----	----	
alkalinity, carbonate (as CO3)	3812-32-6	E290	1.0	mg/L	<1.0	<1.0	<1.0	----	----	
alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	<1.0	----	----	
alkalinity, hydroxide (as OH)	14280-30-9	E290	1.0	mg/L	<1.0	<1.0	<1.0	----	----	
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	106	118	109	----	----	
conductivity	----	E100	2.0	µS/cm	289	358	289	----	----	
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	140	169	138	----	----	
oxidation-reduction potential [ORP]	----	E125	0.10	mV	327	240	240	----	----	
pH	----	E108	0.10	pH units	8.25	8.25	8.22	----	----	
solids, total dissolved [TDS]	----	E162	10	mg/L	179	215	164	----	----	
solids, total suspended [TSS]	----	E160-L	1.0	mg/L	16.4	13.2	15.3	----	----	
turbidity	----	E121	0.10	NTU	7.07	5.11	4.39	----	----	
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	0.0053	<0.0050	----	----	
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	<0.050	<0.050	----	----	
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	0.71	1.08	0.68	----	----	
fluoride	16984-48-8	E235.F	0.020	mg/L	0.104	0.111	0.104	----	----	
Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	0.112	0.058	<0.050	----	----	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.437	0.657	0.440	----	----	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	0.437	0.0013	0.440	----	----	
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0086	0.0086	0.0088	----	----	
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0328	0.0253	0.0313	----	----	
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	49.6	79.6	49.5	----	----	
Organic / Inorganic Carbon										
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	2.32	2.38	2.35	----	----	
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	2.33	2.32	2.55	----	----	
Ion Balance										



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_MIDBO_WS _LAEMP_EVO_ 2022-06-01_NP	RG_MIDGA_WS _LAEMP_EVO_ 2022-06-01_NP	RG_RIVER_WS _LAEMP_EVO_ 2022-06-01_NP	----	----
Client sampling date / time					01-Jun-2022 07:58	01-Jun-2022 09:16	01-Jun-2022 07:58	----	----	
Analyte	CAS Number	Method	LOR	Unit	CG2206841-006	CG2206841-007	CG2206841-008	-----	-----	
					Result	Result	Result	----	----	
Ion Balance										
anion sum	----	EC101	0.10	meq/L	3.24	4.10	3.30	----	----	
cation sum	----	EC101	0.10	meq/L	2.91	3.49	2.85	----	----	
ion balance (cations/anions)	----	EC101	0.010	%	89.8	85.1	86.4	----	----	
ion balance (APHA)	----	EC101	0.010	%	5.36	8.04	7.32	----	----	
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L	0.264	0.227	0.256	----	----	
antimony, total	7440-36-0	E420	0.00010	mg/L	0.00014	0.00012	0.00010	----	----	
arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00033	0.00030	0.00032	----	----	
barium, total	7440-39-3	E420	0.00010	mg/L	0.0664	0.0803	0.0685	----	----	
beryllium, total	7440-41-7	E420	0.020	µg/L	<0.020	<0.020	<0.020	----	----	
bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	<0.000050	----	----	
boron, total	7440-42-8	E420	0.010	mg/L	<0.010	<0.010	<0.010	----	----	
cadmium, total	7440-43-9	E420	0.0050	µg/L	0.0648	0.0657	0.0533	----	----	
calcium, total	7440-70-2	E420	0.050	mg/L	36.3	42.3	36.5	----	----	
chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	0.00052	0.00048	0.00052	----	----	
cobalt, total	7440-48-4	E420	0.10	µg/L	0.21	0.19	0.21	----	----	
copper, total	7440-50-8	E420	0.00050	mg/L	0.00060	0.00062	0.00064	----	----	
iron, total	7439-89-6	E420	0.010	mg/L	0.285	0.261	0.281	----	----	
lead, total	7439-92-1	E420	0.000050	mg/L	0.000194	0.000173	0.000197	----	----	
lithium, total	7439-93-2	E420	0.0010	mg/L	0.0052	0.0078	0.0051	----	----	
magnesium, total	7439-95-4	E420	0.0050	mg/L	13.3	17.7	13.5	----	----	
manganese, total	7439-96-5	E420	0.00010	mg/L	0.00796	0.00786	0.00867	----	----	
mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	----	----	
molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.000721	0.00112	0.000726	----	----	
nickel, total	7440-02-0	E420	0.00050	mg/L	0.00205	0.00290	0.00202	----	----	
potassium, total	7440-09-7	E420	0.050	mg/L	0.628	0.752	0.652	----	----	
selenium, total	7782-49-2	E420	0.050	µg/L	3.73	5.69	3.92	----	----	
silicon, total	7440-21-3	E420	0.10	mg/L	2.54	2.46	2.55	----	----	
silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	<0.000010	----	----	
sodium, total	7440-23-5	E420	0.050	mg/L	2.03	2.23	2.06	----	----	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_MIDBO_WS _LAEMP_EVO_ 2022-06-01_NP	RG_MIDGA_WS _LAEMP_EVO_ 2022-06-01_NP	RG_RIVER_WS _LAEMP_EVO_ 2022-06-01_NP	----	----
Client sampling date / time					01-Jun-2022 07:58	01-Jun-2022 09:16	01-Jun-2022 07:58	----	----	
Analyte	CAS Number	Method	LOR	Unit	CG2206841-006 Result	CG2206841-007 Result	CG2206841-008 Result	----- ----	----- ----	
Total Metals										
strontium, total	7440-24-6	E420	0.00020	mg/L	0.0956	0.113	0.0969	----	----	
sulfur, total	7704-34-9	E420	0.50	mg/L	16.1	24.5	15.7	----	----	
thallium, total	7440-28-0	E420	0.000010	mg/L	0.000013	0.000012	0.000013	----	----	
tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	<0.00010	----	----	
titanium, total	7440-32-6	E420	0.00030	mg/L	0.00290	0.00269	0.00305	----	----	
uranium, total	7440-61-1	E420	0.000010	mg/L	0.000646	0.000958	0.000625	----	----	
vanadium, total	7440-62-2	E420	0.00050	mg/L	0.00129	0.00114	0.00130	----	----	
zinc, total	7440-66-6	E420	0.0030	mg/L	0.0031	0.0034	<0.0030	----	----	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0100	0.0103	0.0099	----	----	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00010	0.00010	<0.00010	----	----	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00017	0.00018	0.00016	----	----	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0599	0.0718	0.0597	----	----	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.020	<0.020	<0.020	----	----	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	<0.000050	----	----	
boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.010	<0.010	<0.010	----	----	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.0194	0.0271	0.0203	----	----	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	36.1	40.8	35.5	----	----	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	0.00013	0.00014	0.00012	----	----	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	<0.10	<0.10	<0.10	----	----	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00033	0.00035	0.00030	----	----	
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	<0.010	<0.010	----	----	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	<0.000050	----	----	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0048	0.0076	0.0048	----	----	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	12.2	16.3	11.9	----	----	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00113	0.00129	0.00103	----	----	
mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	----	----	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.000653	0.00104	0.000691	----	----	
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00150	0.00236	0.00146	----	----	
potassium, dissolved	7440-09-7	E421	0.050	mg/L	0.535	0.671	0.542	----	----	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_MIDBO_WS _LAEMP_EVO_ 2022-06-01_NP	RG_MIDGA_WS _LAEMP_EVO_ 2022-06-01_NP	RG_RIVER_WS _LAEMP_EVO_ 2022-06-01_NP	----	----
Client sampling date / time					01-Jun-2022 07:58	01-Jun-2022 09:16	01-Jun-2022 07:58	----	----	
Analyte	CAS Number	Method	LOR	Unit	CG2206841-006	CG2206841-007	CG2206841-008	-----	-----	
					Result	Result	Result	----	----	
Dissolved Metals										
selenium, dissolved	7782-49-2	E421	0.050	µg/L	3.57	5.39	3.45	----	----	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	1.98	2.01	1.90	----	----	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	<0.000010	----	----	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	2.03	2.25	1.98	----	----	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.0927	0.103	0.0914	----	----	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	14.5	23.8	14.0	----	----	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	<0.000010	----	----	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	<0.00010	----	----	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	<0.00030	----	----	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.000573	0.000859	0.000546	----	----	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	<0.00050	----	----	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0014	0.0012	<0.0010	----	----	
dissolved mercury filtration location	----	EP509	-	-	Field	Field	Field	----	----	
dissolved metals filtration location	----	EP421	-	-	Field	Field	Field	----	----	

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: CG2206841	Page	: 1 of 33
Client	: Teck Coal Limited	Laboratory	: Calgary - Environmental
Contact	: Mike Pope	Account Manager	: Lyudmyla Shvets
Address	: 421 Pine Avenue Sparwood BC Canada V0B2G0	Address	: 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5
Telephone	: ----	Telephone	: +1 403 407 1800
Project	: REGIONAL EFFECTS PROGRAM	Date Samples Received	: 02-Jun-2022 09:40
PO	: VPO00816101	Issue Date	: 13-Jun-2022 14:59
C-O-C number	: MAY/JUNE EVO LAEMP 2022 WS		
Sampler	: EMILY DUTTON		
Site	: ----		
Quote number	: Teck Coal Master Quote		
No. of samples received	: 8		
No. of samples analysed	: 8		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-06-01_NP	E298	01-Jun-2022	08-Jun-2022	----	----		08-Jun-2022	28 days	7 days	✓	
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_FBLANK_WS_LAEMP_EVO_2022-06-01_NP	E298	01-Jun-2022	08-Jun-2022	----	----		08-Jun-2022	28 days	7 days	✓	
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_GATEDP_WS_LAEMP_EVO_2022-06-01_NP	E298	01-Jun-2022	08-Jun-2022	----	----		08-Jun-2022	28 days	7 days	✓	
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_MIDBO_WS_LAEMP_EVO_2022-06-01_NP	E298	01-Jun-2022	08-Jun-2022	----	----		08-Jun-2022	28 days	7 days	✓	
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_MIDGA_WS_LAEMP_EVO_2022-06-01_NP	E298	01-Jun-2022	08-Jun-2022	----	----		08-Jun-2022	28 days	7 days	✓	
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-06-01_NP	E298	01-Jun-2022	08-Jun-2022	----	----		08-Jun-2022	28 days	7 days	✓	
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-05-31_NP	E298	31-May-2022	08-Jun-2022	----	----		08-Jun-2022	28 days	8 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-05-31_NP	E298	31-May-2022	08-Jun-2022	----	----		08-Jun-2022	28 days	8 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-06-01_NP	E235.Br-L	01-Jun-2022	----	----	----		03-Jun-2022	28 days	2 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-06-01_NP	E235.Br-L	01-Jun-2022	----	----	----		03-Jun-2022	28 days	2 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-06-01_NP	E235.Br-L	01-Jun-2022	----	----	----		03-Jun-2022	28 days	2 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-06-01_NP	E235.Br-L	01-Jun-2022	----	----	----		03-Jun-2022	28 days	2 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-06-01_NP	E235.Br-L	01-Jun-2022	----	----	----		03-Jun-2022	28 days	2 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-06-01_NP	E235.Br-L	01-Jun-2022	----	----	----		03-Jun-2022	28 days	2 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-05-31_NP	E235.Br-L	31-May-2022	----	----	----		03-Jun-2022	28 days	3 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-05-31_NP	E235.Br-L	31-May-2022	----	----	----		03-Jun-2022	28 days	3 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-06-01_NP	E235.CI-L	01-Jun-2022	----	----	----		03-Jun-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-06-01_NP	E235.CI-L	01-Jun-2022	----	----	----		03-Jun-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-06-01_NP	E235.CI-L	01-Jun-2022	----	----	----		03-Jun-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-06-01_NP	E235.CI-L	01-Jun-2022	----	----	----		03-Jun-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-06-01_NP	E235.CI-L	01-Jun-2022	----	----	----		03-Jun-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-06-01_NP	E235.CI-L	01-Jun-2022	----	----	----		03-Jun-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-05-31_NP	E235.CI-L	31-May-2022	----	----	----		03-Jun-2022	28 days	3 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-05-31_NP	E235.CI-L	31-May-2022	----	----	----		03-Jun-2022	28 days	3 days	✔	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-06-01_NP	E378-U	01-Jun-2022	----	----	----		03-Jun-2022	3 days	2 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
Container / Client Sample ID(s)				Rec	Actual				Rec	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-06-01_NP	E378-U	01-Jun-2022	----	----	----		03-Jun-2022	3 days	2 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-06-01_NP	E378-U	01-Jun-2022	----	----	----		03-Jun-2022	3 days	2 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-06-01_NP	E378-U	01-Jun-2022	----	----	----		03-Jun-2022	3 days	2 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-06-01_NP	E378-U	01-Jun-2022	----	----	----		03-Jun-2022	3 days	2 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE RG_RIVER_WS_LAEMP_EVO_2022-06-01_NP	E378-U	01-Jun-2022	----	----	----		03-Jun-2022	3 days	2 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-05-31_NP	E378-U	31-May-2022	----	----	----		03-Jun-2022	3 days	3 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-05-31_NP	E378-U	31-May-2022	----	----	----		03-Jun-2022	3 days	3 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-06-01_NP	E235.F	01-Jun-2022	----	----	----		03-Jun-2022	28 days	2 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Fluoride in Water by IC										
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-06-01_NP	E235.F	01-Jun-2022	----	----	----		03-Jun-2022	28 days	2 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-06-01_NP	E235.F	01-Jun-2022	----	----	----		03-Jun-2022	28 days	2 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-06-01_NP	E235.F	01-Jun-2022	----	----	----		03-Jun-2022	28 days	2 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-06-01_NP	E235.F	01-Jun-2022	----	----	----		03-Jun-2022	28 days	2 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE RG_RIVER_WS_LAEMP_EVO_2022-06-01_NP	E235.F	01-Jun-2022	----	----	----		03-Jun-2022	28 days	2 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-05-31_NP	E235.F	31-May-2022	----	----	----		03-Jun-2022	28 days	3 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-05-31_NP	E235.F	31-May-2022	----	----	----		03-Jun-2022	28 days	3 days	✔
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-06-01_NP	E235.NO3-L	01-Jun-2022	----	----	----		03-Jun-2022	3 days	2 days	✔
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-06-01_NP	E235.NO3-L	01-Jun-2022	----	----	----		03-Jun-2022	3 days	2 days	✔



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-06-01_NP	E235.NO3-L	01-Jun-2022	----	----	----		03-Jun-2022	3 days	2 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-06-01_NP	E235.NO3-L	01-Jun-2022	----	----	----		03-Jun-2022	3 days	2 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-06-01_NP	E235.NO3-L	01-Jun-2022	----	----	----		03-Jun-2022	3 days	2 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-06-01_NP	E235.NO3-L	01-Jun-2022	----	----	----		03-Jun-2022	3 days	2 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-05-31_NP	E235.NO3-L	31-May-2022	----	----	----		03-Jun-2022	3 days	3 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-05-31_NP	E235.NO3-L	31-May-2022	----	----	----		03-Jun-2022	3 days	3 days	✓	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-06-01_NP	E235.NO2-L	01-Jun-2022	----	----	----		03-Jun-2022	3 days	2 days	✓	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-06-01_NP	E235.NO2-L	01-Jun-2022	----	----	----		03-Jun-2022	3 days	2 days	✓	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-06-01_NP	E235.NO2-L	01-Jun-2022	----	----	----		03-Jun-2022	3 days	2 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-06-01_NP	E235.NO2-L	01-Jun-2022	----	----	----		03-Jun-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-06-01_NP	E235.NO2-L	01-Jun-2022	----	----	----		03-Jun-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-06-01_NP	E235.NO2-L	01-Jun-2022	----	----	----		03-Jun-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-05-31_NP	E235.NO2-L	31-May-2022	----	----	----		03-Jun-2022	3 days	3 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-05-31_NP	E235.NO2-L	31-May-2022	----	----	----		03-Jun-2022	3 days	3 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-06-01_NP	E235.SO4	01-Jun-2022	----	----	----		03-Jun-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-06-01_NP	E235.SO4	01-Jun-2022	----	----	----		03-Jun-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-06-01_NP	E235.SO4	01-Jun-2022	----	----	----		03-Jun-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-06-01_NP	E235.SO4	01-Jun-2022	----	----	----		03-Jun-2022	28 days	2 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-06-01_NP	E235.SO4	01-Jun-2022	----	----	----		03-Jun-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-06-01_NP	E235.SO4	01-Jun-2022	----	----	----		03-Jun-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-05-31_NP	E235.SO4	31-May-2022	----	----	----		03-Jun-2022	28 days	3 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-05-31_NP	E235.SO4	31-May-2022	----	----	----		03-Jun-2022	28 days	3 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-06-01_NP	E318	01-Jun-2022	05-Jun-2022	----	----		05-Jun-2022	28 days	4 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_FBLANK_WS_LAEMP_EVO_2022-06-01_NP	E318	01-Jun-2022	05-Jun-2022	----	----		05-Jun-2022	28 days	4 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_GATEDP_WS_LAEMP_EVO_2022-06-01_NP	E318	01-Jun-2022	05-Jun-2022	----	----		05-Jun-2022	28 days	4 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_MIDBO_WS_LAEMP_EVO_2022-06-01_NP	E318	01-Jun-2022	05-Jun-2022	----	----		05-Jun-2022	28 days	4 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_MIDGA_WS_LAEMP_EVO_2022-06-01_NP	E318	01-Jun-2022	05-Jun-2022	----	----		05-Jun-2022	28 days	4 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times Rec Actual		Eval	Analysis Date	Holding Times Rec Actual		Eval	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-06-01_NP	E318	01-Jun-2022	05-Jun-2022	----	----		05-Jun-2022	28 days	4 days	✓	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-05-31_NP	E318	31-May-2022	05-Jun-2022	----	----		05-Jun-2022	28 days	5 days	✓	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-05-31_NP	E318	31-May-2022	05-Jun-2022	----	----		05-Jun-2022	28 days	5 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-06-01_NP	E372-U	01-Jun-2022	05-Jun-2022	----	----		08-Jun-2022	28 days	7 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_FBLANK_WS_LAEMP_EVO_2022-06-01_NP	E372-U	01-Jun-2022	05-Jun-2022	----	----		08-Jun-2022	28 days	7 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_GATEDP_WS_LAEMP_EVO_2022-06-01_NP	E372-U	01-Jun-2022	05-Jun-2022	----	----		08-Jun-2022	28 days	7 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_MIDBO_WS_LAEMP_EVO_2022-06-01_NP	E372-U	01-Jun-2022	05-Jun-2022	----	----		08-Jun-2022	28 days	7 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_MIDGA_WS_LAEMP_EVO_2022-06-01_NP	E372-U	01-Jun-2022	05-Jun-2022	----	----		08-Jun-2022	28 days	7 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-06-01_NP	E372-U	01-Jun-2022	05-Jun-2022	----	----		08-Jun-2022	28 days	7 days	✓	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-05-31_NP	E372-U	31-May-2022	05-Jun-2022	----	----		08-Jun-2022	28 days	8 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-05-31_NP	E372-U	31-May-2022	05-Jun-2022	----	----		08-Jun-2022	28 days	8 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-06-01_NP	E421.Cr-L	01-Jun-2022	07-Jun-2022	----	----		07-Jun-2022	180 days	6 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_FBLANK_WS_LAEMP_EVO_2022-06-01_NP	E421.Cr-L	01-Jun-2022	07-Jun-2022	----	----		07-Jun-2022	180 days	6 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_GATEDP_WS_LAEMP_EVO_2022-06-01_NP	E421.Cr-L	01-Jun-2022	07-Jun-2022	----	----		07-Jun-2022	180 days	6 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_MIDBO_WS_LAEMP_EVO_2022-06-01_NP	E421.Cr-L	01-Jun-2022	07-Jun-2022	----	----		07-Jun-2022	180 days	6 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_MIDGA_WS_LAEMP_EVO_2022-06-01_NP	E421.Cr-L	01-Jun-2022	07-Jun-2022	----	----		07-Jun-2022	180 days	6 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_RIVER_WS_LAEMP_EVO_2022-06-01_NP	E421.Cr-L	01-Jun-2022	07-Jun-2022	----	----		07-Jun-2022	180 days	6 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-05-31_NP	E421.Cr-L	31-May-2022	07-Jun-2022	----	----		07-Jun-2022	180 days	7 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-05-31_NP	E421.Cr-L	31-May-2022	07-Jun-2022	----	----		07-Jun-2022	180 days	7 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-06-01_NP	E509	01-Jun-2022	07-Jun-2022	----	----		07-Jun-2022	28 days	6 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_FBLANK_WS_LAEMP_EVO_2022-06-01_NP	E509	01-Jun-2022	07-Jun-2022	----	----		07-Jun-2022	28 days	6 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_GATEDP_WS_LAEMP_EVO_2022-06-01_NP	E509	01-Jun-2022	07-Jun-2022	----	----		07-Jun-2022	28 days	6 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_MIDBO_WS_LAEMP_EVO_2022-06-01_NP	E509	01-Jun-2022	07-Jun-2022	----	----		07-Jun-2022	28 days	6 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_MIDGA_WS_LAEMP_EVO_2022-06-01_NP	E509	01-Jun-2022	07-Jun-2022	----	----		07-Jun-2022	28 days	6 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_RIVER_WS_LAEMP_EVO_2022-06-01_NP	E509	01-Jun-2022	07-Jun-2022	----	----		07-Jun-2022	28 days	6 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-05-31_NP	E509	31-May-2022	07-Jun-2022	----	----		07-Jun-2022	28 days	7 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-05-31_NP	E509	31-May-2022	07-Jun-2022	----	----		07-Jun-2022	28 days	7 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-06-01_NP	E421	01-Jun-2022	07-Jun-2022	----	----		07-Jun-2022	180 days	6 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_FBLANK_WS_LAEMP_EVO_2022-06-01_NP	E421	01-Jun-2022	07-Jun-2022	----	----		07-Jun-2022	180 days	6 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_GATEDP_WS_LAEMP_EVO_2022-06-01_NP	E421	01-Jun-2022	07-Jun-2022	----	----		07-Jun-2022	180 days	6 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_MIDBO_WS_LAEMP_EVO_2022-06-01_NP	E421	01-Jun-2022	07-Jun-2022	----	----		07-Jun-2022	180 days	6 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_MIDGA_WS_LAEMP_EVO_2022-06-01_NP	E421	01-Jun-2022	07-Jun-2022	----	----		07-Jun-2022	180 days	6 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_RIVER_WS_LAEMP_EVO_2022-06-01_NP	E421	01-Jun-2022	07-Jun-2022	----	----		07-Jun-2022	180 days	6 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-05-31_NP	E421	31-May-2022	07-Jun-2022	----	----		07-Jun-2022	180 days	7 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-05-31_NP	E421	31-May-2022	07-Jun-2022	----	----		07-Jun-2022	180 days	7 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-06-01_NP	E358-L	01-Jun-2022	08-Jun-2022	----	----		11-Jun-2022	28 days	10 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_FBLANK_WS_LAEMP_EVO_2022-06-01_NP	E358-L	01-Jun-2022	08-Jun-2022	----	----		11-Jun-2022	28 days	10 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_GATEDP_WS_LAEMP_EVO_2022-06-01_NP	E358-L	01-Jun-2022	08-Jun-2022	----	----		11-Jun-2022	28 days	10 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_MIDBO_WS_LAEMP_EVO_2022-06-01_NP	E358-L	01-Jun-2022	08-Jun-2022	----	----		11-Jun-2022	28 days	10 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_MIDGA_WS_LAEMP_EVO_2022-06-01_NP	E358-L	01-Jun-2022	08-Jun-2022	----	----		11-Jun-2022	28 days	10 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-06-01_NP	E358-L	01-Jun-2022	08-Jun-2022	----	----		11-Jun-2022	28 days	10 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-05-31_NP	E358-L	31-May-2022	08-Jun-2022	----	----		11-Jun-2022	28 days	11 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-05-31_NP	E358-L	31-May-2022	08-Jun-2022	----	----		11-Jun-2022	28 days	11 days	✓	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-06-01_NP	E355-L	01-Jun-2022	08-Jun-2022	----	----		11-Jun-2022	28 days	10 days	✓	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_FBLANK_WS_LAEMP_EVO_2022-06-01_NP	E355-L	01-Jun-2022	08-Jun-2022	----	----		11-Jun-2022	28 days	10 days	✓	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_GATEDP_WS_LAEMP_EVO_2022-06-01_NP	E355-L	01-Jun-2022	08-Jun-2022	----	----		11-Jun-2022	28 days	10 days	✓	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_MIDBO_WS_LAEMP_EVO_2022-06-01_NP	E355-L	01-Jun-2022	08-Jun-2022	----	----		11-Jun-2022	28 days	10 days	✓	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_MIDGA_WS_LAEMP_EVO_2022-06-01_NP	E355-L	01-Jun-2022	08-Jun-2022	----	----		11-Jun-2022	28 days	10 days	✓	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-05-31_NP	E355-L	31-May-2022	08-Jun-2022	----	----		11-Jun-2022	28 days	11 days	✓	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-05-31_NP	E355-L	31-May-2022	08-Jun-2022	----	----		11-Jun-2022	28 days	11 days	✓	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-06-01_NP	E355-L	01-Jun-2022	08-Jun-2022	----	----		08-Jun-2022	28 days	7 days	✓	
Physical Tests : Acidity by Titration											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-06-01_NP	E283	01-Jun-2022	----	----	----		06-Jun-2022	14 days	5 days	✓	
Physical Tests : Acidity by Titration											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-06-01_NP	E283	01-Jun-2022	----	----	----		06-Jun-2022	14 days	5 days	✓	
Physical Tests : Acidity by Titration											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-06-01_NP	E283	01-Jun-2022	----	----	----		06-Jun-2022	14 days	5 days	✓	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Acidity by Titration											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-06-01_NP	E283	01-Jun-2022	----	----	----		06-Jun-2022	14 days	5 days	✓	
Physical Tests : Acidity by Titration											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-06-01_NP	E283	01-Jun-2022	----	----	----		06-Jun-2022	14 days	5 days	✓	
Physical Tests : Acidity by Titration											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-06-01_NP	E283	01-Jun-2022	----	----	----		06-Jun-2022	14 days	5 days	✓	
Physical Tests : Acidity by Titration											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-05-31_NP	E283	31-May-2022	----	----	----		06-Jun-2022	14 days	6 days	✓	
Physical Tests : Acidity by Titration											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-05-31_NP	E283	31-May-2022	----	----	----		06-Jun-2022	14 days	6 days	✓	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-06-01_NP	E290	01-Jun-2022	----	----	----		06-Jun-2022	14 days	5 days	✓	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-06-01_NP	E290	01-Jun-2022	----	----	----		06-Jun-2022	14 days	5 days	✓	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-06-01_NP	E290	01-Jun-2022	----	----	----		06-Jun-2022	14 days	5 days	✓	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-06-01_NP	E290	01-Jun-2022	----	----	----		06-Jun-2022	14 days	5 days	✓	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Alkalinity Species by Titration											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-06-01_NP	E290	01-Jun-2022	----	----	----		06-Jun-2022	14 days	5 days	✓	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-06-01_NP	E290	01-Jun-2022	----	----	----		06-Jun-2022	14 days	5 days	✓	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-05-31_NP	E290	31-May-2022	----	----	----		06-Jun-2022	14 days	6 days	✓	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-05-31_NP	E290	31-May-2022	----	----	----		06-Jun-2022	14 days	6 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-06-01_NP	E100	01-Jun-2022	----	----	----		06-Jun-2022	28 days	5 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-06-01_NP	E100	01-Jun-2022	----	----	----		06-Jun-2022	28 days	5 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-06-01_NP	E100	01-Jun-2022	----	----	----		06-Jun-2022	28 days	5 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-06-01_NP	E100	01-Jun-2022	----	----	----		06-Jun-2022	28 days	5 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-06-01_NP	E100	01-Jun-2022	----	----	----		06-Jun-2022	28 days	5 days	✓	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
Rec	Actual	Rec		Actual							
Physical Tests : Conductivity in Water											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-06-01_NP	E100	01-Jun-2022	----	----	----		06-Jun-2022	28 days	5 days		✓
Physical Tests : Conductivity in Water											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-05-31_NP	E100	31-May-2022	----	----	----		06-Jun-2022	28 days	6 days		✓
Physical Tests : Conductivity in Water											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-05-31_NP	E100	31-May-2022	----	----	----		06-Jun-2022	28 days	6 days		✓
Physical Tests : ORP by Electrode											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-06-01_NP	E125	01-Jun-2022	----	----	----		09-Jun-2022	0.25 hrs	191 hrs		* EHTR-FM
Physical Tests : ORP by Electrode											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-06-01_NP	E125	01-Jun-2022	----	----	----		09-Jun-2022	0.25 hrs	196 hrs		* EHTR-FM
Physical Tests : ORP by Electrode											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-06-01_NP	E125	01-Jun-2022	----	----	----		09-Jun-2022	0.25 hrs	197 hrs		* EHTR-FM
Physical Tests : ORP by Electrode											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-06-01_NP	E125	01-Jun-2022	----	----	----		09-Jun-2022	0.25 hrs	197 hrs		* EHTR-FM
Physical Tests : ORP by Electrode											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-06-01_NP	E125	01-Jun-2022	----	----	----		09-Jun-2022	0.25 hrs	198 hrs		* EHTR-FM
Physical Tests : ORP by Electrode											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-06-01_NP	E125	01-Jun-2022	----	----	----		09-Jun-2022	0.25 hrs	198 hrs		* EHTR-FM



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
Container / Client Sample ID(s)				Rec	Actual			Rec	Actual	
Physical Tests : ORP by Electrode										
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-05-31_NP	E125	31-May-2022	----	----	----		09-Jun-2022	0.25 hrs	215 hrs	* EHTR-FM
Physical Tests : ORP by Electrode										
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-05-31_NP	E125	31-May-2022	----	----	----		09-Jun-2022	0.25 hrs	217 hrs	* EHTR-FM
Physical Tests : pH by Meter										
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-06-01_NP	E108	01-Jun-2022	----	----	----		06-Jun-2022	0.25 hrs	122 hrs	* EHTR-FM
Physical Tests : pH by Meter										
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-06-01_NP	E108	01-Jun-2022	----	----	----		06-Jun-2022	0.25 hrs	127 hrs	* EHTR-FM
Physical Tests : pH by Meter										
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-06-01_NP	E108	01-Jun-2022	----	----	----		06-Jun-2022	0.25 hrs	127 hrs	* EHTR-FM
Physical Tests : pH by Meter										
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-06-01_NP	E108	01-Jun-2022	----	----	----		06-Jun-2022	0.25 hrs	127 hrs	* EHTR-FM
Physical Tests : pH by Meter										
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-06-01_NP	E108	01-Jun-2022	----	----	----		06-Jun-2022	0.25 hrs	129 hrs	* EHTR-FM
Physical Tests : pH by Meter										
HDPE RG_RIVER_WS_LAEMP_EVO_2022-06-01_NP	E108	01-Jun-2022	----	----	----		06-Jun-2022	0.25 hrs	129 hrs	* EHTR-FM
Physical Tests : pH by Meter										
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-05-31_NP	E108	31-May-2022	----	----	----		06-Jun-2022	0.25 hrs	145 hrs	* EHTR-FM



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : pH by Meter											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-05-31_NP	E108	31-May-2022	----	----	----		06-Jun-2022	0.25 hrs	148 hrs	*	EHTR-FM
Physical Tests : TDS by Gravimetry											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-06-01_NP	E162	01-Jun-2022	----	----	----		08-Jun-2022	7 days	7 days	✓	
Physical Tests : TDS by Gravimetry											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-05-31_NP	E162	31-May-2022	----	----	----		07-Jun-2022	7 days	7 days	✓	
Physical Tests : TDS by Gravimetry											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-05-31_NP	E162	31-May-2022	----	----	----		07-Jun-2022	7 days	7 days	✓	
Physical Tests : TDS by Gravimetry											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-06-01_NP	E162	01-Jun-2022	----	----	----		08-Jun-2022	7 days	7 days	✓	
Physical Tests : TDS by Gravimetry											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-06-01_NP	E162	01-Jun-2022	----	----	----		08-Jun-2022	7 days	7 days	✓	
Physical Tests : TDS by Gravimetry											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-06-01_NP	E162	01-Jun-2022	----	----	----		08-Jun-2022	7 days	7 days	✓	
Physical Tests : TDS by Gravimetry											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-06-01_NP	E162	01-Jun-2022	----	----	----		08-Jun-2022	7 days	7 days	✓	
Physical Tests : TDS by Gravimetry											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-06-01_NP	E162	01-Jun-2022	----	----	----		08-Jun-2022	7 days	7 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-06-01_NP	E160-L	01-Jun-2022	----	----	----		08-Jun-2022	7 days	7 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-05-31_NP	E160-L	31-May-2022	----	----	----		07-Jun-2022	7 days	7 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-05-31_NP	E160-L	31-May-2022	----	----	----		07-Jun-2022	7 days	7 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-06-01_NP	E160-L	01-Jun-2022	----	----	----		08-Jun-2022	7 days	7 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-06-01_NP	E160-L	01-Jun-2022	----	----	----		08-Jun-2022	7 days	7 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-06-01_NP	E160-L	01-Jun-2022	----	----	----		08-Jun-2022	7 days	7 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-06-01_NP	E160-L	01-Jun-2022	----	----	----		08-Jun-2022	7 days	7 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-06-01_NP	E160-L	01-Jun-2022	----	----	----		08-Jun-2022	7 days	7 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-06-01_NP	E121	01-Jun-2022	----	----	----		03-Jun-2022	3 days	2 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Turbidity by Nephelometry											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-06-01_NP	E121	01-Jun-2022	----	----	----		03-Jun-2022	3 days	2 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-06-01_NP	E121	01-Jun-2022	----	----	----		03-Jun-2022	3 days	2 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-06-01_NP	E121	01-Jun-2022	----	----	----		03-Jun-2022	3 days	2 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-06-01_NP	E121	01-Jun-2022	----	----	----		03-Jun-2022	3 days	2 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-06-01_NP	E121	01-Jun-2022	----	----	----		03-Jun-2022	3 days	2 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-05-31_NP	E121	31-May-2022	----	----	----		03-Jun-2022	3 days	3 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-05-31_NP	E121	31-May-2022	----	----	----		03-Jun-2022	3 days	3 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-06-01_NP	E420.Cr-L	01-Jun-2022	----	----	----		08-Jun-2022	180 days	7 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-05-31_NP	E420.Cr-L	31-May-2022	----	----	----		08-Jun-2022	180 days	8 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
Rec	Actual	Rec		Actual							
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-05-31_NP	E420.Cr-L	31-May-2022	----	----	----		08-Jun-2022	180 days	8 days	✓	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_FBLANK_WS_LAEMP_EVO_2022-06-01_NP	E420.Cr-L	01-Jun-2022	----	----	----		08-Jun-2022	180 days	8 days	✓	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_GATEDP_WS_LAEMP_EVO_2022-06-01_NP	E420.Cr-L	01-Jun-2022	----	----	----		08-Jun-2022	180 days	8 days	✓	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_MIDBO_WS_LAEMP_EVO_2022-06-01_NP	E420.Cr-L	01-Jun-2022	----	----	----		08-Jun-2022	180 days	8 days	✓	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_MIDGA_WS_LAEMP_EVO_2022-06-01_NP	E420.Cr-L	01-Jun-2022	----	----	----		08-Jun-2022	180 days	8 days	✓	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_RIVER_WS_LAEMP_EVO_2022-06-01_NP	E420.Cr-L	01-Jun-2022	----	----	----		08-Jun-2022	180 days	8 days	✓	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-06-01_NP	E508	01-Jun-2022	----	----	----		07-Jun-2022	28 days	5 days	✓	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-05-31_NP	E508	31-May-2022	----	----	----		07-Jun-2022	28 days	6 days	✓	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_FBLANK_WS_LAEMP_EVO_2022-06-01_NP	E508	01-Jun-2022	----	----	----		07-Jun-2022	28 days	6 days	✓	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_GATEDP_WS_LAEMP_EVO_2022-06-01_NP	E508	01-Jun-2022	----	----	----		07-Jun-2022	28 days	6 days	✓	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_MIDBO_WS_LAEMP_EVO_2022-06-01_NP	E508	01-Jun-2022	----	----	----		07-Jun-2022	28 days	6 days	✓	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_MIDGA_WS_LAEMP_EVO_2022-06-01_NP	E508	01-Jun-2022	----	----	----		07-Jun-2022	28 days	6 days	✓	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_RIVER_WS_LAEMP_EVO_2022-06-01_NP	E508	01-Jun-2022	----	----	----		07-Jun-2022	28 days	6 days	✓	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-05-31_NP	E508	31-May-2022	----	----	----		07-Jun-2022	28 days	7 days	✓	
Total Metals : Total Metals in Water by CRC ICPMS											
HDPE total (nitric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-06-01_NP	E420	01-Jun-2022	----	----	----		08-Jun-2022	180 days	7 days	✓	
Total Metals : Total Metals in Water by CRC ICPMS											
HDPE total (nitric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-05-31_NP	E420	31-May-2022	----	----	----		08-Jun-2022	180 days	8 days	✓	
Total Metals : Total Metals in Water by CRC ICPMS											
HDPE total (nitric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-05-31_NP	E420	31-May-2022	----	----	----		08-Jun-2022	180 days	8 days	✓	
Total Metals : Total Metals in Water by CRC ICPMS											
HDPE total (nitric acid) RG_FBLANK_WS_LAEMP_EVO_2022-06-01_NP	E420	01-Jun-2022	----	----	----		08-Jun-2022	180 days	8 days	✓	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) RG_GATEDP_WS_LAEMP_EVO_2022-06-01_NP	E420	01-Jun-2022	----	----	----		08-Jun-2022	180 days	8 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) RG_MIDBO_WS_LAEMP_EVO_2022-06-01_NP	E420	01-Jun-2022	----	----	----		08-Jun-2022	180 days	8 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) RG_MIDGA_WS_LAEMP_EVO_2022-06-01_NP	E420	01-Jun-2022	----	----	----		08-Jun-2022	180 days	8 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) RG_RIVER_WS_LAEMP_EVO_2022-06-01_NP	E420	01-Jun-2022	----	----	----		08-Jun-2022	180 days	8 days	✓

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended
 Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
Analytical Methods							
Laboratory Duplicates (DUP)							
Acidity by Titration	E283	512684	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290	513127	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	515903	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	509610	1	8	12.5	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	509611	1	8	12.5	5.0	✓
Conductivity in Water	E100	513129	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	513380	1	17	5.8	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	513322	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	513379	1	17	5.8	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	515948	1	13	7.6	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	510191	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	509614	1	8	12.5	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	509612	1	10	10.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	509613	1	8	12.5	5.0	✓
ORP by Electrode	E125	515284	1	20	5.0	5.0	✓
pH by Meter	E108	513128	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	509609	1	8	12.5	5.0	✓
TDS by Gravimetry	E162	512117	2	40	5.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	513473	1	14	7.1	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	511058	2	26	7.6	5.0	✓
Total Mercury in Water by CVAAS	E508	513327	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	513474	1	20	5.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	515949	1	13	7.6	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	511541	2	40	5.0	5.0	✓
Turbidity by Nephelometry	E121	509780	3	57	5.2	5.0	✓
Laboratory Control Samples (LCS)							
Acidity by Titration	E283	512684	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290	513127	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	515903	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	509610	1	8	12.5	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	509611	1	8	12.5	5.0	✓
Conductivity in Water	E100	513129	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	513380	1	17	5.8	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	513322	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	513379	1	17	5.8	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	515948	1	13	7.6	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	510191	1	20	5.0	5.0	✓



Matrix: **Water**

Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
Analytical Methods							
Laboratory Control Samples (LCS) - Continued							
Fluoride in Water by IC	E235.F	509614	1	8	12.5	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	509612	1	10	10.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	509613	1	8	12.5	5.0	✓
ORP by Electrode	E125	515284	1	20	5.0	5.0	✓
pH by Meter	E108	513128	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	509609	1	8	12.5	5.0	✓
TDS by Gravimetry	E162	512117	2	40	5.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	513473	1	14	7.1	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	511058	2	26	7.6	5.0	✓
Total Mercury in Water by CVAAS	E508	513327	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	513474	1	20	5.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	515949	1	13	7.6	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	511541	2	40	5.0	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	512109	3	60	5.0	5.0	✓
Turbidity by Nephelometry	E121	509780	3	57	5.2	5.0	✓
Method Blanks (MB)							
Acidity by Titration	E283	512684	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290	513127	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	515903	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	509610	1	8	12.5	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	509611	1	8	12.5	5.0	✓
Conductivity in Water	E100	513129	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	513380	1	17	5.8	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	513322	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	513379	1	17	5.8	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	515948	1	13	7.6	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	510191	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	509614	1	8	12.5	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	509612	1	10	10.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	509613	1	8	12.5	5.0	✓
Sulfate in Water by IC	E235.SO4	509609	1	8	12.5	5.0	✓
TDS by Gravimetry	E162	512117	2	40	5.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	513473	1	14	7.1	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	511058	2	26	7.6	5.0	✓
Total Mercury in Water by CVAAS	E508	513327	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	513474	1	20	5.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	515949	1	13	7.6	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	511541	2	40	5.0	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	512109	3	60	5.0	5.0	✓
Turbidity by Nephelometry	E121	509780	3	57	5.2	5.0	✓



Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
<i>Analytical Methods</i>							
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	515903	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	509610	1	8	12.5	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	509611	1	8	12.5	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	513380	1	17	5.8	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	513322	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	513379	1	17	5.8	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	515948	1	13	7.6	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	510191	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	509614	1	8	12.5	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	509612	1	10	10.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	509613	1	8	12.5	5.0	✓
Sulfate in Water by IC	E235.SO4	509609	1	8	12.5	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	513473	1	14	7.1	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	511058	2	26	7.6	5.0	✓
Total Mercury in Water by CVAAS	E508	513327	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	513474	1	20	5.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	515949	1	13	7.6	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	511541	2	40	5.0	5.0	✓



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 Calgary - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 Calgary - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 Calgary - Environmental	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
ORP by Electrode	E125 Calgary - Environmental	Water	ASTM D1498 (mod)	Oxidation reduction potential is reported as the oxidation-reduction potential of the platinum metal-reference electrode employed, measured in mV. For high accuracy test results, it is recommended that this analysis be conducted in the field.
TSS by Gravimetry (Low Level)	E160-L Calgary - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 Calgary - Environmental	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC (Low Level)	E235.Cl-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Acidity by Titration	E283 Calgary - Environmental	Water	APHA 2310 B (mod)	Acidity is determined by potentiometric titration to pH endpoint of 8.3



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Alkalinity Species by Titration	E290 Calgary - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 Calgary - Environmental	Water	J. Environ. Monit., 2005, 7, 37-42 (mod)	Ammonia in water is analyzed by flow-injection analysis with fluorescence detection after reaction with orthophthaldialdehyde (OPA).
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 Calgary - Environmental	Water	APHA 4500-Norg D (mod)	Total Kjeldahl Nitrogen is determined using block digestion followed by flow-injection analysis with fluorescence detection.
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L Calgary - Environmental	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Dissolved Organic Carbon by Combustion (Low Level)	E358-L Calgary - Environmental	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U Calgary - Environmental	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U Calgary - Environmental	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Total Metals in Water by CRC ICPMS	E420 Vancouver - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L Vancouver - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS.
Dissolved Metals in Water by CRC ICPMS	E421 Vancouver - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L Vancouver - Environmental	Water	APHA 3030 B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS
Total Mercury in Water by CVAAS	E508 Vancouver - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS
Dissolved Mercury in Water by CVAAS	E509 Vancouver - Environmental	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
Dissolved Hardness (Calculated)	EC100 Vancouver - Environmental	Water	APHA 2340B	"Hardness (as CaCO ₃), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Ion Balance using Dissolved Metals	EC101 Calgary - Environmental	Water	APHA 1030E	Cation Sum, Anion Sum, and Ion Balance are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present. Ion Balance cannot be calculated accurately for waters with very low electrical conductivity (EC).

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 Calgary - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 Calgary - Environmental	Water	APHA 4500-Norg D (mod)	Samples are digested using block digestion with Copper Sulfate Digestion Reagent.
Preparation for Total Organic Carbon by Combustion	EP355 Calgary - Environmental	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon for Combustion	EP358 Calgary - Environmental	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Phosphorus in water	EP372 Calgary - Environmental	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Dissolved Metals Water Filtration	EP421 Vancouver - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO ₃ .
Dissolved Mercury Water Filtration	EP509	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.



<i>Preparation Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
	Vancouver - Environmental			



QUALITY CONTROL REPORT

Work Order : **CG2206841**

Client : Teck Coal Limited
 Contact : Mike Pope
 Address : 421 Pine Avenue
 Sparwood BC Canada V0B2G0
 Telephone : ----
 Project : REGIONAL EFFECTS PROGRAM
 PO : VPO00816101
 C-O-C number : MAY/JUNE EVO LAEMP 2022 WS
 Sampler : EMILY DUTTON
 Site : ----
 Quote number : Teck Coal Master Quote
 No. of samples received : 8
 No. of samples analysed : 8

Page : 1 of 18

Laboratory : Calgary - Environmental
 Account Manager : Lyudmyla Shvets
 Address : 2559 29th Street NE
 Calgary, Alberta Canada T1Y 7B5
 Telephone : +1 403 407 1800
 Date Samples Received : 02-Jun-2022 09:40
 Date Analysis Commenced : 03-Jun-2022
 Issue Date : 13-Jun-2022 14:59

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Angela Ren	Team Leader - Metals	Vancouver Metals, Burnaby, British Columbia
Anshim Anshim	Lab Assistant	Vancouver Metals, Burnaby, British Columbia
Anthony Calero	Team Leader - Inorganics	Calgary Inorganics, Calgary, Alberta
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Sara Niroomand		Calgary Inorganics, Calgary, Alberta
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Sofiya Ivanova	Lab Assistant	Calgary Inorganics, Calgary, Alberta
Zakieh Lalonde		Calgary Inorganics, Calgary, Alberta



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 509780)											
CG2206803-014	Anonymous	turbidity	----	E121	0.10	NTU	<0.10	<0.10	0	Diff <2x LOR	----
Physical Tests (QC Lot: 509926)											
CG2206811-002	Anonymous	turbidity	----	E121	0.10	NTU	0.29	0.32	0.03	Diff <2x LOR	----
Physical Tests (QC Lot: 510190)											
CG2206841-004	RG_ERCKDT_WS_LAEMP_EVO_2022-06-01_NP	turbidity	----	E121	0.10	NTU	<0.10	<0.10	0	Diff <2x LOR	----
Physical Tests (QC Lot: 512117)											
CG2206808-004	Anonymous	solids, total dissolved [TDS]	----	E162	40	mg/L	3830	3850	0.677%	20%	----
Physical Tests (QC Lot: 512684)											
CG2206823-001	Anonymous	acidity (as CaCO3)	----	E283	2.0	mg/L	8.2	7.4	0.9	Diff <2x LOR	----
Physical Tests (QC Lot: 513127)											
CG2206814-004	Anonymous	alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	749	756	0.956%	20%	----
		alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	749	756	0.957%	20%	----
Physical Tests (QC Lot: 513128)											
CG2206814-004	Anonymous	pH	----	E108	0.10	pH units	7.26	7.31	0.686%	4%	----
Physical Tests (QC Lot: 513129)											
CG2206814-004	Anonymous	conductivity	----	E100	1.0	µS/cm	1560	1580	1.15%	10%	----
Physical Tests (QC Lot: 514306)											
CG2206822-006	Anonymous	solids, total dissolved [TDS]	----	E162	20	mg/L	306	300	2.15%	20%	----
Physical Tests (QC Lot: 515284)											
CG2206823-001	Anonymous	oxidation-reduction potential [ORP]	----	E125	0.10	mV	475	471	0.845%	15%	----
Anions and Nutrients (QC Lot: 509609)											
CG2206841-001	RG_ERCKMD_WS_LAEMP_EVO_2022-05-31_NP	sulfate (as SO4)	14808-79-8	E235.SO4	1.50	mg/L	939	940	0.104%	20%	----
Anions and Nutrients (QC Lot: 509610)											
CG2206841-001	RG_ERCKMD_WS_LAEMP_EVO_2022-05-31_NP	bromide	24959-67-9	E235.Br-L	0.250	mg/L	1.09	1.13	0.035	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 509611)											
CG2206841-001	RG_ERCKMD_WS_LAEMP_EVO_2022-05-31_NP	chloride	16887-00-6	E235.Cl-L	0.50	mg/L	7.08	7.02	0.803%	20%	----
Anions and Nutrients (QC Lot: 509612)											



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 509612) - continued											
CG2206841-001	RG_ERCKMD_WS_LAEM P_EVO_2022-05-31_NP	nitrate (as N)	14797-55-8	E235.NO3-L	0.0250	mg/L	19.8	19.9	0.168%	20%	----
Anions and Nutrients (QC Lot: 509613)											
CG2206841-001	RG_ERCKMD_WS_LAEM P_EVO_2022-05-31_NP	nitrite (as N)	14797-65-0	E235.NO2-L	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 509614)											
CG2206841-001	RG_ERCKMD_WS_LAEM P_EVO_2022-05-31_NP	fluoride	16984-48-8	E235.F	0.100	mg/L	0.111	0.112	0.0004	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 510191)											
CG2206841-001	RG_ERCKMD_WS_LAEM P_EVO_2022-05-31_NP	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0190	0.0191	0.0745%	20%	----
Anions and Nutrients (QC Lot: 511058)											
CG2206806-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	0.627	0.667	6.25%	20%	----
Anions and Nutrients (QC Lot: 511059)											
CG2206841-003	RG_FBLANK_WS_LAEMP _EVO_2022-06-01_NP	Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 511541)											
CG2206819-004	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 511542)											
CG2206841-006	RG_MIDBO_WS_LAEMP EVO_2022-06-01_NP	phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0328	0.0327	0.143%	20%	----
Anions and Nutrients (QC Lot: 515903)											
CG2206841-001	RG_ERCKMD_WS_LAEM P_EVO_2022-05-31_NP	ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 515948)											
CG2206823-001	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	0.83	0.90	0.07	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 515949)											
CG2206823-001	Anonymous	carbon, total organic [TOC]	----	E355-L	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
Total Metals (QC Lot: 513327)											
CG2206802-001	Anonymous	mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Total Metals (QC Lot: 513473)											
CG2206810-001	Anonymous	chromium, total	7440-47-3	E420.Cr-L	0.00020	mg/L	0.00031	0.00033	0.00002	Diff <2x LOR	----
Total Metals (QC Lot: 513474)											
CG2206810-001	Anonymous	aluminum, total	7429-90-5	E420	0.0060	mg/L	<0.0060	<0.0060	0	Diff <2x LOR	----
		antimony, total	7440-36-0	E420	0.00020	mg/L	0.00380	0.00379	0.190%	20%	----
		arsenic, total	7440-38-2	E420	0.00020	mg/L	0.00352	0.00356	1.02%	20%	----
		barium, total	7440-39-3	E420	0.00020	mg/L	0.0162	0.0164	0.940%	20%	----
		beryllium, total	7440-41-7	E420	0.000040	mg/L	<0.040 µg/L	<0.000040	0	Diff <2x LOR	----
		bismuth, total	7440-69-9	E420	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (QC Lot: 513474) - continued											
CG2206810-001	Anonymous	boron, total	7440-42-8	E420	0.020	mg/L	0.106	0.108	0.002	Diff <2x LOR	----
		cadmium, total	7440-43-9	E420	0.0000100	mg/L	0.290 µg/L	0.000282	2.62%	20%	----
		calcium, total	7440-70-2	E420	0.100	mg/L	512	516	0.922%	20%	----
		cobalt, total	7440-48-4	E420	0.00020	mg/L	53.6 µg/L	0.0541	0.859%	20%	----
		copper, total	7440-50-8	E420	0.00100	mg/L	0.00113	0.00115	0.00002	Diff <2x LOR	----
		iron, total	7439-89-6	E420	0.020	mg/L	0.371	0.377	1.52%	20%	----
		lead, total	7439-92-1	E420	0.000100	mg/L	0.000148	0.000155	0.000007	Diff <2x LOR	----
		lithium, total	7439-93-2	E420	0.0020	mg/L	1.25	1.25	0.0374%	20%	----
		magnesium, total	7439-95-4	E420	0.0100	mg/L	248	254	2.51%	20%	----
		manganese, total	7439-96-5	E420	0.00020	mg/L	0.311	0.314	0.844%	20%	----
		molybdenum, total	7439-98-7	E420	0.000100	mg/L	0.0101	0.0101	0.462%	20%	----
		nickel, total	7440-02-0	E420	0.00100	mg/L	0.248	0.252	1.68%	20%	----
		potassium, total	7440-09-7	E420	0.100	mg/L	18.9	19.0	0.764%	20%	----
		selenium, total	7782-49-2	E420	0.000100	mg/L	14.4 µg/L	0.0149	2.99%	20%	----
		silicon, total	7440-21-3	E420	0.20	mg/L	3.56	3.68	3.12%	20%	----
		silver, total	7440-22-4	E420	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		sodium, total	7440-23-5	E420	0.100	mg/L	42.1	42.2	0.442%	20%	----
		strontium, total	7440-24-6	E420	0.00040	mg/L	1.69	1.70	0.686%	20%	----
		sulfur, total	7704-34-9	E420	1.00	mg/L	496	507	2.19%	20%	----
		thallium, total	7440-28-0	E420	0.000020	mg/L	0.000139	0.000147	0.000007	Diff <2x LOR	----
		tin, total	7440-31-5	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		titanium, total	7440-32-6	E420	0.00060	mg/L	<0.00060	<0.00060	0	Diff <2x LOR	----
		uranium, total	7440-61-1	E420	0.000020	mg/L	0.0494	0.0493	0.0712%	20%	----
		vanadium, total	7440-62-2	E420	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		zinc, total	7440-66-6	E420	0.0060	mg/L	0.0300	0.0304	0.0004	Diff <2x LOR	----
Dissolved Metals (QC Lot: 513322)											
CG2206802-001	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 513379)											
CG2206806-001	Anonymous	aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0022	0.0022	0.000006	Diff <2x LOR	----
		antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00050	0.00050	0.000003	Diff <2x LOR	----
		barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.195	0.200	2.52%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.000020	mg/L	<0.020 µg/L	<0.000020	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.010	mg/L	0.320	0.322	0.717%	20%	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 513379) - continued											
CG2206806-001	Anonymous	cadmium, dissolved	7440-43-9	E421	0.000050	mg/L	0.0143 µg/L	0.0000180	0.0000038	Diff <2x LOR	----
		calcium, dissolved	7440-70-2	E421	0.050	mg/L	9.59	9.83	2.48%	20%	----
		cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	<0.10 µg/L	<0.00010	0	Diff <2x LOR	----
		copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		iron, dissolved	7439-89-6	E421	0.010	mg/L	0.034	0.035	0.001	Diff <2x LOR	----
		lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.368	0.381	3.38%	20%	----
		magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	6.76	6.94	2.60%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.0225	0.0233	3.48%	20%	----
		molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.0690	0.0701	1.66%	20%	----
		nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00054	0.00055	0.000007	Diff <2x LOR	----
		potassium, dissolved	7440-09-7	E421	0.050	mg/L	1.42	1.49	4.69%	20%	----
		selenium, dissolved	7782-49-2	E421	0.000050	mg/L	<0.050 µg/L	<0.000050	0	Diff <2x LOR	----
		silicon, dissolved	7440-21-3	E421	0.050	mg/L	2.65	2.64	0.366%	20%	----
		silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E421	0.050	mg/L	235	242	2.89%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.683	0.714	4.53%	20%	----
		sulfur, dissolved	7704-34-9	E421	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
		thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00010	mg/L	0.00106	0.00108	2.77%	20%	----
		titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.000039	0.000037	0.000002	Diff <2x LOR	----
		vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	0.00115	0.00118	0.00003	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0023	<0.0010	0.0013	Diff <2x LOR	----
Dissolved Metals (QC Lot: 513380)											
CG2206806-001	Anonymous	chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00010	0.00010	0.000005	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 509780)						
turbidity	---	E121	0.1	NTU	<0.10	---
Physical Tests (QCLot: 509926)						
turbidity	---	E121	0.1	NTU	<0.10	---
Physical Tests (QCLot: 510190)						
turbidity	---	E121	0.1	NTU	<0.10	---
Physical Tests (QCLot: 512109)						
solids, total suspended [TSS]	---	E160-L	1	mg/L	<1.0	---
Physical Tests (QCLot: 512117)						
solids, total dissolved [TDS]	---	E162	10	mg/L	<10	---
Physical Tests (QCLot: 512684)						
acidity (as CaCO ₃)	---	E283	2	mg/L	<2.0	---
Physical Tests (QCLot: 513127)						
alkalinity, bicarbonate (as CaCO ₃)	---	E290	1	mg/L	1.3	---
alkalinity, carbonate (as CaCO ₃)	---	E290	1	mg/L	<1.0	---
alkalinity, hydroxide (as CaCO ₃)	---	E290	1	mg/L	<1.0	---
alkalinity, total (as CaCO ₃)	---	E290	1	mg/L	1.3	---
Physical Tests (QCLot: 513129)						
conductivity	---	E100	1	µS/cm	<1.0	---
Physical Tests (QCLot: 514297)						
solids, total suspended [TSS]	---	E160-L	1	mg/L	<1.0	---
Physical Tests (QCLot: 514298)						
solids, total suspended [TSS]	---	E160-L	1	mg/L	<1.0	---
Physical Tests (QCLot: 514306)						
solids, total dissolved [TDS]	---	E162	10	mg/L	<10	---
Anions and Nutrients (QCLot: 509609)						
sulfate (as SO ₄)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	---
Anions and Nutrients (QCLot: 509610)						
bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	---
Anions and Nutrients (QCLot: 509611)						
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	---
Anions and Nutrients (QCLot: 509612)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	---
Anions and Nutrients (QCLot: 509613)						



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 509613) - continued						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 509614)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 510191)						
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 511058)						
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 511059)						
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 511541)						
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 511542)						
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 515903)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Organic / Inorganic Carbon (QCLot: 515948)						
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Organic / Inorganic Carbon (QCLot: 515949)						
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	<0.50	----
Total Metals (QCLot: 513327)						
mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	----
Total Metals (QCLot: 513473)						
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	<0.00010	----
Total Metals (QCLot: 513474)						
aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	----
antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	----
barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	----
boron, total	7440-42-8	E420	0.01	mg/L	<0.010	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	----
calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	----
copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	----
iron, total	7439-89-6	E420	0.01	mg/L	<0.010	----



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 513474) - continued						
lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	---
lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	---
magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	---
manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	---
molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	---
nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	---
potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	---
selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	---
silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	---
silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	---
sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	---
strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	---
sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	---
thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	---
tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	---
titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	---
uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	---
vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	---
zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	---
Dissolved Metals (QCLot: 513322)						
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	---
Dissolved Metals (QCLot: 513379)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	---
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	---
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	---
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	---
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	---
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	---
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	---
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	---
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	---
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	---
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	---
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	---
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	---
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	---



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 513379) - continued						
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
Dissolved Metals (QCLot: 513380)						
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	<0.00010	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Water					Laboratory Control Sample (LCS) Report				
					Spike Concentration	Recovery (%)	Recovery Limits (%)		Qualifier
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 509780)									
turbidity	---	E121	0.1	NTU	200 NTU	101	85.0	115	---
Physical Tests (QCLot: 509926)									
turbidity	---	E121	0.1	NTU	200 NTU	99.6	85.0	115	---
Physical Tests (QCLot: 510190)									
turbidity	---	E121	0.1	NTU	200 NTU	100	85.0	115	---
Physical Tests (QCLot: 512109)									
solids, total suspended [TSS]	---	E160-L	1	mg/L	150 mg/L	91.4	85.0	115	---
Physical Tests (QCLot: 512117)									
solids, total dissolved [TDS]	---	E162	10	mg/L	1000 mg/L	92.9	85.0	115	---
Physical Tests (QCLot: 512684)									
acidity (as CaCO ₃)	---	E283	2	mg/L	50 mg/L	105	85.0	115	---
Physical Tests (QCLot: 513127)									
alkalinity, total (as CaCO ₃)	---	E290	1	mg/L	500 mg/L	103	85.0	115	---
Physical Tests (QCLot: 513128)									
pH	---	E108	---	pH units	7 pH units	99.8	98.6	101	---
Physical Tests (QCLot: 513129)									
conductivity	---	E100	1	µS/cm	146.9 µS/cm	106	90.0	110	---
Physical Tests (QCLot: 514297)									
solids, total suspended [TSS]	---	E160-L	1	mg/L	150 mg/L	101	85.0	115	---
Physical Tests (QCLot: 514298)									
solids, total suspended [TSS]	---	E160-L	1	mg/L	150 mg/L	97.1	85.0	115	---
Physical Tests (QCLot: 514306)									
solids, total dissolved [TDS]	---	E162	10	mg/L	1000 mg/L	97.4	85.0	115	---
Physical Tests (QCLot: 515284)									
oxidation-reduction potential [ORP]	---	E125	---	mV	220 mV	102	95.4	104	---
Anions and Nutrients (QCLot: 509609)									
sulfate (as SO ₄)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	95.0	90.0	110	---
Anions and Nutrients (QCLot: 509610)									
bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	106	85.0	115	---
Anions and Nutrients (QCLot: 509611)									
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	94.0	90.0	110	---
Anions and Nutrients (QCLot: 509612)									



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike Concentration	Recovery (%) LCS	Recovery Limits (%)		Qualifier
						Low	High		
Anions and Nutrients (QCLot: 509612) - continued									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	93.0	90.0	110	----
Anions and Nutrients (QCLot: 509613)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	94.7	90.0	110	----
Anions and Nutrients (QCLot: 509614)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	105	90.0	110	----
Anions and Nutrients (QCLot: 510191)									
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.02 mg/L	102	80.0	120	----
Anions and Nutrients (QCLot: 511058)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 511059)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 511541)									
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	8.02 mg/L	103	80.0	120	----
Anions and Nutrients (QCLot: 511542)									
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	8.02 mg/L	104	80.0	120	----
Anions and Nutrients (QCLot: 515903)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	98.8	85.0	115	----
Organic / Inorganic Carbon (QCLot: 515948)									
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	94.3	80.0	120	----
Organic / Inorganic Carbon (QCLot: 515949)									
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	100	80.0	120	----
Total Metals (QCLot: 513327)									
mercury, total	7439-97-6	E508	0.000005	mg/L	0.0001 mg/L	99.0	80.0	120	----
Total Metals (QCLot: 513473)									
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	0.25 mg/L	105	80.0	120	----
Total Metals (QCLot: 513474)									
aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	108	80.0	120	----
antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	105	80.0	120	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	103	80.0	120	----
barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	108	80.0	120	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	103	80.0	120	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	106	80.0	120	----
boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	102	80.0	120	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	104	80.0	120	----
calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	105	80.0	120	----



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Total Metals (QCLot: 513474) - continued									
cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	103	80.0	120	----
copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	103	80.0	120	----
iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	109	80.0	120	----
lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	106	80.0	120	----
lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	102	80.0	120	----
magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	106	80.0	120	----
manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	105	80.0	120	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	107	80.0	120	----
nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	103	80.0	120	----
potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	107	80.0	120	----
selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	101	80.0	120	----
silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	110	80.0	120	----
silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	102	80.0	120	----
sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	108	80.0	120	----
strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	106	80.0	120	----
sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	105	80.0	120	----
thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	109	80.0	120	----
tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	104	80.0	120	----
titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	96.2	80.0	120	----
uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	105	80.0	120	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	106	80.0	120	----
zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	102	80.0	120	----
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	100	80.0	120	----
Dissolved Metals (QCLot: 513379)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	100	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	97.2	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	95.0	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	96.0	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	101	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	91.3	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	97.0	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	96.2	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	100	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	95.6	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	96.6	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	104	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	93.7	80.0	120	----



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Dissolved Metals (QCLot: 513379) - continued									
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	104	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	96.3	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	97.7	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	96.2	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	97.6	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	102	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	96.1	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	99.4	80.0	120	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	89.7	80.0	120	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	102	80.0	120	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	100	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	85.6	80.0	120	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	96.0	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	92.2	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	97.5	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	95.1	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	100	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	93.4	80.0	120	----
Dissolved Metals (QCLot: 513380)									
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	0.25 mg/L	97.6	80.0	120	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 509609)										
CG2206841-003	RG_FBLANK_WS_LAEMP_EVO_2022-06-01_NP	sulfate (as SO4)	14808-79-8	E235.SO4	123 mg/L	100 mg/L	123	75.0	125	----
Anions and Nutrients (QCLot: 509610)										
CG2206841-003	RG_FBLANK_WS_LAEMP_EVO_2022-06-01_NP	bromide	24959-67-9	E235.Br-L	0.602 mg/L	0.5 mg/L	120	75.0	125	----
Anions and Nutrients (QCLot: 509611)										
CG2206841-003	RG_FBLANK_WS_LAEMP_EVO_2022-06-01_NP	chloride	16887-00-6	E235.Cl-L	122 mg/L	100 mg/L	122	75.0	125	----
Anions and Nutrients (QCLot: 509612)										
CG2206841-003	RG_FBLANK_WS_LAEMP_EVO_2022-06-01_NP	nitrate (as N)	14797-55-8	E235.NO3-L	3.05 mg/L	2.5 mg/L	122	75.0	125	----
Anions and Nutrients (QCLot: 509613)										
CG2206841-003	RG_FBLANK_WS_LAEMP_EVO_2022-06-01_NP	nitrite (as N)	14797-65-0	E235.NO2-L	0.620 mg/L	0.5 mg/L	124	75.0	125	----
Anions and Nutrients (QCLot: 509614)										
CG2206841-003	RG_FBLANK_WS_LAEMP_EVO_2022-06-01_NP	fluoride	16984-48-8	E235.F	1.13 mg/L	1 mg/L	113	75.0	125	----
Anions and Nutrients (QCLot: 510191)										
CG2206841-002	RG_ERCKUT_WS_LAEMP_EVO_2022-05-31_NP	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0499 mg/L	0.05 mg/L	99.8	70.0	130	----
Anions and Nutrients (QCLot: 511058)										
CG2206816-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.59 mg/L	2.5 mg/L	104	70.0	130	----
Anions and Nutrients (QCLot: 511059)										
CG2206841-004	RG_ERCKDT_WS_LAEMP_EVO_2022-06-01_NP	Kjeldahl nitrogen, total [TKN]	----	E318	2.42 mg/L	2.5 mg/L	96.6	70.0	130	----
Anions and Nutrients (QCLot: 511541)										
CG2206819-005	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0692 mg/L	0.0676 mg/L	102	70.0	130	----
Anions and Nutrients (QCLot: 511542)										
CG2206841-007	RG_MIDGA_WS_LAEMP_EVO_2022-06-01_NP	phosphorus, total	7723-14-0	E372-U	0.0716 mg/L	0.0676 mg/L	106	70.0	130	----
Anions and Nutrients (QCLot: 515903)										
CG2206841-002	RG_ERCKUT_WS_LAEMP_EVO_2022-05-31_NP	ammonia, total (as N)	7664-41-7	E298	0.101 mg/L	0.1 mg/L	101	75.0	125	----
Organic / Inorganic Carbon (QCLot: 515948)										



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Organic / Inorganic Carbon (QCLot: 515948) - continued										
CG2206823-001	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	4.79 mg/L	5 mg/L	95.9	70.0	130	----
Organic / Inorganic Carbon (QCLot: 515949)										
CG2206823-001	Anonymous	carbon, total organic [TOC]	----	E355-L	5.15 mg/L	5 mg/L	103	70.0	130	----
Total Metals (QCLot: 513327)										
CG2206806-001	Anonymous	mercury, total	7439-97-6	E508	0.0000936 mg/L	0.0001 mg/L	93.6	70.0	130	----
Total Metals (QCLot: 513473)										
CG2206810-002	Anonymous	chromium, total	7440-47-3	E420.Cr-L	0.0804 mg/L	0.08 mg/L	100	70.0	130	----
Total Metals (QCLot: 513474)										
CG2206810-002	Anonymous	aluminum, total	7429-90-5	E420	0.409 mg/L	0.4 mg/L	102	70.0	130	----
		antimony, total	7440-36-0	E420	0.0411 mg/L	0.04 mg/L	103	70.0	130	----
		arsenic, total	7440-38-2	E420	0.0417 mg/L	0.04 mg/L	104	70.0	130	----
		barium, total	7440-39-3	E420	0.0406 mg/L	0.04 mg/L	102	70.0	130	----
		beryllium, total	7440-41-7	E420	0.0804 mg/L	0.08 mg/L	100	70.0	130	----
		bismuth, total	7440-69-9	E420	0.0187 mg/L	0.02 mg/L	93.3	70.0	130	----
		boron, total	7440-42-8	E420	0.185 mg/L	0.2 mg/L	92.5	70.0	130	----
		cadmium, total	7440-43-9	E420	0.00793 mg/L	0.008 mg/L	99.2	70.0	130	----
		calcium, total	7440-70-2	E420	ND mg/L	8 mg/L	ND	70.0	130	----
		cobalt, total	7440-48-4	E420	ND mg/L	0.04 mg/L	ND	70.0	130	----
		copper, total	7440-50-8	E420	0.0366 mg/L	0.04 mg/L	91.6	70.0	130	----
		iron, total	7439-89-6	E420	3.83 mg/L	4 mg/L	95.8	70.0	130	----
		lead, total	7439-92-1	E420	0.0386 mg/L	0.04 mg/L	96.6	70.0	130	----
		lithium, total	7439-93-2	E420	ND mg/L	0.2 mg/L	ND	70.0	130	----
		magnesium, total	7439-95-4	E420	ND mg/L	2 mg/L	ND	70.0	130	----
		manganese, total	7439-96-5	E420	ND mg/L	0.04 mg/L	ND	70.0	130	----
		molybdenum, total	7439-98-7	E420	0.0435 mg/L	0.04 mg/L	109	70.0	130	----
		nickel, total	7440-02-0	E420	ND mg/L	0.08 mg/L	ND	70.0	130	----
		potassium, total	7440-09-7	E420	ND mg/L	8 mg/L	ND	70.0	130	----
		selenium, total	7782-49-2	E420	0.0930 mg/L	0.08 mg/L	116	70.0	130	----
		silicon, total	7440-21-3	E420	20.4 mg/L	20 mg/L	102	70.0	130	----
		silver, total	7440-22-4	E420	0.00816 mg/L	0.008 mg/L	102	70.0	130	----
		sodium, total	7440-23-5	E420	ND mg/L	4 mg/L	ND	70.0	130	----
		strontium, total	7440-24-6	E420	ND mg/L	0.04 mg/L	ND	70.0	130	----
		sulfur, total	7704-34-9	E420	ND mg/L	40 mg/L	ND	70.0	130	----
		thallium, total	7440-28-0	E420	0.00784 mg/L	0.008 mg/L	98.0	70.0	130	----
		tin, total	7440-31-5	E420	0.0405 mg/L	0.04 mg/L	101	70.0	130	----



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 513474) - continued										
CG2206810-002	Anonymous	titanium, total	7440-32-6	E420	0.0795 mg/L	0.08 mg/L	99.4	70.0	130	----
		uranium, total	7440-61-1	E420	ND mg/L	0.008 mg/L	ND	70.0	130	----
		vanadium, total	7440-62-2	E420	0.207 mg/L	0.2 mg/L	103	70.0	130	----
		zinc, total	7440-66-6	E420	0.731 mg/L	0.8 mg/L	91.4	70.0	130	----
Dissolved Metals (QCLot: 513322)										
CG2206806-001	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000938 mg/L	0.0001 mg/L	93.8	70.0	130	----
Dissolved Metals (QCLot: 513379)										
CG2206810-001	Anonymous	aluminum, dissolved	7429-90-5	E421	0.399 mg/L	0.4 mg/L	99.7	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.0400 mg/L	0.04 mg/L	100.0	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.0395 mg/L	0.04 mg/L	98.8	70.0	130	----
		barium, dissolved	7440-39-3	E421	0.0372 mg/L	0.04 mg/L	93.1	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.0804 mg/L	0.08 mg/L	100	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.0166 mg/L	0.02 mg/L	82.9	70.0	130	----
		boron, dissolved	7440-42-8	E421	ND mg/L	0.1 mg/L	ND	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.00796 mg/L	0.008 mg/L	99.6	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	4 mg/L	ND	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.0369 mg/L	0.04 mg/L	92.2	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.0370 mg/L	0.04 mg/L	92.4	70.0	130	----
		iron, dissolved	7439-89-6	E421	3.87 mg/L	4 mg/L	96.8	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.0352 mg/L	0.04 mg/L	88.0	70.0	130	----
		lithium, dissolved	7439-93-2	E421	ND mg/L	0.1 mg/L	ND	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	1 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.0409 mg/L	0.04 mg/L	102	70.0	130	----
		nickel, dissolved	7440-02-0	E421	ND mg/L	0.04 mg/L	ND	70.0	130	----
		potassium, dissolved	7440-09-7	E421	ND mg/L	4 mg/L	ND	70.0	130	----
		selenium, dissolved	7782-49-2	E421	0.0854 mg/L	0.08 mg/L	107	70.0	130	----
		silicon, dissolved	7440-21-3	E421	19.0 mg/L	20 mg/L	95.2	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.00751 mg/L	0.008 mg/L	93.9	70.0	130	----
		sodium, dissolved	7440-23-5	E421	ND mg/L	2 mg/L	ND	70.0	130	----
		strontium, dissolved	7440-24-6	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	ND mg/L	20 mg/L	ND	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.00722 mg/L	0.008 mg/L	90.2	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.0390 mg/L	0.04 mg/L	97.4	70.0	130	----
		titanium, dissolved	7440-32-6	E421	0.0779 mg/L	0.08 mg/L	97.4	70.0	130	----
		uranium, dissolved	7440-61-1	E421	ND mg/L	0.004 mg/L	ND	70.0	130	----



Sub-Matrix: **Water**

					<i>Matrix Spike (MS) Report</i>					
					<i>Spike</i>		<i>Recovery (%)</i>	<i>Recovery Limits (%)</i>		
<i>Laboratory sample ID</i>	<i>Client sample ID</i>	<i>Analyte</i>	<i>CAS Number</i>	<i>Method</i>	<i>Concentration</i>	<i>Target</i>	<i>MS</i>	<i>Low</i>	<i>High</i>	<i>Qualifier</i>
Dissolved Metals (QCLot: 513379) - continued										
CG2206810-001	Anonymous	vanadium, dissolved	7440-62-2	E421	0.208 mg/L	0.2 mg/L	104	70.0	130	----
		zinc, dissolved	7440-66-6	E421	0.726 mg/L	0.8 mg/L	90.8	70.0	130	----
Dissolved Metals (QCLot: 513380)										
CG2206810-001	Anonymous	chromium, dissolved	7440-47-3	E421.Cr-L	0.0808 mg/L	0.08 mg/L	101	70.0	130	----

COC ID: **MAY/JUNE EVO LAEMP 2022 WS** TURNAROUND TIME:

PROJECT/CLIENT INFO				LABORATORY			
Facility Name / Job#	Regional EVO LAEMP			Lab Name	ALS Calgary		
Project Manager	Mike Pope			Lab Contact	Lyudmyla Shvets		
Email	m.pope@teck.com			Email	lyudmyla.shvets@alsglobal.com		
Address	421 Pine Avenue			Address	2559 29 Street NE		
City	Sparwood	Province	BC	City	Calgary	Province	AB
Postal Code	V0B 2G0	Country	Canada	Postal Code	T1Y 7B5	Country	Canada
Phone Number	343-333-3905			Phone Number	1 403 407 1794		

Environmental Division
Calgary
Work Order Reference
CG2206841



Telephone : + 1 403 407 1800

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS REQUESTED						
								TECKCOAL-ROUTINE-VA	ALS_Package-DOC	ALS_Package-TRN/TOC	HC-T-U-CVAF-VA	HC-B-CVAF-VA	TECKCOAL-MET-T-VA	TECKCOAL-MET-D-VA
RG_ERCKMD_WS_LAEMP_EVO_2022-05-31_NP	RG_ERCKMD	WS	No	5/31/2022	15:18	G	7	X	X	X	X	X	X	
RG_ERCKUT_WS_LAEMP_EVO_2022-05-31_NP	RG_ERCKUT	WS	No	5/31/2022	12:45	G	7	X	X	X	X	X	X	
RG_FBLANK_WS_LAEMP_EVO_2022-06-01_NP	RG_FBLANK	WS	No	6/1/2022	9:16	G	7	X	X	X	X	X	X	
RG_ERCKDT_WS_LAEMP_EVO_2022-06-01_NP	RG_ERCKDT	WS	No	6/1/2022	14:47	G	7	X	X	X	X	X	X	
RG_GATEDP_WS_LAEMP_EVO_2022-06-01_NP	RG_GATEDP	WS	No	6/1/2022	10:09	G	7	X	X	X	X	X	X	
RG_MIDBO_WS_LAEMP_EVO_2022-06-01_NP	RG_MIDBO	WS	No	6/1/2022	7:58	G	7	X	X	X	X	X	X	
RG_MIDGA_WS_LAEMP_EVO_2022-06-01_NP	RG_MIDGA	WS	No	6/1/2022	9:16	G	7	X	X	X	X	X	X	
RG_RIVER_WS_LAEMP_EVO_2022-06-01_NP	RG_RIVER	WS	No	6/1/2022	7:58	G	7	X	X	X	X	X	X	

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
ALS PO VPO00816101	Emily Dutton	June 1/2022	<i>[Signature]</i>

NO OF BOTTLES RETURNED/DESCRIPTION	Sampler's Name	Mobile #
Regular (default) x Priority (2-3 business days) - 50% surcharge Emergency (1 Business Day) - 100% surcharge For Emergency <1 Day, ASAP or Weekend - Contact ALS	Emily Dutton	647-704-3697
	Sampler's Signature <i>[Signature]</i>	Date/Time June 1, 2022

[Handwritten number 70]



CERTIFICATE OF ANALYSIS

Work Order : **CG2206946**
Client : **Teck Coal Limited**
Contact : Mike Pope
Address : RR#1 HWY#3
Sparwood BC Canada V0B 2G1
Telephone : ----
Project : REGIONAL EFFECTS PROGRAM
PO : VPO00816101
C-O-C number : MAY/JUNE EVO LAEMP 2022 WS
Sampler : ED
Site : ----
Quote number : Teck Coal Master Quote
No. of samples received : 10
No. of samples analysed : 10

Page : 1 of 11
Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
Calgary AB Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 04-Jun-2022 10:00
Date Analysis Commenced : 05-Jun-2022
Issue Date : 15-Jun-2022 15:04

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Angela Ren	Team Leader - Metals	Metals, Burnaby, British Columbia
Anthony Calero	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Dan Gebert	Laboratory Analyst	Metals, Burnaby, British Columbia
Dee Lee	Analyst	Metals, Burnaby, British Columbia
Elke Tabora		Inorganics, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Kim Jensen	Department Manager - Metals	Metals, Burnaby, British Columbia
Kyle Chang	Lab Assistant	Metals, Burnaby, British Columbia
Owen Cheng		Metals, Burnaby, British Columbia
Robin Weeks	Team Leader - Metals	Metals, Burnaby, British Columbia
Ruifang Zheng	Analyst	Inorganics, Calgary, Alberta
Sara Niroomand		Inorganics, Calgary, Alberta
Shirley Li		Inorganics, Calgary, Alberta
Sofiya Ivanova	Lab Assistant	Inorganics, Calgary, Alberta



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
 LOR: Limit of Reporting (detection limit).

<i>Unit</i>	<i>Description</i>
-	No Unit
%	percent
µg/L	micrograms per litre
µS/cm	Microsiemens per centimetre
meq/L	milliequivalents per litre
mg/L	milligrams per litre
mV	millivolts
NTU	nephelometric turbidity units
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

<i>Qualifier</i>	<i>Description</i>
DLDS	Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
HTA	Analytical holding time was exceeded.
RRV	Reported result verified by repeat analysis.
TKNI	TKN result may be biased low due to Nitrate interference. Nitrate-N is > 10x TKN.



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_MIDER_WS _LAEMP_EVO_ 2022-06-02_NP	RG_FBLANK_W S_LAEMP_EVO _2022-06-02_N P	RG_ERCK_WS LAEMP_EVO_2 022-06-02_NP	RG_RIVER_WS _LAEMP_EVO_ 2022-06-02_NP	RG_MICOMP_W S_LAEMP_EVO _2022-06-02_N P
Client sampling date / time					02-Jun-2022 12:32	02-Jun-2022 13:15	02-Jun-2022 09:34	02-Jun-2022 12:32	02-Jun-2022 14:50	
Analyte	CAS Number	Method	LOR	Unit	CG2206946-001	CG2206946-002	CG2206946-003	CG2206946-004	CG2206946-005	
					Result	Result	Result	Result	Result	
Physical Tests										
acidity (as CaCO3)	----	E283	2.0	mg/L	<2.0	<2.0	<2.0	<2.0	<2.0	
alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	90.0	<1.0	368	99.4	117	
alkalinity, bicarbonate (as HCO3)	71-52-3	E290	1.0	mg/L	110	<1.0	449	121	143	
alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
alkalinity, carbonate (as CO3)	3812-32-6	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
alkalinity, hydroxide (as OH)	14280-30-9	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	90.0	<1.0	368	99.4	117	
conductivity	----	E100	2.0	µS/cm	232	<2.0	1890	236	285	
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	108	<0.50	1130	106	130	
oxidation-reduction potential [ORP]	----	E125	0.10	mV	356	544	359	358	348	
pH	----	E108	0.10	pH units	8.10	5.37	8.17	8.13	8.18	
solids, total dissolved [TDS]	----	E162	10	mg/L	171	<10	1540	171	186	
solids, total suspended [TSS]	----	E160-L	1.0	mg/L	12.7	<1.0	1.8	11.8	19.1	
turbidity	----	E121	0.10	NTU	7.32 ^{HTA}	<0.10	<0.10	7.85	8.30	
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	0.0155 ^{RRV}	<0.0050	<0.0050	<0.0050	
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	<0.050	<0.250 ^{DLDS}	<0.050	<0.050	
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	0.30	<0.10	5.97	0.34	0.69	
fluoride	16984-48-8	E235.F	0.020	mg/L	0.090	<0.020	<0.100 ^{DLDS}	0.082	0.092	
Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	<0.500 ^{DLM}	<0.050	1.38 ^{TKNI}	<0.500 ^{DLM}	<0.500 ^{DLM}	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.105	<0.0050	17.0 ^{HTA}	0.114	0.302	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	<0.0010	<0.0050 ^{DLDS, HTA}	<0.0010	<0.0010	
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0108 ^{HTA}	<0.0010	<0.0010	0.0096	0.0068	
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0285	<0.0020	0.0048	0.0535	0.0452	
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	28.3	<0.30	836	29.3	40.6	
Organic / Inorganic Carbon										
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	2.33	<0.50	0.67	2.98	2.62	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_MIDER_WS _LAEMP_EVO_ 2022-06-02_NP	RG_FBLANK_W S_LAEMP_EVO_ 2022-06-02_N P	RG_ERCK_WS_ LAEMP_EVO_2 022-06-02_NP	RG_RIVER_WS _LAEMP_EVO_ 2022-06-02_NP	RG_MICOMP_W S_LAEMP_EVO_ 2022-06-02_N P
Client sampling date / time					02-Jun-2022 12:32	02-Jun-2022 13:15	02-Jun-2022 09:34	02-Jun-2022 12:32	02-Jun-2022 14:50	
Analyte	CAS Number	Method	LOR	Unit	CG2206946-001 Result	CG2206946-002 Result	CG2206946-003 Result	CG2206946-004 Result	CG2206946-005 Result	
Organic / Inorganic Carbon										
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	2.46	<0.50	0.72	2.54	2.38	
Ion Balance										
anion sum	----	EC101	0.10	meq/L	2.41	<0.10	26.1	2.62	3.23	
cation sum	----	EC101	0.10	meq/L	2.25	<0.10	22.9	2.22	2.71	
ion balance (cations/anions)	----	EC101	0.010	%	93.4	100	87.7	84.7	83.9	
ion balance (APHA)	----	EC101	0.010	%	3.43	<0.010	6.53	8.26	8.75	
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L	0.261	<0.0030	<0.0030	0.254	0.221	
antimony, total	7440-36-0	E420	0.00010	mg/L	<0.00010	<0.00010	0.00020	<0.00010	<0.00010	
arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00030	<0.00010	0.00025	0.00029	0.00030	
barium, total	7440-39-3	E420	0.00010	mg/L	0.0589	0.00045 ^{RRV}	0.0463	0.0579	0.0620	
beryllium, total	7440-41-7	E420	0.020	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	
bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
boron, total	7440-42-8	E420	0.010	mg/L	<0.010	<0.010	0.013	<0.010	<0.010	
cadmium, total	7440-43-9	E420	0.0050	µg/L	0.0574	<0.0050	0.0070	0.0567	0.0694	
calcium, total	7440-70-2	E420	0.050	mg/L	28.0	<0.050	220	28.1	35.3	
chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	0.00046	<0.00010	0.00027	0.00043	0.00043	
cobalt, total	7440-48-4	E420	0.10	µg/L	0.21	<0.10	<0.10	0.22	0.20	
copper, total	7440-50-8	E420	0.00050	mg/L	0.00061	<0.00050	<0.00050	0.00087	0.00059	
iron, total	7439-89-6	E420	0.010	mg/L	0.220	<0.010	<0.010	0.227	0.239	
lead, total	7439-92-1	E420	0.000050	mg/L	0.000155	<0.000050	<0.000050	0.000188	0.000216	
lithium, total	7439-93-2	E420	0.0010	mg/L	0.0036	<0.0010	0.0260	0.0033	0.0046	
magnesium, total	7439-95-4	E420	0.0050	mg/L	9.17	<0.0050	148	9.16	11.9	
manganese, total	7439-96-5	E420	0.00010	mg/L	0.00710	<0.00010	0.00036	0.00789	0.00998	
mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.000533	0.000231 ^{RRV}	0.00125	0.000593	0.000574	
nickel, total	7440-02-0	E420	0.00050	mg/L	0.00175	<0.00050	0.00320	0.00167	0.00175	
potassium, total	7440-09-7	E420	0.050	mg/L	0.565	<0.050	2.67	0.554	0.589	
selenium, total	7782-49-2	E420	0.050	µg/L	1.24	<0.050	167	1.32	3.22	



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

Client sample ID

					RG_MIDER_WS _LAEMP_EVO_ 2022-06-02_NP	RG_FBLANK_W S_LAEMP_EVO _2022-06-02_N P	RG_ERCK_WS_ LAEMP_EVO_2 022-06-02_NP	RG_RIVER_WS _LAEMP_EVO_ 2022-06-02_NP	RG_MICOMP_W S_LAEMP_EVO _2022-06-02_N P
Client sampling date / time					02-Jun-2022 12:32	02-Jun-2022 13:15	02-Jun-2022 09:34	02-Jun-2022 12:32	02-Jun-2022 14:50
Analyte	CAS Number	Method	LOR	Unit	CG2206946-001	CG2206946-002	CG2206946-003	CG2206946-004	CG2206946-005
					Result	Result	Result	Result	Result
Total Metals									
silicon, total	7440-21-3	E420	0.10	mg/L	2.35	<0.10	3.84	2.33	2.32
silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
sodium, total	7440-23-5	E420	0.050	mg/L	1.92	<0.050	3.23	1.90	1.95
strontium, total	7440-24-6	E420	0.00020	mg/L	0.0862	<0.00020	0.218	0.0858	0.0947
sulfur, total	7704-34-9	E420	0.50	mg/L	9.42	<0.50	281	9.33	12.9
thallium, total	7440-28-0	E420	0.000010	mg/L	0.000013	<0.000010	<0.000010	0.000012	0.000011
tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
titanium, total	7440-32-6	E420	0.00030	mg/L	0.00416	<0.00030	<0.00030	<0.00480 ^{DLM}	0.00354
uranium, total	7440-61-1	E420	0.000010	mg/L	0.000381	<0.000010	0.00762	0.000378	0.000577
vanadium, total	7440-62-2	E420	0.00050	mg/L	0.00127	<0.00050	<0.00050	0.00123	0.00120
zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	<0.0030	<0.0030	0.0045	<0.0030
Dissolved Metals									
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0124	<0.0010	<0.0010	0.0134	0.0143
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00010	<0.00010	0.00020	<0.00010	<0.00010
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00018	<0.00010	0.00022	0.00017	0.00020
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0530	<0.00010	0.0465	0.0530	0.0575
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.010	<0.010	0.012	<0.010	<0.010
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.0244	<0.0050	0.0080	0.0205	0.0198
calcium, dissolved	7440-70-2	E421	0.050	mg/L	28.6	<0.050	220	28.2	33.5
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	0.00012	<0.00010	0.00016	0.00013	0.00012
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	<0.10	<0.10	<0.10	<0.10	<0.10
copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00034	<0.00020	<0.00020	0.00036	0.00030
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	0.010
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0035	<0.0010	0.0255	0.0032	0.0044
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	8.78	<0.0050	142	8.75	11.4
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00100	<0.00010	0.00035	0.00099	0.00113



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_MIDER_WS _LAEMP_EVO_ 2022-06-02_NP	RG_FBLANK_W S_LAEMP_EVO_ _2022-06-02_N P	RG_ERCK_WS_ LAEMP_EVO_2 022-06-02_NP	RG_RIVER_WS _LAEMP_EVO_ 2022-06-02_NP	RG_MICOMP_W S_LAEMP_EVO_ _2022-06-02_N P
Client sampling date / time					02-Jun-2022 12:32	02-Jun-2022 13:15	02-Jun-2022 09:34	02-Jun-2022 12:32	02-Jun-2022 14:50	
Analyte	CAS Number	Method	LOR	Unit	CG2206946-001	CG2206946-002	CG2206946-003	CG2206946-004	CG2206946-005	
					Result	Result	Result	Result	Result	
Dissolved Metals										
mercury, dissolved	7439-97-6	E509	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.000560	<0.000050	0.00122	0.000511	0.000601	
nickel, dissolved	7440-02-0	E421	0.000050	mg/L	0.00126	<0.000050	0.00312	0.00138	0.00114	
potassium, dissolved	7440-09-7	E421	0.050	mg/L	0.468	<0.050	2.62	0.464	0.525	
selenium, dissolved	7782-49-2	E421	0.050	µg/L	1.18	<0.050	166	1.10	2.98	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	1.98	<0.050	3.78	1.90	1.95	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	1.93	<0.050	3.22	1.91	1.95	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.0888	<0.00020	0.218	0.0864	0.0951	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	9.56	<0.50	273	9.00	12.4	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.000367	<0.000010	0.00764	0.000373	0.000509	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0011	<0.0010	<0.0010	0.0012	<0.0010	
dissolved mercury filtration location	----	EP509	-	-	Field	Field	Field	Field	Field	
dissolved metals filtration location	----	EP421	-	-	Field	Field	Field	Field	Field	

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKUC_W S_LAEMP_EVO _2022-06-02_N P	RG_MI3_WS_L AEMP_EVO_20 22-06-02_NP	RG_GATE_WS_ LAEMP_EVO_2 022-06-02_NP	RG_TRIP_WS_L AEMP_EVO_20 22-06-02_NP	RG_BOCK_WS_ LAEMP_EVO_2 022-06-03_NP
Client sampling date / time					02-Jun-2022 08:47	02-Jun-2022 10:15	02-Jun-2022 13:15	02-Jun-2022 12:00	03-Jun-2022 11:30	
Analyte	CAS Number	Method	LOR	Unit	CG2206946-006	CG2206946-007	CG2206946-008	CG2206946-009	CG2206946-010	
					Result	Result	Result	Result	Result	
Physical Tests										
acidity (as CaCO3)	----	E283	2.0	mg/L	<2.0	<2.0	<2.0	<2.0	2.2	
alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	357	117	363	<1.0	344	
alkalinity, bicarbonate (as HCO3)	71-52-3	E290	1.0	mg/L	436	143	443	<1.0	420	
alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
alkalinity, carbonate (as CO3)	3812-32-6	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
alkalinity, hydroxide (as OH)	14280-30-9	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	357	117	363	<1.0	344	
conductivity	----	E100	2.0	µS/cm	1890	255	1990	<2.0	2010	
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	1130	122	1220	<0.50	1220	
oxidation-reduction potential [ORP]	----	E125	0.10	mV	370	375	354	545	358	
pH	----	E108	0.10	pH units	8.16	8.20	8.21	5.36	8.14	
solids, total dissolved [TDS]	----	E162	10	mg/L	1530	183	1580	<10	1650	
solids, total suspended [TSS]	----	E160-L	1.0	mg/L	1.9	11.8	3.7	<1.0	1.9	
turbidity	----	E121	0.10	NTU	<0.10	6.75	1.75	<0.10	1.07	
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	0.0981	<0.0050	0.0766	
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.250 ^{DLDS}	<0.050	0.370	<0.050	0.358	
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	6.14	0.42	11.4	<0.10	17.8	
fluoride	16984-48-8	E235.F	0.020	mg/L	<0.100 ^{DLDS}	0.101	0.208	<0.020	0.203	
Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	1.34 ^{TKNI}	<0.500 ^{DLM}	2.18	<0.050	1.88	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	17.7 ^{HTA}	0.0946 ^{HTA}	7.57	<0.0050	10.7	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0050 ^{DLDS, HTA}	<0.0010 ^{HTA}	<0.0050 ^{DLDS}	<0.0010	0.0310	
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0012	0.0053	0.0024	<0.0010	<0.0010	
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0057	0.0242	0.0103	<0.0020	0.0042	
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	868	19.8	974	<0.30	989	
Organic / Inorganic Carbon										
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	0.61	2.02	1.26	<0.50	0.70	
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	0.72	1.78	0.88	<0.50	0.70	



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

Client sample ID

					RG_ERCKUC_W S_LAEMP_EVO _2022-06-02_N P	RG_MI3_WS_L AEMP_EVO_20 22-06-02_NP	RG_GATE_WS_ LAEMP_EVO_2 022-06-02_NP	RG_TRIP_WS_L AEMP_EVO_20 22-06-02_NP	RG_BOCK_WS_ LAEMP_EVO_2 022-06-03_NP
Client sampling date / time					02-Jun-2022 08:47	02-Jun-2022 10:15	02-Jun-2022 13:15	02-Jun-2022 12:00	03-Jun-2022 11:30
Analyte	CAS Number	Method	LOR	Unit	CG2206946-006	CG2206946-007	CG2206946-008	CG2206946-009	CG2206946-010
					Result	Result	Result	Result	Result
Ion Balance									
anion sum	----	EC101	0.10	meq/L	26.6	2.77	28.4	<0.10	28.7
cation sum	----	EC101	0.10	meq/L	22.7	2.51	25.0	<0.10	25.0
ion balance (cations/anions)	----	EC101	0.010	%	85.3	90.6	88.0	100	87.1
ion balance (APHA)	----	EC101	0.010	%	7.91	4.92	6.37	<0.010	6.89
Total Metals									
aluminum, total	7429-90-5	E420	0.0030	mg/L	<0.0030	0.213	0.0174	<0.0030	0.0084
antimony, total	7440-36-0	E420	0.00010	mg/L	0.00021	<0.00010	0.00080	<0.00010	0.00090
arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00025	0.00028	0.00036	<0.00010	0.00027
barium, total	7440-39-3	E420	0.00010	mg/L	0.0468	0.0572	0.282	<0.00010	0.166
beryllium, total	7440-41-7	E420	0.020	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020
bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
boron, total	7440-42-8	E420	0.010	mg/L	0.012	<0.010	0.037	<0.010	0.048
cadmium, total	7440-43-9	E420	0.0050	µg/L	0.0073	0.0363	0.261	<0.0050	0.0447
calcium, total	7440-70-2	E420	0.050	mg/L	220	33.2	243	<0.050	222
chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	0.00012	0.00040	<0.00010	<0.00010	<0.00010
cobalt, total	7440-48-4	E420	0.10	µg/L	<0.10	0.15	0.21	<0.10	0.14
copper, total	7440-50-8	E420	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
iron, total	7439-89-6	E420	0.010	mg/L	<0.010	0.195	0.142	<0.010	0.060
lead, total	7439-92-1	E420	0.000050	mg/L	<0.000050	0.000147	<0.000050	<0.000050	<0.000050
lithium, total	7439-93-2	E420	0.0010	mg/L	0.0254	0.0031	0.0989	<0.0010	0.112
magnesium, total	7439-95-4	E420	0.0050	mg/L	149	9.78	166	<0.0050	164
manganese, total	7439-96-5	E420	0.00010	mg/L	0.00029	0.00660	0.00653	<0.00010	0.00266
mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.00123	0.000518	0.0142	<0.000050	0.0136
nickel, total	7440-02-0	E420	0.00050	mg/L	0.00323	0.00112	0.0316	<0.00050	0.0264
potassium, total	7440-09-7	E420	0.050	mg/L	2.67	0.484	4.87	<0.050	5.40
selenium, total	7782-49-2	E420	0.050	µg/L	168	0.883	80.5	<0.050	104
silicon, total	7440-21-3	E420	0.10	mg/L	3.84	2.19	2.87	<0.10	2.36
silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKUC_W S_LAEMP_EVO _2022-06-02_N P	RG_MI3_WS_L AEMP_EVO_20 22-06-02_NP	RG_GATE_WS_ LAEMP_EVO_2 022-06-02_NP	RG_TRIP_WS_L AEMP_EVO_20 22-06-02_NP	RG_BOCK_WS_ LAEMP_EVO_2 022-06-03_NP
Client sampling date / time					02-Jun-2022 08:47	02-Jun-2022 10:15	02-Jun-2022 13:15	02-Jun-2022 12:00	03-Jun-2022 11:30	
Analyte	CAS Number	Method	LOR	Unit	CG2206946-006	CG2206946-007	CG2206946-008	CG2206946-009	CG2206946-010	
					Result	Result	Result	Result	Result	
Total Metals										
sodium, total	7440-23-5	E420	0.050	mg/L	3.19	1.56	8.72	<0.050	9.44	
strontium, total	7440-24-6	E420	0.00020	mg/L	0.220	0.0930	0.543	<0.00020	0.741	
sulfur, total	7704-34-9	E420	0.50	mg/L	284	6.60	332	<0.50	337	
thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	0.000048	<0.000010	0.000036	
tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00030	<0.00390 ^{DLM}	0.00053	<0.00030	<0.00030	
uranium, total	7440-61-1	E420	0.000010	mg/L	0.00780	0.000404	0.0121	<0.000010	0.0118	
vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	0.00091	<0.00050	<0.00050	<0.00050	
zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	<0.0030	0.0091	<0.0030	<0.0030	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	<0.0010	0.0072	0.0014	<0.0010	<0.0010	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00020	<0.00010	0.00076	<0.00010	0.00083	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00025	0.00018	0.00033	<0.00010	0.00025	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0453	0.0518	0.334	<0.00010	0.182	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
boron, dissolved	7440-42-8	E421	0.010	mg/L	0.012	<0.010	0.036	<0.010	0.045	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.0096	0.0122	0.174	<0.0050	0.0316	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	221	33.4	233	<0.050	224	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	0.00016	0.00013	<0.00010	<0.00010	<0.00010	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	<0.10	<0.10	0.18	<0.10	0.12	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00020	0.00023	0.00024	<0.00020	<0.00020	
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	<0.010	0.031	<0.010	<0.010	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0252	0.0031	0.0953	<0.0010	0.113	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	140	9.31	156	<0.0050	161	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00026	0.00072	0.00565	<0.00010	0.00215	
mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00128	0.000483	0.0141	<0.000050	0.0135	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKUC_W S_LAEMP_EVO _2022-06-02_N P	RG_MI3_WS_L AEMP_EVO_20 22-06-02_NP	RG_GATE_WS_ LAEMP_EVO_2 022-06-02_NP	RG_TRIP_WS_L AEMP_EVO_20 22-06-02_NP	RG_BOCK_WS_ LAEMP_EVO_2 022-06-03_NP
Client sampling date / time					02-Jun-2022 08:47	02-Jun-2022 10:15	02-Jun-2022 13:15	02-Jun-2022 12:00	03-Jun-2022 11:30	
Analyte	CAS Number	Method	LOR	Unit	CG2206946-006	CG2206946-007	CG2206946-008	CG2206946-009	CG2206946-010	
					Result	Result	Result	Result	Result	
Dissolved Metals										
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00314	0.00075	0.0297	<0.00050	0.0251	
potassium, dissolved	7440-09-7	E421	0.050	mg/L	2.62	0.389	4.64	<0.050	5.20	
selenium, dissolved	7782-49-2	E421	0.050	µg/L	166	0.849	78.7	<0.050	102	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	3.74	1.87	2.68	<0.050	2.24	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	3.11	1.54	8.51	<0.050	9.39	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.219	0.0868	0.538	<0.00020	0.760	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	271	6.30	309	<0.50	318	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	0.000047	<0.000010	0.000037	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00773	0.000400	0.0112	<0.000010	0.0114	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0010	<0.0010	0.0071	<0.0010	0.0022	
dissolved mercury filtration location	----	EP509	-	-	Field	Field	Field	Field	Field	
dissolved metals filtration location	----	EP421	-	-	Field	Field	Field	Field	Field	

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: CG2206946	Page	: 1 of 39
Client	: Teck Coal Limited	Laboratory	: Calgary - Environmental
Contact	: Mike Pope	Account Manager	: Lyudmyla Shvets
Address	: RR#1 HWY#3 Sparwood BC Canada V0B 2G1	Address	: 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5
Telephone	: ----	Telephone	: +1 403 407 1800
Project	: REGIONAL EFFECTS PROGRAM	Date Samples Received	: 04-Jun-2022 10:00
PO	: VPO00816101	Issue Date	: 15-Jun-2022 15:04
C-O-C number	: MAY/JUNE EVO LAEMP 2022 WS		
Sampler	: ED		
Site	: ----		
Quote number	: Teck Coal Master Quote		
No. of samples received	: 10		
No. of samples analysed	: 10		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers occur - please see following pages for full details.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_BOCK_WS_LAEMP_EVO_2022-06-03_NP	E298	03-Jun-2022	10-Jun-2022	----	----		10-Jun-2022	28 days	7 days	✓	
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_ERCK_WS_LAEMP_EVO_2022-06-02_NP	E298	02-Jun-2022	10-Jun-2022	----	----		10-Jun-2022	28 days	8 days	✓	
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_ERCKUC_WS_LAEMP_EVO_2022-06-02_NP	E298	02-Jun-2022	10-Jun-2022	----	----		10-Jun-2022	28 days	8 days	✓	
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_FBLANK_WS_LAEMP_EVO_2022-06-02_NP	E298	02-Jun-2022	10-Jun-2022	----	----		10-Jun-2022	28 days	8 days	✓	
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_GATE_WS_LAEMP_EVO_2022-06-02_NP	E298	02-Jun-2022	10-Jun-2022	----	----		10-Jun-2022	28 days	8 days	✓	
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_MI3_WS_LAEMP_EVO_2022-06-02_NP	E298	02-Jun-2022	10-Jun-2022	----	----		10-Jun-2022	28 days	8 days	✓	
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_MICOMP_WS_LAEMP_EVO_2022-06-02_NP	E298	02-Jun-2022	10-Jun-2022	----	----		10-Jun-2022	28 days	8 days	✓	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
Rec	Actual	Rec		Actual							
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_MIDER_WS_LAEMP_EVO_2022-06-02_NP	E298	02-Jun-2022	10-Jun-2022	----	----		10-Jun-2022	28 days	8 days	✓	
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-06-02_NP	E298	02-Jun-2022	10-Jun-2022	----	----		10-Jun-2022	28 days	8 days	✓	
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_TRIP_WS_LAEMP_EVO_2022-06-02_NP	E298	02-Jun-2022	10-Jun-2022	----	----		10-Jun-2022	28 days	8 days	✓	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-06-03_NP	E235.Br-L	03-Jun-2022	----	----	----		05-Jun-2022	28 days	2 days	✓	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-06-02_NP	E235.Br-L	02-Jun-2022	----	----	----		05-Jun-2022	28 days	3 days	✓	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-06-02_NP	E235.Br-L	02-Jun-2022	----	----	----		05-Jun-2022	28 days	3 days	✓	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-06-02_NP	E235.Br-L	02-Jun-2022	----	----	----		05-Jun-2022	28 days	3 days	✓	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_GATE_WS_LAEMP_EVO_2022-06-02_NP	E235.Br-L	02-Jun-2022	----	----	----		05-Jun-2022	28 days	3 days	✓	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_MI3_WS_LAEMP_EVO_2022-06-02_NP	E235.Br-L	02-Jun-2022	----	----	----		05-Jun-2022	28 days	3 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-06-02_NP	E235.Br-L	02-Jun-2022	----	----	----		05-Jun-2022	28 days	3 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-06-02_NP	E235.Br-L	02-Jun-2022	----	----	----		05-Jun-2022	28 days	3 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-06-02_NP	E235.Br-L	02-Jun-2022	----	----	----		05-Jun-2022	28 days	3 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-06-02_NP	E235.Br-L	02-Jun-2022	----	----	----		06-Jun-2022	28 days	4 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-06-03_NP	E235.Cl-L	03-Jun-2022	----	----	----		05-Jun-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-06-02_NP	E235.Cl-L	02-Jun-2022	----	----	----		05-Jun-2022	28 days	3 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-06-02_NP	E235.Cl-L	02-Jun-2022	----	----	----		05-Jun-2022	28 days	3 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-06-02_NP	E235.Cl-L	02-Jun-2022	----	----	----		05-Jun-2022	28 days	3 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_GATE_WS_LAEMP_EVO_2022-06-02_NP	E235.Cl-L	02-Jun-2022	----	----	----		05-Jun-2022	28 days	3 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec Actual		Eval	Analysis Date	Holding Times Rec Actual		Eval
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_MI3_WS_LAEMP_EVO_2022-06-02_NP	E235.CI-L	02-Jun-2022	----	----	----		05-Jun-2022	28 days	3 days	✔
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-06-02_NP	E235.CI-L	02-Jun-2022	----	----	----		05-Jun-2022	28 days	3 days	✔
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_RIVER_WS_LAEMP_EVO_2022-06-02_NP	E235.CI-L	02-Jun-2022	----	----	----		05-Jun-2022	28 days	3 days	✔
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_TRIP_WS_LAEMP_EVO_2022-06-02_NP	E235.CI-L	02-Jun-2022	----	----	----		05-Jun-2022	28 days	3 days	✔
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_MIDER_WS_LAEMP_EVO_2022-06-02_NP	E235.CI-L	02-Jun-2022	----	----	----		06-Jun-2022	28 days	4 days	✔
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE RG_BOCK_WS_LAEMP_EVO_2022-06-03_NP	E378-U	03-Jun-2022	----	----	----		05-Jun-2022	3 days	2 days	✔
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE RG_ERCK_WS_LAEMP_EVO_2022-06-02_NP	E378-U	02-Jun-2022	----	----	----		05-Jun-2022	3 days	3 days	✔
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-06-02_NP	E378-U	02-Jun-2022	----	----	----		05-Jun-2022	3 days	3 days	✔
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-06-02_NP	E378-U	02-Jun-2022	----	----	----		05-Jun-2022	3 days	3 days	✔



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
Container / Client Sample ID(s)				Rec	Actual			Rec	Actual	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE RG_GATE_WS_LAEMP_EVO_2022-06-02_NP	E378-U	02-Jun-2022	----	----	----		05-Jun-2022	3 days	3 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE RG_MI3_WS_LAEMP_EVO_2022-06-02_NP	E378-U	02-Jun-2022	----	----	----		05-Jun-2022	3 days	3 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-06-02_NP	E378-U	02-Jun-2022	----	----	----		05-Jun-2022	3 days	3 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE RG_RIVER_WS_LAEMP_EVO_2022-06-02_NP	E378-U	02-Jun-2022	----	----	----		05-Jun-2022	3 days	3 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE RG_TRIP_WS_LAEMP_EVO_2022-06-02_NP	E378-U	02-Jun-2022	----	----	----		05-Jun-2022	3 days	3 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE RG_MIDER_WS_LAEMP_EVO_2022-06-02_NP	E378-U	02-Jun-2022	----	----	----		06-Jun-2022	3 days	4 days	* EHT
Anions and Nutrients : Fluoride in Water by IC										
HDPE RG_BOCK_WS_LAEMP_EVO_2022-06-03_NP	E235.F	03-Jun-2022	----	----	----		05-Jun-2022	28 days	2 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE RG_ERCK_WS_LAEMP_EVO_2022-06-02_NP	E235.F	02-Jun-2022	----	----	----		05-Jun-2022	28 days	3 days	✓



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-06-02_NP	E235.F	02-Jun-2022	----	----	----		05-Jun-2022	28 days	3 days	✓	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-06-02_NP	E235.F	02-Jun-2022	----	----	----		05-Jun-2022	28 days	3 days	✓	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_GATE_WS_LAEMP_EVO_2022-06-02_NP	E235.F	02-Jun-2022	----	----	----		05-Jun-2022	28 days	3 days	✓	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_MI3_WS_LAEMP_EVO_2022-06-02_NP	E235.F	02-Jun-2022	----	----	----		05-Jun-2022	28 days	3 days	✓	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-06-02_NP	E235.F	02-Jun-2022	----	----	----		05-Jun-2022	28 days	3 days	✓	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-06-02_NP	E235.F	02-Jun-2022	----	----	----		05-Jun-2022	28 days	3 days	✓	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-06-02_NP	E235.F	02-Jun-2022	----	----	----		05-Jun-2022	28 days	3 days	✓	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-06-02_NP	E235.F	02-Jun-2022	----	----	----		06-Jun-2022	28 days	4 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-06-03_NP	E235.NO3-L	03-Jun-2022	----	----	----		05-Jun-2022	3 days	2 days	✓	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-06-02_NP	E235.NO3-L	02-Jun-2022	----	----	----		05-Jun-2022	3 days	3 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-06-02_NP	E235.NO3-L	02-Jun-2022	----	----	----		05-Jun-2022	3 days	3 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-06-02_NP	E235.NO3-L	02-Jun-2022	----	----	----		05-Jun-2022	3 days	3 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_GATE_WS_LAEMP_EVO_2022-06-02_NP	E235.NO3-L	02-Jun-2022	----	----	----		05-Jun-2022	3 days	3 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_MI3_WS_LAEMP_EVO_2022-06-02_NP	E235.NO3-L	02-Jun-2022	----	----	----		05-Jun-2022	3 days	3 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-06-02_NP	E235.NO3-L	02-Jun-2022	----	----	----		05-Jun-2022	3 days	3 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-06-02_NP	E235.NO3-L	02-Jun-2022	----	----	----		05-Jun-2022	3 days	3 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-06-02_NP	E235.NO3-L	02-Jun-2022	----	----	----		05-Jun-2022	3 days	3 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-06-02_NP	E235.NO3-L	02-Jun-2022	----	----	----		06-Jun-2022	3 days	4 days	* EHT	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec Actual		Eval	Analysis Date	Holding Times Rec Actual		Eval
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE RG_BOCK_WS_LAEMP_EVO_2022-06-03_NP	E235.NO2-L	03-Jun-2022	----	----	----		05-Jun-2022	3 days	2 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE RG_ERCK_WS_LAEMP_EVO_2022-06-02_NP	E235.NO2-L	02-Jun-2022	----	----	----		05-Jun-2022	3 days	3 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-06-02_NP	E235.NO2-L	02-Jun-2022	----	----	----		05-Jun-2022	3 days	3 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-06-02_NP	E235.NO2-L	02-Jun-2022	----	----	----		05-Jun-2022	3 days	3 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE RG_GATE_WS_LAEMP_EVO_2022-06-02_NP	E235.NO2-L	02-Jun-2022	----	----	----		05-Jun-2022	3 days	3 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE RG_MI3_WS_LAEMP_EVO_2022-06-02_NP	E235.NO2-L	02-Jun-2022	----	----	----		05-Jun-2022	3 days	3 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-06-02_NP	E235.NO2-L	02-Jun-2022	----	----	----		05-Jun-2022	3 days	3 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE RG_RIVER_WS_LAEMP_EVO_2022-06-02_NP	E235.NO2-L	02-Jun-2022	----	----	----		05-Jun-2022	3 days	3 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE RG_TRIP_WS_LAEMP_EVO_2022-06-02_NP	E235.NO2-L	02-Jun-2022	----	----	----		05-Jun-2022	3 days	3 days	✓



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-06-02_NP	E235.NO2-L	02-Jun-2022	----	----	----		06-Jun-2022	3 days	4 days	*	EHT
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-06-03_NP	E235.SO4	03-Jun-2022	----	----	----		05-Jun-2022	28 days	2 days	✓	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-06-02_NP	E235.SO4	02-Jun-2022	----	----	----		05-Jun-2022	28 days	3 days	✓	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-06-02_NP	E235.SO4	02-Jun-2022	----	----	----		05-Jun-2022	28 days	3 days	✓	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-06-02_NP	E235.SO4	02-Jun-2022	----	----	----		05-Jun-2022	28 days	3 days	✓	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_GATE_WS_LAEMP_EVO_2022-06-02_NP	E235.SO4	02-Jun-2022	----	----	----		05-Jun-2022	28 days	3 days	✓	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_MI3_WS_LAEMP_EVO_2022-06-02_NP	E235.SO4	02-Jun-2022	----	----	----		05-Jun-2022	28 days	3 days	✓	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-06-02_NP	E235.SO4	02-Jun-2022	----	----	----		05-Jun-2022	28 days	3 days	✓	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-06-02_NP	E235.SO4	02-Jun-2022	----	----	----		05-Jun-2022	28 days	3 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-06-02_NP	E235.SO4	02-Jun-2022	----	----	----		05-Jun-2022	28 days	3 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-06-02_NP	E235.SO4	02-Jun-2022	----	----	----		06-Jun-2022	28 days	4 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_BOCK_WS_LAEMP_EVO_2022-06-03_NP	E318	03-Jun-2022	09-Jun-2022	----	----		09-Jun-2022	28 days	6 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_ERCK_WS_LAEMP_EVO_2022-06-02_NP	E318	02-Jun-2022	09-Jun-2022	----	----		09-Jun-2022	28 days	7 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKUC_WS_LAEMP_EVO_2022-06-02_NP	E318	02-Jun-2022	09-Jun-2022	----	----		09-Jun-2022	28 days	7 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_FBLANK_WS_LAEMP_EVO_2022-06-02_NP	E318	02-Jun-2022	09-Jun-2022	----	----		09-Jun-2022	28 days	7 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_GATE_WS_LAEMP_EVO_2022-06-02_NP	E318	02-Jun-2022	09-Jun-2022	----	----		09-Jun-2022	28 days	7 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_MI3_WS_LAEMP_EVO_2022-06-02_NP	E318	02-Jun-2022	09-Jun-2022	----	----		09-Jun-2022	28 days	7 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_MICOMP_WS_LAEMP_EVO_2022-06-02_NP	E318	02-Jun-2022	09-Jun-2022	----	----		09-Jun-2022	28 days	7 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
Rec	Actual	Rec		Actual							
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_MIDER_WS_LAEMP_EVO_2022-06-02_NP	E318	02-Jun-2022	09-Jun-2022	----	----		09-Jun-2022	28 days	7 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-06-02_NP	E318	02-Jun-2022	09-Jun-2022	----	----		09-Jun-2022	28 days	7 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_TRIP_WS_LAEMP_EVO_2022-06-02_NP	E318	02-Jun-2022	09-Jun-2022	----	----		09-Jun-2022	28 days	7 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_BOCK_WS_LAEMP_EVO_2022-06-03_NP	E372-U	03-Jun-2022	07-Jun-2022	----	----		10-Jun-2022	28 days	7 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_ERCK_WS_LAEMP_EVO_2022-06-02_NP	E372-U	02-Jun-2022	07-Jun-2022	----	----		10-Jun-2022	28 days	8 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_ERCKUC_WS_LAEMP_EVO_2022-06-02_NP	E372-U	02-Jun-2022	07-Jun-2022	----	----		10-Jun-2022	28 days	8 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_FBLANK_WS_LAEMP_EVO_2022-06-02_NP	E372-U	02-Jun-2022	07-Jun-2022	----	----		10-Jun-2022	28 days	8 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_GATE_WS_LAEMP_EVO_2022-06-02_NP	E372-U	02-Jun-2022	07-Jun-2022	----	----		10-Jun-2022	28 days	8 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_MI3_WS_LAEMP_EVO_2022-06-02_NP	E372-U	02-Jun-2022	07-Jun-2022	----	----		10-Jun-2022	28 days	8 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_MICOMP_WS_LAEMP_EVO_2022-06-02_NP	E372-U	02-Jun-2022	07-Jun-2022	----	----		10-Jun-2022	28 days	8 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_MIDER_WS_LAEMP_EVO_2022-06-02_NP	E372-U	02-Jun-2022	07-Jun-2022	----	----		10-Jun-2022	28 days	8 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-06-02_NP	E372-U	02-Jun-2022	07-Jun-2022	----	----		10-Jun-2022	28 days	8 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_TRIP_WS_LAEMP_EVO_2022-06-02_NP	E372-U	02-Jun-2022	07-Jun-2022	----	----		10-Jun-2022	28 days	8 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_BOCK_WS_LAEMP_EVO_2022-06-03_NP	E421.Cr-L	03-Jun-2022	09-Jun-2022	----	----		09-Jun-2022	180 days	6 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_ERCK_WS_LAEMP_EVO_2022-06-02_NP	E421.Cr-L	02-Jun-2022	09-Jun-2022	----	----		09-Jun-2022	180 days	7 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_ERCKUC_WS_LAEMP_EVO_2022-06-02_NP	E421.Cr-L	02-Jun-2022	09-Jun-2022	----	----		09-Jun-2022	180 days	7 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_FBLANK_WS_LAEMP_EVO_2022-06-02_NP	E421.Cr-L	02-Jun-2022	09-Jun-2022	----	----		09-Jun-2022	180 days	7 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_GATE_WS_LAEMP_EVO_2022-06-02_NP	E421.Cr-L	02-Jun-2022	09-Jun-2022	----	----		09-Jun-2022	180 days	7 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec Actual		Eval	Analysis Date	Holding Times Rec Actual		Eval
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)										
HDPE dissolved (nitric acid) RG_MI3_WS_LAEMP_EVO_2022-06-02_NP	E421.Cr-L	02-Jun-2022	09-Jun-2022	----	----		09-Jun-2022	180 days	7 days	✔
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)										
HDPE dissolved (nitric acid) RG_MICOMP_WS_LAEMP_EVO_2022-06-02_NP	E421.Cr-L	02-Jun-2022	09-Jun-2022	----	----		09-Jun-2022	180 days	7 days	✔
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)										
HDPE dissolved (nitric acid) RG_MIDER_WS_LAEMP_EVO_2022-06-02_NP	E421.Cr-L	02-Jun-2022	09-Jun-2022	----	----		09-Jun-2022	180 days	7 days	✔
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)										
HDPE dissolved (nitric acid) RG_RIVER_WS_LAEMP_EVO_2022-06-02_NP	E421.Cr-L	02-Jun-2022	09-Jun-2022	----	----		09-Jun-2022	180 days	7 days	✔
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)										
HDPE dissolved (nitric acid) RG_TRIP_WS_LAEMP_EVO_2022-06-02_NP	E421.Cr-L	02-Jun-2022	09-Jun-2022	----	----		09-Jun-2022	180 days	7 days	✔
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid) RG_BOCK_WS_LAEMP_EVO_2022-06-03_NP	E509	03-Jun-2022	09-Jun-2022	----	----		09-Jun-2022	28 days	6 days	✔
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid) RG_ERCK_WS_LAEMP_EVO_2022-06-02_NP	E509	02-Jun-2022	09-Jun-2022	----	----		09-Jun-2022	28 days	7 days	✔
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid) RG_ERCKUC_WS_LAEMP_EVO_2022-06-02_NP	E509	02-Jun-2022	09-Jun-2022	----	----		09-Jun-2022	28 days	7 days	✔
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid) RG_FBLANK_WS_LAEMP_EVO_2022-06-02_NP	E509	02-Jun-2022	09-Jun-2022	----	----		09-Jun-2022	28 days	7 days	✔



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec Actual		Eval	Analysis Date	Holding Times Rec Actual		Eval
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid) RG_GATE_WS_LAEMP_EVO_2022-06-02_NP	E509	02-Jun-2022	09-Jun-2022	----	----		09-Jun-2022	28 days	7 days	✔
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid) RG_MI3_WS_LAEMP_EVO_2022-06-02_NP	E509	02-Jun-2022	09-Jun-2022	----	----		09-Jun-2022	28 days	7 days	✔
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid) RG_MICOMP_WS_LAEMP_EVO_2022-06-02_NP	E509	02-Jun-2022	09-Jun-2022	----	----		09-Jun-2022	28 days	7 days	✔
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid) RG_RIVER_WS_LAEMP_EVO_2022-06-02_NP	E509	02-Jun-2022	09-Jun-2022	----	----		09-Jun-2022	28 days	7 days	✔
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid) RG_TRIP_WS_LAEMP_EVO_2022-06-02_NP	E509	02-Jun-2022	09-Jun-2022	----	----		09-Jun-2022	28 days	7 days	✔
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid) RG_MIDER_WS_LAEMP_EVO_2022-06-02_NP	E509	02-Jun-2022	10-Jun-2022	----	----		10-Jun-2022	28 days	8 days	✔
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) RG_BOCK_WS_LAEMP_EVO_2022-06-03_NP	E421	03-Jun-2022	09-Jun-2022	----	----		09-Jun-2022	180 days	6 days	✔
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) RG_ERCK_WS_LAEMP_EVO_2022-06-02_NP	E421	02-Jun-2022	09-Jun-2022	----	----		09-Jun-2022	180 days	7 days	✔
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) RG_ERCKUC_WS_LAEMP_EVO_2022-06-02_NP	E421	02-Jun-2022	09-Jun-2022	----	----		09-Jun-2022	180 days	7 days	✔



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times Rec Actual		Eval	Analysis Date	Holding Times Rec Actual		Eval	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_FBLANK_WS_LAEMP_EVO_2022-06-02_NP	E421	02-Jun-2022	09-Jun-2022	----	----		09-Jun-2022	180 days	7 days	✓	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_GATE_WS_LAEMP_EVO_2022-06-02_NP	E421	02-Jun-2022	09-Jun-2022	----	----		09-Jun-2022	180 days	7 days	✓	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_MI3_WS_LAEMP_EVO_2022-06-02_NP	E421	02-Jun-2022	09-Jun-2022	----	----		09-Jun-2022	180 days	7 days	✓	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_MICOMP_WS_LAEMP_EVO_2022-06-02_NP	E421	02-Jun-2022	09-Jun-2022	----	----		09-Jun-2022	180 days	7 days	✓	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_MIDER_WS_LAEMP_EVO_2022-06-02_NP	E421	02-Jun-2022	09-Jun-2022	----	----		09-Jun-2022	180 days	7 days	✓	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_RIVER_WS_LAEMP_EVO_2022-06-02_NP	E421	02-Jun-2022	09-Jun-2022	----	----		09-Jun-2022	180 days	7 days	✓	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_TRIP_WS_LAEMP_EVO_2022-06-02_NP	E421	02-Jun-2022	09-Jun-2022	----	----		09-Jun-2022	180 days	7 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_BOCK_WS_LAEMP_EVO_2022-06-03_NP	E358-L	03-Jun-2022	13-Jun-2022	----	----		14-Jun-2022	28 days	11 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_ERCK_WS_LAEMP_EVO_2022-06-02_NP	E358-L	02-Jun-2022	13-Jun-2022	----	----		14-Jun-2022	28 days	12 days	✓	



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_ERCKUC_WS_LAEMP_EVO_2022-06-02_NP	E358-L	02-Jun-2022	13-Jun-2022	----	----		14-Jun-2022	28 days	12 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_FBLANK_WS_LAEMP_EVO_2022-06-02_NP	E358-L	02-Jun-2022	13-Jun-2022	----	----		14-Jun-2022	28 days	12 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_GATE_WS_LAEMP_EVO_2022-06-02_NP	E358-L	02-Jun-2022	13-Jun-2022	----	----		14-Jun-2022	28 days	12 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_MI3_WS_LAEMP_EVO_2022-06-02_NP	E358-L	02-Jun-2022	13-Jun-2022	----	----		14-Jun-2022	28 days	12 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_MICOMP_WS_LAEMP_EVO_2022-06-02_NP	E358-L	02-Jun-2022	13-Jun-2022	----	----		14-Jun-2022	28 days	12 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-06-02_NP	E358-L	02-Jun-2022	13-Jun-2022	----	----		14-Jun-2022	28 days	12 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_TRIP_WS_LAEMP_EVO_2022-06-02_NP	E358-L	02-Jun-2022	13-Jun-2022	----	----		14-Jun-2022	28 days	12 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_MIDER_WS_LAEMP_EVO_2022-06-02_NP	E358-L	02-Jun-2022	13-Jun-2022	----	----		15-Jun-2022	28 days	13 days	✓	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_BOCK_WS_LAEMP_EVO_2022-06-03_NP	E355-L	03-Jun-2022	13-Jun-2022	----	----		14-Jun-2022	28 days	11 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_ERCK_WS_LAEMP_EVO_2022-06-02_NP	E355-L	02-Jun-2022	13-Jun-2022	----	----		14-Jun-2022	28 days	12 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKUC_WS_LAEMP_EVO_2022-06-02_NP	E355-L	02-Jun-2022	13-Jun-2022	----	----		14-Jun-2022	28 days	12 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_FBLANK_WS_LAEMP_EVO_2022-06-02_NP	E355-L	02-Jun-2022	13-Jun-2022	----	----		14-Jun-2022	28 days	12 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_GATE_WS_LAEMP_EVO_2022-06-02_NP	E355-L	02-Jun-2022	13-Jun-2022	----	----		14-Jun-2022	28 days	12 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_MI3_WS_LAEMP_EVO_2022-06-02_NP	E355-L	02-Jun-2022	13-Jun-2022	----	----		14-Jun-2022	28 days	12 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_MICOMP_WS_LAEMP_EVO_2022-06-02_NP	E355-L	02-Jun-2022	13-Jun-2022	----	----		14-Jun-2022	28 days	12 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_MIDER_WS_LAEMP_EVO_2022-06-02_NP	E355-L	02-Jun-2022	13-Jun-2022	----	----		14-Jun-2022	28 days	12 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-06-02_NP	E355-L	02-Jun-2022	13-Jun-2022	----	----		14-Jun-2022	28 days	12 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_TRIP_WS_LAEMP_EVO_2022-06-02_NP	E355-L	02-Jun-2022	13-Jun-2022	----	----		14-Jun-2022	28 days	12 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Acidity by Titration											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-06-03_NP	E283	03-Jun-2022	----	----	----		08-Jun-2022	14 days	5 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-06-02_NP	E283	02-Jun-2022	----	----	----		08-Jun-2022	14 days	6 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-06-02_NP	E283	02-Jun-2022	----	----	----		08-Jun-2022	14 days	6 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-06-02_NP	E283	02-Jun-2022	----	----	----		08-Jun-2022	14 days	6 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_GATE_WS_LAEMP_EVO_2022-06-02_NP	E283	02-Jun-2022	----	----	----		08-Jun-2022	14 days	6 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_MI3_WS_LAEMP_EVO_2022-06-02_NP	E283	02-Jun-2022	----	----	----		08-Jun-2022	14 days	6 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-06-02_NP	E283	02-Jun-2022	----	----	----		08-Jun-2022	14 days	6 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-06-02_NP	E283	02-Jun-2022	----	----	----		08-Jun-2022	14 days	6 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-06-02_NP	E283	02-Jun-2022	----	----	----		08-Jun-2022	14 days	6 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Acidity by Titration											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-06-02_NP	E283	02-Jun-2022	----	----	----		08-Jun-2022	14 days	6 days	✓	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-06-03_NP	E290	03-Jun-2022	----	----	----		08-Jun-2022	14 days	5 days	✓	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-06-02_NP	E290	02-Jun-2022	----	----	----		08-Jun-2022	14 days	6 days	✓	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-06-02_NP	E290	02-Jun-2022	----	----	----		08-Jun-2022	14 days	6 days	✓	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-06-02_NP	E290	02-Jun-2022	----	----	----		08-Jun-2022	14 days	6 days	✓	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_GATE_WS_LAEMP_EVO_2022-06-02_NP	E290	02-Jun-2022	----	----	----		08-Jun-2022	14 days	6 days	✓	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_MI3_WS_LAEMP_EVO_2022-06-02_NP	E290	02-Jun-2022	----	----	----		08-Jun-2022	14 days	6 days	✓	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-06-02_NP	E290	02-Jun-2022	----	----	----		08-Jun-2022	14 days	6 days	✓	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-06-02_NP	E290	02-Jun-2022	----	----	----		08-Jun-2022	14 days	6 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Alkalinity Species by Titration											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-06-02_NP	E290	02-Jun-2022	----	----	----		08-Jun-2022	14 days	6 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-06-02_NP	E290	02-Jun-2022	----	----	----		08-Jun-2022	14 days	6 days	✔	
Physical Tests : Conductivity in Water											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-06-03_NP	E100	03-Jun-2022	----	----	----		08-Jun-2022	28 days	5 days	✔	
Physical Tests : Conductivity in Water											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-06-02_NP	E100	02-Jun-2022	----	----	----		08-Jun-2022	28 days	6 days	✔	
Physical Tests : Conductivity in Water											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-06-02_NP	E100	02-Jun-2022	----	----	----		08-Jun-2022	28 days	6 days	✔	
Physical Tests : Conductivity in Water											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-06-02_NP	E100	02-Jun-2022	----	----	----		08-Jun-2022	28 days	6 days	✔	
Physical Tests : Conductivity in Water											
HDPE RG_GATE_WS_LAEMP_EVO_2022-06-02_NP	E100	02-Jun-2022	----	----	----		08-Jun-2022	28 days	6 days	✔	
Physical Tests : Conductivity in Water											
HDPE RG_MI3_WS_LAEMP_EVO_2022-06-02_NP	E100	02-Jun-2022	----	----	----		08-Jun-2022	28 days	6 days	✔	
Physical Tests : Conductivity in Water											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-06-02_NP	E100	02-Jun-2022	----	----	----		08-Jun-2022	28 days	6 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Conductivity in Water											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-06-02_NP	E100	02-Jun-2022	----	----	----		08-Jun-2022	28 days	6 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-06-02_NP	E100	02-Jun-2022	----	----	----		08-Jun-2022	28 days	6 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-06-02_NP	E100	02-Jun-2022	----	----	----		08-Jun-2022	28 days	6 days	✓	
Physical Tests : ORP by Electrode											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-06-03_NP	E125	03-Jun-2022	----	----	----		13-Jun-2022	0.25 hrs	241 hrs	* EHTR-FM	
Physical Tests : ORP by Electrode											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-06-02_NP	E125	02-Jun-2022	----	----	----		13-Jun-2022	0.25 hrs	262 hrs	* EHTR-FM	
Physical Tests : ORP by Electrode											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-06-02_NP	E125	02-Jun-2022	----	----	----		13-Jun-2022	0.25 hrs	263 hrs	* EHTR-FM	
Physical Tests : ORP by Electrode											
HDPE RG_GATE_WS_LAEMP_EVO_2022-06-02_NP	E125	02-Jun-2022	----	----	----		13-Jun-2022	0.25 hrs	263 hrs	* EHTR-FM	
Physical Tests : ORP by Electrode											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-06-02_NP	E125	02-Jun-2022	----	----	----		13-Jun-2022	0.25 hrs	264 hrs	* EHTR-FM	
Physical Tests : ORP by Electrode											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-06-02_NP	E125	02-Jun-2022	----	----	----		13-Jun-2022	0.25 hrs	264 hrs	* EHTR-FM	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
Rec	Actual	Rec		Actual							
Physical Tests : ORP by Electrode											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-06-02_NP	E125	02-Jun-2022	----	----	----		13-Jun-2022	0.25 hrs	265 hrs	*	EHTR-FM
Physical Tests : ORP by Electrode											
HDPE RG_MI3_WS_LAEMP_EVO_2022-06-02_NP	E125	02-Jun-2022	----	----	----		13-Jun-2022	0.25 hrs	266 hrs	*	EHTR-FM
Physical Tests : ORP by Electrode											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-06-02_NP	E125	02-Jun-2022	----	----	----		13-Jun-2022	0.25 hrs	267 hrs	*	EHTR-FM
Physical Tests : ORP by Electrode											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-06-02_NP	E125	02-Jun-2022	----	----	----		13-Jun-2022	0.25 hrs	268 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-06-03_NP	E108	03-Jun-2022	----	----	----		08-Jun-2022	0.25 hrs	121 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-06-02_NP	E108	02-Jun-2022	----	----	----		08-Jun-2022	0.25 hrs	142 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-06-02_NP	E108	02-Jun-2022	----	----	----		08-Jun-2022	0.25 hrs	143 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_GATE_WS_LAEMP_EVO_2022-06-02_NP	E108	02-Jun-2022	----	----	----		08-Jun-2022	0.25 hrs	143 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-06-02_NP	E108	02-Jun-2022	----	----	----		08-Jun-2022	0.25 hrs	144 hrs	*	EHTR-FM



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec Actual		Eval	Analysis Date	Holding Times Rec Actual		Eval
Physical Tests : pH by Meter										
HDPE RG_RIVER_WS_LAEMP_EVO_2022-06-02_NP	E108	02-Jun-2022	----	----	----		08-Jun-2022	0.25 hrs	144 hrs	* EHTR-FM
Physical Tests : pH by Meter										
HDPE RG_TRIP_WS_LAEMP_EVO_2022-06-02_NP	E108	02-Jun-2022	----	----	----		08-Jun-2022	0.25 hrs	145 hrs	* EHTR-FM
Physical Tests : pH by Meter										
HDPE RG_MI3_WS_LAEMP_EVO_2022-06-02_NP	E108	02-Jun-2022	----	----	----		08-Jun-2022	0.25 hrs	146 hrs	* EHTR-FM
Physical Tests : pH by Meter										
HDPE RG_ERCK_WS_LAEMP_EVO_2022-06-02_NP	E108	02-Jun-2022	----	----	----		08-Jun-2022	0.25 hrs	147 hrs	* EHTR-FM
Physical Tests : pH by Meter										
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-06-02_NP	E108	02-Jun-2022	----	----	----		08-Jun-2022	0.25 hrs	148 hrs	* EHTR-FM
Physical Tests : TDS by Gravimetry										
HDPE RG_BOCK_WS_LAEMP_EVO_2022-06-03_NP	E162	03-Jun-2022	----	----	----		09-Jun-2022	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE RG_ERCK_WS_LAEMP_EVO_2022-06-02_NP	E162	02-Jun-2022	----	----	----		09-Jun-2022	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-06-02_NP	E162	02-Jun-2022	----	----	----		09-Jun-2022	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-06-02_NP	E162	02-Jun-2022	----	----	----		09-Jun-2022	7 days	7 days	✓



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : TDS by Gravimetry											
HDPE RG_GATE_WS_LAEMP_EVO_2022-06-02_NP	E162	02-Jun-2022	----	----	----		09-Jun-2022	7 days	7 days	✓	
Physical Tests : TDS by Gravimetry											
HDPE RG_MI3_WS_LAEMP_EVO_2022-06-02_NP	E162	02-Jun-2022	----	----	----		09-Jun-2022	7 days	7 days	✓	
Physical Tests : TDS by Gravimetry											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-06-02_NP	E162	02-Jun-2022	----	----	----		09-Jun-2022	7 days	7 days	✓	
Physical Tests : TDS by Gravimetry											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-06-02_NP	E162	02-Jun-2022	----	----	----		09-Jun-2022	7 days	7 days	✓	
Physical Tests : TDS by Gravimetry											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-06-02_NP	E162	02-Jun-2022	----	----	----		09-Jun-2022	7 days	7 days	✓	
Physical Tests : TDS by Gravimetry											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-06-02_NP	E162	02-Jun-2022	----	----	----		09-Jun-2022	7 days	7 days	✓	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-06-03_NP	E160-L	03-Jun-2022	----	----	----		09-Jun-2022	7 days	6 days	✓	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-06-02_NP	E160-L	02-Jun-2022	----	----	----		09-Jun-2022	7 days	7 days	✓	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-06-02_NP	E160-L	02-Jun-2022	----	----	----		09-Jun-2022	7 days	7 days	✓	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-06-02_NP	E160-L	02-Jun-2022	----	----	----		09-Jun-2022	7 days	7 days	✓	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_GATE_WS_LAEMP_EVO_2022-06-02_NP	E160-L	02-Jun-2022	----	----	----		09-Jun-2022	7 days	7 days	✓	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_MI3_WS_LAEMP_EVO_2022-06-02_NP	E160-L	02-Jun-2022	----	----	----		09-Jun-2022	7 days	7 days	✓	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-06-02_NP	E160-L	02-Jun-2022	----	----	----		09-Jun-2022	7 days	7 days	✓	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-06-02_NP	E160-L	02-Jun-2022	----	----	----		09-Jun-2022	7 days	7 days	✓	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-06-02_NP	E160-L	02-Jun-2022	----	----	----		09-Jun-2022	7 days	7 days	✓	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-06-02_NP	E160-L	02-Jun-2022	----	----	----		09-Jun-2022	7 days	7 days	✓	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-06-03_NP	E121	03-Jun-2022	----	----	----		05-Jun-2022	3 days	2 days	✓	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-06-02_NP	E121	02-Jun-2022	----	----	----		05-Jun-2022	3 days	3 days	✓	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Turbidity by Nephelometry											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-06-02_NP	E121	02-Jun-2022	----	----	----		05-Jun-2022	3 days	3 days	✓	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-06-02_NP	E121	02-Jun-2022	----	----	----		05-Jun-2022	3 days	3 days	✓	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_GATE_WS_LAEMP_EVO_2022-06-02_NP	E121	02-Jun-2022	----	----	----		05-Jun-2022	3 days	3 days	✓	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_MI3_WS_LAEMP_EVO_2022-06-02_NP	E121	02-Jun-2022	----	----	----		05-Jun-2022	3 days	3 days	✓	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-06-02_NP	E121	02-Jun-2022	----	----	----		05-Jun-2022	3 days	3 days	✓	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-06-02_NP	E121	02-Jun-2022	----	----	----		05-Jun-2022	3 days	3 days	✓	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-06-02_NP	E121	02-Jun-2022	----	----	----		05-Jun-2022	3 days	3 days	✓	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-06-02_NP	E121	02-Jun-2022	----	----	----		06-Jun-2022	3 days	4 days	* EHT	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_BOCK_WS_LAEMP_EVO_2022-06-03_NP	E420.Cr-L	03-Jun-2022	----	----	----		09-Jun-2022	180 days	6 days	✓	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_FBLANK_WS_LAEMP_EVO_2022-06-02_NP	E420.Cr-L	02-Jun-2022	----	----	----		09-Jun-2022	180 days	7 days	✓	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_GATE_WS_LAEMP_EVO_2022-06-02_NP	E420.Cr-L	02-Jun-2022	----	----	----		09-Jun-2022	180 days	7 days	✓	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_MICOMP_WS_LAEMP_EVO_2022-06-02_NP	E420.Cr-L	02-Jun-2022	----	----	----		09-Jun-2022	180 days	7 days	✓	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_MIDER_WS_LAEMP_EVO_2022-06-02_NP	E420.Cr-L	02-Jun-2022	----	----	----		09-Jun-2022	180 days	7 days	✓	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_RIVER_WS_LAEMP_EVO_2022-06-02_NP	E420.Cr-L	02-Jun-2022	----	----	----		09-Jun-2022	180 days	7 days	✓	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_TRIP_WS_LAEMP_EVO_2022-06-02_NP	E420.Cr-L	02-Jun-2022	----	----	----		09-Jun-2022	180 days	7 days	✓	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_ERCK_WS_LAEMP_EVO_2022-06-02_NP	E420.Cr-L	02-Jun-2022	----	----	----		09-Jun-2022	180 days	8 days	✓	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_ERCKUC_WS_LAEMP_EVO_2022-06-02_NP	E420.Cr-L	02-Jun-2022	----	----	----		09-Jun-2022	180 days	8 days	✓	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_MI3_WS_LAEMP_EVO_2022-06-02_NP	E420.Cr-L	02-Jun-2022	----	----	----		09-Jun-2022	180 days	8 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_BOCK_WS_LAEMP_EVO_2022-06-03_NP	E508	03-Jun-2022	----	----	----		09-Jun-2022	28 days	6 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_ERCK_WS_LAEMP_EVO_2022-06-02_NP	E508	02-Jun-2022	----	----	----		09-Jun-2022	28 days	7 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_ERCKUC_WS_LAEMP_EVO_2022-06-02_NP	E508	02-Jun-2022	----	----	----		09-Jun-2022	28 days	7 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_FBLANK_WS_LAEMP_EVO_2022-06-02_NP	E508	02-Jun-2022	----	----	----		09-Jun-2022	28 days	7 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_GATE_WS_LAEMP_EVO_2022-06-02_NP	E508	02-Jun-2022	----	----	----		09-Jun-2022	28 days	7 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_MI3_WS_LAEMP_EVO_2022-06-02_NP	E508	02-Jun-2022	----	----	----		09-Jun-2022	28 days	7 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_MICOMP_WS_LAEMP_EVO_2022-06-02_NP	E508	02-Jun-2022	----	----	----		09-Jun-2022	28 days	7 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_MIDER_WS_LAEMP_EVO_2022-06-02_NP	E508	02-Jun-2022	----	----	----		09-Jun-2022	28 days	7 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_RIVER_WS_LAEMP_EVO_2022-06-02_NP	E508	02-Jun-2022	----	----	----		09-Jun-2022	28 days	7 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_TRIP_WS_LAEMP_EVO_2022-06-02_NP	E508	02-Jun-2022	----	----	----		09-Jun-2022	28 days	7 days	✔	
Total Metals : Total Metals in Water by CRC ICPCS											
HDPE total (nitric acid) RG_BOCK_WS_LAEMP_EVO_2022-06-03_NP	E420	03-Jun-2022	----	----	----		09-Jun-2022	180 days	6 days	✔	
Total Metals : Total Metals in Water by CRC ICPCS											
HDPE total (nitric acid) RG_FBLANK_WS_LAEMP_EVO_2022-06-02_NP	E420	02-Jun-2022	----	----	----		09-Jun-2022	180 days	7 days	✔	
Total Metals : Total Metals in Water by CRC ICPCS											
HDPE total (nitric acid) RG_GATE_WS_LAEMP_EVO_2022-06-02_NP	E420	02-Jun-2022	----	----	----		09-Jun-2022	180 days	7 days	✔	
Total Metals : Total Metals in Water by CRC ICPCS											
HDPE total (nitric acid) RG_MICOMP_WS_LAEMP_EVO_2022-06-02_NP	E420	02-Jun-2022	----	----	----		09-Jun-2022	180 days	7 days	✔	
Total Metals : Total Metals in Water by CRC ICPCS											
HDPE total (nitric acid) RG_MIDER_WS_LAEMP_EVO_2022-06-02_NP	E420	02-Jun-2022	----	----	----		09-Jun-2022	180 days	7 days	✔	
Total Metals : Total Metals in Water by CRC ICPCS											
HDPE total (nitric acid) RG_RIVER_WS_LAEMP_EVO_2022-06-02_NP	E420	02-Jun-2022	----	----	----		09-Jun-2022	180 days	7 days	✔	
Total Metals : Total Metals in Water by CRC ICPCS											
HDPE total (nitric acid) RG_TRIP_WS_LAEMP_EVO_2022-06-02_NP	E420	02-Jun-2022	----	----	----		09-Jun-2022	180 days	7 days	✔	
Total Metals : Total Metals in Water by CRC ICPCS											
HDPE total (nitric acid) RG_ERCK_WS_LAEMP_EVO_2022-06-02_NP	E420	02-Jun-2022	----	----	----		09-Jun-2022	180 days	8 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) RG_ERCKUC_WS_LAEMP_EVO_2022-06-02_NP	E420	02-Jun-2022	----	----	----		09-Jun-2022	180 days	8 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) RG_MI3_WS_LAEMP_EVO_2022-06-02_NP	E420	02-Jun-2022	----	----	----		09-Jun-2022	180 days	8 days	✓

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended
 EHT: Exceeded ALS recommended hold time prior to analysis.
 Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
Analytical Methods							
Laboratory Duplicates (DUP)							
Acidity by Titration	E283	515615	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290	515621	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	519043	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	511711	2	19	10.5	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	511712	2	19	10.5	5.0	✓
Conductivity in Water	E100	515620	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	516742	1	20	5.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	518006	2	39	5.1	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	516741	2	20	10.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	521969	1	15	6.6	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	511751	2	21	9.5	5.0	✓
Fluoride in Water by IC	E235.F	511709	2	26	7.6	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	511713	2	21	9.5	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	511714	2	19	10.5	5.0	✓
ORP by Electrode	E125	517037	1	20	5.0	5.0	✓
pH by Meter	E108	515619	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	511710	2	27	7.4	5.0	✓
TDS by Gravimetry	E162	515759	2	40	5.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	516357	2	25	8.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	514941	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	516364	2	32	6.2	5.0	✓
Total Metals in Water by CRC ICPMS	E420	516356	3	40	7.5	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	521968	1	15	6.6	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	513719	2	40	5.0	5.0	✓
Turbidity by Nephelometry	E121	511624	2	10	20.0	5.0	✓
Laboratory Control Samples (LCS)							
Acidity by Titration	E283	515615	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290	515621	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	519043	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	511711	2	19	10.5	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	511712	2	19	10.5	5.0	✓
Conductivity in Water	E100	515620	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	516742	1	20	5.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	518006	2	39	5.1	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	516741	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	521969	1	15	6.6	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	511751	2	21	9.5	5.0	✓



Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
Analytical Methods							
Laboratory Control Samples (LCS) - Continued							
Fluoride in Water by IC	E235.F	511709	2	26	7.6	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	511713	2	21	9.5	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	511714	2	19	10.5	5.0	✓
ORP by Electrode	E125	517037	1	20	5.0	5.0	✓
pH by Meter	E108	515619	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	511710	2	27	7.4	5.0	✓
TDS by Gravimetry	E162	515759	2	40	5.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	516357	2	25	8.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	514941	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	516364	2	32	6.2	5.0	✓
Total Metals in Water by CRC ICPMS	E420	516356	2	40	5.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	521968	1	15	6.6	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	513719	2	40	5.0	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	515746	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121	511624	2	10	20.0	5.0	✓
Method Blanks (MB)							
Acidity by Titration	E283	515615	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290	515621	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	519043	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	511711	2	19	10.5	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	511712	2	19	10.5	5.0	✓
Conductivity in Water	E100	515620	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	516742	1	20	5.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	518006	2	39	5.1	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	516741	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	521969	1	15	6.6	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	511751	2	21	9.5	5.0	✓
Fluoride in Water by IC	E235.F	511709	2	26	7.6	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	511713	2	21	9.5	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	511714	2	19	10.5	5.0	✓
Sulfate in Water by IC	E235.SO4	511710	2	27	7.4	5.0	✓
TDS by Gravimetry	E162	515759	2	40	5.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	516357	2	25	8.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	514941	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	516364	2	32	6.2	5.0	✓
Total Metals in Water by CRC ICPMS	E420	516356	2	40	5.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	521968	1	15	6.6	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	513719	2	40	5.0	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	515746	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121	511624	2	10	20.0	5.0	✓



Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
<i>Analytical Methods</i>							
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	519043	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	511711	1	19	5.2	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	511712	1	19	5.2	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	516742	1	20	5.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	518006	2	39	5.1	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	516741	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	521969	1	15	6.6	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	511751	1	21	4.7	5.0	*
Fluoride in Water by IC	E235.F	511709	2	26	7.6	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	511713	2	21	9.5	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	511714	1	19	5.2	5.0	✓
Sulfate in Water by IC	E235.SO4	511710	2	27	7.4	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	516357	2	25	8.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	514941	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	516364	2	32	6.2	5.0	✓
Total Metals in Water by CRC ICPMS	E420	516356	2	40	5.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	521968	1	15	6.6	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	513719	2	40	5.0	5.0	✓



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 Calgary - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 Calgary - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 Calgary - Environmental	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
ORP by Electrode	E125 Calgary - Environmental	Water	ASTM D1498 (mod)	Oxidation reduction potential is reported as the oxidation-reduction potential of the platinum metal-reference electrode employed, measured in mV. For high accuracy test results, it is recommended that this analysis be conducted in the field.
TSS by Gravimetry (Low Level)	E160-L Calgary - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 Calgary - Environmental	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC (Low Level)	E235.Cl-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Acidity by Titration	E283 Calgary - Environmental	Water	APHA 2310 B (mod)	Acidity is determined by potentiometric titration to pH endpoint of 8.3



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Alkalinity Species by Titration	E290 Calgary - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 Calgary - Environmental	Water	J. Environ. Monit., 2005, 7, 37-42 (mod)	Ammonia in water is analyzed by flow-injection analysis with fluorescence detection after reaction with orthophthaldialdehyde (OPA).
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 Calgary - Environmental	Water	APHA 4500-Norg D (mod)	Total Kjeldahl Nitrogen is determined using block digestion followed by flow-injection analysis with fluorescence detection.
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L Calgary - Environmental	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Dissolved Organic Carbon by Combustion (Low Level)	E358-L Calgary - Environmental	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U Calgary - Environmental	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U Calgary - Environmental	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Total Metals in Water by CRC ICPMS	E420 Vancouver - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L Vancouver - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS.
Dissolved Metals in Water by CRC ICPMS	E421 Vancouver - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L Vancouver - Environmental	Water	APHA 3030 B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS
Total Mercury in Water by CVAAS	E508 Vancouver - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS
Dissolved Mercury in Water by CVAAS	E509 Vancouver - Environmental	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
Dissolved Hardness (Calculated)	EC100 Vancouver - Environmental	Water	APHA 2340B	"Hardness (as CaCO ₃), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Ion Balance using Dissolved Metals	EC101 Calgary - Environmental	Water	APHA 1030E	Cation Sum, Anion Sum, and Ion Balance are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present. Ion Balance cannot be calculated accurately for waters with very low electrical conductivity (EC).

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 Calgary - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 Calgary - Environmental	Water	APHA 4500-Norg D (mod)	Samples are digested using block digestion with Copper Sulfate Digestion Reagent.
Preparation for Total Organic Carbon by Combustion	EP355 Calgary - Environmental	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon for Combustion	EP358 Calgary - Environmental	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Phosphorus in water	EP372 Calgary - Environmental	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Dissolved Metals Water Filtration	EP421 Vancouver - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO ₃ .
Dissolved Mercury Water Filtration	EP509	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.



<i>Preparation Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
	Vancouver - Environmental			



QUALITY CONTROL REPORT

Work Order : **CG2206946**
Client : Teck Coal Limited
Contact : Mike Pope
Address : RR#1 HWY#3
Sparwood BC Canada V0B 2G1
Telephone : ----
Project : REGIONAL EFFECTS PROGRAM
PO : VPO00816101
C-O-C number : MAY/JUNE EVO LAEMP 2022 WS
Sampler : ED
Site : ----
Quote number : Teck Coal Master Quote
No. of samples received : 10
No. of samples analysed : 10

Page : 1 of 23
Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
Calgary, Alberta Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 04-Jun-2022 10:00
Date Analysis Commenced : 05-Jun-2022
Issue Date : 15-Jun-2022 15:04

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
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General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 511624)											
CG2206946-002	RG_FBLANK_WS_LAEMP_EVO_2022-06-02_NP	turbidity	----	E121	0.10	NTU	<0.10	<0.10	0	Diff <2x LOR	----
Physical Tests (QC Lot: 512964)											
CG2206946-001	RG_MIDER_WS_LAEMP_EVO_2022-06-02_NP	turbidity	----	E121	0.10	NTU	7.32	6.65	9.68%	15%	----
Physical Tests (QC Lot: 515615)											
CG2206942-001	Anonymous	acidity (as CaCO3)	----	E283	2.0	mg/L	17.9	16.9	1.0	Diff <2x LOR	----
Physical Tests (QC Lot: 515619)											
CG2206942-001	Anonymous	pH	----	E108	0.10	pH units	7.48	7.47	0.134%	4%	----
Physical Tests (QC Lot: 515620)											
CG2206942-001	Anonymous	conductivity	----	E100	2.0	µS/cm	1530	1540	0.522%	10%	----
Physical Tests (QC Lot: 515621)											
CG2206942-001	Anonymous	alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	319	316	1.10%	20%	----
		alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	319	316	1.10%	20%	----
Physical Tests (QC Lot: 515759)											
CG2206939-017	Anonymous	solids, total dissolved [TDS]	----	E162	40	mg/L	1790	1790	0.00%	20%	----
Physical Tests (QC Lot: 515760)											
CG2206946-002	RG_FBLANK_WS_LAEMP_EVO_2022-06-02_NP	solids, total dissolved [TDS]	----	E162	10	mg/L	<10	<10	0	Diff <2x LOR	----
Physical Tests (QC Lot: 517037)											
CG2206939-021	Anonymous	oxidation-reduction potential [ORP]	----	E125	0.10	mV	454	446	1.78%	15%	----
Anions and Nutrients (QC Lot: 511709)											
CG2206939-014	Anonymous	fluoride	16984-48-8	E235.F	0.100	mg/L	0.337	0.339	0.002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 511710)											
CG2206939-014	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	1.50	mg/L	919	929	1.05%	20%	----
Anions and Nutrients (QC Lot: 511711)											
CG2206939-014	Anonymous	bromide	24959-67-9	E235.Br-L	0.250	mg/L	<0.250	<0.250	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 511712)											
CG2206939-014	Anonymous	chloride	16887-00-6	E235.Cl-L	0.50	mg/L	16.1	16.2	0.753%	20%	----
Anions and Nutrients (QC Lot: 511713)											
CG2206939-014	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	0.0250	mg/L	25.0	25.2	0.914%	20%	----



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 511714)											
CG2206939-014	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.0050	mg/L	0.168	0.162	3.51%	20%	----
Anions and Nutrients (QC Lot: 511751)											
CG2206939-021	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0036	0.0039	0.0003	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 512919)											
CG2206946-001	RG_MIDER_WS_LAEMP_EVO_2022-06-02_NP	sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	28.3	27.6	2.61%	20%	----
Anions and Nutrients (QC Lot: 512920)											
CG2206946-001	RG_MIDER_WS_LAEMP_EVO_2022-06-02_NP	fluoride	16984-48-8	E235.F	0.020	mg/L	0.090	0.087	0.003	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 512921)											
CG2206946-001	RG_MIDER_WS_LAEMP_EVO_2022-06-02_NP	bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 512922)											
CG2206946-001	RG_MIDER_WS_LAEMP_EVO_2022-06-02_NP	nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 512923)											
CG2206946-001	RG_MIDER_WS_LAEMP_EVO_2022-06-02_NP	nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.105	0.100	4.96%	20%	----
Anions and Nutrients (QC Lot: 512924)											
CG2206946-001	RG_MIDER_WS_LAEMP_EVO_2022-06-02_NP	chloride	16887-00-6	E235.Cl-L	0.10	mg/L	0.30	0.28	0.02	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 513130)											
CG2206946-001	RG_MIDER_WS_LAEMP_EVO_2022-06-02_NP	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0108	0.0102	5.71%	20%	----
Anions and Nutrients (QC Lot: 513719)											
CG2206939-020	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0354	0.0334	5.83%	20%	----
Anions and Nutrients (QC Lot: 513720)											
CG2206946-010	RG_BOCK_WS_LAEMP_EVO_2022-06-03_NP	phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0042	0.0042	0.00008	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 514941)											
CG2206946-001	RG_MIDER_WS_LAEMP_EVO_2022-06-02_NP	Kjeldahl nitrogen, total [TKN]	----	E318	0.500	mg/L	<0.500	<0.500	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 519043)											
CG2206939-021	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0302	0.0296	0.0006	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 521968)											
CG2206946-001	RG_MIDER_WS_LAEMP_EVO_2022-06-02_NP	carbon, total organic [TOC]	----	E355-L	0.50	mg/L	2.46	2.39	0.07	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 521969)											
CG2206946-001	RG_MIDER_WS_LAEMP_EVO_2022-06-02_NP	carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	2.33	2.52	0.19	Diff <2x LOR	----
Total Metals (QC Lot: 516356)											



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (QC Lot: 516356) - continued											
CG2206906-001	Anonymous	aluminum, total	7429-90-5	E420	0.0060	mg/L	<0.0060	<0.0060	0	Diff <2x LOR	----
		antimony, total	7440-36-0	E420	0.00020	mg/L	0.00254	0.00258	1.61%	20%	----
		arsenic, total	7440-38-2	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		barium, total	7440-39-3	E420	0.00020	mg/L	0.0209	0.0216	3.17%	20%	----
		beryllium, total	7440-41-7	E420	0.000040	mg/L	<0.040 µg/L	<0.000040	0	Diff <2x LOR	----
		bismuth, total	7440-69-9	E420	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		boron, total	7440-42-8	E420	0.020	mg/L	0.099	0.100	0.00005	Diff <2x LOR	----
		cadmium, total	7440-43-9	E420	0.0000100	mg/L	1.76 µg/L	0.00179	1.89%	20%	----
		calcium, total	7440-70-2	E420	0.100	mg/L	574	577	0.404%	20%	----
		cobalt, total	7440-48-4	E420	0.00020	mg/L	54.3 µg/L	0.0551	1.44%	20%	----
		copper, total	7440-50-8	E420	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		iron, total	7439-89-6	E420	0.020	mg/L	<0.020	<0.020	0	Diff <2x LOR	----
		lead, total	7439-92-1	E420	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		lithium, total	7439-93-2	E420	0.0020	mg/L	1.03	1.01	2.30%	20%	----
		magnesium, total	7439-95-4	E420	0.0100	mg/L	244	243	0.455%	20%	----
		manganese, total	7439-96-5	E420	0.00020	mg/L	0.313	0.313	0.0455%	20%	----
		molybdenum, total	7439-98-7	E420	0.000100	mg/L	0.00439	0.00448	1.91%	20%	----
		nickel, total	7440-02-0	E420	0.00100	mg/L	0.452	0.452	0.0268%	20%	----
		potassium, total	7440-09-7	E420	0.100	mg/L	16.2	16.1	0.644%	20%	----
		selenium, total	7782-49-2	E420	0.000100	mg/L	91.3 µg/L	0.0888	2.74%	20%	----
		silicon, total	7440-21-3	E420	0.20	mg/L	3.14	3.04	3.07%	20%	----
		silver, total	7440-22-4	E420	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		sodium, total	7440-23-5	E420	0.100	mg/L	31.8	31.2	2.16%	20%	----
		strontium, total	7440-24-6	E420	0.00040	mg/L	1.57	1.59	1.63%	20%	----
		sulfur, total	7704-34-9	E420	1.00	mg/L	497	484	2.75%	20%	----
		thallium, total	7440-28-0	E420	0.000020	mg/L	0.000155	0.000156	0.000002	Diff <2x LOR	----
		tin, total	7440-31-5	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		titanium, total	7440-32-6	E420	0.00060	mg/L	<0.00060	<0.00060	0	Diff <2x LOR	----
		uranium, total	7440-61-1	E420	0.000020	mg/L	0.0301	0.0294	2.14%	20%	----
		vanadium, total	7440-62-2	E420	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		zinc, total	7440-66-6	E420	0.0060	mg/L	0.116	0.116	0.0599%	20%	----
Total Metals (QC Lot: 516357)											
CG2206906-001	Anonymous	chromium, total	7440-47-3	E420.Cr-L	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Total Metals (QC Lot: 516364)											
CG2206901-001	Anonymous	mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (QC Lot: 516365)											
CG2206946-010	RG_BOCK_WS_LAEMP_E VO_2022-06-03_NP	mercury, total	7439-97-6	E508	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
Total Metals (QC Lot: 516827)											
CG2206860-001	Anonymous	chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	0.00012	0.00012	0	Diff <2x LOR	----
Total Metals (QC Lot: 516828)											
CG2206860-001	Anonymous	iron, total	7439-89-6	E420	0.010	mg/L	0.069	0.052	0.017	Diff <2x LOR	----
CG2206860-001	Anonymous	aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0380	0.0366	3.92%	20%	----
		antimony, total	7440-36-0	E420	0.00010	mg/L	0.00016	0.00016	0.00002	Diff <2x LOR	----
		arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00014	0.00012	0.00002	Diff <2x LOR	----
		barium, total	7440-39-3	E420	0.00010	mg/L	0.0384	0.0395	2.75%	20%	----
		beryllium, total	7440-41-7	E420	0.000020	mg/L	<0.020 µg/L	<0.000020	0	Diff <2x LOR	----
		bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, total	7440-42-8	E420	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		cadmium, total	7440-43-9	E420	0.000050	mg/L	0.0608 µg/L	0.0000730	18.1%	20%	----
		calcium, total	7440-70-2	E420	0.050	mg/L	66.0	64.6	2.14%	20%	----
		cobalt, total	7440-48-4	E420	0.00010	mg/L	<0.10 µg/L	<0.00010	0	Diff <2x LOR	----
		copper, total	7440-50-8	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		lead, total	7439-92-1	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		lithium, total	7439-93-2	E420	0.0010	mg/L	0.0206	0.0205	0.740%	20%	----
		magnesium, total	7439-95-4	E420	0.0050	mg/L	27.1	28.0	3.22%	20%	----
		manganese, total	7439-96-5	E420	0.00010	mg/L	0.00435	0.00448	2.91%	20%	----
		molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.00176	0.00172	2.47%	20%	----
		nickel, total	7440-02-0	E420	0.00050	mg/L	0.00281	0.00287	0.00005	Diff <2x LOR	----
		potassium, total	7440-09-7	E420	0.050	mg/L	0.967	1.01	4.48%	20%	----
		selenium, total	7782-49-2	E420	0.000050	mg/L	26.5 µg/L	0.0274	3.46%	20%	----
		silicon, total	7440-21-3	E420	0.10	mg/L	1.57	1.66	5.39%	20%	----
		silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, total	7440-23-5	E420	0.050	mg/L	1.40	1.49	6.33%	20%	----
		strontium, total	7440-24-6	E420	0.00020	mg/L	0.0927	0.0950	2.42%	20%	----
		sulfur, total	7704-34-9	E420	0.50	mg/L	41.2	43.9	6.33%	20%	----
		thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, total	7440-32-6	E420	0.00030	mg/L	0.00064	0.00058	0.00006	Diff <2x LOR	----
		uranium, total	7440-61-1	E420	0.000010	mg/L	0.00165	0.00163	1.32%	20%	----
		vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		zinc, total	7440-66-6	E420	0.0030	mg/L	0.0036	0.0036	0.00005	Diff <2x LOR	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 516741)											
CG2206939-020	Anonymous	selenium, dissolved	7782-49-2	E421	0.000050	mg/L	10.3 µg/L	0.00990	4.39%	20%	----
CG2206939-020	Anonymous	aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0026	0.0028	0.0002	Diff <2x LOR	----
		antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00026	0.00028	0.00002	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00153	0.00163	6.32%	20%	----
		barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0141	0.0146	3.47%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.000020	mg/L	<0.020 µg/L	<0.000020	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.010	mg/L	0.032	0.030	0.002	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	0.0112 µg/L	0.0000074	0.0000037	Diff <2x LOR	----
		calcium, dissolved	7440-70-2	E421	0.050	mg/L	222	221	0.759%	20%	----
		cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	0.48 µg/L	0.00049	0.000007	Diff <2x LOR	----
		copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		iron, dissolved	7439-89-6	E421	0.010	mg/L	0.209	0.214	2.72%	20%	----
		lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.129	0.121	6.47%	20%	----
		magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	151	153	1.19%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.389	0.398	2.32%	20%	----
		molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00298	0.00292	1.82%	20%	----
		nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00242	0.00249	0.00007	Diff <2x LOR	----
		potassium, dissolved	7440-09-7	E421	0.050	mg/L	4.76	4.97	4.36%	20%	----
		silicon, dissolved	7440-21-3	E421	0.050	mg/L	3.02	2.94	2.54%	20%	----
		silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E421	0.050	mg/L	11.3	11.9	4.81%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.602	0.605	0.535%	20%	----
		sulfur, dissolved	7704-34-9	E421	0.50	mg/L	282	291	3.17%	20%	----
		thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00764	0.00782	2.24%	20%	----
		vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	0.00079	0.00080	0.00002	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 516742)											
CG2206939-020	Anonymous	chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 518006)											
CG2206939-019	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	0.0000174	0.0000170	0.0000004	Diff <2x LOR	----

Page : 8 of 23
 Work Order : CG2206946
 Client : Teck Coal Limited
 Project : REGIONAL EFFECTS PROGRAM



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

<i>Laboratory sample ID</i>	<i>Client sample ID</i>	<i>Analyte</i>	<i>CAS Number</i>	<i>Method</i>	<i>LOR</i>	<i>Unit</i>	<i>Original Result</i>	<i>Duplicate Result</i>	<i>RPD(%) or Difference</i>	<i>Duplicate Limits</i>	<i>Qualifier</i>
Dissolved Metals (QC Lot: 518239)											
CG2206890-001	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 511624)						
turbidity	----	E121	0.1	NTU	<0.10	----
Physical Tests (QCLot: 512964)						
turbidity	----	E121	0.1	NTU	<0.10	----
Physical Tests (QCLot: 515615)						
acidity (as CaCO ₃)	----	E283	2	mg/L	<2.0	----
Physical Tests (QCLot: 515620)						
conductivity	----	E100	1	µS/cm	<1.0	----
Physical Tests (QCLot: 515621)						
alkalinity, bicarbonate (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
alkalinity, carbonate (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
alkalinity, hydroxide (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
alkalinity, total (as CaCO ₃)	----	E290	1	mg/L	1.7	----
Physical Tests (QCLot: 515746)						
solids, total suspended [TSS]	----	E160-L	1	mg/L	<1.0	----
Physical Tests (QCLot: 515759)						
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 515760)						
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Anions and Nutrients (QCLot: 511709)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 511710)						
sulfate (as SO ₄)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 511711)						
bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 511712)						
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	----
Anions and Nutrients (QCLot: 511713)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 511714)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 511751)						
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 512919)						



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 512919) - continued						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	---
Anions and Nutrients (QCLot: 512920)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	---
Anions and Nutrients (QCLot: 512921)						
bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	---
Anions and Nutrients (QCLot: 512922)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	---
Anions and Nutrients (QCLot: 512923)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	---
Anions and Nutrients (QCLot: 512924)						
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	---
Anions and Nutrients (QCLot: 513130)						
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	---
Anions and Nutrients (QCLot: 513719)						
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	---
Anions and Nutrients (QCLot: 513720)						
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	---
Anions and Nutrients (QCLot: 514941)						
Kjeldahl nitrogen, total [TKN]	---	E318	0.05	mg/L	<0.050	---
Anions and Nutrients (QCLot: 519043)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	---
Organic / Inorganic Carbon (QCLot: 521968)						
carbon, total organic [TOC]	---	E355-L	0.5	mg/L	<0.50	---
Organic / Inorganic Carbon (QCLot: 521969)						
carbon, dissolved organic [DOC]	---	E358-L	0.5	mg/L	<0.50	---
Total Metals (QCLot: 516356)						
aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	---
antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	---
arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	---
barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	---
beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	---
bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	---
boron, total	7440-42-8	E420	0.01	mg/L	<0.010	---
cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	---
calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	---
cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	---



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 516356) - continued						
copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	---
iron, total	7439-89-6	E420	0.01	mg/L	<0.010	---
lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	---
lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	---
magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	---
manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	---
molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	---
nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	---
potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	---
selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	---
silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	---
silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	---
sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	---
strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	---
sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	---
thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	---
tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	---
titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	---
uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	---
vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	---
zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	---
Total Metals (QCLot: 516357)						
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	<0.00010	---
Total Metals (QCLot: 516364)						
mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	---
Total Metals (QCLot: 516365)						
mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	---
Total Metals (QCLot: 516827)						
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	<0.00010	---
Total Metals (QCLot: 516828)						
aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	---
antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	---
arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	---
barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	---
beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	---
bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	---



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 516828) - continued						
boron, total	7440-42-8	E420	0.01	mg/L	<0.010	---
cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.000050	---
calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	---
cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	---
copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	---
iron, total	7439-89-6	E420	0.01	mg/L	<0.010	---
lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	---
lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	---
magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	---
manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	---
molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	---
nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	---
potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	---
selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	---
silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	---
silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	---
sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	---
strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	---
sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	---
thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	---
tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	---
titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	---
uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	---
vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	---
zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	---
Dissolved Metals (QCLot: 516741)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	---
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	---
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	---
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	---
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	---
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	---
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	---
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	---
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	---
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	---



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 516741) - continued						
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
Dissolved Metals (QCLot: 516742)						
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	<0.00010	----
Dissolved Metals (QCLot: 518006)						
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 518239)						
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Physical Tests (QCLot: 511624)									
turbidity	----	E121	0.1	NTU	200 NTU	101	85.0	115	----
Physical Tests (QCLot: 512964)									
turbidity	----	E121	0.1	NTU	200 NTU	104	85.0	115	----
Physical Tests (QCLot: 515615)									
acidity (as CaCO ₃)	----	E283	2	mg/L	50 mg/L	104	85.0	115	----
Physical Tests (QCLot: 515619)									
pH	----	E108	----	pH units	7 pH units	99.6	98.6	101	----
Physical Tests (QCLot: 515620)									
conductivity	----	E100	1	µS/cm	146.9 µS/cm	110	90.0	110	----
Physical Tests (QCLot: 515621)									
alkalinity, total (as CaCO ₃)	----	E290	1	mg/L	500 mg/L	105	85.0	115	----
Physical Tests (QCLot: 515746)									
solids, total suspended [TSS]	----	E160-L	1	mg/L	150 mg/L	94.3	85.0	115	----
Physical Tests (QCLot: 515759)									
solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	95.9	85.0	115	----
Physical Tests (QCLot: 515760)									
solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	97.3	85.0	115	----
Physical Tests (QCLot: 517037)									
oxidation-reduction potential [ORP]	----	E125	----	mV	220 mV	98.4	95.4	104	----
Anions and Nutrients (QCLot: 511709)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 511710)									
sulfate (as SO ₄)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	103	90.0	110	----
Anions and Nutrients (QCLot: 511711)									
bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	89.9	85.0	115	----
Anions and Nutrients (QCLot: 511712)									
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 511713)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 511714)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	106	90.0	110	----
Anions and Nutrients (QCLot: 511751)									



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				Qualifier
					Spike Concentration	Recovery (%) LCS	Recovery Limits (%)		
						Low	High		
Anions and Nutrients (QCLot: 511751) - continued									
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.02 mg/L	102	80.0	120	----
Anions and Nutrients (QCLot: 512919)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 512920)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	97.9	90.0	110	----
Anions and Nutrients (QCLot: 512921)									
bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	89.7	85.0	115	----
Anions and Nutrients (QCLot: 512922)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	96.8	90.0	110	----
Anions and Nutrients (QCLot: 512923)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	96.2	90.0	110	----
Anions and Nutrients (QCLot: 512924)									
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	95.9	90.0	110	----
Anions and Nutrients (QCLot: 513130)									
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.02 mg/L	105	80.0	120	----
Anions and Nutrients (QCLot: 513719)									
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	8.02 mg/L	103	80.0	120	----
Anions and Nutrients (QCLot: 513720)									
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	8.02 mg/L	102	80.0	120	----
Anions and Nutrients (QCLot: 514941)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	99.7	75.0	125	----
Anions and Nutrients (QCLot: 519043)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	101	85.0	115	----
Organic / Inorganic Carbon (QCLot: 521968)									
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	88.7	80.0	120	----
Organic / Inorganic Carbon (QCLot: 521969)									
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	94.8	80.0	120	----
Total Metals (QCLot: 516356)									
aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	94.3	80.0	120	----
antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	101	80.0	120	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	96.1	80.0	120	----
barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	97.5	80.0	120	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	93.7	80.0	120	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	96.3	80.0	120	----
boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	91.2	80.0	120	----



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Total Metals (QCLot: 516356) - continued									
cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	95.0	80.0	120	----
calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	94.9	80.0	120	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	95.1	80.0	120	----
copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	95.0	80.0	120	----
iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	93.2	80.0	120	----
lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	95.4	80.0	120	----
lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	92.5	80.0	120	----
magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	95.3	80.0	120	----
manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	96.7	80.0	120	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	96.7	80.0	120	----
nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	93.7	80.0	120	----
potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	97.3	80.0	120	----
selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	95.8	80.0	120	----
silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	97.7	80.0	120	----
silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	92.1	80.0	120	----
sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	99.2	80.0	120	----
strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	97.3	80.0	120	----
sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	104	80.0	120	----
thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	98.7	80.0	120	----
tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	92.1	80.0	120	----
titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	92.9	80.0	120	----
uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	99.3	80.0	120	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	97.3	80.0	120	----
zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	93.7	80.0	120	----
Total Metals (QCLot: 516357)									
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	0.25 mg/L	95.0	80.0	120	----
Total Metals (QCLot: 516364)									
mercury, total	7439-97-6	E508	0.000005	mg/L	0.0001 mg/L	92.5	80.0	120	----
Total Metals (QCLot: 516365)									
mercury, total	7439-97-6	E508	0.000005	mg/L	0.0001 mg/L	95.1	80.0	120	----
Total Metals (QCLot: 516827)									
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	0.25 mg/L	94.5	80.0	120	----
Total Metals (QCLot: 516828)									
aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	101	80.0	120	----
antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	108	80.0	120	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	93.4	80.0	120	----
barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	100	80.0	120	----



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Total Metals (QCLot: 516828) - continued									
beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	101	80.0	120	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	98.5	80.0	120	----
boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	97.8	80.0	120	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	92.5	80.0	120	----
calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	98.5	80.0	120	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	92.8	80.0	120	----
copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	92.6	80.0	120	----
iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	109	80.0	120	----
lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	102	80.0	120	----
lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	100	80.0	120	----
magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	89.5	80.0	120	----
manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	94.8	80.0	120	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	99.4	80.0	120	----
nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	94.2	80.0	120	----
potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	92.5	80.0	120	----
selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	86.4	80.0	120	----
silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	99.4	80.0	120	----
silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	96.8	80.0	120	----
sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	98.3	80.0	120	----
strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	99.8	80.0	120	----
sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	101	80.0	120	----
thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	97.6	80.0	120	----
tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	97.0	80.0	120	----
titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	94.8	80.0	120	----
uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	98.6	80.0	120	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	96.2	80.0	120	----
zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	95.0	80.0	120	----
Dissolved Metals (QCLot: 516741)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	99.1	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	96.8	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	99.5	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	96.7	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	102	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	98.5	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	99.8	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	95.6	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	98.1	80.0	120	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Dissolved Metals (QCLot: 516741) - continued									
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	95.4	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	95.0	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	104	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	96.7	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	97.7	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	97.6	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	97.5	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	102	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	97.2	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	97.4	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	99.8	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	97.3	80.0	120	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	89.6	80.0	120	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	103	80.0	120	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	102	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	99.1	80.0	120	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	98.8	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	96.4	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	90.1	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	99.6	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	98.2	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	96.0	80.0	120	----
Dissolved Metals (QCLot: 516742)									
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	0.25 mg/L	98.5	80.0	120	----
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	97.2	80.0	120	----
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	94.1	80.0	120	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level $\geq 1x$ spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 511709)										
CG2206939-015	Anonymous	fluoride	16984-48-8	E235.F	0.964 mg/L	1 mg/L	96.4	75.0	125	----
Anions and Nutrients (QCLot: 511710)										
CG2206939-015	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	107 mg/L	100 mg/L	107	75.0	125	----
Anions and Nutrients (QCLot: 511711)										
CG2206939-015	Anonymous	bromide	24959-67-9	E235.Br-L	0.455 mg/L	0.5 mg/L	91.0	75.0	125	----
Anions and Nutrients (QCLot: 511712)										
CG2206939-015	Anonymous	chloride	16887-00-6	E235.Cl-L	102 mg/L	100 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 511713)										
CG2206939-015	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	2.56 mg/L	2.5 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 511714)										
CG2206939-015	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.540 mg/L	0.5 mg/L	108	75.0	125	----
Anions and Nutrients (QCLot: 511751)										
CG2206945-001	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0435 mg/L	0.05 mg/L	87.1	70.0	130	----
Anions and Nutrients (QCLot: 512919)										
CG2206999-004	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	98.3 mg/L	100 mg/L	98.3	75.0	125	----
Anions and Nutrients (QCLot: 512920)										
CG2206999-004	Anonymous	fluoride	16984-48-8	E235.F	1.08 mg/L	1 mg/L	108	75.0	125	----
Anions and Nutrients (QCLot: 512923)										
CG2207000-001	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	2.41 mg/L	2.5 mg/L	96.3	75.0	125	----
Anions and Nutrients (QCLot: 513719)										
CG2206939-021	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0695 mg/L	0.0676 mg/L	103	70.0	130	----
Anions and Nutrients (QCLot: 513720)										
CG2206947-001	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0612 mg/L	0.0676 mg/L	90.5	70.0	130	----
Anions and Nutrients (QCLot: 514941)										
CG2206946-002	RG_FBLANK_WS_LAEMP_EVO_2022-06-02_NP	Kjeldahl nitrogen, total [TKN]	----	E318	2.65 mg/L	2.5 mg/L	106	70.0	130	----
Anions and Nutrients (QCLot: 519043)										
CG2206941-001	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.104 mg/L	0.1 mg/L	104	75.0	125	----
Organic / Inorganic Carbon (QCLot: 521968)										



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Organic / Inorganic Carbon (QCLot: 521968) - continued										
CG2206946-001	RG_MIDER_WS_LAEMP_E VO_2022-06-02_NP	carbon, total organic [TOC]	----	E355-L	5.06 mg/L	5 mg/L	101	70.0	130	----
Organic / Inorganic Carbon (QCLot: 521969)										
CG2206946-001	RG_MIDER_WS_LAEMP_E VO_2022-06-02_NP	carbon, dissolved organic [DOC]	----	E358-L	5.24 mg/L	5 mg/L	105	70.0	130	----
Total Metals (QCLot: 516356)										
CG2206906-002	Anonymous	aluminum, total	7429-90-5	E420	0.374 mg/L	0.4 mg/L	93.6	70.0	130	----
		antimony, total	7440-36-0	E420	0.0397 mg/L	0.04 mg/L	99.2	70.0	130	----
		arsenic, total	7440-38-2	E420	0.0403 mg/L	0.04 mg/L	101	70.0	130	----
		barium, total	7440-39-3	E420	0.0378 mg/L	0.04 mg/L	94.4	70.0	130	----
		beryllium, total	7440-41-7	E420	0.0728 mg/L	0.08 mg/L	91.0	70.0	130	----
		bismuth, total	7440-69-9	E420	0.0170 mg/L	0.02 mg/L	85.1	70.0	130	----
		boron, total	7440-42-8	E420	ND mg/L	0.1 mg/L	ND	70.0	130	----
		cadmium, total	7440-43-9	E420	0.00739 mg/L	0.008 mg/L	92.4	70.0	130	----
		calcium, total	7440-70-2	E420	ND mg/L	4 mg/L	ND	70.0	130	----
		cobalt, total	7440-48-4	E420	ND mg/L	0.02 mg/L	ND	70.0	130	----
		copper, total	7440-50-8	E420	0.0357 mg/L	0.04 mg/L	89.2	70.0	130	----
		iron, total	7439-89-6	E420	3.58 mg/L	4 mg/L	89.4	70.0	130	----
		lead, total	7439-92-1	E420	0.0340 mg/L	0.04 mg/L	85.0	70.0	130	----
		lithium, total	7439-93-2	E420	ND mg/L	0.1 mg/L	ND	70.0	130	----
		magnesium, total	7439-95-4	E420	ND mg/L	1 mg/L	ND	70.0	130	----
		manganese, total	7439-96-5	E420	ND mg/L	0.02 mg/L	ND	70.0	130	----
		molybdenum, total	7439-98-7	E420	0.0409 mg/L	0.04 mg/L	102	70.0	130	----
		nickel, total	7440-02-0	E420	ND mg/L	0.04 mg/L	ND	70.0	130	----
		potassium, total	7440-09-7	E420	ND mg/L	4 mg/L	ND	70.0	130	----
		selenium, total	7782-49-2	E420	ND mg/L	0.04 mg/L	ND	70.0	130	----
		silicon, total	7440-21-3	E420	18.8 mg/L	20 mg/L	94.3	70.0	130	----
		silver, total	7440-22-4	E420	0.00767 mg/L	0.008 mg/L	95.8	70.0	130	----
		sodium, total	7440-23-5	E420	ND mg/L	2 mg/L	ND	70.0	130	----
		strontium, total	7440-24-6	E420	ND mg/L	0.02 mg/L	ND	70.0	130	----
		sulfur, total	7704-34-9	E420	ND mg/L	20 mg/L	ND	70.0	130	----
		thallium, total	7440-28-0	E420	0.00689 mg/L	0.008 mg/L	86.2	70.0	130	----
		tin, total	7440-31-5	E420	0.0372 mg/L	0.04 mg/L	93.1	70.0	130	----
		titanium, total	7440-32-6	E420	0.0755 mg/L	0.08 mg/L	94.4	70.0	130	----
		uranium, total	7440-61-1	E420	ND mg/L	0.008 mg/L	ND	70.0	130	----
		vanadium, total	7440-62-2	E420	0.199 mg/L	0.2 mg/L	99.4	70.0	130	----
		zinc, total	7440-66-6	E420	0.727 mg/L	0.8 mg/L	90.9	70.0	130	----



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 516357)										
CG2206906-002	Anonymous	chromium, total	7440-47-3	E420.Cr-L	0.0760 mg/L	0.08 mg/L	95.0	70.0	130	----
Total Metals (QCLot: 516364)										
CG2206901-002	Anonymous	mercury, total	7439-97-6	E508	0.0000886 mg/L	0.0001 mg/L	88.6	70.0	130	----
Total Metals (QCLot: 516365)										
CG2206947-001	Anonymous	mercury, total	7439-97-6	E508	0.0000905 mg/L	0.0001 mg/L	90.5	70.0	130	----
Total Metals (QCLot: 516827)										
CG2206946-009	RG_TRIP_WS_LAEMP_EV O_2022-06-02_NP	chromium, total	7440-47-3	E420.Cr-L	0.0405 mg/L	0.04 mg/L	101	70.0	130	----
Total Metals (QCLot: 516828)										
CG2206946-009	RG_TRIP_WS_LAEMP_EV O_2022-06-02_NP	aluminum, total	7429-90-5	E420	0.213 mg/L	0.2 mg/L	106	70.0	130	----
		antimony, total	7440-36-0	E420	0.0210 mg/L	0.02 mg/L	105	70.0	130	----
		arsenic, total	7440-38-2	E420	0.0201 mg/L	0.02 mg/L	101	70.0	130	----
		barium, total	7440-39-3	E420	0.0194 mg/L	0.02 mg/L	96.8	70.0	130	----
		beryllium, total	7440-41-7	E420	0.0410 mg/L	0.04 mg/L	103	70.0	130	----
		bismuth, total	7440-69-9	E420	0.0110 mg/L	0.01 mg/L	110	70.0	130	----
		boron, total	7440-42-8	E420	0.104 mg/L	0.1 mg/L	104	70.0	130	----
		cadmium, total	7440-43-9	E420	0.00418 mg/L	0.004 mg/L	104	70.0	130	----
		calcium, total	7440-70-2	E420	4.02 mg/L	4 mg/L	100	70.0	130	----
		cobalt, total	7440-48-4	E420	0.0205 mg/L	0.02 mg/L	102	70.0	130	----
		copper, total	7440-50-8	E420	0.0206 mg/L	0.02 mg/L	103	70.0	130	----
		iron, total	7439-89-6	E420	1.97 mg/L	2 mg/L	98.6	70.0	130	----
		lead, total	7439-92-1	E420	0.0213 mg/L	0.02 mg/L	106	70.0	130	----
		lithium, total	7439-93-2	E420	0.100 mg/L	0.1 mg/L	100	70.0	130	----
		magnesium, total	7439-95-4	E420	0.981 mg/L	1 mg/L	98.1	70.0	130	----
		manganese, total	7439-96-5	E420	0.0205 mg/L	0.02 mg/L	103	70.0	130	----
		molybdenum, total	7439-98-7	E420	0.0201 mg/L	0.02 mg/L	100	70.0	130	----
		nickel, total	7440-02-0	E420	0.0417 mg/L	0.04 mg/L	104	70.0	130	----
		potassium, total	7440-09-7	E420	3.94 mg/L	4 mg/L	98.6	70.0	130	----
		selenium, total	7782-49-2	E420	0.0396 mg/L	0.04 mg/L	99.0	70.0	130	----
		silicon, total	7440-21-3	E420	9.41 mg/L	10 mg/L	94.1	70.0	130	----
		silver, total	7440-22-4	E420	0.00422 mg/L	0.004 mg/L	105	70.0	130	----
		sodium, total	7440-23-5	E420	2.06 mg/L	2 mg/L	103	70.0	130	----
		strontium, total	7440-24-6	E420	0.0198 mg/L	0.02 mg/L	99.0	70.0	130	----
		sulfur, total	7704-34-9	E420	19.3 mg/L	20 mg/L	96.5	70.0	130	----
		thallium, total	7440-28-0	E420	0.00394 mg/L	0.004 mg/L	98.5	70.0	130	----
		tin, total	7440-31-5	E420	0.0202 mg/L	0.02 mg/L	101	70.0	130	----



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 516828) - continued										
CG2206946-009	RG_TRIP_WS_LAEMP_EV O_2022-06-02_NP	titanium, total	7440-32-6	E420	0.0404 mg/L	0.04 mg/L	101	70.0	130	----
		uranium, total	7440-61-1	E420	0.00408 mg/L	0.004 mg/L	102	70.0	130	----
		vanadium, total	7440-62-2	E420	0.102 mg/L	0.1 mg/L	102	70.0	130	----
		zinc, total	7440-66-6	E420	0.433 mg/L	0.4 mg/L	108	70.0	130	----
Dissolved Metals (QCLot: 516741)										
CG2206939-021	Anonymous	aluminum, dissolved	7429-90-5	E421	0.190 mg/L	0.2 mg/L	95.1	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.0195 mg/L	0.02 mg/L	97.7	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.0215 mg/L	0.02 mg/L	107	70.0	130	----
		barium, dissolved	7440-39-3	E421	0.0195 mg/L	0.02 mg/L	97.6	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.0385 mg/L	0.04 mg/L	96.3	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.00872 mg/L	0.01 mg/L	87.2	70.0	130	----
		boron, dissolved	7440-42-8	E421	0.093 mg/L	0.1 mg/L	92.8	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.00370 mg/L	0.004 mg/L	92.4	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	4 mg/L	ND	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.0179 mg/L	0.02 mg/L	89.7	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.0174 mg/L	0.02 mg/L	87.1	70.0	130	----
		iron, dissolved	7439-89-6	E421	1.88 mg/L	2 mg/L	93.9	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.0184 mg/L	0.02 mg/L	92.2	70.0	130	----
		lithium, dissolved	7439-93-2	E421	ND mg/L	0.1 mg/L	ND	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	1 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.0208 mg/L	0.02 mg/L	104	70.0	130	----
		nickel, dissolved	7440-02-0	E421	0.0344 mg/L	0.04 mg/L	86.1	70.0	130	----
		potassium, dissolved	7440-09-7	E421	ND mg/L	4 mg/L	ND	70.0	130	----
		selenium, dissolved	7782-49-2	E421	ND mg/L	0.04 mg/L	ND	70.0	130	----
		silicon, dissolved	7440-21-3	E421	9.49 mg/L	10 mg/L	94.9	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.00384 mg/L	0.004 mg/L	96.1	70.0	130	----
		sodium, dissolved	7440-23-5	E421	ND mg/L	2 mg/L	ND	70.0	130	----
		strontium, dissolved	7440-24-6	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	ND mg/L	20 mg/L	ND	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.00386 mg/L	0.004 mg/L	96.4	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.0191 mg/L	0.02 mg/L	95.7	70.0	130	----
		titanium, dissolved	7440-32-6	E421	0.0380 mg/L	0.04 mg/L	95.1	70.0	130	----
		uranium, dissolved	7440-61-1	E421	ND mg/L	0.004 mg/L	ND	70.0	130	----
		vanadium, dissolved	7440-62-2	E421	0.0986 mg/L	0.1 mg/L	98.6	70.0	130	----
		zinc, dissolved	7440-66-6	E421	0.360 mg/L	0.4 mg/L	89.9	70.0	130	----

Page : 23 of 23
 Work Order : CG2206946
 Client : Teck Coal Limited
 Project : REGIONAL EFFECTS PROGRAM



Sub-Matrix: **Water**

					<i>Matrix Spike (MS) Report</i>					
					<i>Spike</i>		<i>Recovery (%)</i>	<i>Recovery Limits (%)</i>		
<i>Laboratory sample ID</i>	<i>Client sample ID</i>	<i>Analyte</i>	<i>CAS Number</i>	<i>Method</i>	<i>Concentration</i>	<i>Target</i>	<i>MS</i>	<i>Low</i>	<i>High</i>	<i>Qualifier</i>
Dissolved Metals (QCLot: 516742)										
CG2206939-021	Anonymous	chromium, dissolved	7440-47-3	E421.Cr-L	0.0388 mg/L	0.04 mg/L	97.0	70.0	130	----
Dissolved Metals (QCLot: 518006)										
CG2206939-020	Anonymous	mercury, dissolved	7439-97-6	E509	ND mg/L	0.0001 mg/L	ND	70.0	130	----
Dissolved Metals (QCLot: 518239)										
CG2206890-002	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000923 mg/L	0.0001 mg/L	92.3	70.0	130	----

COC ID: MAY/JUNE EVO LAEMP 2022-WS		TURNAROUND TIME:	
PROJECT/CLIENT INFO			
Facility Name / Job# Regional Effects Program		Lab Name ALS Calgary	
Project Manager Mike Pope		Lab Contact Lyudmyla Shvets	
Email		Email lyudmyla.shvets@alsglobal.com	
Address 421 Pine Avenue		Address 2539 29 Street NE	
City Sparwood		Province BC	City Calgary
Postal Code V0B 2G0		Country Canada	Postal Code T1Y 7B5
Phone Number 343-333-3905		Phone Number 1 403 407 1794	

Environmental Division
 Calgary
 Work Order Reference
CG2206946

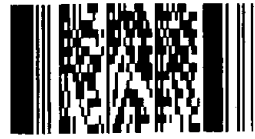
6
 2
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 6

SAMPLE DETAILS								ANALYSIS REQUESTED						
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	TECKCOAL-ROUTINE-VA	ALS_Package-DOC	ALS_Package-TKN/TOC	HG-T-U-CVAF-VA	HG-D-CVAF-VA	TECKCOAL-MET-T-VA	TECKCOAL-MET-D-VA
RG_MIDER_WS_LAEMP_EVO_2022-06-02_NP	RG_MIDER	WS	No	2022-06-02	12:32	G	7	X	X	X	X	X	X	X
RG_FBLANK_WS_LAEMP_EVO_2022-06-02_NP	RG_FBLANK	WS	No	2022-06-02	13:15	G	7	X	X	X	X	X	X	X
RG_ERCK_WS_LAEMP_EVO_2022-06-02_NP	RG_ERCK	WS	No	2022-06-02	9:34	G	7	X	X	X	X	X	X	X
RG_RIVER_WS_LAEMP_EVO_2022-06-02_NP	RG_RIVER	WS	No	2022-06-02	12:32	G	7	X	X	X	X	X	X	X
RG_MICOMP_WS_LAEMP_EVO_2022-06-02_NP	RG_MICOMP	WS	No	2022-06-02	14:50	G	7	X	X	X	X	X	X	X
RG_ERCKUC_WS_LAEMP_EVO_2022-06-02_NP	RG_ERCKUC	WS	No	2022-06-02	8:47	G	7	X	X	X	X	X	X	X
RG_MIB_WS_LAEMP_EVO_2022-06-02_NP	RG_MIB	WS	No	2022-06-02	10:15	G	7	X	X	X	X	X	X	X
RG_GATE_WS_LAEMP_EVO_2022-06-02_NP	RG_GATE	WS	No	2022-06-02	13:15	G	7	X	X	X	X	X	X	X
RG_TRIP_WS_LAEMP_EVO_2022-06-02_NP	RG_TRIP	WS	No	2022-06-02	12:00	G	7	X	X	X	X	X	X	X
RG_BOCK_WS_LAEMP_EVO_2022-06-03_NP	RG_BOCK	WS	No	2022-06-03	11:30	G	7	X	X	X	X	X	X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
ALS PO VPO00816101	Emily Dutton	June 3, 2022	<i>[Signature]</i>

Environmental Division
 Calgary
 Work Order Reference
CG2206946

RETURNED/DESCRIPTION	Regular (default) x	Priority (2-3 business days) - 50% surcharge	Emergency (1 Business Day) - 100% surcharge	For Emergency <1 Day, ASAP or Weekend - Contact ALS
Sampler's Name	Emily Dutton	Mobile #	<i>(10)</i>	
Sampler's Signature	<i>[Signature]</i>	Date/Time	June 3, 2022	



Telephone : +1 403 407 1800



CERTIFICATE OF ANALYSIS

Work Order : **CG2206948**
Client : **Teck Coal Limited**
Contact : Mike Pope
Address : 421 PINE AVE
Sparwood BC Canada V0B 2G0
Telephone : ----
Project : ELKVIEW OPERATION
PO : VPO00816101
C-O-C number : MAY/JUNE EVO LAEMP 2022 WS
Sampler : ED
Site : ----
Quote number : Teck Coal Master Quote
No. of samples received : 1
No. of samples analysed : 1

Page : 1 of 6
Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
Calgary AB Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 04-Jun-2022 10:00
Date Analysis Commenced : 05-Jun-2022
Issue Date : 15-Jun-2022 15:24

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Anthony Calero	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Dan Gebert	Laboratory Analyst	Metals, Burnaby, British Columbia
Dee Lee	Analyst	Metals, Burnaby, British Columbia
Elke Tabora		Inorganics, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Kim Jensen	Department Manager - Metals	Metals, Burnaby, British Columbia
Kyle Chang	Lab Assistant	Metals, Burnaby, British Columbia
Owen Cheng		Metals, Burnaby, British Columbia
Ruifang Zheng	Analyst	Inorganics, Calgary, Alberta
Sara Niroomand		Inorganics, Calgary, Alberta
Shirley Li		Inorganics, Calgary, Alberta



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

<i>Unit</i>	<i>Description</i>
-	No Unit
%	percent
µg/L	micrograms per litre
µS/cm	Microsiemens per centimetre
meq/L	milliequivalents per litre
mg/L	milligrams per litre
mV	millivolts
NTU	nephelometric turbidity units
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.



Analytical Results

Sub-Matrix: Water					Client sample ID	EV_MC3A_WS_	----	----	----	----
(Matrix: Water)						LAEMP_EVO_2				
					Client sampling date / time	02-Jun-2022	---	---	---	---
					12:00					
Analyte	CAS Number	Method	LOR	Unit	CG2206948-001	-----	-----	-----	-----	-----
					Result	---	---	---	---	---
Physical Tests										
acidity (as CaCO3)	---	E283	2.0	mg/L	<2.0	---	---	---	---	---
alkalinity, bicarbonate (as CaCO3)	---	E290	1.0	mg/L	98.5	---	---	---	---	---
alkalinity, bicarbonate (as HCO3)	71-52-3	E290	1.0	mg/L	120	---	---	---	---	---
alkalinity, carbonate (as CaCO3)	---	E290	1.0	mg/L	<1.0	---	---	---	---	---
alkalinity, carbonate (as CO3)	3812-32-6	E290	1.0	mg/L	<1.0	---	---	---	---	---
alkalinity, hydroxide (as CaCO3)	---	E290	1.0	mg/L	<1.0	---	---	---	---	---
alkalinity, hydroxide (as OH)	14280-30-9	E290	1.0	mg/L	<1.0	---	---	---	---	---
alkalinity, total (as CaCO3)	---	E290	1.0	mg/L	98.5	---	---	---	---	---
conductivity	---	E100	2.0	µS/cm	233	---	---	---	---	---
hardness (as CaCO3), dissolved	---	EC100	0.50	mg/L	108	---	---	---	---	---
oxidation-reduction potential [ORP]	---	E125	0.10	mV	382	---	---	---	---	---
pH	---	E108	0.10	pH units	8.13	---	---	---	---	---
solids, total dissolved [TDS]	---	E162	10	mg/L	150	---	---	---	---	---
solids, total suspended [TSS]	---	E160-L	1.0	mg/L	13.3	---	---	---	---	---
turbidity	---	E121	0.10	NTU	7.21	---	---	---	---	---
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	---	---	---	---	---
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	---	---	---	---	---
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	0.35	---	---	---	---	---
fluoride	16984-48-8	E235.F	0.020	mg/L	0.088	---	---	---	---	---
Kjeldahl nitrogen, total [TKN]	---	E318	0.050	mg/L	0.116	---	---	---	---	---
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.129	---	---	---	---	---
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	---	---	---	---	---
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0092	---	---	---	---	---
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0288	---	---	---	---	---
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	29.9	---	---	---	---	---
Organic / Inorganic Carbon										
carbon, dissolved organic [DOC]	---	E358-L	0.50	mg/L	2.77	---	---	---	---	---
carbon, total organic [TOC]	---	E355-L	0.50	mg/L	2.27	---	---	---	---	---



Analytical Results

Sub-Matrix: Water					Client sample ID	EV_MC3A_WS_	----	----	----	----
(Matrix: Water)					LAEMP_EVO_2	----	----	----	----	----
					022-06-02_NP	----	----	----	----	----
					Client sampling date / time	02-Jun-2022	----	----	----	----
					12:00	----	----	----	----	----
Analyte	CAS Number	Method	LOR	Unit	CG2206948-001	-----	-----	-----	-----	-----
					Result	----	----	----	----	----
Ion Balance										
anion sum	----	EC101	0.10	meq/L	2.61	----	----	----	----	----
cation sum	----	EC101	0.10	meq/L	2.26	----	----	----	----	----
ion balance (cations/anions)	----	EC101	0.010	%	86.6	----	----	----	----	----
ion balance (APHA)	----	EC101	0.010	%	7.19	----	----	----	----	----
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L	0.275	----	----	----	----	----
antimony, total	7440-36-0	E420	0.00010	mg/L	<0.00010	----	----	----	----	----
arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00029	----	----	----	----	----
barium, total	7440-39-3	E420	0.00010	mg/L	0.0568	----	----	----	----	----
beryllium, total	7440-41-7	E420	0.020	µg/L	<0.020	----	----	----	----	----
bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	----	----	----	----	----
boron, total	7440-42-8	E420	0.010	mg/L	<0.010	----	----	----	----	----
cadmium, total	7440-43-9	E420	0.0050	µg/L	0.0566	----	----	----	----	----
calcium, total	7440-70-2	E420	0.050	mg/L	29.8	----	----	----	----	----
chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	0.00044	----	----	----	----	----
cobalt, total	7440-48-4	E420	0.10	µg/L	0.21	----	----	----	----	----
copper, total	7440-50-8	E420	0.00050	mg/L	0.00062	----	----	----	----	----
iron, total	7439-89-6	E420	0.010	mg/L	0.285	----	----	----	----	----
lead, total	7439-92-1	E420	0.000050	mg/L	0.000180	----	----	----	----	----
lithium, total	7439-93-2	E420	0.0010	mg/L	0.0033	----	----	----	----	----
magnesium, total	7439-95-4	E420	0.0050	mg/L	9.25	----	----	----	----	----
manganese, total	7439-96-5	E420	0.00010	mg/L	0.00727	----	----	----	----	----
mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	----	----	----	----	----
molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.000553	----	----	----	----	----
nickel, total	7440-02-0	E420	0.00050	mg/L	0.00158	----	----	----	----	----
potassium, total	7440-09-7	E420	0.050	mg/L	0.535	----	----	----	----	----
selenium, total	7782-49-2	E420	0.050	µg/L	1.30	----	----	----	----	----
silicon, total	7440-21-3	E420	0.10	mg/L	2.25	----	----	----	----	----
silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	----	----	----	----	----
sodium, total	7440-23-5	E420	0.050	mg/L	1.94	----	----	----	----	----



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	EV_MC3A_WS_	----	----	----	----
					LAEMP_EVO_2					
					022-06-02_NP					
					Client sampling date / time	02-Jun-2022	----	----	----	----
					12:00					
Analyte	CAS Number	Method	LOR	Unit	CG2206948-001	-----	-----	-----	-----	-----
					Result	----	----	----	----	----
Total Metals										
strontium, total	7440-24-6	E420	0.00020	mg/L	0.0885	----	----	----	----	----
sulfur, total	7704-34-9	E420	0.50	mg/L	8.83	----	----	----	----	----
thallium, total	7440-28-0	E420	0.000010	mg/L	0.000014	----	----	----	----	----
tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	----	----	----	----	----
titanium, total	7440-32-6	E420	0.00030	mg/L	0.00395	----	----	----	----	----
uranium, total	7440-61-1	E420	0.000010	mg/L	0.000408	----	----	----	----	----
vanadium, total	7440-62-2	E420	0.00050	mg/L	0.00124	----	----	----	----	----
zinc, total	7440-66-6	E420	0.0030	mg/L	0.0056	----	----	----	----	----
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0124	----	----	----	----	----
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00010	----	----	----	----	----
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00017	----	----	----	----	----
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0536	----	----	----	----	----
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.020	----	----	----	----	----
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	----	----	----	----	----
boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.010	----	----	----	----	----
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.0247	----	----	----	----	----
calcium, dissolved	7440-70-2	E421	0.050	mg/L	28.6	----	----	----	----	----
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	0.00013	----	----	----	----	----
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	<0.10	----	----	----	----	----
copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00042	----	----	----	----	----
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	----	----	----	----	----
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	----	----	----	----	----
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0032	----	----	----	----	----
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	8.92	----	----	----	----	----
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00099	----	----	----	----	----
mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	----	----	----	----	----
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.000609	----	----	----	----	----
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00120	----	----	----	----	----
potassium, dissolved	7440-09-7	E421	0.050	mg/L	0.471	----	----	----	----	----



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	EV_MC3A_WS_	----	----	----	----
					LAEMP_EVO_2					
					022-06-02_NP					
					Client sampling date / time	02-Jun-2022	----	----	----	----
					12:00					
Analyte	CAS Number	Method	LOR	Unit	CG2206948-001	-----	-----	-----	-----	-----
					Result	----	----	----	----	----
Dissolved Metals										
selenium, dissolved	7782-49-2	E421	0.050	µg/L	1.38	----	----	----	----	----
silicon, dissolved	7440-21-3	E421	0.050	mg/L	1.84	----	----	----	----	----
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	----	----	----	----	----
sodium, dissolved	7440-23-5	E421	0.050	mg/L	1.87	----	----	----	----	----
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.0875	----	----	----	----	----
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	9.11	----	----	----	----	----
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	----	----	----	----	----
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	----	----	----	----	----
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	----	----	----	----	----
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.000370	----	----	----	----	----
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	----	----	----	----	----
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0015	----	----	----	----	----
dissolved mercury filtration location	----	EP509	-	-	Field	----	----	----	----	----
dissolved metals filtration location	----	EP421	-	-	Field	----	----	----	----	----

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: CG2206948	Page	: 1 of 13
Client	: Teck Coal Limited	Laboratory	: Calgary - Environmental
Contact	: Mike Pope	Account Manager	: Lyudmyla Shvets
Address	: 421 PINE AVE Sparwood BC Canada V0B 2G0	Address	: 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5
Telephone	: ----	Telephone	: +1 403 407 1800
Project	: ELKVIEW OPERATION	Date Samples Received	: 04-Jun-2022 10:00
PO	: VPO00816101	Issue Date	: 15-Jun-2022 15:25
C-O-C number	: MAY/JUNE EVO LAEMP 2022 WS		
Sampler	: ED		
Site	: ----		
Quote number	: Teck Coal Master Quote		
No. of samples received	: 1		
No. of samples analysed	: 1		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) EV_MC3A_WS_LAEMP_EVO_2022-06-02_NP	E298	02-Jun-2022	10-Jun-2022	----	----		10-Jun-2022	28 days	8 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE EV_MC3A_WS_LAEMP_EVO_2022-06-02_NP	E235.Br-L	02-Jun-2022	----	----	----		05-Jun-2022	28 days	3 days	✓
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE EV_MC3A_WS_LAEMP_EVO_2022-06-02_NP	E235.Cl-L	02-Jun-2022	----	----	----		05-Jun-2022	28 days	3 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE EV_MC3A_WS_LAEMP_EVO_2022-06-02_NP	E378-U	02-Jun-2022	----	----	----		05-Jun-2022	3 days	3 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE EV_MC3A_WS_LAEMP_EVO_2022-06-02_NP	E235.F	02-Jun-2022	----	----	----		05-Jun-2022	28 days	3 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE EV_MC3A_WS_LAEMP_EVO_2022-06-02_NP	E235.NO3-L	02-Jun-2022	----	----	----		05-Jun-2022	3 days	3 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE EV_MC3A_WS_LAEMP_EVO_2022-06-02_NP	E235.NO2-L	02-Jun-2022	----	----	----		05-Jun-2022	3 days	3 days	✓



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times Rec Actual		Eval	Analysis Date	Holding Times Rec Actual		Eval	
Anions and Nutrients : Sulfate in Water by IC											
HDPE EV_MC3A_WS_LAEMP_EVO_2022-06-02_NP	E235.SO4	02-Jun-2022	----	----	----		05-Jun-2022	28 days	3 days	✓	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) EV_MC3A_WS_LAEMP_EVO_2022-06-02_NP	E318	02-Jun-2022	09-Jun-2022	----	----		09-Jun-2022	28 days	7 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) EV_MC3A_WS_LAEMP_EVO_2022-06-02_NP	E372-U	02-Jun-2022	07-Jun-2022	----	----		10-Jun-2022	28 days	8 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) EV_MC3A_WS_LAEMP_EVO_2022-06-02_NP	E421.Cr-L	02-Jun-2022	09-Jun-2022	----	----		09-Jun-2022	180 days	7 days	✓	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) EV_MC3A_WS_LAEMP_EVO_2022-06-02_NP	E509	02-Jun-2022	09-Jun-2022	----	----		09-Jun-2022	28 days	7 days	✓	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) EV_MC3A_WS_LAEMP_EVO_2022-06-02_NP	E421	02-Jun-2022	09-Jun-2022	----	----		09-Jun-2022	180 days	7 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) EV_MC3A_WS_LAEMP_EVO_2022-06-02_NP	E358-L	02-Jun-2022	13-Jun-2022	----	----		14-Jun-2022	28 days	12 days	✓	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) EV_MC3A_WS_LAEMP_EVO_2022-06-02_NP	E355-L	02-Jun-2022	13-Jun-2022	----	----		14-Jun-2022	28 days	12 days	✓	
Physical Tests : Acidity by Titration											
HDPE EV_MC3A_WS_LAEMP_EVO_2022-06-02_NP	E283	02-Jun-2022	----	----	----		08-Jun-2022	14 days	6 days	✓	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Alkalinity Species by Titration											
HDPE EV_MC3A_WS_LAEMP_EVO_2022-06-02_NP	E290	02-Jun-2022	----	----	----		08-Jun-2022	14 days	6 days	✓	
Physical Tests : Conductivity in Water											
HDPE EV_MC3A_WS_LAEMP_EVO_2022-06-02_NP	E100	02-Jun-2022	----	----	----		08-Jun-2022	28 days	6 days	✓	
Physical Tests : ORP by Electrode											
HDPE EV_MC3A_WS_LAEMP_EVO_2022-06-02_NP	E125	02-Jun-2022	----	----	----		13-Jun-2022	0.25 hrs	268 hrs	* EHTR-FM	
Physical Tests : pH by Meter											
HDPE EV_MC3A_WS_LAEMP_EVO_2022-06-02_NP	E108	02-Jun-2022	----	----	----		08-Jun-2022	0.25 hrs	145 hrs	* EHTR-FM	
Physical Tests : TDS by Gravimetry											
HDPE EV_MC3A_WS_LAEMP_EVO_2022-06-02_NP	E162	02-Jun-2022	----	----	----		09-Jun-2022	7 days	7 days	✓	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE EV_MC3A_WS_LAEMP_EVO_2022-06-02_NP	E160-L	02-Jun-2022	----	----	----		09-Jun-2022	7 days	7 days	✓	
Physical Tests : Turbidity by Nephelometry											
HDPE EV_MC3A_WS_LAEMP_EVO_2022-06-02_NP	E121	02-Jun-2022	----	----	----		05-Jun-2022	3 days	3 days	✓	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) EV_MC3A_WS_LAEMP_EVO_2022-06-02_NP	E420.Cr-L	02-Jun-2022	----	----	----		09-Jun-2022	180 days	7 days	✓	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) EV_MC3A_WS_LAEMP_EVO_2022-06-02_NP	E508	02-Jun-2022	----	----	----		09-Jun-2022	28 days	7 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) EV_MC3A_WS_LAEMP_EVO_2022-06-02_NP	E420	02-Jun-2022	----	----	----		09-Jun-2022	180 days	7 days	✔

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended

Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
Analytical Methods							
Laboratory Duplicates (DUP)							
Acidity by Titration	E283	515616	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290	515624	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	519180	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	511711	1	18	5.5	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	511712	1	18	5.5	5.0	✓
Conductivity in Water	E100	515622	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	516742	1	20	5.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	518006	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	516741	2	20	10.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	521969	1	15	6.6	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	511751	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	511709	1	18	5.5	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	511713	1	19	5.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	511714	1	18	5.5	5.0	✓
ORP by Electrode	E125	517367	1	20	5.0	5.0	✓
pH by Meter	E108	515623	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	511710	1	18	5.5	5.0	✓
TDS by Gravimetry	E162	515760	1	20	5.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	516827	1	5	20.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	514941	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	516365	1	12	8.3	5.0	✓
Total Metals in Water by CRC ICPMS	E420	516828	2	20	10.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	521968	1	15	6.6	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	513720	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121	511691	1	19	5.2	5.0	✓
Laboratory Control Samples (LCS)							
Acidity by Titration	E283	515616	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290	515624	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	519180	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	511711	1	18	5.5	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	511712	1	18	5.5	5.0	✓
Conductivity in Water	E100	515622	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	516742	1	20	5.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	518006	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	516741	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	521969	1	15	6.6	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	511751	1	20	5.0	5.0	✓



Matrix: **Water**

Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
Analytical Methods							
Laboratory Control Samples (LCS) - Continued							
Fluoride in Water by IC	E235.F	511709	1	18	5.5	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	511713	1	19	5.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	511714	1	18	5.5	5.0	✓
ORP by Electrode	E125	517367	1	20	5.0	5.0	✓
pH by Meter	E108	515623	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	511710	1	18	5.5	5.0	✓
TDS by Gravimetry	E162	515760	1	20	5.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	516827	1	5	20.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	514941	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	516365	1	12	8.3	5.0	✓
Total Metals in Water by CRC ICPMS	E420	516828	1	20	5.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	521968	1	15	6.6	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	513720	1	20	5.0	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	515746	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121	511691	1	19	5.2	5.0	✓
Method Blanks (MB)							
Acidity by Titration	E283	515616	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290	515624	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	519180	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	511711	1	18	5.5	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	511712	1	18	5.5	5.0	✓
Conductivity in Water	E100	515622	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	516742	1	20	5.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	518006	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	516741	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	521969	1	15	6.6	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	511751	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	511709	1	18	5.5	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	511713	1	19	5.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	511714	1	18	5.5	5.0	✓
Sulfate in Water by IC	E235.SO4	511710	1	18	5.5	5.0	✓
TDS by Gravimetry	E162	515760	1	20	5.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	516827	1	5	20.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	514941	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	516365	1	12	8.3	5.0	✓
Total Metals in Water by CRC ICPMS	E420	516828	1	20	5.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	521968	1	15	6.6	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	513720	1	20	5.0	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	515746	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121	511691	1	19	5.2	5.0	✓



Matrix: **Water**

Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
<i>Analytical Methods</i>							
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	519180	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	511711	1	18	5.5	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	511712	1	18	5.5	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	516742	1	20	5.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	518006	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	516741	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	521969	1	15	6.6	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	511751	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	511709	1	18	5.5	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	511713	1	19	5.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	511714	1	18	5.5	5.0	✓
Sulfate in Water by IC	E235.SO4	511710	1	18	5.5	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	516827	1	5	20.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	514941	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	516365	1	12	8.3	5.0	✓
Total Metals in Water by CRC ICPMS	E420	516828	1	20	5.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	521968	1	15	6.6	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	513720	1	20	5.0	5.0	✓



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 Calgary - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 Calgary - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 Calgary - Environmental	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
ORP by Electrode	E125 Calgary - Environmental	Water	ASTM D1498 (mod)	Oxidation reduction potential is reported as the oxidation-reduction potential of the platinum metal-reference electrode employed, measured in mV. For high accuracy test results, it is recommended that this analysis be conducted in the field.
TSS by Gravimetry (Low Level)	E160-L Calgary - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 Calgary - Environmental	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC (Low Level)	E235.Cl-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Acidity by Titration	E283 Calgary - Environmental	Water	APHA 2310 B (mod)	Acidity is determined by potentiometric titration to pH endpoint of 8.3



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Alkalinity Species by Titration	E290 Calgary - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 Calgary - Environmental	Water	J. Environ. Monit., 2005, 7, 37-42 (mod)	Ammonia in water is analyzed by flow-injection analysis with fluorescence detection after reaction with orthophthaldialdehyde (OPA).
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 Calgary - Environmental	Water	APHA 4500-Norg D (mod)	Total Kjeldahl Nitrogen is determined using block digestion followed by flow-injection analysis with fluorescence detection.
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L Calgary - Environmental	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Dissolved Organic Carbon by Combustion (Low Level)	E358-L Calgary - Environmental	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U Calgary - Environmental	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U Calgary - Environmental	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Total Metals in Water by CRC ICPMS	E420 Vancouver - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L Vancouver - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS.
Dissolved Metals in Water by CRC ICPMS	E421 Vancouver - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L Vancouver - Environmental	Water	APHA 3030 B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS
Total Mercury in Water by CVAAS	E508 Vancouver - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS
Dissolved Mercury in Water by CVAAS	E509 Vancouver - Environmental	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
Dissolved Hardness (Calculated)	EC100 Vancouver - Environmental	Water	APHA 2340B	"Hardness (as CaCO ₃), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Ion Balance using Dissolved Metals	EC101 Calgary - Environmental	Water	APHA 1030E	Cation Sum, Anion Sum, and Ion Balance are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present. Ion Balance cannot be calculated accurately for waters with very low electrical conductivity (EC).

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 Calgary - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 Calgary - Environmental	Water	APHA 4500-Norg D (mod)	Samples are digested using block digestion with Copper Sulfate Digestion Reagent.
Preparation for Total Organic Carbon by Combustion	EP355 Calgary - Environmental	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon for Combustion	EP358 Calgary - Environmental	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Phosphorus in water	EP372 Calgary - Environmental	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Dissolved Metals Water Filtration	EP421 Vancouver - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO ₃ .
Dissolved Mercury Water Filtration	EP509	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.

Page : 13 of 13
Work Order : CG2206948
Client : Teck Coal Limited
Project : ELKVIEW OPERATION



<i>Preparation Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
	Vancouver - Environmental			



QUALITY CONTROL REPORT

Work Order : **CG2206948**

Client : Teck Coal Limited

Contact : Mike Pope

Address : 421 PINE AVE
Sparwood BC Canada V0B 2G0

Telephone : ----

Project : ELKVIEW OPERATION

PO : VPO00816101

C-O-C number : MAY/JUNE EVO LAEMP 2022 WS

Sampler : ED

Site : ----

Quote number : Teck Coal Master Quote

No. of samples received : 1

No. of samples analysed : 1

Page : 1 of 18

Laboratory : Calgary - Environmental

Account Manager : Lyudmyla Shvets

Address : 2559 29th Street NE
Calgary, Alberta Canada T1Y 7B5

Telephone : +1 403 407 1800

Date Samples Received : 04-Jun-2022 10:00

Date Analysis Commenced : 05-Jun-2022

Issue Date : 15-Jun-2022 15:24

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

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General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 511691)											
CG2206944-001	Anonymous	turbidity	----	E121	0.10	NTU	0.69	0.73	0.04	Diff <2x LOR	----
Physical Tests (QC Lot: 515616)											
CG2206947-003	Anonymous	acidity (as CaCO ₃)	----	E283	2.0	mg/L	<2.0	<2.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 515622)											
CG2206947-003	Anonymous	conductivity	----	E100	2.0	µS/cm	202	199	1.30%	10%	----
Physical Tests (QC Lot: 515623)											
CG2206947-003	Anonymous	pH	----	E108	0.10	pH units	8.09	8.10	0.124%	4%	----
Physical Tests (QC Lot: 515624)											
CG2206947-003	Anonymous	alkalinity, bicarbonate (as CaCO ₃)	----	E290	1.0	mg/L	102	98.5	3.10%	20%	----
		alkalinity, carbonate (as CaCO ₃)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, hydroxide (as CaCO ₃)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, total (as CaCO ₃)	----	E290	1.0	mg/L	102	98.5	3.10%	20%	----
Physical Tests (QC Lot: 515760)											
CG2206946-002	Anonymous	solids, total dissolved [TDS]	----	E162	10	mg/L	<10	<10	0	Diff <2x LOR	----
Physical Tests (QC Lot: 517367)											
CG2206947-001	Anonymous	oxidation-reduction potential [ORP]	----	E125	0.10	mV	478	472	1.30%	15%	----
Anions and Nutrients (QC Lot: 511709)											
CG2206939-014	Anonymous	fluoride	16984-48-8	E235.F	0.100	mg/L	0.337	0.339	0.002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 511710)											
CG2206939-014	Anonymous	sulfate (as SO ₄)	14808-79-8	E235.SO4	1.50	mg/L	919	929	1.05%	20%	----
Anions and Nutrients (QC Lot: 511711)											
CG2206939-014	Anonymous	bromide	24959-67-9	E235.Br-L	0.250	mg/L	<0.250	<0.250	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 511712)											
CG2206939-014	Anonymous	chloride	16887-00-6	E235.Cl-L	0.50	mg/L	16.1	16.2	0.753%	20%	----
Anions and Nutrients (QC Lot: 511713)											
CG2206939-014	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	0.0250	mg/L	25.0	25.2	0.914%	20%	----
Anions and Nutrients (QC Lot: 511714)											
CG2206939-014	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.0050	mg/L	0.168	0.162	3.51%	20%	----
Anions and Nutrients (QC Lot: 511751)											
CG2206939-021	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0036	0.0039	0.0003	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 513720)											



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 513720) - continued											
CG2206946-010	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0042	0.0042	0.00008	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 514941)											
CG2206946-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.500	mg/L	<0.500	<0.500	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 519180)											
CG2206947-001	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 521968)											
CG2206946-001	Anonymous	carbon, total organic [TOC]	----	E355-L	0.50	mg/L	2.46	2.39	0.07	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 521969)											
CG2206946-001	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	2.33	2.52	0.19	Diff <2x LOR	----
Total Metals (QC Lot: 516365)											
CG2206946-010	Anonymous	mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Total Metals (QC Lot: 516827)											
CG2206860-001	Anonymous	chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	0.00012	0.00012	0	Diff <2x LOR	----
Total Metals (QC Lot: 516828)											
CG2206860-001	Anonymous	iron, total	7439-89-6	E420	0.010	mg/L	0.069	0.052	0.017	Diff <2x LOR	----
CG2206860-001	Anonymous	aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0380	0.0366	3.92%	20%	----
		antimony, total	7440-36-0	E420	0.00010	mg/L	0.00016	0.00016	0.000002	Diff <2x LOR	----
		arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00014	0.00012	0.00002	Diff <2x LOR	----
		barium, total	7440-39-3	E420	0.00010	mg/L	0.0384	0.0395	2.75%	20%	----
		beryllium, total	7440-41-7	E420	0.000020	mg/L	<0.020 µg/L	<0.000020	0	Diff <2x LOR	----
		bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, total	7440-42-8	E420	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		cadmium, total	7440-43-9	E420	0.0000050	mg/L	0.0608 µg/L	0.0000730	18.1%	20%	----
		calcium, total	7440-70-2	E420	0.050	mg/L	66.0	64.6	2.14%	20%	----
		cobalt, total	7440-48-4	E420	0.00010	mg/L	<0.10 µg/L	<0.00010	0	Diff <2x LOR	----
		copper, total	7440-50-8	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		lead, total	7439-92-1	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		lithium, total	7439-93-2	E420	0.0010	mg/L	0.0206	0.0205	0.740%	20%	----
		magnesium, total	7439-95-4	E420	0.0050	mg/L	27.1	28.0	3.22%	20%	----
		manganese, total	7439-96-5	E420	0.00010	mg/L	0.00435	0.00448	2.91%	20%	----
		molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.00176	0.00172	2.47%	20%	----
		nickel, total	7440-02-0	E420	0.00050	mg/L	0.00281	0.00287	0.00005	Diff <2x LOR	----
		potassium, total	7440-09-7	E420	0.050	mg/L	0.967	1.01	4.48%	20%	----
		selenium, total	7782-49-2	E420	0.000050	mg/L	26.5 µg/L	0.0274	3.46%	20%	----
		silicon, total	7440-21-3	E420	0.10	mg/L	1.57	1.66	5.39%	20%	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (QC Lot: 516828) - continued											
CG2206860-001	Anonymous	silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, total	7440-23-5	E420	0.050	mg/L	1.40	1.49	6.33%	20%	----
		strontium, total	7440-24-6	E420	0.00020	mg/L	0.0927	0.0950	2.42%	20%	----
		sulfur, total	7704-34-9	E420	0.50	mg/L	41.2	43.9	6.33%	20%	----
		thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, total	7440-32-6	E420	0.00030	mg/L	0.00064	0.00058	0.00006	Diff <2x LOR	----
		uranium, total	7440-61-1	E420	0.000010	mg/L	0.00165	0.00163	1.32%	20%	----
		vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		zinc, total	7440-66-6	E420	0.0030	mg/L	0.0036	0.0036	0.00005	Diff <2x LOR	----
Dissolved Metals (QC Lot: 516741)											
CG2206939-020	Anonymous	selenium, dissolved	7782-49-2	E421	0.000050	mg/L	10.3 µg/L	0.00990	4.39%	20%	----
CG2206939-020	Anonymous	aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0026	0.0028	0.0002	Diff <2x LOR	----
		antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00026	0.00028	0.00002	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00153	0.00163	6.32%	20%	----
		barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0141	0.0146	3.47%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.000020	mg/L	<0.020 µg/L	<0.000020	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.010	mg/L	0.032	0.030	0.002	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	0.0112 µg/L	0.0000074	0.0000037	Diff <2x LOR	----
		calcium, dissolved	7440-70-2	E421	0.050	mg/L	222	221	0.759%	20%	----
		cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	0.48 µg/L	0.00049	0.000007	Diff <2x LOR	----
		copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		iron, dissolved	7439-89-6	E421	0.010	mg/L	0.209	0.214	2.72%	20%	----
		lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.129	0.121	6.47%	20%	----
		magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	151	153	1.19%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.389	0.398	2.32%	20%	----
		molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00298	0.00292	1.82%	20%	----
		nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00242	0.00249	0.00007	Diff <2x LOR	----
		potassium, dissolved	7440-09-7	E421	0.050	mg/L	4.76	4.97	4.36%	20%	----
		silicon, dissolved	7440-21-3	E421	0.050	mg/L	3.02	2.94	2.54%	20%	----
		silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E421	0.050	mg/L	11.3	11.9	4.81%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.602	0.605	0.535%	20%	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 516741) - continued											
CG2206939-020	Anonymous	sulfur, dissolved	7704-34-9	E421	0.50	mg/L	282	291	3.17%	20%	----
		thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00764	0.00782	2.24%	20%	----
		vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	0.00079	0.00080	0.00002	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 516742)											
CG2206939-020	Anonymous	chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 518006)											
CG2206939-019	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	0.0000174	0.0000170	0.0000004	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 511691)						
turbidity	----	E121	0.1	NTU	<0.10	----
Physical Tests (QCLot: 515616)						
acidity (as CaCO3)	----	E283	2	mg/L	<2.0	----
Physical Tests (QCLot: 515622)						
conductivity	----	E100	1	µS/cm	<1.0	----
Physical Tests (QCLot: 515624)						
alkalinity, bicarbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, carbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, hydroxide (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, total (as CaCO3)	----	E290	1	mg/L	1.2	----
Physical Tests (QCLot: 515746)						
solids, total suspended [TSS]	----	E160-L	1	mg/L	<1.0	----
Physical Tests (QCLot: 515760)						
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Anions and Nutrients (QCLot: 511709)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 511710)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 511711)						
bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 511712)						
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	----
Anions and Nutrients (QCLot: 511713)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 511714)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 511751)						
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 513720)						
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 514941)						
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 519180)						



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 519180) - continued						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	---
Organic / Inorganic Carbon (QCLot: 521968)						
carbon, total organic [TOC]	---	E355-L	0.5	mg/L	<0.50	---
Organic / Inorganic Carbon (QCLot: 521969)						
carbon, dissolved organic [DOC]	---	E358-L	0.5	mg/L	<0.50	---
Total Metals (QCLot: 516365)						
mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	---
Total Metals (QCLot: 516827)						
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	<0.00010	---
Total Metals (QCLot: 516828)						
aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	---
antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	---
arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	---
barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	---
beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	---
bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	---
boron, total	7440-42-8	E420	0.01	mg/L	<0.010	---
cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	---
calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	---
cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	---
copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	---
iron, total	7439-89-6	E420	0.01	mg/L	<0.010	---
lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	---
lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	---
magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	---
manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	---
molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	---
nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	---
potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	---
selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	---
silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	---
silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	---
sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	---
strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	---
sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	---
thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	---



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 516828) - continued						
tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	---
titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	---
uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	---
vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	---
zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	---
Dissolved Metals (QCLot: 516741)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	---
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	---
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	---
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	---
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	---
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	---
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	---
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	---
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	---
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	---
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	---
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	---
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	---
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	---
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	---
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	---
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	---
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	---
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	---
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	---
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	---
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	---
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	---
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	---
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	---
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	---
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	---
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	---
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	---
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	---

Page : 10 of 18
Work Order : CG2206948
Client : Teck Coal Limited
Project : ELKVIEW OPERATION



Sub-Matrix: **Water**

<i>Analyte</i>	<i>CAS Number</i>	<i>Method</i>	<i>LOR</i>	<i>Unit</i>	<i>Result</i>	<i>Qualifier</i>
Dissolved Metals (QCLot: 516741) - continued						
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
Dissolved Metals (QCLot: 516742)						
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	<0.00010	----
Dissolved Metals (QCLot: 518006)						
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Physical Tests (QCLot: 511691)									
turbidity	----	E121	0.1	NTU	200 NTU	100	85.0	115	----
Physical Tests (QCLot: 515616)									
acidity (as CaCO3)	----	E283	2	mg/L	50 mg/L	106	85.0	115	----
Physical Tests (QCLot: 515622)									
conductivity	----	E100	1	µS/cm	146.9 µS/cm	109	90.0	110	----
Physical Tests (QCLot: 515623)									
pH	----	E108	----	pH units	7 pH units	99.6	98.6	101	----
Physical Tests (QCLot: 515624)									
alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	106	85.0	115	----
Physical Tests (QCLot: 515746)									
solids, total suspended [TSS]	----	E160-L	1	mg/L	150 mg/L	94.3	85.0	115	----
Physical Tests (QCLot: 515760)									
solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	97.3	85.0	115	----
Physical Tests (QCLot: 517367)									
oxidation-reduction potential [ORP]	----	E125	----	mV	220 mV	97.6	95.4	104	----
Anions and Nutrients (QCLot: 511709)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 511710)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	103	90.0	110	----
Anions and Nutrients (QCLot: 511711)									
bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	89.9	85.0	115	----
Anions and Nutrients (QCLot: 511712)									
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 511713)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 511714)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	106	90.0	110	----
Anions and Nutrients (QCLot: 511751)									
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.02 mg/L	102	80.0	120	----
Anions and Nutrients (QCLot: 513720)									
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	8.02 mg/L	102	80.0	120	----
Anions and Nutrients (QCLot: 514941)									



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Anions and Nutrients (QCLot: 514941) - continued									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	99.7	75.0	125	----
Anions and Nutrients (QCLot: 519180)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	99.4	85.0	115	----
Organic / Inorganic Carbon (QCLot: 521968)									
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	88.7	80.0	120	----
Organic / Inorganic Carbon (QCLot: 521969)									
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	94.8	80.0	120	----
Total Metals (QCLot: 516365)									
mercury, total	7439-97-6	E508	0.000005	mg/L	0.0001 mg/L	95.1	80.0	120	----
Total Metals (QCLot: 516827)									
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	0.25 mg/L	94.5	80.0	120	----
Total Metals (QCLot: 516828)									
aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	101	80.0	120	----
antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	108	80.0	120	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	93.4	80.0	120	----
barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	100	80.0	120	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	101	80.0	120	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	98.5	80.0	120	----
boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	97.8	80.0	120	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	92.5	80.0	120	----
calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	98.5	80.0	120	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	92.8	80.0	120	----
copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	92.6	80.0	120	----
iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	109	80.0	120	----
lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	102	80.0	120	----
lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	100	80.0	120	----
magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	89.5	80.0	120	----
manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	94.8	80.0	120	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	99.4	80.0	120	----
nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	94.2	80.0	120	----
potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	92.5	80.0	120	----
selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	86.4	80.0	120	----
silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	99.4	80.0	120	----
silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	96.8	80.0	120	----
sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	98.3	80.0	120	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Total Metals (QCLot: 516828) - continued									
strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	99.8	80.0	120	----
sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	101	80.0	120	----
thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	97.6	80.0	120	----
tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	97.0	80.0	120	----
titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	94.8	80.0	120	----
uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	98.6	80.0	120	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	96.2	80.0	120	----
zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	95.0	80.0	120	----
Dissolved Metals (QCLot: 516741)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	99.1	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	96.8	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	99.5	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	96.7	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	102	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	98.5	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	99.8	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	95.6	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	98.1	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	95.4	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	95.0	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	104	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	96.7	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	97.7	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	97.6	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	97.5	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	102	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	97.2	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	97.4	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	99.8	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	97.3	80.0	120	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	89.6	80.0	120	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	103	80.0	120	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	102	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	99.1	80.0	120	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	98.8	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	96.4	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	90.1	80.0	120	----



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 516741) - continued									
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	99.6	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	98.2	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	96.0	80.0	120	----
Dissolved Metals (QCLot: 516742)									
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	0.25 mg/L	98.5	80.0	120	----
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	97.2	80.0	120	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level $\geq 1x$ spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 511709)										
CG2206939-015	Anonymous	fluoride	16984-48-8	E235.F	0.964 mg/L	1 mg/L	96.4	75.0	125	----
Anions and Nutrients (QCLot: 511710)										
CG2206939-015	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	107 mg/L	100 mg/L	107	75.0	125	----
Anions and Nutrients (QCLot: 511711)										
CG2206939-015	Anonymous	bromide	24959-67-9	E235.Br-L	0.455 mg/L	0.5 mg/L	91.0	75.0	125	----
Anions and Nutrients (QCLot: 511712)										
CG2206939-015	Anonymous	chloride	16887-00-6	E235.Cl-L	102 mg/L	100 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 511713)										
CG2206939-015	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	2.56 mg/L	2.5 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 511714)										
CG2206939-015	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.540 mg/L	0.5 mg/L	108	75.0	125	----
Anions and Nutrients (QCLot: 511751)										
CG2206945-001	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0435 mg/L	0.05 mg/L	87.1	70.0	130	----
Anions and Nutrients (QCLot: 513720)										
CG2206947-001	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0612 mg/L	0.0676 mg/L	90.5	70.0	130	----
Anions and Nutrients (QCLot: 514941)										
CG2206946-002	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.65 mg/L	2.5 mg/L	106	70.0	130	----
Anions and Nutrients (QCLot: 519180)										
CG2206947-002	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.103 mg/L	0.1 mg/L	103	75.0	125	----
Organic / Inorganic Carbon (QCLot: 521968)										
CG2206946-001	Anonymous	carbon, total organic [TOC]	----	E355-L	5.06 mg/L	5 mg/L	101	70.0	130	----
Organic / Inorganic Carbon (QCLot: 521969)										
CG2206946-001	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	5.24 mg/L	5 mg/L	105	70.0	130	----
Total Metals (QCLot: 516365)										
CG2206947-001	Anonymous	mercury, total	7439-97-6	E508	0.0000905 mg/L	0.0001 mg/L	90.5	70.0	130	----
Total Metals (QCLot: 516827)										
CG2206946-009	Anonymous	chromium, total	7440-47-3	E420.Cr-L	0.0405 mg/L	0.04 mg/L	101	70.0	130	----
Total Metals (QCLot: 516828)										



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 516828) - continued										
CG2206946-009	Anonymous	aluminum, total	7429-90-5	E420	0.213 mg/L	0.2 mg/L	106	70.0	130	----
		antimony, total	7440-36-0	E420	0.0210 mg/L	0.02 mg/L	105	70.0	130	----
		arsenic, total	7440-38-2	E420	0.0201 mg/L	0.02 mg/L	101	70.0	130	----
		barium, total	7440-39-3	E420	0.0194 mg/L	0.02 mg/L	96.8	70.0	130	----
		beryllium, total	7440-41-7	E420	0.0410 mg/L	0.04 mg/L	103	70.0	130	----
		bismuth, total	7440-69-9	E420	0.0110 mg/L	0.01 mg/L	110	70.0	130	----
		boron, total	7440-42-8	E420	0.104 mg/L	0.1 mg/L	104	70.0	130	----
		cadmium, total	7440-43-9	E420	0.00418 mg/L	0.004 mg/L	104	70.0	130	----
		calcium, total	7440-70-2	E420	4.02 mg/L	4 mg/L	100	70.0	130	----
		cobalt, total	7440-48-4	E420	0.0205 mg/L	0.02 mg/L	102	70.0	130	----
		copper, total	7440-50-8	E420	0.0206 mg/L	0.02 mg/L	103	70.0	130	----
		iron, total	7439-89-6	E420	1.97 mg/L	2 mg/L	98.6	70.0	130	----
		lead, total	7439-92-1	E420	0.0213 mg/L	0.02 mg/L	106	70.0	130	----
		lithium, total	7439-93-2	E420	0.100 mg/L	0.1 mg/L	100	70.0	130	----
		magnesium, total	7439-95-4	E420	0.981 mg/L	1 mg/L	98.1	70.0	130	----
		manganese, total	7439-96-5	E420	0.0205 mg/L	0.02 mg/L	103	70.0	130	----
		molybdenum, total	7439-98-7	E420	0.0201 mg/L	0.02 mg/L	100	70.0	130	----
		nickel, total	7440-02-0	E420	0.0417 mg/L	0.04 mg/L	104	70.0	130	----
		potassium, total	7440-09-7	E420	3.94 mg/L	4 mg/L	98.6	70.0	130	----
		selenium, total	7782-49-2	E420	0.0396 mg/L	0.04 mg/L	99.0	70.0	130	----
		silicon, total	7440-21-3	E420	9.41 mg/L	10 mg/L	94.1	70.0	130	----
		silver, total	7440-22-4	E420	0.00422 mg/L	0.004 mg/L	105	70.0	130	----
		sodium, total	7440-23-5	E420	2.06 mg/L	2 mg/L	103	70.0	130	----
		strontium, total	7440-24-6	E420	0.0198 mg/L	0.02 mg/L	99.0	70.0	130	----
		sulfur, total	7704-34-9	E420	19.3 mg/L	20 mg/L	96.5	70.0	130	----
		thallium, total	7440-28-0	E420	0.00394 mg/L	0.004 mg/L	98.5	70.0	130	----
		tin, total	7440-31-5	E420	0.0202 mg/L	0.02 mg/L	101	70.0	130	----
		titanium, total	7440-32-6	E420	0.0404 mg/L	0.04 mg/L	101	70.0	130	----
		uranium, total	7440-61-1	E420	0.00408 mg/L	0.004 mg/L	102	70.0	130	----
		vanadium, total	7440-62-2	E420	0.102 mg/L	0.1 mg/L	102	70.0	130	----
		zinc, total	7440-66-6	E420	0.433 mg/L	0.4 mg/L	108	70.0	130	----
Dissolved Metals (QCLot: 516741)										
CG2206939-021	Anonymous	aluminum, dissolved	7429-90-5	E421	0.190 mg/L	0.2 mg/L	95.1	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.0195 mg/L	0.02 mg/L	97.7	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.0215 mg/L	0.02 mg/L	107	70.0	130	----
		barium, dissolved	7440-39-3	E421	0.0195 mg/L	0.02 mg/L	97.6	70.0	130	----



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 516741) - continued										
CG2206939-021	Anonymous	beryllium, dissolved	7440-41-7	E421	0.0385 mg/L	0.04 mg/L	96.3	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.00872 mg/L	0.01 mg/L	87.2	70.0	130	----
		boron, dissolved	7440-42-8	E421	0.093 mg/L	0.1 mg/L	92.8	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.00370 mg/L	0.004 mg/L	92.4	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	4 mg/L	ND	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.0179 mg/L	0.02 mg/L	89.7	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.0174 mg/L	0.02 mg/L	87.1	70.0	130	----
		iron, dissolved	7439-89-6	E421	1.88 mg/L	2 mg/L	93.9	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.0184 mg/L	0.02 mg/L	92.2	70.0	130	----
		lithium, dissolved	7439-93-2	E421	ND mg/L	0.1 mg/L	ND	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	1 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.0208 mg/L	0.02 mg/L	104	70.0	130	----
		nickel, dissolved	7440-02-0	E421	0.0344 mg/L	0.04 mg/L	86.1	70.0	130	----
		potassium, dissolved	7440-09-7	E421	ND mg/L	4 mg/L	ND	70.0	130	----
		selenium, dissolved	7782-49-2	E421	ND mg/L	0.04 mg/L	ND	70.0	130	----
		silicon, dissolved	7440-21-3	E421	9.49 mg/L	10 mg/L	94.9	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.00384 mg/L	0.004 mg/L	96.1	70.0	130	----
		sodium, dissolved	7440-23-5	E421	ND mg/L	2 mg/L	ND	70.0	130	----
		strontium, dissolved	7440-24-6	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	ND mg/L	20 mg/L	ND	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.00386 mg/L	0.004 mg/L	96.4	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.0191 mg/L	0.02 mg/L	95.7	70.0	130	----
		titanium, dissolved	7440-32-6	E421	0.0380 mg/L	0.04 mg/L	95.1	70.0	130	----
		uranium, dissolved	7440-61-1	E421	ND mg/L	0.004 mg/L	ND	70.0	130	----
		vanadium, dissolved	7440-62-2	E421	0.0986 mg/L	0.1 mg/L	98.6	70.0	130	----
		zinc, dissolved	7440-66-6	E421	0.360 mg/L	0.4 mg/L	89.9	70.0	130	----
Dissolved Metals (QCLot: 516742)										
CG2206939-021	Anonymous	chromium, dissolved	7440-47-3	E421.Cr-L	0.0388 mg/L	0.04 mg/L	97.0	70.0	130	----
Dissolved Metals (QCLot: 518006)										
CG2206939-020	Anonymous	mercury, dissolved	7439-97-6	E509	ND mg/L	0.0001 mg/L	ND	70.0	130	----



COC ID: **MAY/JUNE EVO LAEMP 2022 WS** TURNAROUND TIME: _____

PROJECT/CLIENT INFO				LABORATORY			
Facility Name / Job#	Elkview Operation			Lab Name	ALS Calgary		
Project Manager	Mike Pope			Lab Contact	Iyudmyla Shvets		
Email	[Redacted]			Email	iyudmyla.shvets@alsglobal.com		
Address	421 Pine Avenue			Address	2559 29 Street NE		
City	Sparwood	Province	BC	City	Calgary	Province	AB
Postal Code	V0B 2G0	Country	Canada	Postal Code	T1Y 7B5	Country	Canada
Phone Number	343-333-3905			Phone Number	1 403 407 1794		

Environmental Division
 Calgary
 Work Order Reference
CG2206948

SAMPLE DETAILS								ANALYSIS REQUESTED						
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	TECKCOAL-ROUTINE-VA	ALS_Package-DOC	ALS_Package-TKN/TOC	HG-T-U-CVAF-VA	HG-D-CVAF-VA	TECKCOAL-MET-T-VA	TECKCOAL-MET-D-VA
EY_MC3A_WS_LAEMP_EVO_2022-06-02_NP	EY_MC3A	WS	No	2022-06-02	12:00	G	7	X	X	X	X	X	X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
ALS PO VPD00816101	Emily Dutton	June 3, 2022	<i>[Signature]</i>

NB OF BOTTLES RETURNED/DESCRIPTION	Regular (default)	Priority (2-3 business days) - 50% surcharge	Emergency (1 Business Day) - 100% surcharge	For Emergency <1 Day, ASAP or Weekend - Contact ALS
	x			

Sampler's Name	Emily Dutton	Mobile #	
Sampler's Signature	<i>[Signature]</i>	Date/Time	June 3 2022

Environmental Division
Calgary
Work Order Reference





Environmental

CERTIFICATE OF ANALYSIS

Work Order : **CG2208367**
Client : **Teck Coal Limited**
Contact : Mike Pope
Address : 421 Pine Avenue
Sparwood BC Canada V0B2G0
Telephone : ----
Project : Regional Effects Program
PO : VPO00816101
C-O-C number : June EVO LAEMP 2022
Sampler : ----
Site : ----
Quote number : Teck Coal Master Quote
No. of samples received : 6
No. of samples analysed : 6

Page : 1 of 10
Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
Calgary AB Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 29-Jun-2022 08:50
Date Analysis Commenced : 29-Jun-2022
Issue Date : 02-Jul-2022 14:32

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Anthony Calero	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Dwayne Bennett	Supervisor - Inorganic	Metals, Calgary, Alberta
Elke Tabora		Inorganics, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Mackenzie Lamoureux	Laboratory Analyst	Metals, Calgary, Alberta
Parker Sgarbossa	Laboratory Analyst	Inorganics, Calgary, Alberta
Ruifang Zheng	Analyst	Inorganics, Calgary, Alberta
Shirley Li		Inorganics, Calgary, Alberta
Shirley Li		Metals, Calgary, Alberta
Summie Lo	Lab Assistant	Metals, Calgary, Alberta



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
 LOR: Limit of Reporting (detection limit).

Unit	Description
-	No Unit
%	percent
µg/L	micrograms per litre
µS/cm	Microsiemens per centimetre
meq/L	milliequivalents per litre
mg/L	milligrams per litre
mV	millivolts
NTU	nephelometric turbidity units
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Sample Comments

Sample	Client Id	Comment
CG2208367-002	RG_GATEDP_WS_LAEMP_EV O_2022-06-28_NP	No analysis on CoC for RG_GATEDP_WS_LAEMP_EVO_2022-06-28_NP. Added as per containers.

Qualifiers

Qualifier	Description
DLDS	Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.
DTC	Dissolved concentration exceeds total. Results were confirmed by re-analysis.



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_GATE_WS_ LAEMP_EVO_2 022-06-28_NP	RG_GATEDP_WS_ LAEMP_EVO_2 2022-06-28_NP	RG_BOCK_WS_ LAEMP_EVO_2 022-06-28_NP	RG_BOCKRD_WS_ LAEMP_EV O_2022-06-28_NP	RG_RIVER_WS_ LAEMP_EVO_2 2022-06-28_NP
Client sampling date / time					28-Jun-2022 08:30	28-Jun-2022 08:00	28-Jun-2022 09:30	28-Jun-2022 11:00	28-Jun-2022 11:00	
Analyte	CAS Number	Method	LOR	Unit	CG2208367-001	CG2208367-002	CG2208367-003	CG2208367-004	CG2208367-005	
					Result	Result	Result	Result	Result	
Physical Tests										
acidity (as CaCO3)	----	E283	2.0	mg/L	<2.0	2.3	3.6	<2.0	<2.0	
alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	381	358	368	410	399	
alkalinity, bicarbonate (as HCO3)	71-52-3	E290	1.0	mg/L	465	436	449	500	486	
alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	8.6	
alkalinity, carbonate (as CO3)	3812-32-6	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	5.2	
alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
alkalinity, hydroxide (as OH)	14280-30-9	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	381	358	368	410	407	
conductivity	----	E100	2.0	µS/cm	1850	1850	1850	2010	2000	
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	1370	1440	1360	1500	1520	
oxidation-reduction potential [ORP]	----	E125	0.10	mV	329	323	326	318	310	
pH	----	E108	0.10	pH units	8.25	8.27	8.02	8.28	8.29	
solids, total dissolved [TDS]	----	E162	10	mg/L	1630	1690	1740	1850	1900	
solids, total suspended [TSS]	----	E160-L	1.0	mg/L	4.7	1.5	1.4	1.6	<1.0	
turbidity	----	E121	0.10	NTU	3.71	1.92	0.51	0.90	1.16	
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.136	0.0460	0.0278	<0.0050	0.0068	
bromide	24959-67-9	E235.Br-L	0.050	mg/L	0.411	0.412	0.464	0.536	0.499	
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	12.4	13.0	15.5	13.2	12.9	
fluoride	16984-48-8	E235.F	0.020	mg/L	0.208	0.198	0.193	0.202	0.199	
Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	1.47	0.875	1.04	1.04	1.52	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	7.66	7.76	7.62	8.04	7.84	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	0.0366	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0050	0.0017	<0.0010	0.0024	<0.0010	
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0091	0.0045	0.0248	0.0048	0.0236	
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	940	933	921	1040	1010	
Organic / Inorganic Carbon										
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	0.60	0.78	<0.50	<0.50	<0.50	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_GATE_WS_ LAEMP_EVO_2 022-06-28_NP	RG_GATEDP_W S_LAEMP_EVO _2022-06-28_N P	RG_BOCK_WS_ LAEMP_EVO_2 022-06-28_NP	RG_BOCKRD_ WS_LAEMP_EV O_2022-06-28_ NP	RG_RIVER_WS LAEMP_EVO_ 2022-06-28_NP
Client sampling date / time					28-Jun-2022 08:30	28-Jun-2022 08:00	28-Jun-2022 09:30	28-Jun-2022 11:00	28-Jun-2022 11:00	
Analyte	CAS Number	Method	LOR	Unit	CG2208367-001	CG2208367-002	CG2208367-003	CG2208367-004	CG2208367-005	
					Result	Result	Result	Result	Result	
Organic / Inorganic Carbon										
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	0.69	0.82	<0.50	<0.50	<0.50	
Ion Balance										
anion sum	----	EC101	0.10	meq/L	28.1	27.5	27.5	30.8	30.1	
cation sum	----	EC101	0.10	meq/L	27.9	29.2	27.8	30.5	30.8	
ion balance (cations/anions)	----	EC101	0.010	%	99.3	106	101	99.0	102	
ion balance (APHA)	----	EC101	0.010	%	0.357	3.00	0.542	0.489	1.15	
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0144	0.0130	0.0042	0.0070	0.0049	
antimony, total	7440-36-0	E420	0.00010	mg/L	0.00076	0.00073	0.00081	0.00089	0.00084	
arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00041	0.00041	0.00034	0.00040	0.00041	
barium, total	7440-39-3	E420	0.00010	mg/L	0.418	0.227	0.178	0.0202	0.0276	
beryllium, total	7440-41-7	E420	0.020	µg/L	<0.020	0.042	<0.020	<0.020	<0.020	
bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
boron, total	7440-42-8	E420	0.010	mg/L	0.043	0.038	0.044	0.037	0.040	
cadmium, total	7440-43-9	E420	0.0050	µg/L	0.248	0.158	0.0168	0.302	0.314	
calcium, total	7440-70-2	E420	0.050	mg/L	238	238	222	261	264	
chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	0.00010	0.00011	<0.00010	<0.00010	<0.00010	
cobalt, total	7440-48-4	E420	0.10	µg/L	0.19	0.18	0.10	0.16	0.17	
copper, total	7440-50-8	E420	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
iron, total	7439-89-6	E420	0.010	mg/L	0.131	0.072	0.016	0.039	0.047	
lead, total	7439-92-1	E420	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
lithium, total	7439-93-2	E420	0.0010	mg/L	0.106	0.106	0.130	0.129	0.121	
magnesium, total	7439-95-4	E420	0.0050	mg/L	158	165	160	182	181	
manganese, total	7439-96-5	E420	0.00010	mg/L	0.00666	0.00478	0.00128	0.00357	0.00641	
mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.0128	0.0128	0.0145	0.0157	0.0152	
nickel, total	7440-02-0	E420	0.00050	mg/L	0.0297	0.0294	0.0296	0.0388	0.0385	
potassium, total	7440-09-7	E420	0.050	mg/L	4.78	4.81	5.23	5.38	5.36	
selenium, total	7782-49-2	E420	0.050	µg/L	98.0	106	72.4	90.4	90.8	



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

Client sample ID

					RG_GATE_WS_ LAEMP_EVO_2 022-06-28_NP	RG_GATEDP_W S_LAEMP_EVO _2022-06-28_N P	RG_BOCK_WS_ LAEMP_EVO_2 022-06-28_NP	RG_BOCKRD_ WS_LAEMP_EV O_2022-06-28_ NP	RG_RIVER_WS LAEMP_EVO_ 2022-06-28_NP
Client sampling date / time					28-Jun-2022 08:30	28-Jun-2022 08:00	28-Jun-2022 09:30	28-Jun-2022 11:00	28-Jun-2022 11:00
Analyte	CAS Number	Method	LOR	Unit	CG2208367-001	CG2208367-002	CG2208367-003	CG2208367-004	CG2208367-005
					Result	Result	Result	Result	Result
Total Metals									
silicon, total	7440-21-3	E420	0.10	mg/L	2.93	2.91	2.58	2.75	2.75
silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
sodium, total	7440-23-5	E420	0.050	mg/L	8.32	8.43	9.63	10.3	10.3
strontium, total	7440-24-6	E420	0.00020	mg/L	0.568	0.513	0.684	0.512	0.516
sulfur, total	7704-34-9	E420	0.50	mg/L	254	261	238	286	287
thallium, total	7440-28-0	E420	0.000010	mg/L	0.000058	0.000059	0.000047	0.000061	0.000060
tin, total	7440-31-5	E420	0.00010	mg/L	0.00025	<0.00010	<0.00010	<0.00010	<0.00010
titanium, total	7440-32-6	E420	0.00030	mg/L	0.00071	0.00036	<0.00030	<0.00030	<0.00030
uranium, total	7440-61-1	E420	0.000010	mg/L	0.0113	0.0117	0.0122	0.0136	0.0136
vanadium, total	7440-62-2	E420	0.00050	mg/L	0.00055	0.00066	<0.00050	<0.00050	<0.00050
zinc, total	7440-66-6	E420	0.0030	mg/L	0.0115	0.0068	<0.0030	0.0133	0.0131
Dissolved Metals									
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	<0.0020 DLDS	<0.0020 DLDS	<0.0020 DLDS	<0.0020 DLDS	<0.0020 DLDS
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00081	0.00086	0.00088	0.00094	0.00095
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00032	0.00032	0.00029	0.00035	0.00033
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.475	0.240	0.168	0.0218	0.0284
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.040 DLDS	<0.040 DLDS	<0.040 DLDS	<0.040 DLDS	<0.040 DLDS
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000100 DLDS	<0.000100 DLDS	<0.000100 DLDS	<0.000100 DLDS	<0.000100 DLDS
boron, dissolved	7440-42-8	E421	0.010	mg/L	0.044	0.044	0.052	0.044	0.045
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.220	0.147	0.0126	0.275	0.267
calcium, dissolved	7440-70-2	E421	0.050	mg/L	263	276	251	286	292
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00020 DLDS	<0.00020 DLDS	<0.00020 DLDS	<0.00020 DLDS	<0.00020 DLDS
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	<0.20 DLDS	<0.20 DLDS	<0.20 DLDS	<0.20 DLDS	<0.20 DLDS
copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00040 DLDS	0.00118 DTC	<0.00040 DLDS	<0.00040 DLDS	<0.00040 DLDS
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.020 DLDS	<0.020 DLDS	<0.020 DLDS	<0.020 DLDS	0.020
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000100 DLDS	<0.000100 DLDS	<0.000100 DLDS	<0.000100 DLDS	<0.000100 DLDS
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.119	0.124	0.136	0.131	0.136
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	174	182	179	191	191
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00646	0.00445	0.00133	0.00353	0.00619



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_GATE_WS_ LAEMP_EVO_2 022-06-28_NP	RG_GATEDP_W S_LAEMP_EVO _2022-06-28_N P	RG_BOCK_WS_ LAEMP_EVO_2 022-06-28_NP	RG_BOCKRD_ WS_LAEMP_EV O_2022-06-28_ NP	RG_RIVER_WS _LAEMP_EVO_ 2022-06-28_NP
Client sampling date / time					28-Jun-2022 08:30	28-Jun-2022 08:00	28-Jun-2022 09:30	28-Jun-2022 11:00	28-Jun-2022 11:00	
Analyte	CAS Number	Method	LOR	Unit	CG2208367-001 Result	CG2208367-002 Result	CG2208367-003 Result	CG2208367-004 Result	CG2208367-005 Result	
Dissolved Metals										
mercury, dissolved	7439-97-6	E509	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.0141	0.0152	0.0159	0.0168	0.0173	
nickel, dissolved	7440-02-0	E421	0.000050	mg/L	0.0307	0.0307	0.0316	0.0384	0.0388	
potassium, dissolved	7440-09-7	E421	0.050	mg/L	4.86	4.84	5.34	5.15	5.23	
selenium, dissolved	7782-49-2	E421	0.050	µg/L	96.1	107	81.0	85.0	87.3	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	2.96	3.04	2.65	2.69	2.77	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000020 DLDS	<0.000020 DLDS	<0.000020 DLDS	<0.000020 DLDS	<0.000020 DLDS	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	8.40	8.43	9.91	9.75	9.86	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.593	0.559	0.701	0.522	0.541	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	300	316	308	333	338	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	0.000055	0.000061	0.000046	0.000064	0.000062	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00020 DLDS	<0.00020 DLDS	<0.00020 DLDS	<0.00020 DLDS	<0.00020 DLDS	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00060 DLDS	<0.00060 DLDS	<0.00060 DLDS	<0.00060 DLDS	<0.00060 DLDS	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.0114	0.0120	0.0122	0.0132	0.0136	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00100 DLDS	<0.00100 DLDS	<0.00100 DLDS	<0.00100 DLDS	<0.00100 DLDS	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0113	0.0069	<0.0020 DLDS	0.0136	0.0130	
dissolved mercury filtration location	----	EP509	-	-	Field	Field	Field	Field	Field	
dissolved metals filtration location	----	EP421	-	-	Field	Field	Field	Field	Field	

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_FBLANK_W S_LAEMP_EVO _2022-06-28_N P	----	----	----	----
Client sampling date / time					28-Jun-2022 11:00	----	----	----	----	
Analyte	CAS Number	Method	LOR	Unit	CG2208367-006	-----	-----	-----	-----	
					Result	----	----	----	----	
Physical Tests										
acidity (as CaCO3)	----	E283	2.0	mg/L	<2.0	----	----	----	----	
alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	----	----	----	----	
alkalinity, bicarbonate (as HCO3)	71-52-3	E290	1.0	mg/L	<1.0	----	----	----	----	
alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	----	----	----	----	
alkalinity, carbonate (as CO3)	3812-32-6	E290	1.0	mg/L	<1.0	----	----	----	----	
alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	----	----	----	----	
alkalinity, hydroxide (as OH)	14280-30-9	E290	1.0	mg/L	<1.0	----	----	----	----	
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	<1.0	----	----	----	----	
conductivity	----	E100	2.0	µS/cm	<2.0	----	----	----	----	
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	<0.50	----	----	----	----	
oxidation-reduction potential [ORP]	----	E125	0.10	mV	567	----	----	----	----	
pH	----	E108	0.10	pH units	6.16	----	----	----	----	
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----	----	----	----	
solids, total suspended [TSS]	----	E160-L	1.0	mg/L	<1.0	----	----	----	----	
turbidity	----	E121	0.10	NTU	<0.10	----	----	----	----	
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	----	----	----	----	
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	----	----	----	----	
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	<0.10	----	----	----	----	
fluoride	16984-48-8	E235.F	0.020	mg/L	<0.020	----	----	----	----	
Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	<0.050	----	----	----	----	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	<0.0050	----	----	----	----	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	----	----	----	----	
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	----	----	----	----	
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	<0.0020	----	----	----	----	
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	<0.30	----	----	----	----	
Organic / Inorganic Carbon										
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	<0.50	----	----	----	----	
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	<0.50	----	----	----	----	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_FBLANK_W S_LAEMP_EVO _2022-06-28_N P	----	----	----	----
Client sampling date / time					28-Jun-2022 11:00	----	----	----	----	
Analyte	CAS Number	Method	LOR	Unit	CG2208367-006	-----	-----	-----	-----	
					Result	----	----	----	----	
Ion Balance										
anion sum	----	EC101	0.10	meq/L	<0.10	----	----	----	----	
cation sum	----	EC101	0.10	meq/L	<0.10	----	----	----	----	
ion balance (cations/anions)	----	EC101	0.010	%	100	----	----	----	----	
ion balance (APHA)	----	EC101	0.010	%	<0.010	----	----	----	----	
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L	<0.0030	----	----	----	----	
antimony, total	7440-36-0	E420	0.00010	mg/L	<0.00010	----	----	----	----	
arsenic, total	7440-38-2	E420	0.00010	mg/L	<0.00010	----	----	----	----	
barium, total	7440-39-3	E420	0.00010	mg/L	<0.00010	----	----	----	----	
beryllium, total	7440-41-7	E420	0.020	µg/L	<0.020	----	----	----	----	
bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	----	----	----	----	
boron, total	7440-42-8	E420	0.010	mg/L	<0.010	----	----	----	----	
cadmium, total	7440-43-9	E420	0.0050	µg/L	<0.0050	----	----	----	----	
calcium, total	7440-70-2	E420	0.050	mg/L	<0.050	----	----	----	----	
chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	<0.00010	----	----	----	----	
cobalt, total	7440-48-4	E420	0.10	µg/L	<0.10	----	----	----	----	
copper, total	7440-50-8	E420	0.00050	mg/L	<0.00050	----	----	----	----	
iron, total	7439-89-6	E420	0.010	mg/L	<0.010	----	----	----	----	
lead, total	7439-92-1	E420	0.000050	mg/L	<0.000050	----	----	----	----	
lithium, total	7439-93-2	E420	0.0010	mg/L	<0.0010	----	----	----	----	
magnesium, total	7439-95-4	E420	0.0050	mg/L	<0.0050	----	----	----	----	
manganese, total	7439-96-5	E420	0.00010	mg/L	<0.00010	----	----	----	----	
mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	----	----	----	----	
molybdenum, total	7439-98-7	E420	0.000050	mg/L	<0.000050	----	----	----	----	
nickel, total	7440-02-0	E420	0.00050	mg/L	<0.00050	----	----	----	----	
potassium, total	7440-09-7	E420	0.050	mg/L	<0.050	----	----	----	----	
selenium, total	7782-49-2	E420	0.050	µg/L	<0.050	----	----	----	----	
silicon, total	7440-21-3	E420	0.10	mg/L	<0.10	----	----	----	----	
silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	----	----	----	----	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_FBLANK_W S_LAEMP_EVO _2022-06-28_N P	----	----	----	----
Client sampling date / time					28-Jun-2022 11:00	----	----	----	----	
Analyte	CAS Number	Method	LOR	Unit	CG2208367-006	-----	-----	-----	-----	
					Result	----	----	----	----	
Total Metals										
sodium, total	7440-23-5	E420	0.050	mg/L	<0.050	----	----	----	----	
strontium, total	7440-24-6	E420	0.00020	mg/L	<0.00020	----	----	----	----	
sulfur, total	7704-34-9	E420	0.50	mg/L	<0.50	----	----	----	----	
thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	----	----	----	----	
tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	----	----	----	----	
titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00030	----	----	----	----	
uranium, total	7440-61-1	E420	0.000010	mg/L	<0.000010	----	----	----	----	
vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	----	----	----	----	
zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	----	----	----	----	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	<0.0010	----	----	----	----	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00010	----	----	----	----	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	<0.00010	----	----	----	----	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	<0.00010	----	----	----	----	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.020	----	----	----	----	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	----	----	----	----	
boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.010	----	----	----	----	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	<0.0050	----	----	----	----	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	<0.050	----	----	----	----	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00010	----	----	----	----	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	<0.10	----	----	----	----	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00020	----	----	----	----	
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	----	----	----	----	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	----	----	----	----	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	<0.0010	----	----	----	----	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	<0.0050	----	----	----	----	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	<0.00010	----	----	----	----	
mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	----	----	----	----	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	<0.000050	----	----	----	----	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_FBLANK_W S_LAEMP_EVO _2022-06-28_N P	----	----	----	----
Client sampling date / time					28-Jun-2022 11:00	----	----	----	----	
Analyte	CAS Number	Method	LOR	Unit	CG2208367-006	-----	-----	-----	-----	
					Result	----	----	----	----	
Dissolved Metals										
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	<0.00050	----	----	----	----	
potassium, dissolved	7440-09-7	E421	0.050	mg/L	<0.050	----	----	----	----	
selenium, dissolved	7782-49-2	E421	0.050	µg/L	<0.050	----	----	----	----	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	<0.050	----	----	----	----	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	----	----	----	----	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	<0.050	----	----	----	----	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	<0.00020	----	----	----	----	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	<0.50	----	----	----	----	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	----	----	----	----	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	----	----	----	----	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	----	----	----	----	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	<0.000010	----	----	----	----	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	----	----	----	----	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0010	----	----	----	----	
dissolved mercury filtration location	----	EP509	-	-	Field	----	----	----	----	
dissolved metals filtration location	----	EP421	-	-	Field	----	----	----	----	

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: CG2208367	Page	: 1 of 26
Client	: Teck Coal Limited	Laboratory	: Calgary - Environmental
Contact	: Mike Pope	Account Manager	: Lyudmyla Shvets
Address	: 421 Pine Avenue Sparwood BC Canada V0B2G0	Address	: 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5
Telephone	: ----	Telephone	: +1 403 407 1800
Project	: Regional Effects Program	Date Samples Received	: 29-Jun-2022 08:50
PO	: VPO00816101	Issue Date	: 02-Jul-2022 14:33
C-O-C number	: June EVO LAEMP 2022		
Sampler	: ----		
Site	: ----		
Quote number	: Teck Coal Master Quote		
No. of samples received	: 6		
No. of samples analysed	: 6		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_BOCK_WS_LAEMP_EVO_2022-06-28_NP	E298	28-Jun-2022	29-Jun-2022	----	----		29-Jun-2022	28 days	1 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_BOCKRD_WS_LAEMP_EVO_2022-06-28_NP	E298	28-Jun-2022	29-Jun-2022	----	----		29-Jun-2022	28 days	1 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_FBLANK_WS_LAEMP_EVO_2022-06-28_NP	E298	28-Jun-2022	29-Jun-2022	----	----		29-Jun-2022	28 days	1 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_GATE_WS_LAEMP_EVO_2022-06-28_NP	E298	28-Jun-2022	29-Jun-2022	----	----		29-Jun-2022	28 days	1 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_GATEDP_WS_LAEMP_EVO_2022-06-28_NP	E298	28-Jun-2022	29-Jun-2022	----	----		29-Jun-2022	28 days	1 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-06-28_NP	E298	28-Jun-2022	29-Jun-2022	----	----		29-Jun-2022	28 days	1 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_BOCK_WS_LAEMP_EVO_2022-06-28_NP	E235.Br-L	28-Jun-2022	----	----	----		29-Jun-2022	28 days	1 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-06-28_NP	E235.Br-L	28-Jun-2022	----	----	----		29-Jun-2022	28 days	1 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-06-28_NP	E235.Br-L	28-Jun-2022	----	----	----		29-Jun-2022	28 days	1 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_GATE_WS_LAEMP_EVO_2022-06-28_NP	E235.Br-L	28-Jun-2022	----	----	----		29-Jun-2022	28 days	1 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-06-28_NP	E235.Br-L	28-Jun-2022	----	----	----		29-Jun-2022	28 days	1 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-06-28_NP	E235.Br-L	28-Jun-2022	----	----	----		29-Jun-2022	28 days	1 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-06-28_NP	E235.Cl-L	28-Jun-2022	----	----	----		29-Jun-2022	28 days	1 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-06-28_NP	E235.Cl-L	28-Jun-2022	----	----	----		29-Jun-2022	28 days	1 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-06-28_NP	E235.Cl-L	28-Jun-2022	----	----	----		29-Jun-2022	28 days	1 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_GATE_WS_LAEMP_EVO_2022-06-28_NP	E235.Cl-L	28-Jun-2022	----	----	----		29-Jun-2022	28 days	1 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-06-28_NP	E235.CI-L	28-Jun-2022	----	----	----		29-Jun-2022	28 days	1 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-06-28_NP	E235.CI-L	28-Jun-2022	----	----	----		29-Jun-2022	28 days	1 days	✔	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-06-28_NP	E378-U	28-Jun-2022	----	----	----		29-Jun-2022	3 days	1 days	✔	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-06-28_NP	E378-U	28-Jun-2022	----	----	----		29-Jun-2022	3 days	1 days	✔	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-06-28_NP	E378-U	28-Jun-2022	----	----	----		29-Jun-2022	3 days	1 days	✔	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_GATE_WS_LAEMP_EVO_2022-06-28_NP	E378-U	28-Jun-2022	----	----	----		29-Jun-2022	3 days	1 days	✔	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-06-28_NP	E378-U	28-Jun-2022	----	----	----		29-Jun-2022	3 days	1 days	✔	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-06-28_NP	E378-U	28-Jun-2022	----	----	----		29-Jun-2022	3 days	1 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-06-28_NP	E235.F	28-Jun-2022	----	----	----		29-Jun-2022	28 days	1 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-06-28_NP	E235.F	28-Jun-2022	----	----	----		29-Jun-2022	28 days	1 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-06-28_NP	E235.F	28-Jun-2022	----	----	----		29-Jun-2022	28 days	1 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_GATE_WS_LAEMP_EVO_2022-06-28_NP	E235.F	28-Jun-2022	----	----	----		29-Jun-2022	28 days	1 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-06-28_NP	E235.F	28-Jun-2022	----	----	----		29-Jun-2022	28 days	1 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-06-28_NP	E235.F	28-Jun-2022	----	----	----		29-Jun-2022	28 days	1 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-06-28_NP	E235.NO3-L	28-Jun-2022	----	----	----		29-Jun-2022	3 days	1 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-06-28_NP	E235.NO3-L	28-Jun-2022	----	----	----		29-Jun-2022	3 days	1 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-06-28_NP	E235.NO3-L	28-Jun-2022	----	----	----		29-Jun-2022	3 days	1 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_GATE_WS_LAEMP_EVO_2022-06-28_NP	E235.NO3-L	28-Jun-2022	----	----	----		29-Jun-2022	3 days	1 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-06-28_NP	E235.NO3-L	28-Jun-2022	----	----	----		29-Jun-2022	3 days	1 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-06-28_NP	E235.NO3-L	28-Jun-2022	----	----	----		29-Jun-2022	3 days	1 days	✓	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-06-28_NP	E235.NO2-L	28-Jun-2022	----	----	----		29-Jun-2022	3 days	1 days	✓	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-06-28_NP	E235.NO2-L	28-Jun-2022	----	----	----		29-Jun-2022	3 days	1 days	✓	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-06-28_NP	E235.NO2-L	28-Jun-2022	----	----	----		29-Jun-2022	3 days	1 days	✓	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_GATE_WS_LAEMP_EVO_2022-06-28_NP	E235.NO2-L	28-Jun-2022	----	----	----		29-Jun-2022	3 days	1 days	✓	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-06-28_NP	E235.NO2-L	28-Jun-2022	----	----	----		29-Jun-2022	3 days	1 days	✓	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-06-28_NP	E235.NO2-L	28-Jun-2022	----	----	----		29-Jun-2022	3 days	1 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-06-28_NP	E235.S04	28-Jun-2022	----	----	----		29-Jun-2022	28 days	1 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-06-28_NP	E235.S04	28-Jun-2022	----	----	----		29-Jun-2022	28 days	1 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-06-28_NP	E235.S04	28-Jun-2022	----	----	----		29-Jun-2022	28 days	1 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_GATE_WS_LAEMP_EVO_2022-06-28_NP	E235.S04	28-Jun-2022	----	----	----		29-Jun-2022	28 days	1 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-06-28_NP	E235.S04	28-Jun-2022	----	----	----		29-Jun-2022	28 days	1 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-06-28_NP	E235.S04	28-Jun-2022	----	----	----		29-Jun-2022	28 days	1 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_BOCK_WS_LAEMP_EVO_2022-06-28_NP	E318	28-Jun-2022	30-Jun-2022	----	----		30-Jun-2022	28 days	2 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_BOCKRD_WS_LAEMP_EVO_2022-06-28_NP	E318	28-Jun-2022	30-Jun-2022	----	----		30-Jun-2022	28 days	2 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_FBLANK_WS_LAEMP_EVO_2022-06-28_NP	E318	28-Jun-2022	30-Jun-2022	----	----		30-Jun-2022	28 days	2 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_GATE_WS_LAEMP_EVO_2022-06-28_NP	E318	28-Jun-2022	30-Jun-2022	----	----		30-Jun-2022	28 days	2 days	✓	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_GATEDP_WS_LAEMP_EVO_2022-06-28_NP	E318	28-Jun-2022	30-Jun-2022	----	----		30-Jun-2022	28 days	2 days	✓	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-06-28_NP	E318	28-Jun-2022	30-Jun-2022	----	----		30-Jun-2022	28 days	2 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_BOCK_WS_LAEMP_EVO_2022-06-28_NP	E372-U	28-Jun-2022	29-Jun-2022	----	----		30-Jun-2022	28 days	2 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_BOCKRD_WS_LAEMP_EVO_2022-06-28_NP	E372-U	28-Jun-2022	29-Jun-2022	----	----		30-Jun-2022	28 days	2 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_FBLANK_WS_LAEMP_EVO_2022-06-28_NP	E372-U	28-Jun-2022	29-Jun-2022	----	----		30-Jun-2022	28 days	2 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_GATE_WS_LAEMP_EVO_2022-06-28_NP	E372-U	28-Jun-2022	29-Jun-2022	----	----		30-Jun-2022	28 days	2 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_GATEDP_WS_LAEMP_EVO_2022-06-28_NP	E372-U	28-Jun-2022	29-Jun-2022	----	----		30-Jun-2022	28 days	2 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-06-28_NP	E372-U	28-Jun-2022	29-Jun-2022	----	----		30-Jun-2022	28 days	2 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)										
HDPE dissolved (nitric acid) RG_BOCK_WS_LAEMP_EVO_2022-06-28_NP	E421.Cr-L	28-Jun-2022	29-Jun-2022	----	----		29-Jun-2022	180 days	1 days	✔
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)										
HDPE dissolved (nitric acid) RG_BOCKRD_WS_LAEMP_EVO_2022-06-28_NP	E421.Cr-L	28-Jun-2022	29-Jun-2022	----	----		29-Jun-2022	180 days	1 days	✔
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)										
HDPE dissolved (nitric acid) RG_FBLANK_WS_LAEMP_EVO_2022-06-28_NP	E421.Cr-L	28-Jun-2022	29-Jun-2022	----	----		29-Jun-2022	180 days	1 days	✔
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)										
HDPE dissolved (nitric acid) RG_GATE_WS_LAEMP_EVO_2022-06-28_NP	E421.Cr-L	28-Jun-2022	29-Jun-2022	----	----		29-Jun-2022	180 days	1 days	✔
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)										
HDPE dissolved (nitric acid) RG_GATEDP_WS_LAEMP_EVO_2022-06-28_NP	E421.Cr-L	28-Jun-2022	29-Jun-2022	----	----		29-Jun-2022	180 days	1 days	✔
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)										
HDPE dissolved (nitric acid) RG_RIVER_WS_LAEMP_EVO_2022-06-28_NP	E421.Cr-L	28-Jun-2022	29-Jun-2022	----	----		29-Jun-2022	180 days	1 days	✔
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid) RG_BOCK_WS_LAEMP_EVO_2022-06-28_NP	E509	28-Jun-2022	30-Jun-2022	----	----		30-Jun-2022	28 days	2 days	✔
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid) RG_BOCKRD_WS_LAEMP_EVO_2022-06-28_NP	E509	28-Jun-2022	30-Jun-2022	----	----		30-Jun-2022	28 days	2 days	✔
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid) RG_FBLANK_WS_LAEMP_EVO_2022-06-28_NP	E509	28-Jun-2022	30-Jun-2022	----	----		30-Jun-2022	28 days	2 days	✔



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_GATE_WS_LAEMP_EVO_2022-06-28_NP	E509	28-Jun-2022	30-Jun-2022	----	----		30-Jun-2022	28 days	2 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_GATEDP_WS_LAEMP_EVO_2022-06-28_NP	E509	28-Jun-2022	30-Jun-2022	----	----		30-Jun-2022	28 days	2 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_RIVER_WS_LAEMP_EVO_2022-06-28_NP	E509	28-Jun-2022	30-Jun-2022	----	----		30-Jun-2022	28 days	2 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_BOCK_WS_LAEMP_EVO_2022-06-28_NP	E421	28-Jun-2022	29-Jun-2022	----	----		29-Jun-2022	180 days	1 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_BOCKRD_WS_LAEMP_EVO_2022-06-28_NP	E421	28-Jun-2022	29-Jun-2022	----	----		29-Jun-2022	180 days	1 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_FBLANK_WS_LAEMP_EVO_2022-06-28_NP	E421	28-Jun-2022	29-Jun-2022	----	----		29-Jun-2022	180 days	1 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_GATE_WS_LAEMP_EVO_2022-06-28_NP	E421	28-Jun-2022	29-Jun-2022	----	----		29-Jun-2022	180 days	1 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_GATEDP_WS_LAEMP_EVO_2022-06-28_NP	E421	28-Jun-2022	29-Jun-2022	----	----		29-Jun-2022	180 days	1 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_RIVER_WS_LAEMP_EVO_2022-06-28_NP	E421	28-Jun-2022	29-Jun-2022	----	----		29-Jun-2022	180 days	1 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_BOCK_WS_LAEMP_EVO_2022-06-28_NP	E358-L	28-Jun-2022	29-Jun-2022	----	----		29-Jun-2022	28 days	1 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_BOCKRD_WS_LAEMP_EVO_2022-06-28_NP	E358-L	28-Jun-2022	29-Jun-2022	----	----		29-Jun-2022	28 days	1 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_FBLANK_WS_LAEMP_EVO_2022-06-28_NP	E358-L	28-Jun-2022	29-Jun-2022	----	----		29-Jun-2022	28 days	1 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_GATE_WS_LAEMP_EVO_2022-06-28_NP	E358-L	28-Jun-2022	29-Jun-2022	----	----		29-Jun-2022	28 days	1 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_GATEDP_WS_LAEMP_EVO_2022-06-28_NP	E358-L	28-Jun-2022	29-Jun-2022	----	----		29-Jun-2022	28 days	1 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-06-28_NP	E358-L	28-Jun-2022	29-Jun-2022	----	----		29-Jun-2022	28 days	1 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_BOCK_WS_LAEMP_EVO_2022-06-28_NP	E355-L	28-Jun-2022	29-Jun-2022	----	----		29-Jun-2022	28 days	1 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_BOCKRD_WS_LAEMP_EVO_2022-06-28_NP	E355-L	28-Jun-2022	29-Jun-2022	----	----		29-Jun-2022	28 days	1 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_FBLANK_WS_LAEMP_EVO_2022-06-28_NP	E355-L	28-Jun-2022	29-Jun-2022	----	----		29-Jun-2022	28 days	1 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_GATE_WS_LAEMP_EVO_2022-06-28_NP	E355-L	28-Jun-2022	29-Jun-2022	----	----		29-Jun-2022	28 days	1 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_GATEDP_WS_LAEMP_EVO_2022-06-28_NP	E355-L	28-Jun-2022	29-Jun-2022	----	----		29-Jun-2022	28 days	1 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-06-28_NP	E355-L	28-Jun-2022	29-Jun-2022	----	----		29-Jun-2022	28 days	1 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-06-28_NP	E283	28-Jun-2022	----	----	----		29-Jun-2022	14 days	1 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-06-28_NP	E283	28-Jun-2022	----	----	----		29-Jun-2022	14 days	1 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-06-28_NP	E283	28-Jun-2022	----	----	----		29-Jun-2022	14 days	1 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_GATE_WS_LAEMP_EVO_2022-06-28_NP	E283	28-Jun-2022	----	----	----		29-Jun-2022	14 days	1 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-06-28_NP	E283	28-Jun-2022	----	----	----		29-Jun-2022	14 days	1 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-06-28_NP	E283	28-Jun-2022	----	----	----		29-Jun-2022	14 days	1 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Alkalinity Species by Titration											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-06-28_NP	E290	28-Jun-2022	----	----	----		29-Jun-2022	14 days	1 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-06-28_NP	E290	28-Jun-2022	----	----	----		29-Jun-2022	14 days	1 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-06-28_NP	E290	28-Jun-2022	----	----	----		29-Jun-2022	14 days	1 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_GATE_WS_LAEMP_EVO_2022-06-28_NP	E290	28-Jun-2022	----	----	----		29-Jun-2022	14 days	1 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-06-28_NP	E290	28-Jun-2022	----	----	----		29-Jun-2022	14 days	1 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-06-28_NP	E290	28-Jun-2022	----	----	----		29-Jun-2022	14 days	1 days	✔	
Physical Tests : Conductivity in Water											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-06-28_NP	E100	28-Jun-2022	----	----	----		29-Jun-2022	28 days	1 days	✔	
Physical Tests : Conductivity in Water											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-06-28_NP	E100	28-Jun-2022	----	----	----		29-Jun-2022	28 days	1 days	✔	
Physical Tests : Conductivity in Water											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-06-28_NP	E100	28-Jun-2022	----	----	----		29-Jun-2022	28 days	1 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Conductivity in Water											
HDPE RG_GATE_WS_LAEMP_EVO_2022-06-28_NP	E100	28-Jun-2022	----	----	----		29-Jun-2022	28 days	1 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-06-28_NP	E100	28-Jun-2022	----	----	----		29-Jun-2022	28 days	1 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-06-28_NP	E100	28-Jun-2022	----	----	----		29-Jun-2022	28 days	1 days	✓	
Physical Tests : ORP by Electrode											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-06-28_NP	E125	28-Jun-2022	----	----	----		30-Jun-2022	0.25 hrs	48 hrs	* EHTR-FM	
Physical Tests : ORP by Electrode											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-06-28_NP	E125	28-Jun-2022	----	----	----		30-Jun-2022	0.25 hrs	48 hrs	* EHTR-FM	
Physical Tests : ORP by Electrode											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-06-28_NP	E125	28-Jun-2022	----	----	----		30-Jun-2022	0.25 hrs	48 hrs	* EHTR-FM	
Physical Tests : ORP by Electrode											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-06-28_NP	E125	28-Jun-2022	----	----	----		30-Jun-2022	0.25 hrs	50 hrs	* EHTR-FM	
Physical Tests : ORP by Electrode											
HDPE RG_GATE_WS_LAEMP_EVO_2022-06-28_NP	E125	28-Jun-2022	----	----	----		30-Jun-2022	0.25 hrs	51 hrs	* EHTR-FM	
Physical Tests : ORP by Electrode											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-06-28_NP	E125	28-Jun-2022	----	----	----		30-Jun-2022	0.25 hrs	51 hrs	* EHTR-FM	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
Rec	Actual	Rec		Actual							
Physical Tests : pH by Meter											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-06-28_NP	E108	28-Jun-2022	----	----	----		29-Jun-2022	0.25 hrs	27 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-06-28_NP	E108	28-Jun-2022	----	----	----		29-Jun-2022	0.25 hrs	27 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-06-28_NP	E108	28-Jun-2022	----	----	----		29-Jun-2022	0.25 hrs	27 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-06-28_NP	E108	28-Jun-2022	----	----	----		29-Jun-2022	0.25 hrs	29 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_GATE_WS_LAEMP_EVO_2022-06-28_NP	E108	28-Jun-2022	----	----	----		29-Jun-2022	0.25 hrs	30 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-06-28_NP	E108	28-Jun-2022	----	----	----		29-Jun-2022	0.25 hrs	30 hrs	*	EHTR-FM
Physical Tests : TDS by Gravimetry											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-06-28_NP	E162	28-Jun-2022	----	----	----		29-Jun-2022	7 days	1 days	✓	
Physical Tests : TDS by Gravimetry											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-06-28_NP	E162	28-Jun-2022	----	----	----		29-Jun-2022	7 days	1 days	✓	
Physical Tests : TDS by Gravimetry											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-06-28_NP	E162	28-Jun-2022	----	----	----		29-Jun-2022	7 days	1 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : TDS by Gravimetry											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-06-28_NP	E162	28-Jun-2022	----	----	----		29-Jun-2022	7 days	1 days	✔	
Physical Tests : TDS by Gravimetry											
HDPE RG_GATE_WS_LAEMP_EVO_2022-06-28_NP	E162	28-Jun-2022	----	----	----		29-Jun-2022	7 days	2 days	✔	
Physical Tests : TDS by Gravimetry											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-06-28_NP	E162	28-Jun-2022	----	----	----		29-Jun-2022	7 days	2 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-06-28_NP	E160-L	28-Jun-2022	----	----	----		30-Jun-2022	7 days	2 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-06-28_NP	E160-L	28-Jun-2022	----	----	----		30-Jun-2022	7 days	2 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-06-28_NP	E160-L	28-Jun-2022	----	----	----		30-Jun-2022	7 days	2 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_GATE_WS_LAEMP_EVO_2022-06-28_NP	E160-L	28-Jun-2022	----	----	----		30-Jun-2022	7 days	2 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-06-28_NP	E160-L	28-Jun-2022	----	----	----		30-Jun-2022	7 days	2 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-06-28_NP	E160-L	28-Jun-2022	----	----	----		30-Jun-2022	7 days	2 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Turbidity by Nephelometry											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-06-28_NP	E121	28-Jun-2022	----	----	----		30-Jun-2022	3 days	2 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-06-28_NP	E121	28-Jun-2022	----	----	----		30-Jun-2022	3 days	2 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-06-28_NP	E121	28-Jun-2022	----	----	----		30-Jun-2022	3 days	2 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_GATE_WS_LAEMP_EVO_2022-06-28_NP	E121	28-Jun-2022	----	----	----		30-Jun-2022	3 days	2 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-06-28_NP	E121	28-Jun-2022	----	----	----		30-Jun-2022	3 days	2 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-06-28_NP	E121	28-Jun-2022	----	----	----		30-Jun-2022	3 days	2 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_BOCK_WS_LAEMP_EVO_2022-06-28_NP	E420.Cr-L	28-Jun-2022	----	----	----		30-Jun-2022	180 days	2 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_BOCKRD_WS_LAEMP_EVO_2022-06-28_NP	E420.Cr-L	28-Jun-2022	----	----	----		30-Jun-2022	180 days	2 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_FBLANK_WS_LAEMP_EVO_2022-06-28_NP	E420.Cr-L	28-Jun-2022	----	----	----		30-Jun-2022	180 days	2 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_GATE_WS_LAEMP_EVO_2022-06-28_NP	E420.Cr-L	28-Jun-2022	----	----	----		30-Jun-2022	180 days	2 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_GATEDP_WS_LAEMP_EVO_2022-06-28_NP	E420.Cr-L	28-Jun-2022	----	----	----		30-Jun-2022	180 days	2 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_RIVER_WS_LAEMP_EVO_2022-06-28_NP	E420.Cr-L	28-Jun-2022	----	----	----		30-Jun-2022	180 days	2 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_BOCK_WS_LAEMP_EVO_2022-06-28_NP	E508	28-Jun-2022	----	----	----		30-Jun-2022	28 days	2 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_BOCKRD_WS_LAEMP_EVO_2022-06-28_NP	E508	28-Jun-2022	----	----	----		30-Jun-2022	28 days	2 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_FBLANK_WS_LAEMP_EVO_2022-06-28_NP	E508	28-Jun-2022	----	----	----		30-Jun-2022	28 days	2 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_GATE_WS_LAEMP_EVO_2022-06-28_NP	E508	28-Jun-2022	----	----	----		30-Jun-2022	28 days	2 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_GATEDP_WS_LAEMP_EVO_2022-06-28_NP	E508	28-Jun-2022	----	----	----		30-Jun-2022	28 days	2 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_RIVER_WS_LAEMP_EVO_2022-06-28_NP	E508	28-Jun-2022	----	----	----		30-Jun-2022	28 days	2 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Total Metals : Total Metals in Water by CRC ICPMS											
HDPE total (nitric acid) RG_BOCK_WS_LAEMP_EVO_2022-06-28_NP	E420	28-Jun-2022	----	----	----		30-Jun-2022	180 days	2 days	✓	
Total Metals : Total Metals in Water by CRC ICPMS											
HDPE total (nitric acid) RG_BOCKRD_WS_LAEMP_EVO_2022-06-28_NP	E420	28-Jun-2022	----	----	----		30-Jun-2022	180 days	2 days	✓	
Total Metals : Total Metals in Water by CRC ICPMS											
HDPE total (nitric acid) RG_FBLANK_WS_LAEMP_EVO_2022-06-28_NP	E420	28-Jun-2022	----	----	----		30-Jun-2022	180 days	2 days	✓	
Total Metals : Total Metals in Water by CRC ICPMS											
HDPE total (nitric acid) RG_GATE_WS_LAEMP_EVO_2022-06-28_NP	E420	28-Jun-2022	----	----	----		30-Jun-2022	180 days	2 days	✓	
Total Metals : Total Metals in Water by CRC ICPMS											
HDPE total (nitric acid) RG_GATEDP_WS_LAEMP_EVO_2022-06-28_NP	E420	28-Jun-2022	----	----	----		30-Jun-2022	180 days	2 days	✓	
Total Metals : Total Metals in Water by CRC ICPMS											
HDPE total (nitric acid) RG_RIVER_WS_LAEMP_EVO_2022-06-28_NP	E420	28-Jun-2022	----	----	----		30-Jun-2022	180 days	2 days	✓	

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended
 Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
Analytical Methods							
Laboratory Duplicates (DUP)							
Acidity by Titration	E283	543491	1	13	7.6	5.0	✓
Alkalinity Species by Titration	E290	543494	1	13	7.6	5.0	✓
Ammonia by Fluorescence	E298	543427	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	543944	1	6	16.6	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	543945	1	6	16.6	5.0	✓
Conductivity in Water	E100	543493	1	13	7.6	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	543498	1	20	5.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	544821	1	6	16.6	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	543497	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	543700	1	13	7.6	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	543465	1	9	11.1	5.0	✓
Fluoride in Water by IC	E235.F	543943	1	6	16.6	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	543946	1	6	16.6	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	543947	1	6	16.6	5.0	✓
ORP by Electrode	E125	544671	1	17	5.8	5.0	✓
pH by Meter	E108	543492	1	13	7.6	5.0	✓
Sulfate in Water by IC	E235.SO4	543948	1	6	16.6	5.0	✓
TDS by Gravimetry	E162	543580	1	11	9.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	543707	1	6	16.6	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	543505	1	9	11.1	5.0	✓
Total Mercury in Water by CVAAS	E508	544820	1	6	16.6	5.0	✓
Total Metals in Water by CRC ICPMS	E420	543706	1	8	12.5	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	543703	1	13	7.6	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	543490	1	8	12.5	5.0	✓
Turbidity by Nephelometry	E121	544945	2	40	5.0	5.0	✓
Laboratory Control Samples (LCS)							
Acidity by Titration	E283	543491	1	13	7.6	5.0	✓
Alkalinity Species by Titration	E290	543494	1	13	7.6	5.0	✓
Ammonia by Fluorescence	E298	543427	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	543944	1	6	16.6	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	543945	1	6	16.6	5.0	✓
Conductivity in Water	E100	543493	1	13	7.6	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	543498	1	20	5.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	544821	1	6	16.6	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	543497	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	543700	1	13	7.6	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	543465	1	9	11.1	5.0	✓



Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
Analytical Methods							
Laboratory Control Samples (LCS) - Continued							
Fluoride in Water by IC	E235.F	543943	1	6	16.6	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	543946	1	6	16.6	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	543947	1	6	16.6	5.0	✓
ORP by Electrode	E125	544671	1	17	5.8	5.0	✓
pH by Meter	E108	543492	1	13	7.6	5.0	✓
Sulfate in Water by IC	E235.SO4	543948	1	6	16.6	5.0	✓
TDS by Gravimetry	E162	543580	1	11	9.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	543707	1	6	16.6	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	543505	1	9	11.1	5.0	✓
Total Mercury in Water by CVAAS	E508	544820	1	6	16.6	5.0	✓
Total Metals in Water by CRC ICPMS	E420	543706	1	8	12.5	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	543703	1	13	7.6	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	543490	1	8	12.5	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	543578	1	11	9.0	5.0	✓
Turbidity by Nephelometry	E121	544945	2	40	5.0	5.0	✓
Method Blanks (MB)							
Acidity by Titration	E283	543491	1	13	7.6	5.0	✓
Alkalinity Species by Titration	E290	543494	1	13	7.6	5.0	✓
Ammonia by Fluorescence	E298	543427	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	543944	1	6	16.6	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	543945	1	6	16.6	5.0	✓
Conductivity in Water	E100	543493	1	13	7.6	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	543498	1	20	5.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	544821	1	6	16.6	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	543497	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	543700	1	13	7.6	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	543465	1	9	11.1	5.0	✓
Fluoride in Water by IC	E235.F	543943	1	6	16.6	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	543946	1	6	16.6	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	543947	1	6	16.6	5.0	✓
Sulfate in Water by IC	E235.SO4	543948	1	6	16.6	5.0	✓
TDS by Gravimetry	E162	543580	1	11	9.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	543707	1	6	16.6	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	543505	1	9	11.1	5.0	✓
Total Mercury in Water by CVAAS	E508	544820	1	6	16.6	5.0	✓
Total Metals in Water by CRC ICPMS	E420	543706	1	8	12.5	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	543703	1	13	7.6	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	543490	1	8	12.5	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	543578	1	11	9.0	5.0	✓
Turbidity by Nephelometry	E121	544945	2	40	5.0	5.0	✓



Matrix: **Water**

Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
<i>Analytical Methods</i>							
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	543427	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	543944	1	6	16.6	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	543945	1	6	16.6	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	543498	1	20	5.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	544821	1	6	16.6	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	543497	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	543700	1	13	7.6	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	543465	1	9	11.1	5.0	✓
Fluoride in Water by IC	E235.F	543943	1	6	16.6	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	543946	1	6	16.6	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	543947	1	6	16.6	5.0	✓
Sulfate in Water by IC	E235.SO4	543948	1	6	16.6	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	543707	1	6	16.6	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	543505	1	9	11.1	5.0	✓
Total Mercury in Water by CVAAS	E508	544820	1	6	16.6	5.0	✓
Total Metals in Water by CRC ICPMS	E420	543706	1	8	12.5	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	543703	1	13	7.6	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	543490	1	8	12.5	5.0	✓



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 Calgary - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 Calgary - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 Calgary - Environmental	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
ORP by Electrode	E125 Calgary - Environmental	Water	ASTM D1498 (mod)	Oxidation reduction potential is reported as the oxidation-reduction potential of the platinum metal-reference electrode employed, measured in mV. For high accuracy test results, it is recommended that this analysis be conducted in the field.
TSS by Gravimetry (Low Level)	E160-L Calgary - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 Calgary - Environmental	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC (Low Level)	E235.Cl-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Acidity by Titration	E283 Calgary - Environmental	Water	APHA 2310 B (mod)	Acidity is determined by potentiometric titration to pH endpoint of 8.3



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Alkalinity Species by Titration	E290 Calgary - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 Calgary - Environmental	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 Calgary - Environmental	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L Calgary - Environmental	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Dissolved Organic Carbon by Combustion (Low Level)	E358-L Calgary - Environmental	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U Calgary - Environmental	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U Calgary - Environmental	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Total Metals in Water by CRC ICPMS	E420 Calgary - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L Calgary - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS.
Dissolved Metals in Water by CRC ICPMS	E421 Calgary - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L Calgary - Environmental	Water	APHA 3030 B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS
Total Mercury in Water by CVAAS	E508 Calgary - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS
Dissolved Mercury in Water by CVAAS	E509 Calgary - Environmental	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
Dissolved Hardness (Calculated)	EC100 Calgary - Environmental	Water	APHA 2340B	"Hardness (as CaCO ₃), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Ion Balance using Dissolved Metals	EC101 Calgary - Environmental	Water	APHA 1030E	Cation Sum, Anion Sum, and Ion Balance are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present. Ion Balance cannot be calculated accurately for waters with very low electrical conductivity (EC).

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 Calgary - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 Calgary - Environmental	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Preparation for Total Organic Carbon by Combustion	EP355 Calgary - Environmental	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon for Combustion	EP358 Calgary - Environmental	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Phosphorus in water	EP372 Calgary - Environmental	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Dissolved Metals Water Filtration	EP421 Calgary - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO ₃ .
Dissolved Mercury Water Filtration	EP509 Calgary - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.



QUALITY CONTROL REPORT

Work Order : CG2208367
Client : Teck Coal Limited
Contact : Mike Pope
Address : 421 Pine Avenue
Sparwood BC Canada V0B2G0
Telephone : ---
Project : Regional Effects Program
PO : VPO00816101
C-O-C number : June EVO LAEMP 2022
Sampler : ---
Site : ---
Quote number : Teck Coal Master Quote
No. of samples received : 6
No. of samples analysed : 6

Page : 1 of 18
Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
Calgary, Alberta Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 29-Jun-2022 08:50
Date Analysis Commenced : 29-Jun-2022
Issue Date : 02-Jul-2022 14:33

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
Matrix Spike (MS) Report; Recovery and Data Quality Objectives
Method Blank (MB) Report; Recovery and Data Quality Objectives
Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Table with 3 columns: Signatories, Position, Laboratory Department. Lists names like Anthony Calero, Dwayne Bennett, Elke Tabora, Harpreet Chawla, Mackenzie Lamoureux, Parker Sgarbossa, Ruifang Zheng, Shirley Li, Summie Lo and their respective roles and departments.

Page : 2 of 18
Work Order : CG2208367
Client : Teck Coal Limited
Project : Regional Effects Program



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 543491)											
CG2208316-006	Anonymous	acidity (as CaCO ₃)	----	E283	2.0	mg/L	<2.0	<2.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 543492)											
CG2208316-006	Anonymous	pH	----	E108	0.10	pH units	8.02	8.03	0.125%	4%	----
Physical Tests (QC Lot: 543493)											
CG2208316-006	Anonymous	conductivity	----	E100	2.0	µS/cm	513	507	1.18%	10%	----
Physical Tests (QC Lot: 543494)											
CG2208316-006	Anonymous	alkalinity, bicarbonate (as CaCO ₃)	----	E290	1.0	mg/L	156	167	6.69%	20%	----
		alkalinity, carbonate (as CaCO ₃)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, hydroxide (as CaCO ₃)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, total (as CaCO ₃)	----	E290	1.0	mg/L	156	167	6.69%	20%	----
Physical Tests (QC Lot: 543580)											
CG2208329-001	Anonymous	solids, total dissolved [TDS]	----	E162	20	mg/L	550	566	2.96%	20%	----
Physical Tests (QC Lot: 544671)											
CG2208200-001	Anonymous	oxidation-reduction potential [ORP]	----	E125	0.10	mV	356	348	2.47%	15%	----
Physical Tests (QC Lot: 544945)											
CG2208329-001	Anonymous	turbidity	----	E121	0.10	NTU	4.53	4.34	4.28%	15%	----
Physical Tests (QC Lot: 545122)											
CG2208332-002	Anonymous	turbidity	----	E121	0.10	NTU	3.21	2.90	10.2%	15%	----
Anions and Nutrients (QC Lot: 543427)											
CG2208316-006	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 543465)											
CG2208164-006	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0038	0.0038	0.00005	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 543490)											
CG2208329-001	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0165	0.0156	0.0009	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 543505)											
CG2208064-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	0.143	0.138	0.005	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 543943)											
CG2208367-001	RG_GATE_WS_LAEMP_E VO_2022-06-28_NP	fluoride	16984-48-8	E235.F	0.100	mg/L	0.208	0.213	0.005	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 543944)											
CG2208367-001	RG_GATE_WS_LAEMP_E VO_2022-06-28_NP	bromide	24959-67-9	E235.Br-L	0.250	mg/L	0.411	0.413	0.002	Diff <2x LOR	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 543945)											
CG2208367-001	RG_GATE_WS_LAEMP_E VO_2022-06-28_NP	chloride	16887-00-6	E235.Cl-L	0.50	mg/L	12.4	12.2	1.16%	20%	----
Anions and Nutrients (QC Lot: 543946)											
CG2208367-001	RG_GATE_WS_LAEMP_E VO_2022-06-28_NP	nitrate (as N)	14797-55-8	E235.NO3-L	0.0250	mg/L	7.66	7.59	0.939%	20%	----
Anions and Nutrients (QC Lot: 543947)											
CG2208367-001	RG_GATE_WS_LAEMP_E VO_2022-06-28_NP	nitrite (as N)	14797-65-0	E235.NO2-L	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 543948)											
CG2208367-001	RG_GATE_WS_LAEMP_E VO_2022-06-28_NP	sulfate (as SO4)	14808-79-8	E235.SO4	1.50	mg/L	940	928	1.29%	20%	----
Organic / Inorganic Carbon (QC Lot: 543700)											
CG2208316-006	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	1.16	1.13	0.03	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 543703)											
CG2208316-006	Anonymous	carbon, total organic [TOC]	----	E355-L	0.50	mg/L	1.80	1.66	0.14	Diff <2x LOR	----
Total Metals (QC Lot: 543706)											
CG2208367-001	RG_GATE_WS_LAEMP_E VO_2022-06-28_NP	aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0144	0.0129	0.0015	Diff <2x LOR	----
		antimony, total	7440-36-0	E420	0.00010	mg/L	0.00076	0.00072	0.00004	Diff <2x LOR	----
		arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00041	0.00041	0.000004	Diff <2x LOR	----
		barium, total	7440-39-3	E420	0.00010	mg/L	0.418	0.418	0.0294%	20%	----
		beryllium, total	7440-41-7	E420	0.000020	mg/L	<0.020 µg/L	<0.000020	0	Diff <2x LOR	----
		bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, total	7440-42-8	E420	0.010	mg/L	0.043	0.041	0.002	Diff <2x LOR	----
		cadmium, total	7440-43-9	E420	0.0000050	mg/L	0.248 µg/L	0.000249	0.104%	20%	----
		calcium, total	7440-70-2	E420	0.050	mg/L	238	237	0.368%	20%	----
		cobalt, total	7440-48-4	E420	0.00010	mg/L	0.19 µg/L	0.00018	0.00001	Diff <2x LOR	----
		copper, total	7440-50-8	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		iron, total	7439-89-6	E420	0.010	mg/L	0.131	0.130	0.577%	20%	----
		lead, total	7439-92-1	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		lithium, total	7439-93-2	E420	0.0010	mg/L	0.106	0.107	0.726%	20%	----
		magnesium, total	7439-95-4	E420	0.0050	mg/L	158	158	0.497%	20%	----
		manganese, total	7439-96-5	E420	0.00010	mg/L	0.00666	0.00652	2.16%	20%	----
		molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.0128	0.0127	0.392%	20%	----
		nickel, total	7440-02-0	E420	0.00050	mg/L	0.0297	0.0296	0.123%	20%	----
		potassium, total	7440-09-7	E420	0.050	mg/L	4.78	4.78	0.110%	20%	----
		selenium, total	7782-49-2	E420	0.000050	mg/L	98.0 µg/L	0.0983	0.319%	20%	----
		silicon, total	7440-21-3	E420	0.10	mg/L	2.93	2.92	0.346%	20%	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (QC Lot: 543706) - continued											
CG2208367-001	RG_GATE_WS_LAEMP_E VO_2022-06-28_NP	silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, total	7440-23-5	E420	0.050	mg/L	8.32	8.37	0.610%	20%	----
		strontium, total	7440-24-6	E420	0.00020	mg/L	0.568	0.568	0.0570%	20%	----
		sulfur, total	7704-34-9	E420	0.50	mg/L	254	253	0.288%	20%	----
		thallium, total	7440-28-0	E420	0.000010	mg/L	0.000058	0.000053	0.000005	Diff <2x LOR	----
		tin, total	7440-31-5	E420	0.00010	mg/L	0.00025	<0.00010	0.00015	Diff <2x LOR	----
		titanium, total	7440-32-6	E420	0.00030	mg/L	0.00071	0.00036	0.00034	Diff <2x LOR	----
		uranium, total	7440-61-1	E420	0.000010	mg/L	0.0113	0.0112	0.751%	20%	----
		vanadium, total	7440-62-2	E420	0.00050	mg/L	0.00055	0.00055	0.000002	Diff <2x LOR	----
		zinc, total	7440-66-6	E420	0.0030	mg/L	0.0115	0.0115	0.00003	Diff <2x LOR	----
Total Metals (QC Lot: 543707)											
CG2208367-001	RG_GATE_WS_LAEMP_E VO_2022-06-28_NP	chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	0.00010	<0.00010	0.000002	Diff <2x LOR	----
Total Metals (QC Lot: 544820)											
CG2208367-001	RG_GATE_WS_LAEMP_E VO_2022-06-28_NP	mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 543497)											
CG2208050-001	Anonymous	aluminum, dissolved	7429-90-5	E421	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----
		antimony, dissolved	7440-36-0	E421	0.00020	mg/L	0.00122	0.00120	0.00003	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E421	0.00020	mg/L	0.00022	<0.00020	0.00002	Diff <2x LOR	----
		barium, dissolved	7440-39-3	E421	0.00020	mg/L	0.0761	0.0746	1.98%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.000040	mg/L	<0.040 µg/L	<0.000040	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.020	mg/L	0.032	0.032	0.0006	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E421	0.0000100	mg/L	0.0515 µg/L	0.0000442	0.0000073	Diff <2x LOR	----
		calcium, dissolved	7440-70-2	E421	0.100	mg/L	320	310	3.21%	20%	----
		cobalt, dissolved	7440-48-4	E421	0.00020	mg/L	0.22 µg/L	0.00023	0.00001	Diff <2x LOR	----
		copper, dissolved	7440-50-8	E421	0.00040	mg/L	0.00047	0.00042	0.00005	Diff <2x LOR	----
		iron, dissolved	7439-89-6	E421	0.020	mg/L	<0.020	<0.020	0	Diff <2x LOR	----
		lead, dissolved	7439-92-1	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0020	mg/L	0.153	0.148	3.31%	20%	----
		magnesium, dissolved	7439-95-4	E421	0.0100	mg/L	223	220	1.12%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00020	mg/L	0.00064	0.00067	0.00003	Diff <2x LOR	----
		molybdenum, dissolved	7439-98-7	E421	0.000100	mg/L	0.00742	0.00710	4.40%	20%	----
		nickel, dissolved	7440-02-0	E421	0.00100	mg/L	0.0666	0.0654	1.91%	20%	----
		potassium, dissolved	7440-09-7	E421	0.100	mg/L	5.00	4.97	0.672%	20%	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 543497) - continued											
CG2208050-001	Anonymous	selenium, dissolved	7782-49-2	E421	0.000100	mg/L	294 µg/L	0.291	1.35%	20%	----
		silicon, dissolved	7440-21-3	E421	0.100	mg/L	3.36	3.31	1.54%	20%	----
		silver, dissolved	7440-22-4	E421	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E421	0.100	mg/L	21.7	21.4	1.04%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00040	mg/L	0.788	0.774	1.86%	20%	----
		sulfur, dissolved	7704-34-9	E421	1.00	mg/L	412	398	3.53%	20%	----
		thallium, dissolved	7440-28-0	E421	0.000020	mg/L	0.000023	0.000023	0.0000003	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.00060	mg/L	<0.00060	<0.00060	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000020	mg/L	0.0143	0.0140	2.36%	20%	----
		vanadium, dissolved	7440-62-2	E421	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E421	0.0020	mg/L	0.0026	0.0029	0.0002	Diff <2x LOR	----
Dissolved Metals (QC Lot: 543498)											
CG2208050-001	Anonymous	chromium, dissolved	7440-47-3	E421.Cr-L	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 544821)											
CG2208367-001	RG_GATE_WS_LAEMP_E VO_2022-06-28_NP	mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 543491)						
acidity (as CaCO3)	----	E283	2	mg/L	2.2	----
Physical Tests (QCLot: 543493)						
conductivity	----	E100	1	µS/cm	<1.0	----
Physical Tests (QCLot: 543494)						
alkalinity, bicarbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, carbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, hydroxide (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 543578)						
solids, total suspended [TSS]	----	E160-L	1	mg/L	<1.0	----
Physical Tests (QCLot: 543580)						
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 544945)						
turbidity	----	E121	0.1	NTU	<0.10	----
Physical Tests (QCLot: 545122)						
turbidity	----	E121	0.1	NTU	<0.10	----
Anions and Nutrients (QCLot: 543427)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 543465)						
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 543490)						
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 543505)						
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 543943)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 543944)						
bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 543945)						
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	----
Anions and Nutrients (QCLot: 543946)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 543947)						



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 543947) - continued						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	---
Anions and Nutrients (QCLot: 543948)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	---
Organic / Inorganic Carbon (QCLot: 543700)						
carbon, dissolved organic [DOC]	---	E358-L	0.5	mg/L	<0.50	---
Organic / Inorganic Carbon (QCLot: 543703)						
carbon, total organic [TOC]	---	E355-L	0.5	mg/L	<0.50	---
Total Metals (QCLot: 543706)						
aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	---
antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	---
arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	---
barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	---
beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	---
bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	---
boron, total	7440-42-8	E420	0.01	mg/L	<0.010	---
cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	---
calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	---
cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	---
copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	---
iron, total	7439-89-6	E420	0.01	mg/L	<0.010	---
lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	---
lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	---
magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	---
manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	---
molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	---
nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	---
potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	---
selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	---
silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	---
silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	---
sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	---
strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	---
sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	---
thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	---
tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	---
titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	---



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 543706) - continued						
uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	---
vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	---
zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	---
Total Metals (QCLot: 543707)						
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	<0.00010	---
Total Metals (QCLot: 544820)						
mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	---
Dissolved Metals (QCLot: 543497)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	---
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	---
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	---
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	---
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	---
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	---
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	---
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	---
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	---
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	---
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	---
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	---
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	---
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	---
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	---
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	---
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	---
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	---
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	---
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	---
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	---
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	---
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	---
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	---
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	---
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	---
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	---
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	---



Sub-Matrix: **Water**

<i>Analyte</i>	<i>CAS Number</i>	<i>Method</i>	<i>LOR</i>	<i>Unit</i>	<i>Result</i>	<i>Qualifier</i>
Dissolved Metals (QCLot: 543497) - continued						
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
Dissolved Metals (QCLot: 543498)						
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	<0.00010	----
Dissolved Metals (QCLot: 544821)						
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Physical Tests (QCLot: 543491)									
acidity (as CaCO3)	---	E283	2	mg/L	50 mg/L	104	85.0	115	---
Physical Tests (QCLot: 543492)									
pH	---	E108	---	pH units	7 pH units	99.4	98.6	101	---
Physical Tests (QCLot: 543493)									
conductivity	---	E100	1	µS/cm	146.9 µS/cm	99.9	90.0	110	---
Physical Tests (QCLot: 543494)									
alkalinity, total (as CaCO3)	---	E290	1	mg/L	500 mg/L	102	85.0	115	---
Physical Tests (QCLot: 543578)									
solids, total suspended [TSS]	---	E160-L	1	mg/L	150 mg/L	91.8	85.0	115	---
Physical Tests (QCLot: 543580)									
solids, total dissolved [TDS]	---	E162	10	mg/L	1000 mg/L	98.8	85.0	115	---
Physical Tests (QCLot: 544671)									
oxidation-reduction potential [ORP]	---	E125	---	mV	220 mV	102	95.4	104	---
Physical Tests (QCLot: 544945)									
turbidity	---	E121	0.1	NTU	200 NTU	103	85.0	115	---
Physical Tests (QCLot: 545122)									
turbidity	---	E121	0.1	NTU	200 NTU	102	85.0	115	---
Anions and Nutrients (QCLot: 543427)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	101	85.0	115	---
Anions and Nutrients (QCLot: 543465)									
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.02 mg/L	103	80.0	120	---
Anions and Nutrients (QCLot: 543490)									
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	8.02 mg/L	88.6	80.0	120	---
Anions and Nutrients (QCLot: 543505)									
Kjeldahl nitrogen, total [TKN]	---	E318	0.05	mg/L	4 mg/L	98.2	75.0	125	---
Anions and Nutrients (QCLot: 543943)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	100	90.0	110	---
Anions and Nutrients (QCLot: 543944)									
bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	96.9	85.0	115	---
Anions and Nutrients (QCLot: 543945)									
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	100	90.0	110	---
Anions and Nutrients (QCLot: 543946)									



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Anions and Nutrients (QCLot: 543946) - continued									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	103	90.0	110	----
Anions and Nutrients (QCLot: 543947)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	104	90.0	110	----
Anions and Nutrients (QCLot: 543948)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	105	90.0	110	----
Organic / Inorganic Carbon (QCLot: 543700)									
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	86.1	80.0	120	----
Organic / Inorganic Carbon (QCLot: 543703)									
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	92.2	80.0	120	----
Total Metals (QCLot: 543706)									
aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	96.3	80.0	120	----
antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	99.8	80.0	120	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	96.9	80.0	120	----
barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	105	80.0	120	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	94.2	80.0	120	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	97.5	80.0	120	----
boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	96.0	80.0	120	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	94.5	80.0	120	----
calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	98.4	80.0	120	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	95.3	80.0	120	----
copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	91.9	80.0	120	----
iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	110	80.0	120	----
lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	99.5	80.0	120	----
lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	101	80.0	120	----
magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	95.0	80.0	120	----
manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	95.8	80.0	120	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	100	80.0	120	----
nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	94.7	80.0	120	----
potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	98.0	80.0	120	----
selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	90.5	80.0	120	----
silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	94.6	60.0	140	----
silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	109	80.0	120	----
sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	97.2	80.0	120	----
strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	100	80.0	120	----
sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	97.9	80.0	120	----



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Total Metals (QCLot: 543706) - continued									
thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	98.5	80.0	120	----
tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	97.2	80.0	120	----
titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	96.5	80.0	120	----
uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	98.9	80.0	120	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	99.2	80.0	120	----
zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	96.3	80.0	120	----
Total Metals (QCLot: 543707)									
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	0.25 mg/L	99.6	80.0	120	----
Total Metals (QCLot: 544820)									
mercury, total	7439-97-6	E508	0.000005	mg/L	0.0001 mg/L	97.8	80.0	120	----
Dissolved Metals (QCLot: 543497)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	106	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	102	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	99.3	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	101	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	105	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	102	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	105	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	99.8	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	105	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	102	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	101	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	99.6	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	103	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	105	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	108	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	105	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	106	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	100	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	101	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	98.4	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	102	60.0	140	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	117	80.0	120	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	103	80.0	120	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	100	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	95.3	80.0	120	----



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 543497) - continued									
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	103	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	101	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	103	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	105	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	104	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	99.3	80.0	120	----
Dissolved Metals (QCLot: 543498)									
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	0.25 mg/L	102	80.0	120	----
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	98.2	80.0	120	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 543427)										
CG2208316-007	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0997 mg/L	0.1 mg/L	99.7	75.0	125	----
Anions and Nutrients (QCLot: 543465)										
CG2208164-007	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0470 mg/L	0.05 mg/L	94.0	70.0	130	----
Anions and Nutrients (QCLot: 543490)										
CG2208329-002	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0531 mg/L	0.0676 mg/L	78.6	70.0	130	----
Anions and Nutrients (QCLot: 543505)										
CG2208064-002	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.44 mg/L	2.5 mg/L	97.5	70.0	130	----
Anions and Nutrients (QCLot: 543943)										
CG2208367-002	RG_GATEDP_WS_LAEMP_EVO_2022-06-28_NP	fluoride	16984-48-8	E235.F	0.837 mg/L	1 mg/L	83.7	75.0	125	----
Anions and Nutrients (QCLot: 543944)										
CG2208367-002	RG_GATEDP_WS_LAEMP_EVO_2022-06-28_NP	bromide	24959-67-9	E235.Br-L	0.484 mg/L	0.5 mg/L	96.8	75.0	125	----
Anions and Nutrients (QCLot: 543945)										
CG2208367-002	RG_GATEDP_WS_LAEMP_EVO_2022-06-28_NP	chloride	16887-00-6	E235.Cl-L	93.9 mg/L	100 mg/L	93.9	75.0	125	----
Anions and Nutrients (QCLot: 543946)										
CG2208367-002	RG_GATEDP_WS_LAEMP_EVO_2022-06-28_NP	nitrate (as N)	14797-55-8	E235.NO3-L	ND mg/L	2.5 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 543947)										
CG2208367-002	RG_GATEDP_WS_LAEMP_EVO_2022-06-28_NP	nitrite (as N)	14797-65-0	E235.NO2-L	0.489 mg/L	0.5 mg/L	97.8	75.0	125	----
Anions and Nutrients (QCLot: 543948)										
CG2208367-002	RG_GATEDP_WS_LAEMP_EVO_2022-06-28_NP	sulfate (as SO4)	14808-79-8	E235.SO4	ND mg/L	100 mg/L	ND	75.0	125	----
Organic / Inorganic Carbon (QCLot: 543700)										
CG2208316-006	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	4.58 mg/L	5 mg/L	91.7	70.0	130	----
Organic / Inorganic Carbon (QCLot: 543703)										
CG2208316-006	Anonymous	carbon, total organic [TOC]	----	E355-L	4.52 mg/L	5 mg/L	90.5	70.0	130	----
Total Metals (QCLot: 543706)										
CG2208367-001	RG_GATE_WS_LAEMP_EV_O_2022-06-28_NP	aluminum, total	7429-90-5	E420	2.26 mg/L	2 mg/L	113	70.0	130	----
		antimony, total	7440-36-0	E420	0.217 mg/L	0.2 mg/L	108	70.0	130	----



Sub-Matrix: **Water**


					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 543706) - continued										
CG2208367-001	RG_GATE_WS_LAEMP_EV O_2022-06-28_NP	arsenic, total	7440-38-2	E420	0.221 mg/L	0.2 mg/L	110	70.0	130	----
		barium, total	7440-39-3	E420	ND mg/L	0.2 mg/L	ND	70.0	130	----
		beryllium, total	7440-41-7	E420	0.416 mg/L	0.4 mg/L	104	70.0	130	----
		bismuth, total	7440-69-9	E420	0.111 mg/L	0.1 mg/L	111	70.0	130	----
		boron, total	7440-42-8	E420	1.18 mg/L	1 mg/L	118	70.0	130	----
		cadmium, total	7440-43-9	E420	0.0462 mg/L	0.04 mg/L	116	70.0	130	----
		calcium, total	7440-70-2	E420	ND mg/L	40 mg/L	ND	70.0	130	----
		cobalt, total	7440-48-4	E420	0.229 mg/L	0.2 mg/L	115	70.0	130	----
		copper, total	7440-50-8	E420	0.221 mg/L	0.2 mg/L	110	70.0	130	----
		iron, total	7439-89-6	E420	23.1 mg/L	20 mg/L	116	70.0	130	----
		lead, total	7439-92-1	E420	0.225 mg/L	0.2 mg/L	112	70.0	130	----
		lithium, total	7439-93-2	E420	1.07 mg/L	1 mg/L	107	70.0	130	----
		magnesium, total	7439-95-4	E420	ND mg/L	10 mg/L	ND	70.0	130	----
		manganese, total	7439-96-5	E420	0.230 mg/L	0.2 mg/L	115	70.0	130	----
		molybdenum, total	7439-98-7	E420	0.228 mg/L	0.2 mg/L	114	70.0	130	----
		nickel, total	7440-02-0	E420	0.460 mg/L	0.4 mg/L	115	70.0	130	----
		potassium, total	7440-09-7	E420	45.0 mg/L	40 mg/L	112	70.0	130	----
		selenium, total	7782-49-2	E420	0.501 mg/L	0.4 mg/L	125	70.0	130	----
		silicon, total	7440-21-3	E420	109 mg/L	100 mg/L	109	70.0	130	----
		silver, total	7440-22-4	E420	0.0464 mg/L	0.04 mg/L	116	70.0	130	----
sodium, total	7440-23-5	E420	23.6 mg/L	20 mg/L	118	70.0	130	----		
strontium, total	7440-24-6	E420	ND mg/L	0.2 mg/L	ND	70.0	130	----		
sulfur, total	7704-34-9	E420	ND mg/L	200 mg/L	ND	70.0	130	----		
thallium, total	7440-28-0	E420	0.0426 mg/L	0.04 mg/L	106	70.0	130	----		
tin, total	7440-31-5	E420	0.230 mg/L	0.2 mg/L	115	70.0	130	----		
titanium, total	7440-32-6	E420	0.452 mg/L	0.4 mg/L	113	70.0	130	----		
uranium, total	7440-61-1	E420	0.0448 mg/L	0.04 mg/L	112	70.0	130	----		
vanadium, total	7440-62-2	E420	1.14 mg/L	1 mg/L	114	70.0	130	----		
zinc, total	7440-66-6	E420	4.54 mg/L	4 mg/L	114	70.0	130	----		
Total Metals (QCLot: 543707)										
CG2208367-001	RG_GATE_WS_LAEMP_EV O_2022-06-28_NP	chromium, total	7440-47-3	E420.Cr-L	0.454 mg/L	0.4 mg/L	114	70.0	130	----
Total Metals (QCLot: 544820)										
CG2208367-002	RG_GATEDP_WS_LAEMP_ EVO_2022-06-28_NP	mercury, total	7439-97-6	E508	0.000101 mg/L	0.0001 mg/L	101	70.0	130	----
Dissolved Metals (QCLot: 543497)										
CG2208050-002	Anonymous	aluminum, dissolved	7429-90-5	E421	1.94 mg/L	2 mg/L	97.2	70.0	130	----



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 543497) - continued										
CG2208050-002	Anonymous	antimony, dissolved	7440-36-0	E421	0.204 mg/L	0.2 mg/L	102	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.191 mg/L	0.2 mg/L	95.4	70.0	130	----
		barium, dissolved	7440-39-3	E421	0.193 mg/L	0.2 mg/L	96.6	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.394 mg/L	0.4 mg/L	98.4	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.0961 mg/L	0.1 mg/L	96.1	70.0	130	----
		boron, dissolved	7440-42-8	E421	1.09 mg/L	1 mg/L	109	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.0384 mg/L	0.04 mg/L	96.1	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	40 mg/L	ND	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.194 mg/L	0.2 mg/L	96.9	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.192 mg/L	0.2 mg/L	96.3	70.0	130	----
		iron, dissolved	7439-89-6	E421	19.2 mg/L	20 mg/L	96.2	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.198 mg/L	0.2 mg/L	99.0	70.0	130	----
		lithium, dissolved	7439-93-2	E421	1.03 mg/L	1 mg/L	103	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	10 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E421	0.196 mg/L	0.2 mg/L	97.8	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.209 mg/L	0.2 mg/L	104	70.0	130	----
		nickel, dissolved	7440-02-0	E421	0.383 mg/L	0.4 mg/L	95.8	70.0	130	----
		potassium, dissolved	7440-09-7	E421	38.3 mg/L	40 mg/L	95.7	70.0	130	----
		selenium, dissolved	7782-49-2	E421	0.391 mg/L	0.4 mg/L	97.7	70.0	130	----
		silicon, dissolved	7440-21-3	E421	97.7 mg/L	100 mg/L	97.7	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.0420 mg/L	0.04 mg/L	105	70.0	130	----
		sodium, dissolved	7440-23-5	E421	19.2 mg/L	20 mg/L	95.9	70.0	130	----
		strontium, dissolved	7440-24-6	E421	ND mg/L	0.2 mg/L	ND	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	ND mg/L	200 mg/L	ND	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.0395 mg/L	0.04 mg/L	98.7	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.198 mg/L	0.2 mg/L	99.2	70.0	130	----
		titanium, dissolved	7440-32-6	E421	0.411 mg/L	0.4 mg/L	103	70.0	130	----
		uranium, dissolved	7440-61-1	E421	0.0396 mg/L	0.04 mg/L	99.0	70.0	130	----
		vanadium, dissolved	7440-62-2	E421	0.991 mg/L	1 mg/L	99.1	70.0	130	----
		zinc, dissolved	7440-66-6	E421	3.84 mg/L	4 mg/L	96.0	70.0	130	----
Dissolved Metals (QCLot: 543498)										
CG2208050-002	Anonymous	chromium, dissolved	7440-47-3	E421.Cr-L	0.389 mg/L	0.4 mg/L	97.3	70.0	130	----
Dissolved Metals (QCLot: 544821)										
CG2208367-002	RG_GATEDP_WS_LAEMP_EVO_2022-06-28_NP	mercury, dissolved	7439-97-6	E509	0.000104 mg/L	0.0001 mg/L	104	70.0	130	----



COC ID:		June EVO LAEMP 2022				TURNAROUND TIME:		RUSH						
PROJECT/CLIENT INFO						LABORATORY								
Facility Name / Job#	Regional effects program					Lab Name	ALS Calgary		Excel PDF EDD					
Project Manager	Mike Pope					Lab Contact	Lyudmyla Shvets							
Email	m.pope@teck.com					Email	lyudmyla.shvets@alsglobal.com							
Address	421 Pine Avenue					Address	2559 29 Street NE							
City	Sparwood			Province	BC	City	Calgary	Province	AB					
Postal Code	V0B 2G0			Country	Canada	Postal Code	T1Y 7B5	Country	Canada					
Phone Number	343-333-3905					Phone Number	1 403 407 1794							
SAMPLE DETAILS						ANALYSIS REQUESTED								
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	TECKCOAL-ROUTINE-VA	ALS_Package-DOC	ALS_Package-TKN/TOC	IG-T-U-CVAF-VA	HG-D-CVAF-VA	TECKCOAL-MET-T-VA	TECKCOAL-MET-B-VA
RG_GATE_WS_LAEMP_EVO_2022-06-28_NP	RG_GATE	WS	No	6/28/2022	8:30	G	7	X	X	X	X	X	X	X
RG_GATEDP_WS_LAEMP_EVO_2022-06-28_NP	RG_GATE	WS	No	6/28/2022	8:00	G	7							
RG_BOCK_WS_LAEMP_EVO_2022-06-28_NP	RG_GATE	WS	No	6/28/2022	9:30	G	7	X	X	X	X	X	X	X
RG_BOCKRD_WS_LAEMP_EVO_2022-06-28_NP	RG_GATE	WS	No	6/28/2022	11:00	G	7	X	X	X	X	X	X	X
RG_RIVER_WS_LAEMP_EVO_2022-06-28_NP	RG_RIVER	WS	No	6/28/2022	11:00	G	7	X	X	X	X	X	X	X
RG_FBLANK_WS_LAEMP_EVO_2022-06-28_NP	RG_FBLANK	WS	No	6/28/2022	11:00	G	7							
ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS				RELINQUISHED BY/AFFILIATION		DATE/TIME		ACCEPTED BY/AFFILIATION						
ALS PO VPO00816101				Robin Valteau		June 28/2022		 6/29 8:50						
NO OF BOTTLES RETURNED/DESCRIPTION				Sampler's Name		DATE/TIME		Mobile #						
Regular (default)				Robin Valteau		June 28/2022		416-970-7535						
Priority (2-3 business days) - 50% surcharge				Sampler's Signature				Date/Time						
Emergency (1 Business Day) - 100% surcharge X								June 28/2022						
For Emergency <1 Day, ASAP or Weekend - Contact ALS														

Environmental Division
 Calgary
 Work Order Reference
CG2208367



Telephone : +1 403 407 1800

13c

CERTIFICATE OF ANALYSIS

Work Order : **CG2208549**
Client : **Teck Coal Limited**
Contact : Mike Pope
Address : 421 PINE AVE
 Sparwood BC Canada V0B 2G0
Telephone : ----
Project : ELKVIEW OPERATION
PO : VPO00816101
C-O-C number : June EVO LARMP 2022
Sampler : RV
Site : ----
Quote number : Teck Coal Master Quote
No. of samples received : 1
No. of samples analysed : 1

Page : 1 of 6
Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
 Calgary AB Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 02-Jul-2022 10:30
Date Analysis Commenced : 02-Jul-2022
Issue Date : 07-Jul-2022 11:20

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Anthony Calero	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Erin Sanchez		Metals, Burnaby, British Columbia
Harpreet Chawla	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Owen Cheng		Metals, Burnaby, British Columbia
Robin Weeks	Team Leader - Metals	Metals, Burnaby, British Columbia
Sara Niroomand		Inorganics, Calgary, Alberta



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

<i>Unit</i>	<i>Description</i>
-	No Unit
%	percent
µg/L	micrograms per litre
µS/cm	Microsiemens per centimetre
meq/L	milliequivalents per litre
mg/L	milligrams per litre
mV	millivolts
NTU	nephelometric turbidity units
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.



Analytical Results

Sub-Matrix: Water					Client sample ID	EV_MC3a_WS_	----	----	----	----
(Matrix: Water)						LAEMP_EVO_2				
					Client sampling date / time	29-Jun-2022	---	---	---	---
						13:30				
Analyte	CAS Number	Method	LOR	Unit	CG2208549-001	-----	-----	-----	-----	-----
					Result	---	---	---	---	---
Physical Tests										
acidity (as CaCO3)	---	E283	2.0	mg/L	<2.0	---	---	---	---	---
alkalinity, bicarbonate (as CaCO3)	---	E290	1.0	mg/L	102	---	---	---	---	---
alkalinity, bicarbonate (as HCO3)	71-52-3	E290	1.0	mg/L	124	---	---	---	---	---
alkalinity, carbonate (as CaCO3)	---	E290	1.0	mg/L	<1.0	---	---	---	---	---
alkalinity, carbonate (as CO3)	3812-32-6	E290	1.0	mg/L	<1.0	---	---	---	---	---
alkalinity, hydroxide (as CaCO3)	---	E290	1.0	mg/L	<1.0	---	---	---	---	---
alkalinity, hydroxide (as OH)	14280-30-9	E290	1.0	mg/L	<1.0	---	---	---	---	---
alkalinity, total (as CaCO3)	---	E290	1.0	mg/L	102	---	---	---	---	---
conductivity	---	E100	2.0	µS/cm	231	---	---	---	---	---
hardness (as CaCO3), dissolved	---	EC100	0.50	mg/L	120	---	---	---	---	---
oxidation-reduction potential [ORP]	---	E125	0.10	mV	319	---	---	---	---	---
pH	---	E108	0.10	pH units	8.16	---	---	---	---	---
solids, total dissolved [TDS]	---	E162	10	mg/L	144	---	---	---	---	---
solids, total suspended [TSS]	---	E160-L	1.0	mg/L	11.4	---	---	---	---	---
turbidity	---	E121	0.10	NTU	3.96	---	---	---	---	---
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	---	---	---	---	---
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	---	---	---	---	---
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	0.36	---	---	---	---	---
fluoride	16984-48-8	E235.F	0.020	mg/L	0.090	---	---	---	---	---
Kjeldahl nitrogen, total [TKN]	---	E318	0.050	mg/L	<0.050	---	---	---	---	---
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.0958	---	---	---	---	---
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	---	---	---	---	---
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0088	---	---	---	---	---
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0263	---	---	---	---	---
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	21.9	---	---	---	---	---
Organic / Inorganic Carbon										
carbon, dissolved organic [DOC]	---	E358-L	0.50	mg/L	1.64	---	---	---	---	---
carbon, total organic [TOC]	---	E355-L	0.50	mg/L	1.75	---	---	---	---	---



Analytical Results

Sub-Matrix: Water					Client sample ID	EV_MC3a_WS_	----	----	----	----
(Matrix: Water)					LAEMP_EVO_2	----	----	----	----	----
					022-06-29_NP	----	----	----	----	----
					Client sampling date / time	29-Jun-2022	----	----	----	----
					13:30	----	----	----	----	----
Analyte	CAS Number	Method	LOR	Unit	CG2208549-001	-----	-----	-----	-----	-----
					Result	----	----	----	----	----
Ion Balance										
anion sum	----	EC101	0.10	meq/L	2.52	----	----	----	----	----
cation sum	----	EC101	0.10	meq/L	2.48	----	----	----	----	----
ion balance (cations/anions)	----	EC101	0.010	%	98.4	----	----	----	----	----
ion balance (APHA)	----	EC101	0.010	%	0.800	----	----	----	----	----
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L	0.150	----	----	----	----	----
antimony, total	7440-36-0	E420	0.00010	mg/L	<0.00010	----	----	----	----	----
arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00032	----	----	----	----	----
barium, total	7440-39-3	E420	0.00010	mg/L	0.0541	----	----	----	----	----
beryllium, total	7440-41-7	E420	0.020	µg/L	<0.020	----	----	----	----	----
bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	----	----	----	----	----
boron, total	7440-42-8	E420	0.010	mg/L	<0.010	----	----	----	----	----
cadmium, total	7440-43-9	E420	0.0050	µg/L	0.0429	----	----	----	----	----
calcium, total	7440-70-2	E420	0.050	mg/L	32.6	----	----	----	----	----
chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	0.00034	----	----	----	----	----
cobalt, total	7440-48-4	E420	0.10	µg/L	0.17	----	----	----	----	----
copper, total	7440-50-8	E420	0.00050	mg/L	<0.00050	----	----	----	----	----
iron, total	7439-89-6	E420	0.010	mg/L	0.157	----	----	----	----	----
lead, total	7439-92-1	E420	0.000050	mg/L	0.000146	----	----	----	----	----
lithium, total	7439-93-2	E420	0.0010	mg/L	0.0034	----	----	----	----	----
magnesium, total	7439-95-4	E420	0.0050	mg/L	9.37	----	----	----	----	----
manganese, total	7439-96-5	E420	0.00010	mg/L	0.00582	----	----	----	----	----
mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	----	----	----	----	----
molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.000573	----	----	----	----	----
nickel, total	7440-02-0	E420	0.00050	mg/L	0.00145	----	----	----	----	----
potassium, total	7440-09-7	E420	0.050	mg/L	0.520	----	----	----	----	----
selenium, total	7782-49-2	E420	0.050	µg/L	1.30	----	----	----	----	----
silicon, total	7440-21-3	E420	0.10	mg/L	2.19	----	----	----	----	----
silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	----	----	----	----	----
sodium, total	7440-23-5	E420	0.050	mg/L	1.74	----	----	----	----	----



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	EV_MC3a_WS_	----	----	----	----
					LAEMP_EVO_2					
					022-06-29_NP					
					Client sampling date / time	29-Jun-2022	----	----	----	----
						13:30				
Analyte	CAS Number	Method	LOR	Unit	CG2208549-001	-----	-----	-----	-----	-----
					Result	----	----	----	----	----
Total Metals										
strontium, total	7440-24-6	E420	0.00020	mg/L	0.0900	----	----	----	----	----
sulfur, total	7704-34-9	E420	0.50	mg/L	8.61	----	----	----	----	----
thallium, total	7440-28-0	E420	0.000010	mg/L	0.000010	----	----	----	----	----
tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	----	----	----	----	----
titanium, total	7440-32-6	E420	0.00030	mg/L	0.00246	----	----	----	----	----
uranium, total	7440-61-1	E420	0.000010	mg/L	0.000420	----	----	----	----	----
vanadium, total	7440-62-2	E420	0.00050	mg/L	0.00084	----	----	----	----	----
zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	----	----	----	----	----
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0062	----	----	----	----	----
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00010	----	----	----	----	----
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00019	----	----	----	----	----
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0483	----	----	----	----	----
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.020	----	----	----	----	----
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	----	----	----	----	----
boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.010	----	----	----	----	----
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.0148	----	----	----	----	----
calcium, dissolved	7440-70-2	E421	0.050	mg/L	32.6	----	----	----	----	----
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	0.00012	----	----	----	----	----
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	<0.10	----	----	----	----	----
copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00023	----	----	----	----	----
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	----	----	----	----	----
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	----	----	----	----	----
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0031	----	----	----	----	----
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	9.37	----	----	----	----	----
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00105	----	----	----	----	----
mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	----	----	----	----	----
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.000526	----	----	----	----	----
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00104	----	----	----	----	----
potassium, dissolved	7440-09-7	E421	0.050	mg/L	0.409	----	----	----	----	----



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	EV_MC3a_WS_	----	----	----	----
					LAEMP_EVO_2					
					022-06-29_NP					
					Client sampling date / time	29-Jun-2022	----	----	----	----
						13:30				
Analyte	CAS Number	Method	LOR	Unit	CG2208549-001	-----	-----	-----	-----	
					Result	----	----	----	----	
Dissolved Metals										
selenium, dissolved	7782-49-2	E421	0.050	µg/L	1.14	----	----	----	----	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	1.91	----	----	----	----	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	----	----	----	----	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	1.57	----	----	----	----	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.0947	----	----	----	----	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	8.74	----	----	----	----	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	----	----	----	----	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	----	----	----	----	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	----	----	----	----	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.000353	----	----	----	----	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	----	----	----	----	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0010	----	----	----	----	
dissolved mercury filtration location	----	EP509	-	-	Field	----	----	----	----	
dissolved metals filtration location	----	EP421	-	-	Field	----	----	----	----	

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: CG2208549	Page	: 1 of 13
Client	: Teck Coal Limited	Laboratory	: Calgary - Environmental
Contact	: Mike Pope	Account Manager	: Lyudmyla Shvets
Address	: 421 PINE AVE Sparwood BC Canada V0B 2G0	Address	: 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5
Telephone	: ----	Telephone	: +1 403 407 1800
Project	: ELKVIEW OPERATION	Date Samples Received	: 02-Jul-2022 10:30
PO	: VPO00816101	Issue Date	: 07-Jul-2022 11:21
C-O-C number	: June EVO LARMP 2022		
Sampler	: RV		
Site	: ----		
Quote number	: Teck Coal Master Quote		
No. of samples received	: 1		
No. of samples analysed	: 1		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) EV_MC3a_WS_LAEMP_EVO_2022-06-29_NP	E298	29-Jun-2022	02-Jul-2022	----	----		02-Jul-2022	28 days	3 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE EV_MC3a_WS_LAEMP_EVO_2022-06-29_NP	E235.Br-L	29-Jun-2022	----	----	----		02-Jul-2022	28 days	3 days	✓
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE EV_MC3a_WS_LAEMP_EVO_2022-06-29_NP	E235.Cl-L	29-Jun-2022	----	----	----		02-Jul-2022	28 days	3 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE EV_MC3a_WS_LAEMP_EVO_2022-06-29_NP	E378-U	29-Jun-2022	----	----	----		02-Jul-2022	3 days	3 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE EV_MC3a_WS_LAEMP_EVO_2022-06-29_NP	E235.F	29-Jun-2022	----	----	----		02-Jul-2022	28 days	3 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE EV_MC3a_WS_LAEMP_EVO_2022-06-29_NP	E235.NO3-L	29-Jun-2022	----	----	----		02-Jul-2022	3 days	3 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE EV_MC3a_WS_LAEMP_EVO_2022-06-29_NP	E235.NO2-L	29-Jun-2022	----	----	----		02-Jul-2022	3 days	3 days	✓



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
Container / Client Sample ID(s)				Rec	Actual						Rec
Anions and Nutrients : Sulfate in Water by IC											
HDPE EV_MC3a_WS_LAEMP_EVO_2022-06-29_NP	E235.SO4	29-Jun-2022	----	----	----		02-Jul-2022	28 days	3 days	✓	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) EV_MC3a_WS_LAEMP_EVO_2022-06-29_NP	E318	29-Jun-2022	04-Jul-2022	----	----		04-Jul-2022	28 days	5 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) EV_MC3a_WS_LAEMP_EVO_2022-06-29_NP	E372-U	29-Jun-2022	02-Jul-2022	----	----		03-Jul-2022	28 days	4 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) EV_MC3a_WS_LAEMP_EVO_2022-06-29_NP	E421.Cr-L	29-Jun-2022	06-Jul-2022	----	----		06-Jul-2022	180 days	7 days	✓	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) EV_MC3a_WS_LAEMP_EVO_2022-06-29_NP	E509	29-Jun-2022	06-Jul-2022	----	----		06-Jul-2022	28 days	7 days	✓	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) EV_MC3a_WS_LAEMP_EVO_2022-06-29_NP	E421	29-Jun-2022	06-Jul-2022	----	----		06-Jul-2022	180 days	7 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) EV_MC3a_WS_LAEMP_EVO_2022-06-29_NP	E358-L	29-Jun-2022	02-Jul-2022	----	----		02-Jul-2022	28 days	3 days	✓	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) EV_MC3a_WS_LAEMP_EVO_2022-06-29_NP	E355-L	29-Jun-2022	02-Jul-2022	----	----		02-Jul-2022	28 days	3 days	✓	
Physical Tests : Acidity by Titration											
HDPE EV_MC3a_WS_LAEMP_EVO_2022-06-29_NP	E283	29-Jun-2022	----	----	----		02-Jul-2022	14 days	3 days	✓	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Alkalinity Species by Titration											
HDPE EV_MC3a_WS_LAEMP_EVO_2022-06-29_NP	E290	29-Jun-2022	----	----	----		02-Jul-2022	14 days	3 days	✓	
Physical Tests : Conductivity in Water											
HDPE EV_MC3a_WS_LAEMP_EVO_2022-06-29_NP	E100	29-Jun-2022	----	----	----		02-Jul-2022	28 days	3 days	✓	
Physical Tests : ORP by Electrode											
HDPE EV_MC3a_WS_LAEMP_EVO_2022-06-29_NP	E125	29-Jun-2022	----	----	----		02-Jul-2022	0.25 hrs	71 hrs	* EHTR-FM	
Physical Tests : pH by Meter											
HDPE EV_MC3a_WS_LAEMP_EVO_2022-06-29_NP	E108	29-Jun-2022	----	----	----		02-Jul-2022	0.25 hrs	72 hrs	* EHTR-FM	
Physical Tests : TDS by Gravimetry											
HDPE EV_MC3a_WS_LAEMP_EVO_2022-06-29_NP	E162	29-Jun-2022	----	----	----		02-Jul-2022	7 days	3 days	✓	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE EV_MC3a_WS_LAEMP_EVO_2022-06-29_NP	E160-L	29-Jun-2022	----	----	----		02-Jul-2022	7 days	3 days	✓	
Physical Tests : Turbidity by Nephelometry											
HDPE EV_MC3a_WS_LAEMP_EVO_2022-06-29_NP	E121	29-Jun-2022	----	----	----		02-Jul-2022	3 days	3 days	✓	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) EV_MC3a_WS_LAEMP_EVO_2022-06-29_NP	E420.Cr-L	29-Jun-2022	----	----	----		06-Jul-2022	180 days	7 days	✓	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) EV_MC3a_WS_LAEMP_EVO_2022-06-29_NP	E508	29-Jun-2022	----	----	----		06-Jul-2022	28 days	7 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) EV_MC3a_WS_LAEMP_EVO_2022-06-29_NP	E420	29-Jun-2022	----	----	----		06-Jul-2022	180 days	7 days	✔

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended

Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
Analytical Methods							
Laboratory Duplicates (DUP)							
Acidity by Titration	E283	546629	1	13	7.6	5.0	✓
Alkalinity Species by Titration	E290	546633	1	13	7.6	5.0	✓
Ammonia by Fluorescence	E298	546710	1	19	5.2	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	546636	1	11	9.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	546637	1	11	9.0	5.0	✓
Conductivity in Water	E100	546632	1	13	7.6	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	550271	1	18	5.5	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	550618	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	550272	1	18	5.5	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	546703	1	10	10.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	546599	1	19	5.2	5.0	✓
Fluoride in Water by IC	E235.F	546634	1	11	9.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	546638	1	11	9.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	546639	1	11	9.0	5.0	✓
ORP by Electrode	E125	546590	1	4	25.0	5.0	✓
pH by Meter	E108	546631	1	13	7.6	5.0	✓
Sulfate in Water by IC	E235.SO4	546635	1	11	9.0	5.0	✓
TDS by Gravimetry	E162	546733	1	20	5.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	550571	1	9	11.1	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	547018	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	550611	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	550572	1	19	5.2	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	546707	1	11	9.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	546646	1	14	7.1	5.0	✓
Turbidity by Nephelometry	E121	546455	1	8	12.5	5.0	✓
Laboratory Control Samples (LCS)							
Acidity by Titration	E283	546629	1	13	7.6	5.0	✓
Alkalinity Species by Titration	E290	546633	1	13	7.6	5.0	✓
Ammonia by Fluorescence	E298	546710	1	19	5.2	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	546636	1	11	9.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	546637	1	11	9.0	5.0	✓
Conductivity in Water	E100	546632	1	13	7.6	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	550271	1	18	5.5	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	550618	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	550272	1	18	5.5	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	546703	1	10	10.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	546599	1	19	5.2	5.0	✓



Matrix: **Water**

Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
<i>Analytical Methods</i>							
Laboratory Control Samples (LCS) - Continued							
Fluoride in Water by IC	E235.F	546634	1	11	9.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	546638	1	11	9.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	546639	1	11	9.0	5.0	✓
ORP by Electrode	E125	546590	1	4	25.0	5.0	✓
pH by Meter	E108	546631	1	13	7.6	5.0	✓
Sulfate in Water by IC	E235.SO4	546635	1	11	9.0	5.0	✓
TDS by Gravimetry	E162	546733	1	20	5.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	550571	1	9	11.1	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	547018	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	550611	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	550572	1	19	5.2	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	546707	1	11	9.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	546646	1	14	7.1	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	546731	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121	546455	1	8	12.5	5.0	✓
Method Blanks (MB)							
Acidity by Titration	E283	546629	1	13	7.6	5.0	✓
Alkalinity Species by Titration	E290	546633	1	13	7.6	5.0	✓
Ammonia by Fluorescence	E298	546710	1	19	5.2	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	546636	1	11	9.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	546637	1	11	9.0	5.0	✓
Conductivity in Water	E100	546632	1	13	7.6	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	550271	1	18	5.5	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	550618	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	550272	1	18	5.5	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	546703	1	10	10.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	546599	1	19	5.2	5.0	✓
Fluoride in Water by IC	E235.F	546634	1	11	9.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	546638	1	11	9.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	546639	1	11	9.0	5.0	✓
Sulfate in Water by IC	E235.SO4	546635	1	11	9.0	5.0	✓
TDS by Gravimetry	E162	546733	1	20	5.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	550571	1	9	11.1	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	547018	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	550611	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	550572	1	19	5.2	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	546707	1	11	9.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	546646	1	14	7.1	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	546731	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121	546455	1	8	12.5	5.0	✓



Matrix: **Water**

Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
<i>Analytical Methods</i>							
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	546710	1	19	5.2	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	546636	1	11	9.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	546637	1	11	9.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	550271	1	18	5.5	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	550618	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	550272	1	18	5.5	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	546703	1	10	10.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	546599	1	19	5.2	5.0	✓
Fluoride in Water by IC	E235.F	546634	1	11	9.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	546638	1	11	9.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	546639	1	11	9.0	5.0	✓
Sulfate in Water by IC	E235.SO4	546635	1	11	9.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	550571	1	9	11.1	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	547018	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	550611	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	550572	1	19	5.2	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	546707	1	11	9.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	546646	1	14	7.1	5.0	✓



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 Calgary - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 Calgary - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 Calgary - Environmental	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
ORP by Electrode	E125 Calgary - Environmental	Water	ASTM D1498 (mod)	Oxidation reduction potential is reported as the oxidation-reduction potential of the platinum metal-reference electrode employed, measured in mV. For high accuracy test results, it is recommended that this analysis be conducted in the field.
TSS by Gravimetry (Low Level)	E160-L Calgary - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 Calgary - Environmental	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC (Low Level)	E235.Cl-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Acidity by Titration	E283 Calgary - Environmental	Water	APHA 2310 B (mod)	Acidity is determined by potentiometric titration to pH endpoint of 8.3



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Alkalinity Species by Titration	E290 Calgary - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 Calgary - Environmental	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 Calgary - Environmental	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L Calgary - Environmental	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Dissolved Organic Carbon by Combustion (Low Level)	E358-L Calgary - Environmental	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U Calgary - Environmental	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U Calgary - Environmental	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Total Metals in Water by CRC ICPMS	E420 Vancouver - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L Vancouver - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS.
Dissolved Metals in Water by CRC ICPMS	E421 Vancouver - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L Vancouver - Environmental	Water	APHA 3030 B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS
Total Mercury in Water by CVAAS	E508 Vancouver - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS
Dissolved Mercury in Water by CVAAS	E509 Vancouver - Environmental	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
Dissolved Hardness (Calculated)	EC100 Vancouver - Environmental	Water	APHA 2340B	"Hardness (as CaCO ₃), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Ion Balance using Dissolved Metals	EC101 Calgary - Environmental	Water	APHA 1030E	Cation Sum, Anion Sum, and Ion Balance are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present. Ion Balance cannot be calculated accurately for waters with very low electrical conductivity (EC).

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 Calgary - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 Calgary - Environmental	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Preparation for Total Organic Carbon by Combustion	EP355 Calgary - Environmental	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon for Combustion	EP358 Calgary - Environmental	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Phosphorus in water	EP372 Calgary - Environmental	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Dissolved Metals Water Filtration	EP421 Vancouver - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO ₃ .

Page : 13 of 13
Work Order : CG2208549
Client : Teck Coal Limited
Project : ELKVIEW OPERATION



<i>Preparation Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
Dissolved Mercury Water Filtration	EP509 Vancouver - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.



QUALITY CONTROL REPORT

Work Order : CG2208549
Client : Teck Coal Limited
Contact : Mike Pope
Address : 421 PINE AVE
Sparwood BC Canada V0B 2G0
Telephone : ---
Project : ELKVIEW OPERATION
PO : VPO00816101
C-O-C number : June EVO LARMP 2022
Sampler : RV
Site : ---
Quote number : Teck Coal Master Quote
No. of samples received : 1
No. of samples analysed : 1

Page : 1 of 18
Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
Calgary, Alberta Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 02-Jul-2022 10:30
Date Analysis Commenced : 02-Jul-2022
Issue Date : 07-Jul-2022 11:20

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
Matrix Spike (MS) Report; Recovery and Data Quality Objectives
Method Blank (MB) Report; Recovery and Data Quality Objectives
Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Table with 3 columns: Signatories, Position, Laboratory Department. Rows include Anthony Calero, Erin Sanchez, Harpreet Chawla, Owen Cheng, Robin Weeks, and Sara Niroomand.



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 546455)											
CG2208535-001	Anonymous	turbidity	----	E121	0.10	NTU	4000	4000	0.00%	15%	----
Physical Tests (QC Lot: 546590)											
CG2208535-001	Anonymous	oxidation-reduction potential [ORP]	----	E125	0.10	mV	410	400	2.42%	15%	----
Physical Tests (QC Lot: 546629)											
CG2208540-001	Anonymous	acidity (as CaCO ₃)	----	E283	2.0	mg/L	<2.0	<2.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 546631)											
CG2208540-001	Anonymous	pH	----	E108	0.10	pH units	8.33	8.36	0.359%	4%	----
Physical Tests (QC Lot: 546632)											
CG2208540-001	Anonymous	conductivity	----	E100	2.0	µS/cm	663	666	0.451%	10%	----
Physical Tests (QC Lot: 546633)											
CG2208540-001	Anonymous	alkalinity, bicarbonate (as CaCO ₃)	----	E290	1.0	mg/L	258	254	1.76%	20%	----
		alkalinity, carbonate (as CaCO ₃)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, hydroxide (as CaCO ₃)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, total (as CaCO ₃)	----	E290	1.0	mg/L	258	259	0.271%	20%	----
Physical Tests (QC Lot: 546733)											
CG2208535-001	Anonymous	solids, total dissolved [TDS]	----	E162	20	mg/L	389	396	1.78%	20%	----
Anions and Nutrients (QC Lot: 546599)											
CG2208535-001	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 546634)											
CG2208549-001	EV_MC3a_WS_LAEMP_EVO_2022-06-29_NP	fluoride	16984-48-8	E235.F	0.020	mg/L	0.090	0.090	0.0004	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 546635)											
CG2208549-001	EV_MC3a_WS_LAEMP_EVO_2022-06-29_NP	sulfate (as SO ₄)	14808-79-8	E235.SO4	0.30	mg/L	21.9	22.0	0.704%	20%	----
Anions and Nutrients (QC Lot: 546636)											
CG2208549-001	EV_MC3a_WS_LAEMP_EVO_2022-06-29_NP	bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 546637)											
CG2208549-001	EV_MC3a_WS_LAEMP_EVO_2022-06-29_NP	chloride	16887-00-6	E235.Cl-L	0.10	mg/L	0.36	0.33	0.02	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 546638)											
CG2208549-001	EV_MC3a_WS_LAEMP_EVO_2022-06-29_NP	nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.0958	0.0962	0.417%	20%	----
Anions and Nutrients (QC Lot: 546639)											



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 546639) - continued											
CG2208549-001	EV_MC3a_WS_LAEMP_E VO_2022-06-29_NP	nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 546646)											
CG2208535-001	Anonymous	phosphorus, total	7723-14-0	E372-U	0.100	mg/L	4.87	4.72	3.13%	20%	----
Anions and Nutrients (QC Lot: 546710)											
CG2208535-001	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.125	mg/L	5.15	5.21	1.09%	20%	----
Anions and Nutrients (QC Lot: 547018)											
CG2208265-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.500	mg/L	<0.500	<0.500	0	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 546703)											
CG2208549-001	EV_MC3a_WS_LAEMP_E VO_2022-06-29_NP	carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	1.64	1.58	0.06	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 546707)											
CG2208549-001	EV_MC3a_WS_LAEMP_E VO_2022-06-29_NP	carbon, total organic [TOC]	----	E355-L	0.50	mg/L	1.75	1.89	0.14	Diff <2x LOR	----
Total Metals (QC Lot: 550571)											
CG2208535-001	Anonymous	chromium, total	7440-47-3	E420.Cr-L	0.00050	mg/L	0.0386	0.0353	8.88%	20%	----
Total Metals (QC Lot: 550572)											
CG2208535-001	Anonymous	aluminum, total	7429-90-5	E420	0.0150	mg/L	17.6	15.6	11.8%	20%	----
		antimony, total	7440-36-0	E420	0.00050	mg/L	0.00501	0.00458	0.00043	Diff <2x LOR	----
		arsenic, total	7440-38-2	E420	0.00050	mg/L	0.0299	0.0285	4.80%	20%	----
		barium, total	7440-39-3	E420	0.00050	mg/L	12.0	12.1	0.497%	20%	----
		beryllium, total	7440-41-7	E420	0.000100	mg/L	3.00 µg/L	0.00287	4.25%	20%	----
		bismuth, total	7440-69-9	E420	0.000250	mg/L	0.000722	0.000532	0.000190	Diff <2x LOR	----
		boron, total	7440-42-8	E420	0.050	mg/L	0.065	0.062	0.002	Diff <2x LOR	----
		cadmium, total	7440-43-9	E420	0.0000250	mg/L	8.53 µg/L	0.00808	5.42%	20%	----
		calcium, total	7440-70-2	E420	0.250	mg/L	212	214	0.887%	20%	----
		cobalt, total	7440-48-4	E420	0.00050	mg/L	48.2 µg/L	0.0474	1.56%	20%	----
		copper, total	7440-50-8	E420	0.00250	mg/L	0.129	0.125	3.61%	20%	----
		iron, total	7439-89-6	E420	0.050	mg/L	60.7	51.4	16.4%	20%	----
		lead, total	7439-92-1	E420	0.000250	mg/L	0.0660	0.0606	8.59%	20%	----
		lithium, total	7439-93-2	E420	0.0050	mg/L	0.287	0.287	0.115%	20%	----
		magnesium, total	7439-95-4	E420	0.0250	mg/L	84.4	85.5	1.30%	20%	----
		manganese, total	7439-96-5	E420	0.00050	mg/L	1.08	1.08	0.152%	20%	----
		molybdenum, total	7439-98-7	E420	0.000250	mg/L	0.0762	0.0714	6.46%	20%	----
		nickel, total	7440-02-0	E420	0.00250	mg/L	0.178	0.175	1.56%	20%	----
		potassium, total	7440-09-7	E420	0.250	mg/L	21.1	20.7	1.98%	20%	----
		selenium, total	7782-49-2	E420	0.000250	mg/L	13.8 µg/L	0.0114	19.3%	20%	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (QC Lot: 550572) - continued											
CG2208535-001	Anonymous	silicon, total	7440-21-3	E420	1.00	mg/L	26.2	24.6	6.05%	20%	----
		silver, total	7440-22-4	E420	0.000050	mg/L	0.00216	0.00209	3.39%	20%	----
		sodium, total	7440-23-5	E420	0.250	mg/L	2.22	2.23	0.010	Diff <2x LOR	----
		strontium, total	7440-24-6	E420	0.00100	mg/L	0.972	0.919	5.68%	20%	----
		sulfur, total	7704-34-9	E420	2.50	mg/L	5.86	4.50	1.36	Diff <2x LOR	----
		thallium, total	7440-28-0	E420	0.000050	mg/L	0.00145	0.00143	0.994%	20%	----
		tin, total	7440-31-5	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		titanium, total	7440-32-6	E420	0.00150	mg/L	0.0255	0.0212	18.4%	20%	----
		uranium, total	7440-61-1	E420	0.000050	mg/L	0.00704	0.00683	2.98%	20%	----
		vanadium, total	7440-62-2	E420	0.00250	mg/L	0.109	0.102	6.09%	20%	----
		zinc, total	7440-66-6	E420	0.0150	mg/L	0.575	0.559	2.80%	20%	----
Total Metals (QC Lot: 550611)											
CG2208535-003	Anonymous	mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 550271)											
CG2208535-001	Anonymous	chromium, dissolved	7440-47-3	E421.Cr-L	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 550272)											
CG2208535-001	Anonymous	aluminum, dissolved	7429-90-5	E421	0.0020	mg/L	0.0077	0.0082	0.0005	Diff <2x LOR	----
		antimony, dissolved	7440-36-0	E421	0.00020	mg/L	0.00815	0.00789	3.33%	20%	----
		arsenic, dissolved	7440-38-2	E421	0.00020	mg/L	0.00087	0.00084	0.00002	Diff <2x LOR	----
		barium, dissolved	7440-39-3	E421	0.00020	mg/L	8.13	7.81	4.08%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.000040	mg/L	<0.040 µg/L	<0.000040	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.020	mg/L	0.043	0.042	0.001	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E421	0.0000500	mg/L	<0.0550 µg/L	<0.0000500	0.0000050	Diff <2x LOR	----
		calcium, dissolved	7440-70-2	E421	0.100	mg/L	91.4	89.8	1.78%	20%	----
		cobalt, dissolved	7440-48-4	E421	0.00020	mg/L	3.46 µg/L	0.00344	0.843%	20%	----
		copper, dissolved	7440-50-8	E421	0.00040	mg/L	0.00238	0.00236	0.00001	Diff <2x LOR	----
		iron, dissolved	7439-89-6	E421	0.020	mg/L	<0.020	<0.020	0	Diff <2x LOR	----
		lead, dissolved	7439-92-1	E421	0.000100	mg/L	0.000126	0.000127	0.000001	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0020	mg/L	0.310	0.306	1.26%	20%	----
		magnesium, dissolved	7439-95-4	E421	0.0100	mg/L	27.5	28.0	1.81%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00020	mg/L	0.0295	0.0303	2.63%	20%	----
		molybdenum, dissolved	7439-98-7	E421	0.000100	mg/L	0.0670	0.0650	2.89%	20%	----
		nickel, dissolved	7440-02-0	E421	0.00100	mg/L	0.0167	0.0167	0.0214%	20%	----
		potassium, dissolved	7440-09-7	E421	0.100	mg/L	14.4	14.3	0.494%	20%	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 550272) - continued											
CG2208535-001	Anonymous	selenium, dissolved	7782-49-2	E421	0.000100	mg/L	3.48 µg/L	0.00342	1.80%	20%	----
		silicon, dissolved	7440-21-3	E421	0.100	mg/L	4.57	4.59	0.498%	20%	----
		silver, dissolved	7440-22-4	E421	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E421	0.100	mg/L	1.97	1.98	0.455%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00040	mg/L	0.665	0.644	3.21%	20%	----
		sulfur, dissolved	7704-34-9	E421	1.00	mg/L	1.76	1.75	0.002	Diff <2x LOR	----
		thallium, dissolved	7440-28-0	E421	0.000020	mg/L	0.000135	0.000134	0.000001	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.00060	mg/L	<0.00060	<0.00060	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000020	mg/L	0.000581	0.000563	3.12%	20%	----
		vanadium, dissolved	7440-62-2	E421	0.00100	mg/L	0.00101	<0.00100	0.000009	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E421	0.0020	mg/L	0.0076	0.0072	0.0004	Diff <2x LOR	----
Dissolved Metals (QC Lot: 550618)											
CG2208468-002	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 546455)						
turbidity	----	E121	0.1	NTU	<0.10	----
Physical Tests (QCLot: 546629)						
acidity (as CaCO ₃)	----	E283	2	mg/L	<2.0	----
Physical Tests (QCLot: 546632)						
conductivity	----	E100	1	µS/cm	<1.0	----
Physical Tests (QCLot: 546633)						
alkalinity, bicarbonate (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
alkalinity, carbonate (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
alkalinity, hydroxide (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
alkalinity, total (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 546731)						
solids, total suspended [TSS]	----	E160-L	1	mg/L	<1.0	----
Physical Tests (QCLot: 546733)						
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Anions and Nutrients (QCLot: 546599)						
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 546634)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 546635)						
sulfate (as SO ₄)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 546636)						
bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 546637)						
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	----
Anions and Nutrients (QCLot: 546638)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 546639)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 546646)						
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 546710)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 547018)						



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 547018) - continued						
Kjeldahl nitrogen, total [TKN]	---	E318	0.05	mg/L	<0.050	---
Organic / Inorganic Carbon (QCLot: 546703)						
carbon, dissolved organic [DOC]	---	E358-L	0.5	mg/L	<0.50	---
Organic / Inorganic Carbon (QCLot: 546707)						
carbon, total organic [TOC]	---	E355-L	0.5	mg/L	<0.50	---
Total Metals (QCLot: 550571)						
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	<0.00010	---
Total Metals (QCLot: 550572)						
aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	---
antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	---
arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	---
barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	---
beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	---
bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	---
boron, total	7440-42-8	E420	0.01	mg/L	<0.010	---
cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	---
calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	---
cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	---
copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	---
iron, total	7439-89-6	E420	0.01	mg/L	<0.010	---
lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	---
lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	---
magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	---
manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	---
molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	---
nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	---
potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	---
selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	---
silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	---
silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	---
sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	---
strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	---
sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	---
thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	---
tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	---
titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	---



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 550572) - continued						
uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	---
vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	---
zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	---
Total Metals (QCLot: 550611)						
mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	---
Dissolved Metals (QCLot: 550271)						
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	<0.00010	---
Dissolved Metals (QCLot: 550272)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	---
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	---
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	---
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	---
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	---
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	---
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	---
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	---
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	---
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	---
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	---
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	---
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	---
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	---
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	---
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	---
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	---
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	---
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	---
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	---
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	---
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	---
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	---
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	---
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	---
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	---
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	---
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	---

Page : 10 of 18
Work Order : CG2208549
Client : Teck Coal Limited
Project : ELKVIEW OPERATION



Sub-Matrix: **Water**

<i>Analyte</i>	<i>CAS Number</i>	<i>Method</i>	<i>LOR</i>	<i>Unit</i>	<i>Result</i>	<i>Qualifier</i>
Dissolved Metals (QCLot: 550272) - continued						
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
Dissolved Metals (QCLot: 550618)						
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Physical Tests (QCLot: 546455)									
turbidity	----	E121	0.1	NTU	200 NTU	104	85.0	115	----
Physical Tests (QCLot: 546590)									
oxidation-reduction potential [ORP]	----	E125	----	mV	220 mV	101	95.4	104	----
Physical Tests (QCLot: 546629)									
acidity (as CaCO ₃)	----	E283	2	mg/L	50 mg/L	101	85.0	115	----
Physical Tests (QCLot: 546631)									
pH	----	E108	----	pH units	7 pH units	101	98.6	101	----
Physical Tests (QCLot: 546632)									
conductivity	----	E100	1	µS/cm	146.9 µS/cm	101	90.0	110	----
Physical Tests (QCLot: 546633)									
alkalinity, total (as CaCO ₃)	----	E290	1	mg/L	500 mg/L	105	85.0	115	----
Physical Tests (QCLot: 546731)									
solids, total suspended [TSS]	----	E160-L	1	mg/L	150 mg/L	105	85.0	115	----
Physical Tests (QCLot: 546733)									
solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	94.5	85.0	115	----
Anions and Nutrients (QCLot: 546599)									
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.02 mg/L	97.2	80.0	120	----
Anions and Nutrients (QCLot: 546634)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	99.6	90.0	110	----
Anions and Nutrients (QCLot: 546635)									
sulfate (as SO ₄)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 546636)									
bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	97.8	85.0	115	----
Anions and Nutrients (QCLot: 546637)									
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	98.8	90.0	110	----
Anions and Nutrients (QCLot: 546638)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 546639)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 546646)									
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	8.02 mg/L	98.1	80.0	120	----
Anions and Nutrients (QCLot: 546710)									



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Anions and Nutrients (QCLot: 546710) - continued									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	96.2	85.0	115	----
Anions and Nutrients (QCLot: 547018)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	80.0	75.0	125	----
Organic / Inorganic Carbon (QCLot: 546703)									
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	94.6	80.0	120	----
Organic / Inorganic Carbon (QCLot: 546707)									
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	99.5	80.0	120	----
Total Metals (QCLot: 550571)									
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	0.25 mg/L	99.6	80.0	120	----
Total Metals (QCLot: 550572)									
aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	101	80.0	120	----
antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	110	80.0	120	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	99.3	80.0	120	----
barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	102	80.0	120	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	100	80.0	120	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	102	80.0	120	----
boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	98.2	80.0	120	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	98.7	80.0	120	----
calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	100	80.0	120	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	98.4	80.0	120	----
copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	96.8	80.0	120	----
iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	102	80.0	120	----
lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	101	80.0	120	----
lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	98.6	80.0	120	----
magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	101	80.0	120	----
manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	98.0	80.0	120	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	106	80.0	120	----
nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	98.0	80.0	120	----
potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	102	80.0	120	----
selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	102	80.0	120	----
silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	102	80.0	120	----
silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	103	80.0	120	----
sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	105	80.0	120	----
strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	105	80.0	120	----
sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	104	80.0	120	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Total Metals (QCLot: 550572) - continued									
thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	99.1	80.0	120	----
tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	99.4	80.0	120	----
titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	97.2	80.0	120	----
uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	100	80.0	120	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	101	80.0	120	----
zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	98.0	80.0	120	----
Total Metals (QCLot: 550611)									
mercury, total	7439-97-6	E508	0.000005	mg/L	0.0001 mg/L	97.1	80.0	120	----
Dissolved Metals (QCLot: 550271)									
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	0.25 mg/L	99.2	80.0	120	----
Dissolved Metals (QCLot: 550272)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	105	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	103	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	106	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	111	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	98.4	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	104	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	97.3	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	102	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	103	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	103	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	103	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	116	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	100	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	100	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	103	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	104	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	102	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	103	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	102	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	104	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	101	80.0	120	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	102	80.0	120	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	108	80.0	120	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	114	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	104	80.0	120	----



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 550272) - continued									
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	102	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	101	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	97.3	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	99.0	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	105	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	108	80.0	120	----
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	93.3	80.0	120	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 546599)										
CG2208535-002	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0480 mg/L	0.05 mg/L	96.1	70.0	130	----
Anions and Nutrients (QCLot: 546634)										
CG2208558-001	Anonymous	fluoride	16984-48-8	E235.F	1.01 mg/L	1 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 546635)										
CG2208558-001	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	92.4 mg/L	100 mg/L	92.4	75.0	125	----
Anions and Nutrients (QCLot: 546636)										
CG2208558-001	Anonymous	bromide	24959-67-9	E235.Br-L	0.489 mg/L	0.5 mg/L	97.8	75.0	125	----
Anions and Nutrients (QCLot: 546637)										
CG2208558-001	Anonymous	chloride	16887-00-6	E235.Cl-L	96.2 mg/L	100 mg/L	96.2	75.0	125	----
Anions and Nutrients (QCLot: 546638)										
CG2208558-001	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	2.43 mg/L	2.5 mg/L	97.1	75.0	125	----
Anions and Nutrients (QCLot: 546639)										
CG2208558-001	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.512 mg/L	0.5 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 546646)										
CG2208535-002	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0545 mg/L	0.0676 mg/L	80.6	70.0	130	----
Anions and Nutrients (QCLot: 546710)										
CG2208535-002	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0976 mg/L	0.1 mg/L	97.6	75.0	125	----
Anions and Nutrients (QCLot: 547018)										
CG2208265-009	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.01 mg/L	2.5 mg/L	80.2	70.0	130	----
Organic / Inorganic Carbon (QCLot: 546703)										
CG2208549-001	EV_MC3a_WS_LAEMP_EV O_2022-06-29_NP	carbon, dissolved organic [DOC]	----	E358-L	4.44 mg/L	5 mg/L	88.8	70.0	130	----
Organic / Inorganic Carbon (QCLot: 546707)										
CG2208549-001	EV_MC3a_WS_LAEMP_EV O_2022-06-29_NP	carbon, total organic [TOC]	----	E355-L	4.80 mg/L	5 mg/L	96.0	70.0	130	----
Total Metals (QCLot: 550571)										
CG2208535-002	Anonymous	chromium, total	7440-47-3	E420.Cr-L	0.0396 mg/L	0.04 mg/L	99.0	70.0	130	----
Total Metals (QCLot: 550572)										
CG2208535-002	Anonymous	aluminum, total	7429-90-5	E420	0.195 mg/L	0.2 mg/L	97.5	70.0	130	----
		antimony, total	7440-36-0	E420	0.0201 mg/L	0.02 mg/L	101	70.0	130	----



Sub-Matrix: **Water**

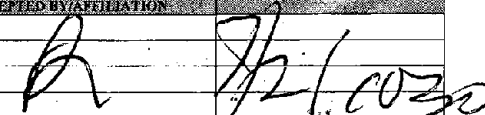
					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 550572) - continued										
CG2208535-002	Anonymous	arsenic, total	7440-38-2	E420	0.0191 mg/L	0.02 mg/L	95.4	70.0	130	----
		barium, total	7440-39-3	E420	0.0197 mg/L	0.02 mg/L	98.3	70.0	130	----
		beryllium, total	7440-41-7	E420	0.0396 mg/L	0.04 mg/L	99.0	70.0	130	----
		bismuth, total	7440-69-9	E420	0.0102 mg/L	0.01 mg/L	102	70.0	130	----
		boron, total	7440-42-8	E420	0.101 mg/L	0.1 mg/L	101	70.0	130	----
		cadmium, total	7440-43-9	E420	0.00402 mg/L	0.004 mg/L	100	70.0	130	----
		calcium, total	7440-70-2	E420	3.83 mg/L	4 mg/L	95.8	70.0	130	----
		cobalt, total	7440-48-4	E420	0.0201 mg/L	0.02 mg/L	100	70.0	130	----
		copper, total	7440-50-8	E420	0.0198 mg/L	0.02 mg/L	99.0	70.0	130	----
		iron, total	7439-89-6	E420	1.96 mg/L	2 mg/L	97.9	70.0	130	----
		lead, total	7439-92-1	E420	0.0198 mg/L	0.02 mg/L	99.0	70.0	130	----
		lithium, total	7439-93-2	E420	0.0943 mg/L	0.1 mg/L	94.3	70.0	130	----
		magnesium, total	7439-95-4	E420	0.973 mg/L	1 mg/L	97.3	70.0	130	----
		manganese, total	7439-96-5	E420	0.0193 mg/L	0.02 mg/L	96.5	70.0	130	----
		molybdenum, total	7439-98-7	E420	0.0206 mg/L	0.02 mg/L	103	70.0	130	----
		nickel, total	7440-02-0	E420	0.0397 mg/L	0.04 mg/L	99.4	70.0	130	----
		potassium, total	7440-09-7	E420	4.02 mg/L	4 mg/L	100	70.0	130	----
		selenium, total	7782-49-2	E420	0.0425 mg/L	0.04 mg/L	106	70.0	130	----
		silicon, total	7440-21-3	E420	9.77 mg/L	10 mg/L	97.7	70.0	130	----
		silver, total	7440-22-4	E420	0.00413 mg/L	0.004 mg/L	103	70.0	130	----
		sodium, total	7440-23-5	E420	2.06 mg/L	2 mg/L	103	70.0	130	----
		strontium, total	7440-24-6	E420	0.0208 mg/L	0.02 mg/L	104	70.0	130	----
		sulfur, total	7704-34-9	E420	19.8 mg/L	20 mg/L	99.3	70.0	130	----
		thallium, total	7440-28-0	E420	0.00382 mg/L	0.004 mg/L	95.6	70.0	130	----
		tin, total	7440-31-5	E420	0.0197 mg/L	0.02 mg/L	98.7	70.0	130	----
		titanium, total	7440-32-6	E420	0.0370 mg/L	0.04 mg/L	92.5	70.0	130	----
		uranium, total	7440-61-1	E420	0.00402 mg/L	0.004 mg/L	100	70.0	130	----
		vanadium, total	7440-62-2	E420	0.0985 mg/L	0.1 mg/L	98.5	70.0	130	----
		zinc, total	7440-66-6	E420	0.393 mg/L	0.4 mg/L	98.3	70.0	130	----
Total Metals (QCLot: 550611)										
CG2208540-001	Anonymous	mercury, total	7439-97-6	E508	0.0000957 mg/L	0.0001 mg/L	95.7	70.0	130	----
Dissolved Metals (QCLot: 550271)										
CG2208535-002	Anonymous	chromium, dissolved	7440-47-3	E421.Cr-L	0.0414 mg/L	0.04 mg/L	103	70.0	130	----
Dissolved Metals (QCLot: 550272)										
CG2208535-002	Anonymous	aluminum, dissolved	7429-90-5	E421	0.210 mg/L	0.2 mg/L	105	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.0204 mg/L	0.02 mg/L	102	70.0	130	----



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 550272) - continued										
CG2208535-002	Anonymous	arsenic, dissolved	7440-38-2	E421	0.0206 mg/L	0.02 mg/L	103	70.0	130	----
		barium, dissolved	7440-39-3	E421	0.0213 mg/L	0.02 mg/L	106	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.0448 mg/L	0.04 mg/L	112	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.00956 mg/L	0.01 mg/L	95.6	70.0	130	----
		boron, dissolved	7440-42-8	E421	0.107 mg/L	0.1 mg/L	107	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.00414 mg/L	0.004 mg/L	103	70.0	130	----
		calcium, dissolved	7440-70-2	E421	4.30 mg/L	4 mg/L	107	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.0207 mg/L	0.02 mg/L	103	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.0209 mg/L	0.02 mg/L	105	70.0	130	----
		iron, dissolved	7439-89-6	E421	2.00 mg/L	2 mg/L	100	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.0195 mg/L	0.02 mg/L	97.6	70.0	130	----
		lithium, dissolved	7439-93-2	E421	0.111 mg/L	0.1 mg/L	111	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	1.06 mg/L	1 mg/L	106	70.0	130	----
		manganese, dissolved	7439-96-5	E421	0.0204 mg/L	0.02 mg/L	102	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.0206 mg/L	0.02 mg/L	103	70.0	130	----
		nickel, dissolved	7440-02-0	E421	0.0416 mg/L	0.04 mg/L	104	70.0	130	----
		potassium, dissolved	7440-09-7	E421	4.08 mg/L	4 mg/L	102	70.0	130	----
		selenium, dissolved	7782-49-2	E421	0.0426 mg/L	0.04 mg/L	106	70.0	130	----
		silicon, dissolved	7440-21-3	E421	10.5 mg/L	10 mg/L	105	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.00428 mg/L	0.004 mg/L	107	70.0	130	----
		sodium, dissolved	7440-23-5	E421	2.15 mg/L	2 mg/L	108	70.0	130	----
		strontium, dissolved	7440-24-6	E421	0.0228 mg/L	0.02 mg/L	114	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	21.0 mg/L	20 mg/L	105	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.00378 mg/L	0.004 mg/L	94.4	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.0205 mg/L	0.02 mg/L	103	70.0	130	----
		titanium, dissolved	7440-32-6	E421	0.0394 mg/L	0.04 mg/L	98.5	70.0	130	----
		uranium, dissolved	7440-61-1	E421	0.00369 mg/L	0.004 mg/L	92.2	70.0	130	----
		vanadium, dissolved	7440-62-2	E421	0.104 mg/L	0.1 mg/L	104	70.0	130	----
		zinc, dissolved	7440-66-6	E421	0.432 mg/L	0.4 mg/L	108	70.0	130	----
Dissolved Metals (QCLot: 550618)										
CG2208468-003	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000921 mg/L	0.0001 mg/L	92.1	70.0	130	----



COC ID:		June EVO LAEMP 2022				TURNAROUND TIME:		RUSH						
PROJECT/CLIENT INFO						LABORATORY								
Facility Name / Job#		Elkview Operations				Lab Name		ALS Calgary						
Project Manager		Mike Pope				Lab Contact		Lyudmyla Shvets						
Email		m.pope@teck.com				Email		lyudmyla.shvets@alsglobal.com						
Address		421 Pine Avenue				Address		2559.29 Street NE						
City		Spawood		Province	BC	City		Calgary	Province	AB				
Postal Code		V0B 2G0		Country	Canada	Postal Code		T1Y 7B5	Country	Canada				
Phone Number		343-333-3905				Phone Number		1 403 407 1794						
SAMPLE DETAILS						ANALYSIS REQUESTED								
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	TECKCOAL-ROUTINE-VA	ALS_Package-DOC	ALS_Package-TKN/TOC	HG-T-U-CVAF-VA	HGin-CVAF-VA	TECKCOAL-MET-I-VA	TECKCOAL-MET-D-VA
EV_MC3a_WS_LAEMP_EVO_2022-06-29_NP	EV_MC3a	WS	No	6/29/2022	13:30	G	7	X	X	X	X	X	X	X
ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS						RELINQUISHED BY/AFFILIATION		DATE/TIME		ACCEPTED BY/AFFILIATION				
ALS PO VPO00816101						Robin Valleau		June 30, 2022						
NO OF BOTTLES RETURNED/DESCRIPTION						SAMPLER'S NAME		MOBILE #		DATE/TIME				
Regular (default)						Robin Valleau		416-970-7565		June 30, 2022				
Priority (2-3 business days) - 50% surcharge						SAMPLER'S SIGNATURE								
Emergency (1 Business Day) - 100% surcharge X														
For Emergency <1 Day, ASAP or Weekend - Contact ALS														

Environmental Division
 Calgary
 Work Order Reference
CG2208549



CERTIFICATE OF ANALYSIS

Work Order : CG2208564 Amendment : 1 Client : Teck Coal Limited Contact : Mike Pope Address : RR#1 HWY#3 Sparwood BC Canada V0B 2G1 Telephone : ---- Project : REGIONAL EFFECTS PROGRAM PO : VPO00816101 C-O-C number : June EVO LAEMP 2022 Sampler : Robin Valleau Site : ---- Quote number : Teck Coal Master Quote No. of samples received : 5 No. of samples analysed : 5	Page : 1 of 6 Laboratory : Calgary - Environmental Account Manager : Lyudmyla Shvets Address : 2559 29th Street NE Calgary AB Canada T1Y 7B5 Telephone : +1 403 407 1800 Date Samples Received : 02-Jul-2022 10:30 Date Analysis Commenced : 02-Jul-2022 Issue Date : 13-Jul-2022 13:27
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This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Anthony Calero	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Erin Sanchez		Metals, Burnaby, British Columbia
Harpreet Chawla	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Owen Cheng		Metals, Burnaby, British Columbia
Robin Weeks	Team Leader - Metals	Metals, Burnaby, British Columbia
Sara Niroomand		Inorganics, Calgary, Alberta



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
 LOR: Limit of Reporting (detection limit).

<i>Unit</i>	<i>Description</i>
-	No Unit
%	percent
µg/L	micrograms per litre
µS/cm	Microsiemens per centimetre
meq/L	milliequivalents per litre
mg/L	milligrams per litre
mV	millivolts
NTU	nephelometric turbidity units
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

<i>Qualifier</i>	<i>Description</i>
DLDS	<i>Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.</i>
DLM	<i>Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).</i>
TKNI	<i>TKN result may be biased low due to Nitrate interference. Nitrate-N is > 10x TKN.</i>



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKUT_W S_LAEMP_EVO 2022-06-29_N P	RG_ERCKDT_W S_LAEMP_EVO 2022-06-29_N P	RG_ERCKMD_ WS_LAEMP_EV O_2022-06-29_ NP	RG_ERCKUC_W S_LAEMP_EVO 2022-06-30_N P	RG_ERCK_WS_ LAEMP_EVO_2 022-06-30_NP
Client sampling date / time					29-Jun-2022 09:00	29-Jun-2022 10:00	29-Jun-2022 11:00	30-Jun-2022 08:40	30-Jun-2022 08:30	
Analyte	CAS Number	Method	LOR	Unit	CG2208564-001	CG2208564-002	CG2208564-003	CG2208564-004	CG2208564-005	
					Result	Result	Result	Result	Result	
Physical Tests										
acidity (as CaCO3)	----	E283	2.0	mg/L	10.6	12.3	7.2	3.9	4.1	
alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	434	437	430	369	382	
alkalinity, bicarbonate (as HCO3)	71-52-3	E290	1.0	mg/L	530	534	525	450	466	
alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
alkalinity, carbonate (as CO3)	3812-32-6	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
alkalinity, hydroxide (as OH)	14280-30-9	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	434	437	430	369	382	
conductivity	----	E100	2.0	µS/cm	1860	1840	1810	1760	1760	
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	1280	1280	1230	1160	1130	
oxidation-reduction potential [ORP]	----	E125	0.10	mV	310	284	288	288	294	
pH	----	E108	0.10	pH units	7.64	7.88	8.10	8.19	8.16	
solids, total dissolved [TDS]	----	E162	10	mg/L	1540	1540	1550	1460	1460	
solids, total suspended [TSS]	----	E160-L	1.0	mg/L	2.4	2.2	7.6	4.5	2.5	
turbidity	----	E121	0.10	NTU	<0.10	<0.10	0.56	0.16	<0.10	
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	5.30	5.26	5.69	4.99	4.91	
fluoride	16984-48-8	E235.F	0.020	mg/L	<0.100 ^{DLDS}	0.103	0.134	0.104	<0.100 ^{DLDS}	
Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	2.49	0.858 ^{TKNI}	<0.500 ^{DLML,TKNI}	<0.500 ^{DLML,TKNI}	<0.500 ^{DLML,TKNI}	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	16.2	16.4	16.4	16.0	16.0	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0217	0.0216	0.0201	0.0048	0.0041	
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0214	0.0209	0.0234	0.0069	0.0072	
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	714	722	712	705	708	
Organic / Inorganic Carbon										
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	1.16	1.11	1.10	1.06	1.02	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKUT_W S_LAEMP_EVO _2022-06-29_N P	RG_ERCKDT_W S_LAEMP_EVO _2022-06-29_N P	RG_ERCKMD_ WS_LAEMP_EV O_2022-06-29_ NP	RG_ERCKUC_W S_LAEMP_EVO _2022-06-30_N P	RG_ERCK_WS_ LAEMP_EVO_2 022-06-30_NP
Client sampling date / time					29-Jun-2022 09:00	29-Jun-2022 10:00	29-Jun-2022 11:00	30-Jun-2022 08:40	30-Jun-2022 08:30	
Analyte	CAS Number	Method	LOR	Unit	CG2208564-001 Result	CG2208564-002 Result	CG2208564-003 Result	CG2208564-004 Result	CG2208564-005 Result	
Organic / Inorganic Carbon										
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	1.05	1.10	1.45	1.21	1.54	
Ion Balance										
anion sum	----	EC101	0.10	meq/L	24.8	25.1	24.8	23.3	23.6	
cation sum	----	EC101	0.10	meq/L	25.7	25.8	24.7	23.4	22.8	
ion balance (cations/anions)	----	EC101	0.010	%	104	103	99.6	100	96.6	
ion balance (APHA)	----	EC101	0.010	%	1.78	1.38	0.202	0.214	1.72	
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L	<0.0030	<0.0030	0.0078	<0.0030	<0.0030	
antimony, total	7440-36-0	E420	0.00010	mg/L	0.00020	0.00021	0.00022	0.00021	0.00021	
arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00029	0.00030	0.00035	0.00029	0.00030	
barium, total	7440-39-3	E420	0.00010	mg/L	0.0642	0.0590	0.0634	0.0542	0.0535	
beryllium, total	7440-41-7	E420	0.020	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	
bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
boron, total	7440-42-8	E420	0.010	mg/L	0.012	0.013	0.012	0.012	0.012	
cadmium, total	7440-43-9	E420	0.0050	µg/L	0.0803	0.0736	0.100	0.0069	0.0065	
calcium, total	7440-70-2	E420	0.050	mg/L	237	246	230	213	212	
chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	0.00020	0.00020	0.00018	0.00019	0.00020	
cobalt, total	7440-48-4	E420	0.10	µg/L	<0.10	<0.10	0.65	<0.10	<0.10	
copper, total	7440-50-8	E420	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
iron, total	7439-89-6	E420	0.010	mg/L	<0.010	<0.010	0.095	<0.010	<0.010	
lead, total	7439-92-1	E420	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
lithium, total	7439-93-2	E420	0.0010	mg/L	0.0260	0.0275	0.0241	0.0244	0.0234	
magnesium, total	7439-95-4	E420	0.0050	mg/L	144	140	137	143	142	
manganese, total	7439-96-5	E420	0.00010	mg/L	<0.00010	0.00013	0.0201	0.00028	0.00027	
mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.00116	0.00116	0.00115	0.00125	0.00133	
nickel, total	7440-02-0	E420	0.00050	mg/L	0.00092	0.00078	0.00153	0.00224	0.00226	
potassium, total	7440-09-7	E420	0.050	mg/L	2.70	2.64	2.61	2.77	2.77	
selenium, total	7782-49-2	E420	0.050	µg/L	170	168	169	164	180	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKUT_W S_LAEMP_EVO _2022-06-29_N P	RG_ERCKDT_W S_LAEMP_EVO _2022-06-29_N P	RG_ERCKMD_ WS_LAEMP_EV O_2022-06-29_ NP	RG_ERCKUC_W S_LAEMP_EVO _2022-06-30_N P	RG_ERCK_WS_ LAEMP_EVO_2 022-06-30_NP
Client sampling date / time					29-Jun-2022 09:00	29-Jun-2022 10:00	29-Jun-2022 11:00	30-Jun-2022 08:40	30-Jun-2022 08:30	
Analyte	CAS Number	Method	LOR	Unit	CG2208564-001 Result	CG2208564-002 Result	CG2208564-003 Result	CG2208564-004 Result	CG2208564-005 Result	
Total Metals										
silicon, total	7440-21-3	E420	0.10	mg/L	3.91	3.93	4.04	3.95	4.13	
silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
sodium, total	7440-23-5	E420	0.050	mg/L	3.39	3.27	3.22	3.36	3.35	
strontium, total	7440-24-6	E420	0.00020	mg/L	0.212	0.221	0.218	0.211	0.220	
sulfur, total	7704-34-9	E420	0.50	mg/L	270	267	267	260	276	
thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	
uranium, total	7440-61-1	E420	0.000010	mg/L	0.00781	0.00815	0.00802	0.00766	0.00793	
vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	<0.0030	0.0032	<0.0030	<0.0030	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00020	0.00020	0.00022	0.00020	0.00020	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00026	0.00023	0.00028	0.00025	0.00025	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0646	0.0667	0.0635	0.0549	0.0512	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
boron, dissolved	7440-42-8	E421	0.010	mg/L	0.012	0.012	0.012	0.011	0.011	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.0759	0.0779	0.0755	<0.0050	<0.0050	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	254	253	247	222	223	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	0.00018	0.00021	0.00017	0.00018	0.00013	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	<0.10	<0.10	<0.10	<0.10	<0.10	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0278	0.0271	0.0272	0.0248	0.0266	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	156	158	148	147	139	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	<0.00010	<0.00010	0.00061	0.00017	0.00020	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKUT_W S_LAEMP_EVO _2022-06-29_N P	RG_ERCKDT_W S_LAEMP_EVO _2022-06-29_N P	RG_ERCKMD_ WS_LAEMP_EV O_2022-06-29_ NP	RG_ERCKUC_W S_LAEMP_EVO _2022-06-30_N P	RG_ERCK_WS_ LAEMP_EVO_2 022-06-30_NP
Client sampling date / time					29-Jun-2022 09:00	29-Jun-2022 10:00	29-Jun-2022 11:00	30-Jun-2022 08:40	30-Jun-2022 08:30	
Analyte	CAS Number	Method	LOR	Unit	CG2208564-001 Result	CG2208564-002 Result	CG2208564-003 Result	CG2208564-004 Result	CG2208564-005 Result	
Dissolved Metals										
mercury, dissolved	7439-97-6	E509	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00110	0.00113	0.00110	0.00120	0.00118	
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00077	0.00082	0.00104	0.00209	0.00202	
potassium, dissolved	7440-09-7	E421	0.050	mg/L	2.69	2.68	2.62	2.58	2.54	
selenium, dissolved	7782-49-2	E421	0.050	µg/L	195	203	197	189	191	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	3.99	4.00	3.99	4.01	3.98	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	3.22	3.30	3.30	3.15	3.00	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.237	0.235	0.230	0.219	0.220	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	275	279	275	272	267	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00732	0.00714	0.00725	0.00713	0.00714	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0014	0.0018	0.0018	<0.0010	<0.0010	
dissolved mercury filtration location	----	EP509	-	-	Field	Field	Field	Field	Field	
dissolved metals filtration location	----	EP421	-	-	Field	Field	Field	Field	Field	

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: CG2208564	Page	: 1 of 24
Amendment	: 1		
Client	: Teck Coal Limited	Laboratory	: Calgary - Environmental
Contact	: Mike Pope	Account Manager	: Lyudmyla Shvets
Address	: RR#1 HWY#3 Spanwood BC Canada V0B 2G1	Address	: 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5
Telephone	: ----	Telephone	: +1 403 407 1800
Project	: REGIONAL EFFECTS PROGRAM	Date Samples Received	: 02-Jul-2022 10:30
PO	: VPO00816101	Issue Date	: 13-Jul-2022 13:27
C-O-C number	: June EVO LAEMP 2022		
Sampler	: Robin Valleau		
Site	: ----		
Quote number	: Teck Coal Master Quote		
No. of samples received	: 5		
No. of samples analysed	: 5		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_ERCK_WS_LAEMP_EVO_2022-06-30_NP	E298	30-Jun-2022	02-Jul-2022	----	----		02-Jul-2022	28 days	2 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_ERCKUC_WS_LAEMP_EVO_2022-06-30_NP	E298	30-Jun-2022	02-Jul-2022	----	----		02-Jul-2022	28 days	2 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-06-29_NP	E298	29-Jun-2022	02-Jul-2022	----	----		02-Jul-2022	28 days	3 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-06-29_NP	E298	29-Jun-2022	02-Jul-2022	----	----		02-Jul-2022	28 days	3 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-06-29_NP	E298	29-Jun-2022	02-Jul-2022	----	----		02-Jul-2022	28 days	3 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCK_WS_LAEMP_EVO_2022-06-30_NP	E235.Br-L	30-Jun-2022	----	----	----		02-Jul-2022	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-06-30_NP	E235.Br-L	30-Jun-2022	----	----	----		02-Jul-2022	28 days	2 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-06-29_NP	E235.Br-L	29-Jun-2022	----	----	----		02-Jul-2022	28 days	3 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-06-29_NP	E235.Br-L	29-Jun-2022	----	----	----		02-Jul-2022	28 days	3 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-06-29_NP	E235.Br-L	29-Jun-2022	----	----	----		02-Jul-2022	28 days	3 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-06-30_NP	E235.Cl-L	30-Jun-2022	----	----	----		02-Jul-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-06-30_NP	E235.Cl-L	30-Jun-2022	----	----	----		02-Jul-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-06-29_NP	E235.Cl-L	29-Jun-2022	----	----	----		02-Jul-2022	28 days	3 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-06-29_NP	E235.Cl-L	29-Jun-2022	----	----	----		02-Jul-2022	28 days	3 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-06-29_NP	E235.Cl-L	29-Jun-2022	----	----	----		02-Jul-2022	28 days	3 days	✔	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-06-30_NP	E378-U	30-Jun-2022	----	----	----		02-Jul-2022	3 days	2 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
Rec	Actual	Rec		Actual						
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-06-30_NP	E378-U	30-Jun-2022	----	----	----		02-Jul-2022	3 days	2 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-06-29_NP	E378-U	29-Jun-2022	----	----	----		02-Jul-2022	3 days	3 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-06-29_NP	E378-U	29-Jun-2022	----	----	----		02-Jul-2022	3 days	3 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-06-29_NP	E378-U	29-Jun-2022	----	----	----		02-Jul-2022	3 days	3 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE RG_ERCK_WS_LAEMP_EVO_2022-06-30_NP	E235.F	30-Jun-2022	----	----	----		02-Jul-2022	28 days	2 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-06-30_NP	E235.F	30-Jun-2022	----	----	----		02-Jul-2022	28 days	2 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-06-29_NP	E235.F	29-Jun-2022	----	----	----		02-Jul-2022	28 days	3 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-06-29_NP	E235.F	29-Jun-2022	----	----	----		02-Jul-2022	28 days	3 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-06-29_NP	E235.F	29-Jun-2022	----	----	----		02-Jul-2022	28 days	3 days	✓



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-06-30_NP	E235.NO3-L	30-Jun-2022	----	----	----		02-Jul-2022	3 days	2 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-06-30_NP	E235.NO3-L	30-Jun-2022	----	----	----		02-Jul-2022	3 days	2 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-06-29_NP	E235.NO3-L	29-Jun-2022	----	----	----		02-Jul-2022	3 days	3 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-06-29_NP	E235.NO3-L	29-Jun-2022	----	----	----		02-Jul-2022	3 days	3 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-06-29_NP	E235.NO3-L	29-Jun-2022	----	----	----		02-Jul-2022	3 days	3 days	✓	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-06-30_NP	E235.NO2-L	30-Jun-2022	----	----	----		02-Jul-2022	3 days	2 days	✓	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-06-30_NP	E235.NO2-L	30-Jun-2022	----	----	----		02-Jul-2022	3 days	2 days	✓	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-06-29_NP	E235.NO2-L	29-Jun-2022	----	----	----		02-Jul-2022	3 days	3 days	✓	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-06-29_NP	E235.NO2-L	29-Jun-2022	----	----	----		02-Jul-2022	3 days	3 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec Actual		Eval	Analysis Date	Holding Times Rec Actual		Eval
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-06-29_NP	E235.NO2-L	29-Jun-2022	----	----	----		02-Jul-2022	3 days	3 days	✔
Anions and Nutrients : Sulfate in Water by IC										
HDPE RG_ERCK_WS_LAEMP_EVO_2022-06-30_NP	E235.SO4	30-Jun-2022	----	----	----		02-Jul-2022	28 days	2 days	✔
Anions and Nutrients : Sulfate in Water by IC										
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-06-30_NP	E235.SO4	30-Jun-2022	----	----	----		02-Jul-2022	28 days	2 days	✔
Anions and Nutrients : Sulfate in Water by IC										
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-06-29_NP	E235.SO4	29-Jun-2022	----	----	----		02-Jul-2022	28 days	3 days	✔
Anions and Nutrients : Sulfate in Water by IC										
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-06-29_NP	E235.SO4	29-Jun-2022	----	----	----		02-Jul-2022	28 days	3 days	✔
Anions and Nutrients : Sulfate in Water by IC										
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-06-29_NP	E235.SO4	29-Jun-2022	----	----	----		02-Jul-2022	28 days	3 days	✔
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) RG_ERCK_WS_LAEMP_EVO_2022-06-30_NP	E318	30-Jun-2022	04-Jul-2022	----	----		04-Jul-2022	28 days	4 days	✔
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) RG_ERCKUC_WS_LAEMP_EVO_2022-06-30_NP	E318	30-Jun-2022	04-Jul-2022	----	----		04-Jul-2022	28 days	4 days	✔
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-06-29_NP	E318	29-Jun-2022	04-Jul-2022	----	----		04-Jul-2022	28 days	5 days	✔



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
Rec	Actual	Rec		Actual							
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-06-29_NP	E318	29-Jun-2022	04-Jul-2022	----	----		04-Jul-2022	28 days	5 days	✓	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-06-29_NP	E318	29-Jun-2022	04-Jul-2022	----	----		04-Jul-2022	28 days	5 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_ERCK_WS_LAEMP_EVO_2022-06-30_NP	E372-U	30-Jun-2022	02-Jul-2022	----	----		03-Jul-2022	28 days	3 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_ERCKUC_WS_LAEMP_EVO_2022-06-30_NP	E372-U	30-Jun-2022	02-Jul-2022	----	----		03-Jul-2022	28 days	3 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-06-29_NP	E372-U	29-Jun-2022	02-Jul-2022	----	----		03-Jul-2022	28 days	4 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-06-29_NP	E372-U	29-Jun-2022	02-Jul-2022	----	----		03-Jul-2022	28 days	4 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-06-29_NP	E372-U	29-Jun-2022	02-Jul-2022	----	----		03-Jul-2022	28 days	4 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_ERCK_WS_LAEMP_EVO_2022-06-30_NP	E421.Cr-L	30-Jun-2022	06-Jul-2022	----	----		06-Jul-2022	180 days	6 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_ERCKUC_WS_LAEMP_EVO_2022-06-30_NP	E421.Cr-L	30-Jun-2022	06-Jul-2022	----	----		06-Jul-2022	180 days	6 days	✓	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-06-29_NP	E421.Cr-L	29-Jun-2022	06-Jul-2022	----	----		06-Jul-2022	180 days	7 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-06-29_NP	E421.Cr-L	29-Jun-2022	06-Jul-2022	----	----		06-Jul-2022	180 days	7 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-06-29_NP	E421.Cr-L	29-Jun-2022	06-Jul-2022	----	----		06-Jul-2022	180 days	7 days	✓	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_ERCK_WS_LAEMP_EVO_2022-06-30_NP	E509	30-Jun-2022	06-Jul-2022	----	----		06-Jul-2022	28 days	6 days	✓	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_ERCKUC_WS_LAEMP_EVO_2022-06-30_NP	E509	30-Jun-2022	06-Jul-2022	----	----		06-Jul-2022	28 days	6 days	✓	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-06-29_NP	E509	29-Jun-2022	06-Jul-2022	----	----		06-Jul-2022	28 days	7 days	✓	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-06-29_NP	E509	29-Jun-2022	06-Jul-2022	----	----		06-Jul-2022	28 days	7 days	✓	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-06-29_NP	E509	29-Jun-2022	06-Jul-2022	----	----		06-Jul-2022	28 days	7 days	✓	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_ERCK_WS_LAEMP_EVO_2022-06-30_NP	E421	30-Jun-2022	06-Jul-2022	----	----		06-Jul-2022	180 days	6 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_ERCKUC_WS_LAEMP_EVO_2022-06-30_NP	E421	30-Jun-2022	06-Jul-2022	----	----		06-Jul-2022	180 days	6 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-06-29_NP	E421	29-Jun-2022	06-Jul-2022	----	----		06-Jul-2022	180 days	7 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-06-29_NP	E421	29-Jun-2022	06-Jul-2022	----	----		06-Jul-2022	180 days	7 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-06-29_NP	E421	29-Jun-2022	06-Jul-2022	----	----		06-Jul-2022	180 days	7 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_ERCK_WS_LAEMP_EVO_2022-06-30_NP	E358-L	30-Jun-2022	02-Jul-2022	----	----		02-Jul-2022	28 days	2 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_ERCKUC_WS_LAEMP_EVO_2022-06-30_NP	E358-L	30-Jun-2022	02-Jul-2022	----	----		02-Jul-2022	28 days	2 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-06-29_NP	E358-L	29-Jun-2022	02-Jul-2022	----	----		02-Jul-2022	28 days	3 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-06-29_NP	E358-L	29-Jun-2022	02-Jul-2022	----	----		02-Jul-2022	28 days	3 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-06-29_NP	E358-L	29-Jun-2022	02-Jul-2022	----	----		02-Jul-2022	28 days	3 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_ERCK_WS_LAEMP_EVO_2022-06-30_NP	E355-L	30-Jun-2022	02-Jul-2022	----	----		02-Jul-2022	28 days	2 days	✓	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKUC_WS_LAEMP_EVO_2022-06-30_NP	E355-L	30-Jun-2022	02-Jul-2022	----	----		02-Jul-2022	28 days	2 days	✓	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-06-29_NP	E355-L	29-Jun-2022	02-Jul-2022	----	----		02-Jul-2022	28 days	3 days	✓	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-06-29_NP	E355-L	29-Jun-2022	02-Jul-2022	----	----		02-Jul-2022	28 days	3 days	✓	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-06-29_NP	E355-L	29-Jun-2022	02-Jul-2022	----	----		02-Jul-2022	28 days	3 days	✓	
Physical Tests : Acidity by Titration											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-06-30_NP	E283	30-Jun-2022	----	----	----		03-Jul-2022	14 days	3 days	✓	
Physical Tests : Acidity by Titration											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-06-30_NP	E283	30-Jun-2022	----	----	----		03-Jul-2022	14 days	3 days	✓	
Physical Tests : Acidity by Titration											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-06-29_NP	E283	29-Jun-2022	----	----	----		03-Jul-2022	14 days	4 days	✓	
Physical Tests : Acidity by Titration											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-06-29_NP	E283	29-Jun-2022	----	----	----		03-Jul-2022	14 days	4 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Acidity by Titration											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-06-29_NP	E283	29-Jun-2022	----	----	----		03-Jul-2022	14 days	4 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-06-30_NP	E290	30-Jun-2022	----	----	----		03-Jul-2022	14 days	3 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-06-30_NP	E290	30-Jun-2022	----	----	----		03-Jul-2022	14 days	3 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-06-29_NP	E290	29-Jun-2022	----	----	----		03-Jul-2022	14 days	4 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-06-29_NP	E290	29-Jun-2022	----	----	----		03-Jul-2022	14 days	4 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-06-29_NP	E290	29-Jun-2022	----	----	----		03-Jul-2022	14 days	4 days	✔	
Physical Tests : Conductivity in Water											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-06-30_NP	E100	30-Jun-2022	----	----	----		03-Jul-2022	28 days	3 days	✔	
Physical Tests : Conductivity in Water											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-06-30_NP	E100	30-Jun-2022	----	----	----		03-Jul-2022	28 days	3 days	✔	
Physical Tests : Conductivity in Water											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-06-29_NP	E100	29-Jun-2022	----	----	----		03-Jul-2022	28 days	4 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Conductivity in Water											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-06-29_NP	E100	29-Jun-2022	----	----	----		03-Jul-2022	28 days	4 days		✓
Physical Tests : Conductivity in Water											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-06-29_NP	E100	29-Jun-2022	----	----	----		03-Jul-2022	28 days	4 days		✓
Physical Tests : ORP by Electrode											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-06-30_NP	E125	30-Jun-2022	----	----	----		02-Jul-2022	0.25 hrs	54 hrs		* EHTR-FM
Physical Tests : ORP by Electrode											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-06-30_NP	E125	30-Jun-2022	----	----	----		02-Jul-2022	0.25 hrs	54 hrs		* EHTR-FM
Physical Tests : ORP by Electrode											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-06-29_NP	E125	29-Jun-2022	----	----	----		02-Jul-2022	0.25 hrs	76 hrs		* EHTR-FM
Physical Tests : ORP by Electrode											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-06-29_NP	E125	29-Jun-2022	----	----	----		02-Jul-2022	0.25 hrs	77 hrs		* EHTR-FM
Physical Tests : ORP by Electrode											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-06-29_NP	E125	29-Jun-2022	----	----	----		02-Jul-2022	0.25 hrs	78 hrs		* EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-06-30_NP	E108	30-Jun-2022	----	----	----		03-Jul-2022	0.25 hrs	71 hrs		* EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-06-30_NP	E108	30-Jun-2022	----	----	----		03-Jul-2022	0.25 hrs	71 hrs		* EHTR-FM



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
Rec	Actual	Rec		Actual						
Physical Tests : pH by Meter										
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-06-29_NP	E108	29-Jun-2022	----	----	----		03-Jul-2022	0.25 hrs	93 hrs	* EHTR-FM
Physical Tests : pH by Meter										
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-06-29_NP	E108	29-Jun-2022	----	----	----		03-Jul-2022	0.25 hrs	94 hrs	* EHTR-FM
Physical Tests : pH by Meter										
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-06-29_NP	E108	29-Jun-2022	----	----	----		03-Jul-2022	0.25 hrs	95 hrs	* EHTR-FM
Physical Tests : TDS by Gravimetry										
HDPE RG_ERCK_WS_LAEMP_EVO_2022-06-30_NP	E162	30-Jun-2022	----	----	----		02-Jul-2022	7 days	2 days	✓
Physical Tests : TDS by Gravimetry										
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-06-30_NP	E162	30-Jun-2022	----	----	----		02-Jul-2022	7 days	2 days	✓
Physical Tests : TDS by Gravimetry										
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-06-29_NP	E162	29-Jun-2022	----	----	----		02-Jul-2022	7 days	3 days	✓
Physical Tests : TDS by Gravimetry										
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-06-29_NP	E162	29-Jun-2022	----	----	----		02-Jul-2022	7 days	3 days	✓
Physical Tests : TDS by Gravimetry										
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-06-29_NP	E162	29-Jun-2022	----	----	----		02-Jul-2022	7 days	3 days	✓
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE RG_ERCK_WS_LAEMP_EVO_2022-06-30_NP	E160-L	30-Jun-2022	----	----	----		02-Jul-2022	7 days	2 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-06-30_NP	E160-L	30-Jun-2022	----	----	----		02-Jul-2022	7 days	2 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-06-29_NP	E160-L	29-Jun-2022	----	----	----		02-Jul-2022	7 days	3 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-06-29_NP	E160-L	29-Jun-2022	----	----	----		02-Jul-2022	7 days	3 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-06-29_NP	E160-L	29-Jun-2022	----	----	----		02-Jul-2022	7 days	3 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-06-30_NP	E121	30-Jun-2022	----	----	----		02-Jul-2022	3 days	2 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-06-30_NP	E121	30-Jun-2022	----	----	----		02-Jul-2022	3 days	2 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-06-29_NP	E121	29-Jun-2022	----	----	----		02-Jul-2022	3 days	3 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-06-29_NP	E121	29-Jun-2022	----	----	----		02-Jul-2022	3 days	3 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-06-29_NP	E121	29-Jun-2022	----	----	----		02-Jul-2022	3 days	3 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_ERCK_WS_LAEMP_EVO_2022-06-30_NP	E420.Cr-L	30-Jun-2022	----	----	----		06-Jul-2022	180 days	6 days	✓	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_ERCKUC_WS_LAEMP_EVO_2022-06-30_NP	E420.Cr-L	30-Jun-2022	----	----	----		06-Jul-2022	180 days	6 days	✓	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-06-29_NP	E420.Cr-L	29-Jun-2022	----	----	----		06-Jul-2022	180 days	7 days	✓	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-06-29_NP	E420.Cr-L	29-Jun-2022	----	----	----		06-Jul-2022	180 days	7 days	✓	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-06-29_NP	E420.Cr-L	29-Jun-2022	----	----	----		06-Jul-2022	180 days	7 days	✓	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_ERCK_WS_LAEMP_EVO_2022-06-30_NP	E508	30-Jun-2022	----	----	----		06-Jul-2022	28 days	6 days	✓	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_ERCKUC_WS_LAEMP_EVO_2022-06-30_NP	E508	30-Jun-2022	----	----	----		06-Jul-2022	28 days	6 days	✓	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-06-29_NP	E508	29-Jun-2022	----	----	----		06-Jul-2022	28 days	7 days	✓	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-06-29_NP	E508	29-Jun-2022	----	----	----		06-Jul-2022	28 days	7 days	✓	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation			Analysis				
			Preparation Date	Holding Times Rec Actual		Eval	Analysis Date	Holding Times Rec Actual		Eval
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-06-29_NP	E508	29-Jun-2022	----	----	----		06-Jul-2022	28 days	7 days	✓
Total Metals : Total Metals in Water by CRC ICPCS										
HDPE total (nitric acid) RG_ERCK_WS_LAEMP_EVO_2022-06-30_NP	E420	30-Jun-2022	----	----	----		06-Jul-2022	180 days	6 days	✓
Total Metals : Total Metals in Water by CRC ICPCS										
HDPE total (nitric acid) RG_ERCKUC_WS_LAEMP_EVO_2022-06-30_NP	E420	30-Jun-2022	----	----	----		06-Jul-2022	180 days	6 days	✓
Total Metals : Total Metals in Water by CRC ICPCS										
HDPE total (nitric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-06-29_NP	E420	29-Jun-2022	----	----	----		06-Jul-2022	180 days	7 days	✓
Total Metals : Total Metals in Water by CRC ICPCS										
HDPE total (nitric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-06-29_NP	E420	29-Jun-2022	----	----	----		06-Jul-2022	180 days	7 days	✓
Total Metals : Total Metals in Water by CRC ICPCS										
HDPE total (nitric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-06-29_NP	E420	29-Jun-2022	----	----	----		06-Jul-2022	180 days	7 days	✓

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended
 Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
Analytical Methods							
Laboratory Duplicates (DUP)							
Acidity by Titration	E283	546886	1	5	20.0	5.0	✓
Alkalinity Species by Titration	E290	546889	1	5	20.0	5.0	✓
Ammonia by Fluorescence	E298	546710	1	19	5.2	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	546784	1	5	20.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	546785	1	5	20.0	5.0	✓
Conductivity in Water	E100	546887	1	6	16.6	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	550271	1	18	5.5	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	550619	1	16	6.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	550272	1	18	5.5	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	546742	1	5	20.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	546749	1	13	7.6	5.0	✓
Fluoride in Water by IC	E235.F	546782	1	5	20.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	546786	1	5	20.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	546787	1	5	20.0	5.0	✓
ORP by Electrode	E125	546770	1	15	6.6	5.0	✓
pH by Meter	E108	546888	1	5	20.0	5.0	✓
Sulfate in Water by IC	E235.SO4	546783	1	5	20.0	5.0	✓
TDS by Gravimetry	E162	546734	1	5	20.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	550571	1	9	11.1	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	547019	1	11	9.0	5.0	✓
Total Mercury in Water by CVAAS	E508	550611	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	550572	1	19	5.2	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	546747	1	5	20.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	546743	1	7	14.2	5.0	✓
Turbidity by Nephelometry	E121	546775	1	15	6.6	5.0	✓
Laboratory Control Samples (LCS)							
Acidity by Titration	E283	546886	1	5	20.0	5.0	✓
Alkalinity Species by Titration	E290	546889	1	5	20.0	5.0	✓
Ammonia by Fluorescence	E298	546710	1	19	5.2	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	546784	1	5	20.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	546785	1	5	20.0	5.0	✓
Conductivity in Water	E100	546887	1	6	16.6	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	550271	1	18	5.5	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	550619	1	16	6.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	550272	1	18	5.5	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	546742	1	5	20.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	546749	1	13	7.6	5.0	✓



Matrix: **Water**

Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
<i>Analytical Methods</i>							
Laboratory Control Samples (LCS) - Continued							
Fluoride in Water by IC	E235.F	546782	1	5	20.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	546786	1	5	20.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	546787	1	5	20.0	5.0	✓
ORP by Electrode	E125	546770	1	15	6.6	5.0	✓
pH by Meter	E108	546888	1	5	20.0	5.0	✓
Sulfate in Water by IC	E235.SO4	546783	1	5	20.0	5.0	✓
TDS by Gravimetry	E162	546734	1	5	20.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	550571	1	9	11.1	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	547019	1	11	9.0	5.0	✓
Total Mercury in Water by CVAAS	E508	550611	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	550572	1	19	5.2	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	546747	1	5	20.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	546743	1	7	14.2	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	546732	1	9	11.1	5.0	✓
Turbidity by Nephelometry	E121	546775	1	15	6.6	5.0	✓
Method Blanks (MB)							
Acidity by Titration	E283	546886	1	5	20.0	5.0	✓
Alkalinity Species by Titration	E290	546889	1	5	20.0	5.0	✓
Ammonia by Fluorescence	E298	546710	1	19	5.2	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	546784	1	5	20.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	546785	1	5	20.0	5.0	✓
Conductivity in Water	E100	546887	1	6	16.6	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	550271	1	18	5.5	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	550619	1	16	6.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	550272	1	18	5.5	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	546742	1	5	20.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	546749	1	13	7.6	5.0	✓
Fluoride in Water by IC	E235.F	546782	1	5	20.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	546786	1	5	20.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	546787	1	5	20.0	5.0	✓
Sulfate in Water by IC	E235.SO4	546783	1	5	20.0	5.0	✓
TDS by Gravimetry	E162	546734	1	5	20.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	550571	1	9	11.1	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	547019	1	11	9.0	5.0	✓
Total Mercury in Water by CVAAS	E508	550611	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	550572	1	19	5.2	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	546747	1	5	20.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	546743	1	7	14.2	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	546732	1	9	11.1	5.0	✓
Turbidity by Nephelometry	E121	546775	1	15	6.6	5.0	✓



Matrix: **Water**

Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
<i>Analytical Methods</i>							
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	546710	1	19	5.2	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	546784	1	5	20.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	546785	1	5	20.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	550271	1	18	5.5	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	550619	1	16	6.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	550272	1	18	5.5	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	546742	1	5	20.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	546749	1	13	7.6	5.0	✓
Fluoride in Water by IC	E235.F	546782	1	5	20.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	546786	1	5	20.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	546787	1	5	20.0	5.0	✓
Sulfate in Water by IC	E235.SO4	546783	1	5	20.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	550571	1	9	11.1	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	547019	1	11	9.0	5.0	✓
Total Mercury in Water by CVAAS	E508	550611	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	550572	1	19	5.2	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	546747	1	5	20.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	546743	1	7	14.2	5.0	✓



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 Calgary - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 Calgary - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 Calgary - Environmental	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
ORP by Electrode	E125 Calgary - Environmental	Water	ASTM D1498 (mod)	Oxidation reduction potential is reported as the oxidation-reduction potential of the platinum metal-reference electrode employed, measured in mV. For high accuracy test results, it is recommended that this analysis be conducted in the field.
TSS by Gravimetry (Low Level)	E160-L Calgary - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 Calgary - Environmental	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC (Low Level)	E235.Cl-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Acidity by Titration	E283 Calgary - Environmental	Water	APHA 2310 B (mod)	Acidity is determined by potentiometric titration to pH endpoint of 8.3



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Alkalinity Species by Titration	E290 Calgary - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 Calgary - Environmental	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 Calgary - Environmental	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L Calgary - Environmental	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Dissolved Organic Carbon by Combustion (Low Level)	E358-L Calgary - Environmental	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U Calgary - Environmental	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U Calgary - Environmental	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Total Metals in Water by CRC ICPMS	E420 Vancouver - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L Vancouver - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS.
Dissolved Metals in Water by CRC ICPMS	E421 Vancouver - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L Vancouver - Environmental	Water	APHA 3030 B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS
Total Mercury in Water by CVAAS	E508 Vancouver - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS
Dissolved Mercury in Water by CVAAS	E509 Vancouver - Environmental	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
Dissolved Hardness (Calculated)	EC100 Vancouver - Environmental	Water	APHA 2340B	"Hardness (as CaCO ₃), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Ion Balance using Dissolved Metals	EC101 Calgary - Environmental	Water	APHA 1030E	Cation Sum, Anion Sum, and Ion Balance are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present. Ion Balance cannot be calculated accurately for waters with very low electrical conductivity (EC).

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 Calgary - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 Calgary - Environmental	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Preparation for Total Organic Carbon by Combustion	EP355 Calgary - Environmental	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon for Combustion	EP358 Calgary - Environmental	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Phosphorus in water	EP372 Calgary - Environmental	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Dissolved Metals Water Filtration	EP421 Vancouver - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO ₃ .



<i>Preparation Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
Dissolved Mercury Water Filtration	EP509 Vancouver - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.

QUALITY CONTROL REPORT

Work Order : **CG2208564**

Page : 1 of 18

Amendment : **1**

Client : Teck Coal Limited
Contact : Mike Pope
Address : RR#1 HWY#3
 Sparwood BC Canada V0B 2G1
Telephone : ----
Project : REGIONAL EFFECTS PROGRAM
PO : VPO00816101
C-O-C number : June EVO LAEMP 2022
Sampler : Robin Valleau
Site : ----
Quote number : Teck Coal Master Quote
No. of samples received : 5
No. of samples analysed : 5

Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
 Calgary, Alberta Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 02-Jul-2022 10:30
Date Analysis Commenced : 02-Jul-2022
Issue Date : 13-Jul-2022 13:27

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Anthony Calero	Team Leader - Inorganics	Calgary Inorganics, Calgary, Alberta
Erin Sanchez		Vancouver Metals, Burnaby, British Columbia
Harpreet Chawla	Team Leader - Inorganics	Calgary Inorganics, Calgary, Alberta
Owen Cheng		Vancouver Metals, Burnaby, British Columbia
Robin Weeks	Team Leader - Metals	Vancouver Metals, Burnaby, British Columbia
Sara Niroomand		Calgary Inorganics, Calgary, Alberta



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 546734)											
CG2208564-001	RG_ERCKUT_WS_LAEMP_EVO_2022-06-29_NP	solids, total dissolved [TDS]	----	E162	20	mg/L	1540	1540	0.325%	20%	----
Physical Tests (QC Lot: 546770)											
CG2208558-001	Anonymous	oxidation-reduction potential [ORP]	----	E125	0.10	mV	407	407	0.0245%	15%	----
Physical Tests (QC Lot: 546775)											
CG2208558-001	Anonymous	turbidity	----	E121	0.10	NTU	4.36	4.16	4.74%	15%	----
Physical Tests (QC Lot: 546886)											
CG2208564-001	RG_ERCKUT_WS_LAEMP_EVO_2022-06-29_NP	acidity (as CaCO ₃)	----	E283	2.0	mg/L	10.6	12.7	2.1	Diff <2x LOR	----
Physical Tests (QC Lot: 546887)											
CG2208564-005	RG_ERCK_WS_LAEMP_EVO_2022-06-30_NP	conductivity	----	E100	2.0	µS/cm	1760	1720	2.24%	10%	----
Physical Tests (QC Lot: 546888)											
CG2208564-005	RG_ERCK_WS_LAEMP_EVO_2022-06-30_NP	pH	----	E108	0.10	pH units	8.16	8.22	0.733%	4%	----
Physical Tests (QC Lot: 546889)											
CG2208564-005	RG_ERCK_WS_LAEMP_EVO_2022-06-30_NP	alkalinity, bicarbonate (as CaCO ₃)	----	E290	1.0	mg/L	382	373	2.22%	20%	----
		alkalinity, carbonate (as CaCO ₃)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, hydroxide (as CaCO ₃)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, total (as CaCO ₃)	----	E290	1.0	mg/L	382	373	2.22%	20%	----
Anions and Nutrients (QC Lot: 546710)											
CG2208535-001	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.125	mg/L	5.15	5.21	1.09%	20%	----
Anions and Nutrients (QC Lot: 546743)											
CG2208564-001	RG_ERCKUT_WS_LAEMP_EVO_2022-06-29_NP	phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0214	0.0229	6.67%	20%	----
Anions and Nutrients (QC Lot: 546749)											
CG2208563-005	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 546782)											
CG2208564-001	RG_ERCKUT_WS_LAEMP_EVO_2022-06-29_NP	fluoride	16984-48-8	E235.F	0.100	mg/L	<0.100	0.109	0.009	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 546783)											
CG2208564-001	RG_ERCKUT_WS_LAEMP_EVO_2022-06-29_NP	sulfate (as SO ₄)	14808-79-8	E235.SO4	1.50	mg/L	714	718	0.536%	20%	----
Anions and Nutrients (QC Lot: 546784)											



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 546784) - continued											
CG2208564-001	RG_ERCKUT_WS_LAEMP_EVO_2022-06-29_NP	bromide	24959-67-9	E235.Br-L	0.250	mg/L	<0.250	<0.250	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 546785)											
CG2208564-001	RG_ERCKUT_WS_LAEMP_EVO_2022-06-29_NP	chloride	16887-00-6	E235.Cl-L	0.50	mg/L	5.30	5.26	0.821%	20%	----
Anions and Nutrients (QC Lot: 546786)											
CG2208564-001	RG_ERCKUT_WS_LAEMP_EVO_2022-06-29_NP	nitrate (as N)	14797-55-8	E235.NO3-L	0.0250	mg/L	16.2	16.4	0.934%	20%	----
Anions and Nutrients (QC Lot: 546787)											
CG2208564-001	RG_ERCKUT_WS_LAEMP_EVO_2022-06-29_NP	nitrite (as N)	14797-65-0	E235.NO2-L	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 547019)											
CG2208558-004	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.500	mg/L	<0.500	<0.500	0	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 546742)											
CG2208564-001	RG_ERCKUT_WS_LAEMP_EVO_2022-06-29_NP	carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	1.16	1.08	0.07	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 546747)											
CG2208564-001	RG_ERCKUT_WS_LAEMP_EVO_2022-06-29_NP	carbon, total organic [TOC]	----	E355-L	0.50	mg/L	1.05	0.99	0.06	Diff <2x LOR	----
Total Metals (QC Lot: 550571)											
CG2208535-001	Anonymous	chromium, total	7440-47-3	E420.Cr-L	0.00050	mg/L	0.0386	0.0353	8.88%	20%	----
Total Metals (QC Lot: 550572)											
CG2208535-001	Anonymous	aluminum, total	7429-90-5	E420	0.0150	mg/L	17.6	15.6	11.8%	20%	----
		antimony, total	7440-36-0	E420	0.00050	mg/L	0.00501	0.00458	0.00043	Diff <2x LOR	----
		arsenic, total	7440-38-2	E420	0.00050	mg/L	0.0299	0.0285	4.80%	20%	----
		barium, total	7440-39-3	E420	0.00050	mg/L	12.0	12.1	0.497%	20%	----
		beryllium, total	7440-41-7	E420	0.000100	mg/L	3.00 µg/L	0.00287	4.25%	20%	----
		bismuth, total	7440-69-9	E420	0.000250	mg/L	0.000722	0.000532	0.000190	Diff <2x LOR	----
		boron, total	7440-42-8	E420	0.050	mg/L	0.065	0.062	0.002	Diff <2x LOR	----
		cadmium, total	7440-43-9	E420	0.0000250	mg/L	8.53 µg/L	0.00808	5.42%	20%	----
		calcium, total	7440-70-2	E420	0.250	mg/L	212	214	0.887%	20%	----
		cobalt, total	7440-48-4	E420	0.00050	mg/L	48.2 µg/L	0.0474	1.56%	20%	----
		copper, total	7440-50-8	E420	0.00250	mg/L	0.129	0.125	3.61%	20%	----
		iron, total	7439-89-6	E420	0.050	mg/L	60.7	51.4	16.4%	20%	----
		lead, total	7439-92-1	E420	0.000250	mg/L	0.0660	0.0606	8.59%	20%	----
		lithium, total	7439-93-2	E420	0.0050	mg/L	0.287	0.287	0.115%	20%	----
		magnesium, total	7439-95-4	E420	0.0250	mg/L	84.4	85.5	1.30%	20%	----
		manganese, total	7439-96-5	E420	0.00050	mg/L	1.08	1.08	0.152%	20%	----
		molybdenum, total	7439-98-7	E420	0.000250	mg/L	0.0762	0.0714	6.46%	20%	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (QC Lot: 550572) - continued											
CG2208535-001	Anonymous	nickel, total	7440-02-0	E420	0.00250	mg/L	0.178	0.175	1.56%	20%	----
		potassium, total	7440-09-7	E420	0.250	mg/L	21.1	20.7	1.98%	20%	----
		selenium, total	7782-49-2	E420	0.000250	mg/L	13.8 µg/L	0.0114	19.3%	20%	----
		silicon, total	7440-21-3	E420	1.00	mg/L	26.2	24.6	6.05%	20%	----
		silver, total	7440-22-4	E420	0.000050	mg/L	0.00216	0.00209	3.39%	20%	----
		sodium, total	7440-23-5	E420	0.250	mg/L	2.22	2.23	0.010	Diff <2x LOR	----
		strontium, total	7440-24-6	E420	0.00100	mg/L	0.972	0.919	5.68%	20%	----
		sulfur, total	7704-34-9	E420	2.50	mg/L	5.86	4.50	1.36	Diff <2x LOR	----
		thallium, total	7440-28-0	E420	0.000050	mg/L	0.00145	0.00143	0.994%	20%	----
		tin, total	7440-31-5	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		titanium, total	7440-32-6	E420	0.00150	mg/L	0.0255	0.0212	18.4%	20%	----
		uranium, total	7440-61-1	E420	0.000050	mg/L	0.00704	0.00683	2.98%	20%	----
		vanadium, total	7440-62-2	E420	0.00250	mg/L	0.109	0.102	6.09%	20%	----
		zinc, total	7440-66-6	E420	0.0150	mg/L	0.575	0.559	2.80%	20%	----
Total Metals (QC Lot: 550611)											
CG2208535-003	Anonymous	mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 550271)											
CG2208535-001	Anonymous	chromium, dissolved	7440-47-3	E421.Cr-L	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 550272)											
CG2208535-001	Anonymous	aluminum, dissolved	7429-90-5	E421	0.0020	mg/L	0.0077	0.0082	0.0005	Diff <2x LOR	----
		antimony, dissolved	7440-36-0	E421	0.00020	mg/L	0.00815	0.00789	3.33%	20%	----
		arsenic, dissolved	7440-38-2	E421	0.00020	mg/L	0.00087	0.00084	0.00002	Diff <2x LOR	----
		barium, dissolved	7440-39-3	E421	0.00020	mg/L	8.13	7.81	4.08%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.000040	mg/L	<0.040 µg/L	<0.000040	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.020	mg/L	0.043	0.042	0.001	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E421	0.0000500	mg/L	<0.0550 µg/L	<0.0000500	0.0000050	Diff <2x LOR	----
		calcium, dissolved	7440-70-2	E421	0.100	mg/L	91.4	89.8	1.78%	20%	----
		cobalt, dissolved	7440-48-4	E421	0.00020	mg/L	3.46 µg/L	0.00344	0.843%	20%	----
		copper, dissolved	7440-50-8	E421	0.00040	mg/L	0.00238	0.00236	0.00001	Diff <2x LOR	----
		iron, dissolved	7439-89-6	E421	0.020	mg/L	<0.020	<0.020	0	Diff <2x LOR	----
		lead, dissolved	7439-92-1	E421	0.000100	mg/L	0.000126	0.000127	0.000001	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0020	mg/L	0.310	0.306	1.26%	20%	----
		magnesium, dissolved	7439-95-4	E421	0.0100	mg/L	27.5	28.0	1.81%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00020	mg/L	0.0295	0.0303	2.63%	20%	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 550272) - continued											
CG2208535-001	Anonymous	molybdenum, dissolved	7439-98-7	E421	0.000100	mg/L	0.0670	0.0650	2.89%	20%	----
		nickel, dissolved	7440-02-0	E421	0.00100	mg/L	0.0167	0.0167	0.0214%	20%	----
		potassium, dissolved	7440-09-7	E421	0.100	mg/L	14.4	14.3	0.494%	20%	----
		selenium, dissolved	7782-49-2	E421	0.000100	mg/L	3.48 µg/L	0.00342	1.80%	20%	----
		silicon, dissolved	7440-21-3	E421	0.100	mg/L	4.57	4.59	0.498%	20%	----
		silver, dissolved	7440-22-4	E421	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E421	0.100	mg/L	1.97	1.98	0.455%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00040	mg/L	0.665	0.644	3.21%	20%	----
		sulfur, dissolved	7704-34-9	E421	1.00	mg/L	1.76	1.75	0.002	Diff <2x LOR	----
		thallium, dissolved	7440-28-0	E421	0.000020	mg/L	0.000135	0.000134	0.000001	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.00060	mg/L	<0.00060	<0.00060	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000020	mg/L	0.000581	0.000563	3.12%	20%	----
		vanadium, dissolved	7440-62-2	E421	0.00100	mg/L	0.00101	<0.00100	0.000009	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E421	0.0020	mg/L	0.0076	0.0072	0.0004	Diff <2x LOR	----
Dissolved Metals (QC Lot: 550619)											
CG2208558-002	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 546732)						
solids, total suspended [TSS]	----	E160-L	1	mg/L	<1.0	----
Physical Tests (QCLot: 546734)						
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 546775)						
turbidity	----	E121	0.1	NTU	<0.10	----
Physical Tests (QCLot: 546886)						
acidity (as CaCO ₃)	----	E283	2	mg/L	<2.0	----
Physical Tests (QCLot: 546887)						
conductivity	----	E100	1	µS/cm	<1.0	----
Physical Tests (QCLot: 546889)						
alkalinity, bicarbonate (as CaCO ₃)	----	E290	1	mg/L	1.0	----
alkalinity, carbonate (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
alkalinity, hydroxide (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
alkalinity, total (as CaCO ₃)	----	E290	1	mg/L	1.0	----
Anions and Nutrients (QCLot: 546710)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 546743)						
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 546749)						
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 546782)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 546783)						
sulfate (as SO ₄)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 546784)						
bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 546785)						
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	----
Anions and Nutrients (QCLot: 546786)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 546787)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 547019)						



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 547019) - continued						
Kjeldahl nitrogen, total [TKN]	---	E318	0.05	mg/L	<0.050	---
Organic / Inorganic Carbon (QCLot: 546742)						
carbon, dissolved organic [DOC]	---	E358-L	0.5	mg/L	<0.50	---
Organic / Inorganic Carbon (QCLot: 546747)						
carbon, total organic [TOC]	---	E355-L	0.5	mg/L	<0.50	---
Total Metals (QCLot: 550571)						
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	<0.00010	---
Total Metals (QCLot: 550572)						
aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	---
antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	---
arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	---
barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	---
beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	---
bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	---
boron, total	7440-42-8	E420	0.01	mg/L	<0.010	---
cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	---
calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	---
cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	---
copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	---
iron, total	7439-89-6	E420	0.01	mg/L	<0.010	---
lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	---
lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	---
magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	---
manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	---
molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	---
nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	---
potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	---
selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	---
silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	---
silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	---
sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	---
strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	---
sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	---
thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	---
tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	---
titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	---



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 550572) - continued						
uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	---
vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	---
zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	---
Total Metals (QCLot: 550611)						
mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	---
Dissolved Metals (QCLot: 550271)						
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	<0.00010	---
Dissolved Metals (QCLot: 550272)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	---
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	---
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	---
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	---
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	---
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	---
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	---
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	---
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	---
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	---
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	---
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	---
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	---
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	---
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	---
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	---
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	---
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	---
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	---
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	---
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	---
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	---
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	---
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	---
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	---
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	---
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	---
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	---



Sub-Matrix: **Water**

<i>Analyte</i>	<i>CAS Number</i>	<i>Method</i>	<i>LOR</i>	<i>Unit</i>	<i>Result</i>	<i>Qualifier</i>
Dissolved Metals (QCLot: 550272) - continued						
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
Dissolved Metals (QCLot: 550619)						
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Water					Laboratory Control Sample (LCS) Report				
					Spike Concentration	Recovery (%)	Recovery Limits (%)		Qualifier
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 546732)									
solids, total suspended [TSS]	---	E160-L	1	mg/L	150 mg/L	90.6	85.0	115	---
Physical Tests (QCLot: 546734)									
solids, total dissolved [TDS]	---	E162	10	mg/L	1000 mg/L	92.6	85.0	115	---
Physical Tests (QCLot: 546770)									
oxidation-reduction potential [ORP]	---	E125	---	mV	220 mV	100	95.4	104	---
Physical Tests (QCLot: 546775)									
turbidity	---	E121	0.1	NTU	200 NTU	102	85.0	115	---
Physical Tests (QCLot: 546886)									
acidity (as CaCO3)	---	E283	2	mg/L	50 mg/L	101	85.0	115	---
Physical Tests (QCLot: 546887)									
conductivity	---	E100	1	µS/cm	146.9 µS/cm	103	90.0	110	---
Physical Tests (QCLot: 546888)									
pH	---	E108	---	pH units	7 pH units	100	98.6	101	---
Physical Tests (QCLot: 546889)									
alkalinity, total (as CaCO3)	---	E290	1	mg/L	500 mg/L	102	85.0	115	---
Anions and Nutrients (QCLot: 546710)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	96.2	85.0	115	---
Anions and Nutrients (QCLot: 546743)									
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	8.02 mg/L	102	80.0	120	---
Anions and Nutrients (QCLot: 546749)									
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.02 mg/L	100	80.0	120	---
Anions and Nutrients (QCLot: 546782)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	99.8	90.0	110	---
Anions and Nutrients (QCLot: 546783)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	101	90.0	110	---
Anions and Nutrients (QCLot: 546784)									
bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	97.8	85.0	115	---
Anions and Nutrients (QCLot: 546785)									
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	100	90.0	110	---
Anions and Nutrients (QCLot: 546786)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	104	90.0	110	---
Anions and Nutrients (QCLot: 546787)									



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Anions and Nutrients (QCLot: 546787) - continued									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 547019)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	78.2	75.0	125	----
Organic / Inorganic Carbon (QCLot: 546742)									
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	108	80.0	120	----
Organic / Inorganic Carbon (QCLot: 546747)									
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	105	80.0	120	----
Total Metals (QCLot: 550571)									
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	0.25 mg/L	99.6	80.0	120	----
Total Metals (QCLot: 550572)									
aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	101	80.0	120	----
antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	110	80.0	120	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	99.3	80.0	120	----
barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	102	80.0	120	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	100	80.0	120	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	102	80.0	120	----
boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	98.2	80.0	120	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	98.7	80.0	120	----
calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	100	80.0	120	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	98.4	80.0	120	----
copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	96.8	80.0	120	----
iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	102	80.0	120	----
lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	101	80.0	120	----
lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	98.6	80.0	120	----
magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	101	80.0	120	----
manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	98.0	80.0	120	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	106	80.0	120	----
nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	98.0	80.0	120	----
potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	102	80.0	120	----
selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	102	80.0	120	----
silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	102	80.0	120	----
silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	103	80.0	120	----
sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	105	80.0	120	----
strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	105	80.0	120	----
sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	104	80.0	120	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Total Metals (QCLot: 550572) - continued									
thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	99.1	80.0	120	----
tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	99.4	80.0	120	----
titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	97.2	80.0	120	----
uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	100	80.0	120	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	101	80.0	120	----
zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	98.0	80.0	120	----
Total Metals (QCLot: 550611)									
mercury, total	7439-97-6	E508	0.000005	mg/L	0.0001 mg/L	97.1	80.0	120	----
Dissolved Metals (QCLot: 550271)									
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	0.25 mg/L	99.2	80.0	120	----
Dissolved Metals (QCLot: 550272)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	105	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	103	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	106	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	111	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	98.4	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	104	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	97.3	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	102	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	103	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	103	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	103	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	116	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	100	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	100	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	103	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	104	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	102	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	103	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	102	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	104	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	101	80.0	120	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	102	80.0	120	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	108	80.0	120	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	114	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	104	80.0	120	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Dissolved Metals (QCLot: 550272) - continued									
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	102	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	101	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	97.3	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	99.0	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	105	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	108	80.0	120	----
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	92.4	80.0	120	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level $\geq 1x$ spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 546710)										
CG2208535-002	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0976 mg/L	0.1 mg/L	97.6	75.0	125	----
Anions and Nutrients (QCLot: 546743)										
CG2208564-002	RG_ERCKDT_WS_LAEMP_EVO_2022-06-29_NP	phosphorus, total	7723-14-0	E372-U	0.0630 mg/L	0.0676 mg/L	93.3	70.0	130	----
Anions and Nutrients (QCLot: 546749)										
CG2208563-006	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0504 mg/L	0.05 mg/L	101	70.0	130	----
Anions and Nutrients (QCLot: 546782)										
CG2208564-002	RG_ERCKDT_WS_LAEMP_EVO_2022-06-29_NP	fluoride	16984-48-8	E235.F	0.855 mg/L	1 mg/L	85.5	75.0	125	----
Anions and Nutrients (QCLot: 546783)										
CG2208564-002	RG_ERCKDT_WS_LAEMP_EVO_2022-06-29_NP	sulfate (as SO4)	14808-79-8	E235.SO4	ND mg/L	100 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 546784)										
CG2208564-002	RG_ERCKDT_WS_LAEMP_EVO_2022-06-29_NP	bromide	24959-67-9	E235.Br-L	0.534 mg/L	0.5 mg/L	107	75.0	125	----
Anions and Nutrients (QCLot: 546785)										
CG2208564-002	RG_ERCKDT_WS_LAEMP_EVO_2022-06-29_NP	chloride	16887-00-6	E235.Cl-L	94.0 mg/L	100 mg/L	94.0	75.0	125	----
Anions and Nutrients (QCLot: 546786)										
CG2208564-002	RG_ERCKDT_WS_LAEMP_EVO_2022-06-29_NP	nitrate (as N)	14797-55-8	E235.NO3-L	ND mg/L	2.5 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 546787)										
CG2208564-002	RG_ERCKDT_WS_LAEMP_EVO_2022-06-29_NP	nitrite (as N)	14797-65-0	E235.NO2-L	0.485 mg/L	0.5 mg/L	97.1	75.0	125	----
Anions and Nutrients (QCLot: 547019)										
CG2208558-006	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	1.96 mg/L	2.5 mg/L	78.6	70.0	130	----
Organic / Inorganic Carbon (QCLot: 546742)										
CG2208564-001	RG_ERCKUT_WS_LAEMP_EVO_2022-06-29_NP	carbon, dissolved organic [DOC]	----	E358-L	6.05 mg/L	5 mg/L	121	70.0	130	----
Organic / Inorganic Carbon (QCLot: 546747)										
CG2208564-001	RG_ERCKUT_WS_LAEMP_EVO_2022-06-29_NP	carbon, total organic [TOC]	----	E355-L	6.03 mg/L	5 mg/L	120	70.0	130	----
Total Metals (QCLot: 550571)										
CG2208535-002	Anonymous	chromium, total	7440-47-3	E420.Cr-L	0.0396 mg/L	0.04 mg/L	99.0	70.0	130	----



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 550572)										
CG2208535-002	Anonymous	aluminum, total	7429-90-5	E420	0.195 mg/L	0.2 mg/L	97.5	70.0	130	----
		antimony, total	7440-36-0	E420	0.0201 mg/L	0.02 mg/L	101	70.0	130	----
		arsenic, total	7440-38-2	E420	0.0191 mg/L	0.02 mg/L	95.4	70.0	130	----
		barium, total	7440-39-3	E420	0.0197 mg/L	0.02 mg/L	98.3	70.0	130	----
		beryllium, total	7440-41-7	E420	0.0396 mg/L	0.04 mg/L	99.0	70.0	130	----
		bismuth, total	7440-69-9	E420	0.0102 mg/L	0.01 mg/L	102	70.0	130	----
		boron, total	7440-42-8	E420	0.101 mg/L	0.1 mg/L	101	70.0	130	----
		cadmium, total	7440-43-9	E420	0.00402 mg/L	0.004 mg/L	100	70.0	130	----
		calcium, total	7440-70-2	E420	3.83 mg/L	4 mg/L	95.8	70.0	130	----
		cobalt, total	7440-48-4	E420	0.0201 mg/L	0.02 mg/L	100	70.0	130	----
		copper, total	7440-50-8	E420	0.0198 mg/L	0.02 mg/L	99.0	70.0	130	----
		iron, total	7439-89-6	E420	1.96 mg/L	2 mg/L	97.9	70.0	130	----
		lead, total	7439-92-1	E420	0.0198 mg/L	0.02 mg/L	99.0	70.0	130	----
		lithium, total	7439-93-2	E420	0.0943 mg/L	0.1 mg/L	94.3	70.0	130	----
		magnesium, total	7439-95-4	E420	0.973 mg/L	1 mg/L	97.3	70.0	130	----
		manganese, total	7439-96-5	E420	0.0193 mg/L	0.02 mg/L	96.5	70.0	130	----
		molybdenum, total	7439-98-7	E420	0.0206 mg/L	0.02 mg/L	103	70.0	130	----
		nickel, total	7440-02-0	E420	0.0397 mg/L	0.04 mg/L	99.4	70.0	130	----
		potassium, total	7440-09-7	E420	4.02 mg/L	4 mg/L	100	70.0	130	----
		selenium, total	7782-49-2	E420	0.0425 mg/L	0.04 mg/L	106	70.0	130	----
		silicon, total	7440-21-3	E420	9.77 mg/L	10 mg/L	97.7	70.0	130	----
		silver, total	7440-22-4	E420	0.00413 mg/L	0.004 mg/L	103	70.0	130	----
		sodium, total	7440-23-5	E420	2.06 mg/L	2 mg/L	103	70.0	130	----
		strontium, total	7440-24-6	E420	0.0208 mg/L	0.02 mg/L	104	70.0	130	----
		sulfur, total	7704-34-9	E420	19.8 mg/L	20 mg/L	99.3	70.0	130	----
		thallium, total	7440-28-0	E420	0.00382 mg/L	0.004 mg/L	95.6	70.0	130	----
		tin, total	7440-31-5	E420	0.0197 mg/L	0.02 mg/L	98.7	70.0	130	----
		titanium, total	7440-32-6	E420	0.0370 mg/L	0.04 mg/L	92.5	70.0	130	----
		uranium, total	7440-61-1	E420	0.00402 mg/L	0.004 mg/L	100	70.0	130	----
		vanadium, total	7440-62-2	E420	0.0985 mg/L	0.1 mg/L	98.5	70.0	130	----
		zinc, total	7440-66-6	E420	0.393 mg/L	0.4 mg/L	98.3	70.0	130	----
Total Metals (QCLot: 550611)										
CG2208540-001	Anonymous	mercury, total	7439-97-6	E508	0.0000957 mg/L	0.0001 mg/L	95.7	70.0	130	----
Dissolved Metals (QCLot: 550271)										
CG2208535-002	Anonymous	chromium, dissolved	7440-47-3	E421.Cr-L	0.0414 mg/L	0.04 mg/L	103	70.0	130	----
Dissolved Metals (QCLot: 550272)										



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 550272) - continued										
CG2208535-002	Anonymous	aluminum, dissolved	7429-90-5	E421	0.210 mg/L	0.2 mg/L	105	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.0204 mg/L	0.02 mg/L	102	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.0206 mg/L	0.02 mg/L	103	70.0	130	----
		barium, dissolved	7440-39-3	E421	0.0213 mg/L	0.02 mg/L	106	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.0448 mg/L	0.04 mg/L	112	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.00956 mg/L	0.01 mg/L	95.6	70.0	130	----
		boron, dissolved	7440-42-8	E421	0.107 mg/L	0.1 mg/L	107	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.00414 mg/L	0.004 mg/L	103	70.0	130	----
		calcium, dissolved	7440-70-2	E421	4.30 mg/L	4 mg/L	107	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.0207 mg/L	0.02 mg/L	103	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.0209 mg/L	0.02 mg/L	105	70.0	130	----
		iron, dissolved	7439-89-6	E421	2.00 mg/L	2 mg/L	100	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.0195 mg/L	0.02 mg/L	97.6	70.0	130	----
		lithium, dissolved	7439-93-2	E421	0.111 mg/L	0.1 mg/L	111	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	1.06 mg/L	1 mg/L	106	70.0	130	----
		manganese, dissolved	7439-96-5	E421	0.0204 mg/L	0.02 mg/L	102	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.0206 mg/L	0.02 mg/L	103	70.0	130	----
		nickel, dissolved	7440-02-0	E421	0.0416 mg/L	0.04 mg/L	104	70.0	130	----
		potassium, dissolved	7440-09-7	E421	4.08 mg/L	4 mg/L	102	70.0	130	----
		selenium, dissolved	7782-49-2	E421	0.0426 mg/L	0.04 mg/L	106	70.0	130	----
		silicon, dissolved	7440-21-3	E421	10.5 mg/L	10 mg/L	105	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.00428 mg/L	0.004 mg/L	107	70.0	130	----
		sodium, dissolved	7440-23-5	E421	2.15 mg/L	2 mg/L	108	70.0	130	----
		strontium, dissolved	7440-24-6	E421	0.0228 mg/L	0.02 mg/L	114	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	21.0 mg/L	20 mg/L	105	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.00378 mg/L	0.004 mg/L	94.4	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.0205 mg/L	0.02 mg/L	103	70.0	130	----
		titanium, dissolved	7440-32-6	E421	0.0394 mg/L	0.04 mg/L	98.5	70.0	130	----
		uranium, dissolved	7440-61-1	E421	0.00369 mg/L	0.004 mg/L	92.2	70.0	130	----
		vanadium, dissolved	7440-62-2	E421	0.104 mg/L	0.1 mg/L	104	70.0	130	----
		zinc, dissolved	7440-66-6	E421	0.432 mg/L	0.4 mg/L	108	70.0	130	----
Dissolved Metals (QCLot: 550619)										
CG2208558-003	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000879 mg/L	0.0001 mg/L	87.9	70.0	130	----



Teck

8564

COC ID:

June EVO LAEMP 2022

TURNAROUND TIME:

RUSH

PROJECT/CLIENT INFO				LABORATORY				
Facility Name / Job#	Regional effects program			Lab Name	ALS Calgary			
Project Manager	Mike Pope			Lab Contact	Iyudmyla Shvets			
Email	mike.pope@teck.com			Email	Iyudmyla.shvets@alsglobal.com			
Address	421 Pine Avenue			Address	2559 29 Street NE			
City	Sparwood		Province	BC	City	Calgary	Province	AB
Postal Code	V0B 2G0		Country	Canada	Postal Code	T1Y 7B5	Country	Canada
Phone Number	343-333-3905			Phone Number	1 403 407 1794			

SAMPLE DETAILS

ANALYSIS REQUESTED

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS REQUESTED						
								TECKCOAL-ROUTINE-VA	ALS_Package-DOC	ALS_Package-TKN/TOC	HC-T-U-CVAF-VA	HC-B-CVAF-VA	TECKCOAL-MET-T-VA	TECKCOAL-MET-D-VA
RG_ERCKUT_WS_LAEMP_EVO_2022-06-29_NP	RG_ERCKUT	WS	N	6/29/2022	9:00	G	7	X	X	X	X	X	X	X
RG_ERCKDT_WS_LAEMP_EVO_2022-06-29_NP	RG_ERCKDT	ws	N	6/29/2022	10:00		7	X	X	X	X	X	X	X
RG_ERCKMD_WS_LAEMP_EVO_2022-06-29_NP	RG_ERCKMD	ws	N	6/29/2022	11:00	G	7	X	X	X	X	X	X	X
RG_ERCKUC_WS_LAEMP_EVO_2022-06-30_NP	RG_ERCKUC	WS	N	6/30/2022	8:40	G	7	X	X	X	X	X	X	X
RG_ERCK_WS_LAEMP_EVO_2022-06-30_NP	RG_ERCK	WS	N	6/30/2022	8:30	G	7	X	X	X	X	X	X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS

RELINQUISHED BY/AFFILIATION

DATE/TIME

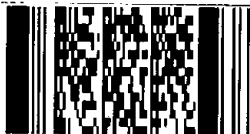
ACCEPTED BY/AFFILIATION

ALS PO VPO00816101	Robin Vallau	June 30-2022	
--------------------	--------------	--------------	--

NO OF BOTTLES RETURNED/DESCRIPTION

Regular (default)		Sampler's Name	Robin Vallau	Mobile #	416-970-7535
Priority (2-3 business days) - 50% surcharge		Sampler's Signature		Date/Time	June 30 2022
Emergency (1 Business Day) - 100% surcharge	X				
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

Environmental Division
 Calgary
 Work Order Reference
CG2208564



Telephone : +1 403 407 1800

Environmental Division
 Calgary
 Work Order Reference
CG2208564

Amber M
July 2/2022
10:30am

80C



CERTIFICATE OF ANALYSIS

Work Order : **CG2208558**
Client : **Teck Coal Limited**
Contact : Mike Pope
Address : RR#1 HWY#3
 Sparwood BC Canada V0B 2G1
Telephone : ----
Project : REGIONAL EFFECTS PROGRAM
PO : VPO00816101
C-O-C number : June EVO LAEMP 2022
Sampler : Alex McClymont
Site : ----
Quote number : Teck Coal Master Quote
No. of samples received : 10
No. of samples analysed : 10

Page : 1 of 10
Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
 Calgary AB Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 02-Jul-2022 10:30
Date Analysis Commenced : 02-Jul-2022
Issue Date : 07-Jul-2022 16:16

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Angela Ren	Team Leader - Metals	Metals, Burnaby, British Columbia
Anthony Calero	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Elke Tabora		Inorganics, Calgary, Alberta
Erin Sanchez		Metals, Burnaby, British Columbia
Harpreet Chawla	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Owen Cheng		Metals, Burnaby, British Columbia
Robin Weeks	Team Leader - Metals	Metals, Burnaby, British Columbia
Sara Niroomand		Inorganics, Calgary, Alberta
Tracy Harley	Supervisor - Water Quality Instrumentation	Inorganics, Burnaby, British Columbia



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

<i>Unit</i>	<i>Description</i>
-	No Unit
%	percent
µg/L	micrograms per litre
µS/cm	Microsiemens per centimetre
meq/L	milliequivalents per litre
mg/L	milligrams per litre
mV	millivolts
NTU	nephelometric turbidity units
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

<i>Qualifier</i>	<i>Description</i>
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
RRV	Reported result verified by repeat analysis.



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_MI3_WS_L AEMP_EVO_20 22-06-29_NP	RG_MIDGA_WS _LAEMP_EVO_ 2022-06-29_NP	RG_MIDBO_WS _LAEMP_EVO_ 2022-06-29_NP	RG_MICOMP_W S_LAEMP_EVO_ 2022-06-29_N P	RG_TRIP_WS_L AEMP_EVO_20 22-06-30_NP
Client sampling date / time					29-Jun-2022 12:45	29-Jun-2022 14:00	29-Jun-2022 14:45	29-Jun-2022 15:10	30-Jun-2022 09:00	
Analyte	CAS Number	Method	LOR	Unit	CG2208558-001	CG2208558-002	CG2208558-003	CG2208558-004	CG2208558-005	
					Result	Result	Result	Result	Result	
Physical Tests										
acidity (as CaCO3)	----	E283	2.0	mg/L	<2.0	<2.0	<2.0	<2.0	<2.0	
alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	93.9	120	113	111	<1.0	
alkalinity, bicarbonate (as HCO3)	71-52-3	E290	1.0	mg/L	114	146	138	135	<1.0	
alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
alkalinity, carbonate (as CO3)	3812-32-6	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
alkalinity, hydroxide (as OH)	14280-30-9	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	93.9	120	113	111	<1.0	
conductivity	----	E100	2.0	µS/cm	226	340	295	274	<2.0	
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	120	188	157	149	<0.50	
oxidation-reduction potential [ORP]	----	E125	0.10	mV	407	393	351	325	496	
pH	----	E108	0.10	pH units	8.05	8.16	8.16	8.16	5.55	
solids, total dissolved [TDS]	----	E162	10	mg/L	127	206	175	167	<10	
solids, total suspended [TSS]	----	E160-L	1.0	mg/L	8.5	9.5	14.5	8.4	<1.0	
turbidity	----	E121	0.10	NTU	4.36	4.17	3.71	4.36	<0.10	
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	0.0292 ^{RRV}	
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	0.26	0.98	0.64	0.54	<0.10	
fluoride	16984-48-8	E235.F	0.020	mg/L	0.086	0.098	0.095	0.096	<0.020	
Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	<0.500 ^{DLM}	<0.500 ^{DLM}	<0.500 ^{DLM}	<0.500 ^{DLM}	0.097	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.0777	0.557	0.400	0.315	<0.0050	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	<0.0010	0.0010	<0.0010	<0.0010	
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0098	0.0052	0.0067	0.0088	<0.0010	
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0231	0.0222	0.0215	0.0257	<0.0020	
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	24.0	59.8	40.2	32.9	<0.30	
Organic / Inorganic Carbon										
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	1.66	1.40	1.60	1.67	<0.50	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_MI3_WS_L AEMP_EVO_20 22-06-29_NP	RG_MIDGA_WS _LAEMP_EVO_ 2022-06-29_NP	RG_MIDBO_WS _LAEMP_EVO_ 2022-06-29_NP	RG_MICOMP_W S_LAEMP_EVO _2022-06-29_N P	RG_TRIP_WS_L AEMP_EVO_20 22-06-30_NP
Client sampling date / time					29-Jun-2022 12:45	29-Jun-2022 14:00	29-Jun-2022 14:45	29-Jun-2022 15:10	30-Jun-2022 09:00	
Analyte	CAS Number	Method	LOR	Unit	CG2208558-001 Result	CG2208558-002 Result	CG2208558-003 Result	CG2208558-004 Result	CG2208558-005 Result	
Organic / Inorganic Carbon										
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	1.75	1.86	1.73	1.84	<0.50	
Ion Balance										
anion sum	----	EC101	0.10	meq/L	2.39	3.72	3.15	2.94	<0.10	
cation sum	----	EC101	0.10	meq/L	2.50	3.85	3.24	3.08	<0.10	
ion balance (cations/anions)	----	EC101	0.010	%	105	103	103	105	100 ^{RRV}	
ion balance (APHA)	----	EC101	0.010	%	2.25	1.72	1.41	2.32	<0.010	
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L	0.204	0.185	0.198	0.148	<0.0030	
antimony, total	7440-36-0	E420	0.00010	mg/L	0.00010	0.00012	0.00011	<0.00010	<0.00010	
arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00030	0.00027	0.00028	0.00027	<0.00010	
barium, total	7440-39-3	E420	0.00010	mg/L	0.0510	0.0577	0.0535	0.0539	<0.00010	
beryllium, total	7440-41-7	E420	0.020	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	
bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
boron, total	7440-42-8	E420	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	
cadmium, total	7440-43-9	E420	0.0050	µg/L	0.0461	0.0389	0.0425	0.0379	<0.0050	
calcium, total	7440-70-2	E420	0.050	mg/L	29.4	41.6	37.1	34.8	<0.050	
chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	0.00039	0.00036	0.00041	0.00037	<0.00010	
cobalt, total	7440-48-4	E420	0.10	µg/L	0.20	0.14	0.17	0.15	<0.10	
copper, total	7440-50-8	E420	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
iron, total	7439-89-6	E420	0.010	mg/L	0.203	0.184	0.218	0.168	<0.010	
lead, total	7439-92-1	E420	0.000050	mg/L	0.000126	0.000131	0.000157	0.000113	<0.000050	
lithium, total	7439-93-2	E420	0.0010	mg/L	0.0030	0.0068	0.0046	0.0037	<0.0010	
magnesium, total	7439-95-4	E420	0.0050	mg/L	9.08	16.0	13.1	11.9	<0.0050	
manganese, total	7439-96-5	E420	0.00010	mg/L	0.00661	0.00585	0.00712	0.00587	<0.00010	
mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.000538	0.00106	0.000717	0.000566	<0.000050	
nickel, total	7440-02-0	E420	0.00050	mg/L	0.00181	0.00230	0.00170	0.00137	<0.00050	
potassium, total	7440-09-7	E420	0.050	mg/L	0.492	0.632	0.565	0.519	<0.050	
selenium, total	7782-49-2	E420	0.050	µg/L	0.995	5.83	4.06	3.44	<0.050	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_MI3_WS_L AEMP_EVO_20 22-06-29_NP	RG_MIDGA_WS _LAEMP_EVO_ 2022-06-29_NP	RG_MIDBO_WS _LAEMP_EVO_ 2022-06-29_NP	RG_MICOMP_W S_LAEMP_EVO _2022-06-29_N P	RG_TRIP_WS_L AEMP_EVO_20 22-06-30_NP
Client sampling date / time					29-Jun-2022 12:45	29-Jun-2022 14:00	29-Jun-2022 14:45	29-Jun-2022 15:10	30-Jun-2022 09:00	
Analyte	CAS Number	Method	LOR	Unit	CG2208558-001 Result	CG2208558-002 Result	CG2208558-003 Result	CG2208558-004 Result	CG2208558-005 Result	
Total Metals										
silicon, total	7440-21-3	E420	0.10	mg/L	2.13	2.25	2.16	2.14	<0.10	
silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
sodium, total	7440-23-5	E420	0.050	mg/L	1.83	1.81	1.73	1.70	<0.050	
strontium, total	7440-24-6	E420	0.00020	mg/L	0.0865	0.106	0.0941	0.0901	<0.00020	
sulfur, total	7704-34-9	E420	0.50	mg/L	8.46	21.1	14.3	12.0	<0.50	
thallium, total	7440-28-0	E420	0.000010	mg/L	0.000014	0.000013	0.000012	0.000011	<0.000010	
tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
titanium, total	7440-32-6	E420	0.00030	mg/L	0.00389	0.00326	<0.00300 ^{DLM}	0.00200	<0.00030	
uranium, total	7440-61-1	E420	0.000010	mg/L	0.000384	0.000908	0.000660	0.000550	<0.000010	
vanadium, total	7440-62-2	E420	0.00050	mg/L	0.00096	0.00081	0.00093	0.00073	<0.00050	
zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0081	0.0058	0.0068	0.0055	<0.0010	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00020	0.00022	0.00022	0.00021	<0.00010	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0528	0.0610	0.0551	0.0574	<0.00010	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.0171	0.0196	0.0188	0.0167	<0.0050	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	31.5	45.4	39.3	37.6	<0.050	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	0.00012	0.00013	0.00012	0.00014	<0.00010	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	<0.10	<0.10	<0.10	<0.10	<0.10	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00028	0.00024	0.00024	0.00022	<0.00020	
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0034	0.0076	0.0050	0.0042	<0.0010	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	10.1	18.1	14.4	13.5	<0.0050	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00142	0.00140	0.00176	0.00137	<0.00010	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_MI3_WS_L AEMP_EVO_20 22-06-29_NP	RG_MIDGA_WS _LAEMP_EVO_ 2022-06-29_NP	RG_MIDBO_WS _LAEMP_EVO_ 2022-06-29_NP	RG_MICOMP_W S_LAEMP_EVO _2022-06-29_N P	RG_TRIP_WS_L AEMP_EVO_20 22-06-30_NP
Client sampling date / time					29-Jun-2022 12:45	29-Jun-2022 14:00	29-Jun-2022 14:45	29-Jun-2022 15:10	30-Jun-2022 09:00	
Analyte	CAS Number	Method	LOR	Unit	CG2208558-001	CG2208558-002	CG2208558-003	CG2208558-004	CG2208558-005	
					Result	Result	Result	Result	Result	
Dissolved Metals										
mercury, dissolved	7439-97-6	E509	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.000524	0.000945	0.000699	0.000550	<0.000050	
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00141	0.00201	0.00132	0.00109	<0.00050	
potassium, dissolved	7440-09-7	E421	0.050	mg/L	0.496	0.636	0.539	0.526	<0.050	
selenium, dissolved	7782-49-2	E421	0.050	µg/L	1.04	6.43	4.24	3.52	<0.050	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	2.02	2.06	2.05	1.99	<0.050	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	1.89	1.92	1.87	1.82	<0.050	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.0954	0.109	0.0993	0.0958	<0.00020	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	9.54	24.4	16.7	13.0	<0.50	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.000335	0.000794	0.000571	0.000492	<0.000010	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0038	<0.0010	0.0014	<0.0010	<0.0010	
dissolved mercury filtration location	----	EP509	-	-	Field	Field	Field	Field	Field	
dissolved metals filtration location	----	EP421	-	-	Field	Field	Field	Field	Field	

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_FBLANK_W S_LAEMP_EVO _2022-06-30_N P	RG_RIVER_WS _LAEMP_EVO_ 2022-06-30_NP	RG_ALUSM_W S_LAEMP_EVO _2022-06-30_N P	RG_MI25_WS_ LAEMP_EVO_2 022-06-30_NP	RG_MIDER_WS _LAEMP_EVO_ 2022-06-30_NP
Client sampling date / time					30-Jun-2022 09:00	30-Jun-2022 09:00	30-Jun-2022 11:00	30-Jun-2022 09:00	30-Jun-2022 12:45	
Analyte	CAS Number	Method	LOR	Unit	CG2208558-006 Result	CG2208558-007 Result	CG2208558-008 Result	CG2208558-009 Result	CG2208558-010 Result	
Physical Tests										
acidity (as CaCO3)	----	E283	2.0	mg/L	<2.0	<2.0	<2.0	<2.0	<2.0	
alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	109	129	107	104	
alkalinity, bicarbonate (as HCO3)	71-52-3	E290	1.0	mg/L	<1.0	133	157	130	127	
alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
alkalinity, carbonate (as CO3)	3812-32-6	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
alkalinity, hydroxide (as OH)	14280-30-9	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	<1.0	109	129	107	104	
conductivity	----	E100	2.0	µS/cm	<2.0	204	242	204	238	
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	<0.50	114	133	110	125	
oxidation-reduction potential [ORP]	----	E125	0.10	mV	514	304	294	280	280	
pH	----	E108	0.10	pH units	5.39	7.99	8.14	8.07	8.11	
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	116	134	121	138	
solids, total suspended [TSS]	----	E160-L	1.0	mg/L	<1.0	4.9	9.4	2.5	8.8	
turbidity	----	E121	0.10	NTU	<0.10	1.26	3.06	1.33	3.69	
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	<0.10	0.11	0.35	0.10	0.32	
fluoride	16984-48-8	E235.F	0.020	mg/L	<0.020	0.041	0.111	0.042	0.088	
Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	<0.050	<0.500 ^{DLM}	3.43	<0.500 ^{DLM}	2.19	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	<0.0050	0.0123	0.0468	<0.0050	0.0736	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	0.0025	0.0048	<0.0010	0.0089	
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	<0.0020	0.0078	0.0173	0.0080	0.0251	
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	<0.30	6.10	6.47	6.14	24.2	
Organic / Inorganic Carbon										
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	<0.50	1.61	1.18	1.64	1.75	
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	<0.50	1.67	1.20	1.76	1.75	



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

Client sample ID

					RG_FBLANK_W S_LAEMP_EVO _2022-06-30_N P	RG_RIVER_WS _LAEMP_EVO_ 2022-06-30_NP	RG_ALUSM_W S_LAEMP_EVO _2022-06-30_N P	RG_MI25_WS_ LAEMP_EVO_2 _2022-06-30_NP	RG_MIDER_WS _LAEMP_EVO_ 2022-06-30_NP
Client sampling date / time					30-Jun-2022 09:00	30-Jun-2022 09:00	30-Jun-2022 11:00	30-Jun-2022 09:00	30-Jun-2022 12:45
Analyte	CAS Number	Method	LOR	Unit	CG2208558-006	CG2208558-007	CG2208558-008	CG2208558-009	CG2208558-010
					Result	Result	Result	Result	Result
Ion Balance									
anion sum	----	EC101	0.10	meq/L	<0.10	2.31	2.73	2.27	2.60
cation sum	----	EC101	0.10	meq/L	<0.10	2.34	2.70	2.27	2.59
ion balance (cations/anions)	----	EC101	0.010	%	100	101	98.9	100	99.6
ion balance (APHA)	----	EC101	0.010	%	<0.010	0.645	0.552	<0.010	0.193
Total Metals									
aluminum, total	7429-90-5	E420	0.0030	mg/L	<0.0030	0.0682	0.195	0.0628	0.195
antimony, total	7440-36-0	E420	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	0.00010
arsenic, total	7440-38-2	E420	0.00010	mg/L	<0.00010	0.00026	0.00018	0.00026	0.00030
barium, total	7440-39-3	E420	0.00010	mg/L	<0.00010	0.0271	0.0459	0.0264	0.0530
beryllium, total	7440-41-7	E420	0.020	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020
bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
boron, total	7440-42-8	E420	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010
cadmium, total	7440-43-9	E420	0.0050	µg/L	<0.0050	0.0158	0.0193	0.0155	0.0438
calcium, total	7440-70-2	E420	0.050	mg/L	<0.050	27.8	35.1	27.8	31.0
chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	<0.00010	0.00037	0.00037	0.00033	0.00036
cobalt, total	7440-48-4	E420	0.10	µg/L	<0.10	<0.10	<0.10	<0.10	0.20
copper, total	7440-50-8	E420	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
iron, total	7439-89-6	E420	0.010	mg/L	<0.010	0.062	0.186	0.054	0.212
lead, total	7439-92-1	E420	0.000050	mg/L	<0.000050	<0.000050	0.000132	<0.000050	0.000153
lithium, total	7439-93-2	E420	0.0010	mg/L	<0.0010	0.0023	0.0021	0.0023	0.0031
magnesium, total	7439-95-4	E420	0.0050	mg/L	<0.0050	8.46	9.06	8.44	9.56
manganese, total	7439-96-5	E420	0.00010	mg/L	<0.00010	0.00220	0.00573	0.00208	0.00691
mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
molybdenum, total	7439-98-7	E420	0.000050	mg/L	<0.000050	0.000626	0.000442	0.000617	0.000548
nickel, total	7440-02-0	E420	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	0.00165
potassium, total	7440-09-7	E420	0.050	mg/L	<0.050	0.350	0.361	0.346	0.492
selenium, total	7782-49-2	E420	0.050	µg/L	<0.050	0.211	0.357	0.183	1.02
silicon, total	7440-21-3	E420	0.10	mg/L	<0.10	2.12	2.14	2.08	2.18
silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_FBLANK_W S_LAEMP_EVO _2022-06-30_N P	RG_RIVER_WS _LAEMP_EVO_ 2022-06-30_NP	RG_ALUSM_W S_LAEMP_EVO _2022-06-30_N P	RG_MI25_WS_ LAEMP_EVO_2 _2022-06-30_NP	RG_MIDER_WS _LAEMP_EVO_ 2022-06-30_NP
Client sampling date / time					30-Jun-2022 09:00	30-Jun-2022 09:00	30-Jun-2022 11:00	30-Jun-2022 09:00	30-Jun-2022 12:45	
Analyte	CAS Number	Method	LOR	Unit	CG2208558-006	CG2208558-007	CG2208558-008	CG2208558-009	CG2208558-010	
					Result	Result	Result	Result	Result	
Total Metals										
sodium, total	7440-23-5	E420	0.050	mg/L	<0.050	1.29	0.997	1.24	1.79	
strontium, total	7440-24-6	E420	0.00020	mg/L	<0.00020	0.0857	0.0777	0.0817	0.0905	
sulfur, total	7704-34-9	E420	0.50	mg/L	<0.50	2.32	2.36	2.40	9.11	
thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	0.000013	
tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00030	0.00115	<0.00390 ^{DLM}	0.00102	0.00279	
uranium, total	7440-61-1	E420	0.000010	mg/L	<0.000010	0.000164	0.000399	0.000161	0.000418	
vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	<0.00050	0.00060	<0.00050	0.00096	
zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	<0.0030	<0.0030	<0.0030	0.0073	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	<0.0010	0.0044	0.0038	0.0050	0.0068	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	<0.00010	0.00026	0.00012	0.00024	0.00022	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	<0.00010	0.0291	0.0461	0.0292	0.0559	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	<0.0050	0.0072	<0.0050	<0.0050	0.0174	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	<0.050	29.9	36.7	28.7	32.1	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00010	0.00026	0.00018	0.00030	0.00015	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	<0.10	<0.10	<0.10	<0.10	<0.10	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	0.00026	
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	<0.0010	0.0026	0.0023	0.0026	0.0033	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	<0.0050	9.49	10.0	9.38	10.8	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	<0.00010	0.00067	0.00091	0.00062	0.00136	
mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	<0.000050	0.000578	0.000458	0.000584	0.000530	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_FBLANK_WS_LAEMP_EVO_2022-06-30_NP	RG_RIVER_WS_LAEMP_EVO_2022-06-30_NP	RG_ALUSM_WS_LAEMP_EVO_2022-06-30_NP	RG_MI25_WS_LAEMP_EVO_2022-06-30_NP	RG_MIDER_WS_LAEMP_EVO_2022-06-30_NP
Client sampling date / time					30-Jun-2022 09:00	30-Jun-2022 09:00	30-Jun-2022 11:00	30-Jun-2022 09:00	30-Jun-2022 12:45	
Analyte	CAS Number	Method	LOR	Unit	CG2208558-006	CG2208558-007	CG2208558-008	CG2208558-009	CG2208558-010	
					Result	Result	Result	Result	Result	
Dissolved Metals										
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	0.00135	
potassium, dissolved	7440-09-7	E421	0.050	mg/L	<0.050	0.356	0.309	0.353	0.476	
selenium, dissolved	7782-49-2	E421	0.050	µg/L	<0.050	0.262	0.335	0.187	0.982	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	<0.050	2.14	1.98	2.19	2.06	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	<0.050	1.31	1.00	1.32	2.00	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	<0.00020	0.0916	0.0864	0.0927	0.0984	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	<0.50	2.79	2.92	2.63	9.82	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	<0.000010	0.000147	0.000344	0.000141	0.000362	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	0.0015	
dissolved mercury filtration location	----	EP509	-	-	Field	Field	Field	Field	Field	
dissolved metals filtration location	----	EP421	-	-	Field	Field	Field	Field	Field	

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: CG2208558	Page	: 1 of 39
Client	: Teck Coal Limited	Laboratory	: Calgary - Environmental
Contact	: Mike Pope	Account Manager	: Lyudmyla Shvets
Address	: RR#1 HWY#3 Sparwood BC Canada V0B 2G1	Address	: 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5
Telephone	: ----	Telephone	: +1 403 407 1800
Project	: REGIONAL EFFECTS PROGRAM	Date Samples Received	: 02-Jul-2022 10:30
PO	: VPO00816101	Issue Date	: 07-Jul-2022 16:17
C-O-C number	: June EVO LAEMP 2022		
Sampler	: Alex McClymont		
Site	: ----		
Quote number	: Teck Coal Master Quote		
No. of samples received	: 10		
No. of samples analysed	: 10		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_ALUSM_WS_LAEMP_EVO_2022-06-30_NP	E298	30-Jun-2022	02-Jul-2022	----	----		02-Jul-2022	28 days	2 days	✓	
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_FBLANK_WS_LAEMP_EVO_2022-06-30_NP	E298	30-Jun-2022	02-Jul-2022	----	----		02-Jul-2022	28 days	2 days	✓	
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_MI25_WS_LAEMP_EVO_2022-06-30_NP	E298	30-Jun-2022	02-Jul-2022	----	----		02-Jul-2022	28 days	2 days	✓	
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_MIDER_WS_LAEMP_EVO_2022-06-30_NP	E298	30-Jun-2022	02-Jul-2022	----	----		02-Jul-2022	28 days	2 days	✓	
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-06-30_NP	E298	30-Jun-2022	02-Jul-2022	----	----		02-Jul-2022	28 days	2 days	✓	
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_TRIP_WS_LAEMP_EVO_2022-06-30_NP	E298	30-Jun-2022	02-Jul-2022	----	----		02-Jul-2022	28 days	2 days	✓	
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_MI3_WS_LAEMP_EVO_2022-06-29_NP	E298	29-Jun-2022	02-Jul-2022	----	----		02-Jul-2022	28 days	3 days	✓	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_MICOMP_WS_LAEMP_EVO_2022-06-29_NP	E298	29-Jun-2022	02-Jul-2022	----	----		02-Jul-2022	28 days	3 days	✓	
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_MIDBO_WS_LAEMP_EVO_2022-06-29_NP	E298	29-Jun-2022	02-Jul-2022	----	----		02-Jul-2022	28 days	3 days	✓	
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_MIDGA_WS_LAEMP_EVO_2022-06-29_NP	E298	29-Jun-2022	02-Jul-2022	----	----		02-Jul-2022	28 days	3 days	✓	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-06-30_NP	E235.Br-L	30-Jun-2022	----	----	----		02-Jul-2022	28 days	2 days	✓	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-06-30_NP	E235.Br-L	30-Jun-2022	----	----	----		02-Jul-2022	28 days	2 days	✓	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_MI25_WS_LAEMP_EVO_2022-06-30_NP	E235.Br-L	30-Jun-2022	----	----	----		02-Jul-2022	28 days	2 days	✓	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-06-30_NP	E235.Br-L	30-Jun-2022	----	----	----		02-Jul-2022	28 days	2 days	✓	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-06-30_NP	E235.Br-L	30-Jun-2022	----	----	----		02-Jul-2022	28 days	2 days	✓	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-06-30_NP	E235.Br-L	30-Jun-2022	----	----	----		02-Jul-2022	28 days	2 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_MI3_WS_LAEMP_EVO_2022-06-29_NP	E235.Br-L	29-Jun-2022	----	----	----		02-Jul-2022	28 days	3 days	✔
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-06-29_NP	E235.Br-L	29-Jun-2022	----	----	----		02-Jul-2022	28 days	3 days	✔
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-06-29_NP	E235.Br-L	29-Jun-2022	----	----	----		02-Jul-2022	28 days	3 days	✔
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-06-29_NP	E235.Br-L	29-Jun-2022	----	----	----		02-Jul-2022	28 days	3 days	✔
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-06-30_NP	E235.Cl-L	30-Jun-2022	----	----	----		02-Jul-2022	28 days	2 days	✔
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-06-30_NP	E235.Cl-L	30-Jun-2022	----	----	----		02-Jul-2022	28 days	2 days	✔
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_MI25_WS_LAEMP_EVO_2022-06-30_NP	E235.Cl-L	30-Jun-2022	----	----	----		02-Jul-2022	28 days	2 days	✔
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_MIDER_WS_LAEMP_EVO_2022-06-30_NP	E235.Cl-L	30-Jun-2022	----	----	----		02-Jul-2022	28 days	2 days	✔
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_RIVER_WS_LAEMP_EVO_2022-06-30_NP	E235.Cl-L	30-Jun-2022	----	----	----		02-Jul-2022	28 days	2 days	✔



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec Actual		Eval	Analysis Date	Holding Times Rec Actual		Eval
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_TRIP_WS_LAEMP_EVO_2022-06-30_NP	E235.CI-L	30-Jun-2022	----	----	----		02-Jul-2022	28 days	2 days	✓
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_MI3_WS_LAEMP_EVO_2022-06-29_NP	E235.CI-L	29-Jun-2022	----	----	----		02-Jul-2022	28 days	3 days	✓
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-06-29_NP	E235.CI-L	29-Jun-2022	----	----	----		02-Jul-2022	28 days	3 days	✓
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-06-29_NP	E235.CI-L	29-Jun-2022	----	----	----		02-Jul-2022	28 days	3 days	✓
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-06-29_NP	E235.CI-L	29-Jun-2022	----	----	----		02-Jul-2022	28 days	3 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-06-30_NP	E378-U	30-Jun-2022	----	----	----		02-Jul-2022	3 days	2 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-06-30_NP	E378-U	30-Jun-2022	----	----	----		02-Jul-2022	3 days	2 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE RG_MI25_WS_LAEMP_EVO_2022-06-30_NP	E378-U	30-Jun-2022	----	----	----		02-Jul-2022	3 days	2 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE RG_MIDER_WS_LAEMP_EVO_2022-06-30_NP	E378-U	30-Jun-2022	----	----	----		02-Jul-2022	3 days	2 days	✓



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
Container / Client Sample ID(s)		Rec		Actual	Rec			Actual		
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE RG_RIVER_WS_LAEMP_EVO_2022-06-30_NP	E378-U	30-Jun-2022	----	----	----		02-Jul-2022	3 days	2 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE RG_TRIP_WS_LAEMP_EVO_2022-06-30_NP	E378-U	30-Jun-2022	----	----	----		02-Jul-2022	3 days	2 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE RG_MI3_WS_LAEMP_EVO_2022-06-29_NP	E378-U	29-Jun-2022	----	----	----		02-Jul-2022	3 days	3 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-06-29_NP	E378-U	29-Jun-2022	----	----	----		02-Jul-2022	3 days	3 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-06-29_NP	E378-U	29-Jun-2022	----	----	----		02-Jul-2022	3 days	3 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-06-29_NP	E378-U	29-Jun-2022	----	----	----		02-Jul-2022	3 days	3 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-06-30_NP	E235.F	30-Jun-2022	----	----	----		02-Jul-2022	28 days	2 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-06-30_NP	E235.F	30-Jun-2022	----	----	----		02-Jul-2022	28 days	2 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_MI25_WS_LAEMP_EVO_2022-06-30_NP	E235.F	30-Jun-2022	----	----	----		02-Jul-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-06-30_NP	E235.F	30-Jun-2022	----	----	----		02-Jul-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-06-30_NP	E235.F	30-Jun-2022	----	----	----		02-Jul-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-06-30_NP	E235.F	30-Jun-2022	----	----	----		02-Jul-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_MI3_WS_LAEMP_EVO_2022-06-29_NP	E235.F	29-Jun-2022	----	----	----		02-Jul-2022	28 days	3 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-06-29_NP	E235.F	29-Jun-2022	----	----	----		02-Jul-2022	28 days	3 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-06-29_NP	E235.F	29-Jun-2022	----	----	----		02-Jul-2022	28 days	3 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-06-29_NP	E235.F	29-Jun-2022	----	----	----		02-Jul-2022	28 days	3 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-06-30_NP	E235.NO3-L	30-Jun-2022	----	----	----		02-Jul-2022	3 days	2 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-06-30_NP	E235.NO3-L	30-Jun-2022	----	----	----		02-Jul-2022	3 days	2 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_MI25_WS_LAEMP_EVO_2022-06-30_NP	E235.NO3-L	30-Jun-2022	----	----	----		02-Jul-2022	3 days	2 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-06-30_NP	E235.NO3-L	30-Jun-2022	----	----	----		02-Jul-2022	3 days	2 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-06-30_NP	E235.NO3-L	30-Jun-2022	----	----	----		02-Jul-2022	3 days	2 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-06-30_NP	E235.NO3-L	30-Jun-2022	----	----	----		02-Jul-2022	3 days	2 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_MI3_WS_LAEMP_EVO_2022-06-29_NP	E235.NO3-L	29-Jun-2022	----	----	----		02-Jul-2022	3 days	3 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-06-29_NP	E235.NO3-L	29-Jun-2022	----	----	----		02-Jul-2022	3 days	3 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-06-29_NP	E235.NO3-L	29-Jun-2022	----	----	----		02-Jul-2022	3 days	3 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-06-29_NP	E235.NO3-L	29-Jun-2022	----	----	----		02-Jul-2022	3 days	3 days	✓	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-06-30_NP	E235.NO2-L	30-Jun-2022	----	----	----		02-Jul-2022	3 days	2 days	✓	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-06-30_NP	E235.NO2-L	30-Jun-2022	----	----	----		02-Jul-2022	3 days	2 days	✓	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_MI25_WS_LAEMP_EVO_2022-06-30_NP	E235.NO2-L	30-Jun-2022	----	----	----		02-Jul-2022	3 days	2 days	✓	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-06-30_NP	E235.NO2-L	30-Jun-2022	----	----	----		02-Jul-2022	3 days	2 days	✓	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-06-30_NP	E235.NO2-L	30-Jun-2022	----	----	----		02-Jul-2022	3 days	2 days	✓	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-06-30_NP	E235.NO2-L	30-Jun-2022	----	----	----		02-Jul-2022	3 days	2 days	✓	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_MI3_WS_LAEMP_EVO_2022-06-29_NP	E235.NO2-L	29-Jun-2022	----	----	----		02-Jul-2022	3 days	3 days	✓	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-06-29_NP	E235.NO2-L	29-Jun-2022	----	----	----		02-Jul-2022	3 days	3 days	✓	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-06-29_NP	E235.NO2-L	29-Jun-2022	----	----	----		02-Jul-2022	3 days	3 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-06-29_NP	E235.NO2-L	29-Jun-2022	----	----	----		02-Jul-2022	3 days	3 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-06-30_NP	E235.SO4	30-Jun-2022	----	----	----		02-Jul-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-06-30_NP	E235.SO4	30-Jun-2022	----	----	----		02-Jul-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_MI25_WS_LAEMP_EVO_2022-06-30_NP	E235.SO4	30-Jun-2022	----	----	----		02-Jul-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-06-30_NP	E235.SO4	30-Jun-2022	----	----	----		02-Jul-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-06-30_NP	E235.SO4	30-Jun-2022	----	----	----		02-Jul-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-06-30_NP	E235.SO4	30-Jun-2022	----	----	----		02-Jul-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_MI3_WS_LAEMP_EVO_2022-06-29_NP	E235.SO4	29-Jun-2022	----	----	----		02-Jul-2022	28 days	3 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-06-29_NP	E235.SO4	29-Jun-2022	----	----	----		02-Jul-2022	28 days	3 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-06-29_NP	E235.SO4	29-Jun-2022	----	----	----		02-Jul-2022	28 days	3 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-06-29_NP	E235.SO4	29-Jun-2022	----	----	----		02-Jul-2022	28 days	3 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_ALUSM_WS_LAEMP_EVO_2022-06-30_NP	E318	30-Jun-2022	04-Jul-2022	----	----		04-Jul-2022	28 days	4 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_FBLANK_WS_LAEMP_EVO_2022-06-30_NP	E318	30-Jun-2022	04-Jul-2022	----	----		04-Jul-2022	28 days	4 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_MI25_WS_LAEMP_EVO_2022-06-30_NP	E318	30-Jun-2022	04-Jul-2022	----	----		04-Jul-2022	28 days	4 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_MIDER_WS_LAEMP_EVO_2022-06-30_NP	E318	30-Jun-2022	04-Jul-2022	----	----		04-Jul-2022	28 days	4 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-06-30_NP	E318	30-Jun-2022	04-Jul-2022	----	----		04-Jul-2022	28 days	4 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_MI3_WS_LAEMP_EVO_2022-06-29_NP	E318	29-Jun-2022	04-Jul-2022	----	----		04-Jul-2022	28 days	5 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_MICOMP_WS_LAEMP_EVO_2022-06-29_NP	E318	29-Jun-2022	04-Jul-2022	----	----		04-Jul-2022	28 days	5 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_MIDBO_WS_LAEMP_EVO_2022-06-29_NP	E318	29-Jun-2022	04-Jul-2022	----	----		04-Jul-2022	28 days	5 days	✓	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_MIDGA_WS_LAEMP_EVO_2022-06-29_NP	E318	29-Jun-2022	04-Jul-2022	----	----		04-Jul-2022	28 days	5 days	✓	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_TRIP_WS_LAEMP_EVO_2022-06-30_NP	E318	30-Jun-2022	06-Jul-2022	----	----		06-Jul-2022	28 days	6 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_ALUSM_WS_LAEMP_EVO_2022-06-30_NP	E372-U	30-Jun-2022	02-Jul-2022	----	----		03-Jul-2022	28 days	3 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_FBLANK_WS_LAEMP_EVO_2022-06-30_NP	E372-U	30-Jun-2022	02-Jul-2022	----	----		03-Jul-2022	28 days	3 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_MI25_WS_LAEMP_EVO_2022-06-30_NP	E372-U	30-Jun-2022	02-Jul-2022	----	----		03-Jul-2022	28 days	3 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_MIDER_WS_LAEMP_EVO_2022-06-30_NP	E372-U	30-Jun-2022	02-Jul-2022	----	----		03-Jul-2022	28 days	3 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-06-30_NP	E372-U	30-Jun-2022	02-Jul-2022	----	----		03-Jul-2022	28 days	3 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_TRIP_WS_LAEMP_EVO_2022-06-30_NP	E372-U	30-Jun-2022	02-Jul-2022	----	----		03-Jul-2022	28 days	3 days	✓	



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_MI3_WS_LAEMP_EVO_2022-06-29_NP	E372-U	29-Jun-2022	02-Jul-2022	----	----		03-Jul-2022	28 days	4 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_MICOMP_WS_LAEMP_EVO_2022-06-29_NP	E372-U	29-Jun-2022	02-Jul-2022	----	----		03-Jul-2022	28 days	4 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_MIDBO_WS_LAEMP_EVO_2022-06-29_NP	E372-U	29-Jun-2022	02-Jul-2022	----	----		03-Jul-2022	28 days	4 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_MIDGA_WS_LAEMP_EVO_2022-06-29_NP	E372-U	29-Jun-2022	02-Jul-2022	----	----		03-Jul-2022	28 days	4 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_ALUSM_WS_LAEMP_EVO_2022-06-30_NP	E421.Cr-L	30-Jun-2022	06-Jul-2022	----	----		06-Jul-2022	180 days	6 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_FBLANK_WS_LAEMP_EVO_2022-06-30_NP	E421.Cr-L	30-Jun-2022	06-Jul-2022	----	----		06-Jul-2022	180 days	6 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_MI25_WS_LAEMP_EVO_2022-06-30_NP	E421.Cr-L	30-Jun-2022	06-Jul-2022	----	----		06-Jul-2022	180 days	6 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_MIDER_WS_LAEMP_EVO_2022-06-30_NP	E421.Cr-L	30-Jun-2022	06-Jul-2022	----	----		06-Jul-2022	180 days	6 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_RIVER_WS_LAEMP_EVO_2022-06-30_NP	E421.Cr-L	30-Jun-2022	06-Jul-2022	----	----		06-Jul-2022	180 days	6 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_TRIP_WS_LAEMP_EVO_2022-06-30_NP	E421.Cr-L	30-Jun-2022	06-Jul-2022	----	----		06-Jul-2022	180 days	6 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_MI3_WS_LAEMP_EVO_2022-06-29_NP	E421.Cr-L	29-Jun-2022	06-Jul-2022	----	----		06-Jul-2022	180 days	7 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_MICOMP_WS_LAEMP_EVO_2022-06-29_NP	E421.Cr-L	29-Jun-2022	06-Jul-2022	----	----		06-Jul-2022	180 days	7 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_MIDBO_WS_LAEMP_EVO_2022-06-29_NP	E421.Cr-L	29-Jun-2022	06-Jul-2022	----	----		06-Jul-2022	180 days	7 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_MIDGA_WS_LAEMP_EVO_2022-06-29_NP	E421.Cr-L	29-Jun-2022	06-Jul-2022	----	----		06-Jul-2022	180 days	7 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_ALUSM_WS_LAEMP_EVO_2022-06-30_NP	E509	30-Jun-2022	06-Jul-2022	----	----		06-Jul-2022	28 days	6 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_FBLANK_WS_LAEMP_EVO_2022-06-30_NP	E509	30-Jun-2022	06-Jul-2022	----	----		06-Jul-2022	28 days	6 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_MI25_WS_LAEMP_EVO_2022-06-30_NP	E509	30-Jun-2022	06-Jul-2022	----	----		06-Jul-2022	28 days	6 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_MIDER_WS_LAEMP_EVO_2022-06-30_NP	E509	30-Jun-2022	06-Jul-2022	----	----		06-Jul-2022	28 days	6 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_RIVER_WS_LAEMP_EVO_2022-06-30_NP	E509	30-Jun-2022	06-Jul-2022	----	----		06-Jul-2022	28 days	6 days	✓	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_TRIP_WS_LAEMP_EVO_2022-06-30_NP	E509	30-Jun-2022	06-Jul-2022	----	----		06-Jul-2022	28 days	6 days	✓	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_MI3_WS_LAEMP_EVO_2022-06-29_NP	E509	29-Jun-2022	06-Jul-2022	----	----		06-Jul-2022	28 days	7 days	✓	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_MICOMP_WS_LAEMP_EVO_2022-06-29_NP	E509	29-Jun-2022	06-Jul-2022	----	----		06-Jul-2022	28 days	7 days	✓	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_MIDBO_WS_LAEMP_EVO_2022-06-29_NP	E509	29-Jun-2022	06-Jul-2022	----	----		06-Jul-2022	28 days	7 days	✓	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_MIDGA_WS_LAEMP_EVO_2022-06-29_NP	E509	29-Jun-2022	06-Jul-2022	----	----		06-Jul-2022	28 days	7 days	✓	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_ALUSM_WS_LAEMP_EVO_2022-06-30_NP	E421	30-Jun-2022	06-Jul-2022	----	----		06-Jul-2022	180 days	6 days	✓	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_FBLANK_WS_LAEMP_EVO_2022-06-30_NP	E421	30-Jun-2022	06-Jul-2022	----	----		06-Jul-2022	180 days	6 days	✓	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_MI25_WS_LAEMP_EVO_2022-06-30_NP	E421	30-Jun-2022	06-Jul-2022	----	----		06-Jul-2022	180 days	6 days	✓	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times Rec Actual		Eval	Analysis Date	Holding Times Rec Actual		Eval	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_MIDER_WS_LAEMP_EVO_2022-06-30_NP	E421	30-Jun-2022	06-Jul-2022	----	----		06-Jul-2022	180 days	6 days	✓	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_RIVER_WS_LAEMP_EVO_2022-06-30_NP	E421	30-Jun-2022	06-Jul-2022	----	----		06-Jul-2022	180 days	6 days	✓	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_TRIP_WS_LAEMP_EVO_2022-06-30_NP	E421	30-Jun-2022	06-Jul-2022	----	----		06-Jul-2022	180 days	6 days	✓	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_MI3_WS_LAEMP_EVO_2022-06-29_NP	E421	29-Jun-2022	06-Jul-2022	----	----		06-Jul-2022	180 days	7 days	✓	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_MICOMP_WS_LAEMP_EVO_2022-06-29_NP	E421	29-Jun-2022	06-Jul-2022	----	----		06-Jul-2022	180 days	7 days	✓	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_MIDBO_WS_LAEMP_EVO_2022-06-29_NP	E421	29-Jun-2022	06-Jul-2022	----	----		06-Jul-2022	180 days	7 days	✓	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_MIDGA_WS_LAEMP_EVO_2022-06-29_NP	E421	29-Jun-2022	06-Jul-2022	----	----		06-Jul-2022	180 days	7 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_ALUSM_WS_LAEMP_EVO_2022-06-30_NP	E358-L	30-Jun-2022	02-Jul-2022	----	----		02-Jul-2022	28 days	2 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_FBLANK_WS_LAEMP_EVO_2022-06-30_NP	E358-L	30-Jun-2022	02-Jul-2022	----	----		02-Jul-2022	28 days	2 days	✓	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_MI25_WS_LAEMP_EVO_2022-06-30_NP	E358-L	30-Jun-2022	02-Jul-2022	----	----		02-Jul-2022	28 days	2 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_MIDER_WS_LAEMP_EVO_2022-06-30_NP	E358-L	30-Jun-2022	02-Jul-2022	----	----		02-Jul-2022	28 days	2 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-06-30_NP	E358-L	30-Jun-2022	02-Jul-2022	----	----		02-Jul-2022	28 days	2 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_MI3_WS_LAEMP_EVO_2022-06-29_NP	E358-L	29-Jun-2022	02-Jul-2022	----	----		02-Jul-2022	28 days	3 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_MICOMP_WS_LAEMP_EVO_2022-06-29_NP	E358-L	29-Jun-2022	02-Jul-2022	----	----		02-Jul-2022	28 days	3 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_MIDBO_WS_LAEMP_EVO_2022-06-29_NP	E358-L	29-Jun-2022	02-Jul-2022	----	----		02-Jul-2022	28 days	3 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_MIDGA_WS_LAEMP_EVO_2022-06-29_NP	E358-L	29-Jun-2022	02-Jul-2022	----	----		02-Jul-2022	28 days	3 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_TRIP_WS_LAEMP_EVO_2022-06-30_NP	E358-L	30-Jun-2022	04-Jul-2022	----	----		04-Jul-2022	28 days	4 days	✓	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_ALUSM_WS_LAEMP_EVO_2022-06-30_NP	E355-L	30-Jun-2022	02-Jul-2022	----	----		02-Jul-2022	28 days	2 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_FBLANK_WS_LAEMP_EVO_2022-06-30_NP	E355-L	30-Jun-2022	02-Jul-2022	----	----		02-Jul-2022	28 days	2 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_MI25_WS_LAEMP_EVO_2022-06-30_NP	E355-L	30-Jun-2022	02-Jul-2022	----	----		02-Jul-2022	28 days	2 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_MIDER_WS_LAEMP_EVO_2022-06-30_NP	E355-L	30-Jun-2022	02-Jul-2022	----	----		02-Jul-2022	28 days	2 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-06-30_NP	E355-L	30-Jun-2022	02-Jul-2022	----	----		02-Jul-2022	28 days	2 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_TRIP_WS_LAEMP_EVO_2022-06-30_NP	E355-L	30-Jun-2022	02-Jul-2022	----	----		02-Jul-2022	28 days	2 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_MI3_WS_LAEMP_EVO_2022-06-29_NP	E355-L	29-Jun-2022	02-Jul-2022	----	----		02-Jul-2022	28 days	3 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_MICOMP_WS_LAEMP_EVO_2022-06-29_NP	E355-L	29-Jun-2022	02-Jul-2022	----	----		02-Jul-2022	28 days	3 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_MIDBO_WS_LAEMP_EVO_2022-06-29_NP	E355-L	29-Jun-2022	02-Jul-2022	----	----		02-Jul-2022	28 days	3 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_MIDGA_WS_LAEMP_EVO_2022-06-29_NP	E355-L	29-Jun-2022	02-Jul-2022	----	----		02-Jul-2022	28 days	3 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Acidity by Titration											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-06-30_NP	E283	30-Jun-2022	----	----	----		02-Jul-2022	14 days	2 days	✓	
Physical Tests : Acidity by Titration											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-06-30_NP	E283	30-Jun-2022	----	----	----		02-Jul-2022	14 days	2 days	✓	
Physical Tests : Acidity by Titration											
HDPE RG_MI25_WS_LAEMP_EVO_2022-06-30_NP	E283	30-Jun-2022	----	----	----		02-Jul-2022	14 days	2 days	✓	
Physical Tests : Acidity by Titration											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-06-30_NP	E283	30-Jun-2022	----	----	----		02-Jul-2022	14 days	2 days	✓	
Physical Tests : Acidity by Titration											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-06-30_NP	E283	30-Jun-2022	----	----	----		02-Jul-2022	14 days	2 days	✓	
Physical Tests : Acidity by Titration											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-06-30_NP	E283	30-Jun-2022	----	----	----		02-Jul-2022	14 days	2 days	✓	
Physical Tests : Acidity by Titration											
HDPE RG_MI3_WS_LAEMP_EVO_2022-06-29_NP	E283	29-Jun-2022	----	----	----		02-Jul-2022	14 days	3 days	✓	
Physical Tests : Acidity by Titration											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-06-29_NP	E283	29-Jun-2022	----	----	----		02-Jul-2022	14 days	3 days	✓	
Physical Tests : Acidity by Titration											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-06-29_NP	E283	29-Jun-2022	----	----	----		02-Jul-2022	14 days	3 days	✓	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Acidity by Titration											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-06-29_NP	E283	29-Jun-2022	----	----	----		02-Jul-2022	14 days	3 days	✓	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-06-30_NP	E290	30-Jun-2022	----	----	----		02-Jul-2022	14 days	2 days	✓	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-06-30_NP	E290	30-Jun-2022	----	----	----		02-Jul-2022	14 days	2 days	✓	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_MI25_WS_LAEMP_EVO_2022-06-30_NP	E290	30-Jun-2022	----	----	----		02-Jul-2022	14 days	2 days	✓	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-06-30_NP	E290	30-Jun-2022	----	----	----		02-Jul-2022	14 days	2 days	✓	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-06-30_NP	E290	30-Jun-2022	----	----	----		02-Jul-2022	14 days	2 days	✓	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-06-30_NP	E290	30-Jun-2022	----	----	----		02-Jul-2022	14 days	2 days	✓	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_MI3_WS_LAEMP_EVO_2022-06-29_NP	E290	29-Jun-2022	----	----	----		02-Jul-2022	14 days	3 days	✓	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-06-29_NP	E290	29-Jun-2022	----	----	----		02-Jul-2022	14 days	3 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Alkalinity Species by Titration											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-06-29_NP	E290	29-Jun-2022	----	----	----		02-Jul-2022	14 days	3 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-06-29_NP	E290	29-Jun-2022	----	----	----		02-Jul-2022	14 days	3 days	✔	
Physical Tests : Conductivity in Water											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-06-30_NP	E100	30-Jun-2022	----	----	----		02-Jul-2022	28 days	2 days	✔	
Physical Tests : Conductivity in Water											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-06-30_NP	E100	30-Jun-2022	----	----	----		02-Jul-2022	28 days	2 days	✔	
Physical Tests : Conductivity in Water											
HDPE RG_MI25_WS_LAEMP_EVO_2022-06-30_NP	E100	30-Jun-2022	----	----	----		02-Jul-2022	28 days	2 days	✔	
Physical Tests : Conductivity in Water											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-06-30_NP	E100	30-Jun-2022	----	----	----		02-Jul-2022	28 days	2 days	✔	
Physical Tests : Conductivity in Water											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-06-30_NP	E100	30-Jun-2022	----	----	----		02-Jul-2022	28 days	2 days	✔	
Physical Tests : Conductivity in Water											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-06-30_NP	E100	30-Jun-2022	----	----	----		02-Jul-2022	28 days	2 days	✔	
Physical Tests : Conductivity in Water											
HDPE RG_MI3_WS_LAEMP_EVO_2022-06-29_NP	E100	29-Jun-2022	----	----	----		02-Jul-2022	28 days	3 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
Rec	Actual	Rec		Actual							
Physical Tests : Conductivity in Water											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-06-29_NP	E100	29-Jun-2022	----	----	----		02-Jul-2022	28 days	3 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-06-29_NP	E100	29-Jun-2022	----	----	----		02-Jul-2022	28 days	3 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-06-29_NP	E100	29-Jun-2022	----	----	----		02-Jul-2022	28 days	3 days	✓	
Physical Tests : ORP by Electrode											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-06-30_NP	E125	30-Jun-2022	----	----	----		02-Jul-2022	0.25 hrs	50 hrs	* EHTR-FM	
Physical Tests : ORP by Electrode											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-06-30_NP	E125	30-Jun-2022	----	----	----		02-Jul-2022	0.25 hrs	52 hrs	* EHTR-FM	
Physical Tests : ORP by Electrode											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-06-30_NP	E125	30-Jun-2022	----	----	----		02-Jul-2022	0.25 hrs	54 hrs	* EHTR-FM	
Physical Tests : ORP by Electrode											
HDPE RG_MI25_WS_LAEMP_EVO_2022-06-30_NP	E125	30-Jun-2022	----	----	----		02-Jul-2022	0.25 hrs	54 hrs	* EHTR-FM	
Physical Tests : ORP by Electrode											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-06-30_NP	E125	30-Jun-2022	----	----	----		02-Jul-2022	0.25 hrs	54 hrs	* EHTR-FM	
Physical Tests : ORP by Electrode											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-06-30_NP	E125	30-Jun-2022	----	----	----		02-Jul-2022	0.25 hrs	54 hrs	* EHTR-FM	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
Rec	Actual	Rec		Actual						
Physical Tests : ORP by Electrode										
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-06-29_NP	E125	29-Jun-2022	----	----	----		02-Jul-2022	0.25 hrs	72 hrs	* EHTR-FM
Physical Tests : ORP by Electrode										
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-06-29_NP	E125	29-Jun-2022	----	----	----		02-Jul-2022	0.25 hrs	72 hrs	* EHTR-FM
Physical Tests : ORP by Electrode										
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-06-29_NP	E125	29-Jun-2022	----	----	----		02-Jul-2022	0.25 hrs	73 hrs	* EHTR-FM
Physical Tests : ORP by Electrode										
HDPE RG_MI3_WS_LAEMP_EVO_2022-06-29_NP	E125	29-Jun-2022	----	----	----		02-Jul-2022	0.25 hrs	74 hrs	* EHTR-FM
Physical Tests : pH by Meter										
HDPE RG_MIDER_WS_LAEMP_EVO_2022-06-30_NP	E108	30-Jun-2022	----	----	----		02-Jul-2022	0.25 hrs	48 hrs	* EHTR-FM
Physical Tests : pH by Meter										
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-06-30_NP	E108	30-Jun-2022	----	----	----		02-Jul-2022	0.25 hrs	50 hrs	* EHTR-FM
Physical Tests : pH by Meter										
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-06-30_NP	E108	30-Jun-2022	----	----	----		02-Jul-2022	0.25 hrs	52 hrs	* EHTR-FM
Physical Tests : pH by Meter										
HDPE RG_MI25_WS_LAEMP_EVO_2022-06-30_NP	E108	30-Jun-2022	----	----	----		02-Jul-2022	0.25 hrs	52 hrs	* EHTR-FM
Physical Tests : pH by Meter										
HDPE RG_RIVER_WS_LAEMP_EVO_2022-06-30_NP	E108	30-Jun-2022	----	----	----		02-Jul-2022	0.25 hrs	52 hrs	* EHTR-FM



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : pH by Meter											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-06-30_NP	E108	30-Jun-2022	----	----	----		02-Jul-2022	0.25 hrs	52 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-06-29_NP	E108	29-Jun-2022	----	----	----		02-Jul-2022	0.25 hrs	70 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-06-29_NP	E108	29-Jun-2022	----	----	----		02-Jul-2022	0.25 hrs	70 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-06-29_NP	E108	29-Jun-2022	----	----	----		02-Jul-2022	0.25 hrs	71 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_MI3_WS_LAEMP_EVO_2022-06-29_NP	E108	29-Jun-2022	----	----	----		02-Jul-2022	0.25 hrs	72 hrs	*	EHTR-FM
Physical Tests : TDS by Gravimetry											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-06-30_NP	E162	30-Jun-2022	----	----	----		02-Jul-2022	7 days	2 days	✓	
Physical Tests : TDS by Gravimetry											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-06-30_NP	E162	30-Jun-2022	----	----	----		02-Jul-2022	7 days	2 days	✓	
Physical Tests : TDS by Gravimetry											
HDPE RG_MI25_WS_LAEMP_EVO_2022-06-30_NP	E162	30-Jun-2022	----	----	----		02-Jul-2022	7 days	2 days	✓	
Physical Tests : TDS by Gravimetry											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-06-30_NP	E162	30-Jun-2022	----	----	----		02-Jul-2022	7 days	2 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : TDS by Gravimetry											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-06-30_NP	E162	30-Jun-2022	----	----	----		02-Jul-2022	7 days	2 days	✔	
Physical Tests : TDS by Gravimetry											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-06-30_NP	E162	30-Jun-2022	----	----	----		02-Jul-2022	7 days	2 days	✔	
Physical Tests : TDS by Gravimetry											
HDPE RG_MI3_WS_LAEMP_EVO_2022-06-29_NP	E162	29-Jun-2022	----	----	----		02-Jul-2022	7 days	3 days	✔	
Physical Tests : TDS by Gravimetry											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-06-29_NP	E162	29-Jun-2022	----	----	----		02-Jul-2022	7 days	3 days	✔	
Physical Tests : TDS by Gravimetry											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-06-29_NP	E162	29-Jun-2022	----	----	----		02-Jul-2022	7 days	3 days	✔	
Physical Tests : TDS by Gravimetry											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-06-29_NP	E162	29-Jun-2022	----	----	----		02-Jul-2022	7 days	3 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-06-30_NP	E160-L	30-Jun-2022	----	----	----		02-Jul-2022	7 days	2 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-06-30_NP	E160-L	30-Jun-2022	----	----	----		02-Jul-2022	7 days	2 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_MI25_WS_LAEMP_EVO_2022-06-30_NP	E160-L	30-Jun-2022	----	----	----		02-Jul-2022	7 days	2 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-06-30_NP	E160-L	30-Jun-2022	----	----	----		02-Jul-2022	7 days	2 days	✓	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-06-30_NP	E160-L	30-Jun-2022	----	----	----		02-Jul-2022	7 days	2 days	✓	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-06-30_NP	E160-L	30-Jun-2022	----	----	----		02-Jul-2022	7 days	2 days	✓	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_MI3_WS_LAEMP_EVO_2022-06-29_NP	E160-L	29-Jun-2022	----	----	----		02-Jul-2022	7 days	3 days	✓	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-06-29_NP	E160-L	29-Jun-2022	----	----	----		02-Jul-2022	7 days	3 days	✓	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-06-29_NP	E160-L	29-Jun-2022	----	----	----		02-Jul-2022	7 days	3 days	✓	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-06-29_NP	E160-L	29-Jun-2022	----	----	----		02-Jul-2022	7 days	3 days	✓	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-06-30_NP	E121	30-Jun-2022	----	----	----		02-Jul-2022	3 days	2 days	✓	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-06-30_NP	E121	30-Jun-2022	----	----	----		02-Jul-2022	3 days	2 days	✓	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Turbidity by Nephelometry											
HDPE RG_MI25_WS_LAEMP_EVO_2022-06-30_NP	E121	30-Jun-2022	----	----	----		02-Jul-2022	3 days	2 days	✓	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-06-30_NP	E121	30-Jun-2022	----	----	----		02-Jul-2022	3 days	2 days	✓	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-06-30_NP	E121	30-Jun-2022	----	----	----		02-Jul-2022	3 days	2 days	✓	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-06-30_NP	E121	30-Jun-2022	----	----	----		02-Jul-2022	3 days	2 days	✓	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_MI3_WS_LAEMP_EVO_2022-06-29_NP	E121	29-Jun-2022	----	----	----		02-Jul-2022	3 days	3 days	✓	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-06-29_NP	E121	29-Jun-2022	----	----	----		02-Jul-2022	3 days	3 days	✓	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-06-29_NP	E121	29-Jun-2022	----	----	----		02-Jul-2022	3 days	3 days	✓	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-06-29_NP	E121	29-Jun-2022	----	----	----		02-Jul-2022	3 days	3 days	✓	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_ALUSM_WS_LAEMP_EVO_2022-06-30_NP	E420.Cr-L	30-Jun-2022	----	----	----		07-Jul-2022	180 days	7 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_FBLANK_WS_LAEMP_EVO_2022-06-30_NP	E420.Cr-L	30-Jun-2022	----	----	----		07-Jul-2022	180 days	7 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_MI25_WS_LAEMP_EVO_2022-06-30_NP	E420.Cr-L	30-Jun-2022	----	----	----		07-Jul-2022	180 days	7 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_MIDER_WS_LAEMP_EVO_2022-06-30_NP	E420.Cr-L	30-Jun-2022	----	----	----		07-Jul-2022	180 days	7 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_RIVER_WS_LAEMP_EVO_2022-06-30_NP	E420.Cr-L	30-Jun-2022	----	----	----		07-Jul-2022	180 days	7 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_TRIP_WS_LAEMP_EVO_2022-06-30_NP	E420.Cr-L	30-Jun-2022	----	----	----		07-Jul-2022	180 days	7 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_MI3_WS_LAEMP_EVO_2022-06-29_NP	E420.Cr-L	29-Jun-2022	----	----	----		07-Jul-2022	180 days	8 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_MICOMP_WS_LAEMP_EVO_2022-06-29_NP	E420.Cr-L	29-Jun-2022	----	----	----		07-Jul-2022	180 days	8 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_MIDBO_WS_LAEMP_EVO_2022-06-29_NP	E420.Cr-L	29-Jun-2022	----	----	----		07-Jul-2022	180 days	8 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_MIDGA_WS_LAEMP_EVO_2022-06-29_NP	E420.Cr-L	29-Jun-2022	----	----	----		07-Jul-2022	180 days	8 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_ALUSM_WS_LAEMP_EVO_2022-06-30_NP	E508	30-Jun-2022	----	----	----		06-Jul-2022	28 days	6 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_FBLANK_WS_LAEMP_EVO_2022-06-30_NP	E508	30-Jun-2022	----	----	----		06-Jul-2022	28 days	6 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_MI25_WS_LAEMP_EVO_2022-06-30_NP	E508	30-Jun-2022	----	----	----		06-Jul-2022	28 days	6 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_MIDER_WS_LAEMP_EVO_2022-06-30_NP	E508	30-Jun-2022	----	----	----		06-Jul-2022	28 days	6 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_RIVER_WS_LAEMP_EVO_2022-06-30_NP	E508	30-Jun-2022	----	----	----		06-Jul-2022	28 days	6 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_TRIP_WS_LAEMP_EVO_2022-06-30_NP	E508	30-Jun-2022	----	----	----		06-Jul-2022	28 days	6 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_MI3_WS_LAEMP_EVO_2022-06-29_NP	E508	29-Jun-2022	----	----	----		06-Jul-2022	28 days	7 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_MICOMP_WS_LAEMP_EVO_2022-06-29_NP	E508	29-Jun-2022	----	----	----		06-Jul-2022	28 days	7 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_MIDBO_WS_LAEMP_EVO_2022-06-29_NP	E508	29-Jun-2022	----	----	----		06-Jul-2022	28 days	7 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_MIDGA_WS_LAEMP_EVO_2022-06-29_NP	E508	29-Jun-2022	----	----	----		06-Jul-2022	28 days	7 days	✔	
Total Metals : Total Metals in Water by CRC ICPMS											
HDPE total (nitric acid) RG_ALUSM_WS_LAEMP_EVO_2022-06-30_NP	E420	30-Jun-2022	----	----	----		07-Jul-2022	180 days	7 days	✔	
Total Metals : Total Metals in Water by CRC ICPMS											
HDPE total (nitric acid) RG_FBLANK_WS_LAEMP_EVO_2022-06-30_NP	E420	30-Jun-2022	----	----	----		07-Jul-2022	180 days	7 days	✔	
Total Metals : Total Metals in Water by CRC ICPMS											
HDPE total (nitric acid) RG_MI25_WS_LAEMP_EVO_2022-06-30_NP	E420	30-Jun-2022	----	----	----		07-Jul-2022	180 days	7 days	✔	
Total Metals : Total Metals in Water by CRC ICPMS											
HDPE total (nitric acid) RG_MIDER_WS_LAEMP_EVO_2022-06-30_NP	E420	30-Jun-2022	----	----	----		07-Jul-2022	180 days	7 days	✔	
Total Metals : Total Metals in Water by CRC ICPMS											
HDPE total (nitric acid) RG_RIVER_WS_LAEMP_EVO_2022-06-30_NP	E420	30-Jun-2022	----	----	----		07-Jul-2022	180 days	7 days	✔	
Total Metals : Total Metals in Water by CRC ICPMS											
HDPE total (nitric acid) RG_TRIP_WS_LAEMP_EVO_2022-06-30_NP	E420	30-Jun-2022	----	----	----		07-Jul-2022	180 days	7 days	✔	
Total Metals : Total Metals in Water by CRC ICPMS											
HDPE total (nitric acid) RG_MI3_WS_LAEMP_EVO_2022-06-29_NP	E420	29-Jun-2022	----	----	----		07-Jul-2022	180 days	8 days	✔	
Total Metals : Total Metals in Water by CRC ICPMS											
HDPE total (nitric acid) RG_MICOMP_WS_LAEMP_EVO_2022-06-29_NP	E420	29-Jun-2022	----	----	----		07-Jul-2022	180 days	8 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) RG_MIDBO_WS_LAEMP_EVO_2022-06-29_NP	E420	29-Jun-2022	----	----	----		07-Jul-2022	180 days	8 days	✔
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) RG_MIDGA_WS_LAEMP_EVO_2022-06-29_NP	E420	29-Jun-2022	----	----	----		07-Jul-2022	180 days	8 days	✔

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended
 Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
Analytical Methods							
Laboratory Duplicates (DUP)							
Acidity by Titration	E283	546629	1	13	7.6	5.0	✓
Alkalinity Species by Titration	E290	546633	1	13	7.6	5.0	✓
Ammonia by Fluorescence	E298	546710	1	19	5.2	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	546636	1	11	9.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	546637	1	11	9.0	5.0	✓
Conductivity in Water	E100	546632	1	13	7.6	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	550271	1	18	5.5	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	550618	2	36	5.5	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	550272	1	18	5.5	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	546703	2	19	10.5	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	546748	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	546634	1	11	9.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	546638	1	11	9.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	546639	1	11	9.0	5.0	✓
ORP by Electrode	E125	546770	1	15	6.6	5.0	✓
pH by Meter	E108	546631	1	13	7.6	5.0	✓
Sulfate in Water by IC	E235.SO4	546635	1	11	9.0	5.0	✓
TDS by Gravimetry	E162	546733	1	20	5.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	547808	1	10	10.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	547018	2	31	6.4	5.0	✓
Total Mercury in Water by CVAAS	E508	550611	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	547807	1	10	10.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	546707	1	11	9.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	546646	1	14	7.1	5.0	✓
Turbidity by Nephelometry	E121	546775	1	15	6.6	5.0	✓
Laboratory Control Samples (LCS)							
Acidity by Titration	E283	546629	1	13	7.6	5.0	✓
Alkalinity Species by Titration	E290	546633	1	13	7.6	5.0	✓
Ammonia by Fluorescence	E298	546710	1	19	5.2	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	546636	1	11	9.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	546637	1	11	9.0	5.0	✓
Conductivity in Water	E100	546632	1	13	7.6	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	550271	1	18	5.5	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	550618	2	36	5.5	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	550272	1	18	5.5	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	546703	2	19	10.5	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	546748	1	20	5.0	5.0	✓



Matrix: **Water**

Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
<i>Analytical Methods</i>							
Laboratory Control Samples (LCS) - Continued							
Fluoride in Water by IC	E235.F	546634	1	11	9.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	546638	1	11	9.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	546639	1	11	9.0	5.0	✓
ORP by Electrode	E125	546770	1	15	6.6	5.0	✓
pH by Meter	E108	546631	1	13	7.6	5.0	✓
Sulfate in Water by IC	E235.SO4	546635	1	11	9.0	5.0	✓
TDS by Gravimetry	E162	546733	1	20	5.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	547808	1	10	10.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	547018	2	31	6.4	5.0	✓
Total Mercury in Water by CVAAS	E508	550611	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	547807	1	10	10.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	546707	1	11	9.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	546646	1	14	7.1	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	546731	2	29	6.9	5.0	✓
Turbidity by Nephelometry	E121	546775	1	15	6.6	5.0	✓
Method Blanks (MB)							
Acidity by Titration	E283	546629	1	13	7.6	5.0	✓
Alkalinity Species by Titration	E290	546633	1	13	7.6	5.0	✓
Ammonia by Fluorescence	E298	546710	1	19	5.2	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	546636	1	11	9.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	546637	1	11	9.0	5.0	✓
Conductivity in Water	E100	546632	1	13	7.6	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	550271	1	18	5.5	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	550618	2	36	5.5	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	550272	1	18	5.5	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	546703	2	19	10.5	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	546748	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	546634	1	11	9.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	546638	1	11	9.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	546639	1	11	9.0	5.0	✓
Sulfate in Water by IC	E235.SO4	546635	1	11	9.0	5.0	✓
TDS by Gravimetry	E162	546733	1	20	5.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	547808	1	10	10.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	547018	2	31	6.4	5.0	✓
Total Mercury in Water by CVAAS	E508	550611	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	547807	1	10	10.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	546707	1	11	9.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	546646	1	14	7.1	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	546731	2	29	6.9	5.0	✓
Turbidity by Nephelometry	E121	546775	1	15	6.6	5.0	✓



Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
<i>Analytical Methods</i>							
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	546710	1	19	5.2	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	546636	1	11	9.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	546637	1	11	9.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	550271	1	18	5.5	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	550618	2	36	5.5	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	550272	1	18	5.5	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	546703	2	19	10.5	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	546748	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	546634	1	11	9.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	546638	1	11	9.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	546639	1	11	9.0	5.0	✓
Sulfate in Water by IC	E235.SO4	546635	1	11	9.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	547808	1	10	10.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	547018	2	31	6.4	5.0	✓
Total Mercury in Water by CVAAS	E508	550611	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	547807	1	10	10.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	546707	1	11	9.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	546646	1	14	7.1	5.0	✓



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 Calgary - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 Calgary - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 Calgary - Environmental	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
ORP by Electrode	E125 Calgary - Environmental	Water	ASTM D1498 (mod)	Oxidation reduction potential is reported as the oxidation-reduction potential of the platinum metal-reference electrode employed, measured in mV. For high accuracy test results, it is recommended that this analysis be conducted in the field.
TSS by Gravimetry (Low Level)	E160-L Calgary - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 Calgary - Environmental	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC (Low Level)	E235.Cl-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Acidity by Titration	E283 Calgary - Environmental	Water	APHA 2310 B (mod)	Acidity is determined by potentiometric titration to pH endpoint of 8.3



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Alkalinity Species by Titration	E290 Calgary - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 Calgary - Environmental	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 Calgary - Environmental	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L Calgary - Environmental	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Dissolved Organic Carbon by Combustion (Low Level)	E358-L Calgary - Environmental	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U Calgary - Environmental	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U Calgary - Environmental	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Total Metals in Water by CRC ICPMS	E420 Vancouver - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L Vancouver - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS.
Dissolved Metals in Water by CRC ICPMS	E421 Vancouver - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L Vancouver - Environmental	Water	APHA 3030 B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS
Total Mercury in Water by CVAAS	E508 Vancouver - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS
Dissolved Mercury in Water by CVAAS	E509 Vancouver - Environmental	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
Dissolved Hardness (Calculated)	EC100 Vancouver - Environmental	Water	APHA 2340B	"Hardness (as CaCO ₃), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Ion Balance using Dissolved Metals	EC101 Calgary - Environmental	Water	APHA 1030E	Cation Sum, Anion Sum, and Ion Balance are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present. Ion Balance cannot be calculated accurately for waters with very low electrical conductivity (EC).

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 Calgary - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 Calgary - Environmental	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Preparation for Total Organic Carbon by Combustion	EP355 Calgary - Environmental	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon for Combustion	EP358 Calgary - Environmental	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Phosphorus in water	EP372 Calgary - Environmental	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Dissolved Metals Water Filtration	EP421 Vancouver - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO ₃ .



<i>Preparation Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
Dissolved Mercury Water Filtration	EP509 Vancouver - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.



QUALITY CONTROL REPORT

Work Order : CG2208558
Client : Teck Coal Limited
Contact : Mike Pope
Address : RR#1 HWY#3
Sparwood BC Canada V0B 2G1
Telephone : ---
Project : REGIONAL EFFECTS PROGRAM
PO : VPO00816101
C-O-C number : June EVO LAEMP 2022
Sampler : Alex McClymont
Site : ---
Quote number : Teck Coal Master Quote
No. of samples received : 10
No. of samples analysed : 10

Page : 1 of 18
Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
Calgary, Alberta Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 02-Jul-2022 10:30
Date Analysis Commenced : 02-Jul-2022
Issue Date : 07-Jul-2022 16:17

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
Matrix Spike (MS) Report; Recovery and Data Quality Objectives
Method Blank (MB) Report; Recovery and Data Quality Objectives
Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Table with 3 columns: Signatories, Position, Laboratory Department. Lists names like Angela Ren, Anthony Calero, Erin Sanchez, etc., along with their roles and departments.



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 546629)											
CG2208540-001	Anonymous	acidity (as CaCO3)	----	E283	2.0	mg/L	<2.0	<2.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 546631)											
CG2208540-001	Anonymous	pH	----	E108	0.10	pH units	8.33	8.36	0.359%	4%	----
Physical Tests (QC Lot: 546632)											
CG2208540-001	Anonymous	conductivity	----	E100	2.0	µS/cm	663	666	0.451%	10%	----
Physical Tests (QC Lot: 546633)											
CG2208540-001	Anonymous	alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	258	254	1.76%	20%	----
		alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	258	259	0.271%	20%	----
Physical Tests (QC Lot: 546733)											
CG2208535-001	Anonymous	solids, total dissolved [TDS]	----	E162	20	mg/L	389	396	1.78%	20%	----
Physical Tests (QC Lot: 546770)											
CG2208558-001	RG_M13_WS_LAEMP_EV O_2022-06-29_NP	oxidation-reduction potential [ORP]	----	E125	0.10	mV	407	407	0.0245%	15%	----
Physical Tests (QC Lot: 546775)											
CG2208558-001	RG_M13_WS_LAEMP_EV O_2022-06-29_NP	turbidity	----	E121	0.10	NTU	4.36	4.16	4.74%	15%	----
Anions and Nutrients (QC Lot: 546634)											
CG2208549-001	Anonymous	fluoride	16984-48-8	E235.F	0.020	mg/L	0.090	0.090	0.0004	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 546635)											
CG2208549-001	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	21.9	22.0	0.704%	20%	----
Anions and Nutrients (QC Lot: 546636)											
CG2208549-001	Anonymous	bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 546637)											
CG2208549-001	Anonymous	chloride	16887-00-6	E235.Cl-L	0.10	mg/L	0.36	0.33	0.02	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 546638)											
CG2208549-001	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.0958	0.0962	0.417%	20%	----
Anions and Nutrients (QC Lot: 546639)											
CG2208549-001	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 546646)											
CG2208535-001	Anonymous	phosphorus, total	7723-14-0	E372-U	0.100	mg/L	4.87	4.72	3.13%	20%	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 546710)											
CG2208535-001	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.125	mg/L	5.15	5.21	1.09%	20%	----
Anions and Nutrients (QC Lot: 546748)											
CG2208558-001	RG_MI3_WS_LAEMP_EV O_2022-06-29_NP	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0098	0.0100	0.0002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 547018)											
CG2208265-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.500	mg/L	<0.500	<0.500	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 547019)											
CG2208558-004	RG_MICOMP_WS_LAEMP _EVO_2022-06-29_NP	Kjeldahl nitrogen, total [TKN]	----	E318	0.500	mg/L	<0.500	<0.500	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 550677)											
CG2208535-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.250	mg/L	8.98	9.38	4.35%	20%	----
Organic / Inorganic Carbon (QC Lot: 546703)											
CG2208549-001	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	1.64	1.58	0.06	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 546707)											
CG2208549-001	Anonymous	carbon, total organic [TOC]	----	E355-L	0.50	mg/L	1.75	1.89	0.14	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 548128)											
CG2208452-001	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	1.29	1.34	0.06	Diff <2x LOR	----
Total Metals (QC Lot: 547807)											
CG2208558-001	RG_MI3_WS_LAEMP_EV O_2022-06-29_NP	aluminum, total	7429-90-5	E420	0.0030	mg/L	0.204	0.222	8.12%	20%	----
		antimony, total	7440-36-0	E420	0.00010	mg/L	0.00010	0.00010	0.000001	Diff <2x LOR	----
		arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00030	0.00031	0.000009	Diff <2x LOR	----
		barium, total	7440-39-3	E420	0.00010	mg/L	0.0510	0.0498	2.53%	20%	----
		beryllium, total	7440-41-7	E420	0.000020	mg/L	<0.020 µg/L	<0.000020	0	Diff <2x LOR	----
		bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, total	7440-42-8	E420	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		cadmium, total	7440-43-9	E420	0.0000050	mg/L	0.0461 µg/L	0.0000429	0.0000032	Diff <2x LOR	----
		calcium, total	7440-70-2	E420	0.050	mg/L	29.4	29.6	0.954%	20%	----
		cobalt, total	7440-48-4	E420	0.00010	mg/L	0.20 µg/L	0.00020	0.000002	Diff <2x LOR	----
		copper, total	7440-50-8	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		iron, total	7439-89-6	E420	0.010	mg/L	0.203	0.207	1.54%	20%	----
		lead, total	7439-92-1	E420	0.000050	mg/L	0.000126	0.000130	0.000004	Diff <2x LOR	----
		lithium, total	7439-93-2	E420	0.0010	mg/L	0.0030	0.0031	0.0001	Diff <2x LOR	----
		magnesium, total	7439-95-4	E420	0.0050	mg/L	9.08	8.91	1.88%	20%	----
		manganese, total	7439-96-5	E420	0.00010	mg/L	0.00661	0.00660	0.180%	20%	----
		molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.000538	0.000549	2.17%	20%	----
		nickel, total	7440-02-0	E420	0.00050	mg/L	0.00181	0.00178	0.00003	Diff <2x LOR	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (QC Lot: 547807) - continued											
CG2208558-001	RG_MI3_WS_LAEMP_EV O_2022-06-29_NP	potassium, total	7440-09-7	E420	0.050	mg/L	0.492	0.498	0.006	Diff <2x LOR	----
		selenium, total	7782-49-2	E420	0.000050	mg/L	0.995 µg/L	0.00106	6.78%	20%	----
		silicon, total	7440-21-3	E420	0.10	mg/L	2.13	2.14	0.0556%	20%	----
		silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, total	7440-23-5	E420	0.050	mg/L	1.83	1.82	0.828%	20%	----
		strontium, total	7440-24-6	E420	0.00020	mg/L	0.0865	0.0882	1.89%	20%	----
		sulfur, total	7704-34-9	E420	0.50	mg/L	8.46	8.72	3.09%	20%	----
		thallium, total	7440-28-0	E420	0.000010	mg/L	0.000014	0.000016	0.00002	Diff <2x LOR	----
		tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, total	7440-32-6	E420	0.00030	mg/L	0.00389	0.00449	14.3%	20%	----
		uranium, total	7440-61-1	E420	0.000010	mg/L	0.000384	0.000412	7.11%	20%	----
		vanadium, total	7440-62-2	E420	0.00050	mg/L	0.00096	0.00099	0.00003	Diff <2x LOR	----
		zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	<0.0030	0	Diff <2x LOR	----
Total Metals (QC Lot: 547808)											
CG2208558-001	RG_MI3_WS_LAEMP_EV O_2022-06-29_NP	chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	0.00039	0.00042	0.00003	Diff <2x LOR	----
Total Metals (QC Lot: 550611)											
CG2208535-003	Anonymous	mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 550271)											
CG2208535-001	Anonymous	chromium, dissolved	7440-47-3	E421.Cr-L	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 550272)											
CG2208535-001	Anonymous	aluminum, dissolved	7429-90-5	E421	0.0020	mg/L	0.0077	0.0082	0.0005	Diff <2x LOR	----
		antimony, dissolved	7440-36-0	E421	0.00020	mg/L	0.00815	0.00789	3.33%	20%	----
		arsenic, dissolved	7440-38-2	E421	0.00020	mg/L	0.00087	0.00084	0.00002	Diff <2x LOR	----
		barium, dissolved	7440-39-3	E421	0.00020	mg/L	8.13	7.81	4.08%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.000040	mg/L	<0.040 µg/L	<0.000040	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.020	mg/L	0.043	0.042	0.001	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E421	0.0000500	mg/L	<0.0550 µg/L	<0.0000500	0.0000050	Diff <2x LOR	----
		calcium, dissolved	7440-70-2	E421	0.100	mg/L	91.4	89.8	1.78%	20%	----
		cobalt, dissolved	7440-48-4	E421	0.00020	mg/L	3.46 µg/L	0.00344	0.843%	20%	----
		copper, dissolved	7440-50-8	E421	0.00040	mg/L	0.00238	0.00236	0.00001	Diff <2x LOR	----
		iron, dissolved	7439-89-6	E421	0.020	mg/L	<0.020	<0.020	0	Diff <2x LOR	----
		lead, dissolved	7439-92-1	E421	0.000100	mg/L	0.000126	0.000127	0.000001	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0020	mg/L	0.310	0.306	1.26%	20%	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 550272) - continued											
CG2208535-001	Anonymous	magnesium, dissolved	7439-95-4	E421	0.0100	mg/L	27.5	28.0	1.81%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00020	mg/L	0.0295	0.0303	2.63%	20%	----
		molybdenum, dissolved	7439-98-7	E421	0.000100	mg/L	0.0670	0.0650	2.89%	20%	----
		nickel, dissolved	7440-02-0	E421	0.00100	mg/L	0.0167	0.0167	0.0214%	20%	----
		potassium, dissolved	7440-09-7	E421	0.100	mg/L	14.4	14.3	0.494%	20%	----
		selenium, dissolved	7782-49-2	E421	0.000100	mg/L	3.48 µg/L	0.00342	1.80%	20%	----
		silicon, dissolved	7440-21-3	E421	0.100	mg/L	4.57	4.59	0.498%	20%	----
		silver, dissolved	7440-22-4	E421	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E421	0.100	mg/L	1.97	1.98	0.455%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00040	mg/L	0.665	0.644	3.21%	20%	----
		sulfur, dissolved	7704-34-9	E421	1.00	mg/L	1.76	1.75	0.002	Diff <2x LOR	----
		thallium, dissolved	7440-28-0	E421	0.000020	mg/L	0.000135	0.000134	0.000001	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.00060	mg/L	<0.00060	<0.00060	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000020	mg/L	0.000581	0.000563	3.12%	20%	----
		vanadium, dissolved	7440-62-2	E421	0.00100	mg/L	0.00101	<0.00100	0.000009	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E421	0.0020	mg/L	0.0076	0.0072	0.0004	Diff <2x LOR	----
Dissolved Metals (QC Lot: 550618)											
CG2208468-002	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 550619)											
CG2208558-002	RG_MIDGA_WS_LAEMP_ EVO_2022-06-29_NP	mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 546629)						
acidity (as CaCO3)	----	E283	2	mg/L	<2.0	----
Physical Tests (QCLot: 546632)						
conductivity	----	E100	1	µS/cm	<1.0	----
Physical Tests (QCLot: 546633)						
alkalinity, bicarbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, carbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, hydroxide (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 546731)						
solids, total suspended [TSS]	----	E160-L	1	mg/L	<1.0	----
Physical Tests (QCLot: 546732)						
solids, total suspended [TSS]	----	E160-L	1	mg/L	<1.0	----
Physical Tests (QCLot: 546733)						
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 546775)						
turbidity	----	E121	0.1	NTU	<0.10	----
Anions and Nutrients (QCLot: 546634)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 546635)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 546636)						
bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 546637)						
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	----
Anions and Nutrients (QCLot: 546638)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 546639)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 546646)						
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 546710)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 546748)						



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 546748) - continued						
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	---
Anions and Nutrients (QCLot: 547018)						
Kjeldahl nitrogen, total [TKN]	---	E318	0.05	mg/L	<0.050	---
Anions and Nutrients (QCLot: 547019)						
Kjeldahl nitrogen, total [TKN]	---	E318	0.05	mg/L	<0.050	---
Anions and Nutrients (QCLot: 550677)						
Kjeldahl nitrogen, total [TKN]	---	E318	0.05	mg/L	<0.050	---
Organic / Inorganic Carbon (QCLot: 546703)						
carbon, dissolved organic [DOC]	---	E358-L	0.5	mg/L	<0.50	---
Organic / Inorganic Carbon (QCLot: 546707)						
carbon, total organic [TOC]	---	E355-L	0.5	mg/L	<0.50	---
Organic / Inorganic Carbon (QCLot: 548128)						
carbon, dissolved organic [DOC]	---	E358-L	0.5	mg/L	<0.50	---
Total Metals (QCLot: 547807)						
aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	---
antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	---
arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	---
barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	---
beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	---
bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	---
boron, total	7440-42-8	E420	0.01	mg/L	<0.010	---
cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	---
calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	---
cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	---
copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	---
iron, total	7439-89-6	E420	0.01	mg/L	<0.010	---
lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	---
lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	---
magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	---
manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	---
molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	---
nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	---
potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	---
selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	---
silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	---
silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	---



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 547807) - continued						
sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	---
strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	---
sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	---
thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	---
tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	---
titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	---
uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	---
vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	---
zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	---
Total Metals (QCLot: 547808)						
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	<0.00010	---
Total Metals (QCLot: 550611)						
mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	---
Dissolved Metals (QCLot: 550271)						
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	<0.00010	---
Dissolved Metals (QCLot: 550272)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	---
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	---
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	---
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	---
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	---
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	---
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	---
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	---
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	---
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	---
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	---
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	---
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	---
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	---
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	---
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	---
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	---
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	---
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	---
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	---



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 550272) - continued						
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
Dissolved Metals (QCLot: 550618)						
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 550619)						
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Physical Tests (QCLot: 546629)									
acidity (as CaCO3)	----	E283	2	mg/L	50 mg/L	101	85.0	115	----
Physical Tests (QCLot: 546631)									
pH	----	E108	----	pH units	7 pH units	101	98.6	101	----
Physical Tests (QCLot: 546632)									
conductivity	----	E100	1	µS/cm	146.9 µS/cm	101	90.0	110	----
Physical Tests (QCLot: 546633)									
alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	105	85.0	115	----
Physical Tests (QCLot: 546731)									
solids, total suspended [TSS]	----	E160-L	1	mg/L	150 mg/L	105	85.0	115	----
Physical Tests (QCLot: 546732)									
solids, total suspended [TSS]	----	E160-L	1	mg/L	150 mg/L	90.6	85.0	115	----
Physical Tests (QCLot: 546733)									
solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	94.5	85.0	115	----
Physical Tests (QCLot: 546770)									
oxidation-reduction potential [ORP]	----	E125	----	mV	220 mV	100	95.4	104	----
Physical Tests (QCLot: 546775)									
turbidity	----	E121	0.1	NTU	200 NTU	102	85.0	115	----
Anions and Nutrients (QCLot: 546634)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	99.6	90.0	110	----
Anions and Nutrients (QCLot: 546635)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 546636)									
bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	97.8	85.0	115	----
Anions and Nutrients (QCLot: 546637)									
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	98.8	90.0	110	----
Anions and Nutrients (QCLot: 546638)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 546639)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 546646)									
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	8.02 mg/L	98.1	80.0	120	----
Anions and Nutrients (QCLot: 546710)									



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Anions and Nutrients (QCLot: 546710) - continued									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	96.2	85.0	115	----
Anions and Nutrients (QCLot: 546748)									
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.02 mg/L	98.8	80.0	120	----
Anions and Nutrients (QCLot: 547018)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	80.0	75.0	125	----
Anions and Nutrients (QCLot: 547019)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	78.2	75.0	125	----
Anions and Nutrients (QCLot: 550677)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	95.6	75.0	125	----
Organic / Inorganic Carbon (QCLot: 546703)									
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	94.6	80.0	120	----
Organic / Inorganic Carbon (QCLot: 546707)									
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	99.5	80.0	120	----
Organic / Inorganic Carbon (QCLot: 548128)									
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	105	80.0	120	----
Total Metals (QCLot: 547807)									
aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	101	80.0	120	----
antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	111	80.0	120	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	101	80.0	120	----
barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	96.1	80.0	120	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	96.2	80.0	120	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	103	80.0	120	----
boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	93.7	80.0	120	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	102	80.0	120	----
calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	100	80.0	120	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	98.9	80.0	120	----
copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	99.8	80.0	120	----
iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	99.3	80.0	120	----
lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	102	80.0	120	----
lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	95.4	80.0	120	----
magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	100	80.0	120	----
manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	100	80.0	120	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	107	80.0	120	----
nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	99.6	80.0	120	----
potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	101	80.0	120	----



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Total Metals (QCLot: 547807) - continued									
selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	97.2	80.0	120	----
silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	101	80.0	120	----
silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	102	80.0	120	----
sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	103	80.0	120	----
strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	105	80.0	120	----
sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	94.8	80.0	120	----
thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	107	80.0	120	----
tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	103	80.0	120	----
titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	101	80.0	120	----
uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	101	80.0	120	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	102	80.0	120	----
zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	102	80.0	120	----
Total Metals (QCLot: 547808)									
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	0.25 mg/L	99.4	80.0	120	----
Total Metals (QCLot: 550611)									
mercury, total	7439-97-6	E508	0.000005	mg/L	0.0001 mg/L	97.1	80.0	120	----
Dissolved Metals (QCLot: 550271)									
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	0.25 mg/L	99.2	80.0	120	----
Dissolved Metals (QCLot: 550272)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	105	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	103	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	106	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	111	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	98.4	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	104	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	97.3	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	102	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	103	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	103	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	103	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	116	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	100	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	100	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	103	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	104	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	102	80.0	120	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Dissolved Metals (QCLot: 550272) - continued									
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	103	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	102	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	104	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	101	80.0	120	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	102	80.0	120	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	108	80.0	120	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	114	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	104	80.0	120	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	102	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	101	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	97.3	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	99.0	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	105	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	108	80.0	120	----
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	93.3	80.0	120	----
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	92.4	80.0	120	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 546634)										
CG2208558-001	RG_MI3_WS_LAEMP_EVO_2022-06-29_NP	fluoride	16984-48-8	E235.F	1.01 mg/L	1 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 546635)										
CG2208558-001	RG_MI3_WS_LAEMP_EVO_2022-06-29_NP	sulfate (as SO4)	14808-79-8	E235.SO4	92.4 mg/L	100 mg/L	92.4	75.0	125	----
Anions and Nutrients (QCLot: 546636)										
CG2208558-001	RG_MI3_WS_LAEMP_EVO_2022-06-29_NP	bromide	24959-67-9	E235.Br-L	0.489 mg/L	0.5 mg/L	97.8	75.0	125	----
Anions and Nutrients (QCLot: 546637)										
CG2208558-001	RG_MI3_WS_LAEMP_EVO_2022-06-29_NP	chloride	16887-00-6	E235.Cl-L	96.2 mg/L	100 mg/L	96.2	75.0	125	----
Anions and Nutrients (QCLot: 546638)										
CG2208558-001	RG_MI3_WS_LAEMP_EVO_2022-06-29_NP	nitrate (as N)	14797-55-8	E235.NO3-L	2.43 mg/L	2.5 mg/L	97.1	75.0	125	----
Anions and Nutrients (QCLot: 546639)										
CG2208558-001	RG_MI3_WS_LAEMP_EVO_2022-06-29_NP	nitrite (as N)	14797-65-0	E235.NO2-L	0.512 mg/L	0.5 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 546646)										
CG2208535-002	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0545 mg/L	0.0676 mg/L	80.6	70.0	130	----
Anions and Nutrients (QCLot: 546710)										
CG2208535-002	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0976 mg/L	0.1 mg/L	97.6	75.0	125	----
Anions and Nutrients (QCLot: 546748)										
CG2208558-002	RG_MIDGA_WS_LAEMP_EVO_2022-06-29_NP	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0505 mg/L	0.05 mg/L	101	70.0	130	----
Anions and Nutrients (QCLot: 547018)										
CG2208265-009	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.01 mg/L	2.5 mg/L	80.2	70.0	130	----
Anions and Nutrients (QCLot: 547019)										
CG2208558-006	RG_FBLANK_WS_LAEMP_EVO_2022-06-30_NP	Kjeldahl nitrogen, total [TKN]	----	E318	1.96 mg/L	2.5 mg/L	78.6	70.0	130	----
Anions and Nutrients (QCLot: 550677)										
CG2208535-002	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.54 mg/L	2.5 mg/L	102	70.0	130	----
Organic / Inorganic Carbon (QCLot: 546703)										
CG2208549-001	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	4.44 mg/L	5 mg/L	88.8	70.0	130	----



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Organic / Inorganic Carbon (QCLot: 546707)										
CG2208549-001	Anonymous	carbon, total organic [TOC]	----	E355-L	4.80 mg/L	5 mg/L	96.0	70.0	130	----
Organic / Inorganic Carbon (QCLot: 548128)										
CG2208452-001	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	5.15 mg/L	5 mg/L	103	70.0	130	----
Total Metals (QCLot: 547807)										
CG2208558-002	RG_MIDGA_WS_LAEMP_E VO_2022-06-29_NP	aluminum, total	7429-90-5	E420	0.160 mg/L	0.2 mg/L	80.2	70.0	130	----
		antimony, total	7440-36-0	E420	0.0203 mg/L	0.02 mg/L	101	70.0	130	----
		arsenic, total	7440-38-2	E420	0.0192 mg/L	0.02 mg/L	95.8	70.0	130	----
		barium, total	7440-39-3	E420	ND mg/L	0.02 mg/L	ND	70.0	130	----
		beryllium, total	7440-41-7	E420	0.0374 mg/L	0.04 mg/L	93.4	70.0	130	----
		bismuth, total	7440-69-9	E420	0.0102 mg/L	0.01 mg/L	102	70.0	130	----
		boron, total	7440-42-8	E420	0.095 mg/L	0.1 mg/L	95.1	70.0	130	----
		cadmium, total	7440-43-9	E420	0.00405 mg/L	0.004 mg/L	101	70.0	130	----
		calcium, total	7440-70-2	E420	ND mg/L	4 mg/L	ND	70.0	130	----
		cobalt, total	7440-48-4	E420	0.0187 mg/L	0.02 mg/L	93.3	70.0	130	----
		copper, total	7440-50-8	E420	0.0186 mg/L	0.02 mg/L	93.1	70.0	130	----
		iron, total	7439-89-6	E420	1.89 mg/L	2 mg/L	94.5	70.0	130	----
		lead, total	7439-92-1	E420	0.0195 mg/L	0.02 mg/L	97.6	70.0	130	----
		lithium, total	7439-93-2	E420	0.0918 mg/L	0.1 mg/L	91.8	70.0	130	----
		magnesium, total	7439-95-4	E420	ND mg/L	1 mg/L	ND	70.0	130	----
		manganese, total	7439-96-5	E420	0.0188 mg/L	0.02 mg/L	93.8	70.0	130	----
		molybdenum, total	7439-98-7	E420	0.0209 mg/L	0.02 mg/L	104	70.0	130	----
		nickel, total	7440-02-0	E420	0.0374 mg/L	0.04 mg/L	93.6	70.0	130	----
		potassium, total	7440-09-7	E420	3.70 mg/L	4 mg/L	92.4	70.0	130	----
		selenium, total	7782-49-2	E420	0.0391 mg/L	0.04 mg/L	97.9	70.0	130	----
		silicon, total	7440-21-3	E420	8.78 mg/L	10 mg/L	87.8	70.0	130	----
		silver, total	7440-22-4	E420	0.00400 mg/L	0.004 mg/L	100	70.0	130	----
		sodium, total	7440-23-5	E420	1.85 mg/L	2 mg/L	92.7	70.0	130	----
		strontium, total	7440-24-6	E420	ND mg/L	0.02 mg/L	ND	70.0	130	----
		sulfur, total	7704-34-9	E420	ND mg/L	20 mg/L	ND	70.0	130	----
		thallium, total	7440-28-0	E420	0.00381 mg/L	0.004 mg/L	95.3	70.0	130	----
tin, total	7440-31-5	E420	0.0197 mg/L	0.02 mg/L	98.4	70.0	130	----		
titanium, total	7440-32-6	E420	0.0376 mg/L	0.04 mg/L	93.9	70.0	130	----		
uranium, total	7440-61-1	E420	0.00396 mg/L	0.004 mg/L	98.9	70.0	130	----		
vanadium, total	7440-62-2	E420	0.0988 mg/L	0.1 mg/L	98.8	70.0	130	----		
zinc, total	7440-66-6	E420	0.377 mg/L	0.4 mg/L	94.2	70.0	130	----		
Total Metals (QCLot: 547808)										



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 547808) - continued										
CG2208558-002	RG_MIDGA_WS_LAEMP_E VO_2022-06-29_NP	chromium, total	7440-47-3	E420.Cr-L	0.0386 mg/L	0.04 mg/L	96.6	70.0	130	----
Total Metals (QCLot: 550611)										
CG2208540-001	Anonymous	mercury, total	7439-97-6	E508	0.0000957 mg/L	0.0001 mg/L	95.7	70.0	130	----
Dissolved Metals (QCLot: 550271)										
CG2208535-002	Anonymous	chromium, dissolved	7440-47-3	E421.Cr-L	0.0414 mg/L	0.04 mg/L	103	70.0	130	----
Dissolved Metals (QCLot: 550272)										
CG2208535-002	Anonymous	aluminum, dissolved	7429-90-5	E421	0.210 mg/L	0.2 mg/L	105	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.0204 mg/L	0.02 mg/L	102	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.0206 mg/L	0.02 mg/L	103	70.0	130	----
		barium, dissolved	7440-39-3	E421	0.0213 mg/L	0.02 mg/L	106	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.0448 mg/L	0.04 mg/L	112	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.00956 mg/L	0.01 mg/L	95.6	70.0	130	----
		boron, dissolved	7440-42-8	E421	0.107 mg/L	0.1 mg/L	107	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.00414 mg/L	0.004 mg/L	103	70.0	130	----
		calcium, dissolved	7440-70-2	E421	4.30 mg/L	4 mg/L	107	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.0207 mg/L	0.02 mg/L	103	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.0209 mg/L	0.02 mg/L	105	70.0	130	----
		iron, dissolved	7439-89-6	E421	2.00 mg/L	2 mg/L	100	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.0195 mg/L	0.02 mg/L	97.6	70.0	130	----
		lithium, dissolved	7439-93-2	E421	0.111 mg/L	0.1 mg/L	111	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	1.06 mg/L	1 mg/L	106	70.0	130	----
		manganese, dissolved	7439-96-5	E421	0.0204 mg/L	0.02 mg/L	102	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.0206 mg/L	0.02 mg/L	103	70.0	130	----
		nickel, dissolved	7440-02-0	E421	0.0416 mg/L	0.04 mg/L	104	70.0	130	----
		potassium, dissolved	7440-09-7	E421	4.08 mg/L	4 mg/L	102	70.0	130	----
		selenium, dissolved	7782-49-2	E421	0.0426 mg/L	0.04 mg/L	106	70.0	130	----
		silicon, dissolved	7440-21-3	E421	10.5 mg/L	10 mg/L	105	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.00428 mg/L	0.004 mg/L	107	70.0	130	----
		sodium, dissolved	7440-23-5	E421	2.15 mg/L	2 mg/L	108	70.0	130	----
		strontium, dissolved	7440-24-6	E421	0.0228 mg/L	0.02 mg/L	114	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	21.0 mg/L	20 mg/L	105	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.00378 mg/L	0.004 mg/L	94.4	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.0205 mg/L	0.02 mg/L	103	70.0	130	----
		titanium, dissolved	7440-32-6	E421	0.0394 mg/L	0.04 mg/L	98.5	70.0	130	----
		uranium, dissolved	7440-61-1	E421	0.00369 mg/L	0.004 mg/L	92.2	70.0	130	----



Sub-Matrix: **Water**

					<i>Matrix Spike (MS) Report</i>					
					<i>Spike</i>		<i>Recovery (%)</i>	<i>Recovery Limits (%)</i>		
<i>Laboratory sample ID</i>	<i>Client sample ID</i>	<i>Analyte</i>	<i>CAS Number</i>	<i>Method</i>	<i>Concentration</i>	<i>Target</i>	<i>MS</i>	<i>Low</i>	<i>High</i>	<i>Qualifier</i>
Dissolved Metals (QCLot: 550272) - continued										
CG2208535-002	Anonymous	vanadium, dissolved	7440-62-2	E421	0.104 mg/L	0.1 mg/L	104	70.0	130	----
		zinc, dissolved	7440-66-6	E421	0.432 mg/L	0.4 mg/L	108	70.0	130	----
Dissolved Metals (QCLot: 550618)										
CG2208468-003	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000921 mg/L	0.0001 mg/L	92.1	70.0	130	----
Dissolved Metals (QCLot: 550619)										
CG2208558-003	RG_MIDBO_WS_LAEMP_E VO_2022-06-29_NP	mercury, dissolved	7439-97-6	E509	0.0000879 mg/L	0.0001 mg/L	87.9	70.0	130	----

COC ID:		June EVO LAEMP 2022		TURNAROUND TIME:		RUSH	
PROJECT/CLIENT INFO				LABORATORY			
Facility Name / Job#		Regional effects program		Lab Name		ALS Calgary	
Project Manager		Mike Pope		Lab Contact		Lyudmyla Shvets	
Email		mike.pope@teck.com		Email		lyudmyla.shvets@alsglobal.com	
Address		421 Pine Avenue		Address		2559 29 Street NE	
City		Sparwood		City		Calgary	
Postal Code		V0B 2G0		Postal Code		T1Y 7B5	
Phone Number		343-333-3905		Phone Number		1 403 407 1794	

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS REQUESTED							
								TECKCOAL-ROUTINE-VA	ALS Package-DOC	ALS Package-TRN/TOC	HG-T-U-CVAF-VA	HG-D-CVAF-VA	TECKCOAL-MET-T-VA	TECKCOAL-MET-D-VA	
								N	P	N	N	P	N	P	
RG_M13_LAEMP_EVO_2022-06-29_NP	RG_M13	WS	No	6/29/2022	12:45	G	7	X	X	X	X	X	X	X	X
RG_MIDGA_LAEMP_EVO_2022-06-29_NP	RG_MIDGA	WS	No	6/29/2022	14:00	G	7	X	X	X	X	X	X	X	X
RG_MIDBO_LAEMP_EVO_2022-06-29_NP	RG_MIDBO	WS	No	6/29/2022	14:45	G	7	X	X	X	X	X	X	X	X
RG_MICOMP_LAEMP_EVO_2022-06-29_NP	RG_MICOMP	WS	No	6/29/2022	15:10	G	7	X	X	X	X	X	X	X	X
RG_TRIP_LAEMP_EVO_2022-06-30_NP	RG_TRIP	WS	No	6/30/2022	9:00	G	4	X		X		X		X	
RG_FBLANK_LAEMP_EVO_2022-06-30_NP	RG_FBLANK	WS	No	6/30/2022	9:00	G	7	X	X	X	X	X	X	X	X
RG_RIVER_LAEMP_EVO_2022-06-30_NP	RG_RIVER	WS	No	6/30/2022	9:00	G	7	X	X	X	X	X	X	X	X
RG_ALUSM_LAEMP_EVO_2022-06-30_NP	RG_ALUSM	WS	No	6/30/2022	11:00	G	7	X	X	X	X	X	X	X	X
RG_M125_LAEMP_EVO_2022-06-30_NP	RG_M125	WS	No	6/30/2022	9:00	G	7	X	X	X	X	X	X	X	X
RG_MIDER_LAEMP_EVO_2022-06-30_NP	RG_MIDER	WS	No	6/30/2022	12:45	G	7	X	X	X	X	X	X	X	X

ALS PO VPO00816101	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
	Alex McClymont	June 30, 2022	<i>[Signature]</i>

REGULAR (default) <input type="checkbox"/> Priority (2-3 business days) - 50% surcharge <input type="checkbox"/> Emergency (1 Business Day) - 100% surcharge <input checked="" type="checkbox"/> For Emergency <1 Day, ASAP or Weekend - Contact ALS	Sampler's Name Alex McClymont	Mobile # 780-293-6750
Sampler's Signature	Date/Time June 30, 2022	<i>[Signature]</i>

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Environmental Division
Calgary
Work Order Reference
CG2208558

Environmental Division
Calgary
Work Order Reference
CG2208558





CERTIFICATE OF ANALYSIS

Work Order : **CG2209854**
Client : **Teck Coal Limited**
Contact : Mike Pope
Address : RR#1 HWY#3
Sparwood BC Canada V0B 2G1
Telephone : ----
Project : Regional Effects Program
PO : VPO00847030
C-O-C number : July 26 EVO LAEMP 2022
Sampler : ROBIN VALLEAU
Site : ----
Quote number : Teck Coal Master Quote
No. of samples received : 10
No. of samples analysed : 10

Page : 1 of 10
Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
Calgary AB Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 27-Jul-2022 08:50
Date Analysis Commenced : 27-Jul-2022
Issue Date : 29-Jul-2022 18:25

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Anthony Calero	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Dwayne Bennett	Supervisor - Inorganic	Inorganics, Calgary, Alberta
Dwayne Bennett	Supervisor - Inorganic	Metals, Calgary, Alberta
Elke Tabora		Inorganics, Calgary, Alberta
Katarzyna Glinka	Analyst	Inorganics, Calgary, Alberta
Kevin Baxter		Metals, Calgary, Alberta
Mackenzie Lamoureux	Laboratory Analyst	Metals, Calgary, Alberta
Millicent Brentnall	Laboratory Analyst	Metals, Calgary, Alberta
Parker Sgarbossa	Laboratory Analyst	Inorganics, Calgary, Alberta
Ruifang Zheng	Analyst	Inorganics, Calgary, Alberta
Shirley Li		Metals, Calgary, Alberta
Sofiya Ivanova	Lab Assistant	Inorganics, Calgary, Alberta
Vladka Stamenova	Analyst	Inorganics, Calgary, Alberta



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

<i>Unit</i>	<i>Description</i>
-	No Unit
%	percent
µg/L	micrograms per litre
µS/cm	Microsiemens per centimetre
meq/L	milliequivalents per litre
mg/L	milligrams per litre
mV	millivolts
NTU	nephelometric turbidity units
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

<i>Qualifier</i>	<i>Description</i>
DLDS	<i>Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.</i>
DTSE	<i>Dissolved Se concentration exceeds total. Positive bias on D-Se suspected due to signal enhancement from volatile selenium species. Contact ALS if an alternative test to address this interference is needed.</i>
TKNI	<i>TKN result may be biased low due to Nitrate interference. Nitrate-N is > 10x TKN.</i>



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_GATEDP_WS S_LAEMP_EVO _2022-07-25_N	RG_GATE_WS LAEMP_EVO_2 022-07-25_N	RG_MIDGA_WS _LAEMP_EVO_ 2022-07-25_N	RG_MIDBO_WS _LAEMP_EVO_ 2022-07-25_N	RG_MICOMP_WS S_LAEMP_EVO _2022-07-25_N
Client sampling date / time					25-Jul-2022 12:30	25-Jul-2022 10:00	25-Jul-2022 12:00	25-Jul-2022 13:00	25-Jul-2022 15:30	
Analyte	CAS Number	Method	LOR	Unit	CG2209854-001	CG2209854-002	CG2209854-003	CG2209854-004	CG2209854-005	
					Result	Result	Result	Result	Result	
Physical Tests										
acidity (as CaCO3)	----	E283	2.0	mg/L	<2.0	<2.0	<2.0	<2.0	<2.0	
alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	373	375	244	180	178	
alkalinity, bicarbonate (as HCO3)	71-52-3	E290	1.0	mg/L	455	457	297	220	217	
alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
alkalinity, carbonate (as CO3)	3812-32-6	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
alkalinity, hydroxide (as OH)	14280-30-9	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	373	375	244	180	178	
conductivity	----	E100	2.0	µS/cm	1910	1910	968	464	464	
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	1310	1300	613	263	265	
oxidation-reduction potential [ORP]	----	E125	0.10	mV	430	416	391	371	370	
pH	----	E108	0.10	pH units	7.92	7.95	7.96	7.94	7.88	
solids, total dissolved [TDS]	----	E162	10	mg/L	1660	1780	760	314	324	
solids, total suspended [TSS]	----	E160-L	1.0	mg/L	2.9	4.8	<1.0	<1.0	1.0	
turbidity	----	E121	0.10	NTU	2.13	2.07	1.07	0.51	0.67	
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.158	0.210	0.0554	0.0112	0.0105	
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.250 ^{DLDS}	0.376	0.129	<0.050	<0.050	
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	5.08	14.0	5.42	1.49	2.36	
fluoride	16984-48-8	E235.F	0.020	mg/L	<0.100 ^{DLDS}	0.214	0.162	0.122	0.125	
Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	0.717 ^{TKNI}	0.788	0.347 ^{TKNI}	0.144	0.193	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	15.5	7.45	2.90	0.835	0.902	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	0.0055	0.0050	0.0038	<0.0010	<0.0010	
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0047	0.0085	0.0042	0.0042	0.0059	
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	759	946	347	103	103	
Organic / Inorganic Carbon										
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	0.93	1.00	0.63	0.99	1.18	
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	1.27	0.98	0.83	0.76	1.03	
Ion Balance										



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_GATEDP_W S_LAEMP_EVO _2022-07-25_N	RG_GATE_WS_ LAEMP_EVO_2 022-07-25_N	RG_MIDGA_WS _LAEMP_EVO_ 2022-07-25_N	RG_MIDBO_WS _LAEMP_EVO_ 2022-07-25_N	RG_MICOMP_W S_LAEMP_EVO _2022-07-25_N
Client sampling date / time					25-Jul-2022 12:30	25-Jul-2022 10:00	25-Jul-2022 12:00	25-Jul-2022 13:00	25-Jul-2022 15:30	
Analyte	CAS Number	Method	LOR	Unit	CG2209854-001	CG2209854-002	CG2209854-003	CG2209854-004	CG2209854-005	
					Result	Result	Result	Result	Result	
Ion Balance										
anion sum	----	EC101	0.10	meq/L	24.5	28.1	12.5	5.85	5.84	
cation sum	----	EC101	0.10	meq/L	26.7	26.4	12.5	5.42	5.48	
ion balance (cations/anions)	----	EC101	0.010	%	109	94.0	100	92.6	93.8	
ion balance (APHA)	----	EC101	0.010	%	4.30	3.12	<0.010	3.82	3.18	
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0114	0.0198	0.0112	0.0122	0.0146	
antimony, total	7440-36-0	E420	0.00010	mg/L	0.00116	0.00119	0.00044	0.00015	0.00015	
arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00044	0.00046	0.00033	0.00028	0.00031	
barium, total	7440-39-3	E420	0.00010	mg/L	0.211	0.263	0.156	0.110	0.111	
beryllium, total	7440-41-7	E420	0.020	µg/L	<0.040 ^{DLDS}	<0.040 ^{DLDS}	<0.020	<0.020	<0.020	
bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000100 ^{DLDS}	<0.000100 ^{DLDS}	<0.000050	<0.000050	<0.000050	
boron, total	7440-42-8	E420	0.010	mg/L	0.054	0.054	0.027	0.015	0.016	
cadmium, total	7440-43-9	E420	0.0050	µg/L	0.166	0.263	0.0775	0.0329	0.0437	
calcium, total	7440-70-2	E420	0.050	mg/L	270	272	130	66.0	68.3	
chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	<0.00020 ^{DLDS}	<0.00020 ^{DLDS}	0.00016	0.00022	0.00029	
cobalt, total	7440-48-4	E420	0.10	µg/L	0.20	0.29	0.11	<0.10	<0.10	
copper, total	7440-50-8	E420	0.00050	mg/L	<0.00100 ^{DLDS}	<0.00100 ^{DLDS}	<0.00050	0.00116	<0.00050	
iron, total	7439-89-6	E420	0.010	mg/L	0.196	0.279	0.070	0.023	0.027	
lead, total	7439-92-1	E420	0.000050	mg/L	<0.000100 ^{DLDS}	<0.000100 ^{DLDS}	<0.000050	0.000088	<0.000050	
lithium, total	7439-93-2	E420	0.0010	mg/L	0.148	0.149	0.0526	0.0124	0.0127	
magnesium, total	7439-95-4	E420	0.0050	mg/L	190	201	79.8	30.0	29.6	
manganese, total	7439-96-5	E420	0.00010	mg/L	0.00880	0.0113	0.00475	0.00293	0.00297	
mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.0167	0.0162	0.00589	0.00132	0.00116	
nickel, total	7440-02-0	E420	0.00050	mg/L	0.0331	0.0365	0.0121	0.00212	0.00196	
potassium, total	7440-09-7	E420	0.050	mg/L	6.05	6.33	2.58	1.01	1.06	
selenium, total	7782-49-2	E420	0.050	µg/L	91.6	92.7	39.0	13.0	13.4	
silicon, total	7440-21-3	E420	0.10	mg/L	3.58	3.67	2.92	2.55	2.68	
silver, total	7440-22-4	E420	0.000010	mg/L	0.000081	0.000023	<0.000010	<0.000010	<0.000010	
sodium, total	7440-23-5	E420	0.050	mg/L	10.3	11.2	5.78	3.69	4.02	
strontium, total	7440-24-6	E420	0.00020	mg/L	0.790	0.790	0.368	0.185	0.189	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_GATEDP_W S_LAEMP_EVO _2022-07-25_N	RG_GATE_WS_ LAEMP_EVO_2 022-07-25_N	RG_MIDGA_WS _LAEMP_EVO_ 2022-07-25_N	RG_MIDBO_WS _LAEMP_EVO_ 2022-07-25_N	RG_MICOMP_W S_LAEMP_EVO _2022-07-25_N
Client sampling date / time					25-Jul-2022 12:30	25-Jul-2022 10:00	25-Jul-2022 12:00	25-Jul-2022 13:00	25-Jul-2022 15:30	
Analyte	CAS Number	Method	LOR	Unit	CG2209854-001	CG2209854-002	CG2209854-003	CG2209854-004	CG2209854-005	
					Result	Result	Result	Result	Result	
Total Metals										
sulfur, total	7704-34-9	E420	0.50	mg/L	402	402	160	45.4	45.6	
thallium, total	7440-28-0	E420	0.000010	mg/L	0.000078	0.000076	0.000032	0.000014	0.000018	
tin, total	7440-31-5	E420	0.00010	mg/L	<0.00020 ^{DLDS}	<0.00020 ^{DLDS}	<0.00010	<0.00010	<0.00010	
titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00060 ^{DLDS}	<0.00060 ^{DLDS}	<0.00030	<0.00030	<0.00030	
uranium, total	7440-61-1	E420	0.000010	mg/L	0.0137	0.0134	0.00520	0.00154	0.00145	
vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00100 ^{DLDS}	<0.00100 ^{DLDS}	0.00065	0.00067	0.00076	
zinc, total	7440-66-6	E420	0.0030	mg/L	0.0091	0.0149	0.0032	<0.0030	<0.0030	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	<0.0010	<0.0010	0.0013	0.0017	0.0016	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00097	0.00097	0.00042	0.00012	0.00012	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00031	0.00034	0.00027	0.00020	0.00020	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.240	0.254	0.151	0.0978	0.0983	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
boron, dissolved	7440-42-8	E421	0.010	mg/L	0.041	0.042	0.023	0.012	0.013	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.121	0.163	0.0591	0.0224	0.0236	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	240	247	124	62.3	63.9	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00010	<0.00010	0.00012	0.00016	0.00016	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	0.17	0.18	<0.10	<0.10	<0.10	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00026	0.00036	0.00067	<0.00020	0.00029	
iron, dissolved	7439-89-6	E421	0.010	mg/L	0.014	0.030	<0.010	<0.010	<0.010	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.133	0.139	0.0527	0.0117	0.0128	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	172	165	73.6	26.1	25.7	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00722	0.00765	0.00379	0.00180	0.00174	
mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.0135	0.0136	0.00537	0.00116	0.000997	
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.0300	0.0288	0.0111	0.00181	0.00139	
potassium, dissolved	7440-09-7	E421	0.050	mg/L	5.58	5.39	2.41	0.940	0.999	
selenium, dissolved	7782-49-2	E421	0.050	µg/L	111	104	42.5	13.3	14.1	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	3.26	3.08	2.59	2.17	2.24	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_GATEDP_WS_LAEMP_EVO_2022-07-25_N	RG_GATE_WS_LAEMP_EVO_2022-07-25_N	RG_MIDGA_WS_LAEMP_EVO_2022-07-25_N	RG_MIDBO_WS_LAEMP_EVO_2022-07-25_N	RG_MICOMP_WS_LAEMP_EVO_2022-07-25_N
Client sampling date / time					25-Jul-2022 12:30	25-Jul-2022 10:00	25-Jul-2022 12:00	25-Jul-2022 13:00	25-Jul-2022 15:30	
Analyte	CAS Number	Method	LOR	Unit	CG2209854-001	CG2209854-002	CG2209854-003	CG2209854-004	CG2209854-005	
					Result	Result	Result	Result	Result	
Dissolved Metals										
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	9.74	9.37	5.42	3.32	3.59	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.700	0.717	0.360	0.172	0.178	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	246	228	124	33.8	33.6	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	0.000062	0.000062	0.000027	<0.000010	<0.000010	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.0113	0.0125	0.00485	0.00132	0.00128	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0060	0.0084	0.0028	<0.0010	<0.0010	
dissolved mercury filtration location	----	EP509	-	-	Field	Field	Field	Field	Field	
dissolved metals filtration location	----	EP421	-	-	Field	Field	Field	Field	Field	

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_RIVER_WS _LAEMP_EVO_ 2022-07-25_N	RG_BOCK_WS_ LAEMP_EVO_2 022-07-25_N	RG_BOCKRD_ WS_LAEMP_EV O_2022-07-26_ N	RG_ERCKUT_W S_LAEMP_EVO _2022-07-26_N	RG_ERCKUMD_ WS_LAEMP_EV O_2022-07-26_ N
Client sampling date / time					25-Jul-2022 14:00	25-Jul-2022 14:00	26-Jul-2022 14:30	26-Jul-2022 10:00	26-Jul-2022 13:30	
Analyte	CAS Number	Method	LOR	Unit	CG2209854-006	CG2209854-007	CG2209854-008	CG2209854-009	CG2209854-010	
					Result	Result	Result	Result	Result	
Physical Tests										
acidity (as CaCO3)	----	E283	2.0	mg/L	<2.0	<2.0	<2.0	6.7	<2.0	
alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	323	320	385	452	446	
alkalinity, bicarbonate (as HCO3)	71-52-3	E290	1.0	mg/L	394	390	470	551	545	
alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
alkalinity, carbonate (as CO3)	3812-32-6	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
alkalinity, hydroxide (as OH)	14280-30-9	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	323	320	385	452	446	
conductivity	----	E100	2.0	µS/cm	1770	1770	2000	1820	1790	
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	1200	1230	1460	1220	1250	
oxidation-reduction potential [ORP]	----	E125	0.10	mV	390	387	372	407	379	
pH	----	E108	0.10	pH units	7.79	7.84	8.04	7.62	7.93	
solids, total dissolved [TDS]	----	E162	10	mg/L	1620	1570	1840	1540	1590	
solids, total suspended [TSS]	----	E160-L	1.0	mg/L	1.5	5.3	1.7	2.1	<1.0	
turbidity	----	E121	0.10	NTU	0.24	2.42	1.87	<0.10	0.35	
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0068	0.0076	0.0221	<0.0050	<0.0050	
bromide	24959-67-9	E235.Br-L	0.050	mg/L	0.402	0.399	0.451	<0.250 ^{DLDS}	<0.250 ^{DLDS}	
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	20.0	20.4	13.6	5.10	5.12	
fluoride	16984-48-8	E235.F	0.020	mg/L	0.179	0.184	0.206	<0.100 ^{DLDS}	<0.100 ^{DLDS}	
Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	0.419 ^{TKNI}	0.349 ^{TKNI}	0.327 ^{TKNI}	0.108 ^{TKNI}	0.083 ^{TKNI}	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	6.72	6.78	7.36	15.4	15.8	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	0.0112	0.0104	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	0.0023	0.0245	0.0230	
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	<0.0020	0.0038	0.0053	0.0218	0.0210	
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	867	871	1010	749	769	
Organic / Inorganic Carbon										
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	0.84	0.72	0.73	<0.50	0.62	
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	0.67	1.09	0.63	<0.50	0.51	
Ion Balance										



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

Client sample ID

					RG_RIVER_WS _LAEMP_EVO_ 2022-07-25_N	RG_BOCK_WS_ LAEMP_EVO_2 022-07-25_N	RG_BOCKRD_ WS_LAEMP_EV O_2022-07-26_ N	RG_ERCKUT_W S_LAEMP_EVO _2022-07-26_N	RG_ERCKUMD_ WS_LAEMP_EV O_2022-07-26_ N
Client sampling date / time					25-Jul-2022 14:00	25-Jul-2022 14:00	26-Jul-2022 14:30	26-Jul-2022 10:00	26-Jul-2022 13:30
Analyte	CAS Number	Method	LOR	Unit	CG2209854-006	CG2209854-007	CG2209854-008	CG2209854-009	CG2209854-010
					Result	Result	Result	Result	Result
Ion Balance									
anion sum	----	EC101	0.10	meq/L	25.6	25.6	29.6	25.9	26.2
cation sum	----	EC101	0.10	meq/L	24.5	25.1	29.7	24.6	25.2
ion balance (cations/anions)	----	EC101	0.010	%	95.7	98.0	100	95.0	96.2
ion balance (APHA)	----	EC101	0.010	%	2.20	0.986	0.169	2.57	1.94
Total Metals									
aluminum, total	7429-90-5	E420	0.0030	mg/L	<0.0060 ^{DLDS}	<0.0060 ^{DLDS}	0.0062	<0.0060 ^{DLDS}	0.0071
antimony, total	7440-36-0	E420	0.00010	mg/L	0.00107	0.00093	0.00125	0.00022	0.00024
arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00035	0.00031	0.00046	0.00032	0.00039
barium, total	7440-39-3	E420	0.00010	mg/L	0.0788	0.0749	0.0674	0.0695	0.0694
beryllium, total	7440-41-7	E420	0.020	µg/L	<0.040 ^{DLDS}	<0.040 ^{DLDS}	<0.040 ^{DLDS}	<0.040 ^{DLDS}	<0.040 ^{DLDS}
bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000100 ^{DLDS}	<0.000100 ^{DLDS}	<0.000100 ^{DLDS}	<0.000100 ^{DLDS}	<0.000100 ^{DLDS}
boron, total	7440-42-8	E420	0.010	mg/L	0.067	0.061	0.049	<0.020 ^{DLDS}	<0.020 ^{DLDS}
cadmium, total	7440-43-9	E420	0.0050	µg/L	0.0124	<0.0100 ^{DLDS}	0.270	0.0968	0.112
calcium, total	7440-70-2	E420	0.050	mg/L	231	210	281	249	252
chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	<0.00020 ^{DLDS}	<0.00020 ^{DLDS}	<0.00020 ^{DLDS}	0.00033	0.00029
cobalt, total	7440-48-4	E420	0.10	µg/L	<0.20 ^{DLDS}	<0.20 ^{DLDS}	0.29	<0.20 ^{DLDS}	0.68
copper, total	7440-50-8	E420	0.00050	mg/L	<0.00100 ^{DLDS}	<0.00100 ^{DLDS}	<0.00100 ^{DLDS}	<0.00100 ^{DLDS}	<0.00100 ^{DLDS}
iron, total	7439-89-6	E420	0.010	mg/L	<0.020 ^{DLDS}	<0.020 ^{DLDS}	0.081	<0.020 ^{DLDS}	0.112
lead, total	7439-92-1	E420	0.000050	mg/L	<0.000100 ^{DLDS}	<0.000100 ^{DLDS}	<0.000100 ^{DLDS}	<0.000100 ^{DLDS}	<0.000100 ^{DLDS}
lithium, total	7439-93-2	E420	0.0010	mg/L	0.164	0.149	0.151	0.0293	0.0291
magnesium, total	7439-95-4	E420	0.0050	mg/L	177	170	203	160	153
manganese, total	7439-96-5	E420	0.00010	mg/L	0.00100	0.00078	0.0194	<0.00020 ^{DLDS}	0.0226
mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.0166	0.0146	0.0185	0.00119	0.00128
nickel, total	7440-02-0	E420	0.00050	mg/L	0.0290	0.0274	0.0400	0.00112	0.00172
potassium, total	7440-09-7	E420	0.050	mg/L	6.16	5.89	6.31	2.87	2.80
selenium, total	7782-49-2	E420	0.050	µg/L	74.4	71.2	85.3	168	158 ^{DTSE}
silicon, total	7440-21-3	E420	0.10	mg/L	3.20	3.13	3.52	4.48	4.43
silver, total	7440-22-4	E420	0.000010	mg/L	<0.000020 ^{DLDS}	<0.000020 ^{DLDS}	<0.000020 ^{DLDS}	<0.000020 ^{DLDS}	<0.000020 ^{DLDS}
sodium, total	7440-23-5	E420	0.050	mg/L	11.5	11.0	11.4	3.51	3.38



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_RIVER_WS _LAEMP_EVO_ 2022-07-25_N	RG_BOCK_WS_ LAEMP_EVO_2 022-07-25_N	RG_BOCKRD_ WS_LAEMP_EV O_2022-07-26_ N	RG_ERCKUT_W S_LAEMP_EVO _2022-07-26_N	RG_ERCKUMD_ WS_LAEMP_EV O_2022-07-26_ N
Client sampling date / time					25-Jul-2022 14:00	25-Jul-2022 14:00	26-Jul-2022 14:30	26-Jul-2022 10:00	26-Jul-2022 13:30	
Analyte	CAS Number	Method	LOR	Unit	CG2209854-006	CG2209854-007	CG2209854-008	CG2209854-009	CG2209854-010	
					Result	Result	Result	Result	Result	
Total Metals										
strontium, total	7440-24-6	E420	0.00020	mg/L	1.04	0.932	0.642	0.232	0.237	
sulfur, total	7704-34-9	E420	0.50	mg/L	358	347	448	296	290	
thallium, total	7440-28-0	E420	0.000010	mg/L	0.000066	0.000056	0.000080	<0.000020 ^{DLDS}	<0.000020 ^{DLDS}	
tin, total	7440-31-5	E420	0.00010	mg/L	<0.00020 ^{DLDS}	<0.00020 ^{DLDS}	<0.00020 ^{DLDS}	<0.00020 ^{DLDS}	<0.00020 ^{DLDS}	
titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00060 ^{DLDS}	<0.00060 ^{DLDS}	<0.00060 ^{DLDS}	<0.00060 ^{DLDS}	<0.00060 ^{DLDS}	
uranium, total	7440-61-1	E420	0.000010	mg/L	0.0128	0.0113	0.0149	0.00889	0.00887	
vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00100 ^{DLDS}	<0.00100 ^{DLDS}	<0.00100 ^{DLDS}	<0.00100 ^{DLDS}	<0.00100 ^{DLDS}	
zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0060 ^{DLDS}	<0.0060 ^{DLDS}	0.0134	<0.0060 ^{DLDS}	<0.0060 ^{DLDS}	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00096	0.00093	0.00125	0.00022	0.00023	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00026	0.00028	0.00037	0.00031	0.00031	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0720	0.0771	0.0596	0.0658	0.0668	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
boron, dissolved	7440-42-8	E421	0.010	mg/L	0.052	0.055	0.043	0.012	0.013	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.0068	0.0079	0.238	0.0899	0.0888	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	215	214	277	247	255	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00010	<0.00010	<0.00010	0.00019	0.00022	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	<0.10	<0.10	0.27	<0.10	<0.10	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00020	<0.00020	0.00026	<0.00020	0.00025	
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	<0.010	0.052	<0.010	<0.010	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.155	0.152	0.154	0.0275	0.0279	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	160	168	186	147	149	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00060	0.00060	0.0183	<0.00010	0.00126	
mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.0137	0.0135	0.0170	0.00107	0.00119	
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.0250	0.0264	0.0362	0.00082	0.00132	
potassium, dissolved	7440-09-7	E421	0.050	mg/L	5.82	6.12	5.91	2.80	2.84	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_RIVER_WS_LAEMP_EVO_2022-07-25_N	RG_BOCK_WS_LAEMP_EVO_2022-07-25_N	RG_BOCKRD_WS_LAEMP_EV_O_2022-07-26_N	RG_ERCKUT_WS_LAEMP_EVO_2022-07-26_N	RG_ERCKUMD_WS_LAEMP_EV_O_2022-07-26_N
Client sampling date / time					25-Jul-2022 14:00	25-Jul-2022 14:00	26-Jul-2022 14:30	26-Jul-2022 10:00	26-Jul-2022 13:30	
Analyte	CAS Number	Method	LOR	Unit	CG2209854-006	CG2209854-007	CG2209854-008	CG2209854-009	CG2209854-010	
					Result	Result	Result	Result	Result	
Dissolved Metals										
selenium, dissolved	7782-49-2	E421	0.050	µg/L	85.6	92.7	92.7	220	182 ^{DTSE}	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	3.06	3.11	3.16	4.36	4.38	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	10.6	11.2	10.8	3.31	3.43	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.948	0.948	0.643	0.234	0.241	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	217	228	255	186	191	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	0.000053	0.000052	0.000075	<0.000010	<0.000010	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.0106	0.0114	0.0157	0.00824	0.00857	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0010	0.0012	0.0118	0.0018	0.0049	
dissolved mercury filtration location	----	EP509	-	-	Field	Field	Field	Field	Field	
dissolved metals filtration location	----	EP421	-	-	Field	Field	Field	Field	Field	

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: CG2209854	Page	: 1 of 39
Client	: Teck Coal Limited	Laboratory	: Calgary - Environmental
Contact	: Mike Pope	Account Manager	: Lyudmyla Shvets
Address	: RR#1 HWY#3 Sparwood BC Canada V0B 2G1	Address	: 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5
Telephone	: ----	Telephone	: +1 403 407 1800
Project	: Regional Effects Program	Date Samples Received	: 27-Jul-2022 08:50
PO	: VPO00847030	Issue Date	: 29-Jul-2022 18:26
C-O-C number	: July 26 EVO LAEMP 2022		
Sampler	: ROBIN VALLEAU		
Site	: ----		
Quote number	: Teck Coal Master Quote		
No. of samples received	: 10		
No. of samples analysed	: 10		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- Matrix Spike outliers occur - please see following pages for full details.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **Water**

Analyte Group	Laboratory sample ID	Client/Ref Sample ID	Analyte	CAS Number	Method	Result	Limits	Comment
Matrix Spike (MS) Recoveries								
Total Metals	Anonymous	Anonymous	chromium, total	7440-47-3	E420.Cr-L	263 %	70.0-130%	Recovery greater than upper data quality objective



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_BOCKRD_WS_LAEMP_EVO_2022-07-26_N	E298	26-Jul-2022	27-Jul-2022	----	----		27-Jul-2022	28 days	1 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_ERCKUMD_WS_LAEMP_EVO_2022-07-26_N	E298	26-Jul-2022	27-Jul-2022	----	----		27-Jul-2022	28 days	1 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-07-26_N	E298	26-Jul-2022	27-Jul-2022	----	----		27-Jul-2022	28 days	1 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_BOCK_WS_LAEMP_EVO_2022-07-25_N	E298	25-Jul-2022	27-Jul-2022	----	----		27-Jul-2022	28 days	2 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_GATE_WS_LAEMP_EVO_2022-07-25_N	E298	25-Jul-2022	27-Jul-2022	----	----		27-Jul-2022	28 days	2 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_GATEDP_WS_LAEMP_EVO_2022-07-25_N	E298	25-Jul-2022	27-Jul-2022	----	----		27-Jul-2022	28 days	2 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_MICOMP_WS_LAEMP_EVO_2022-07-25_N	E298	25-Jul-2022	27-Jul-2022	----	----		27-Jul-2022	28 days	2 days	✓



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_MIDBO_WS_LAEMP_EVO_2022-07-25_N	E298	25-Jul-2022	27-Jul-2022	----	----		27-Jul-2022	28 days	2 days	✓	
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_MIDGA_WS_LAEMP_EVO_2022-07-25_N	E298	25-Jul-2022	27-Jul-2022	----	----		27-Jul-2022	28 days	2 days	✓	
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-07-25_N	E298	25-Jul-2022	27-Jul-2022	----	----		27-Jul-2022	28 days	2 days	✓	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-07-26_N	E235.Br-L	26-Jul-2022	----	----	----		27-Jul-2022	28 days	1 days	✓	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKUMD_WS_LAEMP_EVO_2022-07-26_N	E235.Br-L	26-Jul-2022	----	----	----		27-Jul-2022	28 days	1 days	✓	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-07-26_N	E235.Br-L	26-Jul-2022	----	----	----		27-Jul-2022	28 days	1 days	✓	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-07-25_N	E235.Br-L	25-Jul-2022	----	----	----		27-Jul-2022	28 days	2 days	✓	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_GATE_WS_LAEMP_EVO_2022-07-25_N	E235.Br-L	25-Jul-2022	----	----	----		27-Jul-2022	28 days	2 days	✓	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-07-25_N	E235.Br-L	25-Jul-2022	----	----	----		27-Jul-2022	28 days	2 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-07-25_N	E235.Br-L	25-Jul-2022	----	----	----		27-Jul-2022	28 days	2 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-07-25_N	E235.Br-L	25-Jul-2022	----	----	----		27-Jul-2022	28 days	2 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-07-25_N	E235.Br-L	25-Jul-2022	----	----	----		27-Jul-2022	28 days	2 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-07-25_N	E235.Br-L	25-Jul-2022	----	----	----		27-Jul-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-07-26_N	E235.Cl-L	26-Jul-2022	----	----	----		27-Jul-2022	28 days	1 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKUMD_WS_LAEMP_EVO_2022-07-26_N	E235.Cl-L	26-Jul-2022	----	----	----		27-Jul-2022	28 days	1 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-07-26_N	E235.Cl-L	26-Jul-2022	----	----	----		27-Jul-2022	28 days	1 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-07-25_N	E235.Cl-L	25-Jul-2022	----	----	----		27-Jul-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_GATE_WS_LAEMP_EVO_2022-07-25_N	E235.Cl-L	25-Jul-2022	----	----	----		27-Jul-2022	28 days	2 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times Rec Actual		Eval	Analysis Date	Holding Times Rec Actual		Eval	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-07-25_N	E235.CI-L	25-Jul-2022	----	----	----		27-Jul-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-07-25_N	E235.CI-L	25-Jul-2022	----	----	----		27-Jul-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-07-25_N	E235.CI-L	25-Jul-2022	----	----	----		27-Jul-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-07-25_N	E235.CI-L	25-Jul-2022	----	----	----		27-Jul-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-07-25_N	E235.CI-L	25-Jul-2022	----	----	----		27-Jul-2022	28 days	2 days	✔	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-07-26_N	E378-U	26-Jul-2022	----	----	----		27-Jul-2022	3 days	1 days	✔	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_ERCKUMD_WS_LAEMP_EVO_2022-07-26_N	E378-U	26-Jul-2022	----	----	----		27-Jul-2022	3 days	1 days	✔	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-07-26_N	E378-U	26-Jul-2022	----	----	----		27-Jul-2022	3 days	1 days	✔	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-07-25_N	E378-U	25-Jul-2022	----	----	----		27-Jul-2022	3 days	2 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_GATE_WS_LAEMP_EVO_2022-07-25_N	E378-U	25-Jul-2022	----	----	----		27-Jul-2022	3 days	2 days	✓	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-07-25_N	E378-U	25-Jul-2022	----	----	----		27-Jul-2022	3 days	2 days	✓	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-07-25_N	E378-U	25-Jul-2022	----	----	----		27-Jul-2022	3 days	2 days	✓	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-07-25_N	E378-U	25-Jul-2022	----	----	----		27-Jul-2022	3 days	2 days	✓	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-07-25_N	E378-U	25-Jul-2022	----	----	----		27-Jul-2022	3 days	2 days	✓	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-07-25_N	E378-U	25-Jul-2022	----	----	----		27-Jul-2022	3 days	2 days	✓	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-07-26_N	E235.F	26-Jul-2022	----	----	----		27-Jul-2022	28 days	1 days	✓	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKUMD_WS_LAEMP_EVO_2022-07-26_N	E235.F	26-Jul-2022	----	----	----		27-Jul-2022	28 days	1 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-07-26_N	E235.F	26-Jul-2022	----	----	----		27-Jul-2022	28 days	1 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-07-25_N	E235.F	25-Jul-2022	----	----	----		27-Jul-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_GATE_WS_LAEMP_EVO_2022-07-25_N	E235.F	25-Jul-2022	----	----	----		27-Jul-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-07-25_N	E235.F	25-Jul-2022	----	----	----		27-Jul-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-07-25_N	E235.F	25-Jul-2022	----	----	----		27-Jul-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-07-25_N	E235.F	25-Jul-2022	----	----	----		27-Jul-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-07-25_N	E235.F	25-Jul-2022	----	----	----		27-Jul-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-07-25_N	E235.F	25-Jul-2022	----	----	----		27-Jul-2022	28 days	2 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-07-26_N	E235.NO3-L	26-Jul-2022	----	----	----		27-Jul-2022	3 days	1 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKUMD_WS_LAEMP_EVO_2022-07-26_N	E235.NO3-L	26-Jul-2022	----	----	----		27-Jul-2022	3 days	1 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-07-26_N	E235.NO3-L	26-Jul-2022	----	----	----		27-Jul-2022	3 days	1 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-07-25_N	E235.NO3-L	25-Jul-2022	----	----	----		27-Jul-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_GATE_WS_LAEMP_EVO_2022-07-25_N	E235.NO3-L	25-Jul-2022	----	----	----		27-Jul-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-07-25_N	E235.NO3-L	25-Jul-2022	----	----	----		27-Jul-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-07-25_N	E235.NO3-L	25-Jul-2022	----	----	----		27-Jul-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-07-25_N	E235.NO3-L	25-Jul-2022	----	----	----		27-Jul-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-07-25_N	E235.NO3-L	25-Jul-2022	----	----	----		27-Jul-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-07-25_N	E235.NO3-L	25-Jul-2022	----	----	----		27-Jul-2022	3 days	2 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-07-26_N	E235.NO2-L	26-Jul-2022	----	----	----		27-Jul-2022	3 days	1 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKUMD_WS_LAEMP_EVO_2022-07-26_N	E235.NO2-L	26-Jul-2022	----	----	----		27-Jul-2022	3 days	1 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-07-26_N	E235.NO2-L	26-Jul-2022	----	----	----		27-Jul-2022	3 days	1 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-07-25_N	E235.NO2-L	25-Jul-2022	----	----	----		27-Jul-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_GATE_WS_LAEMP_EVO_2022-07-25_N	E235.NO2-L	25-Jul-2022	----	----	----		27-Jul-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-07-25_N	E235.NO2-L	25-Jul-2022	----	----	----		27-Jul-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-07-25_N	E235.NO2-L	25-Jul-2022	----	----	----		27-Jul-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-07-25_N	E235.NO2-L	25-Jul-2022	----	----	----		27-Jul-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-07-25_N	E235.NO2-L	25-Jul-2022	----	----	----		27-Jul-2022	3 days	2 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-07-25_N	E235.NO2-L	25-Jul-2022	----	----	----		27-Jul-2022	3 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-07-26_N	E235.SO4	26-Jul-2022	----	----	----		27-Jul-2022	28 days	1 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKUMD_WS_LAEMP_EVO_2022-07-26_N	E235.SO4	26-Jul-2022	----	----	----		27-Jul-2022	28 days	1 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-07-26_N	E235.SO4	26-Jul-2022	----	----	----		27-Jul-2022	28 days	1 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-07-25_N	E235.SO4	25-Jul-2022	----	----	----		27-Jul-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_GATE_WS_LAEMP_EVO_2022-07-25_N	E235.SO4	25-Jul-2022	----	----	----		27-Jul-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-07-25_N	E235.SO4	25-Jul-2022	----	----	----		27-Jul-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-07-25_N	E235.SO4	25-Jul-2022	----	----	----		27-Jul-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-07-25_N	E235.SO4	25-Jul-2022	----	----	----		27-Jul-2022	28 days	2 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-07-25_N	E235.SO4	25-Jul-2022	----	----	----		27-Jul-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-07-25_N	E235.SO4	25-Jul-2022	----	----	----		27-Jul-2022	28 days	2 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_BOCKRD_WS_LAEMP_EVO_2022-07-26_N	E318	26-Jul-2022	28-Jul-2022	----	----		28-Jul-2022	28 days	2 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKUMD_WS_LAEMP_EVO_2022-07-26_N	E318	26-Jul-2022	28-Jul-2022	----	----		28-Jul-2022	28 days	2 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-07-26_N	E318	26-Jul-2022	28-Jul-2022	----	----		28-Jul-2022	28 days	2 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_BOCK_WS_LAEMP_EVO_2022-07-25_N	E318	25-Jul-2022	28-Jul-2022	----	----		28-Jul-2022	28 days	3 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_GATE_WS_LAEMP_EVO_2022-07-25_N	E318	25-Jul-2022	28-Jul-2022	----	----		28-Jul-2022	28 days	3 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_GATEDP_WS_LAEMP_EVO_2022-07-25_N	E318	25-Jul-2022	28-Jul-2022	----	----		28-Jul-2022	28 days	3 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_MICOMP_WS_LAEMP_EVO_2022-07-25_N	E318	25-Jul-2022	28-Jul-2022	----	----		28-Jul-2022	28 days	3 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_MIDBO_WS_LAEMP_EVO_2022-07-25_N	E318	25-Jul-2022	28-Jul-2022	----	----		28-Jul-2022	28 days	3 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_MIDGA_WS_LAEMP_EVO_2022-07-25_N	E318	25-Jul-2022	28-Jul-2022	----	----		28-Jul-2022	28 days	3 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-07-25_N	E318	25-Jul-2022	28-Jul-2022	----	----		28-Jul-2022	28 days	3 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_BOCKRD_WS_LAEMP_EVO_2022-07-26_N	E372-U	26-Jul-2022	27-Jul-2022	----	----		28-Jul-2022	28 days	2 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_ERCKUMD_WS_LAEMP_EVO_2022-07-26_N	E372-U	26-Jul-2022	27-Jul-2022	----	----		28-Jul-2022	28 days	2 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-07-26_N	E372-U	26-Jul-2022	27-Jul-2022	----	----		28-Jul-2022	28 days	2 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_BOCK_WS_LAEMP_EVO_2022-07-25_N	E372-U	25-Jul-2022	27-Jul-2022	----	----		28-Jul-2022	28 days	3 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_GATE_WS_LAEMP_EVO_2022-07-25_N	E372-U	25-Jul-2022	27-Jul-2022	----	----		28-Jul-2022	28 days	3 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_GATEDP_WS_LAEMP_EVO_2022-07-25_N	E372-U	25-Jul-2022	27-Jul-2022	----	----		28-Jul-2022	28 days	3 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_MICOMP_WS_LAEMP_EVO_2022-07-25_N	E372-U	25-Jul-2022	27-Jul-2022	----	----		28-Jul-2022	28 days	3 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_MIDBO_WS_LAEMP_EVO_2022-07-25_N	E372-U	25-Jul-2022	27-Jul-2022	----	----		28-Jul-2022	28 days	3 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_MIDGA_WS_LAEMP_EVO_2022-07-25_N	E372-U	25-Jul-2022	27-Jul-2022	----	----		28-Jul-2022	28 days	3 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-07-25_N	E372-U	25-Jul-2022	27-Jul-2022	----	----		28-Jul-2022	28 days	3 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_BOCKRD_WS_LAEMP_EVO_2022-07-26_N	E421.Cr-L	26-Jul-2022	27-Jul-2022	----	----		27-Jul-2022	180 days	1 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_ERCKUMD_WS_LAEMP_EVO_2022-07-26_N	E421.Cr-L	26-Jul-2022	27-Jul-2022	----	----		27-Jul-2022	180 days	1 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-07-26_N	E421.Cr-L	26-Jul-2022	27-Jul-2022	----	----		27-Jul-2022	180 days	1 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_BOCK_WS_LAEMP_EVO_2022-07-25_N	E421.Cr-L	25-Jul-2022	27-Jul-2022	----	----		27-Jul-2022	180 days	2 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_GATE_WS_LAEMP_EVO_2022-07-25_N	E421.Cr-L	25-Jul-2022	27-Jul-2022	----	----		27-Jul-2022	180 days	2 days	✓	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_GATEDP_WS_LAEMP_EVO_2022-07-25_N	E421.Cr-L	25-Jul-2022	27-Jul-2022	----	----		27-Jul-2022	180 days	2 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_MICOMP_WS_LAEMP_EVO_2022-07-25_N	E421.Cr-L	25-Jul-2022	27-Jul-2022	----	----		27-Jul-2022	180 days	2 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_MIDBO_WS_LAEMP_EVO_2022-07-25_N	E421.Cr-L	25-Jul-2022	27-Jul-2022	----	----		27-Jul-2022	180 days	2 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_MIDGA_WS_LAEMP_EVO_2022-07-25_N	E421.Cr-L	25-Jul-2022	27-Jul-2022	----	----		27-Jul-2022	180 days	2 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_RIVER_WS_LAEMP_EVO_2022-07-25_N	E421.Cr-L	25-Jul-2022	27-Jul-2022	----	----		27-Jul-2022	180 days	2 days	✓	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_BOCKRD_WS_LAEMP_EVO_2022-07-26_N	E509	26-Jul-2022	28-Jul-2022	----	----		28-Jul-2022	28 days	2 days	✓	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_ERCKUMD_WS_LAEMP_EVO_2022-07-26_N	E509	26-Jul-2022	28-Jul-2022	----	----		28-Jul-2022	28 days	2 days	✓	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-07-26_N	E509	26-Jul-2022	28-Jul-2022	----	----		28-Jul-2022	28 days	2 days	✓	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_BOCK_WS_LAEMP_EVO_2022-07-25_N	E509	25-Jul-2022	28-Jul-2022	----	----		28-Jul-2022	28 days	3 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_GATE_WS_LAEMP_EVO_2022-07-25_N	E509	25-Jul-2022	28-Jul-2022	----	----		28-Jul-2022	28 days	3 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_GATEDP_WS_LAEMP_EVO_2022-07-25_N	E509	25-Jul-2022	28-Jul-2022	----	----		28-Jul-2022	28 days	3 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_MICOMP_WS_LAEMP_EVO_2022-07-25_N	E509	25-Jul-2022	28-Jul-2022	----	----		28-Jul-2022	28 days	3 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_MIDBO_WS_LAEMP_EVO_2022-07-25_N	E509	25-Jul-2022	28-Jul-2022	----	----		28-Jul-2022	28 days	3 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_MIDGA_WS_LAEMP_EVO_2022-07-25_N	E509	25-Jul-2022	28-Jul-2022	----	----		28-Jul-2022	28 days	3 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_RIVER_WS_LAEMP_EVO_2022-07-25_N	E509	25-Jul-2022	28-Jul-2022	----	----		28-Jul-2022	28 days	3 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_BOCKRD_WS_LAEMP_EVO_2022-07-26_N	E421	26-Jul-2022	27-Jul-2022	----	----		27-Jul-2022	180 days	1 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_ERCKUMD_WS_LAEMP_EVO_2022-07-26_N	E421	26-Jul-2022	27-Jul-2022	----	----		27-Jul-2022	180 days	1 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-07-26_N	E421	26-Jul-2022	27-Jul-2022	----	----		27-Jul-2022	180 days	1 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_BOCK_WS_LAEMP_EVO_2022-07-25_N	E421	25-Jul-2022	27-Jul-2022	----	----		27-Jul-2022	180 days	2 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_GATE_WS_LAEMP_EVO_2022-07-25_N	E421	25-Jul-2022	27-Jul-2022	----	----		27-Jul-2022	180 days	2 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_GATEDP_WS_LAEMP_EVO_2022-07-25_N	E421	25-Jul-2022	27-Jul-2022	----	----		27-Jul-2022	180 days	2 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_MICOMP_WS_LAEMP_EVO_2022-07-25_N	E421	25-Jul-2022	27-Jul-2022	----	----		27-Jul-2022	180 days	2 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_MIDBO_WS_LAEMP_EVO_2022-07-25_N	E421	25-Jul-2022	27-Jul-2022	----	----		27-Jul-2022	180 days	2 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_MIDGA_WS_LAEMP_EVO_2022-07-25_N	E421	25-Jul-2022	27-Jul-2022	----	----		27-Jul-2022	180 days	2 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_RIVER_WS_LAEMP_EVO_2022-07-25_N	E421	25-Jul-2022	27-Jul-2022	----	----		27-Jul-2022	180 days	2 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_BOCKRD_WS_LAEMP_EVO_2022-07-26_N	E358-L	26-Jul-2022	27-Jul-2022	----	----		27-Jul-2022	28 days	1 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_ERCKUMD_WS_LAEMP_EVO_2022-07-26_N	E358-L	26-Jul-2022	27-Jul-2022	----	----		27-Jul-2022	28 days	1 days	✔	



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-07-26_N	E358-L	26-Jul-2022	27-Jul-2022	----	----		27-Jul-2022	28 days	1 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_BOCK_WS_LAEMP_EVO_2022-07-25_N	E358-L	25-Jul-2022	27-Jul-2022	----	----		27-Jul-2022	28 days	2 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_GATE_WS_LAEMP_EVO_2022-07-25_N	E358-L	25-Jul-2022	27-Jul-2022	----	----		27-Jul-2022	28 days	2 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_GATEDP_WS_LAEMP_EVO_2022-07-25_N	E358-L	25-Jul-2022	27-Jul-2022	----	----		27-Jul-2022	28 days	2 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_MICOMP_WS_LAEMP_EVO_2022-07-25_N	E358-L	25-Jul-2022	27-Jul-2022	----	----		27-Jul-2022	28 days	2 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_MIDBO_WS_LAEMP_EVO_2022-07-25_N	E358-L	25-Jul-2022	27-Jul-2022	----	----		27-Jul-2022	28 days	2 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_MIDGA_WS_LAEMP_EVO_2022-07-25_N	E358-L	25-Jul-2022	27-Jul-2022	----	----		27-Jul-2022	28 days	2 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-07-25_N	E358-L	25-Jul-2022	27-Jul-2022	----	----		27-Jul-2022	28 days	2 days	✓	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_BOCKRD_WS_LAEMP_EVO_2022-07-26_N	E355-L	26-Jul-2022	27-Jul-2022	----	----		27-Jul-2022	28 days	1 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKUMD_WS_LAEMP_EVO_2022-07-26_N	E355-L	26-Jul-2022	27-Jul-2022	----	----		27-Jul-2022	28 days	1 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-07-26_N	E355-L	26-Jul-2022	27-Jul-2022	----	----		27-Jul-2022	28 days	1 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_BOCK_WS_LAEMP_EVO_2022-07-25_N	E355-L	25-Jul-2022	27-Jul-2022	----	----		27-Jul-2022	28 days	2 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_GATE_WS_LAEMP_EVO_2022-07-25_N	E355-L	25-Jul-2022	27-Jul-2022	----	----		27-Jul-2022	28 days	2 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_GATEDP_WS_LAEMP_EVO_2022-07-25_N	E355-L	25-Jul-2022	27-Jul-2022	----	----		27-Jul-2022	28 days	2 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_MICOMP_WS_LAEMP_EVO_2022-07-25_N	E355-L	25-Jul-2022	27-Jul-2022	----	----		27-Jul-2022	28 days	2 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_MIDBO_WS_LAEMP_EVO_2022-07-25_N	E355-L	25-Jul-2022	27-Jul-2022	----	----		27-Jul-2022	28 days	2 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_MIDGA_WS_LAEMP_EVO_2022-07-25_N	E355-L	25-Jul-2022	27-Jul-2022	----	----		27-Jul-2022	28 days	2 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-07-25_N	E355-L	25-Jul-2022	27-Jul-2022	----	----		27-Jul-2022	28 days	2 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Acidity by Titration											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-07-26_N	E283	26-Jul-2022	----	----	----		27-Jul-2022	14 days	1 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_ERCKUMD_WS_LAEMP_EVO_2022-07-26_N	E283	26-Jul-2022	----	----	----		27-Jul-2022	14 days	1 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-07-26_N	E283	26-Jul-2022	----	----	----		27-Jul-2022	14 days	1 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-07-25_N	E283	25-Jul-2022	----	----	----		27-Jul-2022	14 days	2 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_GATE_WS_LAEMP_EVO_2022-07-25_N	E283	25-Jul-2022	----	----	----		27-Jul-2022	14 days	2 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-07-25_N	E283	25-Jul-2022	----	----	----		27-Jul-2022	14 days	2 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-07-25_N	E283	25-Jul-2022	----	----	----		27-Jul-2022	14 days	2 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-07-25_N	E283	25-Jul-2022	----	----	----		27-Jul-2022	14 days	2 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-07-25_N	E283	25-Jul-2022	----	----	----		27-Jul-2022	14 days	2 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Acidity by Titration											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-07-25_N	E283	25-Jul-2022	----	----	----		27-Jul-2022	14 days	2 days	✓	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-07-26_N	E290	26-Jul-2022	----	----	----		27-Jul-2022	14 days	1 days	✓	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_ERCKUMD_WS_LAEMP_EVO_2022-07-26_N	E290	26-Jul-2022	----	----	----		27-Jul-2022	14 days	1 days	✓	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-07-26_N	E290	26-Jul-2022	----	----	----		27-Jul-2022	14 days	1 days	✓	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-07-25_N	E290	25-Jul-2022	----	----	----		27-Jul-2022	14 days	2 days	✓	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_GATE_WS_LAEMP_EVO_2022-07-25_N	E290	25-Jul-2022	----	----	----		27-Jul-2022	14 days	2 days	✓	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-07-25_N	E290	25-Jul-2022	----	----	----		27-Jul-2022	14 days	2 days	✓	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-07-25_N	E290	25-Jul-2022	----	----	----		27-Jul-2022	14 days	2 days	✓	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-07-25_N	E290	25-Jul-2022	----	----	----		27-Jul-2022	14 days	2 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Alkalinity Species by Titration											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-07-25_N	E290	25-Jul-2022	----	----	----		27-Jul-2022	14 days	2 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-07-25_N	E290	25-Jul-2022	----	----	----		27-Jul-2022	14 days	2 days	✔	
Physical Tests : Conductivity in Water											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-07-26_N	E100	26-Jul-2022	----	----	----		27-Jul-2022	28 days	1 days	✔	
Physical Tests : Conductivity in Water											
HDPE RG_ERCKUMD_WS_LAEMP_EVO_2022-07-26_N	E100	26-Jul-2022	----	----	----		27-Jul-2022	28 days	1 days	✔	
Physical Tests : Conductivity in Water											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-07-26_N	E100	26-Jul-2022	----	----	----		27-Jul-2022	28 days	1 days	✔	
Physical Tests : Conductivity in Water											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-07-25_N	E100	25-Jul-2022	----	----	----		27-Jul-2022	28 days	2 days	✔	
Physical Tests : Conductivity in Water											
HDPE RG_GATE_WS_LAEMP_EVO_2022-07-25_N	E100	25-Jul-2022	----	----	----		27-Jul-2022	28 days	2 days	✔	
Physical Tests : Conductivity in Water											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-07-25_N	E100	25-Jul-2022	----	----	----		27-Jul-2022	28 days	2 days	✔	
Physical Tests : Conductivity in Water											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-07-25_N	E100	25-Jul-2022	----	----	----		27-Jul-2022	28 days	2 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Conductivity in Water											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-07-25_N	E100	25-Jul-2022	----	----	----		27-Jul-2022	28 days	2 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-07-25_N	E100	25-Jul-2022	----	----	----		27-Jul-2022	28 days	2 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-07-25_N	E100	25-Jul-2022	----	----	----		27-Jul-2022	28 days	2 days	✓	
Physical Tests : ORP by Electrode											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-07-26_N	E125	26-Jul-2022	----	----	----		27-Jul-2022	0.25 hrs	23 hrs	* EHTR-FM	
Physical Tests : ORP by Electrode											
HDPE RG_ERCKUMD_WS_LAEMP_EVO_2022-07-26_N	E125	26-Jul-2022	----	----	----		27-Jul-2022	0.25 hrs	24 hrs	* EHTR-FM	
Physical Tests : ORP by Electrode											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-07-26_N	E125	26-Jul-2022	----	----	----		27-Jul-2022	0.25 hrs	27 hrs	* EHTR-FM	
Physical Tests : ORP by Electrode											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-07-25_N	E125	25-Jul-2022	----	----	----		27-Jul-2022	0.25 hrs	46 hrs	* EHTR-FM	
Physical Tests : ORP by Electrode											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-07-25_N	E125	25-Jul-2022	----	----	----		27-Jul-2022	0.25 hrs	47 hrs	* EHTR-FM	
Physical Tests : ORP by Electrode											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-07-25_N	E125	25-Jul-2022	----	----	----		27-Jul-2022	0.25 hrs	47 hrs	* EHTR-FM	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : ORP by Electrode											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-07-25_N	E125	25-Jul-2022	----	----	----		27-Jul-2022	0.25 hrs	48 hrs	*	EHTR-FM
Physical Tests : ORP by Electrode											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-07-25_N	E125	25-Jul-2022	----	----	----		27-Jul-2022	0.25 hrs	49 hrs	*	EHTR-FM
Physical Tests : ORP by Electrode											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-07-25_N	E125	25-Jul-2022	----	----	----		27-Jul-2022	0.25 hrs	49 hrs	*	EHTR-FM
Physical Tests : ORP by Electrode											
HDPE RG_GATE_WS_LAEMP_EVO_2022-07-25_N	E125	25-Jul-2022	----	----	----		27-Jul-2022	0.25 hrs	51 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-07-26_N	E108	26-Jul-2022	----	----	----		27-Jul-2022	0.25 hrs	26 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_ERCKUMD_WS_LAEMP_EVO_2022-07-26_N	E108	26-Jul-2022	----	----	----		27-Jul-2022	0.25 hrs	27 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-07-26_N	E108	26-Jul-2022	----	----	----		27-Jul-2022	0.25 hrs	30 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-07-25_N	E108	25-Jul-2022	----	----	----		27-Jul-2022	0.25 hrs	49 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-07-25_N	E108	25-Jul-2022	----	----	----		27-Jul-2022	0.25 hrs	50 hrs	*	EHTR-FM



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
Rec	Actual	Rec		Actual							
Physical Tests : pH by Meter											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-07-25_N	E108	25-Jul-2022	----	----	----		27-Jul-2022	0.25 hrs	50 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-07-25_N	E108	25-Jul-2022	----	----	----		27-Jul-2022	0.25 hrs	51 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-07-25_N	E108	25-Jul-2022	----	----	----		27-Jul-2022	0.25 hrs	52 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-07-25_N	E108	25-Jul-2022	----	----	----		27-Jul-2022	0.25 hrs	52 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_GATE_WS_LAEMP_EVO_2022-07-25_N	E108	25-Jul-2022	----	----	----		27-Jul-2022	0.25 hrs	54 hrs	*	EHTR-FM
Physical Tests : TDS by Gravimetry											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-07-26_N	E162	26-Jul-2022	----	----	----		27-Jul-2022	7 days	1 days	✓	
Physical Tests : TDS by Gravimetry											
HDPE RG_ERCKUMD_WS_LAEMP_EVO_2022-07-26_N	E162	26-Jul-2022	----	----	----		27-Jul-2022	7 days	1 days	✓	
Physical Tests : TDS by Gravimetry											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-07-26_N	E162	26-Jul-2022	----	----	----		27-Jul-2022	7 days	1 days	✓	
Physical Tests : TDS by Gravimetry											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-07-25_N	E162	25-Jul-2022	----	----	----		27-Jul-2022	7 days	2 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : TDS by Gravimetry											
HDPE RG_GATE_WS_LAEMP_EVO_2022-07-25_N	E162	25-Jul-2022	----	----	----		27-Jul-2022	7 days	2 days	✔	
Physical Tests : TDS by Gravimetry											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-07-25_N	E162	25-Jul-2022	----	----	----		27-Jul-2022	7 days	2 days	✔	
Physical Tests : TDS by Gravimetry											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-07-25_N	E162	25-Jul-2022	----	----	----		27-Jul-2022	7 days	2 days	✔	
Physical Tests : TDS by Gravimetry											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-07-25_N	E162	25-Jul-2022	----	----	----		27-Jul-2022	7 days	2 days	✔	
Physical Tests : TDS by Gravimetry											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-07-25_N	E162	25-Jul-2022	----	----	----		27-Jul-2022	7 days	2 days	✔	
Physical Tests : TDS by Gravimetry											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-07-25_N	E162	25-Jul-2022	----	----	----		27-Jul-2022	7 days	2 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-07-26_N	E160-L	26-Jul-2022	----	----	----		27-Jul-2022	7 days	1 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_ERCKUMD_WS_LAEMP_EVO_2022-07-26_N	E160-L	26-Jul-2022	----	----	----		27-Jul-2022	7 days	1 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-07-26_N	E160-L	26-Jul-2022	----	----	----		27-Jul-2022	7 days	1 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-07-25_N	E160-L	25-Jul-2022	----	----	----		27-Jul-2022	7 days	2 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_GATE_WS_LAEMP_EVO_2022-07-25_N	E160-L	25-Jul-2022	----	----	----		27-Jul-2022	7 days	2 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-07-25_N	E160-L	25-Jul-2022	----	----	----		27-Jul-2022	7 days	2 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-07-25_N	E160-L	25-Jul-2022	----	----	----		27-Jul-2022	7 days	2 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-07-25_N	E160-L	25-Jul-2022	----	----	----		27-Jul-2022	7 days	2 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-07-25_N	E160-L	25-Jul-2022	----	----	----		27-Jul-2022	7 days	2 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-07-25_N	E160-L	25-Jul-2022	----	----	----		27-Jul-2022	7 days	2 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-07-26_N	E121	26-Jul-2022	----	----	----		27-Jul-2022	3 days	1 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_ERCKUMD_WS_LAEMP_EVO_2022-07-26_N	E121	26-Jul-2022	----	----	----		27-Jul-2022	3 days	1 days	✔	



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Turbidity by Nephelometry											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-07-26_N	E121	26-Jul-2022	----	----	----		27-Jul-2022	3 days	1 days	✓	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-07-25_N	E121	25-Jul-2022	----	----	----		27-Jul-2022	3 days	2 days	✓	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_GATE_WS_LAEMP_EVO_2022-07-25_N	E121	25-Jul-2022	----	----	----		27-Jul-2022	3 days	2 days	✓	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-07-25_N	E121	25-Jul-2022	----	----	----		27-Jul-2022	3 days	2 days	✓	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-07-25_N	E121	25-Jul-2022	----	----	----		27-Jul-2022	3 days	2 days	✓	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-07-25_N	E121	25-Jul-2022	----	----	----		27-Jul-2022	3 days	2 days	✓	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-07-25_N	E121	25-Jul-2022	----	----	----		27-Jul-2022	3 days	2 days	✓	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-07-25_N	E121	25-Jul-2022	----	----	----		27-Jul-2022	3 days	2 days	✓	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_BOCKRD_WS_LAEMP_EVO_2022-07-26_N	E420.Cr-L	26-Jul-2022	----	----	----		27-Jul-2022	180 days	1 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec Actual		Eval	Analysis Date	Holding Times Rec Actual		Eval
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)										
HDPE total (nitric acid) RG_ERCKUMD_WS_LAEMP_EVO_2022-07-26_N	E420.Cr-L	26-Jul-2022	----	----	----		27-Jul-2022	180 days	1 days	✔
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)										
HDPE total (nitric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-07-26_N	E420.Cr-L	26-Jul-2022	----	----	----		27-Jul-2022	180 days	1 days	✔
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)										
HDPE total (nitric acid) RG_BOCK_WS_LAEMP_EVO_2022-07-25_N	E420.Cr-L	25-Jul-2022	----	----	----		27-Jul-2022	180 days	2 days	✔
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)										
HDPE total (nitric acid) RG_GATE_WS_LAEMP_EVO_2022-07-25_N	E420.Cr-L	25-Jul-2022	----	----	----		27-Jul-2022	180 days	2 days	✔
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)										
HDPE total (nitric acid) RG_GATEDP_WS_LAEMP_EVO_2022-07-25_N	E420.Cr-L	25-Jul-2022	----	----	----		27-Jul-2022	180 days	2 days	✔
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)										
HDPE total (nitric acid) RG_MICOMP_WS_LAEMP_EVO_2022-07-25_N	E420.Cr-L	25-Jul-2022	----	----	----		27-Jul-2022	180 days	2 days	✔
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)										
HDPE total (nitric acid) RG_MIDBO_WS_LAEMP_EVO_2022-07-25_N	E420.Cr-L	25-Jul-2022	----	----	----		27-Jul-2022	180 days	2 days	✔
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)										
HDPE total (nitric acid) RG_MIDGA_WS_LAEMP_EVO_2022-07-25_N	E420.Cr-L	25-Jul-2022	----	----	----		27-Jul-2022	180 days	2 days	✔
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)										
HDPE total (nitric acid) RG_RIVER_WS_LAEMP_EVO_2022-07-25_N	E420.Cr-L	25-Jul-2022	----	----	----		27-Jul-2022	180 days	2 days	✔



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_BOCKRD_WS_LAEMP_EVO_2022-07-26_N	E508	26-Jul-2022	----	----	----		28-Jul-2022	28 days	2 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_ERCKUMD_WS_LAEMP_EVO_2022-07-26_N	E508	26-Jul-2022	----	----	----		28-Jul-2022	28 days	2 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-07-26_N	E508	26-Jul-2022	----	----	----		28-Jul-2022	28 days	2 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_BOCK_WS_LAEMP_EVO_2022-07-25_N	E508	25-Jul-2022	----	----	----		28-Jul-2022	28 days	3 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_GATE_WS_LAEMP_EVO_2022-07-25_N	E508	25-Jul-2022	----	----	----		28-Jul-2022	28 days	3 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_GATEDP_WS_LAEMP_EVO_2022-07-25_N	E508	25-Jul-2022	----	----	----		28-Jul-2022	28 days	3 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_MICOMP_WS_LAEMP_EVO_2022-07-25_N	E508	25-Jul-2022	----	----	----		28-Jul-2022	28 days	3 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_MIDBO_WS_LAEMP_EVO_2022-07-25_N	E508	25-Jul-2022	----	----	----		28-Jul-2022	28 days	3 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_MIDGA_WS_LAEMP_EVO_2022-07-25_N	E508	25-Jul-2022	----	----	----		28-Jul-2022	28 days	3 days	✔	



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_RIVER_WS_LAEMP_EVO_2022-07-25_N	E508	25-Jul-2022	----	----	----		28-Jul-2022	28 days	3 days	✔	
Total Metals : Total Metals in Water by CRC ICPMS											
HDPE total (nitric acid) RG_BOCKRD_WS_LAEMP_EVO_2022-07-26_N	E420	26-Jul-2022	----	----	----		27-Jul-2022	180 days	1 days	✔	
Total Metals : Total Metals in Water by CRC ICPMS											
HDPE total (nitric acid) RG_ERCKUMD_WS_LAEMP_EVO_2022-07-26_N	E420	26-Jul-2022	----	----	----		27-Jul-2022	180 days	1 days	✔	
Total Metals : Total Metals in Water by CRC ICPMS											
HDPE total (nitric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-07-26_N	E420	26-Jul-2022	----	----	----		27-Jul-2022	180 days	1 days	✔	
Total Metals : Total Metals in Water by CRC ICPMS											
HDPE total (nitric acid) RG_BOCK_WS_LAEMP_EVO_2022-07-25_N	E420	25-Jul-2022	----	----	----		27-Jul-2022	180 days	2 days	✔	
Total Metals : Total Metals in Water by CRC ICPMS											
HDPE total (nitric acid) RG_GATE_WS_LAEMP_EVO_2022-07-25_N	E420	25-Jul-2022	----	----	----		27-Jul-2022	180 days	2 days	✔	
Total Metals : Total Metals in Water by CRC ICPMS											
HDPE total (nitric acid) RG_GATEDP_WS_LAEMP_EVO_2022-07-25_N	E420	25-Jul-2022	----	----	----		27-Jul-2022	180 days	2 days	✔	
Total Metals : Total Metals in Water by CRC ICPMS											
HDPE total (nitric acid) RG_MICOMP_WS_LAEMP_EVO_2022-07-25_N	E420	25-Jul-2022	----	----	----		27-Jul-2022	180 days	2 days	✔	
Total Metals : Total Metals in Water by CRC ICPMS											
HDPE total (nitric acid) RG_MIDBO_WS_LAEMP_EVO_2022-07-25_N	E420	25-Jul-2022	----	----	----		27-Jul-2022	180 days	2 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) RG_MIDGA_WS_LAEMP_EVO_2022-07-25_N	E420	25-Jul-2022	----	----	----		27-Jul-2022	180 days	2 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) RG_RIVER_WS_LAEMP_EVO_2022-07-25_N	E420	25-Jul-2022	----	----	----		27-Jul-2022	180 days	2 days	✓

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended
 Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
Analytical Methods							
Laboratory Duplicates (DUP)							
Acidity by Titration	E283	579552	2	23	8.7	5.0	✓
Alkalinity Species by Titration	E290	579557	2	23	8.7	5.0	✓
Ammonia by Fluorescence	E298	579054	1	11	9.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	579050	1	13	7.6	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	579051	1	13	7.6	5.0	✓
Conductivity in Water	E100	579556	2	23	8.7	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	578949	1	12	8.3	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	580607	1	18	5.5	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	578950	1	12	8.3	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	579069	1	10	10.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	579229	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	579048	1	13	7.6	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	579052	1	13	7.6	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	579053	1	13	7.6	5.0	✓
ORP by Electrode	E125	579063	1	11	9.0	5.0	✓
pH by Meter	E108	579555	2	23	8.7	5.0	✓
Sulfate in Water by IC	E235.SO4	579049	1	13	7.6	5.0	✓
TDS by Gravimetry	E162	579328	1	12	8.3	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	579027	1	12	8.3	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	579008	1	12	8.3	5.0	✓
Total Mercury in Water by CVAAS	E508	580605	1	19	5.2	5.0	✓
Total Metals in Water by CRC ICPMS	E420	579028	1	13	7.6	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	579070	1	10	10.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	578907	1	10	10.0	5.0	✓
Turbidity by Nephelometry	E121	579076	3	44	6.8	5.0	✓
Laboratory Control Samples (LCS)							
Acidity by Titration	E283	579552	2	23	8.7	5.0	✓
Alkalinity Species by Titration	E290	579557	2	23	8.7	5.0	✓
Ammonia by Fluorescence	E298	579054	1	11	9.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	579050	1	13	7.6	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	579051	1	13	7.6	5.0	✓
Conductivity in Water	E100	579556	2	23	8.7	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	578949	1	12	8.3	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	580607	1	18	5.5	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	578950	1	12	8.3	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	579069	1	10	10.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	579229	1	20	5.0	5.0	✓



Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
Analytical Methods							
Laboratory Control Samples (LCS) - Continued							
Fluoride in Water by IC	E235.F	579048	1	13	7.6	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	579052	1	13	7.6	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	579053	1	13	7.6	5.0	✓
ORP by Electrode	E125	579063	1	11	9.0	5.0	✓
pH by Meter	E108	579555	2	23	8.7	5.0	✓
Sulfate in Water by IC	E235.SO4	579049	1	13	7.6	5.0	✓
TDS by Gravimetry	E162	579328	1	12	8.3	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	579027	1	12	8.3	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	579008	1	12	8.3	5.0	✓
Total Mercury in Water by CVAAS	E508	580605	1	19	5.2	5.0	✓
Total Metals in Water by CRC ICPMS	E420	579028	1	13	7.6	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	579070	1	10	10.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	578907	1	10	10.0	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	579325	1	12	8.3	5.0	✓
Turbidity by Nephelometry	E121	579076	3	44	6.8	5.0	✓
Method Blanks (MB)							
Acidity by Titration	E283	579552	2	23	8.7	5.0	✓
Alkalinity Species by Titration	E290	579557	2	23	8.7	5.0	✓
Ammonia by Fluorescence	E298	579054	1	11	9.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	579050	1	13	7.6	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	579051	1	13	7.6	5.0	✓
Conductivity in Water	E100	579556	2	23	8.7	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	578949	1	12	8.3	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	580607	1	18	5.5	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	578950	1	12	8.3	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	579069	1	10	10.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	579229	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	579048	1	13	7.6	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	579052	1	13	7.6	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	579053	1	13	7.6	5.0	✓
Sulfate in Water by IC	E235.SO4	579049	1	13	7.6	5.0	✓
TDS by Gravimetry	E162	579328	1	12	8.3	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	579027	1	12	8.3	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	579008	1	12	8.3	5.0	✓
Total Mercury in Water by CVAAS	E508	580605	1	19	5.2	5.0	✓
Total Metals in Water by CRC ICPMS	E420	579028	1	13	7.6	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	579070	1	10	10.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	578907	1	10	10.0	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	579325	1	12	8.3	5.0	✓
Turbidity by Nephelometry	E121	579076	3	44	6.8	5.0	✓



Matrix: **Water** Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
<i>Analytical Methods</i>							
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	579054	1	11	9.0	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	579050	1	13	7.6	5.0	✔
Chloride in Water by IC (Low Level)	E235.Cl-L	579051	1	13	7.6	5.0	✔
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	578949	1	12	8.3	5.0	✔
Dissolved Mercury in Water by CVAAS	E509	580607	1	18	5.5	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	578950	1	12	8.3	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	579069	1	10	10.0	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	579229	1	20	5.0	5.0	✔
Fluoride in Water by IC	E235.F	579048	1	13	7.6	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	579052	1	13	7.6	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	579053	1	13	7.6	5.0	✔
Sulfate in Water by IC	E235.SO4	579049	1	13	7.6	5.0	✔
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	579027	1	12	8.3	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	579008	1	12	8.3	5.0	✔
Total Mercury in Water by CVAAS	E508	580605	1	19	5.2	5.0	✔
Total Metals in Water by CRC ICPMS	E420	579028	1	13	7.6	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	579070	1	10	10.0	5.0	✔
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	578907	1	10	10.0	5.0	✔



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 Calgary - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 Calgary - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 Calgary - Environmental	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
ORP by Electrode	E125 Calgary - Environmental	Water	ASTM D1498 (mod)	Oxidation reduction potential is reported as the oxidation-reduction potential of the platinum metal-reference electrode employed, measured in mV. For high accuracy test results, it is recommended that this analysis be conducted in the field.
TSS by Gravimetry (Low Level)	E160-L Calgary - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 Calgary - Environmental	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC (Low Level)	E235.Cl-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Acidity by Titration	E283 Calgary - Environmental	Water	APHA 2310 B (mod)	Acidity is determined by potentiometric titration to pH endpoint of 8.3



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Alkalinity Species by Titration	E290 Calgary - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 Calgary - Environmental	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 Calgary - Environmental	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L Calgary - Environmental	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Dissolved Organic Carbon by Combustion (Low Level)	E358-L Calgary - Environmental	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U Calgary - Environmental	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U Calgary - Environmental	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Total Metals in Water by CRC ICPMS	E420 Calgary - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L Calgary - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS.
Dissolved Metals in Water by CRC ICPMS	E421 Calgary - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L Calgary - Environmental	Water	APHA 3030 B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS
Total Mercury in Water by CVAAS	E508 Calgary - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS
Dissolved Mercury in Water by CVAAS	E509 Calgary - Environmental	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
Dissolved Hardness (Calculated)	EC100 Calgary - Environmental	Water	APHA 2340B	"Hardness (as CaCO ₃), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Ion Balance using Dissolved Metals	EC101 Calgary - Environmental	Water	APHA 1030E	Cation Sum, Anion Sum, and Ion Balance are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present. Ion Balance cannot be calculated accurately for waters with very low electrical conductivity (EC).

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 Calgary - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 Calgary - Environmental	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Preparation for Total Organic Carbon by Combustion	EP355 Calgary - Environmental	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon for Combustion	EP358 Calgary - Environmental	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Phosphorus in water	EP372 Calgary - Environmental	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Dissolved Metals Water Filtration	EP421 Calgary - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO ₃ .
Dissolved Mercury Water Filtration	EP509 Calgary - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.



QUALITY CONTROL REPORT

Work Order : **CG2209854**

Client : Teck Coal Limited
Contact : Mike Pope
Address : RR#1 HWY#3
Sparwood BC Canada V0B 2G1

Telephone : ----

Project : Regional Effects Program
PO : VPO00847030
C-O-C number : July 26 EVO LAEMP 2022
Sampler : ROBIN VALLEAU
Site : ----
Quote number : Teck Coal Master Quote
No. of samples received : 10
No. of samples analysed : 10

Page : 1 of 18

Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
Calgary, Alberta Canada T1Y 7B5

Telephone : +1 403 407 1800
Date Samples Received : 27-Jul-2022 08:50
Date Analysis Commenced : 27-Jul-2022
Issue Date : 29-Jul-2022 18:26

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	Position	Laboratory Department
Anthony Calero	Team Leader - Inorganics	Calgary Inorganics, Calgary, Alberta
Dwayne Bennett	Supervisor - Inorganic	Calgary Inorganics, Calgary, Alberta
Dwayne Bennett	Supervisor - Inorganic	Calgary Metals, Calgary, Alberta
Elke Tabora		Calgary Inorganics, Calgary, Alberta
Katarzyna Glinka	Analyst	Calgary Inorganics, Calgary, Alberta
Kevin Baxter		Calgary Metals, Calgary, Alberta
Mackenzie Lamoureux	Laboratory Analyst	Calgary Metals, Calgary, Alberta
Millicent Brentnall	Laboratory Analyst	Calgary Metals, Calgary, Alberta
Parker Sgarbossa	Laboratory Analyst	Calgary Inorganics, Calgary, Alberta
Ruifang Zheng	Analyst	Calgary Inorganics, Calgary, Alberta
Shirley Li		Calgary Metals, Calgary, Alberta
Sofiya Ivanova	Lab Assistant	Calgary Inorganics, Calgary, Alberta
Vladka Stamenova	Analyst	Calgary Inorganics, Calgary, Alberta

Page : 2 of 18
Work Order : CG2209854
Client : Teck Coal Limited
Project : Regional Effects Program



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 579063)											
CG2209850-001	Anonymous	oxidation-reduction potential [ORP]	----	E125	0.10	mV	466	468	0.236%	15%	----
Physical Tests (QC Lot: 579076)											
CG2209810-002	Anonymous	turbidity	----	E121	0.10	NTU	0.57	0.61	0.04	Diff <2x LOR	----
Physical Tests (QC Lot: 579328)											
CG2209834-001	Anonymous	solids, total dissolved [TDS]	----	E162	20	mg/L	827	815	1.46%	20%	----
Physical Tests (QC Lot: 579344)											
CG2209821-002	Anonymous	turbidity	----	E121	0.10	NTU	<0.10	<0.10	0	Diff <2x LOR	----
Physical Tests (QC Lot: 579552)											
CG2209834-001	Anonymous	acidity (as CaCO3)	----	E283	2.0	mg/L	<2.0	<2.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 579553)											
CG2209854-008	RG_BOCKRD_WS_LAEM P_EVO_2022-07-26_N	acidity (as CaCO3)	----	E283	2.0	mg/L	<2.0	<2.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 579555)											
CG2209834-001	Anonymous	pH	----	E108	0.10	pH units	7.19	7.26	0.969%	4%	----
Physical Tests (QC Lot: 579556)											
CG2209834-001	Anonymous	conductivity	----	E100	2.0	µS/cm	1060	1050	0.474%	10%	----
Physical Tests (QC Lot: 579557)											
CG2209834-001	Anonymous	alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	106	102	3.37%	20%	----
		alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	106	102	3.37%	20%	----
Physical Tests (QC Lot: 579558)											
CG2209854-008	RG_BOCKRD_WS_LAEM P_EVO_2022-07-26_N	conductivity	----	E100	2.0	µS/cm	2000	2000	0.00%	10%	----
Physical Tests (QC Lot: 579559)											
CG2209854-008	RG_BOCKRD_WS_LAEM P_EVO_2022-07-26_N	pH	----	E108	0.10	pH units	8.04	8.04	0.00%	4%	----
Physical Tests (QC Lot: 579560)											
CG2209854-008	RG_BOCKRD_WS_LAEM P_EVO_2022-07-26_N	alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	385	386	0.285%	20%	----
		alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	385	386	0.285%	20%	----



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 579632)											
CG2209854-005	RG_MICOMP_WS_LAEMP_EVO_2022-07-25_N	turbidity	----	E121	0.10	NTU	0.67	0.70	0.03	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 578907)											
CG2209854-001	RG_GATEDP_WS_LAEMP_EVO_2022-07-25_N	phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0047	0.0044	0.0003	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 579008)											
CG2209850-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	0.484	0.458	0.025	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 579048)											
CG2209845-010	Anonymous	fluoride	16984-48-8	E235.F	0.100	mg/L	0.542	0.532	0.010	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 579049)											
CG2209845-010	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	1.50	mg/L	1560	1560	0.317%	20%	----
Anions and Nutrients (QC Lot: 579050)											
CG2209845-010	Anonymous	bromide	24959-67-9	E235.Br-L	0.250	mg/L	<0.250	<0.250	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 579051)											
CG2209845-010	Anonymous	chloride	16887-00-6	E235.Cl-L	0.50	mg/L	4.26	4.26	0.006	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 579052)											
CG2209845-010	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	0.0250	mg/L	5.72	5.71	0.201%	20%	----
Anions and Nutrients (QC Lot: 579053)											
CG2209845-010	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.0050	mg/L	0.0244	0.0238	0.0006	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 579054)											
CG2209850-001	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 579229)											
CG2209853-001	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 579069)											
CG2209854-001	RG_GATEDP_WS_LAEMP_EVO_2022-07-25_N	carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	0.93	0.78	0.15	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 579070)											
CG2209854-001	RG_GATEDP_WS_LAEMP_EVO_2022-07-25_N	carbon, total organic [TOC]	----	E355-L	0.50	mg/L	1.27	1.27	0.002	Diff <2x LOR	----
Total Metals (QC Lot: 579027)											
CG2209834-001	Anonymous	chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	0.00014	0.00014	0.000002	Diff <2x LOR	----
Total Metals (QC Lot: 579028)											
CG2209834-001	Anonymous	aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0438	0.0402	8.42%	20%	----
		antimony, total	7440-36-0	E420	0.00010	mg/L	0.00396	0.00413	4.28%	20%	----
		arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00057	0.00055	0.00002	Diff <2x LOR	----
		barium, total	7440-39-3	E420	0.00010	mg/L	0.0913	0.0903	1.11%	20%	----
		beryllium, total	7440-41-7	E420	0.000020	mg/L	<0.020 µg/L	<0.000020	0	Diff <2x LOR	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (QC Lot: 579028) - continued											
CG2209834-001	Anonymous	bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, total	7440-42-8	E420	0.010	mg/L	0.057	0.059	0.002	Diff <2x LOR	----
		cadmium, total	7440-43-9	E420	0.0000050	mg/L	0.205 µg/L	0.000198	3.47%	20%	----
		calcium, total	7440-70-2	E420	0.050	mg/L	138	141	1.70%	20%	----
		cobalt, total	7440-48-4	E420	0.00010	mg/L	1.40 µg/L	0.00136	3.34%	20%	----
		copper, total	7440-50-8	E420	0.00050	mg/L	0.00076	0.00076	0.000002	Diff <2x LOR	----
		iron, total	7439-89-6	E420	0.010	mg/L	0.063	0.062	0.0010	Diff <2x LOR	----
		lead, total	7439-92-1	E420	0.000050	mg/L	0.000128	0.000127	0.000001	Diff <2x LOR	----
		lithium, total	7439-93-2	E420	0.0010	mg/L	0.0494	0.0495	0.364%	20%	----
		magnesium, total	7439-95-4	E420	0.0050	mg/L	41.6	40.9	1.81%	20%	----
		manganese, total	7439-96-5	E420	0.00010	mg/L	0.104	0.103	0.318%	20%	----
		molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.0166	0.0172	3.99%	20%	----
		nickel, total	7440-02-0	E420	0.00050	mg/L	0.00521	0.00525	0.822%	20%	----
		potassium, total	7440-09-7	E420	0.050	mg/L	6.65	6.59	0.981%	20%	----
		selenium, total	7782-49-2	E420	0.000050	mg/L	18.2 µg/L	0.0182	0.494%	20%	----
		silicon, total	7440-21-3	E420	0.10	mg/L	2.21	2.20	0.236%	20%	----
		silver, total	7440-22-4	E420	0.000010	mg/L	0.000012	<0.000010	0.000002	Diff <2x LOR	----
		sodium, total	7440-23-5	E420	0.050	mg/L	15.3	15.2	1.03%	20%	----
		strontium, total	7440-24-6	E420	0.00020	mg/L	0.781	0.799	2.31%	20%	----
		sulfur, total	7704-34-9	E420	0.50	mg/L	125	126	0.693%	20%	----
		thallium, total	7440-28-0	E420	0.000010	mg/L	0.000029	0.000027	0.000002	Diff <2x LOR	----
		tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, total	7440-32-6	E420	0.00030	mg/L	0.00058	0.00058	0.000001	Diff <2x LOR	----
		uranium, total	7440-61-1	E420	0.000010	mg/L	0.00300	0.00301	0.266%	20%	----
		vanadium, total	7440-62-2	E420	0.00050	mg/L	0.00102	0.00101	0.00001	Diff <2x LOR	----
		zinc, total	7440-66-6	E420	0.0030	mg/L	0.0082	0.0079	0.0003	Diff <2x LOR	----
Total Metals (QC Lot: 580605)											
CG2209792-001	Anonymous	mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 578949)											
CG2209834-001	Anonymous	chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 578950)											
CG2209834-001	Anonymous	aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0140	0.0138	1.23%	20%	----
		antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00427	0.00418	2.25%	20%	----
		arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00043	0.00040	0.00003	Diff <2x LOR	----
		barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0900	0.0883	1.96%	20%	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 578950) - continued											
CG2209834-001	Anonymous	beryllium, dissolved	7440-41-7	E421	0.000020	mg/L	<0.020 µg/L	<0.000020	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.010	mg/L	0.053	0.050	0.003	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	0.168 µg/L	0.000162	3.54%	20%	----
		calcium, dissolved	7440-70-2	E421	0.050	mg/L	143	138	3.58%	20%	----
		cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	1.25 µg/L	0.00124	0.591%	20%	----
		copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00032	0.00030	0.00001	Diff <2x LOR	----
		iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0543	0.0538	0.921%	20%	----
		magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	39.2	39.2	0.126%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.0671	0.0672	0.148%	20%	----
		molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.0170	0.0166	2.36%	20%	----
		nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00463	0.00471	0.00008	Diff <2x LOR	----
		potassium, dissolved	7440-09-7	E421	0.050	mg/L	6.50	6.48	0.394%	20%	----
		selenium, dissolved	7782-49-2	E421	0.000050	mg/L	19.7 µg/L	0.0192	2.45%	20%	----
		silicon, dissolved	7440-21-3	E421	0.050	mg/L	2.12	2.08	1.58%	20%	----
		silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E421	0.050	mg/L	15.0	14.9	0.270%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.836	0.834	0.220%	20%	----
		sulfur, dissolved	7704-34-9	E421	0.50	mg/L	114	110	4.26%	20%	----
		thallium, dissolved	7440-28-0	E421	0.000010	mg/L	0.000027	0.000022	0.000004	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00337	0.00331	1.63%	20%	----
		vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0060	0.0062	0.0001	Diff <2x LOR	----
Dissolved Metals (QC Lot: 580607)											
CG2209792-001	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 579076)						
turbidity	---	E121	0.1	NTU	<0.10	---
Physical Tests (QCLot: 579325)						
solids, total suspended [TSS]	---	E160-L	1	mg/L	<1.0	---
Physical Tests (QCLot: 579328)						
solids, total dissolved [TDS]	---	E162	10	mg/L	<10	---
Physical Tests (QCLot: 579344)						
turbidity	---	E121	0.1	NTU	<0.10	---
Physical Tests (QCLot: 579552)						
acidity (as CaCO ₃)	---	E283	2	mg/L	<2.0	---
Physical Tests (QCLot: 579553)						
acidity (as CaCO ₃)	---	E283	2	mg/L	2.0	---
Physical Tests (QCLot: 579556)						
conductivity	---	E100	1	µS/cm	<1.0	---
Physical Tests (QCLot: 579557)						
alkalinity, bicarbonate (as CaCO ₃)	---	E290	1	mg/L	1.2	---
alkalinity, carbonate (as CaCO ₃)	---	E290	1	mg/L	<1.0	---
alkalinity, hydroxide (as CaCO ₃)	---	E290	1	mg/L	<1.0	---
alkalinity, total (as CaCO ₃)	---	E290	1	mg/L	1.2	---
Physical Tests (QCLot: 579558)						
conductivity	---	E100	1	µS/cm	<1.0	---
Physical Tests (QCLot: 579560)						
alkalinity, bicarbonate (as CaCO ₃)	---	E290	1	mg/L	<1.0	---
alkalinity, carbonate (as CaCO ₃)	---	E290	1	mg/L	<1.0	---
alkalinity, hydroxide (as CaCO ₃)	---	E290	1	mg/L	<1.0	---
alkalinity, total (as CaCO ₃)	---	E290	1	mg/L	<1.0	---
Physical Tests (QCLot: 579632)						
turbidity	---	E121	0.1	NTU	<0.10	---
Anions and Nutrients (QCLot: 578907)						
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	---
Anions and Nutrients (QCLot: 579008)						
Kjeldahl nitrogen, total [TKN]	---	E318	0.05	mg/L	<0.050	---
Anions and Nutrients (QCLot: 579048)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	---



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 579049)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	---
Anions and Nutrients (QCLot: 579050)						
bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	---
Anions and Nutrients (QCLot: 579051)						
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	---
Anions and Nutrients (QCLot: 579052)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	---
Anions and Nutrients (QCLot: 579053)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	---
Anions and Nutrients (QCLot: 579054)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	---
Anions and Nutrients (QCLot: 579229)						
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	---
Organic / Inorganic Carbon (QCLot: 579069)						
carbon, dissolved organic [DOC]	---	E358-L	0.5	mg/L	<0.50	---
Organic / Inorganic Carbon (QCLot: 579070)						
carbon, total organic [TOC]	---	E355-L	0.5	mg/L	<0.50	---
Total Metals (QCLot: 579027)						
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	<0.00010	---
Total Metals (QCLot: 579028)						
aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	---
antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	---
arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	---
barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	---
beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	---
bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	---
boron, total	7440-42-8	E420	0.01	mg/L	<0.010	---
cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	---
calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	---
cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	---
copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	---
iron, total	7439-89-6	E420	0.01	mg/L	<0.010	---
lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	---
lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	---
magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	---
manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	---



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 579028) - continued						
molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	---
nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	---
potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	---
selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	---
silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	---
silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	---
sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	---
strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	---
sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	---
thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	---
tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	---
titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	---
uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	---
vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	---
zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	---
Total Metals (QCLot: 580605)						
mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	---
Dissolved Metals (QCLot: 578949)						
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	<0.00010	---
Dissolved Metals (QCLot: 578950)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	---
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	---
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	---
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	---
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	---
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	---
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	---
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	---
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	---
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	---
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	---
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	---
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	---
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	---
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	---
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	---



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 578950) - continued						
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
Dissolved Metals (QCLot: 580607)						
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Water					Laboratory Control Sample (LCS) Report				
					Spike Concentration	Recovery (%)	Recovery Limits (%)		Qualifier
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 579063)									
oxidation-reduction potential [ORP]	---	E125	---	mV	220 mV	97.2	95.4	104	---
Physical Tests (QCLot: 579076)									
turbidity	---	E121	0.1	NTU	200 NTU	97.8	85.0	115	---
Physical Tests (QCLot: 579325)									
solids, total suspended [TSS]	---	E160-L	1	mg/L	150 mg/L	102	85.0	115	---
Physical Tests (QCLot: 579328)									
solids, total dissolved [TDS]	---	E162	10	mg/L	1000 mg/L	101	85.0	115	---
Physical Tests (QCLot: 579344)									
turbidity	---	E121	0.1	NTU	200 NTU	96.8	85.0	115	---
Physical Tests (QCLot: 579552)									
acidity (as CaCO ₃)	---	E283	2	mg/L	50 mg/L	106	85.0	115	---
Physical Tests (QCLot: 579553)									
acidity (as CaCO ₃)	---	E283	2	mg/L	50 mg/L	106	85.0	115	---
Physical Tests (QCLot: 579555)									
pH	---	E108	---	pH units	7 pH units	100	98.6	101	---
Physical Tests (QCLot: 579556)									
conductivity	---	E100	1	µS/cm	146.9 µS/cm	102	90.0	110	---
Physical Tests (QCLot: 579557)									
alkalinity, total (as CaCO ₃)	---	E290	1	mg/L	500 mg/L	106	85.0	115	---
Physical Tests (QCLot: 579558)									
conductivity	---	E100	1	µS/cm	146.9 µS/cm	102	90.0	110	---
Physical Tests (QCLot: 579559)									
pH	---	E108	---	pH units	7 pH units	100	98.6	101	---
Physical Tests (QCLot: 579560)									
alkalinity, total (as CaCO ₃)	---	E290	1	mg/L	500 mg/L	107	85.0	115	---
Physical Tests (QCLot: 579632)									
turbidity	---	E121	0.1	NTU	200 NTU	96.4	85.0	115	---
Anions and Nutrients (QCLot: 578907)									
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	8.02 mg/L	104	80.0	120	---
Anions and Nutrients (QCLot: 579008)									
Kjeldahl nitrogen, total [TKN]	---	E318	0.05	mg/L	4 mg/L	102	75.0	125	---
Anions and Nutrients (QCLot: 579048)									



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				Qualifier
					Spike Concentration	Recovery (%) LCS	Recovery Limits (%)		
						Low	High		
Anions and Nutrients (QCLot: 579048) - continued									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	90.2	90.0	110	----
Anions and Nutrients (QCLot: 579049)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	106	90.0	110	----
Anions and Nutrients (QCLot: 579050)									
bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	91.1	85.0	115	----
Anions and Nutrients (QCLot: 579051)									
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	98.8	90.0	110	----
Anions and Nutrients (QCLot: 579052)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	99.4	90.0	110	----
Anions and Nutrients (QCLot: 579053)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 579054)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	103	85.0	115	----
Anions and Nutrients (QCLot: 579229)									
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.02 mg/L	105	80.0	120	----
Organic / Inorganic Carbon (QCLot: 579069)									
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	87.4	80.0	120	----
Organic / Inorganic Carbon (QCLot: 579070)									
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	89.9	80.0	120	----
Total Metals (QCLot: 579027)									
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	0.25 mg/L	97.2	80.0	120	----
Total Metals (QCLot: 579028)									
aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	100	80.0	120	----
antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	99.5	80.0	120	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	92.0	80.0	120	----
barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	98.3	80.0	120	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	95.2	80.0	120	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	97.0	80.0	120	----
boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	100	80.0	120	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	97.9	80.0	120	----
calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	95.3	80.0	120	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	95.2	80.0	120	----
copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	94.3	80.0	120	----
iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	108	80.0	120	----
lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	98.3	80.0	120	----



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Total Metals (QCLot: 579028) - continued									
lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	96.1	80.0	120	----
magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	96.6	80.0	120	----
manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	98.4	80.0	120	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	98.3	80.0	120	----
nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	95.5	80.0	120	----
potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	97.2	80.0	120	----
selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	95.7	80.0	120	----
silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	104	60.0	140	----
silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	92.2	80.0	120	----
sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	99.7	80.0	120	----
strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	98.4	80.0	120	----
sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	98.9	80.0	120	----
thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	101	80.0	120	----
tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	99.0	80.0	120	----
titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	96.8	80.0	120	----
uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	98.2	80.0	120	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	97.7	80.0	120	----
zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	93.2	80.0	120	----
Total Metals (QCLot: 580605)									
mercury, total	7439-97-6	E508	0.000005	mg/L	0.0001 mg/L	111	80.0	120	----
Dissolved Metals (QCLot: 578949)									
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	0.25 mg/L	101	80.0	120	----
Dissolved Metals (QCLot: 578950)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	102	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	101	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	97.6	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	99.5	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	104	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	99.3	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	96.4	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	99.9	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	98.0	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	99.9	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	98.1	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	113	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	101	80.0	120	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Dissolved Metals (QCLot: 578950) - continued									
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	105	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	98.0	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	99.3	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	101	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	97.2	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	102	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	98.2	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	102	60.0	140	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	97.4	80.0	120	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	102	80.0	120	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	104	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	97.3	80.0	120	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	101	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	100	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	97.3	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	99.7	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	100	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	95.4	80.0	120	----
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	88.3	80.0	120	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level $\geq 1x$ spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 578907)										
CG2209854-002	RG_GATE_WS_LAEMP_EV O_2022-07-25_N	phosphorus, total	7723-14-0	E372-U	0.0707 mg/L	0.0676 mg/L	104	70.0	130	----
Anions and Nutrients (QCLot: 579008)										
CG2209854-001	RG_GATEDP_WS_LAEMP_ EVO_2022-07-25_N	Kjeldahl nitrogen, total [TKN]	----	E318	2.40 mg/L	2.5 mg/L	96.0	70.0	130	----
Anions and Nutrients (QCLot: 579048)										
CG2209847-001	Anonymous	fluoride	16984-48-8	E235.F	0.876 mg/L	1 mg/L	87.6	75.0	125	----
Anions and Nutrients (QCLot: 579049)										
CG2209847-001	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	ND mg/L	100 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 579050)										
CG2209847-001	Anonymous	bromide	24959-67-9	E235.Br-L	0.476 mg/L	0.5 mg/L	95.3	75.0	125	----
Anions and Nutrients (QCLot: 579051)										
CG2209847-001	Anonymous	chloride	16887-00-6	E235.Cl-L	99.5 mg/L	100 mg/L	99.5	75.0	125	----
Anions and Nutrients (QCLot: 579052)										
CG2209847-001	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	2.39 mg/L	2.5 mg/L	95.5	75.0	125	----
Anions and Nutrients (QCLot: 579053)										
CG2209847-001	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	ND mg/L	0.5 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 579054)										
CG2209854-001	RG_GATEDP_WS_LAEMP_ EVO_2022-07-25_N	ammonia, total (as N)	7664-41-7	E298	ND mg/L	0.1 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 579229)										
CG2209853-002	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0501 mg/L	0.05 mg/L	100	70.0	130	----
Organic / Inorganic Carbon (QCLot: 579069)										
CG2209854-001	RG_GATEDP_WS_LAEMP_ EVO_2022-07-25_N	carbon, dissolved organic [DOC]	----	E358-L	5.03 mg/L	5 mg/L	101	70.0	130	----
Organic / Inorganic Carbon (QCLot: 579070)										
CG2209854-001	RG_GATEDP_WS_LAEMP_ EVO_2022-07-25_N	carbon, total organic [TOC]	----	E355-L	5.31 mg/L	5 mg/L	106	70.0	130	----
Total Metals (QCLot: 579027)										
CG2209850-001	Anonymous	chromium, total	7440-47-3	E420.Cr-L	1.05 mg/L	0.4 mg/L	263	70.0	130	----
Total Metals (QCLot: 579028)										



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 579028) - continued										
CG2209839-002	Anonymous	aluminum, total	7429-90-5	E420	2.08 mg/L	2 mg/L	104	70.0	130	----
		antimony, total	7440-36-0	E420	0.199 mg/L	0.2 mg/L	99.7	70.0	130	----
		arsenic, total	7440-38-2	E420	0.201 mg/L	0.2 mg/L	100	70.0	130	----
		barium, total	7440-39-3	E420	0.200 mg/L	0.2 mg/L	99.9	70.0	130	----
		beryllium, total	7440-41-7	E420	0.397 mg/L	0.4 mg/L	99.2	70.0	130	----
		bismuth, total	7440-69-9	E420	0.0951 mg/L	0.1 mg/L	95.1	70.0	130	----
		boron, total	7440-42-8	E420	0.956 mg/L	1 mg/L	95.6	70.0	130	----
		cadmium, total	7440-43-9	E420	0.0405 mg/L	0.04 mg/L	101	70.0	130	----
		calcium, total	7440-70-2	E420	ND mg/L	40 mg/L	ND	70.0	130	----
		cobalt, total	7440-48-4	E420	0.202 mg/L	0.2 mg/L	101	70.0	130	----
		copper, total	7440-50-8	E420	0.201 mg/L	0.2 mg/L	100	70.0	130	----
		iron, total	7439-89-6	E420	20.5 mg/L	20 mg/L	102	70.0	130	----
		lead, total	7439-92-1	E420	0.193 mg/L	0.2 mg/L	96.6	70.0	130	----
		lithium, total	7439-93-2	E420	1.02 mg/L	1 mg/L	102	70.0	130	----
		magnesium, total	7439-95-4	E420	ND mg/L	10 mg/L	ND	70.0	130	----
		manganese, total	7439-96-5	E420	0.204 mg/L	0.2 mg/L	102	70.0	130	----
		molybdenum, total	7439-98-7	E420	0.199 mg/L	0.2 mg/L	99.3	70.0	130	----
		nickel, total	7440-02-0	E420	0.406 mg/L	0.4 mg/L	102	70.0	130	----
		potassium, total	7440-09-7	E420	42.0 mg/L	40 mg/L	105	70.0	130	----
		selenium, total	7782-49-2	E420	0.408 mg/L	0.4 mg/L	102	70.0	130	----
		silicon, total	7440-21-3	E420	101 mg/L	100 mg/L	101	70.0	130	----
		silver, total	7440-22-4	E420	0.0419 mg/L	0.04 mg/L	105	70.0	130	----
		sodium, total	7440-23-5	E420	ND mg/L	20 mg/L	ND	70.0	130	----
		strontium, total	7440-24-6	E420	ND mg/L	0.2 mg/L	ND	70.0	130	----
		sulfur, total	7704-34-9	E420	210 mg/L	200 mg/L	105	70.0	130	----
		thallium, total	7440-28-0	E420	0.0383 mg/L	0.04 mg/L	95.7	70.0	130	----
		tin, total	7440-31-5	E420	0.198 mg/L	0.2 mg/L	99.0	70.0	130	----
		titanium, total	7440-32-6	E420	0.422 mg/L	0.4 mg/L	106	70.0	130	----
		uranium, total	7440-61-1	E420	0.0387 mg/L	0.04 mg/L	96.8	70.0	130	----
		vanadium, total	7440-62-2	E420	1.04 mg/L	1 mg/L	104	70.0	130	----
		zinc, total	7440-66-6	E420	4.14 mg/L	4 mg/L	103	70.0	130	----
Total Metals (QCLot: 580605)										
CG2209792-002	Anonymous	mercury, total	7439-97-6	E508	0.0000994 mg/L	0.0001 mg/L	99.4	70.0	130	----
Dissolved Metals (QCLot: 578949)										
CG2209850-001	Anonymous	chromium, dissolved	7440-47-3	E421.Cr-L	0.390 mg/L	0.4 mg/L	97.4	70.0	130	----
Dissolved Metals (QCLot: 578950)										



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 578950) - continued										
CG2209850-001	Anonymous	aluminum, dissolved	7429-90-5	E421	2.01 mg/L	2 mg/L	100	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.200 mg/L	0.2 mg/L	100	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.193 mg/L	0.2 mg/L	96.6	70.0	130	----
		barium, dissolved	7440-39-3	E421	0.187 mg/L	0.2 mg/L	93.7	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.391 mg/L	0.4 mg/L	97.8	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.0930 mg/L	0.1 mg/L	93.0	70.0	130	----
		boron, dissolved	7440-42-8	E421	1.04 mg/L	1 mg/L	104	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.0396 mg/L	0.04 mg/L	99.0	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	40 mg/L	ND	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.195 mg/L	0.2 mg/L	97.3	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.193 mg/L	0.2 mg/L	96.5	70.0	130	----
		iron, dissolved	7439-89-6	E421	19.7 mg/L	20 mg/L	98.7	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.189 mg/L	0.2 mg/L	94.4	70.0	130	----
		lithium, dissolved	7439-93-2	E421	1.02 mg/L	1 mg/L	102	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	10 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E421	0.196 mg/L	0.2 mg/L	98.1	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.204 mg/L	0.2 mg/L	102	70.0	130	----
		nickel, dissolved	7440-02-0	E421	0.385 mg/L	0.4 mg/L	96.2	70.0	130	----
		potassium, dissolved	7440-09-7	E421	39.9 mg/L	40 mg/L	99.7	70.0	130	----
		selenium, dissolved	7782-49-2	E421	0.353 mg/L	0.4 mg/L	88.4	70.0	130	----
		silicon, dissolved	7440-21-3	E421	99.9 mg/L	100 mg/L	99.9	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.0428 mg/L	0.04 mg/L	107	70.0	130	----
		sodium, dissolved	7440-23-5	E421	19.5 mg/L	20 mg/L	97.4	70.0	130	----
		strontium, dissolved	7440-24-6	E421	ND mg/L	0.2 mg/L	ND	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	260 mg/L	200 mg/L	130	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.0371 mg/L	0.04 mg/L	92.7	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.198 mg/L	0.2 mg/L	99.0	70.0	130	----
		titanium, dissolved	7440-32-6	E421	0.408 mg/L	0.4 mg/L	102	70.0	130	----
		uranium, dissolved	7440-61-1	E421	0.0375 mg/L	0.04 mg/L	93.7	70.0	130	----
		vanadium, dissolved	7440-62-2	E421	0.968 mg/L	1 mg/L	96.8	70.0	130	----
		zinc, dissolved	7440-66-6	E421	3.92 mg/L	4 mg/L	97.9	70.0	130	----
Dissolved Metals (QCLot: 580607)										
CG2209792-002	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000755 mg/L	0.0001 mg/L	75.5	70.0	130	----



COC ID:	July 26 EVO LAEMP 2022	TURNAROUND TIME:	RUSH
Facility Name / Job#	Regional effects program	Lab Name	ALS Calgary
Project Manager	Mike Pope	Lab Contact	Lyudmyla Shvets
Email		Email	lyudmyla.shvets@alsglobal.com
Address	421 Pine Avenue	Address	2559 29 Street NE
City	Sparwood	Province	BC
Postal Code	VOB 2G0	Country	Canada
Phone Number	343-333-3905	City	Calgary
		Province	AB
		Postal Code	T1Y 7R5
		Country	Canada
		Phone Number	1 403 407 1794

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS REQUESTED						
								TECKCOAL-ROUTINE-VA	ALS_Package-DOC	ALS_Package-TKN/TOC	HG-T-U-CYAF-VA	HG-D-CYAF-VA	TECKCOAL-MET-T-VA	TECKCOAL-MET-D-VA
RG_GATEDP_WS_LAEMP_EVO_2022-07-25_N	RG_GATEDP	WS	N	7/25/2022	12:30	G	7	X	X	X	X	X	X	X
RG_GATE_WS_LAEMP_EVO_2022-07-25_N	RG_GATE	WS	N	7/25/2022	10:00	G	7	X	X	X	X	X	X	X
RG_MIDGA_WS_LAEMP_EVO_2022-07-25_N	RG_MIDGA	WS	N	7/25/2022	12:00	G	7	X	X	X	X	X	X	X
RG_MIDBO_WS_LAEMP_EVO_2022-07-25_N	RG_MIDBO	WS	N	7/25/2022	13:00	G	7	X	X	X	X	X	X	X
RG_MICOMP_WS_LAEMP_EVO_2022-07-25_N	RG_MICOMP	WS	N	7/25/2022	15:30	G	7	X	X	X	X	X	X	X
RG_RIVER_WS_LAEMP_EVO_2022-07-25_N	RG_RIVER	WS	N	7/25/2022	14:00	G	7	X	X	X	X	X	X	X
RG_BOCK_WS_LAEMP_EVO_2022-07-25_N	RG_BOCK	WS	N	7/25/2022	14:00	G	7	X	X	X	X	X	X	X
RG_BOCKRD_WS_LAEMP_EVO_2022-07-26_N	RG_BOCKRD	WS	N	7/26/2022	14:30	G	7	X	X	X	X	X	X	X
RG_ERCKUT_WS_LAEMP_EVO_2022-07-26_N	RG_ERCKUT	WS	N	7/26/2022	10:00	G	7	X	X	X	X	X	X	X
RG_ERCKUMD_WS_LAEMP_EVO_2022-07-26_N	RG_ERCKUMD	WS	N	7/26/2022	13:30	G	7	X	X	X	X	X	X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
ALS PO VPO00847030	Robin Valleu	July 26, 2022	<i>[Signature]</i>
NO OF BOTTLES RETURNED/DESCRIPTION	Sampler's Name	Mobile #	
Regular (default)	Robin Valleu	416-970-7535	
Priority (2-3 business days) - 50% surcharge	Sampler's Signature	Date/Time	
Emergency (1 Business Day) - 100% surcharge X		July 26, 2022	
For Emergency <1 Day, ASAP or Weekend - Contact ALS			

Environmental Division
 Calgary
 Work Order Reference
CG2209854



CS



CERTIFICATE OF ANALYSIS

Work Order : **CG2209850**
Client : **Teck Coal Limited**
Contact : Mike Pope
Address : RR#1 HWY#3
Sparwood BC Canada V0B 2G1
Telephone : ----
Project : Regional Effects Program
PO : VPO00847030
C-O-C number : July 26 EVO LAEMP 2022
Sampler : ROBIN VALLEAU
Site : ----
Quote number : Teck Coal Master Quote
No. of samples received : 1
No. of samples analysed : 1

Page : 1 of 6
Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
Calgary AB Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 27-Jul-2022 08:50
Date Analysis Commenced : 27-Jul-2022
Issue Date : 28-Jul-2022 18:44

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Dwayne Bennett	Supervisor - Inorganic	Inorganics, Calgary, Alberta
Dwayne Bennett	Supervisor - Inorganic	Metals, Calgary, Alberta
Elke Tabora		Inorganics, Calgary, Alberta
Katarzyna Glinka	Analyst	Inorganics, Calgary, Alberta
Mackenzie Lamoureux	Laboratory Analyst	Metals, Calgary, Alberta
Millicent Brentnall	Laboratory Analyst	Metals, Calgary, Alberta
Parker Sgarbossa	Laboratory Analyst	Inorganics, Calgary, Alberta
Ruifang Zheng	Analyst	Inorganics, Calgary, Alberta
Shirley Li		Metals, Calgary, Alberta
Sofiya Ivanova	Lab Assistant	Inorganics, Calgary, Alberta
Vladka Stamenova	Analyst	Inorganics, Calgary, Alberta



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

<i>Unit</i>	<i>Description</i>
-	No Unit
%	percent
µg/L	micrograms per litre
µS/cm	Microsiemens per centimetre
meq/L	milliequivalents per litre
mg/L	milligrams per litre
mV	millivolts
NTU	nephelometric turbidity units
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

<i>Qualifier</i>	<i>Description</i>
DLDS	Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.
TKNI	TKN result may be biased low due to Nitrate interference. Nitrate-N is > 10x TKN.



Analytical Results

Sub-Matrix: Water					Client sample ID	RG_ERCKDT_W	---	---	---	---
(Matrix: Water)						S_LAEMP_EVO				
					Client sampling date / time	26-Jul-2022 11:30	---	---	---	---
Analyte	CAS Number	Method	LOR	Unit	CG2209850-001	-----	-----	-----	-----	-----
					Result	---	---	---	---	---
Physical Tests										
acidity (as CaCO3)	---	E283	2.0	mg/L	4.5	---	---	---	---	---
alkalinity, bicarbonate (as CaCO3)	---	E290	1.0	mg/L	457	---	---	---	---	---
alkalinity, bicarbonate (as HCO3)	71-52-3	E290	1.0	mg/L	558	---	---	---	---	---
alkalinity, carbonate (as CaCO3)	---	E290	1.0	mg/L	<1.0	---	---	---	---	---
alkalinity, carbonate (as CO3)	3812-32-6	E290	1.0	mg/L	<1.0	---	---	---	---	---
alkalinity, hydroxide (as CaCO3)	---	E290	1.0	mg/L	<1.0	---	---	---	---	---
alkalinity, hydroxide (as OH)	14280-30-9	E290	1.0	mg/L	<1.0	---	---	---	---	---
alkalinity, total (as CaCO3)	---	E290	1.0	mg/L	457	---	---	---	---	---
conductivity	---	E100	2.0	µS/cm	1820	---	---	---	---	---
hardness (as CaCO3), dissolved	---	EC100	0.50	mg/L	1220	---	---	---	---	---
oxidation-reduction potential [ORP]	---	E125	0.10	mV	466	---	---	---	---	---
pH	---	E108	0.10	pH units	7.69	---	---	---	---	---
solids, total dissolved [TDS]	---	E162	10	mg/L	1630	---	---	---	---	---
solids, total suspended [TSS]	---	E160-L	1.0	mg/L	2.1	---	---	---	---	---
turbidity	---	E121	0.10	NTU	0.11	---	---	---	---	---
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	---	---	---	---	---
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.250 ^{DLDS}	---	---	---	---	---
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	5.04	---	---	---	---	---
fluoride	16984-48-8	E235.F	0.020	mg/L	0.101	---	---	---	---	---
Kjeldahl nitrogen, total [TKN]	---	E318	0.050	mg/L	0.484 ^{TKN}	---	---	---	---	---
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	15.6	---	---	---	---	---
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0050 ^{DLDS}	---	---	---	---	---
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0188	---	---	---	---	---
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0261	---	---	---	---	---
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	752	---	---	---	---	---
Organic / Inorganic Carbon										
carbon, dissolved organic [DOC]	---	E358-L	0.50	mg/L	<0.50	---	---	---	---	---
carbon, total organic [TOC]	---	E355-L	0.50	mg/L	<0.50	---	---	---	---	---
Ion Balance										



Analytical Results

Sub-Matrix: Water					Client sample ID	RG_ERCKDT_W	----	----	----	----
(Matrix: Water)					S_LAEMP_EVO	-----	-----	-----	-----	-----
					_2022-07-26_N	-----	-----	-----	-----	-----
					Client sampling date / time	26-Jul-2022 11:30	----	----	----	----
Analyte	CAS Number	Method	LOR	Unit	CG2209850-001	-----	-----	-----	-----	-----
					Result	----	----	----	----	----
Ion Balance										
anion sum	----	EC101	0.10	meq/L	26.0	----	----	----	----	----
cation sum	----	EC101	0.10	meq/L	24.7	----	----	----	----	----
ion balance (cations/anions)	----	EC101	0.010	%	95.0	----	----	----	----	----
ion balance (APHA)	----	EC101	0.010	%	2.56	----	----	----	----	----
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0041	----	----	----	----	----
antimony, total	7440-36-0	E420	0.00010	mg/L	0.00029	----	----	----	----	----
arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00038	----	----	----	----	----
barium, total	7440-39-3	E420	0.00010	mg/L	0.0677	----	----	----	----	----
beryllium, total	7440-41-7	E420	0.020	µg/L	<0.020	----	----	----	----	----
bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	----	----	----	----	----
boron, total	7440-42-8	E420	0.010	mg/L	0.014	----	----	----	----	----
cadmium, total	7440-43-9	E420	0.0050	µg/L	0.0943	----	----	----	----	----
calcium, total	7440-70-2	E420	0.050	mg/L	242	----	----	----	----	----
chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	0.00027	----	----	----	----	----
cobalt, total	7440-48-4	E420	0.10	µg/L	0.10	----	----	----	----	----
copper, total	7440-50-8	E420	0.00050	mg/L	<0.00050	----	----	----	----	----
iron, total	7439-89-6	E420	0.010	mg/L	0.011	----	----	----	----	----
lead, total	7439-92-1	E420	0.000050	mg/L	<0.000050	----	----	----	----	----
lithium, total	7439-93-2	E420	0.0010	mg/L	0.0275	----	----	----	----	----
magnesium, total	7439-95-4	E420	0.0050	mg/L	156	----	----	----	----	----
manganese, total	7439-96-5	E420	0.00010	mg/L	0.00184	----	----	----	----	----
mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	----	----	----	----	----
molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.00122	----	----	----	----	----
nickel, total	7440-02-0	E420	0.00050	mg/L	0.00108	----	----	----	----	----
potassium, total	7440-09-7	E420	0.050	mg/L	2.82	----	----	----	----	----
selenium, total	7782-49-2	E420	0.050	µg/L	164	----	----	----	----	----
silicon, total	7440-21-3	E420	0.10	mg/L	4.34	----	----	----	----	----
silver, total	7440-22-4	E420	0.000010	mg/L	0.000182	----	----	----	----	----
sodium, total	7440-23-5	E420	0.050	mg/L	3.43	----	----	----	----	----
strontium, total	7440-24-6	E420	0.00020	mg/L	0.228	----	----	----	----	----



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKDT_W	----	----	----	----
					S_LAEMP_EVO					
					_2022-07-26_N					
					Client sampling date / time	26-Jul-2022 11:30	----	----	----	----
Analyte	CAS Number	Method	LOR	Unit	CG2209850-001	-----	-----	-----	-----	
					Result	----	----	----	----	
Total Metals										
sulfur, total	7704-34-9	E420	0.50	mg/L	219	----	----	----	----	
thallium, total	7440-28-0	E420	0.000010	mg/L	0.000012	----	----	----	----	
tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	----	----	----	----	
titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00030	----	----	----	----	
uranium, total	7440-61-1	E420	0.000010	mg/L	0.00828	----	----	----	----	
vanadium, total	7440-62-2	E420	0.00050	mg/L	0.00059	----	----	----	----	
zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	----	----	----	----	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	<0.0010	----	----	----	----	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00022	----	----	----	----	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00026	----	----	----	----	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0652	----	----	----	----	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.020	----	----	----	----	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	----	----	----	----	
boron, dissolved	7440-42-8	E421	0.010	mg/L	0.012	----	----	----	----	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.0850	----	----	----	----	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	245	----	----	----	----	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	0.00022	----	----	----	----	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	<0.10	----	----	----	----	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00020	----	----	----	----	
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	----	----	----	----	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	----	----	----	----	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0287	----	----	----	----	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	149	----	----	----	----	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00076	----	----	----	----	
mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	----	----	----	----	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00112	----	----	----	----	
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00092	----	----	----	----	
potassium, dissolved	7440-09-7	E421	0.050	mg/L	2.75	----	----	----	----	
selenium, dissolved	7782-49-2	E421	0.050	µg/L	195	----	----	----	----	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	4.07	----	----	----	----	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKDT_W S_LAEMP_EVO _2022-07-26_N	----	----	----	----
Client sampling date / time					26-Jul-2022 11:30	----	----	----	----	
Analyte	CAS Number	Method	LOR	Unit	CG2209850-001	-----	-----	-----	-----	
					Result	----	----	----	----	
Dissolved Metals										
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	----	----	----	----	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	3.31	----	----	----	----	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.233	----	----	----	----	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	183	----	----	----	----	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	----	----	----	----	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	----	----	----	----	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	----	----	----	----	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00820	----	----	----	----	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	----	----	----	----	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0020	----	----	----	----	
dissolved mercury filtration location	----	EP509	-	-	Field	----	----	----	----	
dissolved metals filtration location	----	EP421	-	-	Field	----	----	----	----	

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: CG2209850	Page	: 1 of 13
Client	: Teck Coal Limited	Laboratory	: Calgary - Environmental
Contact	: Mike Pope	Account Manager	: Lyudmyla Shvets
Address	: RR#1 HWY#3 Sparwood BC Canada V0B 2G1	Address	: 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5
Telephone	: ----	Telephone	: +1 403 407 1800
Project	: Regional Effects Program	Date Samples Received	: 27-Jul-2022 08:50
PO	: VPO00847030	Issue Date	: 28-Jul-2022 18:44
C-O-C number	: July 26 EVO LAEMP 2022		
Sampler	: ROBIN VALLEAU		
Site	: ----		
Quote number	: Teck Coal Master Quote		
No. of samples received	: 1		
No. of samples analysed	: 1		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- Matrix Spike outliers occur - please see following pages for full details.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers occur - please see following pages for full details.



Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **Water**

Analyte Group	Laboratory sample ID	Client/Ref Sample ID	Analyte	CAS Number	Method	Result	Limits	Comment
Matrix Spike (MS) Recoveries								
Total Metals	CG2209850-001	RG_ERCKDT_WS_L AEMP_EVO_2022-07 -26_N	chromium, total	7440-47-3	E420.Cr-L	263 %	70.0-130%	Recovery greater than upper data quality objective



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-07-26_N	E298	26-Jul-2022	27-Jul-2022	----	----		27-Jul-2022	28 days	1 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-07-26_N	E235.Br-L	26-Jul-2022	----	----	----		27-Jul-2022	28 days	1 days	✓
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-07-26_N	E235.Cl-L	26-Jul-2022	----	----	----		27-Jul-2022	28 days	1 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-07-26_N	E378-U	26-Jul-2022	----	----	----		27-Jul-2022	3 days	1 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-07-26_N	E235.F	26-Jul-2022	----	----	----		27-Jul-2022	28 days	1 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-07-26_N	E235.NO3-L	26-Jul-2022	----	----	----		27-Jul-2022	3 days	1 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-07-26_N	E235.NO2-L	26-Jul-2022	----	----	----		27-Jul-2022	3 days	1 days	✓



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times Rec Actual		Eval	Analysis Date	Holding Times Rec Actual		Eval	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-07-26_N	E235.SO4	26-Jul-2022	----	----	----		27-Jul-2022	28 days	1 days	✓	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-07-26_N	E318	26-Jul-2022	28-Jul-2022	----	----		28-Jul-2022	28 days	2 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-07-26_N	E372-U	26-Jul-2022	27-Jul-2022	----	----		28-Jul-2022	28 days	2 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-07-26_N	E421.Cr-L	26-Jul-2022	27-Jul-2022	----	----		27-Jul-2022	180 days	1 days	✓	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-07-26_N	E509	26-Jul-2022	28-Jul-2022	----	----		28-Jul-2022	28 days	2 days	✓	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-07-26_N	E421	26-Jul-2022	27-Jul-2022	----	----		27-Jul-2022	180 days	1 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-07-26_N	E358-L	26-Jul-2022	27-Jul-2022	----	----		27-Jul-2022	28 days	1 days	✓	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-07-26_N	E355-L	26-Jul-2022	27-Jul-2022	----	----		27-Jul-2022	28 days	1 days	✓	
Physical Tests : Acidity by Titration											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-07-26_N	E283	26-Jul-2022	----	----	----		27-Jul-2022	14 days	1 days	✓	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Alkalinity Species by Titration											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-07-26_N	E290	26-Jul-2022	----	----	----		27-Jul-2022	14 days	1 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-07-26_N	E100	26-Jul-2022	----	----	----		27-Jul-2022	28 days	1 days	✓	
Physical Tests : ORP by Electrode											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-07-26_N	E125	26-Jul-2022	----	----	----		27-Jul-2022	0.25 hrs	26 hrs	* EHTR-FM	
Physical Tests : pH by Meter											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-07-26_N	E108	26-Jul-2022	----	----	----		27-Jul-2022	0.25 hrs	29 hrs	* EHTR-FM	
Physical Tests : TDS by Gravimetry											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-07-26_N	E162	26-Jul-2022	----	----	----		27-Jul-2022	7 days	1 days	✓	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-07-26_N	E160-L	26-Jul-2022	----	----	----		27-Jul-2022	7 days	1 days	✓	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-07-26_N	E121	26-Jul-2022	----	----	----		27-Jul-2022	3 days	1 days	✓	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-07-26_N	E420.Cr-L	26-Jul-2022	----	----	----		27-Jul-2022	180 days	1 days	✓	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-07-26_N	E508	26-Jul-2022	----	----	----		28-Jul-2022	28 days	2 days	✓	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-07-26_N	E420	26-Jul-2022	----	----	----		27-Jul-2022	180 days	1 days	✓

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended

Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
Analytical Methods							
Laboratory Duplicates (DUP)							
Acidity by Titration	E283	579552	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290	579557	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	579054	1	11	9.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	579050	1	13	7.6	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	579051	1	13	7.6	5.0	✓
Conductivity in Water	E100	579556	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	578949	1	12	8.3	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	580607	1	18	5.5	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	578950	1	12	8.3	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	578844	1	13	7.6	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	578879	1	15	6.6	5.0	✓
Fluoride in Water by IC	E235.F	579048	1	13	7.6	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	579052	1	13	7.6	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	579053	1	13	7.6	5.0	✓
ORP by Electrode	E125	579063	1	11	9.0	5.0	✓
pH by Meter	E108	579555	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	579049	1	13	7.6	5.0	✓
TDS by Gravimetry	E162	579328	1	12	8.3	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	579027	1	12	8.3	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	579008	1	12	8.3	5.0	✓
Total Mercury in Water by CVAAS	E508	580605	1	19	5.2	5.0	✓
Total Metals in Water by CRC ICPMS	E420	579028	1	13	7.6	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	578845	1	13	7.6	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	578905	1	1	100.0	5.0	✓
Turbidity by Nephelometry	E121	578859	1	8	12.5	5.0	✓
Laboratory Control Samples (LCS)							
Acidity by Titration	E283	579552	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290	579557	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	579054	1	11	9.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	579050	1	13	7.6	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	579051	1	13	7.6	5.0	✓
Conductivity in Water	E100	579556	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	578949	1	12	8.3	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	580607	1	18	5.5	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	578950	1	12	8.3	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	578844	1	13	7.6	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	578879	1	15	6.6	5.0	✓



Matrix: **Water**

Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
<i>Analytical Methods</i>							
Laboratory Control Samples (LCS) - Continued							
Fluoride in Water by IC	E235.F	579048	1	13	7.6	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	579052	1	13	7.6	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	579053	1	13	7.6	5.0	✓
ORP by Electrode	E125	579063	1	11	9.0	5.0	✓
pH by Meter	E108	579555	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	579049	1	13	7.6	5.0	✓
TDS by Gravimetry	E162	579328	1	12	8.3	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	579027	1	12	8.3	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	579008	1	12	8.3	5.0	✓
Total Mercury in Water by CVAAS	E508	580605	1	19	5.2	5.0	✓
Total Metals in Water by CRC ICPMS	E420	579028	1	13	7.6	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	578845	1	13	7.6	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	578905	1	1	100.0	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	579325	1	12	8.3	5.0	✓
Turbidity by Nephelometry	E121	578859	1	8	12.5	5.0	✓
Method Blanks (MB)							
Acidity by Titration	E283	579552	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290	579557	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	579054	1	11	9.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	579050	1	13	7.6	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	579051	1	13	7.6	5.0	✓
Conductivity in Water	E100	579556	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	578949	1	12	8.3	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	580607	1	18	5.5	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	578950	1	12	8.3	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	578844	1	13	7.6	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	578879	1	15	6.6	5.0	✓
Fluoride in Water by IC	E235.F	579048	1	13	7.6	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	579052	1	13	7.6	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	579053	1	13	7.6	5.0	✓
Sulfate in Water by IC	E235.SO4	579049	1	13	7.6	5.0	✓
TDS by Gravimetry	E162	579328	1	12	8.3	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	579027	1	12	8.3	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	579008	1	12	8.3	5.0	✓
Total Mercury in Water by CVAAS	E508	580605	1	19	5.2	5.0	✓
Total Metals in Water by CRC ICPMS	E420	579028	1	13	7.6	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	578845	1	13	7.6	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	578905	1	1	100.0	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	579325	1	12	8.3	5.0	✓
Turbidity by Nephelometry	E121	578859	1	8	12.5	5.0	✓



Matrix: **Water** Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
<i>Analytical Methods</i>							
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	579054	1	11	9.0	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	579050	1	13	7.6	5.0	✔
Chloride in Water by IC (Low Level)	E235.Cl-L	579051	1	13	7.6	5.0	✔
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	578949	1	12	8.3	5.0	✔
Dissolved Mercury in Water by CVAAS	E509	580607	1	18	5.5	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	578950	1	12	8.3	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	578844	1	13	7.6	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	578879	1	15	6.6	5.0	✔
Fluoride in Water by IC	E235.F	579048	1	13	7.6	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	579052	1	13	7.6	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	579053	1	13	7.6	5.0	✔
Sulfate in Water by IC	E235.SO4	579049	1	13	7.6	5.0	✔
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	579027	1	12	8.3	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	579008	1	12	8.3	5.0	✔
Total Mercury in Water by CVAAS	E508	580605	1	19	5.2	5.0	✔
Total Metals in Water by CRC ICPMS	E420	579028	1	13	7.6	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	578845	1	13	7.6	5.0	✔
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	578905	0	1	0.0	5.0	✖



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 Calgary - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 Calgary - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 Calgary - Environmental	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
ORP by Electrode	E125 Calgary - Environmental	Water	ASTM D1498 (mod)	Oxidation reduction potential is reported as the oxidation-reduction potential of the platinum metal-reference electrode employed, measured in mV. For high accuracy test results, it is recommended that this analysis be conducted in the field.
TSS by Gravimetry (Low Level)	E160-L Calgary - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 Calgary - Environmental	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC (Low Level)	E235.Cl-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Acidity by Titration	E283 Calgary - Environmental	Water	APHA 2310 B (mod)	Acidity is determined by potentiometric titration to pH endpoint of 8.3



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Alkalinity Species by Titration	E290 Calgary - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 Calgary - Environmental	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 Calgary - Environmental	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L Calgary - Environmental	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Dissolved Organic Carbon by Combustion (Low Level)	E358-L Calgary - Environmental	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U Calgary - Environmental	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U Calgary - Environmental	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Total Metals in Water by CRC ICPMS	E420 Calgary - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L Calgary - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS.
Dissolved Metals in Water by CRC ICPMS	E421 Calgary - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L Calgary - Environmental	Water	APHA 3030 B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS
Total Mercury in Water by CVAAS	E508 Calgary - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS
Dissolved Mercury in Water by CVAAS	E509 Calgary - Environmental	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
Dissolved Hardness (Calculated)	EC100 Calgary - Environmental	Water	APHA 2340B	"Hardness (as CaCO ₃), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Ion Balance using Dissolved Metals	EC101 Calgary - Environmental	Water	APHA 1030E	Cation Sum, Anion Sum, and Ion Balance are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present. Ion Balance cannot be calculated accurately for waters with very low electrical conductivity (EC).

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 Calgary - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 Calgary - Environmental	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Preparation for Total Organic Carbon by Combustion	EP355 Calgary - Environmental	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon for Combustion	EP358 Calgary - Environmental	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Phosphorus in water	EP372 Calgary - Environmental	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Dissolved Metals Water Filtration	EP421 Calgary - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO ₃ .
Dissolved Mercury Water Filtration	EP509 Calgary - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.



QUALITY CONTROL REPORT

Work Order : **CG2209850**

Client : Teck Coal Limited
 Contact : Mike Pope
 Address : RR#1 HWY#3
 Sparwood BC Canada V0B 2G1

Telephone : ----

Project : Regional Effects Program
 PO : VPO00847030
 C-O-C number : July 26 EVO LAEMP 2022
 Sampler : ROBIN VALLEAU
 Site : ----
 Quote number : Teck Coal Master Quote
 No. of samples received : 1
 No. of samples analysed : 1

Page : 1 of 18

Laboratory : Calgary - Environmental
 Account Manager : Lyudmyla Shvets
 Address : 2559 29th Street NE
 Calgary, Alberta Canada T1Y 7B5

Telephone : +1 403 407 1800
 Date Samples Received : 27-Jul-2022 08:50
 Date Analysis Commenced : 27-Jul-2022
 Issue Date : 28-Jul-2022 18:44

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Dwayne Bennett	Supervisor - Inorganic	Calgary Inorganics, Calgary, Alberta
Dwayne Bennett	Supervisor - Inorganic	Calgary Metals, Calgary, Alberta
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Vladka Stamenova	Analyst	Calgary Inorganics, Calgary, Alberta

Page : 2 of 18
Work Order : CG2209850
Client : Teck Coal Limited
Project : Regional Effects Program



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 578859)											
CG2209792-001	Anonymous	turbidity	----	E121	0.10	NTU	0.64	0.74	0.10	Diff <2x LOR	----
Physical Tests (QC Lot: 579063)											
CG2209850-001	RG_ERCKDT_WS_LAEMP_EVO_2022-07-26_N	oxidation-reduction potential [ORP]	----	E125	0.10	mV	466	468	0.236%	15%	----
Physical Tests (QC Lot: 579328)											
CG2209834-001	Anonymous	solids, total dissolved [TDS]	----	E162	20	mg/L	827	815	1.46%	20%	----
Physical Tests (QC Lot: 579552)											
CG2209834-001	Anonymous	acidity (as CaCO ₃)	----	E283	2.0	mg/L	<2.0	<2.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 579555)											
CG2209834-001	Anonymous	pH	----	E108	0.10	pH units	7.19	7.26	0.969%	4%	----
Physical Tests (QC Lot: 579556)											
CG2209834-001	Anonymous	conductivity	----	E100	2.0	µS/cm	1060	1050	0.474%	10%	----
Physical Tests (QC Lot: 579557)											
CG2209834-001	Anonymous	alkalinity, bicarbonate (as CaCO ₃)	----	E290	1.0	mg/L	106	102	3.37%	20%	----
		alkalinity, carbonate (as CaCO ₃)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, hydroxide (as CaCO ₃)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, total (as CaCO ₃)	----	E290	1.0	mg/L	106	102	3.37%	20%	----
Anions and Nutrients (QC Lot: 578879)											
CG2209838-008	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0070	0.0069	0.0001	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 578905)											
CG2209850-001	RG_ERCKDT_WS_LAEMP_EVO_2022-07-26_N	phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0261	0.0255	2.34%	20%	----
Anions and Nutrients (QC Lot: 579008)											
CG2209850-001	RG_ERCKDT_WS_LAEMP_EVO_2022-07-26_N	Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	0.484	0.458	0.025	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 579048)											
CG2209845-010	Anonymous	fluoride	16984-48-8	E235.F	0.100	mg/L	0.542	0.532	0.010	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 579049)											
CG2209845-010	Anonymous	sulfate (as SO ₄)	14808-79-8	E235.SO4	1.50	mg/L	1560	1560	0.317%	20%	----
Anions and Nutrients (QC Lot: 579050)											
CG2209845-010	Anonymous	bromide	24959-67-9	E235.Br-L	0.250	mg/L	<0.250	<0.250	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 579051)											
CG2209845-010	Anonymous	chloride	16887-00-6	E235.Cl-L	0.50	mg/L	4.26	4.26	0.006	Diff <2x LOR	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 579052)											
CG2209845-010	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	0.0250	mg/L	5.72	5.71	0.201%	20%	----
Anions and Nutrients (QC Lot: 579053)											
CG2209845-010	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.0050	mg/L	0.0244	0.0238	0.0006	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 579054)											
CG2209850-001	RG_ERCKDT_WS_LAEMP_EVO_2022-07-26_N	ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 578844)											
CG2209834-001	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	1.01	1.33	0.32	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 578845)											
CG2209834-001	Anonymous	carbon, total organic [TOC]	----	E355-L	0.50	mg/L	1.49	1.34	0.15	Diff <2x LOR	----
Total Metals (QC Lot: 579027)											
CG2209834-001	Anonymous	chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	0.00014	0.00014	0.000002	Diff <2x LOR	----
Total Metals (QC Lot: 579028)											
CG2209834-001	Anonymous	aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0438	0.0402	8.42%	20%	----
		antimony, total	7440-36-0	E420	0.00010	mg/L	0.00396	0.00413	4.28%	20%	----
		arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00057	0.00055	0.00002	Diff <2x LOR	----
		barium, total	7440-39-3	E420	0.00010	mg/L	0.0913	0.0903	1.11%	20%	----
		beryllium, total	7440-41-7	E420	0.000020	mg/L	<0.020 µg/L	<0.000020	0	Diff <2x LOR	----
		bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, total	7440-42-8	E420	0.010	mg/L	0.057	0.059	0.002	Diff <2x LOR	----
		cadmium, total	7440-43-9	E420	0.0000050	mg/L	0.205 µg/L	0.000198	3.47%	20%	----
		calcium, total	7440-70-2	E420	0.050	mg/L	138	141	1.70%	20%	----
		cobalt, total	7440-48-4	E420	0.00010	mg/L	1.40 µg/L	0.00136	3.34%	20%	----
		copper, total	7440-50-8	E420	0.00050	mg/L	0.00076	0.00076	0.000002	Diff <2x LOR	----
		iron, total	7439-89-6	E420	0.010	mg/L	0.063	0.062	0.0010	Diff <2x LOR	----
		lead, total	7439-92-1	E420	0.000050	mg/L	0.000128	0.000127	0.000001	Diff <2x LOR	----
		lithium, total	7439-93-2	E420	0.0010	mg/L	0.0494	0.0495	0.364%	20%	----
		magnesium, total	7439-95-4	E420	0.0050	mg/L	41.6	40.9	1.81%	20%	----
		manganese, total	7439-96-5	E420	0.00010	mg/L	0.104	0.103	0.318%	20%	----
		molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.0166	0.0172	3.99%	20%	----
		nickel, total	7440-02-0	E420	0.00050	mg/L	0.00521	0.00525	0.822%	20%	----
		potassium, total	7440-09-7	E420	0.050	mg/L	6.65	6.59	0.981%	20%	----
		selenium, total	7782-49-2	E420	0.000050	mg/L	18.2 µg/L	0.0182	0.494%	20%	----
		silicon, total	7440-21-3	E420	0.10	mg/L	2.21	2.20	0.236%	20%	----
		silver, total	7440-22-4	E420	0.000010	mg/L	0.000012	<0.000010	0.000002	Diff <2x LOR	----
		sodium, total	7440-23-5	E420	0.050	mg/L	15.3	15.2	1.03%	20%	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (QC Lot: 579028) - continued											
CG2209834-001	Anonymous	strontium, total	7440-24-6	E420	0.00020	mg/L	0.781	0.799	2.31%	20%	----
		sulfur, total	7704-34-9	E420	0.50	mg/L	125	126	0.693%	20%	----
		thallium, total	7440-28-0	E420	0.000010	mg/L	0.000029	0.000027	0.000002	Diff <2x LOR	----
		tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, total	7440-32-6	E420	0.00030	mg/L	0.00058	0.00058	0.000001	Diff <2x LOR	----
		uranium, total	7440-61-1	E420	0.000010	mg/L	0.00300	0.00301	0.266%	20%	----
		vanadium, total	7440-62-2	E420	0.00050	mg/L	0.00102	0.00101	0.00001	Diff <2x LOR	----
		zinc, total	7440-66-6	E420	0.0030	mg/L	0.0082	0.0079	0.0003	Diff <2x LOR	----
Total Metals (QC Lot: 580605)											
CG2209792-001	Anonymous	mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 578949)											
CG2209834-001	Anonymous	chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 578950)											
CG2209834-001	Anonymous	aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0140	0.0138	1.23%	20%	----
		antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00427	0.00418	2.25%	20%	----
		arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00043	0.00040	0.00003	Diff <2x LOR	----
		barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0900	0.0883	1.96%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.000020	mg/L	<0.020 µg/L	<0.000020	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.010	mg/L	0.053	0.050	0.003	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	0.168 µg/L	0.000162	3.54%	20%	----
		calcium, dissolved	7440-70-2	E421	0.050	mg/L	143	138	3.58%	20%	----
		cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	1.25 µg/L	0.00124	0.591%	20%	----
		copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00032	0.00030	0.00001	Diff <2x LOR	----
		iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0543	0.0538	0.921%	20%	----
		magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	39.2	39.2	0.126%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.0671	0.0672	0.148%	20%	----
		molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.0170	0.0166	2.36%	20%	----
		nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00463	0.00471	0.00008	Diff <2x LOR	----
		potassium, dissolved	7440-09-7	E421	0.050	mg/L	6.50	6.48	0.394%	20%	----
		selenium, dissolved	7782-49-2	E421	0.000050	mg/L	19.7 µg/L	0.0192	2.45%	20%	----
		silicon, dissolved	7440-21-3	E421	0.050	mg/L	2.12	2.08	1.58%	20%	----
		silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 578950) - continued											
CG2209834-001	Anonymous	sodium, dissolved	7440-23-5	E421	0.050	mg/L	15.0	14.9	0.270%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.836	0.834	0.220%	20%	----
		sulfur, dissolved	7704-34-9	E421	0.50	mg/L	114	110	4.26%	20%	----
		thallium, dissolved	7440-28-0	E421	0.000010	mg/L	0.000027	0.000022	0.000004	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00337	0.00331	1.63%	20%	----
		vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0060	0.0062	0.0001	Diff <2x LOR	----
Dissolved Metals (QC Lot: 580607)											
CG2209792-001	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 578859)						
turbidity	----	E121	0.1	NTU	<0.10	----
Physical Tests (QCLot: 579325)						
solids, total suspended [TSS]	----	E160-L	1	mg/L	<1.0	----
Physical Tests (QCLot: 579328)						
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 579552)						
acidity (as CaCO3)	----	E283	2	mg/L	<2.0	----
Physical Tests (QCLot: 579556)						
conductivity	----	E100	1	µS/cm	<1.0	----
Physical Tests (QCLot: 579557)						
alkalinity, bicarbonate (as CaCO3)	----	E290	1	mg/L	1.2	----
alkalinity, carbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, hydroxide (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, total (as CaCO3)	----	E290	1	mg/L	1.2	----
Anions and Nutrients (QCLot: 578879)						
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 578905)						
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 579008)						
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 579048)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 579049)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 579050)						
bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 579051)						
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	----
Anions and Nutrients (QCLot: 579052)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 579053)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 579054)						



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 579054) - continued						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	---
Organic / Inorganic Carbon (QCLot: 578844)						
carbon, dissolved organic [DOC]	---	E358-L	0.5	mg/L	<0.50	---
Organic / Inorganic Carbon (QCLot: 578845)						
carbon, total organic [TOC]	---	E355-L	0.5	mg/L	<0.50	---
Total Metals (QCLot: 579027)						
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	<0.00010	---
Total Metals (QCLot: 579028)						
aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	---
antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	---
arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	---
barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	---
beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	---
bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	---
boron, total	7440-42-8	E420	0.01	mg/L	<0.010	---
cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	---
calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	---
cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	---
copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	---
iron, total	7439-89-6	E420	0.01	mg/L	<0.010	---
lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	---
lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	---
magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	---
manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	---
molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	---
nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	---
potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	---
selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	---
silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	---
silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	---
sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	---
strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	---
sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	---
thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	---
tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	---
titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	---



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 579028) - continued						
uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	---
vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	---
zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	---
Total Metals (QCLot: 580605)						
mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	---
Dissolved Metals (QCLot: 578949)						
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	<0.00010	---
Dissolved Metals (QCLot: 578950)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	---
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	---
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	---
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	---
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	---
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	---
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	---
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	---
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	---
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	---
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	---
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	---
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	---
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	---
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	---
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	---
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	---
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	---
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	---
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	---
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	---
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	---
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	---
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	---
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	---
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	---
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	---
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	---



Sub-Matrix: **Water**

<i>Analyte</i>	<i>CAS Number</i>	<i>Method</i>	<i>LOR</i>	<i>Unit</i>	<i>Result</i>	<i>Qualifier</i>
Dissolved Metals (QCLot: 578950) - continued						
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
Dissolved Metals (QCLot: 580607)						
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Physical Tests (QCLot: 578859)									
turbidity	----	E121	0.1	NTU	200 NTU	99.0	85.0	115	----
Physical Tests (QCLot: 579063)									
oxidation-reduction potential [ORP]	----	E125	----	mV	220 mV	97.2	95.4	104	----
Physical Tests (QCLot: 579325)									
solids, total suspended [TSS]	----	E160-L	1	mg/L	150 mg/L	102	85.0	115	----
Physical Tests (QCLot: 579328)									
solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	101	85.0	115	----
Physical Tests (QCLot: 579552)									
acidity (as CaCO ₃)	----	E283	2	mg/L	50 mg/L	106	85.0	115	----
Physical Tests (QCLot: 579555)									
pH	----	E108	----	pH units	7 pH units	100	98.6	101	----
Physical Tests (QCLot: 579556)									
conductivity	----	E100	1	µS/cm	146.9 µS/cm	102	90.0	110	----
Physical Tests (QCLot: 579557)									
alkalinity, total (as CaCO ₃)	----	E290	1	mg/L	500 mg/L	106	85.0	115	----
Anions and Nutrients (QCLot: 578879)									
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.02 mg/L	103	80.0	120	----
Anions and Nutrients (QCLot: 578905)									
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	8.02 mg/L	106	80.0	120	----
Anions and Nutrients (QCLot: 579008)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 579048)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	90.2	90.0	110	----
Anions and Nutrients (QCLot: 579049)									
sulfate (as SO ₄)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	106	90.0	110	----
Anions and Nutrients (QCLot: 579050)									
bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	91.1	85.0	115	----
Anions and Nutrients (QCLot: 579051)									
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	98.8	90.0	110	----
Anions and Nutrients (QCLot: 579052)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	99.4	90.0	110	----
Anions and Nutrients (QCLot: 579053)									



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Anions and Nutrients (QCLot: 579053) - continued									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 579054)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	103	85.0	115	----
Organic / Inorganic Carbon (QCLot: 578844)									
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	83.8	80.0	120	----
Organic / Inorganic Carbon (QCLot: 578845)									
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	91.5	80.0	120	----
Total Metals (QCLot: 579027)									
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	0.25 mg/L	97.2	80.0	120	----
Total Metals (QCLot: 579028)									
aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	100	80.0	120	----
antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	99.5	80.0	120	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	92.0	80.0	120	----
barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	98.3	80.0	120	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	95.2	80.0	120	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	97.0	80.0	120	----
boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	100	80.0	120	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	97.9	80.0	120	----
calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	95.3	80.0	120	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	95.2	80.0	120	----
copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	94.3	80.0	120	----
iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	108	80.0	120	----
lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	98.3	80.0	120	----
lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	96.1	80.0	120	----
magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	96.6	80.0	120	----
manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	98.4	80.0	120	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	98.3	80.0	120	----
nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	95.5	80.0	120	----
potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	97.2	80.0	120	----
selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	95.7	80.0	120	----
silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	104	60.0	140	----
silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	92.2	80.0	120	----
sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	99.7	80.0	120	----
strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	98.4	80.0	120	----
sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	98.9	80.0	120	----



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Total Metals (QCLot: 579028) - continued									
thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	101	80.0	120	----
tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	99.0	80.0	120	----
titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	96.8	80.0	120	----
uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	98.2	80.0	120	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	97.7	80.0	120	----
zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	93.2	80.0	120	----
Total Metals (QCLot: 580605)									
mercury, total	7439-97-6	E508	0.000005	mg/L	0.0001 mg/L	111	80.0	120	----
Dissolved Metals (QCLot: 578949)									
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	0.25 mg/L	101	80.0	120	----
Dissolved Metals (QCLot: 578950)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	102	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	101	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	97.6	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	99.5	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	104	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	99.3	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	96.4	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	99.9	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	98.0	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	99.9	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	98.1	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	113	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	101	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	105	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	98.0	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	99.3	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	101	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	97.2	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	102	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	98.2	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	102	60.0	140	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	97.4	80.0	120	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	102	80.0	120	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	104	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	97.3	80.0	120	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike Concentration	Recovery (%)	Recovery Limits (%)		Qualifier
					LCS	Low	High		
Dissolved Metals (QCLot: 578950) - continued									
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	101	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	100	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	97.3	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	99.7	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	100	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	95.4	80.0	120	----
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	88.3	80.0	120	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 578879)										
CG2209838-009	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0523 mg/L	0.05 mg/L	104	70.0	130	----
Anions and Nutrients (QCLot: 579008)										
CG2209854-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.40 mg/L	2.5 mg/L	96.0	70.0	130	----
Anions and Nutrients (QCLot: 579048)										
CG2209847-001	Anonymous	fluoride	16984-48-8	E235.F	0.876 mg/L	1 mg/L	87.6	75.0	125	----
Anions and Nutrients (QCLot: 579049)										
CG2209847-001	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	ND mg/L	100 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 579050)										
CG2209847-001	Anonymous	bromide	24959-67-9	E235.Br-L	0.476 mg/L	0.5 mg/L	95.3	75.0	125	----
Anions and Nutrients (QCLot: 579051)										
CG2209847-001	Anonymous	chloride	16887-00-6	E235.Cl-L	99.5 mg/L	100 mg/L	99.5	75.0	125	----
Anions and Nutrients (QCLot: 579052)										
CG2209847-001	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	2.39 mg/L	2.5 mg/L	95.5	75.0	125	----
Anions and Nutrients (QCLot: 579053)										
CG2209847-001	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	ND mg/L	0.5 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 579054)										
CG2209854-001	Anonymous	ammonia, total (as N)	7664-41-7	E298	ND mg/L	0.1 mg/L	ND	75.0	125	----
Organic / Inorganic Carbon (QCLot: 578844)										
CG2209834-001	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	5.00 mg/L	5 mg/L	100.0	70.0	130	----
Organic / Inorganic Carbon (QCLot: 578845)										
CG2209834-001	Anonymous	carbon, total organic [TOC]	----	E355-L	5.35 mg/L	5 mg/L	107	70.0	130	----
Total Metals (QCLot: 579027)										
CG2209850-001	RG_ERCKDT_WS_LAEMP_EVO_2022-07-26_N	chromium, total	7440-47-3	E420.Cr-L	1.05 mg/L	0.4 mg/L	263	70.0	130	----
Total Metals (QCLot: 579028)										
CG2209839-002	Anonymous	aluminum, total	7429-90-5	E420	2.08 mg/L	2 mg/L	104	70.0	130	----
		antimony, total	7440-36-0	E420	0.199 mg/L	0.2 mg/L	99.7	70.0	130	----
		arsenic, total	7440-38-2	E420	0.201 mg/L	0.2 mg/L	100	70.0	130	----
		barium, total	7440-39-3	E420	0.200 mg/L	0.2 mg/L	99.9	70.0	130	----



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 579028) - continued										
CG2209839-002	Anonymous	beryllium, total	7440-41-7	E420	0.397 mg/L	0.4 mg/L	99.2	70.0	130	----
		bismuth, total	7440-69-9	E420	0.0951 mg/L	0.1 mg/L	95.1	70.0	130	----
		boron, total	7440-42-8	E420	0.956 mg/L	1 mg/L	95.6	70.0	130	----
		cadmium, total	7440-43-9	E420	0.0405 mg/L	0.04 mg/L	101	70.0	130	----
		calcium, total	7440-70-2	E420	ND mg/L	40 mg/L	ND	70.0	130	----
		cobalt, total	7440-48-4	E420	0.202 mg/L	0.2 mg/L	101	70.0	130	----
		copper, total	7440-50-8	E420	0.201 mg/L	0.2 mg/L	100	70.0	130	----
		iron, total	7439-89-6	E420	20.5 mg/L	20 mg/L	102	70.0	130	----
		lead, total	7439-92-1	E420	0.193 mg/L	0.2 mg/L	96.6	70.0	130	----
		lithium, total	7439-93-2	E420	1.02 mg/L	1 mg/L	102	70.0	130	----
		magnesium, total	7439-95-4	E420	ND mg/L	10 mg/L	ND	70.0	130	----
		manganese, total	7439-96-5	E420	0.204 mg/L	0.2 mg/L	102	70.0	130	----
		molybdenum, total	7439-98-7	E420	0.199 mg/L	0.2 mg/L	99.3	70.0	130	----
		nickel, total	7440-02-0	E420	0.406 mg/L	0.4 mg/L	102	70.0	130	----
		potassium, total	7440-09-7	E420	42.0 mg/L	40 mg/L	105	70.0	130	----
		selenium, total	7782-49-2	E420	0.408 mg/L	0.4 mg/L	102	70.0	130	----
		silicon, total	7440-21-3	E420	101 mg/L	100 mg/L	101	70.0	130	----
		silver, total	7440-22-4	E420	0.0419 mg/L	0.04 mg/L	105	70.0	130	----
		sodium, total	7440-23-5	E420	ND mg/L	20 mg/L	ND	70.0	130	----
		strontium, total	7440-24-6	E420	ND mg/L	0.2 mg/L	ND	70.0	130	----
		sulfur, total	7704-34-9	E420	210 mg/L	200 mg/L	105	70.0	130	----
		thallium, total	7440-28-0	E420	0.0383 mg/L	0.04 mg/L	95.7	70.0	130	----
		tin, total	7440-31-5	E420	0.198 mg/L	0.2 mg/L	99.0	70.0	130	----
		titanium, total	7440-32-6	E420	0.422 mg/L	0.4 mg/L	106	70.0	130	----
		uranium, total	7440-61-1	E420	0.0387 mg/L	0.04 mg/L	96.8	70.0	130	----
		vanadium, total	7440-62-2	E420	1.04 mg/L	1 mg/L	104	70.0	130	----
		zinc, total	7440-66-6	E420	4.14 mg/L	4 mg/L	103	70.0	130	----
Total Metals (QCLot: 580605)										
CG2209792-002	Anonymous	mercury, total	7439-97-6	E508	0.0000994 mg/L	0.0001 mg/L	99.4	70.0	130	----
Dissolved Metals (QCLot: 578949)										
CG2209850-001	RG_ERCKDT_WS_LAEMP_EVO_2022-07-26_N	chromium, dissolved	7440-47-3	E421.Cr-L	0.390 mg/L	0.4 mg/L	97.4	70.0	130	----
Dissolved Metals (QCLot: 578950)										
CG2209850-001	RG_ERCKDT_WS_LAEMP_EVO_2022-07-26_N	aluminum, dissolved	7429-90-5	E421	2.01 mg/L	2 mg/L	100	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.200 mg/L	0.2 mg/L	100	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.193 mg/L	0.2 mg/L	96.6	70.0	130	----



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 578950) - continued										
CG2209850-001	RG_ERCKDT_WS_LAEMP_EVO_2022-07-26_N	barium, dissolved	7440-39-3	E421	0.187 mg/L	0.2 mg/L	93.7	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.391 mg/L	0.4 mg/L	97.8	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.0930 mg/L	0.1 mg/L	93.0	70.0	130	----
		boron, dissolved	7440-42-8	E421	1.04 mg/L	1 mg/L	104	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.0396 mg/L	0.04 mg/L	99.0	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	40 mg/L	ND	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.195 mg/L	0.2 mg/L	97.3	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.193 mg/L	0.2 mg/L	96.5	70.0	130	----
		iron, dissolved	7439-89-6	E421	19.7 mg/L	20 mg/L	98.7	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.189 mg/L	0.2 mg/L	94.4	70.0	130	----
		lithium, dissolved	7439-93-2	E421	1.02 mg/L	1 mg/L	102	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	10 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E421	0.196 mg/L	0.2 mg/L	98.1	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.204 mg/L	0.2 mg/L	102	70.0	130	----
		nickel, dissolved	7440-02-0	E421	0.385 mg/L	0.4 mg/L	96.2	70.0	130	----
		potassium, dissolved	7440-09-7	E421	39.9 mg/L	40 mg/L	99.7	70.0	130	----
		selenium, dissolved	7782-49-2	E421	0.353 mg/L	0.4 mg/L	88.4	70.0	130	----
		silicon, dissolved	7440-21-3	E421	99.9 mg/L	100 mg/L	99.9	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.0428 mg/L	0.04 mg/L	107	70.0	130	----
		sodium, dissolved	7440-23-5	E421	19.5 mg/L	20 mg/L	97.4	70.0	130	----
		strontium, dissolved	7440-24-6	E421	ND mg/L	0.2 mg/L	ND	70.0	130	----
sulfur, dissolved	7704-34-9	E421	260 mg/L	200 mg/L	130	70.0	130	----		
thallium, dissolved	7440-28-0	E421	0.0371 mg/L	0.04 mg/L	92.7	70.0	130	----		
tin, dissolved	7440-31-5	E421	0.198 mg/L	0.2 mg/L	99.0	70.0	130	----		
titanium, dissolved	7440-32-6	E421	0.408 mg/L	0.4 mg/L	102	70.0	130	----		
uranium, dissolved	7440-61-1	E421	0.0375 mg/L	0.04 mg/L	93.7	70.0	130	----		
vanadium, dissolved	7440-62-2	E421	0.968 mg/L	1 mg/L	96.8	70.0	130	----		
zinc, dissolved	7440-66-6	E421	3.92 mg/L	4 mg/L	97.9	70.0	130	----		
Dissolved Metals (QCLot: 580607)										
CG2209792-002	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000755 mg/L	0.0001 mg/L	75.5	70.0	130	----



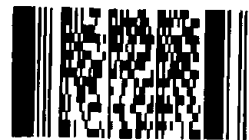
COC ID:	July 26 EVO LAEMP 2022	TURNAROUND TIME:	RUSH
Facility Name / Job#	Regional effects program	Lab Name	ALS Calgary
Project Manager	Mike Pope	Lab Contact	Lyudmyla Shvets
Email	mpope@teck.com	Email	lyudmyla.shvets@alsglobal.com
Address	421 Pine Avenue	Address	2359 29 Street NE
City	Sparwood	City	Calgary
Postal Code	V0B 2G0	Postal Code	T1Y 7B5
Phone Number	343-333-3905	Phone Number	1 403 407 1794

SAMPLE DETAILS								ANALYSIS REQUESTED						
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	TECKCOAL-ROUTINE-VA	ALS_Package-DOC	ALS_Package-TKN/TOC	HG-T-U-CYAF-VA	HG-D-CYAF-VA	TECKCOAL-MET-T-VA	TECKCOAL-MET-D-VA
RG_ERCKDT_WS_LAEMP_EVO_2022-07-26_N	RG_ERCK DT	WS	N	7/26/2022	11:30	G	7	X	X	X	X	X	X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
ALS PO VPO00847030	Robin Valleau	July 26, 2022	<i>[Signature]</i>

NB OF BOTTLES RETURNED/DESCRIPTION	Regular (default)	Priority (2-3 business days) - 50% surcharge	Emergency (1 Business Day) - 100% surcharge <input checked="" type="checkbox"/>	For Emergency <1 Day, ASAP or Weekend - Contact ALS
Sampler's Name	Robin Valleau	Mobile #	416-970-7535	
Sampler's Signature		Date/Time	July 26, 2022	

Environmental Division
 Calgary
 Work Order Reference
CG2209850



[Handwritten notes and signatures]

CERTIFICATE OF ANALYSIS

Work Order : **CG2210004**
Client : **Teck Coal Limited**
Contact : Mike Pope
Address : RR#1 HWY#3
 Sparwood BC Canada V0B 2G1
Telephone : ----
Project : Regional Effects Program
PO : VPO00847030
C-O-C number : JULY 28 EVO LAEMP 2022
Sampler : BB
Site : ----
Quote number : Teck Coal Master Quote
No. of samples received : 11
No. of samples analysed : 11

Page : 1 of 14
Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
 Calgary AB Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 29-Jul-2022 08:45
Date Analysis Commenced : 29-Jul-2022
Issue Date : 31-Jul-2022 17:33

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Anthony Calero	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Anthony Calero	Team Leader - Inorganics	Metals, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Kevin Baxter		Metals, Calgary, Alberta
Mackenzie Lamoureux	Laboratory Analyst	Metals, Calgary, Alberta
Sofiya Ivanova	Lab Assistant	Inorganics, Calgary, Alberta



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
 LOR: Limit of Reporting (detection limit).

<i>Unit</i>	<i>Description</i>
-	No Unit
%	percent
µg/L	micrograms per litre
µS/cm	Microsiemens per centimetre
meq/L	milliequivalents per litre
mg/L	milligrams per litre
mV	millivolts
NTU	nephelometric turbidity units
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

<i>Qualifier</i>	<i>Description</i>
DLDS	Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
RRV	Reported result verified by repeat analysis.
TKNI	TKN result may be biased low due to Nitrate interference. Nitrate-N is > 10x TKN.



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKUC_W S_LAEMP_EVO _2022-07-27_N	RG_ERCK_WS_ LAEMP_EVO_2 022-07-27_N	RG_MI3_WS_L AEMP_EVO_20 22-07-27_N	RG_MIDER_WS _LAEMP_EVO_ 2022-07-27_N	RG_RIVER_WS _LAEMP_EVO_ 2022-07-27_N
Client sampling date / time					27-Jul-2022 08:30	27-Jul-2022 10:00	27-Jul-2022 12:30	27-Jul-2022 11:00	27-Jul-2022 08:30	
Analyte	CAS Number	Method	LOR	Unit	CG2210004-001	CG2210004-002	CG2210004-003	CG2210004-004	CG2210004-005	
					Result	Result	Result	Result	Result	
Physical Tests										
acidity (as CaCO3)	----	E283	2.0	mg/L	6.9	6.2	<2.0	<2.0	7.6	
alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	331	336	134	131	343	
alkalinity, bicarbonate (as HCO3)	71-52-3	E290	1.0	mg/L	404	409	163	160	418	
alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	11.0	<1.0	11.8	13.0	<1.0	
alkalinity, carbonate (as CO3)	3812-32-6	E290	1.0	mg/L	6.6	<1.0	7.1	7.8	<1.0	
alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
alkalinity, hydroxide (as OH)	14280-30-9	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	342	336	146	144	343	
conductivity	----	E100	2.0	µS/cm	1680	1670	305	340	1680	
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	1190	1170	168	185	1180	
oxidation-reduction potential [ORP]	----	E125	0.10	mV	413	408	352	346	355	
pH	----	E108	0.10	pH units	8.32	8.28	8.51	8.50	8.28	
solids, total dissolved [TDS]	----	E162	10	mg/L	1460	1460	192	211	1460	
solids, total suspended [TSS]	----	E160-L	1.0	mg/L	1.6	1.9	1.1	2.1	1.1	
turbidity	----	E121	0.10	NTU	0.10	0.33	0.67	1.53	0.18	
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.050	<0.050	<0.250 ^{DLDS}	
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	4.99	5.12	0.77	0.69	5.16	
fluoride	16984-48-8	E235.F	0.020	mg/L	0.109	0.110	0.171	0.154	0.118	
Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	0.597 ^{TKNI}	<0.500 ^{DLM,TKNI}	<0.500 ^{DLM}	<0.500 ^{DLM}	1.14 ^{TKNI}	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	15.1	15.3	0.0141	0.0335	15.5	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	<0.0010	<0.0010	<0.0050 ^{DLDS}	
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0018	0.0015	<0.0010	<0.0010	0.0016	
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0042	0.0042	0.0054	0.0052	0.0053	
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	708	717	29.2	50.8	722	
Organic / Inorganic Carbon										
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	0.86	0.67	0.79	1.03	0.76	
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	0.75	0.66	1.10	0.96	0.65	
Ion Balance										



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

Client sample ID

					RG_ERCKUC_W S_LAEMP_EVO _2022-07-27_N	RG_ERCK_WS_ LAEMP_EVO_2 022-07-27_N	RG_MI3_WS_L AEMP_EVO_20 22-07-27_N	RG_MIDER_WS _LAEMP_EVO_ 2022-07-27_N	RG_RIVER_WS _LAEMP_EVO_ 2022-07-27_N
					27-Jul-2022 08:30	27-Jul-2022 10:00	27-Jul-2022 12:30	27-Jul-2022 11:00	27-Jul-2022 08:30
Analyte	CAS Number	Method	LOR	Unit	CG2210004-001	CG2210004-002	CG2210004-003	CG2210004-004	CG2210004-005
					Result	Result	Result	Result	Result
Ion Balance									
anion sum	----	EC101	0.10	meq/L	22.8	22.9	3.56	3.96	23.1
cation sum	----	EC101	0.10	meq/L	24.1	23.5	3.46	3.86	23.8
ion balance (cations/anions)	----	EC101	0.010	%	106	103	97.2	97.5	103
ion balance (APHA)	----	EC101	0.010	%	2.77	1.29	1.42	1.28	1.49
Total Metals									
aluminum, total	7429-90-5	E420	0.0030	mg/L	<0.0030	<0.0030	0.0123	0.0110	<0.0030
antimony, total	7440-36-0	E420	0.00010	mg/L	0.00022	0.00022	<0.00010	<0.00010	0.00021
arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00032	0.00034	0.00020	0.00025	0.00035
barium, total	7440-39-3	E420	0.00010	mg/L	0.0494	0.0489	0.0712	0.0884	0.0498
beryllium, total	7440-41-7	E420	0.020	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020
bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
boron, total	7440-42-8	E420	0.010	mg/L	0.013	0.013	<0.010	0.011	0.014
cadmium, total	7440-43-9	E420	0.0050	µg/L	0.0070	0.0060	0.0170	0.0220	0.0060
calcium, total	7440-70-2	E420	0.050	mg/L	207	202	42.0	45.5	206
chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	0.00021	0.00021	0.00023	0.00020	0.00021
cobalt, total	7440-48-4	E420	0.10	µg/L	<0.10	<0.10	<0.10	<0.10	<0.10
copper, total	7440-50-8	E420	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
iron, total	7439-89-6	E420	0.010	mg/L	<0.010	<0.010	0.016	0.016	<0.010
lead, total	7439-92-1	E420	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
lithium, total	7439-93-2	E420	0.0010	mg/L	0.0254	0.0244	0.0046	0.0059	0.0252
magnesium, total	7439-95-4	E420	0.0050	mg/L	143	142	12.6	14.7	144
manganese, total	7439-96-5	E420	0.00010	mg/L	0.00018	0.00021	0.00158	0.00178	0.00016
mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.00120	0.00122	0.000663	0.000721	0.00121
nickel, total	7440-02-0	E420	0.00050	mg/L	0.00219	0.00217	0.00060	0.00127	0.00214
potassium, total	7440-09-7	E420	0.050	mg/L	2.63	2.60	0.486	0.634	2.64
selenium, total	7782-49-2	E420	0.050	µg/L	162	161	0.912	1.43	163
silicon, total	7440-21-3	E420	0.10	mg/L	4.30	4.27	2.11	1.98	4.31
silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
sodium, total	7440-23-5	E420	0.050	mg/L	3.19	3.16	2.19	3.12	3.22
strontium, total	7440-24-6	E420	0.00020	mg/L	0.205	0.200	0.121	0.143	0.205



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKUC_W S_LAEMP_EVO _2022-07-27_N	RG_ERCK_WS_ LAEMP_EVO_2 022-07-27_N	RG_MI3_WS_L AEMP_EVO_20 22-07-27_N	RG_MIDER_WS _LAEMP_EVO_ 2022-07-27_N	RG_RIVER_WS _LAEMP_EVO_ 2022-07-27_N
Client sampling date / time					27-Jul-2022 08:30	27-Jul-2022 10:00	27-Jul-2022 12:30	27-Jul-2022 11:00	27-Jul-2022 08:30	
Analyte	CAS Number	Method	LOR	Unit	CG2210004-001	CG2210004-002	CG2210004-003	CG2210004-004	CG2210004-005	
					Result	Result	Result	Result	Result	
Total Metals										
sulfur, total	7704-34-9	E420	0.50	mg/L	209	206	10.8	18.5	210	
thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	
uranium, total	7440-61-1	E420	0.000010	mg/L	0.00783	0.00771	0.000624	0.000693	0.00785	
vanadium, total	7440-62-2	E420	0.00050	mg/L	0.00050	0.00052	0.00053	0.00057	0.00052	
zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	<0.0010	<0.0010	0.0016	0.0013	<0.0010	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00022	0.00022	<0.00010	<0.00010	0.00022	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00027	0.00026	0.00017	0.00021	0.00031	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0500	0.0497	0.0730	0.0880	0.0504	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
boron, dissolved	7440-42-8	E421	0.010	mg/L	0.010	0.010	<0.010	<0.010	0.011	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	<0.0050	<0.0050	0.0113	0.0207	<0.0050	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	226	220	45.4	48.5	221	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	0.00015	0.00026	0.00020	0.00013	0.00015	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	<0.10	<0.10	<0.10	<0.10	<0.10	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0253	0.0249	0.0040	0.0051	0.0251	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	153	150	13.2	15.6	153	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00018	0.00029	0.00082	0.00100	0.00022	
mercury, dissolved	7439-97-6	E509	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00117	0.00124	0.000709	0.000708	0.00123	
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00213	0.00226	0.00058	0.00116	0.00216	
potassium, dissolved	7440-09-7	E421	0.050	mg/L	2.76	2.70	0.475	0.637	2.71	
selenium, dissolved	7782-49-2	E421	0.050	µg/L	189	197	1.13	1.74	197	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	4.13	3.93	1.98	1.93	3.96	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKUC_W S_LAEMP_EVO _2022-07-27_N	RG_ERCK_WS_ LAEMP_EVO_2 022-07-27_N	RG_MI3_WS_L AEMP_EVO_20 22-07-27_N	RG_MIDER_WS _LAEMP_EVO_ 2022-07-27_N	RG_RIVER_WS _LAEMP_EVO_ 2022-07-27_N
Client sampling date / time					27-Jul-2022 08:30	27-Jul-2022 10:00	27-Jul-2022 12:30	27-Jul-2022 11:00	27-Jul-2022 08:30	
Analyte	CAS Number	Method	LOR	Unit	CG2210004-001	CG2210004-002	CG2210004-003	CG2210004-004	CG2210004-005	
					Result	Result	Result	Result	Result	
Dissolved Metals										
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	3.31	3.26	2.18	3.19	3.26	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.209	0.208	0.122	0.142	0.210	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	278	272	11.2	20.0	274	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00769	0.00772	0.000609	0.000660	0.00751	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
dissolved mercury filtration location	----	EP509	-	-	Field	Field	Field	Field	Field	
dissolved metals filtration location	----	EP421	-	-	Field	Field	Field	Field	Field	

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID				
					RG_MI25_WS_ LAEMP_EVO_2 022-07-27_N	RG_ALUSM_W S_LAEMP_EVO _2022-07-27_N	RG_TRIP_WS_L AEMP_EVO_20 22-07-27_N	RG_TRIP_WS_L AEMP_EVO_20 22-07-27_N	RG_FBLANK_W S_LAEMP_EVO _2022-07-27_N
Client sampling date / time					27-Jul-2022 14:00	27-Jul-2022 15:30	27-Jul-2022 16:00	27-Jul-2022 17:00	27-Jul-2022 16:00
Analyte	CAS Number	Method	LOR	Unit	CG2210004-006	CG2210004-007	CG2210004-008	CG2210004-009	CG2210004-010
					Result	Result	Result	Result	Result
Physical Tests									
acidity (as CaCO3)	----	E283	2.0	mg/L	<2.0	<2.0	<2.0	<2.0	<2.0
alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	127	134	<1.0	<1.0	<1.0
alkalinity, bicarbonate (as HCO3)	71-52-3	E290	1.0	mg/L	155	163	<1.0	<1.0	<1.0
alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	8.2	10.4	<1.0	<1.0	<1.0
alkalinity, carbonate (as CO3)	3812-32-6	E290	1.0	mg/L	4.9	6.2	<1.0	<1.0	<1.0
alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0
alkalinity, hydroxide (as OH)	14280-30-9	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	136	144	<1.0	<1.0	<1.0
conductivity	----	E100	2.0	µS/cm	254	273	<2.0	<2.0	<2.0
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	139	152	<0.50	<0.50	<0.50
oxidation-reduction potential [ORP]	----	E125	0.10	mV	402	399	500	538	536
pH	----	E108	0.10	pH units	8.43	8.47	5.45	5.31	5.41
solids, total dissolved [TDS]	----	E162	10	mg/L	155	156	<10	<10	<10
solids, total suspended [TSS]	----	E160-L	1.0	mg/L	<1.0	5.9	<1.0	<1.0	<1.0
turbidity	----	E121	0.10	NTU	0.41	1.59	<0.10	<0.10	<0.10
Anions and Nutrients									
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	0.0161 ^{RRV}	0.0268 ^{RRV}	<0.0050
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	0.25	0.64	<0.10	<0.10	<0.10
fluoride	16984-48-8	E235.F	0.020	mg/L	0.073	0.174	<0.020	<0.020	<0.020
Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	<0.500 ^{DLM}	<0.500 ^{DLM}	<0.050	<0.050	<0.050
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.0133	0.0150	<0.0050	<0.0050	<0.0050
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0023	<0.0010	<0.0010	<0.0010	<0.0010
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0064	0.0068	<0.0020	<0.0020	<0.0020
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	12.8	12.2	<0.30	<0.30	<0.30
Organic / Inorganic Carbon									
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	0.80	0.91	<0.50	<0.50	<0.50
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	0.98	0.76	<0.50	<0.50	<0.50
Ion Balance									
anion sum	----	EC101	0.10	meq/L	3.00	3.16	<0.10	<0.10	<0.10



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_MI25_WS_ LAEMP_EVO_2 022-07-27_N	RG_ALUSM_W S_LAEMP_EVO _2022-07-27_N	RG_TRIP_WS_L AEMP_EVO_20 22-07-27_N	RG_TRIP_WS_L AEMP_EVO_20 22-07-27_N	RG_FBLANK_W S_LAEMP_EVO _2022-07-27_N
Client sampling date / time					27-Jul-2022 14:00	27-Jul-2022 15:30	27-Jul-2022 16:00	27-Jul-2022 17:00	27-Jul-2022 16:00	
Analyte	CAS Number	Method	LOR	Unit	CG2210004-006	CG2210004-007	CG2210004-008	CG2210004-009	CG2210004-010	
					Result	Result	Result	Result	Result	
Ion Balance										
cation sum	----	EC101	0.10	meq/L	2.90	3.10	<0.10	<0.10	<0.10	
ion balance (cations/anions)	----	EC101	0.010	%	96.7	98.1	100	100	100	
ion balance (APHA)	----	EC101	0.010	%	1.69	0.958	<0.010	<0.010	<0.010	
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0100	0.0127	<0.0030	<0.0030	<0.0030	
antimony, total	7440-36-0	E420	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00028	0.00018	<0.00010	<0.00010	<0.00010	
barium, total	7440-39-3	E420	0.00010	mg/L	0.0454	0.0589	<0.00010	<0.00010	<0.00010	
beryllium, total	7440-41-7	E420	0.020	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	
bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
boron, total	7440-42-8	E420	0.010	mg/L	0.016	<0.010	<0.010	<0.010	<0.010	
cadmium, total	7440-43-9	E420	0.0050	µg/L	0.0150	0.0100	<0.0050	<0.0050	<0.0050	
calcium, total	7440-70-2	E420	0.050	mg/L	34.5	39.0	<0.050	<0.050	<0.050	
chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	0.00032	0.00024	<0.00010	<0.00010	<0.00010	
cobalt, total	7440-48-4	E420	0.10	µg/L	<0.10	<0.10	<0.10	<0.10	<0.10	
copper, total	7440-50-8	E420	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
iron, total	7439-89-6	E420	0.010	mg/L	<0.010	0.022	<0.010	<0.010	<0.010	
lead, total	7439-92-1	E420	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
lithium, total	7439-93-2	E420	0.0010	mg/L	0.0049	0.0034	<0.0010	<0.0010	<0.0010	
magnesium, total	7439-95-4	E420	0.0050	mg/L	10.2	10.9	<0.0050	<0.0050	<0.0050	
manganese, total	7439-96-5	E420	0.00010	mg/L	0.00054	0.00234	<0.00010	<0.00010	<0.00010	
mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.000837	0.000590	<0.000050	<0.000050	<0.000050	
nickel, total	7440-02-0	E420	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
potassium, total	7440-09-7	E420	0.050	mg/L	0.500	0.366	<0.050	<0.050	<0.050	
selenium, total	7782-49-2	E420	0.050	µg/L	0.233	0.532	<0.050	<0.050	<0.050	
silicon, total	7440-21-3	E420	0.10	mg/L	2.43	2.18	<0.10	<0.10	<0.10	
silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
sodium, total	7440-23-5	E420	0.050	mg/L	2.31	1.33	<0.050	<0.050	<0.050	
strontium, total	7440-24-6	E420	0.00020	mg/L	0.136	0.0994	<0.00020	<0.00020	<0.00020	
sulfur, total	7704-34-9	E420	0.50	mg/L	4.69	4.67	<0.50	<0.50	<0.50	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_MI25_WS_LAEMP_EVO_2022-07-27_N	RG_ALUSM_WS_LAEMP_EVO_2022-07-27_N	RG_TRIP_WS_LAEMP_EVO_2022-07-27_N	RG_TRIP_WS_LAEMP_EVO_2022-07-27_N	RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N
Client sampling date / time					27-Jul-2022 14:00	27-Jul-2022 15:30	27-Jul-2022 16:00	27-Jul-2022 17:00	27-Jul-2022 16:00	
Analyte	CAS Number	Method	LOR	Unit	CG2210004-006	CG2210004-007	CG2210004-008	CG2210004-009	CG2210004-010	
					Result	Result	Result	Result	Result	
Total Metals										
thallium, total	7440-28-0	E420	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	
uranium, total	7440-61-1	E420	0.00010	mg/L	0.000224	0.000540	<0.00010	<0.00010	<0.00010	
vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	0.00052	<0.00050	<0.00050	<0.00050	
zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0038	0.0014	<0.0010	<0.0010	<0.0010	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00027	0.00013	<0.00010	<0.00010	<0.00010	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0472	0.0607	<0.00010	<0.00010	0.00012 ^{RRV}	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
boron, dissolved	7440-42-8	E421	0.010	mg/L	0.015	<0.010	<0.010	<0.010	<0.010	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.0089	<0.0050	<0.0050	<0.0050	<0.0050	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	37.5	41.2	<0.050	<0.050	<0.050	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	0.00032	0.00038	<0.00010	<0.00010	<0.00010	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	<0.10	<0.10	<0.10	<0.10	<0.10	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00027	<0.00020	<0.00020	<0.00020	<0.00020	
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0045	0.0029	<0.0010	<0.0010	<0.0010	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	11.1	11.9	<0.0050	<0.0050	<0.0050	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00029	0.00106	<0.00010	<0.00010	0.00014 ^{RRV}	
mercury, dissolved	7439-97-6	E509	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.000846	0.000613	<0.000050	<0.000050	<0.000050	
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
potassium, dissolved	7440-09-7	E421	0.050	mg/L	0.521	0.379	<0.050	<0.050	<0.050	
selenium, dissolved	7782-49-2	E421	0.050	µg/L	0.328	0.690	<0.050	<0.050	<0.050	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	2.33	2.09	<0.050	<0.050	<0.050	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_MI25_WS_ LAEMP_EVO_2 022-07-27_N	RG_ALUSM_W S_LAEMP_EVO _2022-07-27_N	RG_TRIP_WS_L AEMP_EVO_20 22-07-27_N	RG_TRIP_WS_L AEMP_EVO_20 22-07-27_N	RG_FBLANK_W S_LAEMP_EVO _2022-07-27_N
Client sampling date / time					27-Jul-2022 14:00	27-Jul-2022 15:30	27-Jul-2022 16:00	27-Jul-2022 17:00	27-Jul-2022 16:00	
Analyte	CAS Number	Method	LOR	Unit	CG2210004-006	CG2210004-007	CG2210004-008	CG2210004-009	CG2210004-010	
					Result	Result	Result	Result	Result	
Dissolved Metals										
sodium, dissolved	7440-23-5	E421	0.050	mg/L	2.38	1.38	<0.050	<0.050	<0.050	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.140	0.0992	<0.00020	<0.00020	<0.00020	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	4.68	4.52	<0.50	<0.50	<0.50	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.000221	0.000499	<0.000010	<0.000010	<0.000010	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
dissolved mercury filtration location	----	EP509	-	-	Field	Field	Field	Field	Field	
dissolved metals filtration location	----	EP421	-	-	Field	Field	Field	Field	Field	

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Water					Client sample ID	RG_FBLANK_W	---	---	---	---
(Matrix: Water)					S_LAEMP_EVO	---	---	---	---	---
					_2022-07-27_N	---	---	---	---	---
					Client sampling date / time	27-Jul-2022 17:00	---	---	---	---
Analyte	CAS Number	Method	LOR	Unit	CG2210004-011	-----	-----	-----	-----	-----
					Result	---	---	---	---	---
Physical Tests										
acidity (as CaCO3)	----	E283	2.0	mg/L	<2.0	----	----	----	----	----
alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	----	----	----	----	----
alkalinity, bicarbonate (as HCO3)	71-52-3	E290	1.0	mg/L	<1.0	----	----	----	----	----
alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	----	----	----	----	----
alkalinity, carbonate (as CO3)	3812-32-6	E290	1.0	mg/L	<1.0	----	----	----	----	----
alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	----	----	----	----	----
alkalinity, hydroxide (as OH)	14280-30-9	E290	1.0	mg/L	<1.0	----	----	----	----	----
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	<1.0	----	----	----	----	----
conductivity	----	E100	2.0	µS/cm	<2.0	----	----	----	----	----
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	<0.50	----	----	----	----	----
oxidation-reduction potential [ORP]	----	E125	0.10	mV	547	----	----	----	----	----
pH	----	E108	0.10	pH units	5.24	----	----	----	----	----
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----	----	----	----	----
solids, total suspended [TSS]	----	E160-L	1.0	mg/L	<1.0	----	----	----	----	----
turbidity	----	E121	0.10	NTU	<0.10	----	----	----	----	----
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	----	----	----	----	----
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	----	----	----	----	----
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	<0.10	----	----	----	----	----
fluoride	16984-48-8	E235.F	0.020	mg/L	<0.020	----	----	----	----	----
Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	<0.050	----	----	----	----	----
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	<0.0050	----	----	----	----	----
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	----	----	----	----	----
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	----	----	----	----	----
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	<0.0020	----	----	----	----	----
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	<0.30	----	----	----	----	----
Organic / Inorganic Carbon										
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	<0.50	----	----	----	----	----
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	<0.50	----	----	----	----	----
Ion Balance										
anion sum	----	EC101	0.10	meq/L	<0.10	----	----	----	----	----



Analytical Results

Sub-Matrix: Water					Client sample ID	RG_FBLANK_W	---	---	---	---
(Matrix: Water)					S_LAEMP_EVO	---	---	---	---	---
					_2022-07-27_N	---	---	---	---	---
					Client sampling date / time	27-Jul-2022 17:00	---	---	---	---
Analyte	CAS Number	Method	LOR	Unit	CG2210004-011	-----	-----	-----	-----	-----
					Result	---	---	---	---	---
Ion Balance										
cation sum	---	EC101	0.10	meq/L	<0.10	---	---	---	---	---
ion balance (cations/anions)	---	EC101	0.010	%	100	---	---	---	---	---
ion balance (APHA)	---	EC101	0.010	%	<0.010	---	---	---	---	---
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L	<0.0030	---	---	---	---	---
antimony, total	7440-36-0	E420	0.00010	mg/L	<0.00010	---	---	---	---	---
arsenic, total	7440-38-2	E420	0.00010	mg/L	<0.00010	---	---	---	---	---
barium, total	7440-39-3	E420	0.00010	mg/L	<0.00010	---	---	---	---	---
beryllium, total	7440-41-7	E420	0.020	µg/L	<0.020	---	---	---	---	---
bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	---	---	---	---	---
boron, total	7440-42-8	E420	0.010	mg/L	<0.010	---	---	---	---	---
cadmium, total	7440-43-9	E420	0.0050	µg/L	<0.0050	---	---	---	---	---
calcium, total	7440-70-2	E420	0.050	mg/L	<0.050	---	---	---	---	---
chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	<0.00010	---	---	---	---	---
cobalt, total	7440-48-4	E420	0.10	µg/L	<0.10	---	---	---	---	---
copper, total	7440-50-8	E420	0.00050	mg/L	<0.00050	---	---	---	---	---
iron, total	7439-89-6	E420	0.010	mg/L	<0.010	---	---	---	---	---
lead, total	7439-92-1	E420	0.000050	mg/L	<0.000050	---	---	---	---	---
lithium, total	7439-93-2	E420	0.0010	mg/L	<0.0010	---	---	---	---	---
magnesium, total	7439-95-4	E420	0.0050	mg/L	<0.0050	---	---	---	---	---
manganese, total	7439-96-5	E420	0.00010	mg/L	<0.00010	---	---	---	---	---
mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	---	---	---	---	---
molybdenum, total	7439-98-7	E420	0.000050	mg/L	<0.000050	---	---	---	---	---
nickel, total	7440-02-0	E420	0.00050	mg/L	<0.00050	---	---	---	---	---
potassium, total	7440-09-7	E420	0.050	mg/L	<0.050	---	---	---	---	---
selenium, total	7782-49-2	E420	0.050	µg/L	<0.050	---	---	---	---	---
silicon, total	7440-21-3	E420	0.10	mg/L	<0.10	---	---	---	---	---
silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	---	---	---	---	---
sodium, total	7440-23-5	E420	0.050	mg/L	<0.050	---	---	---	---	---
strontium, total	7440-24-6	E420	0.00020	mg/L	<0.00020	---	---	---	---	---
sulfur, total	7704-34-9	E420	0.50	mg/L	<0.50	---	---	---	---	---



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_FBLANK_W S_LAEMP_EVO _2022-07-27_N	----	----	----	----
Client sampling date / time					27-Jul-2022 17:00	----	----	----	----	
Analyte	CAS Number	Method	LOR	Unit	CG2210004-011	-----	-----	-----	-----	
					Result	----	----	----	----	
Total Metals										
thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	----	----	----	----	
tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	----	----	----	----	
titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00030	----	----	----	----	
uranium, total	7440-61-1	E420	0.000010	mg/L	<0.000010	----	----	----	----	
vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	----	----	----	----	
zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	----	----	----	----	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	<0.0010	----	----	----	----	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00010	----	----	----	----	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	<0.00010	----	----	----	----	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	<0.00010	----	----	----	----	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.020	----	----	----	----	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	----	----	----	----	
boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.010	----	----	----	----	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	<0.0050	----	----	----	----	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	<0.050	----	----	----	----	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00010	----	----	----	----	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	<0.10	----	----	----	----	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00020	----	----	----	----	
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	----	----	----	----	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	----	----	----	----	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	<0.0010	----	----	----	----	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	<0.0050	----	----	----	----	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	<0.00010	----	----	----	----	
mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	----	----	----	----	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	<0.000050	----	----	----	----	
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	<0.00050	----	----	----	----	
potassium, dissolved	7440-09-7	E421	0.050	mg/L	<0.050	----	----	----	----	
selenium, dissolved	7782-49-2	E421	0.050	µg/L	<0.050	----	----	----	----	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	<0.050	----	----	----	----	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	----	----	----	----	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_FBLANK_W S_LAEMP_EVO _2022-07-27_N	----	----	----	----
Client sampling date / time					27-Jul-2022 17:00	----	----	----	----	
Analyte	CAS Number	Method	LOR	Unit	CG2210004-011	-----	-----	-----	-----	
					Result	----	----	----	----	
Dissolved Metals										
sodium, dissolved	7440-23-5	E421	0.050	mg/L	<0.050	----	----	----	----	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	<0.00020	----	----	----	----	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	<0.50	----	----	----	----	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	----	----	----	----	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	----	----	----	----	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	----	----	----	----	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	<0.000010	----	----	----	----	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	----	----	----	----	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0010	----	----	----	----	
dissolved mercury filtration location	----	EP509	-	-	Field	----	----	----	----	
dissolved metals filtration location	----	EP421	-	-	Field	----	----	----	----	

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: CG2210004	Page	: 1 of 35
Client	: Teck Coal Limited	Laboratory	: Calgary - Environmental
Contact	: Mike Pope	Account Manager	: Lyudmyla Shvets
Address	: RR#1 HWY#3 Sparwood BC Canada V0B 2G1	Address	: 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5
Telephone	: ----	Telephone	: +1 403 407 1800
Project	: Regional Effects Program	Date Samples Received	: 29-Jul-2022 08:45
PO	: VPO00847030	Issue Date	: 31-Jul-2022 17:33
C-O-C number	: JULY 28 EVO LAEMP 2022		
Sampler	: BB		
Site	: ----		
Quote number	: Teck Coal Master Quote		
No. of samples received	: 11		
No. of samples analysed	: 11		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_ALUSM_WS_LAEMP_EVO_2022-07-27_N	E298	27-Jul-2022	29-Jul-2022	----	----		29-Jul-2022	28 days	2 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_ERCKUC_WS_LAEMP_EVO_2022-07-27_N	E298	27-Jul-2022	29-Jul-2022	----	----		29-Jul-2022	28 days	2 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N, RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N	E298	27-Jul-2022	29-Jul-2022	----	----		29-Jul-2022	28 days	2 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_MI25_WS_LAEMP_EVO_2022-07-27_N	E298	27-Jul-2022	29-Jul-2022	----	----		29-Jul-2022	28 days	2 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_MI3_WS_LAEMP_EVO_2022-07-27_N	E298	27-Jul-2022	29-Jul-2022	----	----		29-Jul-2022	28 days	2 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_MIDER_WS_LAEMP_EVO_2022-07-27_N	E298	27-Jul-2022	29-Jul-2022	----	----		29-Jul-2022	28 days	2 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-07-27_N	E298	27-Jul-2022	29-Jul-2022	----	----		29-Jul-2022	28 days	2 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec Actual		Eval	Analysis Date	Holding Times Rec Actual		Eval
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_TRIP_WS_LAEMP_EVO_2022-07-27_N, RG_TRIP_WS_LAEMP_EVO_2022-07-27_N	E298	27-Jul-2022	29-Jul-2022	----	----		29-Jul-2022	28 days	2 days	✔
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (lab preserved) RG_ERCK_WS_LAEMP_EVO_2022-07-27_N	E298	27-Jul-2022	29-Jul-2022	3 days	2 days	✔	29-Jul-2022	28 days	0 days	✔
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-07-27_N	E235.Br-L	27-Jul-2022	----	----	----		29-Jul-2022	28 days	2 days	✔
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCK_WS_LAEMP_EVO_2022-07-27_N	E235.Br-L	27-Jul-2022	----	----	----		29-Jul-2022	28 days	2 days	✔
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-07-27_N	E235.Br-L	27-Jul-2022	----	----	----		29-Jul-2022	28 days	2 days	✔
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N, RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N	E235.Br-L	27-Jul-2022	----	----	----		29-Jul-2022	28 days	2 days	✔
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_MI25_WS_LAEMP_EVO_2022-07-27_N	E235.Br-L	27-Jul-2022	----	----	----		29-Jul-2022	28 days	2 days	✔
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_MI3_WS_LAEMP_EVO_2022-07-27_N	E235.Br-L	27-Jul-2022	----	----	----		29-Jul-2022	28 days	2 days	✔
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_MIDER_WS_LAEMP_EVO_2022-07-27_N	E235.Br-L	27-Jul-2022	----	----	----		29-Jul-2022	28 days	2 days	✔



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-07-27_N	E235.Br-L	27-Jul-2022	----	----	----		29-Jul-2022	28 days	2 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-07-27_N, RG_TRIP_WS_LAEMP_EVO_2022-07-27_N	E235.Br-L	27-Jul-2022	----	----	----		29-Jul-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-07-27_N	E235.Cl-L	27-Jul-2022	----	----	----		29-Jul-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-07-27_N	E235.Cl-L	27-Jul-2022	----	----	----		29-Jul-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-07-27_N	E235.Cl-L	27-Jul-2022	----	----	----		29-Jul-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N, RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N	E235.Cl-L	27-Jul-2022	----	----	----		29-Jul-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_MI25_WS_LAEMP_EVO_2022-07-27_N	E235.Cl-L	27-Jul-2022	----	----	----		29-Jul-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_MI3_WS_LAEMP_EVO_2022-07-27_N	E235.Cl-L	27-Jul-2022	----	----	----		29-Jul-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-07-27_N	E235.Cl-L	27-Jul-2022	----	----	----		29-Jul-2022	28 days	2 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
Rec	Actual	Rec		Actual							
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-07-27_N	E235.CI-L	27-Jul-2022	----	----	----		29-Jul-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-07-27_N, RG_TRIP_WS_LAEMP_EVO_2022-07-27_N	E235.CI-L	27-Jul-2022	----	----	----		29-Jul-2022	28 days	2 days	✔	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-07-27_N	E378-U	27-Jul-2022	----	----	----		29-Jul-2022	3 days	2 days	✔	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-07-27_N	E378-U	27-Jul-2022	----	----	----		29-Jul-2022	3 days	2 days	✔	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-07-27_N	E378-U	27-Jul-2022	----	----	----		29-Jul-2022	3 days	2 days	✔	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N, RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N	E378-U	27-Jul-2022	----	----	----		29-Jul-2022	3 days	2 days	✔	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_MI25_WS_LAEMP_EVO_2022-07-27_N	E378-U	27-Jul-2022	----	----	----		29-Jul-2022	3 days	2 days	✔	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_MI3_WS_LAEMP_EVO_2022-07-27_N	E378-U	27-Jul-2022	----	----	----		29-Jul-2022	3 days	2 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-07-27_N	E378-U	27-Jul-2022	----	----	----		29-Jul-2022	3 days	2 days	✓	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-07-27_N	E378-U	27-Jul-2022	----	----	----		29-Jul-2022	3 days	2 days	✓	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-07-27_N, RG_TRIP_WS_LAEMP_EVO_2022-07-27_N	E378-U	27-Jul-2022	----	----	----		29-Jul-2022	3 days	2 days	✓	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-07-27_N	E235.F	27-Jul-2022	----	----	----		29-Jul-2022	28 days	2 days	✓	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-07-27_N	E235.F	27-Jul-2022	----	----	----		29-Jul-2022	28 days	2 days	✓	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-07-27_N	E235.F	27-Jul-2022	----	----	----		29-Jul-2022	28 days	2 days	✓	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N, RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N	E235.F	27-Jul-2022	----	----	----		29-Jul-2022	28 days	2 days	✓	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_MI25_WS_LAEMP_EVO_2022-07-27_N	E235.F	27-Jul-2022	----	----	----		29-Jul-2022	28 days	2 days	✓	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_MI3_WS_LAEMP_EVO_2022-07-27_N	E235.F	27-Jul-2022	----	----	----		29-Jul-2022	28 days	2 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-07-27_N	E235.F	27-Jul-2022	----	----	----		29-Jul-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-07-27_N	E235.F	27-Jul-2022	----	----	----		29-Jul-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-07-27_N, RG_TRIP_WS_LAEMP_EVO_2022-07-27_N	E235.F	27-Jul-2022	----	----	----		29-Jul-2022	28 days	2 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-07-27_N	E235.NO3-L	27-Jul-2022	----	----	----		29-Jul-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-07-27_N	E235.NO3-L	27-Jul-2022	----	----	----		29-Jul-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-07-27_N	E235.NO3-L	27-Jul-2022	----	----	----		29-Jul-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N, RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N	E235.NO3-L	27-Jul-2022	----	----	----		29-Jul-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_MI25_WS_LAEMP_EVO_2022-07-27_N	E235.NO3-L	27-Jul-2022	----	----	----		29-Jul-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_MI3_WS_LAEMP_EVO_2022-07-27_N	E235.NO3-L	27-Jul-2022	----	----	----		29-Jul-2022	3 days	2 days	✔	



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-07-27_N	E235.NO3-L	27-Jul-2022	----	----	----		29-Jul-2022	3 days	2 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-07-27_N	E235.NO3-L	27-Jul-2022	----	----	----		29-Jul-2022	3 days	2 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-07-27_N, RG_TRIP_WS_LAEMP_EVO_2022-07-27_N	E235.NO3-L	27-Jul-2022	----	----	----		29-Jul-2022	3 days	2 days	✓	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-07-27_N	E235.NO2-L	27-Jul-2022	----	----	----		29-Jul-2022	3 days	2 days	✓	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-07-27_N	E235.NO2-L	27-Jul-2022	----	----	----		29-Jul-2022	3 days	2 days	✓	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-07-27_N	E235.NO2-L	27-Jul-2022	----	----	----		29-Jul-2022	3 days	2 days	✓	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N, RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N	E235.NO2-L	27-Jul-2022	----	----	----		29-Jul-2022	3 days	2 days	✓	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_MI25_WS_LAEMP_EVO_2022-07-27_N	E235.NO2-L	27-Jul-2022	----	----	----		29-Jul-2022	3 days	2 days	✓	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_MI3_WS_LAEMP_EVO_2022-07-27_N	E235.NO2-L	27-Jul-2022	----	----	----		29-Jul-2022	3 days	2 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-07-27_N	E235.NO2-L	27-Jul-2022	----	----	----		29-Jul-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-07-27_N	E235.NO2-L	27-Jul-2022	----	----	----		29-Jul-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-07-27_N, RG_TRIP_WS_LAEMP_EVO_2022-07-27_N	E235.NO2-L	27-Jul-2022	----	----	----		29-Jul-2022	3 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-07-27_N	E235.SO4	27-Jul-2022	----	----	----		29-Jul-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-07-27_N	E235.SO4	27-Jul-2022	----	----	----		29-Jul-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-07-27_N	E235.SO4	27-Jul-2022	----	----	----		29-Jul-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N, RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N	E235.SO4	27-Jul-2022	----	----	----		29-Jul-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_MI25_WS_LAEMP_EVO_2022-07-27_N	E235.SO4	27-Jul-2022	----	----	----		29-Jul-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_MI3_WS_LAEMP_EVO_2022-07-27_N	E235.SO4	27-Jul-2022	----	----	----		29-Jul-2022	28 days	2 days	✔	



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
Rec	Actual	Rec		Actual							
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-07-27_N	E235.SO4	27-Jul-2022	----	----	----		29-Jul-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-07-27_N	E235.SO4	27-Jul-2022	----	----	----		29-Jul-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-07-27_N, RG_TRIP_WS_LAEMP_EVO_2022-07-27_N	E235.SO4	27-Jul-2022	----	----	----		29-Jul-2022	28 days	2 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_ALUSM_WS_LAEMP_EVO_2022-07-27_N	E318	27-Jul-2022	30-Jul-2022	----	----		30-Jul-2022	28 days	3 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKUC_WS_LAEMP_EVO_2022-07-27_N	E318	27-Jul-2022	30-Jul-2022	----	----		30-Jul-2022	28 days	3 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N, RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N	E318	27-Jul-2022	30-Jul-2022	----	----		30-Jul-2022	28 days	3 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_MI25_WS_LAEMP_EVO_2022-07-27_N	E318	27-Jul-2022	30-Jul-2022	----	----		30-Jul-2022	28 days	3 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_MI3_WS_LAEMP_EVO_2022-07-27_N	E318	27-Jul-2022	30-Jul-2022	----	----		30-Jul-2022	28 days	3 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_MIDER_WS_LAEMP_EVO_2022-07-27_N	E318	27-Jul-2022	30-Jul-2022	----	----		30-Jul-2022	28 days	3 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-07-27_N	E318	27-Jul-2022	30-Jul-2022	----	----		30-Jul-2022	28 days	3 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_TRIP_WS_LAEMP_EVO_2022-07-27_N, RG_TRIP_WS_LAEMP_EVO_2022-07-27_N	E318	27-Jul-2022	30-Jul-2022	----	----		30-Jul-2022	28 days	3 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (lab preserved) RG_ERCK_WS_LAEMP_EVO_2022-07-27_N	E318	27-Jul-2022	30-Jul-2022	3 days	3 days	✔	30-Jul-2022	28 days	0 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_ALUSM_WS_LAEMP_EVO_2022-07-27_N	E372-U	27-Jul-2022	29-Jul-2022	----	----		30-Jul-2022	28 days	3 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_ERCKUC_WS_LAEMP_EVO_2022-07-27_N	E372-U	27-Jul-2022	29-Jul-2022	----	----		30-Jul-2022	28 days	3 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N, RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N	E372-U	27-Jul-2022	29-Jul-2022	----	----		30-Jul-2022	28 days	3 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_MI25_WS_LAEMP_EVO_2022-07-27_N	E372-U	27-Jul-2022	29-Jul-2022	----	----		30-Jul-2022	28 days	3 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_MI3_WS_LAEMP_EVO_2022-07-27_N	E372-U	27-Jul-2022	29-Jul-2022	----	----		30-Jul-2022	28 days	3 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_MIDER_WS_LAEMP_EVO_2022-07-27_N	E372-U	27-Jul-2022	29-Jul-2022	----	----		30-Jul-2022	28 days	3 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-07-27_N	E372-U	27-Jul-2022	29-Jul-2022	----	----		30-Jul-2022	28 days	3 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_TRIP_WS_LAEMP_EVO_2022-07-27_N, RG_TRIP_WS_LAEMP_EVO_2022-07-27_N	E372-U	27-Jul-2022	29-Jul-2022	----	----		30-Jul-2022	28 days	3 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (lab preserved) RG_ERCK_WS_LAEMP_EVO_2022-07-27_N	E372-U	27-Jul-2022	29-Jul-2022	3 days	2 days	✔	30-Jul-2022	28 days	1 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_ALUSM_WS_LAEMP_EVO_2022-07-27_N	E421.Cr-L	27-Jul-2022	29-Jul-2022	----	----		29-Jul-2022	180 days	2 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_ERCK_WS_LAEMP_EVO_2022-07-27_N	E421.Cr-L	27-Jul-2022	29-Jul-2022	----	----		29-Jul-2022	180 days	2 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_ERCKUC_WS_LAEMP_EVO_2022-07-27_N	E421.Cr-L	27-Jul-2022	29-Jul-2022	----	----		29-Jul-2022	180 days	2 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N, RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N	E421.Cr-L	27-Jul-2022	29-Jul-2022	----	----		29-Jul-2022	180 days	2 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_MI25_WS_LAEMP_EVO_2022-07-27_N	E421.Cr-L	27-Jul-2022	29-Jul-2022	----	----		29-Jul-2022	180 days	2 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_MI3_WS_LAEMP_EVO_2022-07-27_N	E421.Cr-L	27-Jul-2022	29-Jul-2022	----	----		29-Jul-2022	180 days	2 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_MIDER_WS_LAEMP_EVO_2022-07-27_N	E421.Cr-L	27-Jul-2022	29-Jul-2022	----	----		29-Jul-2022	180 days	2 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_RIVER_WS_LAEMP_EVO_2022-07-27_N	E421.Cr-L	27-Jul-2022	29-Jul-2022	----	----		29-Jul-2022	180 days	2 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_TRIP_WS_LAEMP_EVO_2022-07-27_N, RG_TRIP_WS_LAEMP_EVO_2022-07-27_N	E421.Cr-L	27-Jul-2022	29-Jul-2022	----	----		29-Jul-2022	180 days	2 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_ALUSM_WS_LAEMP_EVO_2022-07-27_N	E509	27-Jul-2022	29-Jul-2022	----	----		29-Jul-2022	28 days	2 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_ERCK_WS_LAEMP_EVO_2022-07-27_N	E509	27-Jul-2022	29-Jul-2022	----	----		29-Jul-2022	28 days	2 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_ERCKUC_WS_LAEMP_EVO_2022-07-27_N	E509	27-Jul-2022	29-Jul-2022	----	----		29-Jul-2022	28 days	2 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N, RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N	E509	27-Jul-2022	29-Jul-2022	----	----		29-Jul-2022	28 days	2 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_MI25_WS_LAEMP_EVO_2022-07-27_N	E509	27-Jul-2022	29-Jul-2022	----	----		29-Jul-2022	28 days	2 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_MI3_WS_LAEMP_EVO_2022-07-27_N	E509	27-Jul-2022	29-Jul-2022	----	----		29-Jul-2022	28 days	2 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_MIDER_WS_LAEMP_EVO_2022-07-27_N	E509	27-Jul-2022	29-Jul-2022	----	----		29-Jul-2022	28 days	2 days	✓	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_RIVER_WS_LAEMP_EVO_2022-07-27_N	E509	27-Jul-2022	29-Jul-2022	----	----		29-Jul-2022	28 days	2 days	✓	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_TRIP_WS_LAEMP_EVO_2022-07-27_N, RG_TRIP_WS_LAEMP_EVO_2022-07-27_N	E509	27-Jul-2022	29-Jul-2022	----	----		29-Jul-2022	28 days	2 days	✓	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_ALUSM_WS_LAEMP_EVO_2022-07-27_N	E421	27-Jul-2022	29-Jul-2022	----	----		29-Jul-2022	180 days	2 days	✓	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_ERCK_WS_LAEMP_EVO_2022-07-27_N	E421	27-Jul-2022	29-Jul-2022	----	----		29-Jul-2022	180 days	2 days	✓	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_ERCKUC_WS_LAEMP_EVO_2022-07-27_N	E421	27-Jul-2022	29-Jul-2022	----	----		29-Jul-2022	180 days	2 days	✓	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N, RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N	E421	27-Jul-2022	29-Jul-2022	----	----		29-Jul-2022	180 days	2 days	✓	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_MI25_WS_LAEMP_EVO_2022-07-27_N	E421	27-Jul-2022	29-Jul-2022	----	----		29-Jul-2022	180 days	2 days	✓	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_MI3_WS_LAEMP_EVO_2022-07-27_N	E421	27-Jul-2022	29-Jul-2022	----	----		29-Jul-2022	180 days	2 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_MIDER_WS_LAEMP_EVO_2022-07-27_N	E421	27-Jul-2022	29-Jul-2022	----	----		29-Jul-2022	180 days	2 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_RIVER_WS_LAEMP_EVO_2022-07-27_N	E421	27-Jul-2022	29-Jul-2022	----	----		29-Jul-2022	180 days	2 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_TRIP_WS_LAEMP_EVO_2022-07-27_N, RG_TRIP_WS_LAEMP_EVO_2022-07-27_N	E421	27-Jul-2022	29-Jul-2022	----	----		29-Jul-2022	180 days	2 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_ALUSM_WS_LAEMP_EVO_2022-07-27_N	E358-L	27-Jul-2022	29-Jul-2022	----	----		29-Jul-2022	28 days	2 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_ERCK_WS_LAEMP_EVO_2022-07-27_N	E358-L	27-Jul-2022	29-Jul-2022	----	----		29-Jul-2022	28 days	2 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_ERCKUC_WS_LAEMP_EVO_2022-07-27_N	E358-L	27-Jul-2022	29-Jul-2022	----	----		29-Jul-2022	28 days	2 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N, RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N	E358-L	27-Jul-2022	29-Jul-2022	----	----		29-Jul-2022	28 days	2 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_MI25_WS_LAEMP_EVO_2022-07-27_N	E358-L	27-Jul-2022	29-Jul-2022	----	----		29-Jul-2022	28 days	2 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_MI3_WS_LAEMP_EVO_2022-07-27_N	E358-L	27-Jul-2022	29-Jul-2022	----	----		29-Jul-2022	28 days	2 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_MIDER_WS_LAEMP_EVO_2022-07-27_N	E358-L	27-Jul-2022	29-Jul-2022	----	----		29-Jul-2022	28 days	2 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-07-27_N	E358-L	27-Jul-2022	29-Jul-2022	----	----		29-Jul-2022	28 days	2 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_TRIP_WS_LAEMP_EVO_2022-07-27_N, RG_TRIP_WS_LAEMP_EVO_2022-07-27_N	E358-L	27-Jul-2022	29-Jul-2022	----	----		29-Jul-2022	28 days	2 days	✓	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_ALUSM_WS_LAEMP_EVO_2022-07-27_N	E355-L	27-Jul-2022	29-Jul-2022	----	----		29-Jul-2022	28 days	2 days	✓	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKUC_WS_LAEMP_EVO_2022-07-27_N	E355-L	27-Jul-2022	29-Jul-2022	----	----		29-Jul-2022	28 days	2 days	✓	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N, RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N	E355-L	27-Jul-2022	29-Jul-2022	----	----		29-Jul-2022	28 days	2 days	✓	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_MI25_WS_LAEMP_EVO_2022-07-27_N	E355-L	27-Jul-2022	29-Jul-2022	----	----		29-Jul-2022	28 days	2 days	✓	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_MI3_WS_LAEMP_EVO_2022-07-27_N	E355-L	27-Jul-2022	29-Jul-2022	----	----		29-Jul-2022	28 days	2 days	✓	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_MIDER_WS_LAEMP_EVO_2022-07-27_N	E355-L	27-Jul-2022	29-Jul-2022	----	----		29-Jul-2022	28 days	2 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-07-27_N	E355-L	27-Jul-2022	29-Jul-2022	----	----		29-Jul-2022	28 days	2 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_TRIP_WS_LAEMP_EVO_2022-07-27_N, RG_TRIP_WS_LAEMP_EVO_2022-07-27_N	E355-L	27-Jul-2022	29-Jul-2022	----	----		29-Jul-2022	28 days	2 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (lab preserved) RG_ERCK_WS_LAEMP_EVO_2022-07-27_N	E355-L	27-Jul-2022	29-Jul-2022	3 days	2 days	✔	29-Jul-2022	28 days	0 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-07-27_N	E283	27-Jul-2022	----	----	----		29-Jul-2022	14 days	2 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-07-27_N	E283	27-Jul-2022	----	----	----		29-Jul-2022	14 days	2 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-07-27_N	E283	27-Jul-2022	----	----	----		29-Jul-2022	14 days	2 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N, RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N	E283	27-Jul-2022	----	----	----		29-Jul-2022	14 days	2 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_MI25_WS_LAEMP_EVO_2022-07-27_N	E283	27-Jul-2022	----	----	----		29-Jul-2022	14 days	2 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_MI3_WS_LAEMP_EVO_2022-07-27_N	E283	27-Jul-2022	----	----	----		29-Jul-2022	14 days	2 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Acidity by Titration											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-07-27_N	E283	27-Jul-2022	----	----	----		29-Jul-2022	14 days	2 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-07-27_N	E283	27-Jul-2022	----	----	----		29-Jul-2022	14 days	2 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-07-27_N, RG_TRIP_WS_LAEMP_EVO_2022-07-27_N	E283	27-Jul-2022	----	----	----		29-Jul-2022	14 days	2 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-07-27_N	E290	27-Jul-2022	----	----	----		29-Jul-2022	14 days	2 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-07-27_N	E290	27-Jul-2022	----	----	----		29-Jul-2022	14 days	2 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-07-27_N	E290	27-Jul-2022	----	----	----		29-Jul-2022	14 days	2 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N, RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N	E290	27-Jul-2022	----	----	----		29-Jul-2022	14 days	2 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_MI25_WS_LAEMP_EVO_2022-07-27_N	E290	27-Jul-2022	----	----	----		29-Jul-2022	14 days	2 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_MI3_WS_LAEMP_EVO_2022-07-27_N	E290	27-Jul-2022	----	----	----		29-Jul-2022	14 days	2 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Alkalinity Species by Titration											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-07-27_N	E290	27-Jul-2022	----	----	----		29-Jul-2022	14 days	2 days	✓	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-07-27_N	E290	27-Jul-2022	----	----	----		29-Jul-2022	14 days	2 days	✓	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-07-27_N, RG_TRIP_WS_LAEMP_EVO_2022-07-27_N	E290	27-Jul-2022	----	----	----		29-Jul-2022	14 days	2 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-07-27_N	E100	27-Jul-2022	----	----	----		29-Jul-2022	28 days	2 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-07-27_N	E100	27-Jul-2022	----	----	----		29-Jul-2022	28 days	2 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-07-27_N	E100	27-Jul-2022	----	----	----		29-Jul-2022	28 days	2 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N, RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N	E100	27-Jul-2022	----	----	----		29-Jul-2022	28 days	2 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_MI25_WS_LAEMP_EVO_2022-07-27_N	E100	27-Jul-2022	----	----	----		29-Jul-2022	28 days	2 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_MI3_WS_LAEMP_EVO_2022-07-27_N	E100	27-Jul-2022	----	----	----		29-Jul-2022	28 days	2 days	✓	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Conductivity in Water											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-07-27_N	E100	27-Jul-2022	----	----	----		29-Jul-2022	28 days	2 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-07-27_N	E100	27-Jul-2022	----	----	----		29-Jul-2022	28 days	2 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-07-27_N, RG_TRIP_WS_LAEMP_EVO_2022-07-27_N	E100	27-Jul-2022	----	----	----		29-Jul-2022	28 days	2 days	✓	
Physical Tests : ORP by Electrode											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N	E125	27-Jul-2022	----	----	----		29-Jul-2022	0.25 hrs	45 hrs	* EHTR-FM	
Physical Tests : ORP by Electrode											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-07-27_N	E125	27-Jul-2022	----	----	----		29-Jul-2022	0.25 hrs	45 hrs	* EHTR-FM	
Physical Tests : ORP by Electrode											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-07-27_N	E125	27-Jul-2022	----	----	----		29-Jul-2022	0.25 hrs	46 hrs	* EHTR-FM	
Physical Tests : ORP by Electrode											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N	E125	27-Jul-2022	----	----	----		29-Jul-2022	0.25 hrs	46 hrs	* EHTR-FM	
Physical Tests : ORP by Electrode											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-07-27_N	E125	27-Jul-2022	----	----	----		29-Jul-2022	0.25 hrs	46 hrs	* EHTR-FM	
Physical Tests : ORP by Electrode											
HDPE RG_MI25_WS_LAEMP_EVO_2022-07-27_N	E125	27-Jul-2022	----	----	----		29-Jul-2022	0.25 hrs	48 hrs	* EHTR-FM	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
Rec	Actual	Rec		Actual							
Physical Tests : ORP by Electrode											
HDPE RG_MI3_WS_LAEMP_EVO_2022-07-27_N	E125	27-Jul-2022	----	----	----		29-Jul-2022	0.25 hrs	49 hrs	*	EHTR-FM
Physical Tests : ORP by Electrode											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-07-27_N	E125	27-Jul-2022	----	----	----		29-Jul-2022	0.25 hrs	51 hrs	*	EHTR-FM
Physical Tests : ORP by Electrode											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-07-27_N	E125	27-Jul-2022	----	----	----		29-Jul-2022	0.25 hrs	52 hrs	*	EHTR-FM
Physical Tests : ORP by Electrode											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-07-27_N	E125	27-Jul-2022	----	----	----		29-Jul-2022	0.25 hrs	53 hrs	*	EHTR-FM
Physical Tests : ORP by Electrode											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-07-27_N	E125	27-Jul-2022	----	----	----		29-Jul-2022	0.25 hrs	53 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N	E108	27-Jul-2022	----	----	----		29-Jul-2022	0.25 hrs	44 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-07-27_N	E108	27-Jul-2022	----	----	----		29-Jul-2022	0.25 hrs	44 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-07-27_N	E108	27-Jul-2022	----	----	----		29-Jul-2022	0.25 hrs	45 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N	E108	27-Jul-2022	----	----	----		29-Jul-2022	0.25 hrs	45 hrs	*	EHTR-FM



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : pH by Meter											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-07-27_N	E108	27-Jul-2022	----	----	----		29-Jul-2022	0.25 hrs	45 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_MI25_WS_LAEMP_EVO_2022-07-27_N	E108	27-Jul-2022	----	----	----		29-Jul-2022	0.25 hrs	47 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_MI3_WS_LAEMP_EVO_2022-07-27_N	E108	27-Jul-2022	----	----	----		29-Jul-2022	0.25 hrs	48 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-07-27_N	E108	27-Jul-2022	----	----	----		29-Jul-2022	0.25 hrs	50 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-07-27_N	E108	27-Jul-2022	----	----	----		29-Jul-2022	0.25 hrs	51 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-07-27_N	E108	27-Jul-2022	----	----	----		29-Jul-2022	0.25 hrs	52 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-07-27_N	E108	27-Jul-2022	----	----	----		29-Jul-2022	0.25 hrs	52 hrs	*	EHTR-FM
Physical Tests : TDS by Gravimetry											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-07-27_N	E162	27-Jul-2022	----	----	----		29-Jul-2022	7 days	2 days	✓	
Physical Tests : TDS by Gravimetry											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-07-27_N	E162	27-Jul-2022	----	----	----		29-Jul-2022	7 days	2 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : TDS by Gravimetry											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-07-27_N	E162	27-Jul-2022	----	----	----		29-Jul-2022	7 days	2 days	✔	
Physical Tests : TDS by Gravimetry											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N, RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N	E162	27-Jul-2022	----	----	----		29-Jul-2022	7 days	2 days	✔	
Physical Tests : TDS by Gravimetry											
HDPE RG_MI25_WS_LAEMP_EVO_2022-07-27_N	E162	27-Jul-2022	----	----	----		29-Jul-2022	7 days	2 days	✔	
Physical Tests : TDS by Gravimetry											
HDPE RG_MI3_WS_LAEMP_EVO_2022-07-27_N	E162	27-Jul-2022	----	----	----		29-Jul-2022	7 days	2 days	✔	
Physical Tests : TDS by Gravimetry											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-07-27_N	E162	27-Jul-2022	----	----	----		29-Jul-2022	7 days	2 days	✔	
Physical Tests : TDS by Gravimetry											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-07-27_N	E162	27-Jul-2022	----	----	----		29-Jul-2022	7 days	2 days	✔	
Physical Tests : TDS by Gravimetry											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-07-27_N, RG_TRIP_WS_LAEMP_EVO_2022-07-27_N	E162	27-Jul-2022	----	----	----		29-Jul-2022	7 days	2 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-07-27_N	E160-L	27-Jul-2022	----	----	----		29-Jul-2022	7 days	2 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-07-27_N	E160-L	27-Jul-2022	----	----	----		29-Jul-2022	7 days	2 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-07-27_N	E160-L	27-Jul-2022	----	----	----		29-Jul-2022	7 days	2 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N, RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N	E160-L	27-Jul-2022	----	----	----		29-Jul-2022	7 days	2 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_MI25_WS_LAEMP_EVO_2022-07-27_N	E160-L	27-Jul-2022	----	----	----		29-Jul-2022	7 days	2 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_MI3_WS_LAEMP_EVO_2022-07-27_N	E160-L	27-Jul-2022	----	----	----		29-Jul-2022	7 days	2 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-07-27_N	E160-L	27-Jul-2022	----	----	----		29-Jul-2022	7 days	2 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-07-27_N	E160-L	27-Jul-2022	----	----	----		29-Jul-2022	7 days	2 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-07-27_N, RG_TRIP_WS_LAEMP_EVO_2022-07-27_N	E160-L	27-Jul-2022	----	----	----		29-Jul-2022	7 days	2 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-07-27_N	E121	27-Jul-2022	----	----	----		29-Jul-2022	3 days	2 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-07-27_N	E121	27-Jul-2022	----	----	----		29-Jul-2022	3 days	2 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Turbidity by Nephelometry											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-07-27_N	E121	27-Jul-2022	----	----	----		29-Jul-2022	3 days	2 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N, RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N	E121	27-Jul-2022	----	----	----		29-Jul-2022	3 days	2 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_MI25_WS_LAEMP_EVO_2022-07-27_N	E121	27-Jul-2022	----	----	----		29-Jul-2022	3 days	2 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_MI3_WS_LAEMP_EVO_2022-07-27_N	E121	27-Jul-2022	----	----	----		29-Jul-2022	3 days	2 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-07-27_N	E121	27-Jul-2022	----	----	----		29-Jul-2022	3 days	2 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-07-27_N	E121	27-Jul-2022	----	----	----		29-Jul-2022	3 days	2 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-07-27_N, RG_TRIP_WS_LAEMP_EVO_2022-07-27_N	E121	27-Jul-2022	----	----	----		29-Jul-2022	3 days	2 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_ALUSM_WS_LAEMP_EVO_2022-07-27_N	E420.Cr-L	27-Jul-2022	----	----	----		29-Jul-2022	180 days	2 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_ERCK_WS_LAEMP_EVO_2022-07-27_N	E420.Cr-L	27-Jul-2022	----	----	----		29-Jul-2022	180 days	2 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
Rec	Actual	Rec		Actual							
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_ERCKUC_WS_LAEMP_EVO_2022-07-27_N	E420.Cr-L	27-Jul-2022	----	----	----		29-Jul-2022	180 days	2 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N, RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N	E420.Cr-L	27-Jul-2022	----	----	----		29-Jul-2022	180 days	2 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_MI25_WS_LAEMP_EVO_2022-07-27_N	E420.Cr-L	27-Jul-2022	----	----	----		29-Jul-2022	180 days	2 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_MI3_WS_LAEMP_EVO_2022-07-27_N	E420.Cr-L	27-Jul-2022	----	----	----		29-Jul-2022	180 days	2 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_MIDER_WS_LAEMP_EVO_2022-07-27_N	E420.Cr-L	27-Jul-2022	----	----	----		29-Jul-2022	180 days	2 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_RIVER_WS_LAEMP_EVO_2022-07-27_N	E420.Cr-L	27-Jul-2022	----	----	----		29-Jul-2022	180 days	2 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_TRIP_WS_LAEMP_EVO_2022-07-27_N, RG_TRIP_WS_LAEMP_EVO_2022-07-27_N	E420.Cr-L	27-Jul-2022	----	----	----		29-Jul-2022	180 days	2 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_ALUSM_WS_LAEMP_EVO_2022-07-27_N	E508	27-Jul-2022	----	----	----		29-Jul-2022	28 days	2 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_ERCK_WS_LAEMP_EVO_2022-07-27_N	E508	27-Jul-2022	----	----	----		29-Jul-2022	28 days	2 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_ERCKUC_WS_LAEMP_EVO_2022-07-27_N	E508	27-Jul-2022	----	----	----		29-Jul-2022	28 days	2 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N, RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N	E508	27-Jul-2022	----	----	----		29-Jul-2022	28 days	2 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_MI25_WS_LAEMP_EVO_2022-07-27_N	E508	27-Jul-2022	----	----	----		29-Jul-2022	28 days	2 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_MI3_WS_LAEMP_EVO_2022-07-27_N	E508	27-Jul-2022	----	----	----		29-Jul-2022	28 days	2 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_MIDER_WS_LAEMP_EVO_2022-07-27_N	E508	27-Jul-2022	----	----	----		29-Jul-2022	28 days	2 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_RIVER_WS_LAEMP_EVO_2022-07-27_N	E508	27-Jul-2022	----	----	----		29-Jul-2022	28 days	2 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_TRIP_WS_LAEMP_EVO_2022-07-27_N, RG_TRIP_WS_LAEMP_EVO_2022-07-27_N	E508	27-Jul-2022	----	----	----		29-Jul-2022	28 days	2 days	✔	
Total Metals : Total Metals in Water by CRC ICPMS											
HDPE total (nitric acid) RG_ALUSM_WS_LAEMP_EVO_2022-07-27_N	E420	27-Jul-2022	----	----	----		29-Jul-2022	180 days	2 days	✔	
Total Metals : Total Metals in Water by CRC ICPMS											
HDPE total (nitric acid) RG_ERCK_WS_LAEMP_EVO_2022-07-27_N	E420	27-Jul-2022	----	----	----		29-Jul-2022	180 days	2 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Total Metals : Total Metals in Water by CRC ICPMS											
HDPE total (nitric acid) RG_ERCKUC_WS_LAEMP_EVO_2022-07-27_N	E420	27-Jul-2022	----	----	----		29-Jul-2022	180 days	2 days	✓	
Total Metals : Total Metals in Water by CRC ICPMS											
HDPE total (nitric acid) RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N, RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N	E420	27-Jul-2022	----	----	----		29-Jul-2022	180 days	2 days	✓	
Total Metals : Total Metals in Water by CRC ICPMS											
HDPE total (nitric acid) RG_MI25_WS_LAEMP_EVO_2022-07-27_N	E420	27-Jul-2022	----	----	----		29-Jul-2022	180 days	2 days	✓	
Total Metals : Total Metals in Water by CRC ICPMS											
HDPE total (nitric acid) RG_MI3_WS_LAEMP_EVO_2022-07-27_N	E420	27-Jul-2022	----	----	----		29-Jul-2022	180 days	2 days	✓	
Total Metals : Total Metals in Water by CRC ICPMS											
HDPE total (nitric acid) RG_MIDER_WS_LAEMP_EVO_2022-07-27_N	E420	27-Jul-2022	----	----	----		29-Jul-2022	180 days	2 days	✓	
Total Metals : Total Metals in Water by CRC ICPMS											
HDPE total (nitric acid) RG_RIVER_WS_LAEMP_EVO_2022-07-27_N	E420	27-Jul-2022	----	----	----		29-Jul-2022	180 days	2 days	✓	
Total Metals : Total Metals in Water by CRC ICPMS											
HDPE total (nitric acid) RG_TRIP_WS_LAEMP_EVO_2022-07-27_N, RG_TRIP_WS_LAEMP_EVO_2022-07-27_N	E420	27-Jul-2022	----	----	----		29-Jul-2022	180 days	2 days	✓	

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended
 Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
Analytical Methods							
Laboratory Duplicates (DUP)							
Acidity by Titration	E283	582757	1	17	5.8	5.0	✓
Alkalinity Species by Titration	E290	582754	1	17	5.8	5.0	✓
Ammonia by Fluorescence	E298	582601	1	13	7.6	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	582500	2	27	7.4	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	582501	2	27	7.4	5.0	✓
Conductivity in Water	E100	582753	1	17	5.8	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	582627	1	16	6.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	582699	1	13	7.6	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	582628	1	17	5.8	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	582551	1	16	6.2	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	583094	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	582499	2	27	7.4	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	582502	2	29	6.9	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	582503	2	27	7.4	5.0	✓
ORP by Electrode	E125	582842	1	12	8.3	5.0	✓
pH by Meter	E108	582752	1	17	5.8	5.0	✓
Sulfate in Water by IC	E235.SO4	582504	2	27	7.4	5.0	✓
TDS by Gravimetry	E162	582890	2	22	9.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	582673	1	14	7.1	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	582738	1	13	7.6	5.0	✓
Total Mercury in Water by CVAAS	E508	582698	1	13	7.6	5.0	✓
Total Metals in Water by CRC ICPMS	E420	582674	1	17	5.8	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	582552	1	16	6.2	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	582829	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121	582971	2	40	5.0	5.0	✓
Laboratory Control Samples (LCS)							
Acidity by Titration	E283	582757	1	17	5.8	5.0	✓
Alkalinity Species by Titration	E290	582754	1	17	5.8	5.0	✓
Ammonia by Fluorescence	E298	582601	1	13	7.6	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	582500	2	27	7.4	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	582501	2	27	7.4	5.0	✓
Conductivity in Water	E100	582753	1	17	5.8	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	582627	1	16	6.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	582699	1	13	7.6	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	582628	1	17	5.8	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	582551	1	16	6.2	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	583094	1	20	5.0	5.0	✓



Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
<i>Analytical Methods</i>							
Laboratory Control Samples (LCS) - Continued							
Fluoride in Water by IC	E235.F	582499	2	27	7.4	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	582502	2	29	6.9	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	582503	2	27	7.4	5.0	✓
ORP by Electrode	E125	582842	1	12	8.3	5.0	✓
pH by Meter	E108	582752	1	17	5.8	5.0	✓
Sulfate in Water by IC	E235.SO4	582504	2	27	7.4	5.0	✓
TDS by Gravimetry	E162	582890	2	22	9.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	582673	1	14	7.1	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	582738	1	13	7.6	5.0	✓
Total Mercury in Water by CVAAS	E508	582698	1	13	7.6	5.0	✓
Total Metals in Water by CRC ICPMS	E420	582674	1	17	5.8	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	582552	1	16	6.2	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	582829	1	20	5.0	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	582889	1	16	6.2	5.0	✓
Turbidity by Nephelometry	E121	582971	2	40	5.0	5.0	✓
Method Blanks (MB)							
Acidity by Titration	E283	582757	1	17	5.8	5.0	✓
Alkalinity Species by Titration	E290	582754	1	17	5.8	5.0	✓
Ammonia by Fluorescence	E298	582601	1	13	7.6	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	582500	2	27	7.4	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	582501	2	27	7.4	5.0	✓
Conductivity in Water	E100	582753	1	17	5.8	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	582627	1	16	6.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	582699	1	13	7.6	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	582628	1	17	5.8	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	582551	1	16	6.2	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	583094	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	582499	2	27	7.4	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	582502	2	29	6.9	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	582503	2	27	7.4	5.0	✓
Sulfate in Water by IC	E235.SO4	582504	2	27	7.4	5.0	✓
TDS by Gravimetry	E162	582890	2	22	9.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	582673	1	14	7.1	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	582738	1	13	7.6	5.0	✓
Total Mercury in Water by CVAAS	E508	582698	1	13	7.6	5.0	✓
Total Metals in Water by CRC ICPMS	E420	582674	1	17	5.8	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	582552	1	16	6.2	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	582829	1	20	5.0	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	582889	1	16	6.2	5.0	✓
Turbidity by Nephelometry	E121	582971	2	40	5.0	5.0	✓



Matrix: **Water**

Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
<i>Analytical Methods</i>							
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	582601	1	13	7.6	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	582500	2	27	7.4	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	582501	2	27	7.4	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	582627	1	16	6.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	582699	1	13	7.6	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	582628	1	17	5.8	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	582551	1	16	6.2	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	583094	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	582499	2	27	7.4	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	582502	2	29	6.9	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	582503	2	27	7.4	5.0	✓
Sulfate in Water by IC	E235.SO4	582504	2	27	7.4	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	582673	1	14	7.1	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	582738	1	13	7.6	5.0	✓
Total Mercury in Water by CVAAS	E508	582698	1	13	7.6	5.0	✓
Total Metals in Water by CRC ICPMS	E420	582674	1	17	5.8	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	582552	1	16	6.2	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	582829	1	20	5.0	5.0	✓



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 Calgary - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 Calgary - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 Calgary - Environmental	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
ORP by Electrode	E125 Calgary - Environmental	Water	ASTM D1498 (mod)	Oxidation reduction potential is reported as the oxidation-reduction potential of the platinum metal-reference electrode employed, measured in mV. For high accuracy test results, it is recommended that this analysis be conducted in the field.
TSS by Gravimetry (Low Level)	E160-L Calgary - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 Calgary - Environmental	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC (Low Level)	E235.Cl-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Acidity by Titration	E283 Calgary - Environmental	Water	APHA 2310 B (mod)	Acidity is determined by potentiometric titration to pH endpoint of 8.3



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Alkalinity Species by Titration	E290 Calgary - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 Calgary - Environmental	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 Calgary - Environmental	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L Calgary - Environmental	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Dissolved Organic Carbon by Combustion (Low Level)	E358-L Calgary - Environmental	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U Calgary - Environmental	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U Calgary - Environmental	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Total Metals in Water by CRC ICPMS	E420 Calgary - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L Calgary - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS.
Dissolved Metals in Water by CRC ICPMS	E421 Calgary - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L Calgary - Environmental	Water	APHA 3030 B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS
Total Mercury in Water by CVAAS	E508 Calgary - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS
Dissolved Mercury in Water by CVAAS	E509 Calgary - Environmental	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
Dissolved Hardness (Calculated)	EC100 Calgary - Environmental	Water	APHA 2340B	"Hardness (as CaCO ₃), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Ion Balance using Dissolved Metals	EC101 Calgary - Environmental	Water	APHA 1030E	Cation Sum, Anion Sum, and Ion Balance are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present. Ion Balance cannot be calculated accurately for waters with very low electrical conductivity (EC).

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 Calgary - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 Calgary - Environmental	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Preparation for Total Organic Carbon by Combustion	EP355 Calgary - Environmental	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon for Combustion	EP358 Calgary - Environmental	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Phosphorus in water	EP372 Calgary - Environmental	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Dissolved Metals Water Filtration	EP421 Calgary - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO ₃ .
Dissolved Mercury Water Filtration	EP509 Calgary - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.



QUALITY CONTROL REPORT

Work Order : CG2210004
Client : Teck Coal Limited
Contact : Mike Pope
Address : RR#1 HWY#3
Sparwood BC Canada V0B 2G1
Telephone : ---
Project : Regional Effects Program
PO : VPO00847030
C-O-C number : JULY 28 EVO LAEMP 2022
Sampler : BB
Site : ---
Quote number : Teck Coal Master Quote
No. of samples received : 11
No. of samples analysed : 11

Page : 1 of 18
Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
Calgary, Alberta Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 29-Jul-2022 08:45
Date Analysis Commenced : 29-Jul-2022
Issue Date : 31-Jul-2022 17:33

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
Matrix Spike (MS) Report; Recovery and Data Quality Objectives
Method Blank (MB) Report; Recovery and Data Quality Objectives
Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Table with 3 columns: Signatories, Position, Laboratory Department. Rows include Anthony Calero (Team Leader - Inorganics), Harpreet Chawla (Team Leader - Inorganics), Kevin Baxter (Laboratory Analyst), and Sofiya Ivanova (Lab Assistant).

Page : 2 of 18
Work Order : CG2210004
Client : Teck Coal Limited
Project : Regional Effects Program



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 582752)											
CG2209997-001	Anonymous	pH	----	E108	0.10	pH units	8.48	8.49	0.118%	4%	----
Physical Tests (QC Lot: 582753)											
CG2209997-001	Anonymous	conductivity	----	E100	2.0	µS/cm	579	576	0.519%	10%	----
Physical Tests (QC Lot: 582754)											
CG2209997-001	Anonymous	alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	151	149	1.07%	20%	----
		alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	14.4	14.4	0.00%	20%	----
		alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	165	164	0.973%	20%	----
Physical Tests (QC Lot: 582757)											
CG2209997-001	Anonymous	acidity (as CaCO3)	----	E283	2.0	mg/L	<2.0	<2.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 582842)											
CG2210000-001	Anonymous	oxidation-reduction potential [ORP]	----	E125	0.10	mV	408	410	0.563%	15%	----
Physical Tests (QC Lot: 582890)											
CG2209963-001	Anonymous	solids, total dissolved [TDS]	----	E162	10	mg/L	<10	<10	0	Diff <2x LOR	----
Physical Tests (QC Lot: 582891)											
CG2210004-011	RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N	solids, total dissolved [TDS]	----	E162	10	mg/L	<10	<10	0	Diff <2x LOR	----
Physical Tests (QC Lot: 582971)											
CG2209956-001	Anonymous	turbidity	----	E121	0.10	NTU	>4000	>4000	0.00%	15%	----
Physical Tests (QC Lot: 583125)											
CG2209962-005	Anonymous	turbidity	----	E121	0.10	NTU	0.18	0.16	0.02	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 582499)											
CG2209997-001	Anonymous	fluoride	16984-48-8	E235.F	0.020	mg/L	0.113	0.111	0.002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 582500)											
CG2209997-001	Anonymous	bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 582501)											
CG2209997-001	Anonymous	chloride	16887-00-6	E235.Cl-L	0.10	mg/L	5.86	5.85	0.225%	20%	----
Anions and Nutrients (QC Lot: 582502)											
CG2209997-001	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	13.0	13.1	0.112%	20%	----
Anions and Nutrients (QC Lot: 582503)											
CG2209997-001	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	0.0052	0.0051	0.0001	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 582504)											



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 582504) - continued											
CG2209997-001	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	102	102	0.111%	20%	----
Anions and Nutrients (QC Lot: 582505)											
CG2210004-005	RG_RIVER_WS_LAEMP_EVO_2022-07-27_N	fluoride	16984-48-8	E235.F	0.100	mg/L	0.118	0.115	0.003	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 582506)											
CG2210004-005	RG_RIVER_WS_LAEMP_EVO_2022-07-27_N	bromide	24959-67-9	E235.Br-L	0.250	mg/L	<0.250	<0.250	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 582507)											
CG2210004-005	RG_RIVER_WS_LAEMP_EVO_2022-07-27_N	chloride	16887-00-6	E235.Cl-L	0.50	mg/L	5.16	5.13	0.617%	20%	----
Anions and Nutrients (QC Lot: 582508)											
CG2210004-005	RG_RIVER_WS_LAEMP_EVO_2022-07-27_N	nitrate (as N)	14797-55-8	E235.NO3-L	0.0250	mg/L	15.5	15.5	0.148%	20%	----
Anions and Nutrients (QC Lot: 582509)											
CG2210004-005	RG_RIVER_WS_LAEMP_EVO_2022-07-27_N	nitrite (as N)	14797-65-0	E235.NO2-L	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 582510)											
CG2210004-005	RG_RIVER_WS_LAEMP_EVO_2022-07-27_N	sulfate (as SO4)	14808-79-8	E235.SO4	1.50	mg/L	722	718	0.517%	20%	----
Anions and Nutrients (QC Lot: 582601)											
CG2210000-001	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 582738)											
CG2210000-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	0.170	0.177	0.007	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 582829)											
CG2209997-001	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0126	0.0141	0.0015	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 583094)											
CG2210000-001	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 582551)											
CG2209997-001	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	1.50	1.51	0.01	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 582552)											
CG2209997-001	Anonymous	carbon, total organic [TOC]	----	E355-L	0.50	mg/L	1.55	1.56	0.01	Diff <2x LOR	----
Total Metals (QC Lot: 582673)											
CG2209514-001	Anonymous	chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	0.00010	<0.00010	0.000002	Diff <2x LOR	----
Total Metals (QC Lot: 582674)											
CG2209986-002	Anonymous	aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0036	0.0036	0.00005	Diff <2x LOR	----
		antimony, total	7440-36-0	E420	0.00010	mg/L	0.00021	0.00021	0.0000002	Diff <2x LOR	----
		arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00016	0.00017	0.000006	Diff <2x LOR	----
		barium, total	7440-39-3	E420	0.00010	mg/L	0.0120	0.0118	1.51%	20%	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (QC Lot: 582674) - continued											
CG2209986-002	Anonymous	beryllium, total	7440-41-7	E420	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, total	7440-42-8	E420	0.010	mg/L	0.037	0.037	0.0006	Diff <2x LOR	----
		cadmium, total	7440-43-9	E420	0.0000050	mg/L	0.0000151	0.0000161	0.0000010	Diff <2x LOR	----
		calcium, total	7440-70-2	E420	0.050	mg/L	223	222	0.380%	20%	----
		cobalt, total	7440-48-4	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		copper, total	7440-50-8	E420	0.00050	mg/L	0.00063	0.00062	0.00001	Diff <2x LOR	----
		iron, total	7439-89-6	E420	0.010	mg/L	0.186	0.186	0.254%	20%	----
		lead, total	7439-92-1	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		lithium, total	7439-93-2	E420	0.0010	mg/L	0.117	0.116	0.522%	20%	----
		magnesium, total	7439-95-4	E420	0.0050	mg/L	115	114	0.105%	20%	----
		manganese, total	7439-96-5	E420	0.00010	mg/L	0.00434	0.00431	0.714%	20%	----
		molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.0346	0.0344	0.663%	20%	----
		nickel, total	7440-02-0	E420	0.00050	mg/L	0.00423	0.00434	0.00010	Diff <2x LOR	----
		potassium, total	7440-09-7	E420	0.050	mg/L	4.44	4.42	0.400%	20%	----
		selenium, total	7782-49-2	E420	0.000050	mg/L	6.46 µg/L	0.00653	1.03%	20%	----
		silicon, total	7440-21-3	E420	0.10	mg/L	2.20	2.17	1.35%	20%	----
		silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, total	7440-23-5	E420	0.050	mg/L	23.3	23.2	0.403%	20%	----
		strontium, total	7440-24-6	E420	0.00020	mg/L	0.220	0.219	0.488%	20%	----
		sulfur, total	7704-34-9	E420	0.50	mg/L	145	143	1.74%	20%	----
		thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		tin, total	7440-31-5	E420	0.00010	mg/L	0.00011	0.00011	0.000001	Diff <2x LOR	----
		titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		uranium, total	7440-61-1	E420	0.000010	mg/L	0.0104	0.0103	0.530%	20%	----
		vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	<0.0030	0	Diff <2x LOR	----
Total Metals (QC Lot: 582698)											
CG2210000-001	Anonymous	mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 582627)											
CG2209997-001	Anonymous	chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 582628)											
CG2209997-001	Anonymous	aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0074	0.0086	0.0012	Diff <2x LOR	----
		antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00039	0.00041	0.00002	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00024	0.00024	0.000009	Diff <2x LOR	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 582628) - continued											
CG2209997-001	Anonymous	barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.247	0.246	0.379%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.000020	mg/L	<0.020 µg/L	<0.000020	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	0.117 µg/L	0.000117	0.606%	20%	----
		calcium, dissolved	7440-70-2	E421	0.050	mg/L	77.1	80.0	3.67%	20%	----
		cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	<0.10 µg/L	<0.00010	0	Diff <2x LOR	----
		copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00027	0.00024	0.00003	Diff <2x LOR	----
		iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0190	0.0196	3.40%	20%	----
		magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	31.9	31.6	0.898%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00132	0.00133	0.586%	20%	----
		molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00320	0.00338	5.45%	20%	----
		nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00400	0.00398	0.00002	Diff <2x LOR	----
		potassium, dissolved	7440-09-7	E421	0.050	mg/L	1.94	1.89	2.61%	20%	----
		selenium, dissolved	7782-49-2	E421	0.000050	mg/L	44.1 µg/L	0.0462	4.56%	20%	----
		silicon, dissolved	7440-21-3	E421	0.050	mg/L	2.80	2.95	5.02%	20%	----
		silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E421	0.050	mg/L	3.61	3.54	1.79%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.104	0.109	4.62%	20%	----
		sulfur, dissolved	7704-34-9	E421	0.50	mg/L	41.0	43.1	4.95%	20%	----
		thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00103	0.00107	3.92%	20%	----
		vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	0.00070	0.00071	0.00009	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0029	0.0028	0.00009	Diff <2x LOR	----
Dissolved Metals (QC Lot: 582699)											
CG2210000-001	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 582753)						
conductivity	----	E100	1	µS/cm	<1.0	----
Physical Tests (QCLot: 582754)						
alkalinity, bicarbonate (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
alkalinity, carbonate (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
alkalinity, hydroxide (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
alkalinity, total (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 582757)						
acidity (as CaCO ₃)	----	E283	2	mg/L	<2.0	----
Physical Tests (QCLot: 582889)						
solids, total suspended [TSS]	----	E160-L	1	mg/L	<1.0	----
Physical Tests (QCLot: 582890)						
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 582891)						
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 582971)						
turbidity	----	E121	0.1	NTU	<0.10	----
Physical Tests (QCLot: 583125)						
turbidity	----	E121	0.1	NTU	<0.10	----
Anions and Nutrients (QCLot: 582499)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 582500)						
bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 582501)						
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	----
Anions and Nutrients (QCLot: 582502)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 582503)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 582504)						
sulfate (as SO ₄)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 582505)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 582506)						



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 582506) - continued						
bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	---
Anions and Nutrients (QCLot: 582507)						
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	---
Anions and Nutrients (QCLot: 582508)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	---
Anions and Nutrients (QCLot: 582509)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	---
Anions and Nutrients (QCLot: 582510)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	---
Anions and Nutrients (QCLot: 582601)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	---
Anions and Nutrients (QCLot: 582738)						
Kjeldahl nitrogen, total [TKN]	---	E318	0.05	mg/L	<0.050	---
Anions and Nutrients (QCLot: 582829)						
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	---
Anions and Nutrients (QCLot: 583094)						
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	---
Organic / Inorganic Carbon (QCLot: 582551)						
carbon, dissolved organic [DOC]	---	E358-L	0.5	mg/L	<0.50	---
Organic / Inorganic Carbon (QCLot: 582552)						
carbon, total organic [TOC]	---	E355-L	0.5	mg/L	<0.50	---
Total Metals (QCLot: 582673)						
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	<0.00010	---
Total Metals (QCLot: 582674)						
aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	---
antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	---
arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	---
barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	---
beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	---
bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	---
boron, total	7440-42-8	E420	0.01	mg/L	<0.010	---
cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	---
calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	---
cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	---
copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	---
iron, total	7439-89-6	E420	0.01	mg/L	<0.010	---



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 582674) - continued						
lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	---
lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	---
magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	---
manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	---
molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	---
nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	---
potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	---
selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	---
silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	---
silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	---
sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	---
strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	---
sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	---
thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	---
tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	---
titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	---
uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	---
vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	---
zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	---
Total Metals (QCLot: 582698)						
mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	---
Dissolved Metals (QCLot: 582627)						
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	<0.00010	---
Dissolved Metals (QCLot: 582628)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	---
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	---
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	---
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	---
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	---
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	---
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	---
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	---
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	---
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	---
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	---
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	---



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 582628) - continued						
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
Dissolved Metals (QCLot: 582699)						
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Physical Tests (QCLot: 582752)									
pH	----	E108	----	pH units	7 pH units	100	98.6	101	----
Physical Tests (QCLot: 582753)									
conductivity	----	E100	1	µS/cm	146.9 µS/cm	98.4	90.0	110	----
Physical Tests (QCLot: 582754)									
alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	102	85.0	115	----
Physical Tests (QCLot: 582757)									
acidity (as CaCO3)	----	E283	2	mg/L	50 mg/L	108	85.0	115	----
Physical Tests (QCLot: 582842)									
oxidation-reduction potential [ORP]	----	E125	----	mV	220 mV	99.1	95.4	104	----
Physical Tests (QCLot: 582889)									
solids, total suspended [TSS]	----	E160-L	1	mg/L	150 mg/L	94.9	85.0	115	----
Physical Tests (QCLot: 582890)									
solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	97.8	85.0	115	----
Physical Tests (QCLot: 582891)									
solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	96.3	85.0	115	----
Physical Tests (QCLot: 582971)									
turbidity	----	E121	0.1	NTU	200 NTU	98.6	85.0	115	----
Physical Tests (QCLot: 583125)									
turbidity	----	E121	0.1	NTU	200 NTU	97.6	85.0	115	----
Anions and Nutrients (QCLot: 582499)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 582500)									
bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	100	85.0	115	----
Anions and Nutrients (QCLot: 582501)									
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	99.9	90.0	110	----
Anions and Nutrients (QCLot: 582502)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 582503)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 582504)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 582505)									



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Anions and Nutrients (QCLot: 582505) - continued									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 582506)									
bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	100	85.0	115	----
Anions and Nutrients (QCLot: 582507)									
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	99.6	90.0	110	----
Anions and Nutrients (QCLot: 582508)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 582509)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 582510)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 582601)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	99.8	85.0	115	----
Anions and Nutrients (QCLot: 582738)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 582829)									
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	8.02 mg/L	95.0	80.0	120	----
Anions and Nutrients (QCLot: 583094)									
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.02 mg/L	107	80.0	120	----
Organic / Inorganic Carbon (QCLot: 582551)									
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	94.6	80.0	120	----
Organic / Inorganic Carbon (QCLot: 582552)									
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	98.7	80.0	120	----
Total Metals (QCLot: 582673)									
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	0.25 mg/L	94.9	80.0	120	----
Total Metals (QCLot: 582674)									
aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	97.3	80.0	120	----
antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	97.7	80.0	120	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	93.0	80.0	120	----
barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	97.2	80.0	120	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	95.5	80.0	120	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	93.3	80.0	120	----
boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	96.8	80.0	120	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	94.0	80.0	120	----
calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	94.6	80.0	120	----



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Total Metals (QCLot: 582674) - continued									
cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	94.6	80.0	120	----
copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	94.3	80.0	120	----
iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	110	80.0	120	----
lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	95.4	80.0	120	----
lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	93.7	80.0	120	----
magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	93.5	80.0	120	----
manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	95.8	80.0	120	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	97.5	80.0	120	----
nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	94.9	80.0	120	----
potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	97.0	80.0	120	----
selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	90.6	80.0	120	----
silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	98.9	60.0	140	----
silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	90.3	80.0	120	----
sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	97.0	80.0	120	----
strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	95.8	80.0	120	----
sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	97.7	80.0	120	----
thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	95.7	80.0	120	----
tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	96.3	80.0	120	----
titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	89.0	80.0	120	----
uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	99.0	80.0	120	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	97.3	80.0	120	----
zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	92.4	80.0	120	----
Total Metals (QCLot: 582698)									
mercury, total	7439-97-6	E508	0.000005	mg/L	0.0001 mg/L	101	80.0	120	----
Dissolved Metals (QCLot: 582627)									
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	0.25 mg/L	104	80.0	120	----
Dissolved Metals (QCLot: 582628)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	102	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	107	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	102	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	105	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	100	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	103	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	87.6	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	102	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	104	80.0	120	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Dissolved Metals (QCLot: 582628) - continued									
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	102	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	102	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	103	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	104	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	100	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	113	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	107	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	105	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	102	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	105	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	106	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	104	60.0	140	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	105	80.0	120	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	110	80.0	120	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	104	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	112	80.0	120	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	105	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	104	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	104	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	102	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	105	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	119	80.0	120	----
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	105	80.0	120	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 582499)										
CG2209997-002	Anonymous	fluoride	16984-48-8	E235.F	0.825 mg/L	1 mg/L	82.5	75.0	125	----
Anions and Nutrients (QCLot: 582500)										
CG2209997-002	Anonymous	bromide	24959-67-9	E235.Br-L	0.407 mg/L	0.5 mg/L	81.4	75.0	125	----
Anions and Nutrients (QCLot: 582501)										
CG2209997-002	Anonymous	chloride	16887-00-6	E235.Cl-L	84.9 mg/L	100 mg/L	84.9	75.0	125	----
Anions and Nutrients (QCLot: 582502)										
CG2209997-002	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	ND mg/L	2.5 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 582503)										
CG2209997-002	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.435 mg/L	0.5 mg/L	87.1	75.0	125	----
Anions and Nutrients (QCLot: 582504)										
CG2209997-002	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	ND mg/L	100 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 582505)										
CG2210004-011	RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N	fluoride	16984-48-8	E235.F	0.879 mg/L	1 mg/L	87.9	75.0	125	----
Anions and Nutrients (QCLot: 582506)										
CG2210004-011	RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N	bromide	24959-67-9	E235.Br-L	0.435 mg/L	0.5 mg/L	86.9	75.0	125	----
Anions and Nutrients (QCLot: 582507)										
CG2210004-011	RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N	chloride	16887-00-6	E235.Cl-L	86.0 mg/L	100 mg/L	86.0	75.0	125	----
Anions and Nutrients (QCLot: 582508)										
CG2210004-011	RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N	nitrate (as N)	14797-55-8	E235.NO3-L	2.16 mg/L	2.5 mg/L	86.2	75.0	125	----
Anions and Nutrients (QCLot: 582509)										
CG2210004-011	RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N	nitrite (as N)	14797-65-0	E235.NO2-L	0.434 mg/L	0.5 mg/L	86.8	75.0	125	----
Anions and Nutrients (QCLot: 582510)										
CG2210004-011	RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N	sulfate (as SO4)	14808-79-8	E235.SO4	87.3 mg/L	100 mg/L	87.3	75.0	125	----
Anions and Nutrients (QCLot: 582601)										
CG2210004-001	RG_ERCKUC_WS_LAEMP_EVO_2022-07-27_N	ammonia, total (as N)	7664-41-7	E298	0.102 mg/L	0.1 mg/L	102	75.0	125	----



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 582738)										
CG2210004-001	RG_ERCKUC_WS_LAEMP_EVO_2022-07-27_N	Kjeldahl nitrogen, total [TKN]	----	E318	2.48 mg/L	2.5 mg/L	99.3	70.0	130	----
Anions and Nutrients (QCLot: 582829)										
CG2209997-002	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0627 mg/L	0.0676 mg/L	92.8	70.0	130	----
Anions and Nutrients (QCLot: 583094)										
CG2210002-001	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0452 mg/L	0.05 mg/L	90.4	70.0	130	----
Organic / Inorganic Carbon (QCLot: 582551)										
CG2209997-001	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	5.19 mg/L	5 mg/L	104	70.0	130	----
Organic / Inorganic Carbon (QCLot: 582552)										
CG2209997-001	Anonymous	carbon, total organic [TOC]	----	E355-L	5.41 mg/L	5 mg/L	108	70.0	130	----
Total Metals (QCLot: 582673)										
CG2210000-001	Anonymous	chromium, total	7440-47-3	E420.Cr-L	0.393 mg/L	0.4 mg/L	98.3	70.0	130	----
Total Metals (QCLot: 582674)										
CG2210000-001	Anonymous	aluminum, total	7429-90-5	E420	1.96 mg/L	2 mg/L	98.1	70.0	130	----
		antimony, total	7440-36-0	E420	0.192 mg/L	0.2 mg/L	96.1	70.0	130	----
		arsenic, total	7440-38-2	E420	0.191 mg/L	0.2 mg/L	95.4	70.0	130	----
		barium, total	7440-39-3	E420	0.194 mg/L	0.2 mg/L	96.8	70.0	130	----
		beryllium, total	7440-41-7	E420	0.376 mg/L	0.4 mg/L	93.9	70.0	130	----
		bismuth, total	7440-69-9	E420	0.0955 mg/L	0.1 mg/L	95.5	70.0	130	----
		boron, total	7440-42-8	E420	0.940 mg/L	1 mg/L	94.0	70.0	130	----
		cadmium, total	7440-43-9	E420	0.0390 mg/L	0.04 mg/L	97.6	70.0	130	----
		calcium, total	7440-70-2	E420	ND mg/L	40 mg/L	ND	70.0	130	----
		cobalt, total	7440-48-4	E420	0.196 mg/L	0.2 mg/L	98.2	70.0	130	----
		copper, total	7440-50-8	E420	0.197 mg/L	0.2 mg/L	98.7	70.0	130	----
		iron, total	7439-89-6	E420	19.7 mg/L	20 mg/L	98.4	70.0	130	----
		lead, total	7439-92-1	E420	0.195 mg/L	0.2 mg/L	97.4	70.0	130	----
		lithium, total	7439-93-2	E420	0.918 mg/L	1 mg/L	91.8	70.0	130	----
		magnesium, total	7439-95-4	E420	ND mg/L	10 mg/L	ND	70.0	130	----
		manganese, total	7439-96-5	E420	0.197 mg/L	0.2 mg/L	98.3	70.0	130	----
		molybdenum, total	7439-98-7	E420	0.197 mg/L	0.2 mg/L	98.6	70.0	130	----
		nickel, total	7440-02-0	E420	0.398 mg/L	0.4 mg/L	99.6	70.0	130	----
		potassium, total	7440-09-7	E420	39.2 mg/L	40 mg/L	98.0	70.0	130	----
		selenium, total	7782-49-2	E420	0.388 mg/L	0.4 mg/L	97.0	70.0	130	----
		silicon, total	7440-21-3	E420	96.6 mg/L	100 mg/L	96.6	70.0	130	----
		silver, total	7440-22-4	E420	0.0420 mg/L	0.04 mg/L	105	70.0	130	----



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 582674) - continued										
CG2210000-001	Anonymous	sodium, total	7440-23-5	E420	19.3 mg/L	20 mg/L	96.4	70.0	130	----
		strontium, total	7440-24-6	E420	0.186 mg/L	0.2 mg/L	93.1	70.0	130	----
		sulfur, total	7704-34-9	E420	193 mg/L	200 mg/L	96.6	70.0	130	----
		thallium, total	7440-28-0	E420	0.0384 mg/L	0.04 mg/L	95.9	70.0	130	----
		tin, total	7440-31-5	E420	0.193 mg/L	0.2 mg/L	96.6	70.0	130	----
		titanium, total	7440-32-6	E420	0.368 mg/L	0.4 mg/L	91.9	70.0	130	----
		uranium, total	7440-61-1	E420	0.0396 mg/L	0.04 mg/L	98.9	70.0	130	----
		vanadium, total	7440-62-2	E420	0.978 mg/L	1 mg/L	97.8	70.0	130	----
		zinc, total	7440-66-6	E420	3.92 mg/L	4 mg/L	98.0	70.0	130	----
Total Metals (QCLot: 582698)										
CG2210004-001	RG_ERCKUC_WS_LAEMP_EVO_2022-07-27_N	mercury, total	7439-97-6	E508	0.000109 mg/L	0.0001 mg/L	109	70.0	130	----
Dissolved Metals (QCLot: 582627)										
CG2209997-002	Anonymous	chromium, dissolved	7440-47-3	E421.Cr-L	0.398 mg/L	0.4 mg/L	99.6	70.0	130	----
Dissolved Metals (QCLot: 582628)										
CG2209997-002	Anonymous	aluminum, dissolved	7429-90-5	E421	1.81 mg/L	2 mg/L	90.7	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.208 mg/L	0.2 mg/L	104	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.195 mg/L	0.2 mg/L	97.3	70.0	130	----
		barium, dissolved	7440-39-3	E421	ND mg/L	0.2 mg/L	ND	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.379 mg/L	0.4 mg/L	94.8	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.0986 mg/L	0.1 mg/L	98.6	70.0	130	----
		boron, dissolved	7440-42-8	E421	0.940 mg/L	1 mg/L	94.0	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.0401 mg/L	0.04 mg/L	100	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	40 mg/L	ND	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.193 mg/L	0.2 mg/L	96.5	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.194 mg/L	0.2 mg/L	97.0	70.0	130	----
		iron, dissolved	7439-89-6	E421	19.4 mg/L	20 mg/L	96.8	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.202 mg/L	0.2 mg/L	101	70.0	130	----
		lithium, dissolved	7439-93-2	E421	0.993 mg/L	1 mg/L	99.3	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	10 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E421	0.196 mg/L	0.2 mg/L	97.9	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.202 mg/L	0.2 mg/L	101	70.0	130	----
		nickel, dissolved	7440-02-0	E421	0.389 mg/L	0.4 mg/L	97.3	70.0	130	----
		potassium, dissolved	7440-09-7	E421	39.1 mg/L	40 mg/L	97.8	70.0	130	----
		selenium, dissolved	7782-49-2	E421	0.391 mg/L	0.4 mg/L	97.6	70.0	130	----
		silicon, dissolved	7440-21-3	E421	96.9 mg/L	100 mg/L	96.9	70.0	130	----



Sub-Matrix: **Water**

					<i>Matrix Spike (MS) Report</i>					
					<i>Spike</i>		<i>Recovery (%)</i>	<i>Recovery Limits (%)</i>		
<i>Laboratory sample ID</i>	<i>Client sample ID</i>	<i>Analyte</i>	<i>CAS Number</i>	<i>Method</i>	<i>Concentration</i>	<i>Target</i>	<i>MS</i>	<i>Low</i>	<i>High</i>	<i>Qualifier</i>
Dissolved Metals (QCLot: 582628) - continued										
CG2209997-002	Anonymous	silver, dissolved	7440-22-4	E421	0.0442 mg/L	0.04 mg/L	110	70.0	130	----
		sodium, dissolved	7440-23-5	E421	19.7 mg/L	20 mg/L	98.6	70.0	130	----
		strontium, dissolved	7440-24-6	E421	0.204 mg/L	0.2 mg/L	102	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	203 mg/L	200 mg/L	102	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.0400 mg/L	0.04 mg/L	100	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.196 mg/L	0.2 mg/L	97.8	70.0	130	----
		titanium, dissolved	7440-32-6	E421	0.389 mg/L	0.4 mg/L	97.2	70.0	130	----
		uranium, dissolved	7440-61-1	E421	0.0389 mg/L	0.04 mg/L	97.3	70.0	130	----
		vanadium, dissolved	7440-62-2	E421	0.974 mg/L	1 mg/L	97.4	70.0	130	----
		zinc, dissolved	7440-66-6	E421	4.48 mg/L	4 mg/L	112	70.0	130	----
Dissolved Metals (QCLot: 582699)										
CG2210004-001	RG_ERCKUC_WS_LAEMP _EVO_2022-07-27_N	mercury, dissolved	7439-97-6	E509	0.000104 mg/L	0.0001 mg/L	104	70.0	130	----

COC ID:		July 28 EVO LAEMP 2022		TURNAROUND TIME:		RUSH	
PROJECT CLIENT INFO Facility Name / Job# Regional effects program Project Manager Mike Pope Email m.pope@teck.com Address 421 Pine Avenue City Sparwood Province BC Postal Code V0B 2G0 Country Canada Phone Number 343-333-3905				LABORATORY Lab Name ALS Calgary Lab Contact Lyudmyia Shvets Email lyudmyia.shvets@alsglobal.com Address 2559 29 Street NE City Calgary Province AB Postal Code T1Y 7B5 Country Canada Phone Number 403 407 1794			

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS REQUESTED									
								TECKCOAL-ROUTINE-VA	ALS_Package-DOC	ALS_Package-TKN/TOC	HG-T-U-CVAF-VA	HG-D-CVAF-VA	TECKCOAL-MET-T-VA	TECKCOAL-MET-D-VA			
RG_ERCKUC_WS_LAEMP_EVO_2022-07-27_N	RG_ERCKUC	WS	N	7/27/2022	8:30	G	7	X	X	X	X	X	X				
RG_ERCK_WS_LAEMP_EVO_2022-07-27_N	RG_ERCK	WS	N	7/27/2022	10:00	G	7	X	X	X	X	X	X				
RG_MI3_WS_LAEMP_EVO_2022-07-27_N	RG_MI3	WS	N	7/27/2022	12:30	G	7	X	X	X	X	X	X				
RG_MIDER_WS_LAEMP_EVO_2022-07-27_N	RG_MIDER	WS	N	7/27/2022	11:00	G	7	X	X	X	X	X	X				
RG_RIVER_WS_LAEMP_EVO_2022-07-27_N	RG_RIVER	WS	N	7/27/2022	8:30	G	7	X	X	X	X	X	X				
RG_MI25_WS_LAEMP_EVO_2022-07-27_N	RG_MI25	WS	N	7/27/2022	14:00	G	7	X	X	X	X	X	X				
RG_ALUSM_WS_LAEMP_EVO_2022-07-27_N	RG_ALUSM	WS	N	7/27/2022	15:30	G	7	X	X	X	X	X	X				

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS ALS PO VPO00847030	RELINQUISHED BY/AFFILIATION Brianna Barnhart/Minnow Env.	DATE/TIME July 28, 2022	ACCEPTED BY/AFFILIATION <i>MW</i>	7/29 8:45
--	---	----------------------------	--------------------------------------	--------------

REGULAR (default)	Sampler's Name Brianna Barnhart	Mobile # 519-731-3821
Priority (2-3 business days) - 50% surcharge	Sampler's Signature	Date/Time July 28, 2022
Emergency (1 Business Day) - 100% surcharge <input checked="" type="checkbox"/>		
For Emergency <1 Day, ASAP or Weekend - Contact ALS		

Environmental Division
Calgary
Work Order Reference
CG2210004



Telephone : +1 403 407 1800

ALS WS

12e

Environmental Division
Calgary
Work Order Reference
CG2210004

COC ID:

July 28 EVO LAEMP 2022

TURNAROUND TIME:

RUSH

PROJECT CLIENT INFO				LABORATORY			
Facility Name / Job#	Regional effects program			Lab Name	ALS Calgary		
Project Manager	Mike Pope			Lab Contact	Lyudmyla Shvets		
Email	m.pope@teck.com			Email	lyudmyla.shvets@alsglobal.com		
Address	421 Pine Avenue			Address	2559 29 Street NE		
City	Sparwood	Province	BC	City	Calgary	Province	AB
Postal Code	VOB 2G0	Country	Canada	Postal Code	T1Y 7B5	Country	Canada
Phone Number	343-333-3905			Phone Number	1 403 407 1794		

SAMPLE DETAILS								ANALYSIS REQUESTED									
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	TECKCOAL-ROUTINE-VA	ALS_Package-DOC	ALS_Package-TKN/TOC	HG-T-U-CYAF-VA	HG-D-CYAF-VA	TECKCOAL-MET-T-VA	TECKCOAL-MET-D-VA			
RG_TRIP_WS_LAEMP_EVO_2022-07-27_N	RG_TRIP	WS	N	7/27/2022	16:00	G	7	X	X	X	X	X	X	X			
RG_TRIP_WS_LAEMP_EVO_2022-07-27_N	RG_TRIP	WS	N	7/27/2022	17:00	G	7	X	X	X	X	X	X	X			
RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N	RG_FBLANK	WS	N	7/27/2022	16:00	G	7	X	X	X	X	X	X	X			
RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N	RG_FBLANK	WS	N	7/27/2022	17:00	G	7	X	X	X	X	X	X	X			

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELEASED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
ALS PO VPO00847030	Brianna Barnhart/Minnov Env.	July 28, 2022	<i>[Signature]</i> 7/29 8:45

NO OF BOTTLES RETURNED/DESCRIPTION		SAMPLER'S NAME	MOBILE #
Regular (default)		Brianna Barnhart	519-731-3821
Priority (2-3 business days) - 50% surcharge			
Emergency (1 Business Day) - 100% surcharge	X		
For Emergency <1 Day, ASAP or Weekend - Contact ALS			
		SAMPLER'S SIGNATURE	DATE/TIME
			July 28, 2022

12c



CERTIFICATE OF ANALYSIS

Work Order : **CG2210000**
Client : **Teck Coal Limited**
Contact : Mike Pope
Address : RR#1 HWY#3
Sparwood BC Canada V0B 2G1
Telephone : ----
Project : Regional Effects Program
PO : VPO00847030
C-O-C number : EV_MC3a
Sampler : BB
Site : ----
Quote number : Teck Coal Master Quote
No. of samples received : 1
No. of samples analysed : 1

Page : 1 of 6
Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
Calgary AB Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 29-Jul-2022 08:45
Date Analysis Commenced : 29-Jul-2022
Issue Date : 31-Jul-2022 14:17

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Anthony Calero	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Anthony Calero	Team Leader - Inorganics	Metals, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Kevin Baxter		Metals, Calgary, Alberta
Mackenzie Lamoureux	Laboratory Analyst	Metals, Calgary, Alberta
Sofiya Ivanova	Lab Assistant	Inorganics, Calgary, Alberta



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

<i>Unit</i>	<i>Description</i>
-	No Unit
%	percent
µg/L	micrograms per litre
µS/cm	Microsiemens per centimetre
meq/L	milliequivalents per litre
mg/L	milligrams per litre
mV	millivolts
NTU	nephelometric turbidity units
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.



Analytical Results

Sub-Matrix: Water					Client sample ID	EV_MC3A_WS_	----	----	----	----
(Matrix: Water)						LAEMP_EVO_2				
					Client sampling date / time	27-Jul-2022 11:00	----	----	----	----
Analyte	CAS Number	Method	LOR	Unit	CG2210000-001	-----	-----	-----	-----	-----
					Result	----	----	----	----	----
Physical Tests										
acidity (as CaCO3)	----	E283	2.0	mg/L	<2.0	----	----	----	----	----
alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	130	----	----	----	----	----
alkalinity, bicarbonate (as HCO3)	71-52-3	E290	1.0	mg/L	159	----	----	----	----	----
alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	13.0	----	----	----	----	----
alkalinity, carbonate (as CO3)	3812-32-6	E290	1.0	mg/L	7.8	----	----	----	----	----
alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	----	----	----	----	----
alkalinity, hydroxide (as OH)	14280-30-9	E290	1.0	mg/L	<1.0	----	----	----	----	----
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	143	----	----	----	----	----
conductivity	----	E100	2.0	µS/cm	341	----	----	----	----	----
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	186	----	----	----	----	----
oxidation-reduction potential [ORP]	----	E125	0.10	mV	408	----	----	----	----	----
pH	----	E108	0.10	pH units	8.49	----	----	----	----	----
solids, total dissolved [TDS]	----	E162	10	mg/L	211	----	----	----	----	----
solids, total suspended [TSS]	----	E160-L	1.0	mg/L	1.4	----	----	----	----	----
turbidity	----	E121	0.10	NTU	1.12	----	----	----	----	----
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	----	----	----	----	----
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	----	----	----	----	----
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	0.71	----	----	----	----	----
fluoride	16984-48-8	E235.F	0.020	mg/L	0.156	----	----	----	----	----
Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	0.170	----	----	----	----	----
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.0456	----	----	----	----	----
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	----	----	----	----	----
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	----	----	----	----	----
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0063	----	----	----	----	----
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	50.6	----	----	----	----	----
Organic / Inorganic Carbon										
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	0.98	----	----	----	----	----
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	1.12	----	----	----	----	----
Ion Balance										



Analytical Results

Sub-Matrix: Water					Client sample ID	EV_MC3A_WS_	----	----	----	----
(Matrix: Water)					LAEMP_EVO_2					
					022-07-27_N					
					Client sampling date / time	27-Jul-2022 11:00	----	----	----	----
Analyte	CAS Number	Method	LOR	Unit	CG2210000-001	-----	-----	-----	-----	-----
					Result	----	----	----	----	----
Ion Balance										
anion sum	----	EC101	0.10	meq/L	3.94	----	----	----	----	----
cation sum	----	EC101	0.10	meq/L	3.87	----	----	----	----	----
ion balance (cations/anions)	----	EC101	0.010	%	98.2	----	----	----	----	----
ion balance (APHA)	----	EC101	0.010	%	0.896	----	----	----	----	----
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0096	----	----	----	----	----
antimony, total	7440-36-0	E420	0.00010	mg/L	<0.00010	----	----	----	----	----
arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00023	----	----	----	----	----
barium, total	7440-39-3	E420	0.00010	mg/L	0.0872	----	----	----	----	----
beryllium, total	7440-41-7	E420	0.020	µg/L	<0.020	----	----	----	----	----
bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	----	----	----	----	----
boron, total	7440-42-8	E420	0.010	mg/L	0.011	----	----	----	----	----
cadmium, total	7440-43-9	E420	0.0050	µg/L	0.0212	----	----	----	----	----
calcium, total	7440-70-2	E420	0.050	mg/L	44.9	----	----	----	----	----
chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	0.00019	----	----	----	----	----
cobalt, total	7440-48-4	E420	0.10	µg/L	<0.10	----	----	----	----	----
copper, total	7440-50-8	E420	0.00050	mg/L	<0.00050	----	----	----	----	----
iron, total	7439-89-6	E420	0.010	mg/L	0.013	----	----	----	----	----
lead, total	7439-92-1	E420	0.000050	mg/L	<0.000050	----	----	----	----	----
lithium, total	7439-93-2	E420	0.0010	mg/L	0.0057	----	----	----	----	----
magnesium, total	7439-95-4	E420	0.0050	mg/L	14.6	----	----	----	----	----
manganese, total	7439-96-5	E420	0.00010	mg/L	0.00157	----	----	----	----	----
mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	----	----	----	----	----
molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.000712	----	----	----	----	----
nickel, total	7440-02-0	E420	0.00050	mg/L	0.00109	----	----	----	----	----
potassium, total	7440-09-7	E420	0.050	mg/L	0.634	----	----	----	----	----
selenium, total	7782-49-2	E420	0.050	µg/L	1.53	----	----	----	----	----
silicon, total	7440-21-3	E420	0.10	mg/L	1.98	----	----	----	----	----
silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	----	----	----	----	----
sodium, total	7440-23-5	E420	0.050	mg/L	3.03	----	----	----	----	----
strontium, total	7440-24-6	E420	0.00020	mg/L	0.142	----	----	----	----	----



Analytical Results

Sub-Matrix: Water					Client sample ID	EV_MC3A_WS_	----	----	----	----
(Matrix: Water)					LAEMP_EVO_2					
					022-07-27_N					
					Client sampling date / time	27-Jul-2022 11:00	----	----	----	----
Analyte	CAS Number	Method	LOR	Unit	CG2210000-001	-----	-----	-----	-----	-----
					Result	----	----	----	----	----
Total Metals										
sulfur, total	7704-34-9	E420	0.50	mg/L	18.4	----	----	----	----	----
thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	----	----	----	----	----
tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	----	----	----	----	----
titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00030	----	----	----	----	----
uranium, total	7440-61-1	E420	0.000010	mg/L	0.000669	----	----	----	----	----
vanadium, total	7440-62-2	E420	0.00050	mg/L	0.00054	----	----	----	----	----
zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	----	----	----	----	----
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0018	----	----	----	----	----
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00010	----	----	----	----	----
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00022	----	----	----	----	----
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0892	----	----	----	----	----
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.020	----	----	----	----	----
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	----	----	----	----	----
boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.010	----	----	----	----	----
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.0202	----	----	----	----	----
calcium, dissolved	7440-70-2	E421	0.050	mg/L	48.8	----	----	----	----	----
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	0.00012	----	----	----	----	----
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	<0.10	----	----	----	----	----
copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00020	----	----	----	----	----
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	----	----	----	----	----
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	----	----	----	----	----
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0052	----	----	----	----	----
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	15.6	----	----	----	----	----
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00085	----	----	----	----	----
mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	----	----	----	----	----
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.000684	----	----	----	----	----
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00101	----	----	----	----	----
potassium, dissolved	7440-09-7	E421	0.050	mg/L	0.640	----	----	----	----	----
selenium, dissolved	7782-49-2	E421	0.050	µg/L	1.94	----	----	----	----	----
silicon, dissolved	7440-21-3	E421	0.050	mg/L	1.90	----	----	----	----	----



Analytical Results

Sub-Matrix: Water					Client sample ID	EV_MC3A_WS_	----	----	----	----
(Matrix: Water)						LAEMP_EVO_2				
					Client sampling date / time	27-Jul-2022 11:00	----	----	----	----
Analyte	CAS Number	Method	LOR	Unit	CG2210000-001	-----	-----	-----	-----	-----
					Result	----	----	----	----	----
Dissolved Metals										
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	----	----	----	----	----
sodium, dissolved	7440-23-5	E421	0.050	mg/L	3.17	----	----	----	----	----
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.141	----	----	----	----	----
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	19.6	----	----	----	----	----
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	----	----	----	----	----
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	----	----	----	----	----
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	----	----	----	----	----
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.000646	----	----	----	----	----
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	----	----	----	----	----
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0010	----	----	----	----	----
dissolved mercury filtration location	----	EP509	-	-	Field	----	----	----	----	----
dissolved metals filtration location	----	EP421	-	-	Field	----	----	----	----	----

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: CG2210000	Page	: 1 of 12
Client	: Teck Coal Limited	Laboratory	: Calgary - Environmental
Contact	: Mike Pope	Account Manager	: Lyudmyla Shvets
Address	: RR#1 HWY#3 Sparwood BC Canada V0B 2G1	Address	: 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5
Telephone	: ----	Telephone	: +1 403 407 1800
Project	: Regional Effects Program	Date Samples Received	: 29-Jul-2022 08:45
PO	: VPO00847030	Issue Date	: 31-Jul-2022 14:17
C-O-C number	: EV_MC3a		
Sampler	: BB		
Site	: ----		
Quote number	: Teck Coal Master Quote		
No. of samples received	: 1		
No. of samples analysed	: 1		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) EV_MC3A_WS_LAEMP_EVO_2022-07-27_N	E298	27-Jul-2022	29-Jul-2022	----	----		29-Jul-2022	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE EV_MC3A_WS_LAEMP_EVO_2022-07-27_N	E235.Br-L	27-Jul-2022	----	----	----		29-Jul-2022	28 days	2 days	✓
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE EV_MC3A_WS_LAEMP_EVO_2022-07-27_N	E235.Cl-L	27-Jul-2022	----	----	----		29-Jul-2022	28 days	2 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE EV_MC3A_WS_LAEMP_EVO_2022-07-27_N	E378-U	27-Jul-2022	----	----	----		29-Jul-2022	3 days	2 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE EV_MC3A_WS_LAEMP_EVO_2022-07-27_N	E235.F	27-Jul-2022	----	----	----		29-Jul-2022	28 days	2 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE EV_MC3A_WS_LAEMP_EVO_2022-07-27_N	E235.NO3-L	27-Jul-2022	----	----	----		29-Jul-2022	3 days	2 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE EV_MC3A_WS_LAEMP_EVO_2022-07-27_N	E235.NO2-L	27-Jul-2022	----	----	----		29-Jul-2022	3 days	2 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Sulfate in Water by IC											
HDPE EV_MC3A_WS_LAEMP_EVO_2022-07-27_N	E235.SO4	27-Jul-2022	----	----	----		29-Jul-2022	28 days	2 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) EV_MC3A_WS_LAEMP_EVO_2022-07-27_N	E318	27-Jul-2022	30-Jul-2022	----	----		30-Jul-2022	28 days	3 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) EV_MC3A_WS_LAEMP_EVO_2022-07-27_N	E372-U	27-Jul-2022	29-Jul-2022	----	----		30-Jul-2022	28 days	3 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) EV_MC3A_WS_LAEMP_EVO_2022-07-27_N	E421.Cr-L	27-Jul-2022	29-Jul-2022	----	----		29-Jul-2022	180 days	2 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) EV_MC3A_WS_LAEMP_EVO_2022-07-27_N	E509	27-Jul-2022	29-Jul-2022	----	----		29-Jul-2022	28 days	2 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) EV_MC3A_WS_LAEMP_EVO_2022-07-27_N	E421	27-Jul-2022	29-Jul-2022	----	----		29-Jul-2022	180 days	2 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) EV_MC3A_WS_LAEMP_EVO_2022-07-27_N	E358-L	27-Jul-2022	29-Jul-2022	----	----		29-Jul-2022	28 days	2 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) EV_MC3A_WS_LAEMP_EVO_2022-07-27_N	E355-L	27-Jul-2022	29-Jul-2022	----	----		29-Jul-2022	28 days	2 days	✔	
Physical Tests : Acidity by Titration											
HDPE EV_MC3A_WS_LAEMP_EVO_2022-07-27_N	E283	27-Jul-2022	----	----	----		29-Jul-2022	14 days	2 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Alkalinity Species by Titration											
HDPE EV_MC3A_WS_LAEMP_EVO_2022-07-27_N	E290	27-Jul-2022	----	----	----		29-Jul-2022	14 days	2 days	✓	
Physical Tests : Conductivity in Water											
HDPE EV_MC3A_WS_LAEMP_EVO_2022-07-27_N	E100	27-Jul-2022	----	----	----		29-Jul-2022	28 days	2 days	✓	
Physical Tests : ORP by Electrode											
HDPE EV_MC3A_WS_LAEMP_EVO_2022-07-27_N	E125	27-Jul-2022	----	----	----		29-Jul-2022	0.25 hrs	51 hrs	* EHTR-FM	
Physical Tests : pH by Meter											
HDPE EV_MC3A_WS_LAEMP_EVO_2022-07-27_N	E108	27-Jul-2022	----	----	----		29-Jul-2022	0.25 hrs	50 hrs	* EHTR-FM	
Physical Tests : TDS by Gravimetry											
HDPE EV_MC3A_WS_LAEMP_EVO_2022-07-27_N	E162	27-Jul-2022	----	----	----		29-Jul-2022	7 days	2 days	✓	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE EV_MC3A_WS_LAEMP_EVO_2022-07-27_N	E160-L	27-Jul-2022	----	----	----		29-Jul-2022	7 days	2 days	✓	
Physical Tests : Turbidity by Nephelometry											
HDPE EV_MC3A_WS_LAEMP_EVO_2022-07-27_N	E121	27-Jul-2022	----	----	----		29-Jul-2022	3 days	2 days	✓	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) EV_MC3A_WS_LAEMP_EVO_2022-07-27_N	E420.Cr-L	27-Jul-2022	----	----	----		29-Jul-2022	180 days	2 days	✓	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) EV_MC3A_WS_LAEMP_EVO_2022-07-27_N	E508	27-Jul-2022	----	----	----		29-Jul-2022	28 days	2 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) EV_MC3A_WS_LAEMP_EVO_2022-07-27_N	E420	27-Jul-2022	----	----	----		29-Jul-2022	180 days	2 days	✔

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended

Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
Analytical Methods							
Laboratory Duplicates (DUP)							
Acidity by Titration	E283	582757	1	17	5.8	5.0	✓
Alkalinity Species by Titration	E290	582754	1	17	5.8	5.0	✓
Ammonia by Fluorescence	E298	582601	1	13	7.6	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	582500	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	582501	1	20	5.0	5.0	✓
Conductivity in Water	E100	582753	1	17	5.8	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	582627	1	16	6.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	582699	1	13	7.6	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	582628	1	17	5.8	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	582551	1	16	6.2	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	583094	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	582499	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	582502	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	582503	1	20	5.0	5.0	✓
ORP by Electrode	E125	582842	1	12	8.3	5.0	✓
pH by Meter	E108	582752	1	17	5.8	5.0	✓
Sulfate in Water by IC	E235.SO4	582504	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	582890	1	20	5.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	582673	1	14	7.1	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	582738	1	13	7.6	5.0	✓
Total Mercury in Water by CVAAS	E508	582698	1	13	7.6	5.0	✓
Total Metals in Water by CRC ICPMS	E420	582674	1	17	5.8	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	582552	1	16	6.2	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	582829	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121	583125	1	20	5.0	5.0	✓
Laboratory Control Samples (LCS)							
Acidity by Titration	E283	582757	1	17	5.8	5.0	✓
Alkalinity Species by Titration	E290	582754	1	17	5.8	5.0	✓
Ammonia by Fluorescence	E298	582601	1	13	7.6	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	582500	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	582501	1	20	5.0	5.0	✓
Conductivity in Water	E100	582753	1	17	5.8	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	582627	1	16	6.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	582699	1	13	7.6	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	582628	1	17	5.8	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	582551	1	16	6.2	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	583094	1	20	5.0	5.0	✓



Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
<i>Analytical Methods</i>							
Laboratory Control Samples (LCS) - Continued							
Fluoride in Water by IC	E235.F	582499	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	582502	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	582503	1	20	5.0	5.0	✓
ORP by Electrode	E125	582842	1	12	8.3	5.0	✓
pH by Meter	E108	582752	1	17	5.8	5.0	✓
Sulfate in Water by IC	E235.SO4	582504	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	582890	1	20	5.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	582673	1	14	7.1	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	582738	1	13	7.6	5.0	✓
Total Mercury in Water by CVAAS	E508	582698	1	13	7.6	5.0	✓
Total Metals in Water by CRC ICPMS	E420	582674	1	17	5.8	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	582552	1	16	6.2	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	582829	1	20	5.0	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	582889	1	16	6.2	5.0	✓
Turbidity by Nephelometry	E121	583125	1	20	5.0	5.0	✓
Method Blanks (MB)							
Acidity by Titration	E283	582757	1	17	5.8	5.0	✓
Alkalinity Species by Titration	E290	582754	1	17	5.8	5.0	✓
Ammonia by Fluorescence	E298	582601	1	13	7.6	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	582500	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	582501	1	20	5.0	5.0	✓
Conductivity in Water	E100	582753	1	17	5.8	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	582627	1	16	6.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	582699	1	13	7.6	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	582628	1	17	5.8	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	582551	1	16	6.2	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	583094	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	582499	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	582502	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	582503	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	582504	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	582890	1	20	5.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	582673	1	14	7.1	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	582738	1	13	7.6	5.0	✓
Total Mercury in Water by CVAAS	E508	582698	1	13	7.6	5.0	✓
Total Metals in Water by CRC ICPMS	E420	582674	1	17	5.8	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	582552	1	16	6.2	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	582829	1	20	5.0	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	582889	1	16	6.2	5.0	✓
Turbidity by Nephelometry	E121	583125	1	20	5.0	5.0	✓



Matrix: **Water**

Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
<i>Analytical Methods</i>							
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	582601	1	13	7.6	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	582500	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	582501	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	582627	1	16	6.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	582699	1	13	7.6	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	582628	1	17	5.8	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	582551	1	16	6.2	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	583094	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	582499	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	582502	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	582503	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	582504	1	20	5.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	582673	1	14	7.1	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	582738	1	13	7.6	5.0	✓
Total Mercury in Water by CVAAS	E508	582698	1	13	7.6	5.0	✓
Total Metals in Water by CRC ICPMS	E420	582674	1	17	5.8	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	582552	1	16	6.2	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	582829	1	20	5.0	5.0	✓



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 Calgary - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 Calgary - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 Calgary - Environmental	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
ORP by Electrode	E125 Calgary - Environmental	Water	ASTM D1498 (mod)	Oxidation reduction potential is reported as the oxidation-reduction potential of the platinum metal-reference electrode employed, measured in mV. For high accuracy test results, it is recommended that this analysis be conducted in the field.
TSS by Gravimetry (Low Level)	E160-L Calgary - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 Calgary - Environmental	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC (Low Level)	E235.Cl-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Acidity by Titration	E283 Calgary - Environmental	Water	APHA 2310 B (mod)	Acidity is determined by potentiometric titration to pH endpoint of 8.3



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Alkalinity Species by Titration	E290 Calgary - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 Calgary - Environmental	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 Calgary - Environmental	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L Calgary - Environmental	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Dissolved Organic Carbon by Combustion (Low Level)	E358-L Calgary - Environmental	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U Calgary - Environmental	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U Calgary - Environmental	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Total Metals in Water by CRC ICPMS	E420 Calgary - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L Calgary - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS.
Dissolved Metals in Water by CRC ICPMS	E421 Calgary - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L Calgary - Environmental	Water	APHA 3030 B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS
Total Mercury in Water by CVAAS	E508 Calgary - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS
Dissolved Mercury in Water by CVAAS	E509 Calgary - Environmental	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
Dissolved Hardness (Calculated)	EC100 Calgary - Environmental	Water	APHA 2340B	"Hardness (as CaCO ₃), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Ion Balance using Dissolved Metals	EC101 Calgary - Environmental	Water	APHA 1030E	Cation Sum, Anion Sum, and Ion Balance are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present. Ion Balance cannot be calculated accurately for waters with very low electrical conductivity (EC).

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 Calgary - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 Calgary - Environmental	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Preparation for Total Organic Carbon by Combustion	EP355 Calgary - Environmental	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon for Combustion	EP358 Calgary - Environmental	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Phosphorus in water	EP372 Calgary - Environmental	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Dissolved Metals Water Filtration	EP421 Calgary - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO ₃ .
Dissolved Mercury Water Filtration	EP509 Calgary - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.



QUALITY CONTROL REPORT

Work Order : CG2210000
Client : Teck Coal Limited
Contact : Mike Pope
Address : RR#1 HWY#3
Sparwood BC Canada V0B 2G1
Telephone : ---
Project : Regional Effects Program
PO : VPO00847030
C-O-C number : EV_MC3a
Sampler : BB
Site : ---
Quote number : Teck Coal Master Quote
No. of samples received : 1
No. of samples analysed : 1

Page : 1 of 18
Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
Calgary, Alberta Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 29-Jul-2022 08:45
Date Analysis Commenced : 29-Jul-2022
Issue Date : 31-Jul-2022 14:17

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
Matrix Spike (MS) Report; Recovery and Data Quality Objectives
Method Blank (MB) Report; Recovery and Data Quality Objectives
Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Table with 3 columns: Signatories, Position, Laboratory Department. Rows include Anthony Calero (Team Leader - Inorganics), Harpreet Chawla (Team Leader - Inorganics), Kevin Baxter (Laboratory Analyst), and Sofiya Ivanova (Lab Assistant).

Page : 2 of 18
Work Order : CG2210000
Client : Teck Coal Limited
Project : Regional Effects Program



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 582752)											
CG2209997-001	Anonymous	pH	----	E108	0.10	pH units	8.48	8.49	0.118%	4%	----
Physical Tests (QC Lot: 582753)											
CG2209997-001	Anonymous	conductivity	----	E100	2.0	µS/cm	579	576	0.519%	10%	----
Physical Tests (QC Lot: 582754)											
CG2209997-001	Anonymous	alkalinity, bicarbonate (as CaCO ₃)	----	E290	1.0	mg/L	151	149	1.07%	20%	----
		alkalinity, carbonate (as CaCO ₃)	----	E290	1.0	mg/L	14.4	14.4	0.00%	20%	----
		alkalinity, hydroxide (as CaCO ₃)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, total (as CaCO ₃)	----	E290	1.0	mg/L	165	164	0.973%	20%	----
Physical Tests (QC Lot: 582757)											
CG2209997-001	Anonymous	acidity (as CaCO ₃)	----	E283	2.0	mg/L	<2.0	<2.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 582842)											
CG2210000-001	EV_MC3A_WS_LAEMP_E VO_2022-07-27_N	oxidation-reduction potential [ORP]	----	E125	0.10	mV	408	410	0.563%	15%	----
Physical Tests (QC Lot: 582890)											
CG2209963-001	Anonymous	solids, total dissolved [TDS]	----	E162	10	mg/L	<10	<10	0	Diff <2x LOR	----
Physical Tests (QC Lot: 583125)											
CG2209962-005	Anonymous	turbidity	----	E121	0.10	NTU	0.18	0.16	0.02	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 582499)											
CG2209997-001	Anonymous	fluoride	16984-48-8	E235.F	0.020	mg/L	0.113	0.111	0.002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 582500)											
CG2209997-001	Anonymous	bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 582501)											
CG2209997-001	Anonymous	chloride	16887-00-6	E235.Cl-L	0.10	mg/L	5.86	5.85	0.225%	20%	----
Anions and Nutrients (QC Lot: 582502)											
CG2209997-001	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	13.0	13.1	0.112%	20%	----
Anions and Nutrients (QC Lot: 582503)											
CG2209997-001	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	0.0052	0.0051	0.0001	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 582504)											
CG2209997-001	Anonymous	sulfate (as SO ₄)	14808-79-8	E235.SO4	0.30	mg/L	102	102	0.111%	20%	----
Anions and Nutrients (QC Lot: 582601)											
CG2210000-001	EV_MC3A_WS_LAEMP_E VO_2022-07-27_N	ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 582738)											
CG2210000-001	EV_MC3A_WS_LAEMP_EVO_2022-07-27_N	Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	0.170	0.177	0.007	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 582829)											
CG2209997-001	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0126	0.0141	0.0015	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 583094)											
CG2210000-001	EV_MC3A_WS_LAEMP_EVO_2022-07-27_N	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 582551)											
CG2209997-001	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	1.50	1.51	0.01	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 582552)											
CG2209997-001	Anonymous	carbon, total organic [TOC]	----	E355-L	0.50	mg/L	1.55	1.56	0.01	Diff <2x LOR	----
Total Metals (QC Lot: 582673)											
CG2209514-001	Anonymous	chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	0.00010	<0.00010	0.000002	Diff <2x LOR	----
Total Metals (QC Lot: 582674)											
CG2209986-002	Anonymous	aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0036	0.0036	0.00005	Diff <2x LOR	----
		antimony, total	7440-36-0	E420	0.00010	mg/L	0.00021	0.00021	0.0000002	Diff <2x LOR	----
		arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00016	0.00017	0.000006	Diff <2x LOR	----
		barium, total	7440-39-3	E420	0.00010	mg/L	0.0120	0.0118	1.51%	20%	----
		beryllium, total	7440-41-7	E420	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, total	7440-42-8	E420	0.010	mg/L	0.037	0.037	0.0006	Diff <2x LOR	----
		cadmium, total	7440-43-9	E420	0.0000050	mg/L	0.0000151	0.0000161	0.0000010	Diff <2x LOR	----
		calcium, total	7440-70-2	E420	0.050	mg/L	223	222	0.380%	20%	----
		cobalt, total	7440-48-4	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		copper, total	7440-50-8	E420	0.00050	mg/L	0.00063	0.00062	0.00001	Diff <2x LOR	----
		iron, total	7439-89-6	E420	0.010	mg/L	0.186	0.186	0.254%	20%	----
		lead, total	7439-92-1	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		lithium, total	7439-93-2	E420	0.0010	mg/L	0.117	0.116	0.522%	20%	----
		magnesium, total	7439-95-4	E420	0.0050	mg/L	115	114	0.105%	20%	----
		manganese, total	7439-96-5	E420	0.00010	mg/L	0.00434	0.00431	0.714%	20%	----
		molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.0346	0.0344	0.663%	20%	----
		nickel, total	7440-02-0	E420	0.00050	mg/L	0.00423	0.00434	0.00010	Diff <2x LOR	----
		potassium, total	7440-09-7	E420	0.050	mg/L	4.44	4.42	0.400%	20%	----
		selenium, total	7782-49-2	E420	0.000050	mg/L	6.46 µg/L	0.00653	1.03%	20%	----
		silicon, total	7440-21-3	E420	0.10	mg/L	2.20	2.17	1.35%	20%	----
		silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (QC Lot: 582674) - continued											
CG2209986-002	Anonymous	sodium, total	7440-23-5	E420	0.050	mg/L	23.3	23.2	0.403%	20%	----
		strontium, total	7440-24-6	E420	0.00020	mg/L	0.220	0.219	0.488%	20%	----
		sulfur, total	7704-34-9	E420	0.50	mg/L	145	143	1.74%	20%	----
		thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		tin, total	7440-31-5	E420	0.00010	mg/L	0.00011	0.00011	0.000001	Diff <2x LOR	----
		titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		uranium, total	7440-61-1	E420	0.000010	mg/L	0.0104	0.0103	0.530%	20%	----
		vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	<0.0030	0	Diff <2x LOR	----
Total Metals (QC Lot: 582698)											
CG2210000-001	EV_MC3A_WS_LAEMP_E VO_2022-07-27_N	mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 582627)											
CG2209997-001	Anonymous	chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 582628)											
CG2209997-001	Anonymous	aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0074	0.0086	0.0012	Diff <2x LOR	----
		antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00039	0.00041	0.00002	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00024	0.00024	0.000009	Diff <2x LOR	----
		barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.247	0.246	0.379%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.000020	mg/L	<0.020 µg/L	<0.000020	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	0.117 µg/L	0.000117	0.606%	20%	----
		calcium, dissolved	7440-70-2	E421	0.050	mg/L	77.1	80.0	3.67%	20%	----
		cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	<0.10 µg/L	<0.00010	0	Diff <2x LOR	----
		copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00027	0.00024	0.00003	Diff <2x LOR	----
		iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0190	0.0196	3.40%	20%	----
		magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	31.9	31.6	0.898%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00132	0.00133	0.586%	20%	----
		molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00320	0.00338	5.45%	20%	----
		nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00400	0.00398	0.00002	Diff <2x LOR	----
		potassium, dissolved	7440-09-7	E421	0.050	mg/L	1.94	1.89	2.61%	20%	----
		selenium, dissolved	7782-49-2	E421	0.000050	mg/L	44.1 µg/L	0.0462	4.56%	20%	----
		silicon, dissolved	7440-21-3	E421	0.050	mg/L	2.80	2.95	5.02%	20%	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 582628) - continued											
CG2209997-001	Anonymous	silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E421	0.050	mg/L	3.61	3.54	1.79%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.104	0.109	4.62%	20%	----
		sulfur, dissolved	7704-34-9	E421	0.50	mg/L	41.0	43.1	4.95%	20%	----
		thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00103	0.00107	3.92%	20%	----
		vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	0.00070	0.00071	0.000009	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0029	0.0028	0.00009	Diff <2x LOR	----
Dissolved Metals (QC Lot: 582699)											
CG2210000-001	EV_MC3A_WS_LAEMP_E VO_2022-07-27_N	mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 582753)						
conductivity	----	E100	1	µS/cm	<1.0	----
Physical Tests (QCLot: 582754)						
alkalinity, bicarbonate (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
alkalinity, carbonate (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
alkalinity, hydroxide (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
alkalinity, total (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 582757)						
acidity (as CaCO ₃)	----	E283	2	mg/L	<2.0	----
Physical Tests (QCLot: 582889)						
solids, total suspended [TSS]	----	E160-L	1	mg/L	<1.0	----
Physical Tests (QCLot: 582890)						
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 583125)						
turbidity	----	E121	0.1	NTU	<0.10	----
Anions and Nutrients (QCLot: 582499)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 582500)						
bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 582501)						
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	----
Anions and Nutrients (QCLot: 582502)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 582503)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 582504)						
sulfate (as SO ₄)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 582601)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 582738)						
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 582829)						
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 583094)						



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 583094) - continued						
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	---
Organic / Inorganic Carbon (QCLot: 582551)						
carbon, dissolved organic [DOC]	---	E358-L	0.5	mg/L	<0.50	---
Organic / Inorganic Carbon (QCLot: 582552)						
carbon, total organic [TOC]	---	E355-L	0.5	mg/L	<0.50	---
Total Metals (QCLot: 582673)						
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	<0.00010	---
Total Metals (QCLot: 582674)						
aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	---
antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	---
arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	---
barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	---
beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	---
bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	---
boron, total	7440-42-8	E420	0.01	mg/L	<0.010	---
cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	---
calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	---
cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	---
copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	---
iron, total	7439-89-6	E420	0.01	mg/L	<0.010	---
lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	---
lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	---
magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	---
manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	---
molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	---
nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	---
potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	---
selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	---
silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	---
silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	---
sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	---
strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	---
sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	---
thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	---
tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	---
titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	---



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 582674) - continued						
uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	---
vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	---
zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	---
Total Metals (QCLot: 582698)						
mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	---
Dissolved Metals (QCLot: 582627)						
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	<0.00010	---
Dissolved Metals (QCLot: 582628)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	---
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	---
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	---
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	---
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	---
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	---
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	---
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	---
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	---
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	---
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	---
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	---
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	---
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	---
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	---
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	---
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	---
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	---
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	---
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	---
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	---
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	---
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	---
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	---
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	---
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	---
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	---
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	---

Page : 10 of 18
Work Order : CG2210000
Client : Teck Coal Limited
Project : Regional Effects Program



Sub-Matrix: **Water**

<i>Analyte</i>	<i>CAS Number</i>	<i>Method</i>	<i>LOR</i>	<i>Unit</i>	<i>Result</i>	<i>Qualifier</i>
Dissolved Metals (QCLot: 582628) - continued						
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
Dissolved Metals (QCLot: 582699)						
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Water					Laboratory Control Sample (LCS) Report				
					Spike Concentration	Recovery (%)	Recovery Limits (%)		Qualifier
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 582752)									
pH	---	E108	---	pH units	7 pH units	100	98.6	101	---
Physical Tests (QCLot: 582753)									
conductivity	---	E100	1	µS/cm	146.9 µS/cm	98.4	90.0	110	---
Physical Tests (QCLot: 582754)									
alkalinity, total (as CaCO3)	---	E290	1	mg/L	500 mg/L	102	85.0	115	---
Physical Tests (QCLot: 582757)									
acidity (as CaCO3)	---	E283	2	mg/L	50 mg/L	108	85.0	115	---
Physical Tests (QCLot: 582842)									
oxidation-reduction potential [ORP]	---	E125	---	mV	220 mV	99.1	95.4	104	---
Physical Tests (QCLot: 582889)									
solids, total suspended [TSS]	---	E160-L	1	mg/L	150 mg/L	94.9	85.0	115	---
Physical Tests (QCLot: 582890)									
solids, total dissolved [TDS]	---	E162	10	mg/L	1000 mg/L	97.8	85.0	115	---
Physical Tests (QCLot: 583125)									
turbidity	---	E121	0.1	NTU	200 NTU	97.6	85.0	115	---
Anions and Nutrients (QCLot: 582499)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	101	90.0	110	---
Anions and Nutrients (QCLot: 582500)									
bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	100	85.0	115	---
Anions and Nutrients (QCLot: 582501)									
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	99.9	90.0	110	---
Anions and Nutrients (QCLot: 582502)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	101	90.0	110	---
Anions and Nutrients (QCLot: 582503)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	101	90.0	110	---
Anions and Nutrients (QCLot: 582504)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	101	90.0	110	---
Anions and Nutrients (QCLot: 582601)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	99.8	85.0	115	---
Anions and Nutrients (QCLot: 582738)									
Kjeldahl nitrogen, total [TKN]	---	E318	0.05	mg/L	4 mg/L	100	75.0	125	---
Anions and Nutrients (QCLot: 582829)									



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Anions and Nutrients (QCLot: 582829) - continued									
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	8.02 mg/L	95.0	80.0	120	----
Anions and Nutrients (QCLot: 583094)									
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.02 mg/L	107	80.0	120	----
Organic / Inorganic Carbon (QCLot: 582551)									
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	94.6	80.0	120	----
Organic / Inorganic Carbon (QCLot: 582552)									
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	98.7	80.0	120	----
Total Metals (QCLot: 582673)									
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	0.25 mg/L	94.9	80.0	120	----
Total Metals (QCLot: 582674)									
aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	97.3	80.0	120	----
antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	97.7	80.0	120	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	93.0	80.0	120	----
barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	97.2	80.0	120	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	95.5	80.0	120	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	93.3	80.0	120	----
boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	96.8	80.0	120	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	94.0	80.0	120	----
calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	94.6	80.0	120	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	94.6	80.0	120	----
copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	94.3	80.0	120	----
iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	110	80.0	120	----
lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	95.4	80.0	120	----
lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	93.7	80.0	120	----
magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	93.5	80.0	120	----
manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	95.8	80.0	120	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	97.5	80.0	120	----
nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	94.9	80.0	120	----
potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	97.0	80.0	120	----
selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	90.6	80.0	120	----
silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	98.9	60.0	140	----
silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	90.3	80.0	120	----
sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	97.0	80.0	120	----
strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	95.8	80.0	120	----
sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	97.7	80.0	120	----



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Total Metals (QCLot: 582674) - continued									
thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	95.7	80.0	120	----
tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	96.3	80.0	120	----
titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	89.0	80.0	120	----
uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	99.0	80.0	120	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	97.3	80.0	120	----
zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	92.4	80.0	120	----
Total Metals (QCLot: 582698)									
mercury, total	7439-97-6	E508	0.000005	mg/L	0.0001 mg/L	101	80.0	120	----
Dissolved Metals (QCLot: 582627)									
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	0.25 mg/L	104	80.0	120	----
Dissolved Metals (QCLot: 582628)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	102	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	107	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	102	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	105	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	100	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	103	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	87.6	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	102	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	104	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	102	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	102	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	103	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	104	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	100	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	113	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	107	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	105	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	102	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	105	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	106	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	104	60.0	140	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	105	80.0	120	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	110	80.0	120	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	104	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	112	80.0	120	----



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 582628) - continued									
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	105	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	104	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	104	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	102	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	105	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	119	80.0	120	----
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	105	80.0	120	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 582499)										
CG2209997-002	Anonymous	fluoride	16984-48-8	E235.F	0.825 mg/L	1 mg/L	82.5	75.0	125	----
Anions and Nutrients (QCLot: 582500)										
CG2209997-002	Anonymous	bromide	24959-67-9	E235.Br-L	0.407 mg/L	0.5 mg/L	81.4	75.0	125	----
Anions and Nutrients (QCLot: 582501)										
CG2209997-002	Anonymous	chloride	16887-00-6	E235.Cl-L	84.9 mg/L	100 mg/L	84.9	75.0	125	----
Anions and Nutrients (QCLot: 582502)										
CG2209997-002	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	ND mg/L	2.5 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 582503)										
CG2209997-002	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.435 mg/L	0.5 mg/L	87.1	75.0	125	----
Anions and Nutrients (QCLot: 582504)										
CG2209997-002	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	ND mg/L	100 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 582601)										
CG2210004-001	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.102 mg/L	0.1 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 582738)										
CG2210004-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.48 mg/L	2.5 mg/L	99.3	70.0	130	----
Anions and Nutrients (QCLot: 582829)										
CG2209997-002	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0627 mg/L	0.0676 mg/L	92.8	70.0	130	----
Anions and Nutrients (QCLot: 583094)										
CG2210002-001	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0452 mg/L	0.05 mg/L	90.4	70.0	130	----
Organic / Inorganic Carbon (QCLot: 582551)										
CG2209997-001	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	5.19 mg/L	5 mg/L	104	70.0	130	----
Organic / Inorganic Carbon (QCLot: 582552)										
CG2209997-001	Anonymous	carbon, total organic [TOC]	----	E355-L	5.41 mg/L	5 mg/L	108	70.0	130	----
Total Metals (QCLot: 582673)										
CG2210000-001	EV_MC3A_WS_LAEMP_EV O_2022-07-27_N	chromium, total	7440-47-3	E420.Cr-L	0.393 mg/L	0.4 mg/L	98.3	70.0	130	----
Total Metals (QCLot: 582674)										
CG2210000-001	EV_MC3A_WS_LAEMP_EV O_2022-07-27_N	aluminum, total	7429-90-5	E420	1.96 mg/L	2 mg/L	98.1	70.0	130	----
		antimony, total	7440-36-0	E420	0.192 mg/L	0.2 mg/L	96.1	70.0	130	----



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 582674) - continued										
CG2210000-001	EV_MC3A_WS_LAEMP_EV O_2022-07-27_N	arsenic, total	7440-38-2	E420	0.191 mg/L	0.2 mg/L	95.4	70.0	130	----
		barium, total	7440-39-3	E420	0.194 mg/L	0.2 mg/L	96.8	70.0	130	----
		beryllium, total	7440-41-7	E420	0.376 mg/L	0.4 mg/L	93.9	70.0	130	----
		bismuth, total	7440-69-9	E420	0.0955 mg/L	0.1 mg/L	95.5	70.0	130	----
		boron, total	7440-42-8	E420	0.940 mg/L	1 mg/L	94.0	70.0	130	----
		cadmium, total	7440-43-9	E420	0.0390 mg/L	0.04 mg/L	97.6	70.0	130	----
		calcium, total	7440-70-2	E420	ND mg/L	40 mg/L	ND	70.0	130	----
		cobalt, total	7440-48-4	E420	0.196 mg/L	0.2 mg/L	98.2	70.0	130	----
		copper, total	7440-50-8	E420	0.197 mg/L	0.2 mg/L	98.7	70.0	130	----
		iron, total	7439-89-6	E420	19.7 mg/L	20 mg/L	98.4	70.0	130	----
		lead, total	7439-92-1	E420	0.195 mg/L	0.2 mg/L	97.4	70.0	130	----
		lithium, total	7439-93-2	E420	0.918 mg/L	1 mg/L	91.8	70.0	130	----
		magnesium, total	7439-95-4	E420	ND mg/L	10 mg/L	ND	70.0	130	----
		manganese, total	7439-96-5	E420	0.197 mg/L	0.2 mg/L	98.3	70.0	130	----
		molybdenum, total	7439-98-7	E420	0.197 mg/L	0.2 mg/L	98.6	70.0	130	----
		nickel, total	7440-02-0	E420	0.398 mg/L	0.4 mg/L	99.6	70.0	130	----
		potassium, total	7440-09-7	E420	39.2 mg/L	40 mg/L	98.0	70.0	130	----
		selenium, total	7782-49-2	E420	0.388 mg/L	0.4 mg/L	97.0	70.0	130	----
		silicon, total	7440-21-3	E420	96.6 mg/L	100 mg/L	96.6	70.0	130	----
		silver, total	7440-22-4	E420	0.0420 mg/L	0.04 mg/L	105	70.0	130	----
		sodium, total	7440-23-5	E420	19.3 mg/L	20 mg/L	96.4	70.0	130	----
		strontium, total	7440-24-6	E420	0.186 mg/L	0.2 mg/L	93.1	70.0	130	----
		sulfur, total	7704-34-9	E420	193 mg/L	200 mg/L	96.6	70.0	130	----
thallium, total	7440-28-0	E420	0.0384 mg/L	0.04 mg/L	95.9	70.0	130	----		
tin, total	7440-31-5	E420	0.193 mg/L	0.2 mg/L	96.6	70.0	130	----		
titanium, total	7440-32-6	E420	0.368 mg/L	0.4 mg/L	91.9	70.0	130	----		
uranium, total	7440-61-1	E420	0.0396 mg/L	0.04 mg/L	98.9	70.0	130	----		
vanadium, total	7440-62-2	E420	0.978 mg/L	1 mg/L	97.8	70.0	130	----		
zinc, total	7440-66-6	E420	3.92 mg/L	4 mg/L	98.0	70.0	130	----		
Total Metals (QCLot: 582698)										
CG2210004-001	Anonymous	mercury, total	7439-97-6	E508	0.000109 mg/L	0.0001 mg/L	109	70.0	130	----
Dissolved Metals (QCLot: 582627)										
CG2209997-002	Anonymous	chromium, dissolved	7440-47-3	E421.Cr-L	0.398 mg/L	0.4 mg/L	99.6	70.0	130	----
Dissolved Metals (QCLot: 582628)										
CG2209997-002	Anonymous	aluminum, dissolved	7429-90-5	E421	1.81 mg/L	2 mg/L	90.7	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.208 mg/L	0.2 mg/L	104	70.0	130	----



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 582628) - continued										
CG2209997-002	Anonymous	arsenic, dissolved	7440-38-2	E421	0.195 mg/L	0.2 mg/L	97.3	70.0	130	----
		barium, dissolved	7440-39-3	E421	ND mg/L	0.2 mg/L	ND	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.379 mg/L	0.4 mg/L	94.8	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.0986 mg/L	0.1 mg/L	98.6	70.0	130	----
		boron, dissolved	7440-42-8	E421	0.940 mg/L	1 mg/L	94.0	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.0401 mg/L	0.04 mg/L	100	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	40 mg/L	ND	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.193 mg/L	0.2 mg/L	96.5	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.194 mg/L	0.2 mg/L	97.0	70.0	130	----
		iron, dissolved	7439-89-6	E421	19.4 mg/L	20 mg/L	96.8	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.202 mg/L	0.2 mg/L	101	70.0	130	----
		lithium, dissolved	7439-93-2	E421	0.993 mg/L	1 mg/L	99.3	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	10 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E421	0.196 mg/L	0.2 mg/L	97.9	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.202 mg/L	0.2 mg/L	101	70.0	130	----
		nickel, dissolved	7440-02-0	E421	0.389 mg/L	0.4 mg/L	97.3	70.0	130	----
		potassium, dissolved	7440-09-7	E421	39.1 mg/L	40 mg/L	97.8	70.0	130	----
		selenium, dissolved	7782-49-2	E421	0.391 mg/L	0.4 mg/L	97.6	70.0	130	----
		silicon, dissolved	7440-21-3	E421	96.9 mg/L	100 mg/L	96.9	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.0442 mg/L	0.04 mg/L	110	70.0	130	----
		sodium, dissolved	7440-23-5	E421	19.7 mg/L	20 mg/L	98.6	70.0	130	----
		strontium, dissolved	7440-24-6	E421	0.204 mg/L	0.2 mg/L	102	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	203 mg/L	200 mg/L	102	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.0400 mg/L	0.04 mg/L	100	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.196 mg/L	0.2 mg/L	97.8	70.0	130	----
		titanium, dissolved	7440-32-6	E421	0.389 mg/L	0.4 mg/L	97.2	70.0	130	----
		uranium, dissolved	7440-61-1	E421	0.0389 mg/L	0.04 mg/L	97.3	70.0	130	----
		vanadium, dissolved	7440-62-2	E421	0.974 mg/L	1 mg/L	97.4	70.0	130	----
		zinc, dissolved	7440-66-6	E421	4.48 mg/L	4 mg/L	112	70.0	130	----
Dissolved Metals (QCLot: 582699)										
CG2210004-001	Anonymous	mercury, dissolved	7439-97-6	E509	0.000104 mg/L	0.0001 mg/L	104	70.0	130	----



COC ID: EV_MC3a		TURNAROUND TIME: RUSH	
PROJECT/CLIENT/INFO Facility Name / Job# Regional effects program Project Manager Mike Pope Email m.pope@teck.com Address 421 Pine Avenue City Sparwood Province BC Postal Code V0B 2G0 Country Canada Phone Number 343-333-3905		LABORATORY Lab Name ALS Calgary Lab Contact Lyudmyla Shvets Email lyudmyla.shvets@alsglobal.com Address 2559 29 Street NE City Calgary Province AB Postal Code T1Y 7B5 Country Canada Phone Number 1 403 407 1794	

Environmental Division
 Calgary
 Work Order Reference
CG2210000

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont	ANALYSIS REQUESTED						
								TECKCOAL-ROUTINE-VA	ALS_Package-DOC	ALS_Package-TKN/TOC	HG-T-U-CVAF-VA	HG-D-CVAF-VA	TECKCOAL-MET-T-VA	TECKCOAL-MET-D-VA
EV_MC3a_WS_LAEMP_EVO_2022-07-27_N	EV_MC3a	WS	N	7/27/2022	11:00	G	7	X	X	X	X	X	X	

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS ALS PO VPO00847030	REQUESTED BY/APPLICATION Brianna Barnhart/Minnow Env.	DATE/TIME July 28, 2022	ACCEPTED BY/APPLICATION <i>[Signature]</i>
--	--	----------------------------	---

REG OF BOTTLES RETURNED/DESCRIPTION Regular (default) Priority (2-3 business days) - 50% surcharge Emergency (1 Business Day) - 100% surcharge X For Emergency <1 Day, ASAP or Weekend - Contact ALS	Sampler's Name Brianna Barnhart	Mobile # 519-731-3821
	Sampler's Signature <i>[Signature]</i>	Date/Time July 28, 2022

Environmental Division
 Calgary
 Work Order Reference
CG2210000



Telephone : +1 403 407 1800

ALS WS

12



CERTIFICATE OF ANALYSIS

Work Order : **CG2211498**
Client : **Teck Coal Limited**
Contact : Mike Pope
Address : 421 PINE AVE
Sparwood BC Canada V0B 2G0
Telephone : ----
Project : ELKVIEW OPERATIONS
PO : VPO00816101
C-O-C number : EVO_LAEMP_2022-08-25_ALS
Sampler : ----
Site : ----
Quote number : Teck Coal Master Quote
No. of samples received : 1
No. of samples analysed : 1

Page : 1 of 6
Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
Calgary AB Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 26-Aug-2022 09:00
Date Analysis Commenced : 26-Aug-2022
Issue Date : 03-Sep-2022 09:44

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Dwayne Bennett	Supervisor - Inorganic	Inorganics, Calgary, Alberta
Dwayne Bennett	Supervisor - Inorganic	Metals, Calgary, Alberta
Elke Tabora		Inorganics, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Mackenzie Lamoureux	Laboratory Analyst	Metals, Calgary, Alberta
Ruifang Zheng	Analyst	Inorganics, Calgary, Alberta
Sara Niroomand		Inorganics, Calgary, Alberta
Sara Niroomand		Metals, Calgary, Alberta
Shirley Li		Metals, Calgary, Alberta



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

<i>Unit</i>	<i>Description</i>
-	No Unit
%	percent
µg/L	micrograms per litre
µS/cm	Microsiemens per centimetre
meq/L	milliequivalents per litre
mg/L	milligrams per litre
mV	millivolts
NTU	nephelometric turbidity units
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

<i>Qualifier</i>	<i>Description</i>
TKNI	TKN result may be biased low due to Nitrate interference. Nitrate-N is > 10x TKN.



Analytical Results

Sub-Matrix: Water					Client sample ID	EV_MC3A_WS_	----	----	----	----
(Matrix: Water)						LAEMP_EVO_2				
					Client sampling date / time	25-Aug-2022	---	---	---	---
						11:00				
Analyte	CAS Number	Method	LOR	Unit	CG2211498-001	-----	-----	-----	-----	-----
					Result	---	---	---	---	---
Physical Tests										
acidity (as CaCO3)	---	E283	2.0	mg/L	<2.0	---	---	---	---	---
alkalinity, bicarbonate (as CaCO3)	---	E290	1.0	mg/L	182	---	---	---	---	---
alkalinity, bicarbonate (as HCO3)	71-52-3	E290	1.0	mg/L	223	---	---	---	---	---
alkalinity, carbonate (as CaCO3)	---	E290	1.0	mg/L	15.4	---	---	---	---	---
alkalinity, carbonate (as CO3)	3812-32-6	E290	1.0	mg/L	9.2	---	---	---	---	---
alkalinity, hydroxide (as CaCO3)	---	E290	1.0	mg/L	<1.0	---	---	---	---	---
alkalinity, hydroxide (as OH)	14280-30-9	E290	1.0	mg/L	<1.0	---	---	---	---	---
alkalinity, total (as CaCO3)	---	E290	1.0	mg/L	198	---	---	---	---	---
conductivity	---	E100	2.0	µS/cm	605	---	---	---	---	---
hardness (as CaCO3), dissolved	---	EC100	0.50	mg/L	337	---	---	---	---	---
oxidation-reduction potential [ORP]	---	E125	0.10	mV	288	---	---	---	---	---
pH	---	E108	0.10	pH units	8.54	---	---	---	---	---
solids, total dissolved [TDS]	---	E162	10	mg/L	411	---	---	---	---	---
solids, total suspended [TSS]	---	E160-L	1.0	mg/L	2.3	---	---	---	---	---
turbidity	---	E121	0.10	NTU	0.38	---	---	---	---	---
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0068	---	---	---	---	---
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	---	---	---	---	---
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	1.75	---	---	---	---	---
fluoride	16984-48-8	E235.F	0.020	mg/L	0.138	---	---	---	---	---
Kjeldahl nitrogen, total [TKN]	---	E318	0.050	mg/L	0.085 ^{TKN}	---	---	---	---	---
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	2.55	---	---	---	---	---
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	0.0036	---	---	---	---	---
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0026	---	---	---	---	---
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0052	---	---	---	---	---
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	156	---	---	---	---	---
Organic / Inorganic Carbon										
carbon, dissolved organic [DOC]	---	E358-L	0.50	mg/L	0.89	---	---	---	---	---
carbon, total organic [TOC]	---	E355-L	0.50	mg/L	0.85	---	---	---	---	---



Analytical Results

Sub-Matrix: Water					Client sample ID	EV_MC3A_WS_	----	----	----	----
(Matrix: Water)						LAEMP_EVO_2				
					Client sampling date / time	25-Aug-2022	----	----	----	----
						11:00				
Analyte	CAS Number	Method	LOR	Unit	CG2211498-001	-----	-----	-----	-----	-----
					Result	----	----	----	----	----
Ion Balance										
anion sum	----	EC101	0.10	meq/L	7.44	----	----	----	----	----
cation sum	----	EC101	0.10	meq/L	6.90	----	----	----	----	----
ion balance (cations/anions)	----	EC101	0.010	%	92.7	----	----	----	----	----
ion balance (APHA)	----	EC101	0.010	%	3.76	----	----	----	----	----
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0045	----	----	----	----	----
antimony, total	7440-36-0	E420	0.00010	mg/L	<0.00010	----	----	----	----	----
arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00021	----	----	----	----	----
barium, total	7440-39-3	E420	0.00010	mg/L	0.0942	----	----	----	----	----
beryllium, total	7440-41-7	E420	0.020	µg/L	<0.020	----	----	----	----	----
bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	----	----	----	----	----
boron, total	7440-42-8	E420	0.010	mg/L	0.012	----	----	----	----	----
cadmium, total	7440-43-9	E420	0.0050	µg/L	0.0146	----	----	----	----	----
calcium, total	7440-70-2	E420	0.050	mg/L	75.7	----	----	----	----	----
chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	0.00019	----	----	----	----	----
cobalt, total	7440-48-4	E420	0.10	µg/L	<0.10	----	----	----	----	----
copper, total	7440-50-8	E420	0.00050	mg/L	<0.00050	----	----	----	----	----
iron, total	7439-89-6	E420	0.010	mg/L	<0.010	----	----	----	----	----
lead, total	7439-92-1	E420	0.000050	mg/L	<0.000050	----	----	----	----	----
lithium, total	7439-93-2	E420	0.0010	mg/L	0.0090	----	----	----	----	----
magnesium, total	7439-95-4	E420	0.0050	mg/L	37.5	----	----	----	----	----
manganese, total	7439-96-5	E420	0.00010	mg/L	0.00080	----	----	----	----	----
mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	----	----	----	----	----
molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.000799	----	----	----	----	----
nickel, total	7440-02-0	E420	0.00050	mg/L	0.00059	----	----	----	----	----
potassium, total	7440-09-7	E420	0.050	mg/L	0.879	----	----	----	----	----
selenium, total	7782-49-2	E420	0.050	µg/L	24.7	----	----	----	----	----
silicon, total	7440-21-3	E420	0.10	mg/L	2.38	----	----	----	----	----
silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	----	----	----	----	----
sodium, total	7440-23-5	E420	0.050	mg/L	3.05	----	----	----	----	----



Analytical Results

Sub-Matrix: Water					Client sample ID	EV_MC3A_WS_	----	----	----	----
(Matrix: Water)					LAEMP_EVO_2					
					022-08-25_N					
					Client sampling date / time	25-Aug-2022	----	----	----	----
					11:00					
Analyte	CAS Number	Method	LOR	Unit	CG2211498-001	-----	-----	-----	-----	-----
					Result	----	----	----	----	----
Total Metals										
strontium, total	7440-24-6	E420	0.00020	mg/L	0.157	----	----	----	----	----
sulfur, total	7704-34-9	E420	0.50	mg/L	55.6	----	----	----	----	----
thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	----	----	----	----	----
tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	----	----	----	----	----
titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00030	----	----	----	----	----
uranium, total	7440-61-1	E420	0.000010	mg/L	0.00177	----	----	----	----	----
vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	----	----	----	----	----
zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	----	----	----	----	----
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0014	----	----	----	----	----
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00011	----	----	----	----	----
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00018	----	----	----	----	----
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0878	----	----	----	----	----
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.020	----	----	----	----	----
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	----	----	----	----	----
boron, dissolved	7440-42-8	E421	0.010	mg/L	0.011	----	----	----	----	----
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.0175	----	----	----	----	----
calcium, dissolved	7440-70-2	E421	0.050	mg/L	74.4	----	----	----	----	----
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	0.00018	----	----	----	----	----
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	<0.10	----	----	----	----	----
copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00020	----	----	----	----	----
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	----	----	----	----	----
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	----	----	----	----	----
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0091	----	----	----	----	----
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	36.8	----	----	----	----	----
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00022	----	----	----	----	----
mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	----	----	----	----	----
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.000813	----	----	----	----	----
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00085	----	----	----	----	----
potassium, dissolved	7440-09-7	E421	0.050	mg/L	0.944	----	----	----	----	----



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	EV_MC3A_WS_ LAEMP_EVO_2 022-08-25_N	----	----	----	----
Client sampling date / time					25-Aug-2022 11:00	----	----	----	----	
Analyte	CAS Number	Method	LOR	Unit	CG2211498-001	-----	-----	-----	-----	
					Result	----	----	----	----	
Dissolved Metals										
selenium, dissolved	7782-49-2	E421	0.050	µg/L	30.9	----	----	----	----	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	2.73	----	----	----	----	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	----	----	----	----	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	3.04	----	----	----	----	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.162	----	----	----	----	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	60.9	----	----	----	----	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	----	----	----	----	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	----	----	----	----	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	----	----	----	----	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00179	----	----	----	----	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	----	----	----	----	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0010	----	----	----	----	
dissolved mercury filtration location	----	EP509	-	-	Field	----	----	----	----	
dissolved metals filtration location	----	EP421	-	-	Field	----	----	----	----	

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: CG2211498	Page	: 1 of 12
Client	: Teck Coal Limited	Laboratory	: Calgary - Environmental
Contact	: Mike Pope	Account Manager	: Lyudmyla Shvets
Address	: 421 PINE AVE Sparwood BC Canada V0B 2G0	Address	: 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5
Telephone	: ----	Telephone	: +1 403 407 1800
Project	: ELKVIEW OPERATIONS	Date Samples Received	: 26-Aug-2022 09:00
PO	: VPO00816101	Issue Date	: 03-Sep-2022 09:44
C-O-C number	: EVO_LAEMP_2022-08-25_ALS		
Sampler	: ----		
Site	: ----		
Quote number	: Teck Coal Master Quote		
No. of samples received	: 1		
No. of samples analysed	: 1		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) EV_MC3A_WS_LAEMP_EVO_2022-08-25_N	E298	25-Aug-2022	29-Aug-2022	----	----		29-Aug-2022	28 days	4 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE EV_MC3A_WS_LAEMP_EVO_2022-08-25_N	E235.Br-L	25-Aug-2022	27-Aug-2022	----	----		27-Aug-2022	28 days	2 days	✓
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE EV_MC3A_WS_LAEMP_EVO_2022-08-25_N	E235.Cl-L	25-Aug-2022	27-Aug-2022	----	----		27-Aug-2022	28 days	2 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE EV_MC3A_WS_LAEMP_EVO_2022-08-25_N	E378-U	25-Aug-2022	26-Aug-2022	----	----		26-Aug-2022	3 days	1 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE EV_MC3A_WS_LAEMP_EVO_2022-08-25_N	E235.F	25-Aug-2022	27-Aug-2022	----	----		27-Aug-2022	28 days	2 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE EV_MC3A_WS_LAEMP_EVO_2022-08-25_N	E235.NO3-L	25-Aug-2022	27-Aug-2022	3 days	2 days	✓	27-Aug-2022	3 days	0 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE EV_MC3A_WS_LAEMP_EVO_2022-08-25_N	E235.NO2-L	25-Aug-2022	27-Aug-2022	----	----		27-Aug-2022	3 days	2 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Sulfate in Water by IC											
HDPE EV_MC3A_WS_LAEMP_EVO_2022-08-25_N	E235.SO4	25-Aug-2022	27-Aug-2022	----	----		27-Aug-2022	28 days	2 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) EV_MC3A_WS_LAEMP_EVO_2022-08-25_N	E318	25-Aug-2022	30-Aug-2022	----	----		30-Aug-2022	28 days	5 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) EV_MC3A_WS_LAEMP_EVO_2022-08-25_N	E372-U	25-Aug-2022	29-Aug-2022	----	----		30-Aug-2022	28 days	5 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) EV_MC3A_WS_LAEMP_EVO_2022-08-25_N	E421.Cr-L	25-Aug-2022	31-Aug-2022	----	----		01-Sep-2022	180 days	7 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) EV_MC3A_WS_LAEMP_EVO_2022-08-25_N	E509	25-Aug-2022	30-Aug-2022	----	----		30-Aug-2022	28 days	5 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) EV_MC3A_WS_LAEMP_EVO_2022-08-25_N	E421	25-Aug-2022	31-Aug-2022	----	----		01-Sep-2022	180 days	7 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) EV_MC3A_WS_LAEMP_EVO_2022-08-25_N	E358-L	25-Aug-2022	26-Aug-2022	----	----		27-Aug-2022	28 days	2 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) EV_MC3A_WS_LAEMP_EVO_2022-08-25_N	E355-L	25-Aug-2022	26-Aug-2022	----	----		27-Aug-2022	28 days	2 days	✔	
Physical Tests : Acidity by Titration											
HDPE EV_MC3A_WS_LAEMP_EVO_2022-08-25_N	E283	25-Aug-2022	27-Aug-2022	----	----		27-Aug-2022	14 days	2 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Alkalinity Species by Titration											
HDPE EV_MC3A_WS_LAEMP_EVO_2022-08-25_N	E290	25-Aug-2022	27-Aug-2022	----	----		27-Aug-2022	14 days	2 days	✓	
Physical Tests : Conductivity in Water											
HDPE EV_MC3A_WS_LAEMP_EVO_2022-08-25_N	E100	25-Aug-2022	27-Aug-2022	----	----		27-Aug-2022	28 days	2 days	✓	
Physical Tests : ORP by Electrode											
HDPE EV_MC3A_WS_LAEMP_EVO_2022-08-25_N	E125	25-Aug-2022	----	----	----		31-Aug-2022	0.25 hrs	145 hrs	* EHTR-FM	
Physical Tests : pH by Meter											
HDPE EV_MC3A_WS_LAEMP_EVO_2022-08-25_N	E108	25-Aug-2022	27-Aug-2022	----	----		27-Aug-2022	0.25 hrs	0.26 hrs	* EHTR-FM	
Physical Tests : TDS by Gravimetry											
HDPE EV_MC3A_WS_LAEMP_EVO_2022-08-25_N	E162	25-Aug-2022	----	----	----		30-Aug-2022	7 days	5 days	✓	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE EV_MC3A_WS_LAEMP_EVO_2022-08-25_N	E160-L	25-Aug-2022	----	----	----		30-Aug-2022	7 days	5 days	✓	
Physical Tests : Turbidity by Nephelometry											
HDPE EV_MC3A_WS_LAEMP_EVO_2022-08-25_N	E121	25-Aug-2022	----	----	----		28-Aug-2022	3 days	3 days	✓	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) EV_MC3A_WS_LAEMP_EVO_2022-08-25_N	E420.Cr-L	25-Aug-2022	01-Sep-2022	----	----		01-Sep-2022	180 days	7 days	✓	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) EV_MC3A_WS_LAEMP_EVO_2022-08-25_N	E508	25-Aug-2022	30-Aug-2022	----	----		30-Aug-2022	28 days	5 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) EV_MC3A_WS_LAEMP_EVO_2022-08-25_N	E420	25-Aug-2022	01-Sep-2022	----	----		01-Sep-2022	180 days	7 days	✔

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended

Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
Analytical Methods							
Laboratory Duplicates (DUP)							
Acidity by Titration	E283	621826	1	19	5.2	5.0	✓
Alkalinity Species by Titration	E290	621829	1	19	5.2	5.0	✓
Ammonia by Fluorescence	E298	623184	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	621501	1	7	14.2	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	621502	1	7	14.2	5.0	✓
Conductivity in Water	E100	621828	1	19	5.2	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	627675	1	17	5.8	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	624354	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	627676	1	19	5.2	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	621049	1	19	5.2	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	620984	1	13	7.6	5.0	✓
Fluoride in Water by IC	E235.F	621496	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	621503	1	7	14.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	621504	1	7	14.2	5.0	✓
ORP by Electrode	E125	624894	1	8	12.5	5.0	✓
pH by Meter	E108	621827	1	19	5.2	5.0	✓
Sulfate in Water by IC	E235.SO4	621499	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	621920	1	11	9.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	626685	1	2	50.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	623189	1	8	12.5	5.0	✓
Total Mercury in Water by CVAAS	E508	624827	1	6	16.6	5.0	✓
Total Metals in Water by CRC ICPMS	E420	626686	1	19	5.2	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	621050	1	19	5.2	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	623181	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121	622526	1	20	5.0	5.0	✓
Laboratory Control Samples (LCS)							
Acidity by Titration	E283	621826	1	19	5.2	5.0	✓
Alkalinity Species by Titration	E290	621829	1	19	5.2	5.0	✓
Ammonia by Fluorescence	E298	623184	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	621501	1	7	14.2	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	621502	1	7	14.2	5.0	✓
Conductivity in Water	E100	621828	1	19	5.2	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	627675	1	17	5.8	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	624354	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	627676	1	19	5.2	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	621049	1	19	5.2	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	620984	1	13	7.6	5.0	✓



Matrix: **Water**

Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
Analytical Methods							
Laboratory Control Samples (LCS) - Continued							
Fluoride in Water by IC	E235.F	621496	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	621503	1	7	14.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	621504	1	7	14.2	5.0	✓
ORP by Electrode	E125	624894	1	8	12.5	5.0	✓
pH by Meter	E108	621827	1	19	5.2	5.0	✓
Sulfate in Water by IC	E235.SO4	621499	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	621920	1	11	9.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	626685	1	2	50.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	623189	1	8	12.5	5.0	✓
Total Mercury in Water by CVAAS	E508	624827	1	6	16.6	5.0	✓
Total Metals in Water by CRC ICPMS	E420	626686	1	19	5.2	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	621050	1	19	5.2	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	623181	1	20	5.0	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	621906	1	15	6.6	5.0	✓
Turbidity by Nephelometry	E121	622526	1	20	5.0	5.0	✓
Method Blanks (MB)							
Acidity by Titration	E283	621826	1	19	5.2	5.0	✓
Alkalinity Species by Titration	E290	621829	1	19	5.2	5.0	✓
Ammonia by Fluorescence	E298	623184	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	621501	1	7	14.2	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	621502	1	7	14.2	5.0	✓
Conductivity in Water	E100	621828	1	19	5.2	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	627675	1	17	5.8	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	624354	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	627676	1	19	5.2	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	621049	1	19	5.2	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	620984	1	13	7.6	5.0	✓
Fluoride in Water by IC	E235.F	621496	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	621503	1	7	14.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	621504	1	7	14.2	5.0	✓
Sulfate in Water by IC	E235.SO4	621499	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	621920	1	11	9.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	626685	1	2	50.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	623189	1	8	12.5	5.0	✓
Total Mercury in Water by CVAAS	E508	624827	1	6	16.6	5.0	✓
Total Metals in Water by CRC ICPMS	E420	626686	1	19	5.2	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	621050	1	19	5.2	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	623181	1	20	5.0	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	621906	1	15	6.6	5.0	✓
Turbidity by Nephelometry	E121	622526	1	20	5.0	5.0	✓



Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
<i>Analytical Methods</i>							
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	623184	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	621501	1	7	14.2	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	621502	1	7	14.2	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	627675	1	17	5.8	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	624354	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	627676	1	19	5.2	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	621049	1	19	5.2	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	620984	1	13	7.6	5.0	✓
Fluoride in Water by IC	E235.F	621496	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	621503	1	7	14.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	621504	1	7	14.2	5.0	✓
Sulfate in Water by IC	E235.SO4	621499	1	20	5.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	626685	1	2	50.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	623189	1	8	12.5	5.0	✓
Total Mercury in Water by CVAAS	E508	624827	1	6	16.6	5.0	✓
Total Metals in Water by CRC ICPMS	E420	626686	1	19	5.2	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	621050	1	19	5.2	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	623181	1	20	5.0	5.0	✓



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 Calgary - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 Calgary - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 Calgary - Environmental	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
ORP by Electrode	E125 Calgary - Environmental	Water	ASTM D1498 (mod)	Oxidation reduction potential is reported as the oxidation-reduction potential of the platinum metal-reference electrode employed, measured in mV. For high accuracy test results, it is recommended that this analysis be conducted in the field.
TSS by Gravimetry (Low Level)	E160-L Calgary - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 Calgary - Environmental	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC (Low Level)	E235.Cl-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Acidity by Titration	E283 Calgary - Environmental	Water	APHA 2310 B (mod)	Acidity is determined by potentiometric titration to pH endpoint of 8.3



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Alkalinity Species by Titration	E290 Calgary - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 Calgary - Environmental	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 Calgary - Environmental	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L Calgary - Environmental	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Dissolved Organic Carbon by Combustion (Low Level)	E358-L Calgary - Environmental	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U Calgary - Environmental	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U Calgary - Environmental	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Total Metals in Water by CRC ICPMS	E420 Calgary - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L Calgary - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS.
Dissolved Metals in Water by CRC ICPMS	E421 Calgary - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L Calgary - Environmental	Water	APHA 3030 B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS
Total Mercury in Water by CVAAS	E508 Calgary - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS
Dissolved Mercury in Water by CVAAS	E509 Calgary - Environmental	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
Dissolved Hardness (Calculated)	EC100 Calgary - Environmental	Water	APHA 2340B	"Hardness (as CaCO ₃), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Ion Balance using Dissolved Metals	EC101 Calgary - Environmental	Water	APHA 1030E	Cation Sum, Anion Sum, and Ion Balance are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present. Ion Balance cannot be calculated accurately for waters with very low electrical conductivity (EC).

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 Calgary - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 Calgary - Environmental	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Preparation for Total Organic Carbon by Combustion	EP355 Calgary - Environmental	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon for Combustion	EP358 Calgary - Environmental	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Phosphorus in water	EP372 Calgary - Environmental	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Dissolved Metals Water Filtration	EP421 Calgary - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO ₃ .
Dissolved Mercury Water Filtration	EP509 Calgary - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.



QUALITY CONTROL REPORT

Work Order : **CG2211498**

Client : Teck Coal Limited
 Contact : Mike Pope
 Address : 421 PINE AVE
 Sparwood BC Canada V0B 2G0

Telephone : ----

Project : ELKVIEW OPERATIONS
 PO : VPO00816101
 C-O-C number : EVO_LAEMP_2022-08-25_ALS
 Sampler : ----
 Site : ----
 Quote number : Teck Coal Master Quote
 No. of samples received : 1
 No. of samples analysed : 1

Page : 1 of 18

Laboratory : Calgary - Environmental
 Account Manager : Lyudmyla Shvets
 Address : 2559 29th Street NE
 Calgary, Alberta Canada T1Y 7B5

Telephone : +1 403 407 1800
 Date Samples Received : 26-Aug-2022 09:00
 Date Analysis Commenced : 26-Aug-2022
 Issue Date : 03-Sep-2022 09:44

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Dwayne Bennett	Supervisor - Inorganic	Calgary Inorganics, Calgary, Alberta
Dwayne Bennett	Supervisor - Inorganic	Calgary Metals, Calgary, Alberta
Elke Tabora		Calgary Inorganics, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Calgary Inorganics, Calgary, Alberta
Mackenzie Lamoureux	Laboratory Analyst	Calgary Metals, Calgary, Alberta
Ruifang Zheng	Analyst	Calgary Inorganics, Calgary, Alberta
Sara Niroomand		Calgary Inorganics, Calgary, Alberta
Sara Niroomand		Calgary Metals, Calgary, Alberta
Shirley Li		Calgary Metals, Calgary, Alberta

Page : 2 of 18
Work Order : CG2211498
Client : Teck Coal Limited
Project : ELKVIEW OPERATIONS



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 621826)											
CG2211489-001	Anonymous	acidity (as CaCO3)	----	E283	10.0	mg/L	<10.0	11.6	1.6	Diff <2x LOR	----
Physical Tests (QC Lot: 621827)											
CG2211489-001	Anonymous	pH	----	E108	0.10	pH units	7.85	7.87	0.254%	4%	----
Physical Tests (QC Lot: 621828)											
CG2211489-001	Anonymous	conductivity	----	E100	2.0	µS/cm	3170	3120	1.59%	10%	----
Physical Tests (QC Lot: 621829)											
CG2211489-001	Anonymous	alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	794	761	4.26%	20%	----
		alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	794	761	4.26%	20%	----
Physical Tests (QC Lot: 621920)											
CG2211493-001	Anonymous	solids, total dissolved [TDS]	----	E162	20	mg/L	397	403	1.50%	20%	----
Physical Tests (QC Lot: 622526)											
CG2211489-006	Anonymous	turbidity	----	E121	0.10	NTU	0.15	0.17	0.01	Diff <2x LOR	----
Physical Tests (QC Lot: 624894)											
CG2211493-004	Anonymous	oxidation-reduction potential [ORP]	----	E125	0.10	mV	271	270	0.111%	15%	----
Anions and Nutrients (QC Lot: 620984)											
CG2211489-007	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0013	0.0012	0.0002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 621496)											
CG2211446-001	Anonymous	fluoride	16984-48-8	E235.F	0.020	mg/L	1.75	1.72	1.74%	20%	----
Anions and Nutrients (QC Lot: 621499)											
CG2211446-001	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	214	210	1.62%	20%	----
Anions and Nutrients (QC Lot: 621501)											
CG2211495-001	Anonymous	bromide	24959-67-9	E235.Br-L	1.00	mg/L	<1.00	<1.00	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 621502)											
CG2211495-001	Anonymous	chloride	16887-00-6	E235.Cl-L	2.00	mg/L	61.0	64.5	5.50%	20%	----
Anions and Nutrients (QC Lot: 621503)											
CG2211495-001	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	0.100	mg/L	32.2	34.0	5.60%	20%	----
Anions and Nutrients (QC Lot: 621504)											
CG2211495-001	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.0200	mg/L	39.7	41.7	4.93%	20%	----
Anions and Nutrients (QC Lot: 623181)											



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 623181) - continued											
CG2211495-001	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0200	mg/L	0.254	0.253	0.663%	20%	----
Anions and Nutrients (QC Lot: 623184)											
CG2211495-001	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.125	mg/L	3.62	3.60	0.784%	20%	----
Anions and Nutrients (QC Lot: 623189)											
CG2211478-005	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.500	mg/L	1.26	1.42	0.165	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 621049)											
CG2211478-001	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 621050)											
CG2211478-001	Anonymous	carbon, total organic [TOC]	----	E355-L	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
Total Metals (QC Lot: 624827)											
CG2211483-001	Anonymous	mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Total Metals (QC Lot: 626685)											
CG2211458-001	Anonymous	chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	0.00017	0.00016	0.00002	Diff <2x LOR	----
Total Metals (QC Lot: 626686)											
CG2211458-001	Anonymous	aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0075	0.0074	0.0001	Diff <2x LOR	----
		antimony, total	7440-36-0	E420	0.00010	mg/L	0.00054	0.00052	0.00002	Diff <2x LOR	----
		arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00017	0.00013	0.00004	Diff <2x LOR	----
		barium, total	7440-39-3	E420	0.00010	mg/L	0.0205	0.0199	3.24%	20%	----
		beryllium, total	7440-41-7	E420	0.000020	mg/L	0.022 µg/L	<0.000020	0.000002	Diff <2x LOR	----
		bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, total	7440-42-8	E420	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		cadmium, total	7440-43-9	E420	0.0000050	mg/L	0.206 µg/L	0.000189	8.62%	20%	----
		calcium, total	7440-70-2	E420	0.050	mg/L	103	102	0.419%	20%	----
		cobalt, total	7440-48-4	E420	0.00010	mg/L	<0.10 µg/L	<0.00010	0	Diff <2x LOR	----
		copper, total	7440-50-8	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		iron, total	7439-89-6	E420	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		lead, total	7439-92-1	E420	0.000050	mg/L	0.000079	<0.000050	0.000029	Diff <2x LOR	----
		lithium, total	7439-93-2	E420	0.0010	mg/L	0.0185	0.0183	0.838%	20%	----
		magnesium, total	7439-95-4	E420	0.0050	mg/L	90.3	89.6	0.738%	20%	----
		manganese, total	7439-96-5	E420	0.00010	mg/L	0.00033	0.00027	0.00006	Diff <2x LOR	----
		molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.00378	0.00363	4.16%	20%	----
		nickel, total	7440-02-0	E420	0.00050	mg/L	0.00545	0.00510	6.55%	20%	----
		potassium, total	7440-09-7	E420	0.050	mg/L	1.84	1.78	3.13%	20%	----
		selenium, total	7782-49-2	E420	0.000050	mg/L	189 µg/L	0.198	4.97%	20%	----
		silicon, total	7440-21-3	E420	0.10	mg/L	1.43	1.38	3.94%	20%	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (QC Lot: 626686) - continued											
CG2211458-001	Anonymous	silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, total	7440-23-5	E420	0.050	mg/L	2.94	2.93	0.423%	20%	----
		strontium, total	7440-24-6	E420	0.00020	mg/L	0.0850	0.0837	1.54%	20%	----
		sulfur, total	7704-34-9	E420	0.50	mg/L	137	138	0.801%	20%	----
		thallium, total	7440-28-0	E420	0.000010	mg/L	0.000016	0.000017	0.000001	Diff <2x LOR	----
		tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		uranium, total	7440-61-1	E420	0.000010	mg/L	0.00646	0.00645	0.134%	20%	----
		vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		zinc, total	7440-66-6	E420	0.0030	mg/L	0.0078	0.0065	0.0013	Diff <2x LOR	----
Dissolved Metals (QC Lot: 624354)											
CG2211485-001	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 627675)											
CG2211498-001	EV_MC3A_WS_LAEMP_E VO_2022-08-25_N	chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	0.00018	0.00019	0.00001	Diff <2x LOR	----
Dissolved Metals (QC Lot: 627676)											
CG2211498-001	EV_MC3A_WS_LAEMP_E VO_2022-08-25_N	aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0014	0.0013	0.0001	Diff <2x LOR	----
		antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00011	<0.00010	0.000009	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00018	0.00019	0.000007	Diff <2x LOR	----
		barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0878	0.0897	2.12%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.000020	mg/L	<0.020 µg/L	<0.000020	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.010	mg/L	0.011	0.010	0.0004	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	0.0175 µg/L	0.0000177	0.0000002	Diff <2x LOR	----
		calcium, dissolved	7440-70-2	E421	0.050	mg/L	74.4	73.6	1.02%	20%	----
		cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	<0.10 µg/L	<0.00010	0	Diff <2x LOR	----
		copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00020	0.00020	0.0000008	Diff <2x LOR	----
		iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0091	0.0084	0.0007	Diff <2x LOR	----
		magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	36.8	35.8	2.89%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00022	0.00021	0.000010	Diff <2x LOR	----
		molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.000813	0.000812	0.0726%	20%	----
		nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00085	0.00083	0.00002	Diff <2x LOR	----
		potassium, dissolved	7440-09-7	E421	0.050	mg/L	0.944	0.925	2.01%	20%	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 627676) - continued											
CG2211498-001	EV_MC3A_WS_LAEMP_E VO_2022-08-25_N	selenium, dissolved	7782-49-2	E421	0.000050	mg/L	30.9 µg/L	0.0306	1.09%	20%	----
		silicon, dissolved	7440-21-3	E421	0.050	mg/L	2.73	2.63	3.55%	20%	----
		silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E421	0.050	mg/L	3.04	2.97	2.19%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.162	0.162	0.0751%	20%	----
		sulfur, dissolved	7704-34-9	E421	0.50	mg/L	60.9	58.8	3.56%	20%	----
		thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00179	0.00178	0.312%	20%	----
		vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 621826)						
acidity (as CaCO3)	----	E283	2	mg/L	<2.0	----
Physical Tests (QCLot: 621828)						
conductivity	----	E100	1	µS/cm	<1.0	----
Physical Tests (QCLot: 621829)						
alkalinity, bicarbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, carbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, hydroxide (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 621906)						
solids, total suspended [TSS]	----	E160-L	1	mg/L	<1.0	----
Physical Tests (QCLot: 621920)						
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 622526)						
turbidity	----	E121	0.1	NTU	<0.10	----
Anions and Nutrients (QCLot: 620984)						
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 621496)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 621499)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 621501)						
bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 621502)						
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	----
Anions and Nutrients (QCLot: 621503)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 621504)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 623181)						
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 623184)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 623189)						



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 623189) - continued						
Kjeldahl nitrogen, total [TKN]	---	E318	0.05	mg/L	<0.050	---
Organic / Inorganic Carbon (QCLot: 621049)						
carbon, dissolved organic [DOC]	---	E358-L	0.5	mg/L	<0.50	---
Organic / Inorganic Carbon (QCLot: 621050)						
carbon, total organic [TOC]	---	E355-L	0.5	mg/L	<0.50	---
Total Metals (QCLot: 624827)						
mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	---
Total Metals (QCLot: 626685)						
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	<0.00010	---
Total Metals (QCLot: 626686)						
aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	---
antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	---
arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	---
barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	---
beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	---
bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	---
boron, total	7440-42-8	E420	0.01	mg/L	<0.010	---
cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	---
calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	---
cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	---
copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	---
iron, total	7439-89-6	E420	0.01	mg/L	<0.010	---
lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	---
lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	---
magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	---
manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	---
molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	---
nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	---
potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	---
selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	---
silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	---
silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	---
sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	---
strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	---
sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	---
thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	---



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 626686) - continued						
tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	---
titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	---
uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	---
vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	---
zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	---
Dissolved Metals (QCLot: 624354)						
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	---
Dissolved Metals (QCLot: 627675)						
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	<0.00010	---
Dissolved Metals (QCLot: 627676)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	---
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	---
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	---
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	---
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	---
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	---
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	---
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	---
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	---
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	---
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	---
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	---
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	---
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	---
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	---
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	---
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	---
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	---
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	---
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	---
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	---
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	---
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	---
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	---
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	---
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	---

Page : 10 of 18
Work Order : CG2211498
Client : Teck Coal Limited
Project : ELKVIEW OPERATIONS



Sub-Matrix: **Water**

<i>Analyte</i>	<i>CAS Number</i>	<i>Method</i>	<i>LOR</i>	<i>Unit</i>	<i>Result</i>	<i>Qualifier</i>
Dissolved Metals (QCLot: 627676) - continued						
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Physical Tests (QCLot: 621826)									
acidity (as CaCO ₃)	----	E283	2	mg/L	50 mg/L	102	85.0	115	----
Physical Tests (QCLot: 621827)									
pH	----	E108	----	pH units	7 pH units	99.4	98.6	101	----
Physical Tests (QCLot: 621828)									
conductivity	----	E100	1	µS/cm	146.9 µS/cm	103	90.0	110	----
Physical Tests (QCLot: 621829)									
alkalinity, total (as CaCO ₃)	----	E290	1	mg/L	500 mg/L	108	85.0	115	----
Physical Tests (QCLot: 621906)									
solids, total suspended [TSS]	----	E160-L	1	mg/L	150 mg/L	95.0	85.0	115	----
Physical Tests (QCLot: 621920)									
solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	95.6	85.0	115	----
Physical Tests (QCLot: 622526)									
turbidity	----	E121	0.1	NTU	200 NTU	98.1	85.0	115	----
Physical Tests (QCLot: 624894)									
oxidation-reduction potential [ORP]	----	E125	----	mV	220 mV	97.3	95.4	104	----
Anions and Nutrients (QCLot: 620984)									
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.03 mg/L	99.0	80.0	120	----
Anions and Nutrients (QCLot: 621496)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	98.8	90.0	110	----
Anions and Nutrients (QCLot: 621499)									
sulfate (as SO ₄)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	96.9	90.0	110	----
Anions and Nutrients (QCLot: 621501)									
bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	99.1	85.0	115	----
Anions and Nutrients (QCLot: 621502)									
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	97.3	90.0	110	----
Anions and Nutrients (QCLot: 621503)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	96.6	90.0	110	----
Anions and Nutrients (QCLot: 621504)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	95.3	90.0	110	----
Anions and Nutrients (QCLot: 623181)									
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.03 mg/L	93.0	80.0	120	----
Anions and Nutrients (QCLot: 623184)									



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Anions and Nutrients (QCLot: 623184) - continued									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	97.9	85.0	115	----
Anions and Nutrients (QCLot: 623189)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	86.6	75.0	125	----
Organic / Inorganic Carbon (QCLot: 621049)									
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	96.1	80.0	120	----
Organic / Inorganic Carbon (QCLot: 621050)									
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	98.0	80.0	120	----
Total Metals (QCLot: 624827)									
mercury, total	7439-97-6	E508	0.000005	mg/L	0.0001 mg/L	113	80.0	120	----
Total Metals (QCLot: 626685)									
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	0.25 mg/L	97.7	80.0	120	----
Total Metals (QCLot: 626686)									
aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	98.8	80.0	120	----
antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	102	80.0	120	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	97.9	80.0	120	----
barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	102	80.0	120	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	96.9	80.0	120	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	99.1	80.0	120	----
boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	96.8	80.0	120	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	99.5	80.0	120	----
calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	97.6	80.0	120	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	97.7	80.0	120	----
copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	95.8	80.0	120	----
iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	112	80.0	120	----
lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	101	80.0	120	----
lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	113	80.0	120	----
magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	96.1	80.0	120	----
manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	95.7	80.0	120	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	103	80.0	120	----
nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	99.0	80.0	120	----
potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	98.7	80.0	120	----
selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	93.6	80.0	120	----
silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	99.7	60.0	140	----
silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	98.4	80.0	120	----
sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	97.7	80.0	120	----



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Total Metals (QCLot: 626686) - continued									
strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	103	80.0	120	----
sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	106	80.0	120	----
thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	101	80.0	120	----
tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	101	80.0	120	----
titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	91.5	80.0	120	----
uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	102	80.0	120	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	100.0	80.0	120	----
zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	97.2	80.0	120	----
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	97.3	80.0	120	----
Dissolved Metals (QCLot: 627675)									
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	0.25 mg/L	100	80.0	120	----
Dissolved Metals (QCLot: 627676)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	100	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	102	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	98.6	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	100	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	101	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	101	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	97.6	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	99.5	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	99.0	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	97.6	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	97.3	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	114	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	101	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	101	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	97.1	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	99.6	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	103	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	99.6	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	100	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	97.2	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	101	60.0	140	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	99.1	80.0	120	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	99.3	80.0	120	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	103	80.0	120	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Dissolved Metals (QCLot: 627676) - continued									
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	106	80.0	120	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	101	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	102	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	92.6	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	103	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	99.2	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	92.2	80.0	120	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 620984)										
CG2211492-001	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0433 mg/L	0.05 mg/L	86.5	70.0	130	----
Anions and Nutrients (QCLot: 621496)										
CG2211446-002	Anonymous	fluoride	16984-48-8	E235.F	0.983 mg/L	1 mg/L	98.3	75.0	125	----
Anions and Nutrients (QCLot: 621499)										
CG2211446-002	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	94.8 mg/L	100 mg/L	94.8	75.0	125	----
Anions and Nutrients (QCLot: 621501)										
CG2211498-001	EV_MC3A_WS_LAEMP_EV O_2022-08-25_N	bromide	24959-67-9	E235.Br-L	0.498 mg/L	0.5 mg/L	99.5	75.0	125	----
Anions and Nutrients (QCLot: 621502)										
CG2211498-001	EV_MC3A_WS_LAEMP_EV O_2022-08-25_N	chloride	16887-00-6	E235.Cl-L	97.6 mg/L	100 mg/L	97.6	75.0	125	----
Anions and Nutrients (QCLot: 621503)										
CG2211498-001	EV_MC3A_WS_LAEMP_EV O_2022-08-25_N	nitrate (as N)	14797-55-8	E235.NO3-L	ND mg/L	2.5 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 621504)										
CG2211498-001	EV_MC3A_WS_LAEMP_EV O_2022-08-25_N	nitrite (as N)	14797-65-0	E235.NO2-L	0.490 mg/L	0.5 mg/L	97.9	75.0	125	----
Anions and Nutrients (QCLot: 623181)										
CG2211495-002	Anonymous	phosphorus, total	7723-14-0	E372-U	ND mg/L	0.05 mg/L	ND	70.0	130	----
Anions and Nutrients (QCLot: 623184)										
CG2211495-002	Anonymous	ammonia, total (as N)	7664-41-7	E298	ND mg/L	0.1 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 623189)										
CG2211478-006	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.71 mg/L	2.5 mg/L	108	70.0	130	----
Organic / Inorganic Carbon (QCLot: 621049)										
CG2211478-001	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	4.98 mg/L	5 mg/L	99.6	70.0	130	----
Organic / Inorganic Carbon (QCLot: 621050)										
CG2211478-001	Anonymous	carbon, total organic [TOC]	----	E355-L	5.35 mg/L	5 mg/L	107	70.0	130	----
Total Metals (QCLot: 624827)										
CG2211483-002	Anonymous	mercury, total	7439-97-6	E508	0.000110 mg/L	0.0001 mg/L	110	70.0	130	----
Total Metals (QCLot: 626685)										



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 626685) - continued										
CG2211498-001	EV_MC3A_WS_LAEMP_EV O_2022-08-25_N	chromium, total	7440-47-3	E420.Cr-L	0.386 mg/L	0.4 mg/L	96.6	70.0	130	----
Total Metals (QCLot: 626686)										
CG2211498-001	EV_MC3A_WS_LAEMP_EV O_2022-08-25_N	aluminum, total	7429-90-5	E420	1.90 mg/L	2 mg/L	95.2	70.0	130	----
		antimony, total	7440-36-0	E420	0.192 mg/L	0.2 mg/L	96.1	70.0	130	----
		arsenic, total	7440-38-2	E420	0.187 mg/L	0.2 mg/L	93.5	70.0	130	----
		barium, total	7440-39-3	E420	0.189 mg/L	0.2 mg/L	94.4	70.0	130	----
		beryllium, total	7440-41-7	E420	0.352 mg/L	0.4 mg/L	88.1	70.0	130	----
		bismuth, total	7440-69-9	E420	0.0972 mg/L	0.1 mg/L	97.2	70.0	130	----
		boron, total	7440-42-8	E420	0.914 mg/L	1 mg/L	91.4	70.0	130	----
		cadmium, total	7440-43-9	E420	0.0404 mg/L	0.04 mg/L	101	70.0	130	----
		calcium, total	7440-70-2	E420	ND mg/L	40 mg/L	ND	70.0	130	----
		cobalt, total	7440-48-4	E420	0.193 mg/L	0.2 mg/L	96.6	70.0	130	----
		copper, total	7440-50-8	E420	0.195 mg/L	0.2 mg/L	97.7	70.0	130	----
		iron, total	7439-89-6	E420	20.0 mg/L	20 mg/L	100	70.0	130	----
		lead, total	7439-92-1	E420	0.195 mg/L	0.2 mg/L	97.4	70.0	130	----
		lithium, total	7439-93-2	E420	0.875 mg/L	1 mg/L	87.5	70.0	130	----
		magnesium, total	7439-95-4	E420	ND mg/L	10 mg/L	ND	70.0	130	----
		manganese, total	7439-96-5	E420	0.198 mg/L	0.2 mg/L	99.1	70.0	130	----
		molybdenum, total	7439-98-7	E420	0.185 mg/L	0.2 mg/L	92.7	70.0	130	----
		nickel, total	7440-02-0	E420	0.394 mg/L	0.4 mg/L	98.4	70.0	130	----
		potassium, total	7440-09-7	E420	38.2 mg/L	40 mg/L	95.6	70.0	130	----
		selenium, total	7782-49-2	E420	0.377 mg/L	0.4 mg/L	94.3	70.0	130	----
		silicon, total	7440-21-3	E420	88.0 mg/L	100 mg/L	88.0	70.0	130	----
		silver, total	7440-22-4	E420	0.0386 mg/L	0.04 mg/L	96.4	70.0	130	----
		sodium, total	7440-23-5	E420	18.9 mg/L	20 mg/L	94.4	70.0	130	----
		strontium, total	7440-24-6	E420	0.175 mg/L	0.2 mg/L	87.6	70.0	130	----
		sulfur, total	7704-34-9	E420	178 mg/L	200 mg/L	89.0	70.0	130	----
		thallium, total	7440-28-0	E420	0.0368 mg/L	0.04 mg/L	91.9	70.0	130	----
		tin, total	7440-31-5	E420	0.191 mg/L	0.2 mg/L	95.5	70.0	130	----
		titanium, total	7440-32-6	E420	0.399 mg/L	0.4 mg/L	99.7	70.0	130	----
		uranium, total	7440-61-1	E420	0.0402 mg/L	0.04 mg/L	100	70.0	130	----
		vanadium, total	7440-62-2	E420	0.959 mg/L	1 mg/L	95.9	70.0	130	----
		zinc, total	7440-66-6	E420	3.78 mg/L	4 mg/L	94.5	70.0	130	----
Dissolved Metals (QCLot: 624354)										
CG2211485-002	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000962 mg/L	0.0001 mg/L	96.2	70.0	130	----



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 627675)										
CG2211533-001	Anonymous	chromium, dissolved	7440-47-3	E421.Cr-L	0.404 mg/L	0.4 mg/L	101	70.0	130	----
Dissolved Metals (QCLot: 627676)										
CG2211533-001	Anonymous	aluminum, dissolved	7429-90-5	E421	1.98 mg/L	2 mg/L	98.8	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.210 mg/L	0.2 mg/L	105	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.197 mg/L	0.2 mg/L	98.4	70.0	130	----
		barium, dissolved	7440-39-3	E421	0.200 mg/L	0.2 mg/L	99.9	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.398 mg/L	0.4 mg/L	99.4	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.101 mg/L	0.1 mg/L	101	70.0	130	----
		boron, dissolved	7440-42-8	E421	1.02 mg/L	1 mg/L	102	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.0397 mg/L	0.04 mg/L	99.2	70.0	130	----
		calcium, dissolved	7440-70-2	E421	39.6 mg/L	40 mg/L	99.0	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.197 mg/L	0.2 mg/L	98.5	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.199 mg/L	0.2 mg/L	99.6	70.0	130	----
		iron, dissolved	7439-89-6	E421	19.9 mg/L	20 mg/L	99.6	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.204 mg/L	0.2 mg/L	102	70.0	130	----
		lithium, dissolved	7439-93-2	E421	0.971 mg/L	1 mg/L	97.1	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	9.55 mg/L	10 mg/L	95.5	70.0	130	----
		manganese, dissolved	7439-96-5	E421	0.203 mg/L	0.2 mg/L	102	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.208 mg/L	0.2 mg/L	104	70.0	130	----
		nickel, dissolved	7440-02-0	E421	0.405 mg/L	0.4 mg/L	101	70.0	130	----
		potassium, dissolved	7440-09-7	E421	40.2 mg/L	40 mg/L	100	70.0	130	----
		selenium, dissolved	7782-49-2	E421	0.398 mg/L	0.4 mg/L	99.6	70.0	130	----
		silicon, dissolved	7440-21-3	E421	86.6 mg/L	100 mg/L	86.6	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.0437 mg/L	0.04 mg/L	109	70.0	130	----
		sodium, dissolved	7440-23-5	E421	ND mg/L	20 mg/L	ND	70.0	130	----
		strontium, dissolved	7440-24-6	E421	0.206 mg/L	0.2 mg/L	103	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	205 mg/L	200 mg/L	102	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.0401 mg/L	0.04 mg/L	100	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.202 mg/L	0.2 mg/L	101	70.0	130	----
		titanium, dissolved	7440-32-6	E421	0.390 mg/L	0.4 mg/L	97.6	70.0	130	----
		uranium, dissolved	7440-61-1	E421	0.0396 mg/L	0.04 mg/L	99.0	70.0	130	----
		vanadium, dissolved	7440-62-2	E421	0.989 mg/L	1 mg/L	98.9	70.0	130	----
		zinc, dissolved	7440-66-6	E421	3.82 mg/L	4 mg/L	95.4	70.0	130	----



COC ID: EVO_LAEMP_2022-08-25 ALS		TURNAROUND TIME:		Regular		RUSH: NA					
PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name / Job# Elkview Operations				Lab Name ALS Calgary		Report Format / Distribution		Excel	PDF	EDD	
Project Manager Mike Pope				Lab Contact Lyudmyla Shvets		Email 1: AquaSci.Lab@Teck.com		X	X	X	
Email Mike.Pope@Teck.com				Email Lyudmyla.Shvets@ALSGlobal.com		Email 2: teckcoal@equisonline.com				X	
Address 421 Pine Avenue				Address 2559 29 Street NE		Email 3: Teck.Lab.Results@teck.com		X	X	X	
City Sparwood				City Calgary		Email 4: Lisa.Bowron@minnow.ca		X	X	X	
Province BC				Province AB		Email 5: Tyler.Mehler@minnow.ca		X	X	X	
Postal Code V0B 2G0				Postal Code T1Y 7B5		Email 6: Jessica.Ritz@Teck.com		X	X	X	
Country Canada				Country Canada		PO number		VPO00816101			
Phone Number 1-250-865-3048				Phone Number 403 407 1794							

SAMPLE DETAILS **ANALYSIS REQUESTED:**

Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com p	# Of Cont.	PRESERVE	F	F	N	F	N	N	N
								DOC	Mercury_Dissolved	Mercury_Total	TECKCOAL_METINHG_D	TECKCOAL_METINHG_T	TECKCOAL_ROUTINE	TOC_TKN_PT
EV_MC3A_WS_LAEMP_EVO_2022-08-25_N	EV_MC3A	WS	2022/08/25	11:00	G	7		1	1	1	1	1	1	1

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
	Hannah Penner	August 25, 2022	<i>[Signature]</i>	<i>[Signature]</i>

SERVICE REQUEST (rush subject to availability)			
Regular (default) <input checked="" type="checkbox"/>	Priority (2-3 business days) - 50% surcharge	Emergency (1 Business Day) - 100% surcharge	For Emergency <1 Day, ASAP or Weekend - Contact ALS
Sampler's Name	Hannah Penner	Mobile #	250-910-7632
Sampler's Signature	<i>[Signature]</i>	Date/Time	August 25, 2022 <i>[Signature]</i>

Environmental Division
Calgary
Work Order Reference
CG2211498



Telephone : -1 403 407 1800

Environmental Division
Calgary
Work Order Reference
CG2211498

CERTIFICATE OF ANALYSIS

Work Order : **CG2212826**
Client : **Teck Coal Limited**
Contact : Mike Pope
Address : RR#1 HWY#3
 Sparwood BC Canada V0B 2G1
Telephone : ----
Project : REGIONAL EFFECTS PROGRAM
PO : VPO00816101
C-O-C number : REP_LAEMP_EVO_2022-09_ALS
Sampler : Jennifer Ings
Site : ----
Quote number : Teck Coal Master Quote
No. of samples received : 4
No. of samples analysed : 4

Page : 1 of 7
Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
 Calgary AB Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 20-Sep-2022 11:38
Date Analysis Commenced : 20-Sep-2022
Issue Date : 25-Sep-2022 14:31

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Anthony Calero	Supervisor - Inorganic	Metals, Calgary, Alberta
Elke Tabora		Inorganics, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Metals, Calgary, Alberta
Mackenzie Lamoureux	Laboratory Analyst	Metals, Calgary, Alberta
Millicent Brentnall	Laboratory Analyst	Metals, Calgary, Alberta
Parker Sgarbossa	Laboratory Analyst	Inorganics, Calgary, Alberta
Ruifang Zheng	Analyst	Inorganics, Calgary, Alberta
Sara Niroomand		Inorganics, Calgary, Alberta
Vladka Stamenova	Analyst	Inorganics, Calgary, Alberta



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

<i>Unit</i>	<i>Description</i>
-	No Unit
%	percent
µg/L	micrograms per litre
µS/cm	Microsiemens per centimetre
meq/L	milliequivalents per litre
mg/L	milligrams per litre
mV	millivolts
NTU	nephelometric turbidity units
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Workorder Comments

CG2212826: Exceeded Recommended Holding Time prior to receipt at the lab.

Qualifiers

<i>Qualifier</i>	<i>Description</i>
DLDS	Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
DTC	Dissolved concentration exceeds total. Results were confirmed by re-analysis.
HTA	Analytical holding time was exceeded.



RRV *Reported result verified by repeat analysis.*
TKNI *TKN result may be biased low due to Nitrate interference. Nitrate-N is > 10x TKN.*



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_GATEDP_WS_LAEMP_EVO_2022-09_N	RG_GATE_WS_LAEMP_EVO_2022-09_N	RG_BOCK_WS_LAEMP_EVO_2022-09_N	RG_ERCKUT_WS_LAEMP_EVO_2022-09_N	----
Client sampling date / time					15-Sep-2022 07:50	15-Sep-2022 09:45	15-Sep-2022 14:30	15-Sep-2022 11:30	----	
Analyte	CAS Number	Method	LOR	Unit	CG2212826-001	CG2212826-002	CG2212826-003	CG2212826-004	-----	
					Result	Result	Result	Result	----	
Physical Tests										
acidity (as CaCO3)	----	E283	2.0	mg/L	<2.0	<2.0	<2.0	8.9	----	
alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	332	343	275	457	----	
alkalinity, bicarbonate (as HCO3)	71-52-3	E290	1.0	mg/L	405	418	335	558	----	
alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	4.0	7.4	<1.0	<1.0	----	
alkalinity, carbonate (as CO3)	3812-32-6	E290	1.0	mg/L	2.4	4.4	<1.0	<1.0	----	
alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	----	
alkalinity, hydroxide (as OH)	14280-30-9	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	----	
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	336	350	275	457	----	
conductivity	----	E100	2.0	µS/cm	1920	1910	1780	1830	----	
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	1330	1320	1120	1210	----	
oxidation-reduction potential [ORP]	----	E125	0.10	mV	278	290	298	300	----	
pH	----	E108	0.10	pH units	8.28	8.32	8.28	7.97	----	
solids, total dissolved [TDS]	----	E162	10	mg/L	1690	1760	1540	1550	----	
solids, total suspended [TSS]	----	E160-L	1.0	mg/L	4.5	4.6	1.3	2.0	----	
turbidity	----	E121	0.10	NTU	1.22	1.16	0.61	<0.10	----	
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.109	0.168	0.0062	<0.0050	----	
bromide	24959-67-9	E235.Br-L	0.050	mg/L	0.352	0.346	0.418	<0.250 ^{DLDS}	----	
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	14.1	14.8	21.7	5.28	----	
fluoride	16984-48-8	E235.F	0.020	mg/L	0.258	0.271	0.213	0.114	----	
Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	0.708 ^{TKNI}	0.690 ^{TKNI}	<0.500 ^{DLM,TKNI}	1.43 ^{TKNI}	----	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	9.46	9.10	7.10	15.2	----	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	0.0170	0.0118	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	----	
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0017 ^{HTA}	0.0019 ^{HTA}	0.0016 ^{HTA}	0.0250 ^{HTA}	----	
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0038	0.0103	0.0041	0.0225 ^{DLM}	----	
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	932	925	861	728	----	
Organic / Inorganic Carbon										
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	0.64	<0.50	0.58	<0.50	----	
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	0.74	0.64	0.58	<0.50	----	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_GATEDP_W S_LAEMP_EVO _2022-09_N	RG_GATE_WS_ LAEMP_EVO_2 022-09_N	RG_BOCK_WS_ LAEMP_EVO_2 022-09_N	RG_ERCKUT_W S_LAEMP_EVO _2022-09_N	----
Client sampling date / time					15-Sep-2022 07:50	15-Sep-2022 09:45	15-Sep-2022 14:30	15-Sep-2022 11:30	----	
Analyte	CAS Number	Method	LOR	Unit	CG2212826-001 Result	CG2212826-002 Result	CG2212826-003 Result	CG2212826-004 Result	----- ----	
Ion Balance										
anion sum	----	EC101	0.10	meq/L	27.2	27.3	24.6	25.5	----	
cation sum	----	EC101	0.10	meq/L	27.2	26.9	22.9	24.4	----	
ion balance (cations/anions)	----	EC101	0.010	%	100	98.5	93.1	95.7	----	
ion balance (APHA)	----	EC101	0.010	%	<0.010	0.738	3.58	2.20	----	
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0063	0.0130	0.0063	0.0033	----	
antimony, total	7440-36-0	E420	0.00010	mg/L	0.00076	0.00070	0.00083	0.00021	----	
arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00032	0.00034	0.00020	0.00021	----	
barium, total	7440-39-3	E420	0.00010	mg/L	0.342	0.376	0.0579	0.0629	----	
beryllium, total	7440-41-7	E420	0.020	µg/L	<0.020	<0.020	0.201	<0.020	----	
bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0.000057	<0.000050	----	
boron, total	7440-42-8	E420	0.010	mg/L	0.044	0.044	0.053	0.014	----	
cadmium, total	7440-43-9	E420	0.0050	µg/L	0.132	0.161	0.0072	0.0729	----	
calcium, total	7440-70-2	E420	0.050	mg/L	258	253	207	257	----	
chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	0.00018	0.00016	0.00021	0.00027	----	
cobalt, total	7440-48-4	E420	0.10	µg/L	0.16	0.16	<0.10	<0.10	----	
copper, total	7440-50-8	E420	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	----	
iron, total	7439-89-6	E420	0.010	mg/L	0.094	0.135	<0.010	<0.010	----	
lead, total	7439-92-1	E420	0.000050	mg/L	<0.000050	<0.000050	0.000070	<0.000050	----	
lithium, total	7439-93-2	E420	0.0010	mg/L	0.140	0.148	0.148	0.0274	----	
magnesium, total	7439-95-4	E420	0.0050	mg/L	171	162	157	144	----	
manganese, total	7439-96-5	E420	0.00010	mg/L	0.00670	0.00705	0.00021	<0.00010	----	
mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	----	
molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.0150	0.0145	0.0143	0.00102	----	
nickel, total	7440-02-0	E420	0.00050	mg/L	0.0288	0.0286	0.0219	0.00083	----	
potassium, total	7440-09-7	E420	0.050	mg/L	5.18	5.18	5.41	2.60	----	
selenium, total	7782-49-2	E420	0.050	µg/L	90.4	89.2	71.3	156	----	
silicon, total	7440-21-3	E420	0.10	mg/L	2.88	2.88	2.57	4.15	----	
silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	----	
sodium, total	7440-23-5	E420	0.050	mg/L	9.87	9.49	10.3	3.08	----	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_GATEDP_W S_LAEMP_EVO _2022-09_N	RG_GATE_WS_ LAEMP_EVO_2 022-09_N	RG_BOCK_WS_ LAEMP_EVO_2 022-09_N	RG_ERCKUT_W S_LAEMP_EVO _2022-09_N	----
Client sampling date / time					15-Sep-2022 07:50	15-Sep-2022 09:45	15-Sep-2022 14:30	15-Sep-2022 11:30	----	
Analyte	CAS Number	Method	LOR	Unit	CG2212826-001 Result	CG2212826-002 Result	CG2212826-003 Result	CG2212826-004 Result	----- ----	
Total Metals										
strontium, total	7440-24-6	E420	0.00020	mg/L	0.637	0.653	0.783	0.214	----	
sulfur, total	7704-34-9	E420	0.50	mg/L	342	334	313	268	----	
thallium, total	7440-28-0	E420	0.000010	mg/L	0.000054	0.000050	0.000048	<0.000010	----	
tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010 DLDS	<0.00010	<0.00010	----	
titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00030	<0.00030 DLDS	<0.00030	<0.00030	----	
uranium, total	7440-61-1	E420	0.000010	mg/L	0.0117	0.0111	0.00978	0.00765	----	
vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	<0.00050 DLDS	<0.00050	<0.00050	----	
zinc, total	7440-66-6	E420	0.0030	mg/L	0.0072	0.0083	<0.0030	<0.0030	----	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	<0.0020 DLDS	<0.0020 DLDS	<0.0020 DLDS	<0.0020 DLDS	----	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00066	0.00065	0.00065	<0.00020 DLDS	----	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00029	0.00028	<0.00020 DLDS	0.00024	----	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.425	0.542 DTC,RRV	0.0538	0.0610	----	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.040 DLDS	<0.040 DLDS	<0.040 DLDS	<0.040 DLDS	----	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000100 DLDS	<0.000100 DLDS	<0.000100 DLDS	<0.000100 DLDS	----	
boron, dissolved	7440-42-8	E421	0.010	mg/L	0.041	0.041	0.046	<0.020 DLDS	----	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.0829	0.129	<0.0100 DLDS	0.0703	----	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	244	245	190	244	----	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00020 DLDS	<0.00020 DLDS	<0.00020 DLDS	<0.00020 DLDS	----	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	<0.20 DLDS	<0.20 DLDS	<0.20 DLDS	<0.20 DLDS	----	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00040 DLDS	<0.00040 DLDS	<0.00040 DLDS	<0.00040 DLDS	----	
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.020 DLDS	<0.020 DLDS	<0.020 DLDS	<0.020 DLDS	----	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000100 DLDS	<0.000100 DLDS	<0.000100 DLDS	<0.000100 DLDS	----	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.138	0.133	0.136	0.0254	----	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	176	172	157	146	----	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00544	0.00607	<0.00020 DLDS	<0.00020 DLDS	----	
mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	----	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.0141	0.0142	0.0129	0.00104	----	
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.0270	0.0270	0.0196	<0.00100 DLDS	----	
potassium, dissolved	7440-09-7	E421	0.050	mg/L	5.11	4.97	5.05	2.35	----	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_GATEDP_W S_LAEMP_EVO _2022-09_N	RG_GATE_WS_ LAEMP_EVO_2 022-09_N	RG_BOCK_WS_ LAEMP_EVO_2 022-09_N	RG_ERCKUT_W S_LAEMP_EVO _2022-09_N	----
Client sampling date / time					15-Sep-2022 07:50	15-Sep-2022 09:45	15-Sep-2022 14:30	15-Sep-2022 11:30	----	
Analyte	CAS Number	Method	LOR	Unit	CG2212826-001 Result	CG2212826-002 Result	CG2212826-003 Result	CG2212826-004 Result	----- ----	
Dissolved Metals										
selenium, dissolved	7782-49-2	E421	0.050	µg/L	98.6	93.7	69.2	164	----	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	2.72	2.69	2.27	3.77	----	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000020 ^{DLDS}	<0.000020 ^{DLDS}	<0.000020 ^{DLDS}	<0.000020 ^{DLDS}	----	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	9.61	9.57	9.73	3.18	----	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.639	0.692	0.756	0.218	----	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	334	319	283	241	----	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	0.000047	0.000052	0.000037	<0.000020 ^{DLDS}	----	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00020 ^{DLDS}	<0.00020 ^{DLDS}	<0.00020 ^{DLDS}	<0.00020 ^{DLDS}	----	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00060 ^{DLDS}	<0.00060 ^{DLDS}	<0.00060 ^{DLDS}	<0.00060 ^{DLDS}	----	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.0101	0.0102	0.00812	0.00692	----	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00100 ^{DLDS}	<0.00100 ^{DLDS}	<0.00100 ^{DLDS}	<0.00100 ^{DLDS}	----	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0049	0.0068	<0.0020 ^{DLDS}	<0.0020 ^{DLDS}	----	
dissolved mercury filtration location	----	EP509	-	-	Field	Field	Field	Field	----	
dissolved metals filtration location	----	EP421	-	-	Field	Field	Field	Field	----	

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: CG2212826	Page	: 1 of 20
Client	: Teck Coal Limited	Laboratory	: Calgary - Environmental
Contact	: Mike Pope	Account Manager	: Lyudmyla Shvets
Address	: RR#1 HWY#3 Sparwood BC Canada V0B 2G1	Address	: 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5
Telephone	: ----	Telephone	: +1 403 407 1800
Project	: REGIONAL EFFECTS PROGRAM	Date Samples Received	: 20-Sep-2022 11:38
PO	: VPO00816101	Issue Date	: 25-Sep-2022 14:32
C-O-C number	: REP_LAEMP_EVO_2022-09_ALS		
Sampler	: Jennifer Ings		
Site	: ----		
Quote number	: Teck Coal Master Quote		
No. of samples received	: 4		
No. of samples analysed	: 4		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_BOCK_WS_LAEMP_EVO_2022-09_N	E298	15-Sep-2022	20-Sep-2022	----	----		20-Sep-2022	28 days	5 days	✓	
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-09_N	E298	15-Sep-2022	20-Sep-2022	----	----		20-Sep-2022	28 days	5 days	✓	
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_GATE_WS_LAEMP_EVO_2022-09_N	E298	15-Sep-2022	20-Sep-2022	----	----		20-Sep-2022	28 days	5 days	✓	
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_GATEDP_WS_LAEMP_EVO_2022-09_N	E298	15-Sep-2022	20-Sep-2022	----	----		20-Sep-2022	28 days	5 days	✓	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-09_N	E235.Br-L	15-Sep-2022	20-Sep-2022	----	----		20-Sep-2022	28 days	5 days	✓	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-09_N	E235.Br-L	15-Sep-2022	20-Sep-2022	----	----		20-Sep-2022	28 days	5 days	✓	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_GATE_WS_LAEMP_EVO_2022-09_N	E235.Br-L	15-Sep-2022	20-Sep-2022	----	----		20-Sep-2022	28 days	5 days	✓	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
Rec	Actual	Rec		Actual							
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-09_N	E235.Br-L	15-Sep-2022	20-Sep-2022	----	----		20-Sep-2022	28 days	5 days	✓	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-09_N	E235.Cl-L	15-Sep-2022	20-Sep-2022	----	----		20-Sep-2022	28 days	5 days	✓	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-09_N	E235.Cl-L	15-Sep-2022	20-Sep-2022	----	----		20-Sep-2022	28 days	5 days	✓	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_GATE_WS_LAEMP_EVO_2022-09_N	E235.Cl-L	15-Sep-2022	20-Sep-2022	----	----		20-Sep-2022	28 days	5 days	✓	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-09_N	E235.Cl-L	15-Sep-2022	20-Sep-2022	----	----		20-Sep-2022	28 days	5 days	✓	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-09_N	E378-U	15-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	3 days	6 days	* EHTR-FM	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-09_N	E378-U	15-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	3 days	6 days	* EHTR-FM	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_GATE_WS_LAEMP_EVO_2022-09_N	E378-U	15-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	3 days	6 days	* EHTR-FM	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-09_N	E378-U	15-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	3 days	6 days	* EHTR-FM	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-09_N	E235.F	15-Sep-2022	20-Sep-2022	----	----		20-Sep-2022	28 days	5 days	✓	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-09_N	E235.F	15-Sep-2022	20-Sep-2022	----	----		20-Sep-2022	28 days	5 days	✓	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_GATE_WS_LAEMP_EVO_2022-09_N	E235.F	15-Sep-2022	20-Sep-2022	----	----		20-Sep-2022	28 days	5 days	✓	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-09_N	E235.F	15-Sep-2022	20-Sep-2022	----	----		20-Sep-2022	28 days	5 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-09_N	E235.NO3-L	15-Sep-2022	20-Sep-2022	3 days	5 days	* EHTR	20-Sep-2022	3 days	0 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-09_N	E235.NO3-L	15-Sep-2022	20-Sep-2022	3 days	5 days	* EHTR	20-Sep-2022	3 days	0 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_GATE_WS_LAEMP_EVO_2022-09_N	E235.NO3-L	15-Sep-2022	20-Sep-2022	3 days	5 days	* EHTR	20-Sep-2022	3 days	0 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-09_N	E235.NO3-L	15-Sep-2022	20-Sep-2022	3 days	5 days	* EHTR	20-Sep-2022	3 days	0 days	✓	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-09_N	E235.NO2-L	15-Sep-2022	20-Sep-2022	----	----		20-Sep-2022	3 days	5 days	* EHTR-FM	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-09_N	E235.NO2-L	15-Sep-2022	20-Sep-2022	----	----		20-Sep-2022	3 days	5 days	*	EHTR-FM
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_GATE_WS_LAEMP_EVO_2022-09_N	E235.NO2-L	15-Sep-2022	20-Sep-2022	----	----		20-Sep-2022	3 days	5 days	*	EHTR-FM
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-09_N	E235.NO2-L	15-Sep-2022	20-Sep-2022	----	----		20-Sep-2022	3 days	5 days	*	EHTR-FM
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-09_N	E235.SO4	15-Sep-2022	20-Sep-2022	----	----		20-Sep-2022	28 days	5 days	✓	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-09_N	E235.SO4	15-Sep-2022	20-Sep-2022	----	----		20-Sep-2022	28 days	5 days	✓	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_GATE_WS_LAEMP_EVO_2022-09_N	E235.SO4	15-Sep-2022	20-Sep-2022	----	----		20-Sep-2022	28 days	5 days	✓	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-09_N	E235.SO4	15-Sep-2022	20-Sep-2022	----	----		20-Sep-2022	28 days	5 days	✓	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_BOCK_WS_LAEMP_EVO_2022-09_N	E318	15-Sep-2022	20-Sep-2022	----	----		22-Sep-2022	28 days	7 days	✓	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-09_N	E318	15-Sep-2022	20-Sep-2022	----	----		22-Sep-2022	28 days	7 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_GATE_WS_LAEMP_EVO_2022-09_N	E318	15-Sep-2022	20-Sep-2022	----	----		22-Sep-2022	28 days	7 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_GATEDP_WS_LAEMP_EVO_2022-09_N	E318	15-Sep-2022	20-Sep-2022	----	----		22-Sep-2022	28 days	7 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_BOCK_WS_LAEMP_EVO_2022-09_N	E372-U	15-Sep-2022	24-Sep-2022	----	----		24-Sep-2022	28 days	9 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-09_N	E372-U	15-Sep-2022	24-Sep-2022	----	----		24-Sep-2022	28 days	9 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_GATE_WS_LAEMP_EVO_2022-09_N	E372-U	15-Sep-2022	24-Sep-2022	----	----		24-Sep-2022	28 days	9 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_GATEDP_WS_LAEMP_EVO_2022-09_N	E372-U	15-Sep-2022	24-Sep-2022	----	----		24-Sep-2022	28 days	9 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_BOCK_WS_LAEMP_EVO_2022-09_N	E421.Cr-L	15-Sep-2022	22-Sep-2022	----	----		23-Sep-2022	180 days	8 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKUT_WS_LAEMP_EVO_2022-09_N	E421.Cr-L	15-Sep-2022	22-Sep-2022	----	----		23-Sep-2022	180 days	8 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_GATE_WS_LAEMP_EVO_2022-09_N	E421.Cr-L	15-Sep-2022	22-Sep-2022	----	----		23-Sep-2022	180 days	8 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times Rec Actual		Eval	Analysis Date	Holding Times Rec Actual		Eval	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_GATEDP_WS_LAEMP_EVO_2022-09_N	E421.Cr-L	15-Sep-2022	22-Sep-2022	----	----		23-Sep-2022	180 days	8 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_BOCK_WS_LAEMP_EVO_2022-09_N	E509	15-Sep-2022	24-Sep-2022	----	----		24-Sep-2022	28 days	9 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-09_N	E509	15-Sep-2022	24-Sep-2022	----	----		24-Sep-2022	28 days	9 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_GATE_WS_LAEMP_EVO_2022-09_N	E509	15-Sep-2022	24-Sep-2022	----	----		24-Sep-2022	28 days	9 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_GATEDP_WS_LAEMP_EVO_2022-09_N	E509	15-Sep-2022	24-Sep-2022	----	----		24-Sep-2022	28 days	9 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_BOCK_WS_LAEMP_EVO_2022-09_N	E421	15-Sep-2022	22-Sep-2022	----	----		23-Sep-2022	180 days	8 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ERCKUT_WS_LAEMP_EVO_2022-09_N	E421	15-Sep-2022	22-Sep-2022	----	----		23-Sep-2022	180 days	8 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_GATE_WS_LAEMP_EVO_2022-09_N	E421	15-Sep-2022	22-Sep-2022	----	----		23-Sep-2022	180 days	8 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_GATEDP_WS_LAEMP_EVO_2022-09_N	E421	15-Sep-2022	22-Sep-2022	----	----		23-Sep-2022	180 days	8 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_BOCK_WS_LAEMP_EVO_2022-09_N	E358-L	15-Sep-2022	20-Sep-2022	----	----		21-Sep-2022	28 days	5 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-09_N	E358-L	15-Sep-2022	20-Sep-2022	----	----		21-Sep-2022	28 days	5 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_GATE_WS_LAEMP_EVO_2022-09_N	E358-L	15-Sep-2022	20-Sep-2022	----	----		21-Sep-2022	28 days	5 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_GATEDP_WS_LAEMP_EVO_2022-09_N	E358-L	15-Sep-2022	20-Sep-2022	----	----		21-Sep-2022	28 days	5 days	✓	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_BOCK_WS_LAEMP_EVO_2022-09_N	E355-L	15-Sep-2022	20-Sep-2022	----	----		21-Sep-2022	28 days	5 days	✓	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-09_N	E355-L	15-Sep-2022	20-Sep-2022	----	----		21-Sep-2022	28 days	5 days	✓	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_GATE_WS_LAEMP_EVO_2022-09_N	E355-L	15-Sep-2022	20-Sep-2022	----	----		21-Sep-2022	28 days	5 days	✓	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_GATEDP_WS_LAEMP_EVO_2022-09_N	E355-L	15-Sep-2022	20-Sep-2022	----	----		21-Sep-2022	28 days	5 days	✓	
Physical Tests : Acidity by Titration											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-09_N	E283	15-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	14 days	7 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Acidity by Titration											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-09_N	E283	15-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	14 days	7 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_GATE_WS_LAEMP_EVO_2022-09_N	E283	15-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	14 days	7 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-09_N	E283	15-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	14 days	7 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-09_N	E290	15-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	14 days	7 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-09_N	E290	15-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	14 days	7 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_GATE_WS_LAEMP_EVO_2022-09_N	E290	15-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	14 days	7 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-09_N	E290	15-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	14 days	7 days	✔	
Physical Tests : Conductivity in Water											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-09_N	E100	15-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	28 days	7 days	✔	
Physical Tests : Conductivity in Water											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-09_N	E100	15-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	28 days	7 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Conductivity in Water											
HDPE RG_GATE_WS_LAEMP_EVO_2022-09_N	E100	15-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	28 days	7 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-09_N	E100	15-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	28 days	7 days	✓	
Physical Tests : ORP by Electrode											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-09_N	E125	15-Sep-2022	----	----	----		22-Sep-2022	0.25 hrs	170 hrs	* EHTR-FM	
Physical Tests : ORP by Electrode											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-09_N	E125	15-Sep-2022	----	----	----		22-Sep-2022	0.25 hrs	173 hrs	* EHTR-FM	
Physical Tests : ORP by Electrode											
HDPE RG_GATE_WS_LAEMP_EVO_2022-09_N	E125	15-Sep-2022	----	----	----		22-Sep-2022	0.25 hrs	175 hrs	* EHTR-FM	
Physical Tests : ORP by Electrode											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-09_N	E125	15-Sep-2022	----	----	----		22-Sep-2022	0.25 hrs	177 hrs	* EHTR-FM	
Physical Tests : pH by Meter											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-09_N	E108	15-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	0.25 hrs	0.26 hrs	* EHTR-FM	
Physical Tests : pH by Meter											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-09_N	E108	15-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	0.25 hrs	0.26 hrs	* EHTR-FM	
Physical Tests : pH by Meter											
HDPE RG_GATE_WS_LAEMP_EVO_2022-09_N	E108	15-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	0.25 hrs	0.26 hrs	* EHTR-FM	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
Rec	Actual	Rec		Actual							
Physical Tests : pH by Meter											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-09_N	E108	15-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	0.25 hrs	0.26 hrs	*	EHTR-FM
Physical Tests : TDS by Gravimetry											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-09_N	E162	15-Sep-2022	----	----	----		22-Sep-2022	7 days	7 days	✓	
Physical Tests : TDS by Gravimetry											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-09_N	E162	15-Sep-2022	----	----	----		22-Sep-2022	7 days	7 days	✓	
Physical Tests : TDS by Gravimetry											
HDPE RG_GATE_WS_LAEMP_EVO_2022-09_N	E162	15-Sep-2022	----	----	----		22-Sep-2022	7 days	7 days	✓	
Physical Tests : TDS by Gravimetry											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-09_N	E162	15-Sep-2022	----	----	----		22-Sep-2022	7 days	7 days	✓	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-09_N	E160-L	15-Sep-2022	----	----	----		22-Sep-2022	7 days	7 days	✓	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-09_N	E160-L	15-Sep-2022	----	----	----		22-Sep-2022	7 days	7 days	✓	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_GATE_WS_LAEMP_EVO_2022-09_N	E160-L	15-Sep-2022	----	----	----		22-Sep-2022	7 days	7 days	✓	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-09_N	E160-L	15-Sep-2022	----	----	----		22-Sep-2022	7 days	8 days	*	EHT



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Turbidity by Nephelometry											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-09_N	E121	15-Sep-2022	----	----	----		20-Sep-2022	3 days	5 days	*	EHTR
Physical Tests : Turbidity by Nephelometry											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-09_N	E121	15-Sep-2022	----	----	----		20-Sep-2022	3 days	5 days	*	EHTR
Physical Tests : Turbidity by Nephelometry											
HDPE RG_GATE_WS_LAEMP_EVO_2022-09_N	E121	15-Sep-2022	----	----	----		20-Sep-2022	3 days	5 days	*	EHTR
Physical Tests : Turbidity by Nephelometry											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-09_N	E121	15-Sep-2022	----	----	----		20-Sep-2022	3 days	6 days	*	EHTR
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE - total (lab preserved) RG_BOCK_WS_LAEMP_EVO_2022-09_N	E420.Cr-L	15-Sep-2022	23-Sep-2022	----	----		23-Sep-2022	180 days	8 days	✓	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE - total (lab preserved) RG_ERCKUT_WS_LAEMP_EVO_2022-09_N	E420.Cr-L	15-Sep-2022	23-Sep-2022	----	----		23-Sep-2022	180 days	8 days	✓	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE - total (lab preserved) RG_GATE_WS_LAEMP_EVO_2022-09_N	E420.Cr-L	15-Sep-2022	23-Sep-2022	----	----		23-Sep-2022	180 days	8 days	✓	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE - total (lab preserved) RG_GATEDP_WS_LAEMP_EVO_2022-09_N	E420.Cr-L	15-Sep-2022	23-Sep-2022	----	----		23-Sep-2022	180 days	8 days	✓	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_BOCK_WS_LAEMP_EVO_2022-09_N	E508	15-Sep-2022	24-Sep-2022	----	----		24-Sep-2022	28 days	9 days	✓	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-09_N	E508	15-Sep-2022	24-Sep-2022	----	----		24-Sep-2022	28 days	9 days	✓	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_GATE_WS_LAEMP_EVO_2022-09_N	E508	15-Sep-2022	24-Sep-2022	----	----		24-Sep-2022	28 days	9 days	✓	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_GATEDP_WS_LAEMP_EVO_2022-09_N	E508	15-Sep-2022	24-Sep-2022	----	----		24-Sep-2022	28 days	9 days	✓	
Total Metals : Total Metals in Water by CRC ICPMS											
HDPE - total (lab preserved) RG_BOCK_WS_LAEMP_EVO_2022-09_N	E420	15-Sep-2022	23-Sep-2022	----	----		23-Sep-2022	180 days	8 days	✓	
Total Metals : Total Metals in Water by CRC ICPMS											
HDPE - total (lab preserved) RG_ERCKUT_WS_LAEMP_EVO_2022-09_N	E420	15-Sep-2022	23-Sep-2022	----	----		23-Sep-2022	180 days	8 days	✓	
Total Metals : Total Metals in Water by CRC ICPMS											
HDPE - total (lab preserved) RG_GATE_WS_LAEMP_EVO_2022-09_N	E420	15-Sep-2022	23-Sep-2022	----	----		23-Sep-2022	180 days	8 days	✓	
Total Metals : Total Metals in Water by CRC ICPMS											
HDPE - total (lab preserved) RG_GATEDP_WS_LAEMP_EVO_2022-09_N	E420	15-Sep-2022	23-Sep-2022	----	----		23-Sep-2022	180 days	8 days	✓	

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended
 EHTR: Exceeded ALS recommended hold time prior to sample receipt.
 EHT: Exceeded ALS recommended hold time prior to analysis.
 Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
Analytical Methods							
Laboratory Duplicates (DUP)							
Acidity by Titration	E283	660521	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290	660529	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	656571	1	18	5.5	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	656643	1	17	5.8	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	656645	1	17	5.8	5.0	✓
Conductivity in Water	E100	660527	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	660922	1	11	9.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	662250	1	19	5.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	660923	1	11	9.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	656575	1	18	5.5	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	658501	1	14	7.1	5.0	✓
Fluoride in Water by IC	E235.F	656642	1	17	5.8	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	656646	1	17	5.8	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	656647	1	17	5.8	5.0	✓
ORP by Electrode	E125	658630	1	4	25.0	5.0	✓
pH by Meter	E108	660528	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	656648	1	17	5.8	5.0	✓
TDS by Gravimetry	E162	660289	1	20	5.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	661794	1	4	25.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	656569	1	18	5.5	5.0	✓
Total Mercury in Water by CVAAS	E508	662243	1	14	7.1	5.0	✓
Total Metals in Water by CRC ICPMS	E420	661793	1	11	9.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	656576	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121	656605	1	20	5.0	5.0	✓
Laboratory Control Samples (LCS)							
Acidity by Titration	E283	660521	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290	660529	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	656571	1	18	5.5	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	656643	1	17	5.8	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	656645	1	17	5.8	5.0	✓
Conductivity in Water	E100	660527	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	660922	1	11	9.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	662250	1	19	5.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	660923	1	11	9.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	656575	1	18	5.5	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	658501	1	14	7.1	5.0	✓
Fluoride in Water by IC	E235.F	656642	1	17	5.8	5.0	✓



Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
Analytical Methods							
Laboratory Control Samples (LCS) - Continued							
Nitrate in Water by IC (Low Level)	E235.NO3-L	656646	1	17	5.8	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	656647	1	17	5.8	5.0	✓
ORP by Electrode	E125	658630	1	4	25.0	5.0	✓
pH by Meter	E108	660528	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	656648	1	17	5.8	5.0	✓
TDS by Gravimetry	E162	660289	1	20	5.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	661794	1	4	25.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	656569	1	18	5.5	5.0	✓
Total Mercury in Water by CVAAS	E508	662243	1	14	7.1	5.0	✓
Total Metals in Water by CRC ICPMS	E420	661793	1	11	9.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	656576	1	20	5.0	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	660281	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121	656605	1	20	5.0	5.0	✓
Method Blanks (MB)							
Acidity by Titration	E283	660521	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290	660529	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	656571	1	18	5.5	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	656643	1	17	5.8	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	656645	1	17	5.8	5.0	✓
Conductivity in Water	E100	660527	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	660922	1	11	9.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	662250	1	19	5.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	660923	1	11	9.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	656575	1	18	5.5	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	658501	1	14	7.1	5.0	✓
Fluoride in Water by IC	E235.F	656642	1	17	5.8	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	656646	1	17	5.8	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	656647	1	17	5.8	5.0	✓
Sulfate in Water by IC	E235.SO4	656648	1	17	5.8	5.0	✓
TDS by Gravimetry	E162	660289	1	20	5.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	661794	1	4	25.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	656569	1	18	5.5	5.0	✓
Total Mercury in Water by CVAAS	E508	662243	1	14	7.1	5.0	✓
Total Metals in Water by CRC ICPMS	E420	661793	1	11	9.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	656576	1	20	5.0	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	660281	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121	656605	1	20	5.0	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	656571	1	18	5.5	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	656643	1	17	5.8	5.0	✓



Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
<i>Analytical Methods</i>							
Matrix Spikes (MS) - Continued							
Chloride in Water by IC (Low Level)	E235.Cl-L	656645	1	17	5.8	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	660922	1	11	9.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	662250	1	19	5.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	660923	1	11	9.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	656575	1	18	5.5	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	658501	1	14	7.1	5.0	✓
Fluoride in Water by IC	E235.F	656642	1	17	5.8	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	656646	1	17	5.8	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	656647	1	17	5.8	5.0	✓
Sulfate in Water by IC	E235.SO4	656648	1	17	5.8	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	661794	1	4	25.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	656569	1	18	5.5	5.0	✓
Total Mercury in Water by CVAAS	E508	662243	1	14	7.1	5.0	✓
Total Metals in Water by CRC ICPMS	E420	661793	1	11	9.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	656576	1	20	5.0	5.0	✓



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 Calgary - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 Calgary - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 Calgary - Environmental	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
ORP by Electrode	E125 Calgary - Environmental	Water	ASTM D1498 (mod)	Oxidation reduction potential is reported as the oxidation-reduction potential of the platinum metal-reference electrode employed, measured in mV. For high accuracy test results, it is recommended that this analysis be conducted in the field.
TSS by Gravimetry (Low Level)	E160-L Calgary - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 Calgary - Environmental	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC (Low Level)	E235.Cl-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Acidity by Titration	E283 Calgary - Environmental	Water	APHA 2310 B (mod)	Acidity is determined by potentiometric titration to pH endpoint of 8.3



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Alkalinity Species by Titration	E290 Calgary - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 Calgary - Environmental	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 Calgary - Environmental	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L Calgary - Environmental	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Dissolved Organic Carbon by Combustion (Low Level)	E358-L Calgary - Environmental	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U Calgary - Environmental	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U Calgary - Environmental	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Total Metals in Water by CRC ICPMS	E420 Calgary - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L Calgary - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS.
Dissolved Metals in Water by CRC ICPMS	E421 Calgary - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L Calgary - Environmental	Water	APHA 3030 B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS
Total Mercury in Water by CVAAS	E508 Calgary - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS
Dissolved Mercury in Water by CVAAS	E509 Calgary - Environmental	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
Dissolved Hardness (Calculated)	EC100 Calgary - Environmental	Water	APHA 2340B	"Hardness (as CaCO ₃), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Ion Balance using Dissolved Metals	EC101 Calgary - Environmental	Water	APHA 1030E	Cation Sum, Anion Sum, and Ion Balance are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present. Ion Balance cannot be calculated accurately for waters with very low electrical conductivity (EC).

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 Calgary - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 Calgary - Environmental	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Preparation for Total Organic Carbon by Combustion	EP355 Calgary - Environmental	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon for Combustion	EP358 Calgary - Environmental	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Phosphorus in water	EP372 Calgary - Environmental	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Dissolved Metals Water Filtration	EP421 Calgary - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO ₃ .
Dissolved Mercury Water Filtration	EP509 Calgary - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.



QUALITY CONTROL REPORT

Work Order : CG2212826
Client : Teck Coal Limited
Contact : Mike Pope
Address : RR#1 HWY#3
Sparwood BC Canada V0B 2G1
Telephone : ---
Project : REGIONAL EFFECTS PROGRAM
PO : VPO00816101
C-O-C number : REP_LAEMP_EVO_2022-09_ALS
Sampler : Jennifer Ings
Site : ---
Quote number : Teck Coal Master Quote
No. of samples received : 4
No. of samples analysed : 4

Page : 1 of 18
Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
Calgary, Alberta Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 20-Sep-2022 11:38
Date Analysis Commenced : 20-Sep-2022
Issue Date : 25-Sep-2022 14:32

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
Matrix Spike (MS) Report; Recovery and Data Quality Objectives
Method Blank (MB) Report; Recovery and Data Quality Objectives
Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Table with 3 columns: Signatories, Position, Laboratory Department. Lists names like Anthony Calero, Elke Tabora, Harpreet Chawla, Mackenzie Lamoureux, Millicent Brentnall, Parker Sgarbossa, Ruifang Zheng, Sara Niroomand, Vladka Stamenova with their respective roles and departments.

Page : 2 of 18
Work Order : CG2212826
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 656605)											
CG2212821-001	Anonymous	turbidity	----	E121	0.10	NTU	0.22	0.19	0.03	Diff <2x LOR	----
Physical Tests (QC Lot: 658630)											
CG2212826-001	RG_GATEDP_WS_LAEMP_EVO_2022-09_N	oxidation-reduction potential [ORP]	----	E125	0.10	mV	278	279	0.467%	15%	----
Physical Tests (QC Lot: 660289)											
CG2212782-006	Anonymous	solids, total dissolved [TDS]	----	E162	10	mg/L	<10	<10	0	Diff <2x LOR	----
Physical Tests (QC Lot: 660521)											
CG2212715-021	Anonymous	acidity (as CaCO ₃)	----	E283	10.0	mg/L	<10.0	<10.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 660527)											
CG2212715-021	Anonymous	conductivity	----	E100	2.0	µS/cm	1940	1940	0.258%	10%	----
Physical Tests (QC Lot: 660528)											
CG2212715-021	Anonymous	pH	----	E108	0.10	pH units	8.01	8.05	0.498%	4%	----
Physical Tests (QC Lot: 660529)											
CG2212715-021	Anonymous	alkalinity, bicarbonate (as CaCO ₃)	----	E290	1.0	mg/L	427	422	1.32%	20%	----
		alkalinity, carbonate (as CaCO ₃)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, hydroxide (as CaCO ₃)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, total (as CaCO ₃)	----	E290	1.0	mg/L	427	422	1.32%	20%	----
Anions and Nutrients (QC Lot: 656569)											
CG2212816-004	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 656571)											
CG2212816-004	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0294	0.0295	0.0001	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 656642)											
CG2212518-001	Anonymous	fluoride	16984-48-8	E235.F	0.100	mg/L	0.149	0.148	0.001	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 656643)											
CG2212518-001	Anonymous	bromide	24959-67-9	E235.Br-L	0.250	mg/L	<0.250	<0.250	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 656645)											
CG2212518-001	Anonymous	chloride	16887-00-6	E235.Cl-L	0.50	mg/L	5.73	5.73	0.0538%	20%	----
Anions and Nutrients (QC Lot: 656646)											
CG2212518-001	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	0.0250	mg/L	23.5	23.4	0.283%	20%	----
Anions and Nutrients (QC Lot: 656647)											
CG2212518-001	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.0050	mg/L	0.0230	0.0239	0.0009	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 656648)											



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 656648) - continued											
CG2212518-001	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	1.50	mg/L	1770	1770	0.346%	20%	----
Anions and Nutrients (QC Lot: 658501)											
CG2212826-001	RG_GATEDP_WS_LAEMP_EVO_2022-09_N	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0017	0.0016	0.00007	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 656575)											
CG2212821-001	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 656576)											
CG2212821-001	Anonymous	carbon, total organic [TOC]	----	E355-L	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
Total Metals (QC Lot: 661793)											
CG2212826-001	RG_GATEDP_WS_LAEMP_EVO_2022-09_N	aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0063	0.0112	0.0048	Diff <2x LOR	----
		antimony, total	7440-36-0	E420	0.00010	mg/L	0.00076	0.00071	0.00005	Diff <2x LOR	----
		arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00032	0.00027	0.00004	Diff <2x LOR	----
		barium, total	7440-39-3	E420	0.00010	mg/L	0.342	0.349	1.98%	20%	----
		beryllium, total	7440-41-7	E420	0.000020	mg/L	<0.020 µg/L	<0.000020	0	Diff <2x LOR	----
		bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, total	7440-42-8	E420	0.010	mg/L	0.044	0.044	0.0002	Diff <2x LOR	----
		cadmium, total	7440-43-9	E420	0.0000050	mg/L	0.132 µg/L	0.000135	2.59%	20%	----
		calcium, total	7440-70-2	E420	0.050	mg/L	258	261	1.19%	20%	----
		cobalt, total	7440-48-4	E420	0.00010	mg/L	0.16 µg/L	0.00016	0.000002	Diff <2x LOR	----
		copper, total	7440-50-8	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		iron, total	7439-89-6	E420	0.010	mg/L	0.094	0.094	0.0002	Diff <2x LOR	----
		lead, total	7439-92-1	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		lithium, total	7439-93-2	E420	0.0010	mg/L	0.140	0.152	8.04%	20%	----
		magnesium, total	7439-95-4	E420	0.0050	mg/L	171	172	0.558%	20%	----
		manganese, total	7439-96-5	E420	0.00010	mg/L	0.00670	0.00655	2.35%	20%	----
		molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.0150	0.0149	0.790%	20%	----
		nickel, total	7440-02-0	E420	0.00050	mg/L	0.0288	0.0291	1.13%	20%	----
		potassium, total	7440-09-7	E420	0.050	mg/L	5.18	5.16	0.248%	20%	----
		selenium, total	7782-49-2	E420	0.000050	mg/L	90.4 µg/L	0.0896	0.840%	20%	----
		silicon, total	7440-21-3	E420	0.10	mg/L	2.88	2.83	1.86%	20%	----
		silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, total	7440-23-5	E420	0.050	mg/L	9.87	9.54	3.32%	20%	----
		strontium, total	7440-24-6	E420	0.00020	mg/L	0.637	0.639	0.285%	20%	----
		sulfur, total	7704-34-9	E420	0.50	mg/L	342	341	0.340%	20%	----
		thallium, total	7440-28-0	E420	0.000010	mg/L	0.000054	0.000052	0.000001	Diff <2x LOR	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (QC Lot: 661793) - continued											
CG2212826-001	RG_GATEDP_WS_LAEMP_EVO_2022-09_N	tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		uranium, total	7440-61-1	E420	0.000010	mg/L	0.0117	0.0116	1.36%	20%	----
		vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		zinc, total	7440-66-6	E420	0.0030	mg/L	0.0072	0.0079	0.0007	Diff <2x LOR	----
Total Metals (QC Lot: 661794)											
CG2212826-001	RG_GATEDP_WS_LAEMP_EVO_2022-09_N	chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	0.00018	0.00015	0.00003	Diff <2x LOR	----
Total Metals (QC Lot: 662243)											
CG2212826-001	RG_GATEDP_WS_LAEMP_EVO_2022-09_N	mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 660922)											
CG2212826-001	RG_GATEDP_WS_LAEMP_EVO_2022-09_N	chromium, dissolved	7440-47-3	E421.Cr-L	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 660923)											
CG2212826-001	RG_GATEDP_WS_LAEMP_EVO_2022-09_N	aluminum, dissolved	7429-90-5	E421	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----
		antimony, dissolved	7440-36-0	E421	0.00020	mg/L	0.00066	0.00064	0.00002	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E421	0.00020	mg/L	0.00029	0.00024	0.00005	Diff <2x LOR	----
		barium, dissolved	7440-39-3	E421	0.00020	mg/L	0.425	0.406	4.44%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.000040	mg/L	<0.040 µg/L	<0.000040	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.020	mg/L	0.041	0.038	0.003	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E421	0.0000100	mg/L	0.0829 µg/L	0.0000752	0.0000076	Diff <2x LOR	----
		calcium, dissolved	7440-70-2	E421	0.100	mg/L	244	230	5.66%	20%	----
		cobalt, dissolved	7440-48-4	E421	0.00020	mg/L	<0.20 µg/L	<0.00020	0	Diff <2x LOR	----
		copper, dissolved	7440-50-8	E421	0.00040	mg/L	<0.00040	<0.00040	0	Diff <2x LOR	----
		iron, dissolved	7439-89-6	E421	0.020	mg/L	<0.020	<0.020	0	Diff <2x LOR	----
		lead, dissolved	7439-92-1	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0020	mg/L	0.138	0.127	7.84%	20%	----
		magnesium, dissolved	7439-95-4	E421	0.0100	mg/L	176	168	4.42%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00020	mg/L	0.00544	0.00549	0.793%	20%	----
		molybdenum, dissolved	7439-98-7	E421	0.000100	mg/L	0.0141	0.0138	1.59%	20%	----
		nickel, dissolved	7440-02-0	E421	0.00100	mg/L	0.0270	0.0259	4.40%	20%	----
		potassium, dissolved	7440-09-7	E421	0.100	mg/L	5.11	4.58	11.0%	20%	----
		selenium, dissolved	7782-49-2	E421	0.000100	mg/L	98.6 µg/L	0.0928	6.06%	20%	----
		silicon, dissolved	7440-21-3	E421	0.100	mg/L	2.72	2.56	6.26%	20%	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

<i>Laboratory sample ID</i>	<i>Client sample ID</i>	<i>Analyte</i>	<i>CAS Number</i>	<i>Method</i>	<i>LOR</i>	<i>Unit</i>	<i>Original Result</i>	<i>Duplicate Result</i>	<i>RPD(%) or Difference</i>	<i>Duplicate Limits</i>	<i>Qualifier</i>
Dissolved Metals (QC Lot: 660923) - continued											
CG2212826-001	RG_GATEDP_WS_LAEMP_EVO_2022-09_N	silver, dissolved	7440-22-4	E421	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E421	0.100	mg/L	9.61	9.32	3.08%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00040	mg/L	0.639	0.623	2.49%	20%	----
		sulfur, dissolved	7704-34-9	E421	1.00	mg/L	334	315	5.83%	20%	----
		thallium, dissolved	7440-28-0	E421	0.000020	mg/L	0.000047	0.000047	0.00000002	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.00060	mg/L	<0.00060	<0.00060	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000020	mg/L	0.0101	0.00979	3.21%	20%	----
		vanadium, dissolved	7440-62-2	E421	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E421	0.0020	mg/L	0.0049	0.0045	0.0004	Diff <2x LOR	----
Dissolved Metals (QC Lot: 662250)											
CG2212826-001	RG_GATEDP_WS_LAEMP_EVO_2022-09_N	mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 656605)						
turbidity	----	E121	0.1	NTU	<0.10	----
Physical Tests (QCLot: 660281)						
solids, total suspended [TSS]	----	E160-L	1	mg/L	<1.0	----
Physical Tests (QCLot: 660289)						
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 660521)						
acidity (as CaCO ₃)	----	E283	2	mg/L	<2.0	----
Physical Tests (QCLot: 660527)						
conductivity	----	E100	1	µS/cm	<1.0	----
Physical Tests (QCLot: 660529)						
alkalinity, bicarbonate (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
alkalinity, carbonate (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
alkalinity, hydroxide (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
alkalinity, total (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
Anions and Nutrients (QCLot: 656569)						
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 656571)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 656642)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 656643)						
bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 656645)						
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	----
Anions and Nutrients (QCLot: 656646)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 656647)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 656648)						
sulfate (as SO ₄)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 658501)						
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Organic / Inorganic Carbon (QCLot: 656575)						



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Organic / Inorganic Carbon (QCLot: 656575) - continued						
carbon, dissolved organic [DOC]	---	E358-L	0.5	mg/L	<0.50	---
Organic / Inorganic Carbon (QCLot: 656576)						
carbon, total organic [TOC]	---	E355-L	0.5	mg/L	<0.50	---
Total Metals (QCLot: 661793)						
aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	---
antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	---
arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	---
barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	---
beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	---
bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	---
boron, total	7440-42-8	E420	0.01	mg/L	<0.010	---
cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	---
calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	---
cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	---
copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	---
iron, total	7439-89-6	E420	0.01	mg/L	<0.010	---
lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	---
lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	---
magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	---
manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	---
molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	---
nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	---
potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	---
selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	---
silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	---
silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	---
sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	---
strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	---
sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	---
thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	---
tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	---
titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	---
uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	---
vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	---
zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	---
Total Metals (QCLot: 661794)						



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 661794) - continued						
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	<0.00010	---
Total Metals (QCLot: 662243)						
mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	---
Dissolved Metals (QCLot: 660922)						
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	<0.00010	---
Dissolved Metals (QCLot: 660923)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	---
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	---
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	---
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	---
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	---
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	---
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	---
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	---
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	---
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	---
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	---
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	---
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	---
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	---
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	---
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	---
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	---
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	---
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	---
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	---
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	---
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	---
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	---
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	---
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	---
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	---
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	---
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	---
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	---
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	---



Sub-Matrix: **Water**

<i>Analyte</i>	<i>CAS Number</i>	<i>Method</i>	<i>LOR</i>	<i>Unit</i>	<i>Result</i>	<i>Qualifier</i>
Dissolved Metals (QCLot: 660923) - continued						
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
Dissolved Metals (QCLot: 662250)						
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Physical Tests (QCLot: 656605)									
turbidity	---	E121	0.1	NTU	200 NTU	110	85.0	115	---
Physical Tests (QCLot: 658630)									
oxidation-reduction potential [ORP]	---	E125	---	mV	220 mV	101	95.4	104	---
Physical Tests (QCLot: 660281)									
solids, total suspended [TSS]	---	E160-L	1	mg/L	150 mg/L	96.4	85.0	115	---
Physical Tests (QCLot: 660289)									
solids, total dissolved [TDS]	---	E162	10	mg/L	1000 mg/L	95.5	85.0	115	---
Physical Tests (QCLot: 660521)									
acidity (as CaCO3)	---	E283	2	mg/L	50 mg/L	104	85.0	115	---
Physical Tests (QCLot: 660527)									
conductivity	---	E100	1	µS/cm	146.9 µS/cm	100	90.0	110	---
Physical Tests (QCLot: 660528)									
pH	---	E108	---	pH units	7 pH units	101	98.6	101	---
Physical Tests (QCLot: 660529)									
alkalinity, total (as CaCO3)	---	E290	1	mg/L	500 mg/L	102	85.0	115	---
Anions and Nutrients (QCLot: 656569)									
Kjeldahl nitrogen, total [TKN]	---	E318	0.05	mg/L	4 mg/L	104	75.0	125	---
Anions and Nutrients (QCLot: 656571)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	97.6	85.0	115	---
Anions and Nutrients (QCLot: 656642)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	101	90.0	110	---
Anions and Nutrients (QCLot: 656643)									
bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	101	85.0	115	---
Anions and Nutrients (QCLot: 656645)									
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	99.4	90.0	110	---
Anions and Nutrients (QCLot: 656646)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	99.7	90.0	110	---
Anions and Nutrients (QCLot: 656647)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	100.0	90.0	110	---
Anions and Nutrients (QCLot: 656648)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	100	90.0	110	---
Anions and Nutrients (QCLot: 658501)									



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Anions and Nutrients (QCLot: 658501) - continued									
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.03 mg/L	105	80.0	120	----
Organic / Inorganic Carbon (QCLot: 656575)									
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	91.8	80.0	120	----
Organic / Inorganic Carbon (QCLot: 656576)									
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	98.8	80.0	120	----
Total Metals (QCLot: 661793)									
aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	109	80.0	120	----
antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	96.1	80.0	120	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	96.1	80.0	120	----
barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	97.1	80.0	120	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	103	80.0	120	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	90.6	80.0	120	----
boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	103	80.0	120	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	95.5	80.0	120	----
calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	96.4	80.0	120	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	92.4	80.0	120	----
copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	93.7	80.0	120	----
iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	92.9	80.0	120	----
lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	92.1	80.0	120	----
lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	99.0	80.0	120	----
magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	94.5	80.0	120	----
manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	97.0	80.0	120	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	98.0	80.0	120	----
nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	95.3	80.0	120	----
potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	96.3	80.0	120	----
selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	95.2	80.0	120	----
silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	103	60.0	140	----
silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	89.2	80.0	120	----
sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	98.5	80.0	120	----
strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	95.3	80.0	120	----
sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	105	80.0	120	----
thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	92.4	80.0	120	----
tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	95.7	80.0	120	----
titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	96.7	80.0	120	----
uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	96.6	80.0	120	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	95.6	80.0	120	----



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Total Metals (QCLot: 661793) - continued									
zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	101	80.0	120	----
Total Metals (QCLot: 661794)									
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	0.25 mg/L	101	80.0	120	----
Total Metals (QCLot: 662243)									
mercury, total	7439-97-6	E508	0.000005	mg/L	0.0001 mg/L	103	80.0	120	----
Dissolved Metals (QCLot: 660922)									
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	0.25 mg/L	96.9	80.0	120	----
Dissolved Metals (QCLot: 660923)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	101	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	100	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	97.2	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	102	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	99.5	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	94.4	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	99.8	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	93.6	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	98.4	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	95.7	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	94.6	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	98.1	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	99.5	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	102	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	104	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	95.1	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	99.1	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	96.1	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	99.1	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	96.8	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	103	60.0	140	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	85.4	80.0	120	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	102	80.0	120	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	103	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	82.6	80.0	120	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	98.7	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	98.1	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	94.7	80.0	120	----



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 660923) - continued									
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	90.0	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	98.7	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	94.0	80.0	120	----
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	106	80.0	120	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 656569)										
CG2212816-005	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.66 mg/L	2.5 mg/L	106	70.0	130	----
Anions and Nutrients (QCLot: 656571)										
CG2212816-005	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.101 mg/L	0.1 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 656642)										
CG2212832-005	Anonymous	fluoride	16984-48-8	E235.F	1.02 mg/L	1 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 656643)										
CG2212832-005	Anonymous	bromide	24959-67-9	E235.Br-L	0.515 mg/L	0.5 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 656645)										
CG2212832-005	Anonymous	chloride	16887-00-6	E235.Cl-L	101 mg/L	100 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 656646)										
CG2212832-005	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	2.52 mg/L	2.5 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 656647)										
CG2212832-005	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.511 mg/L	0.5 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 656648)										
CG2212832-005	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	102 mg/L	100 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 658501)										
CG2212826-002	RG_GATE_WS_LAEMP_EV O_2022-09_N	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0531 mg/L	0.05 mg/L	106	70.0	130	----
Organic / Inorganic Carbon (QCLot: 656575)										
CG2212821-001	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	5.07 mg/L	5 mg/L	101	70.0	130	----
Organic / Inorganic Carbon (QCLot: 656576)										
CG2212821-001	Anonymous	carbon, total organic [TOC]	----	E355-L	4.87 mg/L	5 mg/L	97.5	70.0	130	----
Total Metals (QCLot: 661793)										
CG2212826-002	RG_GATE_WS_LAEMP_EV O_2022-09_N	aluminum, total	7429-90-5	E420	1.85 mg/L	2 mg/L	92.7	70.0	130	----
		antimony, total	7440-36-0	E420	0.198 mg/L	0.2 mg/L	98.9	70.0	130	----
		arsenic, total	7440-38-2	E420	0.195 mg/L	0.2 mg/L	97.6	70.0	130	----
		barium, total	7440-39-3	E420	ND mg/L	0.2 mg/L	ND	70.0	130	----
		beryllium, total	7440-41-7	E420	0.381 mg/L	0.4 mg/L	95.3	70.0	130	----
		bismuth, total	7440-69-9	E420	0.0964 mg/L	0.1 mg/L	96.4	70.0	130	----
		boron, total	7440-42-8	E420	0.916 mg/L	1 mg/L	91.6	70.0	130	----



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 661793) - continued										
CG2212826-002	RG_GATE_WS_LAEMP_EV O_2022-09_N	cadmium, total	7440-43-9	E420	0.0393 mg/L	0.04 mg/L	98.2	70.0	130	----
		calcium, total	7440-70-2	E420	ND mg/L	40 mg/L	ND	70.0	130	----
		cobalt, total	7440-48-4	E420	0.193 mg/L	0.2 mg/L	96.7	70.0	130	----
		copper, total	7440-50-8	E420	0.192 mg/L	0.2 mg/L	96.2	70.0	130	----
		iron, total	7439-89-6	E420	19.0 mg/L	20 mg/L	95.0	70.0	130	----
		lead, total	7439-92-1	E420	0.186 mg/L	0.2 mg/L	92.8	70.0	130	----
		lithium, total	7439-93-2	E420	0.935 mg/L	1 mg/L	93.5	70.0	130	----
		magnesium, total	7439-95-4	E420	ND mg/L	10 mg/L	ND	70.0	130	----
		manganese, total	7439-96-5	E420	0.189 mg/L	0.2 mg/L	94.5	70.0	130	----
		molybdenum, total	7439-98-7	E420	0.204 mg/L	0.2 mg/L	102	70.0	130	----
		nickel, total	7440-02-0	E420	0.461 mg/L	0.4 mg/L	115	70.0	130	----
		potassium, total	7440-09-7	E420	37.6 mg/L	40 mg/L	94.0	70.0	130	----
		selenium, total	7782-49-2	E420	0.380 mg/L	0.4 mg/L	95.0	70.0	130	----
		silicon, total	7440-21-3	E420	83.7 mg/L	100 mg/L	83.7	70.0	130	----
		silver, total	7440-22-4	E420	0.0428 mg/L	0.04 mg/L	107	70.0	130	----
		sodium, total	7440-23-5	E420	19.5 mg/L	20 mg/L	97.5	70.0	130	----
		strontium, total	7440-24-6	E420	ND mg/L	0.2 mg/L	ND	70.0	130	----
		sulfur, total	7704-34-9	E420	ND mg/L	200 mg/L	ND	70.0	130	----
		thallium, total	7440-28-0	E420	0.0379 mg/L	0.04 mg/L	94.8	70.0	130	----
		tin, total	7440-31-5	E420	0.191 mg/L	0.2 mg/L	95.7	70.0	130	----
		titanium, total	7440-32-6	E420	0.385 mg/L	0.4 mg/L	96.3	70.0	130	----
		uranium, total	7440-61-1	E420	0.0386 mg/L	0.04 mg/L	96.4	70.0	130	----
		vanadium, total	7440-62-2	E420	0.955 mg/L	1 mg/L	95.5	70.0	130	----
		zinc, total	7440-66-6	E420	3.77 mg/L	4 mg/L	94.2	70.0	130	----
Total Metals (QCLot: 661794)										
CG2212826-002	RG_GATE_WS_LAEMP_EV O_2022-09_N	chromium, total	7440-47-3	E420.Cr-L	0.377 mg/L	0.4 mg/L	94.4	70.0	130	----
Total Metals (QCLot: 662243)										
CG2212826-002	RG_GATE_WS_LAEMP_EV O_2022-09_N	mercury, total	7439-97-6	E508	0.0000977 mg/L	0.0001 mg/L	97.7	70.0	130	----
Dissolved Metals (QCLot: 660922)										
CG2212826-002	RG_GATE_WS_LAEMP_EV O_2022-09_N	chromium, dissolved	7440-47-3	E421.Cr-L	0.389 mg/L	0.4 mg/L	97.2	70.0	130	----
Dissolved Metals (QCLot: 660923)										
CG2212826-002	RG_GATE_WS_LAEMP_EV O_2022-09_N	aluminum, dissolved	7429-90-5	E421	1.94 mg/L	2 mg/L	97.3	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.189 mg/L	0.2 mg/L	94.7	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.197 mg/L	0.2 mg/L	98.3	70.0	130	----



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 660923) - continued										
CG2212826-002	RG_GATE_WS_LAEMP_EV O_2022-09_N	barium, dissolved	7440-39-3	E421	ND mg/L	0.2 mg/L	ND	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.384 mg/L	0.4 mg/L	96.0	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.0960 mg/L	0.1 mg/L	96.0	70.0	130	----
		boron, dissolved	7440-42-8	E421	0.982 mg/L	1 mg/L	98.2	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.0407 mg/L	0.04 mg/L	102	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	40 mg/L	ND	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.194 mg/L	0.2 mg/L	97.0	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.193 mg/L	0.2 mg/L	96.5	70.0	130	----
		iron, dissolved	7439-89-6	E421	19.6 mg/L	20 mg/L	98.1	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.202 mg/L	0.2 mg/L	101	70.0	130	----
		lithium, dissolved	7439-93-2	E421	0.975 mg/L	1 mg/L	97.5	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	10 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E421	0.194 mg/L	0.2 mg/L	97.0	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.202 mg/L	0.2 mg/L	101	70.0	130	----
		nickel, dissolved	7440-02-0	E421	0.387 mg/L	0.4 mg/L	96.7	70.0	130	----
		potassium, dissolved	7440-09-7	E421	39.6 mg/L	40 mg/L	99.0	70.0	130	----
		selenium, dissolved	7782-49-2	E421	0.403 mg/L	0.4 mg/L	101	70.0	130	----
		silicon, dissolved	7440-21-3	E421	100 mg/L	100 mg/L	100	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.0386 mg/L	0.04 mg/L	96.5	70.0	130	----
		sodium, dissolved	7440-23-5	E421	20.0 mg/L	20 mg/L	99.8	70.0	130	----
		strontium, dissolved	7440-24-6	E421	ND mg/L	0.2 mg/L	ND	70.0	130	----
sulfur, dissolved	7704-34-9	E421	ND mg/L	200 mg/L	ND	70.0	130	----		
thallium, dissolved	7440-28-0	E421	0.0362 mg/L	0.04 mg/L	90.4	70.0	130	----		
tin, dissolved	7440-31-5	E421	0.185 mg/L	0.2 mg/L	92.4	70.0	130	----		
titanium, dissolved	7440-32-6	E421	0.385 mg/L	0.4 mg/L	96.4	70.0	130	----		
uranium, dissolved	7440-61-1	E421	0.0371 mg/L	0.04 mg/L	92.8	70.0	130	----		
vanadium, dissolved	7440-62-2	E421	0.992 mg/L	1 mg/L	99.2	70.0	130	----		
zinc, dissolved	7440-66-6	E421	3.85 mg/L	4 mg/L	96.2	70.0	130	----		
Dissolved Metals (QCLot: 662250)										
CG2212826-002	RG_GATE_WS_LAEMP_EV O_2022-09_N	mercury, dissolved	7439-97-6	E509	0.0000958 mg/L	0.0001 mg/L	95.8	70.0	130	----



COC ID: REP_LAEMP_EVO_2022-00 ALS		TURNAROUND TIME: 2-3 Business Days		RUSH: Priority				
PROJECT/CLIENT INFO				LABORATORY		OTHER INFO		
Facility Name / Job# Regional Effects Program		Lab Name ALS		Report Format / Distribution		Excel	PDF	EDD
Project Manager Mike Pope		Lab Contact Justine Buma-a		Email 1: AquaSci.ab@teck.com		X	X	X
Email Mike.Pope@Teck.com		Email justine.bumaa@alsglobal.com		Email 2: teckcoal@equisglobe.com				X
Address 421 Pine Ave		Address 2559 29 Street NE		Email 3: Teck.Lab.Results@teck.com		X	X	X
City Sparwood		City Calgary		Email 4: Lisa.Bowron@minnow.ca		X	X	X
Province BC		Province AB		Email 5: Tyler.Mehler@minnow.ca		X	X	X
Postal Code V0B 2G1		Postal Code T1Y 7B5		Email 6: Jessica.Ritz@Teck.com		X	X	X
Country Canada		Country Canada		PO number VPO00816101				
Phone Number 250-425-8247		Phone Number 1-403-407-1781						

SAMPLE DETAILS							ANALYSIS REQUESTED						
DOC	Mercury_Dissolved	Mercury_Total	TECKCOAL_METNHG_D	TECKCOAL_METNHG_I	TECKCOAL_ROUTINE	TOC_TKN_PT	F	F	N	F	N	N	N
RG_GATEDP_WS_LAEMP_EVO_2022-09_N	RG_GATEDP	WS					1	1	1	1	1	1	1
RG_GATE_WS_LAEMP_EVO_2022-09_N	RG_GATE	WS					1	1	1	1	1	1	1
RG_BOCK_WS_LAEMP_EVO_2022-09_N	RG_BOCKRD	WS					1	1	1	1	1	1	1
RG_ERCKUT_WS_LAEMP_EVO_2022-09_N	RG_ERCKUT	WS					1	1	1	1	1	1	1

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS Dissolved metals were field filtered and to be lab preserved Total metals to be lab preserved	RELINQUISHED BY/AFFILIATION Jennifer Ings	DATE/TIME #####	ACCEPTED BY/AFFILIATION <i>Seena</i>	DATE/TIME 09-17/1138am <i>Se</i>
---	---	---------------------------	--	---

SERVICE REQUEST (rush - subject to availability)		Sampler's Name Jennifer Ings	Mobile # 5195003444
Regular (default)	<input type="checkbox"/>	Sampler's Signature <i>Jennifer Ings</i>	Date/Time September 16, 2022
Priority (2-3 business days) - 50% surcharge	<input checked="" type="checkbox"/>		
Emergency (1 Business Day) - 100% surcharge	<input type="checkbox"/>		
For Emergency <1 Day, ASAP or Weekend - Contact ALS			

Environmental Division
Calgary
Work Order Reference
CG2212826



Telephone : +1 403 407 1800

Environmental Division
 Calgary
 Work Order Reference
CG2212826

CERTIFICATE OF ANALYSIS

Work Order : **CG2213025**
Client : **Teck Coal Limited**
Contact : Mike Pope
Address : 421 Pine Avenue
 Sparwood BC Canada V0B2G0
Telephone : ----
Project : REGIONAL EFFECTS PROGRAM
PO : VPO00816101
C-O-C number : REP_LAEMP_EVO_2022-09_ALS
Sampler : Jennifer Ings
Site : ----
Quote number : Teck Coal Master Quote
No. of samples received : 6
No. of samples analysed : 6

Page : 1 of 10
Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
 Calgary AB Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 22-Sep-2022 08:58
Date Analysis Commenced : 22-Sep-2022
Issue Date : 26-Sep-2022 18:24

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Anthony Calero	Supervisor - Inorganic	Inorganics, Calgary, Alberta
Anthony Calero	Supervisor - Inorganic	Metals, Calgary, Alberta
Elke Tabora		Inorganics, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Metals, Calgary, Alberta
Mackenzie Lamoureux	Laboratory Analyst	Metals, Calgary, Alberta
Millicent Brentnall	Laboratory Analyst	Metals, Calgary, Alberta
Ruifang Zheng	Analyst	Inorganics, Calgary, Alberta
Sara Niroomand		Inorganics, Calgary, Alberta
Sara Niroomand		Metals, Calgary, Alberta
Shirley Li		Metals, Calgary, Alberta
Vladka Stamenova	Analyst	Inorganics, Calgary, Alberta



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
 LOR: Limit of Reporting (detection limit).

<i>Unit</i>	<i>Description</i>
-	No Unit
%	percent
µg/L	micrograms per litre
µS/cm	Microsiemens per centimetre
meq/L	milliequivalents per litre
mg/L	milligrams per litre
mV	millivolts
NTU	nephelometric turbidity units
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

<i>Qualifier</i>	<i>Description</i>
DLDS	Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.
DTSE	Dissolved Se concentration exceeds total. Positive bias on D-Se suspected due to signal enhancement from volatile selenium species. Contact ALS if an alternative test to address this interference is needed.
HTA	Analytical holding time was exceeded.
RRV	Reported result verified by repeat analysis.
TKNI	TKN result may be biased low due to Nitrate interference. Nitrate-N is > 10x TKN.



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKBR_W S_LAEMP_EVO _2022-09_N	RG_BOCKRD_ WS_LAEMP_EV O_2022-09_N	RG_ERCKMD_ WS_LAEMP_EV O_2022-09_N	RG_ERCKDT_W S_LAEMP_EVO _2022-09_N	RG_RIVER_WS _LAEMP_EVO_ _2022-09_N
Client sampling date / time					20-Sep-2022 11:47	20-Sep-2022 09:38	20-Sep-2022 15:47	19-Sep-2022 13:27	20-Sep-2022 15:47	
Analyte	CAS Number	Method	LOR	Unit	CG2213025-001	CG2213025-002	CG2213025-003	CG2213025-004	CG2213025-005	
					Result	Result	Result	Result	Result	
Physical Tests										
acidity (as CaCO3)	----	E283	2.0	mg/L	14.2	<2.0	4.8	12.1	6.6	
alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	439	359	488	458	452	
alkalinity, bicarbonate (as HCO3)	71-52-3	E290	1.0	mg/L	536	438	596	559	551	
alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	25.2	<1.0	<1.0	<1.0	
alkalinity, carbonate (as CO3)	3812-32-6	E290	1.0	mg/L	<1.0	15.1	<1.0	<1.0	<1.0	
alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
alkalinity, hydroxide (as OH)	14280-30-9	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	439	384	488	458	452	
conductivity	----	E100	2.0	µS/cm	1810	2000	1810	1800	1790	
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	1330	1520	1300	1310	1300	
oxidation-reduction potential [ORP]	----	E125	0.10	mV	307	331	309	311	310	
pH	----	E108	0.10	pH units	8.06	8.39	8.18	8.05	8.21	
solids, total dissolved [TDS]	----	E162	10	mg/L	1470	1680	1480	1490	1490	
solids, total suspended [TSS]	----	E160-L	1.0	mg/L	1.5	9.1	3.3	4.2	4.2	
turbidity	----	E121	0.10	NTU	0.36	0.94	0.21	0.43	0.48	
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	0.0065	<0.0050	<0.0050	0.0064	
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.250 ^{DLDS}	0.439	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	5.10	14.2	5.18	5.16	5.10	
fluoride	16984-48-8	E235.F	0.020	mg/L	0.107	0.257	0.106	0.106	0.104	
Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	2.46	0.855 ^{TKNI}	1.30 ^{TKNI}	2.18	0.659 ^{TKNI}	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	15.1	9.13	15.1	15.5	15.3	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0152	<0.0010	0.0164	0.0199 ^{HTA}	0.0167	
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0201	0.0102	0.0220	0.0198	0.0218	
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	747	990	746	752	745	
Organic / Inorganic Carbon										
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	<0.50	<0.50	<0.50	<0.50	<0.50	
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	0.50	<0.50	<0.50	<0.50	<0.50	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKBR_W S_LAEMP_EVO _2022-09_N	RG_BOCKRD_ WS_LAEMP_EV O_2022-09_N	RG_ERCKMD_ WS_LAEMP_EV O_2022-09_N	RG_ERCKDT_W S_LAEMP_EVO _2022-09_N	RG_RIVER_WS _LAEMP_EVO_ 2022-09_N
Client sampling date / time					20-Sep-2022 11:47	20-Sep-2022 09:38	20-Sep-2022 15:47	19-Sep-2022 13:27	20-Sep-2022 15:47	
Analyte	CAS Number	Method	LOR	Unit	CG2213025-001	CG2213025-002	CG2213025-003	CG2213025-004	CG2213025-005	
					Result	Result	Result	Result	Result	
Ion Balance										
anion sum	----	EC101	0.10	meq/L	25.6	29.4	26.5	26.1	25.8	
cation sum	----	EC101	0.10	meq/L	26.8	31.1	26.2	26.3	26.2	
ion balance (cations/anions)	----	EC101	0.010	%	105	106	98.9	101	102	
ion balance (APHA)	----	EC101	0.010	%	2.29	2.81	0.569	0.382	0.769	
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0063	0.0115	0.0059	0.0049	0.0051	
antimony, total	7440-36-0	E420	0.00010	mg/L	0.00022	0.00087	0.00021	0.00020	0.00021	
arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00031	0.00038	0.00034	0.00031	0.00039	
barium, total	7440-39-3	E420	0.00010	mg/L	0.0637	0.0423	0.0646	0.0642	0.0640	
beryllium, total	7440-41-7	E420	0.020	µg/L	<0.020	<0.040 ^{DLDS}	<0.020	<0.020	<0.020	
bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000100 ^{DLDS}	<0.000050	<0.000050	<0.000050	
boron, total	7440-42-8	E420	0.010	mg/L	0.014	0.041	0.014	0.013	0.014	
cadmium, total	7440-43-9	E420	0.0050	µg/L	0.0927	0.229	0.0975	0.0915	0.102	
calcium, total	7440-70-2	E420	0.050	mg/L	242	254	238	222	240	
chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	0.00020	<0.00020 ^{DLDS}	0.00018	0.00021	0.00018	
cobalt, total	7440-48-4	E420	0.10	µg/L	<0.10	<0.20 ^{DLDS}	0.38	<0.10	0.35	
copper, total	7440-50-8	E420	0.00050	mg/L	<0.00050	<0.00100 ^{DLDS}	<0.00050	<0.00050	<0.00050	
iron, total	7439-89-6	E420	0.010	mg/L	<0.010	0.060	0.070	<0.010	0.076	
lead, total	7439-92-1	E420	0.000050	mg/L	<0.000050	<0.000100 ^{DLDS}	<0.000050	<0.000050	<0.000050	
lithium, total	7439-93-2	E420	0.0010	mg/L	0.0304	0.144	0.0290	0.0278	0.0302	
magnesium, total	7439-95-4	E420	0.0050	mg/L	159	188	156	157	155	
manganese, total	7439-96-5	E420	0.00010	mg/L	0.00020	0.00398	0.0126	0.00083	0.0126	
mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.00106	0.0165	0.00102	0.00123	0.00130	
nickel, total	7440-02-0	E420	0.00050	mg/L	0.00098	0.0320	0.00121	0.00090	0.00115	
potassium, total	7440-09-7	E420	0.050	mg/L	2.75	5.32	2.71	2.72	2.69	
selenium, total	7782-49-2	E420	0.050	µg/L	160 ^{DTSE}	77.4 ^{DTSE}	156 ^{DTSE}	156 ^{DTSE}	156 ^{DTSE}	
silicon, total	7440-21-3	E420	0.10	mg/L	3.65	2.53	3.63	3.59	3.58	
silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000020 ^{DLDS}	<0.000010	<0.000010	<0.000010	
sodium, total	7440-23-5	E420	0.050	mg/L	3.45	11.0	3.43	3.43	3.38	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKBR_W S_LAEMP_EVO _2022-09_N	RG_BOCKRD_ WS_LAEMP_EV O_2022-09_N	RG_ERCKMD_ WS_LAEMP_EV O_2022-09_N	RG_ERCKDT_W S_LAEMP_EVO _2022-09_N	RG_RIVER_WS _LAEMP_EVO_ _2022-09_N
Client sampling date / time					20-Sep-2022 11:47	20-Sep-2022 09:38	20-Sep-2022 15:47	19-Sep-2022 13:27	20-Sep-2022 15:47	
Analyte	CAS Number	Method	LOR	Unit	CG2213025-001 Result	CG2213025-002 Result	CG2213025-003 Result	CG2213025-004 Result	CG2213025-005 Result	
Total Metals										
strontium, total	7440-24-6	E420	0.00020	mg/L	0.224	0.566	0.220	0.209	0.216	
sulfur, total	7704-34-9	E420	0.50	mg/L	239	316	233	231	228	
thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	0.000048	<0.000010	<0.000010	<0.000010	
tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00020 ^{DLDS}	<0.00010	<0.00010	<0.00010	
titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00030	<0.00060 ^{DLDS}	<0.00030	<0.00030	<0.00030	
uranium, total	7440-61-1	E420	0.000010	mg/L	0.00768	0.0123	0.00753	0.00702	0.00746	
vanadium, total	7440-62-2	E420	0.00050	mg/L	0.00051	<0.00100 ^{DLDS}	0.00051	<0.00050	0.00055	
zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	0.0114	<0.0030	<0.0030	<0.0030	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00023	0.00092	0.00022	0.00022	0.00022	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00031	0.00037	0.00028	0.00030	0.00029	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0648	0.0220	0.0629	0.0635	0.0629	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
boron, dissolved	7440-42-8	E421	0.010	mg/L	0.015	0.042	0.015	0.015	0.015	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.0893	0.188	0.0856	0.0825	0.0924	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	262	276	260	261	260	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	0.00019	<0.00010	0.00019	0.00018	0.00017	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	<0.10	0.13	<0.10	<0.10	<0.10	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00020	0.00020	<0.00020	<0.00020	<0.00020	
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	0.017	<0.010	<0.010	<0.010	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0282	0.146	0.0275	0.0269	0.0267	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	165	203	159	159	158	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	<0.00010	0.00297	0.00052	0.00050	0.00052	
mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00107	0.0166	0.00131	0.00129	0.00140	
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00093	0.0338	0.00108	0.00092	0.00104	
potassium, dissolved	7440-09-7	E421	0.050	mg/L	2.79	5.82	2.74	2.74	2.72	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKBR_WS_LAEMP_EVO_2022-09_N	RG_BOCKRD_WS_LAEMP_EV_O_2022-09_N	RG_ERCKMD_WS_LAEMP_EV_O_2022-09_N	RG_ERCKDT_WS_LAEMP_EVO_2022-09_N	RG_RIVER_WS_LAEMP_EVO_2022-09_N
Client sampling date / time					20-Sep-2022 11:47	20-Sep-2022 09:38	20-Sep-2022 15:47	19-Sep-2022 13:27	20-Sep-2022 15:47	
Analyte	CAS Number	Method	LOR	Unit	CG2213025-001	CG2213025-002	CG2213025-003	CG2213025-004	CG2213025-005	
					Result	Result	Result	Result	Result	
Dissolved Metals										
selenium, dissolved	7782-49-2	E421	0.050	µg/L	217 ^{DTSE}	109 ^{DTSE}	213 ^{DTSE}	220 ^{DTSE}	215 ^{DTSE}	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	4.57	3.15	4.50	4.45	4.55	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	3.29	11.2	3.20	3.20	3.20	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.228	0.572	0.227	0.225	0.225	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	230	320	228	231	232	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	0.000056	<0.000010	<0.000010	<0.000010	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00768	0.0133	0.00763	0.00757	0.00765	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0017	0.0087	0.0015	0.0018	0.0017	
dissolved mercury filtration location	----	EP509	-	-	Field	Field	Field	Field	Field	
dissolved metals filtration location	----	EP421	-	-	Field	Field	Field	Field	Field	

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_TRIP_WS_L AEMP_EVO_20 22-09_N	----	----	----	----
Client sampling date / time					20-Sep-2022 15:47	----	----	----	----	
Analyte	CAS Number	Method	LOR	Unit	CG2213025-006	-----	-----	-----	-----	
					Result	----	----	----	----	
Physical Tests										
acidity (as CaCO3)	----	E283	2.0	mg/L	<2.0	----	----	----	----	
alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	----	----	----	----	
alkalinity, bicarbonate (as HCO3)	71-52-3	E290	1.0	mg/L	<1.0	----	----	----	----	
alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	----	----	----	----	
alkalinity, carbonate (as CO3)	3812-32-6	E290	1.0	mg/L	<1.0	----	----	----	----	
alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	----	----	----	----	
alkalinity, hydroxide (as OH)	14280-30-9	E290	1.0	mg/L	<1.0	----	----	----	----	
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	<1.0	----	----	----	----	
conductivity	----	E100	2.0	µS/cm	<2.0	----	----	----	----	
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	<0.50	----	----	----	----	
oxidation-reduction potential [ORP]	----	E125	0.10	mV	467	----	----	----	----	
pH	----	E108	0.10	pH units	5.42	----	----	----	----	
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----	----	----	----	
solids, total suspended [TSS]	----	E160-L	1.0	mg/L	<1.0	----	----	----	----	
turbidity	----	E121	0.10	NTU	<0.10	----	----	----	----	
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0242 ^{RRV}	----	----	----	----	
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	----	----	----	----	
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	<0.10	----	----	----	----	
fluoride	16984-48-8	E235.F	0.020	mg/L	<0.020	----	----	----	----	
Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	<0.050	----	----	----	----	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	<0.0050	----	----	----	----	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	----	----	----	----	
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	----	----	----	----	
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	<0.0020	----	----	----	----	
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	<0.30	----	----	----	----	
Organic / Inorganic Carbon										
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	<0.50	----	----	----	----	
Ion Balance										
anion sum	----	EC101	0.10	meq/L	<0.10	----	----	----	----	



Analytical Results

Sub-Matrix: Water					Client sample ID	RG_TRIP_WS_L	----	----	----	----
(Matrix: Water)					AEMP_EVO_20					
					22-09_N					
					Client sampling date / time	20-Sep-2022	----	----	----	----
					15:47					
Analyte	CAS Number	Method	LOR	Unit	CG2213025-006	-----	-----	-----	-----	-----
					Result	----	----	----	----	----
Ion Balance										
cation sum	----	EC101	0.10	meq/L	<0.10	----	----	----	----	----
ion balance (cations/anions)	----	EC101	0.010	%	100	----	----	----	----	----
ion balance (APHA)	----	EC101	0.010	%	<0.010	----	----	----	----	----
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L	<0.0030	----	----	----	----	----
antimony, total	7440-36-0	E420	0.00010	mg/L	<0.00010	----	----	----	----	----
arsenic, total	7440-38-2	E420	0.00010	mg/L	<0.00010	----	----	----	----	----
barium, total	7440-39-3	E420	0.00010	mg/L	0.00048 ^{RRV}	----	----	----	----	----
beryllium, total	7440-41-7	E420	0.020	µg/L	<0.020	----	----	----	----	----
bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	----	----	----	----	----
boron, total	7440-42-8	E420	0.010	mg/L	<0.010	----	----	----	----	----
cadmium, total	7440-43-9	E420	0.0050	µg/L	<0.0050	----	----	----	----	----
calcium, total	7440-70-2	E420	0.050	mg/L	<0.050	----	----	----	----	----
chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	<0.00010	----	----	----	----	----
cobalt, total	7440-48-4	E420	0.10	µg/L	<0.10	----	----	----	----	----
copper, total	7440-50-8	E420	0.00050	mg/L	<0.00050	----	----	----	----	----
iron, total	7439-89-6	E420	0.010	mg/L	<0.010	----	----	----	----	----
lead, total	7439-92-1	E420	0.000050	mg/L	<0.000050	----	----	----	----	----
lithium, total	7439-93-2	E420	0.0010	mg/L	<0.0010	----	----	----	----	----
magnesium, total	7439-95-4	E420	0.0050	mg/L	<0.0050	----	----	----	----	----
manganese, total	7439-96-5	E420	0.00010	mg/L	<0.00010	----	----	----	----	----
mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	----	----	----	----	----
molybdenum, total	7439-98-7	E420	0.000050	mg/L	<0.000050	----	----	----	----	----
nickel, total	7440-02-0	E420	0.00050	mg/L	<0.00050	----	----	----	----	----
potassium, total	7440-09-7	E420	0.050	mg/L	<0.050	----	----	----	----	----
selenium, total	7782-49-2	E420	0.050	µg/L	<0.050	----	----	----	----	----
silicon, total	7440-21-3	E420	0.10	mg/L	<0.10	----	----	----	----	----
silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	----	----	----	----	----
sodium, total	7440-23-5	E420	0.050	mg/L	<0.050	----	----	----	----	----
strontium, total	7440-24-6	E420	0.00020	mg/L	<0.00020	----	----	----	----	----



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_TRIP_WS_L AEMP_EVO_20 22-09_N	----	----	----	----
Client sampling date / time					20-Sep-2022 15:47	----	----	----	----	
Analyte	CAS Number	Method	LOR	Unit	CG2213025-006	-----	-----	-----	-----	
					Result	----	----	----	----	
Total Metals										
sulfur, total	7704-34-9	E420	0.50	mg/L	<0.50	----	----	----	----	
thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	----	----	----	----	
tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	----	----	----	----	
titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00030	----	----	----	----	
uranium, total	7440-61-1	E420	0.000010	mg/L	<0.000010	----	----	----	----	
vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	----	----	----	----	
zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	----	----	----	----	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	<0.0010	----	----	----	----	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00010	----	----	----	----	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	<0.00010	----	----	----	----	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	<0.00010	----	----	----	----	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.020	----	----	----	----	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	----	----	----	----	
boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.010	----	----	----	----	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	<0.0050	----	----	----	----	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	<0.050	----	----	----	----	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00010	----	----	----	----	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	<0.10	----	----	----	----	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00020	----	----	----	----	
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	----	----	----	----	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	----	----	----	----	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	<0.0010	----	----	----	----	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	<0.0050	----	----	----	----	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	<0.00010	----	----	----	----	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	<0.000050	----	----	----	----	
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	<0.00050	----	----	----	----	
potassium, dissolved	7440-09-7	E421	0.050	mg/L	<0.050	----	----	----	----	
selenium, dissolved	7782-49-2	E421	0.050	µg/L	<0.050	----	----	----	----	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	<0.050	----	----	----	----	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_TRIP_WS_L AEMP_EVO_20 22-09_N	----	----	----	----
					Client sampling date / time	20-Sep-2022 15:47	----	----	----	----
Analyte	CAS Number	Method	LOR	Unit	CG2213025-006	-----	-----	-----	-----	-----
					Result	----	----	----	----	----
Dissolved Metals										
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	----	----	----	----	----
sodium, dissolved	7440-23-5	E421	0.050	mg/L	<0.050	----	----	----	----	----
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	<0.00020	----	----	----	----	----
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	<0.50	----	----	----	----	----
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	----	----	----	----	----
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	----	----	----	----	----
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	----	----	----	----	----
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	<0.000010	----	----	----	----	----
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	----	----	----	----	----
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0010	----	----	----	----	----
dissolved metals filtration location	----	EP421	-	-	Laboratory	----	----	----	----	----

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: CG2213025	Page	: 1 of 26
Client	: Teck Coal Limited	Laboratory	: Calgary - Environmental
Contact	: Mike Pope	Account Manager	: Lyudmyla Shvets
Address	: 421 Pine Avenue Sparwood BC Canada V0B2G0	Address	: 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5
Telephone	: ----	Telephone	: +1 403 407 1800
Project	: REGIONAL EFFECTS PROGRAM	Date Samples Received	: 22-Sep-2022 08:58
PO	: VPO00816101	Issue Date	: 26-Sep-2022 18:24
C-O-C number	: REP_LAEMP_EVO_2022-09_ALS		
Sampler	: Jennifer Ings		
Site	: ----		
Quote number	: Teck Coal Master Quote		
No. of samples received	: 6		
No. of samples analysed	: 6		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_BOCKRD_WS_LAEMP_EVO_2022-09_N	E298	20-Sep-2022	23-Sep-2022	----	----		23-Sep-2022	28 days	3 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_ERCKBR_WS_LAEMP_EVO_2022-09_N	E298	20-Sep-2022	23-Sep-2022	----	----		23-Sep-2022	28 days	3 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-09_N	E298	20-Sep-2022	23-Sep-2022	----	----		23-Sep-2022	28 days	3 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-09_N	E298	20-Sep-2022	23-Sep-2022	----	----		23-Sep-2022	28 days	3 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_TRIP_WS_LAEMP_EVO_2022-09_N	E298	20-Sep-2022	23-Sep-2022	----	----		23-Sep-2022	28 days	3 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-09_N	E298	19-Sep-2022	23-Sep-2022	----	----		23-Sep-2022	28 days	4 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-09_N	E235.Br-L	20-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	28 days	2 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKBR_WS_LAEMP_EVO_2022-09_N	E235.Br-L	20-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	28 days	2 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-09_N	E235.Br-L	20-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	28 days	2 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-09_N	E235.Br-L	20-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	28 days	2 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-09_N	E235.Br-L	20-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	28 days	2 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-09_N	E235.Br-L	19-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	28 days	3 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-09_N	E235.Cl-L	20-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKBR_WS_LAEMP_EVO_2022-09_N	E235.Cl-L	20-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-09_N	E235.Cl-L	20-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-09_N	E235.Cl-L	20-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	28 days	2 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-09_N	E235.CI-L	20-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	28 days	2 days	✓	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-09_N	E235.CI-L	19-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	28 days	3 days	✓	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-09_N	E378-U	20-Sep-2022	23-Sep-2022	----	----		23-Sep-2022	3 days	3 days	✓	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_ERCKBR_WS_LAEMP_EVO_2022-09_N	E378-U	20-Sep-2022	23-Sep-2022	----	----		23-Sep-2022	3 days	3 days	✓	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-09_N	E378-U	20-Sep-2022	23-Sep-2022	----	----		23-Sep-2022	3 days	3 days	✓	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-09_N	E378-U	20-Sep-2022	23-Sep-2022	----	----		23-Sep-2022	3 days	3 days	✓	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-09_N	E378-U	20-Sep-2022	23-Sep-2022	----	----		23-Sep-2022	3 days	3 days	✓	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-09_N	E378-U	19-Sep-2022	23-Sep-2022	----	----		23-Sep-2022	3 days	4 days	* EHTL	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-09_N	E235.F	20-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKBR_WS_LAEMP_EVO_2022-09_N	E235.F	20-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-09_N	E235.F	20-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-09_N	E235.F	20-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-09_N	E235.F	20-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-09_N	E235.F	19-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	28 days	3 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-09_N	E235.NO3-L	20-Sep-2022	22-Sep-2022	3 days	2 days	✔	22-Sep-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKBR_WS_LAEMP_EVO_2022-09_N	E235.NO3-L	20-Sep-2022	22-Sep-2022	3 days	2 days	✔	22-Sep-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-09_N	E235.NO3-L	20-Sep-2022	22-Sep-2022	3 days	2 days	✔	22-Sep-2022	3 days	0 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-09_N	E235.NO3-L	20-Sep-2022	22-Sep-2022	3 days	2 days	✓	22-Sep-2022	3 days	0 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-09_N	E235.NO3-L	20-Sep-2022	22-Sep-2022	3 days	2 days	✓	22-Sep-2022	3 days	0 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-09_N	E235.NO3-L	19-Sep-2022	22-Sep-2022	3 days	3 days	✓	22-Sep-2022	3 days	0 days	✓	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-09_N	E235.NO2-L	20-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	3 days	2 days	✓	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKBR_WS_LAEMP_EVO_2022-09_N	E235.NO2-L	20-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	3 days	2 days	✓	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-09_N	E235.NO2-L	20-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	3 days	2 days	✓	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-09_N	E235.NO2-L	20-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	3 days	2 days	✓	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-09_N	E235.NO2-L	20-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	3 days	2 days	✓	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-09_N	E235.NO2-L	19-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	3 days	3 days	* EHTL	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-09_N	E235.S04	20-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKBR_WS_LAEMP_EVO_2022-09_N	E235.S04	20-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-09_N	E235.S04	20-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-09_N	E235.S04	20-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-09_N	E235.S04	20-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-09_N	E235.S04	19-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	28 days	3 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_BOCKRD_WS_LAEMP_EVO_2022-09_N	E318	20-Sep-2022	23-Sep-2022	----	----		24-Sep-2022	28 days	4 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKBR_WS_LAEMP_EVO_2022-09_N	E318	20-Sep-2022	23-Sep-2022	----	----		24-Sep-2022	28 days	4 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-09_N	E318	20-Sep-2022	23-Sep-2022	----	----		24-Sep-2022	28 days	4 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-09_N	E318	20-Sep-2022	23-Sep-2022	----	----		24-Sep-2022	28 days	4 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_TRIP_WS_LAEMP_EVO_2022-09_N	E318	20-Sep-2022	23-Sep-2022	----	----		24-Sep-2022	28 days	4 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-09_N	E318	19-Sep-2022	23-Sep-2022	----	----		24-Sep-2022	28 days	5 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_BOCKRD_WS_LAEMP_EVO_2022-09_N	E372-U	20-Sep-2022	23-Sep-2022	----	----		24-Sep-2022	28 days	4 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_ERCKBR_WS_LAEMP_EVO_2022-09_N	E372-U	20-Sep-2022	23-Sep-2022	----	----		24-Sep-2022	28 days	4 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-09_N	E372-U	20-Sep-2022	23-Sep-2022	----	----		24-Sep-2022	28 days	4 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-09_N	E372-U	20-Sep-2022	23-Sep-2022	----	----		24-Sep-2022	28 days	4 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_TRIP_WS_LAEMP_EVO_2022-09_N	E372-U	20-Sep-2022	23-Sep-2022	----	----		24-Sep-2022	28 days	4 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-09_N	E372-U	19-Sep-2022	23-Sep-2022	----	----		24-Sep-2022	28 days	5 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_BOCKRD_WS_LAEMP_EVO_2022-09_N	E421.Cr-L	20-Sep-2022	24-Sep-2022	----	----		24-Sep-2022	180 days	4 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKBR_WS_LAEMP_EVO_2022-09_N	E421.Cr-L	20-Sep-2022	24-Sep-2022	----	----		24-Sep-2022	180 days	4 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKMD_WS_LAEMP_EVO_2022-09_N	E421.Cr-L	20-Sep-2022	24-Sep-2022	----	----		24-Sep-2022	180 days	4 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_RIVER_WS_LAEMP_EVO_2022-09_N	E421.Cr-L	20-Sep-2022	24-Sep-2022	----	----		24-Sep-2022	180 days	4 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_TRIP_WS_LAEMP_EVO_2022-09_N	E421.Cr-L	20-Sep-2022	24-Sep-2022	----	----		24-Sep-2022	180 days	4 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKDT_WS_LAEMP_EVO_2022-09_N	E421.Cr-L	19-Sep-2022	24-Sep-2022	----	----		24-Sep-2022	180 days	5 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_BOCKRD_WS_LAEMP_EVO_2022-09_N	E509	20-Sep-2022	24-Sep-2022	----	----		24-Sep-2022	28 days	4 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_ERCKBR_WS_LAEMP_EVO_2022-09_N	E509	20-Sep-2022	24-Sep-2022	----	----		24-Sep-2022	28 days	4 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-09_N	E509	20-Sep-2022	24-Sep-2022	----	----		24-Sep-2022	28 days	4 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_RIVER_WS_LAEMP_EVO_2022-09_N	E509	20-Sep-2022	24-Sep-2022	----	----		24-Sep-2022	28 days	4 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-09_N	E509	19-Sep-2022	24-Sep-2022	----	----		24-Sep-2022	28 days	5 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_BOCKRD_WS_LAEMP_EVO_2022-09_N	E421	20-Sep-2022	24-Sep-2022	----	----		24-Sep-2022	180 days	4 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ERCKBR_WS_LAEMP_EVO_2022-09_N	E421	20-Sep-2022	24-Sep-2022	----	----		24-Sep-2022	180 days	4 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ERCKMD_WS_LAEMP_EVO_2022-09_N	E421	20-Sep-2022	24-Sep-2022	----	----		24-Sep-2022	180 days	4 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_RIVER_WS_LAEMP_EVO_2022-09_N	E421	20-Sep-2022	24-Sep-2022	----	----		24-Sep-2022	180 days	4 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_TRIP_WS_LAEMP_EVO_2022-09_N	E421	20-Sep-2022	24-Sep-2022	----	----		24-Sep-2022	180 days	4 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ERCKDT_WS_LAEMP_EVO_2022-09_N	E421	19-Sep-2022	24-Sep-2022	----	----		24-Sep-2022	180 days	5 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_ERCKBR_WS_LAEMP_EVO_2022-09_N	E358-L	20-Sep-2022	22-Sep-2022	----	----		23-Sep-2022	28 days	2 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-09_N	E358-L	20-Sep-2022	22-Sep-2022	----	----		23-Sep-2022	28 days	2 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-09_N	E358-L	20-Sep-2022	22-Sep-2022	----	----		23-Sep-2022	28 days	2 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_BOCKRD_WS_LAEMP_EVO_2022-09_N	E358-L	20-Sep-2022	22-Sep-2022	----	----		23-Sep-2022	28 days	3 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-09_N	E358-L	19-Sep-2022	22-Sep-2022	----	----		23-Sep-2022	28 days	3 days	✓	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKBR_WS_LAEMP_EVO_2022-09_N	E355-L	20-Sep-2022	22-Sep-2022	----	----		23-Sep-2022	28 days	2 days	✓	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-09_N	E355-L	20-Sep-2022	22-Sep-2022	----	----		23-Sep-2022	28 days	2 days	✓	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-09_N	E355-L	20-Sep-2022	22-Sep-2022	----	----		23-Sep-2022	28 days	2 days	✓	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_TRIP_WS_LAEMP_EVO_2022-09_N	E355-L	20-Sep-2022	22-Sep-2022	----	----		23-Sep-2022	28 days	2 days	✓	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_BOCKRD_WS_LAEMP_EVO_2022-09_N	E355-L	20-Sep-2022	22-Sep-2022	----	----		23-Sep-2022	28 days	3 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-09_N	E355-L	19-Sep-2022	22-Sep-2022	----	----		23-Sep-2022	28 days	3 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-09_N	E283	20-Sep-2022	23-Sep-2022	----	----		23-Sep-2022	14 days	3 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_ERCKBR_WS_LAEMP_EVO_2022-09_N	E283	20-Sep-2022	23-Sep-2022	----	----		23-Sep-2022	14 days	3 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-09_N	E283	20-Sep-2022	23-Sep-2022	----	----		23-Sep-2022	14 days	3 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-09_N	E283	20-Sep-2022	23-Sep-2022	----	----		23-Sep-2022	14 days	3 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-09_N	E283	20-Sep-2022	23-Sep-2022	----	----		23-Sep-2022	14 days	3 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-09_N	E283	19-Sep-2022	23-Sep-2022	----	----		23-Sep-2022	14 days	4 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-09_N	E290	20-Sep-2022	23-Sep-2022	----	----		23-Sep-2022	14 days	3 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_ERCKBR_WS_LAEMP_EVO_2022-09_N	E290	20-Sep-2022	23-Sep-2022	----	----		23-Sep-2022	14 days	3 days	✔	



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Alkalinity Species by Titration											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-09_N	E290	20-Sep-2022	23-Sep-2022	----	----		23-Sep-2022	14 days	3 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-09_N	E290	20-Sep-2022	23-Sep-2022	----	----		23-Sep-2022	14 days	3 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-09_N	E290	20-Sep-2022	23-Sep-2022	----	----		23-Sep-2022	14 days	3 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-09_N	E290	19-Sep-2022	23-Sep-2022	----	----		23-Sep-2022	14 days	4 days	✔	
Physical Tests : Conductivity in Water											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-09_N	E100	20-Sep-2022	23-Sep-2022	----	----		23-Sep-2022	28 days	3 days	✔	
Physical Tests : Conductivity in Water											
HDPE RG_ERCKBR_WS_LAEMP_EVO_2022-09_N	E100	20-Sep-2022	23-Sep-2022	----	----		23-Sep-2022	28 days	3 days	✔	
Physical Tests : Conductivity in Water											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-09_N	E100	20-Sep-2022	23-Sep-2022	----	----		23-Sep-2022	28 days	3 days	✔	
Physical Tests : Conductivity in Water											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-09_N	E100	20-Sep-2022	23-Sep-2022	----	----		23-Sep-2022	28 days	3 days	✔	
Physical Tests : Conductivity in Water											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-09_N	E100	20-Sep-2022	23-Sep-2022	----	----		23-Sep-2022	28 days	3 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
Rec	Actual	Rec		Actual							
Physical Tests : Conductivity in Water											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-09_N	E100	19-Sep-2022	23-Sep-2022	----	----		23-Sep-2022	28 days	4 days	✓	
Physical Tests : ORP by Electrode											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-09_N	E125	19-Sep-2022	----	----	----		24-Sep-2022	0.25 hrs	117 hrs	* EHTR-FM	
Physical Tests : ORP by Electrode											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-09_N	E125	20-Sep-2022	----	----	----		24-Sep-2022	0.25 hrs	91 hrs	* EHTR-FM	
Physical Tests : ORP by Electrode											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-09_N	E125	20-Sep-2022	----	----	----		24-Sep-2022	0.25 hrs	91 hrs	* EHTR-FM	
Physical Tests : ORP by Electrode											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-09_N	E125	20-Sep-2022	----	----	----		24-Sep-2022	0.25 hrs	91 hrs	* EHTR-FM	
Physical Tests : ORP by Electrode											
HDPE RG_ERCKBR_WS_LAEMP_EVO_2022-09_N	E125	20-Sep-2022	----	----	----		24-Sep-2022	0.25 hrs	95 hrs	* EHTR-FM	
Physical Tests : ORP by Electrode											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-09_N	E125	20-Sep-2022	----	----	----		24-Sep-2022	0.25 hrs	97 hrs	* EHTR-FM	
Physical Tests : pH by Meter											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-09_N	E108	20-Sep-2022	23-Sep-2022	----	----		23-Sep-2022	0.25 hrs	0.26 hrs	* EHTR-FM	
Physical Tests : pH by Meter											
HDPE RG_ERCKBR_WS_LAEMP_EVO_2022-09_N	E108	20-Sep-2022	23-Sep-2022	----	----		23-Sep-2022	0.25 hrs	0.26 hrs	* EHTR-FM	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : pH by Meter											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-09_N	E108	19-Sep-2022	23-Sep-2022	----	----		23-Sep-2022	0.25 hrs	0.26 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-09_N	E108	20-Sep-2022	23-Sep-2022	----	----		23-Sep-2022	0.25 hrs	0.26 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-09_N	E108	20-Sep-2022	23-Sep-2022	----	----		23-Sep-2022	0.25 hrs	0.26 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-09_N	E108	20-Sep-2022	23-Sep-2022	----	----		23-Sep-2022	0.25 hrs	0.26 hrs	*	EHTR-FM
Physical Tests : TDS by Gravimetry											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-09_N	E162	20-Sep-2022	----	----	----		24-Sep-2022	7 days	4 days	✓	
Physical Tests : TDS by Gravimetry											
HDPE RG_ERCKBR_WS_LAEMP_EVO_2022-09_N	E162	20-Sep-2022	----	----	----		24-Sep-2022	7 days	4 days	✓	
Physical Tests : TDS by Gravimetry											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-09_N	E162	20-Sep-2022	----	----	----		24-Sep-2022	7 days	4 days	✓	
Physical Tests : TDS by Gravimetry											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-09_N	E162	20-Sep-2022	----	----	----		24-Sep-2022	7 days	4 days	✓	
Physical Tests : TDS by Gravimetry											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-09_N	E162	20-Sep-2022	----	----	----		24-Sep-2022	7 days	4 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : TDS by Gravimetry										
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-09_N	E162	19-Sep-2022	----	----	----		24-Sep-2022	7 days	5 days	✔
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE [TSS-WB] RG_BOCKRD_WS_LAEMP_EVO_2022-09_N	E160-L	20-Sep-2022	----	----	----		24-Sep-2022	7 days	4 days	✔
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE [TSS-WB] RG_ERCKBR_WS_LAEMP_EVO_2022-09_N	E160-L	20-Sep-2022	----	----	----		24-Sep-2022	7 days	4 days	✔
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE [TSS-WB] RG_ERCKMD_WS_LAEMP_EVO_2022-09_N	E160-L	20-Sep-2022	----	----	----		24-Sep-2022	7 days	4 days	✔
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE [TSS-WB] RG_RIVER_WS_LAEMP_EVO_2022-09_N	E160-L	20-Sep-2022	----	----	----		24-Sep-2022	7 days	4 days	✔
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE [TSS-WB] RG_TRIP_WS_LAEMP_EVO_2022-09_N	E160-L	20-Sep-2022	----	----	----		24-Sep-2022	7 days	4 days	✔
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE [TSS-WB] RG_ERCKDT_WS_LAEMP_EVO_2022-09_N	E160-L	19-Sep-2022	----	----	----		24-Sep-2022	7 days	5 days	✔
Physical Tests : Turbidity by Nephelometry										
HDPE RG_ERCKBR_WS_LAEMP_EVO_2022-09_N	E121	20-Sep-2022	----	----	----		22-Sep-2022	3 days	2 days	✔
Physical Tests : Turbidity by Nephelometry										
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-09_N	E121	20-Sep-2022	----	----	----		22-Sep-2022	3 days	3 days	✔



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Turbidity by Nephelometry											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-09_N	E121	19-Sep-2022	----	----	----		22-Sep-2022	3 days	3 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-09_N	E121	20-Sep-2022	----	----	----		23-Sep-2022	3 days	3 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-09_N	E121	20-Sep-2022	----	----	----		23-Sep-2022	3 days	3 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-09_N	E121	20-Sep-2022	----	----	----		23-Sep-2022	3 days	3 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE - total (lab preserved) RG_BOCKRD_WS_LAEMP_EVO_2022-09_N	E420.Cr-L	20-Sep-2022	24-Sep-2022	----	----		24-Sep-2022	180 days	4 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE - total (lab preserved) RG_ERCKBR_WS_LAEMP_EVO_2022-09_N	E420.Cr-L	20-Sep-2022	24-Sep-2022	----	----		24-Sep-2022	180 days	4 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE - total (lab preserved) RG_ERCKMD_WS_LAEMP_EVO_2022-09_N	E420.Cr-L	20-Sep-2022	24-Sep-2022	----	----		24-Sep-2022	180 days	4 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE - total (lab preserved) RG_RIVER_WS_LAEMP_EVO_2022-09_N	E420.Cr-L	20-Sep-2022	24-Sep-2022	----	----		24-Sep-2022	180 days	4 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE - total (lab preserved) RG_TRIP_WS_LAEMP_EVO_2022-09_N	E420.Cr-L	20-Sep-2022	24-Sep-2022	----	----		24-Sep-2022	180 days	4 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times Rec Actual		Eval	Analysis Date	Holding Times Rec Actual		Eval	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE - total (lab preserved) RG_ERCKDT_WS_LAEMP_EVO_2022-09_N	E420.Cr-L	19-Sep-2022	24-Sep-2022	----	----		24-Sep-2022	180 days	5 days	✓	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_BOCKRD_WS_LAEMP_EVO_2022-09_N	E508	20-Sep-2022	24-Sep-2022	----	----		24-Sep-2022	28 days	4 days	✓	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_ERCKBR_WS_LAEMP_EVO_2022-09_N	E508	20-Sep-2022	24-Sep-2022	----	----		24-Sep-2022	28 days	4 days	✓	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-09_N	E508	20-Sep-2022	24-Sep-2022	----	----		24-Sep-2022	28 days	4 days	✓	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_RIVER_WS_LAEMP_EVO_2022-09_N	E508	20-Sep-2022	24-Sep-2022	----	----		24-Sep-2022	28 days	4 days	✓	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_TRIP_WS_LAEMP_EVO_2022-09_N	E508	20-Sep-2022	24-Sep-2022	----	----		24-Sep-2022	28 days	4 days	✓	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-09_N	E508	19-Sep-2022	24-Sep-2022	----	----		24-Sep-2022	28 days	5 days	✓	
Total Metals : Total Metals in Water by CRC ICPMS											
HDPE - total (lab preserved) RG_BOCKRD_WS_LAEMP_EVO_2022-09_N	E420	20-Sep-2022	24-Sep-2022	----	----		24-Sep-2022	180 days	4 days	✓	
Total Metals : Total Metals in Water by CRC ICPMS											
HDPE - total (lab preserved) RG_ERCKBR_WS_LAEMP_EVO_2022-09_N	E420	20-Sep-2022	24-Sep-2022	----	----		24-Sep-2022	180 days	4 days	✓	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE - total (lab preserved) RG_ERCKMD_WS_LAEMP_EVO_2022-09_N	E420	20-Sep-2022	24-Sep-2022	----	----		24-Sep-2022	180 days	4 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE - total (lab preserved) RG_RIVER_WS_LAEMP_EVO_2022-09_N	E420	20-Sep-2022	24-Sep-2022	----	----		24-Sep-2022	180 days	4 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE - total (lab preserved) RG_TRIP_WS_LAEMP_EVO_2022-09_N	E420	20-Sep-2022	24-Sep-2022	----	----		24-Sep-2022	180 days	4 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE - total (lab preserved) RG_ERCKDT_WS_LAEMP_EVO_2022-09_N	E420	19-Sep-2022	24-Sep-2022	----	----		24-Sep-2022	180 days	5 days	✓

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended
 EH TL: Exceeded ALS recommended hold time prior to analysis. Sample was received less than 24 hours prior to expiry.
 Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
Analytical Methods							
Laboratory Duplicates (DUP)							
Acidity by Titration	E283	662100	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290	662108	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	662439	1	19	5.2	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	661254	1	15	6.6	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	661255	1	15	6.6	5.0	✓
Conductivity in Water	E100	662106	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	661916	1	9	11.1	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	662252	1	7	14.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	661917	1	9	11.1	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	661300	1	8	12.5	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	661541	2	40	5.0	5.0	✓
Fluoride in Water by IC	E235.F	661253	1	15	6.6	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	661252	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	661251	1	19	5.2	5.0	✓
ORP by Electrode	E125	662920	1	14	7.1	5.0	✓
pH by Meter	E108	662107	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	661256	1	15	6.6	5.0	✓
TDS by Gravimetry	E162	664427	1	13	7.6	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	662944	1	15	6.6	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	662438	1	19	5.2	5.0	✓
Total Mercury in Water by CVAAS	E508	662245	1	14	7.1	5.0	✓
Total Metals in Water by CRC ICPMS	E420	662945	1	15	6.6	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	661301	1	9	11.1	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	661974	1	14	7.1	5.0	✓
Turbidity by Nephelometry	E121	661264	2	9	22.2	5.0	✓
Laboratory Control Samples (LCS)							
Acidity by Titration	E283	662100	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290	662108	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	662439	1	19	5.2	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	661254	1	15	6.6	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	661255	1	15	6.6	5.0	✓
Conductivity in Water	E100	662106	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	661916	1	9	11.1	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	662252	1	7	14.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	661917	1	9	11.1	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	661300	1	8	12.5	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	661541	2	40	5.0	5.0	✓



Matrix: **Water**

Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
<i>Analytical Methods</i>							
Laboratory Control Samples (LCS) - Continued							
Fluoride in Water by IC	E235.F	661253	1	15	6.6	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	661252	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	661251	1	19	5.2	5.0	✓
ORP by Electrode	E125	662920	1	14	7.1	5.0	✓
pH by Meter	E108	662107	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	661256	1	15	6.6	5.0	✓
TDS by Gravimetry	E162	664427	1	13	7.6	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	662944	1	15	6.6	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	662438	1	19	5.2	5.0	✓
Total Mercury in Water by CVAAS	E508	662245	1	14	7.1	5.0	✓
Total Metals in Water by CRC ICPMS	E420	662945	1	15	6.6	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	661301	1	9	11.1	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	661974	1	14	7.1	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	664426	1	17	5.8	5.0	✓
Turbidity by Nephelometry	E121	661264	2	9	22.2	5.0	✓
Method Blanks (MB)							
Acidity by Titration	E283	662100	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290	662108	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	662439	1	19	5.2	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	661254	1	15	6.6	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	661255	1	15	6.6	5.0	✓
Conductivity in Water	E100	662106	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	661916	1	9	11.1	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	662252	1	7	14.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	661917	1	9	11.1	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	661300	1	8	12.5	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	661541	2	40	5.0	5.0	✓
Fluoride in Water by IC	E235.F	661253	1	15	6.6	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	661252	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	661251	1	19	5.2	5.0	✓
Sulfate in Water by IC	E235.SO4	661256	1	15	6.6	5.0	✓
TDS by Gravimetry	E162	664427	1	13	7.6	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	662944	1	15	6.6	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	662438	1	19	5.2	5.0	✓
Total Mercury in Water by CVAAS	E508	662245	1	14	7.1	5.0	✓
Total Metals in Water by CRC ICPMS	E420	662945	1	15	6.6	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	661301	1	9	11.1	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	661974	1	14	7.1	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	664426	1	17	5.8	5.0	✓
Turbidity by Nephelometry	E121	661264	2	9	22.2	5.0	✓



Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
<i>Analytical Methods</i>							
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	662439	1	19	5.2	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	661254	1	15	6.6	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	661255	1	15	6.6	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	661916	1	9	11.1	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	662252	1	7	14.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	661917	1	9	11.1	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	661300	1	8	12.5	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	661541	2	40	5.0	5.0	✓
Fluoride in Water by IC	E235.F	661253	1	15	6.6	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	661252	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	661251	1	19	5.2	5.0	✓
Sulfate in Water by IC	E235.SO4	661256	1	15	6.6	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	662944	1	15	6.6	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	662438	1	19	5.2	5.0	✓
Total Mercury in Water by CVAAS	E508	662245	1	14	7.1	5.0	✓
Total Metals in Water by CRC ICPMS	E420	662945	1	15	6.6	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	661301	1	9	11.1	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	661974	1	14	7.1	5.0	✓



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 Calgary - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 Calgary - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 Calgary - Environmental	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
ORP by Electrode	E125 Calgary - Environmental	Water	ASTM D1498 (mod)	Oxidation reduction potential is reported as the oxidation-reduction potential of the platinum metal-reference electrode employed, measured in mV. For high accuracy test results, it is recommended that this analysis be conducted in the field.
TSS by Gravimetry (Low Level)	E160-L Calgary - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 Calgary - Environmental	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC (Low Level)	E235.Cl-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Acidity by Titration	E283 Calgary - Environmental	Water	APHA 2310 B (mod)	Acidity is determined by potentiometric titration to pH endpoint of 8.3



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Alkalinity Species by Titration	E290 Calgary - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 Calgary - Environmental	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 Calgary - Environmental	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L Calgary - Environmental	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Dissolved Organic Carbon by Combustion (Low Level)	E358-L Calgary - Environmental	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U Calgary - Environmental	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U Calgary - Environmental	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Total Metals in Water by CRC ICPMS	E420 Calgary - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L Calgary - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS.
Dissolved Metals in Water by CRC ICPMS	E421 Calgary - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L Calgary - Environmental	Water	APHA 3030 B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS
Total Mercury in Water by CVAAS	E508 Calgary - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS
Dissolved Mercury in Water by CVAAS	E509 Calgary - Environmental	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
Dissolved Hardness (Calculated)	EC100 Calgary - Environmental	Water	APHA 2340B	"Hardness (as CaCO ₃), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Ion Balance using Dissolved Metals	EC101 Calgary - Environmental	Water	APHA 1030E	Cation Sum, Anion Sum, and Ion Balance are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present. Ion Balance cannot be calculated accurately for waters with very low electrical conductivity (EC).

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 Calgary - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 Calgary - Environmental	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Preparation for Total Organic Carbon by Combustion	EP355 Calgary - Environmental	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon for Combustion	EP358 Calgary - Environmental	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Phosphorus in water	EP372 Calgary - Environmental	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Dissolved Metals Water Filtration	EP421 Calgary - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO ₃ .
Dissolved Mercury Water Filtration	EP509 Calgary - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.



QUALITY CONTROL REPORT

Work Order : **CG2213025**

Client : Teck Coal Limited

Contact : Mike Pope

Address : 421 Pine Avenue
Sparwood BC Canada V0B2G0

Telephone : ----

Project : REGIONAL EFFECTS PROGRAM

PO : VPO00816101

C-O-C number : REP_LAEMP_EVO_2022-09_ALS

Sampler : Jennifer Ings

Site : ----

Quote number : Teck Coal Master Quote

No. of samples received : 6

No. of samples analysed : 6

Page : 1 of 18

Laboratory : Calgary - Environmental

Account Manager : Lyudmyla Shvets

Address : 2559 29th Street NE
Calgary, Alberta Canada T1Y 7B5

Telephone : +1 403 407 1800

Date Samples Received : 22-Sep-2022 08:58

Date Analysis Commenced : 22-Sep-2022

Issue Date : 26-Sep-2022 18:24

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Anthony Calero	Supervisor - Inorganic	Calgary Inorganics, Calgary, Alberta
Anthony Calero	Supervisor - Inorganic	Calgary Metals, Calgary, Alberta
Elke Tabora		Calgary Inorganics, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Calgary Inorganics, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Calgary Metals, Calgary, Alberta
Mackenzie Lamoureux	Laboratory Analyst	Calgary Metals, Calgary, Alberta
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Sara Niroomand		Calgary Inorganics, Calgary, Alberta
Sara Niroomand		Calgary Metals, Calgary, Alberta
Shirley Li		Calgary Metals, Calgary, Alberta
Vladka Stamenova	Analyst	Calgary Inorganics, Calgary, Alberta

Page : 2 of 18
Work Order : CG2213025
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 661264)											
CG2213024-001	Anonymous	turbidity	----	E121	0.10	NTU	1.22	1.31	0.08	Diff <2x LOR	----
Physical Tests (QC Lot: 661620)											
CG2213025-003	RG_ERCKMD_WS_LAEM P_EVO_2022-09_N	turbidity	----	E121	0.10	NTU	0.21	0.21	0.006	Diff <2x LOR	----
Physical Tests (QC Lot: 662100)											
CG2212785-004	Anonymous	acidity (as CaCO3)	----	E283	2.0	mg/L	<2.0	<2.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 662106)											
CG2212785-004	Anonymous	conductivity	----	E100	2.0	µS/cm	<2.0	<2.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 662107)											
CG2212785-004	Anonymous	pH	----	E108	0.10	pH units	5.15	5.11	0.780%	4%	----
Physical Tests (QC Lot: 662108)											
CG2212785-004	Anonymous	alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 662920)											
CG2212931-001	Anonymous	oxidation-reduction potential [ORP]	----	E125	0.10	mV	336	337	0.297%	15%	----
Physical Tests (QC Lot: 664427)											
CG2213024-001	Anonymous	solids, total dissolved [TDS]	----	E162	20	mg/L	1320	1320	0.416%	20%	----
Anions and Nutrients (QC Lot: 661251)											
CG2213023-001	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.0050	mg/L	0.0082	0.0081	0.0001	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 661252)											
CG2213023-001	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	0.0250	mg/L	46.9	47.4	0.920%	20%	----
Anions and Nutrients (QC Lot: 661253)											
CG2213023-001	Anonymous	fluoride	16984-48-8	E235.F	0.100	mg/L	0.139	0.143	0.004	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 661254)											
CG2213023-001	Anonymous	bromide	24959-67-9	E235.Br-L	0.250	mg/L	<0.250	<0.250	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 661255)											
CG2213023-001	Anonymous	chloride	16887-00-6	E235.Cl-L	0.50	mg/L	13.5	13.0	3.42%	20%	----
Anions and Nutrients (QC Lot: 661256)											
CG2213023-001	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	1.50	mg/L	1860	1880	0.911%	20%	----
Anions and Nutrients (QC Lot: 661541)											



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 661541) - continued											
CG2213023-002	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 661974)											
CG2212931-001	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0051	0.0047	0.0004	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 662043)											
CG2213003-025	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 662438)											
CG2213021-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.500	mg/L	3.54	3.58	0.039	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 662439)											
CG2213021-001	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.456	0.435	4.67%	20%	----
Organic / Inorganic Carbon (QC Lot: 661300)											
CG2213024-001	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	1.44	1.54	0.09	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 661301)											
CG2213024-001	Anonymous	carbon, total organic [TOC]	----	E355-L	0.50	mg/L	1.47	1.49	0.02	Diff <2x LOR	----
Total Metals (QC Lot: 662245)											
CG2212931-001	Anonymous	mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Total Metals (QC Lot: 662944)											
CG2212812-001	Anonymous	chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	0.00025	0.00023	0.00002	Diff <2x LOR	----
Total Metals (QC Lot: 662945)											
CG2212812-001	Anonymous	aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0182	0.0179	0.0002	Diff <2x LOR	----
		antimony, total	7440-36-0	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00015	0.00016	0.00002	Diff <2x LOR	----
		barium, total	7440-39-3	E420	0.00010	mg/L	0.0476	0.0477	0.283%	20%	----
		beryllium, total	7440-41-7	E420	0.000020	mg/L	<0.020 µg/L	<0.000020	0	Diff <2x LOR	----
		bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, total	7440-42-8	E420	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		cadmium, total	7440-43-9	E420	0.0000050	mg/L	0.0121 µg/L	0.0000122	0.00000007	Diff <2x LOR	----
		calcium, total	7440-70-2	E420	0.050	mg/L	43.1	43.1	0.131%	20%	----
		cobalt, total	7440-48-4	E420	0.00010	mg/L	<0.10 µg/L	<0.00010	0	Diff <2x LOR	----
		copper, total	7440-50-8	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		iron, total	7439-89-6	E420	0.010	mg/L	0.016	0.017	0.00008	Diff <2x LOR	----
		lead, total	7439-92-1	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		lithium, total	7439-93-2	E420	0.0010	mg/L	0.0020	0.0021	0.00010	Diff <2x LOR	----
		magnesium, total	7439-95-4	E420	0.0050	mg/L	11.2	11.0	1.08%	20%	----
		manganese, total	7439-96-5	E420	0.00010	mg/L	0.00340	0.00344	1.23%	20%	----
		molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.00106	0.00108	1.31%	20%	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (QC Lot: 662945) - continued											
CG2212812-001	Anonymous	nickel, total	7440-02-0	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		potassium, total	7440-09-7	E420	0.050	mg/L	0.384	0.386	0.002	Diff <2x LOR	----
		selenium, total	7782-49-2	E420	0.000050	mg/L	0.730 µg/L	0.000737	0.973%	20%	----
		silicon, total	7440-21-3	E420	0.10	mg/L	1.77	1.77	0.161%	20%	----
		silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, total	7440-23-5	E420	0.050	mg/L	0.668	0.672	0.627%	20%	----
		strontium, total	7440-24-6	E420	0.00020	mg/L	0.209	0.214	2.15%	20%	----
		sulfur, total	7704-34-9	E420	0.50	mg/L	6.52	6.41	1.77%	20%	----
		thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		uranium, total	7440-61-1	E420	0.000010	mg/L	0.000685	0.000700	2.11%	20%	----
		vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	<0.0030	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 661916)											
CG2213024-001	Anonymous	chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 661917)											
CG2213024-001	Anonymous	aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00052	0.00050	0.00002	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00025	0.00024	0.00001	Diff <2x LOR	----
		barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0477	0.0454	4.94%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.000020	mg/L	<0.020 µg/L	<0.000020	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.010	mg/L	0.011	0.011	0.00006	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	0.0109 µg/L	0.0000089	0.0000020	Diff <2x LOR	----
		calcium, dissolved	7440-70-2	E421	0.050	mg/L	178	177	0.566%	20%	----
		cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	<0.10 µg/L	<0.00010	0	Diff <2x LOR	----
		copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00038	0.00034	0.00004	Diff <2x LOR	----
		iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0194	0.0189	2.31%	20%	----
		magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	181	173	4.43%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00106	0.00104	1.68%	20%	----
		molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00162	0.00160	0.977%	20%	----
		nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00977	0.00931	4.82%	20%	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 661917) - continued											
CG2213024-001	Anonymous	potassium, dissolved	7440-09-7	E421	0.050	mg/L	2.70	2.63	2.70%	20%	----
		selenium, dissolved	7782-49-2	E421	0.000050	mg/L	215 µg/L	0.208	3.17%	20%	----
		silicon, dissolved	7440-21-3	E421	0.050	mg/L	4.41	4.19	5.16%	20%	----
		silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E421	0.050	mg/L	2.72	2.61	4.00%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.197	0.199	0.834%	20%	----
		sulfur, dissolved	7704-34-9	E421	0.50	mg/L	257	247	3.91%	20%	----
		thallium, dissolved	7440-28-0	E421	0.000010	mg/L	0.000010	0.000010	0.00000003	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00840	0.00842	0.284%	20%	----
		vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 662252)											
CG2213025-001	RG_ERCKBR_WS_LAEM P_EVO_2022-09_N	mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 661264)						
turbidity	----	E121	0.1	NTU	<0.10	----
Physical Tests (QCLot: 661620)						
turbidity	----	E121	0.1	NTU	<0.10	----
Physical Tests (QCLot: 662100)						
acidity (as CaCO ₃)	----	E283	2	mg/L	<2.0	----
Physical Tests (QCLot: 662106)						
conductivity	----	E100	1	µS/cm	<1.0	----
Physical Tests (QCLot: 662108)						
alkalinity, bicarbonate (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
alkalinity, carbonate (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
alkalinity, hydroxide (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
alkalinity, total (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 664426)						
solids, total suspended [TSS]	----	E160-L	1	mg/L	<1.0	----
Physical Tests (QCLot: 664427)						
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Anions and Nutrients (QCLot: 661251)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 661252)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 661253)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 661254)						
bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 661255)						
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	----
Anions and Nutrients (QCLot: 661256)						
sulfate (as SO ₄)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 661541)						
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 661974)						
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 662043)						



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 662043) - continued						
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	---
Anions and Nutrients (QCLot: 662438)						
Kjeldahl nitrogen, total [TKN]	---	E318	0.05	mg/L	<0.050	---
Anions and Nutrients (QCLot: 662439)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	---
Organic / Inorganic Carbon (QCLot: 661300)						
carbon, dissolved organic [DOC]	---	E358-L	0.5	mg/L	<0.50	---
Organic / Inorganic Carbon (QCLot: 661301)						
carbon, total organic [TOC]	---	E355-L	0.5	mg/L	<0.50	---
Total Metals (QCLot: 662245)						
mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	---
Total Metals (QCLot: 662944)						
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	<0.00010	---
Total Metals (QCLot: 662945)						
aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	---
antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	---
arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	---
barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	---
beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	---
bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	---
boron, total	7440-42-8	E420	0.01	mg/L	<0.010	---
cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	---
calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	---
cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	---
copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	---
iron, total	7439-89-6	E420	0.01	mg/L	<0.010	---
lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	---
lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	---
magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	---
manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	---
molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	---
nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	---
potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	---
selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	---
silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	---
silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	---



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 662945) - continued						
sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	---
strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	---
sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	---
thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	---
tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	---
titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	---
uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	---
vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	---
zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	---
Dissolved Metals (QCLot: 661916)						
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	<0.00010	---
Dissolved Metals (QCLot: 661917)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	---
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	---
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	---
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	---
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	---
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	---
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	---
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	---
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	---
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	---
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	---
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	---
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	---
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	---
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	---
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	---
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	---
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	---
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	---
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	---
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	---
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	---
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	---
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	---



Sub-Matrix: **Water**

<i>Analyte</i>	<i>CAS Number</i>	<i>Method</i>	<i>LOR</i>	<i>Unit</i>	<i>Result</i>	<i>Qualifier</i>
Dissolved Metals (QCLot: 661917) - continued						
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
Dissolved Metals (QCLot: 662252)						
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Physical Tests (QCLot: 661264)									
turbidity	---	E121	0.1	NTU	200 NTU	106	85.0	115	---
Physical Tests (QCLot: 661620)									
turbidity	---	E121	0.1	NTU	200 NTU	105	85.0	115	---
Physical Tests (QCLot: 662100)									
acidity (as CaCO ₃)	---	E283	2	mg/L	50 mg/L	106	85.0	115	---
Physical Tests (QCLot: 662106)									
conductivity	---	E100	1	µS/cm	146.9 µS/cm	95.9	90.0	110	---
Physical Tests (QCLot: 662107)									
pH	---	E108	---	pH units	7 pH units	101	98.6	101	---
Physical Tests (QCLot: 662108)									
alkalinity, total (as CaCO ₃)	---	E290	1	mg/L	500 mg/L	105	85.0	115	---
Physical Tests (QCLot: 662920)									
oxidation-reduction potential [ORP]	---	E125	---	mV	220 mV	102	95.4	104	---
Physical Tests (QCLot: 664426)									
solids, total suspended [TSS]	---	E160-L	1	mg/L	150 mg/L	102	85.0	115	---
Physical Tests (QCLot: 664427)									
solids, total dissolved [TDS]	---	E162	10	mg/L	1000 mg/L	93.0	85.0	115	---
Anions and Nutrients (QCLot: 661251)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	95.9	90.0	110	---
Anions and Nutrients (QCLot: 661252)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	100	90.0	110	---
Anions and Nutrients (QCLot: 661253)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	101	90.0	110	---
Anions and Nutrients (QCLot: 661254)									
bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	100	85.0	115	---
Anions and Nutrients (QCLot: 661255)									
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	99.9	90.0	110	---
Anions and Nutrients (QCLot: 661256)									
sulfate (as SO ₄)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	102	90.0	110	---
Anions and Nutrients (QCLot: 661541)									
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.03 mg/L	87.8	80.0	120	---
Anions and Nutrients (QCLot: 661974)									



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				Qualifier
					Spike Concentration	Recovery (%)	Recovery Limits (%)		
					LCS	Low	High		
Anions and Nutrients (QCLot: 661974) - continued									
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.03 mg/L	91.3	80.0	120	----
Anions and Nutrients (QCLot: 662043)									
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.03 mg/L	91.9	80.0	120	----
Anions and Nutrients (QCLot: 662438)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	104	75.0	125	----
Anions and Nutrients (QCLot: 662439)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	96.0	85.0	115	----
Organic / Inorganic Carbon (QCLot: 661300)									
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	99.9	80.0	120	----
Organic / Inorganic Carbon (QCLot: 661301)									
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	101	80.0	120	----
Total Metals (QCLot: 662245)									
mercury, total	7439-97-6	E508	0.000005	mg/L	0.0001 mg/L	103	80.0	120	----
Total Metals (QCLot: 662944)									
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	0.25 mg/L	96.3	80.0	120	----
Total Metals (QCLot: 662945)									
aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	101	80.0	120	----
antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	101	80.0	120	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	97.5	80.0	120	----
barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	98.1	80.0	120	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	102	80.0	120	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	95.5	80.0	120	----
boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	96.9	80.0	120	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	95.4	80.0	120	----
calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	95.9	80.0	120	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	96.2	80.0	120	----
copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	94.6	80.0	120	----
iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	104	80.0	120	----
lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	94.8	80.0	120	----
lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	104	80.0	120	----
magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	97.8	80.0	120	----
manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	97.9	80.0	120	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	98.4	80.0	120	----
nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	95.5	80.0	120	----
potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	100	80.0	120	----



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Total Metals (QCLot: 662945) - continued									
selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	92.3	80.0	120	----
silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	93.0	60.0	140	----
silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	94.5	80.0	120	----
sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	101	80.0	120	----
strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	98.6	80.0	120	----
sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	104	80.0	120	----
thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	93.4	80.0	120	----
tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	95.7	80.0	120	----
titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	99.2	80.0	120	----
uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	95.3	80.0	120	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	98.0	80.0	120	----
zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	92.4	80.0	120	----
Dissolved Metals (QCLot: 661916)									
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	0.25 mg/L	99.5	80.0	120	----
Dissolved Metals (QCLot: 661917)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	105	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	108	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	101	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	104	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	102	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	99.1	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	100	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	99.6	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	99.1	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	101	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	100	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	112	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	100	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	94.5	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	105	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	103	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	103	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	101	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	104	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	95.7	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	106	60.0	140	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Dissolved Metals (QCLot: 661917) - continued									
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	90.1	80.0	120	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	102	80.0	120	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	103	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	107	80.0	120	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	99.5	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	103	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	103	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	95.0	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	101	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	95.8	80.0	120	----
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	104	80.0	120	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 661251)										
CG2213023-007	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.510 mg/L	0.5 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 661252)										
CG2213023-007	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	2.51 mg/L	2.5 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 661253)										
CG2213023-007	Anonymous	fluoride	16984-48-8	E235.F	1.02 mg/L	1 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 661254)										
CG2213023-007	Anonymous	bromide	24959-67-9	E235.Br-L	0.474 mg/L	0.5 mg/L	94.7	75.0	125	----
Anions and Nutrients (QCLot: 661255)										
CG2213023-007	Anonymous	chloride	16887-00-6	E235.Cl-L	101 mg/L	100 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 661256)										
CG2213023-007	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	103 mg/L	100 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 661541)										
CG2213023-003	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0415 mg/L	0.05 mg/L	83.0	70.0	130	----
Anions and Nutrients (QCLot: 661974)										
CG2212931-002	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0457 mg/L	0.05 mg/L	91.4	70.0	130	----
Anions and Nutrients (QCLot: 662043)										
CG2213003-026	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0408 mg/L	0.05 mg/L	81.7	70.0	130	----
Anions and Nutrients (QCLot: 662438)										
CG2213021-002	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.62 mg/L	2.5 mg/L	105	70.0	130	----
Anions and Nutrients (QCLot: 662439)										
CG2213021-002	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0974 mg/L	0.1 mg/L	97.4	75.0	125	----
Organic / Inorganic Carbon (QCLot: 661300)										
CG2213024-001	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	5.51 mg/L	5 mg/L	110	70.0	130	----
Organic / Inorganic Carbon (QCLot: 661301)										
CG2213024-001	Anonymous	carbon, total organic [TOC]	----	E355-L	5.30 mg/L	5 mg/L	106	70.0	130	----
Total Metals (QCLot: 662245)										
CG2212931-002	Anonymous	mercury, total	7439-97-6	E508	0.0000976 mg/L	0.0001 mg/L	97.6	70.0	130	----
Total Metals (QCLot: 662944)										



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 662944) - continued										
CG2212931-001	Anonymous	chromium, total	7440-47-3	E420.Cr-L	0.409 mg/L	0.4 mg/L	102	70.0	130	----
Total Metals (QCLot: 662945)										
CG2212931-001	Anonymous	aluminum, total	7429-90-5	E420	2.05 mg/L	2 mg/L	102	70.0	130	----
		antimony, total	7440-36-0	E420	0.209 mg/L	0.2 mg/L	104	70.0	130	----
		arsenic, total	7440-38-2	E420	0.205 mg/L	0.2 mg/L	102	70.0	130	----
		barium, total	7440-39-3	E420	0.208 mg/L	0.2 mg/L	104	70.0	130	----
		beryllium, total	7440-41-7	E420	0.412 mg/L	0.4 mg/L	103	70.0	130	----
		bismuth, total	7440-69-9	E420	0.103 mg/L	0.1 mg/L	103	70.0	130	----
		boron, total	7440-42-8	E420	1.05 mg/L	1 mg/L	105	70.0	130	----
		cadmium, total	7440-43-9	E420	0.0424 mg/L	0.04 mg/L	106	70.0	130	----
		calcium, total	7440-70-2	E420	ND mg/L	40 mg/L	ND	70.0	130	----
		cobalt, total	7440-48-4	E420	0.207 mg/L	0.2 mg/L	103	70.0	130	----
		copper, total	7440-50-8	E420	0.205 mg/L	0.2 mg/L	102	70.0	130	----
		iron, total	7439-89-6	E420	20.5 mg/L	20 mg/L	103	70.0	130	----
		lead, total	7439-92-1	E420	0.204 mg/L	0.2 mg/L	102	70.0	130	----
		lithium, total	7439-93-2	E420	1.02 mg/L	1 mg/L	102	70.0	130	----
		magnesium, total	7439-95-4	E420	ND mg/L	10 mg/L	ND	70.0	130	----
		manganese, total	7439-96-5	E420	0.209 mg/L	0.2 mg/L	104	70.0	130	----
		molybdenum, total	7439-98-7	E420	0.208 mg/L	0.2 mg/L	104	70.0	130	----
		nickel, total	7440-02-0	E420	0.409 mg/L	0.4 mg/L	102	70.0	130	----
		potassium, total	7440-09-7	E420	40.9 mg/L	40 mg/L	102	70.0	130	----
		selenium, total	7782-49-2	E420	0.392 mg/L	0.4 mg/L	98.0	70.0	130	----
		silicon, total	7440-21-3	E420	86.9 mg/L	100 mg/L	86.9	70.0	130	----
		silver, total	7440-22-4	E420	0.0456 mg/L	0.04 mg/L	114	70.0	130	----
		sodium, total	7440-23-5	E420	21.3 mg/L	20 mg/L	107	70.0	130	----
		strontium, total	7440-24-6	E420	0.216 mg/L	0.2 mg/L	108	70.0	130	----
		sulfur, total	7704-34-9	E420	173 mg/L	200 mg/L	86.7	70.0	130	----
		thallium, total	7440-28-0	E420	0.0389 mg/L	0.04 mg/L	97.3	70.0	130	----
		tin, total	7440-31-5	E420	0.206 mg/L	0.2 mg/L	103	70.0	130	----
		titanium, total	7440-32-6	E420	0.416 mg/L	0.4 mg/L	104	70.0	130	----
		uranium, total	7440-61-1	E420	0.0400 mg/L	0.04 mg/L	100	70.0	130	----
		vanadium, total	7440-62-2	E420	1.02 mg/L	1 mg/L	102	70.0	130	----
		zinc, total	7440-66-6	E420	4.02 mg/L	4 mg/L	100	70.0	130	----
Dissolved Metals (QCLot: 661916)										
CG2213025-001	RG_ERCKBR_WS_LAEMP_EVO_2022-09_N	chromium, dissolved	7440-47-3	E421.Cr-L	0.382 mg/L	0.4 mg/L	95.4	70.0	130	----



Sub-Matrix: **Water**

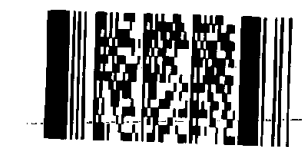
					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 661917)										
CG2213025-001	RG_ERCKBR_WS_LAEMP_EVO_2022-09_N	aluminum, dissolved	7429-90-5	E421	1.99 mg/L	2 mg/L	99.3	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.199 mg/L	0.2 mg/L	99.6	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.190 mg/L	0.2 mg/L	95.3	70.0	130	----
		barium, dissolved	7440-39-3	E421	0.187 mg/L	0.2 mg/L	93.6	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.385 mg/L	0.4 mg/L	96.4	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.0905 mg/L	0.1 mg/L	90.5	70.0	130	----
		boron, dissolved	7440-42-8	E421	0.979 mg/L	1 mg/L	97.9	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.0389 mg/L	0.04 mg/L	97.2	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	40 mg/L	ND	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.192 mg/L	0.2 mg/L	96.1	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.193 mg/L	0.2 mg/L	96.7	70.0	130	----
		iron, dissolved	7439-89-6	E421	19.4 mg/L	20 mg/L	96.9	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.188 mg/L	0.2 mg/L	93.9	70.0	130	----
		lithium, dissolved	7439-93-2	E421	0.860 mg/L	1 mg/L	86.0	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	10 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E421	0.195 mg/L	0.2 mg/L	97.6	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.195 mg/L	0.2 mg/L	97.5	70.0	130	----
		nickel, dissolved	7440-02-0	E421	0.384 mg/L	0.4 mg/L	96.0	70.0	130	----
		potassium, dissolved	7440-09-7	E421	37.7 mg/L	40 mg/L	94.2	70.0	130	----
		selenium, dissolved	7782-49-2	E421	0.322 mg/L	0.4 mg/L	80.6	70.0	130	----
		silicon, dissolved	7440-21-3	E421	75.8 mg/L	100 mg/L	75.8	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.0389 mg/L	0.04 mg/L	97.3	70.0	130	----
		sodium, dissolved	7440-23-5	E421	18.7 mg/L	20 mg/L	93.4	70.0	130	----
strontium, dissolved	7440-24-6	E421	ND mg/L	0.2 mg/L	ND	70.0	130	----		
sulfur, dissolved	7704-34-9	E421	ND mg/L	200 mg/L	ND	70.0	130	----		
thallium, dissolved	7440-28-0	E421	0.0362 mg/L	0.04 mg/L	90.4	70.0	130	----		
tin, dissolved	7440-31-5	E421	0.192 mg/L	0.2 mg/L	96.2	70.0	130	----		
titanium, dissolved	7440-32-6	E421	0.392 mg/L	0.4 mg/L	98.1	70.0	130	----		
uranium, dissolved	7440-61-1	E421	0.0369 mg/L	0.04 mg/L	92.2	70.0	130	----		
vanadium, dissolved	7440-62-2	E421	0.958 mg/L	1 mg/L	95.8	70.0	130	----		
zinc, dissolved	7440-66-6	E421	3.75 mg/L	4 mg/L	93.7	70.0	130	----		
Dissolved Metals (QCLot: 662252)										
CG2213025-002	RG_BOCKRD_WS_LAEMP_EVO_2022-09_N	mercury, dissolved	7439-97-6	E509	0.000103 mg/L	0.0001 mg/L	103	70.0	130	----



COC ID: REP_LAEMP_EVO_2022-09_ALS		TURNAROUND TIME: 2-3 Business Days		RUSH: Priority								
PROJECT/CLIENT INFO			LABORATORY			OTHER INFO						
Facility Name / Job#	Regional Effects Program		Lab Name	ALS		Report Format / Distribution	Excel	PDF	EDD			
Project Manager	Mike Pope		Lab Contact	Justine Buma-a		Email 1:	AguaSciLab@Teck.com	X	X	X		
Email	Mike.Pope@Teck.com		Email	justine.bumaa@alsglobal.com		Email 2:	teckcoal@equisonline.com			X		
Address	421 Pine Ave		Address	2559 29 Street NE		Email 3:	Teck.Lab.Results@teck.com	X	X	X		
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 4:	Lisa.Bowron@minnow.ca	X	X	X
Postal Code	VOB 2G1	Country	Canada	Postal Code	T1Y 7B5	Country	Canada	Email 5:	Tyler.Mehler@minnow.ca	X	X	X
Phone Number	250-425-8247		Phone Number	1-403-407-1781		PO number	VPO0816101					

SAMPLE DETAILS								ANALYSIS REQUESTED												
Sample ID	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com p	# Of Cont.	DOC	Mercury_Dissolved	Mercury_Total	TECKCOAL_MEINHG_D	TECKCOAL_MEINHG_T	TECKCOAL_ROUTINE	TOC_TKN_PT	Filter	Field	Lab	Field & Lab	N	
RG_ERCKBR_WS_LAEMP_EVO_2022-09_N	RG_ERCKBR	WS	N	2022-09-20	11:47	G	7	1	1	1	1	1	1	1						
RG_BOCKRD_WS_LAEMP_EVO_2022-09_N	RG_BOCKRD	WS	N	2022-09-20	9:38	G	7	1	1	1	1	1	1	1						
RG_ERCKMD_WS_LAEMP_EVO_2022-09_N	RG_ERCKMD	WS	N	2022-09-20	15:47	G	7	1	1	1	1	1	1	1						
RG_ERCKDT_WS_LAEMP_EVO_2022-09_N	RG_ERCKDT	WS	N	2022-09-19	13:27	G	7	1	1	1	1	1	1	1						
RG_RIVER_WS_LAEMP_EVO_2022-09_N	RG_RIVER	WS	N	2022-09-20	15:47	G	7	1	1	1	1	1	1	1						
RG_TRIP_WS_LAEMP_EVO_2022-09_N	RG_TRIP	WS	N	2022-09-20	15:47	G	4			1		1	1	1						

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS Dissolved metals were field filtered and to be lab preserved Total metals to be lab preserved		RELINQUISHED BY/AFFILIATION Jennifer Ings		DATE/TIME #####	ACCEPTED BY/AFFILIATION NC	DATE/TIME 22/09/22 0850			
SERVICE REQUEST (rush - subject to availability)		Regular (default)		Priority (2-3 business days) - 50% surcharge X		Emergency (1 Business Day) - 100% surcharge		For Emergency <1 Day, ASAP or Weekend - Contact ALS	
Sampler's Name		Jennifer Ings		Mobile #		5195003444			
Sampler's Signature		<i>Jennifer Ings</i>		Date/Time		September 21, 2022			



Telephone : +1 403 407 1800

Environmental Division
 Calgary
 Work Order Reference
CG2213025

Environmental Division
 Calgary
 Work Order Reference
CG2213025



CERTIFICATE OF ANALYSIS

Work Order : **CG2212657**
Client : **Teck Coal Limited**
Contact : Mike Pope
Address : RR#1 HWY#3
Sparwood BC Canada V0B 2G1
Telephone : ----
Project : Regional Effects Program
PO : VPO00816101
C-O-C number : REP_LAEMP_EVO_2022-09_ALS
Sampler : Jennifer Ings
Site : ----
Quote number : Teck Coal Master Quote
No. of samples received : 2
No. of samples analysed : 2

Page : 1 of 6
Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
Calgary AB Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 16-Sep-2022 08:50
Date Analysis Commenced : 16-Sep-2022
Issue Date : 20-Sep-2022 16:32

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Anthony Calero	Supervisor - Inorganic	Inorganics, Calgary, Alberta
Anthony Calero	Supervisor - Inorganic	Metals, Calgary, Alberta
Elke Tabora		Inorganics, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Mackenzie Lamoureux	Laboratory Analyst	Metals, Calgary, Alberta
Ruifang Zheng	Analyst	Inorganics, Calgary, Alberta
Sara Niroomand		Inorganics, Calgary, Alberta



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

<i>Unit</i>	<i>Description</i>
-	No Unit
%	percent
µg/L	micrograms per litre
µS/cm	Microsiemens per centimetre
meq/L	milliequivalents per litre
mg/L	milligrams per litre
mV	millivolts
NTU	nephelometric turbidity units
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

<i>Qualifier</i>	<i>Description</i>
DLDS	Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.
TKNI	TKN result may be biased low due to Nitrate interference. Nitrate-N is > 10x TKN.



Analytical Results

Sub-Matrix: Water					Client sample ID	RG_ERCK_WS_	RG_ERCKUC_W	---	---	---
(Matrix: Water)						LAEMP_EVO_2	S_LAEMP_EVO			
						022-09_N	_2022-09_N			
Client sampling date / time					14-Sep-2022	14-Sep-2022				
					09:15	14:22				
Analyte	CAS Number	Method	LOR	Unit	CG2212657-001	CG2212657-002	-----	-----	-----	-----
					Result	Result	---	---	---	---
Physical Tests										
acidity (as CaCO3)	---	E283	2.0	mg/L	4.5	7.8	---	---	---	---
alkalinity, bicarbonate (as CaCO3)	---	E290	1.0	mg/L	373	381	---	---	---	---
alkalinity, bicarbonate (as HCO3)	71-52-3	E290	1.0	mg/L	455	465	---	---	---	---
alkalinity, carbonate (as CaCO3)	---	E290	1.0	mg/L	<1.0	<1.0	---	---	---	---
alkalinity, carbonate (as CO3)	3812-32-6	E290	1.0	mg/L	<1.0	<1.0	---	---	---	---
alkalinity, hydroxide (as CaCO3)	---	E290	1.0	mg/L	<1.0	<1.0	---	---	---	---
alkalinity, hydroxide (as OH)	14280-30-9	E290	1.0	mg/L	<1.0	<1.0	---	---	---	---
alkalinity, total (as CaCO3)	---	E290	1.0	mg/L	373	381	---	---	---	---
conductivity	---	E100	2.0	µS/cm	1640	1640	---	---	---	---
hardness (as CaCO3), dissolved	---	EC100	0.50	mg/L	1100	1100	---	---	---	---
oxidation-reduction potential [ORP]	---	E125	0.10	mV	275	276	---	---	---	---
pH	---	E108	0.10	pH units	8.05	8.04	---	---	---	---
solids, total dissolved [TDS]	---	E162	10	mg/L	1400	1410	---	---	---	---
solids, total suspended [TSS]	---	E160-L	1.0	mg/L	3.3	1.8	---	---	---	---
turbidity	---	E121	0.10	NTU	0.18	0.12	---	---	---	---
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	---	---	---	---
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.250 ^{DLDS}	<0.250 ^{DLDS}	---	---	---	---
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	5.04	5.09	---	---	---	---
fluoride	16984-48-8	E235.F	0.020	mg/L	<0.100 ^{DLDS}	<0.100 ^{DLDS}	---	---	---	---
Kjeldahl nitrogen, total [TKN]	---	E318	0.050	mg/L	0.924 ^{TKNI}	0.711 ^{TKNI}	---	---	---	---
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	15.0	15.2	---	---	---	---
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	---	---	---	---
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	---	---	---	---
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	<0.0020	<0.0020	---	---	---	---
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	731	733	---	---	---	---
Organic / Inorganic Carbon										
carbon, dissolved organic [DOC]	---	E358-L	0.50	mg/L	0.64	0.54	---	---	---	---
carbon, total organic [TOC]	---	E355-L	0.50	mg/L	0.52	0.64	---	---	---	---



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCK_WS_ LAEMP_EVO_2 022-09_N	RG_ERCKUC_W S_LAEMP_EVO _2022-09_N	---	---	---
Client sampling date / time					14-Sep-2022 09:15	14-Sep-2022 14:22	---	---	---	
Analyte	CAS Number	Method	LOR	Unit	CG2212657-001 Result	CG2212657-002 Result	----- ---	----- ---	----- ---	
Ion Balance										
anion sum	----	EC101	0.10	meq/L	23.9	24.1	----	----	----	
cation sum	----	EC101	0.10	meq/L	22.1	22.1	----	----	----	
ion balance (cations/anions)	----	EC101	0.010	%	92.5	91.7	----	----	----	
ion balance (APHA)	----	EC101	0.010	%	3.91	4.33	----	----	----	
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0053	0.0050	----	----	----	
antimony, total	7440-36-0	E420	0.00010	mg/L	0.00024	0.00024	----	----	----	
arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00027	0.00030	----	----	----	
barium, total	7440-39-3	E420	0.00010	mg/L	0.0478	0.0496	----	----	----	
beryllium, total	7440-41-7	E420	0.020	µg/L	<0.020	<0.020	----	----	----	
bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	----	----	----	
boron, total	7440-42-8	E420	0.010	mg/L	0.015	0.014	----	----	----	
cadmium, total	7440-43-9	E420	0.0050	µg/L	0.0108	0.0080	----	----	----	
calcium, total	7440-70-2	E420	0.050	mg/L	212	206	----	----	----	
chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	0.00023	0.00023	----	----	----	
cobalt, total	7440-48-4	E420	0.10	µg/L	<0.10	<0.10	----	----	----	
copper, total	7440-50-8	E420	0.00050	mg/L	<0.00050	<0.00050	----	----	----	
iron, total	7439-89-6	E420	0.010	mg/L	<0.010	<0.010	----	----	----	
lead, total	7439-92-1	E420	0.000050	mg/L	0.000058	<0.000050	----	----	----	
lithium, total	7439-93-2	E420	0.0010	mg/L	0.0280	0.0268	----	----	----	
magnesium, total	7439-95-4	E420	0.0050	mg/L	158	160	----	----	----	
manganese, total	7439-96-5	E420	0.00010	mg/L	0.00023	0.00023	----	----	----	
mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	----	----	----	
molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.00112	0.00112	----	----	----	
nickel, total	7440-02-0	E420	0.00050	mg/L	0.00212	0.00207	----	----	----	
potassium, total	7440-09-7	E420	0.050	mg/L	2.75	2.83	----	----	----	
selenium, total	7782-49-2	E420	0.050	µg/L	164	159	----	----	----	
silicon, total	7440-21-3	E420	0.10	mg/L	4.58	4.48	----	----	----	
silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	----	----	----	
sodium, total	7440-23-5	E420	0.050	mg/L	3.34	3.42	----	----	----	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCK_WS_ LAEMP_EVO_2 022-09_N	RG_ERCKUC_W S_LAEMP_EVO _2022-09_N	---	---	---
Client sampling date / time					14-Sep-2022 09:15	14-Sep-2022 14:22	---	---	---	
Analyte	CAS Number	Method	LOR	Unit	CG2212657-001 Result	CG2212657-002 Result	----- ---	----- ---	----- ---	
Total Metals										
strontium, total	7440-24-6	E420	0.00020	mg/L	0.208	0.202	---	---	---	
sulfur, total	7704-34-9	E420	0.50	mg/L	224	216	---	---	---	
thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	---	---	---	
tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	---	---	---	
titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00030	<0.00030	---	---	---	
uranium, total	7440-61-1	E420	0.000010	mg/L	0.00714	0.00696	---	---	---	
vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	<0.00050	---	---	---	
zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	<0.0030	---	---	---	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	<0.0010	<0.0010	---	---	---	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00023	0.00024	---	---	---	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00021	0.00019	---	---	---	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0424	0.0418	---	---	---	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.020	<0.020	---	---	---	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	---	---	---	
boron, dissolved	7440-42-8	E421	0.010	mg/L	0.014	0.014	---	---	---	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.0060	<0.0050	---	---	---	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	222	220	---	---	---	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	0.00017	0.00016	---	---	---	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	<0.10	<0.10	---	---	---	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00020	<0.00020	---	---	---	
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	<0.010	---	---	---	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	---	---	---	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0330	0.0314	---	---	---	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	132	133	---	---	---	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	<0.00010	0.00014	---	---	---	
mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	---	---	---	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00128	0.00128	---	---	---	
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00176	0.00182	---	---	---	
potassium, dissolved	7440-09-7	E421	0.050	mg/L	2.43	2.41	---	---	---	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCK_WS_ LAEMP_EVO_2 022-09_N	RG_ERCKUC_W S_LAEMP_EVO _2022-09_N	----	----	----
Client sampling date / time					14-Sep-2022 09:15	14-Sep-2022 14:22	----	----	----	
Analyte	CAS Number	Method	LOR	Unit	CG2212657-001 Result	CG2212657-002 Result	-----	-----	-----	
Dissolved Metals										
selenium, dissolved	7782-49-2	E421	0.050	µg/L	184	181	----	----	----	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	4.45	4.61	----	----	----	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	----	----	----	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	2.93	2.92	----	----	----	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.231	0.229	----	----	----	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	194	196	----	----	----	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	----	----	----	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	----	----	----	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00807	0.00788	----	----	----	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	----	----	----	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0010	0.0010	----	----	----	
dissolved mercury filtration location	----	EP509	-	-	Field	Field	----	----	----	
dissolved metals filtration location	----	EP421	-	-	Field	Field	----	----	----	

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: CG2212657	Page	: 1 of 15
Client	: Teck Coal Limited	Laboratory	: Calgary - Environmental
Contact	: Mike Pope	Account Manager	: Lyudmyla Shvets
Address	: RR#1 HWY#3 Sparwood BC Canada V0B 2G1	Address	: 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5
Telephone	: ----	Telephone	: +1 403 407 1800
Project	: Regional Effects Program	Date Samples Received	: 16-Sep-2022 08:50
PO	: VPO00816101	Issue Date	: 20-Sep-2022 16:33
C-O-C number	: REP_LAEMP_EVO_2022-09_ALS		
Sampler	: Jennifer Ings		
Site	: ----		
Quote number	: Teck Coal Master Quote		
No. of samples received	: 2		
No. of samples analysed	: 2		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_ERCK_WS_LAEMP_EVO_2022-09_N	E298	14-Sep-2022	16-Sep-2022	----	----		16-Sep-2022	28 days	2 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_ERCKUC_WS_LAEMP_EVO_2022-09_N	E298	14-Sep-2022	16-Sep-2022	----	----		16-Sep-2022	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCK_WS_LAEMP_EVO_2022-09_N	E235.Br-L	14-Sep-2022	16-Sep-2022	----	----		16-Sep-2022	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-09_N	E235.Br-L	14-Sep-2022	16-Sep-2022	----	----		16-Sep-2022	28 days	2 days	✓
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_ERCK_WS_LAEMP_EVO_2022-09_N	E235.Cl-L	14-Sep-2022	16-Sep-2022	----	----		16-Sep-2022	28 days	2 days	✓
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-09_N	E235.Cl-L	14-Sep-2022	16-Sep-2022	----	----		16-Sep-2022	28 days	2 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE RG_ERCK_WS_LAEMP_EVO_2022-09_N	E378-U	14-Sep-2022	17-Sep-2022	----	----		17-Sep-2022	3 days	3 days	✓



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-09_N	E378-U	14-Sep-2022	17-Sep-2022	----	----		17-Sep-2022	3 days	3 days	✓	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-09_N	E235.F	14-Sep-2022	16-Sep-2022	----	----		16-Sep-2022	28 days	2 days	✓	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-09_N	E235.F	14-Sep-2022	16-Sep-2022	----	----		16-Sep-2022	28 days	2 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-09_N	E235.NO3-L	14-Sep-2022	16-Sep-2022	3 days	2 days	✓	16-Sep-2022	3 days	0 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-09_N	E235.NO3-L	14-Sep-2022	16-Sep-2022	3 days	2 days	✓	16-Sep-2022	3 days	0 days	✓	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-09_N	E235.NO2-L	14-Sep-2022	16-Sep-2022	----	----		16-Sep-2022	3 days	2 days	✓	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-09_N	E235.NO2-L	14-Sep-2022	16-Sep-2022	----	----		16-Sep-2022	3 days	2 days	✓	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-09_N	E235.SO4	14-Sep-2022	16-Sep-2022	----	----		16-Sep-2022	28 days	2 days	✓	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-09_N	E235.SO4	14-Sep-2022	16-Sep-2022	----	----		16-Sep-2022	28 days	2 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_ERCK_WS_LAEMP_EVO_2022-09_N	E318	14-Sep-2022	17-Sep-2022	----	----		17-Sep-2022	28 days	3 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKUC_WS_LAEMP_EVO_2022-09_N	E318	14-Sep-2022	17-Sep-2022	----	----		17-Sep-2022	28 days	3 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_ERCK_WS_LAEMP_EVO_2022-09_N	E372-U	14-Sep-2022	19-Sep-2022	----	----		20-Sep-2022	28 days	6 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_ERCKUC_WS_LAEMP_EVO_2022-09_N	E372-U	14-Sep-2022	19-Sep-2022	----	----		20-Sep-2022	28 days	6 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCK_WS_LAEMP_EVO_2022-09_N	E421.Cr-L	14-Sep-2022	19-Sep-2022	----	----		19-Sep-2022	180 days	5 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKUC_WS_LAEMP_EVO_2022-09_N	E421.Cr-L	14-Sep-2022	19-Sep-2022	----	----		19-Sep-2022	180 days	5 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_ERCK_WS_LAEMP_EVO_2022-09_N	E509	14-Sep-2022	20-Sep-2022	----	----		20-Sep-2022	28 days	6 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_ERCKUC_WS_LAEMP_EVO_2022-09_N	E509	14-Sep-2022	20-Sep-2022	----	----		20-Sep-2022	28 days	6 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ERCK_WS_LAEMP_EVO_2022-09_N	E421	14-Sep-2022	19-Sep-2022	----	----		19-Sep-2022	180 days	5 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
Rec	Actual	Rec		Actual							
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ERCKUC_WS_LAEMP_EVO_2022-09_N	E421	14-Sep-2022	19-Sep-2022	----	----		19-Sep-2022	180 days	5 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_ERCK_WS_LAEMP_EVO_2022-09_N	E358-L	14-Sep-2022	16-Sep-2022	----	----		17-Sep-2022	28 days	3 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_ERCKUC_WS_LAEMP_EVO_2022-09_N	E358-L	14-Sep-2022	16-Sep-2022	----	----		17-Sep-2022	28 days	3 days	✓	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_ERCK_WS_LAEMP_EVO_2022-09_N	E355-L	14-Sep-2022	16-Sep-2022	----	----		17-Sep-2022	28 days	3 days	✓	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKUC_WS_LAEMP_EVO_2022-09_N	E355-L	14-Sep-2022	16-Sep-2022	----	----		17-Sep-2022	28 days	3 days	✓	
Physical Tests : Acidity by Titration											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-09_N	E283	14-Sep-2022	17-Sep-2022	----	----		17-Sep-2022	14 days	3 days	✓	
Physical Tests : Acidity by Titration											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-09_N	E283	14-Sep-2022	17-Sep-2022	----	----		17-Sep-2022	14 days	3 days	✓	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-09_N	E290	14-Sep-2022	17-Sep-2022	----	----		17-Sep-2022	14 days	3 days	✓	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-09_N	E290	14-Sep-2022	17-Sep-2022	----	----		17-Sep-2022	14 days	3 days	✓	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Conductivity in Water											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-09_N	E100	14-Sep-2022	17-Sep-2022	----	----		17-Sep-2022	28 days	3 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-09_N	E100	14-Sep-2022	17-Sep-2022	----	----		17-Sep-2022	28 days	3 days	✓	
Physical Tests : ORP by Electrode											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-09_N	E125	14-Sep-2022	----	----	----		17-Sep-2022	0.25 hrs	68 hrs	* EHTR-FM	
Physical Tests : ORP by Electrode											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-09_N	E125	14-Sep-2022	----	----	----		17-Sep-2022	0.25 hrs	73 hrs	* EHTR-FM	
Physical Tests : pH by Meter											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-09_N	E108	14-Sep-2022	17-Sep-2022	----	----		17-Sep-2022	0.25 hrs	0.25 hrs	* EHTR-FM	
Physical Tests : pH by Meter											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-09_N	E108	14-Sep-2022	17-Sep-2022	----	----		17-Sep-2022	0.25 hrs	0.25 hrs	* EHTR-FM	
Physical Tests : TDS by Gravimetry											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-09_N	E162	14-Sep-2022	----	----	----		17-Sep-2022	7 days	3 days	✓	
Physical Tests : TDS by Gravimetry											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-09_N	E162	14-Sep-2022	----	----	----		17-Sep-2022	7 days	3 days	✓	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE [TSS-WB] RG_ERCK_WS_LAEMP_EVO_2022-09_N	E160-L	14-Sep-2022	----	----	----		17-Sep-2022	7 days	3 days	✓	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE [TSS-WB] RG_ERCKUC_WS_LAEMP_EVO_2022-09_N	E160-L	14-Sep-2022	----	----	----		17-Sep-2022	7 days	3 days	✓	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-09_N	E121	14-Sep-2022	----	----	----		16-Sep-2022	3 days	2 days	✓	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-09_N	E121	14-Sep-2022	----	----	----		16-Sep-2022	3 days	2 days	✓	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE - total (lab preserved) RG_ERCK_WS_LAEMP_EVO_2022-09_N	E420.Cr-L	14-Sep-2022	18-Sep-2022	----	----		18-Sep-2022	180 days	4 days	✓	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE - total (lab preserved) RG_ERCKUC_WS_LAEMP_EVO_2022-09_N	E420.Cr-L	14-Sep-2022	18-Sep-2022	----	----		18-Sep-2022	180 days	4 days	✓	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_ERCK_WS_LAEMP_EVO_2022-09_N	E508	14-Sep-2022	20-Sep-2022	----	----		20-Sep-2022	28 days	6 days	✓	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_ERCKUC_WS_LAEMP_EVO_2022-09_N	E508	14-Sep-2022	20-Sep-2022	----	----		20-Sep-2022	28 days	6 days	✓	
Total Metals : Total Metals in Water by CRC ICPMS											
HDPE - total (lab preserved) RG_ERCK_WS_LAEMP_EVO_2022-09_N	E420	14-Sep-2022	18-Sep-2022	----	----		18-Sep-2022	180 days	4 days	✓	
Total Metals : Total Metals in Water by CRC ICPMS											
HDPE - total (lab preserved) RG_ERCKUC_WS_LAEMP_EVO_2022-09_N	E420	14-Sep-2022	18-Sep-2022	----	----		18-Sep-2022	180 days	4 days	✓	

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended



Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
Analytical Methods							
Laboratory Duplicates (DUP)							
Acidity by Titration	E283	652128	1	19	5.2	5.0	✓
Alkalinity Species by Titration	E290	652131	1	19	5.2	5.0	✓
Ammonia by Fluorescence	E298	651651	1	12	8.3	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	651629	1	11	9.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	651630	1	11	9.0	5.0	✓
Conductivity in Water	E100	652130	1	19	5.2	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	653362	1	19	5.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	655111	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	653363	1	19	5.2	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	651624	1	6	16.6	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	651928	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	651628	1	11	9.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	651631	1	11	9.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	651632	1	11	9.0	5.0	✓
ORP by Electrode	E125	652149	1	19	5.2	5.0	✓
pH by Meter	E108	652129	1	19	5.2	5.0	✓
Sulfate in Water by IC	E235.SO4	651633	1	11	9.0	5.0	✓
TDS by Gravimetry	E162	652293	1	17	5.8	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	652278	1	15	6.6	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	651592	1	4	25.0	5.0	✓
Total Mercury in Water by CVAAS	E508	655100	1	19	5.2	5.0	✓
Total Metals in Water by CRC ICPMS	E420	652279	1	15	6.6	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	651625	1	6	16.6	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	653712	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121	651627	1	20	5.0	5.0	✓
Laboratory Control Samples (LCS)							
Acidity by Titration	E283	652128	1	19	5.2	5.0	✓
Alkalinity Species by Titration	E290	652131	1	19	5.2	5.0	✓
Ammonia by Fluorescence	E298	651651	1	12	8.3	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	651629	1	11	9.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	651630	1	11	9.0	5.0	✓
Conductivity in Water	E100	652130	1	19	5.2	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	653362	1	19	5.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	655111	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	653363	1	19	5.2	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	651624	1	6	16.6	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	651928	1	20	5.0	5.0	✓



Matrix: **Water**

Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
Analytical Methods							
Laboratory Control Samples (LCS) - Continued							
Fluoride in Water by IC	E235.F	651628	1	11	9.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	651631	1	11	9.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	651632	1	11	9.0	5.0	✓
ORP by Electrode	E125	652149	1	19	5.2	5.0	✓
pH by Meter	E108	652129	1	19	5.2	5.0	✓
Sulfate in Water by IC	E235.SO4	651633	1	11	9.0	5.0	✓
TDS by Gravimetry	E162	652293	1	17	5.8	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	652278	1	15	6.6	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	651592	1	4	25.0	5.0	✓
Total Mercury in Water by CVAAS	E508	655100	1	19	5.2	5.0	✓
Total Metals in Water by CRC ICPMS	E420	652279	1	15	6.6	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	651625	1	6	16.6	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	653712	1	20	5.0	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	652292	1	17	5.8	5.0	✓
Turbidity by Nephelometry	E121	651627	1	20	5.0	5.0	✓
Method Blanks (MB)							
Acidity by Titration	E283	652128	1	19	5.2	5.0	✓
Alkalinity Species by Titration	E290	652131	1	19	5.2	5.0	✓
Ammonia by Fluorescence	E298	651651	1	12	8.3	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	651629	1	11	9.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	651630	1	11	9.0	5.0	✓
Conductivity in Water	E100	652130	1	19	5.2	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	653362	1	19	5.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	655111	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	653363	1	19	5.2	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	651624	1	6	16.6	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	651928	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	651628	1	11	9.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	651631	1	11	9.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	651632	1	11	9.0	5.0	✓
Sulfate in Water by IC	E235.SO4	651633	1	11	9.0	5.0	✓
TDS by Gravimetry	E162	652293	1	17	5.8	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	652278	1	15	6.6	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	651592	1	4	25.0	5.0	✓
Total Mercury in Water by CVAAS	E508	655100	1	19	5.2	5.0	✓
Total Metals in Water by CRC ICPMS	E420	652279	1	15	6.6	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	651625	1	6	16.6	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	653712	1	20	5.0	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	652292	1	17	5.8	5.0	✓
Turbidity by Nephelometry	E121	651627	1	20	5.0	5.0	✓



Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
<i>Analytical Methods</i>							
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	651651	1	12	8.3	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	651629	1	11	9.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	651630	1	11	9.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	653362	1	19	5.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	655111	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	653363	1	19	5.2	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	651624	1	6	16.6	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	651928	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	651628	1	11	9.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	651631	1	11	9.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	651632	1	11	9.0	5.0	✓
Sulfate in Water by IC	E235.SO4	651633	1	11	9.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	652278	1	15	6.6	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	651592	1	4	25.0	5.0	✓
Total Mercury in Water by CVAAS	E508	655100	1	19	5.2	5.0	✓
Total Metals in Water by CRC ICPMS	E420	652279	1	15	6.6	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	651625	1	6	16.6	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	653712	1	20	5.0	5.0	✓



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 Calgary - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 Calgary - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 Calgary - Environmental	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
ORP by Electrode	E125 Calgary - Environmental	Water	ASTM D1498 (mod)	Oxidation reduction potential is reported as the oxidation-reduction potential of the platinum metal-reference electrode employed, measured in mV. For high accuracy test results, it is recommended that this analysis be conducted in the field.
TSS by Gravimetry (Low Level)	E160-L Calgary - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 Calgary - Environmental	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC (Low Level)	E235.Cl-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Acidity by Titration	E283 Calgary - Environmental	Water	APHA 2310 B (mod)	Acidity is determined by potentiometric titration to pH endpoint of 8.3



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Alkalinity Species by Titration	E290 Calgary - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 Calgary - Environmental	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 Calgary - Environmental	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L Calgary - Environmental	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Dissolved Organic Carbon by Combustion (Low Level)	E358-L Calgary - Environmental	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U Calgary - Environmental	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U Calgary - Environmental	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Total Metals in Water by CRC ICPMS	E420 Calgary - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L Calgary - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS.
Dissolved Metals in Water by CRC ICPMS	E421 Calgary - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L Calgary - Environmental	Water	APHA 3030 B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS
Total Mercury in Water by CVAAS	E508 Calgary - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS
Dissolved Mercury in Water by CVAAS	E509 Calgary - Environmental	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
Dissolved Hardness (Calculated)	EC100 Calgary - Environmental	Water	APHA 2340B	"Hardness (as CaCO ₃), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Ion Balance using Dissolved Metals	EC101 Calgary - Environmental	Water	APHA 1030E	Cation Sum, Anion Sum, and Ion Balance are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present. Ion Balance cannot be calculated accurately for waters with very low electrical conductivity (EC).

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 Calgary - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 Calgary - Environmental	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Preparation for Total Organic Carbon by Combustion	EP355 Calgary - Environmental	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon for Combustion	EP358 Calgary - Environmental	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Phosphorus in water	EP372 Calgary - Environmental	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Dissolved Metals Water Filtration	EP421 Calgary - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO ₃ .
Dissolved Mercury Water Filtration	EP509 Calgary - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.



QUALITY CONTROL REPORT

Work Order : CG2212657
Client : Teck Coal Limited
Contact : Mike Pope
Address : RR#1 HWY#3
Sparwood BC Canada V0B 2G1
Telephone : ---
Project : Regional Effects Program
PO : VPO00816101
C-O-C number : REP_LAEMP_EVO_2022-09_ALS
Sampler : Jennifer Ings
Site : ---
Quote number : Teck Coal Master Quote
No. of samples received : 2
No. of samples analysed : 2

Page : 1 of 18
Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
Calgary, Alberta Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 16-Sep-2022 08:50
Date Analysis Commenced : 16-Sep-2022
Issue Date : 20-Sep-2022 16:32

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
Matrix Spike (MS) Report; Recovery and Data Quality Objectives
Method Blank (MB) Report; Recovery and Data Quality Objectives
Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Table with 3 columns: Signatories, Position, Laboratory Department. Lists names like Anthony Calero, Elke Tabora, Harpreet Chawla, Mackenzie Lamoureux, Ruifang Zheng, Sara Niroomand and their respective roles and departments.

Page : 2 of 18
Work Order : CG2212657
Client : Teck Coal Limited
Project : Regional Effects Program



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 651627)											
CG2212619-005	Anonymous	turbidity	----	E121	0.10	NTU	<0.10	<0.10	0	Diff <2x LOR	----
Physical Tests (QC Lot: 652128)											
CG2212650-001	Anonymous	acidity (as CaCO3)	----	E283	2.0	mg/L	<2.0	<2.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 652129)											
CG2212650-001	Anonymous	pH	----	E108	0.10	pH units	8.34	8.31	0.360%	4%	----
Physical Tests (QC Lot: 652130)											
CG2212650-001	Anonymous	conductivity	----	E100	2.0	µS/cm	287	288	0.348%	10%	----
Physical Tests (QC Lot: 652131)											
CG2212650-001	Anonymous	alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	144	156	7.92%	20%	----
		alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	6.8	5.4	1.4	Diff <2x LOR	----
		alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	151	162	6.72%	20%	----
Physical Tests (QC Lot: 652149)											
CG2212650-001	Anonymous	oxidation-reduction potential [ORP]	----	E125	0.10	mV	268	269	0.186%	15%	----
Physical Tests (QC Lot: 652293)											
CG2212657-001	RG_ERCK_WS_LAEMP_E VO_2022-09_N	solids, total dissolved [TDS]	----	E162	20	mg/L	1400	1420	1.38%	20%	----
Anions and Nutrients (QC Lot: 651592)											
CG2212650-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 651628)											
CG2212647-001	Anonymous	fluoride	16984-48-8	E235.F	0.020	mg/L	0.144	0.144	0.0003	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 651629)											
CG2212647-001	Anonymous	bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 651630)											
CG2212647-001	Anonymous	chloride	16887-00-6	E235.Cl-L	0.10	mg/L	0.17	0.18	0.009	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 651631)											
CG2212647-001	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.0455	0.0466	0.0011	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 651632)											
CG2212647-001	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 651633)											
CG2212647-001	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	46.8	46.7	0.379%	20%	----
Anions and Nutrients (QC Lot: 651651)											



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 651651) - continued											
CG2212588-001	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 651928)											
CG2212626-001	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0048	0.0047	0.00008	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 653712)											
CG2212650-001	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0033	0.0035	0.0002	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 651624)											
CG2212650-001	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 651625)											
CG2212650-001	Anonymous	carbon, total organic [TOC]	----	E355-L	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
Total Metals (QC Lot: 652278)											
CG2212385-001	Anonymous	chromium, total	7440-47-3	E420.Cr-L	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Total Metals (QC Lot: 652279)											
CG2212385-001	Anonymous	aluminum, total	7429-90-5	E420	0.0060	mg/L	0.0110	0.0110	0.00003	Diff <2x LOR	----
		antimony, total	7440-36-0	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		arsenic, total	7440-38-2	E420	0.00020	mg/L	0.00031	0.00029	0.00001	Diff <2x LOR	----
		barium, total	7440-39-3	E420	0.00020	mg/L	0.0320	0.0300	6.28%	20%	----
		beryllium, total	7440-41-7	E420	0.000040	mg/L	<0.040 µg/L	<0.000040	0	Diff <2x LOR	----
		bismuth, total	7440-69-9	E420	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		boron, total	7440-42-8	E420	0.020	mg/L	<0.020	<0.020	0	Diff <2x LOR	----
		cadmium, total	7440-43-9	E420	0.0000100	mg/L	0.0406 µg/L	0.0000339	0.0000067	Diff <2x LOR	----
		calcium, total	7440-70-2	E420	0.100	mg/L	318	304	4.43%	20%	----
		cobalt, total	7440-48-4	E420	0.00020	mg/L	<0.20 µg/L	<0.00020	0	Diff <2x LOR	----
		copper, total	7440-50-8	E420	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		iron, total	7439-89-6	E420	0.020	mg/L	<0.020	<0.020	0	Diff <2x LOR	----
		lead, total	7439-92-1	E420	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		lithium, total	7439-93-2	E420	0.0020	mg/L	0.0380	0.0349	8.66%	20%	----
		magnesium, total	7439-95-4	E420	0.0100	mg/L	186	178	4.04%	20%	----
		manganese, total	7439-96-5	E420	0.00020	mg/L	0.0264	0.0255	3.63%	20%	----
		molybdenum, total	7439-98-7	E420	0.000100	mg/L	0.00194	0.00175	9.93%	20%	----
		nickel, total	7440-02-0	E420	0.00100	mg/L	0.00108	0.00106	0.00002	Diff <2x LOR	----
		potassium, total	7440-09-7	E420	0.100	mg/L	3.69	3.52	4.69%	20%	----
		selenium, total	7782-49-2	E420	0.000100	mg/L	225 µg/L	0.214	4.91%	20%	----
		silicon, total	7440-21-3	E420	0.20	mg/L	6.30	5.96	5.64%	20%	----
		silver, total	7440-22-4	E420	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		sodium, total	7440-23-5	E420	0.100	mg/L	20.2	19.4	3.98%	20%	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (QC Lot: 652279) - continued											
CG2212385-001	Anonymous	strontium, total	7440-24-6	E420	0.00040	mg/L	0.208	0.200	3.65%	20%	----
		sulfur, total	7704-34-9	E420	1.00	mg/L	350	329	6.05%	20%	----
		thallium, total	7440-28-0	E420	0.000020	mg/L	0.000109	0.000105	0.000004	Diff <2x LOR	----
		tin, total	7440-31-5	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		titanium, total	7440-32-6	E420	0.00060	mg/L	<0.00060	<0.00060	0	Diff <2x LOR	----
		uranium, total	7440-61-1	E420	0.000020	mg/L	0.00759	0.00737	2.94%	20%	----
		vanadium, total	7440-62-2	E420	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		zinc, total	7440-66-6	E420	0.0060	mg/L	<0.0060	<0.0060	0	Diff <2x LOR	----
Total Metals (QC Lot: 655100)											
CG2212650-001	Anonymous	mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	0.0000055	0.0000005	Diff <2x LOR	----
Dissolved Metals (QC Lot: 653362)											
CG2212385-001	Anonymous	chromium, dissolved	7440-47-3	E421.Cr-L	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 653363)											
CG2212385-001	Anonymous	aluminum, dissolved	7429-90-5	E421	0.0020	mg/L	0.0029	0.0031	0.0002	Diff <2x LOR	----
		antimony, dissolved	7440-36-0	E421	0.00020	mg/L	0.00022	0.00020	0.00002	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E421	0.00020	mg/L	0.00028	0.00028	0.000002	Diff <2x LOR	----
		barium, dissolved	7440-39-3	E421	0.00020	mg/L	0.0378	0.0405	6.68%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.000040	mg/L	<0.040 µg/L	<0.000040	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.020	mg/L	<0.020	<0.020	0	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E421	0.0000100	mg/L	0.0295 µg/L	0.0000320	0.0000025	Diff <2x LOR	----
		calcium, dissolved	7440-70-2	E421	0.100	mg/L	280	308	9.73%	20%	----
		cobalt, dissolved	7440-48-4	E421	0.00020	mg/L	<0.20 µg/L	<0.00020	0	Diff <2x LOR	----
		copper, dissolved	7440-50-8	E421	0.00040	mg/L	0.00181	0.00198	0.00017	Diff <2x LOR	----
		iron, dissolved	7439-89-6	E421	0.020	mg/L	<0.020	<0.020	0	Diff <2x LOR	----
		lead, dissolved	7439-92-1	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0020	mg/L	0.0390	0.0382	2.27%	20%	----
		magnesium, dissolved	7439-95-4	E421	0.0100	mg/L	158	164	4.09%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00020	mg/L	0.00567	0.00600	5.56%	20%	----
		molybdenum, dissolved	7439-98-7	E421	0.000100	mg/L	0.00184	0.00196	6.25%	20%	----
		nickel, dissolved	7440-02-0	E421	0.00100	mg/L	<0.00100	0.00111	0.00011	Diff <2x LOR	----
		potassium, dissolved	7440-09-7	E421	0.100	mg/L	3.44	3.63	5.37%	20%	----
		selenium, dissolved	7782-49-2	E421	0.000100	mg/L	208 µg/L	0.220	5.88%	20%	----
		silicon, dissolved	7440-21-3	E421	0.100	mg/L	5.95	6.13	2.99%	20%	----
		silver, dissolved	7440-22-4	E421	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 653363) - continued											
CG2212385-001	Anonymous	sodium, dissolved	7440-23-5	E421	0.100	mg/L	19.8	20.7	4.78%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00040	mg/L	0.197	0.218	9.97%	20%	----
		sulfur, dissolved	7704-34-9	E421	1.00	mg/L	279	289	3.57%	20%	----
		thallium, dissolved	7440-28-0	E421	0.000020	mg/L	0.000101	0.000110	0.000009	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.00060	mg/L	<0.00060	<0.00060	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000020	mg/L	0.00684	0.00748	9.04%	20%	----
		vanadium, dissolved	7440-62-2	E421	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E421	0.0020	mg/L	0.0027	0.0027	0.00003	Diff <2x LOR	----
Dissolved Metals (QC Lot: 655111)											
CG2212650-001	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 651627)						
turbidity	----	E121	0.1	NTU	<0.10	----
Physical Tests (QCLot: 652128)						
acidity (as CaCO ₃)	----	E283	2	mg/L	<2.0	----
Physical Tests (QCLot: 652130)						
conductivity	----	E100	1	µS/cm	<1.0	----
Physical Tests (QCLot: 652131)						
alkalinity, bicarbonate (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
alkalinity, carbonate (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
alkalinity, hydroxide (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
alkalinity, total (as CaCO ₃)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 652292)						
solids, total suspended [TSS]	----	E160-L	1	mg/L	<1.0	----
Physical Tests (QCLot: 652293)						
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Anions and Nutrients (QCLot: 651592)						
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 651628)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 651629)						
bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 651630)						
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	----
Anions and Nutrients (QCLot: 651631)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 651632)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 651633)						
sulfate (as SO ₄)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 651651)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 651928)						
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 653712)						



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 653712) - continued						
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	---
Organic / Inorganic Carbon (QCLot: 651624)						
carbon, dissolved organic [DOC]	---	E358-L	0.5	mg/L	<0.50	---
Organic / Inorganic Carbon (QCLot: 651625)						
carbon, total organic [TOC]	---	E355-L	0.5	mg/L	<0.50	---
Total Metals (QCLot: 652278)						
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	<0.00010	---
Total Metals (QCLot: 652279)						
aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	---
antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	---
arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	---
barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	---
beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	---
bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	---
boron, total	7440-42-8	E420	0.01	mg/L	<0.010	---
cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	---
calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	---
cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	---
copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	---
iron, total	7439-89-6	E420	0.01	mg/L	<0.010	---
lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	---
lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	---
magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	---
manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	---
molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	---
nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	---
potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	---
selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	---
silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	---
silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	---
sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	---
strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	---
sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	---
thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	---
tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	---
titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	---



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 652279) - continued						
uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	---
vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	---
zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	---
Total Metals (QCLot: 655100)						
mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	---
Dissolved Metals (QCLot: 653362)						
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	<0.00010	---
Dissolved Metals (QCLot: 653363)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	---
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	---
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	---
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	---
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	---
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	---
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	---
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	---
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	---
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	---
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	---
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	---
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	---
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	---
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	---
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	---
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	---
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	---
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	---
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	---
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	---
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	---
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	---
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	---
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	---
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	---
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	---
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	---



Sub-Matrix: **Water**

<i>Analyte</i>	<i>CAS Number</i>	<i>Method</i>	<i>LOR</i>	<i>Unit</i>	<i>Result</i>	<i>Qualifier</i>
Dissolved Metals (QCLot: 653363) - continued						
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
Dissolved Metals (QCLot: 655111)						
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Water					Laboratory Control Sample (LCS) Report				
					Spike Concentration	Recovery (%) LCS	Recovery Limits (%)		Qualifier
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 651627)									
turbidity	---	E121	0.1	NTU	200 NTU	113	85.0	115	---
Physical Tests (QCLot: 652128)									
acidity (as CaCO3)	---	E283	2	mg/L	50 mg/L	106	85.0	115	---
Physical Tests (QCLot: 652129)									
pH	---	E108	---	pH units	7 pH units	100	98.6	101	---
Physical Tests (QCLot: 652130)									
conductivity	---	E100	1	µS/cm	146.9 µS/cm	97.3	90.0	110	---
Physical Tests (QCLot: 652131)									
alkalinity, total (as CaCO3)	---	E290	1	mg/L	500 mg/L	101	85.0	115	---
Physical Tests (QCLot: 652149)									
oxidation-reduction potential [ORP]	---	E125	---	mV	220 mV	100	95.4	104	---
Physical Tests (QCLot: 652292)									
solids, total suspended [TSS]	---	E160-L	1	mg/L	150 mg/L	88.9	85.0	115	---
Physical Tests (QCLot: 652293)									
solids, total dissolved [TDS]	---	E162	10	mg/L	1000 mg/L	92.5	85.0	115	---
Anions and Nutrients (QCLot: 651592)									
Kjeldahl nitrogen, total [TKN]	---	E318	0.05	mg/L	4 mg/L	99.1	75.0	125	---
Anions and Nutrients (QCLot: 651628)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	103	90.0	110	---
Anions and Nutrients (QCLot: 651629)									
bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	102	85.0	115	---
Anions and Nutrients (QCLot: 651630)									
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	101	90.0	110	---
Anions and Nutrients (QCLot: 651631)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	102	90.0	110	---
Anions and Nutrients (QCLot: 651632)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	99.7	90.0	110	---
Anions and Nutrients (QCLot: 651633)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	104	90.0	110	---
Anions and Nutrients (QCLot: 651651)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	97.4	85.0	115	---
Anions and Nutrients (QCLot: 651928)									



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Anions and Nutrients (QCLot: 651928) - continued									
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.03 mg/L	92.8	80.0	120	----
Anions and Nutrients (QCLot: 653712)									
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.03 mg/L	95.2	80.0	120	----
Organic / Inorganic Carbon (QCLot: 651624)									
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	97.9	80.0	120	----
Organic / Inorganic Carbon (QCLot: 651625)									
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	102	80.0	120	----
Total Metals (QCLot: 652278)									
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	0.25 mg/L	89.3	80.0	120	----
Total Metals (QCLot: 652279)									
aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	103	80.0	120	----
antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	108	80.0	120	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	90.0	80.0	120	----
barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	105	80.0	120	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	88.2	80.0	120	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	91.5	80.0	120	----
boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	86.2	80.0	120	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	88.6	80.0	120	----
calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	104	80.0	120	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	87.4	80.0	120	----
copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	89.1	80.0	120	----
iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	108	80.0	120	----
lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	90.7	80.0	120	----
lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	99.2	80.0	120	----
magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	87.4	80.0	120	----
manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	95.1	80.0	120	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	93.1	80.0	120	----
nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	91.1	80.0	120	----
potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	90.4	80.0	120	----
selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	84.0	80.0	120	----
silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	108	60.0	140	----
silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	86.2	80.0	120	----
sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	90.3	80.0	120	----
strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	95.5	80.0	120	----
sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	97.6	80.0	120	----



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Total Metals (QCLot: 652279) - continued									
thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	91.5	80.0	120	----
tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	104	80.0	120	----
titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	93.4	80.0	120	----
uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	102	80.0	120	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	89.7	80.0	120	----
zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	108	80.0	120	----
Total Metals (QCLot: 655100)									
mercury, total	7439-97-6	E508	0.000005	mg/L	0.0001 mg/L	118	80.0	120	----
Dissolved Metals (QCLot: 653362)									
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	0.25 mg/L	90.7	80.0	120	----
Dissolved Metals (QCLot: 653363)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	95.3	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	98.4	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	87.9	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	91.6	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	98.8	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	94.4	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	89.1	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	88.6	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	95.1	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	90.2	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	89.3	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	105	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	94.6	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	105	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	90.6	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	91.6	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	98.1	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	88.1	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	92.4	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	86.9	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	99.8	60.0	140	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	88.6	80.0	120	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	94.0	80.0	120	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	96.2	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	84.0	80.0	120	----



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 653363) - continued									
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	94.2	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	93.9	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	89.3	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	95.8	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	91.2	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	93.2	80.0	120	----
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	95.8	80.0	120	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 651592)										
CG2212650-002	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.41 mg/L	2.5 mg/L	96.2	70.0	130	----
Anions and Nutrients (QCLot: 651628)										
CG2212647-002	Anonymous	fluoride	16984-48-8	E235.F	1.02 mg/L	1 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 651629)										
CG2212647-002	Anonymous	bromide	24959-67-9	E235.Br-L	0.510 mg/L	0.5 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 651630)										
CG2212647-002	Anonymous	chloride	16887-00-6	E235.Cl-L	100 mg/L	100 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 651631)										
CG2212647-002	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	2.53 mg/L	2.5 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 651632)										
CG2212647-002	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.515 mg/L	0.5 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 651633)										
CG2212647-002	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	102 mg/L	100 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 651651)										
CG2212588-002	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.106 mg/L	0.1 mg/L	106	75.0	125	----
Anions and Nutrients (QCLot: 651928)										
CG2212650-001	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0514 mg/L	0.05 mg/L	103	70.0	130	----
Anions and Nutrients (QCLot: 653712)										
CG2212650-002	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0504 mg/L	0.05 mg/L	101	70.0	130	----
Organic / Inorganic Carbon (QCLot: 651624)										
CG2212650-001	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	5.19 mg/L	5 mg/L	104	70.0	130	----
Organic / Inorganic Carbon (QCLot: 651625)										
CG2212650-001	Anonymous	carbon, total organic [TOC]	----	E355-L	5.52 mg/L	5 mg/L	110	70.0	130	----
Total Metals (QCLot: 652278)										
CG2212385-002	Anonymous	chromium, total	7440-47-3	E420.Cr-L	0.459 mg/L	0.4 mg/L	115	70.0	130	----
Total Metals (QCLot: 652279)										
CG2212385-002	Anonymous	aluminum, total	7429-90-5	E420	2.34 mg/L	2 mg/L	117	70.0	130	----
		antimony, total	7440-36-0	E420	0.215 mg/L	0.2 mg/L	107	70.0	130	----



Sub-Matrix: **Water**

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	Target	MS	Low	High	
Total Metals (QCLot: 652279) - continued										
CG2212385-002	Anonymous	arsenic, total	7440-38-2	E420	0.224 mg/L	0.2 mg/L	112	70.0	130	----
		barium, total	7440-39-3	E420	0.242 mg/L	0.2 mg/L	121	70.0	130	----
		beryllium, total	7440-41-7	E420	0.414 mg/L	0.4 mg/L	103	70.0	130	----
		bismuth, total	7440-69-9	E420	0.0981 mg/L	0.1 mg/L	98.1	70.0	130	----
		boron, total	7440-42-8	E420	1.02 mg/L	1 mg/L	102	70.0	130	----
		cadmium, total	7440-43-9	E420	0.0472 mg/L	0.04 mg/L	118	70.0	130	----
		calcium, total	7440-70-2	E420	ND mg/L	40 mg/L	ND	70.0	130	----
		cobalt, total	7440-48-4	E420	0.232 mg/L	0.2 mg/L	116	70.0	130	----
		copper, total	7440-50-8	E420	0.224 mg/L	0.2 mg/L	112	70.0	130	----
		iron, total	7439-89-6	E420	23.1 mg/L	20 mg/L	116	70.0	130	----
		lead, total	7439-92-1	E420	0.202 mg/L	0.2 mg/L	101	70.0	130	----
		lithium, total	7439-93-2	E420	1.03 mg/L	1 mg/L	103	70.0	130	----
		magnesium, total	7439-95-4	E420	ND mg/L	10 mg/L	ND	70.0	130	----
		manganese, total	7439-96-5	E420	ND mg/L	0.2 mg/L	ND	70.0	130	----
		molybdenum, total	7439-98-7	E420	0.213 mg/L	0.2 mg/L	106	70.0	130	----
		nickel, total	7440-02-0	E420	0.452 mg/L	0.4 mg/L	113	70.0	130	----
		potassium, total	7440-09-7	E420	47.4 mg/L	40 mg/L	118	70.0	130	----
		selenium, total	7782-49-2	E420	0.472 mg/L	0.4 mg/L	118	70.0	130	----
		silicon, total	7440-21-3	E420	92.1 mg/L	100 mg/L	92.1	70.0	130	----
		silver, total	7440-22-4	E420	0.0429 mg/L	0.04 mg/L	107	70.0	130	----
		sodium, total	7440-23-5	E420	16.3 mg/L	20 mg/L	81.3	70.0	130	----
		strontium, total	7440-24-6	E420	ND mg/L	0.2 mg/L	ND	70.0	130	----
		sulfur, total	7704-34-9	E420	ND mg/L	200 mg/L	ND	70.0	130	----
		thallium, total	7440-28-0	E420	0.0402 mg/L	0.04 mg/L	100	70.0	130	----
		tin, total	7440-31-5	E420	0.208 mg/L	0.2 mg/L	104	70.0	130	----
		titanium, total	7440-32-6	E420	0.450 mg/L	0.4 mg/L	112	70.0	130	----
		uranium, total	7440-61-1	E420	0.0416 mg/L	0.04 mg/L	104	70.0	130	----
		vanadium, total	7440-62-2	E420	1.17 mg/L	1 mg/L	117	70.0	130	----
		zinc, total	7440-66-6	E420	4.52 mg/L	4 mg/L	113	70.0	130	----
Total Metals (QCLot: 655100)										
CG2212650-002	Anonymous	mercury, total	7439-97-6	E508	0.0000937 mg/L	0.0001 mg/L	93.7	70.0	130	----
Dissolved Metals (QCLot: 653362)										
CG2212385-002	Anonymous	chromium, dissolved	7440-47-3	E421.Cr-L	0.354 mg/L	0.4 mg/L	88.6	70.0	130	----
Dissolved Metals (QCLot: 653363)										
CG2212385-002	Anonymous	aluminum, dissolved	7429-90-5	E421	1.76 mg/L	2 mg/L	88.2	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.208 mg/L	0.2 mg/L	104	70.0	130	----



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 653363) - continued										
CG2212385-002	Anonymous	arsenic, dissolved	7440-38-2	E421	0.171 mg/L	0.2 mg/L	85.4	70.0	130	----
		barium, dissolved	7440-39-3	E421	0.176 mg/L	0.2 mg/L	88.0	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.386 mg/L	0.4 mg/L	96.6	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.0933 mg/L	0.1 mg/L	93.3	70.0	130	----
		boron, dissolved	7440-42-8	E421	0.976 mg/L	1 mg/L	97.6	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.0362 mg/L	0.04 mg/L	90.5	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	40 mg/L	ND	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.174 mg/L	0.2 mg/L	87.2	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.171 mg/L	0.2 mg/L	85.4	70.0	130	----
		iron, dissolved	7439-89-6	E421	17.8 mg/L	20 mg/L	88.9	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.191 mg/L	0.2 mg/L	95.4	70.0	130	----
		lithium, dissolved	7439-93-2	E421	1.02 mg/L	1 mg/L	102	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	10 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E421	ND mg/L	0.2 mg/L	ND	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.205 mg/L	0.2 mg/L	102	70.0	130	----
		nickel, dissolved	7440-02-0	E421	0.343 mg/L	0.4 mg/L	85.8	70.0	130	----
		potassium, dissolved	7440-09-7	E421	35.0 mg/L	40 mg/L	87.4	70.0	130	----
		selenium, dissolved	7782-49-2	E421	0.389 mg/L	0.4 mg/L	97.3	70.0	130	----
		silicon, dissolved	7440-21-3	E421	78.0 mg/L	100 mg/L	78.0	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.0410 mg/L	0.04 mg/L	102	70.0	130	----
		sodium, dissolved	7440-23-5	E421	17.2 mg/L	20 mg/L	85.8	70.0	130	----
		strontium, dissolved	7440-24-6	E421	ND mg/L	0.2 mg/L	ND	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	ND mg/L	200 mg/L	ND	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.0374 mg/L	0.04 mg/L	93.5	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.188 mg/L	0.2 mg/L	94.1	70.0	130	----
		titanium, dissolved	7440-32-6	E421	0.344 mg/L	0.4 mg/L	85.9	70.0	130	----
		uranium, dissolved	7440-61-1	E421	0.0390 mg/L	0.04 mg/L	97.6	70.0	130	----
		vanadium, dissolved	7440-62-2	E421	0.876 mg/L	1 mg/L	87.6	70.0	130	----
		zinc, dissolved	7440-66-6	E421	3.62 mg/L	4 mg/L	90.6	70.0	130	----
Dissolved Metals (QCLot: 655111)										
CG2212650-002	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000938 mg/L	0.0001 mg/L	93.8	70.0	130	----



CERTIFICATE OF ANALYSIS

Work Order : **CG2212857**
Client : **Teck Coal Limited**
Contact : Mike Pope
Address : RR#1 HWY#3
 Sparwood BC Canada V0B 2G1
Telephone : ----
Project : REGIONAL EFFECTS PROGRAM
PO : VPO00816101
C-O-C number : REP_LAEMP_EVO_2022-09_ALS
Sampler : Jennifer Ings
Site : ----
Quote number : Teck Coal Master Quote
No. of samples received : 5
No. of samples analysed : 5

Page : 1 of 6
Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
 Calgary AB Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 20-Sep-2022 08:55
Date Analysis Commenced : 21-Sep-2022
Issue Date : 23-Sep-2022 16:15

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Anthony Calero	Supervisor - Inorganic	Inorganics, Calgary, Alberta
Anthony Calero	Supervisor - Inorganic	Metals, Calgary, Alberta
Elke Tabora		Inorganics, Calgary, Alberta
Mackenzie Lamoureux	Laboratory Analyst	Metals, Calgary, Alberta
Parker Sgarbossa	Laboratory Analyst	Inorganics, Calgary, Alberta
Ruifang Zheng	Analyst	Inorganics, Calgary, Alberta
Sara Niroomand		Inorganics, Calgary, Alberta
Sara Niroomand		Metals, Calgary, Alberta
Summie Lo	Lab Assistant	Metals, Calgary, Alberta
Vladka Stamenova	Analyst	Inorganics, Calgary, Alberta



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

<i>Unit</i>	<i>Description</i>
-	No Unit
%	percent
µg/L	micrograms per litre
µS/cm	Microsiemens per centimetre
meq/L	milliequivalents per litre
mg/L	milligrams per litre
mV	millivolts
NTU	nephelometric turbidity units
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

<i>Qualifier</i>	<i>Description</i>
DLDS	<i>Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.</i>
DLM	<i>Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).</i>
DTSE	<i>Dissolved Se concentration exceeds total. Positive bias on D-Se suspected due to signal enhancement from volatile selenium species. Contact ALS if an alternative test to address this interference is needed.</i>



Analytical Results

Sub-Matrix: Water					Client sample ID				
(Matrix: Water)					RG_MIDGA_WS _LAEMP_EVO_ 2022-09_N	RG_MICOMP_W S_LAEMP_EVO_ 2022-09_N	RG_FBLANK_W S_LAEMP_EVO_ 2022-09_NP	RG_RIVER_WS _LAEMP_EVO_ 2022-09_NP	RG_ALUM_W S_LAEMP_EVO_ 2022-09_N
Client sampling date / time					18-Sep-2022 10:00	18-Sep-2022 17:10	18-Sep-2022 17:10	18-Sep-2022 17:10	18-Sep-2022 12:00
Analyte	CAS Number	Method	LOR	Unit	CG2212857-001	CG2212857-002	CG2212857-003	CG2212857-004	CG2212857-005
					Result	Result	Result	Result	Result
Physical Tests									
acidity (as CaCO3)	----	E283	2.0	mg/L	<2.0	<2.0	<2.0	<2.0	<2.0
alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	253	192	<1.0	189	163
alkalinity, bicarbonate (as HCO3)	71-52-3	E290	1.0	mg/L	309	235	<1.0	231	199
alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	13.4	9.4	<1.0	9.6	4.0
alkalinity, carbonate (as CO3)	3812-32-6	E290	1.0	mg/L	8.0	5.6	<1.0	5.8	2.4
alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0
alkalinity, hydroxide (as OH)	14280-30-9	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	266	202	<1.0	199	167
conductivity	----	E100	2.0	µS/cm	1200	594	<2.0	593	309
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	766	340	<0.50	353	175
oxidation-reduction potential [ORP]	----	E125	0.10	mV	426	383	517	306	304
pH	----	E108	0.10	pH units	8.40	8.43	5.49	8.43	8.34
solids, total dissolved [TDS]	----	E162	10	mg/L	968	415	<10	393	176
solids, total suspended [TSS]	----	E160-L	1.0	mg/L	1.0	<1.0	<1.0	<1.0	1.7
turbidity	----	E121	0.10	NTU	0.62	0.38	<0.10	0.37	0.39
Anions and Nutrients									
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0631	0.0062	<0.0050	0.0169	<0.0050
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.250 ^{DLS}	<0.050	<0.050	<0.050	<0.050
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	7.58	4.01	<0.10	4.01	1.02
fluoride	16984-48-8	E235.F	0.020	mg/L	0.200	0.154	<0.020	0.155	0.163
Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	<0.500 ^{DLM}	<0.500 ^{DLM}	<0.050	<0.500 ^{DLM}	<0.500 ^{DLM}
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	4.64	1.66	<0.0050	1.66	0.0136
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	0.0150	0.0027	<0.0010	0.0026	<0.0010
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0034	0.0028	<0.0020	0.0027	0.0022
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	473	142	<0.30	142	15.2
Organic / Inorganic Carbon									
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	0.83	0.68	<0.50	0.77	<0.50
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	0.85	0.85	<0.50	0.74	<0.50



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_MIDGA_WS _LAEMP_EVO_ 2022-09_N	RG_MICOMP_W S_LAEMP_EVO_ 2022-09_N	RG_FBLANK_W S_LAEMP_EVO_ 2022-09_NP	RG_RIVER_WS _LAEMP_EVO_ 2022-09_NP	RG_ALUSM_W S_LAEMP_EVO_ 2022-09_N
Client sampling date / time					18-Sep-2022 10:00	18-Sep-2022 17:10	18-Sep-2022 17:10	18-Sep-2022 17:10	18-Sep-2022 12:00	
Analyte	CAS Number	Method	LOR	Unit	CG2212857-001	CG2212857-002	CG2212857-003	CG2212857-004	CG2212857-005	
					Result	Result	Result	Result	Result	
Ion Balance										
anion sum	----	EC101	0.10	meq/L	15.7	7.23	<0.10	7.17	3.69	
cation sum	----	EC101	0.10	meq/L	15.6	7.00	<0.10	7.28	3.59	
ion balance (cations/anions)	----	EC101	0.010	%	99.4	96.8	100	102	97.3	
ion balance (APHA)	----	EC101	0.010	%	0.319	1.62	<0.010	0.761	1.37	
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0056	0.0052	<0.0030	0.0059	0.0097	
antimony, total	7440-36-0	E420	0.00010	mg/L	0.00034	<0.00010	<0.00010	<0.00010	<0.00010	
arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00030	0.00020	<0.00010	0.00021	0.00019	
barium, total	7440-39-3	E420	0.00010	mg/L	0.276	0.114	<0.00010	0.114	0.0720	
beryllium, total	7440-41-7	E420	0.020	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	
bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
boron, total	7440-42-8	E420	0.010	mg/L	0.025	0.013	<0.010	0.013	<0.010	
cadmium, total	7440-43-9	E420	0.0050	µg/L	0.0482	0.0222	<0.0050	0.0204	0.0255	
calcium, total	7440-70-2	E420	0.050	mg/L	142	74.3	<0.050	75.1	46.0	
chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	0.00011	0.00014	<0.00010	0.00015	0.00023	
cobalt, total	7440-48-4	E420	0.10	µg/L	<0.10	<0.10	<0.10	<0.10	<0.10	
copper, total	7440-50-8	E420	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
iron, total	7439-89-6	E420	0.010	mg/L	0.054	0.010	<0.010	<0.010	0.014	
lead, total	7439-92-1	E420	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
lithium, total	7439-93-2	E420	0.0010	mg/L	0.0613	0.0131	<0.0010	0.0137	0.0033	
magnesium, total	7439-95-4	E420	0.0050	mg/L	93.1	33.6	<0.0050	33.5	13.2	
manganese, total	7439-96-5	E420	0.00010	mg/L	0.00414	0.00197	<0.00010	0.00190	0.00156	
mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.00646	0.00100	<0.000050	0.00102	0.000646	
nickel, total	7440-02-0	E420	0.00050	mg/L	0.0122	0.00095	<0.00050	0.00090	<0.00050	
potassium, total	7440-09-7	E420	0.050	mg/L	2.84	0.982	<0.050	0.976	0.396	
selenium, total	7782-49-2	E420	0.050	µg/L	45.4 ^{DTSE}	17.1 ^{DTSE}	<0.050	16.5 ^{DTSE}	0.544 ^{DTSE}	
silicon, total	7440-21-3	E420	0.10	mg/L	2.45	2.27	<0.10	2.31	2.30	
silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
sodium, total	7440-23-5	E420	0.050	mg/L	6.12	4.12	<0.050	4.10	1.84	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_MIDGA_WS _LAEMP_EVO_ 2022-09_N	RG_MICOMP_W S_LAEMP_EVO _2022-09_N	RG_FBLANK_W S_LAEMP_EVO _2022-09_NP	RG_RIVER_WS _LAEMP_EVO_ 2022-09_NP	RG_ALUSM_W S_LAEMP_EVO _2022-09_N
Client sampling date / time					18-Sep-2022 10:00	18-Sep-2022 17:10	18-Sep-2022 17:10	18-Sep-2022 17:10	18-Sep-2022 12:00	
Analyte	CAS Number	Method	LOR	Unit	CG2212857-001	CG2212857-002	CG2212857-003	CG2212857-004	CG2212857-005	
					Result	Result	Result	Result	Result	
Total Metals										
strontium, total	7440-24-6	E420	0.00020	mg/L	0.390	0.185	<0.00020	0.184	0.117	
sulfur, total	7704-34-9	E420	0.50	mg/L	168	49.6	<0.50	50.0	4.86	
thallium, total	7440-28-0	E420	0.000010	mg/L	0.000026	<0.000010	<0.000010	<0.000010	<0.000010	
tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	
uranium, total	7440-61-1	E420	0.000010	mg/L	0.00509	0.00137	<0.000010	0.00134	0.000516	
vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	<0.00050	<0.00050	0.00051	<0.00050	
zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	0.0031	<0.0030	<0.0030	0.0051	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0011	0.0016	<0.0010	0.0017	<0.0010	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00035	<0.00010	<0.00010	0.00010	<0.00010	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00026	0.00019	<0.00010	0.00019	0.00013	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.280	0.122	<0.00010	0.126	0.0741	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
boron, dissolved	7440-42-8	E421	0.010	mg/L	0.028	0.015	<0.010	0.016	<0.010	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.0457	0.0213	<0.0050	0.0261	<0.0050	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	160	80.3	<0.050	83.0	48.8	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00010	0.00013	<0.00010	0.00014	0.00020	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	<0.10	<0.10	<0.10	<0.10	<0.10	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0688	0.0141	<0.0010	0.0152	0.0042	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	88.9	33.9	<0.0050	35.4	13.0	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00378	0.00154	<0.00010	0.00167	0.00105	
mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00700	0.00107	<0.000050	0.00106	0.000702	
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.0119	0.00092	<0.00050	0.00094	<0.00050	
potassium, dissolved	7440-09-7	E421	0.050	mg/L	2.78	1.08	<0.050	1.15	0.416	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_MIDGA_WS _LAEMP_EVO_ 2022-09_N	RG_MICOMP_W S_LAEMP_EVO_ 2022-09_N	RG_FBLANK_W S_LAEMP_EVO_ 2022-09_NP	RG_RIVER_WS _LAEMP_EVO_ 2022-09_NP	RG_ALUSM_W S_LAEMP_EVO_ 2022-09_N
Client sampling date / time					18-Sep-2022 10:00	18-Sep-2022 17:10	18-Sep-2022 17:10	18-Sep-2022 17:10	18-Sep-2022 12:00	
Analyte	CAS Number	Method	LOR	Unit	CG2212857-001	CG2212857-002	CG2212857-003	CG2212857-004	CG2212857-005	
					Result	Result	Result	Result	Result	
Dissolved Metals										
selenium, dissolved	7782-49-2	E421	0.050	µg/L	67.6 ^{DTSE}	25.0 ^{DTSE}	<0.050	26.0 ^{DTSE}	0.776 ^{DTSE}	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	3.20	2.88	<0.050	3.05	2.77	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	5.95	4.18	<0.050	4.42	1.80	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.415	0.197	<0.00020	0.200	0.129	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	153	57.7	<0.50	61.1	6.36	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	0.000026	<0.000010	<0.000010	<0.000010	<0.000010	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00567	0.00151	<0.000010	0.00152	0.000590	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0017	<0.0010	<0.0010	<0.0010	<0.0010	
dissolved mercury filtration location	----	EP509	-	-	Field	Field	Field	Field	Field	
dissolved metals filtration location	----	EP421	-	-	Field	Field	Field	Field	Field	

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: CG2212857	Page	: 1 of 23
Client	: Teck Coal Limited	Laboratory	: Calgary - Environmental
Contact	: Mike Pope	Account Manager	: Lyudmyla Shvets
Address	: RR#1 HWY#3 Sparwood BC Canada V0B 2G1	Address	: 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5
Telephone	: ----	Telephone	: +1 403 407 1800
Project	: REGIONAL EFFECTS PROGRAM	Date Samples Received	: 20-Sep-2022 08:55
PO	: VPO00816101	Issue Date	: 23-Sep-2022 16:15
C-O-C number	: REP_LAEMP_EVO_2022-09_ALS		
Sampler	: Jennifer Ings		
Site	: ----		
Quote number	: Teck Coal Master Quote		
No. of samples received	: 5		
No. of samples analysed	: 5		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_ALUSM_WS_LAEMP_EVO_2022-09_N	E298	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	28 days	3 days	✓	
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_FBLANK_WS_LAEMP_EVO_2022-09_NP	E298	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	28 days	3 days	✓	
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_MICOMP_WS_LAEMP_EVO_2022-09_N	E298	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	28 days	3 days	✓	
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_MIDGA_WS_LAEMP_EVO_2022-09_N	E298	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	28 days	3 days	✓	
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-09_NP	E298	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	28 days	3 days	✓	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-09_N	E235.Br-L	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	28 days	3 days	✓	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-09_NP	E235.Br-L	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	28 days	3 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-09_N	E235.Br-L	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	28 days	3 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-09_N	E235.Br-L	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	28 days	3 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-09_NP	E235.Br-L	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	28 days	3 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-09_N	E235.Cl-L	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	28 days	3 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-09_NP	E235.Cl-L	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	28 days	3 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-09_N	E235.Cl-L	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	28 days	3 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-09_N	E235.Cl-L	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	28 days	3 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-09_NP	E235.Cl-L	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	28 days	3 days	✔	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-09_N	E378-U	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	3 days	3 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times Rec Actual		Eval	Analysis Date	Holding Times Rec Actual		Eval	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-09_NP	E378-U	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	3 days	3 days	✓	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-09_N	E378-U	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	3 days	3 days	✓	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-09_N	E378-U	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	3 days	3 days	✓	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-09_NP	E378-U	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	3 days	3 days	✓	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-09_N	E235.F	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	28 days	3 days	✓	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-09_NP	E235.F	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	28 days	3 days	✓	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-09_N	E235.F	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	28 days	3 days	✓	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-09_N	E235.F	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	28 days	3 days	✓	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-09_NP	E235.F	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	28 days	3 days	✓	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-09_N	E235.NO3-L	18-Sep-2022	21-Sep-2022	3 days	3 days	✓	21-Sep-2022	3 days	0 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-09_NP	E235.NO3-L	18-Sep-2022	21-Sep-2022	3 days	3 days	✓	21-Sep-2022	3 days	0 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-09_N	E235.NO3-L	18-Sep-2022	21-Sep-2022	3 days	3 days	✓	21-Sep-2022	3 days	0 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-09_N	E235.NO3-L	18-Sep-2022	21-Sep-2022	3 days	3 days	✓	21-Sep-2022	3 days	0 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-09_NP	E235.NO3-L	18-Sep-2022	21-Sep-2022	3 days	3 days	✓	21-Sep-2022	3 days	0 days	✓	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-09_N	E235.NO2-L	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	3 days	3 days	✓	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-09_NP	E235.NO2-L	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	3 days	3 days	✓	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-09_N	E235.NO2-L	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	3 days	3 days	✓	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-09_N	E235.NO2-L	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	3 days	3 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-09_NP	E235.NO2-L	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	3 days	3 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-09_N	E235.SO4	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	28 days	3 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-09_NP	E235.SO4	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	28 days	3 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-09_N	E235.SO4	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	28 days	3 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-09_N	E235.SO4	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	28 days	3 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-09_NP	E235.SO4	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	28 days	3 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_ALUSM_WS_LAEMP_EVO_2022-09_N	E318	18-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	28 days	4 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_FBLANK_WS_LAEMP_EVO_2022-09_NP	E318	18-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	28 days	4 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_MICOMP_WS_LAEMP_EVO_2022-09_N	E318	18-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	28 days	4 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_MIDGA_WS_LAEMP_EVO_2022-09_N	E318	18-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	28 days	4 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-09_NP	E318	18-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	28 days	4 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_ALUSM_WS_LAEMP_EVO_2022-09_N	E372-U	18-Sep-2022	21-Sep-2022	----	----		22-Sep-2022	28 days	4 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_FBLANK_WS_LAEMP_EVO_2022-09_NP	E372-U	18-Sep-2022	21-Sep-2022	----	----		22-Sep-2022	28 days	4 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_MICOMP_WS_LAEMP_EVO_2022-09_N	E372-U	18-Sep-2022	21-Sep-2022	----	----		22-Sep-2022	28 days	4 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_MIDGA_WS_LAEMP_EVO_2022-09_N	E372-U	18-Sep-2022	21-Sep-2022	----	----		22-Sep-2022	28 days	4 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-09_NP	E372-U	18-Sep-2022	21-Sep-2022	----	----		22-Sep-2022	28 days	4 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_ALUSM_WS_LAEMP_EVO_2022-09_N	E421.Cr-L	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_FBLANK_WS_LAEMP_EVO_2022-09_NP	E421.Cr-L	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	180 days	3 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_MICOMP_WS_LAEMP_EVO_2022-09_N	E421.Cr-L	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_MIDGA_WS_LAEMP_EVO_2022-09_N	E421.Cr-L	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_RIVER_WS_LAEMP_EVO_2022-09_NP	E421.Cr-L	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_ALUSM_WS_LAEMP_EVO_2022-09_N	E509	18-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	28 days	4 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_FBLANK_WS_LAEMP_EVO_2022-09_NP	E509	18-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	28 days	4 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_MICOMP_WS_LAEMP_EVO_2022-09_N	E509	18-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	28 days	4 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_MIDGA_WS_LAEMP_EVO_2022-09_N	E509	18-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	28 days	4 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_RIVER_WS_LAEMP_EVO_2022-09_NP	E509	18-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	28 days	4 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_ALUSM_WS_LAEMP_EVO_2022-09_N	E421	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	180 days	3 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_FBLANK_WS_LAEMP_EVO_2022-09_NP	E421	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_MICOMP_WS_LAEMP_EVO_2022-09_N	E421	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_MIDGA_WS_LAEMP_EVO_2022-09_N	E421	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_RIVER_WS_LAEMP_EVO_2022-09_NP	E421	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	180 days	3 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_ALUSM_WS_LAEMP_EVO_2022-09_N	E358-L	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	28 days	3 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_FBLANK_WS_LAEMP_EVO_2022-09_NP	E358-L	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	28 days	3 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_MICOMP_WS_LAEMP_EVO_2022-09_N	E358-L	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	28 days	3 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_MIDGA_WS_LAEMP_EVO_2022-09_N	E358-L	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	28 days	3 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-09_NP	E358-L	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	28 days	3 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_ALUSM_WS_LAEMP_EVO_2022-09_N	E355-L	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	28 days	3 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_FBLANK_WS_LAEMP_EVO_2022-09_NP	E355-L	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	28 days	3 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_MICOMP_WS_LAEMP_EVO_2022-09_N	E355-L	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	28 days	3 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_MIDGA_WS_LAEMP_EVO_2022-09_N	E355-L	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	28 days	3 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-09_NP	E355-L	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	28 days	3 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-09_N	E283	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	14 days	3 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-09_NP	E283	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	14 days	3 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-09_N	E283	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	14 days	3 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-09_N	E283	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	14 days	3 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Acidity by Titration											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-09_NP	E283	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	14 days	3 days	✓	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-09_N	E290	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	14 days	3 days	✓	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-09_NP	E290	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	14 days	3 days	✓	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-09_N	E290	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	14 days	3 days	✓	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-09_N	E290	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	14 days	3 days	✓	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-09_NP	E290	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	14 days	3 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-09_N	E100	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	28 days	3 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-09_NP	E100	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	28 days	3 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-09_N	E100	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	28 days	3 days	✓	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Conductivity in Water											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-09_N	E100	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	28 days	3 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-09_NP	E100	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	28 days	3 days	✓	
Physical Tests : ORP by Electrode											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-09_NP	E125	18-Sep-2022	----	----	----		21-Sep-2022	0.25 hrs	73 hrs	* EHTR-FM	
Physical Tests : ORP by Electrode											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-09_N	E125	18-Sep-2022	----	----	----		21-Sep-2022	0.25 hrs	73 hrs	* EHTR-FM	
Physical Tests : ORP by Electrode											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-09_NP	E125	18-Sep-2022	----	----	----		21-Sep-2022	0.25 hrs	73 hrs	* EHTR-FM	
Physical Tests : ORP by Electrode											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-09_N	E125	18-Sep-2022	----	----	----		21-Sep-2022	0.25 hrs	78 hrs	* EHTR-FM	
Physical Tests : ORP by Electrode											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-09_N	E125	18-Sep-2022	----	----	----		21-Sep-2022	0.25 hrs	80 hrs	* EHTR-FM	
Physical Tests : pH by Meter											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-09_N	E108	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	0.25 hrs	0.26 hrs	* EHTR-FM	
Physical Tests : pH by Meter											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-09_NP	E108	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	0.25 hrs	0.26 hrs	* EHTR-FM	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : pH by Meter											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-09_N	E108	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	0.25 hrs	0.26 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-09_N	E108	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	0.25 hrs	0.26 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-09_NP	E108	18-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	0.25 hrs	0.26 hrs	*	EHTR-FM
Physical Tests : TDS by Gravimetry											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-09_N	E162	18-Sep-2022	----	----	----		21-Sep-2022	7 days	3 days	✓	
Physical Tests : TDS by Gravimetry											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-09_NP	E162	18-Sep-2022	----	----	----		21-Sep-2022	7 days	3 days	✓	
Physical Tests : TDS by Gravimetry											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-09_N	E162	18-Sep-2022	----	----	----		21-Sep-2022	7 days	3 days	✓	
Physical Tests : TDS by Gravimetry											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-09_N	E162	18-Sep-2022	----	----	----		21-Sep-2022	7 days	3 days	✓	
Physical Tests : TDS by Gravimetry											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-09_NP	E162	18-Sep-2022	----	----	----		21-Sep-2022	7 days	3 days	✓	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-09_N	E160-L	18-Sep-2022	----	----	----		21-Sep-2022	7 days	3 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-09_NP	E160-L	18-Sep-2022	----	----	----		21-Sep-2022	7 days	3 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-09_N	E160-L	18-Sep-2022	----	----	----		21-Sep-2022	7 days	3 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-09_N	E160-L	18-Sep-2022	----	----	----		21-Sep-2022	7 days	3 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-09_NP	E160-L	18-Sep-2022	----	----	----		21-Sep-2022	7 days	3 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-09_N	E121	18-Sep-2022	----	----	----		21-Sep-2022	3 days	3 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-09_NP	E121	18-Sep-2022	----	----	----		21-Sep-2022	3 days	3 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-09_N	E121	18-Sep-2022	----	----	----		21-Sep-2022	3 days	3 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-09_N	E121	18-Sep-2022	----	----	----		21-Sep-2022	3 days	3 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-09_NP	E121	18-Sep-2022	----	----	----		21-Sep-2022	3 days	3 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_ALUSM_WS_LAEMP_EVO_2022-09_N	E420.Cr-L	18-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	180 days	4 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_FBLANK_WS_LAEMP_EVO_2022-09_NP	E420.Cr-L	18-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	180 days	4 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_MICOMP_WS_LAEMP_EVO_2022-09_N	E420.Cr-L	18-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	180 days	4 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_MIDGA_WS_LAEMP_EVO_2022-09_N	E420.Cr-L	18-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	180 days	4 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_RIVER_WS_LAEMP_EVO_2022-09_NP	E420.Cr-L	18-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	180 days	4 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_ALUSM_WS_LAEMP_EVO_2022-09_N	E508	18-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	28 days	4 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_FBLANK_WS_LAEMP_EVO_2022-09_NP	E508	18-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	28 days	4 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_MICOMP_WS_LAEMP_EVO_2022-09_N	E508	18-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	28 days	4 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_MIDGA_WS_LAEMP_EVO_2022-09_N	E508	18-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	28 days	4 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_RIVER_WS_LAEMP_EVO_2022-09_NP	E508	18-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	28 days	4 days	✓	
Total Metals : Total Metals in Water by CRC ICPCS											
HDPE total (nitric acid) RG_ALUSM_WS_LAEMP_EVO_2022-09_N	E420	18-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	180 days	4 days	✓	
Total Metals : Total Metals in Water by CRC ICPCS											
HDPE total (nitric acid) RG_FBLANK_WS_LAEMP_EVO_2022-09_NP	E420	18-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	180 days	4 days	✓	
Total Metals : Total Metals in Water by CRC ICPCS											
HDPE total (nitric acid) RG_MICOMP_WS_LAEMP_EVO_2022-09_N	E420	18-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	180 days	4 days	✓	
Total Metals : Total Metals in Water by CRC ICPCS											
HDPE total (nitric acid) RG_MIDGA_WS_LAEMP_EVO_2022-09_N	E420	18-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	180 days	4 days	✓	
Total Metals : Total Metals in Water by CRC ICPCS											
HDPE total (nitric acid) RG_RIVER_WS_LAEMP_EVO_2022-09_NP	E420	18-Sep-2022	22-Sep-2022	----	----		22-Sep-2022	180 days	4 days	✓	

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended
 Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
Analytical Methods							
Laboratory Duplicates (DUP)							
Acidity by Titration	E283	658307	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290	658298	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	658476	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	657947	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	657948	1	20	5.0	5.0	✓
Conductivity in Water	E100	658297	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	658519	1	20	5.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	659465	2	38	5.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	658520	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	658087	1	20	5.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	658098	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	657946	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	657949	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	657950	1	20	5.0	5.0	✓
ORP by Electrode	E125	657900	1	20	5.0	5.0	✓
pH by Meter	E108	658296	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	657951	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	658683	1	19	5.2	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	658337	1	11	9.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	658339	1	9	11.1	5.0	✓
Total Mercury in Water by CVAAS	E508	659456	1	10	10.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	658336	1	11	9.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	658088	1	20	5.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	658502	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121	657894	1	9	11.1	5.0	✓
Laboratory Control Samples (LCS)							
Acidity by Titration	E283	658307	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290	658298	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	658476	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	657947	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	657948	1	20	5.0	5.0	✓
Conductivity in Water	E100	658297	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	658519	1	20	5.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	659465	2	38	5.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	658520	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	658087	1	20	5.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	658098	1	20	5.0	5.0	✓



Matrix: **Water**

Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
<i>Analytical Methods</i>							
Laboratory Control Samples (LCS) - Continued							
Fluoride in Water by IC	E235.F	657946	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	657949	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	657950	1	20	5.0	5.0	✓
ORP by Electrode	E125	657900	1	20	5.0	5.0	✓
pH by Meter	E108	658296	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	657951	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	658683	1	19	5.2	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	658337	1	11	9.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	658339	1	9	11.1	5.0	✓
Total Mercury in Water by CVAAS	E508	659456	1	10	10.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	658336	1	11	9.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	658088	1	20	5.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	658502	1	20	5.0	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	658680	1	19	5.2	5.0	✓
Turbidity by Nephelometry	E121	657894	1	9	11.1	5.0	✓
Method Blanks (MB)							
Acidity by Titration	E283	658307	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290	658298	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	658476	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	657947	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	657948	1	20	5.0	5.0	✓
Conductivity in Water	E100	658297	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	658519	1	20	5.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	659465	2	38	5.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	658520	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	658087	1	20	5.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	658098	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	657946	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	657949	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	657950	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	657951	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	658683	1	19	5.2	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	658337	1	11	9.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	658339	1	9	11.1	5.0	✓
Total Mercury in Water by CVAAS	E508	659456	1	10	10.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	658336	1	11	9.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	658088	1	20	5.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	658502	1	20	5.0	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	658680	1	19	5.2	5.0	✓
Turbidity by Nephelometry	E121	657894	1	9	11.1	5.0	✓



Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
<i>Analytical Methods</i>							
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	658476	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	657947	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	657948	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	658519	1	20	5.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	659465	2	38	5.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	658520	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	658087	1	20	5.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	658098	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	657946	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	657949	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	657950	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	657951	1	20	5.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	658337	1	11	9.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	658339	1	9	11.1	5.0	✓
Total Mercury in Water by CVAAS	E508	659456	1	10	10.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	658336	1	11	9.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	658088	1	20	5.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	658502	1	20	5.0	5.0	✓



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 Calgary - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 Calgary - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 Calgary - Environmental	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
ORP by Electrode	E125 Calgary - Environmental	Water	ASTM D1498 (mod)	Oxidation reduction potential is reported as the oxidation-reduction potential of the platinum metal-reference electrode employed, measured in mV. For high accuracy test results, it is recommended that this analysis be conducted in the field.
TSS by Gravimetry (Low Level)	E160-L Calgary - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 Calgary - Environmental	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC (Low Level)	E235.Cl-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Acidity by Titration	E283 Calgary - Environmental	Water	APHA 2310 B (mod)	Acidity is determined by potentiometric titration to pH endpoint of 8.3



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Alkalinity Species by Titration	E290 Calgary - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 Calgary - Environmental	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 Calgary - Environmental	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L Calgary - Environmental	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Dissolved Organic Carbon by Combustion (Low Level)	E358-L Calgary - Environmental	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U Calgary - Environmental	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U Calgary - Environmental	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Total Metals in Water by CRC ICPMS	E420 Calgary - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L Calgary - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS.
Dissolved Metals in Water by CRC ICPMS	E421 Calgary - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L Calgary - Environmental	Water	APHA 3030 B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS
Total Mercury in Water by CVAAS	E508 Calgary - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS
Dissolved Mercury in Water by CVAAS	E509 Calgary - Environmental	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
Dissolved Hardness (Calculated)	EC100 Calgary - Environmental	Water	APHA 2340B	"Hardness (as CaCO ₃), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Ion Balance using Dissolved Metals	EC101 Calgary - Environmental	Water	APHA 1030E	Cation Sum, Anion Sum, and Ion Balance are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present. Ion Balance cannot be calculated accurately for waters with very low electrical conductivity (EC).

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 Calgary - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 Calgary - Environmental	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Preparation for Total Organic Carbon by Combustion	EP355 Calgary - Environmental	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon for Combustion	EP358 Calgary - Environmental	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Phosphorus in water	EP372 Calgary - Environmental	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Dissolved Metals Water Filtration	EP421 Calgary - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO ₃ .
Dissolved Mercury Water Filtration	EP509 Calgary - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.



QUALITY CONTROL REPORT

Work Order : CG2212857
Client : Teck Coal Limited
Contact : Mike Pope
Address : RR#1 HWY#3
Sparwood BC Canada V0B 2G1
Telephone : ---
Project : REGIONAL EFFECTS PROGRAM
PO : VPO00816101
C-O-C number : REP_LAEMP_EVO_2022-09_ALS
Sampler : Jennifer Ings
Site : ---
Quote number : Teck Coal Master Quote
No. of samples received : 5
No. of samples analysed : 5

Page : 1 of 18
Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
Calgary, Alberta Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 20-Sep-2022 08:55
Date Analysis Commenced : 21-Sep-2022
Issue Date : 23-Sep-2022 16:15

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
Matrix Spike (MS) Report; Recovery and Data Quality Objectives
Method Blank (MB) Report; Recovery and Data Quality Objectives
Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Table with 3 columns: Signatories, Position, Laboratory Department. Lists names like Anthony Calero, Elke Tabora, Mackenzie Lamoureux, etc.



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 657894)											
CG2212857-001	RG_MIDGA_WS_LAEMP_EVO_2022-09_N	turbidity	----	E121	0.10	NTU	0.62	0.60	0.02	Diff <2x LOR	----
Physical Tests (QC Lot: 657900)											
CG2212821-001	Anonymous	oxidation-reduction potential [ORP]	----	E125	0.10	mV	283	282	0.425%	15%	----
Physical Tests (QC Lot: 658296)											
CG2212823-001	Anonymous	pH	----	E108	0.10	pH units	8.33	8.38	0.598%	4%	----
Physical Tests (QC Lot: 658297)											
CG2212823-001	Anonymous	conductivity	----	E100	2.0	µS/cm	1020	1030	1.36%	10%	----
Physical Tests (QC Lot: 658298)											
CG2212823-001	Anonymous	alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	208	226	8.12%	20%	----
		alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	12.4	10.4	17.5%	20%	----
		alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	220	242	9.18%	20%	----
Physical Tests (QC Lot: 658307)											
CG2212823-001	Anonymous	acidity (as CaCO3)	----	E283	2.0	mg/L	<2.0	<2.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 658683)											
CG2212857-001	RG_MIDGA_WS_LAEMP_EVO_2022-09_N	solids, total dissolved [TDS]	----	E162	20	mg/L	968	970	0.310%	20%	----
Anions and Nutrients (QC Lot: 657946)											
CG2212857-001	RG_MIDGA_WS_LAEMP_EVO_2022-09_N	fluoride	16984-48-8	E235.F	0.100	mg/L	0.200	0.204	0.004	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 657947)											
CG2212857-001	RG_MIDGA_WS_LAEMP_EVO_2022-09_N	bromide	24959-67-9	E235.Br-L	0.250	mg/L	<0.250	<0.250	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 657948)											
CG2212857-001	RG_MIDGA_WS_LAEMP_EVO_2022-09_N	chloride	16887-00-6	E235.Cl-L	0.50	mg/L	7.58	7.74	2.08%	20%	----
Anions and Nutrients (QC Lot: 657949)											
CG2212857-001	RG_MIDGA_WS_LAEMP_EVO_2022-09_N	nitrate (as N)	14797-55-8	E235.NO3-L	0.0250	mg/L	4.64	4.69	1.08%	20%	----
Anions and Nutrients (QC Lot: 657950)											
CG2212857-001	RG_MIDGA_WS_LAEMP_EVO_2022-09_N	nitrite (as N)	14797-65-0	E235.NO2-L	0.0050	mg/L	0.0150	0.0149	0.0001	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 657951)											
CG2212857-001	RG_MIDGA_WS_LAEMP_EVO_2022-09_N	sulfate (as SO4)	14808-79-8	E235.SO4	1.50	mg/L	473	481	1.72%	20%	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 658098)											
CG2212518-001	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 658339)											
CG2212857-001	RG_MIDGA_WS_LAEMP_EVO_2022-09_N	Kjeldahl nitrogen, total [TKN]	----	E318	0.500	mg/L	<0.500	<0.500	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 658476)											
CG2212850-001	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0067	0.0060	0.0007	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 658502)											
CG2212857-001	RG_MIDGA_WS_LAEMP_EVO_2022-09_N	phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0034	0.0028	0.0006	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 658087)											
CG2212850-001	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	0.54	0.64	0.11	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 658088)											
CG2212850-001	Anonymous	carbon, total organic [TOC]	----	E355-L	0.50	mg/L	0.98	0.96	0.03	Diff <2x LOR	----
Total Metals (QC Lot: 658336)											
CG2212446-002	Anonymous	aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0134	0.0116	0.0018	Diff <2x LOR	----
		antimony, total	7440-36-0	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00016	0.00016	0.000001	Diff <2x LOR	----
		barium, total	7440-39-3	E420	0.00010	mg/L	0.0493	0.0488	1.06%	20%	----
		beryllium, total	7440-41-7	E420	0.000020	mg/L	<0.020 µg/L	<0.000020	0	Diff <2x LOR	----
		bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, total	7440-42-8	E420	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		cadmium, total	7440-43-9	E420	0.0000050	mg/L	0.0090 µg/L	0.0000077	0.0000012	Diff <2x LOR	----
		calcium, total	7440-70-2	E420	0.050	mg/L	44.3	44.2	0.372%	20%	----
		cobalt, total	7440-48-4	E420	0.00010	mg/L	<0.10 µg/L	<0.00010	0	Diff <2x LOR	----
		copper, total	7440-50-8	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		iron, total	7439-89-6	E420	0.010	mg/L	0.010	0.010	0.0005	Diff <2x LOR	----
		lead, total	7439-92-1	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		lithium, total	7439-93-2	E420	0.0010	mg/L	0.0022	0.0020	0.0002	Diff <2x LOR	----
		magnesium, total	7439-95-4	E420	0.0050	mg/L	12.1	12.3	2.05%	20%	----
		manganese, total	7439-96-5	E420	0.00010	mg/L	0.00145	0.00139	4.65%	20%	----
		molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.00101	0.00102	1.20%	20%	----
		nickel, total	7440-02-0	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		potassium, total	7440-09-7	E420	0.050	mg/L	0.419	0.417	0.002	Diff <2x LOR	----
		selenium, total	7782-49-2	E420	0.000050	mg/L	1.95 µg/L	0.00187	4.39%	20%	----
		silicon, total	7440-21-3	E420	0.10	mg/L	2.00	2.01	0.434%	20%	----
		silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (QC Lot: 658336) - continued											
CG2212446-002	Anonymous	sodium, total	7440-23-5	E420	0.050	mg/L	0.875	0.892	1.83%	20%	----
		strontium, total	7440-24-6	E420	0.00020	mg/L	0.202	0.211	4.12%	20%	----
		sulfur, total	7704-34-9	E420	0.50	mg/L	7.63	7.82	2.50%	20%	----
		thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		uranium, total	7440-61-1	E420	0.000010	mg/L	0.000660	0.000686	3.82%	20%	----
		vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	<0.0030	0	Diff <2x LOR	----
Total Metals (QC Lot: 658337)											
CG2212446-002	Anonymous	chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	0.00025	0.00028	0.00003	Diff <2x LOR	----
Total Metals (QC Lot: 659456)											
CG2212850-001	Anonymous	mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 658519)											
CG2212850-001	Anonymous	chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	0.00012	<0.00010	0.00002	Diff <2x LOR	----
Dissolved Metals (QC Lot: 658520)											
CG2212850-001	Anonymous	aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00010	<0.00010	0.000005	Diff <2x LOR	----
		barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.114	0.112	1.54%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.000020	mg/L	<0.020 µg/L	<0.000020	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.010	mg/L	0.012	0.011	0.0002	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	0.0226 µg/L	0.0000243	0.0000017	Diff <2x LOR	----
		calcium, dissolved	7440-70-2	E421	0.050	mg/L	111	111	0.516%	20%	----
		cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	<0.10 µg/L	<0.00010	0	Diff <2x LOR	----
		copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00023	0.00022	0.00001	Diff <2x LOR	----
		iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0318	0.0308	3.27%	20%	----
		magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	47.1	46.0	2.29%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00110	0.00108	2.13%	20%	----
		molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00129	0.00127	1.63%	20%	----
		nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00086	0.00081	0.00006	Diff <2x LOR	----
		potassium, dissolved	7440-09-7	E421	0.050	mg/L	1.56	1.54	1.48%	20%	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 658520) - continued											
CG2212850-001	Anonymous	selenium, dissolved	7782-49-2	E421	0.000050	mg/L	62.3 µg/L	0.0605	2.82%	20%	----
		silicon, dissolved	7440-21-3	E421	0.050	mg/L	2.82	2.79	0.945%	20%	----
		silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E421	0.050	mg/L	2.98	2.94	1.34%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.165	0.165	0.0102%	20%	----
		sulfur, dissolved	7704-34-9	E421	0.50	mg/L	88.4	87.7	0.820%	20%	----
		thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00158	0.00167	5.20%	20%	----
		vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0012	0.0012	0.000002	Diff <2x LOR	----
Dissolved Metals (QC Lot: 659465)											
CG2212779-001	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 659466)											
CG2212857-002	RG_MICOMP_WS_LAEMP _EVO_2022-09_N	mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 657894)						
turbidity	----	E121	0.1	NTU	<0.10	----
Physical Tests (QCLot: 658297)						
conductivity	----	E100	1	µS/cm	<1.0	----
Physical Tests (QCLot: 658298)						
alkalinity, bicarbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, carbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, hydroxide (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 658307)						
acidity (as CaCO3)	----	E283	2	mg/L	<2.0	----
Physical Tests (QCLot: 658680)						
solids, total suspended [TSS]	----	E160-L	1	mg/L	<1.0	----
Physical Tests (QCLot: 658683)						
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Anions and Nutrients (QCLot: 657946)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 657947)						
bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 657948)						
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	----
Anions and Nutrients (QCLot: 657949)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 657950)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 657951)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 658098)						
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 658339)						
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 658476)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 658502)						



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 658502) - continued						
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	---
Organic / Inorganic Carbon (QCLot: 658087)						
carbon, dissolved organic [DOC]	---	E358-L	0.5	mg/L	<0.50	---
Organic / Inorganic Carbon (QCLot: 658088)						
carbon, total organic [TOC]	---	E355-L	0.5	mg/L	<0.50	---
Total Metals (QCLot: 658336)						
aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	---
antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	---
arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	---
barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	---
beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	---
bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	---
boron, total	7440-42-8	E420	0.01	mg/L	<0.010	---
cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	---
calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	---
cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	---
copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	---
iron, total	7439-89-6	E420	0.01	mg/L	<0.010	---
lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	---
lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	---
magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	---
manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	---
molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	---
nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	---
potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	---
selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	---
silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	---
silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	---
sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	---
strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	---
sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	---
thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	---
tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	---
titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	---
uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	---
vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	---



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 658336) - continued						
zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	---
Total Metals (QCLot: 658337)						
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	<0.00010	---
Total Metals (QCLot: 659456)						
mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	---
Dissolved Metals (QCLot: 658519)						
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	<0.00010	---
Dissolved Metals (QCLot: 658520)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	---
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	---
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	---
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	---
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	---
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	---
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	---
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	---
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	---
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	---
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	---
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	---
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	---
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	---
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	---
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	---
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	---
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	---
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	---
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	---
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	---
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	---
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	---
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	---
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	---
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	---
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	---
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	---



Sub-Matrix: **Water**

<i>Analyte</i>	<i>CAS Number</i>	<i>Method</i>	<i>LOR</i>	<i>Unit</i>	<i>Result</i>	<i>Qualifier</i>
Dissolved Metals (QCLot: 658520) - continued						
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
Dissolved Metals (QCLot: 659465)						
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 659466)						
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Physical Tests (QCLot: 657894)									
turbidity	----	E121	0.1	NTU	200 NTU	105	85.0	115	----
Physical Tests (QCLot: 657900)									
oxidation-reduction potential [ORP]	----	E125	----	mV	220 mV	102	95.4	104	----
Physical Tests (QCLot: 658296)									
pH	----	E108	----	pH units	7 pH units	99.4	98.6	101	----
Physical Tests (QCLot: 658297)									
conductivity	----	E100	1	µS/cm	146.9 µS/cm	102	90.0	110	----
Physical Tests (QCLot: 658298)									
alkalinity, total (as CaCO ₃)	----	E290	1	mg/L	500 mg/L	105	85.0	115	----
Physical Tests (QCLot: 658307)									
acidity (as CaCO ₃)	----	E283	2	mg/L	50 mg/L	104	85.0	115	----
Physical Tests (QCLot: 658680)									
solids, total suspended [TSS]	----	E160-L	1	mg/L	150 mg/L	92.8	85.0	115	----
Physical Tests (QCLot: 658683)									
solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	99.3	85.0	115	----
Anions and Nutrients (QCLot: 657946)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 657947)									
bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	102	85.0	115	----
Anions and Nutrients (QCLot: 657948)									
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 657949)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 657950)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 657951)									
sulfate (as SO ₄)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 658098)									
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.03 mg/L	108	80.0	120	----
Anions and Nutrients (QCLot: 658339)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	105	75.0	125	----
Anions and Nutrients (QCLot: 658476)									



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Anions and Nutrients (QCLot: 658476) - continued									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	104	85.0	115	----
Anions and Nutrients (QCLot: 658502)									
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.03 mg/L	100	80.0	120	----
Organic / Inorganic Carbon (QCLot: 658087)									
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	115	80.0	120	----
Organic / Inorganic Carbon (QCLot: 658088)									
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	113	80.0	120	----
Total Metals (QCLot: 658336)									
aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	107	80.0	120	----
antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	99.9	80.0	120	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	101	80.0	120	----
barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	96.1	80.0	120	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	92.7	80.0	120	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	95.1	80.0	120	----
boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	95.1	80.0	120	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	97.1	80.0	120	----
calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	94.9	80.0	120	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	100	80.0	120	----
copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	97.4	80.0	120	----
iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	101	80.0	120	----
lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	105	80.0	120	----
lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	94.9	80.0	120	----
magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	108	80.0	120	----
manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	105	80.0	120	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	95.0	80.0	120	----
nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	98.8	80.0	120	----
potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	106	80.0	120	----
selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	93.3	80.0	120	----
silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	107	60.0	140	----
silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	87.2	80.0	120	----
sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	104	80.0	120	----
strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	102	80.0	120	----
sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	95.9	80.0	120	----
thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	96.3	80.0	120	----
tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	102	80.0	120	----



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Total Metals (QCLot: 658336) - continued									
titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	104	80.0	120	----
uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	90.4	80.0	120	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	103	80.0	120	----
zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	94.2	80.0	120	----
Total Metals (QCLot: 658337)									
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	0.25 mg/L	100	80.0	120	----
Total Metals (QCLot: 659456)									
mercury, total	7439-97-6	E508	0.000005	mg/L	0.0001 mg/L	88.7	80.0	120	----
Dissolved Metals (QCLot: 658519)									
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	0.25 mg/L	99.9	80.0	120	----
Dissolved Metals (QCLot: 658520)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	99.3	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	96.8	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	97.4	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	98.0	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	95.2	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	93.1	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	88.6	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	100	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	95.6	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	97.1	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	96.6	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	110	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	93.9	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	95.7	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	101	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	102	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	95.4	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	96.6	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	98.5	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	94.7	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	103	60.0	140	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	87.7	80.0	120	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	100	80.0	120	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	92.9	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	99.1	80.0	120	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike Concentration	Recovery (%)	Recovery Limits (%)		Qualifier
					LCS	Low	High		
Dissolved Metals (QCLot: 658520) - continued									
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	93.6	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	96.6	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	84.1	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	90.9	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	101	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	97.2	80.0	120	----
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	86.2	80.0	120	----
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	86.3	80.0	120	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 657946)										
CG2212857-003	RG_FBLANK_WS_LAEMP_EVO_2022-09_NP	fluoride	16984-48-8	E235.F	0.996 mg/L	1 mg/L	99.6	75.0	125	----
Anions and Nutrients (QCLot: 657947)										
CG2212857-003	RG_FBLANK_WS_LAEMP_EVO_2022-09_NP	bromide	24959-67-9	E235.Br-L	0.504 mg/L	0.5 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 657948)										
CG2212857-003	RG_FBLANK_WS_LAEMP_EVO_2022-09_NP	chloride	16887-00-6	E235.Cl-L	97.8 mg/L	100 mg/L	97.8	75.0	125	----
Anions and Nutrients (QCLot: 657949)										
CG2212857-003	RG_FBLANK_WS_LAEMP_EVO_2022-09_NP	nitrate (as N)	14797-55-8	E235.NO3-L	2.46 mg/L	2.5 mg/L	98.5	75.0	125	----
Anions and Nutrients (QCLot: 657950)										
CG2212857-003	RG_FBLANK_WS_LAEMP_EVO_2022-09_NP	nitrite (as N)	14797-65-0	E235.NO2-L	0.501 mg/L	0.5 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 657951)										
CG2212857-003	RG_FBLANK_WS_LAEMP_EVO_2022-09_NP	sulfate (as SO4)	14808-79-8	E235.SO4	96.5 mg/L	100 mg/L	96.5	75.0	125	----
Anions and Nutrients (QCLot: 658098)										
CG2212832-001	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0541 mg/L	0.05 mg/L	108	70.0	130	----
Anions and Nutrients (QCLot: 658339)										
CG2212857-002	RG_MICOMP_WS_LAEMP_EVO_2022-09_N	Kjeldahl nitrogen, total [TKN]	----	E318	2.67 mg/L	2.5 mg/L	107	70.0	130	----
Anions and Nutrients (QCLot: 658476)										
CG2212854-001	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.105 mg/L	0.1 mg/L	105	75.0	125	----
Anions and Nutrients (QCLot: 658502)										
CG2212857-002	RG_MICOMP_WS_LAEMP_EVO_2022-09_N	phosphorus, total	7723-14-0	E372-U	0.0434 mg/L	0.05 mg/L	86.7	70.0	130	----
Organic / Inorganic Carbon (QCLot: 658087)										
CG2212850-001	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	5.51 mg/L	5 mg/L	110	70.0	130	----
Organic / Inorganic Carbon (QCLot: 658088)										
CG2212850-001	Anonymous	carbon, total organic [TOC]	----	E355-L	5.29 mg/L	5 mg/L	106	70.0	130	----
Total Metals (QCLot: 658336)										
CG2212502-008	Anonymous	aluminum, total	7429-90-5	E420	2.00 mg/L	2 mg/L	100	70.0	130	----



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 658336) - continued										
CG2212502-008	Anonymous	antimony, total	7440-36-0	E420	0.209 mg/L	0.2 mg/L	104	70.0	130	----
		arsenic, total	7440-38-2	E420	0.196 mg/L	0.2 mg/L	98.1	70.0	130	----
		barium, total	7440-39-3	E420	0.173 mg/L	0.2 mg/L	86.6	70.0	130	----
		beryllium, total	7440-41-7	E420	0.368 mg/L	0.4 mg/L	92.0	70.0	130	----
		bismuth, total	7440-69-9	E420	0.100 mg/L	0.1 mg/L	100	70.0	130	----
		boron, total	7440-42-8	E420	0.956 mg/L	1 mg/L	95.6	70.0	130	----
		cadmium, total	7440-43-9	E420	0.0400 mg/L	0.04 mg/L	100.0	70.0	130	----
		calcium, total	7440-70-2	E420	ND mg/L	40 mg/L	ND	70.0	130	----
		cobalt, total	7440-48-4	E420	0.201 mg/L	0.2 mg/L	100	70.0	130	----
		copper, total	7440-50-8	E420	0.197 mg/L	0.2 mg/L	98.6	70.0	130	----
		iron, total	7439-89-6	E420	19.8 mg/L	20 mg/L	99.3	70.0	130	----
		lead, total	7439-92-1	E420	0.220 mg/L	0.2 mg/L	110	70.0	130	----
		lithium, total	7439-93-2	E420	0.909 mg/L	1 mg/L	90.9	70.0	130	----
		magnesium, total	7439-95-4	E420	ND mg/L	10 mg/L	ND	70.0	130	----
		manganese, total	7439-96-5	E420	0.202 mg/L	0.2 mg/L	101	70.0	130	----
		molybdenum, total	7439-98-7	E420	0.194 mg/L	0.2 mg/L	96.8	70.0	130	----
		nickel, total	7440-02-0	E420	0.391 mg/L	0.4 mg/L	97.7	70.0	130	----
		potassium, total	7440-09-7	E420	40.4 mg/L	40 mg/L	101	70.0	130	----
		selenium, total	7782-49-2	E420	0.389 mg/L	0.4 mg/L	97.3	70.0	130	----
		silicon, total	7440-21-3	E420	102 mg/L	100 mg/L	102	70.0	130	----
		silver, total	7440-22-4	E420	0.0399 mg/L	0.04 mg/L	99.7	70.0	130	----
		sodium, total	7440-23-5	E420	20.3 mg/L	20 mg/L	102	70.0	130	----
		strontium, total	7440-24-6	E420	0.197 mg/L	0.2 mg/L	98.4	70.0	130	----
		sulfur, total	7704-34-9	E420	180 mg/L	200 mg/L	90.0	70.0	130	----
		thallium, total	7440-28-0	E420	0.0366 mg/L	0.04 mg/L	91.4	70.0	130	----
		tin, total	7440-31-5	E420	0.193 mg/L	0.2 mg/L	96.7	70.0	130	----
		titanium, total	7440-32-6	E420	0.398 mg/L	0.4 mg/L	99.4	70.0	130	----
		uranium, total	7440-61-1	E420	0.0369 mg/L	0.04 mg/L	92.3	70.0	130	----
		vanadium, total	7440-62-2	E420	1.00 mg/L	1 mg/L	100	70.0	130	----
		zinc, total	7440-66-6	E420	3.85 mg/L	4 mg/L	96.2	70.0	130	----
Total Metals (QCLot: 658337)										
CG2212502-008	Anonymous	chromium, total	7440-47-3	E420.Cr-L	0.396 mg/L	0.4 mg/L	98.9	70.0	130	----
Total Metals (QCLot: 659456)										
CG2212857-001	RG_MIDGA_WS_LAEMP_EVO_2022-09_N	mercury, total	7439-97-6	E508	0.0000956 mg/L	0.0001 mg/L	95.6	70.0	130	----
Dissolved Metals (QCLot: 658519)										



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 658519) - continued										
CG2212857-001	RG_MIDGA_WS_LAEMP_E VO_2022-09_N	chromium, dissolved	7440-47-3	E421.Cr-L	0.403 mg/L	0.4 mg/L	101	70.0	130	----
Dissolved Metals (QCLot: 658520)										
CG2212857-001	RG_MIDGA_WS_LAEMP_E VO_2022-09_N	aluminum, dissolved	7429-90-5	E421	2.26 mg/L	2 mg/L	113	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.213 mg/L	0.2 mg/L	106	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.204 mg/L	0.2 mg/L	102	70.0	130	----
		barium, dissolved	7440-39-3	E421	ND mg/L	0.2 mg/L	ND	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.409 mg/L	0.4 mg/L	102	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.0990 mg/L	0.1 mg/L	99.0	70.0	130	----
		boron, dissolved	7440-42-8	E421	0.943 mg/L	1 mg/L	94.3	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.0409 mg/L	0.04 mg/L	102	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	40 mg/L	ND	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.199 mg/L	0.2 mg/L	99.7	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.201 mg/L	0.2 mg/L	101	70.0	130	----
		iron, dissolved	7439-89-6	E421	19.5 mg/L	20 mg/L	97.7	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.206 mg/L	0.2 mg/L	103	70.0	130	----
		lithium, dissolved	7439-93-2	E421	0.904 mg/L	1 mg/L	90.4	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	10 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E421	0.206 mg/L	0.2 mg/L	103	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.211 mg/L	0.2 mg/L	106	70.0	130	----
		nickel, dissolved	7440-02-0	E421	0.392 mg/L	0.4 mg/L	98.1	70.0	130	----
		potassium, dissolved	7440-09-7	E421	40.2 mg/L	40 mg/L	100	70.0	130	----
		selenium, dissolved	7782-49-2	E421	0.431 mg/L	0.4 mg/L	108	70.0	130	----
		silicon, dissolved	7440-21-3	E421	90.8 mg/L	100 mg/L	90.8	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.0439 mg/L	0.04 mg/L	110	70.0	130	----
		sodium, dissolved	7440-23-5	E421	19.9 mg/L	20 mg/L	99.3	70.0	130	----
		strontium, dissolved	7440-24-6	E421	ND mg/L	0.2 mg/L	ND	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	206 mg/L	200 mg/L	103	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.0400 mg/L	0.04 mg/L	100	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.214 mg/L	0.2 mg/L	107	70.0	130	----
		titanium, dissolved	7440-32-6	E421	0.391 mg/L	0.4 mg/L	97.8	70.0	130	----
		uranium, dissolved	7440-61-1	E421	0.0421 mg/L	0.04 mg/L	105	70.0	130	----
		vanadium, dissolved	7440-62-2	E421	1.02 mg/L	1 mg/L	102	70.0	130	----
		zinc, dissolved	7440-66-6	E421	4.04 mg/L	4 mg/L	101	70.0	130	----
Dissolved Metals (QCLot: 659465)										
CG2212792-001	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000920 mg/L	0.0001 mg/L	92.0	70.0	130	----

Page : 18 of 18
 Work Order : CG2212857
 Client : Teck Coal Limited
 Project : REGIONAL EFFECTS PROGRAM



Sub-Matrix: **Water**

					<i>Matrix Spike (MS) Report</i>					
					<i>Spike</i>		<i>Recovery (%)</i>	<i>Recovery Limits (%)</i>		
<i>Laboratory sample ID</i>	<i>Client sample ID</i>	<i>Analyte</i>	<i>CAS Number</i>	<i>Method</i>	<i>Concentration</i>	<i>Target</i>	<i>MS</i>	<i>Low</i>	<i>High</i>	<i>Qualifier</i>
Dissolved Metals (QCLot: 659466)										
CG2212857-003	RG_FBLANK_WS_LAEMP_ EVO_2022-09_NP	mercury, dissolved	7439-97-6	E509	0.0000942 mg/L	0.0001 mg/L	94.2	70.0	130	----

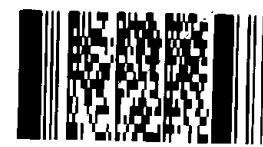
COC ID: REP_LAEMP_EVO_2022-09_ALS		TURNAROUND TIME: 2-3 Business Days			RUSH: Priority				
PROJECT/CLIENT INFO				LABORATORY			OTHER INFO		
Facility Name / Job# Regional Effects Program				Lab Name ALS			Report Format / Distribution		
Project Manager Mike Pope				Lab Contact Justine Buma-a			Excel PDF EDD		
Email Mike.Pope@Teck.com				Email justine.bumaa@alsglobal.com			Email 1: AquaSciLab@Teck.com X X X		
Address 421 Pine Ave				Address 2559 29 Street NE			Email 2: teckcoal@equisonline.com X X X		
City Sparwood Province BC				City Calgary Province AB			Email 3: Teck.Lab.Results@teck.com X X X		
Postal Code V0B 2G1 Country Canada				Postal Code T1Y 7B5 Country Canada			Email 4: Lisa.Bowron@minnow.ca X X X		
Phone Number 250-425-8247				Phone Number 1-403-407-1781			Email 5: Tyler.Mehler@minnow.ca X X X		
				PO number			VPO00816101		

Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com p	# Of Cont.	ANALYSIS REQUESTED							
								DOC	Mercury_Dissolved	Mercury_Total	TECKCOAL_METNHG_D	TECKCOAL_METNHG_T	TECKCOAL_ROUTINE	TOC_TKN_PT	
RG_MIDGA_WS_LAEMP_EVO_2022-09_N	RG_MIDGA	WS		2022/09/18	10:00	G	7	1	1	1	1	1	1	1	1
RG_MICOMP_WS_LAEMP_EVO_2022-09_N	RG_MICOMP	WS		2022/09/18	17:10	G	7	1	1	1	1	1	1	1	1
RG_FBLANK_WS_LAEMP_EVO_2022-09_NP	RG_FBLANK	WS		2022/09/18	17:10	G	7	1	1	1	1	1	1	1	1
RG_RIVER_WS_LAEMP_EVO_2022-09_NP	RG_RIVER	WS		2022/09/18	17:10	G	7	1	1	1	1	1	1	1	1
RG_ALUSM_WS_LAEMP_EVO_2022-09_N	RG_ALUSM	WS		2022/09/18		G	7	1	1	1	1	1	1	1	1

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS Dissolved metals were field filtered and to be lab preserved Total metals to be lab preserved	RELINQUISHED BY/AFFILIATION Jennifer Ings	DATE/TIME #####	ACCEPTED BY/AFFILIATION <i>[Signature]</i>	DATE/TIME 9/20 8:55
---	---	---------------------------	--	----------------------------------

SERVICE REQUEST (rush - subject to availability)			
Regular (default)	Sampler's Name	Jennifer Ings	Mobile #
Priority (2-3 business days) - 50% surcharge X	Sampler's Signature	<i>[Signature]</i>	Date/Time
Emergency (1 Business Day) - 100% surcharge			September 19, 2022
For Emergency <1 Day, ASAP or Weekend - Contact ALS			

Environmental Division
Calgary
Work Order Reference
CG2212857



Telephone : +1 403 407 1800

Environmental Division
 Calgary
 Work Order Reference
CG2212857

[Handwritten initials]



CERTIFICATE OF ANALYSIS

Work Order : **CG2212628**
Client : **Teck Coal Limited**
Contact : Mike Pope
Address : RR#1 HWY#3
Sparwood BC Canada V0B 2G1
Telephone : ----
Project : REGIONAL EFFECTS PROGRAM
PO : VPO00816101
C-O-C number : REP_LAEMP_EVO_2022-09_ALS
Sampler : Jennifer Ings
Site : ----
Quote number : Teck Coal Master Quote
No. of samples received : 2
No. of samples analysed : 2

Page : 1 of 6
Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
Calgary AB Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 15-Sep-2022 08:50
Date Analysis Commenced : 16-Sep-2022
Issue Date : 21-Sep-2022 14:26

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Anthony Calero	Supervisor - Inorganic	Metals, Calgary, Alberta
Elke Tabora		Inorganics, Calgary, Alberta
Hamideh Moradi	Analyst	Metals, Burnaby, British Columbia
Harpreet Chawla	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Metals, Calgary, Alberta
Mackenzie Lamoureux	Laboratory Analyst	Metals, Calgary, Alberta
Sara Niroomand		Inorganics, Calgary, Alberta
Sara Niroomand		Metals, Calgary, Alberta
Sheida Aria	Lab Assistant	Metals, Calgary, Alberta



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

<i>Unit</i>	<i>Description</i>
-	No Unit
%	percent
µg/L	micrograms per litre
µS/cm	Microsiemens per centimetre
meq/L	milliequivalents per litre
mg/L	milligrams per litre
mV	millivolts
NTU	nephelometric turbidity units
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

<i>Qualifier</i>	<i>Description</i>
DLB	Detection Limit Raised. Analyte detected at comparable level in Method Blank.
HTA	Analytical holding time was exceeded.
TKNI	TKN result may be biased low due to Nitrate interference. Nitrate-N is > 10x TKN.



Analytical Results

Sub-Matrix: Water					Client sample ID				
(Matrix: Water)					RG_MIDER_WS _LAEMP_EVO_ 2022-09_N	RG_MIDBO_WS _LAEMP_EVO_ 2022-09_N	----	----	----
Client sampling date / time					13-Sep-2022 07:45	13-Sep-2022 14:10	----	----	----
Analyte	CAS Number	Method	LOR	Unit	CG2212628-001	CG2212628-002	-----	-----	-----
					Result	Result	---	---	---
Physical Tests									
acidity (as CaCO3)	----	E283	2.0	mg/L	<2.0	<2.0	----	----	----
alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	179	179	----	----	----
alkalinity, bicarbonate (as HCO3)	71-52-3	E290	1.0	mg/L	218	218	----	----	----
alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	5.8	15.4	----	----	----
alkalinity, carbonate (as CO3)	3812-32-6	E290	1.0	mg/L	3.5	9.2	----	----	----
alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	----	----	----
alkalinity, hydroxide (as OH)	14280-30-9	E290	1.0	mg/L	<1.0	<1.0	----	----	----
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	184	194	----	----	----
conductivity	----	E100	2.0	µS/cm	406	591	----	----	----
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	208	312	----	----	----
oxidation-reduction potential [ORP]	----	E125	0.10	mV	321	324	----	----	----
pH	----	E108	0.10	pH units	8.36	8.56	----	----	----
solids, total dissolved [TDS]	----	E162	10	mg/L	256	390	----	----	----
solids, total suspended [TSS]	----	E160-L	1.0	mg/L	1.6	1.3	----	----	----
turbidity	----	E121	0.10	NTU	0.40	0.45 ^{HTA}	----	----	----
Anions and Nutrients									
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0052	0.0124	----	----	----
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	<0.050	----	----	----
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	1.12	2.28	----	----	----
fluoride	16984-48-8	E235.F	0.020	mg/L	0.159	0.158	----	----	----
Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	0.130	0.103 ^{TKNI}	----	----	----
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.206	1.61	----	----	----
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	0.0028	----	----	----
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	----	----	----
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0032	0.0021	----	----	----
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	63.6	148	----	----	----
Organic / Inorganic Carbon									
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	<0.50	<0.50	----	----	----
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	<0.50	<0.50	----	----	----



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_MIDER_WS _LAEMP_EVO_ 2022-09_N	RG_MIDBO_WS _LAEMP_EVO_ 2022-09_N	---	---	---
Client sampling date / time					13-Sep-2022 07:45	13-Sep-2022 14:10	---	---	---	
Analyte	CAS Number	Method	LOR	Unit	CG2212628-001 Result	CG2212628-002 Result	----- ---	----- ---	----- ---	
Ion Balance										
anion sum	----	EC101	0.10	meq/L	5.06	7.15	---	---	---	
cation sum	----	EC101	0.10	meq/L	4.33	6.43	---	---	---	
ion balance (cations/anions)	----	EC101	0.010	%	85.6	89.9	---	---	---	
ion balance (APHA)	----	EC101	0.010	%	7.77	5.30	---	---	---	
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0061	0.0053	---	---	---	
antimony, total	7440-36-0	E420	0.00010	mg/L	<0.00010	0.00013	---	---	---	
arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00023	0.00026	---	---	---	
barium, total	7440-39-3	E420	0.00010	mg/L	0.111	0.133	---	---	---	
beryllium, total	7440-41-7	E420	0.020	µg/L	<0.020	<0.020	---	---	---	
bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	---	---	---	
boron, total	7440-42-8	E420	0.010	mg/L	0.014	0.015	---	---	---	
cadmium, total	7440-43-9	E420	0.0050	µg/L	0.0191	0.0186	---	---	---	
calcium, total	7440-70-2	E420	0.050	mg/L	51.2	72.6	---	---	---	
chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	0.00017	0.00016	---	---	---	
cobalt, total	7440-48-4	E420	0.10	µg/L	<0.10	<0.10	---	---	---	
copper, total	7440-50-8	E420	0.00050	mg/L	0.00085	<0.00050	---	---	---	
iron, total	7439-89-6	E420	0.010	mg/L	<0.010	<0.010	---	---	---	
lead, total	7439-92-1	E420	0.000050	mg/L	0.000064	<0.000050	---	---	---	
lithium, total	7439-93-2	E420	0.0010	mg/L	0.0074	0.0149	---	---	---	
magnesium, total	7439-95-4	E420	0.0050	mg/L	17.3	35.9	---	---	---	
manganese, total	7439-96-5	E420	0.00010	mg/L	0.00102	0.00182	---	---	---	
mercury, total	7439-97-6	E508-L	0.00050	µg/L	<0.00050	---	---	---	---	
mercury, total	7439-97-6	E508	0.0000050	mg/L	---	<0.0000050	---	---	---	
molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.000738	0.00146	---	---	---	
nickel, total	7440-02-0	E420	0.00050	mg/L	<0.00050	0.00156	---	---	---	
potassium, total	7440-09-7	E420	0.050	mg/L	0.633	1.08	---	---	---	
selenium, total	7782-49-2	E420	0.050	µg/L	3.10	17.7	---	---	---	
silicon, total	7440-21-3	E420	0.10	mg/L	1.78	2.47	---	---	---	
silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	---	---	---	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_MIDER_WS _LAEMP_EVO_ 2022-09_N	RG_MIDBO_WS _LAEMP_EVO_ 2022-09_N	----	----	----
Client sampling date / time					13-Sep-2022 07:45	13-Sep-2022 14:10	----	----	----	
Analyte	CAS Number	Method	LOR	Unit	CG2212628-001 Result	CG2212628-002 Result	-----	-----	-----	
Total Metals										
sodium, total	7440-23-5	E420	0.050	mg/L	3.44	3.82	----	----	----	
strontium, total	7440-24-6	E420	0.00020	mg/L	0.164	0.187	----	----	----	
sulfur, total	7704-34-9	E420	0.50	mg/L	21.2	57.4	----	----	----	
thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	----	----	----	
tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00030	<0.00030	----	----	----	
uranium, total	7440-61-1	E420	0.000010	mg/L	0.000852	0.00179	----	----	----	
vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00250 ^{DLB}	<0.00250 ^{DLB}	----	----	----	
zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	<0.0030	----	----	----	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0015	<0.0010	----	----	----	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00010	0.00010	----	----	----	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00014	0.00018	----	----	----	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.118	0.139	----	----	----	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.020	<0.020	----	----	----	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	----	----	----	
boron, dissolved	7440-42-8	E421	0.010	mg/L	0.011	0.013	----	----	----	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.0174	0.0194	----	----	----	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	54.2	65.3	----	----	----	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	0.00015	0.00013	----	----	----	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	<0.10	<0.10	----	----	----	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00020	<0.00020	----	----	----	
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	<0.010	----	----	----	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	----	----	----	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0067	0.0141	----	----	----	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	17.7	36.1	----	----	----	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00056	0.00192	----	----	----	
mercury, dissolved	7439-97-6	E509	0.000050	mg/L	<0.000050	<0.000050	----	----	----	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.000744	0.00129	----	----	----	
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	<0.00050	0.00160	----	----	----	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_MIDER_WS _LAEMP_EVO_ 2022-09_N	RG_MIDBO_WS _LAEMP_EVO_ 2022-09_N	----	----	----
Client sampling date / time					13-Sep-2022 07:45	13-Sep-2022 14:10	----	----	----	
Analyte	CAS Number	Method	LOR	Unit	CG2212628-001 Result	CG2212628-002 Result	-----	-----	-----	
Dissolved Metals										
potassium, dissolved	7440-09-7	E421	0.050	mg/L	0.660	1.14	----	----	----	
selenium, dissolved	7782-49-2	E421	0.050	µg/L	2.78	20.6	----	----	----	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	2.40	2.45	----	----	----	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	----	----	----	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	3.51	3.90	----	----	----	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.164	0.167	----	----	----	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	21.9	52.6	----	----	----	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	----	----	----	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	----	----	----	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.000783	0.00164	----	----	----	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	----	----	----	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0010	<0.0010	----	----	----	
dissolved mercury filtration location	----	EP509	-	-	Field	Field	----	----	----	
dissolved metals filtration location	----	EP421	-	-	Field	Field	----	----	----	

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: CG2212628	Page	: 1 of 17
Client	: Teck Coal Limited	Laboratory	: Calgary - Environmental
Contact	: Mike Pope	Account Manager	: Lyudmyla Shvets
Address	: RR#1 HWY#3 Sparwood BC Canada V0B 2G1	Address	: 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5
Telephone	: ----	Telephone	: +1 403 407 1800
Project	: REGIONAL EFFECTS PROGRAM	Date Samples Received	: 15-Sep-2022 08:50
PO	: VPO00816101	Issue Date	: 21-Sep-2022 14:26
C-O-C number	: REP_LAEMP_EVO_2022-09_ALS		
Sampler	: Jennifer Ings		
Site	: ----		
Quote number	: Teck Coal Master Quote		
No. of samples received	: 2		
No. of samples analysed	: 2		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- Method Blank value outliers occur - please see following pages for full details.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **Water**

Analyte Group	Laboratory sample ID	Client/Ref Sample ID	Analyte	CAS Number	Method	Result	Limits	Comment
Method Blank (MB) Values								
Total Metals	QC-MRG2-6516750 01	----	vanadium, total	7440-62-2	E420	0.00052 ^{MB-LOR} mg/L	0.0005 mg/L	Blank result exceeds permitted value

Result Qualifiers

Qualifier	Description
MB-LOR	Method Blank exceeds ALS DQO. Limits of Reporting have been adjusted for samples with positive hits below 5x blank level.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_MIDBO_WS_LAEMP_EVO_2022-09_N	E298	13-Sep-2022	16-Sep-2022	----	----		16-Sep-2022	28 days	3 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_MIDER_WS_LAEMP_EVO_2022-09_N	E298	13-Sep-2022	16-Sep-2022	----	----		16-Sep-2022	28 days	3 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-09_N	E235.Br-L	13-Sep-2022	16-Sep-2022	----	----		16-Sep-2022	28 days	3 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_MIDER_WS_LAEMP_EVO_2022-09_N	E235.Br-L	13-Sep-2022	16-Sep-2022	----	----		16-Sep-2022	28 days	3 days	✓
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-09_N	E235.Cl-L	13-Sep-2022	16-Sep-2022	----	----		16-Sep-2022	28 days	3 days	✓
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_MIDER_WS_LAEMP_EVO_2022-09_N	E235.Cl-L	13-Sep-2022	16-Sep-2022	----	----		16-Sep-2022	28 days	3 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-09_N	E378-U	13-Sep-2022	16-Sep-2022	----	----		16-Sep-2022	3 days	3 days	✓



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-09_N	E378-U	13-Sep-2022	16-Sep-2022	----	----		16-Sep-2022	3 days	3 days	✓	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-09_N	E235.F	13-Sep-2022	16-Sep-2022	----	----		16-Sep-2022	28 days	3 days	✓	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-09_N	E235.F	13-Sep-2022	16-Sep-2022	----	----		16-Sep-2022	28 days	3 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-09_N	E235.NO3-L	13-Sep-2022	16-Sep-2022	3 days	3 days	✓	16-Sep-2022	3 days	0 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-09_N	E235.NO3-L	13-Sep-2022	16-Sep-2022	3 days	3 days	✓	16-Sep-2022	3 days	0 days	✓	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-09_N	E235.NO2-L	13-Sep-2022	16-Sep-2022	----	----		16-Sep-2022	3 days	3 days	✓	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-09_N	E235.NO2-L	13-Sep-2022	16-Sep-2022	----	----		16-Sep-2022	3 days	3 days	✓	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-09_N	E235.SO4	13-Sep-2022	16-Sep-2022	----	----		16-Sep-2022	28 days	3 days	✓	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-09_N	E235.SO4	13-Sep-2022	16-Sep-2022	----	----		16-Sep-2022	28 days	3 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
Rec	Actual	Rec		Actual							
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_MIDBO_WS_LAEMP_EVO_2022-09_N	E318	13-Sep-2022	17-Sep-2022	----	----		17-Sep-2022	28 days	4 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_MIDER_WS_LAEMP_EVO_2022-09_N	E318	13-Sep-2022	17-Sep-2022	----	----		17-Sep-2022	28 days	4 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_MIDBO_WS_LAEMP_EVO_2022-09_N	E372-U	13-Sep-2022	16-Sep-2022	----	----		17-Sep-2022	28 days	4 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_MIDER_WS_LAEMP_EVO_2022-09_N	E372-U	13-Sep-2022	16-Sep-2022	----	----		17-Sep-2022	28 days	4 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_MIDBO_WS_LAEMP_EVO_2022-09_N	E421.Cr-L	13-Sep-2022	17-Sep-2022	----	----		17-Sep-2022	180 days	4 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_MIDER_WS_LAEMP_EVO_2022-09_N	E421.Cr-L	13-Sep-2022	17-Sep-2022	----	----		17-Sep-2022	180 days	4 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_MIDBO_WS_LAEMP_EVO_2022-09_N	E509	13-Sep-2022	17-Sep-2022	----	----		17-Sep-2022	28 days	4 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_MIDER_WS_LAEMP_EVO_2022-09_N	E509	13-Sep-2022	17-Sep-2022	----	----		17-Sep-2022	28 days	4 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_MIDBO_WS_LAEMP_EVO_2022-09_N	E421	13-Sep-2022	17-Sep-2022	----	----		17-Sep-2022	180 days	4 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
Container / Client Sample ID(s)				Rec	Actual				Rec		Actual
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_MIDER_WS_LAEMP_EVO_2022-09_N	E421	13-Sep-2022	17-Sep-2022	----	----		17-Sep-2022	180 days	4 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_MIDBO_WS_LAEMP_EVO_2022-09_N	E358-L	13-Sep-2022	16-Sep-2022	----	----		16-Sep-2022	28 days	3 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_MIDER_WS_LAEMP_EVO_2022-09_N	E358-L	13-Sep-2022	16-Sep-2022	----	----		16-Sep-2022	28 days	3 days	✓	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_MIDBO_WS_LAEMP_EVO_2022-09_N	E355-L	13-Sep-2022	16-Sep-2022	----	----		16-Sep-2022	28 days	3 days	✓	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_MIDER_WS_LAEMP_EVO_2022-09_N	E355-L	13-Sep-2022	16-Sep-2022	----	----		16-Sep-2022	28 days	3 days	✓	
Physical Tests : Acidity by Titration											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-09_N	E283	13-Sep-2022	16-Sep-2022	----	----		16-Sep-2022	14 days	3 days	✓	
Physical Tests : Acidity by Titration											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-09_N	E283	13-Sep-2022	16-Sep-2022	----	----		16-Sep-2022	14 days	3 days	✓	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-09_N	E290	13-Sep-2022	16-Sep-2022	----	----		16-Sep-2022	14 days	3 days	✓	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-09_N	E290	13-Sep-2022	16-Sep-2022	----	----		16-Sep-2022	14 days	3 days	✓	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Conductivity in Water											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-09_N	E100	13-Sep-2022	16-Sep-2022	----	----		16-Sep-2022	28 days	3 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-09_N	E100	13-Sep-2022	16-Sep-2022	----	----		16-Sep-2022	28 days	3 days	✓	
Physical Tests : ORP by Electrode											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-09_N	E125	13-Sep-2022	----	----	----		16-Sep-2022	0.25 hrs	79 hrs	* EHTR-FM	
Physical Tests : ORP by Electrode											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-09_N	E125	13-Sep-2022	----	----	----		16-Sep-2022	0.25 hrs	86 hrs	* EHTR-FM	
Physical Tests : pH by Meter											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-09_N	E108	13-Sep-2022	16-Sep-2022	----	----		16-Sep-2022	0.25 hrs	0.25 hrs	* EHTR-FM	
Physical Tests : pH by Meter											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-09_N	E108	13-Sep-2022	16-Sep-2022	----	----		16-Sep-2022	0.25 hrs	0.25 hrs	* EHTR-FM	
Physical Tests : TDS by Gravimetry											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-09_N	E162	13-Sep-2022	----	----	----		16-Sep-2022	7 days	3 days	✓	
Physical Tests : TDS by Gravimetry											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-09_N	E162	13-Sep-2022	----	----	----		16-Sep-2022	7 days	4 days	✓	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-09_N	E160-L	13-Sep-2022	----	----	----		16-Sep-2022	7 days	3 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec Actual		Eval	Analysis Date	Holding Times Rec Actual		Eval
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE RG_MIDER_WS_LAEMP_EVO_2022-09_N	E160-L	13-Sep-2022	----	----	----		16-Sep-2022	7 days	4 days	✔
Physical Tests : Turbidity by Nephelometry										
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-09_N	E121	13-Sep-2022	----	----	----		16-Sep-2022	3 days	3 days	✔
Physical Tests : Turbidity by Nephelometry										
HDPE RG_MIDER_WS_LAEMP_EVO_2022-09_N	E121	13-Sep-2022	----	----	----		16-Sep-2022	3 days	3 days	✔
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)										
HDPE - total (lab preserved) RG_MIDBO_WS_LAEMP_EVO_2022-09_N	E420.Cr-L	13-Sep-2022	17-Sep-2022	----	----		17-Sep-2022	180 days	4 days	✔
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)										
HDPE total (nitric acid) RG_MIDER_WS_LAEMP_EVO_2022-09_N	E420.Cr-L	13-Sep-2022	17-Sep-2022	----	----		17-Sep-2022	180 days	4 days	✔
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) RG_MIDBO_WS_LAEMP_EVO_2022-09_N	E508	13-Sep-2022	17-Sep-2022	----	----		17-Sep-2022	28 days	4 days	✔
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved) RG_MIDER_WS_LAEMP_EVO_2022-09_N	E508-L	13-Sep-2022	21-Sep-2022	28 days	8 days	✔	21-Sep-2022	28 days	0 days	✔
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE - total (lab preserved) RG_MIDBO_WS_LAEMP_EVO_2022-09_N	E420	13-Sep-2022	17-Sep-2022	----	----		17-Sep-2022	180 days	4 days	✔
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) RG_MIDER_WS_LAEMP_EVO_2022-09_N	E420	13-Sep-2022	17-Sep-2022	----	----		17-Sep-2022	180 days	4 days	✔

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended

Page : 10 of 17
Work Order : CG2212628
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
Analytical Methods							
Laboratory Duplicates (DUP)							
Acidity by Titration	E283	651426	1	17	5.8	5.0	✓
Alkalinity Species by Titration	E290	651429	1	17	5.8	5.0	✓
Ammonia by Fluorescence	E298	651485	1	17	5.8	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	651474	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	651475	1	20	5.0	5.0	✓
Conductivity in Water	E100	651428	1	17	5.8	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	652076	1	15	6.6	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	651966	1	18	5.5	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	652077	1	17	5.8	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	651436	1	15	6.6	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	651462	1	17	5.8	5.0	✓
Fluoride in Water by IC	E235.F	651473	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	651476	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	651477	1	20	5.0	5.0	✓
ORP by Electrode	E125	651554	1	17	5.8	5.0	✓
pH by Meter	E108	651427	1	17	5.8	5.0	✓
Sulfate in Water by IC	E235.SO4	651478	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	651516	1	19	5.2	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	651675	1	17	5.8	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	651465	1	17	5.8	5.0	✓
Total Mercury in Water by CVAAS	E508	651965	1	16	6.2	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	657455	1	17	5.8	5.0	✓
Total Metals in Water by CRC ICPMS	E420	651676	1	17	5.8	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	651437	1	17	5.8	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	651459	1	17	5.8	5.0	✓
Turbidity by Nephelometry	E121	651454	2	17	11.7	5.0	✓
Laboratory Control Samples (LCS)							
Acidity by Titration	E283	651426	1	17	5.8	5.0	✓
Alkalinity Species by Titration	E290	651429	1	17	5.8	5.0	✓
Ammonia by Fluorescence	E298	651485	1	17	5.8	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	651474	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	651475	1	20	5.0	5.0	✓
Conductivity in Water	E100	651428	1	17	5.8	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	652076	1	15	6.6	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	651966	1	18	5.5	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	652077	1	17	5.8	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	651436	1	15	6.6	5.0	✓



Matrix: **Water**

Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
Analytical Methods							
Laboratory Control Samples (LCS) - Continued							
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	651462	1	17	5.8	5.0	✓
Fluoride in Water by IC	E235.F	651473	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	651476	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	651477	1	20	5.0	5.0	✓
ORP by Electrode	E125	651554	1	17	5.8	5.0	✓
pH by Meter	E108	651427	1	17	5.8	5.0	✓
Sulfate in Water by IC	E235.SO4	651478	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	651516	1	19	5.2	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	651675	1	17	5.8	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	651465	1	17	5.8	5.0	✓
Total Mercury in Water by CVAAS	E508	651965	1	16	6.2	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	657455	1	17	5.8	5.0	✓
Total Metals in Water by CRC ICPMS	E420	651676	1	17	5.8	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	651437	1	17	5.8	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	651459	1	17	5.8	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	651515	1	19	5.2	5.0	✓
Turbidity by Nephelometry	E121	651454	2	17	11.7	5.0	✓
Method Blanks (MB)							
Acidity by Titration	E283	651426	1	17	5.8	5.0	✓
Alkalinity Species by Titration	E290	651429	1	17	5.8	5.0	✓
Ammonia by Fluorescence	E298	651485	1	17	5.8	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	651474	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	651475	1	20	5.0	5.0	✓
Conductivity in Water	E100	651428	1	17	5.8	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	652076	1	15	6.6	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	651966	1	18	5.5	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	652077	1	17	5.8	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	651436	1	15	6.6	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	651462	1	17	5.8	5.0	✓
Fluoride in Water by IC	E235.F	651473	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	651476	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	651477	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	651478	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	651516	1	19	5.2	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	651675	1	17	5.8	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	651465	1	17	5.8	5.0	✓
Total Mercury in Water by CVAAS	E508	651965	1	16	6.2	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	657455	1	17	5.8	5.0	✓
Total Metals in Water by CRC ICPMS	E420	651676	1	17	5.8	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	651437	1	17	5.8	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	651459	1	17	5.8	5.0	✓



Matrix: **Water**

Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
<i>Analytical Methods</i>							
Method Blanks (MB) - Continued							
TSS by Gravimetry (Low Level)	E160-L	651515	1	19	5.2	5.0	✓
Turbidity by Nephelometry	E121	651454	2	17	11.7	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	651485	1	17	5.8	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	651474	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	651475	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	652076	1	15	6.6	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	651966	1	18	5.5	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	652077	1	17	5.8	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	651436	1	15	6.6	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	651462	1	17	5.8	5.0	✓
Fluoride in Water by IC	E235.F	651473	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	651476	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	651477	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	651478	1	20	5.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	651675	1	17	5.8	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	651465	1	17	5.8	5.0	✓
Total Mercury in Water by CVAAS	E508	651965	1	16	6.2	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	657455	1	17	5.8	5.0	✓
Total Metals in Water by CRC ICPMS	E420	651676	1	17	5.8	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	651437	1	17	5.8	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	651459	1	17	5.8	5.0	✓



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 Calgary - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 Calgary - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 Calgary - Environmental	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
ORP by Electrode	E125 Calgary - Environmental	Water	ASTM D1498 (mod)	Oxidation reduction potential is reported as the oxidation-reduction potential of the platinum metal-reference electrode employed, measured in mV. For high accuracy test results, it is recommended that this analysis be conducted in the field.
TSS by Gravimetry (Low Level)	E160-L Calgary - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 Calgary - Environmental	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC (Low Level)	E235.Cl-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Acidity by Titration	E283 Calgary - Environmental	Water	APHA 2310 B (mod)	Acidity is determined by potentiometric titration to pH endpoint of 8.3



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Alkalinity Species by Titration	E290 Calgary - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 Calgary - Environmental	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 Calgary - Environmental	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L Calgary - Environmental	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Dissolved Organic Carbon by Combustion (Low Level)	E358-L Calgary - Environmental	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U Calgary - Environmental	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U Calgary - Environmental	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Total Metals in Water by CRC ICPMS	E420 Calgary - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L Calgary - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS.
Dissolved Metals in Water by CRC ICPMS	E421 Calgary - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L Calgary - Environmental	Water	APHA 3030 B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS
Total Mercury in Water by CVAAS	E508 Calgary - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L Vancouver - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAFS.
Dissolved Mercury in Water by CVAAS	E509 Calgary - Environmental	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
Dissolved Hardness (Calculated)	EC100 Calgary - Environmental	Water	APHA 2340B	"Hardness (as CaCO ₃), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Ion Balance using Dissolved Metals	EC101 Calgary - Environmental	Water	APHA 1030E	Cation Sum, Anion Sum, and Ion Balance are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present. Ion Balance cannot be calculated accurately for waters with very low electrical conductivity (EC).

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 Calgary - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 Calgary - Environmental	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Preparation for Total Organic Carbon by Combustion	EP355 Calgary - Environmental	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon for Combustion	EP358 Calgary - Environmental	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Phosphorus in water	EP372 Calgary - Environmental	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Dissolved Metals Water Filtration	EP421 Calgary - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO ₃ .



<i>Preparation Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
Dissolved Mercury Water Filtration	EP509 Calgary - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.



QUALITY CONTROL REPORT

Work Order : **CG2212628**

Client : Teck Coal Limited

Contact : Mike Pope

Address : RR#1 HWY#3
Sparwood BC Canada V0B 2G1

Telephone : ----

Project : REGIONAL EFFECTS PROGRAM

PO : VPO00816101

C-O-C number : REP_LAEMP_EVO_2022-09_ALS

Sampler : Jennifer Ings

Site : ----

Quote number : Teck Coal Master Quote

No. of samples received : 2

No. of samples analysed : 2

Page : 1 of 18

Laboratory : Calgary - Environmental

Account Manager : Lyudmyla Shvets

Address : 2559 29th Street NE
Calgary, Alberta Canada T1Y 7B5

Telephone : +1 403 407 1800

Date Samples Received : 15-Sep-2022 08:50

Date Analysis Commenced : 16-Sep-2022

Issue Date : 21-Sep-2022 14:26

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Anthony Calero	Supervisor - Inorganic	Calgary Metals, Calgary, Alberta
Elke Tabora		Calgary Inorganics, Calgary, Alberta
Hamideh Moradi	Analyst	Vancouver Metals, Burnaby, British Columbia
Harpreet Chawla	Team Leader - Inorganics	Calgary Inorganics, Calgary, Alberta
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Page : 2 of 18
Work Order : CG2212628
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 651426)											
CG2212617-001	Anonymous	acidity (as CaCO3)	----	E283	2.0	mg/L	<2.0	<2.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 651427)											
CG2212617-001	Anonymous	pH	----	E108	0.10	pH units	8.25	8.25	0.00%	4%	----
Physical Tests (QC Lot: 651428)											
CG2212617-001	Anonymous	conductivity	----	E100	2.0	µS/cm	732	724	1.10%	10%	----
Physical Tests (QC Lot: 651429)											
CG2212617-001	Anonymous	alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	189	184	2.52%	20%	----
		alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	189	184	2.52%	20%	----
Physical Tests (QC Lot: 651454)											
CG2212624-001	Anonymous	turbidity	----	E121	0.10	NTU	0.30	0.32	0.02	Diff <2x LOR	----
Physical Tests (QC Lot: 651457)											
CG2212617-001	Anonymous	turbidity	----	E121	0.10	NTU	0.37	0.37	0.0002	Diff <2x LOR	----
Physical Tests (QC Lot: 651516)											
CG2212617-001	Anonymous	solids, total dissolved [TDS]	----	E162	20	mg/L	512	523	2.03%	20%	----
Physical Tests (QC Lot: 651554)											
CG2212617-001	Anonymous	oxidation-reduction potential [ORP]	----	E125	0.10	mV	315	318	0.854%	15%	----
Anions and Nutrients (QC Lot: 651459)											
CG2212617-001	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0050	0.0048	0.0001	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 651462)											
CG2212617-001	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 651465)											
CG2212617-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.500	mg/L	<0.500	<0.500	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 651473)											
CG2212617-001	Anonymous	fluoride	16984-48-8	E235.F	0.020	mg/L	0.192	0.195	0.003	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 651474)											
CG2212617-001	Anonymous	bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 651475)											
CG2212617-001	Anonymous	chloride	16887-00-6	E235.Cl-L	0.10	mg/L	1.00	1.00	0.234%	20%	----
Anions and Nutrients (QC Lot: 651476)											



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 651476) - continued											
CG2212617-001	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.728	0.726	0.316%	20%	----
Anions and Nutrients (QC Lot: 651477)											
CG2212617-001	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	0.0013	0.0013	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 651478)											
CG2212617-001	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	230	230	0.0432%	20%	----
Anions and Nutrients (QC Lot: 651485)											
CG2212617-001	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0058	0.0051	0.0007	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 651436)											
CG2212617-001	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 651437)											
CG2212617-001	Anonymous	carbon, total organic [TOC]	----	E355-L	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
Total Metals (QC Lot: 651675)											
CG2212617-001	Anonymous	chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	0.00018	0.00016	0.00001	Diff <2x LOR	----
Total Metals (QC Lot: 651676)											
CG2212617-001	Anonymous	aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0066	0.0066	0.00006	Diff <2x LOR	----
		antimony, total	7440-36-0	E420	0.00010	mg/L	0.00017	0.00017	0.000005	Diff <2x LOR	----
		arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00030	0.00032	0.00003	Diff <2x LOR	----
		barium, total	7440-39-3	E420	0.00010	mg/L	0.0803	0.0784	2.39%	20%	----
		beryllium, total	7440-41-7	E420	0.000020	mg/L	<0.020 µg/L	<0.000020	0	Diff <2x LOR	----
		bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, total	7440-42-8	E420	0.010	mg/L	0.033	0.034	0.001	Diff <2x LOR	----
		cadmium, total	7440-43-9	E420	0.0000050	mg/L	0.0226 µg/L	0.0000234	0.0000008	Diff <2x LOR	----
		calcium, total	7440-70-2	E420	0.050	mg/L	87.9	88.1	0.204%	20%	----
		cobalt, total	7440-48-4	E420	0.00010	mg/L	0.10 µg/L	<0.00010	0.000004	Diff <2x LOR	----
		copper, total	7440-50-8	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		iron, total	7439-89-6	E420	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		lead, total	7439-92-1	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		lithium, total	7439-93-2	E420	0.0010	mg/L	0.0156	0.0158	1.71%	20%	----
		magnesium, total	7439-95-4	E420	0.0050	mg/L	37.8	36.6	3.10%	20%	----
		manganese, total	7439-96-5	E420	0.00010	mg/L	0.00168	0.00167	0.701%	20%	----
		molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.000895	0.000886	1.04%	20%	----
		nickel, total	7440-02-0	E420	0.00050	mg/L	0.00507	0.00491	0.00016	Diff <2x LOR	----
		potassium, total	7440-09-7	E420	0.050	mg/L	1.18	1.15	2.05%	20%	----
		selenium, total	7782-49-2	E420	0.000050	mg/L	5.06 µg/L	0.00527	4.15%	20%	----
		silicon, total	7440-21-3	E420	0.10	mg/L	1.72	1.62	6.41%	20%	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (QC Lot: 651676) - continued											
CG2212617-001	Anonymous	silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, total	7440-23-5	E420	0.050	mg/L	10.3	10.1	2.22%	20%	----
		strontium, total	7440-24-6	E420	0.00020	mg/L	0.352	0.353	0.533%	20%	----
		sulfur, total	7704-34-9	E420	0.50	mg/L	81.3	80.3	1.33%	20%	----
		thallium, total	7440-28-0	E420	0.000010	mg/L	0.000020	0.000020	0.00000004	Diff <2x LOR	----
		tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		uranium, total	7440-61-1	E420	0.000010	mg/L	0.00196	0.00202	3.16%	20%	----
		vanadium, total	7440-62-2	E420	0.00250	mg/L	<0.00250	<0.00250	0	Diff <2x LOR	----
		zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	<0.0030	0	Diff <2x LOR	----
Total Metals (QC Lot: 651965)											
CG2212617-001	Anonymous	mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Total Metals (QC Lot: 657455)											
CG2212604-001	Anonymous	mercury, total	7439-97-6	E508-L	0.50	ng/L	0.69	<0.50	0.19	Diff <2x LOR	----
Dissolved Metals (QC Lot: 651966)											
CG2212467-001	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 652076)											
CG2212617-001	Anonymous	chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	0.00017	0.00015	0.00002	Diff <2x LOR	----
Dissolved Metals (QC Lot: 652077)											
CG2212617-001	Anonymous	aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0012	<0.0010	0.0002	Diff <2x LOR	----
		antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00017	0.00017	0.000006	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00024	0.00026	0.00001	Diff <2x LOR	----
		barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0877	0.0868	0.999%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.000020	mg/L	<0.020 µg/L	<0.000020	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.010	mg/L	0.029	0.031	0.002	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	0.0202 µg/L	0.0000195	0.0000006	Diff <2x LOR	----
		calcium, dissolved	7440-70-2	E421	0.050	mg/L	91.0	89.5	1.57%	20%	----
		cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	0.10 µg/L	0.00010	0.00000006	Diff <2x LOR	----
		copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0153	0.0155	1.53%	20%	----
		magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	38.7	38.6	0.203%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00191	0.00194	1.56%	20%	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 652077) - continued											
CG2212617-001	Anonymous	molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.000953	0.000939	1.42%	20%	----
		nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00503	0.00494	0.00009	Diff <2x LOR	----
		potassium, dissolved	7440-09-7	E421	0.050	mg/L	1.30	1.28	1.79%	20%	----
		selenium, dissolved	7782-49-2	E421	0.000050	mg/L	5.03 µg/L	0.00516	2.69%	20%	----
		silicon, dissolved	7440-21-3	E421	0.050	mg/L	2.11	2.10	0.595%	20%	----
		silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E421	0.050	mg/L	11.0	10.9	1.05%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.364	0.368	1.28%	20%	----
		sulfur, dissolved	7704-34-9	E421	0.50	mg/L	84.3	84.0	0.292%	20%	----
		thallium, dissolved	7440-28-0	E421	0.000010	mg/L	0.000021	0.000020	0.000001	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00204	0.00204	0.194%	20%	----
		vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 651426)						
acidity (as CaCO3)	----	E283	2	mg/L	<2.0	----
Physical Tests (QCLot: 651428)						
conductivity	----	E100	1	µS/cm	1.3	----
Physical Tests (QCLot: 651429)						
alkalinity, bicarbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, carbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, hydroxide (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 651454)						
turbidity	----	E121	0.1	NTU	<0.10	----
Physical Tests (QCLot: 651457)						
turbidity	----	E121	0.1	NTU	<0.10	----
Physical Tests (QCLot: 651515)						
solids, total suspended [TSS]	----	E160-L	1	mg/L	<1.0	----
Physical Tests (QCLot: 651516)						
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Anions and Nutrients (QCLot: 651459)						
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 651462)						
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 651465)						
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 651473)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 651474)						
bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 651475)						
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	----
Anions and Nutrients (QCLot: 651476)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 651477)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 651478)						



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 651478) - continued						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	---
Anions and Nutrients (QCLot: 651485)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	---
Organic / Inorganic Carbon (QCLot: 651436)						
carbon, dissolved organic [DOC]	---	E358-L	0.5	mg/L	<0.50	---
Organic / Inorganic Carbon (QCLot: 651437)						
carbon, total organic [TOC]	---	E355-L	0.5	mg/L	<0.50	---
Total Metals (QCLot: 651675)						
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	<0.00010	---
Total Metals (QCLot: 651676)						
aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	---
antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	---
arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	---
barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	---
beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	---
bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	---
boron, total	7440-42-8	E420	0.01	mg/L	<0.010	---
cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	---
calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	---
cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	---
copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	---
iron, total	7439-89-6	E420	0.01	mg/L	<0.010	---
lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	---
lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	---
magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	---
manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	---
molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	---
nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	---
potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	---
selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	---
silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	---
silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	---
sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	---
strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	---
sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	---
thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	---



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 651676) - continued						
tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	---
titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	---
uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	---
vanadium, total	7440-62-2	E420	0.0005	mg/L	# 0.00052	MB-LOR
zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	---
Total Metals (QCLot: 651965)						
mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	---
Total Metals (QCLot: 657455)						
mercury, total	7439-97-6	E508-L	0.5	ng/L	<0.50	---
Dissolved Metals (QCLot: 651966)						
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	---
Dissolved Metals (QCLot: 652076)						
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	<0.00010	---
Dissolved Metals (QCLot: 652077)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	---
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	---
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	---
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	---
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	---
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	---
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	---
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	---
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	---
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	---
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	---
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	---
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	---
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	---
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	---
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	---
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	---
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	---
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	---
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	---
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	---
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	---



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 652077) - continued						
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----

Qualifiers

Qualifier	Description
MB-LOR	Method Blank exceeds ALS DQO. Limits of Reporting have been adjusted for samples with positive hits below 5x blank level.



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Physical Tests (QCLot: 651426)									
acidity (as CaCO3)	----	E283	2	mg/L	50 mg/L	106	85.0	115	----
Physical Tests (QCLot: 651427)									
pH	----	E108	----	pH units	7 pH units	101	98.6	101	----
Physical Tests (QCLot: 651428)									
conductivity	----	E100	1	µS/cm	146.9 µS/cm	100	90.0	110	----
Physical Tests (QCLot: 651429)									
alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	103	85.0	115	----
Physical Tests (QCLot: 651454)									
turbidity	----	E121	0.1	NTU	200 NTU	105	85.0	115	----
Physical Tests (QCLot: 651457)									
turbidity	----	E121	0.1	NTU	200 NTU	110	85.0	115	----
Physical Tests (QCLot: 651515)									
solids, total suspended [TSS]	----	E160-L	1	mg/L	150 mg/L	93.9	85.0	115	----
Physical Tests (QCLot: 651516)									
solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	93.0	85.0	115	----
Physical Tests (QCLot: 651554)									
oxidation-reduction potential [ORP]	----	E125	----	mV	220 mV	101	95.4	104	----
Anions and Nutrients (QCLot: 651459)									
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.03 mg/L	103	80.0	120	----
Anions and Nutrients (QCLot: 651462)									
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.03 mg/L	93.9	80.0	120	----
Anions and Nutrients (QCLot: 651465)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	104	75.0	125	----
Anions and Nutrients (QCLot: 651473)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 651474)									
bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	103	85.0	115	----
Anions and Nutrients (QCLot: 651475)									
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 651476)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 651477)									



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Anions and Nutrients (QCLot: 651477) - continued									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	99.7	90.0	110	----
Anions and Nutrients (QCLot: 651478)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 651485)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	97.8	85.0	115	----
Organic / Inorganic Carbon (QCLot: 651436)									
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	95.4	80.0	120	----
Organic / Inorganic Carbon (QCLot: 651437)									
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	96.8	80.0	120	----
Total Metals (QCLot: 651675)									
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	0.25 mg/L	96.7	80.0	120	----
Total Metals (QCLot: 651676)									
aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	100	80.0	120	----
antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	97.1	80.0	120	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	95.4	80.0	120	----
barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	98.0	80.0	120	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	99.9	80.0	120	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	91.2	80.0	120	----
boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	99.7	80.0	120	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	94.3	80.0	120	----
calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	92.1	80.0	120	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	93.1	80.0	120	----
copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	92.9	80.0	120	----
iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	106	80.0	120	----
lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	93.3	80.0	120	----
lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	108	80.0	120	----
magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	96.7	80.0	120	----
manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	99.8	80.0	120	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	96.2	80.0	120	----
nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	94.0	80.0	120	----
potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	96.8	80.0	120	----
selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	97.2	80.0	120	----
silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	89.3	60.0	140	----
silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	89.3	80.0	120	----
sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	95.8	80.0	120	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Total Metals (QCLot: 651676) - continued									
strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	98.4	80.0	120	----
sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	107	80.0	120	----
thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	92.1	80.0	120	----
tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	96.3	80.0	120	----
titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	97.2	80.0	120	----
uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	94.3	80.0	120	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	96.1	80.0	120	----
zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	94.8	80.0	120	----
Total Metals (QCLot: 651965)									
mercury, total	7439-97-6	E508	0.000005	mg/L	0.0001 mg/L	101	80.0	120	----
Total Metals (QCLot: 657455)									
mercury, total	7439-97-6	E508-L	0.5	ng/L	5 ng/L	107	80.0	120	----
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	97.0	80.0	120	----
Dissolved Metals (QCLot: 652076)									
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	0.25 mg/L	99.0	80.0	120	----
Dissolved Metals (QCLot: 652077)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	101	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	97.7	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	95.8	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	97.8	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	103	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	93.8	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	104	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	102	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	94.7	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	99.0	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	98.3	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	111	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	97.8	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	106	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	97.4	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	101	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	100	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	97.4	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	96.6	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	92.8	80.0	120	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Dissolved Metals (QCLot: 652077) - continued									
silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	106	60.0	140	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	94.2	80.0	120	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	98.2	80.0	120	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	101	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	92.8	80.0	120	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	94.0	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	101	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	101	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	99.0	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	99.7	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	97.3	80.0	120	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 651459)										
CG2212617-002	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0531 mg/L	0.05 mg/L	106	70.0	130	----
Anions and Nutrients (QCLot: 651462)										
CG2212617-002	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0510 mg/L	0.05 mg/L	102	70.0	130	----
Anions and Nutrients (QCLot: 651465)										
CG2212617-002	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.68 mg/L	2.5 mg/L	107	70.0	130	----
Anions and Nutrients (QCLot: 651473)										
CG2212630-006	Anonymous	fluoride	16984-48-8	E235.F	1.02 mg/L	1 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 651474)										
CG2212630-006	Anonymous	bromide	24959-67-9	E235.Br-L	0.516 mg/L	0.5 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 651475)										
CG2212630-006	Anonymous	chloride	16887-00-6	E235.Cl-L	99.7 mg/L	100 mg/L	99.7	75.0	125	----
Anions and Nutrients (QCLot: 651476)										
CG2212630-006	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	2.50 mg/L	2.5 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 651477)										
CG2212630-006	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.508 mg/L	0.5 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 651478)										
CG2212630-006	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	101 mg/L	100 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 651485)										
CG2212617-002	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0997 mg/L	0.1 mg/L	99.7	75.0	125	----
Organic / Inorganic Carbon (QCLot: 651436)										
CG2212617-001	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	5.35 mg/L	5 mg/L	107	70.0	130	----
Organic / Inorganic Carbon (QCLot: 651437)										
CG2212617-001	Anonymous	carbon, total organic [TOC]	----	E355-L	5.65 mg/L	5 mg/L	113	70.0	130	----
Total Metals (QCLot: 651675)										
CG2212617-002	Anonymous	chromium, total	7440-47-3	E420.Cr-L	0.402 mg/L	0.4 mg/L	100	70.0	130	----
Total Metals (QCLot: 651676)										
CG2212617-002	Anonymous	aluminum, total	7429-90-5	E420	1.88 mg/L	2 mg/L	94.3	70.0	130	----
		antimony, total	7440-36-0	E420	0.204 mg/L	0.2 mg/L	102	70.0	130	----



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 651676) - continued										
CG2212617-002	Anonymous	arsenic, total	7440-38-2	E420	0.189 mg/L	0.2 mg/L	94.4	70.0	130	----
		barium, total	7440-39-3	E420	0.187 mg/L	0.2 mg/L	93.3	70.0	130	----
		beryllium, total	7440-41-7	E420	0.420 mg/L	0.4 mg/L	105	70.0	130	----
		bismuth, total	7440-69-9	E420	0.102 mg/L	0.1 mg/L	102	70.0	130	----
		boron, total	7440-42-8	E420	1.13 mg/L	1 mg/L	113	70.0	130	----
		cadmium, total	7440-43-9	E420	0.0413 mg/L	0.04 mg/L	103	70.0	130	----
		calcium, total	7440-70-2	E420	ND mg/L	40 mg/L	ND	70.0	130	----
		cobalt, total	7440-48-4	E420	0.199 mg/L	0.2 mg/L	99.6	70.0	130	----
		copper, total	7440-50-8	E420	0.201 mg/L	0.2 mg/L	100	70.0	130	----
		iron, total	7439-89-6	E420	20.4 mg/L	20 mg/L	102	70.0	130	----
		lead, total	7439-92-1	E420	0.195 mg/L	0.2 mg/L	97.7	70.0	130	----
		lithium, total	7439-93-2	E420	1.04 mg/L	1 mg/L	104	70.0	130	----
		magnesium, total	7439-95-4	E420	ND mg/L	10 mg/L	ND	70.0	130	----
		manganese, total	7439-96-5	E420	0.200 mg/L	0.2 mg/L	100	70.0	130	----
		molybdenum, total	7439-98-7	E420	0.191 mg/L	0.2 mg/L	95.3	70.0	130	----
		nickel, total	7440-02-0	E420	0.400 mg/L	0.4 mg/L	100	70.0	130	----
		potassium, total	7440-09-7	E420	37.8 mg/L	40 mg/L	94.5	70.0	130	----
		selenium, total	7782-49-2	E420	0.480 mg/L	0.4 mg/L	120	70.0	130	----
		silicon, total	7440-21-3	E420	75.8 mg/L	100 mg/L	75.8	70.0	130	----
		silver, total	7440-22-4	E420	0.0403 mg/L	0.04 mg/L	101	70.0	130	----
		sodium, total	7440-23-5	E420	ND mg/L	20 mg/L	ND	70.0	130	----
		strontium, total	7440-24-6	E420	ND mg/L	0.2 mg/L	ND	70.0	130	----
		sulfur, total	7704-34-9	E420	151 mg/L	200 mg/L	75.7	70.0	130	----
		thallium, total	7440-28-0	E420	0.0376 mg/L	0.04 mg/L	94.1	70.0	130	----
		tin, total	7440-31-5	E420	0.204 mg/L	0.2 mg/L	102	70.0	130	----
		titanium, total	7440-32-6	E420	0.386 mg/L	0.4 mg/L	96.4	70.0	130	----
		uranium, total	7440-61-1	E420	0.0403 mg/L	0.04 mg/L	101	70.0	130	----
		vanadium, total	7440-62-2	E420	0.970 mg/L	1 mg/L	97.0	70.0	130	----
		zinc, total	7440-66-6	E420	4.02 mg/L	4 mg/L	100	70.0	130	----
Total Metals (QCLot: 651965)										
CG2212617-002	Anonymous	mercury, total	7439-97-6	E508	0.0000968 mg/L	0.0001 mg/L	96.8	70.0	130	----
Total Metals (QCLot: 657455)										
CG2212604-002	Anonymous	mercury, total	7439-97-6	E508-L	4.58 ng/L	5 ng/L	91.6	70.0	130	----
Dissolved Metals (QCLot: 651966)										
CG2212467-002	Anonymous	mercury, dissolved	7439-97-6	E509	0.000106 mg/L	0.0001 mg/L	106	70.0	130	----



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 652076)										
CG2212617-002	Anonymous	chromium, dissolved	7440-47-3	E421.Cr-L	0.378 mg/L	0.4 mg/L	94.4	70.0	130	----
Dissolved Metals (QCLot: 652077)										
CG2212617-002	Anonymous	aluminum, dissolved	7429-90-5	E421	1.87 mg/L	2 mg/L	93.6	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.188 mg/L	0.2 mg/L	94.1	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.183 mg/L	0.2 mg/L	91.6	70.0	130	----
		barium, dissolved	7440-39-3	E421	0.169 mg/L	0.2 mg/L	84.7	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.372 mg/L	0.4 mg/L	92.9	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.0930 mg/L	0.1 mg/L	93.0	70.0	130	----
		boron, dissolved	7440-42-8	E421	0.978 mg/L	1 mg/L	97.8	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.0398 mg/L	0.04 mg/L	99.5	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	40 mg/L	ND	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.192 mg/L	0.2 mg/L	95.8	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.191 mg/L	0.2 mg/L	95.4	70.0	130	----
		iron, dissolved	7439-89-6	E421	18.9 mg/L	20 mg/L	94.4	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.189 mg/L	0.2 mg/L	94.4	70.0	130	----
		lithium, dissolved	7439-93-2	E421	0.922 mg/L	1 mg/L	92.2	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	10 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E421	0.189 mg/L	0.2 mg/L	94.7	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.191 mg/L	0.2 mg/L	95.6	70.0	130	----
		nickel, dissolved	7440-02-0	E421	0.375 mg/L	0.4 mg/L	93.8	70.0	130	----
		potassium, dissolved	7440-09-7	E421	36.6 mg/L	40 mg/L	91.5	70.0	130	----
		selenium, dissolved	7782-49-2	E421	0.372 mg/L	0.4 mg/L	93.0	70.0	130	----
		silicon, dissolved	7440-21-3	E421	93.6 mg/L	100 mg/L	93.6	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.0400 mg/L	0.04 mg/L	99.9	70.0	130	----
		sodium, dissolved	7440-23-5	E421	ND mg/L	20 mg/L	ND	70.0	130	----
		strontium, dissolved	7440-24-6	E421	ND mg/L	0.2 mg/L	ND	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	143 mg/L	200 mg/L	71.6	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.0363 mg/L	0.04 mg/L	90.9	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.188 mg/L	0.2 mg/L	94.1	70.0	130	----
		titanium, dissolved	7440-32-6	E421	0.378 mg/L	0.4 mg/L	94.6	70.0	130	----
		uranium, dissolved	7440-61-1	E421	0.0379 mg/L	0.04 mg/L	94.8	70.0	130	----
		vanadium, dissolved	7440-62-2	E421	0.935 mg/L	1 mg/L	93.5	70.0	130	----
		zinc, dissolved	7440-66-6	E421	3.79 mg/L	4 mg/L	94.8	70.0	130	----





CERTIFICATE OF ANALYSIS

<p>Work Order : CG2215354</p> <p>Client : Teck Coal Limited</p> <p>Contact : Mike Pope</p> <p>Address : 421 Pine Avenue Sparwood BC Canada V0B2G0</p> <p>Telephone : ----</p> <p>Project : REGIONAL EFFECTS PROGRAM</p> <p>PO : VPO00847030</p> <p>C-O-C number : November EVO LAEMP 2022</p> <p>Sampler : AMC</p> <p>Site : ----</p> <p>Quote number : Teck Coal Master Quote</p> <p>No. of samples received : 10</p> <p>No. of samples analysed : 9</p>	<p>Page : 1 of 8</p> <p>Laboratory : Calgary - Environmental</p> <p>Account Manager : Lyudmyla Shvets</p> <p>Address : 2559 29th Street NE Calgary AB Canada T1Y 7B5</p> <p>Telephone : +1 403 407 1800</p> <p>Date Samples Received : 02-Nov-2022 09:00</p> <p>Date Analysis Commenced : 03-Nov-2022</p> <p>Issue Date : 04-Nov-2022 18:05</p>
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This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Anthony Calero	Supervisor - Inorganic	Inorganics, Calgary, Alberta
Elke Tabora		Inorganics, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Metals, Calgary, Alberta
Kevin Baxter		Metals, Calgary, Alberta
Parker Sgarbossa	Laboratory Analyst	Inorganics, Calgary, Alberta
Ruifang Zheng	Analyst	Inorganics, Calgary, Alberta
Shirley Li		Inorganics, Calgary, Alberta
Summie Lo	Lab Assistant	Metals, Calgary, Alberta
Vladka Stamenova	Analyst	Inorganics, Calgary, Alberta



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
 LOR: Limit of Reporting (detection limit).

<i>Unit</i>	<i>Description</i>
-	No Unit
%	percent
µg/L	micrograms per litre
µS/cm	Microsiemens per centimetre
meq/L	milliequivalents per litre
mg/L	milligrams per litre
mV	millivolts
NTU	nephelometric turbidity units
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

<i>Qualifier</i>	<i>Description</i>
DLDS	Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.
TKNI	TKN result may be biased low due to Nitrate interference. Nitrate-N is > 10x TKN.



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKUT_1_ PW-1_2022-10 _NP	RG_ERCKUT_1_ PW-2_2022-10 _NP	RG_ERCKUT_1_ PW-3_2022-10 _NP	RG_ERCKUT_2_ PW-1_2022-10 _NP	RG_ERCKUT_2_ PW-2_2022-10 _NP
Client sampling date / time					31-Oct-2022 13:00	31-Oct-2022 13:15	31-Oct-2022 13:30	31-Oct-2022 13:45	31-Oct-2022 14:00	
Analyte	CAS Number	Method	LOR	Unit	CG2215354-001	CG2215354-002	CG2215354-003	CG2215354-004	CG2215354-005	
					Result	Result	Result	Result	Result	
Physical Tests										
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	1190	1200	1210	1210	1220	
Anions and Nutrients										
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	5.51	5.56	5.46	5.47	5.56	
fluoride	16984-48-8	E235.F	0.020	mg/L	0.105	0.102	<0.100 ^{DLDS}	<0.100 ^{DLDS}	<0.100 ^{DLDS}	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	16.6	16.6	16.7	16.7	16.8	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	0.0104	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	760	764	765	767	773	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	0.0073	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0657	0.0681	0.0652	0.0656	0.0670	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.100 ^{DLDS}	<0.100 ^{DLDS}	<0.100 ^{DLDS}	<0.100 ^{DLDS}	<0.100 ^{DLDS}	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000250 ^{DLDS}	<0.000250 ^{DLDS}	<0.000250 ^{DLDS}	<0.000250 ^{DLDS}	<0.000250 ^{DLDS}	
boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.050 ^{DLDS}	<0.050 ^{DLDS}	<0.050 ^{DLDS}	<0.050 ^{DLDS}	<0.050 ^{DLDS}	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.122	0.0956	0.102	0.132	0.0908	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	241	242	245	248	248	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	<0.50 ^{DLDS}	<0.50 ^{DLDS}	<0.50 ^{DLDS}	<0.50 ^{DLDS}	<0.50 ^{DLDS}	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00100 ^{DLDS}	<0.00100 ^{DLDS}	<0.00100 ^{DLDS}	<0.00100 ^{DLDS}	<0.00100 ^{DLDS}	
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.050 ^{DLDS}	<0.050 ^{DLDS}	<0.050 ^{DLDS}	<0.050 ^{DLDS}	<0.050 ^{DLDS}	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000250 ^{DLDS}	<0.000250 ^{DLDS}	<0.000250 ^{DLDS}	<0.000250 ^{DLDS}	<0.000250 ^{DLDS}	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0288	0.0295	0.0298	0.0287	0.0294	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	142	145	146	144	147	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.000960	0.00100	0.000918	0.000970	0.00107	
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	<0.00250 ^{DLDS}	<0.00250 ^{DLDS}	<0.00250 ^{DLDS}	<0.00250 ^{DLDS}	<0.00250 ^{DLDS}	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKUT_1_ PW-1_2022-10 _NP	RG_ERCKUT_1_ PW-2_2022-10 _NP	RG_ERCKUT_1_ PW-3_2022-10 _NP	RG_ERCKUT_2_ PW-1_2022-10 _NP	RG_ERCKUT_2_ PW-2_2022-10 _NP
Client sampling date / time					31-Oct-2022 13:00	31-Oct-2022 13:15	31-Oct-2022 13:30	31-Oct-2022 13:45	31-Oct-2022 14:00	
Analyte	CAS Number	Method	LOR	Unit	CG2215354-001	CG2215354-002	CG2215354-003	CG2215354-004	CG2215354-005	
					Result	Result	Result	Result	Result	
Dissolved Metals										
potassium, dissolved	7440-09-7	E421	0.050	mg/L	2.55	2.77	2.63	2.61	2.61	
selenium, dissolved	7782-49-2	E421	0.050	µg/L	162	165	159	166	165	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	3.89	4.15	4.04	3.96	3.99	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	2.90	3.02	2.96	2.93	3.01	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.206	0.208	0.212	0.209	0.210	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	266	295	281	283	288	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00150 ^{DLDS}	<0.00150 ^{DLDS}	<0.00150 ^{DLDS}	<0.00150 ^{DLDS}	<0.00150 ^{DLDS}	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00759	0.00777	0.00782	0.00767	0.00766	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00250 ^{DLDS}	<0.00250 ^{DLDS}	<0.00250 ^{DLDS}	<0.00250 ^{DLDS}	<0.00250 ^{DLDS}	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	
dissolved metals filtration location	----	EP421	-	-	Laboratory	Laboratory	Laboratory	Laboratory	Laboratory	

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKUT_3_ PW-1_2022-11 _NP	RG_ERCKUT_3_ PW-2_2022-11 _NP	RG_ERCKUT_3_ PW-3_2022-11 _NP	RG_ERCKUT_W S_LAEMP_EVO _2022-11_NP	----
Client sampling date / time					01-Nov-2022 09:00	01-Nov-2022 09:05	01-Nov-2022 09:10	01-Nov-2022 09:15	----	
Analyte	CAS Number	Method	LOR	Unit	CG2215354-007	CG2215354-008	CG2215354-009	CG2215354-010	-----	
					Result	Result	Result	Result	----	
Physical Tests										
acidity (as CaCO3)	----	E283	2.0	mg/L	----	----	----	3.8	----	
alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	----	----	----	426	----	
alkalinity, bicarbonate (as HCO3)	71-52-3	E290	1.0	mg/L	----	----	----	520	----	
alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	----	----	----	<1.0	----	
alkalinity, carbonate (as CO3)	3812-32-6	E290	1.0	mg/L	----	----	----	<1.0	----	
alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	----	----	----	<1.0	----	
alkalinity, hydroxide (as OH)	14280-30-9	E290	1.0	mg/L	----	----	----	<1.0	----	
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	----	----	----	426	----	
conductivity	----	E100	2.0	µS/cm	----	----	----	1890	----	
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	1210	1210	1210	1230	----	
oxidation-reduction potential [ORP]	----	E125	0.10	mV	----	----	----	420	----	
pH	----	E108	0.10	pH units	----	----	----	8.12	----	
solids, total dissolved [TDS]	----	E162	10	mg/L	----	----	----	1530	----	
solids, total suspended [TSS]	----	E160-L	1.0	mg/L	----	----	----	3.5	----	
turbidity	----	E121	0.10	NTU	----	----	----	0.25	----	
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	----	----	----	<0.0050	----	
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	----	
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	5.41	5.51	5.46	5.48	----	
fluoride	16984-48-8	E235.F	0.020	mg/L	<0.100 ^{DLDS}	<0.100 ^{DLDS}	<0.100 ^{DLDS}	<0.100 ^{DLDS}	----	
Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	----	----	----	1.11 ^{TKN}	----	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	16.8	16.8	16.7	16.7	----	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	----	
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	----	----	----	0.0141	----	
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	----	----	----	0.0200	----	
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	765	767	766	762	----	
Organic / Inorganic Carbon										
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	----	----	----	0.60	----	
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	----	----	----	0.70	----	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKUT_3_ PW-1_2022-11 _NP	RG_ERCKUT_3_ PW-2_2022-11 _NP	RG_ERCKUT_3_ PW-3_2022-11 _NP	RG_ERCKUT_W S_LAEMP_EVO _2022-11_NP	----
Client sampling date / time					01-Nov-2022 09:00	01-Nov-2022 09:05	01-Nov-2022 09:10	01-Nov-2022 09:15	----	
Analyte	CAS Number	Method	LOR	Unit	CG2215354-007	CG2215354-008	CG2215354-009	CG2215354-010	-----	
					Result	Result	Result	Result	----	
Ion Balance										
anion sum	----	EC101	0.10	meq/L	----	----	----	25.7	----	
cation sum	----	EC101	0.10	meq/L	----	----	----	24.8	----	
ion balance (cations/anions)	----	EC101	0.010	%	----	----	----	96.5	----	
ion balance (APHA)	----	EC101	0.01	%	----	----	----	-1.78	----	
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L	----	----	----	<0.0060 ^{DLDS}	----	
antimony, total	7440-36-0	E420	0.00010	mg/L	----	----	----	0.00023	----	
arsenic, total	7440-38-2	E420	0.00010	mg/L	----	----	----	0.00025	----	
barium, total	7440-39-3	E420	0.00010	mg/L	----	----	----	0.0795	----	
beryllium, total	7440-41-7	E420	0.020	µg/L	----	----	----	<0.040 ^{DLDS}	----	
bismuth, total	7440-69-9	E420	0.000050	mg/L	----	----	----	<0.000100 ^{DLDS}	----	
boron, total	7440-42-8	E420	0.010	mg/L	----	----	----	0.024	----	
cadmium, total	7440-43-9	E420	0.0050	µg/L	----	----	----	0.109	----	
calcium, total	7440-70-2	E420	0.050	mg/L	----	----	----	268	----	
chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	----	----	----	<0.00020 ^{DLDS}	----	
cobalt, total	7440-48-4	E420	0.10	µg/L	----	----	----	<0.20 ^{DLDS}	----	
copper, total	7440-50-8	E420	0.00050	mg/L	----	----	----	<0.00100 ^{DLDS}	----	
iron, total	7439-89-6	E420	0.010	mg/L	----	----	----	<0.020 ^{DLDS}	----	
lead, total	7439-92-1	E420	0.000050	mg/L	----	----	----	<0.000100 ^{DLDS}	----	
lithium, total	7439-93-2	E420	0.0010	mg/L	----	----	----	0.0309	----	
magnesium, total	7439-95-4	E420	0.0050	mg/L	----	----	----	180	----	
manganese, total	7439-96-5	E420	0.00010	mg/L	----	----	----	0.00048	----	
mercury, total	7439-97-6	E508	0.0000050	mg/L	----	----	----	<0.0000050	----	
molybdenum, total	7439-98-7	E420	0.000050	mg/L	----	----	----	0.00107	----	
nickel, total	7440-02-0	E420	0.00050	mg/L	----	----	----	<0.00100 ^{DLDS}	----	
potassium, total	7440-09-7	E420	0.050	mg/L	----	----	----	2.94	----	
selenium, total	7782-49-2	E420	0.050	µg/L	----	----	----	163	----	
silicon, total	7440-21-3	E420	0.10	mg/L	----	----	----	4.35	----	
silver, total	7440-22-4	E420	0.000010	mg/L	----	----	----	<0.000020 ^{DLDS}	----	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKUT_3_ PW-1_2022-11 _NP	RG_ERCKUT_3_ PW-2_2022-11 _NP	RG_ERCKUT_3_ PW-3_2022-11 _NP	RG_ERCKUT_W S_LAEMP_EVO _2022-11_NP	----
Client sampling date / time					01-Nov-2022 09:00	01-Nov-2022 09:05	01-Nov-2022 09:10	01-Nov-2022 09:15	----	
Analyte	CAS Number	Method	LOR	Unit	CG2215354-007	CG2215354-008	CG2215354-009	CG2215354-010	-----	
					Result	Result	Result	Result	----	
Total Metals										
sodium, total	7440-23-5	E420	0.050	mg/L	----	----	----	3.35	----	
strontium, total	7440-24-6	E420	0.00020	mg/L	----	----	----	0.238	----	
sulfur, total	7704-34-9	E420	0.50	mg/L	----	----	----	282	----	
thallium, total	7440-28-0	E420	0.000010	mg/L	----	----	----	<0.000020 DLDS	----	
tin, total	7440-31-5	E420	0.00010	mg/L	----	----	----	<0.00020 DLDS	----	
titanium, total	7440-32-6	E420	0.00030	mg/L	----	----	----	<0.00060 DLDS	----	
uranium, total	7440-61-1	E420	0.000010	mg/L	----	----	----	0.00806	----	
vanadium, total	7440-62-2	E420	0.00050	mg/L	----	----	----	<0.00100 DLDS	----	
zinc, total	7440-66-6	E420	0.0030	mg/L	----	----	----	<0.0060 DLDS	----	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	<0.0050 DLDS	<0.0050 DLDS	<0.0050 DLDS	<0.0020 DLDS	----	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00050 DLDS	<0.00050 DLDS	<0.00050 DLDS	0.00020	----	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	<0.00050 DLDS	<0.00050 DLDS	<0.00050 DLDS	0.00023	----	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0660	0.0672	0.0649	0.0654	----	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.100 DLDS	<0.100 DLDS	<0.100 DLDS	<0.040 DLDS	----	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000250 DLDS	<0.000250 DLDS	<0.000250 DLDS	<0.000100 DLDS	----	
boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.050 DLDS	<0.050 DLDS	<0.050 DLDS	<0.020 DLDS	----	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.0704	0.0760	0.124	0.0862	----	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	244	246	242	250	----	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00050 DLDS	<0.00050 DLDS	<0.00050 DLDS	0.00024	----	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	<0.50 DLDS	<0.50 DLDS	<0.50 DLDS	<0.20 DLDS	----	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00100 DLDS	<0.00100 DLDS	<0.00100 DLDS	<0.00040 DLDS	----	
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.050 DLDS	<0.050 DLDS	<0.050 DLDS	<0.020 DLDS	----	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000250 DLDS	<0.000250 DLDS	<0.000250 DLDS	<0.000100 DLDS	----	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0288	0.0297	0.0289	0.0301	----	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	146	145	147	147	----	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	<0.00050 DLDS	<0.00050 DLDS	<0.00050 DLDS	<0.00020 DLDS	----	
mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	----	----	----	<0.0000050	----	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.000947	0.000977	0.00102	0.000962	----	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKUT_3_ PW-1_2022-11 _NP	RG_ERCKUT_3_ PW-2_2022-11 _NP	RG_ERCKUT_3_ PW-3_2022-11 _NP	RG_ERCKUT_W S_LAEMP_EVO _2022-11_NP	----
Client sampling date / time					01-Nov-2022 09:00	01-Nov-2022 09:05	01-Nov-2022 09:10	01-Nov-2022 09:15	----	
Analyte	CAS Number	Method	LOR	Unit	CG2215354-007	CG2215354-008	CG2215354-009	CG2215354-010	-----	
					Result	Result	Result	Result	----	
Dissolved Metals										
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	<0.00250 ^{DLDS}	<0.00250 ^{DLDS}	<0.00250 ^{DLDS}	<0.00100 ^{DLDS}	----	
potassium, dissolved	7440-09-7	E421	0.050	mg/L	2.59	2.56	2.70	2.82	----	
selenium, dissolved	7782-49-2	E421	0.050	µg/L	162	162	164	189	----	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	3.93	4.02	3.91	4.22	----	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	<0.000020 ^{DLDS}	----	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	2.92	2.99	2.96	3.05	----	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.207	0.209	0.207	0.208	----	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	277	278	274	314	----	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	<0.000020 ^{DLDS}	----	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00020 ^{DLDS}	----	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00150 ^{DLDS}	<0.00150 ^{DLDS}	<0.00150 ^{DLDS}	<0.00060 ^{DLDS}	----	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00766	0.00760	0.00770	0.00749	----	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00250 ^{DLDS}	<0.00250 ^{DLDS}	<0.00250 ^{DLDS}	<0.00100 ^{DLDS}	----	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	<0.0020 ^{DLDS}	----	
dissolved mercury filtration location	----	EP509	-	-	----	----	----	Field	----	
dissolved metals filtration location	----	EP421	-	-	Laboratory	Laboratory	Laboratory	Field	----	

Please refer to the General Comments section for an explanation of any qualifiers detected.



QUALITY CONTROL INTERPRETIVE REPORT

<p>Work Order : CG2215354</p> <p>Client : Teck Coal Limited</p> <p>Contact : Mike Pope</p> <p>Address : 421 Pine Avenue Sparwood BC Canada V0B2G0</p> <p>Telephone : ----</p> <p>Project : REGIONAL EFFECTS PROGRAM</p> <p>PO : VPO00847030</p> <p>C-O-C number : November EVO LAEMP 2022</p> <p>Sampler : AMC</p> <p>Site : ----</p> <p>Quote number : Teck Coal Master Quote</p> <p>No. of samples received : 10</p> <p>No. of samples analysed : 9</p>	<p>Page : 1 of 20</p> <p>Laboratory : Calgary - Environmental</p> <p>Account Manager : Lyudmyla Shvets</p> <p>Address : 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5</p> <p>Telephone : +1 403 407 1800</p> <p>Date Samples Received : 02-Nov-2022 09:00</p> <p>Issue Date : 04-Nov-2022 18:06</p>
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This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

- Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
 - CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
 - DQO: Data Quality Objective.
 - LOR: Limit of Reporting (detection limit).
 - RPD: Relative Percent Difference.
-

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers occur - please see following pages for full details.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP	E298	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKUT_3_PW-1_2022-11_NP	E235.Br-L	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKUT_3_PW-2_2022-11_NP	E235.Br-L	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKUT_3_PW-3_2022-11_NP	E235.Br-L	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP	E235.Br-L	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKUT_1_PW-1_2022-10_NP	E235.Br-L	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	3 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKUT_1_PW-2_2022-10_NP	E235.Br-L	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	3 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKUT_1_PW-3_2022-10_NP	E235.Br-L	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	3 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKUT_2_PW-1_2022-10_NP	E235.Br-L	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	3 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKUT_2_PW-2_2022-10_NP	E235.Br-L	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	3 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKUT_3_PW-1_2022-11_NP	E235.Cl-L	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKUT_3_PW-2_2022-11_NP	E235.Cl-L	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKUT_3_PW-3_2022-11_NP	E235.Cl-L	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP	E235.Cl-L	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKUT_1_PW-1_2022-10_NP	E235.Cl-L	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	3 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKUT_1_PW-2_2022-10_NP	E235.Cl-L	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	3 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKUT_1_PW-3_2022-10_NP	E235.Cl-L	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	3 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKUT_2_PW-1_2022-10_NP	E235.Cl-L	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	3 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKUT_2_PW-2_2022-10_NP	E235.Cl-L	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	3 days	✔	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP	E378-U	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	3 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKUT_3_PW-1_2022-11_NP	E235.F	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKUT_3_PW-2_2022-11_NP	E235.F	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKUT_3_PW-3_2022-11_NP	E235.F	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP	E235.F	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKUT_1_PW-1_2022-10_NP	E235.F	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	3 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKUT_1_PW-2_2022-10_NP	E235.F	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	3 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKUT_1_PW-3_2022-10_NP	E235.F	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	3 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKUT_2_PW-1_2022-10_NP	E235.F	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	3 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKUT_2_PW-2_2022-10_NP	E235.F	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	3 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKUT_3_PW-1_2022-11_NP	E235.NO3-L	01-Nov-2022	03-Nov-2022	3 days	2 days	✔	03-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKUT_3_PW-2_2022-11_NP	E235.NO3-L	01-Nov-2022	03-Nov-2022	3 days	2 days	✔	03-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKUT_3_PW-3_2022-11_NP	E235.NO3-L	01-Nov-2022	03-Nov-2022	3 days	2 days	✔	03-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP	E235.NO3-L	01-Nov-2022	03-Nov-2022	3 days	2 days	✔	03-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKUT_1_PW-1_2022-10_NP	E235.NO3-L	31-Oct-2022	03-Nov-2022	3 days	3 days	✔	03-Nov-2022	3 days	0 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKUT_1_PW-2_2022-10_NP	E235.NO3-L	31-Oct-2022	03-Nov-2022	3 days	3 days	✔	03-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKUT_1_PW-3_2022-10_NP	E235.NO3-L	31-Oct-2022	03-Nov-2022	3 days	3 days	✔	03-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKUT_2_PW-1_2022-10_NP	E235.NO3-L	31-Oct-2022	03-Nov-2022	3 days	3 days	✔	03-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKUT_2_PW-2_2022-10_NP	E235.NO3-L	31-Oct-2022	03-Nov-2022	3 days	3 days	✔	03-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKUT_3_PW-1_2022-11_NP	E235.NO2-L	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKUT_3_PW-2_2022-11_NP	E235.NO2-L	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKUT_3_PW-3_2022-11_NP	E235.NO2-L	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP	E235.NO2-L	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKUT_1_PW-1_2022-10_NP	E235.NO2-L	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	3 days	3 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKUT_1_PW-2_2022-10_NP	E235.NO2-L	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	3 days	3 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKUT_1_PW-3_2022-10_NP	E235.NO2-L	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	3 days	3 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKUT_2_PW-1_2022-10_NP	E235.NO2-L	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	3 days	3 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKUT_2_PW-2_2022-10_NP	E235.NO2-L	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	3 days	3 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKUT_3_PW-1_2022-11_NP	E235.SO4	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKUT_3_PW-2_2022-11_NP	E235.SO4	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKUT_3_PW-3_2022-11_NP	E235.SO4	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP	E235.SO4	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKUT_1_PW-1_2022-10_NP	E235.SO4	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	3 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKUT_1_PW-2_2022-10_NP	E235.SO4	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	3 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKUT_1_PW-3_2022-10_NP	E235.SO4	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	3 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKUT_2_PW-1_2022-10_NP	E235.SO4	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	3 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKUT_2_PW-2_2022-10_NP	E235.SO4	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	3 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP	E318	01-Nov-2022	04-Nov-2022	----	----		04-Nov-2022	28 days	3 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP	E372-U	01-Nov-2022	03-Nov-2022	----	----		04-Nov-2022	28 days	3 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKUT_3_PW-1_2022-11_NP	E421.Cr-L	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	2 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKUT_3_PW-2_2022-11_NP	E421.Cr-L	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	2 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKUT_3_PW-3_2022-11_NP	E421.Cr-L	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	2 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP	E421.Cr-L	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	2 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKUT_1_PW-1_2022-10_NP	E421.Cr-L	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKUT_1_PW-2_2022-10_NP	E421.Cr-L	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKUT_1_PW-3_2022-10_NP	E421.Cr-L	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKUT_2_PW-1_2022-10_NP	E421.Cr-L	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKUT_2_PW-2_2022-10_NP	E421.Cr-L	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP	E509	01-Nov-2022	04-Nov-2022	----	----		04-Nov-2022	28 days	3 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ERCKUT_3_PW-1_2022-11_NP	E421	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	2 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ERCKUT_3_PW-2_2022-11_NP	E421	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	2 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ERCKUT_3_PW-3_2022-11_NP	E421	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	2 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP	E421	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	2 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ERCKUT_1_PW-1_2022-10_NP	E421	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ERCKUT_1_PW-2_2022-10_NP	E421	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ERCKUT_1_PW-3_2022-10_NP	E421	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ERCKUT_2_PW-1_2022-10_NP	E421	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ERCKUT_2_PW-2_2022-10_NP	E421	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	3 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP	E358-L	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP	E355-L	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Acidity by Titration											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP	E283	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	14 days	2 days	✓	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP	E290	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	14 days	2 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP	E100	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✓	
Physical Tests : ORP by Electrode											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP	E125	01-Nov-2022	----	----	----		04-Nov-2022	0.25 hrs	74 hrs	* EHTR-FM	
Physical Tests : pH by Meter											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP	E108	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	0.25 hrs	0.25 hrs	* EHTR-FM	
Physical Tests : TDS by Gravimetry											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP	E162	01-Nov-2022	----	----	----		03-Nov-2022	7 days	2 days	✓	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP	E160-L	01-Nov-2022	----	----	----		03-Nov-2022	7 days	2 days	✓	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP	E121	01-Nov-2022	----	----	----		03-Nov-2022	3 days	2 days	✓	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE - total (lab preserved) RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP	E420.Cr-L	01-Nov-2022	04-Nov-2022	----	----		04-Nov-2022	180 days	3 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP	E508	01-Nov-2022	04-Nov-2022	----	----		04-Nov-2022	28 days	3 days	✔
Total Metals : Total metals in Water by CRC ICPMS										
HDPE - total (lab preserved) RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP	E420	01-Nov-2022	04-Nov-2022	----	----		04-Nov-2022	180 days	3 days	✔

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended
 Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water** Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
Analytical Methods							
Laboratory Duplicates (DUP)							
Acidity by Titration	E283	729315	1	14	7.1	5.0	✔
Alkalinity Species by Titration	E290	729321	1	7	14.2	5.0	✔
Ammonia by Fluorescence	E298	728827	1	20	5.0	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	728818	1	20	5.0	5.0	✔
Chloride in Water by IC (Low Level)	E235.Cl-L	728819	1	20	5.0	5.0	✔
Conductivity in Water	E100	729320	1	7	14.2	5.0	✔
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	729266	1	9	11.1	5.0	✔
Dissolved Mercury in Water by CVAAS	E509	730111	1	9	11.1	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	729267	1	9	11.1	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	729328	1	9	11.1	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	729421	1	20	5.0	5.0	✔
Fluoride in Water by IC	E235.F	728816	1	20	5.0	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	728820	1	20	5.0	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	728821	1	20	5.0	5.0	✔
ORP by Electrode	E125	730396	1	9	11.1	5.0	✔
pH by Meter	E108	729319	1	7	14.2	5.0	✔
Sulfate in Water by IC	E235.SO4	728817	1	20	5.0	5.0	✔
TDS by Gravimetry	E162	729418	1	9	11.1	5.0	✔
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	729252	1	9	11.1	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	728945	0	15	0.0	5.0	✖
Total Mercury in Water by CVAAS	E508	730122	1	10	10.0	5.0	✔
Total metals in Water by CRC ICPMS	E420	729253	1	11	9.0	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	729329	1	9	11.1	5.0	✔
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	729343	1	6	16.6	5.0	✔
Turbidity by Nephelometry	E121	729146	1	20	5.0	5.0	✔
Laboratory Control Samples (LCS)							
Acidity by Titration	E283	729315	1	14	7.1	5.0	✔
Alkalinity Species by Titration	E290	729321	1	7	14.2	5.0	✔
Ammonia by Fluorescence	E298	728827	1	20	5.0	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	728818	1	20	5.0	5.0	✔
Chloride in Water by IC (Low Level)	E235.Cl-L	728819	1	20	5.0	5.0	✔
Conductivity in Water	E100	729320	1	7	14.2	5.0	✔
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	729266	1	9	11.1	5.0	✔
Dissolved Mercury in Water by CVAAS	E509	730111	1	9	11.1	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	729267	1	9	11.1	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	729328	1	9	11.1	5.0	✔



Matrix: **Water**

Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
Analytical Methods							
Laboratory Control Samples (LCS) - Continued							
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	729421	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	728816	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	728820	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	728821	1	20	5.0	5.0	✓
ORP by Electrode	E125	730396	1	9	11.1	5.0	✓
pH by Meter	E108	729319	1	7	14.2	5.0	✓
Sulfate in Water by IC	E235.SO4	728817	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	729418	1	9	11.1	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	729252	1	9	11.1	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	728945	1	15	6.6	5.0	✓
Total Mercury in Water by CVAAS	E508	730122	1	10	10.0	5.0	✓
Total metals in Water by CRC ICPMS	E420	729253	1	11	9.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	729329	1	9	11.1	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	729343	1	6	16.6	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	729431	1	9	11.1	5.0	✓
Turbidity by Nephelometry	E121	729146	1	20	5.0	5.0	✓
Method Blanks (MB)							
Acidity by Titration	E283	729315	1	14	7.1	5.0	✓
Alkalinity Species by Titration	E290	729321	1	7	14.2	5.0	✓
Ammonia by Fluorescence	E298	728827	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	728818	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	728819	1	20	5.0	5.0	✓
Conductivity in Water	E100	729320	1	7	14.2	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	729266	1	9	11.1	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	730111	1	9	11.1	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	729267	1	9	11.1	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	729328	1	9	11.1	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	729421	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	728816	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	728820	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	728821	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	728817	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	729418	1	9	11.1	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	729252	1	9	11.1	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	728945	1	15	6.6	5.0	✓
Total Mercury in Water by CVAAS	E508	730122	1	10	10.0	5.0	✓
Total metals in Water by CRC ICPMS	E420	729253	1	11	9.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	729329	1	9	11.1	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	729343	1	6	16.6	5.0	✓



Matrix: **Water** Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
<i>Analytical Methods</i>							
Method Blanks (MB) - Continued							
TSS by Gravimetry (Low Level)	E160-L	729431	1	9	11.1	5.0	✔
Turbidity by Nephelometry	E121	729146	1	20	5.0	5.0	✔
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	728827	1	20	5.0	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	728818	1	20	5.0	5.0	✔
Chloride in Water by IC (Low Level)	E235.Cl-L	728819	1	20	5.0	5.0	✔
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	729266	1	9	11.1	5.0	✔
Dissolved Mercury in Water by CVAAS	E509	730111	1	9	11.1	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	729267	1	9	11.1	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	729328	1	9	11.1	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	729421	1	20	5.0	5.0	✔
Fluoride in Water by IC	E235.F	728816	1	20	5.0	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	728820	1	20	5.0	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	728821	1	20	5.0	5.0	✔
Sulfate in Water by IC	E235.SO4	728817	1	20	5.0	5.0	✔
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	729252	1	9	11.1	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	728945	1	15	6.6	5.0	✔
Total Mercury in Water by CVAAS	E508	730122	1	10	10.0	5.0	✔
Total metals in Water by CRC ICPMS	E420	729253	1	11	9.0	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	729329	1	9	11.1	5.0	✔
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	729343	1	6	16.6	5.0	✔



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 Calgary - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 Calgary - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 Calgary - Environmental	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
ORP by Electrode	E125 Calgary - Environmental	Water	ASTM D1498 (mod)	Oxidation reduction potential is reported as the oxidation-reduction potential of the platinum metal-reference electrode employed, measured in mV. For high accuracy test results, it is recommended that this analysis be conducted in the field.
TSS by Gravimetry (Low Level)	E160-L Calgary - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 Calgary - Environmental	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC (Low Level)	E235.Cl-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Acidity by Titration	E283 Calgary - Environmental	Water	APHA 2310 B (mod)	Acidity is determined by potentiometric titration to pH endpoint of 8.3
Alkalinity Species by Titration	E290 Calgary - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 Calgary - Environmental	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 Calgary - Environmental	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L Calgary - Environmental	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Dissolved Organic Carbon by Combustion (Low Level)	E358-L Calgary - Environmental	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U Calgary - Environmental	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U Calgary - Environmental	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Total metals in Water by CRC ICPMS	E420 Calgary - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L Calgary - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Metals in Water by CRC ICPMS	E421 Calgary - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L Calgary - Environmental	Water	APHA 3030 B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS
Total Mercury in Water by CVAAS	E508 Calgary - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS
Dissolved Mercury in Water by CVAAS	E509 Calgary - Environmental	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
Dissolved Hardness (Calculated)	EC100 Calgary - Environmental	Water	APHA 2340B	"Hardness (as CaCO ₃), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Ion Balance using Dissolved Metals	EC101 Calgary - Environmental	Water	APHA 1030E	Cation Sum, Anion Sum, and Ion Balance are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present. Ion Balance cannot be calculated accurately for waters with very low electrical conductivity (EC).

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 Calgary - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 Calgary - Environmental	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Preparation for Total Organic Carbon by Combustion	EP355 Calgary - Environmental	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon by Combustion	EP358 Calgary - Environmental	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Phosphorus in water	EP372 Calgary - Environmental	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.



<i>Preparation Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
Dissolved Metals Water Filtration	EP421 Calgary - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.
Dissolved Mercury Water Filtration	EP509 Calgary - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.

QUALITY CONTROL REPORT

<p>Work Order : CG2215354</p> <p>Client : Teck Coal Limited</p> <p>Contact : Mike Pope</p> <p>Address : 421 Pine Avenue Sparwood BC Canada V0B2G0</p> <p>Telephone :</p> <p>Project : REGIONAL EFFECTS PROGRAM</p> <p>PO : VPO00847030</p> <p>C-O-C number : November EVO LAEMP 2022</p> <p>Sampler : AMC</p> <p>Site : ----</p> <p>Quote number : Teck Coal Master Quote</p> <p>No. of samples received : 10</p> <p>No. of samples analysed : 9</p>	<p>Page : 1 of 18</p> <p>Laboratory : Calgary - Environmental</p> <p>Account Manager : Lyudmyla Shvets</p> <p>Address : 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5</p> <p>Telephone : +1 403 407 1800</p> <p>Date Samples Received : 02-Nov-2022 09:00</p> <p>Date Analysis Commenced : 03-Nov-2022</p> <p>Issue Date : 04-Nov-2022 18:05</p>
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This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Anthony Calero	Supervisor - Inorganic	Calgary Inorganics, Calgary, Alberta
Elke Tabora		Calgary Inorganics, Calgary, Alberta
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Harpreet Chawla	Team Leader - Inorganics	Calgary Metals, Calgary, Alberta
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Page : 2 of 18
Work Order : CG2215354
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

- Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
- CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
- DQO = Data Quality Objective.
- LOR = Limit of Reporting (detection limit).
- RPD = Relative Percent Difference
- # = Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 729146)											
CG2215277-001	Anonymous	turbidity	----	E121	0.10	NTU	0.17	0.20	0.03	Diff <2x LOR	----
Physical Tests (QC Lot: 729315)											
CG2215311-010	Anonymous	acidity (as CaCO ₃)	----	E283	2.0	mg/L	<2.0	<2.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 729319)											
CG2215311-010	Anonymous	pH	----	E108	0.10	pH units	8.25	8.26	0.121%	4%	----
Physical Tests (QC Lot: 729320)											
CG2215311-010	Anonymous	conductivity	----	E100	2.0	µS/cm	1780	1780	0.112%	10%	----
Physical Tests (QC Lot: 729321)											
CG2215311-010	Anonymous	alkalinity, bicarbonate (as CaCO ₃)	----	E290	1.0	mg/L	424	420	0.830%	20%	----
		alkalinity, carbonate (as CaCO ₃)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, hydroxide (as CaCO ₃)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, total (as CaCO ₃)	----	E290	1.0	mg/L	424	420	0.830%	20%	----
Physical Tests (QC Lot: 729418)											
CG2215311-010	Anonymous	solids, total dissolved [TDS]	----	E162	40	mg/L	1540	1700	9.99%	20%	----
Physical Tests (QC Lot: 730396)											
CG2215311-010	Anonymous	oxidation-reduction potential [ORP]	----	E125	0.10	mV	378	383	1.42%	15%	----
Anions and Nutrients (QC Lot: 728816)											
CG2215352-001	Anonymous	fluoride	16984-48-8	E235.F	0.100	mg/L	0.116	0.117	0.001	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 728817)											
CG2215352-001	Anonymous	sulfate (as SO ₄)	14808-79-8	E235.SO4	1.50	mg/L	604	610	0.877%	20%	----
Anions and Nutrients (QC Lot: 728818)											
CG2215352-001	Anonymous	bromide	24959-67-9	E235.Br-L	0.250	mg/L	<0.250	<0.250	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 728819)											
CG2215352-001	Anonymous	chloride	16887-00-6	E235.Cl-L	0.50	mg/L	37.0	37.2	0.673%	20%	----
Anions and Nutrients (QC Lot: 728820)											
CG2215352-001	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	0.0250	mg/L	2.02	2.03	0.490%	20%	----
Anions and Nutrients (QC Lot: 728821)											
CG2215352-001	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.0050	mg/L	0.175	0.178	1.59%	20%	----
Anions and Nutrients (QC Lot: 728827)											
CG2215337-001	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 729343)											
CG2215338-001	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0043	0.0050	0.0007	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 729421)											
CG2215351-001	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 729328)											
CG2215352-001	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	1.41	1.45	0.04	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 729329)											
CG2215352-001	Anonymous	carbon, total organic [TOC]	----	E355-L	0.50	mg/L	1.61	1.43	0.18	Diff <2x LOR	----
Total Metals (QC Lot: 729252)											
CG2215304-010	Anonymous	chromium, total	7440-47-3	E420.Cr-L	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Total Metals (QC Lot: 729253)											
CG2215304-010	Anonymous	aluminum, total	7429-90-5	E420	0.0060	mg/L	<0.0060	<0.0060	0	Diff <2x LOR	----
		antimony, total	7440-36-0	E420	0.00020	mg/L	0.00021	0.00021	0.000002	Diff <2x LOR	----
		arsenic, total	7440-38-2	E420	0.00020	mg/L	0.00028	0.00036	0.00009	Diff <2x LOR	----
		barium, total	7440-39-3	E420	0.00020	mg/L	0.0590	0.0580	1.69%	20%	----
		beryllium, total	7440-41-7	E420	0.000040	mg/L	<0.040 µg/L	<0.000040	0	Diff <2x LOR	----
		bismuth, total	7440-69-9	E420	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		boron, total	7440-42-8	E420	0.020	mg/L	0.022	0.022	0.0005	Diff <2x LOR	----
		cadmium, total	7440-43-9	E420	0.0000100	mg/L	0.175 µg/L	0.000148	17.1%	20%	----
		calcium, total	7440-70-2	E420	0.100	mg/L	266	262	1.81%	20%	----
		cobalt, total	7440-48-4	E420	0.00020	mg/L	3.19 µg/L	0.00315	1.22%	20%	----
		copper, total	7440-50-8	E420	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		iron, total	7439-89-6	E420	0.020	mg/L	0.047	0.048	0.001	Diff <2x LOR	----
		lead, total	7439-92-1	E420	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		lithium, total	7439-93-2	E420	0.0020	mg/L	0.0530	0.0528	0.232%	20%	----
		magnesium, total	7439-95-4	E420	0.0100	mg/L	175	172	1.90%	20%	----
		manganese, total	7439-96-5	E420	0.00020	mg/L	0.0883	0.0906	2.60%	20%	----
		molybdenum, total	7439-98-7	E420	0.000100	mg/L	0.00455	0.00452	0.591%	20%	----
		nickel, total	7440-02-0	E420	0.00100	mg/L	0.0129	0.0135	4.17%	20%	----
		potassium, total	7440-09-7	E420	0.100	mg/L	3.43	3.49	1.76%	20%	----
		selenium, total	7782-49-2	E420	0.000100	mg/L	133 µg/L	0.136	2.75%	20%	----
		silicon, total	7440-21-3	E420	0.20	mg/L	4.11	4.08	0.770%	20%	----
silver, total	7440-22-4	E420	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----		
sodium, total	7440-23-5	E420	0.100	mg/L	5.37	5.38	0.165%	20%	----		
strontium, total	7440-24-6	E420	0.00040	mg/L	0.296	0.290	2.16%	20%	----		



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (QC Lot: 729253) - continued											
CG2215304-010	Anonymous	sulfur, total	7704-34-9	E420	1.00	mg/L	289	291	0.761%	20%	----
		thallium, total	7440-28-0	E420	0.000020	mg/L	0.000032	0.000029	0.000003	Diff <2x LOR	----
		tin, total	7440-31-5	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		titanium, total	7440-32-6	E420	0.00060	mg/L	<0.00060	<0.00060	0	Diff <2x LOR	----
		uranium, total	7440-61-1	E420	0.000020	mg/L	0.00885	0.00896	1.29%	20%	----
		vanadium, total	7440-62-2	E420	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		zinc, total	7440-66-6	E420	0.0060	mg/L	<0.0060	<0.0060	0	Diff <2x LOR	----
Total Metals (QC Lot: 730122)											
CG2215338-004	Anonymous	mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 729266)											
CG2215354-010	RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP	chromium, dissolved	7440-47-3	E421.Cr-L	0.00020	mg/L	0.00024	<0.00020	0.00004	Diff <2x LOR	----
Dissolved Metals (QC Lot: 729267)											
CG2215354-010	RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP	aluminum, dissolved	7429-90-5	E421	0.0020	mg/L	<0.0020	0.0027	0.0007	Diff <2x LOR	----
		antimony, dissolved	7440-36-0	E421	0.00020	mg/L	0.00020	<0.00020	0.0000010	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E421	0.00020	mg/L	0.00023	0.00024	0.000008	Diff <2x LOR	----
		barium, dissolved	7440-39-3	E421	0.00020	mg/L	0.0654	0.0656	0.378%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.000040	mg/L	<0.040 µg/L	<0.000040	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.020	mg/L	<0.020	<0.020	0	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E421	0.0000100	mg/L	0.0862 µg/L	0.0000836	0.0000027	Diff <2x LOR	----
		calcium, dissolved	7440-70-2	E421	0.100	mg/L	250	254	1.82%	20%	----
		cobalt, dissolved	7440-48-4	E421	0.00020	mg/L	<0.20 µg/L	<0.00020	0	Diff <2x LOR	----
		copper, dissolved	7440-50-8	E421	0.00040	mg/L	<0.00040	<0.00040	0	Diff <2x LOR	----
		iron, dissolved	7439-89-6	E421	0.020	mg/L	<0.020	<0.020	0	Diff <2x LOR	----
		lead, dissolved	7439-92-1	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0020	mg/L	0.0301	0.0299	0.653%	20%	----
		magnesium, dissolved	7439-95-4	E421	0.0100	mg/L	147	139	5.60%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		molybdenum, dissolved	7439-98-7	E421	0.000100	mg/L	0.000962	0.000991	0.000029	Diff <2x LOR	----
		nickel, dissolved	7440-02-0	E421	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		potassium, dissolved	7440-09-7	E421	0.100	mg/L	2.82	2.65	6.18%	20%	----
		selenium, dissolved	7782-49-2	E421	0.000100	mg/L	189 µg/L	0.193	2.28%	20%	----
		silicon, dissolved	7440-21-3	E421	0.100	mg/L	4.22	4.05	4.27%	20%	----



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 729267) - continued											
CG2215354-010	RG_ERCKUT_WS_LAEMP _EVO_2022-11_NP	silver, dissolved	7440-22-4	E421	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E421	0.100	mg/L	3.05	2.95	3.44%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00040	mg/L	0.208	0.213	2.07%	20%	----
		sulfur, dissolved	7704-34-9	E421	1.00	mg/L	314	303	3.34%	20%	----
		thallium, dissolved	7440-28-0	E421	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.00060	mg/L	<0.00060	<0.00060	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000020	mg/L	0.00749	0.00765	2.17%	20%	----
		vanadium, dissolved	7440-62-2	E421	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
zinc, dissolved	7440-66-6	E421	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----		
Dissolved Metals (QC Lot: 730111)											
CG2215338-005	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 729146)						
turbidity	---	E121	0.1	NTU	<0.10	---
Physical Tests (QCLot: 729315)						
acidity (as CaCO3)	---	E283	2	mg/L	2.1	---
Physical Tests (QCLot: 729320)						
conductivity	---	E100	1	µS/cm	<1.0	---
Physical Tests (QCLot: 729321)						
alkalinity, bicarbonate (as CaCO3)	---	E290	1	mg/L	<1.0	---
alkalinity, carbonate (as CaCO3)	---	E290	1	mg/L	<1.0	---
alkalinity, hydroxide (as CaCO3)	---	E290	1	mg/L	<1.0	---
alkalinity, total (as CaCO3)	---	E290	1	mg/L	<1.0	---
Physical Tests (QCLot: 729418)						
solids, total dissolved [TDS]	---	E162	10	mg/L	<10	---
Physical Tests (QCLot: 729431)						
solids, total suspended [TSS]	---	E160-L	1	mg/L	<1.0	---
Anions and Nutrients (QCLot: 728816)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	---
Anions and Nutrients (QCLot: 728817)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	---
Anions and Nutrients (QCLot: 728818)						
bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	---
Anions and Nutrients (QCLot: 728819)						
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	---
Anions and Nutrients (QCLot: 728820)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	---
Anions and Nutrients (QCLot: 728821)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	---
Anions and Nutrients (QCLot: 728827)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	---
Anions and Nutrients (QCLot: 728945)						
Kjeldahl nitrogen, total [TKN]	---	E318	0.05	mg/L	<0.050	---
Anions and Nutrients (QCLot: 729343)						
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	---



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 729421)						
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Organic / Inorganic Carbon (QCLot: 729328)						
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Organic / Inorganic Carbon (QCLot: 729329)						
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	<0.50	----
Total Metals (QCLot: 729252)						
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	<0.00010	----
Total Metals (QCLot: 729253)						
aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	----
antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	----
barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	----
boron, total	7440-42-8	E420	0.01	mg/L	<0.010	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	----
calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	----
copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	----
iron, total	7439-89-6	E420	0.01	mg/L	<0.010	----
lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	----
lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	----
magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	----
manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	----
nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	----
potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	----
selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	----
silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	----
silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	----
sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	----
strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	----
sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	----
thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	----
tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 729253) - continued						
titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	----
uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	----
zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	----
Total Metals (QCLot: 730122)						
mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 729266)						
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	<0.00010	----
Dissolved Metals (QCLot: 729267)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----



Sub-Matrix: **Water**

<i>Analyte</i>	<i>CAS Number</i>	<i>Method</i>	<i>LOR</i>	<i>Unit</i>	<i>Result</i>	<i>Qualifier</i>
Dissolved Metals (QCLot: 729267) - continued						
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
Dissolved Metals (QCLot: 730111)						
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Physical Tests (QCLot: 729146)									
turbidity	----	E121	0.1	NTU	200 NTU	102	85.0	115	----
Physical Tests (QCLot: 729315)									
acidity (as CaCO3)	----	E283	2	mg/L	50 mg/L	101	85.0	115	----
Physical Tests (QCLot: 729319)									
pH	----	E108	----	pH units	7 pH units	101	98.6	101	----
Physical Tests (QCLot: 729320)									
conductivity	----	E100	1	µS/cm	146.9 µS/cm	99.3	90.0	110	----
Physical Tests (QCLot: 729321)									
alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	97.0	85.0	115	----
Physical Tests (QCLot: 729418)									
solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	98.4	85.0	115	----
Physical Tests (QCLot: 729431)									
solids, total suspended [TSS]	----	E160-L	1	mg/L	150 mg/L	104	85.0	115	----
Physical Tests (QCLot: 730396)									
oxidation-reduction potential [ORP]	----	E125	----	mV	220 mV	101	95.4	104	----
Anions and Nutrients (QCLot: 728816)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	105	90.0	110	----
Anions and Nutrients (QCLot: 728817)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	103	90.0	110	----
Anions and Nutrients (QCLot: 728818)									
bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	100	85.0	115	----
Anions and Nutrients (QCLot: 728819)									
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	104	90.0	110	----
Anions and Nutrients (QCLot: 728820)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 728821)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 728827)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	97.4	85.0	115	----
Anions and Nutrients (QCLot: 728945)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	90.9	75.0	125	----



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Anions and Nutrients (QCLot: 729343)									
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.03 mg/L	83.7	80.0	120	----
Anions and Nutrients (QCLot: 729421)									
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.03 mg/L	83.6	80.0	120	----
Organic / Inorganic Carbon (QCLot: 729328)									
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	93.0	80.0	120	----
Organic / Inorganic Carbon (QCLot: 729329)									
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	98.9	80.0	120	----
Total Metals (QCLot: 729252)									
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	0.25 mg/L	104	80.0	120	----
Total Metals (QCLot: 729253)									
aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	103	80.0	120	----
antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	98.6	80.0	120	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	98.2	80.0	120	----
barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	106	80.0	120	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	104	80.0	120	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	100	80.0	120	----
boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	98.7	80.0	120	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	104	80.0	120	----
calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	101	80.0	120	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	101	80.0	120	----
copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	98.6	80.0	120	----
iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	108	80.0	120	----
lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	103	80.0	120	----
lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	102	80.0	120	----
magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	105	80.0	120	----
manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	104	80.0	120	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	101	80.0	120	----
nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	104	80.0	120	----
potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	103	80.0	120	----
selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	90.7	80.0	120	----
silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	105	60.0	140	----
silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	93.4	80.0	120	----
sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	105	80.0	120	----
strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	104	80.0	120	----



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 729253) - continued									
sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	105	80.0	120	----
thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	102	80.0	120	----
tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	98.5	80.0	120	----
titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	106	80.0	120	----
uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	100	80.0	120	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	102	80.0	120	----
zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	91.9	80.0	120	----
Total Metals (QCLot: 730122)									
mercury, total	7439-97-6	E508	0.000005	mg/L	0.0001 mg/L	99.6	80.0	120	----
Dissolved Metals (QCLot: 729266)									
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	0.25 mg/L	95.6	80.0	120	----
Dissolved Metals (QCLot: 729267)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	103	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	91.5	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	93.8	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	100	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	101	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	90.8	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	89.5	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	91.8	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	97.1	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	95.6	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	94.2	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	96.0	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	92.0	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	97.5	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	91.5	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	93.0	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	95.2	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	93.0	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	99.7	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	86.2	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	94.6	60.0	140	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	87.2	80.0	120	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	97.0	80.0	120	----



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 729267) - continued									
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	93.4	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	90.1	80.0	120	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	91.8	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	90.4	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	89.8	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	93.9	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	97.5	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	86.3	80.0	120	----
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	96.7	80.0	120	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 728816)										
CG2215352-002	Anonymous	fluoride	16984-48-8	E235.F	1.03 mg/L	1 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 728817)										
CG2215352-002	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	82.0 mg/L	100 mg/L	82.0	75.0	125	----
Anions and Nutrients (QCLot: 728818)										
CG2215352-002	Anonymous	bromide	24959-67-9	E235.Br-L	0.453 mg/L	0.5 mg/L	90.6	75.0	125	----
Anions and Nutrients (QCLot: 728819)										
CG2215352-002	Anonymous	chloride	16887-00-6	E235.Cl-L	91.1 mg/L	100 mg/L	91.1	75.0	125	----
Anions and Nutrients (QCLot: 728820)										
CG2215352-002	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	ND mg/L	2.5 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 728821)										
CG2215352-002	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	ND mg/L	0.5 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 728827)										
CG2215337-002	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.105 mg/L	0.1 mg/L	105	75.0	125	----
Anions and Nutrients (QCLot: 728945)										
CG2215332-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.14 mg/L	2.5 mg/L	85.8	70.0	130	----
Anions and Nutrients (QCLot: 729343)										
CG2215338-002	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0415 mg/L	0.05 mg/L	83.0	70.0	130	----
Anions and Nutrients (QCLot: 729421)										
CG2215351-002	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0478 mg/L	0.05 mg/L	95.7	70.0	130	----
Organic / Inorganic Carbon (QCLot: 729328)										
CG2215352-001	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	5.19 mg/L	5 mg/L	104	70.0	130	----
Organic / Inorganic Carbon (QCLot: 729329)										
CG2215352-001	Anonymous	carbon, total organic [TOC]	----	E355-L	5.19 mg/L	5 mg/L	104	70.0	130	----
Total Metals (QCLot: 729252)										
CG2215338-001	Anonymous	chromium, total	7440-47-3	E420.Cr-L	0.396 mg/L	0.4 mg/L	99.0	70.0	130	----
Total Metals (QCLot: 729253)										
CG2215338-001	Anonymous	aluminum, total	7429-90-5	E420	2.02 mg/L	2 mg/L	101	70.0	130	----



Sub-Matrix: Water

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 729253) - continued										
CG2215338-001	Anonymous	antimony, total	7440-36-0	E420	0.195 mg/L	0.2 mg/L	97.4	70.0	130	----
		arsenic, total	7440-38-2	E420	0.192 mg/L	0.2 mg/L	95.8	70.0	130	----
		barium, total	7440-39-3	E420	0.204 mg/L	0.2 mg/L	102	70.0	130	----
		beryllium, total	7440-41-7	E420	0.375 mg/L	0.4 mg/L	93.7	70.0	130	----
		bismuth, total	7440-69-9	E420	0.100 mg/L	0.1 mg/L	100	70.0	130	----
		boron, total	7440-42-8	E420	0.970 mg/L	1 mg/L	97.0	70.0	130	----
		cadmium, total	7440-43-9	E420	0.0409 mg/L	0.04 mg/L	102	70.0	130	----
		calcium, total	7440-70-2	E420	ND mg/L	40 mg/L	ND	70.0	130	----
		cobalt, total	7440-48-4	E420	0.191 mg/L	0.2 mg/L	95.7	70.0	130	----
		copper, total	7440-50-8	E420	0.192 mg/L	0.2 mg/L	95.8	70.0	130	----
		iron, total	7439-89-6	E420	19.9 mg/L	20 mg/L	99.5	70.0	130	----
		lead, total	7439-92-1	E420	0.203 mg/L	0.2 mg/L	102	70.0	130	----
		lithium, total	7439-93-2	E420	0.898 mg/L	1 mg/L	89.8	70.0	130	----
		magnesium, total	7439-95-4	E420	ND mg/L	10 mg/L	ND	70.0	130	----
		manganese, total	7439-96-5	E420	0.199 mg/L	0.2 mg/L	99.6	70.0	130	----
		molybdenum, total	7439-98-7	E420	0.200 mg/L	0.2 mg/L	99.8	70.0	130	----
		nickel, total	7440-02-0	E420	0.398 mg/L	0.4 mg/L	99.5	70.0	130	----
		potassium, total	7440-09-7	E420	38.1 mg/L	40 mg/L	95.2	70.0	130	----
		selenium, total	7782-49-2	E420	0.382 mg/L	0.4 mg/L	95.5	70.0	130	----
		silicon, total	7440-21-3	E420	89.9 mg/L	100 mg/L	89.9	70.0	130	----
		silver, total	7440-22-4	E420	0.0403 mg/L	0.04 mg/L	101	70.0	130	----
		sodium, total	7440-23-5	E420	20.4 mg/L	20 mg/L	102	70.0	130	----
		strontium, total	7440-24-6	E420	ND mg/L	0.2 mg/L	ND	70.0	130	----
		sulfur, total	7704-34-9	E420	ND mg/L	200 mg/L	ND	70.0	130	----
		thallium, total	7440-28-0	E420	0.0385 mg/L	0.04 mg/L	96.3	70.0	130	----
		tin, total	7440-31-5	E420	0.196 mg/L	0.2 mg/L	97.9	70.0	130	----
		titanium, total	7440-32-6	E420	0.420 mg/L	0.4 mg/L	105	70.0	130	----
		uranium, total	7440-61-1	E420	0.0393 mg/L	0.04 mg/L	98.2	70.0	130	----
		vanadium, total	7440-62-2	E420	0.985 mg/L	1 mg/L	98.5	70.0	130	----
		zinc, total	7440-66-6	E420	3.57 mg/L	4 mg/L	89.3	70.0	130	----
Total Metals (QCLot: 730122)										
CG2215338-005	Anonymous	mercury, total	7439-97-6	E508	0.0000990 mg/L	0.0001 mg/L	99.0	70.0	130	----
Dissolved Metals (QCLot: 729266)										
CG2215354-010	RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP	chromium, dissolved	7440-47-3	E421.Cr-L	0.372 mg/L	0.4 mg/L	93.1	70.0	130	----



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 729267)										
CG2215354-010	RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP	aluminum, dissolved	7429-90-5	E421	1.85 mg/L	2 mg/L	92.5	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.184 mg/L	0.2 mg/L	91.8	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.187 mg/L	0.2 mg/L	93.4	70.0	130	----
		barium, dissolved	7440-39-3	E421	0.197 mg/L	0.2 mg/L	98.5	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.397 mg/L	0.4 mg/L	99.2	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.0929 mg/L	0.1 mg/L	92.9	70.0	130	----
		boron, dissolved	7440-42-8	E421	0.977 mg/L	1 mg/L	97.7	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.0373 mg/L	0.04 mg/L	93.2	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	40 mg/L	ND	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.192 mg/L	0.2 mg/L	96.2	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.188 mg/L	0.2 mg/L	93.8	70.0	130	----
		iron, dissolved	7439-89-6	E421	19.2 mg/L	20 mg/L	96.0	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.190 mg/L	0.2 mg/L	94.9	70.0	130	----
		lithium, dissolved	7439-93-2	E421	0.896 mg/L	1 mg/L	89.6	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	10 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E421	0.195 mg/L	0.2 mg/L	97.3	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.192 mg/L	0.2 mg/L	95.9	70.0	130	----
		nickel, dissolved	7440-02-0	E421	0.366 mg/L	0.4 mg/L	91.6	70.0	130	----
		potassium, dissolved	7440-09-7	E421	38.0 mg/L	40 mg/L	94.9	70.0	130	----
		selenium, dissolved	7782-49-2	E421	0.368 mg/L	0.4 mg/L	91.9	70.0	130	----
		silicon, dissolved	7440-21-3	E421	87.0 mg/L	100 mg/L	87.0	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.0398 mg/L	0.04 mg/L	99.6	70.0	130	----
		sodium, dissolved	7440-23-5	E421	18.2 mg/L	20 mg/L	91.0	70.0	130	----
		strontium, dissolved	7440-24-6	E421	ND mg/L	0.2 mg/L	ND	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	ND mg/L	200 mg/L	ND	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.0365 mg/L	0.04 mg/L	91.2	70.0	130	----
tin, dissolved	7440-31-5	E421	0.184 mg/L	0.2 mg/L	91.9	70.0	130	----		
titanium, dissolved	7440-32-6	E421	0.365 mg/L	0.4 mg/L	91.2	70.0	130	----		
uranium, dissolved	7440-61-1	E421	0.0376 mg/L	0.04 mg/L	94.0	70.0	130	----		
vanadium, dissolved	7440-62-2	E421	0.969 mg/L	1 mg/L	96.9	70.0	130	----		
zinc, dissolved	7440-66-6	E421	3.44 mg/L	4 mg/L	86.1	70.0	130	----		
Dissolved Metals (QCLot: 730111)										
CG2215352-001	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000950 mg/L	0.0001 mg/L	95.0	70.0	130	----



COC ID: November EVO LAEMP 2022		TURNAROUND TIME:	
PROJECT/CLIENT INFO			
Facility Name / Job# Regional Effects Program		Lab Name ALS Calgary	
Project Manager Mike Pope		Lab Contact Lyudmyla Shvets	
Address 421 Pine Avenue		Address 2539 29 Street NE	
City Sparwood	Province BC	City Calgary	Province AB
Postal Code V0B 2G0	Country Canada	Postal Code T1Y 7B5	Country Canada
Phone Number 343-333-3905		Phone Number 1 403 407 1794	

SAMPLE DETAILS								ANALYSIS REQUESTED								
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	TECKCOAL-ANIONS	Dissolved metals	TECKCOAL-ROUTINE-VA	ALS_Package-DOC	ALS_Package-TKN/TOC	HG-T-U-CYAF-VA	HG-D-CYAF-VA	TECKCOAL-MET-T-VA	TECKCOAL-MET-D-VA
RG_ERCKUT_1_PW-1_2022-10_NP	RG_ERCKUT	PW	No	10/31/2022	13:00	G	1	X	X							
RG_ERCKUT_1_PW-2_2022-10_NP	RG_ERCKUT	PW	No	10/31/2022	13:15	G	1	X	X							
RG_ERCKUT_1_PW-3_2022-10_NP	RG_ERCKUT	PW	No	10/31/2022	13:30	G	1									
RG_ERCKUT_2_PW-1_2022-10_NP	RG_ERCKUT	PW	No	10/31/2022	13:45	G	1	X	X							
RG_ERCKUT_2_PW-2_2022-10_NP	RG_ERCKUT	PW	No	10/31/2022	14:00	G	1	X	X							
RG_ERCKUT_2_PW-3_2022-10_NP	RG_ERCKUT	PW	No	10/31/2022	13:00	G	1	X	X							
RG_ERCKUT_3_PW-1_2022-11_NP	RG_ERCKUT	PW	No	11/1/2022	9:00	G	1	X	X							
RG_ERCKUT_3_PW-2_2022-11_NP	RG_ERCKUT	PW	No	11/1/2022	9:05	G	1	X	X							
RG_ERCKUT_3_PW-3_2022-11_NP	RG_ERCKUT	PW	No	11/1/2022	9:10	G	1	X	X							
RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP	RG_ERCKUT	WS	No	11/1/2022	9:15	G	7			X	X	X	X	X	X	X

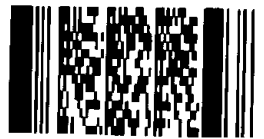
ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS ALS PO VPO00847030	RELINQUISHED BY/AFFILIATION Alex McClymont, Minnow Environmental	DATE/TIME November 1, 2022	ACCEPTED BY/AFFILIATION
			11/2/2022 9:00am 70C
NB OF BOTTLES RETURNED/DESCRIPTION	Sampler's Name Alex McClymont	Mobile # 780-293-6750	
Regular (default)	Sampler's Signature	Date/Time November 1, 2022	
Priority (2-3 business days) - 50% surcharge X			
Emergency (1 Business Day) - 100% surcharge			
For Emergency <1 Day, ASAP or Weekend - Contact ALS			

Environmental
Calgary
Work Order Reference
CG221



Telephone : + 1 403 407 1800

Environmental Division
Calgary
Work Order Reference
CG2215354



Telephone : + 1 403 407 1800



CERTIFICATE OF ANALYSIS

<p>Work Order : CG2215304</p> <p>Client : Teck Coal Limited</p> <p>Contact : Mike Pope</p> <p>Address : 421 Pine Avenue Sparwood BC Canada V0B2G0</p> <p>Telephone : ----</p> <p>Project : REGIONAL EFFECTS PROGRAM</p> <p>PO : VPO00847030</p> <p>C-O-C number : November EVO LAEMP 2022</p> <p>Sampler : A McC</p> <p>Site : ----</p> <p>Quote number : Teck Coal Master Quote</p> <p>No. of samples received : 10</p> <p>No. of samples analysed : 10</p>	<p>Page : 1 of 8</p> <p>Laboratory : Calgary - Environmental</p> <p>Account Manager : Lyudmyla Shvets</p> <p>Address : 2559 29th Street NE Calgary AB Canada T1Y 7B5</p> <p>Telephone : +1 403 407 1800</p> <p>Date Samples Received : 02-Nov-2022 09:00</p> <p>Date Analysis Commenced : 02-Nov-2022</p> <p>Issue Date : 04-Nov-2022 16:35</p>
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This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Anthony Calero	Supervisor - Inorganic	Inorganics, Calgary, Alberta
Anthony Calero	Supervisor - Inorganic	Metals, Calgary, Alberta
Elke Tabora		Inorganics, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Metals, Calgary, Alberta
Kevin Baxter		Metals, Calgary, Alberta
Ruifang Zheng	Analyst	Inorganics, Calgary, Alberta
Shirley Li		Inorganics, Calgary, Alberta
Summie Lo	Lab Assistant	Metals, Calgary, Alberta
Vladka Stamenova	Analyst	Inorganics, Calgary, Alberta



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
 LOR: Limit of Reporting (detection limit).

<i>Unit</i>	<i>Description</i>
-	No Unit
%	percent
µg/L	micrograms per litre
µS/cm	Microsiemens per centimetre
meq/L	milliequivalents per litre
mg/L	milligrams per litre
mV	millivolts
NTU	nephelometric turbidity units
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

<i>Qualifier</i>	<i>Description</i>
DLDS	Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.
TKNI	TKN result may be biased low due to Nitrate interference. Nitrate-N is > 10x TKN.



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKDT_1_ PW-1_2022-10 _NP	RG_ERCKDT_1_ PW-2_2022-10 _NP	RG_ERCKDT_1_ PW-3_2022-10 _NP	RG_ERCKDT_2_ PW-1_2022-10 _NP	RG_ERCKDT_2_ PW-2_2022-10 _NP
Client sampling date / time					31-Oct-2022 08:30	31-Oct-2022 08:45	31-Oct-2022 09:00	31-Oct-2022 09:15	31-Oct-2022 09:30	
Analyte	CAS Number	Method	LOR	Unit	CG2215304-001	CG2215304-002	CG2215304-003	CG2215304-004	CG2215304-005	
					Result	Result	Result	Result	Result	
Physical Tests										
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	1180	1150	1200	1180	1180	
Anions and Nutrients										
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	10.7	8.26	9.40	8.15	7.98	
fluoride	16984-48-8	E235.F	0.020	mg/L	0.155	0.157	0.205	0.155	0.157	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	12.0	9.68	9.80	9.86	9.83	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	0.0178	0.0134	0.0197	0.0134	0.0110	
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	751	761	772	768	762	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0075	0.0055	0.0087	0.0057	0.0096	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0434	0.0411	0.0445	0.0444	0.0450	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.100 ^{DLDS}	<0.100 ^{DLDS}	<0.100 ^{DLDS}	<0.100 ^{DLDS}	<0.100 ^{DLDS}	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000250 ^{DLDS}	<0.000250 ^{DLDS}	<0.000250 ^{DLDS}	<0.000250 ^{DLDS}	<0.000250 ^{DLDS}	
boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.050 ^{DLDS}	<0.050 ^{DLDS}	<0.050 ^{DLDS}	<0.050 ^{DLDS}	<0.050 ^{DLDS}	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.232	0.183	0.171	0.173	0.198	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	242	238	243	239	234	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	5.54	4.95	5.05	5.39	5.32	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00100 ^{DLDS}	<0.00100 ^{DLDS}	<0.00100 ^{DLDS}	<0.00100 ^{DLDS}	<0.00100 ^{DLDS}	
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.050 ^{DLDS}	<0.050 ^{DLDS}	<0.050 ^{DLDS}	<0.050 ^{DLDS}	<0.050 ^{DLDS}	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000250 ^{DLDS}	<0.000250 ^{DLDS}	<0.000250 ^{DLDS}	<0.000250 ^{DLDS}	<0.000250 ^{DLDS}	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0741	0.0711	0.0724	0.0715	0.0680	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	140	136	145	142	144	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.155	0.145	0.130	0.144	0.148	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00803	0.00758	0.00801	0.00752	0.00740	
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.0222	0.0211	0.0221	0.0217	0.0217	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKDT_1_ PW-1_2022-10 _NP	RG_ERCKDT_1_ PW-2_2022-10 _NP	RG_ERCKDT_1_ PW-3_2022-10 _NP	RG_ERCKDT_2_ PW-1_2022-10 _NP	RG_ERCKDT_2_ PW-2_2022-10 _NP
Client sampling date / time					31-Oct-2022 08:30	31-Oct-2022 08:45	31-Oct-2022 09:00	31-Oct-2022 09:15	31-Oct-2022 09:30	
Analyte	CAS Number	Method	LOR	Unit	CG2215304-001	CG2215304-002	CG2215304-003	CG2215304-004	CG2215304-005	
					Result	Result	Result	Result	Result	
Dissolved Metals										
potassium, dissolved	7440-09-7	E421	0.050	mg/L	3.66	3.28	3.69	3.34	3.47	
selenium, dissolved	7782-49-2	E421	0.050	µg/L	98.4	93.6	92.3	96.3	99.6	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	3.45	3.62	3.61	3.62	3.56	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	6.44	6.12	6.45	6.27	6.38	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.326	0.309	0.318	0.320	0.314	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	284	285	281	277	295	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00150 ^{DLDS}	<0.00150 ^{DLDS}	<0.00150 ^{DLDS}	<0.00150 ^{DLDS}	<0.00150 ^{DLDS}	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00919	0.00885	0.00917	0.00896	0.00880	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00250 ^{DLDS}	<0.00250 ^{DLDS}	<0.00250 ^{DLDS}	<0.00250 ^{DLDS}	<0.00250 ^{DLDS}	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0089	0.0102	0.0065	0.0084	0.0092	
dissolved metals filtration location	----	EP421	-	-	Laboratory	Laboratory	Laboratory	Laboratory	Laboratory	

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKDT_2_ PW-3_2022-10 _NP	RG_ERCKDT_3_ PW-1_2022-10 _NP	RG_ERCKDT_3_ PW-2_2022-10 _NP	RG_ERCKDT_3_ PW-3_2022-10 _NP	RG_ERCKDT_W S_LAEMP_EVO _2022-10_NP
Client sampling date / time					31-Oct-2022 09:45	31-Oct-2022 10:00	31-Oct-2022 10:15	31-Oct-2022 10:30	31-Oct-2022 10:35	
Analyte	CAS Number	Method	LOR	Unit	CG2215304-006	CG2215304-007	CG2215304-008	CG2215304-009	CG2215304-010	
					Result	Result	Result	Result	Result	
Physical Tests										
acidity (as CaCO3)	----	E283	2.0	mg/L	----	----	----	----	<2.0	
alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	----	----	----	----	457	
alkalinity, bicarbonate (as HCO3)	71-52-3	E290	1.0	mg/L	----	----	----	----	558	
alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	----	----	----	----	<1.0	
alkalinity, carbonate (as CO3)	3812-32-6	E290	1.0	mg/L	----	----	----	----	<1.0	
alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	----	----	----	----	<1.0	
alkalinity, hydroxide (as OH)	14280-30-9	E290	1.0	mg/L	----	----	----	----	<1.0	
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	----	----	----	----	457	
conductivity	----	E100	2.0	µS/cm	----	----	----	----	1890	
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	1160	1170	1180	1150	1200	
oxidation-reduction potential [ORP]	----	E125	0.10	mV	----	----	----	----	316	
pH	----	E108	0.10	pH units	----	----	----	----	7.80	
solids, total dissolved [TDS]	----	E162	10	mg/L	----	----	----	----	1550	
solids, total suspended [TSS]	----	E160-L	1.0	mg/L	----	----	----	----	1.1	
turbidity	----	E121	0.10	NTU	----	----	----	----	0.40	
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	----	----	----	----	0.0288	
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	8.18	8.79	8.89	8.95	6.75	
fluoride	16984-48-8	E235.F	0.020	mg/L	0.165	0.172	0.173	0.173	0.139	
Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	----	----	----	----	0.561 ^{TKN}	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	9.85	8.08	8.04	8.12	13.2	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	0.0143	0.0156	0.0239	0.0190	<0.0050 ^{DLDS}	
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	----	----	----	----	0.0174	
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	----	----	----	----	0.0159	
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	763	770	764	771	778	
Organic / Inorganic Carbon										
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	----	----	----	----	0.58	
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	----	----	----	----	<0.50	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKDT_2_ PW-3_2022-10 _NP	RG_ERCKDT_3_ PW-1_2022-10 _NP	RG_ERCKDT_3_ PW-2_2022-10 _NP	RG_ERCKDT_3_ PW-3_2022-10 _NP	RG_ERCKDT_W S_LAEMP_EVO _2022-10_NP
Client sampling date / time					31-Oct-2022 09:45	31-Oct-2022 10:00	31-Oct-2022 10:15	31-Oct-2022 10:30	31-Oct-2022 10:35	
Analyte	CAS Number	Method	LOR	Unit	CG2215304-006	CG2215304-007	CG2215304-008	CG2215304-009	CG2215304-010	
					Result	Result	Result	Result	Result	
Ion Balance										
anion sum	----	EC101	0.10	meq/L	----	----	----	----	26.5	
cation sum	----	EC101	0.10	meq/L	----	----	----	----	24.3	
ion balance (cations/anions)	----	EC101	0.010	%	----	----	----	----	91.7	
ion balance (APHA)	----	EC101	0.01	%	----	----	----	----	-4.33	
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L	----	----	----	----	<0.0060 ^{DLDS}	
antimony, total	7440-36-0	E420	0.00010	mg/L	----	----	----	----	0.00021	
arsenic, total	7440-38-2	E420	0.00010	mg/L	----	----	----	----	0.00028	
barium, total	7440-39-3	E420	0.00010	mg/L	----	----	----	----	0.0590	
beryllium, total	7440-41-7	E420	0.020	µg/L	----	----	----	----	<0.040 ^{DLDS}	
bismuth, total	7440-69-9	E420	0.000050	mg/L	----	----	----	----	<0.000100 ^{DLDS}	
boron, total	7440-42-8	E420	0.010	mg/L	----	----	----	----	0.022	
cadmium, total	7440-43-9	E420	0.0050	µg/L	----	----	----	----	0.175	
calcium, total	7440-70-2	E420	0.050	mg/L	----	----	----	----	266	
chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	----	----	----	----	<0.00020 ^{DLDS}	
cobalt, total	7440-48-4	E420	0.10	µg/L	----	----	----	----	3.19	
copper, total	7440-50-8	E420	0.00050	mg/L	----	----	----	----	<0.00100 ^{DLDS}	
iron, total	7439-89-6	E420	0.010	mg/L	----	----	----	----	0.047	
lead, total	7439-92-1	E420	0.000050	mg/L	----	----	----	----	<0.000100 ^{DLDS}	
lithium, total	7439-93-2	E420	0.0010	mg/L	----	----	----	----	0.0530	
magnesium, total	7439-95-4	E420	0.0050	mg/L	----	----	----	----	175	
manganese, total	7439-96-5	E420	0.00010	mg/L	----	----	----	----	0.0883	
mercury, total	7439-97-6	E508	0.0000050	mg/L	----	----	----	----	<0.0000050	
molybdenum, total	7439-98-7	E420	0.000050	mg/L	----	----	----	----	0.00455	
nickel, total	7440-02-0	E420	0.00050	mg/L	----	----	----	----	0.0129	
potassium, total	7440-09-7	E420	0.050	mg/L	----	----	----	----	3.43	
selenium, total	7782-49-2	E420	0.050	µg/L	----	----	----	----	133	
silicon, total	7440-21-3	E420	0.10	mg/L	----	----	----	----	4.11	
silver, total	7440-22-4	E420	0.000010	mg/L	----	----	----	----	<0.000020 ^{DLDS}	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKDT_2_ PW-3_2022-10 _NP	RG_ERCKDT_3_ PW-1_2022-10 _NP	RG_ERCKDT_3_ PW-2_2022-10 _NP	RG_ERCKDT_3_ PW-3_2022-10 _NP	RG_ERCKDT_W S_LAEMP_EVO _2022-10_NP
Client sampling date / time					31-Oct-2022 09:45	31-Oct-2022 10:00	31-Oct-2022 10:15	31-Oct-2022 10:30	31-Oct-2022 10:35	
Analyte	CAS Number	Method	LOR	Unit	CG2215304-006	CG2215304-007	CG2215304-008	CG2215304-009	CG2215304-010	
					Result	Result	Result	Result	Result	
Total Metals										
sodium, total	7440-23-5	E420	0.050	mg/L	---	---	---	---	5.37	
strontium, total	7440-24-6	E420	0.00020	mg/L	---	---	---	---	0.296	
sulfur, total	7704-34-9	E420	0.50	mg/L	---	---	---	---	289	
thallium, total	7440-28-0	E420	0.000010	mg/L	---	---	---	---	0.000032	
tin, total	7440-31-5	E420	0.00010	mg/L	---	---	---	---	<0.00020 ^{DLDS}	
titanium, total	7440-32-6	E420	0.00030	mg/L	---	---	---	---	<0.00060 ^{DLDS}	
uranium, total	7440-61-1	E420	0.000010	mg/L	---	---	---	---	0.00885	
vanadium, total	7440-62-2	E420	0.00050	mg/L	---	---	---	---	<0.00100 ^{DLDS}	
zinc, total	7440-66-6	E420	0.0030	mg/L	---	---	---	---	<0.0060 ^{DLDS}	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	0.0082	<0.0020 ^{DLDS}	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	0.00020	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	0.00029	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0464	0.0383	0.0396	0.0391	0.0544	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.100 ^{DLDS}	<0.100 ^{DLDS}	<0.100 ^{DLDS}	<0.100 ^{DLDS}	<0.040 ^{DLDS}	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000250 ^{DLDS}	<0.000250 ^{DLDS}	<0.000250 ^{DLDS}	<0.000250 ^{DLDS}	<0.000100 ^{DLDS}	
boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.050 ^{DLDS}	<0.050 ^{DLDS}	<0.050 ^{DLDS}	<0.050 ^{DLDS}	0.020	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.218	0.250	0.226	0.237	0.152	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	237	235	236	233	245	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00020 ^{DLDS}	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	2.32	6.66	6.72	6.21	2.82	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00100 ^{DLDS}	<0.00100 ^{DLDS}	<0.00100 ^{DLDS}	<0.00100 ^{DLDS}	<0.00040 ^{DLDS}	
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.050 ^{DLDS}	<0.050 ^{DLDS}	<0.050 ^{DLDS}	<0.050 ^{DLDS}	<0.020 ^{DLDS}	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000250 ^{DLDS}	<0.000250 ^{DLDS}	<0.000250 ^{DLDS}	<0.000250 ^{DLDS}	<0.000100 ^{DLDS}	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0711	0.0797	0.0828	0.0819	0.0498	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	138	141	143	139	143	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.0592	0.185	0.185	0.176	0.0791	
mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	---	---	---	---	<0.0000050	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00778	0.00978	0.00960	0.00901	0.00433	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKDT_2_ PW-3_2022-10 _NP	RG_ERCKDT_3_ PW-1_2022-10 _NP	RG_ERCKDT_3_ PW-2_2022-10 _NP	RG_ERCKDT_3_ PW-3_2022-10 _NP	RG_ERCKDT_3_ PW-3_2022-10 _NP
Client sampling date / time					31-Oct-2022 09:45	31-Oct-2022 10:00	31-Oct-2022 10:15	31-Oct-2022 10:30	31-Oct-2022 10:35	
Analyte	CAS Number	Method	LOR	Unit	CG2215304-006	CG2215304-007	CG2215304-008	CG2215304-009	CG2215304-010	
					Result	Result	Result	Result	Result	
Dissolved Metals										
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.0137	0.0274	0.0278	0.0259	0.0114	
potassium, dissolved	7440-09-7	E421	0.050	mg/L	3.47	3.75	3.78	3.63	3.19	
selenium, dissolved	7782-49-2	E421	0.050	µg/L	99.9	79.5	82.3	80.0	151	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	3.58	3.39	3.30	3.29	4.04	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	<0.000020 ^{DLDS}	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	6.17	7.13	7.34	7.03	4.81	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.316	0.348	0.342	0.332	0.262	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	285	291	295	291	307	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000050 ^{DLDS}	0.000054	0.000052	<0.000050 ^{DLDS}	0.000031	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00020 ^{DLDS}	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00150 ^{DLDS}	<0.00150 ^{DLDS}	<0.00150 ^{DLDS}	<0.00150 ^{DLDS}	<0.00060 ^{DLDS}	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00893	0.00944	0.00928	0.00904	0.00818	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00250 ^{DLDS}	<0.00250 ^{DLDS}	<0.00250 ^{DLDS}	<0.00250 ^{DLDS}	<0.00100 ^{DLDS}	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0050 ^{DLDS}	0.0088	0.0095	0.0092	0.0044	
dissolved mercury filtration location	----	EP509	-	-	----	----	----	----	Field	
dissolved metals filtration location	----	EP421	-	-	Laboratory	Laboratory	Laboratory	Laboratory	Field	

Please refer to the General Comments section for an explanation of any qualifiers detected.



QUALITY CONTROL INTERPRETIVE REPORT

<p>Work Order : CG2215304</p> <p>Client : Teck Coal Limited</p> <p>Contact : Mike Pope</p> <p>Address : 421 Pine Avenue Sparwood BC Canada V0B2G0</p> <p>Telephone : ----</p> <p>Project : REGIONAL EFFECTS PROGRAM</p> <p>PO : VPO00847030</p> <p>C-O-C number : November EVO LAEMP 2022</p> <p>Sampler : A McC</p> <p>Site : ----</p> <p>Quote number : Teck Coal Master Quote</p> <p>No. of samples received : 10</p> <p>No. of samples analysed : 10</p>	<p>Page : 1 of 21</p> <p>Laboratory : Calgary - Environmental</p> <p>Account Manager : Lyudmyla Shvets</p> <p>Address : 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5</p> <p>Telephone : +1 403 407 1800</p> <p>Date Samples Received : 02-Nov-2022 09:00</p> <p>Issue Date : 04-Nov-2022 16:35</p>
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This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

- Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
 - CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
 - DQO: Data Quality Objective.
 - LOR: Limit of Reporting (detection limit).
 - RPD: Relative Percent Difference.
-

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP	E298	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKDT_1_PW-1_2022-10_NP	E235.Br-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKDT_1_PW-2_2022-10_NP	E235.Br-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKDT_1_PW-3_2022-10_NP	E235.Br-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKDT_2_PW-1_2022-10_NP	E235.Br-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKDT_2_PW-2_2022-10_NP	E235.Br-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKDT_2_PW-3_2022-10_NP	E235.Br-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKDT_3_PW-1_2022-10_NP	E235.Br-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKDT_3_PW-2_2022-10_NP	E235.Br-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKDT_3_PW-3_2022-10_NP	E235.Br-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP	E235.Br-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKDT_1_PW-1_2022-10_NP	E235.Cl-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKDT_1_PW-2_2022-10_NP	E235.Cl-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKDT_1_PW-3_2022-10_NP	E235.Cl-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKDT_2_PW-1_2022-10_NP	E235.Cl-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKDT_2_PW-2_2022-10_NP	E235.Cl-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_ERCKDT_2_PW-3_2022-10_NP	E235.Cl-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_ERCKDT_3_PW-1_2022-10_NP	E235.Cl-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_ERCKDT_3_PW-2_2022-10_NP	E235.Cl-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_ERCKDT_3_PW-3_2022-10_NP	E235.Cl-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP	E235.Cl-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP	E378-U	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	3 days	3 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE RG_ERCKDT_1_PW-1_2022-10_NP	E235.F	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE RG_ERCKDT_1_PW-2_2022-10_NP	E235.F	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE RG_ERCKDT_1_PW-3_2022-10_NP	E235.F	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Fluoride in Water by IC										
HDPE RG_ERCKDT_2_PW-1_2022-10_NP	E235.F	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE RG_ERCKDT_2_PW-2_2022-10_NP	E235.F	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE RG_ERCKDT_2_PW-3_2022-10_NP	E235.F	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE RG_ERCKDT_3_PW-1_2022-10_NP	E235.F	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE RG_ERCKDT_3_PW-2_2022-10_NP	E235.F	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE RG_ERCKDT_3_PW-3_2022-10_NP	E235.F	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP	E235.F	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE RG_ERCKDT_1_PW-1_2022-10_NP	E235.NO3-L	31-Oct-2022	02-Nov-2022	3 days	2 days	✔	02-Nov-2022	3 days	0 days	✔
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE RG_ERCKDT_1_PW-2_2022-10_NP	E235.NO3-L	31-Oct-2022	02-Nov-2022	3 days	2 days	✔	02-Nov-2022	3 days	0 days	✔



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKDT_1_PW-3_2022-10_NP	E235.NO3-L	31-Oct-2022	02-Nov-2022	3 days	2 days	✔	02-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKDT_2_PW-1_2022-10_NP	E235.NO3-L	31-Oct-2022	02-Nov-2022	3 days	2 days	✔	02-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKDT_2_PW-2_2022-10_NP	E235.NO3-L	31-Oct-2022	02-Nov-2022	3 days	2 days	✔	02-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKDT_2_PW-3_2022-10_NP	E235.NO3-L	31-Oct-2022	02-Nov-2022	3 days	2 days	✔	02-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKDT_3_PW-1_2022-10_NP	E235.NO3-L	31-Oct-2022	02-Nov-2022	3 days	2 days	✔	02-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKDT_3_PW-2_2022-10_NP	E235.NO3-L	31-Oct-2022	02-Nov-2022	3 days	2 days	✔	02-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKDT_3_PW-3_2022-10_NP	E235.NO3-L	31-Oct-2022	02-Nov-2022	3 days	2 days	✔	02-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP	E235.NO3-L	31-Oct-2022	02-Nov-2022	3 days	2 days	✔	02-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKDT_1_PW-1_2022-10_NP	E235.NO2-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	3 days	2 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKDT_1_PW-2_2022-10_NP	E235.NO2-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKDT_1_PW-3_2022-10_NP	E235.NO2-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKDT_2_PW-1_2022-10_NP	E235.NO2-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKDT_2_PW-2_2022-10_NP	E235.NO2-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKDT_2_PW-3_2022-10_NP	E235.NO2-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKDT_3_PW-1_2022-10_NP	E235.NO2-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKDT_3_PW-2_2022-10_NP	E235.NO2-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKDT_3_PW-3_2022-10_NP	E235.NO2-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP	E235.NO2-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	3 days	2 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKDT_1_PW-1_2022-10_NP	E235.S04	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKDT_1_PW-2_2022-10_NP	E235.S04	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKDT_1_PW-3_2022-10_NP	E235.S04	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKDT_2_PW-1_2022-10_NP	E235.S04	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKDT_2_PW-2_2022-10_NP	E235.S04	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKDT_2_PW-3_2022-10_NP	E235.S04	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKDT_3_PW-1_2022-10_NP	E235.S04	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKDT_3_PW-2_2022-10_NP	E235.S04	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKDT_3_PW-3_2022-10_NP	E235.S04	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP	E235.SO4	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP	E318	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	3 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP	E372-U	31-Oct-2022	03-Nov-2022	----	----		04-Nov-2022	28 days	4 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKDT_1_PW-1_2022-10_NP	E421.Cr-L	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKDT_1_PW-2_2022-10_NP	E421.Cr-L	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKDT_1_PW-3_2022-10_NP	E421.Cr-L	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKDT_2_PW-1_2022-10_NP	E421.Cr-L	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKDT_2_PW-2_2022-10_NP	E421.Cr-L	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKDT_2_PW-3_2022-10_NP	E421.Cr-L	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	3 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKDT_3_PW-1_2022-10_NP	E421.Cr-L	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKDT_3_PW-2_2022-10_NP	E421.Cr-L	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKDT_3_PW-3_2022-10_NP	E421.Cr-L	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP	E421.Cr-L	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP	E509	31-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	28 days	4 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ERCKDT_1_PW-1_2022-10_NP	E421	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ERCKDT_1_PW-2_2022-10_NP	E421	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ERCKDT_1_PW-3_2022-10_NP	E421	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ERCKDT_2_PW-1_2022-10_NP	E421	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	3 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ERCKDT_2_PW-2_2022-10_NP	E421	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ERCKDT_2_PW-3_2022-10_NP	E421	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ERCKDT_3_PW-1_2022-10_NP	E421	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ERCKDT_3_PW-2_2022-10_NP	E421	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ERCKDT_3_PW-3_2022-10_NP	E421	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP	E421	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	3 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP	E358-L	31-Oct-2022	02-Nov-2022	----	----		03-Nov-2022	28 days	3 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP	E355-L	31-Oct-2022	02-Nov-2022	----	----		03-Nov-2022	28 days	3 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP	E283	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	14 days	3 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Alkalinity Species by Titration											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP	E290	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	14 days	3 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP	E100	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	3 days	✓	
Physical Tests : ORP by Electrode											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP	E125	31-Oct-2022	----	----	----		03-Nov-2022	0.25 hrs	75 hrs	* EHTR-FM	
Physical Tests : pH by Meter											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP	E108	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	0.25 hrs	0.27 hrs	* EHTR-FM	
Physical Tests : TDS by Gravimetry											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP	E162	31-Oct-2022	----	----	----		03-Nov-2022	7 days	3 days	✓	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP	E160-L	31-Oct-2022	----	----	----		03-Nov-2022	7 days	3 days	✓	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP	E121	31-Oct-2022	----	----	----		03-Nov-2022	3 days	3 days	✓	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE - total (lab preserved) RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP	E420.Cr-L	31-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	180 days	4 days	✓	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP	E508	31-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	28 days	4 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals : Total metals in Water by CRC ICPMS										
HDPE - total (lab preserved) RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP	E420	31-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	180 days	4 days	✔

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended

Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
Analytical Methods							
Laboratory Duplicates (DUP)							
Acidity by Titration	E283	728157	1	18	5.5	5.0	✓
Alkalinity Species by Titration	E290	728250	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	727557	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	727388	2	29	6.9	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	727389	2	29	6.9	5.0	✓
Conductivity in Water	E100	728248	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	728447	1	11	9.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	730110	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	728448	1	11	9.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	727550	1	17	5.8	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	728152	1	13	7.6	5.0	✓
Fluoride in Water by IC	E235.F	727387	2	29	6.9	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	727390	2	29	6.9	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	727391	2	29	6.9	5.0	✓
ORP by Electrode	E125	728320	1	20	5.0	5.0	✓
pH by Meter	E108	728249	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	727392	2	29	6.9	5.0	✓
TDS by Gravimetry	E162	727501	1	15	6.6	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	729252	1	9	11.1	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	727559	1	2	50.0	5.0	✓
Total Mercury in Water by CVAAS	E508	730121	1	20	5.0	5.0	✓
Total metals in Water by CRC ICPMS	E420	729253	1	11	9.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	727551	1	19	5.2	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	728382	1	17	5.8	5.0	✓
Turbidity by Nephelometry	E121	727502	1	20	5.0	5.0	✓
Laboratory Control Samples (LCS)							
Acidity by Titration	E283	728157	1	18	5.5	5.0	✓
Alkalinity Species by Titration	E290	728250	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	727557	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	727388	2	29	6.9	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	727389	2	29	6.9	5.0	✓
Conductivity in Water	E100	728248	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	728447	1	11	9.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	730110	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	728448	1	11	9.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	727550	1	17	5.8	5.0	✓



Matrix: **Water**

Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
Analytical Methods							
Laboratory Control Samples (LCS) - Continued							
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	728152	1	13	7.6	5.0	✓
Fluoride in Water by IC	E235.F	727387	2	29	6.9	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	727390	2	29	6.9	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	727391	2	29	6.9	5.0	✓
ORP by Electrode	E125	728320	1	20	5.0	5.0	✓
pH by Meter	E108	728249	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	727392	2	29	6.9	5.0	✓
TDS by Gravimetry	E162	727501	1	15	6.6	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	729252	1	9	11.1	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	727559	1	2	50.0	5.0	✓
Total Mercury in Water by CVAAS	E508	730121	1	20	5.0	5.0	✓
Total metals in Water by CRC ICPMS	E420	729253	1	11	9.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	727551	1	19	5.2	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	728382	1	17	5.8	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	727500	1	15	6.6	5.0	✓
Turbidity by Nephelometry	E121	727502	1	20	5.0	5.0	✓
Method Blanks (MB)							
Acidity by Titration	E283	728157	1	18	5.5	5.0	✓
Alkalinity Species by Titration	E290	728250	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	727557	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	727388	2	29	6.9	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	727389	2	29	6.9	5.0	✓
Conductivity in Water	E100	728248	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	728447	1	11	9.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	730110	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	728448	1	11	9.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	727550	1	17	5.8	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	728152	1	13	7.6	5.0	✓
Fluoride in Water by IC	E235.F	727387	2	29	6.9	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	727390	2	29	6.9	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	727391	2	29	6.9	5.0	✓
Sulfate in Water by IC	E235.SO4	727392	2	29	6.9	5.0	✓
TDS by Gravimetry	E162	727501	1	15	6.6	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	729252	1	9	11.1	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	727559	1	2	50.0	5.0	✓
Total Mercury in Water by CVAAS	E508	730121	1	20	5.0	5.0	✓
Total metals in Water by CRC ICPMS	E420	729253	1	11	9.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	727551	1	19	5.2	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	728382	1	17	5.8	5.0	✓



Matrix: **Water** Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
<i>Analytical Methods</i>							
Method Blanks (MB) - Continued							
TSS by Gravimetry (Low Level)	E160-L	727500	1	15	6.6	5.0	✔
Turbidity by Nephelometry	E121	727502	1	20	5.0	5.0	✔
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	727557	1	20	5.0	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	727388	2	29	6.9	5.0	✔
Chloride in Water by IC (Low Level)	E235.Cl-L	727389	2	29	6.9	5.0	✔
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	728447	1	11	9.0	5.0	✔
Dissolved Mercury in Water by CVAAS	E509	730110	1	20	5.0	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	728448	1	11	9.0	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	727550	1	17	5.8	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	728152	1	13	7.6	5.0	✔
Fluoride in Water by IC	E235.F	727387	2	29	6.9	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	727390	2	29	6.9	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	727391	2	29	6.9	5.0	✔
Sulfate in Water by IC	E235.SO4	727392	2	29	6.9	5.0	✔
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	729252	1	9	11.1	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	727559	1	2	50.0	5.0	✔
Total Mercury in Water by CVAAS	E508	730121	1	20	5.0	5.0	✔
Total metals in Water by CRC ICPMS	E420	729253	1	11	9.0	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	727551	1	19	5.2	5.0	✔
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	728382	1	17	5.8	5.0	✔



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 Calgary - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 Calgary - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 Calgary - Environmental	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
ORP by Electrode	E125 Calgary - Environmental	Water	ASTM D1498 (mod)	Oxidation reduction potential is reported as the oxidation-reduction potential of the platinum metal-reference electrode employed, measured in mV. For high accuracy test results, it is recommended that this analysis be conducted in the field.
TSS by Gravimetry (Low Level)	E160-L Calgary - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 Calgary - Environmental	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC (Low Level)	E235.Cl-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Acidity by Titration	E283 Calgary - Environmental	Water	APHA 2310 B (mod)	Acidity is determined by potentiometric titration to pH endpoint of 8.3
Alkalinity Species by Titration	E290 Calgary - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 Calgary - Environmental	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 Calgary - Environmental	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L Calgary - Environmental	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Dissolved Organic Carbon by Combustion (Low Level)	E358-L Calgary - Environmental	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U Calgary - Environmental	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U Calgary - Environmental	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Total metals in Water by CRC ICPMS	E420 Calgary - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L Calgary - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Metals in Water by CRC ICPMS	E421 Calgary - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L Calgary - Environmental	Water	APHA 3030 B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS
Total Mercury in Water by CVAAS	E508 Calgary - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS
Dissolved Mercury in Water by CVAAS	E509 Calgary - Environmental	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
Dissolved Hardness (Calculated)	EC100 Calgary - Environmental	Water	APHA 2340B	"Hardness (as CaCO ₃), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Ion Balance using Dissolved Metals	EC101 Calgary - Environmental	Water	APHA 1030E	Cation Sum, Anion Sum, and Ion Balance are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present. Ion Balance cannot be calculated accurately for waters with very low electrical conductivity (EC).

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 Calgary - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 Calgary - Environmental	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Preparation for Total Organic Carbon by Combustion	EP355 Calgary - Environmental	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon by Combustion	EP358 Calgary - Environmental	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Phosphorus in water	EP372 Calgary - Environmental	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.

Page : 21 of 21
Work Order : CG2215304
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



<i>Preparation Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
Dissolved Metals Water Filtration	EP421 Calgary - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.
Dissolved Mercury Water Filtration	EP509 Calgary - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.

QUALITY CONTROL REPORT

<p>Work Order : CG2215304</p> <p>Client : Teck Coal Limited</p> <p>Contact : Mike Pope</p> <p>Address : 421 Pine Avenue Sparwood BC Canada V0B2G0</p> <p>Telephone :</p> <p>Project : REGIONAL EFFECTS PROGRAM</p> <p>PO : VPO00847030</p> <p>C-O-C number : November EVO LAEMP 2022</p> <p>Sampler : A McC ----</p> <p>Site : ----</p> <p>Quote number : Teck Coal Master Quote</p> <p>No. of samples received : 10</p> <p>No. of samples analysed : 10</p>	<p>Page : 1 of 19</p> <p>Laboratory : Calgary - Environmental</p> <p>Account Manager : Lyudmyla Shvets</p> <p>Address : 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5</p> <p>Telephone : +1 403 407 1800</p> <p>Date Samples Received : 02-Nov-2022 09:00</p> <p>Date Analysis Commenced : 02-Nov-2022</p> <p>Issue Date : 04-Nov-2022 16:35</p>
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This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Anthony Calero	Supervisor - Inorganic	Calgary Inorganics, Calgary, Alberta
Anthony Calero	Supervisor - Inorganic	Calgary Metals, Calgary, Alberta
Elke Tabora		Calgary Inorganics, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Calgary Inorganics, Calgary, Alberta
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Page : 2 of 19
Work Order : CG2215304
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

- Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
- CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
- DQO = Data Quality Objective.
- LOR = Limit of Reporting (detection limit).
- RPD = Relative Percent Difference
- # = Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 727501)											
CG2215304-010	RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP	solids, total dissolved [TDS]	----	E162	40	mg/L	1550	1540	0.518%	20%	----
Physical Tests (QC Lot: 727502)											
CG2215208-002	Anonymous	turbidity	----	E121	0.10	NTU	0.40	0.38	0.01	Diff <2x LOR	----
Physical Tests (QC Lot: 728157)											
CG2215287-007	Anonymous	acidity (as CaCO3)	----	E283	2.0	mg/L	2.0	2.1	0.08	Diff <2x LOR	----
Physical Tests (QC Lot: 728248)											
CG2215287-005	Anonymous	conductivity	----	E100	2.0	µS/cm	1180	1180	0.508%	10%	----
Physical Tests (QC Lot: 728249)											
CG2215287-005	Anonymous	pH	----	E108	0.10	pH units	8.18	8.18	0.00%	4%	----
Physical Tests (QC Lot: 728250)											
CG2215287-005	Anonymous	alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	148	149	0.470%	20%	----
		alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	148	149	0.470%	20%	----
Physical Tests (QC Lot: 728320)											
CG2215287-001	Anonymous	oxidation-reduction potential [ORP]	----	E125	0.10	mV	287	294	2.38%	15%	----
Anions and Nutrients (QC Lot: 727387)											
CG2215304-001	RG_ERCKDT_1_PW-1_20_22-10_NP	fluoride	16984-48-8	E235.F	0.100	mg/L	0.155	0.154	0.0008	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 727388)											
CG2215304-001	RG_ERCKDT_1_PW-1_20_22-10_NP	bromide	24959-67-9	E235.Br-L	0.250	mg/L	<0.250	<0.250	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 727389)											
CG2215304-001	RG_ERCKDT_1_PW-1_20_22-10_NP	chloride	16887-00-6	E235.Cl-L	0.50	mg/L	10.7	10.6	0.922%	20%	----
Anions and Nutrients (QC Lot: 727390)											
CG2215304-001	RG_ERCKDT_1_PW-1_20_22-10_NP	nitrate (as N)	14797-55-8	E235.NO3-L	0.0250	mg/L	12.0	12.3	1.76%	20%	----
Anions and Nutrients (QC Lot: 727391)											
CG2215304-001	RG_ERCKDT_1_PW-1_20_22-10_NP	nitrite (as N)	14797-65-0	E235.NO2-L	0.0050	mg/L	0.0178	0.0166	0.0012	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 727392)											



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 727392) - continued											
CG2215304-001	RG_ERCKDT_1_PW-1_20 22-10_NP	sulfate (as SO4)	14808-79-8	E235.SO4	1.50	mg/L	751	759	1.07%	20%	----
Anions and Nutrients (QC Lot: 727508)											
CG2215304-010	RG_ERCKDT_WS_LAEMP _EVO_2022-10_NP	fluoride	16984-48-8	E235.F	0.100	mg/L	0.139	0.138	0.001	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 727509)											
CG2215304-010	RG_ERCKDT_WS_LAEMP _EVO_2022-10_NP	bromide	24959-67-9	E235.Br-L	0.250	mg/L	<0.250	<0.250	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 727510)											
CG2215304-010	RG_ERCKDT_WS_LAEMP _EVO_2022-10_NP	chloride	16887-00-6	E235.Cl-L	0.50	mg/L	6.75	6.73	0.323%	20%	----
Anions and Nutrients (QC Lot: 727511)											
CG2215304-010	RG_ERCKDT_WS_LAEMP _EVO_2022-10_NP	nitrate (as N)	14797-55-8	E235.NO3-L	0.0250	mg/L	13.2	13.2	0.202%	20%	----
Anions and Nutrients (QC Lot: 727512)											
CG2215304-010	RG_ERCKDT_WS_LAEMP _EVO_2022-10_NP	nitrite (as N)	14797-65-0	E235.NO2-L	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 727513)											
CG2215304-010	RG_ERCKDT_WS_LAEMP _EVO_2022-10_NP	sulfate (as SO4)	14808-79-8	E235.SO4	1.50	mg/L	778	776	0.163%	20%	----
Anions and Nutrients (QC Lot: 727557)											
CG2215282-001	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0500	mg/L	1.95	1.93	1.39%	20%	----
Anions and Nutrients (QC Lot: 727559)											
CG2215304-010	RG_ERCKDT_WS_LAEMP _EVO_2022-10_NP	Kjeldahl nitrogen, total [TKN]	----	E318	0.500	mg/L	0.561	1.26	0.695	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 728152)											
CG2215304-010	RG_ERCKDT_WS_LAEMP _EVO_2022-10_NP	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0174	0.0187	6.92%	20%	----
Anions and Nutrients (QC Lot: 728382)											
CG2215291-001	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 727550)											
CG2215304-010	RG_ERCKDT_WS_LAEMP _EVO_2022-10_NP	carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	0.58	0.63	0.05	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 727551)											
CG2215304-010	RG_ERCKDT_WS_LAEMP _EVO_2022-10_NP	carbon, total organic [TOC]	----	E355-L	0.50	mg/L	<0.50	0.53	0.03	Diff <2x LOR	----
Total Metals (QC Lot: 729252)											
CG2215304-010	RG_ERCKDT_WS_LAEMP _EVO_2022-10_NP	chromium, total	7440-47-3	E420.Cr-L	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Total Metals (QC Lot: 729253)											



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (QC Lot: 729253) - continued											
CG2215304-010	RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP	aluminum, total	7429-90-5	E420	0.0060	mg/L	<0.0060	<0.0060	0	Diff <2x LOR	----
		antimony, total	7440-36-0	E420	0.00020	mg/L	0.00021	0.00021	0.000002	Diff <2x LOR	----
		arsenic, total	7440-38-2	E420	0.00020	mg/L	0.00028	0.00036	0.00009	Diff <2x LOR	----
		barium, total	7440-39-3	E420	0.00020	mg/L	0.0590	0.0580	1.69%	20%	----
		beryllium, total	7440-41-7	E420	0.000040	mg/L	<0.040 µg/L	<0.000040	0	Diff <2x LOR	----
		bismuth, total	7440-69-9	E420	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		boron, total	7440-42-8	E420	0.020	mg/L	0.022	0.022	0.0005	Diff <2x LOR	----
		cadmium, total	7440-43-9	E420	0.0000100	mg/L	0.175 µg/L	0.000148	17.1%	20%	----
		calcium, total	7440-70-2	E420	0.100	mg/L	266	262	1.81%	20%	----
		cobalt, total	7440-48-4	E420	0.00020	mg/L	3.19 µg/L	0.00315	1.22%	20%	----
		copper, total	7440-50-8	E420	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		iron, total	7439-89-6	E420	0.020	mg/L	0.047	0.048	0.001	Diff <2x LOR	----
		lead, total	7439-92-1	E420	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		lithium, total	7439-93-2	E420	0.0020	mg/L	0.0530	0.0528	0.232%	20%	----
		magnesium, total	7439-95-4	E420	0.0100	mg/L	175	172	1.90%	20%	----
		manganese, total	7439-96-5	E420	0.00020	mg/L	0.0883	0.0906	2.60%	20%	----
		molybdenum, total	7439-98-7	E420	0.000100	mg/L	0.00455	0.00452	0.591%	20%	----
		nickel, total	7440-02-0	E420	0.00100	mg/L	0.0129	0.0135	4.17%	20%	----
		potassium, total	7440-09-7	E420	0.100	mg/L	3.43	3.49	1.76%	20%	----
		selenium, total	7782-49-2	E420	0.000100	mg/L	133 µg/L	0.136	2.75%	20%	----
		silicon, total	7440-21-3	E420	0.20	mg/L	4.11	4.08	0.770%	20%	----
		silver, total	7440-22-4	E420	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		sodium, total	7440-23-5	E420	0.100	mg/L	5.37	5.38	0.165%	20%	----
		strontium, total	7440-24-6	E420	0.00040	mg/L	0.296	0.290	2.16%	20%	----
		sulfur, total	7704-34-9	E420	1.00	mg/L	289	291	0.761%	20%	----
		thallium, total	7440-28-0	E420	0.000020	mg/L	0.000032	0.000029	0.000003	Diff <2x LOR	----
		tin, total	7440-31-5	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		titanium, total	7440-32-6	E420	0.00060	mg/L	<0.00060	<0.00060	0	Diff <2x LOR	----
uranium, total	7440-61-1	E420	0.000020	mg/L	0.00885	0.00896	1.29%	20%	----		
vanadium, total	7440-62-2	E420	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----		
zinc, total	7440-66-6	E420	0.0060	mg/L	<0.0060	<0.0060	0	Diff <2x LOR	----		
Total Metals (QC Lot: 730121)											
CG2215287-005	Anonymous	mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----

Dissolved Metals (QC Lot: 728447)



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 728447) - continued											
CG2215304-010	RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP	chromium, dissolved	7440-47-3	E421.Cr-L	0.00020	mg/L	<0.00020	0.00021	0.000008	Diff <2x LOR	----
Dissolved Metals (QC Lot: 728448)											
CG2215304-010	RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP	aluminum, dissolved	7429-90-5	E421	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----
		antimony, dissolved	7440-36-0	E421	0.00020	mg/L	0.00020	<0.00020	0.000002	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E421	0.00020	mg/L	0.00029	0.00029	0.000005	Diff <2x LOR	----
		barium, dissolved	7440-39-3	E421	0.00020	mg/L	0.0544	0.0539	0.920%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.000040	mg/L	<0.040 µg/L	<0.000040	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.020	mg/L	0.020	0.020	0.0001	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E421	0.0000100	mg/L	0.152 µg/L	0.000151	0.898%	20%	----
		calcium, dissolved	7440-70-2	E421	0.100	mg/L	245	244	0.0785%	20%	----
		cobalt, dissolved	7440-48-4	E421	0.00020	mg/L	2.82 µg/L	0.00296	4.95%	20%	----
		copper, dissolved	7440-50-8	E421	0.00040	mg/L	<0.00040	<0.00040	0	Diff <2x LOR	----
		iron, dissolved	7439-89-6	E421	0.020	mg/L	<0.020	<0.020	0	Diff <2x LOR	----
		lead, dissolved	7439-92-1	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0020	mg/L	0.0498	0.0504	1.14%	20%	----
		magnesium, dissolved	7439-95-4	E421	0.0100	mg/L	143	145	1.15%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00020	mg/L	0.0791	0.0826	4.28%	20%	----
		molybdenum, dissolved	7439-98-7	E421	0.000100	mg/L	0.00433	0.00443	2.42%	20%	----
		nickel, dissolved	7440-02-0	E421	0.00100	mg/L	0.0114	0.0116	2.35%	20%	----
		potassium, dissolved	7440-09-7	E421	0.100	mg/L	3.19	3.22	0.835%	20%	----
		selenium, dissolved	7782-49-2	E421	0.000100	mg/L	151 µg/L	0.154	2.11%	20%	----
		silicon, dissolved	7440-21-3	E421	0.100	mg/L	4.04	4.09	1.20%	20%	----
		silver, dissolved	7440-22-4	E421	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E421	0.100	mg/L	4.81	4.88	1.47%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00040	mg/L	0.262	0.267	1.88%	20%	----
		sulfur, dissolved	7704-34-9	E421	1.00	mg/L	307	299	2.60%	20%	----
		thallium, dissolved	7440-28-0	E421	0.000020	mg/L	0.000031	0.000028	0.000003	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.00060	mg/L	<0.00060	<0.00060	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000020	mg/L	0.00818	0.00833	1.92%	20%	----
		vanadium, dissolved	7440-62-2	E421	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E421	0.0020	mg/L	0.0044	0.0046	0.0001	Diff <2x LOR	----

Page : 7 of 19
 Work Order : CG2215304
 Client : Teck Coal Limited
 Project : REGIONAL EFFECTS PROGRAM



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 730110)											
CG2215304-010	RG_ERCKDT_WS_LAEMP _EVO_2022-10_NP	mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 727500)						
solids, total suspended [TSS]	---	E160-L	1	mg/L	<1.0	---
Physical Tests (QCLot: 727501)						
solids, total dissolved [TDS]	---	E162	10	mg/L	<10	---
Physical Tests (QCLot: 727502)						
turbidity	---	E121	0.1	NTU	<0.10	---
Physical Tests (QCLot: 728157)						
acidity (as CaCO3)	---	E283	2	mg/L	2.1	---
Physical Tests (QCLot: 728248)						
conductivity	---	E100	1	µS/cm	<1.0	---
Physical Tests (QCLot: 728250)						
alkalinity, bicarbonate (as CaCO3)	---	E290	1	mg/L	<1.0	---
alkalinity, carbonate (as CaCO3)	---	E290	1	mg/L	<1.0	---
alkalinity, hydroxide (as CaCO3)	---	E290	1	mg/L	<1.0	---
alkalinity, total (as CaCO3)	---	E290	1	mg/L	<1.0	---
Anions and Nutrients (QCLot: 727387)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	---
Anions and Nutrients (QCLot: 727388)						
bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	---
Anions and Nutrients (QCLot: 727389)						
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	---
Anions and Nutrients (QCLot: 727390)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	---
Anions and Nutrients (QCLot: 727391)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	---
Anions and Nutrients (QCLot: 727392)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	---
Anions and Nutrients (QCLot: 727508)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	---
Anions and Nutrients (QCLot: 727509)						
bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	---
Anions and Nutrients (QCLot: 727510)						
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	---



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 727511)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 727512)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 727513)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 727557)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 727559)						
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 728152)						
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 728382)						
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Organic / Inorganic Carbon (QCLot: 727550)						
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Organic / Inorganic Carbon (QCLot: 727551)						
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	<0.50	----
Total Metals (QCLot: 729252)						
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	<0.00010	----
Total Metals (QCLot: 729253)						
aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	----
antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	----
barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	----
boron, total	7440-42-8	E420	0.01	mg/L	<0.010	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	----
calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	----
copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	----
iron, total	7439-89-6	E420	0.01	mg/L	<0.010	----
lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	----
lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	----
magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 729253) - continued						
manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	----
nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	----
potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	----
selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	----
silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	----
silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	----
sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	----
strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	----
sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	----
thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	----
tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	----
titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	----
uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	----
zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	----
Total Metals (QCLot: 730121)						
mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 728447)						
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	<0.00010	----
Dissolved Metals (QCLot: 728448)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 728448) - continued						
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
Dissolved Metals (QCLot: 730110)						
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Physical Tests (QCLot: 727500)									
solids, total suspended [TSS]	----	E160-L	1	mg/L	150 mg/L	94.6	85.0	115	----
Physical Tests (QCLot: 727501)									
solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	96.1	85.0	115	----
Physical Tests (QCLot: 727502)									
turbidity	----	E121	0.1	NTU	200 NTU	110	85.0	115	----
Physical Tests (QCLot: 728157)									
acidity (as CaCO ₃)	----	E283	2	mg/L	50 mg/L	102	85.0	115	----
Physical Tests (QCLot: 728248)									
conductivity	----	E100	1	µS/cm	146.9 µS/cm	97.6	90.0	110	----
Physical Tests (QCLot: 728249)									
pH	----	E108	----	pH units	7 pH units	101	98.6	101	----
Physical Tests (QCLot: 728250)									
alkalinity, total (as CaCO ₃)	----	E290	1	mg/L	500 mg/L	96.9	85.0	115	----
Physical Tests (QCLot: 728320)									
oxidation-reduction potential [ORP]	----	E125	----	mV	220 mV	99.3	95.4	104	----
Anions and Nutrients (QCLot: 727387)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	98.0	90.0	110	----
Anions and Nutrients (QCLot: 727388)									
bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	95.1	85.0	115	----
Anions and Nutrients (QCLot: 727389)									
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	97.6	90.0	110	----
Anions and Nutrients (QCLot: 727390)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 727391)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	98.9	90.0	110	----
Anions and Nutrients (QCLot: 727392)									
sulfate (as SO ₄)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	99.3	90.0	110	----
Anions and Nutrients (QCLot: 727508)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 727509)									
bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	102	85.0	115	----



Sub-Matrix: Water					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	
Anions and Nutrients (QCLot: 727510)									
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	99.7	90.0	110	----
Anions and Nutrients (QCLot: 727511)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 727512)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	98.1	90.0	110	----
Anions and Nutrients (QCLot: 727513)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 727557)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	102	85.0	115	----
Anions and Nutrients (QCLot: 727559)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	83.8	75.0	125	----
Anions and Nutrients (QCLot: 728152)									
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.03 mg/L	96.2	80.0	120	----
Anions and Nutrients (QCLot: 728382)									
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.03 mg/L	100	80.0	120	----
Organic / Inorganic Carbon (QCLot: 727550)									
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	92.6	80.0	120	----
Organic / Inorganic Carbon (QCLot: 727551)									
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	98.4	80.0	120	----
Total Metals (QCLot: 729252)									
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	0.25 mg/L	104	80.0	120	----
Total Metals (QCLot: 729253)									
aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	103	80.0	120	----
antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	98.6	80.0	120	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	98.2	80.0	120	----
barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	106	80.0	120	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	104	80.0	120	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	100	80.0	120	----
boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	98.7	80.0	120	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	104	80.0	120	----
calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	101	80.0	120	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	101	80.0	120	----
copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	98.6	80.0	120	----
iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	108	80.0	120	----



Sub-Matrix: **Water**

Laboratory Control Sample (LCS) Report

Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Total Metals (QCLot: 729253) - continued									
lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	103	80.0	120	----
lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	102	80.0	120	----
magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	105	80.0	120	----
manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	104	80.0	120	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	101	80.0	120	----
nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	104	80.0	120	----
potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	103	80.0	120	----
selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	90.7	80.0	120	----
silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	105	60.0	140	----
silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	93.4	80.0	120	----
sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	105	80.0	120	----
strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	104	80.0	120	----
sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	105	80.0	120	----
thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	102	80.0	120	----
tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	98.5	80.0	120	----
titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	106	80.0	120	----
uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	100	80.0	120	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	102	80.0	120	----
zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	91.9	80.0	120	----
Total Metals (QCLot: 730121)									
mercury, total	7439-97-6	E508	0.000005	mg/L	0.0001 mg/L	100	80.0	120	----
Dissolved Metals (QCLot: 728447)									
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	0.25 mg/L	92.8	80.0	120	----
Dissolved Metals (QCLot: 728448)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	102	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	90.4	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	94.0	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	99.8	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	100	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	93.3	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	92.3	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	93.3	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	96.0	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	97.5	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	91.7	80.0	120	----



Sub-Matrix: Water					Laboratory Control Sample (LCS) Report				
					<i>Spike</i>	<i>Recovery (%)</i>	<i>Recovery Limits (%)</i>		<i>Qualifier</i>
<i>Analyte</i>	<i>CAS Number</i>	<i>Method</i>	<i>LOR</i>	<i>Unit</i>	<i>Concentration</i>	<i>LCS</i>	<i>Low</i>	<i>High</i>	
Dissolved Metals (QCLot: 728448) - continued									
iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	103	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	93.5	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	102	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	92.2	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	96.5	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	96.3	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	93.2	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	101	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	90.6	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	100	60.0	140	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	87.9	80.0	120	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	99.7	80.0	120	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	93.2	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	111	80.0	120	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	93.0	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	92.0	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	94.1	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	92.7	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	98.6	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	84.9	80.0	120	----
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	104	80.0	120	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 727387)										
CG2215304-002	RG_ERCKDT_1_PW-2_2022-10_NP	fluoride	16984-48-8	E235.F	0.958 mg/L	1 mg/L	95.8	75.0	125	----
Anions and Nutrients (QCLot: 727388)										
CG2215304-002	RG_ERCKDT_1_PW-2_2022-10_NP	bromide	24959-67-9	E235.Br-L	0.530 mg/L	0.5 mg/L	106	75.0	125	----
Anions and Nutrients (QCLot: 727389)										
CG2215304-002	RG_ERCKDT_1_PW-2_2022-10_NP	chloride	16887-00-6	E235.Cl-L	101 mg/L	100 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 727390)										
CG2215304-002	RG_ERCKDT_1_PW-2_2022-10_NP	nitrate (as N)	14797-55-8	E235.NO3-L	ND mg/L	2.5 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 727391)										
CG2215304-002	RG_ERCKDT_1_PW-2_2022-10_NP	nitrite (as N)	14797-65-0	E235.NO2-L	0.521 mg/L	0.5 mg/L	104	75.0	125	----
Anions and Nutrients (QCLot: 727392)										
CG2215304-002	RG_ERCKDT_1_PW-2_2022-10_NP	sulfate (as SO4)	14808-79-8	E235.SO4	ND mg/L	100 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 727508)										
CG2215311-001	Anonymous	fluoride	16984-48-8	E235.F	0.936 mg/L	1 mg/L	93.6	75.0	125	----
Anions and Nutrients (QCLot: 727509)										
CG2215311-001	Anonymous	bromide	24959-67-9	E235.Br-L	0.525 mg/L	0.5 mg/L	105	75.0	125	----
Anions and Nutrients (QCLot: 727510)										
CG2215311-001	Anonymous	chloride	16887-00-6	E235.Cl-L	106 mg/L	100 mg/L	106	75.0	125	----
Anions and Nutrients (QCLot: 727511)										
CG2215311-001	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	ND mg/L	2.5 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 727512)										
CG2215311-001	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.534 mg/L	0.5 mg/L	107	75.0	125	----
Anions and Nutrients (QCLot: 727513)										
CG2215311-001	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	ND mg/L	100 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 727557)										
CG2215282-002	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.109 mg/L	0.1 mg/L	109	75.0	125	----



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 727559)										
CG2215320-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.32 mg/L	2.5 mg/L	93.0	70.0	130	----
Anions and Nutrients (QCLot: 728152)										
CG2215311-010	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0516 mg/L	0.05 mg/L	103	70.0	130	----
Anions and Nutrients (QCLot: 728382)										
CG2215291-002	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0421 mg/L	0.05 mg/L	84.2	70.0	130	----
Organic / Inorganic Carbon (QCLot: 727550)										
CG2215304-010	RG_ERCKDT_WS_LAEMP_ EVO_2022-10_NP	carbon, dissolved organic [DOC]	----	E358-L	5.15 mg/L	5 mg/L	103	70.0	130	----
Organic / Inorganic Carbon (QCLot: 727551)										
CG2215304-010	RG_ERCKDT_WS_LAEMP_ EVO_2022-10_NP	carbon, total organic [TOC]	----	E355-L	5.59 mg/L	5 mg/L	112	70.0	130	----
Total Metals (QCLot: 729252)										
CG2215338-001	Anonymous	chromium, total	7440-47-3	E420.Cr-L	0.396 mg/L	0.4 mg/L	99.0	70.0	130	----
Total Metals (QCLot: 729253)										
CG2215338-001	Anonymous	aluminum, total	7429-90-5	E420	2.02 mg/L	2 mg/L	101	70.0	130	----
		antimony, total	7440-36-0	E420	0.195 mg/L	0.2 mg/L	97.4	70.0	130	----
		arsenic, total	7440-38-2	E420	0.192 mg/L	0.2 mg/L	95.8	70.0	130	----
		barium, total	7440-39-3	E420	0.204 mg/L	0.2 mg/L	102	70.0	130	----
		beryllium, total	7440-41-7	E420	0.375 mg/L	0.4 mg/L	93.7	70.0	130	----
		bismuth, total	7440-69-9	E420	0.100 mg/L	0.1 mg/L	100	70.0	130	----
		boron, total	7440-42-8	E420	0.970 mg/L	1 mg/L	97.0	70.0	130	----
		cadmium, total	7440-43-9	E420	0.0409 mg/L	0.04 mg/L	102	70.0	130	----
		calcium, total	7440-70-2	E420	ND mg/L	40 mg/L	ND	70.0	130	----
		cobalt, total	7440-48-4	E420	0.191 mg/L	0.2 mg/L	95.7	70.0	130	----
		copper, total	7440-50-8	E420	0.192 mg/L	0.2 mg/L	95.8	70.0	130	----
		iron, total	7439-89-6	E420	19.9 mg/L	20 mg/L	99.5	70.0	130	----
		lead, total	7439-92-1	E420	0.203 mg/L	0.2 mg/L	102	70.0	130	----
		lithium, total	7439-93-2	E420	0.898 mg/L	1 mg/L	89.8	70.0	130	----
		magnesium, total	7439-95-4	E420	ND mg/L	10 mg/L	ND	70.0	130	----
		manganese, total	7439-96-5	E420	0.199 mg/L	0.2 mg/L	99.6	70.0	130	----
		molybdenum, total	7439-98-7	E420	0.200 mg/L	0.2 mg/L	99.8	70.0	130	----
		nickel, total	7440-02-0	E420	0.398 mg/L	0.4 mg/L	99.5	70.0	130	----
		potassium, total	7440-09-7	E420	38.1 mg/L	40 mg/L	95.2	70.0	130	----
		selenium, total	7782-49-2	E420	0.382 mg/L	0.4 mg/L	95.5	70.0	130	----



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 729253) - continued										
CG2215338-001	Anonymous	silicon, total	7440-21-3	E420	89.9 mg/L	100 mg/L	89.9	70.0	130	----
		silver, total	7440-22-4	E420	0.0403 mg/L	0.04 mg/L	101	70.0	130	----
		sodium, total	7440-23-5	E420	20.4 mg/L	20 mg/L	102	70.0	130	----
		strontium, total	7440-24-6	E420	ND mg/L	0.2 mg/L	ND	70.0	130	----
		sulfur, total	7704-34-9	E420	ND mg/L	200 mg/L	ND	70.0	130	----
		thallium, total	7440-28-0	E420	0.0385 mg/L	0.04 mg/L	96.3	70.0	130	----
		tin, total	7440-31-5	E420	0.196 mg/L	0.2 mg/L	97.9	70.0	130	----
		titanium, total	7440-32-6	E420	0.420 mg/L	0.4 mg/L	105	70.0	130	----
		uranium, total	7440-61-1	E420	0.0393 mg/L	0.04 mg/L	98.2	70.0	130	----
		vanadium, total	7440-62-2	E420	0.985 mg/L	1 mg/L	98.5	70.0	130	----
		zinc, total	7440-66-6	E420	3.57 mg/L	4 mg/L	89.3	70.0	130	----
Total Metals (QCLot: 730121)										
CG2215287-006	Anonymous	mercury, total	7439-97-6	E508	0.0000985 mg/L	0.0001 mg/L	98.5	70.0	130	----
Dissolved Metals (QCLot: 728447)										
CG2215320-001	Anonymous	chromium, dissolved	7440-47-3	E421.Cr-L	0.379 mg/L	0.4 mg/L	94.7	70.0	130	----
Dissolved Metals (QCLot: 728448)										
CG2215320-001	Anonymous	aluminum, dissolved	7429-90-5	E421	2.03 mg/L	2 mg/L	101	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.188 mg/L	0.2 mg/L	94.2	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.194 mg/L	0.2 mg/L	96.8	70.0	130	----
		barium, dissolved	7440-39-3	E421	0.199 mg/L	0.2 mg/L	99.4	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.400 mg/L	0.4 mg/L	100	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.0977 mg/L	0.1 mg/L	97.7	70.0	130	----
		boron, dissolved	7440-42-8	E421	0.996 mg/L	1 mg/L	99.6	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.0395 mg/L	0.04 mg/L	98.7	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	40 mg/L	ND	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.196 mg/L	0.2 mg/L	98.1	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.188 mg/L	0.2 mg/L	94.0	70.0	130	----
		iron, dissolved	7439-89-6	E421	19.4 mg/L	20 mg/L	96.8	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.196 mg/L	0.2 mg/L	97.8	70.0	130	----
		lithium, dissolved	7439-93-2	E421	0.947 mg/L	1 mg/L	94.7	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	10 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E421	0.181 mg/L	0.2 mg/L	90.6	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.198 mg/L	0.2 mg/L	99.2	70.0	130	----
		nickel, dissolved	7440-02-0	E421	0.385 mg/L	0.4 mg/L	96.3	70.0	130	----



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 728448) - continued										
CG2215320-001	Anonymous	potassium, dissolved	7440-09-7	E421	39.6 mg/L	40 mg/L	99.1	70.0	130	----
		selenium, dissolved	7782-49-2	E421	0.423 mg/L	0.4 mg/L	106	70.0	130	----
		silicon, dissolved	7440-21-3	E421	90.0 mg/L	100 mg/L	90.0	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.0412 mg/L	0.04 mg/L	103	70.0	130	----
		sodium, dissolved	7440-23-5	E421	18.4 mg/L	20 mg/L	91.8	70.0	130	----
		strontium, dissolved	7440-24-6	E421	ND mg/L	0.2 mg/L	ND	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	185 mg/L	200 mg/L	92.7	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.0377 mg/L	0.04 mg/L	94.2	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.190 mg/L	0.2 mg/L	94.8	70.0	130	----
		titanium, dissolved	7440-32-6	E421	0.374 mg/L	0.4 mg/L	93.5	70.0	130	----
		uranium, dissolved	7440-61-1	E421	0.0385 mg/L	0.04 mg/L	96.2	70.0	130	----
		vanadium, dissolved	7440-62-2	E421	0.994 mg/L	1 mg/L	99.4	70.0	130	----
		zinc, dissolved	7440-66-6	E421	3.52 mg/L	4 mg/L	88.1	70.0	130	----
Dissolved Metals (QCLot: 730110)										
CG2215311-010	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000968 mg/L	0.0001 mg/L	96.8	70.0	130	----

PROJECT/CLIENT INFO		LABORATORY							
Facility Name / Job#	Regional Effects Program	Lab Name	ALS Calgary						
Project Manager	Mike Pope	Lab Contact	Ljudmyla Shvets						
Email	mike.pope@teck.com	Email	ljudmyla.shvets@alsglobal.com						
Address	421 Pine Avenue	Address	2559 29 Street NE						
City	Sparwood	City	Calgary						
Postal Code	V0B 2G0	Postal Code	T1Y 7B5						
Phone Number	343-333-3905	Phone Number	1 403 407 1794						
SAMPLE DETAILS									
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G-Grab C-Comp	# Of Cont.	ANALYSIS REQUESTED	
RG_ERCKDT_1_PW-1_2022-10_NP	RG_ERCKDT	PW	No	10/31/2022	8:30	G	1	TECKCOAL-ANIONS Dissolved metals TECKCOAL-ROUTINE-VA ALS_Package-DOC ALS_Package-TKN/TOC HG-T-U-CVAF-VA HG-D-CVAF-VA TECKCOAL-MET-T-VA TECKCOAL-MET-D-VA	
RG_ERCKDT_1_PW-2_2022-10_NP	RG_ERCKDT	PW	No	10/31/2022	8:45	G	1		
RG_ERCKDT_1_PW-3_2022-10_NP	RG_ERCKDT	PW	No	10/31/2022	9:00	G	1		
RG_ERCKDT_2_PW-1_2022-10_NP	RG_ERCKDT	PW	No	10/31/2022	9:15	G	1		
RG_ERCKDT_2_PW-2_2022-10_NP	RG_ERCKDT	PW	No	10/31/2022	9:30	G	1		
RG_ERCKDT_2_PW-3_2022-10_NP	RG_ERCKDT	PW	No	10/31/2022	9:45	G	1		
RG_ERCKDT_3_PW-1_2022-10_NP	RG_ERCKDT	PW	No	10/31/2022	10:00	G	1		
RG_ERCKDT_3_PW-2_2022-10_NP	RG_ERCKDT	PW	No	10/31/2022	10:15	G	1		
RG_ERCKDT_3_PW-3_2022-10_NP	RG_ERCKDT	WS	No	10/31/2022	10:30	G	1		
RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP	RG_ERCKDT	WS	No	10/31/2022	10:35	G	7	X X X X X X X X	
ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS				RELINQUISHED BY/AFFILIATION		DATE/TIME		ACCEPTED BY/AFFILIATION	
ALS POVFO00847030				Alex McClymont, Minnow Environmental		November 1, 2022			
NB OF BOTTLES RETURNED/DESCRIPTION				SAMPLER'S NAME		MOBILE #		DATE/TIME	
Regular (default)				Alex McClymont		780-293-6750		November 1, 2022	
Priority (2-3 business days) - 50% surcharge X				SAMPLER'S SIGNATURE		DATE/TIME		November 1, 2022	
Emergency (1 Business Day) - 100% surcharge									
For Emergency <1 Day, ASAP or Weekend - Contact ALS									

Environmental Division
 Calgary
 Work Order Reference
CG2215304



Telephone : +1 403 407 1800



CERTIFICATE OF ANALYSIS

<p>Work Order : CG2215338</p> <p>Client : Teck Coal Limited</p> <p>Contact : Mike Pope</p> <p>Address : 421 Pine Avenue Sparwood BC Canada V0B2G0</p> <p>Telephone : ----</p> <p>Project : REGIONAL EFFECTS PROGRAM</p> <p>PO : VPO00847030</p> <p>C-O-C number : November EVO LAEMP 2022</p> <p>Sampler : AMC</p> <p>Site : ----</p> <p>Quote number : Teck Coal Master Quote</p> <p>No. of samples received : 5</p> <p>No. of samples analysed : 5</p>	<p>Page : 1 of 6</p> <p>Laboratory : Calgary - Environmental</p> <p>Account Manager : Lyudmyla Shvets</p> <p>Address : 2559 29th Street NE Calgary AB Canada T1Y 7B5</p> <p>Telephone : +1 403 407 1800</p> <p>Date Samples Received : 02-Nov-2022 09:00</p> <p>Date Analysis Commenced : 03-Nov-2022</p> <p>Issue Date : 05-Nov-2022 15:27</p>
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This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Anthony Calero	Supervisor - Inorganic	Inorganics, Calgary, Alberta
Anthony Calero	Supervisor - Inorganic	Metals, Calgary, Alberta
Elke Tabora		Inorganics, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Metals, Calgary, Alberta
Kevin Baxter		Inorganics, Calgary, Alberta
Kevin Baxter		Metals, Calgary, Alberta
Parker Sgarbossa	Laboratory Analyst	Inorganics, Calgary, Alberta
Ruifang Zheng	Analyst	Inorganics, Calgary, Alberta
Shirley Li		Inorganics, Calgary, Alberta
Summie Lo	Lab Assistant	Metals, Calgary, Alberta
Vladka Stamenova	Analyst	Inorganics, Calgary, Alberta



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
 LOR: Limit of Reporting (detection limit).

Unit	Description
-	No Unit
%	percent
µg/L	micrograms per litre
µS/cm	Microsiemens per centimetre
meq/L	milliequivalents per litre
mg/L	milligrams per litre
mV	millivolts
NTU	nephelometric turbidity units
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

Qualifier	Description
DLDS	Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.
DTC	Dissolved concentration exceeds total. Results were confirmed by re-analysis.
RRV	Reported result verified by repeat analysis.
TKNI	TKN result may be biased low due to Nitrate interference. Nitrate-N is > 10x TKN.



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID				
					RG_ERCK_WS_ LAEMP_EVO_2 022-11_NP	RG_ERCKUC_W S_LAEMP_EVO _2022-11_NP	RG_GATEDP_W S_LAEMP_EVO _2022-11_NP	RG_RIVER_WS _LAEMP_EVO_ _2022-11_NP	RG_FBLANK_W S_LAEMP_EVO _2022-11_NP
Client sampling date / time					01-Nov-2022 12:00	01-Nov-2022 13:00	01-Nov-2022 13:40	01-Nov-2022 13:40	01-Nov-2022 13:40
Analyte	CAS Number	Method	LOR	Unit	CG2215338-001	CG2215338-002	CG2215338-003	CG2215338-004	CG2215338-005
					Result	Result	Result	Result	Result
Physical Tests									
acidity (as CaCO3)	----	E283	2.0	mg/L	<2.0	<2.0	<2.0	<2.0	<2.0
alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	348	369	226	248	<1.0
alkalinity, bicarbonate (as HCO3)	71-52-3	E290	1.0	mg/L	424	451	276	303	<1.0
alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	14.6	<1.0	18.4	9.6	<1.0
alkalinity, carbonate (as CO3)	3812-32-6	E290	1.0	mg/L	8.8	<1.0	11.0	5.8	<1.0
alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0
alkalinity, hydroxide (as OH)	14280-30-9	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	362	369	244	258	<1.0
conductivity	----	E100	2.0	µS/cm	1780	1780	2090	2110	<2.0
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	1080	1120	1310	1310	<0.50
oxidation-reduction potential [ORP]	----	E125	0.10	mV	414	431	427	424	526
pH	----	E108	0.10	pH units	8.35	8.37	8.43	8.37	5.43
solids, total dissolved [TDS]	----	E162	10	mg/L	1510	1380	1850	1800	<10
solids, total suspended [TSS]	----	E160-L	1.0	mg/L	2.5	1.9	8.4	10.0	<1.0
turbidity	----	E121	0.10	NTU	0.27	0.10	13.9	13.1	<0.10
Anions and Nutrients									
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	0.213	0.190	<0.0050
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.250 ^{DLDS}	<0.250 ^{DLDS}	0.261	0.270	<0.050
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	8.19	8.14	28.7	28.9	<0.10
fluoride	16984-48-8	E235.F	0.020	mg/L	0.161	0.159	0.236	0.238	<0.020
Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	0.778 ^{TKNI}	1.30	1.46 ^{TKNI}	1.12 ^{TKNI}	<0.050
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	9.46	9.42	23.3	23.4	<0.0050
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	0.0581	0.0566	<0.0010
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0043	0.0062	0.0109	0.0145	<0.0020
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	784	780	1040	1040	<0.30
Organic / Inorganic Carbon									
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	<0.50	0.57	2.19	2.36	<0.50



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCK_WS_ LAEMP_EVO_2 022-11_NP	RG_ERCKUC_W S_ LAEMP_EVO _2022-11_NP	RG_GATEDP_W S_ LAEMP_EVO _2022-11_NP	RG_RIVER_WS _LAEMP_EVO_ 2022-11_NP	RG_FBLANK_W S_ LAEMP_EVO _2022-11_NP
Client sampling date / time					01-Nov-2022 12:00	01-Nov-2022 13:00	01-Nov-2022 13:40	01-Nov-2022 13:40	01-Nov-2022 13:40	
Analyte	CAS Number	Method	LOR	Unit	CG2215338-001	CG2215338-002	CG2215338-003	CG2215338-004	CG2215338-005	
					Result	Result	Result	Result	Result	
Organic / Inorganic Carbon										
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	<0.50	<0.50	2.34	2.39	<0.50	
Ion Balance										
anion sum	----	EC101	0.10	meq/L	24.5	24.5	29.0	29.3	<0.10	
cation sum	----	EC101	0.10	meq/L	21.9	22.7	26.6	26.7	<0.10	
ion balance (cations/anions)	----	EC101	0.010	%	89.4	92.6	91.7	91.1	100	
ion balance (APHA)	----	EC101	0.01	%	-5.60	-3.81	-4.32	-4.64	<0.01	
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L	<0.0060 DLDS	<0.0060 DLDS	0.0623	0.0683	<0.0030	
antimony, total	7440-36-0	E420	0.00010	mg/L	<0.00020 DLDS	0.00021	0.00056	0.00057	<0.00010	
arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00025	0.00039	0.00039	0.00036	<0.00010	
barium, total	7440-39-3	E420	0.00010	mg/L	0.0388	0.0382	0.140	0.143	<0.00010	
beryllium, total	7440-41-7	E420	0.020	µg/L	<0.040 DLDS	<0.040 DLDS	<0.040 DLDS	<0.040 DLDS	<0.020	
bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000100 DLDS	<0.000100 DLDS	<0.000100 DLDS	<0.000100 DLDS	<0.000050	
boron, total	7440-42-8	E420	0.010	mg/L	0.025	0.027	0.036	0.038	<0.010	
cadmium, total	7440-43-9	E420	0.0050	µg/L	0.0112	<0.0100 DLDS	0.130	0.131	<0.0050	
calcium, total	7440-70-2	E420	0.050	mg/L	231	238	247	260	<0.050	
chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	<0.00020 DLDS	<0.00020 DLDS	0.00026	0.00022	<0.00010	
cobalt, total	7440-48-4	E420	0.10	µg/L	0.81	0.94	0.35	0.31	<0.10	
copper, total	7440-50-8	E420	0.00050	mg/L	<0.00100 DLDS	<0.00100 DLDS	<0.00100 DLDS	<0.00100 DLDS	<0.00050	
iron, total	7439-89-6	E420	0.010	mg/L	<0.020 DLDS	<0.020 DLDS	0.103	0.097	<0.010	
lead, total	7439-92-1	E420	0.000050	mg/L	<0.000100 DLDS	<0.000100 DLDS	0.000151	0.000141	<0.000050	
lithium, total	7439-93-2	E420	0.0010	mg/L	0.0720	0.0706	0.109	0.110	<0.0010	
magnesium, total	7439-95-4	E420	0.0050	mg/L	166	173	214	215	<0.0050	
manganese, total	7439-96-5	E420	0.00010	mg/L	0.0144	0.0152	0.0157	0.0171	<0.00010	
mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.00787	0.00802	0.00641	0.00658	<0.000050	
nickel, total	7440-02-0	E420	0.00050	mg/L	0.0131	0.0137	0.0191	0.0191	<0.00050	
potassium, total	7440-09-7	E420	0.050	mg/L	3.64	3.83	5.68	5.69	<0.050	
selenium, total	7782-49-2	E420	0.050	µg/L	102	98.1	264	273	<0.050	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCK_WS_ LAEMP_EVO_2 022-11_NP	RG_ERCKUC_W S_LAEMP_EVO _2022-11_NP	RG_GATEDP_W S_LAEMP_EVO _2022-11_NP	RG_RIVER_WS _LAEMP_EVO_ 2022-11_NP	RG_FBLANK_W S_LAEMP_EVO _2022-11_NP
Client sampling date / time					01-Nov-2022 12:00	01-Nov-2022 13:00	01-Nov-2022 13:40	01-Nov-2022 13:40	01-Nov-2022 13:40	
Analyte	CAS Number	Method	LOR	Unit	CG2215338-001	CG2215338-002	CG2215338-003	CG2215338-004	CG2215338-005	
					Result	Result	Result	Result	Result	
Total Metals										
silicon, total	7440-21-3	E420	0.10	mg/L	3.97	3.95	3.16	3.21	<0.10	
silver, total	7440-22-4	E420	0.000010	mg/L	<0.000020 DLDS	<0.000020 DLDS	<0.000020 DLDS	<0.000020 DLDS	<0.000010	
sodium, total	7440-23-5	E420	0.050	mg/L	7.03	7.12	6.11	6.11	<0.050	
strontium, total	7440-24-6	E420	0.00020	mg/L	0.329	0.329	0.873	0.882	<0.00020	
sulfur, total	7704-34-9	E420	0.50	mg/L	303	291	379	390	<0.50	
thallium, total	7440-28-0	E420	0.000010	mg/L	0.000031	0.000030	0.000043	0.000041	<0.000010	
tin, total	7440-31-5	E420	0.00010	mg/L	<0.00020 DLDS	<0.00020 DLDS	<0.00020 DLDS	<0.00020 DLDS	<0.00010	
titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00060 DLDS	<0.00060 DLDS	0.00110	0.00133	<0.00030	
uranium, total	7440-61-1	E420	0.000010	mg/L	0.00950	0.00927	0.00868	0.00890	<0.000010	
vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00100 DLDS	<0.00100 DLDS	<0.00100 DLDS	<0.00100 DLDS	<0.00050	
zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0060 DLDS	<0.0060 DLDS	<0.0060 DLDS	<0.0060 DLDS	<0.0030	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	<0.0020 DLDS	0.0020	0.0026	0.0027	<0.0010	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00020 DLDS	<0.00020 DLDS	0.00052	0.00052	<0.00010	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00028	0.00023	0.00038	0.00037	<0.00010	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0359	0.0347	0.132	0.132	0.00013 RRV	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.040 DLDS	<0.040 DLDS	<0.040 DLDS	<0.040 DLDS	<0.020	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000100 DLDS	<0.000100 DLDS	<0.000100 DLDS	<0.000100 DLDS	<0.000050	
boron, dissolved	7440-42-8	E421	0.010	mg/L	0.023	0.023	0.033	0.034	<0.010	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	<0.0100 DLDS	<0.0100 DLDS	0.0920	0.0999	<0.0050	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	212	221	241	238	<0.050	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00020 DLDS	<0.00020 DLDS	<0.00020 DLDS	<0.00020 DLDS	<0.00010	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	0.74	0.79	0.22	0.22	<0.10	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00040 DLDS	<0.00040 DLDS	0.00050	0.00052	0.00044 RRV	
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.020 DLDS	<0.020 DLDS	<0.020 DLDS	<0.020 DLDS	<0.010	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000100 DLDS	<0.000100 DLDS	<0.000100 DLDS	<0.000100 DLDS	<0.000050	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0696	0.0700	0.113	0.112	<0.0010	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	133	138	172	175	<0.0050	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.0120	0.0140	0.0137	0.0136	<0.00010	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCK_WS_ LAEMP_EVO_2 022-11_NP	RG_ERCKUC_W S_LAEMP_EVO _2022-11_NP	RG_GATEDP_W S_LAEMP_EVO _2022-11_NP	RG_RIVER_WS _LAEMP_EVO_ 2022-11_NP	RG_FBLANK_W S_LAEMP_EVO _2022-11_NP
Client sampling date / time					01-Nov-2022 12:00	01-Nov-2022 13:00	01-Nov-2022 13:40	01-Nov-2022 13:40	01-Nov-2022 13:40	
Analyte	CAS Number	Method	LOR	Unit	CG2215338-001	CG2215338-002	CG2215338-003	CG2215338-004	CG2215338-005	
					Result	Result	Result	Result	Result	
Dissolved Metals										
mercury, dissolved	7439-97-6	E509	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00744	0.00749	0.00629	0.00611	<0.000050	
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.0113	0.0116	0.0167	0.0172	<0.00050	
potassium, dissolved	7440-09-7	E421	0.050	mg/L	3.54	3.43	5.31	5.41	<0.050	
selenium, dissolved	7782-49-2	E421	0.050	µg/L	108	107	278	285	<0.050	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	3.69	3.59	2.76	2.70	<0.050	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000020 DLDS	<0.000020 DLDS	<0.000020 DLDS	<0.000020 DLDS	<0.000010	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	6.51	6.39	5.63	5.67	0.168 DTC RRV	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.297	0.294	0.832	0.824	<0.00020	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	310	299	386	387	<0.50	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	0.000029	0.000029	0.000042	0.000040	<0.000010	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00020 DLDS	<0.00020 DLDS	<0.00020 DLDS	<0.00020 DLDS	0.00036 DTC RRV	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00060 DLDS	<0.00060 DLDS	<0.00060 DLDS	<0.00060 DLDS	<0.00030	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00857	0.00868	0.00838	0.00837	<0.000010	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00100 DLDS	<0.00100 DLDS	<0.00100 DLDS	<0.00100 DLDS	<0.00050	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0020 DLDS	<0.0020 DLDS	0.0034	0.0043	<0.0010	
dissolved mercury filtration location	----	EP509	-	-	Field	Field	Field	Field	Field	
dissolved metals filtration location	----	EP421	-	-	Field	Field	Field	Field	Field	

Please refer to the General Comments section for an explanation of any qualifiers detected.



QUALITY CONTROL INTERPRETIVE REPORT

<p>Work Order : CG2215338</p> <p>Client : Teck Coal Limited</p> <p>Contact : Mike Pope</p> <p>Address : 421 Pine Avenue Sparwood BC Canada V0B2G0</p> <p>Telephone : ----</p> <p>Project : REGIONAL EFFECTS PROGRAM</p> <p>PO : VPO00847030</p> <p>C-O-C number : November EVO LAEMP 2022</p> <p>Sampler : AMC</p> <p>Site : ----</p> <p>Quote number : Teck Coal Master Quote</p> <p>No. of samples received : 5</p> <p>No. of samples analysed : 5</p>	<p>Page : 1 of 24</p> <p>Laboratory : Calgary - Environmental</p> <p>Account Manager : Lyudmyla Shvets</p> <p>Address : 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5</p> <p>Telephone : +1 403 407 1800</p> <p>Date Samples Received : 02-Nov-2022 09:00</p> <p>Issue Date : 05-Nov-2022 15:27</p>
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This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

- Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
- CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
- DQO: Data Quality Objective.
- LOR: Limit of Reporting (detection limit).
- RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_ERCK_WS_LAEMP_EVO_2022-11_NP	E298	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_ERCKUC_WS_LAEMP_EVO_2022-11_NP	E298	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_FBLANK_WS_LAEMP_EVO_2022-11_NP	E298	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_GATEDP_WS_LAEMP_EVO_2022-11_NP	E298	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (lab preserved) RG_RIVER_WS_LAEMP_EVO_2022-11_NP	E298	01-Nov-2022	03-Nov-2022	3 days	2 days	✓	03-Nov-2022	28 days	0 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCK_WS_LAEMP_EVO_2022-11_NP	E235.Br-L	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-11_NP	E235.Br-L	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-11_NP	E235.Br-L	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-11_NP	E235.Br-L	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-11_NP	E235.Br-L	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-11_NP	E235.Cl-L	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-11_NP	E235.Cl-L	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-11_NP	E235.Cl-L	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-11_NP	E235.Cl-L	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-11_NP	E235.Cl-L	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-11_NP	E378-U	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	3 days	2 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-11_NP	E378-U	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	3 days	2 days	✔	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-11_NP	E378-U	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	3 days	2 days	✔	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-11_NP	E378-U	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	3 days	2 days	✔	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-11_NP	E378-U	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	3 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-11_NP	E235.F	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-11_NP	E235.F	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-11_NP	E235.F	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-11_NP	E235.F	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-11_NP	E235.F	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-11_NP	E235.NO3-L	01-Nov-2022	03-Nov-2022	3 days	2 days	✔	03-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-11_NP	E235.NO3-L	01-Nov-2022	03-Nov-2022	3 days	2 days	✔	03-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-11_NP	E235.NO3-L	01-Nov-2022	03-Nov-2022	3 days	2 days	✔	03-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-11_NP	E235.NO3-L	01-Nov-2022	03-Nov-2022	3 days	2 days	✔	03-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-11_NP	E235.NO3-L	01-Nov-2022	03-Nov-2022	3 days	2 days	✔	03-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-11_NP	E235.NO2-L	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-11_NP	E235.NO2-L	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-11_NP	E235.NO2-L	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	3 days	2 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-11_NP	E235.NO2-L	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-11_NP	E235.NO2-L	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	3 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-11_NP	E235.SO4	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-11_NP	E235.SO4	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-11_NP	E235.SO4	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-11_NP	E235.SO4	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-11_NP	E235.SO4	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_ERCK_WS_LAEMP_EVO_2022-11_NP	E318	01-Nov-2022	04-Nov-2022	----	----		04-Nov-2022	28 days	3 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKUC_WS_LAEMP_EVO_2022-11_NP	E318	01-Nov-2022	04-Nov-2022	----	----		04-Nov-2022	28 days	3 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_FBLANK_WS_LAEMP_EVO_2022-11_NP	E318	01-Nov-2022	04-Nov-2022	----	----		04-Nov-2022	28 days	3 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_GATEDP_WS_LAEMP_EVO_2022-11_NP	E318	01-Nov-2022	04-Nov-2022	----	----		04-Nov-2022	28 days	3 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (lab preserved) RG_RIVER_WS_LAEMP_EVO_2022-11_NP	E318	01-Nov-2022	04-Nov-2022	3 days	3 days	✔	04-Nov-2022	28 days	0 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_ERCK_WS_LAEMP_EVO_2022-11_NP	E372-U	01-Nov-2022	03-Nov-2022	----	----		04-Nov-2022	28 days	3 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_ERCKUC_WS_LAEMP_EVO_2022-11_NP	E372-U	01-Nov-2022	03-Nov-2022	----	----		04-Nov-2022	28 days	3 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_FBLANK_WS_LAEMP_EVO_2022-11_NP	E372-U	01-Nov-2022	03-Nov-2022	----	----		04-Nov-2022	28 days	3 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_GATEDP_WS_LAEMP_EVO_2022-11_NP	E372-U	01-Nov-2022	03-Nov-2022	----	----		04-Nov-2022	28 days	3 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (lab preserved) RG_RIVER_WS_LAEMP_EVO_2022-11_NP	E372-U	01-Nov-2022	03-Nov-2022	3 days	2 days	✔	04-Nov-2022	28 days	1 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCK_WS_LAEMP_EVO_2022-11_NP	E421.Cr-L	01-Nov-2022	03-Nov-2022	----	----		04-Nov-2022	180 days	3 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKUC_WS_LAEMP_EVO_2022-11_NP	E421.Cr-L	01-Nov-2022	03-Nov-2022	----	----		04-Nov-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_FBLANK_WS_LAEMP_EVO_2022-11_NP	E421.Cr-L	01-Nov-2022	03-Nov-2022	----	----		04-Nov-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_GATEDP_WS_LAEMP_EVO_2022-11_NP	E421.Cr-L	01-Nov-2022	03-Nov-2022	----	----		04-Nov-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_RIVER_WS_LAEMP_EVO_2022-11_NP	E421.Cr-L	01-Nov-2022	03-Nov-2022	----	----		04-Nov-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_ERCK_WS_LAEMP_EVO_2022-11_NP	E509	01-Nov-2022	04-Nov-2022	----	----		04-Nov-2022	28 days	3 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_ERCKUC_WS_LAEMP_EVO_2022-11_NP	E509	01-Nov-2022	04-Nov-2022	----	----		04-Nov-2022	28 days	3 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_FBLANK_WS_LAEMP_EVO_2022-11_NP	E509	01-Nov-2022	04-Nov-2022	----	----		04-Nov-2022	28 days	3 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_GATEDP_WS_LAEMP_EVO_2022-11_NP	E509	01-Nov-2022	04-Nov-2022	----	----		04-Nov-2022	28 days	3 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_RIVER_WS_LAEMP_EVO_2022-11_NP	E509	01-Nov-2022	04-Nov-2022	----	----		04-Nov-2022	28 days	3 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ERCK_WS_LAEMP_EVO_2022-11_NP	E421	01-Nov-2022	03-Nov-2022	----	----		04-Nov-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ERCKUC_WS_LAEMP_EVO_2022-11_NP	E421	01-Nov-2022	03-Nov-2022	----	----		04-Nov-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_FBLANK_WS_LAEMP_EVO_2022-11_NP	E421	01-Nov-2022	03-Nov-2022	----	----		04-Nov-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_GATEDP_WS_LAEMP_EVO_2022-11_NP	E421	01-Nov-2022	03-Nov-2022	----	----		04-Nov-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_RIVER_WS_LAEMP_EVO_2022-11_NP	E421	01-Nov-2022	03-Nov-2022	----	----		04-Nov-2022	180 days	3 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_ERCK_WS_LAEMP_EVO_2022-11_NP	E358-L	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_ERCKUC_WS_LAEMP_EVO_2022-11_NP	E358-L	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_FBLANK_WS_LAEMP_EVO_2022-11_NP	E358-L	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_GATEDP_WS_LAEMP_EVO_2022-11_NP	E358-L	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-11_NP	E358-L	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_ERCK_WS_LAEMP_EVO_2022-11_NP	E355-L	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKUC_WS_LAEMP_EVO_2022-11_NP	E355-L	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_FBLANK_WS_LAEMP_EVO_2022-11_NP	E355-L	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_GATEDP_WS_LAEMP_EVO_2022-11_NP	E355-L	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (lab preserved) RG_RIVER_WS_LAEMP_EVO_2022-11_NP	E355-L	01-Nov-2022	03-Nov-2022	3 days	2 days	✔	03-Nov-2022	28 days	0 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-11_NP	E283	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	14 days	2 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-11_NP	E283	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	14 days	2 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-11_NP	E283	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	14 days	2 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Acidity by Titration											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-11_NP	E283	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	14 days	2 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-11_NP	E283	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	14 days	2 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-11_NP	E290	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	14 days	2 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-11_NP	E290	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	14 days	2 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-11_NP	E290	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	14 days	2 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-11_NP	E290	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	14 days	2 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-11_NP	E290	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	14 days	2 days	✔	
Physical Tests : Conductivity in Water											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-11_NP	E100	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✔	
Physical Tests : Conductivity in Water											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-11_NP	E100	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Conductivity in Water											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-11_NP	E100	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-11_NP	E100	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-11_NP	E100	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✓	
Physical Tests : ORP by Electrode											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-11_NP	E125	01-Nov-2022	----	----	----		04-Nov-2022	0.25 hrs	69 hrs	* EHTR-FM	
Physical Tests : ORP by Electrode											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-11_NP	E125	01-Nov-2022	----	----	----		04-Nov-2022	0.25 hrs	69 hrs	* EHTR-FM	
Physical Tests : ORP by Electrode											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-11_NP	E125	01-Nov-2022	----	----	----		04-Nov-2022	0.25 hrs	69 hrs	* EHTR-FM	
Physical Tests : ORP by Electrode											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-11_NP	E125	01-Nov-2022	----	----	----		04-Nov-2022	0.25 hrs	70 hrs	* EHTR-FM	
Physical Tests : ORP by Electrode											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-11_NP	E125	01-Nov-2022	----	----	----		04-Nov-2022	0.25 hrs	71 hrs	* EHTR-FM	
Physical Tests : pH by Meter											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-11_NP	E108	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	0.25 hrs	0.25 hrs	* EHTR-FM	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : pH by Meter											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-11_NP	E108	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	0.25 hrs	0.25 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-11_NP	E108	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	0.25 hrs	0.25 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-11_NP	E108	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	0.25 hrs	0.25 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-11_NP	E108	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	0.25 hrs	0.25 hrs	*	EHTR-FM
Physical Tests : TDS by Gravimetry											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-11_NP	E162	01-Nov-2022	----	----	----		03-Nov-2022	7 days	2 days	✓	
Physical Tests : TDS by Gravimetry											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-11_NP	E162	01-Nov-2022	----	----	----		03-Nov-2022	7 days	2 days	✓	
Physical Tests : TDS by Gravimetry											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-11_NP	E162	01-Nov-2022	----	----	----		03-Nov-2022	7 days	2 days	✓	
Physical Tests : TDS by Gravimetry											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-11_NP	E162	01-Nov-2022	----	----	----		03-Nov-2022	7 days	2 days	✓	
Physical Tests : TDS by Gravimetry											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-11_NP	E162	01-Nov-2022	----	----	----		03-Nov-2022	7 days	2 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE RG_ERCK_WS_LAEMP_EVO_2022-11_NP	E160-L	01-Nov-2022	----	----	----		03-Nov-2022	7 days	2 days	✔
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-11_NP	E160-L	01-Nov-2022	----	----	----		03-Nov-2022	7 days	2 days	✔
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-11_NP	E160-L	01-Nov-2022	----	----	----		03-Nov-2022	7 days	2 days	✔
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-11_NP	E160-L	01-Nov-2022	----	----	----		03-Nov-2022	7 days	2 days	✔
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE RG_RIVER_WS_LAEMP_EVO_2022-11_NP	E160-L	01-Nov-2022	----	----	----		03-Nov-2022	7 days	2 days	✔
Physical Tests : Turbidity by Nephelometry										
HDPE RG_ERCK_WS_LAEMP_EVO_2022-11_NP	E121	01-Nov-2022	----	----	----		04-Nov-2022	3 days	3 days	✔
Physical Tests : Turbidity by Nephelometry										
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-11_NP	E121	01-Nov-2022	----	----	----		04-Nov-2022	3 days	3 days	✔
Physical Tests : Turbidity by Nephelometry										
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-11_NP	E121	01-Nov-2022	----	----	----		04-Nov-2022	3 days	3 days	✔
Physical Tests : Turbidity by Nephelometry										
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-11_NP	E121	01-Nov-2022	----	----	----		04-Nov-2022	3 days	3 days	✔



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Turbidity by Nephelometry										
HDPE RG_RIVER_WS_LAEMP_EVO_2022-11_NP	E121	01-Nov-2022	----	----	----		04-Nov-2022	3 days	3 days	✔
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)										
HDPE - total (lab preserved) RG_ERCK_WS_LAEMP_EVO_2022-11_NP	E420.Cr-L	01-Nov-2022	04-Nov-2022	----	----		04-Nov-2022	180 days	3 days	✔
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)										
HDPE - total (lab preserved) RG_ERCKUC_WS_LAEMP_EVO_2022-11_NP	E420.Cr-L	01-Nov-2022	04-Nov-2022	----	----		04-Nov-2022	180 days	3 days	✔
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)										
HDPE - total (lab preserved) RG_FBLANK_WS_LAEMP_EVO_2022-11_NP	E420.Cr-L	01-Nov-2022	04-Nov-2022	----	----		04-Nov-2022	180 days	3 days	✔
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)										
HDPE - total (lab preserved) RG_GATEDP_WS_LAEMP_EVO_2022-11_NP	E420.Cr-L	01-Nov-2022	04-Nov-2022	----	----		04-Nov-2022	180 days	3 days	✔
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)										
HDPE - total (lab preserved) RG_RIVER_WS_LAEMP_EVO_2022-11_NP	E420.Cr-L	01-Nov-2022	04-Nov-2022	----	----		04-Nov-2022	180 days	3 days	✔
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) RG_ERCK_WS_LAEMP_EVO_2022-11_NP	E508	01-Nov-2022	04-Nov-2022	----	----		04-Nov-2022	28 days	3 days	✔
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) RG_ERCKUC_WS_LAEMP_EVO_2022-11_NP	E508	01-Nov-2022	04-Nov-2022	----	----		04-Nov-2022	28 days	3 days	✔
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) RG_FBLANK_WS_LAEMP_EVO_2022-11_NP	E508	01-Nov-2022	04-Nov-2022	----	----		04-Nov-2022	28 days	3 days	✔



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_GATEDP_WS_LAEMP_EVO_2022-11_NP	E508	01-Nov-2022	04-Nov-2022	----	----		04-Nov-2022	28 days	3 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_RIVER_WS_LAEMP_EVO_2022-11_NP	E508	01-Nov-2022	04-Nov-2022	----	----		04-Nov-2022	28 days	3 days	✔	
Total Metals : Total metals in Water by CRC ICPMS											
HDPE - total (lab preserved) RG_ERCK_WS_LAEMP_EVO_2022-11_NP	E420	01-Nov-2022	04-Nov-2022	----	----		04-Nov-2022	180 days	3 days	✔	
Total Metals : Total metals in Water by CRC ICPMS											
HDPE - total (lab preserved) RG_ERCKUC_WS_LAEMP_EVO_2022-11_NP	E420	01-Nov-2022	04-Nov-2022	----	----		04-Nov-2022	180 days	3 days	✔	
Total Metals : Total metals in Water by CRC ICPMS											
HDPE - total (lab preserved) RG_FBLANK_WS_LAEMP_EVO_2022-11_NP	E420	01-Nov-2022	04-Nov-2022	----	----		04-Nov-2022	180 days	3 days	✔	
Total Metals : Total metals in Water by CRC ICPMS											
HDPE - total (lab preserved) RG_GATEDP_WS_LAEMP_EVO_2022-11_NP	E420	01-Nov-2022	04-Nov-2022	----	----		04-Nov-2022	180 days	3 days	✔	
Total Metals : Total metals in Water by CRC ICPMS											
HDPE - total (lab preserved) RG_RIVER_WS_LAEMP_EVO_2022-11_NP	E420	01-Nov-2022	04-Nov-2022	----	----		04-Nov-2022	180 days	3 days	✔	

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended
 Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
Analytical Methods							
Laboratory Duplicates (DUP)							
Acidity by Titration	E283	729315	1	14	7.1	5.0	✓
Alkalinity Species by Titration	E290	729321	1	7	14.2	5.0	✓
Ammonia by Fluorescence	E298	728827	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	728627	1	16	6.2	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	728628	1	16	6.2	5.0	✓
Conductivity in Water	E100	729320	1	7	14.2	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	729263	1	15	6.6	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	730110	2	29	6.9	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	729264	1	15	6.6	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	728638	1	14	7.1	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	728584	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	728626	1	16	6.2	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	728629	1	16	6.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	728630	1	16	6.2	5.0	✓
ORP by Electrode	E125	730396	1	9	11.1	5.0	✓
pH by Meter	E108	729319	1	7	14.2	5.0	✓
Sulfate in Water by IC	E235.SO4	728631	1	16	6.2	5.0	✓
TDS by Gravimetry	E162	729418	1	9	11.1	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	729252	1	9	11.1	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	728941	1	19	5.2	5.0	✓
Total Mercury in Water by CVAAS	E508	730121	2	30	6.6	5.0	✓
Total metals in Water by CRC ICPMS	E420	729253	1	11	9.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	728639	1	14	7.1	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	729343	1	6	16.6	5.0	✓
Turbidity by Nephelometry	E121	730049	1	11	9.0	5.0	✓
Laboratory Control Samples (LCS)							
Acidity by Titration	E283	729315	1	14	7.1	5.0	✓
Alkalinity Species by Titration	E290	729321	1	7	14.2	5.0	✓
Ammonia by Fluorescence	E298	728827	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	728627	1	16	6.2	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	728628	1	16	6.2	5.0	✓
Conductivity in Water	E100	729320	1	7	14.2	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	729263	1	15	6.6	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	730110	2	29	6.9	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	729264	1	15	6.6	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	728638	1	14	7.1	5.0	✓



Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
Analytical Methods							
Laboratory Control Samples (LCS) - Continued							
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	728584	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	728626	1	16	6.2	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	728629	1	16	6.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	728630	1	16	6.2	5.0	✓
ORP by Electrode	E125	730396	1	9	11.1	5.0	✓
pH by Meter	E108	729319	1	7	14.2	5.0	✓
Sulfate in Water by IC	E235.SO4	728631	1	16	6.2	5.0	✓
TDS by Gravimetry	E162	729418	1	9	11.1	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	729252	1	9	11.1	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	728941	1	19	5.2	5.0	✓
Total Mercury in Water by CVAAS	E508	730121	2	30	6.6	5.0	✓
Total metals in Water by CRC ICPMS	E420	729253	1	11	9.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	728639	1	14	7.1	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	729343	1	6	16.6	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	729431	1	9	11.1	5.0	✓
Turbidity by Nephelometry	E121	730049	1	11	9.0	5.0	✓
Method Blanks (MB)							
Acidity by Titration	E283	729315	1	14	7.1	5.0	✓
Alkalinity Species by Titration	E290	729321	1	7	14.2	5.0	✓
Ammonia by Fluorescence	E298	728827	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	728627	1	16	6.2	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	728628	1	16	6.2	5.0	✓
Conductivity in Water	E100	729320	1	7	14.2	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	729263	1	15	6.6	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	730110	2	29	6.9	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	729264	1	15	6.6	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	728638	1	14	7.1	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	728584	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	728626	1	16	6.2	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	728629	1	16	6.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	728630	1	16	6.2	5.0	✓
Sulfate in Water by IC	E235.SO4	728631	1	16	6.2	5.0	✓
TDS by Gravimetry	E162	729418	1	9	11.1	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	729252	1	9	11.1	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	728941	1	19	5.2	5.0	✓
Total Mercury in Water by CVAAS	E508	730121	2	30	6.6	5.0	✓
Total metals in Water by CRC ICPMS	E420	729253	1	11	9.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	728639	1	14	7.1	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	729343	1	6	16.6	5.0	✓



Matrix: **Water** Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
<i>Analytical Methods</i>							
Method Blanks (MB) - Continued							
TSS by Gravimetry (Low Level)	E160-L	729431	1	9	11.1	5.0	✔
Turbidity by Nephelometry	E121	730049	1	11	9.0	5.0	✔
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	728827	1	20	5.0	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	728627	1	16	6.2	5.0	✔
Chloride in Water by IC (Low Level)	E235.Cl-L	728628	1	16	6.2	5.0	✔
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	729263	1	15	6.6	5.0	✔
Dissolved Mercury in Water by CVAAS	E509	730110	2	29	6.9	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	729264	1	15	6.6	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	728638	1	14	7.1	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	728584	1	20	5.0	5.0	✔
Fluoride in Water by IC	E235.F	728626	1	16	6.2	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	728629	1	16	6.2	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	728630	1	16	6.2	5.0	✔
Sulfate in Water by IC	E235.SO4	728631	1	16	6.2	5.0	✔
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	729252	1	9	11.1	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	728941	1	19	5.2	5.0	✔
Total Mercury in Water by CVAAS	E508	730121	2	30	6.6	5.0	✔
Total metals in Water by CRC ICPMS	E420	729253	1	11	9.0	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	728639	1	14	7.1	5.0	✔
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	729343	1	6	16.6	5.0	✔



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 Calgary - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 Calgary - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 Calgary - Environmental	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
ORP by Electrode	E125 Calgary - Environmental	Water	ASTM D1498 (mod)	Oxidation reduction potential is reported as the oxidation-reduction potential of the platinum metal-reference electrode employed, measured in mV. For high accuracy test results, it is recommended that this analysis be conducted in the field.
TSS by Gravimetry (Low Level)	E160-L Calgary - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 Calgary - Environmental	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC (Low Level)	E235.Cl-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Acidity by Titration	E283 Calgary - Environmental	Water	APHA 2310 B (mod)	Acidity is determined by potentiometric titration to pH endpoint of 8.3
Alkalinity Species by Titration	E290 Calgary - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 Calgary - Environmental	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 Calgary - Environmental	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L Calgary - Environmental	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Dissolved Organic Carbon by Combustion (Low Level)	E358-L Calgary - Environmental	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U Calgary - Environmental	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U Calgary - Environmental	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Total metals in Water by CRC ICPMS	E420 Calgary - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L Calgary - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Metals in Water by CRC ICPMS	E421 Calgary - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L Calgary - Environmental	Water	APHA 3030 B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS
Total Mercury in Water by CVAAS	E508 Calgary - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS
Dissolved Mercury in Water by CVAAS	E509 Calgary - Environmental	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
Dissolved Hardness (Calculated)	EC100 Calgary - Environmental	Water	APHA 2340B	"Hardness (as CaCO ₃), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Ion Balance using Dissolved Metals	EC101 Calgary - Environmental	Water	APHA 1030E	Cation Sum, Anion Sum, and Ion Balance are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present. Ion Balance cannot be calculated accurately for waters with very low electrical conductivity (EC).

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 Calgary - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 Calgary - Environmental	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Preparation for Total Organic Carbon by Combustion	EP355 Calgary - Environmental	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon by Combustion	EP358 Calgary - Environmental	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Phosphorus in water	EP372 Calgary - Environmental	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.

Page : 24 of 24
Work Order : CG2215338
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



<i>Preparation Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
Dissolved Metals Water Filtration	EP421 Calgary - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.
Dissolved Mercury Water Filtration	EP509 Calgary - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.

QUALITY CONTROL REPORT

<p>Work Order : CG2215338</p> <p>Client : Teck Coal Limited</p> <p>Contact : Mike Pope</p> <p>Address : 421 Pine Avenue Sparwood BC Canada V0B2G0</p> <p>Telephone :</p> <p>Project : REGIONAL EFFECTS PROGRAM</p> <p>PO : VPO00847030</p> <p>C-O-C number : November EVO LAEMP 2022</p> <p>Sampler : AMC</p> <p>Site : ----</p> <p>Quote number : Teck Coal Master Quote</p> <p>No. of samples received : 5</p> <p>No. of samples analysed : 5</p>	<p>Page : 1 of 18</p> <p>Laboratory : Calgary - Environmental</p> <p>Account Manager : Lyudmyla Shvets</p> <p>Address : 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5</p> <p>Telephone : +1 403 407 1800</p> <p>Date Samples Received : 02-Nov-2022 09:00</p> <p>Date Analysis Commenced : 03-Nov-2022</p> <p>Issue Date : 05-Nov-2022 15:27</p>
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This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Anthony Calero	Supervisor - Inorganic	Calgary Inorganics, Calgary, Alberta
Anthony Calero	Supervisor - Inorganic	Calgary Metals, Calgary, Alberta
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Page : 2 of 18
Work Order : CG2215338
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 729315)											
CG2215311-010	Anonymous	acidity (as CaCO3)	----	E283	2.0	mg/L	<2.0	<2.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 729319)											
CG2215311-010	Anonymous	pH	----	E108	0.10	pH units	8.25	8.26	0.121%	4%	----
Physical Tests (QC Lot: 729320)											
CG2215311-010	Anonymous	conductivity	----	E100	2.0	µS/cm	1780	1780	0.112%	10%	----
Physical Tests (QC Lot: 729321)											
CG2215311-010	Anonymous	alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	424	420	0.830%	20%	----
		alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	424	420	0.830%	20%	----
Physical Tests (QC Lot: 729418)											
CG2215311-010	Anonymous	solids, total dissolved [TDS]	----	E162	40	mg/L	1540	1700	9.99%	20%	----
Physical Tests (QC Lot: 730049)											
CG2215338-001	RG_ERCK_WS_LAEMP_E VO_2022-11_NP	turbidity	----	E121	0.10	NTU	0.27	0.24	0.04	Diff <2x LOR	----
Physical Tests (QC Lot: 730396)											
CG2215311-010	Anonymous	oxidation-reduction potential [ORP]	----	E125	0.10	mV	378	383	1.42%	15%	----
Anions and Nutrients (QC Lot: 728584)											
CG2215325-001	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 728626)											
CG2215336-001	Anonymous	fluoride	16984-48-8	E235.F	0.020	mg/L	0.891	0.872	2.13%	20%	----
Anions and Nutrients (QC Lot: 728627)											
CG2215336-001	Anonymous	bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 728628)											
CG2215336-001	Anonymous	chloride	16887-00-6	E235.Cl-L	0.10	mg/L	0.52	0.51	0.005	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 728629)											
CG2215336-001	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.463	0.461	0.476%	20%	----
Anions and Nutrients (QC Lot: 728630)											
CG2215336-001	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 728631)											



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 728631) - continued											
CG2215336-001	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	82.5	82.1	0.489%	20%	----
Anions and Nutrients (QC Lot: 728827)											
CG2215337-001	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 728941)											
CG2215311-010	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.500	mg/L	<0.500	<0.500	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 729343)											
CG2215338-001	RG_ERCK_WS_LAEMP_E VO_2022-11_NP	phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0043	0.0050	0.0007	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 728638)											
CG2215337-001	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	1.17	1.12	0.05	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 728639)											
CG2215337-001	Anonymous	carbon, total organic [TOC]	----	E355-L	0.50	mg/L	1.42	1.37	0.04	Diff <2x LOR	----
Total Metals (QC Lot: 729252)											
CG2215304-010	Anonymous	chromium, total	7440-47-3	E420.Cr-L	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Total Metals (QC Lot: 729253)											
CG2215304-010	Anonymous	aluminum, total	7429-90-5	E420	0.0060	mg/L	<0.0060	<0.0060	0	Diff <2x LOR	----
		antimony, total	7440-36-0	E420	0.00020	mg/L	0.00021	0.00021	0.000002	Diff <2x LOR	----
		arsenic, total	7440-38-2	E420	0.00020	mg/L	0.00028	0.00036	0.00009	Diff <2x LOR	----
		barium, total	7440-39-3	E420	0.00020	mg/L	0.0590	0.0580	1.69%	20%	----
		beryllium, total	7440-41-7	E420	0.000040	mg/L	<0.040 µg/L	<0.000040	0	Diff <2x LOR	----
		bismuth, total	7440-69-9	E420	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		boron, total	7440-42-8	E420	0.020	mg/L	0.022	0.022	0.0005	Diff <2x LOR	----
		cadmium, total	7440-43-9	E420	0.0000100	mg/L	0.175 µg/L	0.000148	17.1%	20%	----
		calcium, total	7440-70-2	E420	0.100	mg/L	266	262	1.81%	20%	----
		cobalt, total	7440-48-4	E420	0.00020	mg/L	3.19 µg/L	0.00315	1.22%	20%	----
		copper, total	7440-50-8	E420	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		iron, total	7439-89-6	E420	0.020	mg/L	0.047	0.048	0.001	Diff <2x LOR	----
		lead, total	7439-92-1	E420	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		lithium, total	7439-93-2	E420	0.0020	mg/L	0.0530	0.0528	0.232%	20%	----
		magnesium, total	7439-95-4	E420	0.0100	mg/L	175	172	1.90%	20%	----
		manganese, total	7439-96-5	E420	0.00020	mg/L	0.0883	0.0906	2.60%	20%	----
		molybdenum, total	7439-98-7	E420	0.000100	mg/L	0.00455	0.00452	0.591%	20%	----
		nickel, total	7440-02-0	E420	0.00100	mg/L	0.0129	0.0135	4.17%	20%	----
		potassium, total	7440-09-7	E420	0.100	mg/L	3.43	3.49	1.76%	20%	----



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (QC Lot: 729253) - continued											
CG2215304-010	Anonymous	selenium, total	7782-49-2	E420	0.000100	mg/L	133 µg/L	0.136	2.75%	20%	----
		silicon, total	7440-21-3	E420	0.20	mg/L	4.11	4.08	0.770%	20%	----
		silver, total	7440-22-4	E420	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		sodium, total	7440-23-5	E420	0.100	mg/L	5.37	5.38	0.165%	20%	----
		strontium, total	7440-24-6	E420	0.00040	mg/L	0.296	0.290	2.16%	20%	----
		sulfur, total	7704-34-9	E420	1.00	mg/L	289	291	0.761%	20%	----
		thallium, total	7440-28-0	E420	0.000020	mg/L	0.000032	0.000029	0.000003	Diff <2x LOR	----
		tin, total	7440-31-5	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		titanium, total	7440-32-6	E420	0.00060	mg/L	<0.00060	<0.00060	0	Diff <2x LOR	----
		uranium, total	7440-61-1	E420	0.000020	mg/L	0.00885	0.00896	1.29%	20%	----
		vanadium, total	7440-62-2	E420	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		zinc, total	7440-66-6	E420	0.0060	mg/L	<0.0060	<0.0060	0	Diff <2x LOR	----
Total Metals (QC Lot: 730121)											
CG2215287-005	Anonymous	mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Total Metals (QC Lot: 730122)											
CG2215338-004	RG_RIVER_WS_LAEMP_EVO_2022-11_NP	mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 729263)											
CG2215338-001	RG_ERCK_WS_LAEMP_EVO_2022-11_NP	chromium, dissolved	7440-47-3	E421.Cr-L	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 729264)											
CG2215338-001	RG_ERCK_WS_LAEMP_EVO_2022-11_NP	aluminum, dissolved	7429-90-5	E421	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----
		antimony, dissolved	7440-36-0	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E421	0.00020	mg/L	0.00028	0.00025	0.00003	Diff <2x LOR	----
		barium, dissolved	7440-39-3	E421	0.00020	mg/L	0.0359	0.0345	3.91%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.000040	mg/L	<0.040 µg/L	<0.000040	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.020	mg/L	0.023	0.023	0.0007	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E421	0.0000100	mg/L	<0.0100 µg/L	<0.0000100	0	Diff <2x LOR	----
		calcium, dissolved	7440-70-2	E421	0.100	mg/L	212	207	2.79%	20%	----
		cobalt, dissolved	7440-48-4	E421	0.00020	mg/L	0.74 µg/L	0.00074	0.000004	Diff <2x LOR	----
		copper, dissolved	7440-50-8	E421	0.00040	mg/L	<0.00040	<0.00040	0	Diff <2x LOR	----
		iron, dissolved	7439-89-6	E421	0.020	mg/L	<0.020	<0.020	0	Diff <2x LOR	----
		lead, dissolved	7439-92-1	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0020	mg/L	0.0696	0.0667	4.18%	20%	----



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 729264) - continued											
CG2215338-001	RG_ERCK_WS_LAEMP_E VO_2022-11_NP	magnesium, dissolved	7439-95-4	E421	0.0100	mg/L	133	129	3.07%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00020	mg/L	0.0120	0.0116	2.67%	20%	----
		molybdenum, dissolved	7439-98-7	E421	0.000100	mg/L	0.00744	0.00727	2.25%	20%	----
		nickel, dissolved	7440-02-0	E421	0.00100	mg/L	0.0113	0.0109	3.54%	20%	----
		potassium, dissolved	7440-09-7	E421	0.100	mg/L	3.54	3.42	3.33%	20%	----
		selenium, dissolved	7782-49-2	E421	0.000100	mg/L	108 µg/L	0.107	0.954%	20%	----
		silicon, dissolved	7440-21-3	E421	0.100	mg/L	3.69	3.53	4.31%	20%	----
		silver, dissolved	7440-22-4	E421	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E421	0.100	mg/L	6.51	6.17	5.33%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00040	mg/L	0.297	0.292	1.65%	20%	----
		sulfur, dissolved	7704-34-9	E421	1.00	mg/L	310	288	7.24%	20%	----
		thallium, dissolved	7440-28-0	E421	0.000020	mg/L	0.000029	0.000028	0.0000005	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.00060	mg/L	<0.00060	<0.00060	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000020	mg/L	0.00857	0.00848	0.990%	20%	----
vanadium, dissolved	7440-62-2	E421	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----		
zinc, dissolved	7440-66-6	E421	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----		
Dissolved Metals (QC Lot: 730110)											
CG2215304-010	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 730111)											
CG2215338-005	RG_FBLANK_WS_LAEMP _EVO_2022-11_NP	mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 729315)						
acidity (as CaCO3)	---	E283	2	mg/L	2.1	---
Physical Tests (QCLot: 729320)						
conductivity	---	E100	1	µS/cm	<1.0	---
Physical Tests (QCLot: 729321)						
alkalinity, bicarbonate (as CaCO3)	---	E290	1	mg/L	<1.0	---
alkalinity, carbonate (as CaCO3)	---	E290	1	mg/L	<1.0	---
alkalinity, hydroxide (as CaCO3)	---	E290	1	mg/L	<1.0	---
alkalinity, total (as CaCO3)	---	E290	1	mg/L	<1.0	---
Physical Tests (QCLot: 729418)						
solids, total dissolved [TDS]	---	E162	10	mg/L	<10	---
Physical Tests (QCLot: 729431)						
solids, total suspended [TSS]	---	E160-L	1	mg/L	<1.0	---
Physical Tests (QCLot: 730049)						
turbidity	---	E121	0.1	NTU	<0.10	---
Anions and Nutrients (QCLot: 728584)						
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	---
Anions and Nutrients (QCLot: 728626)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	---
Anions and Nutrients (QCLot: 728627)						
bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	---
Anions and Nutrients (QCLot: 728628)						
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	---
Anions and Nutrients (QCLot: 728629)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	---
Anions and Nutrients (QCLot: 728630)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	---
Anions and Nutrients (QCLot: 728631)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	---
Anions and Nutrients (QCLot: 728827)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	---
Anions and Nutrients (QCLot: 728941)						
Kjeldahl nitrogen, total [TKN]	---	E318	0.05	mg/L	<0.050	---



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 729343)						
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Organic / Inorganic Carbon (QCLot: 728638)						
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Organic / Inorganic Carbon (QCLot: 728639)						
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	<0.50	----
Total Metals (QCLot: 729252)						
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	<0.00010	----
Total Metals (QCLot: 729253)						
aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	----
antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	----
barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	----
boron, total	7440-42-8	E420	0.01	mg/L	<0.010	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	----
calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	----
copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	----
iron, total	7439-89-6	E420	0.01	mg/L	<0.010	----
lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	----
lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	----
magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	----
manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	----
nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	----
potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	----
selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	----
silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	----
silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	----
sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	----
strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	----
sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	----
thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	----
tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 729253) - continued						
titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	----
uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	----
zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	----
Total Metals (QCLot: 730121)						
mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	----
Total Metals (QCLot: 730122)						
mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 729263)						
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	<0.00010	----
Dissolved Metals (QCLot: 729264)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 729264) - continued						
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
Dissolved Metals (QCLot: 730110)						
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 730111)						
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Physical Tests (QCLot: 729315)									
acidity (as CaCO3)	----	E283	2	mg/L	50 mg/L	101	85.0	115	----
Physical Tests (QCLot: 729319)									
pH	----	E108	----	pH units	7 pH units	101	98.6	101	----
Physical Tests (QCLot: 729320)									
conductivity	----	E100	1	µS/cm	146.9 µS/cm	99.3	90.0	110	----
Physical Tests (QCLot: 729321)									
alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	97.0	85.0	115	----
Physical Tests (QCLot: 729418)									
solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	98.4	85.0	115	----
Physical Tests (QCLot: 729431)									
solids, total suspended [TSS]	----	E160-L	1	mg/L	150 mg/L	104	85.0	115	----
Physical Tests (QCLot: 730049)									
turbidity	----	E121	0.1	NTU	200 NTU	100.0	85.0	115	----
Physical Tests (QCLot: 730396)									
oxidation-reduction potential [ORP]	----	E125	----	mV	220 mV	101	95.4	104	----
Anions and Nutrients (QCLot: 728584)									
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.03 mg/L	95.5	80.0	120	----
Anions and Nutrients (QCLot: 728626)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	99.9	90.0	110	----
Anions and Nutrients (QCLot: 728627)									
bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	102	85.0	115	----
Anions and Nutrients (QCLot: 728628)									
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	99.9	90.0	110	----
Anions and Nutrients (QCLot: 728629)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 728630)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	97.8	90.0	110	----
Anions and Nutrients (QCLot: 728631)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 728827)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	97.4	85.0	115	----



Sub-Matrix: Water					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	
Anions and Nutrients (QCLot: 728941)									
Kjeldahl nitrogen, total [TKN]	---	E318	0.05	mg/L	4 mg/L	82.0	75.0	125	---
Anions and Nutrients (QCLot: 729343)									
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.03 mg/L	83.7	80.0	120	---
Organic / Inorganic Carbon (QCLot: 728638)									
carbon, dissolved organic [DOC]	---	E358-L	0.5	mg/L	8.57 mg/L	98.8	80.0	120	---
Organic / Inorganic Carbon (QCLot: 728639)									
carbon, total organic [TOC]	---	E355-L	0.5	mg/L	8.57 mg/L	101	80.0	120	---
Total Metals (QCLot: 729252)									
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	0.25 mg/L	104	80.0	120	---
Total Metals (QCLot: 729253)									
aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	103	80.0	120	---
antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	98.6	80.0	120	---
arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	98.2	80.0	120	---
barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	106	80.0	120	---
beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	104	80.0	120	---
bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	100	80.0	120	---
boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	98.7	80.0	120	---
cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	104	80.0	120	---
calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	101	80.0	120	---
cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	101	80.0	120	---
copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	98.6	80.0	120	---
iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	108	80.0	120	---
lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	103	80.0	120	---
lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	102	80.0	120	---
magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	105	80.0	120	---
manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	104	80.0	120	---
molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	101	80.0	120	---
nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	104	80.0	120	---
potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	103	80.0	120	---
selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	90.7	80.0	120	---
silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	105	60.0	140	---
silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	93.4	80.0	120	---
sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	105	80.0	120	---
strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	104	80.0	120	---



Sub-Matrix: Water					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	
Total Metals (QCLot: 729253) - continued									
sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	105	80.0	120	----
thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	102	80.0	120	----
tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	98.5	80.0	120	----
titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	106	80.0	120	----
uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	100	80.0	120	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	102	80.0	120	----
zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	91.9	80.0	120	----
Total Metals (QCLot: 730121)									
mercury, total	7439-97-6	E508	0.000005	mg/L	0.0001 mg/L	100	80.0	120	----
Total Metals (QCLot: 730122)									
mercury, total	7439-97-6	E508	0.000005	mg/L	0.0001 mg/L	99.6	80.0	120	----
Dissolved Metals (QCLot: 729263)									
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	0.25 mg/L	92.7	80.0	120	----
Dissolved Metals (QCLot: 729264)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	105	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	92.4	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	92.1	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	98.4	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	98.8	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	91.5	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	87.8	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	91.8	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	95.4	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	94.3	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	92.1	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	102	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	93.3	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	102	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	85.7	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	90.4	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	97.2	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	92.3	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	98.6	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	87.8	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	99.1	60.0	140	----



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 729264) - continued									
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	88.7	80.0	120	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	94.9	80.0	120	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	95.8	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	104	80.0	120	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	93.0	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	91.6	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	94.0	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	91.7	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	95.4	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	84.0	80.0	120	----
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	104	80.0	120	----
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	96.7	80.0	120	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 728584)										
CG2215325-002	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0506 mg/L	0.05 mg/L	101	70.0	130	----
Anions and Nutrients (QCLot: 728626)										
CG2215338-005	RG_FBLANK_WS_LAEMP_EVO_2022-11_NP	fluoride	16984-48-8	E235.F	0.912 mg/L	1 mg/L	91.2	75.0	125	----
Anions and Nutrients (QCLot: 728627)										
CG2215338-005	RG_FBLANK_WS_LAEMP_EVO_2022-11_NP	bromide	24959-67-9	E235.Br-L	0.465 mg/L	0.5 mg/L	93.0	75.0	125	----
Anions and Nutrients (QCLot: 728628)										
CG2215338-005	RG_FBLANK_WS_LAEMP_EVO_2022-11_NP	chloride	16887-00-6	E235.Cl-L	90.7 mg/L	100 mg/L	90.7	75.0	125	----
Anions and Nutrients (QCLot: 728629)										
CG2215338-005	RG_FBLANK_WS_LAEMP_EVO_2022-11_NP	nitrate (as N)	14797-55-8	E235.NO3-L	2.27 mg/L	2.5 mg/L	91.0	75.0	125	----
Anions and Nutrients (QCLot: 728630)										
CG2215338-005	RG_FBLANK_WS_LAEMP_EVO_2022-11_NP	nitrite (as N)	14797-65-0	E235.NO2-L	0.465 mg/L	0.5 mg/L	93.1	75.0	125	----
Anions and Nutrients (QCLot: 728631)										
CG2215338-005	RG_FBLANK_WS_LAEMP_EVO_2022-11_NP	sulfate (as SO4)	14808-79-8	E235.SO4	89.0 mg/L	100 mg/L	89.0	75.0	125	----
Anions and Nutrients (QCLot: 728827)										
CG2215337-002	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.105 mg/L	0.1 mg/L	105	75.0	125	----
Anions and Nutrients (QCLot: 728941)										
CG2215313-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.22 mg/L	2.5 mg/L	88.8	70.0	130	----
Anions and Nutrients (QCLot: 729343)										
CG2215338-002	RG_ERCKUC_WS_LAEMP_EVO_2022-11_NP	phosphorus, total	7723-14-0	E372-U	0.0415 mg/L	0.05 mg/L	83.0	70.0	130	----
Organic / Inorganic Carbon (QCLot: 728638)										
CG2215337-001	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	5.86 mg/L	5 mg/L	117	70.0	130	----
Organic / Inorganic Carbon (QCLot: 728639)										
CG2215337-001	Anonymous	carbon, total organic [TOC]	----	E355-L	6.04 mg/L	5 mg/L	121	70.0	130	----
Total Metals (QCLot: 729252)										



Sub-Matrix: Water

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 729252) - continued										
CG2215338-001	RG_ERCK_WS_LAEMP_EV O_2022-11_NP	chromium, total	7440-47-3	E420.Cr-L	0.396 mg/L	0.4 mg/L	99.0	70.0	130	----
Total Metals (QCLot: 729253)										
CG2215338-001	RG_ERCK_WS_LAEMP_EV O_2022-11_NP	aluminum, total	7429-90-5	E420	2.02 mg/L	2 mg/L	101	70.0	130	----
		antimony, total	7440-36-0	E420	0.195 mg/L	0.2 mg/L	97.4	70.0	130	----
		arsenic, total	7440-38-2	E420	0.192 mg/L	0.2 mg/L	95.8	70.0	130	----
		barium, total	7440-39-3	E420	0.204 mg/L	0.2 mg/L	102	70.0	130	----
		beryllium, total	7440-41-7	E420	0.375 mg/L	0.4 mg/L	93.7	70.0	130	----
		bismuth, total	7440-69-9	E420	0.100 mg/L	0.1 mg/L	100	70.0	130	----
		boron, total	7440-42-8	E420	0.970 mg/L	1 mg/L	97.0	70.0	130	----
		cadmium, total	7440-43-9	E420	0.0409 mg/L	0.04 mg/L	102	70.0	130	----
		calcium, total	7440-70-2	E420	ND mg/L	40 mg/L	ND	70.0	130	----
		cobalt, total	7440-48-4	E420	0.191 mg/L	0.2 mg/L	95.7	70.0	130	----
		copper, total	7440-50-8	E420	0.192 mg/L	0.2 mg/L	95.8	70.0	130	----
		iron, total	7439-89-6	E420	19.9 mg/L	20 mg/L	99.5	70.0	130	----
		lead, total	7439-92-1	E420	0.203 mg/L	0.2 mg/L	102	70.0	130	----
		lithium, total	7439-93-2	E420	0.898 mg/L	1 mg/L	89.8	70.0	130	----
		magnesium, total	7439-95-4	E420	ND mg/L	10 mg/L	ND	70.0	130	----
		manganese, total	7439-96-5	E420	0.199 mg/L	0.2 mg/L	99.6	70.0	130	----
		molybdenum, total	7439-98-7	E420	0.200 mg/L	0.2 mg/L	99.8	70.0	130	----
		nickel, total	7440-02-0	E420	0.398 mg/L	0.4 mg/L	99.5	70.0	130	----
		potassium, total	7440-09-7	E420	38.1 mg/L	40 mg/L	95.2	70.0	130	----
		selenium, total	7782-49-2	E420	0.382 mg/L	0.4 mg/L	95.5	70.0	130	----
		silicon, total	7440-21-3	E420	89.9 mg/L	100 mg/L	89.9	70.0	130	----
		silver, total	7440-22-4	E420	0.0403 mg/L	0.04 mg/L	101	70.0	130	----
		sodium, total	7440-23-5	E420	20.4 mg/L	20 mg/L	102	70.0	130	----
		strontium, total	7440-24-6	E420	ND mg/L	0.2 mg/L	ND	70.0	130	----
		sulfur, total	7704-34-9	E420	ND mg/L	200 mg/L	ND	70.0	130	----
		thallium, total	7440-28-0	E420	0.0385 mg/L	0.04 mg/L	96.3	70.0	130	----
		tin, total	7440-31-5	E420	0.196 mg/L	0.2 mg/L	97.9	70.0	130	----
		titanium, total	7440-32-6	E420	0.420 mg/L	0.4 mg/L	105	70.0	130	----
		uranium, total	7440-61-1	E420	0.0393 mg/L	0.04 mg/L	98.2	70.0	130	----
		vanadium, total	7440-62-2	E420	0.985 mg/L	1 mg/L	98.5	70.0	130	----
		zinc, total	7440-66-6	E420	3.57 mg/L	4 mg/L	89.3	70.0	130	----
Total Metals (QCLot: 730121)										



Sub-Matrix: Water

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 730121) - continued										
CG2215287-006	Anonymous	mercury, total	7439-97-6	E508	0.0000985 mg/L	0.0001 mg/L	98.5	70.0	130	----
Total Metals (QCLot: 730122)										
CG2215338-005	RG_FBLANK_WS_LAEMP_EVO_2022-11_NP	mercury, total	7439-97-6	E508	0.0000990 mg/L	0.0001 mg/L	99.0	70.0	130	----
Dissolved Metals (QCLot: 729263)										
CG2215338-002	RG_ERCKUC_WS_LAEMP_EVO_2022-11_NP	chromium, dissolved	7440-47-3	E421.Cr-L	0.376 mg/L	0.4 mg/L	93.9	70.0	130	----
Dissolved Metals (QCLot: 729264)										
CG2215338-002	RG_ERCKUC_WS_LAEMP_EVO_2022-11_NP	aluminum, dissolved	7429-90-5	E421	2.01 mg/L	2 mg/L	101	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.187 mg/L	0.2 mg/L	93.4	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.191 mg/L	0.2 mg/L	95.7	70.0	130	----
		barium, dissolved	7440-39-3	E421	0.194 mg/L	0.2 mg/L	97.2	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.382 mg/L	0.4 mg/L	95.4	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.0947 mg/L	0.1 mg/L	94.7	70.0	130	----
		boron, dissolved	7440-42-8	E421	0.922 mg/L	1 mg/L	92.2	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.0376 mg/L	0.04 mg/L	94.1	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	40 mg/L	ND	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.194 mg/L	0.2 mg/L	97.1	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.190 mg/L	0.2 mg/L	94.8	70.0	130	----
		iron, dissolved	7439-89-6	E421	18.8 mg/L	20 mg/L	94.2	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.195 mg/L	0.2 mg/L	97.6	70.0	130	----
		lithium, dissolved	7439-93-2	E421	0.922 mg/L	1 mg/L	92.2	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	10 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E421	0.179 mg/L	0.2 mg/L	89.6	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.192 mg/L	0.2 mg/L	96.3	70.0	130	----
		nickel, dissolved	7440-02-0	E421	0.378 mg/L	0.4 mg/L	94.6	70.0	130	----
		potassium, dissolved	7440-09-7	E421	38.6 mg/L	40 mg/L	96.4	70.0	130	----
		selenium, dissolved	7782-49-2	E421	0.384 mg/L	0.4 mg/L	96.1	70.0	130	----
		silicon, dissolved	7440-21-3	E421	81.1 mg/L	100 mg/L	81.1	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.0395 mg/L	0.04 mg/L	98.8	70.0	130	----
		sodium, dissolved	7440-23-5	E421	18.2 mg/L	20 mg/L	91.1	70.0	130	----
		strontium, dissolved	7440-24-6	E421	ND mg/L	0.2 mg/L	ND	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	ND mg/L	200 mg/L	ND	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.0368 mg/L	0.04 mg/L	92.1	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.184 mg/L	0.2 mg/L	92.2	70.0	130	----



Sub-Matrix: **Water**

					<i>Matrix Spike (MS) Report</i>					
					<i>Spike</i>		<i>Recovery (%)</i>	<i>Recovery Limits (%)</i>		
<i>Laboratory sample ID</i>	<i>Client sample ID</i>	<i>Analyte</i>	<i>CAS Number</i>	<i>Method</i>	<i>Concentration</i>	<i>Target</i>	<i>MS</i>	<i>Low</i>	<i>High</i>	<i>Qualifier</i>
Dissolved Metals (QCLot: 729264) - continued										
CG2215338-002	RG_ERCKUC_WS_LAEMP _EVO_2022-11_NP	titanium, dissolved	7440-32-6	E421	0.378 mg/L	0.4 mg/L	94.5	70.0	130	----
		uranium, dissolved	7440-61-1	E421	0.0371 mg/L	0.04 mg/L	92.8	70.0	130	----
		vanadium, dissolved	7440-62-2	E421	0.965 mg/L	1 mg/L	96.5	70.0	130	----
		zinc, dissolved	7440-66-6	E421	3.43 mg/L	4 mg/L	85.7	70.0	130	----
Dissolved Metals (QCLot: 730110)										
CG2215311-010	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000968 mg/L	0.0001 mg/L	96.8	70.0	130	----
Dissolved Metals (QCLot: 730111)										
CG2215352-001	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000950 mg/L	0.0001 mg/L	95.0	70.0	130	----

Teck

November EVO LAEMP 2022

TURNAROUND TIME:

COC ID:

LABORATORY

PROJECT/CLIENT INFO
 Facility Name / Job# Regional Effects Program
 Project Manager Mike Pope

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SAMPLE DETAILS

ANALYSIS REQUEST

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.
RG_ERCK_WS_LAEMP_EVO_2022-11_NP	RG_ERCK	WS	No	11/1/2022	12:00	G	7
RG_ERCKUC_WS_LAEMP_EVO_2022-11_NP	RG_ERCKUC	WS	No	11/1/2022	13:00	G	7
RG_GATEDP_WS_LAEMP_EVO_2022-11_NP	RG_GATEDP	WS	No	11/1/2022	13:40	G	7
RG_RIVER_WS_LAEMP_EVO_2022-11_NP	RG_RIVER	WS	No	11/1/2022	13:40	G	7
RG_FBLANK_WS_LAEMP_EVO_2022-11_NP	RG_FBLANK	WS	No				
			No				
			No				
			No				
			No				

TECKCOAL-ANIONS	Dissolved metals	TECKCOAL-ROUTINE-VA	ALS_Package-DOC	ALS_Package-TKN/TOC	HG-T-U-CVAF-VA	HG-D-CVAF-VA	TECKCOAL-MET-T-VA	TECKCOAL-MET-D-VA
		X	X	X	X	X	X	X
		X	X	X	X	X	X	X
		X	X	X	X	X	X	X
		X	X	X	X	X	X	X
		X	X	X	X	X	X	X

RELINQUISHED BY/AFFILIATION

DATE/TIME

ACCEPTED BY/AFFILIATION

Alex McClymont, Minnow Environmental

November 1, 2022

11/2/2022 9:00am 7°C

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS

ALS PO VPO00847030

NB OF BOTTLES RETURNED/DESCRIPTION
 Regular (default)
 Priority (2-3 business days) - 50% surcharge X
 Emergency (1 Business Day) - 100% surcharge
 For Emergency <1 Day, ASAP or Weekend - Contact ALS

Sampler's Name

Alex McClymont

Mobile #

780-293-6750

Sampler's Signature

Date/Time

November 1, 2022

Environmental
 Calgary
 Work Order Reference
 CG221



Telephone : +1 403 407 1800

Environmental Division
 Calgary
 Work Order Reference
 CG2215338



Telephone : +1 403 407 1800



CERTIFICATE OF ANALYSIS

<p>Work Order : CG2215311</p> <p>Client : Teck Coal Limited</p> <p>Contact : Mike Pope</p> <p>Address : 421 Pine Avenue Sparwood BC Canada V0B2G0</p> <p>Telephone : ----</p> <p>Project : REGIONAL EFFECTS PROGRAM</p> <p>PO : VPO00847030</p> <p>C-O-C number : November EVO LAEMP 2022</p> <p>Sampler : AMC</p> <p>Site : ----</p> <p>Quote number : Teck Coal Master Quote</p> <p>No. of samples received : 10</p> <p>No. of samples analysed : 10</p>	<p>Page : 1 of 8</p> <p>Laboratory : Calgary - Environmental</p> <p>Account Manager : Lyudmyla Shvets</p> <p>Address : 2559 29th Street NE Calgary AB Canada T1Y 7B5</p> <p>Telephone : +1 403 407 1800</p> <p>Date Samples Received : 02-Nov-2022 09:00</p> <p>Date Analysis Commenced : 02-Nov-2022</p> <p>Issue Date : 04-Nov-2022 16:39</p>
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This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Anthony Calero	Supervisor - Inorganic	Inorganics, Calgary, Alberta
Anthony Calero	Supervisor - Inorganic	Metals, Calgary, Alberta
Elke Tabora		Inorganics, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Metals, Calgary, Alberta
Kevin Baxter		Inorganics, Calgary, Alberta
Kevin Baxter		Metals, Calgary, Alberta
Ruifang Zheng	Analyst	Inorganics, Calgary, Alberta
Shirley Li		Inorganics, Calgary, Alberta
Shirley Li		Metals, Calgary, Alberta
Summie Lo	Lab Assistant	Metals, Calgary, Alberta
Vladka Stamenova	Analyst	Inorganics, Calgary, Alberta



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
 LOR: Limit of Reporting (detection limit).

Unit	Description
-	No Unit
%	percent
µg/L	micrograms per litre
µS/cm	Microsiemens per centimetre
meq/L	milliequivalents per litre
mg/L	milligrams per litre
mV	millivolts
NTU	nephelometric turbidity units
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

Qualifier	Description
DLDS	Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
TKNI	TKN result may be biased low due to Nitrate interference. Nitrate-N is > 10x TKN.



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKMD_1 _PW-1_2022-1 0_NP	RG_ERCKMD_1 _PW-2_2022-1 0_NP	RG_ERCKMD_1 _PW-3_2022-1 0_NP	RG_ERCKMD_2 _PW-1_2022-1 0_NP	RG_ERCKMD_2 _PW-2_2022-1 0_NP
Client sampling date / time					31-Oct-2022 12:00	31-Oct-2022 12:15	31-Oct-2022 12:30	31-Oct-2022 12:45	31-Oct-2022 13:00	
Analyte	CAS Number	Method	LOR	Unit	CG2215311-001	CG2215311-002	CG2215311-003	CG2215311-004	CG2215311-005	
					Result	Result	Result	Result	Result	
Physical Tests										
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	1110	1150	1190	1150	1160	
Anions and Nutrients										
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	8.53	8.34	8.49	8.42	8.44	
fluoride	16984-48-8	E235.F	0.020	mg/L	0.179	0.176	0.189	0.176	0.178	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	9.69	9.64	9.62	9.66	9.69	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	0.0108	0.0112	0.0109	0.0125	<0.0050 ^{DLDS}	
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	794	793	790	790	789	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	0.0074	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0423	0.0437	0.0450	0.0412	0.0466	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.100 ^{DLDS}	<0.100 ^{DLDS}	<0.100 ^{DLDS}	<0.100 ^{DLDS}	<0.100 ^{DLDS}	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000250 ^{DLDS}	<0.000250 ^{DLDS}	<0.000250 ^{DLDS}	<0.000250 ^{DLDS}	<0.000250 ^{DLDS}	
boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.050 ^{DLDS}	<0.050 ^{DLDS}	<0.050 ^{DLDS}	<0.050 ^{DLDS}	<0.050 ^{DLDS}	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.154	0.163	0.144	0.182	0.0997	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	218	236	241	233	232	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	3.59	3.62	3.00	3.78	0.74	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00340	<0.00100 ^{DLDS}	<0.00100 ^{DLDS}	<0.00100 ^{DLDS}	<0.00100 ^{DLDS}	
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.050 ^{DLDS}	<0.050 ^{DLDS}	<0.050 ^{DLDS}	<0.050 ^{DLDS}	<0.050 ^{DLDS}	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	0.00249	<0.000250 ^{DLDS}	<0.000250 ^{DLDS}	<0.000250 ^{DLDS}	<0.000250 ^{DLDS}	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0675	0.0716	0.0704	0.0693	0.0704	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	138	137	144	139	141	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.0932	0.0907	0.0648	0.0966	0.0112	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00699	0.00787	0.00782	0.00747	0.00760	
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.0194	0.0200	0.0200	0.0197	0.00725	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKMD_1 _PW-1_2022-1 0_NP	RG_ERCKMD_1 _PW-2_2022-1 0_NP	RG_ERCKMD_1 _PW-3_2022-1 0_NP	RG_ERCKMD_2 _PW-1_2022-1 0_NP	RG_ERCKMD_2 _PW-2_2022-1 0_NP
Client sampling date / time					31-Oct-2022 12:00	31-Oct-2022 12:15	31-Oct-2022 12:30	31-Oct-2022 12:45	31-Oct-2022 13:00	
Analyte	CAS Number	Method	LOR	Unit	CG2215311-001	CG2215311-002	CG2215311-003	CG2215311-004	CG2215311-005	
					Result	Result	Result	Result	Result	
Dissolved Metals										
potassium, dissolved	7440-09-7	E421	0.050	mg/L	3.28	3.45	3.78	3.44	3.54	
selenium, dissolved	7782-49-2	E421	0.050	µg/L	91.3	89.6	87.9	87.2	89.8	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	3.34	3.20	3.37	3.35	3.34	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	6.17	6.20	6.52	6.28	6.46	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.293	0.318	0.321	0.311	0.306	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	267	272	271	270	276	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00150 ^{DLDS}	<0.00150 ^{DLDS}	<0.00150 ^{DLDS}	<0.00150 ^{DLDS}	<0.00150 ^{DLDS}	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00816	0.00912	0.00873	0.00866	0.00862	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00250 ^{DLDS}	<0.00250 ^{DLDS}	<0.00250 ^{DLDS}	<0.00250 ^{DLDS}	<0.00250 ^{DLDS}	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0085	0.0064	0.0073	0.0077	<0.0050 ^{DLDS}	
dissolved metals filtration location	----	EP421	-	-	Laboratory	Laboratory	Laboratory	Laboratory	Laboratory	

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKMD_2 _PW-3_2022-1 0_NP	RG_ERCKMD_3 _PW-1_2022-1 0_NP	RG_ERCKMD_3 _PW-2_2022-1 0_NP	RG_ERCKMD_3 _PW-3_2022-1 0_NP	RG_ERCKMD_ WS_LAEMP_EV O_2022-10_NP
Client sampling date / time					31-Oct-2022 13:15	31-Oct-2022 13:30	31-Oct-2022 13:45	31-Oct-2022 14:00	31-Oct-2022 14:15	
Analyte	CAS Number	Method	LOR	Unit	CG2215311-006	CG2215311-007	CG2215311-008	CG2215311-009	CG2215311-010	
					Result	Result	Result	Result	Result	
Physical Tests										
acidity (as CaCO3)	----	E283	2.0	mg/L	----	----	----	----	<2.0	
alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	----	----	----	----	424	
alkalinity, bicarbonate (as HCO3)	71-52-3	E290	1.0	mg/L	----	----	----	----	517	
alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	----	----	----	----	<1.0	
alkalinity, carbonate (as CO3)	3812-32-6	E290	1.0	mg/L	----	----	----	----	<1.0	
alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	----	----	----	----	<1.0	
alkalinity, hydroxide (as OH)	14280-30-9	E290	1.0	mg/L	----	----	----	----	<1.0	
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	----	----	----	----	424	
conductivity	----	E100	2.0	µS/cm	----	----	----	----	1780	
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	1160	1140	1180	1170	1140	
oxidation-reduction potential [ORP]	----	E125	0.10	mV	----	----	----	----	378	
pH	----	E108	0.10	pH units	----	----	----	----	8.25	
solids, total dissolved [TDS]	----	E162	10	mg/L	----	----	----	----	1540	
solids, total suspended [TSS]	----	E160-L	1.0	mg/L	----	----	----	----	<1.0	
turbidity	----	E121	0.10	NTU	----	----	----	----	0.57	
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	----	----	----	----	0.0190	
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	8.44	8.44	8.41	8.50	8.53	
fluoride	16984-48-8	E235.F	0.020	mg/L	0.178	0.174	0.176	0.188	0.176	
Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	----	----	----	----	<0.500 ^{DLM,TKN}	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	9.68	9.69	9.67	9.72	9.77	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	0.0099	0.0131	0.0125	0.0115	0.0133	
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	----	----	----	----	0.0129	
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	----	----	----	----	0.0139	
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	791	793	791	795	802	
Organic / Inorganic Carbon										
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	----	----	----	----	0.54	
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	----	----	----	----	0.68	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKMD_2 _PW-3_2022-1 0_NP	RG_ERCKMD_3 _PW-1_2022-1 0_NP	RG_ERCKMD_3 _PW-2_2022-1 0_NP	RG_ERCKMD_3 _PW-3_2022-1 0_NP	RG_ERCKMD_ WS_LAEMP_EV O_2022-10_NP
Client sampling date / time					31-Oct-2022 13:15	31-Oct-2022 13:30	31-Oct-2022 13:45	31-Oct-2022 14:00	31-Oct-2022 14:15	
Analyte	CAS Number	Method	LOR	Unit	CG2215311-006	CG2215311-007	CG2215311-008	CG2215311-009	CG2215311-010	
					Result	Result	Result	Result	Result	
Ion Balance										
anion sum	----	EC101	0.10	meq/L	----	----	----	----	26.1	
cation sum	----	EC101	0.10	meq/L	----	----	----	----	23.1	
ion balance (cations/anions)	----	EC101	0.010	%	----	----	----	----	88.5	
ion balance (APHA)	----	EC101	0.01	%	----	----	----	----	-6.10	
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L	----	----	----	----	<0.0060 ^{DLDS}	
antimony, total	7440-36-0	E420	0.00010	mg/L	----	----	----	----	0.00021	
arsenic, total	7440-38-2	E420	0.00010	mg/L	----	----	----	----	0.00033	
barium, total	7440-39-3	E420	0.00010	mg/L	----	----	----	----	0.0447	
beryllium, total	7440-41-7	E420	0.020	µg/L	----	----	----	----	<0.040 ^{DLDS}	
bismuth, total	7440-69-9	E420	0.000050	mg/L	----	----	----	----	<0.000100 ^{DLDS}	
boron, total	7440-42-8	E420	0.010	mg/L	----	----	----	----	0.029	
cadmium, total	7440-43-9	E420	0.0050	µg/L	----	----	----	----	0.240	
calcium, total	7440-70-2	E420	0.050	mg/L	----	----	----	----	266	
chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	----	----	----	----	<0.00020 ^{DLDS}	
cobalt, total	7440-48-4	E420	0.10	µg/L	----	----	----	----	5.63	
copper, total	7440-50-8	E420	0.00050	mg/L	----	----	----	----	<0.00100 ^{DLDS}	
iron, total	7439-89-6	E420	0.010	mg/L	----	----	----	----	0.063	
lead, total	7439-92-1	E420	0.000050	mg/L	----	----	----	----	<0.000100 ^{DLDS}	
lithium, total	7439-93-2	E420	0.0010	mg/L	----	----	----	----	0.0710	
magnesium, total	7439-95-4	E420	0.0050	mg/L	----	----	----	----	153	
manganese, total	7439-96-5	E420	0.00010	mg/L	----	----	----	----	0.119	
mercury, total	7439-97-6	E508	0.0000050	mg/L	----	----	----	----	<0.0000050	
molybdenum, total	7439-98-7	E420	0.000050	mg/L	----	----	----	----	0.00808	
nickel, total	7440-02-0	E420	0.00050	mg/L	----	----	----	----	0.0217	
potassium, total	7440-09-7	E420	0.050	mg/L	----	----	----	----	3.69	
selenium, total	7782-49-2	E420	0.050	µg/L	----	----	----	----	94.2	
silicon, total	7440-21-3	E420	0.10	mg/L	----	----	----	----	3.92	
silver, total	7440-22-4	E420	0.000010	mg/L	----	----	----	----	<0.000020 ^{DLDS}	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKMD_2 _PW-3_2022-1 0_NP	RG_ERCKMD_3 _PW-1_2022-1 0_NP	RG_ERCKMD_3 _PW-2_2022-1 0_NP	RG_ERCKMD_3 _PW-3_2022-1 0_NP	RG_ERCKMD_ WS_LAEMP_EV O_2022-10_NP
Client sampling date / time					31-Oct-2022 13:15	31-Oct-2022 13:30	31-Oct-2022 13:45	31-Oct-2022 14:00	31-Oct-2022 14:15	
Analyte	CAS Number	Method	LOR	Unit	CG2215311-006	CG2215311-007	CG2215311-008	CG2215311-009	CG2215311-010	
					Result	Result	Result	Result	Result	
Total Metals										
sodium, total	7440-23-5	E420	0.050	mg/L	---	---	---	---	6.78	
strontium, total	7440-24-6	E420	0.00020	mg/L	---	---	---	---	0.339	
sulfur, total	7704-34-9	E420	0.50	mg/L	---	---	---	---	303	
thallium, total	7440-28-0	E420	0.000010	mg/L	---	---	---	---	0.000074	
tin, total	7440-31-5	E420	0.00010	mg/L	---	---	---	---	<0.00020 DLDS	
titanium, total	7440-32-6	E420	0.00030	mg/L	---	---	---	---	<0.00060 DLDS	
uranium, total	7440-61-1	E420	0.000010	mg/L	---	---	---	---	0.00893	
vanadium, total	7440-62-2	E420	0.00050	mg/L	---	---	---	---	<0.00100 DLDS	
zinc, total	7440-66-6	E420	0.0030	mg/L	---	---	---	---	0.0094	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	<0.0050 DLDS	<0.0050 DLDS	<0.0050 DLDS	<0.0050 DLDS	<0.0020 DLDS	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00050 DLDS	<0.00050 DLDS	<0.00050 DLDS	<0.00050 DLDS	<0.00020 DLDS	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	<0.00050 DLDS	<0.00050 DLDS	<0.00050 DLDS	<0.00050 DLDS	0.00027	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0444	0.0413	0.0424	0.0436	0.0400	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.100 DLDS	<0.100 DLDS	<0.100 DLDS	<0.100 DLDS	<0.040 DLDS	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000250 DLDS	<0.000250 DLDS	<0.000250 DLDS	<0.000250 DLDS	<0.000100 DLDS	
boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.050 DLDS	<0.050 DLDS	<0.050 DLDS	<0.050 DLDS	0.024	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.148	0.191	0.154	0.143	0.193	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	236	231	237	236	238	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00050 DLDS	<0.00050 DLDS	<0.00050 DLDS	<0.00050 DLDS	<0.00020 DLDS	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	1.83	4.00	4.23	2.40	3.95	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00100 DLDS	<0.00100 DLDS	<0.00100 DLDS	<0.00100 DLDS	<0.00040 DLDS	
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.050 DLDS	<0.050 DLDS	<0.050 DLDS	<0.050 DLDS	<0.020 DLDS	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000250 DLDS	<0.000250 DLDS	<0.000250 DLDS	<0.000250 DLDS	<0.000100 DLDS	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0718	0.0698	0.0732	0.0707	0.0734	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	140	137	144	141	132	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.0601	0.104	0.106	0.0467	0.107	
mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	---	---	---	---	<0.0000050	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00785	0.00763	0.00766	0.00755	0.00766	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKMD_2 _PW-3_2022-1 0_NP	RG_ERCKMD_3 _PW-1_2022-1 0_NP	RG_ERCKMD_3 _PW-2_2022-1 0_NP	RG_ERCKMD_3 _PW-3_2022-1 0_NP	RG_ERCKMD_ WS_LAEMP_EV O_2022-10_NP
Client sampling date / time					31-Oct-2022 13:15	31-Oct-2022 13:30	31-Oct-2022 13:45	31-Oct-2022 14:00	31-Oct-2022 14:15	
Analyte	CAS Number	Method	LOR	Unit	CG2215311-006	CG2215311-007	CG2215311-008	CG2215311-009	CG2215311-010	
					Result	Result	Result	Result	Result	
Dissolved Metals										
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.0122	0.0209	0.0217	0.0193	0.0189	
potassium, dissolved	7440-09-7	E421	0.050	mg/L	3.50	3.30	3.55	3.61	3.42	
selenium, dissolved	7782-49-2	E421	0.050	µg/L	91.5	89.5	97.3	92.4	106	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	3.46	3.31	3.58	3.44	3.50	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	<0.000020 ^{DLDS}	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	6.42	6.14	6.54	6.43	6.23	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.321	0.320	0.320	0.313	0.318	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	285	271	294	281	292	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	0.000044	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00020 ^{DLDS}	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00150 ^{DLDS}	<0.00150 ^{DLDS}	<0.00150 ^{DLDS}	<0.00150 ^{DLDS}	<0.00060 ^{DLDS}	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00897	0.00873	0.00879	0.00863	0.00847	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00250 ^{DLDS}	<0.00250 ^{DLDS}	<0.00250 ^{DLDS}	<0.00250 ^{DLDS}	<0.00100 ^{DLDS}	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0050 ^{DLDS}	0.0080	0.0078	0.0052	0.0059	
dissolved mercury filtration location	----	EP509	-	-	----	----	----	----	Field	
dissolved metals filtration location	----	EP421	-	-	Laboratory	Laboratory	Laboratory	Laboratory	Field	

Please refer to the General Comments section for an explanation of any qualifiers detected.



QUALITY CONTROL INTERPRETIVE REPORT

<p>Work Order : CG2215311</p> <p>Client : Teck Coal Limited</p> <p>Contact : Mike Pope</p> <p>Address : 421 Pine Avenue Sparwood BC Canada V0B2G0</p> <p>Telephone : ----</p> <p>Project : REGIONAL EFFECTS PROGRAM</p> <p>PO : VPO00847030</p> <p>C-O-C number : November EVO LAEMP 2022</p> <p>Sampler : AMC</p> <p>Site : ----</p> <p>Quote number : Teck Coal Master Quote</p> <p>No. of samples received : 10</p> <p>No. of samples analysed : 10</p>	<p>Page : 1 of 22</p> <p>Laboratory : Calgary - Environmental</p> <p>Account Manager : Lyudmyla Shvets</p> <p>Address : 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5</p> <p>Telephone : +1 403 407 1800</p> <p>Date Samples Received : 02-Nov-2022 09:00</p> <p>Issue Date : 04-Nov-2022 16:40</p>
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This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

- Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
- CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
- DQO: Data Quality Objective.
- LOR: Limit of Reporting (detection limit).
- RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- Method Blank value outliers occur - please see following pages for full details.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **Water**

Analyte Group	Laboratory sample ID	Client/Ref Sample ID	Analyte	CAS Number	Method	Result	Limits	Comment
Method Blank (MB) Values								
Total Metals	QC-MRG2-7289420 01	----	magnesium, total	7439-95-4	E420	0.0082 mg/L	0.005 mg/L	Blank result exceeds permitted value
Total Metals	QC-MRG2-7289420 01	----	chromium, total	7440-47-3	E420.Cr-L	0.00020 mg/L	0.0001 mg/L	Blank result exceeds permitted value



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP	E298	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKMD_1_PW-1_2022-10_NP	E235.Br-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKMD_1_PW-2_2022-10_NP	E235.Br-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKMD_1_PW-3_2022-10_NP	E235.Br-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKMD_2_PW-1_2022-10_NP	E235.Br-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKMD_2_PW-2_2022-10_NP	E235.Br-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKMD_2_PW-3_2022-10_NP	E235.Br-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKMD_3_PW-1_2022-10_NP	E235.Br-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKMD_3_PW-2_2022-10_NP	E235.Br-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKMD_3_PW-3_2022-10_NP	E235.Br-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP	E235.Br-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKMD_1_PW-1_2022-10_NP	E235.Cl-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKMD_1_PW-2_2022-10_NP	E235.Cl-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKMD_1_PW-3_2022-10_NP	E235.Cl-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKMD_2_PW-1_2022-10_NP	E235.Cl-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKMD_2_PW-2_2022-10_NP	E235.Cl-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKMD_2_PW-3_2022-10_NP	E235.Cl-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKMD_3_PW-1_2022-10_NP	E235.Cl-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKMD_3_PW-2_2022-10_NP	E235.Cl-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKMD_3_PW-3_2022-10_NP	E235.Cl-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP	E235.Cl-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP	E378-U	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	3 days	3 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKMD_1_PW-1_2022-10_NP	E235.F	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKMD_1_PW-2_2022-10_NP	E235.F	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKMD_1_PW-3_2022-10_NP	E235.F	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Fluoride in Water by IC										
HDPE RG_ERCKMD_2_PW-1_2022-10_NP	E235.F	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE RG_ERCKMD_2_PW-2_2022-10_NP	E235.F	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE RG_ERCKMD_2_PW-3_2022-10_NP	E235.F	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE RG_ERCKMD_3_PW-1_2022-10_NP	E235.F	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE RG_ERCKMD_3_PW-2_2022-10_NP	E235.F	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE RG_ERCKMD_3_PW-3_2022-10_NP	E235.F	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP	E235.F	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE RG_ERCKMD_1_PW-1_2022-10_NP	E235.NO3-L	31-Oct-2022	02-Nov-2022	3 days	2 days	✔	02-Nov-2022	3 days	0 days	✔
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE RG_ERCKMD_1_PW-2_2022-10_NP	E235.NO3-L	31-Oct-2022	02-Nov-2022	3 days	2 days	✔	02-Nov-2022	3 days	0 days	✔



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKMD_1_PW-3_2022-10_NP	E235.NO3-L	31-Oct-2022	02-Nov-2022	3 days	2 days	✔	02-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKMD_2_PW-1_2022-10_NP	E235.NO3-L	31-Oct-2022	02-Nov-2022	3 days	2 days	✔	02-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKMD_2_PW-2_2022-10_NP	E235.NO3-L	31-Oct-2022	02-Nov-2022	3 days	2 days	✔	02-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKMD_2_PW-3_2022-10_NP	E235.NO3-L	31-Oct-2022	02-Nov-2022	3 days	2 days	✔	02-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKMD_3_PW-1_2022-10_NP	E235.NO3-L	31-Oct-2022	02-Nov-2022	3 days	2 days	✔	02-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKMD_3_PW-2_2022-10_NP	E235.NO3-L	31-Oct-2022	02-Nov-2022	3 days	2 days	✔	02-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKMD_3_PW-3_2022-10_NP	E235.NO3-L	31-Oct-2022	02-Nov-2022	3 days	2 days	✔	02-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP	E235.NO3-L	31-Oct-2022	02-Nov-2022	3 days	2 days	✔	02-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKMD_1_PW-1_2022-10_NP	E235.NO2-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	3 days	2 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKMD_1_PW-2_2022-10_NP	E235.NO2-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKMD_1_PW-3_2022-10_NP	E235.NO2-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKMD_2_PW-1_2022-10_NP	E235.NO2-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKMD_2_PW-2_2022-10_NP	E235.NO2-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKMD_2_PW-3_2022-10_NP	E235.NO2-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKMD_3_PW-1_2022-10_NP	E235.NO2-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKMD_3_PW-2_2022-10_NP	E235.NO2-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKMD_3_PW-3_2022-10_NP	E235.NO2-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP	E235.NO2-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	3 days	2 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Sulfate in Water by IC										
HDPE RG_ERCKMD_1_PW-1_2022-10_NP	E235.S04	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔
Anions and Nutrients : Sulfate in Water by IC										
HDPE RG_ERCKMD_1_PW-2_2022-10_NP	E235.S04	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔
Anions and Nutrients : Sulfate in Water by IC										
HDPE RG_ERCKMD_1_PW-3_2022-10_NP	E235.S04	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔
Anions and Nutrients : Sulfate in Water by IC										
HDPE RG_ERCKMD_2_PW-1_2022-10_NP	E235.S04	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔
Anions and Nutrients : Sulfate in Water by IC										
HDPE RG_ERCKMD_2_PW-2_2022-10_NP	E235.S04	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔
Anions and Nutrients : Sulfate in Water by IC										
HDPE RG_ERCKMD_2_PW-3_2022-10_NP	E235.S04	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔
Anions and Nutrients : Sulfate in Water by IC										
HDPE RG_ERCKMD_3_PW-1_2022-10_NP	E235.S04	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔
Anions and Nutrients : Sulfate in Water by IC										
HDPE RG_ERCKMD_3_PW-2_2022-10_NP	E235.S04	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔
Anions and Nutrients : Sulfate in Water by IC										
HDPE RG_ERCKMD_3_PW-3_2022-10_NP	E235.S04	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP	E235.SO4	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP	E318	31-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	28 days	4 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP	E372-U	31-Oct-2022	03-Nov-2022	----	----		04-Nov-2022	28 days	4 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKMD_1_PW-1_2022-10_NP	E421.Cr-L	31-Oct-2022	03-Nov-2022	----	----		04-Nov-2022	180 days	4 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKMD_1_PW-2_2022-10_NP	E421.Cr-L	31-Oct-2022	03-Nov-2022	----	----		04-Nov-2022	180 days	4 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKMD_1_PW-3_2022-10_NP	E421.Cr-L	31-Oct-2022	03-Nov-2022	----	----		04-Nov-2022	180 days	4 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKMD_2_PW-1_2022-10_NP	E421.Cr-L	31-Oct-2022	03-Nov-2022	----	----		04-Nov-2022	180 days	4 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKMD_2_PW-2_2022-10_NP	E421.Cr-L	31-Oct-2022	03-Nov-2022	----	----		04-Nov-2022	180 days	4 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKMD_2_PW-3_2022-10_NP	E421.Cr-L	31-Oct-2022	03-Nov-2022	----	----		04-Nov-2022	180 days	4 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKMD_3_PW-1_2022-10_NP	E421.Cr-L	31-Oct-2022	03-Nov-2022	----	----		04-Nov-2022	180 days	4 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKMD_3_PW-2_2022-10_NP	E421.Cr-L	31-Oct-2022	03-Nov-2022	----	----		04-Nov-2022	180 days	4 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKMD_3_PW-3_2022-10_NP	E421.Cr-L	31-Oct-2022	03-Nov-2022	----	----		04-Nov-2022	180 days	4 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP	E421.Cr-L	31-Oct-2022	03-Nov-2022	----	----		04-Nov-2022	180 days	4 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP	E509	31-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	28 days	4 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ERCKMD_1_PW-1_2022-10_NP	E421	31-Oct-2022	03-Nov-2022	----	----		04-Nov-2022	180 days	4 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ERCKMD_1_PW-2_2022-10_NP	E421	31-Oct-2022	03-Nov-2022	----	----		04-Nov-2022	180 days	4 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ERCKMD_1_PW-3_2022-10_NP	E421	31-Oct-2022	03-Nov-2022	----	----		04-Nov-2022	180 days	4 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ERCKMD_2_PW-1_2022-10_NP	E421	31-Oct-2022	03-Nov-2022	----	----		04-Nov-2022	180 days	4 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ERCKMD_2_PW-2_2022-10_NP	E421	31-Oct-2022	03-Nov-2022	----	----		04-Nov-2022	180 days	4 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ERCKMD_2_PW-3_2022-10_NP	E421	31-Oct-2022	03-Nov-2022	----	----		04-Nov-2022	180 days	4 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ERCKMD_3_PW-1_2022-10_NP	E421	31-Oct-2022	03-Nov-2022	----	----		04-Nov-2022	180 days	4 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ERCKMD_3_PW-2_2022-10_NP	E421	31-Oct-2022	03-Nov-2022	----	----		04-Nov-2022	180 days	4 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ERCKMD_3_PW-3_2022-10_NP	E421	31-Oct-2022	03-Nov-2022	----	----		04-Nov-2022	180 days	4 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP	E421	31-Oct-2022	03-Nov-2022	----	----		04-Nov-2022	180 days	4 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP	E358-L	31-Oct-2022	02-Nov-2022	----	----		03-Nov-2022	28 days	3 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP	E355-L	31-Oct-2022	02-Nov-2022	----	----		03-Nov-2022	28 days	3 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP	E283	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	14 days	3 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Alkalinity Species by Titration											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP	E290	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	14 days	3 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP	E100	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	3 days	✓	
Physical Tests : ORP by Electrode											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP	E125	31-Oct-2022	----	----	----		04-Nov-2022	0.25 hrs	93 hrs	* EHTR-FM	
Physical Tests : pH by Meter											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP	E108	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	0.25 hrs	0.25 hrs	* EHTR-FM	
Physical Tests : TDS by Gravimetry											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP	E162	31-Oct-2022	----	----	----		03-Nov-2022	7 days	3 days	✓	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP	E160-L	31-Oct-2022	----	----	----		03-Nov-2022	7 days	3 days	✓	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP	E121	31-Oct-2022	----	----	----		03-Nov-2022	3 days	3 days	✓	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE - total (lab preserved) RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP	E420.Cr-L	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	3 days	✓	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP	E508	31-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	28 days	4 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals : Total metals in Water by CRC ICPMS										
HDPE - total (lab preserved) RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP	E420	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	3 days	✔

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended

Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
Analytical Methods							
Laboratory Duplicates (DUP)							
Acidity by Titration	E283	729315	1	14	7.1	5.0	✓
Alkalinity Species by Titration	E290	729321	1	7	14.2	5.0	✓
Ammonia by Fluorescence	E298	727697	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	727509	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	727510	1	20	5.0	5.0	✓
Conductivity in Water	E100	729320	1	7	14.2	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	729263	1	15	6.6	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	730110	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	729264	1	15	6.6	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	727550	1	17	5.8	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	728152	1	13	7.6	5.0	✓
Fluoride in Water by IC	E235.F	727508	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	727511	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	727512	1	20	5.0	5.0	✓
ORP by Electrode	E125	730396	1	9	11.1	5.0	✓
pH by Meter	E108	729319	1	7	14.2	5.0	✓
Sulfate in Water by IC	E235.SO4	727513	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	729418	1	9	11.1	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	728943	1	11	9.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	728941	1	16	6.2	5.0	✓
Total Mercury in Water by CVAAS	E508	730121	1	20	5.0	5.0	✓
Total metals in Water by CRC ICPMS	E420	728942	1	20	5.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	727551	1	19	5.2	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	728394	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121	727502	1	20	5.0	5.0	✓
Laboratory Control Samples (LCS)							
Acidity by Titration	E283	729315	1	14	7.1	5.0	✓
Alkalinity Species by Titration	E290	729321	1	7	14.2	5.0	✓
Ammonia by Fluorescence	E298	727697	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	727509	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	727510	1	20	5.0	5.0	✓
Conductivity in Water	E100	729320	1	7	14.2	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	729263	1	15	6.6	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	730110	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	729264	1	15	6.6	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	727550	1	17	5.8	5.0	✓



Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
Analytical Methods							
Laboratory Control Samples (LCS) - Continued							
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	728152	1	13	7.6	5.0	✓
Fluoride in Water by IC	E235.F	727508	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	727511	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	727512	1	20	5.0	5.0	✓
ORP by Electrode	E125	730396	1	9	11.1	5.0	✓
pH by Meter	E108	729319	1	7	14.2	5.0	✓
Sulfate in Water by IC	E235.SO4	727513	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	729418	1	9	11.1	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	728943	1	11	9.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	728941	1	16	6.2	5.0	✓
Total Mercury in Water by CVAAS	E508	730121	1	20	5.0	5.0	✓
Total metals in Water by CRC ICPMS	E420	728942	1	20	5.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	727551	1	19	5.2	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	728394	1	20	5.0	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	729431	1	9	11.1	5.0	✓
Turbidity by Nephelometry	E121	727502	1	20	5.0	5.0	✓
Method Blanks (MB)							
Acidity by Titration	E283	729315	1	14	7.1	5.0	✓
Alkalinity Species by Titration	E290	729321	1	7	14.2	5.0	✓
Ammonia by Fluorescence	E298	727697	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	727509	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	727510	1	20	5.0	5.0	✓
Conductivity in Water	E100	729320	1	7	14.2	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	729263	1	15	6.6	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	730110	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	729264	1	15	6.6	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	727550	1	17	5.8	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	728152	1	13	7.6	5.0	✓
Fluoride in Water by IC	E235.F	727508	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	727511	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	727512	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	727513	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	729418	1	9	11.1	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	728943	1	11	9.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	728941	1	16	6.2	5.0	✓
Total Mercury in Water by CVAAS	E508	730121	1	20	5.0	5.0	✓
Total metals in Water by CRC ICPMS	E420	728942	1	20	5.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	727551	1	19	5.2	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	728394	1	20	5.0	5.0	✓



Matrix: **Water** Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
<i>Analytical Methods</i>							
Method Blanks (MB) - Continued							
TSS by Gravimetry (Low Level)	E160-L	729431	1	9	11.1	5.0	✔
Turbidity by Nephelometry	E121	727502	1	20	5.0	5.0	✔
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	727697	1	20	5.0	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	727509	1	20	5.0	5.0	✔
Chloride in Water by IC (Low Level)	E235.Cl-L	727510	1	20	5.0	5.0	✔
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	729263	1	15	6.6	5.0	✔
Dissolved Mercury in Water by CVAAS	E509	730110	1	20	5.0	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	729264	1	15	6.6	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	727550	1	17	5.8	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	728152	1	13	7.6	5.0	✔
Fluoride in Water by IC	E235.F	727508	1	20	5.0	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	727511	1	20	5.0	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	727512	1	20	5.0	5.0	✔
Sulfate in Water by IC	E235.SO4	727513	1	20	5.0	5.0	✔
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	728943	1	11	9.0	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	728941	1	16	6.2	5.0	✔
Total Mercury in Water by CVAAS	E508	730121	1	20	5.0	5.0	✔
Total metals in Water by CRC ICPMS	E420	728942	1	20	5.0	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	727551	1	19	5.2	5.0	✔
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	728394	1	20	5.0	5.0	✔



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 Calgary - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 Calgary - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 Calgary - Environmental	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
ORP by Electrode	E125 Calgary - Environmental	Water	ASTM D1498 (mod)	Oxidation reduction potential is reported as the oxidation-reduction potential of the platinum metal-reference electrode employed, measured in mV. For high accuracy test results, it is recommended that this analysis be conducted in the field.
TSS by Gravimetry (Low Level)	E160-L Calgary - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 Calgary - Environmental	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC (Low Level)	E235.Cl-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Acidity by Titration	E283 Calgary - Environmental	Water	APHA 2310 B (mod)	Acidity is determined by potentiometric titration to pH endpoint of 8.3
Alkalinity Species by Titration	E290 Calgary - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 Calgary - Environmental	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 Calgary - Environmental	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L Calgary - Environmental	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Dissolved Organic Carbon by Combustion (Low Level)	E358-L Calgary - Environmental	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U Calgary - Environmental	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U Calgary - Environmental	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Total metals in Water by CRC ICPMS	E420 Calgary - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L Calgary - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Metals in Water by CRC ICPMS	E421 Calgary - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L Calgary - Environmental	Water	APHA 3030 B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS
Total Mercury in Water by CVAAS	E508 Calgary - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS
Dissolved Mercury in Water by CVAAS	E509 Calgary - Environmental	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
Dissolved Hardness (Calculated)	EC100 Calgary - Environmental	Water	APHA 2340B	"Hardness (as CaCO ₃), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Ion Balance using Dissolved Metals	EC101 Calgary - Environmental	Water	APHA 1030E	Cation Sum, Anion Sum, and Ion Balance are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present. Ion Balance cannot be calculated accurately for waters with very low electrical conductivity (EC).

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 Calgary - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 Calgary - Environmental	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Preparation for Total Organic Carbon by Combustion	EP355 Calgary - Environmental	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon by Combustion	EP358 Calgary - Environmental	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Phosphorus in water	EP372 Calgary - Environmental	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.



<i>Preparation Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
Dissolved Metals Water Filtration	EP421 Calgary - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.
Dissolved Mercury Water Filtration	EP509 Calgary - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.

QUALITY CONTROL REPORT

<p>Work Order : CG2215311</p> <p>Client : Teck Coal Limited</p> <p>Contact : Mike Pope</p> <p>Address : 421 Pine Avenue Sparwood BC Canada V0B2G0</p> <p>Telephone :</p> <p>Project : REGIONAL EFFECTS PROGRAM</p> <p>PO : VPO00847030</p> <p>C-O-C number : November EVO LAEMP 2022</p> <p>Sampler : AMC</p> <p>Site : ----</p> <p>Quote number : Teck Coal Master Quote</p> <p>No. of samples received : 10</p> <p>No. of samples analysed : 10</p>	<p>Page : 1 of 17</p> <p>Laboratory : Calgary - Environmental</p> <p>Account Manager : Lyudmyla Shvets</p> <p>Address : 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5</p> <p>Telephone : +1 403 407 1800</p> <p>Date Samples Received : 02-Nov-2022 09:00</p> <p>Date Analysis Commenced : 02-Nov-2022</p> <p>Issue Date : 04-Nov-2022 16:40</p>
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This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Anthony Calero	Supervisor - Inorganic	Calgary Inorganics, Calgary, Alberta
Anthony Calero	Supervisor - Inorganic	Calgary Metals, Calgary, Alberta
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Page : 2 of 17
Work Order : CG2215311
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

- Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
- CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
- DQO = Data Quality Objective.
- LOR = Limit of Reporting (detection limit).
- RPD = Relative Percent Difference
- # = Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 727502)											
CG2215208-002	Anonymous	turbidity	----	E121	0.10	NTU	0.40	0.38	0.01	Diff <2x LOR	----
Physical Tests (QC Lot: 729315)											
CG2215311-010	RG_ERCKMD_WS_LAEM P_EVO_2022-10_NP	acidity (as CaCO3)	----	E283	2.0	mg/L	<2.0	<2.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 729319)											
CG2215311-010	RG_ERCKMD_WS_LAEM P_EVO_2022-10_NP	pH	----	E108	0.10	pH units	8.25	8.26	0.121%	4%	----
Physical Tests (QC Lot: 729320)											
CG2215311-010	RG_ERCKMD_WS_LAEM P_EVO_2022-10_NP	conductivity	----	E100	2.0	µS/cm	1780	1780	0.112%	10%	----
Physical Tests (QC Lot: 729321)											
CG2215311-010	RG_ERCKMD_WS_LAEM P_EVO_2022-10_NP	alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	424	420	0.830%	20%	----
		alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	424	420	0.830%	20%	----
Physical Tests (QC Lot: 729418)											
CG2215311-010	RG_ERCKMD_WS_LAEM P_EVO_2022-10_NP	solids, total dissolved [TDS]	----	E162	40	mg/L	1540	1700	9.99%	20%	----
Physical Tests (QC Lot: 730396)											
CG2215311-010	RG_ERCKMD_WS_LAEM P_EVO_2022-10_NP	oxidation-reduction potential [ORP]	----	E125	0.10	mV	378	383	1.42%	15%	----
Anions and Nutrients (QC Lot: 727508)											
CG2215304-010	Anonymous	fluoride	16984-48-8	E235.F	0.100	mg/L	0.139	0.138	0.001	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 727509)											
CG2215304-010	Anonymous	bromide	24959-67-9	E235.Br-L	0.250	mg/L	<0.250	<0.250	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 727510)											
CG2215304-010	Anonymous	chloride	16887-00-6	E235.Cl-L	0.50	mg/L	6.75	6.73	0.323%	20%	----
Anions and Nutrients (QC Lot: 727511)											
CG2215304-010	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	0.0250	mg/L	13.2	13.2	0.202%	20%	----
Anions and Nutrients (QC Lot: 727512)											
CG2215304-010	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 727513)											



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 727513) - continued											
CG2215304-010	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	1.50	mg/L	778	776	0.163%	20%	----
Anions and Nutrients (QC Lot: 727697)											
CG2215305-001	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0240	0.0241	0.0001	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 728152)											
CG2215304-010	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0174	0.0187	6.92%	20%	----
Anions and Nutrients (QC Lot: 728394)											
CG2215307-001	Anonymous	phosphorus, total	7723-14-0	E372-U	0.200	mg/L	4.89	4.99	1.92%	20%	----
Anions and Nutrients (QC Lot: 728941)											
CG2215311-010	RG_ERCKMD_WS_LAEM P_EVO_2022-10_NP	Kjeldahl nitrogen, total [TKN]	----	E318	0.500	mg/L	<0.500	<0.500	0	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 727550)											
CG2215304-010	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	0.58	0.63	0.05	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 727551)											
CG2215304-010	Anonymous	carbon, total organic [TOC]	----	E355-L	0.50	mg/L	<0.50	0.53	0.03	Diff <2x LOR	----
Total Metals (QC Lot: 730121)											
CG2215287-005	Anonymous	mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 729263)											
CG2215338-001	Anonymous	chromium, dissolved	7440-47-3	E421.Cr-L	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 729264)											
CG2215338-001	Anonymous	aluminum, dissolved	7429-90-5	E421	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----
		antimony, dissolved	7440-36-0	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E421	0.00020	mg/L	0.00028	0.00025	0.00003	Diff <2x LOR	----
		barium, dissolved	7440-39-3	E421	0.00020	mg/L	0.0359	0.0345	3.91%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.000040	mg/L	<0.040 µg/L	<0.000040	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.020	mg/L	0.023	0.023	0.0007	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E421	0.0000100	mg/L	<0.0100 µg/L	<0.0000100	0	Diff <2x LOR	----
		calcium, dissolved	7440-70-2	E421	0.100	mg/L	212	207	2.79%	20%	----
		cobalt, dissolved	7440-48-4	E421	0.00020	mg/L	0.74 µg/L	0.00074	0.000004	Diff <2x LOR	----
		copper, dissolved	7440-50-8	E421	0.00040	mg/L	<0.00040	<0.00040	0	Diff <2x LOR	----
		iron, dissolved	7439-89-6	E421	0.020	mg/L	<0.020	<0.020	0	Diff <2x LOR	----
		lead, dissolved	7439-92-1	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0020	mg/L	0.0696	0.0667	4.18%	20%	----
		magnesium, dissolved	7439-95-4	E421	0.0100	mg/L	133	129	3.07%	20%	----



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 729264) - continued											
CG2215338-001	Anonymous	manganese, dissolved	7439-96-5	E421	0.00020	mg/L	0.0120	0.0116	2.67%	20%	----
		molybdenum, dissolved	7439-98-7	E421	0.000100	mg/L	0.00744	0.00727	2.25%	20%	----
		nickel, dissolved	7440-02-0	E421	0.00100	mg/L	0.0113	0.0109	3.54%	20%	----
		potassium, dissolved	7440-09-7	E421	0.100	mg/L	3.54	3.42	3.33%	20%	----
		selenium, dissolved	7782-49-2	E421	0.000100	mg/L	108 µg/L	0.107	0.954%	20%	----
		silicon, dissolved	7440-21-3	E421	0.100	mg/L	3.69	3.53	4.31%	20%	----
		silver, dissolved	7440-22-4	E421	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E421	0.100	mg/L	6.51	6.17	5.33%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00040	mg/L	0.297	0.292	1.65%	20%	----
		sulfur, dissolved	7704-34-9	E421	1.00	mg/L	310	288	7.24%	20%	----
		thallium, dissolved	7440-28-0	E421	0.000020	mg/L	0.000029	0.000028	0.0000005	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.00060	mg/L	<0.00060	<0.00060	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000020	mg/L	0.00857	0.00848	0.990%	20%	----
		vanadium, dissolved	7440-62-2	E421	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E421	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 730110)											
CG2215304-010	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 727502)						
turbidity	---	E121	0.1	NTU	<0.10	---
Physical Tests (QCLot: 729315)						
acidity (as CaCO3)	---	E283	2	mg/L	2.1	---
Physical Tests (QCLot: 729320)						
conductivity	---	E100	1	µS/cm	<1.0	---
Physical Tests (QCLot: 729321)						
alkalinity, bicarbonate (as CaCO3)	---	E290	1	mg/L	<1.0	---
alkalinity, carbonate (as CaCO3)	---	E290	1	mg/L	<1.0	---
alkalinity, hydroxide (as CaCO3)	---	E290	1	mg/L	<1.0	---
alkalinity, total (as CaCO3)	---	E290	1	mg/L	<1.0	---
Physical Tests (QCLot: 729418)						
solids, total dissolved [TDS]	---	E162	10	mg/L	<10	---
Physical Tests (QCLot: 729431)						
solids, total suspended [TSS]	---	E160-L	1	mg/L	<1.0	---
Anions and Nutrients (QCLot: 727508)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	---
Anions and Nutrients (QCLot: 727509)						
bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	---
Anions and Nutrients (QCLot: 727510)						
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	---
Anions and Nutrients (QCLot: 727511)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	---
Anions and Nutrients (QCLot: 727512)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	---
Anions and Nutrients (QCLot: 727513)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	---
Anions and Nutrients (QCLot: 727697)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	---
Anions and Nutrients (QCLot: 728152)						
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	---
Anions and Nutrients (QCLot: 728394)						
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	---



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 728941)						
Kjeldahl nitrogen, total [TKN]	---	E318	0.05	mg/L	<0.050	---
Organic / Inorganic Carbon (QCLot: 727550)						
carbon, dissolved organic [DOC]	---	E358-L	0.5	mg/L	<0.50	---
Organic / Inorganic Carbon (QCLot: 727551)						
carbon, total organic [TOC]	---	E355-L	0.5	mg/L	<0.50	---
Total Metals (QCLot: 728942)						
aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	---
antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	---
arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	---
barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	---
beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	---
bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	---
boron, total	7440-42-8	E420	0.01	mg/L	<0.010	---
cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	---
calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	---
cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	---
copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	---
iron, total	7439-89-6	E420	0.01	mg/L	<0.010	---
lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	---
lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	---
magnesium, total	7439-95-4	E420	0.005	mg/L	# 0.0082	---
manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	---
molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	---
nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	---
potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	---
selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	---
silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	---
silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	---
sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	---
strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	---
sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	---
thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	---
tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	---
titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	---
uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	---



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 728942) - continued						
vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	---
zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	---
Total Metals (QCLot: 728943)						
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	# 0.00020	---
Total Metals (QCLot: 730121)						
mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	---
Dissolved Metals (QCLot: 729263)						
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	<0.00010	---
Dissolved Metals (QCLot: 729264)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	---
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	---
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	---
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	---
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	---
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	---
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	---
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	---
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	---
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	---
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	---
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	---
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	---
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	---
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	---
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	---
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	---
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	---
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	---
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	---
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	---
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	---
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	---
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	---
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	---
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	---



Sub-Matrix: **Water**

<i>Analyte</i>	<i>CAS Number</i>	<i>Method</i>	<i>LOR</i>	<i>Unit</i>	<i>Result</i>	<i>Qualifier</i>
Dissolved Metals (QCLot: 729264) - continued						
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
Dissolved Metals (QCLot: 730110)						
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Physical Tests (QCLot: 727502)									
turbidity	----	E121	0.1	NTU	200 NTU	110	85.0	115	----
Physical Tests (QCLot: 729315)									
acidity (as CaCO3)	----	E283	2	mg/L	50 mg/L	101	85.0	115	----
Physical Tests (QCLot: 729319)									
pH	----	E108	----	pH units	7 pH units	101	98.6	101	----
Physical Tests (QCLot: 729320)									
conductivity	----	E100	1	µS/cm	146.9 µS/cm	99.3	90.0	110	----
Physical Tests (QCLot: 729321)									
alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	97.0	85.0	115	----
Physical Tests (QCLot: 729418)									
solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	98.4	85.0	115	----
Physical Tests (QCLot: 729431)									
solids, total suspended [TSS]	----	E160-L	1	mg/L	150 mg/L	104	85.0	115	----
Physical Tests (QCLot: 730396)									
oxidation-reduction potential [ORP]	----	E125	----	mV	220 mV	101	95.4	104	----
Anions and Nutrients (QCLot: 727508)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 727509)									
bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	102	85.0	115	----
Anions and Nutrients (QCLot: 727510)									
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	99.7	90.0	110	----
Anions and Nutrients (QCLot: 727511)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 727512)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	98.1	90.0	110	----
Anions and Nutrients (QCLot: 727513)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 727697)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	99.2	85.0	115	----
Anions and Nutrients (QCLot: 728152)									
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.03 mg/L	96.2	80.0	120	----



Sub-Matrix: Water					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	
Anions and Nutrients (QCLot: 728394)									
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.03 mg/L	87.5	80.0	120	----
Anions and Nutrients (QCLot: 728941)									
Kjeldahl nitrogen, total [TKN]	---	E318	0.05	mg/L	4 mg/L	82.0	75.0	125	----
Organic / Inorganic Carbon (QCLot: 727550)									
carbon, dissolved organic [DOC]	---	E358-L	0.5	mg/L	8.57 mg/L	92.6	80.0	120	----
Organic / Inorganic Carbon (QCLot: 727551)									
carbon, total organic [TOC]	---	E355-L	0.5	mg/L	8.57 mg/L	98.4	80.0	120	----
Total Metals (QCLot: 728942)									
aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	104	80.0	120	----
antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	99.5	80.0	120	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	91.5	80.0	120	----
barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	98.0	80.0	120	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	99.9	80.0	120	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	95.9	80.0	120	----
boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	99.0	80.0	120	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	95.0	80.0	120	----
calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	98.4	80.0	120	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	94.1	80.0	120	----
copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	94.6	80.0	120	----
iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	104	80.0	120	----
lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	96.4	80.0	120	----
lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	96.7	80.0	120	----
magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	95.8	80.0	120	----
manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	96.7	80.0	120	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	98.5	80.0	120	----
nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	92.3	80.0	120	----
potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	98.9	80.0	120	----
selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	88.4	80.0	120	----
silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	99.7	60.0	140	----
silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	92.5	80.0	120	----
sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	97.8	80.0	120	----
strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	96.8	80.0	120	----
sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	102	80.0	120	----
thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	95.6	80.0	120	----



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 728942) - continued									
tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	96.8	80.0	120	----
titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	98.6	80.0	120	----
uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	89.9	80.0	120	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	96.0	80.0	120	----
zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	94.0	80.0	120	----
Total Metals (QCLot: 728943)									
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	0.25 mg/L	93.0	80.0	120	----
Total Metals (QCLot: 730121)									
mercury, total	7439-97-6	E508	0.000005	mg/L	0.0001 mg/L	100	80.0	120	----
Dissolved Metals (QCLot: 729263)									
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	0.25 mg/L	92.7	80.0	120	----
Dissolved Metals (QCLot: 729264)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	105	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	92.4	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	92.1	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	98.4	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	98.8	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	91.5	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	87.8	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	91.8	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	95.4	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	94.3	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	92.1	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	102	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	93.3	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	102	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	85.7	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	90.4	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	97.2	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	92.3	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	98.6	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	87.8	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	99.1	60.0	140	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	88.7	80.0	120	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	94.9	80.0	120	----



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 729264) - continued									
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	95.8	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	104	80.0	120	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	93.0	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	91.6	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	94.0	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	91.7	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	95.4	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	84.0	80.0	120	----
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	104	80.0	120	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 727508)										
CG2215311-001	RG_ERCKMD_1_PW-1_2022-10_NP	fluoride	16984-48-8	E235.F	0.936 mg/L	1 mg/L	93.6	75.0	125	----
Anions and Nutrients (QCLot: 727509)										
CG2215311-001	RG_ERCKMD_1_PW-1_2022-10_NP	bromide	24959-67-9	E235.Br-L	0.525 mg/L	0.5 mg/L	105	75.0	125	----
Anions and Nutrients (QCLot: 727510)										
CG2215311-001	RG_ERCKMD_1_PW-1_2022-10_NP	chloride	16887-00-6	E235.Cl-L	106 mg/L	100 mg/L	106	75.0	125	----
Anions and Nutrients (QCLot: 727511)										
CG2215311-001	RG_ERCKMD_1_PW-1_2022-10_NP	nitrate (as N)	14797-55-8	E235.NO3-L	ND mg/L	2.5 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 727512)										
CG2215311-001	RG_ERCKMD_1_PW-1_2022-10_NP	nitrite (as N)	14797-65-0	E235.NO2-L	0.534 mg/L	0.5 mg/L	107	75.0	125	----
Anions and Nutrients (QCLot: 727513)										
CG2215311-001	RG_ERCKMD_1_PW-1_2022-10_NP	sulfate (as SO4)	14808-79-8	E235.SO4	ND mg/L	100 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 727697)										
CG2215311-010	RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP	ammonia, total (as N)	7664-41-7	E298	0.102 mg/L	0.1 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 728152)										
CG2215311-010	RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0516 mg/L	0.05 mg/L	103	70.0	130	----
Anions and Nutrients (QCLot: 728394)										
CG2215311-010	RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP	phosphorus, total	7723-14-0	E372-U	0.0375 mg/L	0.05 mg/L	75.0	70.0	130	----
Anions and Nutrients (QCLot: 728941)										
CG2215313-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.22 mg/L	2.5 mg/L	88.8	70.0	130	----
Organic / Inorganic Carbon (QCLot: 727550)										
CG2215304-010	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	5.15 mg/L	5 mg/L	103	70.0	130	----
Organic / Inorganic Carbon (QCLot: 727551)										
CG2215304-010	Anonymous	carbon, total organic [TOC]	----	E355-L	5.59 mg/L	5 mg/L	112	70.0	130	----



Sub-Matrix: Water

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 728942)										
CG2215260-002	Anonymous	aluminum, total	7429-90-5	E420	2.06 mg/L	2 mg/L	103	70.0	130	----
		antimony, total	7440-36-0	E420	0.193 mg/L	0.2 mg/L	96.6	70.0	130	----
		arsenic, total	7440-38-2	E420	0.184 mg/L	0.2 mg/L	92.1	70.0	130	----
		barium, total	7440-39-3	E420	0.194 mg/L	0.2 mg/L	96.9	70.0	130	----
		beryllium, total	7440-41-7	E420	0.388 mg/L	0.4 mg/L	97.1	70.0	130	----
		bismuth, total	7440-69-9	E420	0.0947 mg/L	0.1 mg/L	94.7	70.0	130	----
		boron, total	7440-42-8	E420	1.00 mg/L	1 mg/L	100	70.0	130	----
		cadmium, total	7440-43-9	E420	0.0382 mg/L	0.04 mg/L	95.6	70.0	130	----
		calcium, total	7440-70-2	E420	ND mg/L	40 mg/L	ND	70.0	130	----
		cobalt, total	7440-48-4	E420	0.189 mg/L	0.2 mg/L	94.5	70.0	130	----
		copper, total	7440-50-8	E420	0.189 mg/L	0.2 mg/L	94.6	70.0	130	----
		iron, total	7439-89-6	E420	18.6 mg/L	20 mg/L	92.9	70.0	130	----
		lead, total	7439-92-1	E420	0.183 mg/L	0.2 mg/L	91.4	70.0	130	----
		lithium, total	7439-93-2	E420	0.976 mg/L	1 mg/L	97.6	70.0	130	----
		magnesium, total	7439-95-4	E420	ND mg/L	10 mg/L	ND	70.0	130	----
		manganese, total	7439-96-5	E420	0.189 mg/L	0.2 mg/L	94.4	70.0	130	----
		molybdenum, total	7439-98-7	E420	0.195 mg/L	0.2 mg/L	97.4	70.0	130	----
		nickel, total	7440-02-0	E420	0.373 mg/L	0.4 mg/L	93.2	70.0	130	----
		potassium, total	7440-09-7	E420	38.2 mg/L	40 mg/L	95.6	70.0	130	----
		selenium, total	7782-49-2	E420	0.359 mg/L	0.4 mg/L	89.8	70.0	130	----
		silicon, total	7440-21-3	E420	95.8 mg/L	100 mg/L	95.8	70.0	130	----
		silver, total	7440-22-4	E420	0.0415 mg/L	0.04 mg/L	104	70.0	130	----
		sodium, total	7440-23-5	E420	18.6 mg/L	20 mg/L	93.0	70.0	130	----
		strontium, total	7440-24-6	E420	ND mg/L	0.2 mg/L	ND	70.0	130	----
		sulfur, total	7704-34-9	E420	ND mg/L	200 mg/L	ND	70.0	130	----
		thallium, total	7440-28-0	E420	0.0374 mg/L	0.04 mg/L	93.6	70.0	130	----
		tin, total	7440-31-5	E420	0.191 mg/L	0.2 mg/L	95.4	70.0	130	----
		titanium, total	7440-32-6	E420	0.390 mg/L	0.4 mg/L	97.4	70.0	130	----
		uranium, total	7440-61-1	E420	0.0362 mg/L	0.04 mg/L	90.5	70.0	130	----
		vanadium, total	7440-62-2	E420	0.956 mg/L	1 mg/L	95.6	70.0	130	----
		zinc, total	7440-66-6	E420	3.77 mg/L	4 mg/L	94.3	70.0	130	----
Total Metals (QCLot: 728943)										
CG2215260-002	Anonymous	chromium, total	7440-47-3	E420.Cr-L	0.371 mg/L	0.4 mg/L	92.8	70.0	130	----
Total Metals (QCLot: 730121)										
CG2215287-006	Anonymous	mercury, total	7439-97-6	E508	0.0000985 mg/L	0.0001 mg/L	98.5	70.0	130	----



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 729263)										
CG2215338-002	Anonymous	chromium, dissolved	7440-47-3	E421.Cr-L	0.376 mg/L	0.4 mg/L	93.9	70.0	130	----
Dissolved Metals (QCLot: 729264)										
CG2215338-002	Anonymous	aluminum, dissolved	7429-90-5	E421	2.01 mg/L	2 mg/L	101	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.187 mg/L	0.2 mg/L	93.4	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.191 mg/L	0.2 mg/L	95.7	70.0	130	----
		barium, dissolved	7440-39-3	E421	0.194 mg/L	0.2 mg/L	97.2	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.382 mg/L	0.4 mg/L	95.4	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.0947 mg/L	0.1 mg/L	94.7	70.0	130	----
		boron, dissolved	7440-42-8	E421	0.922 mg/L	1 mg/L	92.2	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.0376 mg/L	0.04 mg/L	94.1	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	40 mg/L	ND	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.194 mg/L	0.2 mg/L	97.1	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.190 mg/L	0.2 mg/L	94.8	70.0	130	----
		iron, dissolved	7439-89-6	E421	18.8 mg/L	20 mg/L	94.2	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.195 mg/L	0.2 mg/L	97.6	70.0	130	----
		lithium, dissolved	7439-93-2	E421	0.922 mg/L	1 mg/L	92.2	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	10 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E421	0.179 mg/L	0.2 mg/L	89.6	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.192 mg/L	0.2 mg/L	96.3	70.0	130	----
		nickel, dissolved	7440-02-0	E421	0.378 mg/L	0.4 mg/L	94.6	70.0	130	----
		potassium, dissolved	7440-09-7	E421	38.6 mg/L	40 mg/L	96.4	70.0	130	----
		selenium, dissolved	7782-49-2	E421	0.384 mg/L	0.4 mg/L	96.1	70.0	130	----
		silicon, dissolved	7440-21-3	E421	81.1 mg/L	100 mg/L	81.1	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.0395 mg/L	0.04 mg/L	98.8	70.0	130	----
		sodium, dissolved	7440-23-5	E421	18.2 mg/L	20 mg/L	91.1	70.0	130	----
		strontium, dissolved	7440-24-6	E421	ND mg/L	0.2 mg/L	ND	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	ND mg/L	200 mg/L	ND	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.0368 mg/L	0.04 mg/L	92.1	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.184 mg/L	0.2 mg/L	92.2	70.0	130	----
		titanium, dissolved	7440-32-6	E421	0.378 mg/L	0.4 mg/L	94.5	70.0	130	----
		uranium, dissolved	7440-61-1	E421	0.0371 mg/L	0.04 mg/L	92.8	70.0	130	----
		vanadium, dissolved	7440-62-2	E421	0.965 mg/L	1 mg/L	96.5	70.0	130	----
		zinc, dissolved	7440-66-6	E421	3.43 mg/L	4 mg/L	85.7	70.0	130	----
Dissolved Metals (QCLot: 730110)										

Page : 17 of 17
 Work Order : CG2215311
 Client : Teck Coal Limited
 Project : REGIONAL EFFECTS PROGRAM



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 730110) - continued										
CG2215311-010	RG_ERCKMD_WS_LAEMP _EVO_2022-10_NP	mercury, dissolved	7439-97-6	E509	0.0000968 mg/L	0.0001 mg/L	96.8	70.0	130	----

COC ID: November EVO LAEMP 2022 TURNAROUND TIME:

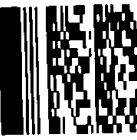
PROJECT/CLIENT INFO				LABORATORY			
Facility Name / Job#	Regional Effects Program			Lab Name	ALS Calgary		
Project Manager	Mike Pope			Lab Contact	Lyudmyla Shvets		
Address	421 Pine Avenue			Address	2559 29 Street NE		
City	Sparwood	Province	BC	City	Calgary	Province	AB
Postal Code	V0B 2G0	Country	Canada	Postal Code	T1Y 7B5	Country	Canada
Phone Number	343-333-3905			Phone Number	1 403 407 1794		

SAMPLE DETAILS								ANALYSIS REQUESTED								
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	TECKCOAL-ANIONS	Dissolved metals	TECKCOAL-ROUTINE-VA	ALS_Package-DOC	ALS_Package-TKN/TOC	HG-T-U-CVAF-VA	HG-D-CVAF-VA	TECKCOAL-MET-T-VA	TECKCOAL-MET-D-VA
RG_ERCKMD_1_PW-1_2022-10_NP	RG_ERCKMD	PW	No	10/31/2022	12:00	G	1	X	X							
RG_ERCKMD_1_PW-2_2022-10_NP	RG_ERCKMD	PW	No	10/31/2022	12:15	G	1	X	X							
RG_ERCKMD_1_PW-3_2022-10_NP	RG_ERCKMD	PW	No	10/31/2022	12:30	G	1	X	X							
RG_ERCKMD_2_PW-1_2022-10_NP	RG_ERCKMD	PW	No	10/31/2022	12:45	G	1	X	X							
RG_ERCKMD_2_PW-2_2022-10_NP	RG_ERCKMD	PW	No	10/31/2022	13:00	G	1	X	X							
RG_ERCKMD_2_PW-3_2022-10_NP	RG_ERCKMD	PW	No	10/31/2022	13:15	G	1	X	X							
RG_ERCKMD_3_PW-1_2022-10_NP	RG_ERCKMD	PW	No	10/31/2022	13:30	G	1	X	X							
RG_ERCKMD_3_PW-2_2022-10_NP	RG_ERCKMD	PW	No	10/31/2022	13:45	G	1	X	X							
RG_ERCKMD_3_PW-3_2022-10_NP	RG_ERCKMD	PW	No	10/31/2022	14:00	G	1	X	X							
RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP	RG_ERCKMD	WS	No	10/31/2022	14:15	G	7	X	X	X	X	X	X	X	X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
ALS PO VPO00847030	Alex McClymont, Minnow Environmental	November 1, 2022	

NB OF BOTTLES RETURNED/DESCRIPTION	Sampler's Name	Mobile #
Regular (default)	Alex McClymont	780-293-6750
Priority (2-3 business days) - 50% surcharge X		
Emergency (1 Business Day) - 100% surcharge		
For Emergency <1 Day, ASAP or Weekend - Contact ALS	Sampler's Signature	Date/Time
		November 1, 2022

Environmental
Calgary
Work Order Ref
CG221



Telephone : + 1 403 407

Environmental Division
Calgary
Work Order Reference
CG2215311



Telephone : + 1 403 407 1800

11/2/2022

9:00 am 7°C



CERTIFICATE OF ANALYSIS

<p>Work Order : CG2215428</p> <p>Client : Teck Coal Limited</p> <p>Contact : Mike Pope</p> <p>Address : 421 Pine Avenue Sparwood BC Canada V0B2G0</p> <p>Telephone : ----</p> <p>Project : REGIONAL EFFECTS PROGRAM</p> <p>PO : VPO00847030</p> <p>C-O-C number : November EVO LAEMP 2022</p> <p>Sampler : Robin Valleau</p> <p>Site : ----</p> <p>Quote number : Teck Coal Master Quote</p> <p>No. of samples received : 10</p> <p>No. of samples analysed : 10</p>	<p>Page : 1 of 10</p> <p>Laboratory : Calgary - Environmental</p> <p>Account Manager : Lyudmyla Shvets</p> <p>Address : 2559 29th Street NE Calgary AB Canada T1Y 7B5</p> <p>Telephone : +1 403 407 1800</p> <p>Date Samples Received : 04-Nov-2022 09:25</p> <p>Date Analysis Commenced : 06-Nov-2022</p> <p>Issue Date : 14-Nov-2022 16:02</p>
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This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Andrew Fox		Metals, Calgary, Alberta
Anthony Calero	Supervisor - Inorganic	Inorganics, Calgary, Alberta
Elke Tabora		Inorganics, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Metals, Calgary, Alberta
Kevin Baxter	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Maria Tuguinay	Lab Assistant	Inorganics, Calgary, Alberta
Parker Sgarbossa	Laboratory Analyst	Inorganics, Calgary, Alberta
Ruifang Zheng	Analyst	Inorganics, Calgary, Alberta
Shirley Li	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Shirley Li	Team Leader - Inorganics	Metals, Calgary, Alberta
Vladka Stamenova	Analyst	Inorganics, Calgary, Alberta



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
 LOR: Limit of Reporting (detection limit).

<i>Unit</i>	<i>Description</i>
-	no unit
%	percent
µg/L	micrograms per litre
µS/cm	microsiemens per centimetre
meq/L	milliequivalents per litre
mg/L	milligrams per litre
mV	millivolts
NTU	nephelometric turbidity units
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

<i>Qualifier</i>	<i>Description</i>
DLDS	Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.
DTC	Dissolved concentration exceeds total. Results were confirmed by re-analysis.
HTA	Analytical holding time was exceeded.
TKNI	TKN result may be biased low due to Nitrate interference. Nitrate-N is > 10x TKN.



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID				
					RG_MI3_WS_L AEMP_EVO_20 22-11_N	RG_MIDGA_WS _LAEMP_EVO_ 2022-11_N	RG_MIDBO_WS _LAEMP_EVO_ 2022-11_N	RG_MIDER_WS _LAEMP_EVO_ 2022-11_N	RG_MICOMP_W S_LAEMP_EVO _2022-11_N
Client sampling date / time					02-Nov-2022 09:45	02-Nov-2022 13:00	02-Nov-2022 14:00	02-Nov-2022 11:30	02-Nov-2022 15:00
Analyte	CAS Number	Method	LOR	Unit	CG2215428-001	CG2215428-002	CG2215428-003	CG2215428-004	CG2215428-005
					Result	Result	Result	Result	Result
Physical Tests									
acidity (as CaCO3)	----	E283	2.0	mg/L	<2.0	<2.0	<2.0	<2.0	<2.0
alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	149	151	159	138	171
alkalinity, bicarbonate (as HCO3)	71-52-3	E290	1.0	mg/L	182	184	194	169	209
alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	3.8	8.8	<1.0	<1.0
alkalinity, carbonate (as CO3)	3812-32-6	E290	1.0	mg/L	<1.0	2.3	5.3	<1.0	<1.0
alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0
alkalinity, hydroxide (as OH)	14280-30-9	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	149	155	168	138	171
conductivity	----	E100	2.0	µS/cm	334	458	473	359	504
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	192	261	273	204	287
oxidation-reduction potential [ORP]	----	E125	0.10	mV	380	374	382	384	391
pH	----	E108	0.10	pH units	8.24	8.29	8.31	8.26	8.24
solids, total dissolved [TDS]	----	E162	10	mg/L	192	290	292	220	345
solids, total suspended [TSS]	----	E160-L	1.0	mg/L	<1.0	<1.0	1.5	1.0	<1.0
turbidity	----	E121	0.10	NTU	0.52 ^{HTA}	0.52 ^{HTA}	0.97 ^{HTA}	0.62 ^{HTA}	0.44 ^{HTA}
Anions and Nutrients									
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	1.19	1.80	2.01	1.25	3.67
fluoride	16984-48-8	E235.F	0.020	mg/L	0.145	0.132	0.134	0.124	0.132
Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	<0.050	0.059 ^{TKN}	0.199	0.094	0.134
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.142	0.697	0.842	0.210	1.03
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	0.0010	0.0015	<0.0010	0.0012
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0048	0.0036	0.0037	0.0055	0.0035
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	47.3	100	108	64.8	120
Organic / Inorganic Carbon									
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	1.15	1.13	1.11	1.21	1.17



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_MI3_WS_L AEMP_EVO_20 22-11_N	RG_MIDGA_WS _LAEMP_EVO_ 2022-11_N	RG_MIDBO_WS _LAEMP_EVO_ 2022-11_N	RG_MIDER_WS _LAEMP_EVO_ 2022-11_N	RG_MICOMP_W S_LAEMP_EVO _2022-11_N
Client sampling date / time					02-Nov-2022 09:45	02-Nov-2022 13:00	02-Nov-2022 14:00	02-Nov-2022 11:30	02-Nov-2022 15:00	
Analyte	CAS Number	Method	LOR	Unit	CG2215428-001	CG2215428-002	CG2215428-003	CG2215428-004	CG2215428-005	
					Result	Result	Result	Result	Result	
Organic / Inorganic Carbon										
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	1.35	1.20	1.18	1.39	1.36	
Ion Balance										
anion sum	----	EC101	0.10	meq/L	4.01	5.29	5.73	4.16	6.10	
cation sum	----	EC101	0.10	meq/L	3.98	5.40	5.64	4.25	5.94	
ion balance (cations/anions)	----	EC101	0.010	%	99.2	102	98.4	102	97.4	
ion balance (APHA)	----	EC101	0.01	%	-0.38	1.03	-0.79	1.07	-1.33	
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0176	0.0183	0.0168	0.0219	0.0137	
antimony, total	7440-36-0	E420	0.00010	mg/L	<0.00010	0.00010	0.00011	<0.00010	0.00010	
arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00019	0.00015	0.00018	0.00019	0.00016	
barium, total	7440-39-3	E420	0.00010	mg/L	0.0943	0.108	0.105	0.104	0.101	
beryllium, total	7440-41-7	E420	0.020	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	
bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
boron, total	7440-42-8	E420	0.010	mg/L	<0.010	0.012	0.012	<0.010	0.012	
cadmium, total	7440-43-9	E420	0.0050	µg/L	0.0126	0.0106	0.0234	0.0227	0.0246	
calcium, total	7440-70-2	E420	0.050	mg/L	51.2	64.2	64.3	51.8	66.4	
chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	0.00017	0.00014	0.00015	0.00016	0.00015	
cobalt, total	7440-48-4	E420	0.10	µg/L	<0.10	<0.10	<0.10	<0.10	<0.10	
copper, total	7440-50-8	E420	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	0.00079	
iron, total	7439-89-6	E420	0.010	mg/L	0.017	0.021	0.020	0.021	0.016	
lead, total	7439-92-1	E420	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
lithium, total	7439-93-2	E420	0.0010	mg/L	0.0050	0.0098	0.0117	0.0061	0.0131	
magnesium, total	7439-95-4	E420	0.0050	mg/L	17.1	27.4	25.6	16.3	25.5	
manganese, total	7439-96-5	E420	0.00010	mg/L	0.00119	0.00235	0.00236	0.00114	0.00206	
mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.000683	0.00106	0.00115	0.000733	0.00112	
nickel, total	7440-02-0	E420	0.00050	mg/L	<0.00050	0.00095	0.00117	0.00058	0.00102	
potassium, total	7440-09-7	E420	0.050	mg/L	0.566	0.810	0.869	0.630	0.868	
selenium, total	7782-49-2	E420	0.050	µg/L	1.06	6.91	8.52	1.71	9.85	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_MI3_WS_L AEMP_EVO_20 22-11_N	RG_MIDGA_WS _LAEMP_EVO_ 2022-11_N	RG_MIDBO_WS _LAEMP_EVO_ 2022-11_N	RG_MIDER_WS _LAEMP_EVO_ 2022-11_N	RG_MICOMP_W S_LAEMP_EVO _2022-11_N
Client sampling date / time					02-Nov-2022 09:45	02-Nov-2022 13:00	02-Nov-2022 14:00	02-Nov-2022 11:30	02-Nov-2022 15:00	
Analyte	CAS Number	Method	LOR	Unit	CG2215428-001	CG2215428-002	CG2215428-003	CG2215428-004	CG2215428-005	
					Result	Result	Result	Result	Result	
Total Metals										
silicon, total	7440-21-3	E420	0.10	mg/L	2.38	2.48	2.37	2.25	2.44	
silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
sodium, total	7440-23-5	E420	0.050	mg/L	2.87	3.64	3.73	3.44	4.00	
strontium, total	7440-24-6	E420	0.00020	mg/L	0.144	0.162	0.169	0.156	0.172	
sulfur, total	7704-34-9	E420	0.50	mg/L	18.4	40.0	40.9	24.4	44.4	
thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
titanium, total	7440-32-6	E420	0.00030	mg/L	0.00034	<0.00030	<0.00030	<0.00030	<0.00030	
uranium, total	7440-61-1	E420	0.000010	mg/L	0.000630	0.00111	0.00121	0.000683	0.00120	
vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030 ^{OTC}	<0.0030	<0.0030	<0.0030	<0.0030	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	<0.0010	0.0010	0.0012	<0.0010	<0.0010	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00011	0.00011	0.00014	0.00014	0.00015	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0931	0.105	0.104	0.105	0.102	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.010	0.010	<0.010	<0.010	0.011	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.0068	0.0174	0.0162	0.0146	0.0202	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	50.5	62.4	64.4	52.5	67.7	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	0.00013	0.00011	<0.00010	<0.00010	0.00010	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	<0.10	<0.10	<0.10	<0.10	<0.10	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00020	<0.00020	0.00021	0.00021	0.00025	
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0049	0.0096	0.0106	0.0056	0.0122	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	16.1	25.6	27.3	17.8	28.7	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00064	0.00160	0.00164	0.00052	0.00159	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_MI3_WS_L AEMP_EVO_20 22-11_N	RG_MIDGA_WS _LAEMP_EVO_ 2022-11_N	RG_MIDBO_WS _LAEMP_EVO_ 2022-11_N	RG_MIDER_WS _LAEMP_EVO_ 2022-11_N	RG_MICOMP_WS S_LAEMP_EVO_ _2022-11_N
Client sampling date / time					02-Nov-2022 09:45	02-Nov-2022 13:00	02-Nov-2022 14:00	02-Nov-2022 11:30	02-Nov-2022 15:00	
Analyte	CAS Number	Method	LOR	Unit	CG2215428-001	CG2215428-002	CG2215428-003	CG2215428-004	CG2215428-005	
					Result	Result	Result	Result	Result	
Dissolved Metals										
mercury, dissolved	7439-97-6	E509	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.000660	0.00104	0.00112	0.000719	0.00104	
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	<0.00050	0.00093	0.00102	0.00051	0.00102	
potassium, dissolved	7440-09-7	E421	0.050	mg/L	0.574	0.807	0.844	0.637	0.913	
selenium, dissolved	7782-49-2	E421	0.050	µg/L	1.30	8.27	10.0	2.05	11.5	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	2.30	2.33	2.40	2.26	2.48	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	2.89	3.64	3.71	3.53	4.21	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.144	0.160	0.167	0.156	0.173	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	17.8	38.2	42.2	25.1	45.4	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.000622	0.00109	0.00118	0.000657	0.00114	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0041 ^{DTC}	<0.0010	<0.0010	<0.0010	<0.0010	
dissolved mercury filtration location	----	EP509	-	-	Field	Field	Field	Field	Field	
dissolved metals filtration location	----	EP421	-	-	Field	Field	Field	Field	Field	

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_GATE_WS_ LAEMP_EVO_2 022-11_N	RG_BOCK_WS_ LAEMP_EVO_2 022-11_N	RG_BOCKRD_ WS_LAEMP_EV O_2022-11_N	RG_ALUSM_W S_LAEMP_EVO _2022-11_N	RG_RIVER_WS _LAEMP_EVO_ _2022-11_N
Client sampling date / time					03-Nov-2022 13:00	03-Nov-2022 11:00	03-Nov-2022 09:00	03-Nov-2022 14:00	03-Nov-2022 09:00	
Analyte	CAS Number	Method	LOR	Unit	CG2215428-006	CG2215428-007	CG2215428-008	CG2215428-009	CG2215428-010	
					Result	Result	Result	Result	Result	
Physical Tests										
acidity (as CaCO3)	----	E283	2.0	mg/L	<2.0	2.8	3.0	<2.0	2.7	
alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	273	227	310	177	295	
alkalinity, bicarbonate (as HCO3)	71-52-3	E290	1.0	mg/L	333	277	378	215	360	
alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	<1.0	7.8	<1.0	
alkalinity, carbonate (as CO3)	3812-32-6	E290	1.0	mg/L	<1.0	<1.0	<1.0	4.7	<1.0	
alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
alkalinity, hydroxide (as OH)	14280-30-9	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	273	227	310	184	295	
conductivity	----	E100	2.0	µS/cm	2070	1830	2520	297	2680	
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	1570	1310	1970	170	2070	
oxidation-reduction potential [ORP]	----	E125	0.10	mV	396	395	395	383	391	
pH	----	E108	0.10	pH units	8.28	8.18	8.19	8.34	8.19	
solids, total dissolved [TDS]	----	E162	10	mg/L	1910	1620	2500	176	2730	
solids, total suspended [TSS]	----	E160-L	1.0	mg/L	1.0	<1.0	4.1	<1.0	3.2	
turbidity	----	E121	0.10	NTU	0.61 ^{HTA}	0.48 ^{HTA}	1.10 ^{HTA}	0.20 ^{HTA}	0.82 ^{HTA}	
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.365	0.0123	0.664	<0.0050	0.536	
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.250 ^{DLDS}	0.404	<0.250 ^{DLDS}	<0.050	<0.250 ^{DLDS}	
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	12.2	28.3	20.7	0.92	19.0	
fluoride	16984-48-8	E235.F	0.020	mg/L	0.259	0.226	0.272	0.158	0.272	
Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	2.42 ^{TKNI}	3.84	3.33 ^{TKNI}	<0.050	0.864 ^{TKNI}	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	26.6	17.6	46.5	0.0215	50.9	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	0.0411	0.0211	0.0064	<0.0010	0.0064	
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0047	<0.0010	0.0029	<0.0010	0.0041	
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0117	<0.0020	0.0106	<0.0020	0.0107	
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	1140	945	1420	16.5	1550	
Organic / Inorganic Carbon										
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	2.04	1.25	1.58	0.66	1.79	
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	2.14	1.29	1.60	1.22	1.78	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_GATE_WS_ LAEMP_EVO_2 022-11_N	RG_BOCK_WS_ LAEMP_EVO_2 022-11_N	RG_BOCKRD_ WS_LAEMP_EV O_2022-11_N	RG_ALUSM_W S_LAEMP_EVO _2022-11_N	RG_RIVER_WS _LAEMP_EVO_ 2022-11_N
Client sampling date / time					03-Nov-2022 13:00	03-Nov-2022 11:00	03-Nov-2022 09:00	03-Nov-2022 14:00	03-Nov-2022 09:00	
Analyte	CAS Number	Method	LOR	Unit	CG2215428-006	CG2215428-007	CG2215428-008	CG2215428-009	CG2215428-010	
					Result	Result	Result	Result	Result	
Ion Balance										
anion sum	----	EC101	0.10	meq/L	31.4	26.3	39.7	4.06	42.4	
cation sum	----	EC101	0.10	meq/L	31.8	26.7	39.9	3.47	41.9	
ion balance (cations/anions)	----	EC101	0.010	%	101	102	100	85.5	98.8	
ion balance (APHA)	----	EC101	0.01	%	0.63	0.75	0.25	-7.84	-0.59	
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0082	0.0093	<0.0060 DLDS	0.0063	<0.0060 DLDS	
antimony, total	7440-36-0	E420	0.00010	mg/L	0.00065	0.00075	0.00081	<0.00010	0.00096	
arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00033	<0.00020 DLDS	0.00037	0.00011	0.00043	
barium, total	7440-39-3	E420	0.00010	mg/L	0.152	0.0514	0.0882	0.0694	0.0757	
beryllium, total	7440-41-7	E420	0.020	µg/L	<0.040 DLDS	<0.040 DLDS	<0.040 DLDS	<0.020	<0.040 DLDS	
bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000100 DLDS	<0.000100 DLDS	<0.000100 DLDS	<0.000050	<0.000100 DLDS	
boron, total	7440-42-8	E420	0.010	mg/L	0.038	0.053	0.050	<0.010	0.045	
cadmium, total	7440-43-9	E420	0.0050	µg/L	0.0957	0.0113	0.135	0.0057	0.161	
calcium, total	7440-70-2	E420	0.050	mg/L	286	236	353	47.4	362	
chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	<0.00020 DLDS	<0.00020 DLDS	<0.00020 DLDS	0.00019	<0.00020 DLDS	
cobalt, total	7440-48-4	E420	0.10	µg/L	0.21	<0.20 DLDS	0.34	<0.10	0.30	
copper, total	7440-50-8	E420	0.00050	mg/L	<0.00100 DLDS	0.00124	<0.00100 DLDS	0.00184	0.00209	
iron, total	7439-89-6	E420	0.010	mg/L	0.057	<0.020 DLDS	0.238	0.012	0.219	
lead, total	7439-92-1	E420	0.000050	mg/L	<0.000100 DLDS	<0.000100 DLDS	<0.000100 DLDS	0.000076	<0.000100 DLDS	
lithium, total	7439-93-2	E420	0.0010	mg/L	0.119	0.155	0.171	0.0037	0.178	
magnesium, total	7439-95-4	E420	0.0050	mg/L	234	198	295	14.5	281	
manganese, total	7439-96-5	E420	0.00010	mg/L	0.0160	0.00046	0.0315	0.00130	0.0281	
mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.00727	0.0119	0.00819	0.000677	0.00855	
nickel, total	7440-02-0	E420	0.00050	mg/L	0.0186	0.0237	0.0350	<0.00050	0.0368	
potassium, total	7440-09-7	E420	0.050	mg/L	4.87	5.93	6.25	0.396	6.39	
selenium, total	7782-49-2	E420	0.050	µg/L	316	175	488	0.594	528	
silicon, total	7440-21-3	E420	0.10	mg/L	3.68	2.50	3.31	2.43	3.19	
silver, total	7440-22-4	E420	0.000010	mg/L	<0.000020 DLDS	<0.000020 DLDS	<0.000020 DLDS	<0.000010	<0.000020 DLDS	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_GATE_WS_ LAEMP_EVO_2 022-11_N	RG_BOCK_WS_ LAEMP_EVO_2 022-11_N	RG_BOCKRD_ WS_LAEMP_EV O_2022-11_N	RG_ALUSM_W S_LAEMP_EVO _2022-11_N	RG_RIVER_WS _LAEMP_EVO_ 2022-11_N
Client sampling date / time					03-Nov-2022 13:00	03-Nov-2022 11:00	03-Nov-2022 09:00	03-Nov-2022 14:00	03-Nov-2022 09:00	
Analyte	CAS Number	Method	LOR	Unit	CG2215428-006	CG2215428-007	CG2215428-008	CG2215428-009	CG2215428-010	
					Result	Result	Result	Result	Result	
Total Metals										
sodium, total	7440-23-5	E420	0.050	mg/L	5.34	10.1	7.99	1.63	8.06	
strontium, total	7440-24-6	E420	0.00020	mg/L	0.814	0.979	1.16	0.120	1.08	
sulfur, total	7704-34-9	E420	0.50	mg/L	481	396	487	6.68	488	
thallium, total	7440-28-0	E420	0.000010	mg/L	0.000033	0.000039	0.000043	<0.000010	0.000047	
tin, total	7440-31-5	E420	0.00010	mg/L	<0.00020 DLDS	<0.00020 DLDS	<0.00020 DLDS	<0.00010	<0.00020 DLDS	
titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00060 DLDS	<0.00060 DLDS	<0.00060 DLDS	<0.00030	<0.00060 DLDS	
uranium, total	7440-61-1	E420	0.000010	mg/L	0.00946	0.0104	0.0125	0.000574	0.0133	
vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00100 DLDS	<0.00100 DLDS	<0.00100 DLDS	<0.00050	<0.00100 DLDS	
zinc, total	7440-66-6	E420	0.0030	mg/L	0.0065	<0.0060 DLDS	0.0122	<0.0030	0.0123	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	<0.0020 DLDS	<0.0020 DLDS	<0.0020 DLDS	<0.0010	<0.0020 DLDS	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00059	0.00068	0.00080	<0.00010	0.00084	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00034	<0.00020 DLDS	0.00036	<0.00010	0.00032	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.158	0.0461	0.0833	0.0679	0.0603	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.040 DLDS	<0.040 DLDS	<0.040 DLDS	<0.020	<0.040 DLDS	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000100 DLDS	<0.000100 DLDS	<0.000100 DLDS	<0.000050	<0.000100 DLDS	
boron, dissolved	7440-42-8	E421	0.010	mg/L	0.033	0.047	0.045	<0.010	0.042	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.0798	<0.0100 DLDS	0.169	0.0074	0.175	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	279	224	341	45.9	359	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00020 DLDS	<0.00020 DLDS	<0.00020 DLDS	0.00020	<0.00020 DLDS	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	<0.20 DLDS	<0.20 DLDS	0.29	<0.10	0.30	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00040 DLDS	<0.00040 DLDS	<0.00040 DLDS	<0.00020	<0.00040 DLDS	
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.020 DLDS	<0.020 DLDS	0.168	<0.010	0.142	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000100 DLDS	<0.000100 DLDS	<0.000100 DLDS	<0.000050	<0.000100 DLDS	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.114	0.146	0.163	0.0037	0.165	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	213	182	272	13.4	285	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.0138	0.00034	0.0292	0.00090	0.0267	
mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00690	0.0114	0.00770	0.000629	0.00811	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_GATE_WS_ LAEMP_EVO_2 022-11_N	RG_BOCK_WS_ LAEMP_EVO_2 022-11_N	RG_BOCKRD_ WS_LAEMP_EV O_2022-11_N	RG_ALUSM_W S_LAEMP_EVO _2022-11_N	RG_RIVER_WS _LAEMP_EVO_ 2022-11_N
Client sampling date / time					03-Nov-2022 13:00	03-Nov-2022 11:00	03-Nov-2022 09:00	03-Nov-2022 14:00	03-Nov-2022 09:00	
Analyte	CAS Number	Method	LOR	Unit	CG2215428-006	CG2215428-007	CG2215428-008	CG2215428-009	CG2215428-010	
					Result	Result	Result	Result	Result	
Dissolved Metals										
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.0174	0.0225	0.0329	<0.00050	0.0349	
potassium, dissolved	7440-09-7	E421	0.050	mg/L	4.70	5.72	6.17	0.388	6.12	
selenium, dissolved	7782-49-2	E421	0.050	µg/L	339	186	524	0.765	563	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	3.59	2.34	3.09	2.33	3.06	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000020 DLDS	<0.000020 DLDS	<0.000020 DLDS	<0.000010	<0.000020 DLDS	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	5.22	9.74	7.85	1.58	7.62	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.809	0.945	1.15	0.117	1.06	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	451	360	452	6.55	479	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	0.000036	0.000037	0.000043	<0.000010	0.000042	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00020 DLDS	<0.00020 DLDS	<0.00020 DLDS	<0.00010	<0.00020 DLDS	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00060 DLDS	<0.00060 DLDS	<0.00060 DLDS	<0.00030	<0.00060 DLDS	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00908	0.00980	0.0121	0.000542	0.0129	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00100 DLDS	<0.00100 DLDS	<0.00100 DLDS	<0.00050	<0.00100 DLDS	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0059	<0.0020 DLDS	0.0112	<0.0010	0.0124	
dissolved mercury filtration location	----	EP509	-	-	Field	Field	Field	Field	Field	
dissolved metals filtration location	----	EP421	-	-	Field	Field	Field	Field	Field	

Please refer to the General Comments section for an explanation of any qualifiers detected.



QUALITY CONTROL INTERPRETIVE REPORT

<p>Work Order : CG2215428</p> <p>Client : Teck Coal Limited</p> <p>Contact : Mike Pope</p> <p>Address : 421 Pine Avenue Sparwood BC Canada V0B2G0</p> <p>Telephone : ----</p> <p>Project : REGIONAL EFFECTS PROGRAM</p> <p>PO : VPO00847030</p> <p>C-O-C number : November EVO LAEMP 2022</p> <p>Sampler : Robin Valleau</p> <p>Site : ----</p> <p>Quote number : Teck Coal Master Quote</p> <p>No. of samples received : 10</p> <p>No. of samples analysed : 10</p>	<p>Page : 1 of 39</p> <p>Laboratory : Calgary - Environmental</p> <p>Account Manager : Lyudmyla Shvets</p> <p>Address : 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5</p> <p>Telephone : +1 403 407 1800</p> <p>Date Samples Received : 04-Nov-2022 09:25</p> <p>Issue Date : 14-Nov-2022 16:03</p>
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This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

- Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
- CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
- DQO: Data Quality Objective.
- LOR: Limit of Reporting (detection limit).
- RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_ALUSM_WS_LAEMP_EVO_2022-11_N	E298	03-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	3 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_BOCK_WS_LAEMP_EVO_2022-11_N	E298	03-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	3 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_BOCKRD_WS_LAEMP_EVO_2022-11_N	E298	03-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	3 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_GATE_WS_LAEMP_EVO_2022-11_N	E298	03-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	3 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-11_N	E298	03-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	3 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_MI3_WS_LAEMP_EVO_2022-11_N	E298	02-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	4 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_MICOMP_WS_LAEMP_EVO_2022-11_N	E298	02-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	4 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_MIDBO_WS_LAEMP_EVO_2022-11_N	E298	02-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	4 days	✔	
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_MIDER_WS_LAEMP_EVO_2022-11_N	E298	02-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	4 days	✔	
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_MIDGA_WS_LAEMP_EVO_2022-11_N	E298	02-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	4 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-11_N	E235.Br-L	03-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	3 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-11_N	E235.Br-L	03-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	3 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-11_N	E235.Br-L	03-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	3 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_GATE_WS_LAEMP_EVO_2022-11_N	E235.Br-L	03-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	3 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-11_N	E235.Br-L	03-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	3 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_MI3_WS_LAEMP_EVO_2022-11_N	E235.Br-L	02-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	4 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-11_N	E235.Br-L	02-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	4 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-11_N	E235.Br-L	02-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	4 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-11_N	E235.Br-L	02-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	4 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-11_N	E235.Br-L	02-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	4 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-11_N	E235.Cl-L	03-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	3 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-11_N	E235.Cl-L	03-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	3 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-11_N	E235.Cl-L	03-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	3 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_GATE_WS_LAEMP_EVO_2022-11_N	E235.Cl-L	03-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	3 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-11_N	E235.Cl-L	03-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	3 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_MI3_WS_LAEMP_EVO_2022-11_N	E235.CI-L	02-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	4 days	✓	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-11_N	E235.CI-L	02-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	4 days	✓	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-11_N	E235.CI-L	02-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	4 days	✓	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-11_N	E235.CI-L	02-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	4 days	✓	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-11_N	E235.CI-L	02-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	4 days	✓	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_MI3_WS_LAEMP_EVO_2022-11_N	E378-U	02-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	3 days	4 days	* EHT	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-11_N	E378-U	02-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	3 days	4 days	* EHT	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-11_N	E378-U	02-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	3 days	4 days	* EHT	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-11_N	E378-U	02-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	3 days	4 days	*	EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-11_N	E378-U	02-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	3 days	4 days	*	EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-11_N	E378-U	03-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	72 hrs	51.01 hrs	*	EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_GATE_WS_LAEMP_EVO_2022-11_N	E378-U	03-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	72 hrs	52.01 hrs	*	EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-11_N	E378-U	03-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	72 hrs	54.01 hrs	*	EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-11_N	E378-U	03-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	72 hrs	56.01 hrs	*	EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-11_N	E378-U	03-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	72 hrs	56.01 hrs	*	EHT
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-11_N	E235.F	03-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	3 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-11_N	E235.F	03-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	3 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-11_N	E235.F	03-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	3 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_GATE_WS_LAEMP_EVO_2022-11_N	E235.F	03-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	3 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-11_N	E235.F	03-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	3 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_MI3_WS_LAEMP_EVO_2022-11_N	E235.F	02-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	4 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-11_N	E235.F	02-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	4 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-11_N	E235.F	02-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	4 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-11_N	E235.F	02-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	4 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-11_N	E235.F	02-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	4 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-11_N	E235.NO3-L	03-Nov-2022	06-Nov-2022	2 days	3 days	* EHT	06-Nov-2022	3 days	0 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-11_N	E235.NO3-L	03-Nov-2022	06-Nov-2022	2 days	3 days	* EHT	06-Nov-2022	3 days	0 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-11_N	E235.NO3-L	03-Nov-2022	06-Nov-2022	2 days	3 days	* EHT	06-Nov-2022	3 days	0 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_GATE_WS_LAEMP_EVO_2022-11_N	E235.NO3-L	03-Nov-2022	06-Nov-2022	2 days	3 days	* EHT	06-Nov-2022	3 days	0 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-11_N	E235.NO3-L	03-Nov-2022	06-Nov-2022	2 days	3 days	* EHT	06-Nov-2022	3 days	0 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_MI3_WS_LAEMP_EVO_2022-11_N	E235.NO3-L	02-Nov-2022	06-Nov-2022	3 days	4 days	* EHT	06-Nov-2022	3 days	0 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-11_N	E235.NO3-L	02-Nov-2022	06-Nov-2022	3 days	4 days	* EHT	06-Nov-2022	3 days	0 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-11_N	E235.NO3-L	02-Nov-2022	06-Nov-2022	3 days	4 days	* EHT	06-Nov-2022	3 days	0 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-11_N	E235.NO3-L	02-Nov-2022	06-Nov-2022	3 days	4 days	* EHT	06-Nov-2022	3 days	0 days	✓	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-11_N	E235.NO3-L	02-Nov-2022	06-Nov-2022	3 days	4 days	* EHT	06-Nov-2022	3 days	0 days	✓	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_MI3_WS_LAEMP_EVO_2022-11_N	E235.NO2-L	02-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	3 days	4 days	* EHT	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-11_N	E235.NO2-L	02-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	3 days	4 days	* EHT	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-11_N	E235.NO2-L	02-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	3 days	4 days	* EHT	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-11_N	E235.NO2-L	02-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	3 days	4 days	* EHT	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-11_N	E235.NO2-L	02-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	3 days	4 days	* EHT	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-11_N	E235.NO2-L	03-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	72 hrs	51.01 hrs	* EHT	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_GATE_WS_LAEMP_EVO_2022-11_N	E235.NO2-L	03-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	72 hrs	52.01 hrs	* EHT	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-11_N	E235.NO2-L	03-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	72 hrs	54.01 hrs	* EHT	



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-11_N	E235.NO2-L	03-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	72 hrs	56.01 hrs	*	EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-11_N	E235.NO2-L	03-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	72 hrs	56.01 hrs	*	EHT
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-11_N	E235.SO4	03-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	3 days	✓	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-11_N	E235.SO4	03-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	3 days	✓	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-11_N	E235.SO4	03-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	3 days	✓	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_GATE_WS_LAEMP_EVO_2022-11_N	E235.SO4	03-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	3 days	✓	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-11_N	E235.SO4	03-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	3 days	✓	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_MI3_WS_LAEMP_EVO_2022-11_N	E235.SO4	02-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	4 days	✓	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-11_N	E235.SO4	02-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	4 days	✓	



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-11_N	E235.SO4	02-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	4 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-11_N	E235.SO4	02-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	4 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-11_N	E235.SO4	02-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	4 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_ALUSM_WS_LAEMP_EVO_2022-11_N	E318	03-Nov-2022	09-Nov-2022	----	----		09-Nov-2022	28 days	6 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_BOCK_WS_LAEMP_EVO_2022-11_N	E318	03-Nov-2022	09-Nov-2022	----	----		09-Nov-2022	28 days	6 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_BOCKRD_WS_LAEMP_EVO_2022-11_N	E318	03-Nov-2022	09-Nov-2022	----	----		09-Nov-2022	28 days	6 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_GATE_WS_LAEMP_EVO_2022-11_N	E318	03-Nov-2022	09-Nov-2022	----	----		09-Nov-2022	28 days	6 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-11_N	E318	03-Nov-2022	09-Nov-2022	----	----		09-Nov-2022	28 days	6 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_MI3_WS_LAEMP_EVO_2022-11_N	E318	02-Nov-2022	09-Nov-2022	----	----		09-Nov-2022	28 days	7 days	✔	



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) RG_MICOMP_WS_LAEMP_EVO_2022-11_N	E318	02-Nov-2022	09-Nov-2022	----	----		09-Nov-2022	28 days	7 days	✔
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) RG_MIDBO_WS_LAEMP_EVO_2022-11_N	E318	02-Nov-2022	09-Nov-2022	----	----		09-Nov-2022	28 days	7 days	✔
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) RG_MIDER_WS_LAEMP_EVO_2022-11_N	E318	02-Nov-2022	09-Nov-2022	----	----		09-Nov-2022	28 days	7 days	✔
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) RG_MIDGA_WS_LAEMP_EVO_2022-11_N	E318	02-Nov-2022	09-Nov-2022	----	----		09-Nov-2022	28 days	7 days	✔
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) RG_ALUSM_WS_LAEMP_EVO_2022-11_N	E372-U	03-Nov-2022	08-Nov-2022	----	----		09-Nov-2022	28 days	6 days	✔
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) RG_BOCK_WS_LAEMP_EVO_2022-11_N	E372-U	03-Nov-2022	08-Nov-2022	----	----		09-Nov-2022	28 days	6 days	✔
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) RG_BOCKRD_WS_LAEMP_EVO_2022-11_N	E372-U	03-Nov-2022	08-Nov-2022	----	----		09-Nov-2022	28 days	6 days	✔
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) RG_GATE_WS_LAEMP_EVO_2022-11_N	E372-U	03-Nov-2022	08-Nov-2022	----	----		09-Nov-2022	28 days	6 days	✔
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-11_N	E372-U	03-Nov-2022	08-Nov-2022	----	----		09-Nov-2022	28 days	6 days	✔



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) RG_MI3_WS_LAEMP_EVO_2022-11_N	E372-U	02-Nov-2022	08-Nov-2022	----	----		09-Nov-2022	28 days	7 days	✔
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) RG_MICOMP_WS_LAEMP_EVO_2022-11_N	E372-U	02-Nov-2022	08-Nov-2022	----	----		09-Nov-2022	28 days	7 days	✔
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) RG_MIDBO_WS_LAEMP_EVO_2022-11_N	E372-U	02-Nov-2022	08-Nov-2022	----	----		09-Nov-2022	28 days	7 days	✔
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) RG_MIDER_WS_LAEMP_EVO_2022-11_N	E372-U	02-Nov-2022	08-Nov-2022	----	----		09-Nov-2022	28 days	7 days	✔
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) RG_MIDGA_WS_LAEMP_EVO_2022-11_N	E372-U	02-Nov-2022	08-Nov-2022	----	----		09-Nov-2022	28 days	7 days	✔
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)										
HDPE - dissolved (lab preserved) RG_ALUSM_WS_LAEMP_EVO_2022-11_N	E421.Cr-L	03-Nov-2022	09-Nov-2022	----	----		09-Nov-2022	180 days	6 days	✔
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)										
HDPE - dissolved (lab preserved) RG_BOCK_WS_LAEMP_EVO_2022-11_N	E421.Cr-L	03-Nov-2022	09-Nov-2022	----	----		09-Nov-2022	180 days	6 days	✔
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)										
HDPE - dissolved (lab preserved) RG_BOCKRD_WS_LAEMP_EVO_2022-11_N	E421.Cr-L	03-Nov-2022	09-Nov-2022	----	----		09-Nov-2022	180 days	6 days	✔
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)										
HDPE - dissolved (lab preserved) RG_GATE_WS_LAEMP_EVO_2022-11_N	E421.Cr-L	03-Nov-2022	09-Nov-2022	----	----		09-Nov-2022	180 days	6 days	✔



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)										
HDPE - dissolved (lab preserved) RG_RIVER_WS_LAEMP_EVO_2022-11_N	E421.Cr-L	03-Nov-2022	09-Nov-2022	----	----		09-Nov-2022	180 days	6 days	✔
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)										
HDPE - dissolved (lab preserved) RG_MI3_WS_LAEMP_EVO_2022-11_N	E421.Cr-L	02-Nov-2022	09-Nov-2022	----	----		09-Nov-2022	180 days	7 days	✔
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)										
HDPE - dissolved (lab preserved) RG_MICOMP_WS_LAEMP_EVO_2022-11_N	E421.Cr-L	02-Nov-2022	09-Nov-2022	----	----		09-Nov-2022	180 days	7 days	✔
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)										
HDPE - dissolved (lab preserved) RG_MIDBO_WS_LAEMP_EVO_2022-11_N	E421.Cr-L	02-Nov-2022	09-Nov-2022	----	----		09-Nov-2022	180 days	7 days	✔
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)										
HDPE - dissolved (lab preserved) RG_MIDER_WS_LAEMP_EVO_2022-11_N	E421.Cr-L	02-Nov-2022	09-Nov-2022	----	----		09-Nov-2022	180 days	7 days	✔
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)										
HDPE - dissolved (lab preserved) RG_MIDGA_WS_LAEMP_EVO_2022-11_N	E421.Cr-L	02-Nov-2022	09-Nov-2022	----	----		09-Nov-2022	180 days	7 days	✔
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid) RG_ALUSM_WS_LAEMP_EVO_2022-11_N	E509	03-Nov-2022	13-Nov-2022	----	----		13-Nov-2022	28 days	10 days	✔
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid) RG_BOCK_WS_LAEMP_EVO_2022-11_N	E509	03-Nov-2022	13-Nov-2022	----	----		13-Nov-2022	28 days	10 days	✔
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid) RG_BOCKRD_WS_LAEMP_EVO_2022-11_N	E509	03-Nov-2022	13-Nov-2022	----	----		13-Nov-2022	28 days	10 days	✔



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_GATE_WS_LAEMP_EVO_2022-11_N	E509	03-Nov-2022	13-Nov-2022	----	----		13-Nov-2022	28 days	10 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_RIVER_WS_LAEMP_EVO_2022-11_N	E509	03-Nov-2022	13-Nov-2022	----	----		13-Nov-2022	28 days	10 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_MI3_WS_LAEMP_EVO_2022-11_N	E509	02-Nov-2022	13-Nov-2022	----	----		13-Nov-2022	28 days	11 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_MICOMP_WS_LAEMP_EVO_2022-11_N	E509	02-Nov-2022	13-Nov-2022	----	----		13-Nov-2022	28 days	11 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_MIDBO_WS_LAEMP_EVO_2022-11_N	E509	02-Nov-2022	13-Nov-2022	----	----		13-Nov-2022	28 days	11 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_MIDER_WS_LAEMP_EVO_2022-11_N	E509	02-Nov-2022	13-Nov-2022	----	----		13-Nov-2022	28 days	11 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_MIDGA_WS_LAEMP_EVO_2022-11_N	E509	02-Nov-2022	13-Nov-2022	----	----		13-Nov-2022	28 days	11 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ALUSM_WS_LAEMP_EVO_2022-11_N	E421	03-Nov-2022	09-Nov-2022	----	----		09-Nov-2022	180 days	6 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_BOCK_WS_LAEMP_EVO_2022-11_N	E421	03-Nov-2022	09-Nov-2022	----	----		09-Nov-2022	180 days	6 days	✔	



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_BOCKRD_WS_LAEMP_EVO_2022-11_N	E421	03-Nov-2022	09-Nov-2022	----	----		09-Nov-2022	180 days	6 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_GATE_WS_LAEMP_EVO_2022-11_N	E421	03-Nov-2022	09-Nov-2022	----	----		09-Nov-2022	180 days	6 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_RIVER_WS_LAEMP_EVO_2022-11_N	E421	03-Nov-2022	09-Nov-2022	----	----		09-Nov-2022	180 days	6 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_MI3_WS_LAEMP_EVO_2022-11_N	E421	02-Nov-2022	09-Nov-2022	----	----		09-Nov-2022	180 days	7 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_MICOMP_WS_LAEMP_EVO_2022-11_N	E421	02-Nov-2022	09-Nov-2022	----	----		09-Nov-2022	180 days	7 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_MIDBO_WS_LAEMP_EVO_2022-11_N	E421	02-Nov-2022	09-Nov-2022	----	----		09-Nov-2022	180 days	7 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_MIDER_WS_LAEMP_EVO_2022-11_N	E421	02-Nov-2022	09-Nov-2022	----	----		09-Nov-2022	180 days	7 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_MIDGA_WS_LAEMP_EVO_2022-11_N	E421	02-Nov-2022	09-Nov-2022	----	----		09-Nov-2022	180 days	7 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_ALUSM_WS_LAEMP_EVO_2022-11_N	E358-L	03-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	3 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_BOCK_WS_LAEMP_EVO_2022-11_N	E358-L	03-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	3 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_BOCKRD_WS_LAEMP_EVO_2022-11_N	E358-L	03-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	3 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_GATE_WS_LAEMP_EVO_2022-11_N	E358-L	03-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	3 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-11_N	E358-L	03-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	3 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_MI3_WS_LAEMP_EVO_2022-11_N	E358-L	02-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	4 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_MICOMP_WS_LAEMP_EVO_2022-11_N	E358-L	02-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	4 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_MIDBO_WS_LAEMP_EVO_2022-11_N	E358-L	02-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	4 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_MIDER_WS_LAEMP_EVO_2022-11_N	E358-L	02-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	4 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_MIDGA_WS_LAEMP_EVO_2022-11_N	E358-L	02-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	4 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_ALUSM_WS_LAEMP_EVO_2022-11_N	E355-L	03-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	3 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_BOCK_WS_LAEMP_EVO_2022-11_N	E355-L	03-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	3 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_BOCKRD_WS_LAEMP_EVO_2022-11_N	E355-L	03-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	3 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_GATE_WS_LAEMP_EVO_2022-11_N	E355-L	03-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	3 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-11_N	E355-L	03-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	3 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_MI3_WS_LAEMP_EVO_2022-11_N	E355-L	02-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	4 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_MICOMP_WS_LAEMP_EVO_2022-11_N	E355-L	02-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	4 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_MIDBO_WS_LAEMP_EVO_2022-11_N	E355-L	02-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	4 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_MIDER_WS_LAEMP_EVO_2022-11_N	E355-L	02-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	4 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_MIDGA_WS_LAEMP_EVO_2022-11_N	E355-L	02-Nov-2022	06-Nov-2022	----	----		06-Nov-2022	28 days	4 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-11_N	E283	03-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	14 days	5 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-11_N	E283	03-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	14 days	5 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-11_N	E283	03-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	14 days	5 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_GATE_WS_LAEMP_EVO_2022-11_N	E283	03-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	14 days	5 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-11_N	E283	03-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	14 days	5 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_MI3_WS_LAEMP_EVO_2022-11_N	E283	02-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	14 days	6 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-11_N	E283	02-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	14 days	6 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-11_N	E283	02-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	14 days	6 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Acidity by Titration											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-11_N	E283	02-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	14 days	6 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-11_N	E283	02-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	14 days	6 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-11_N	E290	03-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	14 days	5 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-11_N	E290	03-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	14 days	5 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-11_N	E290	03-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	14 days	5 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_GATE_WS_LAEMP_EVO_2022-11_N	E290	03-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	14 days	5 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-11_N	E290	03-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	14 days	5 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_MI3_WS_LAEMP_EVO_2022-11_N	E290	02-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	14 days	6 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-11_N	E290	02-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	14 days	6 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Alkalinity Species by Titration											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-11_N	E290	02-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	14 days	6 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-11_N	E290	02-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	14 days	6 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-11_N	E290	02-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	14 days	6 days	✔	
Physical Tests : Conductivity in Water											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-11_N	E100	03-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	28 days	5 days	✔	
Physical Tests : Conductivity in Water											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-11_N	E100	03-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	28 days	5 days	✔	
Physical Tests : Conductivity in Water											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-11_N	E100	03-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	28 days	5 days	✔	
Physical Tests : Conductivity in Water											
HDPE RG_GATE_WS_LAEMP_EVO_2022-11_N	E100	03-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	28 days	5 days	✔	
Physical Tests : Conductivity in Water											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-11_N	E100	03-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	28 days	5 days	✔	
Physical Tests : Conductivity in Water											
HDPE RG_MI3_WS_LAEMP_EVO_2022-11_N	E100	02-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	28 days	6 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Conductivity in Water											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-11_N	E100	02-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	28 days	6 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-11_N	E100	02-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	28 days	6 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-11_N	E100	02-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	28 days	6 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-11_N	E100	02-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	28 days	6 days	✓	
Physical Tests : ORP by Electrode											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-11_N	E125	03-Nov-2022	----	----	----		07-Nov-2022	0.25 hrs	101 hrs	* EHTR-FM	
Physical Tests : ORP by Electrode											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-11_N	E125	03-Nov-2022	----	----	----		07-Nov-2022	0.25 hrs	103 hrs	* EHTR-FM	
Physical Tests : ORP by Electrode											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-11_N	E125	03-Nov-2022	----	----	----		07-Nov-2022	0.25 hrs	103 hrs	* EHTR-FM	
Physical Tests : ORP by Electrode											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-11_N	E125	02-Nov-2022	----	----	----		07-Nov-2022	0.25 hrs	121 hrs	* EHTR-FM	
Physical Tests : ORP by Electrode											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-11_N	E125	02-Nov-2022	----	----	----		07-Nov-2022	0.25 hrs	122 hrs	* EHTR-FM	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : ORP by Electrode											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-11_N	E125	02-Nov-2022	----	----	----		07-Nov-2022	0.25 hrs	123 hrs	*	EHTR-FM
Physical Tests : ORP by Electrode											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-11_N	E125	02-Nov-2022	----	----	----		07-Nov-2022	0.25 hrs	125 hrs	*	EHTR-FM
Physical Tests : ORP by Electrode											
HDPE RG_MI3_WS_LAEMP_EVO_2022-11_N	E125	02-Nov-2022	----	----	----		07-Nov-2022	0.25 hrs	127 hrs	*	EHTR-FM
Physical Tests : ORP by Electrode											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-11_N	E125	03-Nov-2022	----	----	----		07-Nov-2022	0.25 hrs	98 hrs	*	EHTR-FM
Physical Tests : ORP by Electrode											
HDPE RG_GATE_WS_LAEMP_EVO_2022-11_N	E125	03-Nov-2022	----	----	----		07-Nov-2022	0.25 hrs	99 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_MI3_WS_LAEMP_EVO_2022-11_N	E108	02-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	0.25 hrs	0.26 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-11_N	E108	02-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	0.25 hrs	0.26 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-11_N	E108	02-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	0.25 hrs	0.26 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-11_N	E108	02-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	0.25 hrs	0.26 hrs	*	EHTR-FM



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : pH by Meter											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-11_N	E108	02-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	0.25 hrs	0.26 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-11_N	E108	03-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	0.25 hrs	-23.74 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-11_N	E108	03-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	0.25 hrs	-23.74 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-11_N	E108	03-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	0.25 hrs	-23.74 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_GATE_WS_LAEMP_EVO_2022-11_N	E108	03-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	0.25 hrs	-23.74 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-11_N	E108	03-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	0.25 hrs	-23.74 hrs	*	EHTR-FM
Physical Tests : TDS by Gravimetry											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-11_N	E162	03-Nov-2022	----	----	----		08-Nov-2022	7 days	5 days	✓	
Physical Tests : TDS by Gravimetry											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-11_N	E162	03-Nov-2022	----	----	----		08-Nov-2022	7 days	5 days	✓	
Physical Tests : TDS by Gravimetry											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-11_N	E162	03-Nov-2022	----	----	----		08-Nov-2022	7 days	5 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : TDS by Gravimetry										
HDPE RG_GATE_WS_LAEMP_EVO_2022-11_N	E162	03-Nov-2022	----	----	----		08-Nov-2022	7 days	5 days	✔
Physical Tests : TDS by Gravimetry										
HDPE RG_RIVER_WS_LAEMP_EVO_2022-11_N	E162	03-Nov-2022	----	----	----		08-Nov-2022	7 days	5 days	✔
Physical Tests : TDS by Gravimetry										
HDPE RG_MI3_WS_LAEMP_EVO_2022-11_N	E162	02-Nov-2022	----	----	----		08-Nov-2022	7 days	6 days	✔
Physical Tests : TDS by Gravimetry										
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-11_N	E162	02-Nov-2022	----	----	----		08-Nov-2022	7 days	6 days	✔
Physical Tests : TDS by Gravimetry										
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-11_N	E162	02-Nov-2022	----	----	----		08-Nov-2022	7 days	6 days	✔
Physical Tests : TDS by Gravimetry										
HDPE RG_MIDER_WS_LAEMP_EVO_2022-11_N	E162	02-Nov-2022	----	----	----		08-Nov-2022	7 days	6 days	✔
Physical Tests : TDS by Gravimetry										
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-11_N	E162	02-Nov-2022	----	----	----		08-Nov-2022	7 days	6 days	✔
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-11_N	E160-L	03-Nov-2022	----	----	----		08-Nov-2022	7 days	5 days	✔
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE RG_BOCK_WS_LAEMP_EVO_2022-11_N	E160-L	03-Nov-2022	----	----	----		08-Nov-2022	7 days	5 days	✔



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-11_N	E160-L	03-Nov-2022	----	----	----		08-Nov-2022	7 days	5 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_GATE_WS_LAEMP_EVO_2022-11_N	E160-L	03-Nov-2022	----	----	----		08-Nov-2022	7 days	5 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-11_N	E160-L	03-Nov-2022	----	----	----		08-Nov-2022	7 days	5 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_MI3_WS_LAEMP_EVO_2022-11_N	E160-L	02-Nov-2022	----	----	----		08-Nov-2022	7 days	6 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-11_N	E160-L	02-Nov-2022	----	----	----		08-Nov-2022	7 days	6 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-11_N	E160-L	02-Nov-2022	----	----	----		08-Nov-2022	7 days	6 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-11_N	E160-L	02-Nov-2022	----	----	----		08-Nov-2022	7 days	6 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-11_N	E160-L	02-Nov-2022	----	----	----		08-Nov-2022	7 days	6 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_MI3_WS_LAEMP_EVO_2022-11_N	E121	02-Nov-2022	----	----	----		06-Nov-2022	3 days	4 days	✖ EHT	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Turbidity by Nephelometry											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-11_N	E121	02-Nov-2022	----	----	----		06-Nov-2022	3 days	4 days	*	EHT
Physical Tests : Turbidity by Nephelometry											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-11_N	E121	02-Nov-2022	----	----	----		06-Nov-2022	3 days	4 days	*	EHT
Physical Tests : Turbidity by Nephelometry											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-11_N	E121	02-Nov-2022	----	----	----		06-Nov-2022	3 days	4 days	*	EHT
Physical Tests : Turbidity by Nephelometry											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-11_N	E121	02-Nov-2022	----	----	----		06-Nov-2022	3 days	4 days	*	EHT
Physical Tests : Turbidity by Nephelometry											
HDPE RG_ALUSM_WS_LAEMP_EVO_2022-11_N	E121	03-Nov-2022	----	----	----		06-Nov-2022	72 hrs	73 hrs	*	EHT
Physical Tests : Turbidity by Nephelometry											
HDPE RG_GATE_WS_LAEMP_EVO_2022-11_N	E121	03-Nov-2022	----	----	----		06-Nov-2022	72 hrs	74 hrs	*	EHT
Physical Tests : Turbidity by Nephelometry											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-11_N	E121	03-Nov-2022	----	----	----		06-Nov-2022	72 hrs	76 hrs	*	EHT
Physical Tests : Turbidity by Nephelometry											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-11_N	E121	03-Nov-2022	----	----	----		06-Nov-2022	72 hrs	78 hrs	*	EHT
Physical Tests : Turbidity by Nephelometry											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-11_N	E121	03-Nov-2022	----	----	----		06-Nov-2022	72 hrs	78 hrs	*	EHT



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE - total (lab preserved) RG_ALUSM_WS_LAEMP_EVO_2022-11_N	E420.Cr-L	03-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	180 days	5 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE - total (lab preserved) RG_BOCK_WS_LAEMP_EVO_2022-11_N	E420.Cr-L	03-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	180 days	5 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE - total (lab preserved) RG_BOCKRD_WS_LAEMP_EVO_2022-11_N	E420.Cr-L	03-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	180 days	5 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE - total (lab preserved) RG_GATE_WS_LAEMP_EVO_2022-11_N	E420.Cr-L	03-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	180 days	5 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE - total (lab preserved) RG_RIVER_WS_LAEMP_EVO_2022-11_N	E420.Cr-L	03-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	180 days	5 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE - total (lab preserved) RG_MI3_WS_LAEMP_EVO_2022-11_N	E420.Cr-L	02-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	180 days	6 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE - total (lab preserved) RG_MICOMP_WS_LAEMP_EVO_2022-11_N	E420.Cr-L	02-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	180 days	6 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE - total (lab preserved) RG_MIDBO_WS_LAEMP_EVO_2022-11_N	E420.Cr-L	02-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	180 days	6 days	✔	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE - total (lab preserved) RG_MIDER_WS_LAEMP_EVO_2022-11_N	E420.Cr-L	02-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	180 days	6 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE - total (lab preserved) RG_MIDGA_WS_LAEMP_EVO_2022-11_N	E420.Cr-L	02-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	180 days	6 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_ALUSM_WS_LAEMP_EVO_2022-11_N	E508	03-Nov-2022	13-Nov-2022	----	----		13-Nov-2022	28 days	10 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_BOCK_WS_LAEMP_EVO_2022-11_N	E508	03-Nov-2022	13-Nov-2022	----	----		13-Nov-2022	28 days	10 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_BOCKRD_WS_LAEMP_EVO_2022-11_N	E508	03-Nov-2022	13-Nov-2022	----	----		13-Nov-2022	28 days	10 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_GATE_WS_LAEMP_EVO_2022-11_N	E508	03-Nov-2022	13-Nov-2022	----	----		13-Nov-2022	28 days	10 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_RIVER_WS_LAEMP_EVO_2022-11_N	E508	03-Nov-2022	13-Nov-2022	----	----		13-Nov-2022	28 days	10 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_MI3_WS_LAEMP_EVO_2022-11_N	E508	02-Nov-2022	13-Nov-2022	----	----		13-Nov-2022	28 days	11 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_MICOMP_WS_LAEMP_EVO_2022-11_N	E508	02-Nov-2022	13-Nov-2022	----	----		13-Nov-2022	28 days	11 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_MIDBO_WS_LAEMP_EVO_2022-11_N	E508	02-Nov-2022	13-Nov-2022	----	----		13-Nov-2022	28 days	11 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) RG_MIDER_WS_LAEMP_EVO_2022-11_N	E508	02-Nov-2022	13-Nov-2022	----	----		13-Nov-2022	28 days	11 days	✔
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) RG_MIDGA_WS_LAEMP_EVO_2022-11_N	E508	02-Nov-2022	13-Nov-2022	----	----		13-Nov-2022	28 days	11 days	✔
Total Metals : Total metals in Water by CRC ICPMS										
HDPE - total (lab preserved) RG_ALUSM_WS_LAEMP_EVO_2022-11_N	E420	03-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	180 days	5 days	✔
Total Metals : Total metals in Water by CRC ICPMS										
HDPE - total (lab preserved) RG_BOCK_WS_LAEMP_EVO_2022-11_N	E420	03-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	180 days	5 days	✔
Total Metals : Total metals in Water by CRC ICPMS										
HDPE - total (lab preserved) RG_BOCKRD_WS_LAEMP_EVO_2022-11_N	E420	03-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	180 days	5 days	✔
Total Metals : Total metals in Water by CRC ICPMS										
HDPE - total (lab preserved) RG_GATE_WS_LAEMP_EVO_2022-11_N	E420	03-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	180 days	5 days	✔
Total Metals : Total metals in Water by CRC ICPMS										
HDPE - total (lab preserved) RG_RIVER_WS_LAEMP_EVO_2022-11_N	E420	03-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	180 days	5 days	✔
Total Metals : Total metals in Water by CRC ICPMS										
HDPE - total (lab preserved) RG_MI3_WS_LAEMP_EVO_2022-11_N	E420	02-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	180 days	6 days	✔
Total Metals : Total metals in Water by CRC ICPMS										
HDPE - total (lab preserved) RG_MICOMP_WS_LAEMP_EVO_2022-11_N	E420	02-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	180 days	6 days	✔



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals : Total metals in Water by CRC ICPMS										
HDPE - total (lab preserved) RG_MIDBO_WS_LAEMP_EVO_2022-11_N	E420	02-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	180 days	6 days	✔
Total Metals : Total metals in Water by CRC ICPMS										
HDPE - total (lab preserved) RG_MIDER_WS_LAEMP_EVO_2022-11_N	E420	02-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	180 days	6 days	✔
Total Metals : Total metals in Water by CRC ICPMS										
HDPE - total (lab preserved) RG_MIDGA_WS_LAEMP_EVO_2022-11_N	E420	02-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	180 days	6 days	✔

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended
 EHT: Exceeded ALS recommended hold time prior to analysis.
 Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
Analytical Methods							
Laboratory Duplicates (DUP)							
Acidity by Titration	E283	735058	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290	734897	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	732809	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	732839	1	10	10.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	732840	1	10	10.0	5.0	✓
Conductivity in Water	E100	734898	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	734993	1	10	10.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	741495	2	40	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	734992	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	732812	1	13	7.6	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	732805	1	10	10.0	5.0	✓
Fluoride in Water by IC	E235.F	732838	1	10	10.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	732841	1	10	10.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	732842	1	10	10.0	5.0	✓
ORP by Electrode	E125	732915	1	10	10.0	5.0	✓
pH by Meter	E108	734896	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	732843	1	10	10.0	5.0	✓
TDS by Gravimetry	E162	735660	1	15	6.6	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	734745	1	10	10.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	733811	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	741503	2	40	5.0	5.0	✓
Total metals in Water by CRC ICPMS	E420	734744	1	19	5.2	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	732813	1	10	10.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	735102	1	19	5.2	5.0	✓
Turbidity by Nephelometry	E121	732820	1	17	5.8	5.0	✓
Laboratory Control Samples (LCS)							
Acidity by Titration	E283	735058	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290	734897	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	732809	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	732839	1	10	10.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	732840	1	10	10.0	5.0	✓
Conductivity in Water	E100	734898	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	734993	1	10	10.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	741495	2	40	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	734992	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	732812	1	13	7.6	5.0	✓



Matrix: **Water**

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
Analytical Methods							
Laboratory Control Samples (LCS) - Continued							
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	732805	1	10	10.0	5.0	✔
Fluoride in Water by IC	E235.F	732838	1	10	10.0	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	732841	1	10	10.0	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	732842	1	10	10.0	5.0	✔
ORP by Electrode	E125	732915	1	10	10.0	5.0	✔
pH by Meter	E108	734896	1	20	5.0	5.0	✔
Sulfate in Water by IC	E235.SO4	732843	1	10	10.0	5.0	✔
TDS by Gravimetry	E162	735660	1	15	6.6	5.0	✔
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	734745	1	10	10.0	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	733811	1	20	5.0	5.0	✔
Total Mercury in Water by CVAAS	E508	741503	2	40	5.0	5.0	✔
Total metals in Water by CRC ICPMS	E420	734744	1	19	5.2	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	732813	1	10	10.0	5.0	✔
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	735102	1	19	5.2	5.0	✔
TSS by Gravimetry (Low Level)	E160-L	735659	1	15	6.6	5.0	✔
Turbidity by Nephelometry	E121	732820	1	17	5.8	5.0	✔
Method Blanks (MB)							
Acidity by Titration	E283	735058	1	20	5.0	5.0	✔
Alkalinity Species by Titration	E290	734897	1	20	5.0	5.0	✔
Ammonia by Fluorescence	E298	732809	1	20	5.0	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	732839	1	10	10.0	5.0	✔
Chloride in Water by IC (Low Level)	E235.Cl-L	732840	1	10	10.0	5.0	✔
Conductivity in Water	E100	734898	1	20	5.0	5.0	✔
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	734993	1	10	10.0	5.0	✔
Dissolved Mercury in Water by CVAAS	E509	741495	2	40	5.0	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	734992	1	20	5.0	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	732812	1	13	7.6	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	732805	1	10	10.0	5.0	✔
Fluoride in Water by IC	E235.F	732838	1	10	10.0	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	732841	1	10	10.0	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	732842	1	10	10.0	5.0	✔
Sulfate in Water by IC	E235.SO4	732843	1	10	10.0	5.0	✔
TDS by Gravimetry	E162	735660	1	15	6.6	5.0	✔
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	734745	1	10	10.0	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	733811	1	20	5.0	5.0	✔
Total Mercury in Water by CVAAS	E508	741503	2	40	5.0	5.0	✔
Total metals in Water by CRC ICPMS	E420	734744	1	19	5.2	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	732813	1	10	10.0	5.0	✔
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	735102	1	19	5.2	5.0	✔



Matrix: **Water** Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
<i>Analytical Methods</i>							
Method Blanks (MB) - Continued							
TSS by Gravimetry (Low Level)	E160-L	735659	1	15	6.6	5.0	✔
Turbidity by Nephelometry	E121	732820	1	17	5.8	5.0	✔
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	732809	1	20	5.0	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	732839	1	10	10.0	5.0	✔
Chloride in Water by IC (Low Level)	E235.Cl-L	732840	1	10	10.0	5.0	✔
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	734993	1	10	10.0	5.0	✔
Dissolved Mercury in Water by CVAAS	E509	741495	2	40	5.0	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	734992	1	20	5.0	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	732812	1	13	7.6	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	732805	1	10	10.0	5.0	✔
Fluoride in Water by IC	E235.F	732838	1	10	10.0	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	732841	1	10	10.0	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	732842	1	10	10.0	5.0	✔
Sulfate in Water by IC	E235.SO4	732843	1	10	10.0	5.0	✔
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	734745	1	10	10.0	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	733811	1	20	5.0	5.0	✔
Total Mercury in Water by CVAAS	E508	741503	2	40	5.0	5.0	✔
Total metals in Water by CRC ICPMS	E420	734744	1	19	5.2	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	732813	1	10	10.0	5.0	✔
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	735102	1	19	5.2	5.0	✔



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 Calgary - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 Calgary - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 Calgary - Environmental	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
ORP by Electrode	E125 Calgary - Environmental	Water	ASTM D1498 (mod)	Oxidation reduction potential is reported as the oxidation-reduction potential of the platinum metal-reference electrode employed, measured in mV. For high accuracy test results, it is recommended that this analysis be conducted in the field.
TSS by Gravimetry (Low Level)	E160-L Calgary - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 Calgary - Environmental	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC (Low Level)	E235.Cl-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Acidity by Titration	E283 Calgary - Environmental	Water	APHA 2310 B (mod)	Acidity is determined by potentiometric titration to pH endpoint of 8.3
Alkalinity Species by Titration	E290 Calgary - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 Calgary - Environmental	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 Calgary - Environmental	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L Calgary - Environmental	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Dissolved Organic Carbon by Combustion (Low Level)	E358-L Calgary - Environmental	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U Calgary - Environmental	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U Calgary - Environmental	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Total metals in Water by CRC ICPMS	E420 Calgary - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L Calgary - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Metals in Water by CRC ICPMS	E421 Calgary - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L Calgary - Environmental	Water	APHA 3030 B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS
Total Mercury in Water by CVAAS	E508 Calgary - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS
Dissolved Mercury in Water by CVAAS	E509 Calgary - Environmental	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
Dissolved Hardness (Calculated)	EC100 Calgary - Environmental	Water	APHA 2340B	"Hardness (as CaCO ₃), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Ion Balance using Dissolved Metals	EC101 Calgary - Environmental	Water	APHA 1030E	Cation Sum, Anion Sum, and Ion Balance are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present. Ion Balance cannot be calculated accurately for waters with very low electrical conductivity (EC).

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 Calgary - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 Calgary - Environmental	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Preparation for Total Organic Carbon by Combustion	EP355 Calgary - Environmental	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon by Combustion	EP358 Calgary - Environmental	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Phosphorus in water	EP372 Calgary - Environmental	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.



<i>Preparation Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
Dissolved Metals Water Filtration	EP421 Calgary - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.
Dissolved Mercury Water Filtration	EP509 Calgary - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.

QUALITY CONTROL REPORT

<p>Work Order : CG2215428</p> <p>Client : Teck Coal Limited</p> <p>Contact : Mike Pope</p> <p>Address : 421 Pine Avenue Sparwood BC Canada V0B2G0</p> <p>Telephone :</p> <p>Project : REGIONAL EFFECTS PROGRAM</p> <p>PO : VPO00847030</p> <p>C-O-C number : November EVO LAEMP 2022</p> <p>Sampler : Robin Valleau___</p> <p>Site : ---</p> <p>Quote number : Teck Coal Master Quote</p> <p>No. of samples received : 10</p> <p>No. of samples analysed : 10</p>	<p>Page : 1 of 18</p> <p>Laboratory : Calgary - Environmental</p> <p>Account Manager : Lyudmyla Shvets</p> <p>Address : 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5</p> <p>Telephone : +1 403 407 1800</p> <p>Date Samples Received : 04-Nov-2022 09:25</p> <p>Date Analysis Commenced : 06-Nov-2022</p> <p>Issue Date : 14-Nov-2022 16:03</p>
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This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

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Page : 2 of 18
Work Order : CG2215428
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 732820)											
CG2215428-001	RG_MI3_WS_LAEMP_EV O_2022-11_N	turbidity	----	E121	0.10	NTU	0.52	0.58	0.05	Diff <2x LOR	----
Physical Tests (QC Lot: 732915)											
CG2215428-001	RG_MI3_WS_LAEMP_EV O_2022-11_N	oxidation-reduction potential [ORP]	----	E125	0.10	mV	380	380	0.210%	15%	----
Physical Tests (QC Lot: 734896)											
CG2215369-008	Anonymous	pH	----	E108	0.10	pH units	7.96	7.98	0.251%	4%	----
Physical Tests (QC Lot: 734897)											
CG2215369-008	Anonymous	alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	439	452	3.05%	20%	----
		alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	439	452	3.05%	20%	----
Physical Tests (QC Lot: 734898)											
CG2215369-008	Anonymous	conductivity	----	E100	2.0	µS/cm	1770	1760	0.283%	10%	----
Physical Tests (QC Lot: 735058)											
CG2215369-008	Anonymous	acidity (as CaCO3)	----	E283	10.0	mg/L	<10.0	<10.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 735660)											
CG2215428-001	RG_MI3_WS_LAEMP_EV O_2022-11_N	solids, total dissolved [TDS]	----	E162	20	mg/L	192	190	2	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 732805)											
CG2215428-001	RG_MI3_WS_LAEMP_EV O_2022-11_N	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	0.0012	0.0002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 732809)											
CG2215428-001	RG_MI3_WS_LAEMP_EV O_2022-11_N	ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 732838)											
CG2215428-001	RG_MI3_WS_LAEMP_EV O_2022-11_N	fluoride	16984-48-8	E235.F	0.020	mg/L	0.145	0.143	0.002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 732839)											
CG2215428-001	RG_MI3_WS_LAEMP_EV O_2022-11_N	bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 732840)											
CG2215428-001	RG_MI3_WS_LAEMP_EV O_2022-11_N	chloride	16887-00-6	E235.Cl-L	0.10	mg/L	1.19	1.17	1.31%	20%	----



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 732841)											
CG2215428-001	RG_MI3_WS_LAEMP_EV O_2022-11_N	nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.142	0.141	1.34%	20%	----
Anions and Nutrients (QC Lot: 732842)											
CG2215428-001	RG_MI3_WS_LAEMP_EV O_2022-11_N	nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 732843)											
CG2215428-001	RG_MI3_WS_LAEMP_EV O_2022-11_N	sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	47.3	46.6	1.50%	20%	----
Anions and Nutrients (QC Lot: 733811)											
CG2215428-001	RG_MI3_WS_LAEMP_EV O_2022-11_N	Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 735102)											
CG2215405-001	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0025	0.0020	0.0005	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 732812)											
CG2215428-001	RG_MI3_WS_LAEMP_EV O_2022-11_N	carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	1.15	1.19	0.04	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 732813)											
CG2215428-001	RG_MI3_WS_LAEMP_EV O_2022-11_N	carbon, total organic [TOC]	----	E355-L	0.50	mg/L	1.35	1.23	0.13	Diff <2x LOR	----
Total Metals (QC Lot: 734744)											
CG2215405-001	Anonymous	aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0164	0.0172	0.0008	Diff <2x LOR	----
		antimony, total	7440-36-0	E420	0.00010	mg/L	0.00019	0.00014	0.00005	Diff <2x LOR	----
		arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00012	0.00012	0.000004	Diff <2x LOR	----
		barium, total	7440-39-3	E420	0.00010	mg/L	0.0339	0.0336	0.825%	20%	----
		beryllium, total	7440-41-7	E420	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, total	7440-42-8	E420	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		cadmium, total	7440-43-9	E420	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		calcium, total	7440-70-2	E420	0.050	mg/L	44.0	43.9	0.145%	20%	----
		cobalt, total	7440-48-4	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		copper, total	7440-50-8	E420	0.00050	mg/L	0.00137	0.00146	0.00009	Diff <2x LOR	----
		iron, total	7439-89-6	E420	0.010	mg/L	0.021	0.021	0.0001	Diff <2x LOR	----
		lead, total	7439-92-1	E420	0.000050	mg/L	0.000061	0.000062	0.000001	Diff <2x LOR	----
		lithium, total	7439-93-2	E420	0.0010	mg/L	0.0029	0.0028	0.00008	Diff <2x LOR	----
		magnesium, total	7439-95-4	E420	0.0050	mg/L	15.2	15.2	0.335%	20%	----
		manganese, total	7439-96-5	E420	0.00010	mg/L	0.00137	0.00150	8.72%	20%	----
		molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.000701	0.000682	2.76%	20%	----



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (QC Lot: 734744) - continued											
CG2215405-001	Anonymous	nickel, total	7440-02-0	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		potassium, total	7440-09-7	E420	0.050	mg/L	0.560	0.548	2.20%	20%	----
		selenium, total	7782-49-2	E420	0.000050	mg/L	0.000480	0.000485	0.000006	Diff <2x LOR	----
		silicon, total	7440-21-3	E420	0.10	mg/L	1.60	1.60	0.0797%	20%	----
		silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, total	7440-23-5	E420	0.050	mg/L	2.22	2.22	0.00311%	20%	----
		strontium, total	7440-24-6	E420	0.00020	mg/L	0.193	0.193	0.0173%	20%	----
		sulfur, total	7704-34-9	E420	0.50	mg/L	16.3	16.6	1.44%	20%	----
		thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		uranium, total	7440-61-1	E420	0.000010	mg/L	0.000529	0.000543	2.63%	20%	----
		vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	<0.0030	0	Diff <2x LOR	----
Total Metals (QC Lot: 734745)											
CG2215428-001	RG_MI3_WS_LAEMP_EV O_2022-11_N	chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	0.00017	0.00019	0.00002	Diff <2x LOR	----
Total Metals (QC Lot: 741503)											
CG2215411-001	Anonymous	mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Total Metals (QC Lot: 741504)											
CG2215428-007	RG_BOCK_WS_LAEMP_E VO_2022-11_N	mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 734992)											
CG2215428-001	RG_MI3_WS_LAEMP_EV O_2022-11_N	aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	<0.0010	0.0013	0.0003	Diff <2x LOR	----
		antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00011	0.00012	0.00001	Diff <2x LOR	----
		barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0931	0.0928	0.309%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.000020	mg/L	<0.020 µg/L	<0.000020	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	0.0068 µg/L	0.0000090	0.0000022	Diff <2x LOR	----
		calcium, dissolved	7440-70-2	E421	0.050	mg/L	50.5	50.0	0.860%	20%	----
		cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	<0.10 µg/L	<0.00010	0	Diff <2x LOR	----
		copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 734992) - continued											
CG2215428-001	RG_MI3_WS_LAEMP_EV O_2022-11_N	lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0049	0.0049	0.00001	Diff <2x LOR	----
		magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	16.1	16.0	0.606%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00064	0.00061	0.00003	Diff <2x LOR	----
		molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.000660	0.000688	4.09%	20%	----
		nickel, dissolved	7440-02-0	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		potassium, dissolved	7440-09-7	E421	0.050	mg/L	0.574	0.549	4.55%	20%	----
		selenium, dissolved	7782-49-2	E421	0.000050	mg/L	1.30 µg/L	0.00139	6.79%	20%	----
		silicon, dissolved	7440-21-3	E421	0.050	mg/L	2.30	2.27	1.35%	20%	----
		silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E421	0.050	mg/L	2.89	2.84	1.85%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.144	0.143	0.659%	20%	----
		sulfur, dissolved	7704-34-9	E421	0.50	mg/L	17.8	17.7	0.456%	20%	----
		thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.000622	0.000618	0.641%	20%	----		
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----		
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0041	0.0041	0.00005	Diff <2x LOR	----		
Dissolved Metals (QC Lot: 734993)											
CG2215428-001	RG_MI3_WS_LAEMP_EV O_2022-11_N	chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	0.00013	0.00013	0.000002	Diff <2x LOR	----
Dissolved Metals (QC Lot: 741495)											
CG2215411-001	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 741496)											
CG2215428-007	RG_BOCK_WS_LAEMP_E VO_2022-11_N	mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 732820)						
turbidity	---	E121	0.1	NTU	<0.10	---
Physical Tests (QCLot: 734897)						
alkalinity, bicarbonate (as CaCO3)	---	E290	1	mg/L	<1.0	---
alkalinity, carbonate (as CaCO3)	---	E290	1	mg/L	<1.0	---
alkalinity, hydroxide (as CaCO3)	---	E290	1	mg/L	<1.0	---
alkalinity, total (as CaCO3)	---	E290	1	mg/L	<1.0	---
Physical Tests (QCLot: 734898)						
conductivity	---	E100	1	µS/cm	1.7	---
Physical Tests (QCLot: 735058)						
acidity (as CaCO3)	---	E283	2	mg/L	<2.0	---
Physical Tests (QCLot: 735659)						
solids, total suspended [TSS]	---	E160-L	1	mg/L	<1.0	---
Physical Tests (QCLot: 735660)						
solids, total dissolved [TDS]	---	E162	10	mg/L	<10	---
Anions and Nutrients (QCLot: 732805)						
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	---
Anions and Nutrients (QCLot: 732809)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	---
Anions and Nutrients (QCLot: 732838)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	---
Anions and Nutrients (QCLot: 732839)						
bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	---
Anions and Nutrients (QCLot: 732840)						
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	---
Anions and Nutrients (QCLot: 732841)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	---
Anions and Nutrients (QCLot: 732842)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	---
Anions and Nutrients (QCLot: 732843)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	---
Anions and Nutrients (QCLot: 733811)						
Kjeldahl nitrogen, total [TKN]	---	E318	0.05	mg/L	<0.050	---



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 735102)						
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Organic / Inorganic Carbon (QCLot: 732812)						
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Organic / Inorganic Carbon (QCLot: 732813)						
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	<0.50	----
Total Metals (QCLot: 734744)						
aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	----
antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	----
barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	----
boron, total	7440-42-8	E420	0.01	mg/L	<0.010	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	----
calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	----
copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	----
iron, total	7439-89-6	E420	0.01	mg/L	<0.010	----
lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	----
lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	----
magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	----
manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	----
nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	----
potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	----
selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	----
silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	----
silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	----
sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	----
strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	----
sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	----
thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	----
tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	----
titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	----
uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 734744) - continued						
vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	---
zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	---
Total Metals (QCLot: 734745)						
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	<0.00010	---
Total Metals (QCLot: 741503)						
mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	---
Total Metals (QCLot: 741504)						
mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	---
Dissolved Metals (QCLot: 734992)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	---
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	---
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	---
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	---
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	---
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	---
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	---
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	---
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	---
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	---
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	---
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	---
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	---
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	---
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	---
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	---
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	---
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	---
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	---
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	---
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	---
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	---
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	---
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	---
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	---
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	---



Sub-Matrix: **Water**

<i>Analyte</i>	<i>CAS Number</i>	<i>Method</i>	<i>LOR</i>	<i>Unit</i>	<i>Result</i>	<i>Qualifier</i>
Dissolved Metals (QCLot: 734992) - continued						
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
Dissolved Metals (QCLot: 734993)						
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	<0.00010	----
Dissolved Metals (QCLot: 741495)						
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 741496)						
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Physical Tests (QCLot: 732820)									
turbidity	----	E121	0.1	NTU	200 NTU	99.1	85.0	115	----
Physical Tests (QCLot: 732915)									
oxidation-reduction potential [ORP]	----	E125	----	mV	220 mV	100	95.4	104	----
Physical Tests (QCLot: 734896)									
pH	----	E108	----	pH units	7 pH units	101	98.6	101	----
Physical Tests (QCLot: 734897)									
alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	103	85.0	115	----
Physical Tests (QCLot: 734898)									
conductivity	----	E100	1	µS/cm	146.9 µS/cm	99.5	90.0	110	----
Physical Tests (QCLot: 735058)									
acidity (as CaCO3)	----	E283	2	mg/L	50 mg/L	107	85.0	115	----
Physical Tests (QCLot: 735659)									
solids, total suspended [TSS]	----	E160-L	1	mg/L	150 mg/L	94.2	85.0	115	----
Physical Tests (QCLot: 735660)									
solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	98.2	85.0	115	----
Anions and Nutrients (QCLot: 732805)									
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.03 mg/L	96.2	80.0	120	----
Anions and Nutrients (QCLot: 732809)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	106	85.0	115	----
Anions and Nutrients (QCLot: 732838)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 732839)									
bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	102	85.0	115	----
Anions and Nutrients (QCLot: 732840)									
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	100.0	90.0	110	----
Anions and Nutrients (QCLot: 732841)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 732842)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	98.6	90.0	110	----
Anions and Nutrients (QCLot: 732843)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	101	90.0	110	----



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Anions and Nutrients (QCLot: 733811)									
Kjeldahl nitrogen, total [TKN]	---	E318	0.05	mg/L	4 mg/L	99.1	75.0	125	---
Anions and Nutrients (QCLot: 735102)									
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.03 mg/L	106	80.0	120	---
Organic / Inorganic Carbon (QCLot: 732812)									
carbon, dissolved organic [DOC]	---	E358-L	0.5	mg/L	8.57 mg/L	93.4	80.0	120	---
Organic / Inorganic Carbon (QCLot: 732813)									
carbon, total organic [TOC]	---	E355-L	0.5	mg/L	8.57 mg/L	97.0	80.0	120	---
Total Metals (QCLot: 734744)									
aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	103	80.0	120	---
antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	103	80.0	120	---
arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	97.8	80.0	120	---
barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	101	80.0	120	---
beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	99.5	80.0	120	---
bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	96.2	80.0	120	---
boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	98.4	80.0	120	---
cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	94.8	80.0	120	---
calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	100	80.0	120	---
cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	95.8	80.0	120	---
copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	94.5	80.0	120	---
iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	107	80.0	120	---
lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	97.6	80.0	120	---
lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	98.4	80.0	120	---
magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	103	80.0	120	---
manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	102	80.0	120	---
molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	101	80.0	120	---
nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	96.3	80.0	120	---
potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	99.2	80.0	120	---
selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	89.5	80.0	120	---
silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	101	60.0	140	---
silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	94.9	80.0	120	---
sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	98.0	80.0	120	---
strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	97.6	80.0	120	---
sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	101	80.0	120	---
thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	97.1	80.0	120	---



Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 734744) - continued									
tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	98.6	80.0	120	----
titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	82.3	80.0	120	----
uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	92.3	80.0	120	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	98.6	80.0	120	----
zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	92.3	80.0	120	----
Total Metals (QCLot: 734745)									
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	0.25 mg/L	97.2	80.0	120	----
Total Metals (QCLot: 741503)									
mercury, total	7439-97-6	E508	0.000005	mg/L	0.0001 mg/L	90.4	80.0	120	----
Total Metals (QCLot: 741504)									
mercury, total	7439-97-6	E508	0.000005	mg/L	0.0001 mg/L	89.4	80.0	120	----
Dissolved Metals (QCLot: 734992)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	95.9	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	103	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	102	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	99.3	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	97.3	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	95.1	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	101	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	94.8	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	98.2	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	93.8	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	95.2	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	107	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	96.5	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	102	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	98.6	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	94.4	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	104	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	96.8	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	97.6	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	98.4	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	103	60.0	140	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	92.6	80.0	120	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	96.5	80.0	120	----



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 734992) - continued									
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	97.4	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	106	80.0	120	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	96.6	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	104	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	103	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	91.4	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	96.5	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	97.6	80.0	120	----
Dissolved Metals (QCLot: 734993)									
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	0.25 mg/L	94.7	80.0	120	----
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	97.6	80.0	120	----
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	92.7	80.0	120	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 732805)										
CG2215428-002	RG_MIDGA_WS_LAEMP_E VO_2022-11_N	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0472 mg/L	0.05 mg/L	94.4	70.0	130	----
Anions and Nutrients (QCLot: 732809)										
CG2215428-002	RG_MIDGA_WS_LAEMP_E VO_2022-11_N	ammonia, total (as N)	7664-41-7	E298	0.104 mg/L	0.1 mg/L	104	75.0	125	----
Anions and Nutrients (QCLot: 732838)										
CG2215428-002	RG_MIDGA_WS_LAEMP_E VO_2022-11_N	fluoride	16984-48-8	E235.F	0.951 mg/L	1 mg/L	95.1	75.0	125	----
Anions and Nutrients (QCLot: 732839)										
CG2215428-002	RG_MIDGA_WS_LAEMP_E VO_2022-11_N	bromide	24959-67-9	E235.Br-L	0.483 mg/L	0.5 mg/L	96.5	75.0	125	----
Anions and Nutrients (QCLot: 732840)										
CG2215428-002	RG_MIDGA_WS_LAEMP_E VO_2022-11_N	chloride	16887-00-6	E235.Cl-L	95.9 mg/L	100 mg/L	95.9	75.0	125	----
Anions and Nutrients (QCLot: 732841)										
CG2215428-002	RG_MIDGA_WS_LAEMP_E VO_2022-11_N	nitrate (as N)	14797-55-8	E235.NO3-L	2.39 mg/L	2.5 mg/L	95.5	75.0	125	----
Anions and Nutrients (QCLot: 732842)										
CG2215428-002	RG_MIDGA_WS_LAEMP_E VO_2022-11_N	nitrite (as N)	14797-65-0	E235.NO2-L	0.490 mg/L	0.5 mg/L	97.9	75.0	125	----
Anions and Nutrients (QCLot: 732843)										
CG2215428-002	RG_MIDGA_WS_LAEMP_E VO_2022-11_N	sulfate (as SO4)	14808-79-8	E235.SO4	ND mg/L	100 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 733811)										
CG2215428-002	RG_MIDGA_WS_LAEMP_E VO_2022-11_N	Kjeldahl nitrogen, total [TKN]	----	E318	2.53 mg/L	2.5 mg/L	101	70.0	130	----
Anions and Nutrients (QCLot: 735102)										
CG2215405-002	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0517 mg/L	0.05 mg/L	103	70.0	130	----
Organic / Inorganic Carbon (QCLot: 732812)										
CG2215428-001	RG_MI3_WS_LAEMP_EVO _2022-11_N	carbon, dissolved organic [DOC]	----	E358-L	5.29 mg/L	5 mg/L	106	70.0	130	----
Organic / Inorganic Carbon (QCLot: 732813)										
CG2215428-001	RG_MI3_WS_LAEMP_EVO _2022-11_N	carbon, total organic [TOC]	----	E355-L	5.28 mg/L	5 mg/L	106	70.0	130	----



Sub-Matrix: Water

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 734744)										
CG2215405-002	Anonymous	aluminum, total	7429-90-5	E420	1.96 mg/L	2 mg/L	98.2	70.0	130	----
		antimony, total	7440-36-0	E420	0.201 mg/L	0.2 mg/L	101	70.0	130	----
		arsenic, total	7440-38-2	E420	0.197 mg/L	0.2 mg/L	98.6	70.0	130	----
		barium, total	7440-39-3	E420	0.204 mg/L	0.2 mg/L	102	70.0	130	----
		beryllium, total	7440-41-7	E420	0.397 mg/L	0.4 mg/L	99.3	70.0	130	----
		bismuth, total	7440-69-9	E420	0.101 mg/L	0.1 mg/L	101	70.0	130	----
		boron, total	7440-42-8	E420	0.943 mg/L	1 mg/L	94.3	70.0	130	----
		cadmium, total	7440-43-9	E420	0.0389 mg/L	0.04 mg/L	97.2	70.0	130	----
		calcium, total	7440-70-2	E420	ND mg/L	40 mg/L	ND	70.0	130	----
		cobalt, total	7440-48-4	E420	0.200 mg/L	0.2 mg/L	100.0	70.0	130	----
		copper, total	7440-50-8	E420	0.198 mg/L	0.2 mg/L	99.3	70.0	130	----
		iron, total	7439-89-6	E420	20.3 mg/L	20 mg/L	102	70.0	130	----
		lead, total	7439-92-1	E420	0.194 mg/L	0.2 mg/L	97.2	70.0	130	----
		lithium, total	7439-93-2	E420	1.02 mg/L	1 mg/L	102	70.0	130	----
		magnesium, total	7439-95-4	E420	ND mg/L	10 mg/L	ND	70.0	130	----
		manganese, total	7439-96-5	E420	0.210 mg/L	0.2 mg/L	105	70.0	130	----
		molybdenum, total	7439-98-7	E420	0.201 mg/L	0.2 mg/L	100	70.0	130	----
		nickel, total	7440-02-0	E420	0.406 mg/L	0.4 mg/L	101	70.0	130	----
		potassium, total	7440-09-7	E420	39.6 mg/L	40 mg/L	99.1	70.0	130	----
		selenium, total	7782-49-2	E420	0.387 mg/L	0.4 mg/L	96.8	70.0	130	----
		silicon, total	7440-21-3	E420	98.8 mg/L	100 mg/L	98.8	70.0	130	----
		silver, total	7440-22-4	E420	0.0433 mg/L	0.04 mg/L	108	70.0	130	----
		sodium, total	7440-23-5	E420	19.6 mg/L	20 mg/L	98.3	70.0	130	----
		strontium, total	7440-24-6	E420	0.205 mg/L	0.2 mg/L	102	70.0	130	----
		sulfur, total	7704-34-9	E420	205 mg/L	200 mg/L	103	70.0	130	----
		thallium, total	7440-28-0	E420	0.0402 mg/L	0.04 mg/L	100	70.0	130	----
		tin, total	7440-31-5	E420	0.197 mg/L	0.2 mg/L	98.6	70.0	130	----
		titanium, total	7440-32-6	E420	0.344 mg/L	0.4 mg/L	86.0	70.0	130	----
		uranium, total	7440-61-1	E420	0.0381 mg/L	0.04 mg/L	95.3	70.0	130	----
		vanadium, total	7440-62-2	E420	1.00 mg/L	1 mg/L	100	70.0	130	----
		zinc, total	7440-66-6	E420	4.00 mg/L	4 mg/L	99.9	70.0	130	----
Total Metals (QCLot: 734745)										
CG2215428-002	RG_MIDGA_WS_LAEMP_E VO_2022-11_N	chromium, total	7440-47-3	E420.Cr-L	0.410 mg/L	0.4 mg/L	103	70.0	130	----
Total Metals (QCLot: 741503)										



Sub-Matrix: Water

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 741503) - continued										
CG2215411-002	Anonymous	mercury, total	7439-97-6	E508	0.000102 mg/L	0.0001 mg/L	102	70.0	130	----
Total Metals (QCLot: 741504)										
CG2215428-008	RG_BOCKRD_WS_LAEMP_EVO_2022-11_N	mercury, total	7439-97-6	E508	0.000102 mg/L	0.0001 mg/L	102	70.0	130	----
Dissolved Metals (QCLot: 734992)										
CG2215428-002	RG_MIDGA_WS_LAEMP_EVO_2022-11_N	aluminum, dissolved	7429-90-5	E421	1.87 mg/L	2 mg/L	93.3	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.197 mg/L	0.2 mg/L	98.5	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.196 mg/L	0.2 mg/L	98.2	70.0	130	----
		barium, dissolved	7440-39-3	E421	0.186 mg/L	0.2 mg/L	93.2	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.395 mg/L	0.4 mg/L	98.7	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.0948 mg/L	0.1 mg/L	94.8	70.0	130	----
		boron, dissolved	7440-42-8	E421	0.952 mg/L	1 mg/L	95.2	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.0392 mg/L	0.04 mg/L	97.9	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	40 mg/L	ND	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.195 mg/L	0.2 mg/L	97.5	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.194 mg/L	0.2 mg/L	97.2	70.0	130	----
		iron, dissolved	7439-89-6	E421	19.9 mg/L	20 mg/L	99.7	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.192 mg/L	0.2 mg/L	96.3	70.0	130	----
		lithium, dissolved	7439-93-2	E421	0.970 mg/L	1 mg/L	97.0	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	10 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E421	0.198 mg/L	0.2 mg/L	99.2	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.193 mg/L	0.2 mg/L	96.4	70.0	130	----
		nickel, dissolved	7440-02-0	E421	0.393 mg/L	0.4 mg/L	98.3	70.0	130	----
		potassium, dissolved	7440-09-7	E421	39.2 mg/L	40 mg/L	98.0	70.0	130	----
		selenium, dissolved	7782-49-2	E421	0.398 mg/L	0.4 mg/L	99.5	70.0	130	----
		silicon, dissolved	7440-21-3	E421	97.8 mg/L	100 mg/L	97.8	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.0419 mg/L	0.04 mg/L	105	70.0	130	----
		sodium, dissolved	7440-23-5	E421	19.6 mg/L	20 mg/L	97.8	70.0	130	----
		strontium, dissolved	7440-24-6	E421	0.183 mg/L	0.2 mg/L	91.3	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	201 mg/L	200 mg/L	101	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.0383 mg/L	0.04 mg/L	95.8	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.192 mg/L	0.2 mg/L	96.2	70.0	130	----
		titanium, dissolved	7440-32-6	E421	0.391 mg/L	0.4 mg/L	97.7	70.0	130	----
		uranium, dissolved	7440-61-1	E421	0.0359 mg/L	0.04 mg/L	89.8	70.0	130	----
		vanadium, dissolved	7440-62-2	E421	0.960 mg/L	1 mg/L	96.0	70.0	130	----



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 734992) - continued										
CG2215428-002	RG_MIDGA_WS_LAEMP_EVO_2022-11_N	zinc, dissolved	7440-66-6	E421	3.86 mg/L	4 mg/L	96.5	70.0	130	----
Dissolved Metals (QCLot: 734993)										
CG2215428-002	RG_MIDGA_WS_LAEMP_EVO_2022-11_N	chromium, dissolved	7440-47-3	E421.Cr-L	0.396 mg/L	0.4 mg/L	99.1	70.0	130	----
Dissolved Metals (QCLot: 741495)										
CG2215411-002	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000913 mg/L	0.0001 mg/L	91.3	70.0	130	----
Dissolved Metals (QCLot: 741496)										
CG2215428-008	RG_BOCKRD_WS_LAEMP_EVO_2022-11_N	mercury, dissolved	7439-97-6	E509	0.0000973 mg/L	0.0001 mg/L	97.3	70.0	130	----

COC ID: November EVO LAEMP 2022		TURNAROUND TIME:	
PROJECT/CLIENT INFO			
Facility Name / Job#	Regional EVO LAEMP		LABORATORY
Project Manager	Mike Pope	Lab Name	ALS Calgary
Address	421 Pine Avenue	Lab Contact	Lyudmyla Shvets
City	Sparwood	Address	2559 29 Street NE
Province	BC	City	Calgary
Postal Code	V0B 2G0	Province	AB
Phone Number	343-333-3905	Country	Canada
		Postal Code	T1Y 7B5
		Country	Canada
		Phone Number	403 407 1794

Environment Division
 Calgary
 Work Order Reference
CG2215428

SAMPLE DETAILS								ANALYSIS REQUESTED						
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	TECKCOAL-ROUTINE-VA	ALS_Package-DOC	ALS_Package-TKN/TOC	HG-T-L-CVAF-VA	HG-D-CVAF-VA	TECKCOAL-MET-T-VA	TECKCOAL-MET-D-VA
RG_MI3_WS_LAEMP_EVO_2022-11_N	RG MI3	WS	No	11/2/2022	9:45	G	7	X	X	X	X	X	X	X
RG_MIDGA_WS_LAEMP_EVO_2022-11_N	RG MIDGA	WS	No	11/2/2022	13:00	G	7	X	X	X	X	X	X	X
RG_MIDBO_WS_LAEMP_EVO_2022-11_N	RG MIDBO	WS	No	11/2/2022	14:00	G	7	X	X	X	X	X	X	X
RG_MIDER_WS_LAEMP_EVO_2022-11_N	RG MIDER	WS	No	11/2/2022	11:30	G	7	X	X	X	X	X	X	X
RG_MICOMP_WS_LAEMP_EVO_2022-11_N	RG MICOMP	WS	No	11/2/2022	15:00	G	7	X	X	X	X	X	X	X
RG_GATE_WS_LAEMP_EVO_2022-11_N	RG_GATE	WS	No	11/2/2022	13:00	G	7	X	X	X	X	X	X	X
RG_BOCK_WS_LAEMP_EVO_2022-11_N	RG BOCK	WS	No	11/2/2022	11:00	G	7	X	X	X	X	X	X	X
RG_BOCKRD_WS_LAEMP_EVO_2022-11_N	RG BOCKRD	WS	No	11/2/2022	9:00	G	7	X	X	X	X	X	X	X
RG_ALUSM_WS_LAEMP_EVO_2022-11_N	RG ALUSM	WS	No	11/2/2022	14:00	G	7	X	X	X	X	X	X	X
RG_RIVER_WS_LAEMP_EVO_2022-11_N	RG RIVER	WS	No	11/2/2022	9:00	G	7	X	X	X	X	X	X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
	Robin Vallean, Minnow Environmental	November 2, 2022	<i>[Signature]</i> M/4 925

NB OF BOTTLES RETURNED/DESCRIPTION	Regular (default)	
	Priority (2-3 business days) - 50% surcharge	X
	Emergency (1 Business Day) - 100% surcharge	
	For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name	Robin Vallean	Mobile #	416-970-7535
Sampler's Signature		Date/Time	November 2, 2022

Environmental Division
 Calgary
 Work Order Reference
CG2215428





CERTIFICATE OF ANALYSIS

<p>Work Order : CG2215432</p> <p>Amendment : 1</p> <p>Client : Teck Coal Limited</p> <p>Contact : Mike Pope</p> <p>Address : 421 Pine Avenue Sparwood BC Canada V0B2G0</p> <p>Telephone : ----</p> <p>Project : REGIONAL EFFECTS PROGRAM</p> <p>PO : VPO00847030</p> <p>C-O-C number : ----</p> <p>Sampler : ----</p> <p>Site : ----</p> <p>Quote number : Teck Coal Master Quote</p> <p>No. of samples received : 1</p> <p>No. of samples analysed : 1</p>	<p>Page : 1 of 6</p> <p>Laboratory : Calgary - Environmental</p> <p>Account Manager : Lyudmyla Shvets</p> <p>Address : 2559 29th Street NE Calgary AB Canada T1Y 7B5</p> <p>Telephone : +1 403 407 1800</p> <p>Date Samples Received : 04-Nov-2022 09:25</p> <p>Date Analysis Commenced : 04-Nov-2022</p> <p>Issue Date : 15-Nov-2022 16:42</p>
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This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Anthony Calero	Supervisor - Inorganic	Inorganics, Calgary, Alberta
Anthony Calero	Supervisor - Inorganic	Metals, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Metals, Calgary, Alberta
Ruifang Zheng	Analyst	Inorganics, Calgary, Alberta
Shirley Li	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Summie Lo	Lab Assistant	Metals, Calgary, Alberta



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

<i>Unit</i>	<i>Description</i>
-	no unit
%	percent
µg/L	micrograms per litre
µS/cm	microsiemens per centimetre
meq/L	milliequivalents per litre
mg/L	milligrams per litre
mV	millivolts
NTU	nephelometric turbidity units
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

<i>Qualifier</i>	<i>Description</i>
RRV	Reported result verified by repeat analysis.



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_FBLANK_WS_	---	---	---	---
					EVO_2022-11_					
					NP					
					Client sampling date / time	03-Nov-2022	---	---	---	---
					11:30					
Analyte	CAS Number	Method	LOR	Unit	CG2215432-001	-----	-----	-----	-----	-----
					Result	---	---	---	---	---
Physical Tests										
acidity (as CaCO3)	---	E283	2.0	mg/L	<2.0	---	---	---	---	---
alkalinity, bicarbonate (as CaCO3)	---	E290	1.0	mg/L	<1.0	---	---	---	---	---
alkalinity, bicarbonate (as HCO3)	71-52-3	E290	1.0	mg/L	<1.0	---	---	---	---	---
alkalinity, carbonate (as CaCO3)	---	E290	1.0	mg/L	<1.0	---	---	---	---	---
alkalinity, carbonate (as CO3)	3812-32-6	E290	1.0	mg/L	<1.0	---	---	---	---	---
alkalinity, hydroxide (as CaCO3)	---	E290	1.0	mg/L	<1.0	---	---	---	---	---
alkalinity, hydroxide (as OH)	14280-30-9	E290	1.0	mg/L	<1.0	---	---	---	---	---
alkalinity, total (as CaCO3)	---	E290	1.0	mg/L	<1.0	---	---	---	---	---
conductivity	---	E100	2.0	µS/cm	<2.0	---	---	---	---	---
hardness (as CaCO3), dissolved	---	EC100	0.50	mg/L	<0.50	---	---	---	---	---
oxidation-reduction potential [ORP]	---	E125	0.10	mV	518	---	---	---	---	---
pH	---	E108	0.10	pH units	5.63	---	---	---	---	---
solids, total dissolved [TDS]	---	E162	10	mg/L	<10	---	---	---	---	---
solids, total suspended [TSS]	---	E160-L	1.0	mg/L	<1.0	---	---	---	---	---
turbidity	---	E121	0.10	NTU	<0.10	---	---	---	---	---
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	---	---	---	---	---
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	---	---	---	---	---
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	<0.10	---	---	---	---	---
fluoride	16984-48-8	E235.F	0.020	mg/L	<0.020	---	---	---	---	---
Kjeldahl nitrogen, total [TKN]	---	E318	0.050	mg/L	<0.050	---	---	---	---	---
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	<0.0050	---	---	---	---	---
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	---	---	---	---	---
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	---	---	---	---	---
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	<0.0020	---	---	---	---	---
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	<0.30	---	---	---	---	---
Organic / Inorganic Carbon										



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_FBLANK_W S_LAEMP_WS_ EVO_2022-11_ NP	----	----	----	----
Client sampling date / time					03-Nov-2022 11:30	----	----	----	----	
Analyte	CAS Number	Method	LOR	Unit	CG2215432-001	-----	-----	-----	-----	
					Result	----	----	----	----	
Organic / Inorganic Carbon										
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	<0.50	----	----	----	----	
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	<0.50	----	----	----	----	
Ion Balance										
anion sum	----	EC101	0.10	meq/L	<0.10	----	----	----	----	
cation sum	----	EC101	0.10	meq/L	<0.10	----	----	----	----	
ion balance (cations/anions)	----	EC101	0.010	%	100	----	----	----	----	
ion balance (APHA)	----	EC101	0.01	%	<0.01	----	----	----	----	
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L	<0.0030	----	----	----	----	
antimony, total	7440-36-0	E420	0.00010	mg/L	<0.00010	----	----	----	----	
arsenic, total	7440-38-2	E420	0.00010	mg/L	<0.00010	----	----	----	----	
barium, total	7440-39-3	E420	0.00010	mg/L	<0.00010	----	----	----	----	
beryllium, total	7440-41-7	E420	0.020	µg/L	<0.020	----	----	----	----	
bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	----	----	----	----	
boron, total	7440-42-8	E420	0.010	mg/L	<0.010	----	----	----	----	
cadmium, total	7440-43-9	E420	0.0050	µg/L	<0.0050	----	----	----	----	
calcium, total	7440-70-2	E420	0.050	mg/L	<0.050	----	----	----	----	
chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	<0.00010	----	----	----	----	
cobalt, total	7440-48-4	E420	0.10	µg/L	<0.10	----	----	----	----	
copper, total	7440-50-8	E420	0.00050	mg/L	<0.00050	----	----	----	----	
iron, total	7439-89-6	E420	0.010	mg/L	<0.010	----	----	----	----	
lead, total	7439-92-1	E420	0.000050	mg/L	<0.000050	----	----	----	----	
lithium, total	7439-93-2	E420	0.0010	mg/L	<0.0010	----	----	----	----	
magnesium, total	7439-95-4	E420	0.0050	mg/L	<0.0050	----	----	----	----	
manganese, total	7439-96-5	E420	0.00010	mg/L	<0.00010	----	----	----	----	
mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	----	----	----	----	
molybdenum, total	7439-98-7	E420	0.000050	mg/L	<0.000050	----	----	----	----	
nickel, total	7440-02-0	E420	0.00050	mg/L	<0.00050	----	----	----	----	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_FBLANK_W S_LAEMP_WS_ EVO_2022-11_ NP	----	----	----	----
Client sampling date / time					03-Nov-2022 11:30	----	----	----	----	
Analyte	CAS Number	Method	LOR	Unit	CG2215432-001	-----	-----	-----	-----	
					Result	----	----	----	----	
Total Metals										
potassium, total	7440-09-7	E420	0.050	mg/L	<0.050	----	----	----	----	
selenium, total	7782-49-2	E420	0.050	µg/L	<0.050	----	----	----	----	
silicon, total	7440-21-3	E420	0.10	mg/L	<0.10	----	----	----	----	
silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	----	----	----	----	
sodium, total	7440-23-5	E420	0.050	mg/L	0.147 ^{RRV}	----	----	----	----	
strontium, total	7440-24-6	E420	0.00020	mg/L	<0.00020	----	----	----	----	
sulfur, total	7704-34-9	E420	0.50	mg/L	<0.50	----	----	----	----	
thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	----	----	----	----	
tin, total	7440-31-5	E420	0.00010	mg/L	0.00033 ^{RRV}	----	----	----	----	
titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00030	----	----	----	----	
uranium, total	7440-61-1	E420	0.000010	mg/L	<0.000010	----	----	----	----	
vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	----	----	----	----	
zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	----	----	----	----	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	<0.0010	----	----	----	----	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00010	----	----	----	----	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	<0.00010	----	----	----	----	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.00011 ^{RRV}	----	----	----	----	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.020	----	----	----	----	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	----	----	----	----	
boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.010	----	----	----	----	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	<0.0050	----	----	----	----	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	<0.050	----	----	----	----	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00010	----	----	----	----	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	<0.10	----	----	----	----	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00041 ^{RRV}	----	----	----	----	
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	----	----	----	----	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	----	----	----	----	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_FBLANK_W S_LAEMP_WS_ EVO_2022-11_ NP	----	----	----	----
Client sampling date / time					03-Nov-2022 11:30	----	----	----	----	
Analyte	CAS Number	Method	LOR	Unit	CG2215432-001	-----	-----	-----	-----	
					Result	----	----	----	----	
Dissolved Metals										
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	<0.0010	----	----	----	----	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	0.0051 ^{RRV}	----	----	----	----	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	<0.00010	----	----	----	----	
mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	----	----	----	----	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	<0.000050	----	----	----	----	
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	<0.00050	----	----	----	----	
potassium, dissolved	7440-09-7	E421	0.050	mg/L	<0.050	----	----	----	----	
selenium, dissolved	7782-49-2	E421	0.050	µg/L	<0.050	----	----	----	----	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	<0.050	----	----	----	----	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	----	----	----	----	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	0.171 ^{RRV}	----	----	----	----	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	<0.00020	----	----	----	----	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	<0.50	----	----	----	----	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	----	----	----	----	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	0.00035 ^{RRV}	----	----	----	----	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	----	----	----	----	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	<0.000010	----	----	----	----	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	----	----	----	----	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0010	----	----	----	----	
dissolved mercury filtration location	----	EP509	-	-	Field	----	----	----	----	
dissolved metals filtration location	----	EP421	-	-	Field	----	----	----	----	

Please refer to the General Comments section for an explanation of any qualifiers detected.



QUALITY CONTROL INTERPRETIVE REPORT

<p>Work Order : CG2215432</p> <p>Amendment : 1</p> <p>Client : Teck Coal Limited</p> <p>Contact : Mike Pope</p> <p>Address : 421 Pine Avenue Sparwood BC Canada V0B2G0</p> <p>Telephone : ----</p> <p>Project : REGIONAL EFFECTS PROGRAM</p> <p>PO : VPO00847030</p> <p>C-O-C number : ----</p> <p>Sampler : ----</p> <p>Site : ----</p> <p>Quote number : Teck Coal Master Quote</p> <p>No. of samples received : 1</p> <p>No. of samples analysed : 1</p>	<p>Page : 1 of 13</p> <p>Laboratory : Calgary - Environmental</p> <p>Account Manager : Lyudmyla Shvets</p> <p>Address : 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5</p> <p>Telephone : +1 403 407 1800</p> <p>Date Samples Received : 04-Nov-2022 09:25</p> <p>Issue Date : 15-Nov-2022 16:43</p>
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This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

- Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
- CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
- DQO: Data Quality Objective.
- LOR: Limit of Reporting (detection limit).
- RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_FBLANK_WS_LAEMP_WS_EVO_2022-11_NP	E298	03-Nov-2022	04-Nov-2022	----	----		04-Nov-2022	28 days	1 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_FBLANK_WS_LAEMP_WS_EVO_2022-11_NP	E235.Br-L	03-Nov-2022	04-Nov-2022	----	----		04-Nov-2022	28 days	1 days	✓
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_FBLANK_WS_LAEMP_WS_EVO_2022-11_NP	E235.Cl-L	03-Nov-2022	04-Nov-2022	----	----		04-Nov-2022	28 days	1 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE RG_FBLANK_WS_LAEMP_WS_EVO_2022-11_NP	E378-U	03-Nov-2022	04-Nov-2022	----	----		04-Nov-2022	3 days	1 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE RG_FBLANK_WS_LAEMP_WS_EVO_2022-11_NP	E235.F	03-Nov-2022	04-Nov-2022	----	----		04-Nov-2022	28 days	1 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE RG_FBLANK_WS_LAEMP_WS_EVO_2022-11_NP	E235.NO3-L	03-Nov-2022	04-Nov-2022	3 days	1 days	✓	04-Nov-2022	3 days	0 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_FBLANK_WS_LAEMP_WS_EVO_2022-11_NP	E235.NO2-L	03-Nov-2022	04-Nov-2022	----	----		04-Nov-2022	3 days	1 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_FBLANK_WS_LAEMP_WS_EVO_2022-11_NP	E235.SO4	03-Nov-2022	04-Nov-2022	----	----		04-Nov-2022	28 days	1 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_FBLANK_WS_LAEMP_WS_EVO_2022-11_NP	E318	03-Nov-2022	05-Nov-2022	----	----		05-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_FBLANK_WS_LAEMP_WS_EVO_2022-11_NP	E372-U	03-Nov-2022	04-Nov-2022	----	----		05-Nov-2022	28 days	2 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_FBLANK_WS_LAEMP_WS_EVO_2022-11_NP	E421.Cr-L	03-Nov-2022	05-Nov-2022	----	----		05-Nov-2022	180 days	2 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_FBLANK_WS_LAEMP_WS_EVO_2022-11_NP	E509	03-Nov-2022	05-Nov-2022	----	----		05-Nov-2022	28 days	2 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_FBLANK_WS_LAEMP_WS_EVO_2022-11_NP	E421	03-Nov-2022	05-Nov-2022	----	----		05-Nov-2022	180 days	2 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_FBLANK_WS_LAEMP_WS_EVO_2022-11_NP	E358-L	03-Nov-2022	04-Nov-2022	----	----		04-Nov-2022	28 days	1 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_FBLANK_WS_LAEMP_WS_EVO_2022-11_NP	E355-L	03-Nov-2022	04-Nov-2022	----	----		04-Nov-2022	28 days	1 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Acidity by Titration											
HDPE RG_FBLANK_WS_LAEMP_WS_EVO_2022-11_NP	E283	03-Nov-2022	04-Nov-2022	----	----		04-Nov-2022	14 days	1 days	✓	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_FBLANK_WS_LAEMP_WS_EVO_2022-11_NP	E290	03-Nov-2022	04-Nov-2022	----	----		04-Nov-2022	14 days	1 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_FBLANK_WS_LAEMP_WS_EVO_2022-11_NP	E100	03-Nov-2022	04-Nov-2022	----	----		04-Nov-2022	28 days	1 days	✓	
Physical Tests : ORP by Electrode											
HDPE RG_FBLANK_WS_LAEMP_WS_EVO_2022-11_NP	E125	03-Nov-2022	----	----	----		04-Nov-2022	0.25 hrs	34 hrs	* EHTR-FM	
Physical Tests : pH by Meter											
HDPE RG_FBLANK_WS_LAEMP_WS_EVO_2022-11_NP	E108	03-Nov-2022	04-Nov-2022	----	----		04-Nov-2022	0.25 hrs	0.26 hrs	* EHTR-FM	
Physical Tests : TDS by Gravimetry											
HDPE RG_FBLANK_WS_LAEMP_WS_EVO_2022-11_NP	E162	03-Nov-2022	----	----	----		05-Nov-2022	7 days	2 days	✓	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_FBLANK_WS_LAEMP_WS_EVO_2022-11_NP	E160-L	03-Nov-2022	----	----	----		05-Nov-2022	7 days	2 days	✓	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_FBLANK_WS_LAEMP_WS_EVO_2022-11_NP	E121	03-Nov-2022	----	----	----		04-Nov-2022	3 days	1 days	✓	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE - total (lab preserved) RG_FBLANK_WS_LAEMP_WS_EVO_2022-11_NP	E420.Cr-L	03-Nov-2022	05-Nov-2022	----	----		05-Nov-2022	180 days	2 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) RG_FBLANK_WS_LAEMP_WS_EVO_2022-11_NP	E508	03-Nov-2022	05-Nov-2022	----	----		05-Nov-2022	28 days	2 days	✔
Total Metals : Total metals in Water by CRC ICPMS										
HDPE - total (lab preserved) RG_FBLANK_WS_LAEMP_WS_EVO_2022-11_NP	E420	03-Nov-2022	05-Nov-2022	----	----		05-Nov-2022	180 days	2 days	✔

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended
 Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
Analytical Methods							
Laboratory Duplicates (DUP)							
Acidity by Titration	E283	731100	1	8	12.5	5.0	✓
Alkalinity Species by Titration	E290	730981	1	18	5.5	5.0	✓
Ammonia by Fluorescence	E298	731347	1	9	11.1	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	730865	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	730867	1	20	5.0	5.0	✓
Conductivity in Water	E100	730980	1	18	5.5	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	731727	1	7	14.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	731644	1	13	7.6	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	731728	1	8	12.5	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	731145	1	17	5.8	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	730904	1	17	5.8	5.0	✓
Fluoride in Water by IC	E235.F	730863	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	730869	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	730871	1	20	5.0	5.0	✓
ORP by Electrode	E125	731400	1	4	25.0	5.0	✓
pH by Meter	E108	730979	1	19	5.2	5.0	✓
Sulfate in Water by IC	E235.SO4	730872	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	731673	1	12	8.3	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	731179	1	7	14.2	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	731193	1	7	14.2	5.0	✓
Total Mercury in Water by CVAAS	E508	731648	1	18	5.5	5.0	✓
Total metals in Water by CRC ICPMS	E420	731180	1	7	14.2	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	731146	1	16	6.2	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	730769	1	6	16.6	5.0	✓
Turbidity by Nephelometry	E121	731395	1	8	12.5	5.0	✓
Laboratory Control Samples (LCS)							
Acidity by Titration	E283	731100	1	8	12.5	5.0	✓
Alkalinity Species by Titration	E290	730981	1	18	5.5	5.0	✓
Ammonia by Fluorescence	E298	731347	1	9	11.1	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	730865	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	730867	1	20	5.0	5.0	✓
Conductivity in Water	E100	730980	1	18	5.5	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	731727	1	7	14.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	731644	1	13	7.6	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	731728	1	8	12.5	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	731145	1	17	5.8	5.0	✓



Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
Analytical Methods							
Laboratory Control Samples (LCS) - Continued							
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	730904	1	17	5.8	5.0	✓
Fluoride in Water by IC	E235.F	730863	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	730869	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	730871	1	20	5.0	5.0	✓
ORP by Electrode	E125	731400	1	4	25.0	5.0	✓
pH by Meter	E108	730979	1	19	5.2	5.0	✓
Sulfate in Water by IC	E235.SO4	730872	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	731673	1	12	8.3	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	731179	1	7	14.2	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	731193	1	7	14.2	5.0	✓
Total Mercury in Water by CVAAS	E508	731648	1	18	5.5	5.0	✓
Total metals in Water by CRC ICPMS	E420	731180	1	7	14.2	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	731146	1	16	6.2	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	730769	1	6	16.6	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	731672	1	12	8.3	5.0	✓
Turbidity by Nephelometry	E121	731395	1	8	12.5	5.0	✓
Method Blanks (MB)							
Acidity by Titration	E283	731100	1	8	12.5	5.0	✓
Alkalinity Species by Titration	E290	730981	1	18	5.5	5.0	✓
Ammonia by Fluorescence	E298	731347	1	9	11.1	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	730865	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	730867	1	20	5.0	5.0	✓
Conductivity in Water	E100	730980	1	18	5.5	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	731727	1	7	14.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	731644	1	13	7.6	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	731728	1	8	12.5	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	731145	1	17	5.8	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	730904	1	17	5.8	5.0	✓
Fluoride in Water by IC	E235.F	730863	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	730869	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	730871	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	730872	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	731673	1	12	8.3	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	731179	1	7	14.2	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	731193	1	7	14.2	5.0	✓
Total Mercury in Water by CVAAS	E508	731648	1	18	5.5	5.0	✓
Total metals in Water by CRC ICPMS	E420	731180	1	7	14.2	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	731146	1	16	6.2	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	730769	1	6	16.6	5.0	✓



Matrix: **Water** Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
<i>Analytical Methods</i>							
Method Blanks (MB) - Continued							
TSS by Gravimetry (Low Level)	E160-L	731672	1	12	8.3	5.0	✔
Turbidity by Nephelometry	E121	731395	1	8	12.5	5.0	✔
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	731347	1	9	11.1	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	730865	1	20	5.0	5.0	✔
Chloride in Water by IC (Low Level)	E235.Cl-L	730867	1	20	5.0	5.0	✔
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	731727	1	7	14.2	5.0	✔
Dissolved Mercury in Water by CVAAS	E509	731644	1	13	7.6	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	731728	1	8	12.5	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	731145	1	17	5.8	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	730904	1	17	5.8	5.0	✔
Fluoride in Water by IC	E235.F	730863	1	20	5.0	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	730869	1	20	5.0	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	730871	1	20	5.0	5.0	✔
Sulfate in Water by IC	E235.SO4	730872	1	20	5.0	5.0	✔
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	731179	1	7	14.2	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	731193	1	7	14.2	5.0	✔
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Total metals in Water by CRC ICPMS	E420	731180	1	7	14.2	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	731146	1	16	6.2	5.0	✔
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	730769	1	6	16.6	5.0	✔



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 Calgary - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 Calgary - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 Calgary - Environmental	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
ORP by Electrode	E125 Calgary - Environmental	Water	ASTM D1498 (mod)	Oxidation reduction potential is reported as the oxidation-reduction potential of the platinum metal-reference electrode employed, measured in mV. For high accuracy test results, it is recommended that this analysis be conducted in the field.
TSS by Gravimetry (Low Level)	E160-L Calgary - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 Calgary - Environmental	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC (Low Level)	E235.Cl-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Acidity by Titration	E283 Calgary - Environmental	Water	APHA 2310 B (mod)	Acidity is determined by potentiometric titration to pH endpoint of 8.3
Alkalinity Species by Titration	E290 Calgary - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 Calgary - Environmental	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 Calgary - Environmental	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L Calgary - Environmental	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Dissolved Organic Carbon by Combustion (Low Level)	E358-L Calgary - Environmental	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U Calgary - Environmental	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U Calgary - Environmental	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Total metals in Water by CRC ICPMS	E420 Calgary - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L Calgary - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Metals in Water by CRC ICPMS	E421 Calgary - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L Calgary - Environmental	Water	APHA 3030 B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS
Total Mercury in Water by CVAAS	E508 Calgary - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS
Dissolved Mercury in Water by CVAAS	E509 Calgary - Environmental	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
Dissolved Hardness (Calculated)	EC100 Calgary - Environmental	Water	APHA 2340B	"Hardness (as CaCO ₃), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Ion Balance using Dissolved Metals	EC101 Calgary - Environmental	Water	APHA 1030E	Cation Sum, Anion Sum, and Ion Balance are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present. Ion Balance cannot be calculated accurately for waters with very low electrical conductivity (EC).

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 Calgary - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 Calgary - Environmental	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Preparation for Total Organic Carbon by Combustion	EP355 Calgary - Environmental	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon by Combustion	EP358 Calgary - Environmental	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Phosphorus in water	EP372 Calgary - Environmental	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.



<i>Preparation Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
Dissolved Metals Water Filtration	EP421 Calgary - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.
Dissolved Mercury Water Filtration	EP509 Calgary - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.

QUALITY CONTROL REPORT

Work Order	: CG2215432	Page	: 1 of 18
Amendment	: 1		
Client	: Teck Coal Limited	Laboratory	: Calgary - Environmental
Contact	: Mike Pope	Account Manager	: Lyudmyla Shvets
Address	: 421 Pine Avenue Sparwood BC Canada V0B2G0	Address	: 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5
Telephone	:	Telephone	: +1 403 407 1800
Project	: REGIONAL EFFECTS PROGRAM	Date Samples Received	: 04-Nov-2022 09:25
PO	: VPO00847030	Date Analysis Commenced	: 04-Nov-2022
C-O-C number	: ----	Issue Date	: 15-Nov-2022 16:42
Sampler	: ---- ----		
Site	: ----		
Quote number	: Teck Coal Master Quote		
No. of samples received	: 1		
No. of samples analysed	: 1		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Anthony Calero	Supervisor - Inorganic	Calgary Inorganics, Calgary, Alberta
Anthony Calero	Supervisor - Inorganic	Calgary Metals, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Calgary Inorganics, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Calgary Metals, Calgary, Alberta
Ruifang Zheng	Analyst	Calgary Inorganics, Calgary, Alberta
Shirley Li	Team Leader - Inorganics	Calgary Inorganics, Calgary, Alberta
Summie Lo	Lab Assistant	Calgary Metals, Calgary, Alberta



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 730979)											
CG2215419-011	Anonymous	pH	----	E108	0.10	pH units	7.19	7.22	0.416%	4%	----
Physical Tests (QC Lot: 730980)											
CG2215419-012	Anonymous	conductivity	----	E100	1.0	µS/cm	27100	27000	0.370%	10%	----
Physical Tests (QC Lot: 730981)											
CG2215419-012	Anonymous	alkalinity, bicarbonate (as CaCO ₃)	----	E290	1.0	mg/L	613	550	10.8%	20%	----
		alkalinity, carbonate (as CaCO ₃)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, hydroxide (as CaCO ₃)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, total (as CaCO ₃)	----	E290	1.0	mg/L	613	550	10.8%	20%	----
Physical Tests (QC Lot: 731100)											
CG2215412-001	Anonymous	acidity (as CaCO ₃)	----	E283	2.0	mg/L	<2.0	<2.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 731395)											
CG2215412-001	Anonymous	turbidity	----	E121	0.10	NTU	42.6	41.7	2.18%	15%	----
Physical Tests (QC Lot: 731400)											
CG2215412-001	Anonymous	oxidation-reduction potential [ORP]	----	E125	0.10	mV	241	249	3.06%	15%	----
Physical Tests (QC Lot: 731673)											
CG2215352-001	Anonymous	solids, total dissolved [TDS]	----	E162	40	mg/L	1460	1390	4.86%	20%	----
Anions and Nutrients (QC Lot: 730769)											
CG2215417-001	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0055	0.0063	0.0008	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 730863)											
CG2215417-001	Anonymous	fluoride	16984-48-8	E235.F	0.100	mg/L	0.193	0.195	0.002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 730865)											
CG2215417-001	Anonymous	bromide	24959-67-9	E235.Br-L	0.250	mg/L	<0.250	<0.250	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 730867)											
CG2215417-001	Anonymous	chloride	16887-00-6	E235.Cl-L	0.50	mg/L	47.5	47.4	0.280%	20%	----
Anions and Nutrients (QC Lot: 730869)											
CG2215417-001	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	0.0250	mg/L	48.0	47.9	0.149%	20%	----
Anions and Nutrients (QC Lot: 730871)											
CG2215417-001	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 730872)											
CG2215417-001	Anonymous	sulfate (as SO ₄)	14808-79-8	E235.SO4	1.50	mg/L	644	643	0.148%	20%	----



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 730904)											
CG2215432-001	RG_FBLANK_WS_LAEMP_WS_EVO_2022-11_NP	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 731193)											
CG2215412-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	0.243	0.261	0.017	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 731347)											
CG2215405-009	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.316	0.312	1.37%	20%	----
Organic / Inorganic Carbon (QC Lot: 731145)											
CG2215412-001	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	0.94	1.01	0.07	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 731146)											
CG2215412-001	Anonymous	carbon, total organic [TOC]	----	E355-L	0.50	mg/L	2.18	2.84	0.66	Diff <2x LOR	----
Total Metals (QC Lot: 731179)											
CG2215417-001	Anonymous	chromium, total	7440-47-3	E420.Cr-L	0.00020	mg/L	0.00029	0.00030	0.00002	Diff <2x LOR	----
Total Metals (QC Lot: 731180)											
CG2215417-001	Anonymous	aluminum, total	7429-90-5	E420	0.0060	mg/L	0.0384	0.0351	0.0033	Diff <2x LOR	----
		antimony, total	7440-36-0	E420	0.00020	mg/L	0.00137	0.00152	0.00015	Diff <2x LOR	----
		arsenic, total	7440-38-2	E420	0.00020	mg/L	0.00021	<0.00020	0.000008	Diff <2x LOR	----
		barium, total	7440-39-3	E420	0.00020	mg/L	0.0251	0.0245	2.46%	20%	----
		beryllium, total	7440-41-7	E420	0.000040	mg/L	<0.040 µg/L	<0.000040	0	Diff <2x LOR	----
		bismuth, total	7440-69-9	E420	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		boron, total	7440-42-8	E420	0.020	mg/L	0.042	0.042	0.000008	Diff <2x LOR	----
		cadmium, total	7440-43-9	E420	0.0000100	mg/L	0.635 µg/L	0.000633	0.277%	20%	----
		calcium, total	7440-70-2	E420	0.100	mg/L	270	265	1.84%	20%	----
		cobalt, total	7440-48-4	E420	0.00020	mg/L	<0.20 µg/L	0.00020	0.000004	Diff <2x LOR	----
		copper, total	7440-50-8	E420	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		iron, total	7439-89-6	E420	0.020	mg/L	0.152	0.153	0.002	Diff <2x LOR	----
		lead, total	7439-92-1	E420	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		lithium, total	7439-93-2	E420	0.0020	mg/L	0.247	0.244	1.07%	20%	----
		magnesium, total	7439-95-4	E420	0.0100	mg/L	132	132	0.0164%	20%	----
		manganese, total	7439-96-5	E420	0.00020	mg/L	0.00746	0.00769	3.12%	20%	----
		molybdenum, total	7439-98-7	E420	0.000100	mg/L	0.00454	0.00432	5.04%	20%	----
		nickel, total	7440-02-0	E420	0.00100	mg/L	0.0469	0.0462	1.31%	20%	----
		potassium, total	7440-09-7	E420	0.100	mg/L	4.77	4.78	0.173%	20%	----
		selenium, total	7782-49-2	E420	0.000100	mg/L	171 µg/L	0.167	2.15%	20%	----
		silicon, total	7440-21-3	E420	0.20	mg/L	3.02	2.94	2.90%	20%	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (QC Lot: 731180) - continued											
CG2215417-001	Anonymous	silver, total	7440-22-4	E420	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		sodium, total	7440-23-5	E420	0.100	mg/L	33.1	33.2	0.576%	20%	----
		strontium, total	7440-24-6	E420	0.00040	mg/L	0.298	0.294	1.40%	20%	----
		sulfur, total	7704-34-9	E420	1.00	mg/L	251	245	2.37%	20%	----
		thallium, total	7440-28-0	E420	0.000020	mg/L	0.000042	0.000040	0.000002	Diff <2x LOR	----
		tin, total	7440-31-5	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		titanium, total	7440-32-6	E420	0.00060	mg/L	0.00100	0.00086	0.00014	Diff <2x LOR	----
		uranium, total	7440-61-1	E420	0.000020	mg/L	0.00905	0.00899	0.670%	20%	----
		vanadium, total	7440-62-2	E420	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		zinc, total	7440-66-6	E420	0.0060	mg/L	0.0330	0.0321	0.0009	Diff <2x LOR	----
Total Metals (QC Lot: 731648)											
CG2215291-001	Anonymous	mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 731644)											
CG2215405-001	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 731727)											
CG2215412-001	Anonymous	chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 731728)											
CG2215412-001	Anonymous	aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0187	0.0183	2.00%	20%	----
		antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00046	0.00049	0.00003	Diff <2x LOR	----
		barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0544	0.0540	0.816%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.000020	mg/L	<0.020 µg/L	<0.000020	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.010	mg/L	0.118	0.118	0.112%	20%	----
		cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	0.0396 µg/L	0.0000336	0.0000060	Diff <2x LOR	----
		calcium, dissolved	7440-70-2	E421	0.050	mg/L	35.6	35.7	0.0784%	20%	----
		cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	0.10 µg/L	<0.00010	0.0000008	Diff <2x LOR	----
		copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00228	0.00226	0.701%	20%	----
		iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0134	0.0134	0.0314%	20%	----
		magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	18.3	18.1	1.15%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.0468	0.0464	0.898%	20%	----
		molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.0144	0.0146	1.16%	20%	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

<i>Laboratory sample ID</i>	<i>Client sample ID</i>	<i>Analyte</i>	<i>CAS Number</i>	<i>Method</i>	<i>LOR</i>	<i>Unit</i>	<i>Original Result</i>	<i>Duplicate Result</i>	<i>RPD(%) or Difference</i>	<i>Duplicate Limits</i>	<i>Qualifier</i>
Dissolved Metals (QC Lot: 731728) - continued											
CG2215412-001	Anonymous	nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00123	0.00117	0.00006	Diff <2x LOR	----
		potassium, dissolved	7440-09-7	E421	0.050	mg/L	1.10	1.08	1.69%	20%	----
		selenium, dissolved	7782-49-2	E421	0.000050	mg/L	0.176 µg/L	0.000186	0.000010	Diff <2x LOR	----
		silicon, dissolved	7440-21-3	E421	0.050	mg/L	5.57	5.61	0.700%	20%	----
		silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E421	0.050	mg/L	30.3	30.3	0.165%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.424	0.424	0.101%	20%	----
		sulfur, dissolved	7704-34-9	E421	0.50	mg/L	9.87	9.86	0.178%	20%	----
		thallium, dissolved	7440-28-0	E421	0.000010	mg/L	0.000034	0.000033	0.000001	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.00030	mg/L	0.00031	<0.00030	0.00001	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00157	0.00160	1.92%	20%	----
		vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0100	0.0094	0.0006	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 730980)						
conductivity	---	E100	1	µS/cm	<1.0	---
Physical Tests (QCLot: 730981)						
alkalinity, bicarbonate (as CaCO3)	---	E290	1	mg/L	<1.0	---
alkalinity, carbonate (as CaCO3)	---	E290	1	mg/L	<1.0	---
alkalinity, hydroxide (as CaCO3)	---	E290	1	mg/L	<1.0	---
alkalinity, total (as CaCO3)	---	E290	1	mg/L	<1.0	---
Physical Tests (QCLot: 731100)						
acidity (as CaCO3)	---	E283	2	mg/L	2.4	---
Physical Tests (QCLot: 731395)						
turbidity	---	E121	0.1	NTU	<0.10	---
Physical Tests (QCLot: 731672)						
solids, total suspended [TSS]	---	E160-L	1	mg/L	<1.0	---
Physical Tests (QCLot: 731673)						
solids, total dissolved [TDS]	---	E162	10	mg/L	<10	---
Anions and Nutrients (QCLot: 730769)						
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	---
Anions and Nutrients (QCLot: 730863)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	---
Anions and Nutrients (QCLot: 730865)						
bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	---
Anions and Nutrients (QCLot: 730867)						
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	---
Anions and Nutrients (QCLot: 730869)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	---
Anions and Nutrients (QCLot: 730871)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	---
Anions and Nutrients (QCLot: 730872)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	---
Anions and Nutrients (QCLot: 730904)						
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	---
Anions and Nutrients (QCLot: 731193)						
Kjeldahl nitrogen, total [TKN]	---	E318	0.05	mg/L	<0.050	---



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 731347)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Organic / Inorganic Carbon (QCLot: 731145)						
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Organic / Inorganic Carbon (QCLot: 731146)						
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	<0.50	----
Total Metals (QCLot: 731179)						
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	<0.00010	----
Total Metals (QCLot: 731180)						
aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	----
antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	----
barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	----
boron, total	7440-42-8	E420	0.01	mg/L	<0.010	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	----
calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	----
copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	----
iron, total	7439-89-6	E420	0.01	mg/L	<0.010	----
lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	----
lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	----
magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	----
manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	----
nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	----
potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	----
selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	----
silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	----
silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	----
sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	----
strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	----
sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	----
thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	----
tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 731180) - continued						
titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	----
uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	----
zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	----
Total Metals (QCLot: 731648)						
mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 731644)						
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 731727)						
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	<0.00010	----
Dissolved Metals (QCLot: 731728)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----



Sub-Matrix: **Water**

<i>Analyte</i>	<i>CAS Number</i>	<i>Method</i>	<i>LOR</i>	<i>Unit</i>	<i>Result</i>	<i>Qualifier</i>
Dissolved Metals (QCLot: 731728) - continued						
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Physical Tests (QCLot: 730979)									
pH	----	E108	----	pH units	7 pH units	101	98.6	101	----
Physical Tests (QCLot: 730980)									
conductivity	----	E100	1	µS/cm	146.9 µS/cm	97.1	90.0	110	----
Physical Tests (QCLot: 730981)									
alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	89.3	85.0	115	----
Physical Tests (QCLot: 731100)									
acidity (as CaCO3)	----	E283	2	mg/L	50 mg/L	101	85.0	115	----
Physical Tests (QCLot: 731395)									
turbidity	----	E121	0.1	NTU	200 NTU	101	85.0	115	----
Physical Tests (QCLot: 731400)									
oxidation-reduction potential [ORP]	----	E125	----	mV	220 mV	96.5	95.4	104	----
Physical Tests (QCLot: 731672)									
solids, total suspended [TSS]	----	E160-L	1	mg/L	150 mg/L	88.8	85.0	115	----
Physical Tests (QCLot: 731673)									
solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	95.8	85.0	115	----
Anions and Nutrients (QCLot: 730769)									
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.03 mg/L	88.2	80.0	120	----
Anions and Nutrients (QCLot: 730863)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 730865)									
bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	102	85.0	115	----
Anions and Nutrients (QCLot: 730867)									
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 730869)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 730871)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 730872)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 730904)									
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.03 mg/L	94.1	80.0	120	----



Sub-Matrix: Water					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	
Anions and Nutrients (QCLot: 731193)									
Kjeldahl nitrogen, total [TKN]	---	E318	0.05	mg/L	4 mg/L	96.4	75.0	125	---
Anions and Nutrients (QCLot: 731347)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	106	85.0	115	---
Organic / Inorganic Carbon (QCLot: 731145)									
carbon, dissolved organic [DOC]	---	E358-L	0.5	mg/L	8.57 mg/L	98.7	80.0	120	---
Organic / Inorganic Carbon (QCLot: 731146)									
carbon, total organic [TOC]	---	E355-L	0.5	mg/L	8.57 mg/L	98.8	80.0	120	---
Total Metals (QCLot: 731179)									
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	0.25 mg/L	101	80.0	120	---
Total Metals (QCLot: 731180)									
aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	96.3	80.0	120	---
antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	98.6	80.0	120	---
arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	100	80.0	120	---
barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	100	80.0	120	---
beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	92.9	80.0	120	---
bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	94.4	80.0	120	---
boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	92.6	80.0	120	---
cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	97.1	80.0	120	---
calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	97.1	80.0	120	---
cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	96.0	80.0	120	---
copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	96.7	80.0	120	---
iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	108	80.0	120	---
lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	96.3	80.0	120	---
lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	93.5	80.0	120	---
magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	103	80.0	120	---
manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	100	80.0	120	---
molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	98.8	80.0	120	---
nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	95.1	80.0	120	---
potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	100	80.0	120	---
selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	91.2	80.0	120	---
silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	98.1	60.0	140	---
silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	91.5	80.0	120	---
sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	98.8	80.0	120	---
strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	97.0	80.0	120	---



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 731180) - continued									
sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	89.0	80.0	120	----
thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	95.2	80.0	120	----
tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	95.1	80.0	120	----
titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	94.4	80.0	120	----
uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	92.8	80.0	120	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	96.8	80.0	120	----
zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	92.0	80.0	120	----
Total Metals (QCLot: 731648)									
mercury, total	7439-97-6	E508	0.000005	mg/L	0.0001 mg/L	103	80.0	120	----
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	88.4	80.0	120	----
Dissolved Metals (QCLot: 731727)									
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	0.25 mg/L	101	80.0	120	----
Dissolved Metals (QCLot: 731728)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	101	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	101	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	103	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	101	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	94.2	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	96.7	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	95.0	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	97.3	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	98.9	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	98.9	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	98.5	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	110	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	98.4	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	96.3	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	104	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	100	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	100	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	98.2	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	99.9	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	94.9	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	99.1	60.0	140	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	92.4	80.0	120	----



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 731728) - continued									
sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	101	80.0	120	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	98.8	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	99.2	80.0	120	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	96.8	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	98.0	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	97.8	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	93.8	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	99.7	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	96.2	80.0	120	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 730769)										
CG2215417-002	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0433 mg/L	0.05 mg/L	86.6	70.0	130	----
Anions and Nutrients (QCLot: 730863)										
CG2215432-001	RG_FBLANK_WS_LAEMP_WS_EVO_2022-11_NP	fluoride	16984-48-8	E235.F	0.921 mg/L	1 mg/L	92.1	75.0	125	----
Anions and Nutrients (QCLot: 730865)										
CG2215432-001	RG_FBLANK_WS_LAEMP_WS_EVO_2022-11_NP	bromide	24959-67-9	E235.Br-L	0.465 mg/L	0.5 mg/L	92.9	75.0	125	----
Anions and Nutrients (QCLot: 730867)										
CG2215432-001	RG_FBLANK_WS_LAEMP_WS_EVO_2022-11_NP	chloride	16887-00-6	E235.Cl-L	91.0 mg/L	100 mg/L	91.0	75.0	125	----
Anions and Nutrients (QCLot: 730869)										
CG2215432-001	RG_FBLANK_WS_LAEMP_WS_EVO_2022-11_NP	nitrate (as N)	14797-55-8	E235.NO3-L	2.28 mg/L	2.5 mg/L	91.0	75.0	125	----
Anions and Nutrients (QCLot: 730871)										
CG2215432-001	RG_FBLANK_WS_LAEMP_WS_EVO_2022-11_NP	nitrite (as N)	14797-65-0	E235.NO2-L	0.462 mg/L	0.5 mg/L	92.4	75.0	125	----
Anions and Nutrients (QCLot: 730872)										
CG2215432-001	RG_FBLANK_WS_LAEMP_WS_EVO_2022-11_NP	sulfate (as SO4)	14808-79-8	E235.SO4	90.1 mg/L	100 mg/L	90.1	75.0	125	----
Anions and Nutrients (QCLot: 730904)										
CG2215433-001	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0439 mg/L	0.05 mg/L	87.8	70.0	130	----
Anions and Nutrients (QCLot: 731193)										
CG2215417-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.45 mg/L	2.5 mg/L	98.0	70.0	130	----
Anions and Nutrients (QCLot: 731347)										
CG2215412-001	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0877 mg/L	0.1 mg/L	87.7	75.0	125	----
Organic / Inorganic Carbon (QCLot: 731145)										
CG2215412-001	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	4.88 mg/L	5 mg/L	97.6	70.0	130	----
Organic / Inorganic Carbon (QCLot: 731146)										
CG2215412-001	Anonymous	carbon, total organic [TOC]	----	E355-L	5.00 mg/L	5 mg/L	100	70.0	130	----
Total Metals (QCLot: 731179)										
CG2215417-002	Anonymous	chromium, total	7440-47-3	E420.Cr-L	0.402 mg/L	0.4 mg/L	100	70.0	130	----



Sub-Matrix: Water

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 731180)										
CG2215417-002	Anonymous	aluminum, total	7429-90-5	E420	1.95 mg/L	2 mg/L	97.4	70.0	130	----
		antimony, total	7440-36-0	E420	0.201 mg/L	0.2 mg/L	100	70.0	130	----
		arsenic, total	7440-38-2	E420	0.202 mg/L	0.2 mg/L	101	70.0	130	----
		barium, total	7440-39-3	E420	ND mg/L	0.2 mg/L	ND	70.0	130	----
		beryllium, total	7440-41-7	E420	0.391 mg/L	0.4 mg/L	97.8	70.0	130	----
		bismuth, total	7440-69-9	E420	0.0990 mg/L	0.1 mg/L	99.0	70.0	130	----
		boron, total	7440-42-8	E420	1.01 mg/L	1 mg/L	101	70.0	130	----
		cadmium, total	7440-43-9	E420	0.0394 mg/L	0.04 mg/L	98.6	70.0	130	----
		calcium, total	7440-70-2	E420	ND mg/L	40 mg/L	ND	70.0	130	----
		cobalt, total	7440-48-4	E420	0.196 mg/L	0.2 mg/L	97.8	70.0	130	----
		copper, total	7440-50-8	E420	0.199 mg/L	0.2 mg/L	99.6	70.0	130	----
		iron, total	7439-89-6	E420	20.1 mg/L	20 mg/L	100	70.0	130	----
		lead, total	7439-92-1	E420	0.191 mg/L	0.2 mg/L	95.4	70.0	130	----
		lithium, total	7439-93-2	E420	0.999 mg/L	1 mg/L	99.9	70.0	130	----
		magnesium, total	7439-95-4	E420	ND mg/L	10 mg/L	ND	70.0	130	----
		manganese, total	7439-96-5	E420	0.203 mg/L	0.2 mg/L	101	70.0	130	----
		molybdenum, total	7439-98-7	E420	0.201 mg/L	0.2 mg/L	101	70.0	130	----
		nickel, total	7440-02-0	E420	0.394 mg/L	0.4 mg/L	98.6	70.0	130	----
		potassium, total	7440-09-7	E420	40.0 mg/L	40 mg/L	100	70.0	130	----
		selenium, total	7782-49-2	E420	0.394 mg/L	0.4 mg/L	98.5	70.0	130	----
		silicon, total	7440-21-3	E420	97.8 mg/L	100 mg/L	97.8	70.0	130	----
		silver, total	7440-22-4	E420	0.0430 mg/L	0.04 mg/L	108	70.0	130	----
		sodium, total	7440-23-5	E420	18.7 mg/L	20 mg/L	93.6	70.0	130	----
		strontium, total	7440-24-6	E420	ND mg/L	0.2 mg/L	ND	70.0	130	----
		sulfur, total	7704-34-9	E420	176 mg/L	200 mg/L	87.9	70.0	130	----
		thallium, total	7440-28-0	E420	0.0389 mg/L	0.04 mg/L	97.3	70.0	130	----
		tin, total	7440-31-5	E420	0.196 mg/L	0.2 mg/L	98.0	70.0	130	----
		titanium, total	7440-32-6	E420	0.360 mg/L	0.4 mg/L	90.1	70.0	130	----
		uranium, total	7440-61-1	E420	0.0376 mg/L	0.04 mg/L	94.0	70.0	130	----
		vanadium, total	7440-62-2	E420	0.969 mg/L	1 mg/L	96.9	70.0	130	----
		zinc, total	7440-66-6	E420	3.83 mg/L	4 mg/L	95.8	70.0	130	----
Total Metals (QCLot: 731648)										
CG2215291-002	Anonymous	mercury, total	7439-97-6	E508	0.000888 mg/L	0.0001 mg/L	88.8	70.0	130	----
Dissolved Metals (QCLot: 731644)										
CG2215405-002	Anonymous	mercury, dissolved	7439-97-6	E509	0.000898 mg/L	0.0001 mg/L	89.8	70.0	130	----



Sub-Matrix: Water

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 731727)										
CG2215417-001	Anonymous	chromium, dissolved	7440-47-3	E421.Cr-L	0.414 mg/L	0.4 mg/L	103	70.0	130	----
Dissolved Metals (QCLot: 731728)										
CG2215417-001	Anonymous	aluminum, dissolved	7429-90-5	E421	1.97 mg/L	2 mg/L	98.6	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.205 mg/L	0.2 mg/L	102	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.204 mg/L	0.2 mg/L	102	70.0	130	----
		barium, dissolved	7440-39-3	E421	0.201 mg/L	0.2 mg/L	100	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.396 mg/L	0.4 mg/L	98.9	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.0972 mg/L	0.1 mg/L	97.2	70.0	130	----
		boron, dissolved	7440-42-8	E421	1.03 mg/L	1 mg/L	103	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.0400 mg/L	0.04 mg/L	100	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	40 mg/L	ND	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.200 mg/L	0.2 mg/L	100	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.197 mg/L	0.2 mg/L	98.6	70.0	130	----
		iron, dissolved	7439-89-6	E421	20.2 mg/L	20 mg/L	101	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.189 mg/L	0.2 mg/L	94.5	70.0	130	----
		lithium, dissolved	7439-93-2	E421	1.00 mg/L	1 mg/L	100	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	10 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E421	0.203 mg/L	0.2 mg/L	102	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.202 mg/L	0.2 mg/L	101	70.0	130	----
		nickel, dissolved	7440-02-0	E421	0.398 mg/L	0.4 mg/L	99.6	70.0	130	----
		potassium, dissolved	7440-09-7	E421	39.8 mg/L	40 mg/L	99.6	70.0	130	----
		selenium, dissolved	7782-49-2	E421	0.389 mg/L	0.4 mg/L	97.3	70.0	130	----
		silicon, dissolved	7440-21-3	E421	99.0 mg/L	100 mg/L	99.0	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.0424 mg/L	0.04 mg/L	106	70.0	130	----
		sodium, dissolved	7440-23-5	E421	ND mg/L	20 mg/L	ND	70.0	130	----
		strontium, dissolved	7440-24-6	E421	ND mg/L	0.2 mg/L	ND	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	ND mg/L	200 mg/L	ND	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.0388 mg/L	0.04 mg/L	97.1	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.198 mg/L	0.2 mg/L	99.1	70.0	130	----
		titanium, dissolved	7440-32-6	E421	0.359 mg/L	0.4 mg/L	89.8	70.0	130	----
		uranium, dissolved	7440-61-1	E421	0.0379 mg/L	0.04 mg/L	94.7	70.0	130	----
		vanadium, dissolved	7440-62-2	E421	1.00 mg/L	1 mg/L	100	70.0	130	----
		zinc, dissolved	7440-66-6	E421	3.94 mg/L	4 mg/L	98.4	70.0	130	----



COC ID: November EVO LAEMP 2022

TURNAROUND TIME:

PROJECT/CLIENT INFO

LABORATORY

Facility Name / Job# Regional EVO LAEMP

Lab Name ALS Calgary

Project Manager Mike Pope

Lab Contact Lyudmyla Shvets

Excel PDF EDD

Address 421 Pine Avenue

Address 2559 29 Street NE

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Country Canada

City Calgary

Province AB

Country Canada

Postal Code V0B 2G0

Postal Code T1Y 7B5

Phone Number 343-333-3905

Phone Number 1 403 407 1794

SAMPLE DETAILS

ANALYSIS REQUESTED

Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS REQUESTED						
								TECKCOAL-ROUTINE-VA	ALS_Package-DOC	ALS_Package-TKN/TOC	HG-T-U-CVAF-VA	HG-D-CVAF-VA	TECKCOAL-MET-T-VA	TECKCOAL-MET-D-VA
RG_FBLANK_WS_LAEMP_EVO_2022-11_NP	RG_M13	WS	No	11/2/2022	9:00	G	7	X	X	X	X	X	X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS

RELINQUISHED BY/AFFILIATION

DATE/TIME

ACCEPTED BY/AFFILIATION

ALS PO VPO00847030

Robin Valleau, Minnow Environmental

November 2, 2022

NB OF BOTTLES RETURNED/DESCRIPTION

Regular (default)	
Priority (2-3 business days) - 50% surcharge	X
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name

Robin Valleau

Mobile #

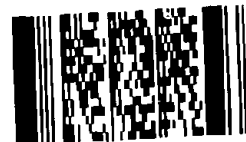
416-970-7535

Sampler's Signature

Date/Time

November 2, 2022

Environmental Division
Calgary
Work Order Reference
CG2215432



Telephone : +1 403 407 1800

Environmental Division
Calgary
Work Order Reference
CG2215432



CERTIFICATE OF ANALYSIS

<p>Work Order : CG2216634</p> <p>Client : Teck Coal Limited</p> <p>Contact : Mike Pope</p> <p>Address : 421 Pine Avenue Sparwood BC Canada V0B2G0</p> <p>Telephone : ----</p> <p>Project : REGIONAL EFFECTS PROGRAM</p> <p>PO : VPO00847030</p> <p>C-O-C number : December EVO LAEMP 2022</p> <p>Sampler : Liva Ramanjehimanana</p> <p>Site : ----</p> <p>Quote number : Teck Coal Master Quote</p> <p>No. of samples received : 11</p> <p>No. of samples analysed : 11</p>	<p>Page : 1 of 14</p> <p>Laboratory : Calgary - Environmental</p> <p>Account Manager : Lyudmyla Shvets</p> <p>Address : 2559 29th Street NE Calgary AB Canada T1Y 7B5</p> <p>Telephone : +1 403 407 1800</p> <p>Date Samples Received : 30-Nov-2022 09:55</p> <p>Date Analysis Commenced : 30-Nov-2022</p> <p>Issue Date : 02-Dec-2022 16:39</p>
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This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Anthony Calero	Supervisor - Inorganic	Inorganics, Calgary, Alberta
Elke Tabora		Inorganics, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Metals, Calgary, Alberta
Kevin Baxter	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Kevin Baxter	Team Leader - Inorganics	Metals, Calgary, Alberta
Mackenzie Lamoureux	Laboratory Analyst	Metals, Calgary, Alberta
Naeun Kim	Analyst	Metals, Calgary, Alberta
Ruifang Zheng	Analyst	Inorganics, Calgary, Alberta
Vladka Stamenova	Analyst	Inorganics, Calgary, Alberta



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

<i>Unit</i>	<i>Description</i>
-	no units
%	percent
µg/L	micrograms per litre
µS/cm	microsiemens per centimetre
meq/L	milliequivalents per litre
mg/L	milligrams per litre
mV	millivolts
NTU	nephelometric turbidity units
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Workorder Comments

Sample(s) 1-11: Sample Received Unpreserved. Results may be biased either high or low for indicated parameter(s).

Qualifiers

<i>Qualifier</i>	<i>Description</i>
DLDS	Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.
RRV	Reported result verified by repeat analysis.
TKNI	TKN result may be biased low due to Nitrate interference. Nitrate-N is > 10x TKN.



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_RIVER_WS _LAEMP_EVO_ 2022-12_N	RG_ERCKMD_ WS_LAEMP_EV O_2022-12_N	RG_ERCKDT_W S_LAEMP_EVO _2022-12_N	RG_ERCKUT_W S_LAEMP_EVO _2022-12_N	RG_GATEDP_W S_LAEMP_EVO _2022-12_N
Client sampling date / time					28-Nov-2022 13:00	28-Nov-2022 09:30	28-Nov-2022 13:00	29-Nov-2022 09:00	29-Nov-2022 13:30	
Analyte	CAS Number	Method	LOR	Unit	CG2216634-001	CG2216634-002	CG2216634-003	CG2216634-004	CG2216634-005	
					Result	Result	Result	Result	Result	
Physical Tests										
acidity (as CaCO3)	----	E283	2.0	mg/L	2.9	<2.0	4.0	7.5	<2.0	
alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	459	457	455	459	362	
alkalinity, bicarbonate (as HCO3)	71-52-3	E290	1.0	mg/L	560	558	555	560	442	
alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	18.2	
alkalinity, carbonate (as CO3)	3812-32-6	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	10.9	
alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
alkalinity, hydroxide (as OH)	14280-30-9	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	459	457	455	459	380	
conductivity	----	E100	2.0	µS/cm	1870	1860	1880	1870	1970	
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	1290	1210	1270	1370	1340	
oxidation-reduction potential [ORP]	----	E125	0.10	mV	365	342	345	356	351	
pH	----	E108	0.10	pH units	8.05	8.23	8.05	7.98	8.36	
solids, total dissolved [TDS]	----	E162	10	mg/L	1380	1580	1430	1570	1650	
solids, total suspended [TSS]	----	E160-L	1.0	mg/L	1.2	2.9	2.1	1.5	1.2	
turbidity	----	E121	0.10	NTU	0.74	0.94	0.72	0.16	0.64	
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0390	0.0072	0.0406	<0.0050	0.119	
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	0.335	
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	7.77	9.54	7.61	5.94	13.3	
fluoride	16984-48-8	E235.F	0.020	mg/L	0.166	0.237	0.175	0.137	0.291	
Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	1.85	1.29	1.79	1.51 ^{TKN}	1.03	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	12.6	9.60	12.4	17.5	7.45	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	0.0077	0.0300	0.0070	<0.0050 ^{DLDS}	0.0102	
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0144	0.0111	0.0140	0.0214	0.0012	
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0168	0.0112	0.0153	0.0208	0.0057	
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	828	882	835	815	965	
Organic / Inorganic Carbon										
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	<0.50	0.62	0.60	<0.50	0.76	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_RIVER_WS _LAEMP_EVO_ 2022-12_N	RG_ERCKMD_ WS_LAEMP_EV O_2022-12_N	RG_ERCKDT_W S_LAEMP_EVO _2022-12_N	RG_ERCKUT_W S_LAEMP_EVO _2022-12_N	RG_GATEDP_W S_LAEMP_EVO _2022-12_N
Client sampling date / time					28-Nov-2022 13:00	28-Nov-2022 09:30	28-Nov-2022 13:00	29-Nov-2022 09:00	29-Nov-2022 13:30	
Analyte	CAS Number	Method	LOR	Unit	CG2216634-001	CG2216634-002	CG2216634-003	CG2216634-004	CG2216634-005	
					Result	Result	Result	Result	Result	
Organic / Inorganic Carbon										
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	<0.50	0.75	0.51	<0.50	0.76	
Ion Balance										
anion sum	----	EC101	0.10	meq/L	27.5	28.5	27.6	27.6	28.6	
cation sum	----	EC101	0.10	meq/L	26.0	24.6	25.7	27.6	27.4	
ion balance (cations/anions)	----	EC101	0.010	%	94.5	86.3	93.1	100	95.8	
ion balance (APHA)	----	EC101	0.01	%	-2.80	-7.34	-3.56	<0.01	-2.14	
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L	<0.0060 ^{DLDS}	<0.0060 ^{DLDS}	<0.0060 ^{DLDS}	<0.0060 ^{DLDS}	<0.0060 ^{DLDS}	
antimony, total	7440-36-0	E420	0.00010	mg/L	<0.00020 ^{DLDS}	<0.00020 ^{DLDS}	0.00022	<0.00020 ^{DLDS}	0.00048	
arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00026	0.00032	0.00033	0.00022	0.00031	
barium, total	7440-39-3	E420	0.00010	mg/L	0.0469	0.0392	0.0482	0.0608	0.356	
beryllium, total	7440-41-7	E420	0.020	µg/L	<0.040 ^{DLDS}	<0.040 ^{DLDS}	<0.040 ^{DLDS}	<0.040 ^{DLDS}	<0.040 ^{DLDS}	
bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000100 ^{DLDS}	<0.000100 ^{DLDS}	<0.000100 ^{DLDS}	<0.000100 ^{DLDS}	<0.000100 ^{DLDS}	
boron, total	7440-42-8	E420	0.010	mg/L	<0.020 ^{DLDS}	0.027	0.021	<0.020 ^{DLDS}	0.040	
cadmium, total	7440-43-9	E420	0.0050	µg/L	0.193	0.205	0.203	0.0811	0.112	
calcium, total	7440-70-2	E420	0.050	mg/L	240	248	250	248	250	
chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	<0.00020 ^{DLDS}	<0.00020 ^{DLDS}	<0.00020 ^{DLDS}	0.00022	<0.00020 ^{DLDS}	
cobalt, total	7440-48-4	E420	0.10	µg/L	4.12	5.82	4.45	<0.20 ^{DLDS}	<0.20 ^{DLDS}	
copper, total	7440-50-8	E420	0.00050	mg/L	<0.00100 ^{DLDS}	<0.00100 ^{DLDS}	<0.00100 ^{DLDS}	<0.00100 ^{DLDS}	<0.00100 ^{DLDS}	
iron, total	7439-89-6	E420	0.010	mg/L	0.063	0.076	0.070	<0.020 ^{DLDS}	0.064	
lead, total	7439-92-1	E420	0.000050	mg/L	<0.000100 ^{DLDS}	<0.000100 ^{DLDS}	<0.000100 ^{DLDS}	<0.000100 ^{DLDS}	<0.000100 ^{DLDS}	
lithium, total	7439-93-2	E420	0.0010	mg/L	0.0458	0.0704	0.0508	0.0276	0.122	
magnesium, total	7439-95-4	E420	0.0050	mg/L	160	169	167	159	184	
manganese, total	7439-96-5	E420	0.00010	mg/L	0.114	0.153	0.121	<0.00020 ^{DLDS}	0.00485	
mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.00534	0.00911	0.00592	0.00101	0.0152	
nickel, total	7440-02-0	E420	0.00050	mg/L	0.0167	0.0286	0.0184	0.00102	0.0323	
potassium, total	7440-09-7	E420	0.050	mg/L	3.20	3.88	3.36	2.67	5.05	
selenium, total	7782-49-2	E420	0.050	µg/L	117	88.4	119	161	71.5	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_RIVER_WS _LAEMP_EVO_ 2022-12_N	RG_ERCKMD_ WS_LAEMP_EV O_2022-12_N	RG_ERCKDT_W S_LAEMP_EVO _2022-12_N	RG_ERCKUT_W S_LAEMP_EVO _2022-12_N	RG_GATEDP_W S_LAEMP_EVO _2022-12_N
Client sampling date / time					28-Nov-2022 13:00	28-Nov-2022 09:30	28-Nov-2022 13:00	29-Nov-2022 09:00	29-Nov-2022 13:30	
Analyte	CAS Number	Method	LOR	Unit	CG2216634-001	CG2216634-002	CG2216634-003	CG2216634-004	CG2216634-005	
					Result	Result	Result	Result	Result	
Total Metals										
silicon, total	7440-21-3	E420	0.10	mg/L	3.67	3.50	3.80	4.08	2.83	
silver, total	7440-22-4	E420	0.000010	mg/L	<0.000020 DLDS	<0.000020 DLDS	<0.000020 DLDS	<0.000020 DLDS	<0.000020 DLDS	
sodium, total	7440-23-5	E420	0.050	mg/L	5.34	7.40	5.58	2.95	10.8	
strontium, total	7440-24-6	E420	0.00020	mg/L	0.260	0.322	0.284	0.209	0.577	
sulfur, total	7704-34-9	E420	0.50	mg/L	280	294	288	276	343	
thallium, total	7440-28-0	E420	0.000010	mg/L	0.000038	0.000050	0.000038	<0.000020 DLDS	0.000043	
tin, total	7440-31-5	E420	0.00010	mg/L	<0.00020 DLDS	<0.00020 DLDS	<0.00020 DLDS	<0.00020 DLDS	<0.00020 DLDS	
titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00060 DLDS	<0.00060 DLDS	<0.00060 DLDS	<0.00060 DLDS	<0.00060 DLDS	
uranium, total	7440-61-1	E420	0.000010	mg/L	0.00857	0.0102	0.00921	0.00797	0.0120	
vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00100 DLDS	<0.00100 DLDS	<0.00100 DLDS	<0.00100 DLDS	<0.00100 DLDS	
zinc, total	7440-66-6	E420	0.0030	mg/L	0.0066	0.0159	0.0085	<0.0060 DLDS	0.0063	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	<0.0020 DLDS	<0.0020 DLDS	<0.0020 DLDS	<0.0020 DLDS	<0.0020 DLDS	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00020	<0.00020 DLDS	<0.00020 DLDS	0.00020	0.00044	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00036	0.00029	0.00032	0.00032	0.00033	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0472	0.0360	0.0455	0.0660	0.366	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.040 DLDS	<0.040 DLDS	<0.040 DLDS	<0.040 DLDS	<0.040 DLDS	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000100 DLDS	<0.000100 DLDS	<0.000100 DLDS	<0.000100 DLDS	<0.000100 DLDS	
boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.020 DLDS	0.025	0.020	<0.020 DLDS	0.039	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.188	0.199	0.149	0.107	0.0931	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	250	227	254	273	244	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00020 DLDS	<0.00020 DLDS	<0.00020 DLDS	0.00022	<0.00020 DLDS	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	4.23	5.48	4.14	<0.20 DLDS	<0.20 DLDS	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00040 DLDS	<0.00040 DLDS	<0.00040 DLDS	<0.00040 DLDS	<0.00040 DLDS	
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.020 DLDS	<0.020 DLDS	<0.020 DLDS	<0.020 DLDS	<0.020 DLDS	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000100 DLDS	<0.000100 DLDS	<0.000100 DLDS	<0.000100 DLDS	<0.000100 DLDS	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0511	0.0666	0.0506	0.0309	0.119	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	161	157	155	167	178	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.111	0.139	0.110	<0.00020 DLDS	0.00436	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_RIVER_WS _LAEMP_EVO_ 2022-12_N	RG_ERCKMD_ WS_LAEMP_EV O_2022-12_N	RG_ERCKDT_W S_LAEMP_EVO _2022-12_N	RG_ERCKUT_W S_LAEMP_EVO _2022-12_N	RG_GATEDP_W S_LAEMP_EVO _2022-12_N
Client sampling date / time					28-Nov-2022 13:00	28-Nov-2022 09:30	28-Nov-2022 13:00	29-Nov-2022 09:00	29-Nov-2022 13:30	
Analyte	CAS Number	Method	LOR	Unit	CG2216634-001	CG2216634-002	CG2216634-003	CG2216634-004	CG2216634-005	
					Result	Result	Result	Result	Result	
Dissolved Metals										
mercury, dissolved	7439-97-6	E509	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00548	0.00770	0.00565	0.00106	0.0144	
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.0170	0.0269	0.0178	<0.00100 ^{DLDS}	0.0311	
potassium, dissolved	7440-09-7	E421	0.050	mg/L	3.29	3.67	3.16	2.80	5.01	
selenium, dissolved	7782-49-2	E421	0.050	µg/L	126	81.3	126	177	73.1	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	3.57	3.11	3.57	4.08	2.62	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000020 ^{DLDS}	<0.000020 ^{DLDS}	<0.000020 ^{DLDS}	<0.000020 ^{DLDS}	<0.000020 ^{DLDS}	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	5.35	6.98	5.23	3.09	10.5	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.271	0.284	0.274	0.218	0.560	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	281	255	280	286	314	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	0.000031	0.000049	0.000033	<0.000020 ^{DLDS}	0.000044	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00020 ^{DLDS}	<0.00020 ^{DLDS}	<0.00020 ^{DLDS}	<0.00020 ^{DLDS}	<0.00020 ^{DLDS}	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00060 ^{DLDS}	<0.00060 ^{DLDS}	<0.00060 ^{DLDS}	<0.00060 ^{DLDS}	<0.00060 ^{DLDS}	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00878	0.00862	0.00871	0.00827	0.0112	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00100 ^{DLDS}	<0.00100 ^{DLDS}	<0.00100 ^{DLDS}	<0.00100 ^{DLDS}	<0.00100 ^{DLDS}	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0083	0.0124	0.0083	0.0025	0.0056	
dissolved mercury filtration location	----	EP509	-	-	Field	Field	Field	Field	Field	
dissolved metals filtration location	----	EP421	-	-	Field	Field	Field	Field	Field	

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_GATE_WS_ LAEMP_EVO_2 022-12_N	RG_BOCK_WS_ LAEMP_EVO_2 022-12_N	RG_BOCKRD_ WS_LAEMP_EV O_2022-12_N	RG_RIVER_2_W S_LAEMP_EVO _2022-12_N	RG_FBLANK_W S_LAEMP_EVO _2022-12_N
Client sampling date / time					29-Nov-2022 13:45	29-Nov-2022 15:00	29-Nov-2022 12:20	29-Nov-2022 13:30	28-Nov-2022 13:00	
Analyte	CAS Number	Method	LOR	Unit	CG2216634-006	CG2216634-007	CG2216634-008	CG2216634-009	CG2216634-010	
					Result	Result	Result	Result	Result	
Physical Tests										
acidity (as CaCO3)	----	E283	2.0	mg/L	<2.0	<2.0	<2.0	<2.0	<2.0	
alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	379	378	388	368	<1.0	
alkalinity, bicarbonate (as HCO3)	71-52-3	E290	1.0	mg/L	462	462	473	448	<1.0	
alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	15.8	<1.0	18.8	17.8	<1.0	
alkalinity, carbonate (as CO3)	3812-32-6	E290	1.0	mg/L	9.5	<1.0	11.3	10.7	<1.0	
alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
alkalinity, hydroxide (as OH)	14280-30-9	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	395	378	407	385	<1.0	
conductivity	----	E100	2.0	µS/cm	1950	1960	1940	1950	<2.0	
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	1310	1350	1260	1280	<0.50	
oxidation-reduction potential [ORP]	----	E125	0.10	mV	348	351	347	338	480	
pH	----	E108	0.10	pH units	8.33	8.21	8.34	8.32	5.26	
solids, total dissolved [TDS]	----	E162	10	mg/L	1750	1730	1640	1760	<10	
solids, total suspended [TSS]	----	E160-L	1.0	mg/L	2.6	5.4	1.4	2.2	<1.0	
turbidity	----	E121	0.10	NTU	1.18	2.49	0.68	0.71	<0.10	
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.133	0.0459	0.124	0.120	<0.0050	
bromide	24959-67-9	E235.Br-L	0.050	mg/L	0.333	0.372	0.379	0.325	<0.050	
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	13.4	15.9	14.2	13.0	<0.10	
fluoride	16984-48-8	E235.F	0.020	mg/L	0.298	0.263	0.310	0.289	<0.020	
Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	1.87	1.66	1.00	2.29	<0.050	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	7.17	8.34	7.20	7.25	<0.0050	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	0.0085	0.0161	<0.0050 ^{DLDS}	0.0098	<0.0010	
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0014	<0.0010	0.0012	<0.0010	<0.0010	
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0057	0.0043	0.0051	0.0047	<0.0020	
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	961	857	1000	958	<0.30	
Organic / Inorganic Carbon										
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	0.72	0.59	0.58	0.72	<0.50	
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	0.90	0.58	0.55	0.66	<0.50	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_GATE_WS_ LAEMP_EVO_2 022-12_N	RG_BOCK_WS_ LAEMP_EVO_2 022-12_N	RG_BOCKRD_ WS_LAEMP_EV O_2022-12_N	RG_RIVER_2_W S_LAEMP_EVO _2022-12_N	RG_FBLANK_W S_LAEMP_EVO _2022-12_N
Client sampling date / time					29-Nov-2022 13:45	29-Nov-2022 15:00	29-Nov-2022 12:20	29-Nov-2022 13:30	28-Nov-2022 13:00	
Analyte	CAS Number	Method	LOR	Unit	CG2216634-006	CG2216634-007	CG2216634-008	CG2216634-009	CG2216634-010	
					Result	Result	Result	Result	Result	
Ion Balance										
anion sum	----	EC101	0.10	meq/L	28.8	26.4	29.9	28.5	<0.10	
cation sum	----	EC101	0.10	meq/L	26.8	27.6	25.8	26.1	<0.10	
ion balance (cations/anions)	----	EC101	0.010	%	93.0	104	86.3	91.6	100	
ion balance (APHA)	----	EC101	0.01	%	-3.60	2.22	-7.36	-4.40	<0.01	
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L	<0.0060 DLDS	<0.0060 DLDS	<0.0060 DLDS	<0.0060 DLDS	<0.0030	
antimony, total	7440-36-0	E420	0.00010	mg/L	0.00044	0.00054	0.00046	0.00046	<0.00010	
arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00036	0.00028	0.00031	0.00028	<0.00010	
barium, total	7440-39-3	E420	0.00010	mg/L	0.351	0.170	0.345	0.354	<0.00010	
beryllium, total	7440-41-7	E420	0.020	µg/L	<0.040 DLDS	<0.040 DLDS	<0.040 DLDS	<0.040 DLDS	<0.020	
bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000100 DLDS	<0.000100 DLDS	<0.000100 DLDS	<0.000100 DLDS	<0.000050	
boron, total	7440-42-8	E420	0.010	mg/L	0.041	0.045	0.042	0.040	<0.010	
cadmium, total	7440-43-9	E420	0.0050	µg/L	0.149	0.0409	0.134	0.0981	<0.0050	
calcium, total	7440-70-2	E420	0.050	mg/L	238	239	242	253	<0.050	
chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	<0.00020 DLDS	<0.00020 DLDS	<0.00020 DLDS	<0.00020 DLDS	<0.00010	
cobalt, total	7440-48-4	E420	0.10	µg/L	<0.20 DLDS	<0.20 DLDS	<0.20 DLDS	<0.20 DLDS	<0.10	
copper, total	7440-50-8	E420	0.00050	mg/L	<0.00100 DLDS	<0.00100 DLDS	<0.00100 DLDS	<0.00100 DLDS	<0.00050	
iron, total	7439-89-6	E420	0.010	mg/L	0.067	<0.020 DLDS	0.075	0.060	<0.010	
lead, total	7439-92-1	E420	0.000050	mg/L	<0.000100 DLDS	<0.000100 DLDS	<0.000100 DLDS	<0.000100 DLDS	<0.000050	
lithium, total	7439-93-2	E420	0.0010	mg/L	0.124	0.134	0.121	0.122	<0.0010	
magnesium, total	7439-95-4	E420	0.0050	mg/L	177	188	179	182	<0.0050	
manganese, total	7439-96-5	E420	0.00010	mg/L	0.00468	0.00096	0.00483	0.00491	<0.00010	
mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.0151	0.0160	0.0161	0.0155	<0.000050	
nickel, total	7440-02-0	E420	0.00050	mg/L	0.0323	0.0293	0.0341	0.0320	<0.00050	
potassium, total	7440-09-7	E420	0.050	mg/L	4.86	5.40	4.97	4.93	<0.050	
selenium, total	7782-49-2	E420	0.050	µg/L	68.4	81.7	63.0	67.6	<0.050	
silicon, total	7440-21-3	E420	0.10	mg/L	2.78	2.93	2.79	2.84	<0.10	
silver, total	7440-22-4	E420	0.000010	mg/L	<0.000020 DLDS	<0.000020 DLDS	<0.000020 DLDS	<0.000020 DLDS	<0.000010	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_GATE_WS_ LAEMP_EVO_2 022-12_N	RG_BOCK_WS_ LAEMP_EVO_2 022-12_N	RG_BOCKRD_ WS_LAEMP_EV O_2022-12_N	RG_RIVER_2_W S_LAEMP_EVO _2022-12_N	RG_FBLANK_W S_LAEMP_EVO _2022-12_N
Client sampling date / time					29-Nov-2022 13:45	29-Nov-2022 15:00	29-Nov-2022 12:20	29-Nov-2022 13:30	28-Nov-2022 13:00	
Analyte	CAS Number	Method	LOR	Unit	CG2216634-006	CG2216634-007	CG2216634-008	CG2216634-009	CG2216634-010	
					Result	Result	Result	Result	Result	
Total Metals										
sodium, total	7440-23-5	E420	0.050	mg/L	10.6	11.4	10.7	10.7	<0.050	
strontium, total	7440-24-6	E420	0.00020	mg/L	0.561	0.628	0.571	0.588	<0.00020	
sulfur, total	7704-34-9	E420	0.50	mg/L	331	349	342	338	<0.50	
thallium, total	7440-28-0	E420	0.000010	mg/L	0.000040	0.000038	0.000045	0.000045	<0.000010	
tin, total	7440-31-5	E420	0.00010	mg/L	<0.00020 DLDS	<0.00020 DLDS	<0.00020 DLDS	<0.00020 DLDS	<0.00010	
titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00060 DLDS	<0.00060 DLDS	<0.00060 DLDS	<0.00060 DLDS	<0.00030	
uranium, total	7440-61-1	E420	0.000010	mg/L	0.0117	0.0126	0.0127	0.0122	<0.000010	
vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00100 DLDS	<0.00100 DLDS	<0.00100 DLDS	<0.00100 DLDS	<0.00050	
zinc, total	7440-66-6	E420	0.0030	mg/L	0.0064	<0.0060 DLDS	0.0072	<0.0060 DLDS	<0.0030	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0020	<0.0020 DLDS	<0.0020 DLDS	<0.0020 DLDS	<0.0010	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00043	0.00054	0.00042	0.00043	<0.00010	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00037	0.00026	0.00032	0.00026	<0.00010	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.365	0.167	0.326	0.341	<0.00010	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.040 DLDS	<0.040 DLDS	<0.040 DLDS	<0.040 DLDS	<0.020	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000100 DLDS	<0.000100 DLDS	<0.000100 DLDS	<0.000100 DLDS	<0.000050	
boron, dissolved	7440-42-8	E421	0.010	mg/L	0.040	0.044	0.039	0.040	<0.010	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.108	0.0337	0.126	0.106	<0.0050	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	243	243	234	236	<0.050	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00020 DLDS	<0.00020 DLDS	<0.00020 DLDS	<0.00020 DLDS	<0.00010	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	<0.20 DLDS	<0.20 DLDS	<0.20 DLDS	<0.20 DLDS	<0.10	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00040 DLDS	<0.00040 DLDS	<0.00040 DLDS	<0.00040 DLDS	<0.00020	
iron, dissolved	7439-89-6	E421	0.010	mg/L	0.027	<0.020 DLDS	0.048	<0.020 DLDS	<0.010	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000100 DLDS	<0.000100 DLDS	<0.000100 DLDS	<0.000100 DLDS	<0.000050	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.122	0.136	0.122	0.127	<0.0010	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	171	180	165	168	<0.0050	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00478	0.00080	0.00429	0.00439	<0.00010	
mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.0147	0.0153	0.0146	0.0145	<0.000050	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_GATE_WS_ LAEMP_EVO_2 022-12_N	RG_BOCK_WS_ LAEMP_EVO_2 022-12_N	RG_BOCKRD_ WS_LAEMP_EV O_2022-12_N	RG_RIVER_2_W S_LAEMP_EVO _2022-12_N	RG_FBLANK_W S_LAEMP_EVO _2022-12_N
Client sampling date / time					29-Nov-2022 13:45	29-Nov-2022 15:00	29-Nov-2022 12:20	29-Nov-2022 13:30	28-Nov-2022 13:00	
Analyte	CAS Number	Method	LOR	Unit	CG2216634-006	CG2216634-007	CG2216634-008	CG2216634-009	CG2216634-010	
					Result	Result	Result	Result	Result	
Dissolved Metals										
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.0305	0.0273	0.0313	0.0289	<0.00050	
potassium, dissolved	7440-09-7	E421	0.050	mg/L	4.71	5.19	4.72	4.74	<0.050	
selenium, dissolved	7782-49-2	E421	0.050	µg/L	69.4	81.4	59.2	73.1	<0.050	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	2.62	2.72	2.40	2.54	<0.050	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000020 ^{DLDS}	<0.000020 ^{DLDS}	<0.000020 ^{DLDS}	<0.000020 ^{DLDS}	<0.000010	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	10.2	11.4	10.8	9.83	<0.050	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.566	0.626	0.537	0.551	<0.00020	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	318	328	300	310	<0.50	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	0.000042	0.000036	0.000043	0.000040	<0.000010	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00020 ^{DLDS}	<0.00020 ^{DLDS}	<0.00020 ^{DLDS}	<0.00020 ^{DLDS}	<0.00010	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00060 ^{DLDS}	<0.00060 ^{DLDS}	<0.00060 ^{DLDS}	<0.00060 ^{DLDS}	<0.00030	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.0115	0.0121	0.0113	0.0114	<0.000010	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00100 ^{DLDS}	<0.00100 ^{DLDS}	<0.00100 ^{DLDS}	<0.00100 ^{DLDS}	<0.00050	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0056	0.0025	0.0078	0.0049	<0.0010	
dissolved mercury filtration location	----	EP509	-	-	Field	Field	Field	Field	Field	
dissolved metals filtration location	----	EP421	-	-	Field	Field	Field	Field	Field	

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_TRIP_WS_L AEMP_EVO_20 22-12_N	----	----	----	----
Client sampling date / time					28-Nov-2022 13:00	----	----	----	----	
Analyte	CAS Number	Method	LOR	Unit	CG2216634-011	-----	-----	-----	-----	
					Result	----	----	----	----	
Physical Tests										
acidity (as CaCO3)	----	E283	2.0	mg/L	<2.0	----	----	----	----	
alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	----	----	----	----	
alkalinity, bicarbonate (as HCO3)	71-52-3	E290	1.0	mg/L	<1.0	----	----	----	----	
alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	----	----	----	----	
alkalinity, carbonate (as CO3)	3812-32-6	E290	1.0	mg/L	<1.0	----	----	----	----	
alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	----	----	----	----	
alkalinity, hydroxide (as OH)	14280-30-9	E290	1.0	mg/L	<1.0	----	----	----	----	
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	<1.0	----	----	----	----	
conductivity	----	E100	2.0	µS/cm	<2.0	----	----	----	----	
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	<0.50	----	----	----	----	
oxidation-reduction potential [ORP]	----	E125	0.10	mV	526	----	----	----	----	
pH	----	E108	0.10	pH units	5.41	----	----	----	----	
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----	----	----	----	
solids, total suspended [TSS]	----	E160-L	1.0	mg/L	<1.0	----	----	----	----	
turbidity	----	E121	0.10	NTU	<0.10	----	----	----	----	
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0241 ^{RRV}	----	----	----	----	
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	----	----	----	----	
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	<0.10	----	----	----	----	
fluoride	16984-48-8	E235.F	0.020	mg/L	<0.020	----	----	----	----	
Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	<0.050	----	----	----	----	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	<0.0050	----	----	----	----	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	----	----	----	----	
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	----	----	----	----	
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	<0.0020	----	----	----	----	
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	<0.30	----	----	----	----	
Organic / Inorganic Carbon										
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	<0.50	----	----	----	----	
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	<0.50	----	----	----	----	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_TRIP_WS_L AEMP_EVO_20 22-12_N	----	----	----	----
Client sampling date / time					28-Nov-2022 13:00	----	----	----	----	
Analyte	CAS Number	Method	LOR	Unit	CG2216634-011	-----	-----	-----	-----	
					Result	----	----	----	----	
Ion Balance										
anion sum	----	EC101	0.10	meq/L	<0.10	----	----	----	----	
cation sum	----	EC101	0.10	meq/L	<0.10	----	----	----	----	
ion balance (cations/anions)	----	EC101	0.010	%	100	----	----	----	----	
ion balance (APHA)	----	EC101	0.01	%	<0.01	----	----	----	----	
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L	<0.0030	----	----	----	----	
antimony, total	7440-36-0	E420	0.00010	mg/L	<0.00010	----	----	----	----	
arsenic, total	7440-38-2	E420	0.00010	mg/L	<0.00010	----	----	----	----	
barium, total	7440-39-3	E420	0.00010	mg/L	<0.00010	----	----	----	----	
beryllium, total	7440-41-7	E420	0.020	µg/L	<0.020	----	----	----	----	
bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	----	----	----	----	
boron, total	7440-42-8	E420	0.010	mg/L	<0.010	----	----	----	----	
cadmium, total	7440-43-9	E420	0.0050	µg/L	<0.0050	----	----	----	----	
calcium, total	7440-70-2	E420	0.050	mg/L	<0.050	----	----	----	----	
chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	<0.00010	----	----	----	----	
cobalt, total	7440-48-4	E420	0.10	µg/L	<0.10	----	----	----	----	
copper, total	7440-50-8	E420	0.00050	mg/L	<0.00050	----	----	----	----	
iron, total	7439-89-6	E420	0.010	mg/L	<0.010	----	----	----	----	
lead, total	7439-92-1	E420	0.000050	mg/L	<0.000050	----	----	----	----	
lithium, total	7439-93-2	E420	0.0010	mg/L	<0.0010	----	----	----	----	
magnesium, total	7439-95-4	E420	0.0050	mg/L	<0.0050	----	----	----	----	
manganese, total	7439-96-5	E420	0.00010	mg/L	<0.00010	----	----	----	----	
mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	----	----	----	----	
molybdenum, total	7439-98-7	E420	0.000050	mg/L	<0.000050	----	----	----	----	
nickel, total	7440-02-0	E420	0.00050	mg/L	<0.00050	----	----	----	----	
potassium, total	7440-09-7	E420	0.050	mg/L	<0.050	----	----	----	----	
selenium, total	7782-49-2	E420	0.050	µg/L	<0.050	----	----	----	----	
silicon, total	7440-21-3	E420	0.10	mg/L	<0.10	----	----	----	----	
silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	----	----	----	----	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_TRIP_WS_L AEMP_EVO_20 22-12_N	----	----	----	----
Client sampling date / time					28-Nov-2022 13:00	----	----	----	----	
Analyte	CAS Number	Method	LOR	Unit	CG2216634-011	-----	-----	-----	-----	
					Result	----	----	----	----	
Total Metals										
sodium, total	7440-23-5	E420	0.050	mg/L	<0.050	----	----	----	----	
strontium, total	7440-24-6	E420	0.00020	mg/L	<0.00020	----	----	----	----	
sulfur, total	7704-34-9	E420	0.50	mg/L	<0.50	----	----	----	----	
thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	----	----	----	----	
tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	----	----	----	----	
titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00030	----	----	----	----	
uranium, total	7440-61-1	E420	0.000010	mg/L	<0.000010	----	----	----	----	
vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	----	----	----	----	
zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	----	----	----	----	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	<0.0010	----	----	----	----	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00010	----	----	----	----	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	<0.00010	----	----	----	----	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	<0.00010	----	----	----	----	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.020	----	----	----	----	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	----	----	----	----	
boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.010	----	----	----	----	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	<0.0050	----	----	----	----	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	<0.050	----	----	----	----	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00010	----	----	----	----	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	<0.10	----	----	----	----	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00020	----	----	----	----	
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	----	----	----	----	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	----	----	----	----	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	<0.0010	----	----	----	----	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	<0.0050	----	----	----	----	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	<0.00010	----	----	----	----	
mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	----	----	----	----	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	<0.000050	----	----	----	----	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_TRIP_WS_L AEMP_EVO_20 22-12_N	----	----	----	----
Client sampling date / time					28-Nov-2022 13:00	----	----	----	----	
Analyte	CAS Number	Method	LOR	Unit	CG2216634-011	-----	-----	-----	-----	
					Result	----	----	----	----	
Dissolved Metals										
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	<0.00050	----	----	----	----	
potassium, dissolved	7440-09-7	E421	0.050	mg/L	<0.050	----	----	----	----	
selenium, dissolved	7782-49-2	E421	0.050	µg/L	<0.050	----	----	----	----	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	<0.050	----	----	----	----	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	----	----	----	----	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	<0.050	----	----	----	----	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	<0.00020	----	----	----	----	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	<0.50	----	----	----	----	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	----	----	----	----	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	----	----	----	----	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	----	----	----	----	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	<0.000010	----	----	----	----	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	----	----	----	----	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0010	----	----	----	----	
dissolved mercury filtration location	----	EP509	-	-	Field	----	----	----	----	
dissolved metals filtration location	----	EP421	-	-	Field	----	----	----	----	

Please refer to the General Comments section for an explanation of any qualifiers detected.



QUALITY CONTROL INTERPRETIVE REPORT

<p>Work Order : CG2216634</p> <p>Client : Teck Coal Limited</p> <p>Contact : Mike Pope</p> <p>Address : 421 Pine Avenue Sparwood BC Canada V0B2G0</p> <p>Telephone : ----</p> <p>Project : REGIONAL EFFECTS PROGRAM</p> <p>PO : VPO00847030</p> <p>C-O-C number : December EVO LAEMP 2022</p> <p>Sampler : Liva Ramanjehimanana</p> <p>Site : ----</p> <p>Quote number : Teck Coal Master Quote</p> <p>No. of samples received : 11</p> <p>No. of samples analysed : 11</p>	<p>Page : 1 of 42</p> <p>Laboratory : Calgary - Environmental</p> <p>Account Manager : Lyudmyla Shvets</p> <p>Address : 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5</p> <p>Telephone : +1 403 407 1800</p> <p>Date Samples Received : 30-Nov-2022 09:55</p> <p>Issue Date : 02-Dec-2022 16:40</p>
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This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

- Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
- CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
- DQO: Data Quality Objective.
- LOR: Limit of Reporting (detection limit).
- RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_BOCK_WS_LAEMP_EVO_2022-12_N	E298	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	1 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_BOCKRD_WS_LAEMP_EVO_2022-12_N	E298	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	1 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-12_N	E298	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	1 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_GATE_WS_LAEMP_EVO_2022-12_N	E298	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	1 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_GATEDP_WS_LAEMP_EVO_2022-12_N	E298	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	1 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_RIVER_2_WS_LAEMP_EVO_2022-12_N	E298	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	1 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-12_N	E298	28-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	2 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-12_N	E298	28-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_FBLANK_WS_LAEMP_EVO_2022-12_N	E298	28-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-12_N	E298	28-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_TRIP_WS_LAEMP_EVO_2022-12_N	E298	28-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-12_N	E235.Br-L	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	1 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-12_N	E235.Br-L	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	1 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-12_N	E235.Br-L	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	1 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_GATE_WS_LAEMP_EVO_2022-12_N	E235.Br-L	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	1 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-12_N	E235.Br-L	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	1 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_RIVER_2_WS_LAEMP_EVO_2022-12_N	E235.Br-L	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	1 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-12_N	E235.Br-L	28-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-12_N	E235.Br-L	28-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-12_N	E235.Br-L	28-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-12_N	E235.Br-L	28-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-12_N	E235.Br-L	28-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-12_N	E235.Cl-L	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	1 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-12_N	E235.Cl-L	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	1 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-12_N	E235.Cl-L	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	1 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_GATE_WS_LAEMP_EVO_2022-12_N	E235.CI-L	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	1 days	✔
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-12_N	E235.CI-L	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	1 days	✔
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_RIVER_2_WS_LAEMP_EVO_2022-12_N	E235.CI-L	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	1 days	✔
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-12_N	E235.CI-L	28-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	2 days	✔
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-12_N	E235.CI-L	28-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	2 days	✔
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-12_N	E235.CI-L	28-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	2 days	✔
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_RIVER_WS_LAEMP_EVO_2022-12_N	E235.CI-L	28-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	2 days	✔
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_TRIP_WS_LAEMP_EVO_2022-12_N	E235.CI-L	28-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	2 days	✔
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE RG_BOCK_WS_LAEMP_EVO_2022-12_N	E378-U	29-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	3 days	2 days	✔



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-12_N	E378-U	29-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	3 days	2 days	✔
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-12_N	E378-U	29-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	3 days	2 days	✔
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE RG_GATE_WS_LAEMP_EVO_2022-12_N	E378-U	29-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	3 days	2 days	✔
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-12_N	E378-U	29-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	3 days	2 days	✔
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE RG_RIVER_2_WS_LAEMP_EVO_2022-12_N	E378-U	29-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	3 days	2 days	✔
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-12_N	E378-U	28-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	3 days	3 days	✔
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-12_N	E378-U	28-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	3 days	3 days	✔



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-12_N	E378-U	28-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	3 days	3 days	✔
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE RG_RIVER_WS_LAEMP_EVO_2022-12_N	E378-U	28-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	3 days	3 days	✔
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE RG_TRIP_WS_LAEMP_EVO_2022-12_N	E378-U	28-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	3 days	3 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE RG_BOCK_WS_LAEMP_EVO_2022-12_N	E235.F	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	1 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-12_N	E235.F	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	1 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-12_N	E235.F	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	1 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE RG_GATE_WS_LAEMP_EVO_2022-12_N	E235.F	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	1 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-12_N	E235.F	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	1 days	✔



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_RIVER_2_WS_LAEMP_EVO_2022-12_N	E235.F	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	1 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-12_N	E235.F	28-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-12_N	E235.F	28-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-12_N	E235.F	28-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-12_N	E235.F	28-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-12_N	E235.F	28-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-12_N	E235.NO3-L	29-Nov-2022	30-Nov-2022	3 days	1 days	✔	30-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-12_N	E235.NO3-L	29-Nov-2022	30-Nov-2022	3 days	1 days	✔	30-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-12_N	E235.NO3-L	29-Nov-2022	30-Nov-2022	3 days	1 days	✔	30-Nov-2022	3 days	0 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_GATE_WS_LAEMP_EVO_2022-12_N	E235.NO3-L	29-Nov-2022	30-Nov-2022	3 days	1 days	✔	30-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-12_N	E235.NO3-L	29-Nov-2022	30-Nov-2022	3 days	1 days	✔	30-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_RIVER_2_WS_LAEMP_EVO_2022-12_N	E235.NO3-L	29-Nov-2022	30-Nov-2022	3 days	1 days	✔	30-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-12_N	E235.NO3-L	28-Nov-2022	30-Nov-2022	3 days	2 days	✔	30-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-12_N	E235.NO3-L	28-Nov-2022	30-Nov-2022	3 days	2 days	✔	30-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-12_N	E235.NO3-L	28-Nov-2022	30-Nov-2022	3 days	2 days	✔	30-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-12_N	E235.NO3-L	28-Nov-2022	30-Nov-2022	3 days	2 days	✔	30-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-12_N	E235.NO3-L	28-Nov-2022	30-Nov-2022	3 days	2 days	✔	30-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-12_N	E235.NO2-L	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	3 days	1 days	✔	



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-12_N	E235.NO2-L	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	3 days	1 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-12_N	E235.NO2-L	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	3 days	1 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_GATE_WS_LAEMP_EVO_2022-12_N	E235.NO2-L	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	3 days	1 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-12_N	E235.NO2-L	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	3 days	1 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_RIVER_2_WS_LAEMP_EVO_2022-12_N	E235.NO2-L	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	3 days	1 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-12_N	E235.NO2-L	28-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-12_N	E235.NO2-L	28-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-12_N	E235.NO2-L	28-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-12_N	E235.NO2-L	28-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	3 days	2 days	✔	



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-12_N	E235.NO2-L	28-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	3 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-12_N	E235.SO4	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	1 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-12_N	E235.SO4	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	1 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-12_N	E235.SO4	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	1 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_GATE_WS_LAEMP_EVO_2022-12_N	E235.SO4	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	1 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-12_N	E235.SO4	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	1 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_RIVER_2_WS_LAEMP_EVO_2022-12_N	E235.SO4	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	1 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-12_N	E235.SO4	28-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-12_N	E235.SO4	28-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	2 days	✔	



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			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Sulfate in Water by IC										
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-12_N	E235.SO4	28-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	2 days	✔
Anions and Nutrients : Sulfate in Water by IC										
HDPE RG_RIVER_WS_LAEMP_EVO_2022-12_N	E235.SO4	28-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	2 days	✔
Anions and Nutrients : Sulfate in Water by IC										
HDPE RG_TRIP_WS_LAEMP_EVO_2022-12_N	E235.SO4	28-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	2 days	✔
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) RG_BOCK_WS_LAEMP_EVO_2022-12_N	E318	29-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	28 days	2 days	✔
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) RG_BOCKRD_WS_LAEMP_EVO_2022-12_N	E318	29-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	28 days	2 days	✔
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-12_N	E318	29-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	28 days	2 days	✔
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) RG_GATE_WS_LAEMP_EVO_2022-12_N	E318	29-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	28 days	2 days	✔
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) RG_GATEDP_WS_LAEMP_EVO_2022-12_N	E318	29-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	28 days	2 days	✔
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) RG_RIVER_2_WS_LAEMP_EVO_2022-12_N	E318	29-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	28 days	2 days	✔



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-12_N	E318	28-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	28 days	3 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-12_N	E318	28-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	28 days	3 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_FBLANK_WS_LAEMP_EVO_2022-12_N	E318	28-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	28 days	3 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-12_N	E318	28-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	28 days	3 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_TRIP_WS_LAEMP_EVO_2022-12_N	E318	28-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	28 days	3 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_BOCK_WS_LAEMP_EVO_2022-12_N	E372-U	29-Nov-2022	01-Dec-2022	----	----		02-Dec-2022	28 days	3 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_BOCKRD_WS_LAEMP_EVO_2022-12_N	E372-U	29-Nov-2022	01-Dec-2022	----	----		02-Dec-2022	28 days	3 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-12_N	E372-U	29-Nov-2022	01-Dec-2022	----	----		02-Dec-2022	28 days	3 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_GATE_WS_LAEMP_EVO_2022-12_N	E372-U	29-Nov-2022	01-Dec-2022	----	----		02-Dec-2022	28 days	3 days	✔	



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_GATEDP_WS_LAEMP_EVO_2022-12_N	E372-U	29-Nov-2022	01-Dec-2022	----	----		02-Dec-2022	28 days	3 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_RIVER_2_WS_LAEMP_EVO_2022-12_N	E372-U	29-Nov-2022	01-Dec-2022	----	----		02-Dec-2022	28 days	3 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-12_N	E372-U	28-Nov-2022	01-Dec-2022	----	----		02-Dec-2022	28 days	4 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-12_N	E372-U	28-Nov-2022	01-Dec-2022	----	----		02-Dec-2022	28 days	4 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_FBLANK_WS_LAEMP_EVO_2022-12_N	E372-U	28-Nov-2022	01-Dec-2022	----	----		02-Dec-2022	28 days	4 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-12_N	E372-U	28-Nov-2022	01-Dec-2022	----	----		02-Dec-2022	28 days	4 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_TRIP_WS_LAEMP_EVO_2022-12_N	E372-U	28-Nov-2022	01-Dec-2022	----	----		02-Dec-2022	28 days	4 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_BOCK_WS_LAEMP_EVO_2022-12_N	E421.Cr-L	29-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	2 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_BOCKRD_WS_LAEMP_EVO_2022-12_N	E421.Cr-L	29-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	2 days	✔	



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKUT_WS_LAEMP_EVO_2022-12_N	E421.Cr-L	29-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	2 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_GATE_WS_LAEMP_EVO_2022-12_N	E421.Cr-L	29-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	2 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_GATEDP_WS_LAEMP_EVO_2022-12_N	E421.Cr-L	29-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	2 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_RIVER_2_WS_LAEMP_EVO_2022-12_N	E421.Cr-L	29-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	2 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKDT_WS_LAEMP_EVO_2022-12_N	E421.Cr-L	28-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	3 days	✔	
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HDPE - dissolved (lab preserved) RG_ERCKMD_WS_LAEMP_EVO_2022-12_N	E421.Cr-L	28-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_FBLANK_WS_LAEMP_EVO_2022-12_N	E421.Cr-L	28-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_RIVER_WS_LAEMP_EVO_2022-12_N	E421.Cr-L	28-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_TRIP_WS_LAEMP_EVO_2022-12_N	E421.Cr-L	28-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	3 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_BOCK_WS_LAEMP_EVO_2022-12_N	E509	29-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	28 days	2 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_BOCKRD_WS_LAEMP_EVO_2022-12_N	E509	29-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	28 days	2 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-12_N	E509	29-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	28 days	2 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_GATE_WS_LAEMP_EVO_2022-12_N	E509	29-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	28 days	2 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_GATEDP_WS_LAEMP_EVO_2022-12_N	E509	29-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	28 days	2 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_RIVER_2_WS_LAEMP_EVO_2022-12_N	E509	29-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	28 days	2 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-12_N	E509	28-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	28 days	3 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-12_N	E509	28-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	28 days	3 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_FBLANK_WS_LAEMP_EVO_2022-12_N	E509	28-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	28 days	3 days	✔	



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_RIVER_WS_LAEMP_EVO_2022-12_N	E509	28-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	28 days	3 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_TRIP_WS_LAEMP_EVO_2022-12_N	E509	28-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	28 days	3 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_BOCK_WS_LAEMP_EVO_2022-12_N	E421	29-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	2 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_BOCKRD_WS_LAEMP_EVO_2022-12_N	E421	29-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	2 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ERCKUT_WS_LAEMP_EVO_2022-12_N	E421	29-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	2 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_GATE_WS_LAEMP_EVO_2022-12_N	E421	29-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	2 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_GATEDP_WS_LAEMP_EVO_2022-12_N	E421	29-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	2 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_RIVER_2_WS_LAEMP_EVO_2022-12_N	E421	29-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	2 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ERCKDT_WS_LAEMP_EVO_2022-12_N	E421	28-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	3 days	✔	



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved) RG_ERCKMD_WS_LAEMP_EVO_2022-12_N	E421	28-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	3 days	✔
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved) RG_FBLANK_WS_LAEMP_EVO_2022-12_N	E421	28-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	3 days	✔
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved) RG_RIVER_WS_LAEMP_EVO_2022-12_N	E421	28-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	3 days	✔
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved) RG_TRIP_WS_LAEMP_EVO_2022-12_N	E421	28-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	3 days	✔
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) RG_BOCK_WS_LAEMP_EVO_2022-12_N	E358-L	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	1 days	✔
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) RG_BOCKRD_WS_LAEMP_EVO_2022-12_N	E358-L	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	1 days	✔
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-12_N	E358-L	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	1 days	✔
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) RG_GATE_WS_LAEMP_EVO_2022-12_N	E358-L	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	1 days	✔
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) RG_GATEDP_WS_LAEMP_EVO_2022-12_N	E358-L	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	1 days	✔



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_RIVER_2_WS_LAEMP_EVO_2022-12_N	E358-L	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	1 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-12_N	E358-L	28-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	2 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-12_N	E358-L	28-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	2 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_FBLANK_WS_LAEMP_EVO_2022-12_N	E358-L	28-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	2 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-12_N	E358-L	28-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	2 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_TRIP_WS_LAEMP_EVO_2022-12_N	E358-L	28-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	2 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_BOCK_WS_LAEMP_EVO_2022-12_N	E355-L	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	1 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_BOCKRD_WS_LAEMP_EVO_2022-12_N	E355-L	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	1 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-12_N	E355-L	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	1 days	✔	



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) RG_GATE_WS_LAEMP_EVO_2022-12_N	E355-L	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	1 days	✔
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) RG_GATEDP_WS_LAEMP_EVO_2022-12_N	E355-L	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	1 days	✔
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) RG_RIVER_2_WS_LAEMP_EVO_2022-12_N	E355-L	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	1 days	✔
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-12_N	E355-L	28-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	2 days	✔
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-12_N	E355-L	28-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	2 days	✔
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) RG_FBLANK_WS_LAEMP_EVO_2022-12_N	E355-L	28-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	2 days	✔
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) RG_RIVER_WS_LAEMP_EVO_2022-12_N	E355-L	28-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	2 days	✔
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) RG_TRIP_WS_LAEMP_EVO_2022-12_N	E355-L	28-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	2 days	✔
Physical Tests : Acidity by Titration										
HDPE RG_BOCK_WS_LAEMP_EVO_2022-12_N	E283	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	14 days	1 days	✔



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Acidity by Titration											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-12_N	E283	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	14 days	1 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-12_N	E283	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	14 days	1 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_GATE_WS_LAEMP_EVO_2022-12_N	E283	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	14 days	1 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-12_N	E283	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	14 days	1 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_RIVER_2_WS_LAEMP_EVO_2022-12_N	E283	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	14 days	1 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-12_N	E283	28-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	14 days	2 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-12_N	E283	28-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	14 days	2 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-12_N	E283	28-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	14 days	2 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-12_N	E283	28-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	14 days	2 days	✔	



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			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Acidity by Titration										
HDPE RG_TRIP_WS_LAEMP_EVO_2022-12_N	E283	28-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	14 days	2 days	✔
Physical Tests : Alkalinity Species by Titration										
HDPE RG_BOCK_WS_LAEMP_EVO_2022-12_N	E290	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	14 days	1 days	✔
Physical Tests : Alkalinity Species by Titration										
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-12_N	E290	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	14 days	1 days	✔
Physical Tests : Alkalinity Species by Titration										
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-12_N	E290	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	14 days	1 days	✔
Physical Tests : Alkalinity Species by Titration										
HDPE RG_GATE_WS_LAEMP_EVO_2022-12_N	E290	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	14 days	1 days	✔
Physical Tests : Alkalinity Species by Titration										
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-12_N	E290	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	14 days	1 days	✔
Physical Tests : Alkalinity Species by Titration										
HDPE RG_RIVER_2_WS_LAEMP_EVO_2022-12_N	E290	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	14 days	1 days	✔
Physical Tests : Alkalinity Species by Titration										
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-12_N	E290	28-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	14 days	2 days	✔
Physical Tests : Alkalinity Species by Titration										
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-12_N	E290	28-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	14 days	2 days	✔



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			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Alkalinity Species by Titration											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-12_N	E290	28-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	14 days	2 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-12_N	E290	28-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	14 days	2 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-12_N	E290	28-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	14 days	2 days	✔	
Physical Tests : Conductivity in Water											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-12_N	E100	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	1 days	✔	
Physical Tests : Conductivity in Water											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-12_N	E100	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	1 days	✔	
Physical Tests : Conductivity in Water											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-12_N	E100	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	1 days	✔	
Physical Tests : Conductivity in Water											
HDPE RG_GATE_WS_LAEMP_EVO_2022-12_N	E100	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	1 days	✔	
Physical Tests : Conductivity in Water											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-12_N	E100	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	1 days	✔	
Physical Tests : Conductivity in Water											
HDPE RG_RIVER_2_WS_LAEMP_EVO_2022-12_N	E100	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	1 days	✔	



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Conductivity in Water											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-12_N	E100	28-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	2 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-12_N	E100	28-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	2 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-12_N	E100	28-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	2 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-12_N	E100	28-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	2 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-12_N	E100	28-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	28 days	2 days	✓	
Physical Tests : ORP by Electrode											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-12_N	E125	29-Nov-2022	----	----	----		01-Dec-2022	0.25 hrs	44 hrs	* EHTR-FM	
Physical Tests : ORP by Electrode											
HDPE RG_GATE_WS_LAEMP_EVO_2022-12_N	E125	29-Nov-2022	----	----	----		01-Dec-2022	0.25 hrs	45 hrs	* EHTR-FM	
Physical Tests : ORP by Electrode											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-12_N	E125	29-Nov-2022	----	----	----		01-Dec-2022	0.25 hrs	45 hrs	* EHTR-FM	
Physical Tests : ORP by Electrode											
HDPE RG_RIVER_2_WS_LAEMP_EVO_2022-12_N	E125	29-Nov-2022	----	----	----		01-Dec-2022	0.25 hrs	45 hrs	* EHTR-FM	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : ORP by Electrode											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-12_N	E125	29-Nov-2022	----	----	----		01-Dec-2022	0.25 hrs	46 hrs	*	EHTR-FM
Physical Tests : ORP by Electrode											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-12_N	E125	29-Nov-2022	----	----	----		01-Dec-2022	0.25 hrs	50 hrs	*	EHTR-FM
Physical Tests : ORP by Electrode											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-12_N	E125	28-Nov-2022	----	----	----		01-Dec-2022	0.25 hrs	70 hrs	*	EHTR-FM
Physical Tests : ORP by Electrode											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-12_N	E125	28-Nov-2022	----	----	----		01-Dec-2022	0.25 hrs	70 hrs	*	EHTR-FM
Physical Tests : ORP by Electrode											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-12_N	E125	28-Nov-2022	----	----	----		01-Dec-2022	0.25 hrs	70 hrs	*	EHTR-FM
Physical Tests : ORP by Electrode											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-12_N	E125	28-Nov-2022	----	----	----		01-Dec-2022	0.25 hrs	70 hrs	*	EHTR-FM
Physical Tests : ORP by Electrode											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-12_N	E125	28-Nov-2022	----	----	----		01-Dec-2022	0.25 hrs	73 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-12_N	E108	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	0.25 hrs	0.33 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-12_N	E108	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	0.25 hrs	0.33 hrs	*	EHTR-FM



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : pH by Meter											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-12_N	E108	28-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	0.25 hrs	0.33 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-12_N	E108	28-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	0.25 hrs	0.33 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-12_N	E108	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	0.25 hrs	0.33 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-12_N	E108	28-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	0.25 hrs	0.33 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_GATE_WS_LAEMP_EVO_2022-12_N	E108	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	0.25 hrs	0.33 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-12_N	E108	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	0.25 hrs	0.33 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_RIVER_2_WS_LAEMP_EVO_2022-12_N	E108	29-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	0.25 hrs	0.33 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-12_N	E108	28-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	0.25 hrs	0.33 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-12_N	E108	28-Nov-2022	30-Nov-2022	----	----		30-Nov-2022	0.25 hrs	0.33 hrs	*	EHTR-FM



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : TDS by Gravimetry										
HDPE RG_BOCK_WS_LAEMP_EVO_2022-12_N	E162	29-Nov-2022	----	----	----		30-Nov-2022	7 days	1 days	✔
Physical Tests : TDS by Gravimetry										
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-12_N	E162	29-Nov-2022	----	----	----		30-Nov-2022	7 days	1 days	✔
Physical Tests : TDS by Gravimetry										
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-12_N	E162	29-Nov-2022	----	----	----		30-Nov-2022	7 days	1 days	✔
Physical Tests : TDS by Gravimetry										
HDPE RG_GATE_WS_LAEMP_EVO_2022-12_N	E162	29-Nov-2022	----	----	----		30-Nov-2022	7 days	1 days	✔
Physical Tests : TDS by Gravimetry										
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-12_N	E162	29-Nov-2022	----	----	----		30-Nov-2022	7 days	1 days	✔
Physical Tests : TDS by Gravimetry										
HDPE RG_RIVER_2_WS_LAEMP_EVO_2022-12_N	E162	29-Nov-2022	----	----	----		30-Nov-2022	7 days	1 days	✔
Physical Tests : TDS by Gravimetry										
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-12_N	E162	28-Nov-2022	----	----	----		30-Nov-2022	7 days	2 days	✔
Physical Tests : TDS by Gravimetry										
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-12_N	E162	28-Nov-2022	----	----	----		30-Nov-2022	7 days	2 days	✔
Physical Tests : TDS by Gravimetry										
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-12_N	E162	28-Nov-2022	----	----	----		30-Nov-2022	7 days	2 days	✔



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : TDS by Gravimetry										
HDPE RG_RIVER_WS_LAEMP_EVO_2022-12_N	E162	28-Nov-2022	----	----	----		30-Nov-2022	7 days	2 days	✔
Physical Tests : TDS by Gravimetry										
HDPE RG_TRIP_WS_LAEMP_EVO_2022-12_N	E162	28-Nov-2022	----	----	----		30-Nov-2022	7 days	2 days	✔
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE RG_BOCK_WS_LAEMP_EVO_2022-12_N	E160-L	29-Nov-2022	----	----	----		01-Dec-2022	7 days	2 days	✔
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-12_N	E160-L	29-Nov-2022	----	----	----		01-Dec-2022	7 days	2 days	✔
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-12_N	E160-L	29-Nov-2022	----	----	----		01-Dec-2022	7 days	2 days	✔
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE RG_GATE_WS_LAEMP_EVO_2022-12_N	E160-L	29-Nov-2022	----	----	----		01-Dec-2022	7 days	2 days	✔
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-12_N	E160-L	29-Nov-2022	----	----	----		01-Dec-2022	7 days	2 days	✔
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE RG_RIVER_2_WS_LAEMP_EVO_2022-12_N	E160-L	29-Nov-2022	----	----	----		01-Dec-2022	7 days	2 days	✔
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-12_N	E160-L	28-Nov-2022	----	----	----		01-Dec-2022	7 days	3 days	✔



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-12_N	E160-L	28-Nov-2022	----	----	----		01-Dec-2022	7 days	3 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-12_N	E160-L	28-Nov-2022	----	----	----		01-Dec-2022	7 days	3 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_RIVER_WS_LAEMP_EVO_2022-12_N	E160-L	28-Nov-2022	----	----	----		01-Dec-2022	7 days	3 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_TRIP_WS_LAEMP_EVO_2022-12_N	E160-L	28-Nov-2022	----	----	----		01-Dec-2022	7 days	3 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_BOCKRD_WS_LAEMP_EVO_2022-12_N	E121	29-Nov-2022	----	----	----		30-Nov-2022	3 days	1 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-12_N	E121	29-Nov-2022	----	----	----		30-Nov-2022	3 days	1 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_BOCK_WS_LAEMP_EVO_2022-12_N	E121	29-Nov-2022	----	----	----		01-Dec-2022	3 days	2 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-12_N	E121	28-Nov-2022	----	----	----		30-Nov-2022	3 days	2 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-12_N	E121	28-Nov-2022	----	----	----		30-Nov-2022	3 days	2 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Turbidity by Nephelometry										
HDPE RG_FBLANK_WS_LAEMP_EVO_2022-12_N	E121	28-Nov-2022	----	----	----		30-Nov-2022	3 days	2 days	✔
Physical Tests : Turbidity by Nephelometry										
HDPE RG_GATE_WS_LAEMP_EVO_2022-12_N	E121	29-Nov-2022	----	----	----		01-Dec-2022	3 days	2 days	✔
Physical Tests : Turbidity by Nephelometry										
HDPE RG_GATEDP_WS_LAEMP_EVO_2022-12_N	E121	29-Nov-2022	----	----	----		01-Dec-2022	3 days	2 days	✔
Physical Tests : Turbidity by Nephelometry										
HDPE RG_RIVER_2_WS_LAEMP_EVO_2022-12_N	E121	29-Nov-2022	----	----	----		01-Dec-2022	3 days	2 days	✔
Physical Tests : Turbidity by Nephelometry										
HDPE RG_RIVER_WS_LAEMP_EVO_2022-12_N	E121	28-Nov-2022	----	----	----		30-Nov-2022	3 days	2 days	✔
Physical Tests : Turbidity by Nephelometry										
HDPE RG_TRIP_WS_LAEMP_EVO_2022-12_N	E121	28-Nov-2022	----	----	----		30-Nov-2022	3 days	2 days	✔
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)										
HDPE - total (lab preserved) RG_BOCK_WS_LAEMP_EVO_2022-12_N	E420.Cr-L	29-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	2 days	✔
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)										
HDPE - total (lab preserved) RG_BOCKRD_WS_LAEMP_EVO_2022-12_N	E420.Cr-L	29-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	2 days	✔
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)										
HDPE - total (lab preserved) RG_ERCKUT_WS_LAEMP_EVO_2022-12_N	E420.Cr-L	29-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	2 days	✔



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)										
HDPE - total (lab preserved) RG_GATE_WS_LAEMP_EVO_2022-12_N	E420.Cr-L	29-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	2 days	✔
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)										
HDPE - total (lab preserved) RG_GATEDP_WS_LAEMP_EVO_2022-12_N	E420.Cr-L	29-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	2 days	✔
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)										
HDPE - total (lab preserved) RG_RIVER_2_WS_LAEMP_EVO_2022-12_N	E420.Cr-L	29-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	2 days	✔
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)										
HDPE - total (lab preserved) RG_ERCKDT_WS_LAEMP_EVO_2022-12_N	E420.Cr-L	28-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	3 days	✔
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)										
HDPE - total (lab preserved) RG_ERCKMD_WS_LAEMP_EVO_2022-12_N	E420.Cr-L	28-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	3 days	✔
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)										
HDPE - total (lab preserved) RG_FBLANK_WS_LAEMP_EVO_2022-12_N	E420.Cr-L	28-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	3 days	✔
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)										
HDPE - total (lab preserved) RG_RIVER_WS_LAEMP_EVO_2022-12_N	E420.Cr-L	28-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	3 days	✔
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)										
HDPE - total (lab preserved) RG_TRIP_WS_LAEMP_EVO_2022-12_N	E420.Cr-L	28-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	3 days	✔
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) RG_BOCK_WS_LAEMP_EVO_2022-12_N	E508	29-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	28 days	2 days	✔



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_BOCKRD_WS_LAEMP_EVO_2022-12_N	E508	29-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	28 days	2 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-12_N	E508	29-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	28 days	2 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_GATE_WS_LAEMP_EVO_2022-12_N	E508	29-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	28 days	2 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_GATEDP_WS_LAEMP_EVO_2022-12_N	E508	29-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	28 days	2 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_RIVER_2_WS_LAEMP_EVO_2022-12_N	E508	29-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	28 days	2 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-12_N	E508	28-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	28 days	3 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-12_N	E508	28-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	28 days	3 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_FBLANK_WS_LAEMP_EVO_2022-12_N	E508	28-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	28 days	3 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_RIVER_WS_LAEMP_EVO_2022-12_N	E508	28-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	28 days	3 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) RG_TRIP_WS_LAEMP_EVO_2022-12_N	E508	28-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	28 days	3 days	✔
Total Metals : Total metals in Water by CRC ICPMS										
HDPE - total (lab preserved) RG_BOCK_WS_LAEMP_EVO_2022-12_N	E420	29-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	2 days	✔
Total Metals : Total metals in Water by CRC ICPMS										
HDPE - total (lab preserved) RG_BOCKRD_WS_LAEMP_EVO_2022-12_N	E420	29-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	2 days	✔
Total Metals : Total metals in Water by CRC ICPMS										
HDPE - total (lab preserved) RG_ERCKUT_WS_LAEMP_EVO_2022-12_N	E420	29-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	2 days	✔
Total Metals : Total metals in Water by CRC ICPMS										
HDPE - total (lab preserved) RG_GATE_WS_LAEMP_EVO_2022-12_N	E420	29-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	2 days	✔
Total Metals : Total metals in Water by CRC ICPMS										
HDPE - total (lab preserved) RG_GATEDP_WS_LAEMP_EVO_2022-12_N	E420	29-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	2 days	✔
Total Metals : Total metals in Water by CRC ICPMS										
HDPE - total (lab preserved) RG_RIVER_2_WS_LAEMP_EVO_2022-12_N	E420	29-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	2 days	✔
Total Metals : Total metals in Water by CRC ICPMS										
HDPE - total (lab preserved) RG_ERCKDT_WS_LAEMP_EVO_2022-12_N	E420	28-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	3 days	✔
Total Metals : Total metals in Water by CRC ICPMS										
HDPE - total (lab preserved) RG_ERCKMD_WS_LAEMP_EVO_2022-12_N	E420	28-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	3 days	✔



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals : Total metals in Water by CRC ICPMS										
HDPE - total (lab preserved) RG_FBLANK_WS_LAEMP_EVO_2022-12_N	E420	28-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	3 days	✔
Total Metals : Total metals in Water by CRC ICPMS										
HDPE - total (lab preserved) RG_RIVER_WS_LAEMP_EVO_2022-12_N	E420	28-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	3 days	✔
Total Metals : Total metals in Water by CRC ICPMS										
HDPE - total (lab preserved) RG_TRIP_WS_LAEMP_EVO_2022-12_N	E420	28-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	3 days	✔

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended
 Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
Analytical Methods							
Laboratory Duplicates (DUP)							
Acidity by Titration	E283	763243	1	11	9.0	5.0	✓
Alkalinity Species by Titration	E290	763226	1	11	9.0	5.0	✓
Ammonia by Fluorescence	E298	763186	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	763173	2	23	8.7	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	763174	2	23	8.7	5.0	✓
Conductivity in Water	E100	763225	1	11	9.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	763864	1	16	6.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	764141	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	763863	1	16	6.2	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	763160	1	11	9.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	764013	2	32	6.2	5.0	✓
Fluoride in Water by IC	E235.F	763172	2	23	8.7	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	763175	2	24	8.3	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	763176	2	23	8.7	5.0	✓
ORP by Electrode	E125	763147	1	11	9.0	5.0	✓
pH by Meter	E108	763224	1	11	9.0	5.0	✓
Sulfate in Water by IC	E235.SO4	763177	2	23	8.7	5.0	✓
TDS by Gravimetry	E162	763221	2	30	6.6	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	763859	1	11	9.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	763280	1	11	9.0	5.0	✓
Total Mercury in Water by CVAAS	E508	764135	1	20	5.0	5.0	✓
Total metals in Water by CRC ICPMS	E420	763860	1	11	9.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	763164	1	14	7.1	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	764040	1	11	9.0	5.0	✓
Turbidity by Nephelometry	E121	763154	3	60	5.0	5.0	✓
Laboratory Control Samples (LCS)							
Acidity by Titration	E283	763243	1	11	9.0	5.0	✓
Alkalinity Species by Titration	E290	763226	1	11	9.0	5.0	✓
Ammonia by Fluorescence	E298	763186	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	763173	2	23	8.7	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	763174	2	23	8.7	5.0	✓
Conductivity in Water	E100	763225	1	11	9.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	763864	1	16	6.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	764141	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	763863	1	16	6.2	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	763160	1	11	9.0	5.0	✓



Matrix: **Water**

Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
Analytical Methods							
Laboratory Control Samples (LCS) - Continued							
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	764013	2	32	6.2	5.0	✓
Fluoride in Water by IC	E235.F	763172	2	23	8.7	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	763175	2	24	8.3	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	763176	2	23	8.7	5.0	✓
ORP by Electrode	E125	763147	1	11	9.0	5.0	✓
pH by Meter	E108	763224	1	11	9.0	5.0	✓
Sulfate in Water by IC	E235.SO4	763177	2	23	8.7	5.0	✓
TDS by Gravimetry	E162	763221	2	30	6.6	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	763859	1	11	9.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	763280	1	11	9.0	5.0	✓
Total Mercury in Water by CVAAS	E508	764135	1	20	5.0	5.0	✓
Total metals in Water by CRC ICPMS	E420	763860	1	11	9.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	763164	1	14	7.1	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	764040	1	11	9.0	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	763219	2	29	6.9	5.0	✓
Turbidity by Nephelometry	E121	763154	3	60	5.0	5.0	✓
Method Blanks (MB)							
Acidity by Titration	E283	763243	1	11	9.0	5.0	✓
Alkalinity Species by Titration	E290	763226	1	11	9.0	5.0	✓
Ammonia by Fluorescence	E298	763186	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	763173	2	23	8.7	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	763174	2	23	8.7	5.0	✓
Conductivity in Water	E100	763225	1	11	9.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	763864	1	16	6.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	764141	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	763863	1	16	6.2	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	763160	1	11	9.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	764013	2	32	6.2	5.0	✓
Fluoride in Water by IC	E235.F	763172	2	23	8.7	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	763175	2	24	8.3	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	763176	2	23	8.7	5.0	✓
Sulfate in Water by IC	E235.SO4	763177	2	23	8.7	5.0	✓
TDS by Gravimetry	E162	763221	2	30	6.6	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	763859	1	11	9.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	763280	1	11	9.0	5.0	✓
Total Mercury in Water by CVAAS	E508	764135	1	20	5.0	5.0	✓
Total metals in Water by CRC ICPMS	E420	763860	1	11	9.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	763164	1	14	7.1	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	764040	1	11	9.0	5.0	✓



Matrix: **Water** Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
<i>Analytical Methods</i>							
Method Blanks (MB) - Continued							
TSS by Gravimetry (Low Level)	E160-L	763219	2	29	6.9	5.0	✔
Turbidity by Nephelometry	E121	763154	3	60	5.0	5.0	✔
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	763186	1	20	5.0	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	763173	2	23	8.7	5.0	✔
Chloride in Water by IC (Low Level)	E235.Cl-L	763174	2	23	8.7	5.0	✔
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	763864	1	16	6.2	5.0	✔
Dissolved Mercury in Water by CVAAS	E509	764141	1	20	5.0	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	763863	1	16	6.2	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	763160	1	11	9.0	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	764013	2	32	6.2	5.0	✔
Fluoride in Water by IC	E235.F	763172	2	23	8.7	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	763175	2	24	8.3	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	763176	2	23	8.7	5.0	✔
Sulfate in Water by IC	E235.SO4	763177	2	23	8.7	5.0	✔
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	763859	1	11	9.0	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	763280	1	11	9.0	5.0	✔
Total Mercury in Water by CVAAS	E508	764135	1	20	5.0	5.0	✔
Total metals in Water by CRC ICPMS	E420	763860	1	11	9.0	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	763164	1	14	7.1	5.0	✔
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	764040	1	11	9.0	5.0	✔



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 Calgary - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 Calgary - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 Calgary - Environmental	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
ORP by Electrode	E125 Calgary - Environmental	Water	ASTM D1498 (mod)	Oxidation reduction potential is reported as the oxidation-reduction potential of the platinum metal-reference electrode employed, measured in mV. For high accuracy test results, it is recommended that this analysis be conducted in the field.
TSS by Gravimetry (Low Level)	E160-L Calgary - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 Calgary - Environmental	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC (Low Level)	E235.Cl-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Acidity by Titration	E283 Calgary - Environmental	Water	APHA 2310 B (mod)	Acidity is determined by potentiometric titration to pH endpoint of 8.3
Alkalinity Species by Titration	E290 Calgary - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 Calgary - Environmental	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 Calgary - Environmental	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L Calgary - Environmental	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Dissolved Organic Carbon by Combustion (Low Level)	E358-L Calgary - Environmental	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U Calgary - Environmental	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U Calgary - Environmental	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Total metals in Water by CRC ICPMS	E420 Calgary - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L Calgary - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Metals in Water by CRC ICPMS	E421 Calgary - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L Calgary - Environmental	Water	APHA 3030 B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS
Total Mercury in Water by CVAAS	E508 Calgary - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS
Dissolved Mercury in Water by CVAAS	E509 Calgary - Environmental	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
Dissolved Hardness (Calculated)	EC100 Calgary - Environmental	Water	APHA 2340B	"Hardness (as CaCO ₃), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Ion Balance using Dissolved Metals	EC101 Calgary - Environmental	Water	APHA 1030E	Cation Sum, Anion Sum, and Ion Balance are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present. Ion Balance cannot be calculated accurately for waters with very low electrical conductivity (EC).

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 Calgary - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 Calgary - Environmental	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Preparation for Total Organic Carbon by Combustion	EP355 Calgary - Environmental	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon by Combustion	EP358 Calgary - Environmental	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Phosphorus in water	EP372 Calgary - Environmental	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.



<i>Preparation Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
Dissolved Metals Water Filtration	EP421 Calgary - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.
Dissolved Mercury Water Filtration	EP509 Calgary - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.

QUALITY CONTROL REPORT

<p>Work Order : CG2216634</p> <p>Client : Teck Coal Limited</p> <p>Contact : Mike Pope</p> <p>Address : 421 Pine Avenue Sparwood BC Canada V0B2G0</p> <p>Telephone :</p> <p>Project : REGIONAL EFFECTS PROGRAM</p> <p>PO : VPO00847030</p> <p>C-O-C number : December EVO LAEMP 2022</p> <p>Sampler : Liva Ramanjehimanana</p> <p>Site : ---</p> <p>Quote number : Teck Coal Master Quote</p> <p>No. of samples received : 11</p> <p>No. of samples analysed : 11</p>	<p>Page : 1 of 19</p> <p>Laboratory : Calgary - Environmental</p> <p>Account Manager : Lyudmyla Shvets</p> <p>Address : 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5</p> <p>Telephone : +1 403 407 1800</p> <p>Date Samples Received : 30-Nov-2022 09:55</p> <p>Date Analysis Commenced : 30-Nov-2022</p> <p>Issue Date : 02-Dec-2022 16:39</p>
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This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Anthony Calero	Supervisor - Inorganic	Calgary Inorganics, Calgary, Alberta
Elke Tabora		Calgary Inorganics, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Calgary Inorganics, Calgary, Alberta
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Vladka Stamenova	Analyst	Calgary Inorganics, Calgary, Alberta



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 763147)											
CG2216634-001	RG_RIVER_WS_LAEMP_EVO_2022-12_N	oxidation-reduction potential [ORP]	----	E125	0.10	mV	365	364	0.494%	15%	----
Physical Tests (QC Lot: 763154)											
CG2216607-001	Anonymous	turbidity	----	E121	0.10	NTU	0.73	0.72	0.02	Diff <2x LOR	----
Physical Tests (QC Lot: 763221)											
CG2216599-001	Anonymous	solids, total dissolved [TDS]	----	E162	20	mg/L	220	204	7.08%	20%	----
Physical Tests (QC Lot: 763222)											
CG2216634-002	RG_ERCKMD_WS_LAEMP_EVO_2022-12_N	solids, total dissolved [TDS]	----	E162	40	mg/L	1580	1660	4.38%	20%	----
Physical Tests (QC Lot: 763224)											
CG2216634-001	RG_RIVER_WS_LAEMP_EVO_2022-12_N	pH	----	E108	0.10	pH units	8.05	8.08	0.372%	4%	----
Physical Tests (QC Lot: 763225)											
CG2216634-001	RG_RIVER_WS_LAEMP_EVO_2022-12_N	conductivity	----	E100	2.0	µS/cm	1870	1880	0.747%	10%	----
Physical Tests (QC Lot: 763226)											
CG2216634-001	RG_RIVER_WS_LAEMP_EVO_2022-12_N	alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	459	466	1.43%	20%	----
		alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	459	466	1.43%	20%	----
Physical Tests (QC Lot: 763243)											
CG2216634-001	RG_RIVER_WS_LAEMP_EVO_2022-12_N	acidity (as CaCO3)	----	E283	2.0	mg/L	2.9	2.0	0.8	Diff <2x LOR	----
Physical Tests (QC Lot: 764363)											
CG2216603-001	Anonymous	turbidity	----	E121	0.10	NTU	1.39	1.50	7.62%	15%	----
Physical Tests (QC Lot: 764511)											
CG2216604-004	Anonymous	turbidity	----	E121	0.10	NTU	0.13	0.14	0.01	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 763172)											
CG2216616-001	Anonymous	fluoride	16984-48-8	E235.F	0.100	mg/L	0.109	0.107	0.002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 763173)											
CG2216616-001	Anonymous	bromide	24959-67-9	E235.Br-L	0.250	mg/L	<0.250	<0.250	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 763174)											



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 763174) - continued											
CG2216616-001	Anonymous	chloride	16887-00-6	E235.Cl-L	0.50	mg/L	24.8	24.1	3.03%	20%	----
Anions and Nutrients (QC Lot: 763175)											
CG2216616-001	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	0.0250	mg/L	56.9	55.3	2.93%	20%	----
Anions and Nutrients (QC Lot: 763176)											
CG2216616-001	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.0050	mg/L	0.0064	0.0060	0.0004	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 763177)											
CG2216616-001	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	1.50	mg/L	340	334	1.92%	20%	----
Anions and Nutrients (QC Lot: 763178)											
CG2216634-009	RG_RIVER_2_WS_LAEM P_EVO_2022-12_N	nitrate (as N)	14797-55-8	E235.NO3-L	0.0250	mg/L	7.25	7.36	1.62%	20%	----
Anions and Nutrients (QC Lot: 763179)											
CG2216634-009	RG_RIVER_2_WS_LAEM P_EVO_2022-12_N	fluoride	16984-48-8	E235.F	0.100	mg/L	0.289	0.295	0.007	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 763180)											
CG2216634-009	RG_RIVER_2_WS_LAEM P_EVO_2022-12_N	bromide	24959-67-9	E235.Br-L	0.250	mg/L	0.325	0.330	0.005	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 763181)											
CG2216634-009	RG_RIVER_2_WS_LAEM P_EVO_2022-12_N	chloride	16887-00-6	E235.Cl-L	0.50	mg/L	13.0	13.3	1.62%	20%	----
Anions and Nutrients (QC Lot: 763182)											
CG2216634-009	RG_RIVER_2_WS_LAEM P_EVO_2022-12_N	nitrite (as N)	14797-65-0	E235.NO2-L	0.0050	mg/L	0.0098	0.0104	0.0006	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 763183)											
CG2216634-009	RG_RIVER_2_WS_LAEM P_EVO_2022-12_N	sulfate (as SO4)	14808-79-8	E235.SO4	1.50	mg/L	958	964	0.675%	20%	----
Anions and Nutrients (QC Lot: 763186)											
CG2216606-001	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 763280)											
CG2216634-001	RG_RIVER_WS_LAEMP_ EVO_2022-12_N	Kjeldahl nitrogen, total [TKN]	----	E318	0.500	mg/L	1.85	1.38	0.472	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 764013)											
CG2216608-001	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 764014)											
CG2216634-006	RG_GATE_WS_LAEMP_E VO_2022-12_N	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0014	0.0017	0.0002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 764040)											
CG2216634-001	RG_RIVER_WS_LAEMP_ EVO_2022-12_N	phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0168	0.0154	0.0014	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 763160)											



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Organic / Inorganic Carbon (QC Lot: 763160) - continued											
CG2216634-001	RG_RIVER_WS_LAEMP_EVO_2022-12_N	carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 763164)											
CG2216634-001	RG_RIVER_WS_LAEMP_EVO_2022-12_N	carbon, total organic [TOC]	----	E355-L	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
Total Metals (QC Lot: 763859)											
CG2216634-001	RG_RIVER_WS_LAEMP_EVO_2022-12_N	chromium, total	7440-47-3	E420.Cr-L	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Total Metals (QC Lot: 763860)											
CG2216634-001	RG_RIVER_WS_LAEMP_EVO_2022-12_N	aluminum, total	7429-90-5	E420	0.0060	mg/L	<0.0060	<0.0060	0	Diff <2x LOR	----
		antimony, total	7440-36-0	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		arsenic, total	7440-38-2	E420	0.00020	mg/L	0.00026	0.00026	0.0000007	Diff <2x LOR	----
		barium, total	7440-39-3	E420	0.00020	mg/L	0.0469	0.0486	3.42%	20%	----
		beryllium, total	7440-41-7	E420	0.000040	mg/L	<0.040 µg/L	<0.000040	0	Diff <2x LOR	----
		bismuth, total	7440-69-9	E420	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		boron, total	7440-42-8	E420	0.020	mg/L	<0.020	0.021	0.001	Diff <2x LOR	----
		cadmium, total	7440-43-9	E420	0.0000100	mg/L	0.193 µg/L	0.000215	11.0%	20%	----
		calcium, total	7440-70-2	E420	0.100	mg/L	240	257	6.81%	20%	----
		cobalt, total	7440-48-4	E420	0.00020	mg/L	4.12 µg/L	0.00417	1.20%	20%	----
		copper, total	7440-50-8	E420	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		iron, total	7439-89-6	E420	0.020	mg/L	0.063	0.068	0.005	Diff <2x LOR	----
		lead, total	7439-92-1	E420	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		lithium, total	7439-93-2	E420	0.0020	mg/L	0.0458	0.0514	11.6%	20%	----
		magnesium, total	7439-95-4	E420	0.0100	mg/L	160	162	1.16%	20%	----
		manganese, total	7439-96-5	E420	0.00020	mg/L	0.114	0.115	0.993%	20%	----
		molybdenum, total	7439-98-7	E420	0.000100	mg/L	0.00534	0.00552	3.33%	20%	----
		nickel, total	7440-02-0	E420	0.00100	mg/L	0.0167	0.0179	6.63%	20%	----
		potassium, total	7440-09-7	E420	0.100	mg/L	3.20	3.30	3.13%	20%	----
		selenium, total	7782-49-2	E420	0.000100	mg/L	117 µg/L	0.125	6.49%	20%	----
		silicon, total	7440-21-3	E420	0.20	mg/L	3.67	3.74	1.73%	20%	----
		silver, total	7440-22-4	E420	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		sodium, total	7440-23-5	E420	0.100	mg/L	5.34	5.42	1.43%	20%	----
		strontium, total	7440-24-6	E420	0.00040	mg/L	0.260	0.281	7.58%	20%	----
		sulfur, total	7704-34-9	E420	1.00	mg/L	280	293	4.51%	20%	----
		thallium, total	7440-28-0	E420	0.000020	mg/L	0.000038	0.000038	0.0000003	Diff <2x LOR	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (QC Lot: 763860) - continued											
CG2216634-001	RG_RIVER_WS_LAEMP_EVO_2022-12_N	tin, total	7440-31-5	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		titanium, total	7440-32-6	E420	0.00060	mg/L	<0.00060	<0.00060	0	Diff <2x LOR	----
		uranium, total	7440-61-1	E420	0.000020	mg/L	0.00857	0.00923	7.38%	20%	----
		vanadium, total	7440-62-2	E420	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		zinc, total	7440-66-6	E420	0.0060	mg/L	0.0066	0.0079	0.0013	Diff <2x LOR	----
Total Metals (QC Lot: 764135)											
CG2216634-001	RG_RIVER_WS_LAEMP_EVO_2022-12_N	mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 763863)											
CG2216630-021	Anonymous	aluminum, dissolved	7429-90-5	E421	0.0050	mg/L	0.0058	<0.0050	0.0008	Diff <2x LOR	----
		antimony, dissolved	7440-36-0	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		barium, dissolved	7440-39-3	E421	0.00050	mg/L	0.0376	0.0382	1.41%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.000100	mg/L	<0.100 µg/L	<0.000100	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000250	mg/L	<0.000250	<0.000250	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E421	0.0000250	mg/L	0.209 µg/L	0.000207	0.0000023	Diff <2x LOR	----
		calcium, dissolved	7440-70-2	E421	0.250	mg/L	230	250	8.66%	20%	----
		cobalt, dissolved	7440-48-4	E421	0.00050	mg/L	4.37 µg/L	0.00447	0.00010	Diff <2x LOR	----
		copper, dissolved	7440-50-8	E421	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		iron, dissolved	7439-89-6	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		lead, dissolved	7439-92-1	E421	0.000250	mg/L	<0.000250	<0.000250	0	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0050	mg/L	0.0660	0.0669	1.32%	20%	----
		magnesium, dissolved	7439-95-4	E421	0.0250	mg/L	155	158	1.98%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00050	mg/L	0.106	0.109	2.52%	20%	----
		molybdenum, dissolved	7439-98-7	E421	0.000250	mg/L	0.00818	0.00882	7.46%	20%	----
		nickel, dissolved	7440-02-0	E421	0.00250	mg/L	0.0256	0.0265	3.35%	20%	----
		potassium, dissolved	7440-09-7	E421	0.250	mg/L	3.58	3.64	1.61%	20%	----
		selenium, dissolved	7782-49-2	E421	0.000250	mg/L	75.3 µg/L	0.0808	7.05%	20%	----
		silicon, dissolved	7440-21-3	E421	0.250	mg/L	3.26	3.25	0.447%	20%	----
		silver, dissolved	7440-22-4	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E421	0.250	mg/L	6.47	6.72	3.76%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00100	mg/L	0.284	0.307	7.66%	20%	----
		sulfur, dissolved	7704-34-9	E421	2.50	mg/L	272	280	3.04%	20%	----



Sub-Matrix: Water					<i>Laboratory Duplicate (DUP) Report</i>						
<i>Laboratory sample ID</i>	<i>Client sample ID</i>	<i>Analyte</i>	<i>CAS Number</i>	<i>Method</i>	<i>LOR</i>	<i>Unit</i>	<i>Original Result</i>	<i>Duplicate Result</i>	<i>RPD(%) or Difference</i>	<i>Duplicate Limits</i>	<i>Qualifier</i>
Dissolved Metals (QC Lot: 763863) - continued											
CG2216630-021	Anonymous	thallium, dissolved	7440-28-0	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.00150	mg/L	<0.00150	<0.00150	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000050	mg/L	0.00917	0.00962	4.76%	20%	----
		vanadium, dissolved	7440-62-2	E421	0.00250	mg/L	<0.00250	<0.00250	0	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E421	0.0050	mg/L	0.0100	0.0102	0.0002	Diff <2x LOR	----
Dissolved Metals (QC Lot: 763864)											
CG2216630-021	Anonymous	chromium, dissolved	7440-47-3	E421.Cr-L	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 764141)											
CG2216634-001	RG_RIVER_WS_LAEMP_EVO_2022-12_N	mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 763154)						
turbidity	---	E121	0.1	NTU	<0.10	---
Physical Tests (QCLot: 763219)						
solids, total suspended [TSS]	---	E160-L	1	mg/L	<1.0	---
Physical Tests (QCLot: 763220)						
solids, total suspended [TSS]	---	E160-L	1	mg/L	<1.0	---
Physical Tests (QCLot: 763221)						
solids, total dissolved [TDS]	---	E162	10	mg/L	<10	---
Physical Tests (QCLot: 763222)						
solids, total dissolved [TDS]	---	E162	10	mg/L	<10	---
Physical Tests (QCLot: 763225)						
conductivity	---	E100	1	µS/cm	<1.0	---
Physical Tests (QCLot: 763226)						
alkalinity, bicarbonate (as CaCO ₃)	---	E290	1	mg/L	<1.0	---
alkalinity, carbonate (as CaCO ₃)	---	E290	1	mg/L	<1.0	---
alkalinity, hydroxide (as CaCO ₃)	---	E290	1	mg/L	<1.0	---
alkalinity, total (as CaCO ₃)	---	E290	1	mg/L	<1.0	---
Physical Tests (QCLot: 763243)						
acidity (as CaCO ₃)	---	E283	2	mg/L	<2.0	---
Physical Tests (QCLot: 764363)						
turbidity	---	E121	0.1	NTU	<0.10	---
Physical Tests (QCLot: 764511)						
turbidity	---	E121	0.1	NTU	<0.10	---
Anions and Nutrients (QCLot: 763172)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	---
Anions and Nutrients (QCLot: 763173)						
bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	---
Anions and Nutrients (QCLot: 763174)						
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	---
Anions and Nutrients (QCLot: 763175)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	---
Anions and Nutrients (QCLot: 763176)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	---



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 763177)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 763178)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 763179)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 763180)						
bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 763181)						
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	----
Anions and Nutrients (QCLot: 763182)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 763183)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 763186)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 763280)						
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 764013)						
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 764014)						
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 764040)						
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Organic / Inorganic Carbon (QCLot: 763160)						
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Organic / Inorganic Carbon (QCLot: 763164)						
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	<0.50	----
Total Metals (QCLot: 763859)						
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	<0.00010	----
Total Metals (QCLot: 763860)						
aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	----
antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	----
barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 763860) - continued						
bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	---
boron, total	7440-42-8	E420	0.01	mg/L	<0.010	---
cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	---
calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	---
cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	---
copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	---
iron, total	7439-89-6	E420	0.01	mg/L	<0.010	---
lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	---
lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	---
magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	---
manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	---
molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	---
nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	---
potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	---
selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	---
silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	---
silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	---
sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	---
strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	---
sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	---
thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	---
tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	---
titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	---
uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	---
vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	---
zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	---
Total Metals (QCLot: 764135)						
mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	---
Dissolved Metals (QCLot: 763863)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	---
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	---
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	---
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	---
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	---
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	---



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 763863) - continued						
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
Dissolved Metals (QCLot: 763864)						
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	<0.00010	----
Dissolved Metals (QCLot: 764141)						
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Physical Tests (QCLot: 763147)									
oxidation-reduction potential [ORP]	----	E125	----	mV	220 mV	98.7	95.4	104	----
Physical Tests (QCLot: 763154)									
turbidity	----	E121	0.1	NTU	200 NTU	101	85.0	115	----
Physical Tests (QCLot: 763219)									
solids, total suspended [TSS]	----	E160-L	1	mg/L	150 mg/L	94.3	85.0	115	----
Physical Tests (QCLot: 763220)									
solids, total suspended [TSS]	----	E160-L	1	mg/L	150 mg/L	92.6	85.0	115	----
Physical Tests (QCLot: 763221)									
solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	95.2	85.0	115	----
Physical Tests (QCLot: 763222)									
solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	96.6	85.0	115	----
Physical Tests (QCLot: 763224)									
pH	----	E108	----	pH units	7 pH units	100	98.6	101	----
Physical Tests (QCLot: 763225)									
conductivity	----	E100	1	µS/cm	146.9 µS/cm	99.2	90.0	110	----
Physical Tests (QCLot: 763226)									
alkalinity, total (as CaCO ₃)	----	E290	1	mg/L	500 mg/L	102	85.0	115	----
Physical Tests (QCLot: 763243)									
acidity (as CaCO ₃)	----	E283	2	mg/L	50 mg/L	105	85.0	115	----
Physical Tests (QCLot: 764363)									
turbidity	----	E121	0.1	NTU	200 NTU	101	85.0	115	----
Physical Tests (QCLot: 764511)									
turbidity	----	E121	0.1	NTU	200 NTU	102	85.0	115	----
Anions and Nutrients (QCLot: 763172)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	103	90.0	110	----
Anions and Nutrients (QCLot: 763173)									
bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	106	85.0	115	----
Anions and Nutrients (QCLot: 763174)									
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	105	90.0	110	----
Anions and Nutrients (QCLot: 763175)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	105	90.0	110	----



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Anions and Nutrients (QCLot: 763176)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	104	90.0	110	----
Anions and Nutrients (QCLot: 763177)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	105	90.0	110	----
Anions and Nutrients (QCLot: 763178)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	107	90.0	110	----
Anions and Nutrients (QCLot: 763179)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	105	90.0	110	----
Anions and Nutrients (QCLot: 763180)									
bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	107	85.0	115	----
Anions and Nutrients (QCLot: 763181)									
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	107	90.0	110	----
Anions and Nutrients (QCLot: 763182)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	105	90.0	110	----
Anions and Nutrients (QCLot: 763183)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	106	90.0	110	----
Anions and Nutrients (QCLot: 763186)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	99.0	85.0	115	----
Anions and Nutrients (QCLot: 763280)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	93.7	75.0	125	----
Anions and Nutrients (QCLot: 764013)									
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.03 mg/L	97.9	80.0	120	----
Anions and Nutrients (QCLot: 764014)									
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.03 mg/L	107	80.0	120	----
Anions and Nutrients (QCLot: 764040)									
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.03 mg/L	99.8	80.0	120	----
Organic / Inorganic Carbon (QCLot: 763160)									
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	112	80.0	120	----
Organic / Inorganic Carbon (QCLot: 763164)									
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	113	80.0	120	----
Total Metals (QCLot: 763859)									
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	0.25 mg/L	94.8	80.0	120	----
Total Metals (QCLot: 763860)									
aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	102	80.0	120	----



Sub-Matrix: Water

Laboratory Control Sample (LCS) Report

Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Total Metals (QCLot: 763860) - continued									
antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	93.3	80.0	120	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	94.1	80.0	120	----
barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	93.2	80.0	120	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	101	80.0	120	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	95.4	80.0	120	----
boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	92.7	80.0	120	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	99.3	80.0	120	----
calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	88.4	80.0	120	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	97.0	80.0	120	----
copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	94.0	80.0	120	----
iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	100	80.0	120	----
lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	99.1	80.0	120	----
lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	99.5	80.0	120	----
magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	104	80.0	120	----
manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	98.4	80.0	120	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	93.0	80.0	120	----
nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	96.6	80.0	120	----
potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	96.6	80.0	120	----
selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	100	80.0	120	----
silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	98.2	60.0	140	----
silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	89.5	80.0	120	----
sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	93.7	80.0	120	----
strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	90.5	80.0	120	----
sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	109	80.0	120	----
thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	97.6	80.0	120	----
tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	97.1	80.0	120	----
titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	89.4	80.0	120	----
uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	96.9	80.0	120	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	98.8	80.0	120	----
zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	92.7	80.0	120	----
Total Metals (QCLot: 764135)									
mercury, total	7439-97-6	E508	0.000005	mg/L	0.0001 mg/L	105	80.0	120	----
Dissolved Metals (QCLot: 763863)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	101	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	90.8	80.0	120	----



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 763863) - continued									
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	97.1	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	94.3	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	97.5	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	94.9	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	91.9	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	98.6	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	89.5	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	97.4	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	95.7	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	92.0	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	98.4	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	97.1	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	108	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	99.6	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	91.4	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	96.9	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	98.0	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	95.4	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	95.0	60.0	140	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	88.1	80.0	120	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	96.5	80.0	120	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	88.3	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	105	80.0	120	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	95.7	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	93.3	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	99.0	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	96.0	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	97.4	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	96.6	80.0	120	----
Dissolved Metals (QCLot: 763864)									
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	0.25 mg/L	95.8	80.0	120	----
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	103	80.0	120	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 763172)										
CG2216616-008	Anonymous	fluoride	16984-48-8	E235.F	0.776 mg/L	1 mg/L	77.6	75.0	125	----
Anions and Nutrients (QCLot: 763173)										
CG2216616-008	Anonymous	bromide	24959-67-9	E235.Br-L	0.389 mg/L	0.5 mg/L	77.7	75.0	125	----
Anions and Nutrients (QCLot: 763174)										
CG2216616-008	Anonymous	chloride	16887-00-6	E235.Cl-L	77.3 mg/L	100 mg/L	77.3	75.0	125	----
Anions and Nutrients (QCLot: 763175)										
CG2216616-008	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	1.94 mg/L	2.5 mg/L	77.6	75.0	125	----
Anions and Nutrients (QCLot: 763176)										
CG2216616-008	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.397 mg/L	0.5 mg/L	79.4	75.0	125	----
Anions and Nutrients (QCLot: 763177)										
CG2216616-008	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	76.1 mg/L	100 mg/L	76.1	75.0	125	----
Anions and Nutrients (QCLot: 763178)										
CG2216634-010	RG_FBLANK_WS_LAEMP_EVO_2022-12_N	nitrate (as N)	14797-55-8	E235.NO3-L	2.18 mg/L	2.5 mg/L	87.2	75.0	125	----
Anions and Nutrients (QCLot: 763179)										
CG2216634-010	RG_FBLANK_WS_LAEMP_EVO_2022-12_N	fluoride	16984-48-8	E235.F	0.850 mg/L	1 mg/L	85.0	75.0	125	----
Anions and Nutrients (QCLot: 763180)										
CG2216634-010	RG_FBLANK_WS_LAEMP_EVO_2022-12_N	bromide	24959-67-9	E235.Br-L	0.440 mg/L	0.5 mg/L	88.0	75.0	125	----
Anions and Nutrients (QCLot: 763181)										
CG2216634-010	RG_FBLANK_WS_LAEMP_EVO_2022-12_N	chloride	16887-00-6	E235.Cl-L	86.7 mg/L	100 mg/L	86.7	75.0	125	----
Anions and Nutrients (QCLot: 763182)										
CG2216634-010	RG_FBLANK_WS_LAEMP_EVO_2022-12_N	nitrite (as N)	14797-65-0	E235.NO2-L	0.447 mg/L	0.5 mg/L	89.4	75.0	125	----
Anions and Nutrients (QCLot: 763183)										
CG2216634-010	RG_FBLANK_WS_LAEMP_EVO_2022-12_N	sulfate (as SO4)	14808-79-8	E235.SO4	81.8 mg/L	100 mg/L	81.8	75.0	125	----
Anions and Nutrients (QCLot: 763186)										



Sub-Matrix: Water

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 763186) - continued										
CG2216606-002	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.102 mg/L	0.1 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 763280)										
CG2216634-002	RG_ERCKMD_WS_LAEMP_EVO_2022-12_N	Kjeldahl nitrogen, total [TKN]	----	E318	2.44 mg/L	2.5 mg/L	97.6	70.0	130	----
Anions and Nutrients (QCLot: 764013)										
CG2216608-002	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0512 mg/L	0.05 mg/L	102	70.0	130	----
Anions and Nutrients (QCLot: 764014)										
CG2216634-007	RG_BOCK_WS_LAEMP_EV_O_2022-12_N	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0505 mg/L	0.05 mg/L	101	70.0	130	----
Anions and Nutrients (QCLot: 764040)										
CG2216634-002	RG_ERCKMD_WS_LAEMP_EVO_2022-12_N	phosphorus, total	7723-14-0	E372-U	0.0494 mg/L	0.05 mg/L	98.8	70.0	130	----
Organic / Inorganic Carbon (QCLot: 763160)										
CG2216634-001	RG_RIVER_WS_LAEMP_EVO_2022-12_N	carbon, dissolved organic [DOC]	----	E358-L	6.08 mg/L	5 mg/L	122	70.0	130	----
Organic / Inorganic Carbon (QCLot: 763164)										
CG2216634-001	RG_RIVER_WS_LAEMP_EVO_2022-12_N	carbon, total organic [TOC]	----	E355-L	6.31 mg/L	5 mg/L	126	70.0	130	----
Total Metals (QCLot: 763859)										
CG2216634-002	RG_ERCKMD_WS_LAEMP_EVO_2022-12_N	chromium, total	7440-47-3	E420.Cr-L	0.385 mg/L	0.4 mg/L	96.4	70.0	130	----
Total Metals (QCLot: 763860)										
CG2216634-002	RG_ERCKMD_WS_LAEMP_EVO_2022-12_N	aluminum, total	7429-90-5	E420	2.02 mg/L	2 mg/L	101	70.0	130	----
		antimony, total	7440-36-0	E420	0.196 mg/L	0.2 mg/L	98.2	70.0	130	----
		arsenic, total	7440-38-2	E420	0.195 mg/L	0.2 mg/L	97.6	70.0	130	----
		barium, total	7440-39-3	E420	0.179 mg/L	0.2 mg/L	89.7	70.0	130	----
		beryllium, total	7440-41-7	E420	0.395 mg/L	0.4 mg/L	98.8	70.0	130	----
		bismuth, total	7440-69-9	E420	0.0936 mg/L	0.1 mg/L	93.6	70.0	130	----
		boron, total	7440-42-8	E420	0.941 mg/L	1 mg/L	94.1	70.0	130	----
		cadmium, total	7440-43-9	E420	0.0417 mg/L	0.04 mg/L	104	70.0	130	----
		calcium, total	7440-70-2	E420	ND mg/L	40 mg/L	ND	70.0	130	----
		cobalt, total	7440-48-4	E420	0.193 mg/L	0.2 mg/L	96.5	70.0	130	----
		copper, total	7440-50-8	E420	0.188 mg/L	0.2 mg/L	94.0	70.0	130	----
		iron, total	7439-89-6	E420	19.7 mg/L	20 mg/L	98.5	70.0	130	----
		lead, total	7439-92-1	E420	0.192 mg/L	0.2 mg/L	95.8	70.0	130	----
		lithium, total	7439-93-2	E420	0.993 mg/L	1 mg/L	99.3	70.0	130	----



Sub-Matrix: Water

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 763860) - continued										
CG2216634-002	RG_ERCKMD_WS_LAEMP_EVO_2022-12_N	magnesium, total	7439-95-4	E420	ND mg/L	10 mg/L	ND	70.0	130	----
		manganese, total	7439-96-5	E420	0.195 mg/L	0.2 mg/L	97.6	70.0	130	----
		molybdenum, total	7439-98-7	E420	0.201 mg/L	0.2 mg/L	100	70.0	130	----
		nickel, total	7440-02-0	E420	0.385 mg/L	0.4 mg/L	96.2	70.0	130	----
		potassium, total	7440-09-7	E420	37.9 mg/L	40 mg/L	94.8	70.0	130	----
		selenium, total	7782-49-2	E420	0.418 mg/L	0.4 mg/L	104	70.0	130	----
		silicon, total	7440-21-3	E420	96.6 mg/L	100 mg/L	96.6	70.0	130	----
		silver, total	7440-22-4	E420	0.0422 mg/L	0.04 mg/L	105	70.0	130	----
		sodium, total	7440-23-5	E420	17.8 mg/L	20 mg/L	88.9	70.0	130	----
		strontium, total	7440-24-6	E420	ND mg/L	0.2 mg/L	ND	70.0	130	----
		sulfur, total	7704-34-9	E420	ND mg/L	200 mg/L	ND	70.0	130	----
		thallium, total	7440-28-0	E420	0.0382 mg/L	0.04 mg/L	95.4	70.0	130	----
		tin, total	7440-31-5	E420	0.202 mg/L	0.2 mg/L	101	70.0	130	----
		titanium, total	7440-32-6	E420	0.388 mg/L	0.4 mg/L	96.9	70.0	130	----
		uranium, total	7440-61-1	E420	0.0380 mg/L	0.04 mg/L	95.0	70.0	130	----
vanadium, total	7440-62-2	E420	0.972 mg/L	1 mg/L	97.2	70.0	130	----		
zinc, total	7440-66-6	E420	3.85 mg/L	4 mg/L	96.3	70.0	130	----		
Total Metals (QCLot: 764135)										
CG2216634-002	RG_ERCKMD_WS_LAEMP_EVO_2022-12_N	mercury, total	7439-97-6	E508	0.0000984 mg/L	0.0001 mg/L	98.4	70.0	130	----
Dissolved Metals (QCLot: 763863)										
CG2216630-022	Anonymous	aluminum, dissolved	7429-90-5	E421	2.05 mg/L	2 mg/L	102	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.186 mg/L	0.2 mg/L	93.2	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.197 mg/L	0.2 mg/L	98.5	70.0	130	----
		barium, dissolved	7440-39-3	E421	0.184 mg/L	0.2 mg/L	91.8	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.411 mg/L	0.4 mg/L	103	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.0939 mg/L	0.1 mg/L	93.9	70.0	130	----
		boron, dissolved	7440-42-8	E421	0.958 mg/L	1 mg/L	95.8	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.0410 mg/L	0.04 mg/L	102	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	40 mg/L	ND	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.196 mg/L	0.2 mg/L	98.3	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.192 mg/L	0.2 mg/L	95.9	70.0	130	----
		iron, dissolved	7439-89-6	E421	19.5 mg/L	20 mg/L	97.4	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.193 mg/L	0.2 mg/L	96.6	70.0	130	----
		lithium, dissolved	7439-93-2	E421	1.06 mg/L	1 mg/L	106	70.0	130	----



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 763863) - continued										
CG2216630-022	Anonymous	magnesium, dissolved	7439-95-4	E421	ND mg/L	10 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E421	0.195 mg/L	0.2 mg/L	97.6	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.194 mg/L	0.2 mg/L	97.1	70.0	130	----
		nickel, dissolved	7440-02-0	E421	0.380 mg/L	0.4 mg/L	95.0	70.0	130	----
		potassium, dissolved	7440-09-7	E421	38.6 mg/L	40 mg/L	96.6	70.0	130	----
		selenium, dissolved	7782-49-2	E421	0.415 mg/L	0.4 mg/L	104	70.0	130	----
		silicon, dissolved	7440-21-3	E421	94.6 mg/L	100 mg/L	94.6	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.0396 mg/L	0.04 mg/L	99.1	70.0	130	----
		sodium, dissolved	7440-23-5	E421	18.7 mg/L	20 mg/L	93.4	70.0	130	----
		strontium, dissolved	7440-24-6	E421	ND mg/L	0.2 mg/L	ND	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	ND mg/L	200 mg/L	ND	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.0384 mg/L	0.04 mg/L	96.1	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.190 mg/L	0.2 mg/L	95.1	70.0	130	----
		titanium, dissolved	7440-32-6	E421	0.372 mg/L	0.4 mg/L	93.1	70.0	130	----
		uranium, dissolved	7440-61-1	E421	0.0387 mg/L	0.04 mg/L	96.7	70.0	130	----
		vanadium, dissolved	7440-62-2	E421	0.977 mg/L	1 mg/L	97.7	70.0	130	----
		zinc, dissolved	7440-66-6	E421	4.13 mg/L	4 mg/L	103	70.0	130	----
Dissolved Metals (QCLot: 763864)										
CG2216630-022	Anonymous	chromium, dissolved	7440-47-3	E421.Cr-L	0.388 mg/L	0.4 mg/L	97.1	70.0	130	----
Dissolved Metals (QCLot: 764141)										
CG2216634-002	RG_ERCKMD_WS_LAEMP_EVO_2022-12_N	mercury, dissolved	7439-97-6	E509	0.0000945 mg/L	0.0001 mg/L	94.5	70.0	130	----

COC ID:	December EVO LAEMP 2022		TURNAROUND TIME:	rush	
PROJECT/CLIENT INFO			LABORATORY		
Facility Name / Job#	Regional EVO LAEMP		Lab Name	ALS Calgary	
Project Manager	Mike Pone		Lab Contact	Lyudmyla Shvets	
Address	421 Pine Avenue		Address	2559 29 Street NE	
City	Sparwood	Province	BC	City	Calgary
Postal Code	VOB 2G0	Country	Canada	Postal Code	T1Y 7B5
Phone Number	343-333-3905		Phone Number	403 407 1794	

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS REQUESTED								
								TECKCOAL-ROUTINE-VA	ALS_Package-DOC	ALS_Package-TKN/TOC	HG-T-U-CVAF-VA	HG-D-CVAF-VA	TECKCOAL-MET-T-VA	TECKCOAL-MET-D-VA		
RG_RIVER_WS_LAEMP_EVO_2022-12_N	RG_RIVER	WS	No	11/28/2022	13:00	G	7	X	X	X	X	X	X	X		
RG_ERCKMD_WS_LAEMP_EVO_2022-12_N	RG_ERCKMD	WS	No	11/28/2022	9:30	G	7	X	X	X	X	X	X	X		
RG_ERCKDT_WS_LAEMP_EVO_2022-12_N	RG_ERCKDT	WS	No	11/28/2022	13:00	G	7	X	X	X	X	X	X	X		
RG_ERCKUT_WS_LAEMP_EVO_2022-12_N	RG_ERCKUT	WS	No	11/29/2022	9:00	G	7	X	X	X	X	X	X	X		
RG_GATEDP_WS_LAEMP_EVO_2022-12_N	RG_GATEDP	WS	No	11/29/2022	13:30	G	7	X	X	X	X	X	X	X		
RG_GATE_WS_LAEMP_EVO_2022-12_N	RG_GATE	WS	No	11/29/2022	13:45	G	7	X	X	X	X	X	X	X		
RG_BOCK_WS_LAEMP_EVO_2022-12_N	RG_BOCK	WS	No	11/29/2022	15:00	G	7	X	X	X	X	X	X	X		
RG_BOCKRD_WS_LAEMP_EVO_2022-12_N	RG_BOCKRD	WS	No	11/29/2022	12:20	G	7	X	X	X	X	X	X	X		
RG_RIVER_2_WS_LAEMP_EVO_2022-12_N	RG_RIVER	WS	No	11/29/2022	13:30	G	7	X	X	X	X	X	X	X		
RG_FBLANK_WS_LAEMP_EVO_2022-12_N	RG_FBLANK	WS	No	11/28/2022	13:00	G	7	X	X	X	X	X	X	X		
RG_TRIP_2_WS_LAEMP_EVO_2022-12_N	RG_TRIP	WS	No	11/28/2022	13:00	G	7	X	X	X	X	X	X	X		

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
ALS PO VPO00847030	Liva Ramanjehimanana/Minnow Environmental	November 29, 2022	<i>[Signature]</i> 11/30 9:35

NB OF BOTTLES RETURNED/DESCRIPTION	Regular (default)	Priority (2-3 business days) - 50% surcharge	Emergency (1 Business Day) - 100% surcharge	For Emergency <1 Day, ASAP or Weekend - Contact ALS
		X		

Sampler's Name	Liva Ramanjehimanana	Mobile #	416-684-0886
Sampler's Signature	Liva Ramanjehimanana	Date/Time	November 29, 2022

Environmental Division
Calgary
Work Order Reference
CG2216634



Telephone : + 1 403 407 1800

Environmental Division
Calgary
Work Order Reference
CG2216634



CERTIFICATE OF ANALYSIS

<p>Work Order : CG2216725</p> <p>Client : Teck Coal Limited</p> <p>Contact : Mike Pope</p> <p>Address : 421 Pine Avenue Sparwood BC Canada V0B2G0</p> <p>Telephone : ----</p> <p>Project : REGIONAL EFFECTS PROGRAM</p> <p>PO : VPO00847030</p> <p>C-O-C number : December EVO LAEMP 2022</p> <p>Sampler : Liva Ramanjehimanana</p> <p>Site : ----</p> <p>Quote number : Teck Coal Master Quote</p> <p>No. of samples received : 7</p> <p>No. of samples analysed : 7</p>	<p>Page : 1 of 10</p> <p>Laboratory : Calgary - Environmental</p> <p>Account Manager : Lyudmyla Shvets</p> <p>Address : 2559 29th Street NE Calgary AB Canada T1Y 7B5</p> <p>Telephone : +1 403 407 1800</p> <p>Date Samples Received : 02-Dec-2022 08:50</p> <p>Date Analysis Commenced : 02-Dec-2022</p> <p>Issue Date : 04-Dec-2022 15:48</p>
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This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Andrew Fox		Metals, Calgary, Alberta
Anthony Calero	Supervisor - Inorganic	Inorganics, Calgary, Alberta
Elke Tabora		Inorganics, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Metals, Calgary, Alberta
Ruifang Zheng	Analyst	Inorganics, Calgary, Alberta
Shirley Li	Team Leader - Inorganics	Metals, Calgary, Alberta
Sonhuong Bui	Laboratory Analyst	Metals, Calgary, Alberta



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
 LOR: Limit of Reporting (detection limit).

Unit	Description
-	no units
%	percent
µg/L	micrograms per litre
µS/cm	microsiemens per centimetre
meq/L	milliequivalents per litre
mg/L	milligrams per litre
mV	millivolts
NTU	nephelometric turbidity units
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

Qualifier	Description
DLDS	Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
DTSE	Dissolved Se concentration exceeds total. Positive bias on D-Se suspected due to signal enhancement from volatile selenium species. Contact ALS if an alternative test to address this interference is needed.
RRV	Reported result verified by repeat analysis.
TKNI	TKN result may be biased low due to Nitrate interference. Nitrate-N is > 10x TKN.



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCK_WS_ LAEMP_EVO_2 022-12_N	RG_MICOMP_W S_LAEMP_EVO _2022-12_N	RG_MI3_WS_L AEMP_EVO_20 22-12_N	RG_ERCKUC_W S_LAEMP_EVO _2022-12_N	RG_MIDER_WS _LAEMP_EVO_ _2022-12_N
Client sampling date / time					30-Nov-2022 09:30	30-Nov-2022 14:00	30-Nov-2022 11:15	30-Nov-2022 10:20	30-Nov-2022 12:30	
Analyte	CAS Number	Method	LOR	Unit	CG2216725-001	CG2216725-002	CG2216725-003	CG2216725-004	CG2216725-005	
					Result	Result	Result	Result	Result	
Physical Tests										
acidity (as CaCO3)	----	E283	2.0	mg/L	<2.0	<2.0	<2.0	<2.0	<2.0	
alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	425	219	170	412	174	
alkalinity, bicarbonate (as HCO3)	71-52-3	E290	1.0	mg/L	519	267	208	502	212	
alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
alkalinity, carbonate (as CO3)	3812-32-6	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
alkalinity, hydroxide (as OH)	14280-30-9	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	425	219	170	412	174	
conductivity	----	E100	2.0	µS/cm	1820	688	377	1800	414	
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	1190	357	184	1200	227	
oxidation-reduction potential [ORP]	----	E125	0.10	mV	368	345	354	354	300	
pH	----	E108	0.10	pH units	8.16	8.20	8.22	8.18	8.25	
solids, total dissolved [TDS]	----	E162	10	mg/L	1590	480	236	1590	270	
solids, total suspended [TSS]	----	E160-L	1.0	mg/L	<1.0	1.1	<1.0	2.2	<1.0	
turbidity	----	E121	0.10	NTU	0.11	0.32	0.26	0.17	0.30	
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	0.0133	0.0065	<0.0050	0.0052	
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.250 ^{DLDS}	<0.050	<0.050	<0.250 ^{DLDS}	<0.050	
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	9.06	4.89	1.60	8.49	1.77	
fluoride	16984-48-8	E235.F	0.020	mg/L	0.177	0.160	0.153	0.180	0.148	
Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	0.761 ^{TKNI}	0.281	<0.500 ^{DLM}	1.85	0.267	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	8.30	1.55	0.124	8.60	0.287	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0050 ^{DLDS}	0.0023	<0.0010	<0.0050 ^{DLDS}	<0.0010	
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0048	<0.0010	<0.0010	0.0057	0.0011	
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0108 ^{DLM}	0.0040	0.0038	0.0073	0.0280	
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	791	187	47.0	820	67.4	
Organic / Inorganic Carbon										
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	<0.50	<0.50	<0.50	<0.50	<0.50	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCK_WS_ LAEMP_EVO_2 022-12_N	RG_MICOMP_W S_ LAEMP_EVO _2022-12_N	RG_MI3_WS_L AEMP_EVO_20 22-12_N	RG_ERCKUC_W S_ LAEMP_EVO _2022-12_N	RG_MIDER_WS _LAEMP_EVO_ 2022-12_N
Client sampling date / time					30-Nov-2022 09:30	30-Nov-2022 14:00	30-Nov-2022 11:15	30-Nov-2022 10:20	30-Nov-2022 12:30	
Analyte	CAS Number	Method	LOR	Unit	CG2216725-001	CG2216725-002	CG2216725-003	CG2216725-004	CG2216725-005	
					Result	Result	Result	Result	Result	
Organic / Inorganic Carbon										
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	<0.50	<0.50	<0.50	<0.50	<0.50	
Ion Balance										
anion sum	----	EC101	0.10	meq/L	25.8	8.53	4.44	26.2	4.96	
cation sum	----	EC101	0.10	meq/L	24.2	7.36	3.83	24.3	4.71	
ion balance (cations/anions)	----	EC101	0.010	%	93.8	86.3	86.3	92.7	95.0	
ion balance (APHA)	----	EC101	0.01	%	-3.20	-7.36	-7.38	-3.76	-2.58	
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L	<0.0030	0.0065	0.0070	0.0051	0.0076	
antimony, total	7440-36-0	E420	0.00010	mg/L	0.00021	0.00013	<0.00010	0.00024	<0.00010	
arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00032	0.00019	0.00014	0.00028	0.00015	
barium, total	7440-39-3	E420	0.00010	mg/L	0.0324	0.123	0.102	0.0327	0.108	
beryllium, total	7440-41-7	E420	0.020	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	
bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
boron, total	7440-42-8	E420	0.010	mg/L	0.026	0.014	<0.010	0.026	<0.010	
cadmium, total	7440-43-9	E420	0.0050	µg/L	0.0094	0.0277	0.0130	0.0135	0.0168	
calcium, total	7440-70-2	E420	0.050	mg/L	248	87.2	55.6	238	58.5	
chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	0.00019	0.00014	0.00013	<0.00010	0.00014	
cobalt, total	7440-48-4	E420	0.10	µg/L	1.38	<0.10	<0.10	1.75	<0.10	
copper, total	7440-50-8	E420	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
iron, total	7439-89-6	E420	0.010	mg/L	<0.010	0.016	<0.010	0.012	<0.010	
lead, total	7439-92-1	E420	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
lithium, total	7439-93-2	E420	0.0010	mg/L	0.0750	0.0209	0.0056	0.0726	0.0066	
magnesium, total	7439-95-4	E420	0.0050	mg/L	164	42.2	16.7	155	20.2	
manganese, total	7439-96-5	E420	0.00010	mg/L	0.0242	0.00289	0.00066	0.0372	0.00110	
mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.00877	0.00201	0.000766	0.00884	0.000908	
nickel, total	7440-02-0	E420	0.00050	mg/L	0.0172	0.00294	<0.00050	0.0173	0.00061	
potassium, total	7440-09-7	E420	0.050	mg/L	4.09	1.27	0.591	3.89	0.661	
selenium, total	7782-49-2	E420	0.050	µg/L	93.4 ^{DTSE}	15.2 ^{DTSE}	1.18 ^{DTSE}	88.0 ^{DTSE}	2.91 ^{DTSE}	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCK_WS_ LAEMP_EVO_2 022-12_N	RG_MICOMP_W S_ LAEMP_EVO _2022-12_N	RG_MI3_WS_L AEMP_EVO_20 22-12_N	RG_ERCKUC_W S_ LAEMP_EVO _2022-12_N	RG_MIDER_WS _LAEMP_EVO_ _2022-12_N
Client sampling date / time					30-Nov-2022 09:30	30-Nov-2022 14:00	30-Nov-2022 11:15	30-Nov-2022 10:20	30-Nov-2022 12:30	
Analyte	CAS Number	Method	LOR	Unit	CG2216725-001	CG2216725-002	CG2216725-003	CG2216725-004	CG2216725-005	
					Result	Result	Result	Result	Result	
Total Metals										
silicon, total	7440-21-3	E420	0.10	mg/L	4.34	2.72	2.58	4.06	2.55	
silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
sodium, total	7440-23-5	E420	0.050	mg/L	7.91	5.14	3.43	7.51	3.76	
strontium, total	7440-24-6	E420	0.00020	mg/L	0.326	0.210	0.160	0.329	0.165	
sulfur, total	7704-34-9	E420	0.50	mg/L	341	65.2	16.8	315	24.4	
thallium, total	7440-28-0	E420	0.000010	mg/L	0.000037	<0.000010	<0.000010	0.000038	<0.000010	
tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	
uranium, total	7440-61-1	E420	0.000010	mg/L	0.0108	0.00233	0.000816	0.0102	0.00102	
vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00022	0.00011	<0.00010	0.00021	<0.00010	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00034	0.00015	0.00013	0.00036	0.00016	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0328	0.114	0.0973	0.0338	0.112	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
boron, dissolved	7440-42-8	E421	0.010	mg/L	0.023	0.014	<0.010	0.023	<0.010	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.0057	0.0213	0.0130	0.0097	0.0143	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	230	80.1	48.5	225	59.0	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00010	0.00012	0.00016	<0.00010	0.00017	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	1.27	<0.10	<0.10	1.36	<0.10	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0636	0.0208	0.0051	0.0670	0.0064	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	150	38.1	15.3	154	19.4	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.0227	0.00201	0.00037	0.0239	0.00071	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCK_WS_ LAEMP_EVO_2 022-12_N	RG_MICOMP_W S_LAEMP_EVO _2022-12_N	RG_MI3_WS_L AEMP_EVO_20 22-12_N	RG_ERCKUC_W S_LAEMP_EVO _2022-12_N	RG_MIDER_WS _LAEMP_EVO_ _2022-12_N
Client sampling date / time					30-Nov-2022 09:30	30-Nov-2022 14:00	30-Nov-2022 11:15	30-Nov-2022 10:20	30-Nov-2022 12:30	
Analyte	CAS Number	Method	LOR	Unit	CG2216725-001	CG2216725-002	CG2216725-003	CG2216725-004	CG2216725-005	
					Result	Result	Result	Result	Result	
Dissolved Metals										
mercury, dissolved	7439-97-6	E509	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00905	0.00206	0.000762	0.00866	0.000944	
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.0167	0.00263	<0.00050	0.0169	0.00059	
potassium, dissolved	7440-09-7	E421	0.050	mg/L	3.72	1.10	0.506	3.78	0.658	
selenium, dissolved	7782-49-2	E421	0.050	µg/L	143 ^{DTSE}	25.4 ^{DTSE}	2.10 ^{DTSE}	141 ^{DTSE}	4.33 ^{DTSE}	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	3.92	2.78	2.49	3.91	2.36	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	7.04	4.67	3.12	7.24	3.63	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.312	0.192	0.139	0.311	0.170	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	350	82.0	20.4	352	25.5	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	0.000035	<0.000010	<0.000010	0.000036	<0.000010	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.0100	0.00210	0.000750	0.0101	0.00102	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
dissolved mercury filtration location	----	EP509	-	-	Field	Field	Field	Field	Field	
dissolved metals filtration location	----	EP421	-	-	Field	Field	Field	Field	Field	

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_FBLANK2_ WS_LAEMP_EV O_2022-12_N	RG_TRIP2_WS_ LAEMP_EVO_2 022-12_N	----	----	----
Client sampling date / time					30-Nov-2022 13:00	30-Nov-2022 13:00	----	----	----	
Analyte	CAS Number	Method	LOR	Unit	CG2216725-006	CG2216725-007	-----	-----	-----	
					Result	Result	----	----	----	
Physical Tests										
acidity (as CaCO3)	----	E283	2.0	mg/L	2.0 ^{RRV}	2.1 ^{RRV}	----	----	----	
alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	----	----	----	
alkalinity, bicarbonate (as HCO3)	71-52-3	E290	1.0	mg/L	<1.0	<1.0	----	----	----	
alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	----	----	----	
alkalinity, carbonate (as CO3)	3812-32-6	E290	1.0	mg/L	<1.0	<1.0	----	----	----	
alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	----	----	----	
alkalinity, hydroxide (as OH)	14280-30-9	E290	1.0	mg/L	<1.0	<1.0	----	----	----	
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	----	----	----	
conductivity	----	E100	2.0	µS/cm	<2.0	<2.0	----	----	----	
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	<0.50	<0.50	----	----	----	
oxidation-reduction potential [ORP]	----	E125	0.10	mV	528	533	----	----	----	
pH	----	E108	0.10	pH units	5.72	5.53	----	----	----	
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	<10	----	----	----	
solids, total suspended [TSS]	----	E160-L	1.0	mg/L	<1.0	<1.0	----	----	----	
turbidity	----	E121	0.10	NTU	<0.10	<0.10	----	----	----	
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	0.0646 ^{RRV}	----	----	----	
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	<0.050	----	----	----	
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	<0.10	<0.10	----	----	----	
fluoride	16984-48-8	E235.F	0.020	mg/L	<0.020	<0.020	----	----	----	
Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	<0.050	0.058 ^{RRV}	----	----	----	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	<0.0050	0.0068	----	----	----	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	<0.0010	----	----	----	
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	----	----	----	
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	<0.0020	<0.0020	----	----	----	
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	<0.30	<0.30	----	----	----	
Organic / Inorganic Carbon										
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	<0.50	<0.50	----	----	----	
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	<0.50	<0.50	----	----	----	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_FBLANK2_ WS_LAEMP_EV O_2022-12_N	RG_TRIP2_WS_ LAEMP_EVO_2 022-12_N	----	----	----
Client sampling date / time					30-Nov-2022 13:00	30-Nov-2022 13:00	----	----	----	
Analyte	CAS Number	Method	LOR	Unit	CG2216725-006	CG2216725-007	-----	-----	-----	
					Result	Result	----	----	----	
Ion Balance										
anion sum	----	EC101	0.10	meq/L	<0.10	<0.10	----	----	----	
cation sum	----	EC101	0.10	meq/L	<0.10	<0.10	----	----	----	
ion balance (cations/anions)	----	EC101	0.010	%	100	100	----	----	----	
ion balance (APHA)	----	EC101	0.01	%	<0.01	<0.01	----	----	----	
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L	<0.0030	<0.0030	----	----	----	
antimony, total	7440-36-0	E420	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
arsenic, total	7440-38-2	E420	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
barium, total	7440-39-3	E420	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
beryllium, total	7440-41-7	E420	0.020	µg/L	<0.020	<0.020	----	----	----	
bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	----	----	----	
boron, total	7440-42-8	E420	0.010	mg/L	<0.010	<0.010	----	----	----	
cadmium, total	7440-43-9	E420	0.0050	µg/L	<0.0050	<0.0050	----	----	----	
calcium, total	7440-70-2	E420	0.050	mg/L	<0.050	<0.050	----	----	----	
chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
cobalt, total	7440-48-4	E420	0.10	µg/L	<0.10	<0.10	----	----	----	
copper, total	7440-50-8	E420	0.00050	mg/L	<0.00050	<0.00050	----	----	----	
iron, total	7439-89-6	E420	0.010	mg/L	<0.010	<0.010	----	----	----	
lead, total	7439-92-1	E420	0.000050	mg/L	<0.000050	<0.000050	----	----	----	
lithium, total	7439-93-2	E420	0.0010	mg/L	<0.0010	<0.0010	----	----	----	
magnesium, total	7439-95-4	E420	0.0050	mg/L	<0.0050	<0.0050	----	----	----	
manganese, total	7439-96-5	E420	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	----	----	----	
molybdenum, total	7439-98-7	E420	0.000050	mg/L	<0.000050	<0.000050	----	----	----	
nickel, total	7440-02-0	E420	0.00050	mg/L	<0.00050	<0.00050	----	----	----	
potassium, total	7440-09-7	E420	0.050	mg/L	<0.050	<0.050	----	----	----	
selenium, total	7782-49-2	E420	0.050	µg/L	<0.050	<0.050	----	----	----	
silicon, total	7440-21-3	E420	0.10	mg/L	<0.10	<0.10	----	----	----	
silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	----	----	----	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_FBLANK2_ WS_LAEMP_EV O_2022-12_N	RG_TRIP2_WS_ LAEMP_EVO_2 022-12_N	----	----	----
Client sampling date / time					30-Nov-2022 13:00	30-Nov-2022 13:00	----	----	----	
Analyte	CAS Number	Method	LOR	Unit	CG2216725-006 Result	CG2216725-007 Result	----- ----	----- ----	----- ----	
Total Metals										
sodium, total	7440-23-5	E420	0.050	mg/L	<0.050	<0.050	----	----	----	
strontium, total	7440-24-6	E420	0.00020	mg/L	<0.00020	<0.00020	----	----	----	
sulfur, total	7704-34-9	E420	0.50	mg/L	<0.50	<0.50	----	----	----	
thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	----	----	----	
tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00030	<0.00030	----	----	----	
uranium, total	7440-61-1	E420	0.000010	mg/L	<0.000010	<0.000010	----	----	----	
vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	<0.00050	----	----	----	
zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	<0.0030	----	----	----	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	<0.0010	<0.0010	----	----	----	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.020	<0.020	----	----	----	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	----	----	----	
boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.010	<0.010	----	----	----	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	<0.0050	<0.0050	----	----	----	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	<0.050	<0.050	----	----	----	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	<0.10	<0.10	----	----	----	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00020	<0.00020	----	----	----	
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	<0.010	----	----	----	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	----	----	----	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	<0.0010	<0.0010	----	----	----	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	<0.0050	<0.0050	----	----	----	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	----	----	----	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	<0.000050	<0.000050	----	----	----	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_FBLANK2_ WS_LAEMP_EV O_2022-12_N	RG_TRIP2_WS_ LAEMP_EVO_2 022-12_N	----	----	----
Client sampling date / time					30-Nov-2022 13:00	30-Nov-2022 13:00	----	----	----	
Analyte	CAS Number	Method	LOR	Unit	CG2216725-006 Result	CG2216725-007 Result	-----	-----	-----	
Dissolved Metals										
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	<0.00050	<0.00050	----	----	----	
potassium, dissolved	7440-09-7	E421	0.050	mg/L	<0.050	<0.050	----	----	----	
selenium, dissolved	7782-49-2	E421	0.050	µg/L	<0.050	<0.050	----	----	----	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	<0.050	0.102 ^{RRV}	----	----	----	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	----	----	----	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	<0.050	<0.050	----	----	----	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	<0.00020	<0.00020	----	----	----	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	<0.50	<0.50	----	----	----	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	----	----	----	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	----	----	----	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	<0.000010	<0.000010	----	----	----	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	----	----	----	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0010	<0.0010	----	----	----	
dissolved mercury filtration location	----	EP509	-	-	Field	Field	----	----	----	
dissolved metals filtration location	----	EP421	-	-	Field	Field	----	----	----	

Please refer to the General Comments section for an explanation of any qualifiers detected.



QUALITY CONTROL INTERPRETIVE REPORT

<p>Work Order : CG2216725</p> <p>Client : Teck Coal Limited</p> <p>Contact : Mike Pope</p> <p>Address : 421 Pine Avenue Sparwood BC Canada V0B2G0</p> <p>Telephone : ----</p> <p>Project : REGIONAL EFFECTS PROGRAM</p> <p>PO : VPO00847030</p> <p>C-O-C number : December EVO LAEMP 2022</p> <p>Sampler : Liva Ramanjehimanana</p> <p>Site : ----</p> <p>Quote number : Teck Coal Master Quote</p> <p>No. of samples received : 7</p> <p>No. of samples analysed : 7</p>	<p>Page : 1 of 30</p> <p>Laboratory : Calgary - Environmental</p> <p>Account Manager : Lyudmyla Shvets</p> <p>Address : 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5</p> <p>Telephone : +1 403 407 1800</p> <p>Date Samples Received : 02-Dec-2022 08:50</p> <p>Issue Date : 04-Dec-2022 15:48</p>
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This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

- Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
- CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
- DQO: Data Quality Objective.
- LOR: Limit of Reporting (detection limit).
- RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_ERCK_WS_LAEMP_EVO_2022-12_N	E298	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_ERCKUC_WS_LAEMP_EVO_2022-12_N	E298	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_FBLANK2_WS_LAEMP_EVO_2022-12_N	E298	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_MI3_WS_LAEMP_EVO_2022-12_N	E298	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_MICOMP_WS_LAEMP_EVO_2022-12_N	E298	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_MIDER_WS_LAEMP_EVO_2022-12_N	E298	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_TRIP2_WS_LAEMP_EVO_2022-12_N	E298	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-12_N	E235.Br-L	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-12_N	E235.Br-L	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_FBLANK2_WS_LAEMP_EVO_2022-12_N	E235.Br-L	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_MI3_WS_LAEMP_EVO_2022-12_N	E235.Br-L	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-12_N	E235.Br-L	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-12_N	E235.Br-L	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_TRIP2_WS_LAEMP_EVO_2022-12_N	E235.Br-L	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-12_N	E235.Cl-L	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-12_N	E235.Cl-L	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_FBLANK2_WS_LAEMP_EVO_2022-12_N	E235.CI-L	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_MI3_WS_LAEMP_EVO_2022-12_N	E235.CI-L	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-12_N	E235.CI-L	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-12_N	E235.CI-L	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_TRIP2_WS_LAEMP_EVO_2022-12_N	E235.CI-L	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✔	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-12_N	E378-U	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	3 days	2 days	✔	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-12_N	E378-U	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	3 days	2 days	✔	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_FBLANK2_WS_LAEMP_EVO_2022-12_N	E378-U	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	3 days	2 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_MI3_WS_LAEMP_EVO_2022-12_N	E378-U	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	3 days	2 days	✔	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-12_N	E378-U	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	3 days	2 days	✔	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-12_N	E378-U	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	3 days	2 days	✔	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_TRIP2_WS_LAEMP_EVO_2022-12_N	E378-U	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	3 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-12_N	E235.F	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-12_N	E235.F	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_FBLANK2_WS_LAEMP_EVO_2022-12_N	E235.F	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_MI3_WS_LAEMP_EVO_2022-12_N	E235.F	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-12_N	E235.F	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-12_N	E235.F	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_TRIP2_WS_LAEMP_EVO_2022-12_N	E235.F	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-12_N	E235.NO3-L	30-Nov-2022	02-Dec-2022	3 days	2 days	✔	02-Dec-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-12_N	E235.NO3-L	30-Nov-2022	02-Dec-2022	3 days	2 days	✔	02-Dec-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_FBLANK2_WS_LAEMP_EVO_2022-12_N	E235.NO3-L	30-Nov-2022	02-Dec-2022	3 days	2 days	✔	02-Dec-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_MI3_WS_LAEMP_EVO_2022-12_N	E235.NO3-L	30-Nov-2022	02-Dec-2022	3 days	2 days	✔	02-Dec-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-12_N	E235.NO3-L	30-Nov-2022	02-Dec-2022	3 days	2 days	✔	02-Dec-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-12_N	E235.NO3-L	30-Nov-2022	02-Dec-2022	3 days	2 days	✔	02-Dec-2022	3 days	0 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_TRIP2_WS_LAEMP_EVO_2022-12_N	E235.NO3-L	30-Nov-2022	02-Dec-2022	3 days	2 days	✔	02-Dec-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-12_N	E235.NO2-L	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-12_N	E235.NO2-L	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_FBLANK2_WS_LAEMP_EVO_2022-12_N	E235.NO2-L	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_MI3_WS_LAEMP_EVO_2022-12_N	E235.NO2-L	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-12_N	E235.NO2-L	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-12_N	E235.NO2-L	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_TRIP2_WS_LAEMP_EVO_2022-12_N	E235.NO2-L	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	3 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-12_N	E235.SO4	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-12_N	E235.SO4	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_FBLANK2_WS_LAEMP_EVO_2022-12_N	E235.SO4	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_MI3_WS_LAEMP_EVO_2022-12_N	E235.SO4	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-12_N	E235.SO4	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-12_N	E235.SO4	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_TRIP2_WS_LAEMP_EVO_2022-12_N	E235.SO4	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_ERCK_WS_LAEMP_EVO_2022-12_N	E318	30-Nov-2022	03-Dec-2022	----	----		03-Dec-2022	28 days	3 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKUC_WS_LAEMP_EVO_2022-12_N	E318	30-Nov-2022	03-Dec-2022	----	----		03-Dec-2022	28 days	3 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_FBLANK2_WS_LAEMP_EVO_2022-12_N	E318	30-Nov-2022	03-Dec-2022	----	----		03-Dec-2022	28 days	3 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_MI3_WS_LAEMP_EVO_2022-12_N	E318	30-Nov-2022	03-Dec-2022	----	----		03-Dec-2022	28 days	3 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_MICOMP_WS_LAEMP_EVO_2022-12_N	E318	30-Nov-2022	03-Dec-2022	----	----		03-Dec-2022	28 days	3 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_MIDER_WS_LAEMP_EVO_2022-12_N	E318	30-Nov-2022	03-Dec-2022	----	----		03-Dec-2022	28 days	3 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_TRIP2_WS_LAEMP_EVO_2022-12_N	E318	30-Nov-2022	03-Dec-2022	----	----		03-Dec-2022	28 days	3 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_ERCK_WS_LAEMP_EVO_2022-12_N	E372-U	30-Nov-2022	02-Dec-2022	----	----		04-Dec-2022	28 days	4 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_ERCKUC_WS_LAEMP_EVO_2022-12_N	E372-U	30-Nov-2022	02-Dec-2022	----	----		04-Dec-2022	28 days	4 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_FBLANK2_WS_LAEMP_EVO_2022-12_N	E372-U	30-Nov-2022	02-Dec-2022	----	----		04-Dec-2022	28 days	4 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_MI3_WS_LAEMP_EVO_2022-12_N	E372-U	30-Nov-2022	02-Dec-2022	----	----		04-Dec-2022	28 days	4 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_MICOMP_WS_LAEMP_EVO_2022-12_N	E372-U	30-Nov-2022	02-Dec-2022	----	----		04-Dec-2022	28 days	4 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_MIDER_WS_LAEMP_EVO_2022-12_N	E372-U	30-Nov-2022	02-Dec-2022	----	----		04-Dec-2022	28 days	4 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_TRIP2_WS_LAEMP_EVO_2022-12_N	E372-U	30-Nov-2022	02-Dec-2022	----	----		04-Dec-2022	28 days	4 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCK_WS_LAEMP_EVO_2022-12_N	E421.Cr-L	30-Nov-2022	03-Dec-2022	----	----		03-Dec-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKUC_WS_LAEMP_EVO_2022-12_N	E421.Cr-L	30-Nov-2022	03-Dec-2022	----	----		03-Dec-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_FBLANK2_WS_LAEMP_EVO_2022-12_N	E421.Cr-L	30-Nov-2022	03-Dec-2022	----	----		03-Dec-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_MI3_WS_LAEMP_EVO_2022-12_N	E421.Cr-L	30-Nov-2022	03-Dec-2022	----	----		03-Dec-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_MICOMP_WS_LAEMP_EVO_2022-12_N	E421.Cr-L	30-Nov-2022	03-Dec-2022	----	----		03-Dec-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_MIDER_WS_LAEMP_EVO_2022-12_N	E421.Cr-L	30-Nov-2022	03-Dec-2022	----	----		03-Dec-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_TRIP2_WS_LAEMP_EVO_2022-12_N	E421.Cr-L	30-Nov-2022	03-Dec-2022	----	----		03-Dec-2022	180 days	3 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_ERCK_WS_LAEMP_EVO_2022-12_N	E509	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_ERCKUC_WS_LAEMP_EVO_2022-12_N	E509	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_FBLANK2_WS_LAEMP_EVO_2022-12_N	E509	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_MI3_WS_LAEMP_EVO_2022-12_N	E509	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_MICOMP_WS_LAEMP_EVO_2022-12_N	E509	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_MIDER_WS_LAEMP_EVO_2022-12_N	E509	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_TRIP2_WS_LAEMP_EVO_2022-12_N	E509	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ERCK_WS_LAEMP_EVO_2022-12_N	E421	30-Nov-2022	03-Dec-2022	----	----		03-Dec-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ERCKUC_WS_LAEMP_EVO_2022-12_N	E421	30-Nov-2022	03-Dec-2022	----	----		03-Dec-2022	180 days	3 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_FBLANK2_WS_LAEMP_EVO_2022-12_N	E421	30-Nov-2022	03-Dec-2022	----	----		03-Dec-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_MI3_WS_LAEMP_EVO_2022-12_N	E421	30-Nov-2022	03-Dec-2022	----	----		03-Dec-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_MICOMP_WS_LAEMP_EVO_2022-12_N	E421	30-Nov-2022	03-Dec-2022	----	----		03-Dec-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_MIDER_WS_LAEMP_EVO_2022-12_N	E421	30-Nov-2022	03-Dec-2022	----	----		03-Dec-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_TRIP2_WS_LAEMP_EVO_2022-12_N	E421	30-Nov-2022	03-Dec-2022	----	----		03-Dec-2022	180 days	3 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_ERCK_WS_LAEMP_EVO_2022-12_N	E358-L	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_ERCKUC_WS_LAEMP_EVO_2022-12_N	E358-L	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_FBLANK2_WS_LAEMP_EVO_2022-12_N	E358-L	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_MI3_WS_LAEMP_EVO_2022-12_N	E358-L	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_MICOMP_WS_LAEMP_EVO_2022-12_N	E358-L	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_MIDER_WS_LAEMP_EVO_2022-12_N	E358-L	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_TRIP2_WS_LAEMP_EVO_2022-12_N	E358-L	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_ERCK_WS_LAEMP_EVO_2022-12_N	E355-L	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKUC_WS_LAEMP_EVO_2022-12_N	E355-L	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_FBLANK2_WS_LAEMP_EVO_2022-12_N	E355-L	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_MI3_WS_LAEMP_EVO_2022-12_N	E355-L	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_MICOMP_WS_LAEMP_EVO_2022-12_N	E355-L	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_MIDER_WS_LAEMP_EVO_2022-12_N	E355-L	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_TRIP2_WS_LAEMP_EVO_2022-12_N	E355-L	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-12_N	E283	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	14 days	2 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-12_N	E283	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	14 days	2 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_FBLANK2_WS_LAEMP_EVO_2022-12_N	E283	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	14 days	2 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_MI3_WS_LAEMP_EVO_2022-12_N	E283	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	14 days	2 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-12_N	E283	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	14 days	2 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-12_N	E283	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	14 days	2 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_TRIP2_WS_LAEMP_EVO_2022-12_N	E283	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	14 days	2 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-12_N	E290	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	14 days	2 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Alkalinity Species by Titration											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-12_N	E290	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	14 days	2 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_FBLANK2_WS_LAEMP_EVO_2022-12_N	E290	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	14 days	2 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_MI3_WS_LAEMP_EVO_2022-12_N	E290	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	14 days	2 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-12_N	E290	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	14 days	2 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-12_N	E290	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	14 days	2 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_TRIP2_WS_LAEMP_EVO_2022-12_N	E290	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	14 days	2 days	✔	
Physical Tests : Conductivity in Water											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-12_N	E100	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✔	
Physical Tests : Conductivity in Water											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-12_N	E100	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✔	
Physical Tests : Conductivity in Water											
HDPE RG_FBLANK2_WS_LAEMP_EVO_2022-12_N	E100	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Conductivity in Water											
HDPE RG_MI3_WS_LAEMP_EVO_2022-12_N	E100	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-12_N	E100	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-12_N	E100	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_TRIP2_WS_LAEMP_EVO_2022-12_N	E100	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✓	
Physical Tests : ORP by Electrode											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-12_N	E125	30-Nov-2022	----	----	----		02-Dec-2022	0.25 hrs	50 hrs	* EHTR-FM	
Physical Tests : ORP by Electrode											
HDPE RG_FBLANK2_WS_LAEMP_EVO_2022-12_N	E125	30-Nov-2022	----	----	----		02-Dec-2022	0.25 hrs	51 hrs	* EHTR-FM	
Physical Tests : ORP by Electrode											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-12_N	E125	30-Nov-2022	----	----	----		02-Dec-2022	0.25 hrs	51 hrs	* EHTR-FM	
Physical Tests : ORP by Electrode											
HDPE RG_TRIP2_WS_LAEMP_EVO_2022-12_N	E125	30-Nov-2022	----	----	----		02-Dec-2022	0.25 hrs	51 hrs	* EHTR-FM	
Physical Tests : ORP by Electrode											
HDPE RG_MI3_WS_LAEMP_EVO_2022-12_N	E125	30-Nov-2022	----	----	----		02-Dec-2022	0.25 hrs	52 hrs	* EHTR-FM	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : ORP by Electrode											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-12_N	E125	30-Nov-2022	----	----	----		02-Dec-2022	0.25 hrs	53 hrs	*	EHTR-FM
Physical Tests : ORP by Electrode											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-12_N	E125	30-Nov-2022	----	----	----		02-Dec-2022	0.25 hrs	54 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-12_N	E108	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	0.25 hrs	0.26 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-12_N	E108	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	0.25 hrs	0.26 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_FBLANK2_WS_LAEMP_EVO_2022-12_N	E108	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	0.25 hrs	0.26 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_MI3_WS_LAEMP_EVO_2022-12_N	E108	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	0.25 hrs	0.26 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-12_N	E108	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	0.25 hrs	0.26 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-12_N	E108	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	0.25 hrs	0.26 hrs	*	EHTR-FM
Physical Tests : pH by Meter											
HDPE RG_TRIP2_WS_LAEMP_EVO_2022-12_N	E108	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	0.25 hrs	0.26 hrs	*	EHTR-FM



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : TDS by Gravimetry										
HDPE RG_ERCK_WS_LAEMP_EVO_2022-12_N	E162	30-Nov-2022	----	----	----		03-Dec-2022	7 days	3 days	✔
Physical Tests : TDS by Gravimetry										
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-12_N	E162	30-Nov-2022	----	----	----		03-Dec-2022	7 days	3 days	✔
Physical Tests : TDS by Gravimetry										
HDPE RG_FBLANK2_WS_LAEMP_EVO_2022-12_N	E162	30-Nov-2022	----	----	----		03-Dec-2022	7 days	3 days	✔
Physical Tests : TDS by Gravimetry										
HDPE RG_MI3_WS_LAEMP_EVO_2022-12_N	E162	30-Nov-2022	----	----	----		03-Dec-2022	7 days	3 days	✔
Physical Tests : TDS by Gravimetry										
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-12_N	E162	30-Nov-2022	----	----	----		03-Dec-2022	7 days	3 days	✔
Physical Tests : TDS by Gravimetry										
HDPE RG_MIDER_WS_LAEMP_EVO_2022-12_N	E162	30-Nov-2022	----	----	----		03-Dec-2022	7 days	3 days	✔
Physical Tests : TDS by Gravimetry										
HDPE RG_TRIP2_WS_LAEMP_EVO_2022-12_N	E162	30-Nov-2022	----	----	----		03-Dec-2022	7 days	3 days	✔
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE RG_ERCK_WS_LAEMP_EVO_2022-12_N	E160-L	30-Nov-2022	----	----	----		04-Dec-2022	7 days	4 days	✔
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-12_N	E160-L	30-Nov-2022	----	----	----		04-Dec-2022	7 days	4 days	✔



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_FBLANK2_WS_LAEMP_EVO_2022-12_N	E160-L	30-Nov-2022	----	----	----		04-Dec-2022	7 days	4 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_MI3_WS_LAEMP_EVO_2022-12_N	E160-L	30-Nov-2022	----	----	----		04-Dec-2022	7 days	4 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-12_N	E160-L	30-Nov-2022	----	----	----		04-Dec-2022	7 days	4 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_MIDER_WS_LAEMP_EVO_2022-12_N	E160-L	30-Nov-2022	----	----	----		04-Dec-2022	7 days	4 days	✔	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_TRIP2_WS_LAEMP_EVO_2022-12_N	E160-L	30-Nov-2022	----	----	----		04-Dec-2022	7 days	4 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_ERCK_WS_LAEMP_EVO_2022-12_N	E121	30-Nov-2022	----	----	----		02-Dec-2022	3 days	2 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_ERCKUC_WS_LAEMP_EVO_2022-12_N	E121	30-Nov-2022	----	----	----		02-Dec-2022	3 days	2 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_FBLANK2_WS_LAEMP_EVO_2022-12_N	E121	30-Nov-2022	----	----	----		02-Dec-2022	3 days	2 days	✔	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_MI3_WS_LAEMP_EVO_2022-12_N	E121	30-Nov-2022	----	----	----		02-Dec-2022	3 days	2 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Turbidity by Nephelometry										
HDPE RG_MICOMP_WS_LAEMP_EVO_2022-12_N	E121	30-Nov-2022	----	----	----		02-Dec-2022	3 days	2 days	✔
Physical Tests : Turbidity by Nephelometry										
HDPE RG_MIDER_WS_LAEMP_EVO_2022-12_N	E121	30-Nov-2022	----	----	----		02-Dec-2022	3 days	2 days	✔
Physical Tests : Turbidity by Nephelometry										
HDPE RG_TRIP2_WS_LAEMP_EVO_2022-12_N	E121	30-Nov-2022	----	----	----		02-Dec-2022	3 days	2 days	✔
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)										
HDPE - total (lab preserved) RG_ERCK_WS_LAEMP_EVO_2022-12_N	E420.Cr-L	30-Nov-2022	03-Dec-2022	----	----		03-Dec-2022	180 days	3 days	✔
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)										
HDPE - total (lab preserved) RG_ERCKUC_WS_LAEMP_EVO_2022-12_N	E420.Cr-L	30-Nov-2022	03-Dec-2022	----	----		03-Dec-2022	180 days	3 days	✔
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)										
HDPE - total (lab preserved) RG_FBLANK2_WS_LAEMP_EVO_2022-12_N	E420.Cr-L	30-Nov-2022	03-Dec-2022	----	----		03-Dec-2022	180 days	3 days	✔
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)										
HDPE - total (lab preserved) RG_MI3_WS_LAEMP_EVO_2022-12_N	E420.Cr-L	30-Nov-2022	03-Dec-2022	----	----		03-Dec-2022	180 days	3 days	✔
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)										
HDPE - total (lab preserved) RG_MICOMP_WS_LAEMP_EVO_2022-12_N	E420.Cr-L	30-Nov-2022	03-Dec-2022	----	----		03-Dec-2022	180 days	3 days	✔
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)										
HDPE - total (lab preserved) RG_MIDER_WS_LAEMP_EVO_2022-12_N	E420.Cr-L	30-Nov-2022	03-Dec-2022	----	----		03-Dec-2022	180 days	3 days	✔



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE total (nitric acid) RG_TRIP2_WS_LAEMP_EVO_2022-12_N	E420.Cr-L	30-Nov-2022	03-Dec-2022	----	----		03-Dec-2022	180 days	3 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_ERCK_WS_LAEMP_EVO_2022-12_N	E508	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_ERCKUC_WS_LAEMP_EVO_2022-12_N	E508	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_FBLANK2_WS_LAEMP_EVO_2022-12_N	E508	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_MI3_WS_LAEMP_EVO_2022-12_N	E508	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_MICOMP_WS_LAEMP_EVO_2022-12_N	E508	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_MIDER_WS_LAEMP_EVO_2022-12_N	E508	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_TRIP2_WS_LAEMP_EVO_2022-12_N	E508	30-Nov-2022	02-Dec-2022	----	----		02-Dec-2022	28 days	2 days	✔	
Total Metals : Total metals in Water by CRC ICPMS											
HDPE - total (lab preserved) RG_ERCK_WS_LAEMP_EVO_2022-12_N	E420	30-Nov-2022	03-Dec-2022	----	----		03-Dec-2022	180 days	3 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Total Metals : Total metals in Water by CRC ICPMS											
HDPE - total (lab preserved) RG_ERCKUC_WS_LAEMP_EVO_2022-12_N	E420	30-Nov-2022	03-Dec-2022	----	----		03-Dec-2022	180 days	3 days	✔	
Total Metals : Total metals in Water by CRC ICPMS											
HDPE - total (lab preserved) RG_FBLANK2_WS_LAEMP_EVO_2022-12_N	E420	30-Nov-2022	03-Dec-2022	----	----		03-Dec-2022	180 days	3 days	✔	
Total Metals : Total metals in Water by CRC ICPMS											
HDPE - total (lab preserved) RG_MI3_WS_LAEMP_EVO_2022-12_N	E420	30-Nov-2022	03-Dec-2022	----	----		03-Dec-2022	180 days	3 days	✔	
Total Metals : Total metals in Water by CRC ICPMS											
HDPE - total (lab preserved) RG_MICOMP_WS_LAEMP_EVO_2022-12_N	E420	30-Nov-2022	03-Dec-2022	----	----		03-Dec-2022	180 days	3 days	✔	
Total Metals : Total metals in Water by CRC ICPMS											
HDPE - total (lab preserved) RG_MIDER_WS_LAEMP_EVO_2022-12_N	E420	30-Nov-2022	03-Dec-2022	----	----		03-Dec-2022	180 days	3 days	✔	
Total Metals : Total metals in Water by CRC ICPMS											
HDPE total (nitric acid) RG_TRIP2_WS_LAEMP_EVO_2022-12_N	E420	30-Nov-2022	03-Dec-2022	----	----		03-Dec-2022	180 days	3 days	✔	

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended
 Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
Analytical Methods							
Laboratory Duplicates (DUP)							
Acidity by Titration	E283	765770	1	10	10.0	5.0	✓
Alkalinity Species by Titration	E290	765769	1	10	10.0	5.0	✓
Ammonia by Fluorescence	E298	766115	1	10	10.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	765713	1	7	14.2	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	765714	1	7	14.2	5.0	✓
Conductivity in Water	E100	765767	1	10	10.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	765677	1	8	12.5	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	766147	1	19	5.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	765678	1	8	12.5	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	765709	1	12	8.3	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	765682	1	17	5.8	5.0	✓
Fluoride in Water by IC	E235.F	765712	1	7	14.2	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	765715	1	7	14.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	765716	1	7	14.2	5.0	✓
ORP by Electrode	E125	765830	1	10	10.0	5.0	✓
pH by Meter	E108	765768	1	10	10.0	5.0	✓
Sulfate in Water by IC	E235.SO4	765717	1	7	14.2	5.0	✓
TDS by Gravimetry	E162	766792	1	11	9.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	765676	1	7	14.2	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	765699	1	7	14.2	5.0	✓
Total Mercury in Water by CVAAS	E508	766153	1	20	5.0	5.0	✓
Total metals in Water by CRC ICPMS	E420	765675	1	8	12.5	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	765710	1	11	9.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	765878	1	8	12.5	5.0	✓
Turbidity by Nephelometry	E121	765700	1	20	5.0	5.0	✓
Laboratory Control Samples (LCS)							
Acidity by Titration	E283	765770	1	10	10.0	5.0	✓
Alkalinity Species by Titration	E290	765769	1	10	10.0	5.0	✓
Ammonia by Fluorescence	E298	766115	1	10	10.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	765713	1	7	14.2	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	765714	1	7	14.2	5.0	✓
Conductivity in Water	E100	765767	1	10	10.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	765677	1	8	12.5	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	766147	1	19	5.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	765678	1	8	12.5	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	765709	1	12	8.3	5.0	✓



Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
Analytical Methods							
Laboratory Control Samples (LCS) - Continued							
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	765682	1	17	5.8	5.0	✓
Fluoride in Water by IC	E235.F	765712	1	7	14.2	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	765715	1	7	14.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	765716	1	7	14.2	5.0	✓
ORP by Electrode	E125	765830	1	10	10.0	5.0	✓
pH by Meter	E108	765768	1	10	10.0	5.0	✓
Sulfate in Water by IC	E235.SO4	765717	1	7	14.2	5.0	✓
TDS by Gravimetry	E162	766792	1	11	9.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	765676	1	7	14.2	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	765699	1	7	14.2	5.0	✓
Total Mercury in Water by CVAAS	E508	766153	1	20	5.0	5.0	✓
Total metals in Water by CRC ICPMS	E420	765675	1	8	12.5	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	765710	1	11	9.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	765878	1	8	12.5	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	766791	1	16	6.2	5.0	✓
Turbidity by Nephelometry	E121	765700	1	20	5.0	5.0	✓
Method Blanks (MB)							
Acidity by Titration	E283	765770	1	10	10.0	5.0	✓
Alkalinity Species by Titration	E290	765769	1	10	10.0	5.0	✓
Ammonia by Fluorescence	E298	766115	1	10	10.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	765713	1	7	14.2	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	765714	1	7	14.2	5.0	✓
Conductivity in Water	E100	765767	1	10	10.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	765677	1	8	12.5	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	766147	1	19	5.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	765678	1	8	12.5	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	765709	1	12	8.3	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	765682	1	17	5.8	5.0	✓
Fluoride in Water by IC	E235.F	765712	1	7	14.2	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	765715	1	7	14.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	765716	1	7	14.2	5.0	✓
Sulfate in Water by IC	E235.SO4	765717	1	7	14.2	5.0	✓
TDS by Gravimetry	E162	766792	1	11	9.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	765676	1	7	14.2	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	765699	1	7	14.2	5.0	✓
Total Mercury in Water by CVAAS	E508	766153	1	20	5.0	5.0	✓
Total metals in Water by CRC ICPMS	E420	765675	1	8	12.5	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	765710	1	11	9.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	765878	1	8	12.5	5.0	✓



Matrix: **Water** Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
<i>Analytical Methods</i>							
Method Blanks (MB) - Continued							
TSS by Gravimetry (Low Level)	E160-L	766791	1	16	6.2	5.0	✔
Turbidity by Nephelometry	E121	765700	1	20	5.0	5.0	✔
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	766115	1	10	10.0	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	765713	1	7	14.2	5.0	✔
Chloride in Water by IC (Low Level)	E235.Cl-L	765714	1	7	14.2	5.0	✔
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	765677	1	8	12.5	5.0	✔
Dissolved Mercury in Water by CVAAS	E509	766147	1	19	5.2	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	765678	1	8	12.5	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	765709	1	12	8.3	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	765682	1	17	5.8	5.0	✔
Fluoride in Water by IC	E235.F	765712	1	7	14.2	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	765715	1	7	14.2	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	765716	1	7	14.2	5.0	✔
Sulfate in Water by IC	E235.SO4	765717	1	7	14.2	5.0	✔
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	765676	1	7	14.2	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	765699	1	7	14.2	5.0	✔
Total Mercury in Water by CVAAS	E508	766153	1	20	5.0	5.0	✔
Total metals in Water by CRC ICPMS	E420	765675	1	8	12.5	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	765710	1	11	9.0	5.0	✔
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	765878	1	8	12.5	5.0	✔



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 Calgary - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 Calgary - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 Calgary - Environmental	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
ORP by Electrode	E125 Calgary - Environmental	Water	ASTM D1498 (mod)	Oxidation reduction potential is reported as the oxidation-reduction potential of the platinum metal-reference electrode employed, measured in mV. For high accuracy test results, it is recommended that this analysis be conducted in the field.
TSS by Gravimetry (Low Level)	E160-L Calgary - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 Calgary - Environmental	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC (Low Level)	E235.Cl-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Acidity by Titration	E283 Calgary - Environmental	Water	APHA 2310 B (mod)	Acidity is determined by potentiometric titration to pH endpoint of 8.3
Alkalinity Species by Titration	E290 Calgary - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 Calgary - Environmental	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 Calgary - Environmental	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L Calgary - Environmental	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Dissolved Organic Carbon by Combustion (Low Level)	E358-L Calgary - Environmental	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U Calgary - Environmental	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U Calgary - Environmental	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Total metals in Water by CRC ICPMS	E420 Calgary - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L Calgary - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Metals in Water by CRC ICPMS	E421 Calgary - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L Calgary - Environmental	Water	APHA 3030 B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS
Total Mercury in Water by CVAAS	E508 Calgary - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS
Dissolved Mercury in Water by CVAAS	E509 Calgary - Environmental	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
Dissolved Hardness (Calculated)	EC100 Calgary - Environmental	Water	APHA 2340B	"Hardness (as CaCO ₃), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Ion Balance using Dissolved Metals	EC101 Calgary - Environmental	Water	APHA 1030E	Cation Sum, Anion Sum, and Ion Balance are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present. Ion Balance cannot be calculated accurately for waters with very low electrical conductivity (EC).

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 Calgary - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 Calgary - Environmental	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Preparation for Total Organic Carbon by Combustion	EP355 Calgary - Environmental	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon by Combustion	EP358 Calgary - Environmental	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Phosphorus in water	EP372 Calgary - Environmental	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.



<i>Preparation Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
Dissolved Metals Water Filtration	EP421 Calgary - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.
Dissolved Mercury Water Filtration	EP509 Calgary - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.

QUALITY CONTROL REPORT

<p>Work Order : CG2216725</p> <p>Client : Teck Coal Limited</p> <p>Contact : Mike Pope</p> <p>Address : 421 Pine Avenue Sparwood BC Canada V0B2G0</p> <p>Telephone :</p> <p>Project : REGIONAL EFFECTS PROGRAM</p> <p>PO : VPO00847030</p> <p>C-O-C number : December EVO LAEMP 2022</p> <p>Sampler : Liva Ramanjehimanana</p> <p>Site : ---</p> <p>Quote number : Teck Coal Master Quote</p> <p>No. of samples received : 7</p> <p>No. of samples analysed : 7</p>	<p>Page : 1 of 18</p> <p>Laboratory : Calgary - Environmental</p> <p>Account Manager : Lyudmyla Shvets</p> <p>Address : 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5</p> <p>Telephone : +1 403 407 1800</p> <p>Date Samples Received : 02-Dec-2022 08:50</p> <p>Date Analysis Commenced : 02-Dec-2022</p> <p>Issue Date : 04-Dec-2022 15:48</p>
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This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Andrew Fox		Calgary Metals, Calgary, Alberta
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General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 765700)											
CG2216689-001	Anonymous	turbidity	----	E121	0.10	NTU	0.13	0.13	0.004	Diff <2x LOR	----
Physical Tests (QC Lot: 765767)											
CG2216712-001	Anonymous	conductivity	----	E100	2.0	µS/cm	2120	2130	0.470%	10%	----
Physical Tests (QC Lot: 765768)											
CG2216712-001	Anonymous	pH	----	E108	0.10	pH units	8.14	8.10	0.493%	4%	----
Physical Tests (QC Lot: 765769)											
CG2216712-001	Anonymous	alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	356	372	4.43%	20%	----
		alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	356	372	4.43%	20%	----
Physical Tests (QC Lot: 765770)											
CG2216712-001	Anonymous	acidity (as CaCO3)	----	E283	2.0	mg/L	6.2	5.1	1.1	Diff <2x LOR	----
Physical Tests (QC Lot: 765830)											
CG2216712-001	Anonymous	oxidation-reduction potential [ORP]	----	E125	0.10	mV	411	419	1.93%	15%	----
Physical Tests (QC Lot: 766792)											
CG2216717-001	Anonymous	solids, total dissolved [TDS]	----	E162	40	mg/L	1430	1460	2.42%	20%	----
Anions and Nutrients (QC Lot: 765682)											
CG2216719-001	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 765699)											
CG2216725-001	RG_ERCK_WS_LAEMP_E VO_2022-12_N	Kjeldahl nitrogen, total [TKN]	----	E318	0.500	mg/L	0.761	0.650	0.111	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 765712)											
CG2216725-001	RG_ERCK_WS_LAEMP_E VO_2022-12_N	fluoride	16984-48-8	E235.F	0.100	mg/L	0.177	0.175	0.002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 765713)											
CG2216725-001	RG_ERCK_WS_LAEMP_E VO_2022-12_N	bromide	24959-67-9	E235.Br-L	0.250	mg/L	<0.250	<0.250	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 765714)											
CG2216725-001	RG_ERCK_WS_LAEMP_E VO_2022-12_N	chloride	16887-00-6	E235.Cl-L	0.50	mg/L	9.06	9.07	0.120%	20%	----
Anions and Nutrients (QC Lot: 765715)											
CG2216725-001	RG_ERCK_WS_LAEMP_E VO_2022-12_N	nitrate (as N)	14797-55-8	E235.NO3-L	0.0250	mg/L	8.30	8.19	1.34%	20%	----



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 765716)											
CG2216725-001	RG_ERCK_WS_LAEMP_E VO_2022-12_N	nitrite (as N)	14797-65-0	E235.NO2-L	0.0050	mg/L	<0.0050	0.0059	0.0009	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 765717)											
CG2216725-001	RG_ERCK_WS_LAEMP_E VO_2022-12_N	sulfate (as SO4)	14808-79-8	E235.SO4	1.50	mg/L	791	778	1.64%	20%	----
Anions and Nutrients (QC Lot: 765878)											
CG2216717-001	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0089	0.0099	0.0010	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 766115)											
CG2216712-001	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.742	0.736	0.690%	20%	----
Organic / Inorganic Carbon (QC Lot: 765709)											
CG2216712-001	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 765710)											
CG2216712-001	Anonymous	carbon, total organic [TOC]	----	E355-L	0.50	mg/L	3.02	2.97	0.05	Diff <2x LOR	----
Total Metals (QC Lot: 765675)											
CG2216725-001	RG_ERCK_WS_LAEMP_E VO_2022-12_N	aluminum, total	7429-90-5	E420	0.0030	mg/L	<0.0030	0.0032	0.0002	Diff <2x LOR	----
		antimony, total	7440-36-0	E420	0.00010	mg/L	0.00021	0.00022	0.000006	Diff <2x LOR	----
		arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00032	0.00031	0.000003	Diff <2x LOR	----
		barium, total	7440-39-3	E420	0.00010	mg/L	0.0324	0.0328	1.26%	20%	----
		beryllium, total	7440-41-7	E420	0.000020	mg/L	<0.020 µg/L	<0.000020	0	Diff <2x LOR	----
		bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, total	7440-42-8	E420	0.010	mg/L	0.026	0.025	0.0005	Diff <2x LOR	----
		cadmium, total	7440-43-9	E420	0.0000050	mg/L	0.0094 µg/L	0.0000102	0.0000008	Diff <2x LOR	----
		calcium, total	7440-70-2	E420	0.050	mg/L	248	242	2.52%	20%	----
		cobalt, total	7440-48-4	E420	0.00010	mg/L	1.38 µg/L	0.00135	2.47%	20%	----
		copper, total	7440-50-8	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		iron, total	7439-89-6	E420	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		lead, total	7439-92-1	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		lithium, total	7439-93-2	E420	0.0010	mg/L	0.0750	0.0710	5.41%	20%	----
		magnesium, total	7439-95-4	E420	0.0050	mg/L	164	160	2.42%	20%	----
		manganese, total	7439-96-5	E420	0.00010	mg/L	0.0242	0.0238	1.64%	20%	----
		molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.00877	0.00886	1.07%	20%	----
nickel, total	7440-02-0	E420	0.00050	mg/L	0.0172	0.0172	0.165%	20%	----		
potassium, total	7440-09-7	E420	0.050	mg/L	4.09	3.99	2.47%	20%	----		
selenium, total	7782-49-2	E420	0.000050	mg/L	93.4 µg/L	0.0937	0.279%	20%	----		
silicon, total	7440-21-3	E420	0.10	mg/L	4.34	4.27	1.76%	20%	----		



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (QC Lot: 765675) - continued											
CG2216725-001	RG_ERCK_WS_LAEMP_E VO_2022-12_N	silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, total	7440-23-5	E420	0.050	mg/L	7.91	7.81	1.25%	20%	----
		strontium, total	7440-24-6	E420	0.00020	mg/L	0.326	0.327	0.383%	20%	----
		sulfur, total	7704-34-9	E420	0.50	mg/L	341	327	4.32%	20%	----
		thallium, total	7440-28-0	E420	0.000010	mg/L	0.000037	0.000040	0.000003	Diff <2x LOR	----
		tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		uranium, total	7440-61-1	E420	0.000010	mg/L	0.0108	0.0108	0.478%	20%	----
		vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	<0.0030	0	Diff <2x LOR	----		
Total Metals (QC Lot: 765676)											
CG2216725-001	RG_ERCK_WS_LAEMP_E VO_2022-12_N	chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	0.00019	0.00011	0.00008	Diff <2x LOR	----
Total Metals (QC Lot: 766153)											
CG2216725-001	RG_ERCK_WS_LAEMP_E VO_2022-12_N	mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 765677)											
CG2216717-001	Anonymous	chromium, dissolved	7440-47-3	E421.Cr-L	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 765678)											
CG2216717-001	Anonymous	aluminum, dissolved	7429-90-5	E421	0.0020	mg/L	0.0218	0.0204	6.82%	20%	----
		antimony, dissolved	7440-36-0	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E421	0.00020	mg/L	0.00028	0.00029	0.000007	Diff <2x LOR	----
		barium, dissolved	7440-39-3	E421	0.00020	mg/L	0.0168	0.0175	3.82%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.000040	mg/L	<0.040 µg/L	<0.000040	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.020	mg/L	0.032	0.032	0.0002	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E421	0.0000100	mg/L	0.0155 µg/L	0.0000124	0.0000031	Diff <2x LOR	----
		calcium, dissolved	7440-70-2	E421	0.100	mg/L	212	217	2.12%	20%	----
		cobalt, dissolved	7440-48-4	E421	0.00020	mg/L	0.96 µg/L	0.00098	0.00002	Diff <2x LOR	----
		copper, dissolved	7440-50-8	E421	0.00040	mg/L	<0.00040	<0.00040	0	Diff <2x LOR	----
		iron, dissolved	7439-89-6	E421	0.020	mg/L	<0.020	<0.020	0	Diff <2x LOR	----
		lead, dissolved	7439-92-1	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0020	mg/L	0.117	0.110	6.34%	20%	----
		magnesium, dissolved	7439-95-4	E421	0.0100	mg/L	144	145	0.601%	20%	----
manganese, dissolved	7439-96-5	E421	0.00020	mg/L	0.264	0.273	3.31%	20%	----		



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 765678) - continued											
CG2216717-001	Anonymous	molybdenum, dissolved	7439-98-7	E421	0.000100	mg/L	0.00328	0.00324	1.00%	20%	----
		nickel, dissolved	7440-02-0	E421	0.00100	mg/L	0.00696	0.00745	0.00049	Diff <2x LOR	----
		potassium, dissolved	7440-09-7	E421	0.100	mg/L	5.02	5.19	3.40%	20%	----
		selenium, dissolved	7782-49-2	E421	0.000100	mg/L	0.980 µg/L	0.00100	0.000025	Diff <2x LOR	----
		silicon, dissolved	7440-21-3	E421	0.100	mg/L	2.89	2.73	5.80%	20%	----
		silver, dissolved	7440-22-4	E421	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E421	0.100	mg/L	13.9	14.1	1.53%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00040	mg/L	0.550	0.541	1.49%	20%	----
		sulfur, dissolved	7704-34-9	E421	1.00	mg/L	280	281	0.378%	20%	----
		thallium, dissolved	7440-28-0	E421	0.000020	mg/L	0.000022	<0.000020	0.000002	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.00060	mg/L	<0.00060	<0.00060	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000020	mg/L	0.00910	0.00891	2.13%	20%	----
		vanadium, dissolved	7440-62-2	E421	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E421	0.0020	mg/L	0.0027	0.0028	0.0001	Diff <2x LOR	----
Dissolved Metals (QC Lot: 766147)											
CG2216717-001	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 765700)						
turbidity	---	E121	0.1	NTU	<0.10	---
Physical Tests (QCLot: 765767)						
conductivity	---	E100	1	µS/cm	<1.0	---
Physical Tests (QCLot: 765769)						
alkalinity, bicarbonate (as CaCO ₃)	---	E290	1	mg/L	1.0	---
alkalinity, carbonate (as CaCO ₃)	---	E290	1	mg/L	<1.0	---
alkalinity, hydroxide (as CaCO ₃)	---	E290	1	mg/L	<1.0	---
alkalinity, total (as CaCO ₃)	---	E290	1	mg/L	1.0	---
Physical Tests (QCLot: 765770)						
acidity (as CaCO ₃)	---	E283	2	mg/L	2.3	---
Physical Tests (QCLot: 766791)						
solids, total suspended [TSS]	---	E160-L	1	mg/L	<1.0	---
Physical Tests (QCLot: 766792)						
solids, total dissolved [TDS]	---	E162	10	mg/L	<10	---
Anions and Nutrients (QCLot: 765682)						
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	---
Anions and Nutrients (QCLot: 765699)						
Kjeldahl nitrogen, total [TKN]	---	E318	0.05	mg/L	<0.050	---
Anions and Nutrients (QCLot: 765712)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	---
Anions and Nutrients (QCLot: 765713)						
bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	---
Anions and Nutrients (QCLot: 765714)						
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	---
Anions and Nutrients (QCLot: 765715)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	---
Anions and Nutrients (QCLot: 765716)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	---
Anions and Nutrients (QCLot: 765717)						
sulfate (as SO ₄)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	---
Anions and Nutrients (QCLot: 765878)						
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	---



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 766115)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	---
Organic / Inorganic Carbon (QCLot: 765709)						
carbon, dissolved organic [DOC]	---	E358-L	0.5	mg/L	<0.50	---
Organic / Inorganic Carbon (QCLot: 765710)						
carbon, total organic [TOC]	---	E355-L	0.5	mg/L	<0.50	---
Total Metals (QCLot: 765675)						
aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	---
antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	---
arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	---
barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	---
beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	---
bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	---
boron, total	7440-42-8	E420	0.01	mg/L	<0.010	---
cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	---
calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	---
cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	---
copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	---
iron, total	7439-89-6	E420	0.01	mg/L	<0.010	---
lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	---
lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	---
magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	---
manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	---
molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	---
nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	---
potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	---
selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	---
silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	---
silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	---
sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	---
strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	---
sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	---
thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	---
tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	---
titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	---
uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	---



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 765675) - continued						
vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	---
zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	---
Total Metals (QCLot: 765676)						
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	<0.00010	---
Total Metals (QCLot: 766153)						
mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	---
Dissolved Metals (QCLot: 765677)						
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	<0.00010	---
Dissolved Metals (QCLot: 765678)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	---
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	---
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	---
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	---
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	---
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	---
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	---
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	---
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	---
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	---
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	---
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	---
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	---
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	---
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	---
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	---
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	---
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	---
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	---
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	---
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	---
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	---
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	---
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	---
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	---
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	---



Sub-Matrix: **Water**

<i>Analyte</i>	<i>CAS Number</i>	<i>Method</i>	<i>LOR</i>	<i>Unit</i>	<i>Result</i>	<i>Qualifier</i>
Dissolved Metals (QCLot: 765678) - continued						
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
Dissolved Metals (QCLot: 766147)						
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Physical Tests (QCLot: 765700)									
turbidity	----	E121	0.1	NTU	200 NTU	100	85.0	115	----
Physical Tests (QCLot: 765767)									
conductivity	----	E100	1	µS/cm	146.9 µS/cm	99.5	90.0	110	----
Physical Tests (QCLot: 765768)									
pH	----	E108	----	pH units	7 pH units	100	98.6	101	----
Physical Tests (QCLot: 765769)									
alkalinity, total (as CaCO ₃)	----	E290	1	mg/L	500 mg/L	102	85.0	115	----
Physical Tests (QCLot: 765770)									
acidity (as CaCO ₃)	----	E283	2	mg/L	50 mg/L	107	85.0	115	----
Physical Tests (QCLot: 765830)									
oxidation-reduction potential [ORP]	----	E125	----	mV	220 mV	100	95.4	104	----
Physical Tests (QCLot: 766791)									
solids, total suspended [TSS]	----	E160-L	1	mg/L	150 mg/L	97.7	85.0	115	----
Physical Tests (QCLot: 766792)									
solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	98.0	85.0	115	----
Anions and Nutrients (QCLot: 765682)									
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.03 mg/L	99.3	80.0	120	----
Anions and Nutrients (QCLot: 765699)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 765712)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 765713)									
bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	102	85.0	115	----
Anions and Nutrients (QCLot: 765714)									
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 765715)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 765716)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 765717)									
sulfate (as SO ₄)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	102	90.0	110	----



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Anions and Nutrients (QCLot: 765878)									
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.03 mg/L	96.7	80.0	120	----
Anions and Nutrients (QCLot: 766115)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	102	85.0	115	----
Organic / Inorganic Carbon (QCLot: 765709)									
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	98.0	80.0	120	----
Organic / Inorganic Carbon (QCLot: 765710)									
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	95.7	80.0	120	----
Total Metals (QCLot: 765675)									
aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	108	80.0	120	----
antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	97.2	80.0	120	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	99.3	80.0	120	----
barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	102	80.0	120	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	105	80.0	120	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	102	80.0	120	----
boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	94.4	80.0	120	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	97.2	80.0	120	----
calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	105	80.0	120	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	101	80.0	120	----
copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	97.2	80.0	120	----
iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	105	80.0	120	----
lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	104	80.0	120	----
lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	110	80.0	120	----
magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	108	80.0	120	----
manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	105	80.0	120	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	99.4	80.0	120	----
nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	100	80.0	120	----
potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	107	80.0	120	----
selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	86.3	80.0	120	----
silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	110	60.0	140	----
silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	97.2	80.0	120	----
sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	106	80.0	120	----
strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	102	80.0	120	----
sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	100	80.0	120	----
thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	98.3	80.0	120	----



Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 765675) - continued									
tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	99.5	80.0	120	----
titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	101	80.0	120	----
uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	108	80.0	120	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	106	80.0	120	----
zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	95.6	80.0	120	----
Total Metals (QCLot: 765676)									
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	0.25 mg/L	104	80.0	120	----
Total Metals (QCLot: 766153)									
mercury, total	7439-97-6	E508	0.000005	mg/L	0.0001 mg/L	113	80.0	120	----
Dissolved Metals (QCLot: 765677)									
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	0.25 mg/L	100	80.0	120	----
Dissolved Metals (QCLot: 765678)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	107	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	101	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	99.0	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	107	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	106	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	102	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	92.1	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	97.6	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	105	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	98.5	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	95.5	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	105	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	103	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	112	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	106	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	101	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	102	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	101	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	107	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	91.5	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	107	60.0	140	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	102	80.0	120	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	107	80.0	120	----



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 765678) - continued									
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	105	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	93.3	80.0	120	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	102	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	100	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	104	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	109	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	106	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	94.7	80.0	120	----
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	119	80.0	120	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 765682)										
CG2216719-002	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0519 mg/L	0.05 mg/L	104	70.0	130	----
Anions and Nutrients (QCLot: 765699)										
CG2216725-002	RG_MICOMP_WS_LAEMP_EVO_2022-12_N	Kjeldahl nitrogen, total [TKN]	----	E318	2.74 mg/L	2.5 mg/L	110	70.0	130	----
Anions and Nutrients (QCLot: 765712)										
CG2216725-006	RG_FBLANK2_WS_LAEMP_EVO_2022-12_N	fluoride	16984-48-8	E235.F	0.974 mg/L	1 mg/L	97.4	75.0	125	----
Anions and Nutrients (QCLot: 765713)										
CG2216725-006	RG_FBLANK2_WS_LAEMP_EVO_2022-12_N	bromide	24959-67-9	E235.Br-L	0.494 mg/L	0.5 mg/L	98.9	75.0	125	----
Anions and Nutrients (QCLot: 765714)										
CG2216725-006	RG_FBLANK2_WS_LAEMP_EVO_2022-12_N	chloride	16887-00-6	E235.Cl-L	97.4 mg/L	100 mg/L	97.4	75.0	125	----
Anions and Nutrients (QCLot: 765715)										
CG2216725-006	RG_FBLANK2_WS_LAEMP_EVO_2022-12_N	nitrate (as N)	14797-55-8	E235.NO3-L	2.44 mg/L	2.5 mg/L	97.6	75.0	125	----
Anions and Nutrients (QCLot: 765716)										
CG2216725-006	RG_FBLANK2_WS_LAEMP_EVO_2022-12_N	nitrite (as N)	14797-65-0	E235.NO2-L	0.498 mg/L	0.5 mg/L	99.5	75.0	125	----
Anions and Nutrients (QCLot: 765717)										
CG2216725-006	RG_FBLANK2_WS_LAEMP_EVO_2022-12_N	sulfate (as SO4)	14808-79-8	E235.SO4	98.6 mg/L	100 mg/L	98.6	75.0	125	----
Anions and Nutrients (QCLot: 765878)										
CG2216725-001	RG_ERCK_WS_LAEMP_EV_O_2022-12_N	phosphorus, total	7723-14-0	E372-U	0.0477 mg/L	0.05 mg/L	95.4	70.0	130	----
Anions and Nutrients (QCLot: 766115)										
CG2216712-002	Anonymous	ammonia, total (as N)	7664-41-7	E298	ND mg/L	0.1 mg/L	ND	75.0	125	----
Organic / Inorganic Carbon (QCLot: 765709)										
CG2216712-001	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	4.88 mg/L	5 mg/L	97.6	70.0	130	----
Organic / Inorganic Carbon (QCLot: 765710)										
CG2216712-001	Anonymous	carbon, total organic [TOC]	----	E355-L	5.34 mg/L	5 mg/L	107	70.0	130	----
Total Metals (QCLot: 765675)										



Sub-Matrix: Water

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 765675) - continued										
CG2216725-002	RG_MICOMP_WS_LAEMP_EVO_2022-12_N	aluminum, total	7429-90-5	E420	2.09 mg/L	2 mg/L	104	70.0	130	----
		antimony, total	7440-36-0	E420	0.218 mg/L	0.2 mg/L	109	70.0	130	----
		arsenic, total	7440-38-2	E420	0.214 mg/L	0.2 mg/L	107	70.0	130	----
		barium, total	7440-39-3	E420	0.234 mg/L	0.2 mg/L	117	70.0	130	----
		beryllium, total	7440-41-7	E420	0.422 mg/L	0.4 mg/L	106	70.0	130	----
		bismuth, total	7440-69-9	E420	0.116 mg/L	0.1 mg/L	116	70.0	130	----
		boron, total	7440-42-8	E420	0.977 mg/L	1 mg/L	97.7	70.0	130	----
		cadmium, total	7440-43-9	E420	0.0435 mg/L	0.04 mg/L	109	70.0	130	----
		calcium, total	7440-70-2	E420	ND mg/L	40 mg/L	ND	70.0	130	----
		cobalt, total	7440-48-4	E420	0.213 mg/L	0.2 mg/L	107	70.0	130	----
		copper, total	7440-50-8	E420	0.211 mg/L	0.2 mg/L	105	70.0	130	----
		iron, total	7439-89-6	E420	21.6 mg/L	20 mg/L	108	70.0	130	----
		lead, total	7439-92-1	E420	0.233 mg/L	0.2 mg/L	116	70.0	130	----
		lithium, total	7439-93-2	E420	1.04 mg/L	1 mg/L	104	70.0	130	----
		magnesium, total	7439-95-4	E420	ND mg/L	10 mg/L	ND	70.0	130	----
		manganese, total	7439-96-5	E420	0.212 mg/L	0.2 mg/L	106	70.0	130	----
		molybdenum, total	7439-98-7	E420	0.211 mg/L	0.2 mg/L	105	70.0	130	----
		nickel, total	7440-02-0	E420	0.435 mg/L	0.4 mg/L	109	70.0	130	----
		potassium, total	7440-09-7	E420	42.7 mg/L	40 mg/L	107	70.0	130	----
		selenium, total	7782-49-2	E420	0.418 mg/L	0.4 mg/L	104	70.0	130	----
		silicon, total	7440-21-3	E420	106 mg/L	100 mg/L	106	70.0	130	----
		silver, total	7440-22-4	E420	0.0475 mg/L	0.04 mg/L	119	70.0	130	----
		sodium, total	7440-23-5	E420	21.4 mg/L	20 mg/L	107	70.0	130	----
		strontium, total	7440-24-6	E420	ND mg/L	0.2 mg/L	ND	70.0	130	----
		sulfur, total	7704-34-9	E420	189 mg/L	200 mg/L	94.3	70.0	130	----
		thallium, total	7440-28-0	E420	0.0441 mg/L	0.04 mg/L	110	70.0	130	----
		tin, total	7440-31-5	E420	0.215 mg/L	0.2 mg/L	107	70.0	130	----
		titanium, total	7440-32-6	E420	0.415 mg/L	0.4 mg/L	104	70.0	130	----
		uranium, total	7440-61-1	E420	0.0472 mg/L	0.04 mg/L	118	70.0	130	----
		vanadium, total	7440-62-2	E420	1.09 mg/L	1 mg/L	109	70.0	130	----
		zinc, total	7440-66-6	E420	4.21 mg/L	4 mg/L	105	70.0	130	----
Total Metals (QCLot: 765676)										
CG2216725-002	RG_MICOMP_WS_LAEMP_EVO_2022-12_N	chromium, total	7440-47-3	E420.Cr-L	0.426 mg/L	0.4 mg/L	106	70.0	130	----
Total Metals (QCLot: 766153)										



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 766153) - continued										
CG2216725-002	RG_MICOMP_WS_LAEMP_EVO_2022-12_N	mercury, total	7439-97-6	E508	0.0000885 mg/L	0.0001 mg/L	88.5	70.0	130	----
Dissolved Metals (QCLot: 765677)										
CG2216725-001	RG_ERCK_WS_LAEMP_EV O_2022-12_N	chromium, dissolved	7440-47-3	E421.Cr-L	0.392 mg/L	0.4 mg/L	98.0	70.0	130	----
Dissolved Metals (QCLot: 765678)										
CG2216725-001	RG_ERCK_WS_LAEMP_EV O_2022-12_N	aluminum, dissolved	7429-90-5	E421	1.89 mg/L	2 mg/L	94.7	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.207 mg/L	0.2 mg/L	104	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.200 mg/L	0.2 mg/L	100	70.0	130	----
		barium, dissolved	7440-39-3	E421	0.201 mg/L	0.2 mg/L	100	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.378 mg/L	0.4 mg/L	94.5	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.106 mg/L	0.1 mg/L	106	70.0	130	----
		boron, dissolved	7440-42-8	E421	0.862 mg/L	1 mg/L	86.2	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.0390 mg/L	0.04 mg/L	97.6	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	40 mg/L	ND	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.195 mg/L	0.2 mg/L	97.4	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.190 mg/L	0.2 mg/L	94.9	70.0	130	----
		iron, dissolved	7439-89-6	E421	19.5 mg/L	20 mg/L	97.5	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.211 mg/L	0.2 mg/L	106	70.0	130	----
		lithium, dissolved	7439-93-2	E421	0.911 mg/L	1 mg/L	91.1	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	10 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E421	0.198 mg/L	0.2 mg/L	99.2	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.200 mg/L	0.2 mg/L	100	70.0	130	----
		nickel, dissolved	7440-02-0	E421	0.396 mg/L	0.4 mg/L	98.9	70.0	130	----
		potassium, dissolved	7440-09-7	E421	38.7 mg/L	40 mg/L	96.7	70.0	130	----
		selenium, dissolved	7782-49-2	E421	0.365 mg/L	0.4 mg/L	91.2	70.0	130	----
		silicon, dissolved	7440-21-3	E421	93.7 mg/L	100 mg/L	93.7	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.0441 mg/L	0.04 mg/L	110	70.0	130	----
		sodium, dissolved	7440-23-5	E421	19.0 mg/L	20 mg/L	94.9	70.0	130	----
		strontium, dissolved	7440-24-6	E421	ND mg/L	0.2 mg/L	ND	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	ND mg/L	200 mg/L	ND	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.0427 mg/L	0.04 mg/L	107	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.198 mg/L	0.2 mg/L	98.8	70.0	130	----
		titanium, dissolved	7440-32-6	E421	0.386 mg/L	0.4 mg/L	96.5	70.0	130	----
		uranium, dissolved	7440-61-1	E421	0.0446 mg/L	0.04 mg/L	112	70.0	130	----
		vanadium, dissolved	7440-62-2	E421	1.01 mg/L	1 mg/L	101	70.0	130	----

Page : 18 of 18
 Work Order : CG2216725
 Client : Teck Coal Limited
 Project : REGIONAL EFFECTS PROGRAM



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 765678) - continued										
CG2216725-001	RG_ERCK_WS_LAEMP_EV	zinc, dissolved	7440-66-6	E421	3.77 mg/L	4 mg/L	94.2	70.0	130	----
Dissolved Metals (QCLot: 766147)										
CG2216725-001	RG_ERCK_WS_LAEMP_EV O_2022-12_N	mercury, dissolved	7439-97-6	E509	0.000114 mg/L	0.0001 mg/L	114	70.0	130	----

COC ID:		December EVO LAEMP 2022				TURNAROUND TIME:				
PROJECT/CLIENT INFO						LABORATORY				
Facility Name / Job#		Regional EVO LAEMP				Lab Name		ALS Calgary		
Project Manager		Mike Pope				Lab Contact		Lyudmyla Shvets		
Email		mike.pope@teck.com				Email		lyudmyla.shvets@alsglobal.com		
Address		421 Pine Avenue				Address		2559 29 Street NE		
City		Sparwood		Province	BC	City		Calgary	Province	AB
Postal Code		V0B 2G0		Country	Canada	Postal Code		T1Y 7B5	Country	Canada
Phone Number		343-333-3905				Phone Number		1 403 407 1794		

SAMPLE DETAILS								ANALYSIS REQUESTED									
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G-Grab C-Comp	# Of Cont.	TECKCOAL-ROUTINE-VA	ALS_Package-DOC	ALS_Package-TKN/TOC	HG-T-U-CVAF-VA	HG-D-CVAF-VA	TECKCOAL-MET-T-VA	TECKCOAL-MET-D-VA	Excel	PDF	EDD
RG_ERCK_WS_LAEMP_EVO_2022-12_N	RG_ERCK	WS	No	11/30/2022	9:30	G	7	X	X	X	X	X	X	X	X	X	X
RG_MICOMP_WS_LAEMP_EVO_2022-12_N	RG_MICOMP	WS	No	11/30/2022	14:00	G	7	X	X	X	X	X	X	X	X	X	X
RG_MI3_WS_LAEMP_EVO_2022-12_N	RG_MI3	WS	No	11/30/2022	11:15	G	7	X	X	X	X	X	X	X	X	X	X
RG_ERCKUC_WS_LAEMP_EVO_2022-12_N	RG_ERCKUC	WS	No	11/30/2022	10:20	G	7	X	X	X	X	X	X	X	X	X	X
RG_MIDER_WS_LAEMP_EVO_2022-12_N	RG_MIDER	WS	No	11/30/2022	12:30	G	7	X	X	X	X	X	X	X	X	X	X
RG_FBLANK_2_WS_LAEMP_EVO_2022-12_N	RG_FBLANK	WS	No	11/30/2022	13:00	G	7	X	X	X	X	X	X	X	X	X	X
RG_TRIP_WS_LAEMP_EVO_2022-12_N	RG_TRIP	WS	No	11/30/2022	13:00	G	7	X	X	X	X	X	X	X	X	X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS

ALS PO VPO00847030

NB OF BOTTLES RETURNED/DESCRIPTION

Regular (default) _____
 Priority (2-3 business days) - 50% surcharge
 Emergency (1 Business Day) - 100% surcharge _____
 For Emergency <1 Day, ASAP or Weekend - Contact ALS _____

RELINQUISHED BY/AFFILIATION
Liva Ramanjehimannana/Minnow Environmental

DATE/TIME
December 1, 2022

ACCEPTED BY/AFFILIATION
[Signature]

850

Sampler's Name	Liva Ramanjehimannana	Mobile #	416-684-0886
Sampler's Signature	<i>[Signature]</i>	Date/Time	December 1, 2022

Environmental Division
 Calgary
 Work Order Reference
CG2216725



Telephone: +1 403 407 1800



CERTIFICATE OF ANALYSIS

<p>Work Order : CG2216767</p> <p>Amendment : 1</p> <p>Client : Teck Coal Limited</p> <p>Contact : Mike Pope</p> <p>Address : 421 Pine Avenue Sparwood BC Canada V0B2G0</p> <p>Telephone : ----</p> <p>Project : REGIONAL EFFECTS PROGRAM</p> <p>PO : VPO00847030</p> <p>C-O-C number : December EVO LAEMP 2022</p> <p>Sampler : Hillary Quinn-Austin</p> <p>Site : ----</p> <p>Quote number : Teck Coal Master Quote</p> <p>No. of samples received : 2</p> <p>No. of samples analysed : 2</p>	<p>Page : 1 of 6</p> <p>Laboratory : Calgary - Environmental</p> <p>Account Manager : Lyudmyla Shvets</p> <p>Address : 2559 29th Street NE Calgary AB Canada T1Y 7B5</p> <p>Telephone : +1 403 407 1800</p> <p>Date Samples Received : 03-Dec-2022 11:40</p> <p>Date Analysis Commenced : 03-Dec-2022</p> <p>Issue Date : 06-Dec-2022 13:37</p>
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This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Elke Tabora		Inorganics, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Metals, Calgary, Alberta
Parker Sgarbossa	Laboratory Analyst	Inorganics, Calgary, Alberta
Ruifang Zheng	Analyst	Inorganics, Calgary, Alberta
Zakieh Lalonde		Metals, Calgary, Alberta



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
 LOR: Limit of Reporting (detection limit).

Unit	Description
-	no units
%	percent
µg/L	micrograms per litre
µS/cm	microsiemens per centimetre
meq/L	milliequivalents per litre
mg/L	milligrams per litre
mV	millivolts
NTU	nephelometric turbidity units
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Sample Comments

Sample	Client Id	Comment
CG2216767-001	RG_MIDBO_WS_LAEMP_EVO _2022-12_N	Sample(s) 1-2: Sample Received Unpreserved. Results may be biased either high or low for indicated parameter(s). METALS



Analytical Results

Sub-Matrix: Water					Client sample ID				
(Matrix: Water)					RG_MIDBO_WS _LAEMP_EVO_ 2022-12_N	RG_MIDGA_WS _LAEMP_EVO_ 2022-12_N	---	---	---
Client sampling date / time					02-Dec-2022 09:00	02-Dec-2022 10:30	---	---	---
Analyte	CAS Number	Method	LOR	Unit	CG2216767-001	CG2216767-002	-----	-----	-----
					Result	Result	---	---	---
Physical Tests									
acidity (as CaCO3)	---	E283	2.0	mg/L	<2.0	<2.0	---	---	---
alkalinity, bicarbonate (as CaCO3)	---	E290	1.0	mg/L	200	218	---	---	---
alkalinity, bicarbonate (as HCO3)	71-52-3	E290	1.0	mg/L	243	266	---	---	---
alkalinity, carbonate (as CaCO3)	---	E290	1.0	mg/L	11.2	14.4	---	---	---
alkalinity, carbonate (as CO3)	3812-32-6	E290	1.0	mg/L	6.7	8.6	---	---	---
alkalinity, hydroxide (as CaCO3)	---	E290	1.0	mg/L	<1.0	<1.0	---	---	---
alkalinity, hydroxide (as OH)	14280-30-9	E290	1.0	mg/L	<1.0	<1.0	---	---	---
alkalinity, total (as CaCO3)	---	E290	1.0	mg/L	211	233	---	---	---
conductivity	---	E100	2.0	µS/cm	702	805	---	---	---
hardness (as CaCO3), dissolved	---	EC100	0.50	mg/L	422	502	---	---	---
oxidation-reduction potential [ORP]	---	E125	0.10	mV	324	351	---	---	---
pH	---	E108	0.10	pH units	8.37	8.42	---	---	---
solids, total dissolved [TDS]	---	E162	10	mg/L	478	586	---	---	---
solids, total suspended [TSS]	---	E160-L	1.0	mg/L	<1.0	2.2	---	---	---
turbidity	---	E121	0.10	NTU	0.23	0.39	---	---	---
Anions and Nutrients									
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0197	0.0269	---	---	---
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	0.063	---	---	---
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	3.33	4.11	---	---	---
fluoride	16984-48-8	E235.F	0.020	mg/L	0.161	0.167	---	---	---
Kjeldahl nitrogen, total [TKN]	---	E318	0.050	mg/L	0.335	0.890	---	---	---
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	1.38	1.86	---	---	---
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	0.0019	0.0020	---	---	---
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0014	<0.0010	---	---	---
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0026	0.0027	---	---	---
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	182	242	---	---	---
Organic / Inorganic Carbon									
carbon, dissolved organic [DOC]	---	E358-L	0.50	mg/L	<0.50	<0.50	---	---	---



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_MIDBO_WS _LAEMP_EVO_ 2022-12_N	RG_MIDGA_WS _LAEMP_EVO_ 2022-12_N	----	----	----
Client sampling date / time					02-Dec-2022 09:00	02-Dec-2022 10:30	----	----	----	
Analyte	CAS Number	Method	LOR	Unit	CG2216767-001	CG2216767-002	-----	-----	-----	
					Result	Result	----	----	----	
Organic / Inorganic Carbon										
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	<0.50	<0.50	----	----	----	
Ion Balance										
anion sum	----	EC101	0.10	meq/L	8.21	9.95	----	----	----	
cation sum	----	EC101	0.10	meq/L	8.69	10.3	----	----	----	
ion balance (cations/anions)	----	EC101	0.010	%	106	104	----	----	----	
ion balance (APHA)	----	EC101	0.01	%	2.84	1.73	----	----	----	
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0038	0.0050	----	----	----	
antimony, total	7440-36-0	E420	0.00010	mg/L	0.00013	0.00015	----	----	----	
arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00020	0.00019	----	----	----	
barium, total	7440-39-3	E420	0.00010	mg/L	0.139	0.165	----	----	----	
beryllium, total	7440-41-7	E420	0.020	µg/L	<0.020	<0.020	----	----	----	
bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	----	----	----	
boron, total	7440-42-8	E420	0.010	mg/L	0.014	0.017	----	----	----	
cadmium, total	7440-43-9	E420	0.0050	µg/L	0.0267	0.0337	----	----	----	
calcium, total	7440-70-2	E420	0.050	mg/L	97.8	115	----	----	----	
chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	0.00011	0.00015	----	----	----	
cobalt, total	7440-48-4	E420	0.10	µg/L	<0.10	<0.10	----	----	----	
copper, total	7440-50-8	E420	0.00050	mg/L	<0.00050	<0.00050	----	----	----	
iron, total	7439-89-6	E420	0.010	mg/L	0.010	0.017	----	----	----	
lead, total	7439-92-1	E420	0.000050	mg/L	<0.000050	<0.000050	----	----	----	
lithium, total	7439-93-2	E420	0.0010	mg/L	0.0207	0.0310	----	----	----	
magnesium, total	7439-95-4	E420	0.0050	mg/L	45.8	57.1	----	----	----	
manganese, total	7439-96-5	E420	0.00010	mg/L	0.00281	0.00316	----	----	----	
mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	----	----	----	
molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.00249	0.00376	----	----	----	
nickel, total	7440-02-0	E420	0.00050	mg/L	0.00370	0.00616	----	----	----	
potassium, total	7440-09-7	E420	0.050	mg/L	1.33	1.65	----	----	----	
selenium, total	7782-49-2	E420	0.050	µg/L	13.9	18.6	----	----	----	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_MIDBO_WS _LAEMP_EVO_ 2022-12_N	RG_MIDGA_WS _LAEMP_EVO_ 2022-12_N	----	----	----
Client sampling date / time					02-Dec-2022 09:00	02-Dec-2022 10:30	----	----	----	
Analyte	CAS Number	Method	LOR	Unit	CG2216767-001	CG2216767-002	-----	-----	-----	
					Result	Result	----	----	----	
Total Metals										
silicon, total	7440-21-3	E420	0.10	mg/L	2.64	2.68	----	----	----	
silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	----	----	----	
sodium, total	7440-23-5	E420	0.050	mg/L	5.39	5.80	----	----	----	
strontium, total	7440-24-6	E420	0.00020	mg/L	0.222	0.269	----	----	----	
sulfur, total	7704-34-9	E420	0.50	mg/L	73.3	97.8	----	----	----	
thallium, total	7440-28-0	E420	0.000010	mg/L	0.000010	0.000014	----	----	----	
tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00030	<0.00030	----	----	----	
uranium, total	7440-61-1	E420	0.000010	mg/L	0.00244	0.00335	----	----	----	
vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	<0.00050	----	----	----	
zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	<0.0030	----	----	----	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	<0.0010	<0.0010	----	----	----	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00012	0.00015	----	----	----	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00018	0.00017	----	----	----	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.134	0.155	----	----	----	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.020	<0.020	----	----	----	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	----	----	----	
boron, dissolved	7440-42-8	E421	0.010	mg/L	0.015	0.017	----	----	----	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.0268	0.0381	----	----	----	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	97.9	112	----	----	----	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	0.00010	0.00011	----	----	----	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	<0.10	<0.10	----	----	----	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00020	<0.00020	----	----	----	
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	<0.010	----	----	----	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	----	----	----	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0231	0.0345	----	----	----	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	43.2	54.1	----	----	----	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00246	0.00286	----	----	----	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_MIDBO_WS _LAEMP_EVO_ 2022-12_N	RG_MIDGA_WS _LAEMP_EVO_ 2022-12_N	----	----	----
Client sampling date / time					02-Dec-2022 09:00	02-Dec-2022 10:30	----	----	----	
Analyte	CAS Number	Method	LOR	Unit	CG2216767-001	CG2216767-002	-----	-----	-----	
					Result	Result	----	----	----	
Dissolved Metals										
mercury, dissolved	7439-97-6	E509	0.000050	mg/L	<0.000050	<0.000050	----	----	----	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00246	0.00366	----	----	----	
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00337	0.00568	----	----	----	
potassium, dissolved	7440-09-7	E421	0.050	mg/L	1.26	1.56	----	----	----	
selenium, dissolved	7782-49-2	E421	0.050	µg/L	16.4	22.2	----	----	----	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	2.51	2.53	----	----	----	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	----	----	----	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	5.04	5.42	----	----	----	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.214	0.251	----	----	----	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	72.2	95.2	----	----	----	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	0.000012	----	----	----	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	----	----	----	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00242	0.00325	----	----	----	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	----	----	----	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0010	0.0012	----	----	----	
dissolved mercury filtration location	----	EP509	-	-	Field	Field	----	----	----	
dissolved metals filtration location	----	EP421	-	-	Field	Field	----	----	----	

Please refer to the General Comments section for an explanation of any qualifiers detected.



QUALITY CONTROL INTERPRETIVE REPORT

<p>Work Order : CG2216767</p> <p>Amendment : 1</p> <p>Client : Teck Coal Limited</p> <p>Contact : Mike Pope</p> <p>Address : 421 Pine Avenue Sparwood BC Canada V0B2G0</p> <p>Telephone : ----</p> <p>Project : REGIONAL EFFECTS PROGRAM</p> <p>PO : VPO00847030</p> <p>C-O-C number : December EVO LAEMP 2022</p> <p>Sampler : Hillary Quinn-Austin</p> <p>Site : ----</p> <p>Quote number : Teck Coal Master Quote</p> <p>No. of samples received : 2</p> <p>No. of samples analysed : 2</p>	<p>Page : 1 of 16</p> <p>Laboratory : Calgary - Environmental</p> <p>Account Manager : Lyudmyla Shvets</p> <p>Address : 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5</p> <p>Telephone : +1 403 407 1800</p> <p>Date Samples Received : 03-Dec-2022 11:40</p> <p>Issue Date : 06-Dec-2022 13:37</p>
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This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

- Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
- CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
- DQO: Data Quality Objective.
- LOR: Limit of Reporting (detection limit).
- RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_MIDBO_WS_LAEMP_EVO_2022-12_N	E298	02-Dec-2022	03-Dec-2022	----	----		03-Dec-2022	28 days	1 days	✓	
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) RG_MIDGA_WS_LAEMP_EVO_2022-12_N	E298	02-Dec-2022	03-Dec-2022	----	----		03-Dec-2022	28 days	1 days	✓	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-12_N	E235.Br-L	02-Dec-2022	03-Dec-2022	----	----		03-Dec-2022	28 days	1 days	✓	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-12_N	E235.Br-L	02-Dec-2022	03-Dec-2022	----	----		03-Dec-2022	28 days	1 days	✓	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-12_N	E235.Cl-L	02-Dec-2022	03-Dec-2022	----	----		03-Dec-2022	28 days	1 days	✓	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-12_N	E235.Cl-L	02-Dec-2022	03-Dec-2022	----	----		03-Dec-2022	28 days	1 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-12_N	E378-U	02-Dec-2022	04-Dec-2022	----	----		04-Dec-2022	3 days	2 days	✔	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-12_N	E378-U	02-Dec-2022	04-Dec-2022	----	----		04-Dec-2022	3 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-12_N	E235.F	02-Dec-2022	03-Dec-2022	----	----		03-Dec-2022	28 days	1 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-12_N	E235.F	02-Dec-2022	03-Dec-2022	----	----		03-Dec-2022	28 days	1 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-12_N	E235.NO3-L	02-Dec-2022	03-Dec-2022	3 days	1 days	✔	03-Dec-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-12_N	E235.NO3-L	02-Dec-2022	03-Dec-2022	3 days	1 days	✔	03-Dec-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-12_N	E235.NO2-L	02-Dec-2022	03-Dec-2022	----	----		03-Dec-2022	3 days	1 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-12_N	E235.NO2-L	02-Dec-2022	03-Dec-2022	----	----		03-Dec-2022	3 days	1 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-12_N	E235.SO4	02-Dec-2022	03-Dec-2022	----	----		03-Dec-2022	28 days	1 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-12_N	E235.SO4	02-Dec-2022	03-Dec-2022	----	----		03-Dec-2022	28 days	1 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_MIDBO_WS_LAEMP_EVO_2022-12_N	E318	02-Dec-2022	04-Dec-2022	----	----		04-Dec-2022	28 days	2 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_MIDGA_WS_LAEMP_EVO_2022-12_N	E318	02-Dec-2022	04-Dec-2022	----	----		04-Dec-2022	28 days	2 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_MIDBO_WS_LAEMP_EVO_2022-12_N	E372-U	02-Dec-2022	04-Dec-2022	----	----		04-Dec-2022	28 days	2 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_MIDGA_WS_LAEMP_EVO_2022-12_N	E372-U	02-Dec-2022	04-Dec-2022	----	----		04-Dec-2022	28 days	2 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_MIDBO_WS_LAEMP_EVO_2022-12_N	E421.Cr-L	02-Dec-2022	05-Dec-2022	----	----		05-Dec-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_MIDGA_WS_LAEMP_EVO_2022-12_N	E421.Cr-L	02-Dec-2022	05-Dec-2022	----	----		05-Dec-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_MIDBO_WS_LAEMP_EVO_2022-12_N	E509	02-Dec-2022	04-Dec-2022	----	----		04-Dec-2022	28 days	2 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_MIDGA_WS_LAEMP_EVO_2022-12_N	E509	02-Dec-2022	04-Dec-2022	----	----		04-Dec-2022	28 days	2 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_MIDBO_WS_LAEMP_EVO_2022-12_N	E421	02-Dec-2022	05-Dec-2022	----	----		05-Dec-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_MIDGA_WS_LAEMP_EVO_2022-12_N	E421	02-Dec-2022	05-Dec-2022	----	----		05-Dec-2022	180 days	3 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_MIDBO_WS_LAEMP_EVO_2022-12_N	E358-L	02-Dec-2022	03-Dec-2022	----	----		03-Dec-2022	28 days	1 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_MIDGA_WS_LAEMP_EVO_2022-12_N	E358-L	02-Dec-2022	03-Dec-2022	----	----		03-Dec-2022	28 days	1 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_MIDBO_WS_LAEMP_EVO_2022-12_N	E355-L	02-Dec-2022	03-Dec-2022	----	----		03-Dec-2022	28 days	1 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_MIDGA_WS_LAEMP_EVO_2022-12_N	E355-L	02-Dec-2022	03-Dec-2022	----	----		03-Dec-2022	28 days	1 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-12_N	E283	02-Dec-2022	03-Dec-2022	----	----		03-Dec-2022	14 days	1 days	✔	
Physical Tests : Acidity by Titration											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-12_N	E283	02-Dec-2022	03-Dec-2022	----	----		03-Dec-2022	14 days	1 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-12_N	E290	02-Dec-2022	03-Dec-2022	----	----		03-Dec-2022	14 days	1 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Alkalinity Species by Titration											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-12_N	E290	02-Dec-2022	03-Dec-2022	----	----		03-Dec-2022	14 days	1 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-12_N	E100	02-Dec-2022	03-Dec-2022	----	----		03-Dec-2022	28 days	1 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-12_N	E100	02-Dec-2022	03-Dec-2022	----	----		03-Dec-2022	28 days	1 days	✓	
Physical Tests : ORP by Electrode											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-12_N	E125	02-Dec-2022	----	----	----		03-Dec-2022	0.25 hrs	26 hrs	* EHTR-FM	
Physical Tests : ORP by Electrode											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-12_N	E125	02-Dec-2022	----	----	----		03-Dec-2022	0.25 hrs	28 hrs	* EHTR-FM	
Physical Tests : pH by Meter											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-12_N	E108	02-Dec-2022	03-Dec-2022	----	----		03-Dec-2022	0.25 hrs	0.26 hrs	* EHTR-FM	
Physical Tests : pH by Meter											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-12_N	E108	02-Dec-2022	03-Dec-2022	----	----		03-Dec-2022	0.25 hrs	0.26 hrs	* EHTR-FM	
Physical Tests : TDS by Gravimetry											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-12_N	E162	02-Dec-2022	----	----	----		03-Dec-2022	7 days	1 days	✓	
Physical Tests : TDS by Gravimetry											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-12_N	E162	02-Dec-2022	----	----	----		03-Dec-2022	7 days	1 days	✓	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-12_N	E160-L	02-Dec-2022	----	----	----		04-Dec-2022	7 days	2 days	✓	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-12_N	E160-L	02-Dec-2022	----	----	----		04-Dec-2022	7 days	2 days	✓	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_MIDBO_WS_LAEMP_EVO_2022-12_N	E121	02-Dec-2022	----	----	----		03-Dec-2022	3 days	1 days	✓	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_MIDGA_WS_LAEMP_EVO_2022-12_N	E121	02-Dec-2022	----	----	----		03-Dec-2022	3 days	1 days	✓	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE - total (lab preserved) RG_MIDBO_WS_LAEMP_EVO_2022-12_N	E420.Cr-L	02-Dec-2022	04-Dec-2022	----	----		05-Dec-2022	180 days	3 days	✓	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE - total (lab preserved) RG_MIDGA_WS_LAEMP_EVO_2022-12_N	E420.Cr-L	02-Dec-2022	04-Dec-2022	----	----		05-Dec-2022	180 days	3 days	✓	
Total Metals : Total Mercury in Water by CVAAS											
HDPE - total (lab preserved) RG_MIDBO_WS_LAEMP_EVO_2022-12_N	E508	02-Dec-2022	04-Dec-2022	0.01 hrs	7 hrs	* EHTR-FM	04-Dec-2022	-40.76 hrs	0.01 hrs	* EHTR-FM	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_MIDGA_WS_LAEMP_EVO_2022-12_N	E508	02-Dec-2022	04-Dec-2022	----	----		04-Dec-2022	28 days	2 days	✓	
Total Metals : Total metals in Water by CRC ICPMS											
HDPE - total (lab preserved) RG_MIDBO_WS_LAEMP_EVO_2022-12_N	E420	02-Dec-2022	04-Dec-2022	----	----		05-Dec-2022	180 days	3 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals : Total metals in Water by CRC ICPMS										
HDPE - total (lab preserved) RG_MIDGA_WS_LAEMP_EVO_2022-12_N	E420	02-Dec-2022	04-Dec-2022	----	----		05-Dec-2022	180 days	3 days	✔

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended

Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
Analytical Methods							
Laboratory Duplicates (DUP)							
Acidity by Titration	E283	766734	1	17	5.8	5.0	✓
Alkalinity Species by Titration	E290	766755	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	766724	1	17	5.8	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	766715	1	16	6.2	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	766716	1	16	6.2	5.0	✓
Conductivity in Water	E100	766754	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	766887	1	2	50.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	766822	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	766888	1	2	50.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	766710	1	2	50.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	766871	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	766713	1	16	6.2	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	766717	1	16	6.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	766718	1	16	6.2	5.0	✓
ORP by Electrode	E125	766727	1	2	50.0	5.0	✓
pH by Meter	E108	766753	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	766714	1	16	6.2	5.0	✓
TDS by Gravimetry	E162	766792	1	11	9.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	766865	1	2	50.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	766743	1	2	50.0	5.0	✓
Total Mercury in Water by CVAAS	E508	766825	1	16	6.2	5.0	✓
Total metals in Water by CRC ICPMS	E420	766866	1	2	50.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	766711	1	2	50.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	766864	1	2	50.0	5.0	✓
Turbidity by Nephelometry	E121	766786	1	2	50.0	5.0	✓
Laboratory Control Samples (LCS)							
Acidity by Titration	E283	766734	1	17	5.8	5.0	✓
Alkalinity Species by Titration	E290	766755	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	766724	1	17	5.8	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	766715	1	16	6.2	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	766716	1	16	6.2	5.0	✓
Conductivity in Water	E100	766754	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	766887	1	2	50.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	766822	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	766888	1	2	50.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	766710	1	2	50.0	5.0	✓



Matrix: **Water** Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
Analytical Methods							
Laboratory Control Samples (LCS) - Continued							
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	766871	1	20	5.0	5.0	✔
Fluoride in Water by IC	E235.F	766713	1	16	6.2	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	766717	1	16	6.2	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	766718	1	16	6.2	5.0	✔
ORP by Electrode	E125	766727	1	2	50.0	5.0	✔
pH by Meter	E108	766753	1	20	5.0	5.0	✔
Sulfate in Water by IC	E235.SO4	766714	1	16	6.2	5.0	✔
TDS by Gravimetry	E162	766792	1	11	9.0	5.0	✔
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	766865	1	2	50.0	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	766743	1	2	50.0	5.0	✔
Total Mercury in Water by CVAAS	E508	766825	1	16	6.2	5.0	✔
Total metals in Water by CRC ICPMS	E420	766866	1	2	50.0	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	766711	1	2	50.0	5.0	✔
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	766864	1	2	50.0	5.0	✔
TSS by Gravimetry (Low Level)	E160-L	766791	1	16	6.2	5.0	✔
Turbidity by Nephelometry	E121	766786	1	2	50.0	5.0	✔
Method Blanks (MB)							
Acidity by Titration	E283	766734	1	17	5.8	5.0	✔
Alkalinity Species by Titration	E290	766755	1	20	5.0	5.0	✔
Ammonia by Fluorescence	E298	766724	1	17	5.8	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	766715	1	16	6.2	5.0	✔
Chloride in Water by IC (Low Level)	E235.Cl-L	766716	1	16	6.2	5.0	✔
Conductivity in Water	E100	766754	1	20	5.0	5.0	✔
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	766887	1	2	50.0	5.0	✔
Dissolved Mercury in Water by CVAAS	E509	766822	1	20	5.0	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	766888	1	2	50.0	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	766710	1	2	50.0	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	766871	1	20	5.0	5.0	✔
Fluoride in Water by IC	E235.F	766713	1	16	6.2	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	766717	1	16	6.2	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	766718	1	16	6.2	5.0	✔
Sulfate in Water by IC	E235.SO4	766714	1	16	6.2	5.0	✔
TDS by Gravimetry	E162	766792	1	11	9.0	5.0	✔
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	766865	1	2	50.0	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	766743	1	2	50.0	5.0	✔
Total Mercury in Water by CVAAS	E508	766825	1	16	6.2	5.0	✔
Total metals in Water by CRC ICPMS	E420	766866	1	2	50.0	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	766711	1	2	50.0	5.0	✔
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	766864	1	2	50.0	5.0	✔



Matrix: **Water** Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
<i>Analytical Methods</i>							
Method Blanks (MB) - Continued							
TSS by Gravimetry (Low Level)	E160-L	766791	1	16	6.2	5.0	✔
Turbidity by Nephelometry	E121	766786	1	2	50.0	5.0	✔
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	766724	1	17	5.8	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	766715	1	16	6.2	5.0	✔
Chloride in Water by IC (Low Level)	E235.Cl-L	766716	1	16	6.2	5.0	✔
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	766887	1	2	50.0	5.0	✔
Dissolved Mercury in Water by CVAAS	E509	766822	1	20	5.0	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	766888	1	2	50.0	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	766710	1	2	50.0	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	766871	1	20	5.0	5.0	✔
Fluoride in Water by IC	E235.F	766713	1	16	6.2	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	766717	1	16	6.2	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	766718	1	16	6.2	5.0	✔
Sulfate in Water by IC	E235.SO4	766714	1	16	6.2	5.0	✔
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	766865	1	2	50.0	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	766743	1	2	50.0	5.0	✔
Total Mercury in Water by CVAAS	E508	766825	1	16	6.2	5.0	✔
Total metals in Water by CRC ICPMS	E420	766866	1	2	50.0	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	766711	1	2	50.0	5.0	✔
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	766864	1	2	50.0	5.0	✔



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 Calgary - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 Calgary - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 Calgary - Environmental	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
ORP by Electrode	E125 Calgary - Environmental	Water	ASTM D1498 (mod)	Oxidation reduction potential is reported as the oxidation-reduction potential of the platinum metal-reference electrode employed, measured in mV. For high accuracy test results, it is recommended that this analysis be conducted in the field.
TSS by Gravimetry (Low Level)	E160-L Calgary - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 Calgary - Environmental	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC (Low Level)	E235.Cl-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Acidity by Titration	E283 Calgary - Environmental	Water	APHA 2310 B (mod)	Acidity is determined by potentiometric titration to pH endpoint of 8.3
Alkalinity Species by Titration	E290 Calgary - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 Calgary - Environmental	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 Calgary - Environmental	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L Calgary - Environmental	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Dissolved Organic Carbon by Combustion (Low Level)	E358-L Calgary - Environmental	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U Calgary - Environmental	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U Calgary - Environmental	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Total metals in Water by CRC ICPMS	E420 Calgary - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L Calgary - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Metals in Water by CRC ICPMS	E421 Calgary - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L Calgary - Environmental	Water	APHA 3030 B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS
Total Mercury in Water by CVAAS	E508 Calgary - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS
Dissolved Mercury in Water by CVAAS	E509 Calgary - Environmental	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
Dissolved Hardness (Calculated)	EC100 Calgary - Environmental	Water	APHA 2340B	"Hardness (as CaCO ₃), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Ion Balance using Dissolved Metals	EC101 Calgary - Environmental	Water	APHA 1030E	Cation Sum, Anion Sum, and Ion Balance are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present. Ion Balance cannot be calculated accurately for waters with very low electrical conductivity (EC).

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 Calgary - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 Calgary - Environmental	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Preparation for Total Organic Carbon by Combustion	EP355 Calgary - Environmental	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon by Combustion	EP358 Calgary - Environmental	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Phosphorus in water	EP372 Calgary - Environmental	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.



<i>Preparation Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
Dissolved Metals Water Filtration	EP421 Calgary - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.
Dissolved Mercury Water Filtration	EP509 Calgary - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.

QUALITY CONTROL REPORT

Work Order	: CG2216767	Page	: 1 of 18
Amendment	: 1		
Client	: Teck Coal Limited	Laboratory	: Calgary - Environmental
Contact	: Mike Pope	Account Manager	: Lyudmyla Shvets
Address	: 421 Pine Avenue Sparwood BC Canada V0B2G0	Address	: 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5
Telephone	:	Telephone	: +1 403 407 1800
Project	: REGIONAL EFFECTS PROGRAM	Date Samples Received	: 03-Dec-2022 11:40
PO	: VPO00847030	Date Analysis Commenced	: 03-Dec-2022
C-O-C number	: December EVO LAEMP 2022	Issue Date	: 06-Dec-2022 13:37
Sampler	: Hillary Quinn-Austin		
Site	: ----		
Quote number	: Teck Coal Master Quote		
No. of samples received	: 2		
No. of samples analysed	: 2		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Elke Tabora		Calgary Inorganics, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Calgary Inorganics, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Calgary Metals, Calgary, Alberta
Parker Sgarbossa	Laboratory Analyst	Calgary Inorganics, Calgary, Alberta
Ruifang Zheng	Analyst	Calgary Inorganics, Calgary, Alberta
Zakieh Lalonde		Calgary Metals, Calgary, Alberta



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 766727)											
CG2216767-001	RG_MIDBO_WS_LAEMP_EVO_2022-12_N	oxidation-reduction potential [ORP]	----	E125	0.10	mV	324	334	3.07%	15%	----
Physical Tests (QC Lot: 766734)											
CG2216767-001	RG_MIDBO_WS_LAEMP_EVO_2022-12_N	acidity (as CaCO3)	----	E283	2.0	mg/L	<2.0	<2.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 766753)											
CG2216754-001	Anonymous	pH	----	E108	0.10	pH units	7.56	7.56	0.00%	4%	----
Physical Tests (QC Lot: 766754)											
CG2216761-001	Anonymous	conductivity	----	E100	2.0	µS/cm	274	270	1.47%	10%	----
Physical Tests (QC Lot: 766755)											
CG2216761-001	Anonymous	alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	134	137	2.13%	20%	----
		alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, total (as CaCO3)	----	E290	2.0	mg/L	134	137	2.13%	20%	----
Physical Tests (QC Lot: 766786)											
CG2216767-001	RG_MIDBO_WS_LAEMP_EVO_2022-12_N	turbidity	----	E121	0.10	NTU	0.23	0.22	0.002	Diff <2x LOR	----
Physical Tests (QC Lot: 766792)											
CG2216717-001	Anonymous	solids, total dissolved [TDS]	----	E162	40	mg/L	1430	1460	2.42%	20%	----
Anions and Nutrients (QC Lot: 766713)											
CG2216764-001	Anonymous	fluoride	16984-48-8	E235.F	0.400	mg/L	<0.400	<0.400	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 766714)											
CG2216764-001	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	6.00	mg/L	1240	1240	0.0415%	20%	----
Anions and Nutrients (QC Lot: 766715)											
CG2216764-001	Anonymous	bromide	24959-67-9	E235.Br-L	1.00	mg/L	<1.00	<1.00	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 766716)											
CG2216764-001	Anonymous	chloride	16887-00-6	E235.Cl-L	2.00	mg/L	57.0	56.8	0.398%	20%	----
Anions and Nutrients (QC Lot: 766717)											
CG2216764-001	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	0.100	mg/L	64.1	64.0	0.133%	20%	----
Anions and Nutrients (QC Lot: 766718)											
CG2216764-001	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.0200	mg/L	2.70	2.70	0.0371%	20%	----



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 766724)											
CG2216767-001	RG_MIDBO_WS_LAEMP_EVO_2022-12_N	ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0197	0.0188	0.0009	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 766743)											
CG2216767-001	RG_MIDBO_WS_LAEMP_EVO_2022-12_N	Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	0.335	0.283	0.052	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 766864)											
CG2216767-001	RG_MIDBO_WS_LAEMP_EVO_2022-12_N	phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0026	0.0024	0.0002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 766871)											
CG2216767-001	RG_MIDBO_WS_LAEMP_EVO_2022-12_N	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0014	0.0014	0.00007	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 766710)											
CG2216767-001	RG_MIDBO_WS_LAEMP_EVO_2022-12_N	carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 766711)											
CG2216767-001	RG_MIDBO_WS_LAEMP_EVO_2022-12_N	carbon, total organic [TOC]	----	E355-L	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
Total Metals (QC Lot: 766825)											
CG2216743-009	Anonymous	mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Total Metals (QC Lot: 766865)											
CG2216767-001	RG_MIDBO_WS_LAEMP_EVO_2022-12_N	chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	0.00011	0.00012	0.000008	Diff <2x LOR	----
Total Metals (QC Lot: 766866)											
CG2216767-001	RG_MIDBO_WS_LAEMP_EVO_2022-12_N	aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0038	0.0042	0.0004	Diff <2x LOR	----
		antimony, total	7440-36-0	E420	0.00010	mg/L	0.00013	0.00012	0.000004	Diff <2x LOR	----
		arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00020	0.00018	0.00001	Diff <2x LOR	----
		barium, total	7440-39-3	E420	0.00010	mg/L	0.139	0.141	1.63%	20%	----
		beryllium, total	7440-41-7	E420	0.000020	mg/L	<0.020 µg/L	<0.000020	0	Diff <2x LOR	----
		bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, total	7440-42-8	E420	0.010	mg/L	0.014	0.014	0.0002	Diff <2x LOR	----
		cadmium, total	7440-43-9	E420	0.0000050	mg/L	0.0267 µg/L	0.0000258	0.0000010	Diff <2x LOR	----
		calcium, total	7440-70-2	E420	0.050	mg/L	97.8	98.2	0.404%	20%	----
		cobalt, total	7440-48-4	E420	0.00010	mg/L	<0.10 µg/L	<0.00010	0	Diff <2x LOR	----
		copper, total	7440-50-8	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		iron, total	7439-89-6	E420	0.010	mg/L	0.010	0.010	0.0004	Diff <2x LOR	----
		lead, total	7439-92-1	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		lithium, total	7439-93-2	E420	0.0010	mg/L	0.0207	0.0229	9.78%	20%	----



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (QC Lot: 766866) - continued											
CG2216767-001	RG_MIDBO_WS_LAEMP_EVO_2022-12_N	magnesium, total	7439-95-4	E420	0.0050	mg/L	45.8	45.1	1.42%	20%	----
		manganese, total	7439-96-5	E420	0.00010	mg/L	0.00281	0.00285	1.58%	20%	----
		molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.00249	0.00248	0.401%	20%	----
		nickel, total	7440-02-0	E420	0.00050	mg/L	0.00370	0.00372	0.00001	Diff <2x LOR	----
		potassium, total	7440-09-7	E420	0.050	mg/L	1.33	1.31	1.35%	20%	----
		selenium, total	7782-49-2	E420	0.000050	mg/L	13.9 µg/L	0.0139	0.317%	20%	----
		silicon, total	7440-21-3	E420	0.10	mg/L	2.64	2.62	0.772%	20%	----
		silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, total	7440-23-5	E420	0.050	mg/L	5.39	5.34	0.855%	20%	----
		strontium, total	7440-24-6	E420	0.00020	mg/L	0.222	0.229	3.02%	20%	----
		sulfur, total	7704-34-9	E420	0.50	mg/L	73.3	70.5	3.92%	20%	----
		thallium, total	7440-28-0	E420	0.000010	mg/L	0.000010	0.000011	0.0000002	Diff <2x LOR	----
		tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		uranium, total	7440-61-1	E420	0.000010	mg/L	0.00244	0.00246	0.750%	20%	----
vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----		
zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	<0.0030	0	Diff <2x LOR	----		
Dissolved Metals (QC Lot: 766822)											
CG2216729-001	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 766887)											
CG2216767-001	RG_MIDBO_WS_LAEMP_EVO_2022-12_N	chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	0.00010	0.00012	0.00002	Diff <2x LOR	----
Dissolved Metals (QC Lot: 766888)											
CG2216767-001	RG_MIDBO_WS_LAEMP_EVO_2022-12_N	aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00012	0.00012	0.000004	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00018	0.00019	0.000006	Diff <2x LOR	----
		barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.134	0.132	1.43%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.000020	mg/L	<0.020 µg/L	<0.000020	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.010	mg/L	0.015	0.015	0.00005	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	0.0268 µg/L	0.0000230	0.0000038	Diff <2x LOR	----
		calcium, dissolved	7440-70-2	E421	0.050	mg/L	97.9	96.0	1.88%	20%	----
		cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	<0.10 µg/L	<0.00010	0	Diff <2x LOR	----
		copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 766888) - continued											
CG2216767-001	RG_MIDBO_WS_LAEMP_EVO_2022-12_N	iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0231	0.0199	14.8%	20%	----
		magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	43.2	43.5	0.609%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00246	0.00245	0.268%	20%	----
		molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00246	0.00244	0.752%	20%	----
		nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00337	0.00341	0.00004	Diff <2x LOR	----
		potassium, dissolved	7440-09-7	E421	0.050	mg/L	1.26	1.25	0.900%	20%	----
		selenium, dissolved	7782-49-2	E421	0.000050	mg/L	16.4 µg/L	0.0167	2.11%	20%	----
		silicon, dissolved	7440-21-3	E421	0.050	mg/L	2.51	2.47	1.61%	20%	----
		silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E421	0.050	mg/L	5.04	4.97	1.50%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.214	0.215	0.692%	20%	----
		sulfur, dissolved	7704-34-9	E421	0.50	mg/L	72.2	71.5	1.03%	20%	----
		thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00242	0.00235	2.76%	20%	----		
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----		
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----		



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 766734)						
acidity (as CaCO3)	---	E283	2	mg/L	<2.0	---
Physical Tests (QCLot: 766754)						
conductivity	---	E100	1	µS/cm	1.1	---
Physical Tests (QCLot: 766755)						
alkalinity, bicarbonate (as CaCO3)	---	E290	1	mg/L	<1.0	---
alkalinity, carbonate (as CaCO3)	---	E290	1	mg/L	<1.0	---
alkalinity, hydroxide (as CaCO3)	---	E290	1	mg/L	<1.0	---
alkalinity, total (as CaCO3)	---	E290	1	mg/L	<1.0	---
Physical Tests (QCLot: 766786)						
turbidity	---	E121	0.1	NTU	<0.10	---
Physical Tests (QCLot: 766791)						
solids, total suspended [TSS]	---	E160-L	1	mg/L	<1.0	---
Physical Tests (QCLot: 766792)						
solids, total dissolved [TDS]	---	E162	10	mg/L	<10	---
Anions and Nutrients (QCLot: 766713)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	---
Anions and Nutrients (QCLot: 766714)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	---
Anions and Nutrients (QCLot: 766715)						
bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	---
Anions and Nutrients (QCLot: 766716)						
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	---
Anions and Nutrients (QCLot: 766717)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	---
Anions and Nutrients (QCLot: 766718)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	---
Anions and Nutrients (QCLot: 766724)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	---
Anions and Nutrients (QCLot: 766743)						
Kjeldahl nitrogen, total [TKN]	---	E318	0.05	mg/L	<0.050	---
Anions and Nutrients (QCLot: 766864)						
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	---



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 766871)						
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Organic / Inorganic Carbon (QCLot: 766710)						
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Organic / Inorganic Carbon (QCLot: 766711)						
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	<0.50	----
Total Metals (QCLot: 766825)						
mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	----
Total Metals (QCLot: 766865)						
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	<0.00010	----
Total Metals (QCLot: 766866)						
aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	----
antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	----
barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	----
boron, total	7440-42-8	E420	0.01	mg/L	<0.010	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	----
calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	----
copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	----
iron, total	7439-89-6	E420	0.01	mg/L	<0.010	----
lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	----
lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	----
magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	----
manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	----
nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	----
potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	----
selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	----
silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	----
silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	----
sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	----
strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	----
sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 766866) - continued						
thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	----
tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	----
titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	----
uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	----
zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	----
Dissolved Metals (QCLot: 766822)						
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 766887)						
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	<0.00010	----
Dissolved Metals (QCLot: 766888)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----



Sub-Matrix: **Water**

<i>Analyte</i>	<i>CAS Number</i>	<i>Method</i>	<i>LOR</i>	<i>Unit</i>	<i>Result</i>	<i>Qualifier</i>
Dissolved Metals (QCLot: 766888) - continued						
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				Qualifier
					Spike	Recovery (%)	Recovery Limits (%)		
					Concentration	LCS	Low	High	
Physical Tests (QCLot: 766727)									
oxidation-reduction potential [ORP]	----	E125	----	mV	220 mV	100	95.4	104	----
Physical Tests (QCLot: 766734)									
acidity (as CaCO ₃)	----	E283	2	mg/L	50 mg/L	105	85.0	115	----
Physical Tests (QCLot: 766753)									
pH	----	E108	----	pH units	7 pH units	101	98.6	101	----
Physical Tests (QCLot: 766754)									
conductivity	----	E100	1	µS/cm	146.9 µS/cm	101	90.0	110	----
Physical Tests (QCLot: 766755)									
alkalinity, total (as CaCO ₃)	----	E290	1	mg/L	500 mg/L	102	85.0	115	----
Physical Tests (QCLot: 766786)									
turbidity	----	E121	0.1	NTU	200 NTU	104	85.0	115	----
Physical Tests (QCLot: 766791)									
solids, total suspended [TSS]	----	E160-L	1	mg/L	150 mg/L	97.7	85.0	115	----
Physical Tests (QCLot: 766792)									
solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	98.0	85.0	115	----
Anions and Nutrients (QCLot: 766713)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 766714)									
sulfate (as SO ₄)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 766715)									
bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	99.6	85.0	115	----
Anions and Nutrients (QCLot: 766716)									
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	99.3	90.0	110	----
Anions and Nutrients (QCLot: 766717)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	99.9	90.0	110	----
Anions and Nutrients (QCLot: 766718)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	98.2	90.0	110	----
Anions and Nutrients (QCLot: 766724)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	105	85.0	115	----
Anions and Nutrients (QCLot: 766743)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	92.0	75.0	125	----



Sub-Matrix: Water					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	
Anions and Nutrients (QCLot: 766864)									
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.03 mg/L	102	80.0	120	----
Anions and Nutrients (QCLot: 766871)									
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.03 mg/L	101	80.0	120	----
Organic / Inorganic Carbon (QCLot: 766710)									
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	91.0	80.0	120	----
Organic / Inorganic Carbon (QCLot: 766711)									
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	96.6	80.0	120	----
Total Metals (QCLot: 766825)									
mercury, total	7439-97-6	E508	0.000005	mg/L	0.0001 mg/L	106	80.0	120	----
Total Metals (QCLot: 766865)									
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	0.25 mg/L	103	80.0	120	----
Total Metals (QCLot: 766866)									
aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	110	80.0	120	----
antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	108	80.0	120	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	101	80.0	120	----
barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	99.1	80.0	120	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	107	80.0	120	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	105	80.0	120	----
boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	98.4	80.0	120	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	101	80.0	120	----
calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	106	80.0	120	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	104	80.0	120	----
copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	101	80.0	120	----
iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	102	80.0	120	----
lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	102	80.0	120	----
lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	120	80.0	120	----
magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	111	80.0	120	----
manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	102	80.0	120	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	105	80.0	120	----
nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	104	80.0	120	----
potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	108	80.0	120	----
selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	97.1	80.0	120	----
silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	104	60.0	140	----
silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	93.9	80.0	120	----



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 766866) - continued									
sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	112	80.0	120	----
strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	107	80.0	120	----
sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	112	80.0	120	----
thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	99.8	80.0	120	----
tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	103	80.0	120	----
titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	103	80.0	120	----
uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	106	80.0	120	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	106	80.0	120	----
zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	96.7	80.0	120	----
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	94.5	80.0	120	----
Dissolved Metals (QCLot: 766887)									
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	0.25 mg/L	99.8	80.0	120	----
Dissolved Metals (QCLot: 766888)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	108	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	103	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	99.7	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	99.8	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	101	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	101	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	93.8	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	99.7	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	102	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	101	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	98.6	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	99.1	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	102	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	102	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	110	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	99.6	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	100	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	101	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	108	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	95.3	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	101	60.0	140	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	93.6	80.0	120	----



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 766888) - continued									
sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	109	80.0	120	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	104	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	109	80.0	120	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	99.5	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	101	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	96.5	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	102	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	104	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	94.3	80.0	120	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 766713)										
CG2216766-001	Anonymous	fluoride	16984-48-8	E235.F	0.854 mg/L	1 mg/L	85.4	75.0	125	----
Anions and Nutrients (QCLot: 766714)										
CG2216766-001	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	ND mg/L	100 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 766715)										
CG2216766-001	Anonymous	bromide	24959-67-9	E235.Br-L	ND mg/L	0.5 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 766716)										
CG2216766-001	Anonymous	chloride	16887-00-6	E235.Cl-L	88.0 mg/L	100 mg/L	88.0	75.0	125	----
Anions and Nutrients (QCLot: 766717)										
CG2216766-001	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	2.20 mg/L	2.5 mg/L	88.1	75.0	125	----
Anions and Nutrients (QCLot: 766718)										
CG2216766-001	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.446 mg/L	0.5 mg/L	89.1	75.0	125	----
Anions and Nutrients (QCLot: 766724)										
CG2216767-002	RG_MIDGA_WS_LAEMP_E VO_2022-12_N	ammonia, total (as N)	7664-41-7	E298	0.100 mg/L	0.1 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 766743)										
CG2216767-002	RG_MIDGA_WS_LAEMP_E VO_2022-12_N	Kjeldahl nitrogen, total [TKN]	----	E318	2.31 mg/L	2.5 mg/L	92.4	70.0	130	----
Anions and Nutrients (QCLot: 766864)										
CG2216767-002	RG_MIDGA_WS_LAEMP_E VO_2022-12_N	phosphorus, total	7723-14-0	E372-U	0.0415 mg/L	0.05 mg/L	82.9	70.0	130	----
Anions and Nutrients (QCLot: 766871)										
CG2216767-002	RG_MIDGA_WS_LAEMP_E VO_2022-12_N	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0497 mg/L	0.05 mg/L	99.3	70.0	130	----
Organic / Inorganic Carbon (QCLot: 766710)										
CG2216767-001	RG_MIDBO_WS_LAEMP_E VO_2022-12_N	carbon, dissolved organic [DOC]	----	E358-L	5.38 mg/L	5 mg/L	108	70.0	130	----
Organic / Inorganic Carbon (QCLot: 766711)										
CG2216767-001	RG_MIDBO_WS_LAEMP_E VO_2022-12_N	carbon, total organic [TOC]	----	E355-L	5.69 mg/L	5 mg/L	114	70.0	130	----
Total Metals (QCLot: 766825)										
CG2216743-010	Anonymous	mercury, total	7439-97-6	E508	0.000109 mg/L	0.0001 mg/L	109	70.0	130	----



Sub-Matrix: Water

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 766865)										
CG2216767-002	RG_MIDGA_WS_LAEMP_E VO_2022-12_N	chromium, total	7440-47-3	E420.Cr-L	0.399 mg/L	0.4 mg/L	99.8	70.0	130	----
Total Metals (QCLot: 766866)										
CG2216767-002	RG_MIDGA_WS_LAEMP_E VO_2022-12_N	aluminum, total	7429-90-5	E420	2.03 mg/L	2 mg/L	102	70.0	130	----
		antimony, total	7440-36-0	E420	0.201 mg/L	0.2 mg/L	101	70.0	130	----
		arsenic, total	7440-38-2	E420	0.199 mg/L	0.2 mg/L	99.4	70.0	130	----
		barium, total	7440-39-3	E420	0.183 mg/L	0.2 mg/L	91.7	70.0	130	----
		beryllium, total	7440-41-7	E420	0.428 mg/L	0.4 mg/L	107	70.0	130	----
		bismuth, total	7440-69-9	E420	0.106 mg/L	0.1 mg/L	106	70.0	130	----
		boron, total	7440-42-8	E420	0.995 mg/L	1 mg/L	99.5	70.0	130	----
		cadmium, total	7440-43-9	E420	0.0399 mg/L	0.04 mg/L	99.7	70.0	130	----
		calcium, total	7440-70-2	E420	ND mg/L	40 mg/L	ND	70.0	130	----
		cobalt, total	7440-48-4	E420	0.200 mg/L	0.2 mg/L	100	70.0	130	----
		copper, total	7440-50-8	E420	0.198 mg/L	0.2 mg/L	99.0	70.0	130	----
		iron, total	7439-89-6	E420	20.2 mg/L	20 mg/L	101	70.0	130	----
		lead, total	7439-92-1	E420	0.206 mg/L	0.2 mg/L	103	70.0	130	----
		lithium, total	7439-93-2	E420	1.07 mg/L	1 mg/L	107	70.0	130	----
		magnesium, total	7439-95-4	E420	ND mg/L	10 mg/L	ND	70.0	130	----
		manganese, total	7439-96-5	E420	0.193 mg/L	0.2 mg/L	96.4	70.0	130	----
		molybdenum, total	7439-98-7	E420	0.214 mg/L	0.2 mg/L	107	70.0	130	----
		nickel, total	7440-02-0	E420	0.401 mg/L	0.4 mg/L	100	70.0	130	----
		potassium, total	7440-09-7	E420	40.7 mg/L	40 mg/L	102	70.0	130	----
		selenium, total	7782-49-2	E420	0.391 mg/L	0.4 mg/L	97.9	70.0	130	----
		silicon, total	7440-21-3	E420	96.6 mg/L	100 mg/L	96.6	70.0	130	----
		silver, total	7440-22-4	E420	0.0392 mg/L	0.04 mg/L	98.0	70.0	130	----
		sodium, total	7440-23-5	E420	20.7 mg/L	20 mg/L	104	70.0	130	----
		strontium, total	7440-24-6	E420	ND mg/L	0.2 mg/L	ND	70.0	130	----
		sulfur, total	7704-34-9	E420	196 mg/L	200 mg/L	98.0	70.0	130	----
		thallium, total	7440-28-0	E420	0.0402 mg/L	0.04 mg/L	100	70.0	130	----
		tin, total	7440-31-5	E420	0.197 mg/L	0.2 mg/L	98.4	70.0	130	----
		titanium, total	7440-32-6	E420	0.390 mg/L	0.4 mg/L	97.6	70.0	130	----
		uranium, total	7440-61-1	E420	0.0426 mg/L	0.04 mg/L	106	70.0	130	----
		vanadium, total	7440-62-2	E420	1.01 mg/L	1 mg/L	101	70.0	130	----
		zinc, total	7440-66-6	E420	3.84 mg/L	4 mg/L	96.1	70.0	130	----
Dissolved Metals (QCLot: 766822)										



Sub-Matrix: Water

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 766822) - continued										
CG2216729-002	Anonymous	mercury, dissolved	7439-97-6	E509	0.000106 mg/L	0.0001 mg/L	106	70.0	130	----
Dissolved Metals (QCLot: 766887)										
CG2216767-002	RG_MIDGA_WS_LAEMP_EVO_2022-12_N	chromium, dissolved	7440-47-3	E421.Cr-L	0.394 mg/L	0.4 mg/L	98.5	70.0	130	----
Dissolved Metals (QCLot: 766888)										
CG2216767-002	RG_MIDGA_WS_LAEMP_EVO_2022-12_N	aluminum, dissolved	7429-90-5	E421	2.01 mg/L	2 mg/L	100	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.195 mg/L	0.2 mg/L	97.6	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.196 mg/L	0.2 mg/L	98.3	70.0	130	----
		barium, dissolved	7440-39-3	E421	0.182 mg/L	0.2 mg/L	91.2	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.399 mg/L	0.4 mg/L	99.8	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.100 mg/L	0.1 mg/L	100	70.0	130	----
		boron, dissolved	7440-42-8	E421	0.935 mg/L	1 mg/L	93.5	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.0387 mg/L	0.04 mg/L	96.7	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	40 mg/L	ND	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.199 mg/L	0.2 mg/L	99.3	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.196 mg/L	0.2 mg/L	98.1	70.0	130	----
		iron, dissolved	7439-89-6	E421	19.9 mg/L	20 mg/L	99.6	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.196 mg/L	0.2 mg/L	97.8	70.0	130	----
		lithium, dissolved	7439-93-2	E421	1.06 mg/L	1 mg/L	106	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	10 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E421	0.193 mg/L	0.2 mg/L	96.3	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.201 mg/L	0.2 mg/L	100	70.0	130	----
		nickel, dissolved	7440-02-0	E421	0.394 mg/L	0.4 mg/L	98.4	70.0	130	----
		potassium, dissolved	7440-09-7	E421	40.2 mg/L	40 mg/L	100	70.0	130	----
		selenium, dissolved	7782-49-2	E421	0.389 mg/L	0.4 mg/L	97.3	70.0	130	----
		silicon, dissolved	7440-21-3	E421	93.8 mg/L	100 mg/L	93.8	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.0383 mg/L	0.04 mg/L	95.8	70.0	130	----
		sodium, dissolved	7440-23-5	E421	20.9 mg/L	20 mg/L	104	70.0	130	----
		strontium, dissolved	7440-24-6	E421	ND mg/L	0.2 mg/L	ND	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	202 mg/L	200 mg/L	101	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.0383 mg/L	0.04 mg/L	95.8	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.190 mg/L	0.2 mg/L	95.0	70.0	130	----
		titanium, dissolved	7440-32-6	E421	0.380 mg/L	0.4 mg/L	95.1	70.0	130	----
		uranium, dissolved	7440-61-1	E421	0.0399 mg/L	0.04 mg/L	99.8	70.0	130	----
		vanadium, dissolved	7440-62-2	E421	0.993 mg/L	1 mg/L	99.3	70.0	130	----



Sub-Matrix: **Water**

					<i>Matrix Spike (MS) Report</i>					
					<i>Spike</i>		<i>Recovery (%)</i>	<i>Recovery Limits (%)</i>		
<i>Laboratory sample ID</i>	<i>Client sample ID</i>	<i>Analyte</i>	<i>CAS Number</i>	<i>Method</i>	<i>Concentration</i>	<i>Target</i>	<i>MS</i>	<i>Low</i>	<i>High</i>	<i>Qualifier</i>
Dissolved Metals (QCLot: 766888) - continued										
CG2216767-002	RG_MIDGA_WS_LAEMP_E VO_2022-12_N	zinc, dissolved	7440-66-6	E421	3.84 mg/L	4 mg/L	96.0	70.0	130	----

COC ID:		December EVO LAEMP 2022			TURNAROUND TIME:			rush	
PROJECT/CLIENT INFO					LABORATORY				
Facility Name / Job#		Regional EVO LAEMP			Lab Name		ALS Calgary		
Project Manager		Mike Pope			Lab Contact		Lyudmyla Shvets		
Address		421 Pine Avenue			Address		2559 29 Street NE		
City		Sparwood		Province		BC		City	
Postal Code		V0B 2G0		Country		Canada		City	
Phone Number		343-333-3905			Phone Number		1 403 407 1794		

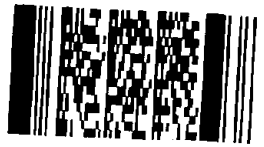
SAMPLE DETAILS								ANALYSIS REQUESTED							
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	TECKCOAL-ROUTINE-VA	ALS_Package-DOC	ALS_Package-TKN/TOC	HC-T-U-CVAF-VA	HC-D-CVAF-VA	TECKCOAL-MET-T-VA	TECKCOAL-MET-D-VA	
RG_MIDBO_WS_LAEMP_EVO_2022-12_N	RG_MIDBO	WS	No	12/2/2022	9:00	G	7	X	X	X	X	X	X	X	
RG_MIDGA_WS_LAEMP_EVO_2022-12_N	RG_MIDGA	WS	No	12/2/2022	10:30	G	7	X	X	X	X	X	X	X	

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
ALS PO VPO00847030	Hillary Quinn-Austin/Minnow Env.	December 2, 2022	<i>[Signature]</i>

NB OF BOTTLES RETURNED/DESCRIPTION	Regular (default)	Priority (2-3 business days) - 50% surcharge	Emergency (1 Business Day) - 100% surcharge	For Emergency <1 Day, ASAP or Weekend - Contact ALS	Sampler's Name	Hillary Quinn-Austin	Mobile #	613-620-3778
		X			Sampler's Signature	<i>[Signature]</i>	Date/Time	December 2, 2022

Environmental Division
 Calgary
 Work Order Reference
CG2216767

Environmental Division
 Calgary
 Work Order Reference
CG2216767



INTERSTITIAL BRYOPHYTE CHEMISTRY

ALS Laboratory Reports



CERTIFICATE OF ANALYSIS

Work Order : **CG2206165**
Client : **Teck Coal Limited**
Contact : Mike Pope
Address : 421 Pine Avenue
Sparwood BC Canada V0B2G0
Telephone : ----
Project : REGIONAL EFFECTS PROGRAM
PO : VPO00816101
C-O-C number : May EVO LAEMP 2022 PW
Sampler : Alex McClymont
Site : ----
Quote number : Teck Coal Master Quote
No. of samples received : 10
No. of samples analysed : 10

Page : 1 of 6
Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
Calgary AB Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 21-May-2022 09:10
Date Analysis Commenced : 21-May-2022
Issue Date : 29-May-2022 15:05

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Anthony Calero	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Dwayne Bennett	Supervisor - Inorganic	Metals, Calgary, Alberta
Sara Niroomand		Inorganics, Calgary, Alberta
Sheida Aria	Lab Assistant	Metals, Calgary, Alberta



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

<i>Unit</i>	<i>Description</i>
-	No Unit
µg/L	micrograms per litre
mg/L	milligrams per litre

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

<i>Qualifier</i>	<i>Description</i>
DLDS	Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.



Analytical Results

Sub-Matrix: Water					Client sample ID				
(Matrix: Water)					RG_ERCKDT_P W-01_D1_LAE MP_EVO_2022- 05-19_NP	RG_ERCKDT_P W-01_D2_LAE MP_EVO_2022- 05-19_NP	RG_ERCKDT_P W-01_D3_LAE MP_EVO_2022- 05-19_NP	RG_ERCKDT_P W-02_D1_LAE MP_EVO_2022- 05-19_NP	RG_ERCKDT_P W-02_D2_LAE MP_EVO_2022- 05-19_NP
Client sampling date / time					19-May-2022 11:15	19-May-2022 11:30	19-May-2022 11:45	19-May-2022 09:00	19-May-2022 10:30
Analyte	CAS Number	Method	LOR	Unit	CG2206165-001	CG2206165-002	CG2206165-003	CG2206165-004	CG2206165-005
					Result	Result	Result	Result	Result
Physical Tests									
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	1270	1290	1300	1270	1270
Anions and Nutrients									
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	5.96	6.16	6.98	5.94	6.51
fluoride	16984-48-8	E235.F	0.020	mg/L	0.102	0.105	0.135	<0.100 ^{DLDS}	0.102
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	18.0	17.5	17.5	17.1	17.3
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	0.0148	0.0133	0.0100	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	804	817	829	814	825
Dissolved Metals									
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0046	0.0061	0.0052	0.0042	0.0051
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00019	0.00022	0.00022	0.00019	0.00019
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00022	0.00030	0.00021	0.00023	0.00025
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0617	0.0607	0.0505	0.0621	0.0632
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
boron, dissolved	7440-42-8	E421	0.010	mg/L	0.012	0.012	0.013	0.012	0.012
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.0851	0.176	0.134	0.0990	0.0981
calcium, dissolved	7440-70-2	E421	0.050	mg/L	253	255	266	253	253
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	0.00022	0.00025	0.00022	0.00025	0.00022
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	<0.10	0.11	<0.10	<0.10	<0.10
copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00020	0.00042	0.00036	<0.00020	0.00028
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	0.020	<0.010	<0.010	<0.010
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0248	0.0250	0.0260	0.0251	0.0250
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	156	158	155	156	156
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00029	0.00261	0.00110	0.00026	0.00035
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00106	0.00117	0.00119	0.00110	0.00113
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00090	0.00346	0.00425	0.00087	0.00092



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

Client sample ID

					RG_ERCKDT_P W-01_D1_LAE MP_EVO_2022- 05-19_NP	RG_ERCKDT_P W-01_D2_LAE MP_EVO_2022- 05-19_NP	RG_ERCKDT_P W-01_D3_LAE MP_EVO_2022- 05-19_NP	RG_ERCKDT_P W-02_D1_LAE MP_EVO_2022- 05-19_NP	RG_ERCKDT_P W-02_D2_LAE MP_EVO_2022- 05-19_NP
Client sampling date / time					19-May-2022 11:15	19-May-2022 11:30	19-May-2022 11:45	19-May-2022 09:00	19-May-2022 10:30
Analyte	CAS Number	Method	LOR	Unit	CG2206165-001	CG2206165-002	CG2206165-003	CG2206165-004	CG2206165-005
					Result	Result	Result	Result	Result
Dissolved Metals									
potassium, dissolved	7440-09-7	E421	0.050	mg/L	2.71	3.20	2.88	2.77	2.88
selenium, dissolved	7782-49-2	E421	0.050	µg/L	159	168	168	168	170
silicon, dissolved	7440-21-3	E421	0.050	mg/L	3.80	4.18	4.03	3.80	3.87
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
sodium, dissolved	7440-23-5	E421	0.050	mg/L	3.22	3.34	3.29	3.26	3.27
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.218	0.224	0.235	0.228	0.229
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	280	290	294	285	289
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	0.000017	0.000021	<0.000010	<0.000010
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00810	0.00828	0.00852	0.00850	0.00843
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0052	0.0079	0.0094	0.0040	0.0043
dissolved metals filtration location	----	EP421	-	-	Field	Field	Field	Field	Field

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKDT_P W-02_D3_LAE MP_EVO_2022- 05-19_NP	RG_ERCKDT_P W-03_D1_LAE MP_EVO_2022- 05-19_NP	RG_ERCKDT_P W-03_D2_LAE MP_EVO_2022- 05-19_NP	RG_ERCKDT_P W-03_D3_LAE MP_EVO_2022- 05-19_NP	RG_RIVER_PW LAEMP_EVO_ 2022-05-19_NP
Client sampling date / time					19-May-2022 10:45	19-May-2022 13:30	19-May-2022 14:00	19-May-2022 14:15	19-May-2022 14:15	
Analyte	CAS Number	Method	LOR	Unit	CG2206165-006 Result	CG2206165-007 Result	CG2206165-008 Result	CG2206165-009 Result	CG2206165-010 Result	
Physical Tests										
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	1290	1260	1230	1230	1230	
Anions and Nutrients										
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	6.76	6.29	6.04	6.15	6.94	
fluoride	16984-48-8	E235.F	0.020	mg/L	0.109	<0.100 ^{DLDS}	0.110	<0.100 ^{DLDS}	0.142	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	17.9	17.5	17.1	17.2	17.6	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	0.0067	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	0.0090	0.0287	
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	854	824	804	815	818	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0045	0.0064	0.0047	0.0061	0.0063	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00019	0.00018	0.00019	0.00019	0.00019	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00026	0.00022	0.00021	0.00020	0.00026	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0630	0.0636	0.0632	0.0613	0.0639	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
boron, dissolved	7440-42-8	E421	0.010	mg/L	0.012	0.012	0.012	0.012	0.012	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.131	0.0816	0.0916	0.0964	0.134	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	255	248	242	246	242	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	0.00021	0.00024	0.00021	0.00022	0.00019	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	<0.10	<0.10	<0.10	<0.10	<0.10	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00024	0.00023	0.00033	0.00042	0.00042	
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0248	0.0243	0.0239	0.0236	0.0233	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	158	155	151	150	151	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00108	0.00037	0.00060	0.00078	0.00079	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00113	0.00111	0.00108	0.00111	0.00122	
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00181	0.00086	0.00098	0.00108	0.00123	
potassium, dissolved	7440-09-7	E421	0.050	mg/L	2.83	2.71	2.69	2.70	3.53	



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

Client sample ID

					RG_ERCKDT_P W-02_D3_LAE MP_EVO_2022- 05-19_NP	RG_ERCKDT_P W-03_D1_LAE MP_EVO_2022- 05-19_NP	RG_ERCKDT_P W-03_D2_LAE MP_EVO_2022- 05-19_NP	RG_ERCKDT_P W-03_D3_LAE MP_EVO_2022- 05-19_NP	RG_RIVER_PW _LAEMP_EVO_ 2022-05-19_NP
Client sampling date / time					19-May-2022 10:45	19-May-2022 13:30	19-May-2022 14:00	19-May-2022 14:15	19-May-2022 14:15
Analyte	CAS Number	Method	LOR	Unit	CG2206165-006	CG2206165-007	CG2206165-008	CG2206165-009	CG2206165-010
					Result	Result	Result	Result	Result
Dissolved Metals									
selenium, dissolved	7782-49-2	E421	0.050	µg/L	174	167	164	165	164
silicon, dissolved	7440-21-3	E421	0.050	mg/L	3.94	3.81	3.78	3.74	3.66
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
sodium, dissolved	7440-23-5	E421	0.050	mg/L	3.30	3.26	3.22	3.18	3.20
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.232	0.224	0.219	0.223	0.222
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	292	282	278	278	276
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	0.000011	<0.000010	<0.000010	<0.000010	<0.000010
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	0.00037	<0.00030	<0.00030	<0.00030
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00851	0.00823	0.00799	0.00818	0.00815
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0050	0.0040	0.0054	0.0080	0.0038
dissolved metals filtration location	----	EP421	-	-	Field	Field	Field	Field	Field

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: CG2206165	Page	: 1 of 14
Client	: Teck Coal Limited	Laboratory	: Calgary - Environmental
Contact	: Mike Pope	Account Manager	: Lyudmyla Shvets
Address	: 421 Pine Avenue Sparwood BC Canada V0B2G0	Address	: 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5
Telephone	: ----	Telephone	: +1 403 407 1800
Project	: REGIONAL EFFECTS PROGRAM	Date Samples Received	: 21-May-2022 09:10
PO	: VPO00816101	Issue Date	: 29-May-2022 15:05
C-O-C number	: May EVO LAEMP 2022 PW		
Sampler	: Alex McClymont		
Site	: ----		
Quote number	: Teck Coal Master Quote		
No. of samples received	: 10		
No. of samples analysed	: 10		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKDT_PW-01_D1_LAEMP_EVO_2022-05-19_NP	E235.Br-L	19-May-2022	----	----	----		21-May-2022	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKDT_PW-01_D2_LAEMP_EVO_2022-05-19_NP	E235.Br-L	19-May-2022	----	----	----		21-May-2022	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKDT_PW-01_D3_LAEMP_EVO_2022-05-19_NP	E235.Br-L	19-May-2022	----	----	----		21-May-2022	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKDT_PW-02_D1_LAEMP_EVO_2022-05-19_NP	E235.Br-L	19-May-2022	----	----	----		21-May-2022	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKDT_PW-02_D2_LAEMP_EVO_2022-05-19_NP	E235.Br-L	19-May-2022	----	----	----		21-May-2022	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKDT_PW-02_D3_LAEMP_EVO_2022-05-19_NP	E235.Br-L	19-May-2022	----	----	----		21-May-2022	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKDT_PW-03_D1_LAEMP_EVO_2022-05-19_NP	E235.Br-L	19-May-2022	----	----	----		21-May-2022	28 days	2 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKDT_PW-03_D2_LAEMP_EVO_2022-05-19_NP	E235.Br-L	19-May-2022	----	----	----		21-May-2022	28 days	2 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKDT_PW-03_D3_LAEMP_EVO_2022-05-19_NP	E235.Br-L	19-May-2022	----	----	----		21-May-2022	28 days	2 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_RIVER_PW_LAEMP_EVO_2022-05-19_NP	E235.Br-L	19-May-2022	----	----	----		21-May-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKDT_PW-01_D1_LAEMP_EVO_2022-05-19_NP	E235.Cl-L	19-May-2022	----	----	----		21-May-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKDT_PW-01_D2_LAEMP_EVO_2022-05-19_NP	E235.Cl-L	19-May-2022	----	----	----		21-May-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKDT_PW-01_D3_LAEMP_EVO_2022-05-19_NP	E235.Cl-L	19-May-2022	----	----	----		21-May-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKDT_PW-02_D1_LAEMP_EVO_2022-05-19_NP	E235.Cl-L	19-May-2022	----	----	----		21-May-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKDT_PW-02_D2_LAEMP_EVO_2022-05-19_NP	E235.Cl-L	19-May-2022	----	----	----		21-May-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKDT_PW-02_D3_LAEMP_EVO_2022-05-19_NP	E235.Cl-L	19-May-2022	----	----	----		21-May-2022	28 days	2 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_ERCKDT_PW-03_D1_LAEMP_EVO_2022-05-19_NP	E235.Cl-L	19-May-2022	----	----	----		21-May-2022	28 days	2 days	✔
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_ERCKDT_PW-03_D2_LAEMP_EVO_2022-05-19_NP	E235.Cl-L	19-May-2022	----	----	----		21-May-2022	28 days	2 days	✔
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_ERCKDT_PW-03_D3_LAEMP_EVO_2022-05-19_NP	E235.Cl-L	19-May-2022	----	----	----		21-May-2022	28 days	2 days	✔
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_RIVER_PW_LAEMP_EVO_2022-05-19_NP	E235.Cl-L	19-May-2022	----	----	----		21-May-2022	28 days	2 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE RG_ERCKDT_PW-01_D1_LAEMP_EVO_2022-05-19_NP	E235.F	19-May-2022	----	----	----		21-May-2022	28 days	2 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE RG_ERCKDT_PW-01_D2_LAEMP_EVO_2022-05-19_NP	E235.F	19-May-2022	----	----	----		21-May-2022	28 days	2 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE RG_ERCKDT_PW-01_D3_LAEMP_EVO_2022-05-19_NP	E235.F	19-May-2022	----	----	----		21-May-2022	28 days	2 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE RG_ERCKDT_PW-02_D1_LAEMP_EVO_2022-05-19_NP	E235.F	19-May-2022	----	----	----		21-May-2022	28 days	2 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE RG_ERCKDT_PW-02_D2_LAEMP_EVO_2022-05-19_NP	E235.F	19-May-2022	----	----	----		21-May-2022	28 days	2 days	✔



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKDT_PW-02_D3_LAEMP_EVO_2022-05-19_NP	E235.F	19-May-2022	----	----	----		21-May-2022	28 days	2 days	✔	
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HDPE RG_ERCKDT_PW-03_D1_LAEMP_EVO_2022-05-19_NP	E235.F	19-May-2022	----	----	----		21-May-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKDT_PW-03_D2_LAEMP_EVO_2022-05-19_NP	E235.F	19-May-2022	----	----	----		21-May-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKDT_PW-03_D3_LAEMP_EVO_2022-05-19_NP	E235.F	19-May-2022	----	----	----		21-May-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_RIVER_PW_LAEMP_EVO_2022-05-19_NP	E235.F	19-May-2022	----	----	----		21-May-2022	28 days	2 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKDT_PW-01_D1_LAEMP_EVO_2022-05-19_NP	E235.NO3-L	19-May-2022	----	----	----		21-May-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKDT_PW-01_D2_LAEMP_EVO_2022-05-19_NP	E235.NO3-L	19-May-2022	----	----	----		21-May-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKDT_PW-01_D3_LAEMP_EVO_2022-05-19_NP	E235.NO3-L	19-May-2022	----	----	----		21-May-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKDT_PW-02_D1_LAEMP_EVO_2022-05-19_NP	E235.NO3-L	19-May-2022	----	----	----		21-May-2022	3 days	2 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKDT_PW-02_D2_LAEMP_EVO_2022-05-19_NP	E235.NO3-L	19-May-2022	----	----	----		21-May-2022	3 days	2 days	✔	
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HDPE RG_ERCKDT_PW-02_D3_LAEMP_EVO_2022-05-19_NP	E235.NO3-L	19-May-2022	----	----	----		21-May-2022	3 days	2 days	✔	
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HDPE RG_ERCKDT_PW-03_D2_LAEMP_EVO_2022-05-19_NP	E235.NO3-L	19-May-2022	----	----	----		21-May-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKDT_PW-03_D3_LAEMP_EVO_2022-05-19_NP	E235.NO3-L	19-May-2022	----	----	----		21-May-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_RIVER_PW_LAEMP_EVO_2022-05-19_NP	E235.NO3-L	19-May-2022	----	----	----		21-May-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKDT_PW-01_D1_LAEMP_EVO_2022-05-19_NP	E235.NO2-L	19-May-2022	----	----	----		21-May-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKDT_PW-01_D2_LAEMP_EVO_2022-05-19_NP	E235.NO2-L	19-May-2022	----	----	----		21-May-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKDT_PW-01_D3_LAEMP_EVO_2022-05-19_NP	E235.NO2-L	19-May-2022	----	----	----		21-May-2022	3 days	2 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

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			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKDT_PW-02_D1_LAEMP_EVO_2022-05-19_NP	E235.NO2-L	19-May-2022	----	----	----		21-May-2022	3 days	2 days	✔	
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Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKDT_PW-03_D3_LAEMP_EVO_2022-05-19_NP	E235.NO2-L	19-May-2022	----	----	----		21-May-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_RIVER_PW_LAEMP_EVO_2022-05-19_NP	E235.NO2-L	19-May-2022	----	----	----		21-May-2022	3 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKDT_PW-01_D1_LAEMP_EVO_2022-05-19_NP	E235.SO4	19-May-2022	----	----	----		21-May-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKDT_PW-01_D2_LAEMP_EVO_2022-05-19_NP	E235.SO4	19-May-2022	----	----	----		21-May-2022	28 days	2 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKDT_PW-01_D3_LAEMP_EVO_2022-05-19_NP	E235.SO4	19-May-2022	----	----	----		21-May-2022	28 days	2 days	✔	
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HDPE RG_ERCKDT_PW-03_D1_LAEMP_EVO_2022-05-19_NP	E235.SO4	19-May-2022	----	----	----		21-May-2022	28 days	2 days	✔	
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HDPE RG_ERCKDT_PW-03_D3_LAEMP_EVO_2022-05-19_NP	E235.SO4	19-May-2022	----	----	----		21-May-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_RIVER_PW_LAEMP_EVO_2022-05-19_NP	E235.SO4	19-May-2022	----	----	----		21-May-2022	28 days	2 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_ERCKDT_PW-01_D1_LAEMP_EVO_2022-05-19_NP	E421.Cr-L	19-May-2022	27-May-2022	----	----		27-May-2022	180 days	8 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
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Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
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Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_ERCKDT_PW-02_D2_LAEMP_EVO_2022-05-19_NP	E421.Cr-L	19-May-2022	27-May-2022	----	----		27-May-2022	180 days	8 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_ERCKDT_PW-02_D3_LAEMP_EVO_2022-05-19_NP	E421.Cr-L	19-May-2022	27-May-2022	----	----		27-May-2022	180 days	8 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_ERCKDT_PW-03_D1_LAEMP_EVO_2022-05-19_NP	E421.Cr-L	19-May-2022	27-May-2022	----	----		27-May-2022	180 days	8 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_ERCKDT_PW-03_D2_LAEMP_EVO_2022-05-19_NP	E421.Cr-L	19-May-2022	27-May-2022	----	----		27-May-2022	180 days	8 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_ERCKDT_PW-03_D3_LAEMP_EVO_2022-05-19_NP	E421.Cr-L	19-May-2022	27-May-2022	----	----		27-May-2022	180 days	8 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_RIVER_PW_LAEMP_EVO_2022-05-19_NP	E421.Cr-L	19-May-2022	27-May-2022	----	----		27-May-2022	180 days	8 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_ERCKDT_PW-01_D1_LAEMP_EVO_2022-05-19_NP	E421	19-May-2022	27-May-2022	----	----		27-May-2022	180 days	8 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_ERCKDT_PW-01_D2_LAEMP_EVO_2022-05-19_NP	E421	19-May-2022	27-May-2022	----	----		27-May-2022	180 days	8 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_ERCKDT_PW-01_D3_LAEMP_EVO_2022-05-19_NP	E421	19-May-2022	27-May-2022	----	----		27-May-2022	180 days	8 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_ERCKDT_PW-02_D1_LAEMP_EVO_2022-05-19_NP	E421	19-May-2022	27-May-2022	----	----		27-May-2022	180 days	8 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_ERCKDT_PW-02_D2_LAEMP_EVO_2022-05-19_NP	E421	19-May-2022	27-May-2022	----	----		27-May-2022	180 days	8 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_ERCKDT_PW-02_D3_LAEMP_EVO_2022-05-19_NP	E421	19-May-2022	27-May-2022	----	----		27-May-2022	180 days	8 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_ERCKDT_PW-03_D1_LAEMP_EVO_2022-05-19_NP	E421	19-May-2022	27-May-2022	----	----		27-May-2022	180 days	8 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_ERCKDT_PW-03_D2_LAEMP_EVO_2022-05-19_NP	E421	19-May-2022	27-May-2022	----	----		27-May-2022	180 days	8 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_ERCKDT_PW-03_D3_LAEMP_EVO_2022-05-19_NP	E421	19-May-2022	27-May-2022	----	----		27-May-2022	180 days	8 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		
				Rec	Actual			Rec	Actual	Eval
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) RG_RIVER_PW_LAEMP_EVO_2022-05-19_NP	E421	19-May-2022	27-May-2022	----	----		27-May-2022	180 days	8 days	✔

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
Analytical Methods							
Laboratory Duplicates (DUP)							
Bromide in Water by IC (Low Level)	E235.Br-L	496299	2	27	7.4	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	496300	2	27	7.4	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	502084	1	19	5.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	502085	1	19	5.2	5.0	✓
Fluoride in Water by IC	E235.F	496303	2	27	7.4	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	496301	2	27	7.4	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	496302	2	27	7.4	5.0	✓
Sulfate in Water by IC	E235.SO4	496298	2	27	7.4	5.0	✓
Laboratory Control Samples (LCS)							
Bromide in Water by IC (Low Level)	E235.Br-L	496299	2	27	7.4	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	496300	2	27	7.4	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	502084	1	19	5.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	502085	1	19	5.2	5.0	✓
Fluoride in Water by IC	E235.F	496303	2	27	7.4	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	496301	2	27	7.4	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	496302	2	27	7.4	5.0	✓
Sulfate in Water by IC	E235.SO4	496298	2	27	7.4	5.0	✓
Method Blanks (MB)							
Bromide in Water by IC (Low Level)	E235.Br-L	496299	2	27	7.4	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	496300	2	27	7.4	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	502084	1	19	5.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	502085	1	19	5.2	5.0	✓
Fluoride in Water by IC	E235.F	496303	2	27	7.4	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	496301	2	27	7.4	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	496302	2	27	7.4	5.0	✓
Sulfate in Water by IC	E235.SO4	496298	2	27	7.4	5.0	✓
Matrix Spikes (MS)							
Bromide in Water by IC (Low Level)	E235.Br-L	496299	2	27	7.4	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	496300	2	27	7.4	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	502084	1	19	5.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	502085	1	19	5.2	5.0	✓
Fluoride in Water by IC	E235.F	496303	2	27	7.4	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	496301	2	27	7.4	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	496302	2	27	7.4	5.0	✓
Sulfate in Water by IC	E235.SO4	496298	2	27	7.4	5.0	✓



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Bromide in Water by IC (Low Level)	E235.Br-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC (Low Level)	E235.Cl-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Dissolved Metals in Water by CRC ICPMS	E421 Calgary - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L Calgary - Environmental	Water	APHA 3030 B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS
Dissolved Hardness (Calculated)	EC100 Calgary - Environmental	Water	APHA 2340B	"Hardness (as CaCO ₃), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Metals Water Filtration	EP421 Calgary - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO ₃ .



QUALITY CONTROL REPORT

Work Order : **CG2206165**

Client : Teck Coal Limited
Contact : Mike Pope
Address : 421 Pine Avenue
Sparwood BC Canada V0B2G0

Telephone : ----

Project : REGIONAL EFFECTS PROGRAM
PO : VPO00816101
C-O-C number : May EVO LAEMP 2022 PW
Sampler : Alex McClymont
Site : ----
Quote number : Teck Coal Master Quote
No. of samples received : 10
No. of samples analysed : 10

Page : 1 of 11

Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
Calgary, Alberta Canada T1Y 7B5

Telephone : +1 403 407 1800
Date Samples Received : 21-May-2022 09:10
Date Analysis Commenced : 21-May-2022
Issue Date : 29-May-2022 15:05

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Anthony Calero	Team Leader - Inorganics	Calgary Inorganics, Calgary, Alberta
Dwayne Bennett	Supervisor - Inorganic	Calgary Metals, Calgary, Alberta
Sara Niroomand		Calgary Inorganics, Calgary, Alberta
Sheida Aria	Lab Assistant	Calgary Metals, Calgary, Alberta



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 496298)											
CG2206163-006	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	1.50	mg/L	1170	1310	11.2%	20%	----
Anions and Nutrients (QC Lot: 496299)											
CG2206163-006	Anonymous	bromide	24959-67-9	E235.Br-L	0.250	mg/L	<0.250	<0.250	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 496300)											
CG2206163-006	Anonymous	chloride	16887-00-6	E235.Cl-L	0.50	mg/L	51.5	60.5	16.0%	20%	----
Anions and Nutrients (QC Lot: 496301)											
CG2206163-006	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	0.0250	mg/L	31.0	34.5	10.8%	20%	----
Anions and Nutrients (QC Lot: 496302)											
CG2206163-006	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.0050	mg/L	30.4	33.8	10.8%	20%	----
Anions and Nutrients (QC Lot: 496303)											
CG2206163-006	Anonymous	fluoride	16984-48-8	E235.F	0.100	mg/L	0.313	0.370	0.057	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 496304)											
CG2206165-004	RG_ERCKDT_PW-02_D1_LAEMP_EVO_2022-05-19_NP	fluoride	16984-48-8	E235.F	0.100	mg/L	<0.100	0.102	0.002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 496305)											
CG2206165-004	RG_ERCKDT_PW-02_D1_LAEMP_EVO_2022-05-19_NP	bromide	24959-67-9	E235.Br-L	0.250	mg/L	<0.250	<0.250	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 496306)											
CG2206165-004	RG_ERCKDT_PW-02_D1_LAEMP_EVO_2022-05-19_NP	chloride	16887-00-6	E235.Cl-L	0.50	mg/L	5.94	6.02	1.43%	20%	----
Anions and Nutrients (QC Lot: 496307)											
CG2206165-004	RG_ERCKDT_PW-02_D1_LAEMP_EVO_2022-05-19_NP	nitrate (as N)	14797-55-8	E235.NO3-L	0.0250	mg/L	17.1	17.3	0.990%	20%	----
Anions and Nutrients (QC Lot: 496308)											
CG2206165-004	RG_ERCKDT_PW-02_D1_LAEMP_EVO_2022-05-19_NP	nitrite (as N)	14797-65-0	E235.NO2-L	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 496309)											
CG2206165-004	RG_ERCKDT_PW-02_D1_LAEMP_EVO_2022-05-19_NP	sulfate (as SO4)	14808-79-8	E235.SO4	1.50	mg/L	814	822	0.941%	20%	----
Dissolved Metals (QC Lot: 502084)											



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 502084) - continued											
CG2206165-001	RG_ERCKDT_PW-01_D1_LAEMP_EVO_2022-05-19_NP	chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	0.00022	0.00022	0.000005	Diff <2x LOR	----
Dissolved Metals (QC Lot: 502085)											
CG2206165-001	RG_ERCKDT_PW-01_D1_LAEMP_EVO_2022-05-19_NP	aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0046	0.0043	0.0004	Diff <2x LOR	----
		antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00019	0.00020	0.000008	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00022	0.00022	0.000001	Diff <2x LOR	----
		barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0617	0.0626	1.49%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.000020	mg/L	<0.020 µg/L	<0.000020	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.010	mg/L	0.012	0.012	0.0005	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	0.0851 µg/L	0.0000947	10.7%	20%	----
		calcium, dissolved	7440-70-2	E421	0.050	mg/L	253	263	4.05%	20%	----
		cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	<0.10 µg/L	<0.00010	0	Diff <2x LOR	----
		copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0248	0.0250	0.765%	20%	----
		magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	156	158	1.31%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00029	0.00027	0.00002	Diff <2x LOR	----
		molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00106	0.00112	4.76%	20%	----
		nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00090	0.00085	0.00005	Diff <2x LOR	----
		potassium, dissolved	7440-09-7	E421	0.050	mg/L	2.71	2.72	0.523%	20%	----
		selenium, dissolved	7782-49-2	E421	0.000050	mg/L	159 µg/L	0.170	6.39%	20%	----
		silicon, dissolved	7440-21-3	E421	0.050	mg/L	3.80	3.96	4.00%	20%	----
		silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E421	0.050	mg/L	3.22	3.25	0.710%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.218	0.234	7.46%	20%	----
		sulfur, dissolved	7704-34-9	E421	0.50	mg/L	280	292	3.83%	20%	----
		thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00810	0.00867	6.85%	20%	----
		vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0052	0.0052	0.00002	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 496298)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 496299)						
bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 496300)						
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	----
Anions and Nutrients (QCLot: 496301)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 496302)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 496303)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 496304)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 496305)						
bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 496306)						
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	----
Anions and Nutrients (QCLot: 496307)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 496308)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 496309)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Dissolved Metals (QCLot: 502084)						
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	<0.00010	----
Dissolved Metals (QCLot: 502085)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	----



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 502085) - continued						
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Anions and Nutrients (QCLot: 496298)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	107	90.0	110	----
Anions and Nutrients (QCLot: 496299)									
bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	102	85.0	115	----
Anions and Nutrients (QCLot: 496300)									
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	104	90.0	110	----
Anions and Nutrients (QCLot: 496301)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	107	90.0	110	----
Anions and Nutrients (QCLot: 496302)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	105	90.0	110	----
Anions and Nutrients (QCLot: 496303)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	98.2	90.0	110	----
Anions and Nutrients (QCLot: 496304)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	95.5	90.0	110	----
Anions and Nutrients (QCLot: 496305)									
bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	98.7	85.0	115	----
Anions and Nutrients (QCLot: 496306)									
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 496307)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	104	90.0	110	----
Anions and Nutrients (QCLot: 496308)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 496309)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	104	90.0	110	----
Dissolved Metals (QCLot: 502084)									
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	0.25 mg/L	96.5	80.0	120	----
Dissolved Metals (QCLot: 502085)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	102	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	104	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	96.2	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	92.6	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	98.9	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	97.9	80.0	120	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Dissolved Metals (QCLot: 502085) - continued									
boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	101	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	95.9	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	96.4	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	96.2	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	101	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	95.3	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	98.2	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	102	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	98.9	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	97.3	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	105	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	92.4	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	102	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	95.7	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	104	60.0	140	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	92.8	80.0	120	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	99.3	80.0	120	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	97.2	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	102	80.0	120	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	98.0	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	96.8	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	92.1	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	98.4	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	99.3	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	95.4	80.0	120	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level $\geq 1 \times$ spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 496298)										
CG2206165-002	RG_ERCKDT_PW-01_D2_L AEMP_EVO_2022-05-19_N P	sulfate (as SO4)	14808-79-8	E235.SO4	ND mg/L	100 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 496299)										
CG2206165-002	RG_ERCKDT_PW-01_D2_L AEMP_EVO_2022-05-19_N P	bromide	24959-67-9	E235.Br-L	0.502 mg/L	0.5 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 496300)										
CG2206165-002	RG_ERCKDT_PW-01_D2_L AEMP_EVO_2022-05-19_N P	chloride	16887-00-6	E235.Cl-L	91.9 mg/L	100 mg/L	91.9	75.0	125	----
Anions and Nutrients (QCLot: 496301)										
CG2206165-002	RG_ERCKDT_PW-01_D2_L AEMP_EVO_2022-05-19_N P	nitrate (as N)	14797-55-8	E235.NO3-L	ND mg/L	2.5 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 496302)										
CG2206165-002	RG_ERCKDT_PW-01_D2_L AEMP_EVO_2022-05-19_N P	nitrite (as N)	14797-65-0	E235.NO2-L	0.464 mg/L	0.5 mg/L	92.8	75.0	125	----
Anions and Nutrients (QCLot: 496303)										
CG2206165-002	RG_ERCKDT_PW-01_D2_L AEMP_EVO_2022-05-19_N P	fluoride	16984-48-8	E235.F	0.851 mg/L	1 mg/L	85.1	75.0	125	----
Anions and Nutrients (QCLot: 496304)										
CG2206165-004	RG_ERCKDT_PW-02_D1_L AEMP_EVO_2022-05-19_N P	fluoride	16984-48-8	E235.F	0.823 mg/L	1 mg/L	82.3	75.0	125	----
Anions and Nutrients (QCLot: 496305)										
CG2206165-004	RG_ERCKDT_PW-02_D1_L AEMP_EVO_2022-05-19_N P	bromide	24959-67-9	E235.Br-L	0.513 mg/L	0.5 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 496306)										
CG2206165-004	RG_ERCKDT_PW-02_D1_L AEMP_EVO_2022-05-19_N P	chloride	16887-00-6	E235.Cl-L	97.9 mg/L	100 mg/L	97.9	75.0	125	----
Anions and Nutrients (QCLot: 496307)										



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 496307) - continued										
CG2206165-004	RG_ERCKDT_PW-02_D1_L AEMP_EVO_2022-05-19_N P	nitrate (as N)	14797-55-8	E235.NO3-L	ND mg/L	2.5 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 496308)										
CG2206165-004	RG_ERCKDT_PW-02_D1_L AEMP_EVO_2022-05-19_N P	nitrite (as N)	14797-65-0	E235.NO2-L	0.499 mg/L	0.5 mg/L	99.7	75.0	125	----
Anions and Nutrients (QCLot: 496309)										
CG2206165-004	RG_ERCKDT_PW-02_D1_L AEMP_EVO_2022-05-19_N P	sulfate (as SO4)	14808-79-8	E235.SO4	ND mg/L	100 mg/L	ND	75.0	125	----
Dissolved Metals (QCLot: 502084)										
CG2206165-002	RG_ERCKDT_PW-01_D2_L AEMP_EVO_2022-05-19_N P	chromium, dissolved	7440-47-3	E421.Cr-L	0.383 mg/L	0.4 mg/L	95.8	70.0	130	----
Dissolved Metals (QCLot: 502085)										
CG2206165-002	RG_ERCKDT_PW-01_D2_L AEMP_EVO_2022-05-19_N P	aluminum, dissolved	7429-90-5	E421	1.82 mg/L	2 mg/L	91.1	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.205 mg/L	0.2 mg/L	103	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.188 mg/L	0.2 mg/L	93.8	70.0	130	----
		barium, dissolved	7440-39-3	E421	0.182 mg/L	0.2 mg/L	91.0	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.383 mg/L	0.4 mg/L	95.8	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.0960 mg/L	0.1 mg/L	96.0	70.0	130	----
		boron, dissolved	7440-42-8	E421	1.05 mg/L	1 mg/L	105	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.0385 mg/L	0.04 mg/L	96.2	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	40 mg/L	ND	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.190 mg/L	0.2 mg/L	94.9	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.195 mg/L	0.2 mg/L	97.3	70.0	130	----
		iron, dissolved	7439-89-6	E421	19.0 mg/L	20 mg/L	95.0	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.197 mg/L	0.2 mg/L	98.4	70.0	130	----
		lithium, dissolved	7439-93-2	E421	0.985 mg/L	1 mg/L	98.5	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	10 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E421	0.194 mg/L	0.2 mg/L	96.9	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.209 mg/L	0.2 mg/L	105	70.0	130	----
		nickel, dissolved	7440-02-0	E421	0.391 mg/L	0.4 mg/L	97.7	70.0	130	----
		potassium, dissolved	7440-09-7	E421	38.5 mg/L	40 mg/L	96.2	70.0	130	----
		selenium, dissolved	7782-49-2	E421	0.385 mg/L	0.4 mg/L	96.2	70.0	130	----
		silicon, dissolved	7440-21-3	E421	95.8 mg/L	100 mg/L	95.8	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.0394 mg/L	0.04 mg/L	98.6	70.0	130	----



Sub-Matrix: **Water**

					<i>Matrix Spike (MS) Report</i>					
					<i>Spike</i>		<i>Recovery (%)</i>	<i>Recovery Limits (%)</i>		
<i>Laboratory sample ID</i>	<i>Client sample ID</i>	<i>Analyte</i>	<i>CAS Number</i>	<i>Method</i>	<i>Concentration</i>	<i>Target</i>	<i>MS</i>	<i>Low</i>	<i>High</i>	<i>Qualifier</i>
Dissolved Metals (QCLot: 502085) - continued										
CG2206165-002	RG_ERCKDT_PW-01_D2_L AEMP_EVO_2022-05-19_N P	sodium, dissolved	7440-23-5	E421	19.1 mg/L	20 mg/L	95.6	70.0	130	----
		strontium, dissolved	7440-24-6	E421	ND mg/L	0.2 mg/L	ND	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	ND mg/L	200 mg/L	ND	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.0389 mg/L	0.04 mg/L	97.3	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.192 mg/L	0.2 mg/L	96.2	70.0	130	----
		titanium, dissolved	7440-32-6	E421	0.366 mg/L	0.4 mg/L	91.5	70.0	130	----
		uranium, dissolved	7440-61-1	E421	0.0403 mg/L	0.04 mg/L	101	70.0	130	----
		vanadium, dissolved	7440-62-2	E421	0.991 mg/L	1 mg/L	99.1	70.0	130	----
		zinc, dissolved	7440-66-6	E421	3.65 mg/L	4 mg/L	91.3	70.0	130	----

COC ID: May EVO LAEMP 2022 PW TURNAROUND TIME:

PROJECT/CUSTOMER INFO				LABORATORY			
Facility Name / Job#	Regional EVO LAEMP			Lab Name	ALS Calgary		
Project Manager	Mike Pope			Lab Contact	Lyudmyla Shvets		
Email	m.pope@teck.com			Fmail	lyudmyla.shvets@alsglobal.com		
Address	421 Pine Avenue			Address	2559 29 Street NE		
City	Sparwood	Province	BC	City	Calgary	Province	AB
Postal Code	V0B 2G0	Country	Canada	Postal Code	T1Y 7B5	Country	Canada
Phone Number	343-333-3905			Phone Number	1 403 407 1794		

Environmental Division
Calgary
Work Order Reference
CG2206165



Sample ID	Sample Location	Field Matrix	Hazardous Material (Ycs/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS REQUESTED	
								TECKCOAL-ANIONS	Dissolved metals
RG_ERCKDT_PW-01_D1_LAEMP_EVO_2022-05-19_NP	RG_ERCKDT	PW	No	5/19/2022	11:15	G	2	X	X
RG_ERCKDT_PW-01_D2_LAEMP_EVO_2022-05-19_NP	RG_ERCKDT	PW	No	5/19/2022	11:30	G	2	X	X
RG_ERCKDT_PW-01_D3_LAEMP_EVO_2022-05-19_NP	RG_ERCKDT	PW	No	5/19/2022	11:45	G	2	X	X
RG_ERCKDT_PW-02_D1_LAEMP_EVO_2022-05-19_NP	RG_ERCKDT	PW	No	5/19/2022	9:00	G	2	X	X
RG_ERCKDT_PW-02_D2_LAEMP_EVO_2022-05-19_NP	RG_ERCKDT	PW	No	5/19/2022	10:30	G	2	X	X
RG_ERCKDT_PW-02_D3_LAEMP_EVO_2022-05-19_NP	RG_ERCKDT	PW	No	5/19/2022	10:45	G	2	X	X
RG_ERCKDT_PW-03_D1_LAEMP_EVO_2022-05-19_NP	RG_ERCKDT	PW	No	5/19/2022	13:30	G	2	X	X
RG_ERCKDT_PW-03_D2_LAEMP_EVO_2022-05-19_NP	RG_ERCKDT	PW	No	5/19/2022	14:00	G	2	X	X
RG_ERCKDT_PW-03_D3_LAEMP_EVO_2022-05-19_NP	RG_ERCKDT	PW	No	5/19/2022	14:15	G	2	X	X
RG_RIVER PW LAEMP EVO 2022-05-19 NP	RG_RIVER	PW	No	5/19/2022	14:15	G	2	X	X

- not for use

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/RADIATION
ALS PO VPO00816101 Samples for Anions have "Anions" on the label and "T" on the cap Samples for dissolved metals have "DTE" on the label and "N" on the cap	Alex McClymont	May 20, 2022	<i>[Signature]</i> 21/05/2022
NB OF PPT GLASS RETURNED/DESCRIPTION	Sampler's Name	Mobile #	780-293-6750
Regular (default) x Priority (2-3 business days) - 50% surcharge Emergency (1 Business Day) - 100% surcharge For Emergency <1 Day, ASAP or Weekend - Contact ALS.	Sampler's Signature	Date/Time	May 20, 2022

Environmental Division
Calgary

Work Order Reference

CG2206165





CERTIFICATE OF ANALYSIS

Work Order : **CG2206166**
Client : **Teck Coal Limited**
Contact : Mike Pope
Address : 421 Pine Avenue
Sparwood BC Canada V0B2G0
Telephone : ----
Project : REGIONAL EFFECTS PROGRAM
PO : VPO00816101
C-O-C number : May EVO LAEMP 2022
Sampler : Alex McClymont
Site : ----
Quote number : Teck Coal Master Quote
No. of samples received : 9
No. of samples analysed : 9

Page : 1 of 6
Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
Calgary AB Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 21-May-2022 09:10
Date Analysis Commenced : 22-May-2022
Issue Date : 30-May-2022 14:44

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Dwayne Bennett	Supervisor - Inorganic	Metals, Calgary, Alberta
Sara Niroomand		Inorganics, Calgary, Alberta
Sheida Aria	Lab Assistant	Metals, Calgary, Alberta
Shirley Li		Inorganics, Calgary, Alberta



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

<i>Unit</i>	<i>Description</i>
-	No Unit
µg/L	micrograms per litre
mg/L	milligrams per litre

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

<i>Qualifier</i>	<i>Description</i>
DLDS	Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.



Analytical Results

Sub-Matrix: Water					Client sample ID				
(Matrix: Water)					RG_ERCKUT_P W-01_D1_LAE MP_EVO_2022- 05-20_NP	RG_ERCKUT_P W-01_D2_LAE MP_EVO_2022- 05-20_NP	RG_ERCKUT_P W-01_D3_LAE MP_EVO_2022- 05-20_NP	RG_ERCKUT_P W-02_D1_LAE MP_EVO_2022- 05-20_NP	RG_ERCKUT_P W-02_D2_LAE MP_EVO_2022- 05-20_NP
Client sampling date / time					20-May-2022 09:30	20-May-2022 09:45	20-May-2022 10:00	20-May-2022 11:30	20-May-2022 11:50
Analyte	CAS Number	Method	LOR	Unit	CG2206166-001	CG2206166-002	CG2206166-003	CG2206166-004	CG2206166-005
					Result	Result	Result	Result	Result
Physical Tests									
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	1250	1250	1240	1250	1220
Anions and Nutrients									
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	7.12	6.11	6.60	6.08	5.83
fluoride	16984-48-8	E235.F	0.020	mg/L	0.102	<0.100 ^{DLDS}	0.106	<0.100 ^{DLDS}	<0.100 ^{DLDS}
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	17.6	17.5	17.6	17.8	17.0
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	0.0253	<0.0050 ^{DLDS}	0.322	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	828	823	827	839	805
Dissolved Metals									
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0061	0.0055	0.0044	0.0082	0.0055
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00019	0.00018	0.00018	0.00018	0.00018
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00023	0.00022	0.00022	0.00024	0.00023
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0646	0.0673	0.0657	0.0668	0.0670
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
boron, dissolved	7440-42-8	E421	0.010	mg/L	0.011	0.012	0.012	0.011	0.011
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.107	0.0842	0.0883	0.100	0.0929
calcium, dissolved	7440-70-2	E421	0.050	mg/L	247	248	248	248	240
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	0.00025	0.00025	0.00022	0.00025	0.00029
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	<0.10	<0.10	<0.10	<0.10	<0.10
copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00020	0.00023	0.00021	0.00024	0.00021
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0244	0.0245	0.0248	0.0236	0.0224
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	153	154	152	153	151
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00067	0.00023	<0.00010	0.00015	0.00012
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00104	0.00108	0.00105	0.00109	0.00101
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00084	0.00087	0.00084	0.00087	0.00083



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

Client sample ID

					RG_ERCKUT_P W-01_D1_LAE MP_EVO_2022- 05-20_NP	RG_ERCKUT_P W-01_D2_LAE MP_EVO_2022- 05-20_NP	RG_ERCKUT_P W-01_D3_LAE MP_EVO_2022- 05-20_NP	RG_ERCKUT_P W-02_D1_LAE MP_EVO_2022- 05-20_NP	RG_ERCKUT_P W-02_D2_LAE MP_EVO_2022- 05-20_NP
Client sampling date / time					20-May-2022 09:30	20-May-2022 09:45	20-May-2022 10:00	20-May-2022 11:30	20-May-2022 11:50
Analyte	CAS Number	Method	LOR	Unit	CG2206166-001	CG2206166-002	CG2206166-003	CG2206166-004	CG2206166-005
					Result	Result	Result	Result	Result
Dissolved Metals									
potassium, dissolved	7440-09-7	E421	0.050	mg/L	2.71	2.72	2.69	2.68	2.66
selenium, dissolved	7782-49-2	E421	0.050	µg/L	160	162	163	166	159
silicon, dissolved	7440-21-3	E421	0.050	mg/L	3.75	3.76	3.80	3.90	3.70
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
sodium, dissolved	7440-23-5	E421	0.050	mg/L	3.22	3.26	3.21	3.20	3.20
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.218	0.219	0.220	0.222	0.215
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	275	273	279	285	269
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00803	0.00823	0.00824	0.00831	0.00795
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0051	0.0035	0.0041	0.0038	0.0041
dissolved metals filtration location	----	EP421	-	-	Field	Field	Field	Field	Field

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKUT_P W-02_D3_LAE MP_EVO_2022- 05-20_NP	RG_ERCKUT_P W-03_D1_LAE MP_EVO_2022- 05-20_NP	RG_ERCKUT_P W-03_D2_LAE MP_EVO_2022- 05-20_NP	RG_ERCKUT_P W-03_D3_LAE MP_EVO_2022- 05-20_NP	----
Client sampling date / time					20-May-2022 12:25	20-May-2022 13:10	20-May-2022 13:30	20-May-2022 13:50	----	
Analyte	CAS Number	Method	LOR	Unit	CG2206166-006 Result	CG2206166-007 Result	CG2206166-008 Result	CG2206166-009 Result	----- ----	
Physical Tests										
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	1230	1240	1280	1240	----	
Anions and Nutrients										
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	----	
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	5.92	5.96	5.88	5.92	----	
fluoride	16984-48-8	E235.F	0.020	mg/L	<0.100 ^{DLDS}	<0.100 ^{DLDS}	<0.100 ^{DLDS}	<0.100 ^{DLDS}	----	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	17.3	17.3	17.1	16.3	----	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	----	
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	820	821	809	769	----	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0055	0.0074	0.0028	0.0044	----	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00018	0.00018	0.00020	0.00019	----	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00020	0.00022	0.00020	0.00022	----	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0656	0.0663	0.0604	0.0587	----	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.020	<0.020	<0.020	<0.020	----	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	----	
boron, dissolved	7440-42-8	E421	0.010	mg/L	0.012	0.012	0.012	0.012	----	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.0911	0.0936	0.0976	0.0881	----	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	246	248	263	257	----	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	0.00020	0.00026	0.00026	0.00022	----	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	<0.10	<0.10	<0.10	<0.10	----	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00020	0.00028	<0.00020	0.00024	----	
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	----	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	0.000073	<0.000050	0.000070	----	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0232	0.0233	0.0253	0.0244	----	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	149	152	151	145	----	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00012	0.00016	0.00015	<0.00010	----	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00105	0.00109	0.00107	0.00106	----	
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00082	0.00086	0.00085	0.00079	----	
potassium, dissolved	7440-09-7	E421	0.050	mg/L	2.64	2.72	2.79	2.56	----	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKUT_P W-02_D3_LAE MP_EVO_2022- 05-20_NP	RG_ERCKUT_P W-03_D1_LAE MP_EVO_2022- 05-20_NP	RG_ERCKUT_P W-03_D2_LAE MP_EVO_2022- 05-20_NP	RG_ERCKUT_P W-03_D3_LAE MP_EVO_2022- 05-20_NP	----
Client sampling date / time					20-May-2022 12:25	20-May-2022 13:10	20-May-2022 13:30	20-May-2022 13:50	----	
Analyte	CAS Number	Method	LOR	Unit	CG2206166-006	CG2206166-007	CG2206166-008	CG2206166-009	-----	
					Result	Result	Result	Result	----	
Dissolved Metals										
selenium, dissolved	7782-49-2	E421	0.050	µg/L	163	164	161	161	----	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	3.70	3.72	3.85	3.79	----	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	----	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	3.16	3.22	3.22	3.06	----	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.218	0.222	0.224	0.226	----	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	275	276	283	282	----	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	----	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	----	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	----	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00801	0.00829	0.00826	0.00842	----	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	----	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0032	0.0051	0.0041	0.0038	----	
dissolved metals filtration location	----	EP421	-	-	Field	Field	Field	Field	----	

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: CG2206166	Page	: 1 of 13
Client	: Teck Coal Limited	Laboratory	: Calgary - Environmental
Contact	: Mike Pope	Account Manager	: Lyudmyla Shvets
Address	: 421 Pine Avenue Sparwood BC Canada V0B2G0	Address	: 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5
Telephone	: ----	Telephone	: +1 403 407 1800
Project	: REGIONAL EFFECTS PROGRAM	Date Samples Received	: 21-May-2022 09:10
PO	: VPO00816101	Issue Date	: 30-May-2022 14:45
C-O-C number	: May EVO LAEMP 2022		
Sampler	: Alex McClymont		
Site	: ----		
Quote number	: Teck Coal Master Quote		
No. of samples received	: 9		
No. of samples analysed	: 9		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKUT_PW-01_D1_LAEMP_EVO_2022-05-20_NP	E235.Br-L	20-May-2022	----	----	----		22-May-2022	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKUT_PW-01_D2_LAEMP_EVO_2022-05-20_NP	E235.Br-L	20-May-2022	----	----	----		22-May-2022	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKUT_PW-01_D3_LAEMP_EVO_2022-05-20_NP	E235.Br-L	20-May-2022	----	----	----		22-May-2022	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKUT_PW-02_D1_LAEMP_EVO_2022-05-20_NP	E235.Br-L	20-May-2022	----	----	----		22-May-2022	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKUT_PW-02_D2_LAEMP_EVO_2022-05-20_NP	E235.Br-L	20-May-2022	----	----	----		22-May-2022	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKUT_PW-02_D3_LAEMP_EVO_2022-05-20_NP	E235.Br-L	20-May-2022	----	----	----		22-May-2022	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKUT_PW-03_D1_LAEMP_EVO_2022-05-20_NP	E235.Br-L	20-May-2022	----	----	----		22-May-2022	28 days	2 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKUT_PW-03_D2_LAEMP_EVO_2022-05-20_NP	E235.Br-L	20-May-2022	----	----	----		22-May-2022	28 days	2 days	✔
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKUT_PW-03_D3_LAEMP_EVO_2022-05-20_NP	E235.Br-L	20-May-2022	----	----	----		22-May-2022	28 days	2 days	✔
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_ERCKUT_PW-01_D1_LAEMP_EVO_2022-05-20_NP	E235.Cl-L	20-May-2022	----	----	----		22-May-2022	28 days	2 days	✔
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_ERCKUT_PW-01_D2_LAEMP_EVO_2022-05-20_NP	E235.Cl-L	20-May-2022	----	----	----		22-May-2022	28 days	2 days	✔
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_ERCKUT_PW-01_D3_LAEMP_EVO_2022-05-20_NP	E235.Cl-L	20-May-2022	----	----	----		22-May-2022	28 days	2 days	✔
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_ERCKUT_PW-02_D1_LAEMP_EVO_2022-05-20_NP	E235.Cl-L	20-May-2022	----	----	----		22-May-2022	28 days	2 days	✔
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_ERCKUT_PW-02_D2_LAEMP_EVO_2022-05-20_NP	E235.Cl-L	20-May-2022	----	----	----		22-May-2022	28 days	2 days	✔
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_ERCKUT_PW-02_D3_LAEMP_EVO_2022-05-20_NP	E235.Cl-L	20-May-2022	----	----	----		22-May-2022	28 days	2 days	✔
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_ERCKUT_PW-03_D1_LAEMP_EVO_2022-05-20_NP	E235.Cl-L	20-May-2022	----	----	----		22-May-2022	28 days	2 days	✔



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKUT_PW-03_D2_LAEMP_EVO_2022-05-20_NP	E235.CI-L	20-May-2022	----	----	----		22-May-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKUT_PW-03_D3_LAEMP_EVO_2022-05-20_NP	E235.CI-L	20-May-2022	----	----	----		22-May-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKUT_PW-01_D1_LAEMP_EVO_2022-05-20_NP	E235.F	20-May-2022	----	----	----		22-May-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKUT_PW-01_D2_LAEMP_EVO_2022-05-20_NP	E235.F	20-May-2022	----	----	----		22-May-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKUT_PW-01_D3_LAEMP_EVO_2022-05-20_NP	E235.F	20-May-2022	----	----	----		22-May-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKUT_PW-02_D1_LAEMP_EVO_2022-05-20_NP	E235.F	20-May-2022	----	----	----		22-May-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKUT_PW-02_D2_LAEMP_EVO_2022-05-20_NP	E235.F	20-May-2022	----	----	----		22-May-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKUT_PW-02_D3_LAEMP_EVO_2022-05-20_NP	E235.F	20-May-2022	----	----	----		22-May-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKUT_PW-03_D1_LAEMP_EVO_2022-05-20_NP	E235.F	20-May-2022	----	----	----		22-May-2022	28 days	2 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKUT_PW-03_D2_LAEMP_EVO_2022-05-20_NP	E235.F	20-May-2022	----	----	----		22-May-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKUT_PW-03_D3_LAEMP_EVO_2022-05-20_NP	E235.F	20-May-2022	----	----	----		22-May-2022	28 days	2 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKUT_PW-01_D1_LAEMP_EVO_2022-05-20_NP	E235.NO3-L	20-May-2022	----	----	----		22-May-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKUT_PW-01_D2_LAEMP_EVO_2022-05-20_NP	E235.NO3-L	20-May-2022	----	----	----		22-May-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKUT_PW-01_D3_LAEMP_EVO_2022-05-20_NP	E235.NO3-L	20-May-2022	----	----	----		22-May-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKUT_PW-02_D1_LAEMP_EVO_2022-05-20_NP	E235.NO3-L	20-May-2022	----	----	----		22-May-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKUT_PW-02_D2_LAEMP_EVO_2022-05-20_NP	E235.NO3-L	20-May-2022	----	----	----		22-May-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKUT_PW-02_D3_LAEMP_EVO_2022-05-20_NP	E235.NO3-L	20-May-2022	----	----	----		22-May-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKUT_PW-03_D1_LAEMP_EVO_2022-05-20_NP	E235.NO3-L	20-May-2022	----	----	----		22-May-2022	3 days	2 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKUT_PW-03_D2_LAEMP_EVO_2022-05-20_NP	E235.NO3-L	20-May-2022	----	----	----		22-May-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKUT_PW-03_D3_LAEMP_EVO_2022-05-20_NP	E235.NO3-L	20-May-2022	----	----	----		22-May-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKUT_PW-01_D1_LAEMP_EVO_2022-05-20_NP	E235.NO2-L	20-May-2022	----	----	----		22-May-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKUT_PW-01_D2_LAEMP_EVO_2022-05-20_NP	E235.NO2-L	20-May-2022	----	----	----		22-May-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKUT_PW-01_D3_LAEMP_EVO_2022-05-20_NP	E235.NO2-L	20-May-2022	----	----	----		22-May-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKUT_PW-02_D1_LAEMP_EVO_2022-05-20_NP	E235.NO2-L	20-May-2022	----	----	----		22-May-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKUT_PW-02_D2_LAEMP_EVO_2022-05-20_NP	E235.NO2-L	20-May-2022	----	----	----		22-May-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKUT_PW-02_D3_LAEMP_EVO_2022-05-20_NP	E235.NO2-L	20-May-2022	----	----	----		22-May-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKUT_PW-03_D1_LAEMP_EVO_2022-05-20_NP	E235.NO2-L	20-May-2022	----	----	----		22-May-2022	3 days	2 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKUT_PW-03_D2_LAEMP_EVO_2022-05-20_NP	E235.NO2-L	20-May-2022	----	----	----		22-May-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKUT_PW-03_D3_LAEMP_EVO_2022-05-20_NP	E235.NO2-L	20-May-2022	----	----	----		22-May-2022	3 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKUT_PW-01_D1_LAEMP_EVO_2022-05-20_NP	E235.SO4	20-May-2022	----	----	----		22-May-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKUT_PW-01_D2_LAEMP_EVO_2022-05-20_NP	E235.SO4	20-May-2022	----	----	----		22-May-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKUT_PW-01_D3_LAEMP_EVO_2022-05-20_NP	E235.SO4	20-May-2022	----	----	----		22-May-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKUT_PW-02_D1_LAEMP_EVO_2022-05-20_NP	E235.SO4	20-May-2022	----	----	----		22-May-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKUT_PW-02_D2_LAEMP_EVO_2022-05-20_NP	E235.SO4	20-May-2022	----	----	----		22-May-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKUT_PW-02_D3_LAEMP_EVO_2022-05-20_NP	E235.SO4	20-May-2022	----	----	----		22-May-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKUT_PW-03_D1_LAEMP_EVO_2022-05-20_NP	E235.SO4	20-May-2022	----	----	----		22-May-2022	28 days	2 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKUT_PW-03_D2_LAEMP_EVO_2022-05-20_NP	E235.SO4	20-May-2022	----	----	----		22-May-2022	28 days	2 days	✓	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKUT_PW-03_D3_LAEMP_EVO_2022-05-20_NP	E235.SO4	20-May-2022	----	----	----		22-May-2022	28 days	2 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_ERCKUT_PW-01_D1_LAEMP_EVO_2022-05-20_NP	E421.Cr-L	20-May-2022	27-May-2022	----	----		27-May-2022	180 days	7 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_ERCKUT_PW-01_D2_LAEMP_EVO_2022-05-20_NP	E421.Cr-L	20-May-2022	27-May-2022	----	----		27-May-2022	180 days	7 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_ERCKUT_PW-01_D3_LAEMP_EVO_2022-05-20_NP	E421.Cr-L	20-May-2022	27-May-2022	----	----		27-May-2022	180 days	7 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_ERCKUT_PW-02_D1_LAEMP_EVO_2022-05-20_NP	E421.Cr-L	20-May-2022	27-May-2022	----	----		27-May-2022	180 days	7 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_ERCKUT_PW-02_D2_LAEMP_EVO_2022-05-20_NP	E421.Cr-L	20-May-2022	27-May-2022	----	----		27-May-2022	180 days	7 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_ERCKUT_PW-02_D3_LAEMP_EVO_2022-05-20_NP	E421.Cr-L	20-May-2022	27-May-2022	----	----		27-May-2022	180 days	7 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_ERCKUT_PW-03_D1_LAEMP_EVO_2022-05-20_NP	E421.Cr-L	20-May-2022	27-May-2022	----	----		27-May-2022	180 days	7 days	✓	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times Rec Actual		Eval	Analysis Date	Holding Times Rec Actual		Eval	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_ERCKUT_PW-03_D2_LAEMP_EVO_2022-05-20_NP	E421.Cr-L	20-May-2022	27-May-2022	----	----		27-May-2022	180 days	7 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_ERCKUT_PW-03_D3_LAEMP_EVO_2022-05-20_NP	E421.Cr-L	20-May-2022	27-May-2022	----	----		27-May-2022	180 days	7 days	✓	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_ERCKUT_PW-01_D1_LAEMP_EVO_2022-05-20_NP	E421	20-May-2022	27-May-2022	----	----		27-May-2022	180 days	7 days	✓	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_ERCKUT_PW-01_D2_LAEMP_EVO_2022-05-20_NP	E421	20-May-2022	27-May-2022	----	----		27-May-2022	180 days	7 days	✓	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_ERCKUT_PW-01_D3_LAEMP_EVO_2022-05-20_NP	E421	20-May-2022	27-May-2022	----	----		27-May-2022	180 days	7 days	✓	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_ERCKUT_PW-02_D1_LAEMP_EVO_2022-05-20_NP	E421	20-May-2022	27-May-2022	----	----		27-May-2022	180 days	7 days	✓	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_ERCKUT_PW-02_D2_LAEMP_EVO_2022-05-20_NP	E421	20-May-2022	27-May-2022	----	----		27-May-2022	180 days	7 days	✓	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_ERCKUT_PW-02_D3_LAEMP_EVO_2022-05-20_NP	E421	20-May-2022	27-May-2022	----	----		27-May-2022	180 days	7 days	✓	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_ERCKUT_PW-03_D1_LAEMP_EVO_2022-05-20_NP	E421	20-May-2022	27-May-2022	----	----		27-May-2022	180 days	7 days	✓	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) RG_ERCKUT_PW-03_D2_LAEMP_EVO_2022-05-20_NP	E421	20-May-2022	27-May-2022	----	----		27-May-2022	180 days	7 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) RG_ERCKUT_PW-03_D3_LAEMP_EVO_2022-05-20_NP	E421	20-May-2022	27-May-2022	----	----		27-May-2022	180 days	7 days	✓

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
Analytical Methods							
Laboratory Duplicates (DUP)							
Bromide in Water by IC (Low Level)	E235.Br-L	496565	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	496562	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	502084	1	19	5.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	502085	1	19	5.2	5.0	✓
Fluoride in Water by IC	E235.F	496563	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	496566	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	496567	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	496564	1	20	5.0	5.0	✓
Laboratory Control Samples (LCS)							
Bromide in Water by IC (Low Level)	E235.Br-L	496565	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	496562	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	502084	1	19	5.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	502085	1	19	5.2	5.0	✓
Fluoride in Water by IC	E235.F	496563	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	496566	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	496567	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	496564	1	20	5.0	5.0	✓
Method Blanks (MB)							
Bromide in Water by IC (Low Level)	E235.Br-L	496565	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	496562	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	502084	1	19	5.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	502085	1	19	5.2	5.0	✓
Fluoride in Water by IC	E235.F	496563	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	496566	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	496567	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	496564	1	20	5.0	5.0	✓
Matrix Spikes (MS)							
Bromide in Water by IC (Low Level)	E235.Br-L	496565	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	496562	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	502084	1	19	5.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	502085	1	19	5.2	5.0	✓
Fluoride in Water by IC	E235.F	496563	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	496566	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	496567	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	496564	1	20	5.0	5.0	✓



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Bromide in Water by IC (Low Level)	E235.Br-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC (Low Level)	E235.Cl-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Dissolved Metals in Water by CRC ICPMS	E421 Calgary - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L Calgary - Environmental	Water	APHA 3030 B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS
Dissolved Hardness (Calculated)	EC100 Calgary - Environmental	Water	APHA 2340B	"Hardness (as CaCO ₃), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Metals Water Filtration	EP421 Calgary - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO ₃ .



QUALITY CONTROL REPORT

Work Order : **CG2206166**

Client : Teck Coal Limited
Contact : Mike Pope
Address : 421 Pine Avenue
Sparwood BC Canada V0B2G0

Telephone : ----

Project : REGIONAL EFFECTS PROGRAM
PO : VPO00816101
C-O-C number : May EVO LAEMP 2022
Sampler : Alex McClymont
Site : ----
Quote number : Teck Coal Master Quote
No. of samples received : 9
No. of samples analysed : 9

Page : 1 of 10

Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
Calgary, Alberta Canada T1Y 7B5

Telephone : +1 403 407 1800
Date Samples Received : 21-May-2022 09:10
Date Analysis Commenced : 22-May-2022
Issue Date : 30-May-2022 14:44

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

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Page : 2 of 10
Work Order : CG2206166
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 496562)											
CG2206160-006	Anonymous	chloride	16887-00-6	E235.Cl-L	0.50	mg/L	80.2	80.8	0.798%	20%	----
Anions and Nutrients (QC Lot: 496563)											
CG2206166-001	RG_ERCKUT_PW-01_D1_LAEMP_EVO_2022-05-20_NP	fluoride	16984-48-8	E235.F	0.100	mg/L	0.102	<0.100	0.002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 496564)											
CG2206166-001	RG_ERCKUT_PW-01_D1_LAEMP_EVO_2022-05-20_NP	sulfate (as SO4)	14808-79-8	E235.SO4	1.50	mg/L	828	817	1.44%	20%	----
Anions and Nutrients (QC Lot: 496565)											
CG2206166-001	RG_ERCKUT_PW-01_D1_LAEMP_EVO_2022-05-20_NP	bromide	24959-67-9	E235.Br-L	0.250	mg/L	<0.250	<0.250	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 496566)											
CG2206166-001	RG_ERCKUT_PW-01_D1_LAEMP_EVO_2022-05-20_NP	nitrate (as N)	14797-55-8	E235.NO3-L	0.0250	mg/L	17.6	17.4	1.30%	20%	----
Anions and Nutrients (QC Lot: 496567)											
CG2206166-001	RG_ERCKUT_PW-01_D1_LAEMP_EVO_2022-05-20_NP	nitrite (as N)	14797-65-0	E235.NO2-L	0.0050	mg/L	0.0253	0.0276	0.0023	Diff <2x LOR	----
Dissolved Metals (QC Lot: 502084)											
CG2206165-001	Anonymous	chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	0.00022	0.00022	0.000005	Diff <2x LOR	----
Dissolved Metals (QC Lot: 502085)											
CG2206165-001	Anonymous	aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0046	0.0043	0.0004	Diff <2x LOR	----
		antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00019	0.00020	0.000008	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00022	0.00022	0.000001	Diff <2x LOR	----
		barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0617	0.0626	1.49%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.000020	mg/L	<0.020 µg/L	<0.000020	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.010	mg/L	0.012	0.012	0.0005	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E421	0.000050	mg/L	0.0851 µg/L	0.0000947	10.7%	20%	----
		calcium, dissolved	7440-70-2	E421	0.050	mg/L	253	263	4.05%	20%	----
		cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	<0.10 µg/L	<0.00010	0	Diff <2x LOR	----
		copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 502085) - continued											
CG2206165-001	Anonymous	lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0248	0.0250	0.765%	20%	----
		magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	156	158	1.31%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00029	0.00027	0.00002	Diff <2x LOR	----
		molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00106	0.00112	4.76%	20%	----
		nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00090	0.00085	0.00005	Diff <2x LOR	----
		potassium, dissolved	7440-09-7	E421	0.050	mg/L	2.71	2.72	0.523%	20%	----
		selenium, dissolved	7782-49-2	E421	0.000050	mg/L	159 µg/L	0.170	6.39%	20%	----
		silicon, dissolved	7440-21-3	E421	0.050	mg/L	3.80	3.96	4.00%	20%	----
		silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E421	0.050	mg/L	3.22	3.25	0.710%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.218	0.234	7.46%	20%	----
		sulfur, dissolved	7704-34-9	E421	0.50	mg/L	280	292	3.83%	20%	----
		thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00810	0.00867	6.85%	20%	----
		vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0052	0.0052	0.00002	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 496562)						
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	----
Anions and Nutrients (QCLot: 496563)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 496564)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 496565)						
bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 496566)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 496567)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Dissolved Metals (QCLot: 502084)						
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	<0.00010	----
Dissolved Metals (QCLot: 502085)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----



Sub-Matrix: **Water**

<i>Analyte</i>	<i>CAS Number</i>	<i>Method</i>	<i>LOR</i>	<i>Unit</i>	<i>Result</i>	<i>Qualifier</i>
Dissolved Metals (QCLot: 502085) - continued						
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Anions and Nutrients (QCLot: 496562)									
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	104	90.0	110	----
Anions and Nutrients (QCLot: 496563)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	106	90.0	110	----
Anions and Nutrients (QCLot: 496564)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	105	90.0	110	----
Anions and Nutrients (QCLot: 496565)									
bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	99.4	85.0	115	----
Anions and Nutrients (QCLot: 496566)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	105	90.0	110	----
Anions and Nutrients (QCLot: 496567)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	104	90.0	110	----
Dissolved Metals (QCLot: 502084)									
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	0.25 mg/L	96.5	80.0	120	----
Dissolved Metals (QCLot: 502085)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	102	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	104	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	96.2	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	92.6	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	98.9	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	97.9	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	101	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	95.9	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	96.4	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	96.2	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	101	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	95.3	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	98.2	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	102	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	98.9	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	97.3	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	105	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	92.4	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	102	80.0	120	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report					
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier	
					Concentration	LCS	Low	High		
Dissolved Metals (QCLot: 502085) - continued										
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	95.7	80.0	120	----	
silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	104	60.0	140	----	
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	92.8	80.0	120	----	
sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	99.3	80.0	120	----	
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	97.2	80.0	120	----	
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	102	80.0	120	----	
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	98.0	80.0	120	----	
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	96.8	80.0	120	----	
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	92.1	80.0	120	----	
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	98.4	80.0	120	----	
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	99.3	80.0	120	----	
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	95.4	80.0	120	----	



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level $\geq 1x$ spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 496562)										
CG2206169-008	Anonymous	chloride	16887-00-6	E235.Cl-L	99.7 mg/L	100 mg/L	99.7	75.0	125	----
Anions and Nutrients (QCLot: 496563)										
CG2206166-002	RG_ERCKUT_PW-01_D2_L AEMP_EVO_2022-05-20_N P	fluoride	16984-48-8	E235.F	0.820 mg/L	1 mg/L	82.0	75.0	125	----
Anions and Nutrients (QCLot: 496564)										
CG2206166-002	RG_ERCKUT_PW-01_D2_L AEMP_EVO_2022-05-20_N P	sulfate (as SO4)	14808-79-8	E235.SO4	ND mg/L	100 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 496565)										
CG2206166-002	RG_ERCKUT_PW-01_D2_L AEMP_EVO_2022-05-20_N P	bromide	24959-67-9	E235.Br-L	0.557 mg/L	0.5 mg/L	111	75.0	125	----
Anions and Nutrients (QCLot: 496566)										
CG2206166-002	RG_ERCKUT_PW-01_D2_L AEMP_EVO_2022-05-20_N P	nitrate (as N)	14797-55-8	E235.NO3-L	ND mg/L	2.5 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 496567)										
CG2206166-002	RG_ERCKUT_PW-01_D2_L AEMP_EVO_2022-05-20_N P	nitrite (as N)	14797-65-0	E235.NO2-L	0.496 mg/L	0.5 mg/L	99.3	75.0	125	----
Dissolved Metals (QCLot: 502084)										
CG2206165-002	Anonymous	chromium, dissolved	7440-47-3	E421.Cr-L	0.383 mg/L	0.4 mg/L	95.8	70.0	130	----
Dissolved Metals (QCLot: 502085)										
CG2206165-002	Anonymous	aluminum, dissolved	7429-90-5	E421	1.82 mg/L	2 mg/L	91.1	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.205 mg/L	0.2 mg/L	103	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.188 mg/L	0.2 mg/L	93.8	70.0	130	----
		barium, dissolved	7440-39-3	E421	0.182 mg/L	0.2 mg/L	91.0	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.383 mg/L	0.4 mg/L	95.8	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.0960 mg/L	0.1 mg/L	96.0	70.0	130	----
		boron, dissolved	7440-42-8	E421	1.05 mg/L	1 mg/L	105	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.0385 mg/L	0.04 mg/L	96.2	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	40 mg/L	ND	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.190 mg/L	0.2 mg/L	94.9	70.0	130	----



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 502085) - continued										
CG2206165-002	Anonymous	copper, dissolved	7440-50-8	E421	0.195 mg/L	0.2 mg/L	97.3	70.0	130	----
		iron, dissolved	7439-89-6	E421	19.0 mg/L	20 mg/L	95.0	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.197 mg/L	0.2 mg/L	98.4	70.0	130	----
		lithium, dissolved	7439-93-2	E421	0.985 mg/L	1 mg/L	98.5	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	10 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E421	0.194 mg/L	0.2 mg/L	96.9	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.209 mg/L	0.2 mg/L	105	70.0	130	----
		nickel, dissolved	7440-02-0	E421	0.391 mg/L	0.4 mg/L	97.7	70.0	130	----
		potassium, dissolved	7440-09-7	E421	38.5 mg/L	40 mg/L	96.2	70.0	130	----
		selenium, dissolved	7782-49-2	E421	0.385 mg/L	0.4 mg/L	96.2	70.0	130	----
		silicon, dissolved	7440-21-3	E421	95.8 mg/L	100 mg/L	95.8	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.0394 mg/L	0.04 mg/L	98.6	70.0	130	----
		sodium, dissolved	7440-23-5	E421	19.1 mg/L	20 mg/L	95.6	70.0	130	----
		strontium, dissolved	7440-24-6	E421	ND mg/L	0.2 mg/L	ND	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	ND mg/L	200 mg/L	ND	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.0389 mg/L	0.04 mg/L	97.3	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.192 mg/L	0.2 mg/L	96.2	70.0	130	----
		titanium, dissolved	7440-32-6	E421	0.366 mg/L	0.4 mg/L	91.5	70.0	130	----
		uranium, dissolved	7440-61-1	E421	0.0403 mg/L	0.04 mg/L	101	70.0	130	----
		vanadium, dissolved	7440-62-2	E421	0.991 mg/L	1 mg/L	99.1	70.0	130	----
		zinc, dissolved	7440-66-6	E421	3.65 mg/L	4 mg/L	91.3	70.0	130	----

COC ID: May EVO LAEMP 2022

TURNAROUND TIME:

PROJECT/CLIENT INFO				LABORATORY			
Facility Name / Job#	Regional EVO LAEMP			Lab Name	ALS Calgary		
Project Manager	Mike Pope			Lab Contact	Lyudmyla Shvets		
Email	m.pope@teck.com			Email	lyudmyla.shvets@alsglobal.com		
Address	421 Pine Avenue			Address	2559 29 Street NE		
City	Sparwood	Province	BC	City	Calgary	Province	AB
Postal Code	VOB 2G0	Country	Canada	Postal Code	T1Y 7B5	Country	Canada
Phone Number	343-333-3905			Phone Number	1 403 407 1794		

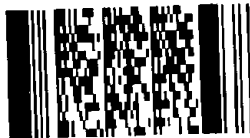
SAMPLE DETAILS									ANALYSIS REQUESTED				
Sample ID	Sample Location	Field Matrix	Hazardous Material (Ycs/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	TECKCOAL-ANIONS	Dissolved metals				
1 RG_ERCKUT_PW-01_D1_LAEMP_EVO_2022-05-20_NP	RG_ERCKUT	PW	No	5/20/2022	9:30	G	2	X	X				
2 RG_ERCKUT_PW-01_D2_LAEMP_EVO_2022-05-20_NP	RG_ERCKUT	PW	No	5/20/2022	9:45	G	2	X	X				
3 RG_ERCKUT_PW-01_D3_LAEMP_EVO_2022-05-20_NP	RG_ERCKUT	PW	No	5/20/2022	10:00	G	2	X	X				
4 RG_ERCKUT_PW-02_D1_LAEMP_EVO_2022-05-20_NP	RG_ERCKUT	PW	No	5/20/2022	11:30	G	2	X	X				
5 RG_ERCKUT_PW-02_D2_LAEMP_EVO_2022-05-20_NP	RG_ERCKUT	PW	No	5/20/2022	11:50	G	2	X	X				
6 RG_ERCKUT_PW-02_D3_LAEMP_EVO_2022-05-20_NP	RG_ERCKUT	PW	No	5/20/2022	12:25	G	2	X	X				
7 RG_ERCKUT_PW-03_D1_LAEMP_EVO_2022-05-20_NP	RG_ERCKUT	PW	No	5/20/2022	13:10	G	2	X	X				
8 RG_ERCKUT_PW-03_D2_LAEMP_EVO_2022-05-20_NP	RG_ERCKUT	PW	No	5/20/2022	13:30	G	2	X	X				
9 RG_ERCKUT_PW-03_D3_LAEMP_EVO_2022-05-20_NP	RG_ERCKUT	PW	No	5/20/2022	13:50	G	2	X	X				

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
ALS PO YPO00816101 Samples for Anions have "Anions" on the label and "I" on the cap Samples for dissolved metals have "DTE" on the label and "N" on the cap	Alex McClymont	May 20, 2022	<i>[Signature]</i> 2/1/05 9:10 P

NE OF BOTTLES RETURNED/DESCRIPTION	Sampler's Name	Mobile #
Regular (default) <input checked="" type="checkbox"/>	Alex McClymont	780-293-6750
Priority (2-3 business days) - 50% surcharge		
Emergency (1 Business Day) - 100% surcharge		
For Emergency <1 Day, ASAP or Weekend - Contact ALS		
	Sampler's Signature	Date/Time
	<i>[Signature]</i>	May 20, 2022

Environmental Division
 Calgary
 Work Order Reference
CG2206166

Calgary
 Work Order Reference
CG2206166



Telephone : + 1 403 407 1800

CERTIFICATE OF ANALYSIS

Work Order : **CG2210765**

Page : 1 of 14

Amendment : **1**

Client : **Teck Coal Limited**

Laboratory : Calgary - Environmental

Contact : Mike Pope

Account Manager : Lyudmyla Shvets

Address : 421 Pine Avenue
Sparwood BC Canada V0B2G0

Address : 2559 29th Street NE
Calgary AB Canada T1Y 7B5

Telephone : ----

Telephone : +1 403 407 1800

Project : REGIONAL EFFECTS PROGRAM

Date Samples Received : 13-Aug-2022 08:50

PO : VPO00816101

Date Analysis Commenced : 13-Aug-2022

C-O-C number : August EVO LAEMP 2022 PW

Issue Date : 23-Aug-2022 15:39

Sampler : Tyler Mehler

Site : ----

Quote number : Teck Coal Master Quote

No. of samples received : 27

No. of samples analysed : 27

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Anthony Calero	Supervisor - Inorganic	Inorganics, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Kevin Baxter		Metals, Calgary, Alberta
Millicent Brentnall	Laboratory Analyst	Metals, Calgary, Alberta



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

<i>Unit</i>	<i>Description</i>
-	No Unit
µg/L	micrograms per litre
mg/L	milligrams per litre

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

<i>Qualifier</i>	<i>Description</i>
DLDS	Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.



Analytical Results

Sub-Matrix: Water					Client sample ID				
(Matrix: Water)					RG_ERCKUT_1_	RG_ERCKUT_1_	RG_ERCKUT_2_	RG_ERCKUT_2_	RG_ERCKUT_3_
					PW-1_2022-08	PW-2_2022-08	PW-1_2022-08	PW-2_2022-08	PW-1_2022-08
					_NP	_NP	_NP	_NP	_NP
Client sampling date / time					08-Aug-2022	08-Aug-2022	08-Aug-2022	08-Aug-2022	08-Aug-2022
					10:00	10:15	10:30	10:45	11:00
Analyte	CAS Number	Method	LOR	Unit	CG2210765-001	CG2210765-002	CG2210765-003	CG2210765-004	CG2210765-005
					Result	Result	Result	Result	Result
Physical Tests									
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	1200	1160	1170	1200	1180
Anions and Nutrients									
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	5.22	5.30	5.05	5.08	5.10
fluoride	16984-48-8	E235.F	0.020	mg/L	0.114	0.122	0.114	0.112	0.111
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	15.3	15.6	15.6	15.3	15.6
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	719	714	726	720	724
Dissolved Metals									
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0041	0.0083	0.0042	0.0045	0.0039
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00020	0.00021	0.00021	0.00022	0.00022
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00022	0.00028	0.00022	0.00033	0.00020
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0618	0.0612	0.0628	0.0624	0.0580
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
boron, dissolved	7440-42-8	E421	0.010	mg/L	0.014	0.014	0.014	0.015	0.015
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.0859	0.447	0.0922	0.119	0.0807
calcium, dissolved	7440-70-2	E421	0.050	mg/L	236	230	223	239	245
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	0.00022	0.00015	0.00024	0.00012	0.00019
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	<0.10	<0.10	<0.10	<0.10	<0.10
copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00032	0.00065	0.00031	0.00032	0.00029
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	0.015	<0.010	<0.010	<0.010
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	0.000096	0.000068	<0.000050	0.000078
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0269	0.0269	0.0261	0.0272	0.0278
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	149	142	148	147	138
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00011	0.00173	<0.00010	0.00526	0.00057
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00112	0.00109	0.00104	0.00112	0.00112
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00082	0.00137	0.00083	0.00088	0.00081
potassium, dissolved	7440-09-7	E421	0.050	mg/L	2.63	3.77	2.65	2.80	2.57



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKUT_1_ PW-1_2022-08 _NP	RG_ERCKUT_1_ PW-2_2022-08 _NP	RG_ERCKUT_2_ PW-1_2022-08 _NP	RG_ERCKUT_2_ PW-2_2022-08 _NP	RG_ERCKUT_3_ PW-1_2022-08 _NP
Client sampling date / time					08-Aug-2022 10:00	08-Aug-2022 10:15	08-Aug-2022 10:30	08-Aug-2022 10:45	08-Aug-2022 11:00	
Analyte	CAS Number	Method	LOR	Unit	CG2210765-001 Result	CG2210765-002 Result	CG2210765-003 Result	CG2210765-004 Result	CG2210765-005 Result	
Dissolved Metals										
selenium, dissolved	7782-49-2	E421	0.050	µg/L	163	161	159	163	155	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	4.26	4.75	4.17	5.58	4.06	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	3.38	3.28	3.36	3.45	3.24	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.212	0.209	0.202	0.218	0.221	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	204	197	200	202	194	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	0.000010	<0.000010	<0.000010	<0.000010	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00815	0.00834	0.00776	0.00840	0.00849	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0021	0.0060	0.0026	0.0022	0.0029	
dissolved metals filtration location	----	EP421	-	-	Field	Field	Field	Field	Field	

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKUT_3_ PW-2_2022-08 _NP	RG_ERCKUT_W S-1_2022-08_N P	RG_ERCKUT_W S-2_2022-08_N P	RG_ERCKUT_W S-3_2022-08_N P	RG_ERCKDT_1_ PW-1_2022-08 _NP
Client sampling date / time					08-Aug-2022 11:15	09-Aug-2022 11:30	09-Aug-2022 11:45	09-Aug-2022 12:00	09-Aug-2022 08:30	
Analyte	CAS Number	Method	LOR	Unit	CG2210765-006 Result	CG2210765-007 Result	CG2210765-008 Result	CG2210765-009 Result	CG2210765-010 Result	
Physical Tests										
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	1210	1140	1160	1150	1140	
Anions and Nutrients										
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	5.15	5.36	5.11	5.36	5.35	
fluoride	16984-48-8	E235.F	0.020	mg/L	0.115	0.111	0.112	<0.100 ^{DLDS}	0.112	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	15.4	15.5	15.4	15.5	15.7	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	715	718	718	719	733	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0042	0.0040	0.0031	0.0038	0.0030	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00023	0.00020	0.00021	0.00024	0.00020	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00023	0.00021	0.00022	0.00022	0.00023	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0620	0.0602	0.0601	0.0584	0.0597	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
boron, dissolved	7440-42-8	E421	0.010	mg/L	0.015	0.013	0.015	0.014	0.013	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.103	0.0773	0.0758	0.0852	0.0724	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	245	225	232	230	228	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	0.00020	0.00021	0.00022	0.00021	0.00018	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	<0.10	<0.10	<0.10	<0.10	<0.10	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00037	0.00026	0.00030	0.00054	0.00036	
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	0.014	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0284	0.0263	0.0268	0.0261	0.0268	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	146	140	141	140	140	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00036	0.00049	<0.00010	0.00036	0.00044	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00117	0.00108	0.00111	0.00108	0.00108	
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00086	0.00093	0.00088	0.00086	0.00082	
potassium, dissolved	7440-09-7	E421	0.050	mg/L	2.90	2.53	2.57	2.67	2.54	
selenium, dissolved	7782-49-2	E421	0.050	µg/L	168	154	156	145	153	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKUT_3_ PW-2_2022-08 _NP	RG_ERCKUT_W S-1_2022-08_N P	RG_ERCKUT_W S-2_2022-08_N P	RG_ERCKUT_W S-3_2022-08_N P	RG_ERCKDT_1_ PW-1_2022-08 _NP
Client sampling date / time					08-Aug-2022 11:15	09-Aug-2022 11:30	09-Aug-2022 11:45	09-Aug-2022 12:00	09-Aug-2022 08:30	
Analyte	CAS Number	Method	LOR	Unit	CG2210765-006	CG2210765-007	CG2210765-008	CG2210765-009	CG2210765-010	
					Result	Result	Result	Result	Result	
Dissolved Metals										
silicon, dissolved	7440-21-3	E421	0.050	mg/L	4.32	4.03	4.10	4.03	4.07	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	3.42	3.36	3.24	3.44	3.36	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.225	0.201	0.208	0.206	0.206	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	204	192	194	186	188	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00856	0.00780	0.00799	0.00781	0.00795	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0024	0.0024	0.0032	0.0063	0.0022	
dissolved metals filtration location	----	EP421	-	-	Field	Field	Field	Field	Field	

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKDT_1_ PW-2_2022-08 _NP	RG_ERCKDT_2_ PW-1_2022-08 _NP	RG_ERCKDT_2_ PW-2_2022-08 _NP	RG_ERCKDT_3_ PW-1_2022-08 _NP	RG_ERCKDT_3_ PW-2_2022-08 _NP
Client sampling date / time					09-Aug-2022 08:45	09-Aug-2022 09:00	09-Aug-2022 09:15	09-Aug-2022 09:30	09-Aug-2022 09:45	
Analyte	CAS Number	Method	LOR	Unit	CG2210765-011 Result	CG2210765-012 Result	CG2210765-013 Result	CG2210765-014 Result	CG2210765-015 Result	
Physical Tests										
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	1180	1160	1180	1220	1200	
Anions and Nutrients										
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	5.42	5.06	5.21	5.09	5.06	
fluoride	16984-48-8	E235.F	0.020	mg/L	0.169	0.111	0.116	0.110	0.112	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	15.4	15.4	15.6	15.5	15.5	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	714	714	724	724	725	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0074	0.0031	0.0035	0.0035	0.0032	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00022	0.00022	0.00022	0.00022	0.00023	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00030	0.00023	0.00026	0.00025	0.00025	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0644	0.0617	0.0630	0.0633	0.0614	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
boron, dissolved	7440-42-8	E421	0.010	mg/L	0.016	0.013	0.014	0.014	0.014	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.126	0.0764	0.102	0.0877	0.0806	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	239	229	235	241	240	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	0.00024	0.00022	0.00022	0.00026	0.00018	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	<0.10	<0.10	<0.10	0.13	<0.10	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00069	0.00030	0.00042	0.00036	0.00023	
iron, dissolved	7439-89-6	E421	0.010	mg/L	0.026	<0.010	0.010	<0.010	<0.010	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	0.000060	<0.000050	<0.000050	<0.000050	<0.000050	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0268	0.0266	0.0273	0.0283	0.0277	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	141	144	145	150	145	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00151	0.00034	0.00060	0.00428	0.00046	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00122	0.00109	0.00116	0.00124	0.00120	
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00215	0.00086	0.00104	0.00093	0.00085	
potassium, dissolved	7440-09-7	E421	0.050	mg/L	3.35	2.62	2.82	2.75	2.59	
selenium, dissolved	7782-49-2	E421	0.050	µg/L	152	148	161	170	156	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKDT_1_ PW-2_2022-08 _NP	RG_ERCKDT_2_ PW-1_2022-08 _NP	RG_ERCKDT_2_ PW-2_2022-08 _NP	RG_ERCKDT_3_ PW-1_2022-08 _NP	RG_ERCKDT_3_ PW-2_2022-08 _NP
Client sampling date / time					09-Aug-2022 08:45	09-Aug-2022 09:00	09-Aug-2022 09:15	09-Aug-2022 09:30	09-Aug-2022 09:45	
Analyte	CAS Number	Method	LOR	Unit	CG2210765-011 Result	CG2210765-012 Result	CG2210765-013 Result	CG2210765-014 Result	CG2210765-015 Result	
Dissolved Metals										
silicon, dissolved	7440-21-3	E421	0.050	mg/L	4.16	4.08	4.23	4.37	4.12	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	3.50	3.30	3.33	3.40	3.28	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.214	0.208	0.212	0.221	0.218	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	190	186	199	208	190	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00799	0.00798	0.00818	0.00860	0.00835	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0060	0.0022	0.0022	0.0018	0.0016	
dissolved metals filtration location	----	EP421	-	-	Field	Field	Field	Field	Field	

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKDT_W S-1_2022-08_N P"	RG_ERCKDT_W S-2_2022-08_N P	RG_ERCKDT_W S-3_2022-08_N P	RG_ERCKMD_1 _PW-1_2022-0 8_NP	RG_ERCKMD_1 _PW-2_2022-0 8_NP
Client sampling date / time					09-Aug-2022 10:00	09-Aug-2022 10:15	09-Aug-2022 10:30	09-Aug-2022 13:15	09-Aug-2022 13:30	
Analyte	CAS Number	Method	LOR	Unit	CG2210765-016 Result	CG2210765-017 Result	CG2210765-018 Result	CG2210765-019 Result	CG2210765-020 Result	
Physical Tests										
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	1170	1180	1200	1190	1170	
Anions and Nutrients										
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	5.59	5.53	5.10	5.36	5.08	
fluoride	16984-48-8	E235.F	0.020	mg/L	0.111	0.110	0.109	0.123	0.114	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	15.5	15.4	15.4	15.4	15.4	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	724	715	713	722	716	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0030	0.0038	0.0039	0.0039	0.0036	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00021	0.00022	0.00022	0.00022	0.00023	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00024	0.00022	0.00021	0.00024	0.00032	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0617	0.0619	0.0612	0.0619	0.0680	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
boron, dissolved	7440-42-8	E421	0.010	mg/L	0.013	0.014	0.012	0.014	0.013	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.0766	0.0809	0.0728	0.0971	0.111	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	229	233	239	236	232	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	0.00020	0.00019	0.00021	0.00022	0.00020	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	<0.10	<0.10	<0.10	<0.10	<0.10	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00021	0.00026	0.00023	0.00025	0.00033	
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	<0.010	<0.010	0.013	0.028	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	0.000057	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0266	0.0272	0.0273	0.0270	0.0267	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	145	145	146	145	144	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00021	0.00021	0.00021	0.00134	0.00222	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00112	0.00111	0.00112	0.00130	0.00117	
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00082	0.00087	0.00081	0.00131	0.00116	
potassium, dissolved	7440-09-7	E421	0.050	mg/L	2.62	2.59	2.59	2.88	2.73	
selenium, dissolved	7782-49-2	E421	0.050	µg/L	155	156	158	159	160	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKDT_W S-1_2022-08_N P"	RG_ERCKDT_W S-2_2022-08_N P	RG_ERCKDT_W S-3_2022-08_N P	RG_ERCKMD_1 _PW-1_2022-0 8_NP	RG_ERCKMD_1 _PW-2_2022-0 8_NP
Client sampling date / time					09-Aug-2022 10:00	09-Aug-2022 10:15	09-Aug-2022 10:30	09-Aug-2022 13:15	09-Aug-2022 13:30	
Analyte	CAS Number	Method	LOR	Unit	CG2210765-016 Result	CG2210765-017 Result	CG2210765-018 Result	CG2210765-019 Result	CG2210765-020 Result	
Dissolved Metals										
silicon, dissolved	7440-21-3	E421	0.050	mg/L	4.14	4.17	4.21	4.27	4.24	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	3.54	4.28	3.33	3.50	3.30	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.206	0.213	0.215	0.213	0.212	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	190	190	192	189	189	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00796	0.00814	0.00822	0.00803	0.00795	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0015	0.0020	0.0019	0.0030	0.0029	
dissolved metals filtration location	----	EP421	-	-	Field	Field	Field	Field	Field	

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKMD_2 _PW-1_2022-0 8_NP	RG_ERCKMD_2 _PW-2_2022-0 8_NP	RG_ERCKMD_3 _PW-1_2022-0 8_NP	RG_ERCKMD_3 _PW-2_2022-0 8_NP	RG_ERCKMD_ WS-1_2022-08 _NP
Client sampling date / time					09-Aug-2022 13:45	09-Aug-2022 13:47	09-Aug-2022 13:50	09-Aug-2022 14:00	09-Aug-2022 14:15	
Analyte	CAS Number	Method	LOR	Unit	CG2210765-021 Result	CG2210765-022 Result	CG2210765-023 Result	CG2210765-024 Result	CG2210765-025 Result	
Physical Tests										
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	1160	1160	1110	1150	1180	
Anions and Nutrients										
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	5.47	5.28	5.07	5.06	5.07	
fluoride	16984-48-8	E235.F	0.020	mg/L	0.114	0.124	0.113	0.117	0.111	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	15.6	15.6	15.3	15.3	15.5	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	727	722	713	711	726	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0036	0.0038	0.0132	0.0141	0.0030	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00022	0.00021	0.00019	0.00022	0.00021	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00023	0.00031	0.00023	0.00028	0.00026	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0613	0.0650	0.0575	0.0651	0.0620	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
boron, dissolved	7440-42-8	E421	0.010	mg/L	0.014	0.014	0.012	0.013	0.013	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.0792	0.107	0.0772	0.0787	0.0809	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	230	228	219	224	234	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	0.00017	0.00019	0.00027	0.00025	0.00028	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	<0.10	0.10	<0.10	<0.10	<0.10	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00026	0.00041	0.00024	0.00023	0.00022	
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	0.057	<0.010	0.014	<0.010	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0266	0.0265	0.0251	0.0262	0.0274	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	142	144	136	144	144	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00126	0.00177	0.00158	0.00090	0.00052	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00114	0.00140	0.00111	0.00110	0.00113	
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00103	0.00185	0.00093	0.00256	0.00101	
potassium, dissolved	7440-09-7	E421	0.050	mg/L	2.58	2.95	2.44	2.69	2.60	
selenium, dissolved	7782-49-2	E421	0.050	µg/L	157	154	143	154	157	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKMD_2 _PW-1_2022-0 8_NP	RG_ERCKMD_2 _PW-2_2022-0 8_NP	RG_ERCKMD_3 _PW-1_2022-0 8_NP	RG_ERCKMD_3 _PW-2_2022-0 8_NP	RG_ERCKMD_ WS-1_2022-08 _NP
Client sampling date / time					09-Aug-2022 13:45	09-Aug-2022 13:47	09-Aug-2022 13:50	09-Aug-2022 14:00	09-Aug-2022 14:15	
Analyte	CAS Number	Method	LOR	Unit	CG2210765-021	CG2210765-022	CG2210765-023	CG2210765-024	CG2210765-025	
					Result	Result	Result	Result	Result	
Dissolved Metals										
silicon, dissolved	7440-21-3	E421	0.050	mg/L	4.18	4.66	3.87	4.20	4.24	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	3.49	3.27	3.07	3.31	3.23	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.209	0.206	0.195	0.202	0.214	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	188	187	174	184	191	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	<0.000010	0.000011	<0.000010	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00788	0.00780	0.00732	0.00762	0.00809	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0028	0.0029	0.0018	0.0030	0.0019	
dissolved metals filtration location	----	EP421	-	-	Field	Field	Field	Field	Field	

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKMD_ WS-2_2022-08 _NP	RG_ERCKMD_ WS-3_2022-08 _NP	---	---	---
Client sampling date / time					09-Aug-2022 14:30	09-Aug-2022 14:45	---	---	---	
Analyte	CAS Number	Method	LOR	Unit	CG2210765-026 Result	CG2210765-027 Result	-----	-----	-----	
Physical Tests										
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	1170	1170	---	---	---	
Anions and Nutrients										
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.250 ^{DLDS}	<0.250 ^{DLDS}	---	---	---	
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	5.02	5.27	---	---	---	
fluoride	16984-48-8	E235.F	0.020	mg/L	0.109	0.112	---	---	---	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	15.3	15.4	---	---	---	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	---	---	---	
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	712	712	---	---	---	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0050	0.0144	---	---	---	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00021	0.00021	---	---	---	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00024	0.00030	---	---	---	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0615	0.118	---	---	---	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.020	<0.020	---	---	---	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	---	---	---	
boron, dissolved	7440-42-8	E421	0.010	mg/L	0.014	0.085	---	---	---	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.0936	0.0816	---	---	---	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	233	232	---	---	---	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	0.00021	0.00026	---	---	---	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	<0.10	<0.10	---	---	---	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00036	0.00157	---	---	---	
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	<0.010	---	---	---	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	0.000081	---	---	---	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0270	0.0273	---	---	---	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	143	143	---	---	---	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00114	0.00056	---	---	---	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00114	0.00116	---	---	---	
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00099	0.00094	---	---	---	
potassium, dissolved	7440-09-7	E421	0.050	mg/L	2.56	2.62	---	---	---	
selenium, dissolved	7782-49-2	E421	0.050	µg/L	161	156	---	---	---	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKMD_ WS-2_2022-08 _NP	RG_ERCKMD_ WS-3_2022-08 _NP	----	----	----
Client sampling date / time					09-Aug-2022 14:30	09-Aug-2022 14:45	----	----	----	
Analyte	CAS Number	Method	LOR	Unit	CG2210765-026 Result	CG2210765-027 Result	-----	-----	-----	
Dissolved Metals										
silicon, dissolved	7440-21-3	E421	0.050	mg/L	4.20	4.30	----	----	----	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	----	----	----	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	3.20	3.85	----	----	----	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.212	0.210	----	----	----	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	193	190	----	----	----	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	0.000010	<0.000010	----	----	----	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	----	----	----	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00797	0.00794	----	----	----	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	----	----	----	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0022	0.0031	----	----	----	
dissolved metals filtration location	----	EP421	-	-	Field	Field	----	----	----	

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: CG2210765	Page	: 1 of 29
Amendment	: 1		
Client	: Teck Coal Limited	Laboratory	: Calgary - Environmental
Contact	: Mike Pope	Account Manager	: Lyudmyla Shvets
Address	: 421 Pine Avenue Spanwood BC Canada V0B2G0	Address	: 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5
Telephone	: ----	Telephone	: +1 403 407 1800
Project	: REGIONAL EFFECTS PROGRAM	Date Samples Received	: 13-Aug-2022 08:50
PO	: VPO00816101	Issue Date	: 23-Aug-2022 15:39
C-O-C number	: August EVO LAEMP 2022 PW		
Sampler	: Tyler Mehler		
Site	: ----		
Quote number	: Teck Coal Master Quote		
No. of samples received	: 27		
No. of samples analysed	: 27		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKDT_1_PW-1_2022-08_NP	E235.Br-L	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	4 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKDT_1_PW-2_2022-08_NP	E235.Br-L	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	4 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKDT_2_PW-1_2022-08_NP	E235.Br-L	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	4 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKDT_2_PW-2_2022-08_NP	E235.Br-L	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	4 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKDT_3_PW-1_2022-08_NP	E235.Br-L	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	4 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKDT_3_PW-2_2022-08_NP	E235.Br-L	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	4 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKDT_WS-1_2022-08_NP"	E235.Br-L	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	4 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
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Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKMD_1_PW-1_2022-08_NP	E235.Br-L	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	4 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
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Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKUT_WS-1_2022-08_NP	E235.Br-L	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	4 days	✓	
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HDPE RG_ERCKUT_1_PW-1_2022-08_NP	E235.Br-L	08-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	5 days	✓	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKUT_1_PW-2_2022-08_NP	E235.Br-L	08-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	5 days	✓	
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Anions and Nutrients : Chloride in Water by IC (Low Level)											
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			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
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HDPE RG_ERCKDT_WS-3_2022-08_NP	E235.CI-L	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	4 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKMD_1_PW-1_2022-08_NP	E235.CI-L	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	4 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKMD_1_PW-2_2022-08_NP	E235.CI-L	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	4 days	✔	
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			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
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Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKUT_WS-1_2022-08_NP	E235.CI-L	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	4 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
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HDPE RG_ERCKUT_1_PW-1_2022-08_NP	E235.CI-L	08-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	5 days	✔	
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HDPE RG_ERCKUT_3_PW-2_2022-08_NP	E235.Cl-L	08-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	5 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKDT_1_PW-1_2022-08_NP	E235.F	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	4 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKDT_1_PW-2_2022-08_NP	E235.F	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	4 days	✔	
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			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
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Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKDT_WS-3_2022-08_NP	E235.F	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	4 days	✔	
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HDPE RG_ERCKMD_2_PW-1_2022-08_NP	E235.F	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	4 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKMD_2_PW-2_2022-08_NP	E235.F	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	4 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKMD_3_PW-1_2022-08_NP	E235.F	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	4 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKMD_3_PW-2_2022-08_NP	E235.F	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	4 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKMD_WS-1_2022-08_NP	E235.F	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	4 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKMD_WS-2_2022-08_NP	E235.F	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	4 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKMD_WS-3_2022-08_NP	E235.F	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	4 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKUT_WS-1_2022-08_NP	E235.F	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	4 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKUT_WS-2_2022-08_NP	E235.F	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	4 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKUT_WS-3_2022-08_NP	E235.F	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	4 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKUT_1_PW-1_2022-08_NP	E235.F	08-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	5 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKUT_1_PW-2_2022-08_NP	E235.F	08-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	5 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKUT_2_PW-1_2022-08_NP	E235.F	08-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	5 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKUT_2_PW-2_2022-08_NP	E235.F	08-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	5 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKUT_3_PW-1_2022-08_NP	E235.F	08-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	5 days	✓	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKUT_3_PW-2_2022-08_NP	E235.F	08-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	5 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKDT_1_PW-1_2022-08_NP	E235.NO3-L	09-Aug-2022	13-Aug-2022	3 days	4 days	* EHTR	13-Aug-2022	3 days	0 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKDT_1_PW-2_2022-08_NP	E235.NO3-L	09-Aug-2022	13-Aug-2022	3 days	4 days	* EHTR	13-Aug-2022	3 days	0 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKDT_2_PW-1_2022-08_NP	E235.NO3-L	09-Aug-2022	13-Aug-2022	3 days	4 days	* EHTR	13-Aug-2022	3 days	0 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKDT_2_PW-2_2022-08_NP	E235.NO3-L	09-Aug-2022	13-Aug-2022	3 days	4 days	* EHTR	13-Aug-2022	3 days	0 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKDT_3_PW-1_2022-08_NP	E235.NO3-L	09-Aug-2022	13-Aug-2022	3 days	4 days	* EHTR	13-Aug-2022	3 days	0 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKDT_3_PW-2_2022-08_NP	E235.NO3-L	09-Aug-2022	13-Aug-2022	3 days	4 days	* EHTR	13-Aug-2022	3 days	0 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKDT_WS-1_2022-08_NP"	E235.NO3-L	09-Aug-2022	13-Aug-2022	3 days	4 days	* EHTR	13-Aug-2022	3 days	0 days	✓	



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKDT_WS-2_2022-08_NP	E235.NO3-L	09-Aug-2022	13-Aug-2022	3 days	4 days	* EHTR	13-Aug-2022	3 days	0 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKDT_WS-3_2022-08_NP	E235.NO3-L	09-Aug-2022	13-Aug-2022	3 days	4 days	* EHTR	13-Aug-2022	3 days	0 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKMD_1_PW-1_2022-08_NP	E235.NO3-L	09-Aug-2022	13-Aug-2022	3 days	4 days	* EHTR	13-Aug-2022	3 days	0 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKMD_1_PW-2_2022-08_NP	E235.NO3-L	09-Aug-2022	13-Aug-2022	3 days	4 days	* EHTR	13-Aug-2022	3 days	0 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKMD_2_PW-1_2022-08_NP	E235.NO3-L	09-Aug-2022	13-Aug-2022	3 days	4 days	* EHTR	13-Aug-2022	3 days	0 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKMD_2_PW-2_2022-08_NP	E235.NO3-L	09-Aug-2022	13-Aug-2022	3 days	4 days	* EHTR	13-Aug-2022	3 days	0 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKMD_3_PW-1_2022-08_NP	E235.NO3-L	09-Aug-2022	13-Aug-2022	3 days	4 days	* EHTR	13-Aug-2022	3 days	0 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKMD_3_PW-2_2022-08_NP	E235.NO3-L	09-Aug-2022	13-Aug-2022	3 days	4 days	* EHTR	13-Aug-2022	3 days	0 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKMD_WS-1_2022-08_NP	E235.NO3-L	09-Aug-2022	13-Aug-2022	3 days	4 days	* EHTR	13-Aug-2022	3 days	0 days	✓	



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKMD_WS-2_2022-08_NP	E235.NO3-L	09-Aug-2022	13-Aug-2022	3 days	4 days	* EHTR	13-Aug-2022	3 days	0 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKMD_WS-3_2022-08_NP	E235.NO3-L	09-Aug-2022	13-Aug-2022	3 days	4 days	* EHTR	13-Aug-2022	3 days	0 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKUT_WS-1_2022-08_NP	E235.NO3-L	09-Aug-2022	13-Aug-2022	3 days	4 days	* EHTR	13-Aug-2022	3 days	0 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKUT_WS-2_2022-08_NP	E235.NO3-L	09-Aug-2022	13-Aug-2022	3 days	4 days	* EHTR	13-Aug-2022	3 days	0 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKUT_WS-3_2022-08_NP	E235.NO3-L	09-Aug-2022	13-Aug-2022	3 days	4 days	* EHTR	13-Aug-2022	3 days	0 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKUT_1_PW-1_2022-08_NP	E235.NO3-L	08-Aug-2022	13-Aug-2022	3 days	5 days	* EHTR	13-Aug-2022	3 days	0 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKUT_1_PW-2_2022-08_NP	E235.NO3-L	08-Aug-2022	13-Aug-2022	3 days	5 days	* EHTR	13-Aug-2022	3 days	0 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKUT_2_PW-1_2022-08_NP	E235.NO3-L	08-Aug-2022	13-Aug-2022	3 days	5 days	* EHTR	13-Aug-2022	3 days	0 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKUT_2_PW-2_2022-08_NP	E235.NO3-L	08-Aug-2022	13-Aug-2022	3 days	5 days	* EHTR	13-Aug-2022	3 days	0 days	✓	



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			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKUT_3_PW-1_2022-08_NP	E235.NO3-L	08-Aug-2022	13-Aug-2022	3 days	5 days	* EHTR	13-Aug-2022	3 days	0 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKUT_3_PW-2_2022-08_NP	E235.NO3-L	08-Aug-2022	13-Aug-2022	3 days	5 days	* EHTR	13-Aug-2022	3 days	0 days	✓	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKDT_1_PW-1_2022-08_NP	E235.NO2-L	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	3 days	4 days	* EHTR-FM	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKDT_1_PW-2_2022-08_NP	E235.NO2-L	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	3 days	4 days	* EHTR-FM	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKDT_2_PW-1_2022-08_NP	E235.NO2-L	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	3 days	4 days	* EHTR-FM	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKDT_2_PW-2_2022-08_NP	E235.NO2-L	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	3 days	4 days	* EHTR-FM	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKDT_3_PW-1_2022-08_NP	E235.NO2-L	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	3 days	4 days	* EHTR-FM	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKDT_3_PW-2_2022-08_NP	E235.NO2-L	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	3 days	4 days	* EHTR-FM	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKDT_WS-1_2022-08_NP"	E235.NO2-L	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	3 days	4 days	* EHTR-FM	



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKDT_WS-2_2022-08_NP	E235.NO2-L	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	3 days	4 days	*	EHTR-FM
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKDT_WS-3_2022-08_NP	E235.NO2-L	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	3 days	4 days	*	EHTR-FM
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKMD_1_PW-1_2022-08_NP	E235.NO2-L	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	3 days	4 days	*	EHTR-FM
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKMD_1_PW-2_2022-08_NP	E235.NO2-L	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	3 days	4 days	*	EHTR-FM
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKMD_2_PW-1_2022-08_NP	E235.NO2-L	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	3 days	4 days	*	EHTR-FM
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKMD_2_PW-2_2022-08_NP	E235.NO2-L	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	3 days	4 days	*	EHTR-FM
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKMD_3_PW-1_2022-08_NP	E235.NO2-L	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	3 days	4 days	*	EHTR-FM
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKMD_3_PW-2_2022-08_NP	E235.NO2-L	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	3 days	4 days	*	EHTR-FM
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKMD_WS-1_2022-08_NP	E235.NO2-L	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	3 days	4 days	*	EHTR-FM



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKMD_WS-2_2022-08_NP	E235.NO2-L	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	3 days	4 days	*	EHTR-FM
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKMD_WS-3_2022-08_NP	E235.NO2-L	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	3 days	4 days	*	EHTR-FM
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKUT_WS-1_2022-08_NP	E235.NO2-L	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	3 days	4 days	*	EHTR-FM
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKUT_WS-2_2022-08_NP	E235.NO2-L	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	3 days	4 days	*	EHTR-FM
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKUT_WS-3_2022-08_NP	E235.NO2-L	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	3 days	4 days	*	EHTR-FM
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKUT_1_PW-1_2022-08_NP	E235.NO2-L	08-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	3 days	5 days	*	EHTR-FM
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKUT_1_PW-2_2022-08_NP	E235.NO2-L	08-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	3 days	5 days	*	EHTR-FM
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKUT_2_PW-1_2022-08_NP	E235.NO2-L	08-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	3 days	5 days	*	EHTR-FM
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKUT_2_PW-2_2022-08_NP	E235.NO2-L	08-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	3 days	5 days	*	EHTR-FM



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKUT_3_PW-1_2022-08_NP	E235.NO2-L	08-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	3 days	5 days	*	EHTR-FM
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKUT_3_PW-2_2022-08_NP	E235.NO2-L	08-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	3 days	5 days	*	EHTR-FM
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKDT_1_PW-1_2022-08_NP	E235.SO4	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	4 days	✓	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKDT_1_PW-2_2022-08_NP	E235.SO4	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	4 days	✓	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKDT_2_PW-1_2022-08_NP	E235.SO4	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	4 days	✓	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKDT_2_PW-2_2022-08_NP	E235.SO4	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	4 days	✓	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKDT_3_PW-1_2022-08_NP	E235.SO4	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	4 days	✓	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKDT_3_PW-2_2022-08_NP	E235.SO4	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	4 days	✓	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKDT_WS-1_2022-08_NP"	E235.SO4	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	4 days	✓	



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			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKDT_WS-2_2022-08_NP	E235.S04	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	4 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKDT_WS-3_2022-08_NP	E235.S04	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	4 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKMD_1_PW-1_2022-08_NP	E235.S04	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	4 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKMD_1_PW-2_2022-08_NP	E235.S04	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	4 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKMD_2_PW-1_2022-08_NP	E235.S04	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	4 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKMD_2_PW-2_2022-08_NP	E235.S04	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	4 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKMD_3_PW-1_2022-08_NP	E235.S04	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	4 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKMD_3_PW-2_2022-08_NP	E235.S04	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	4 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKMD_WS-1_2022-08_NP	E235.S04	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	4 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKMD_WS-2_2022-08_NP	E235.SO4	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	4 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKMD_WS-3_2022-08_NP	E235.SO4	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	4 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKUT_WS-1_2022-08_NP	E235.SO4	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	4 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKUT_WS-2_2022-08_NP	E235.SO4	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	4 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKUT_WS-3_2022-08_NP	E235.SO4	09-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	4 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKUT_1_PW-1_2022-08_NP	E235.SO4	08-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	5 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKUT_1_PW-2_2022-08_NP	E235.SO4	08-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	5 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKUT_2_PW-1_2022-08_NP	E235.SO4	08-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	5 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKUT_2_PW-2_2022-08_NP	E235.SO4	08-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	5 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times Rec Actual		Eval	Analysis Date	Holding Times Rec Actual		Eval	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKUT_3_PW-1_2022-08_NP	E235.SO4	08-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	5 days	✓	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKUT_3_PW-2_2022-08_NP	E235.SO4	08-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	5 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_ERCKDT_1_PW-1_2022-08_NP	E421.Cr-L	09-Aug-2022	19-Aug-2022	----	----		20-Aug-2022	180 days	11 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_ERCKDT_1_PW-2_2022-08_NP	E421.Cr-L	09-Aug-2022	19-Aug-2022	----	----		20-Aug-2022	180 days	11 days	✓	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_ERCKDT_2_PW-1_2022-08_NP	E421.Cr-L	09-Aug-2022	19-Aug-2022	----	----		20-Aug-2022	180 days	11 days	✓	
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Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_ERCKDT_WS-1_2022-08_NP"	E421.Cr-L	09-Aug-2022	19-Aug-2022	----	----		20-Aug-2022	180 days	11 days	✓	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec Actual		Eval	Analysis Date	Holding Times Rec Actual		Eval
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)										
HDPE dissolved (nitric acid) RG_ERCKDT_WS-2_2022-08_NP	E421.Cr-L	09-Aug-2022	19-Aug-2022	----	----		20-Aug-2022	180 days	11 days	✓
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)										
HDPE dissolved (nitric acid) RG_ERCKDT_WS-3_2022-08_NP	E421.Cr-L	09-Aug-2022	19-Aug-2022	----	----		20-Aug-2022	180 days	11 days	✓
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)										
HDPE dissolved (nitric acid) RG_ERCKMD_1_PW-1_2022-08_NP	E421.Cr-L	09-Aug-2022	19-Aug-2022	----	----		20-Aug-2022	180 days	11 days	✓
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)										
HDPE dissolved (nitric acid) RG_ERCKMD_1_PW-2_2022-08_NP	E421.Cr-L	09-Aug-2022	19-Aug-2022	----	----		20-Aug-2022	180 days	11 days	✓
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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE dissolved (nitric acid) RG_ERCKMD_WS-2_2022-08_NP	E421.Cr-L	09-Aug-2022	19-Aug-2022	----	----		20-Aug-2022	180 days	11 days	✓	
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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
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			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
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Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_ERCKMD_3_PW-1_2022-08_NP	E421	09-Aug-2022	19-Aug-2022	----	----		20-Aug-2022	180 days	11 days	✔	
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Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_ERCKMD_WS-1_2022-08_NP	E421	09-Aug-2022	19-Aug-2022	----	----		20-Aug-2022	180 days	11 days	✔	



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_ERCKMD_WS-2_2022-08_NP	E421	09-Aug-2022	19-Aug-2022	----	----		20-Aug-2022	180 days	11 days	✔	
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Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) RG_ERCKUT_WS-1_2022-08_NP	E421	09-Aug-2022	19-Aug-2022	----	----		20-Aug-2022	180 days	11 days	✔	
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HDPE dissolved (nitric acid) RG_ERCKUT_1_PW-1_2022-08_NP	E421	08-Aug-2022	19-Aug-2022	----	----		20-Aug-2022	180 days	12 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
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HDPE dissolved (nitric acid) RG_ERCKUT_2_PW-1_2022-08_NP	E421	08-Aug-2022	19-Aug-2022	----	----		20-Aug-2022	180 days	12 days	✔	
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HDPE dissolved (nitric acid) RG_ERCKUT_2_PW-2_2022-08_NP	E421	08-Aug-2022	19-Aug-2022	----	----		20-Aug-2022	180 days	12 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) RG_ERCKUT_3_PW-1_2022-08_NP	E421	08-Aug-2022	19-Aug-2022	----	----		20-Aug-2022	180 days	12 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) RG_ERCKUT_3_PW-2_2022-08_NP	E421	08-Aug-2022	19-Aug-2022	----	----		20-Aug-2022	180 days	12 days	✓

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended
 EHTR: Exceeded ALS recommended hold time prior to sample receipt.
 Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
Analytical Methods							
Laboratory Duplicates (DUP)							
Bromide in Water by IC (Low Level)	E235.Br-L	601659	2	27	7.4	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	601660	2	27	7.4	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	609957	2	36	5.5	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	609956	2	40	5.0	5.0	✓
Fluoride in Water by IC	E235.F	601658	2	27	7.4	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	601661	2	29	6.9	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	601662	2	29	6.9	5.0	✓
Sulfate in Water by IC	E235.SO4	601663	2	27	7.4	5.0	✓
Laboratory Control Samples (LCS)							
Bromide in Water by IC (Low Level)	E235.Br-L	601659	2	27	7.4	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	601660	2	27	7.4	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	609957	2	36	5.5	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	609956	2	40	5.0	5.0	✓
Fluoride in Water by IC	E235.F	601658	2	27	7.4	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	601661	2	29	6.9	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	601662	2	29	6.9	5.0	✓
Sulfate in Water by IC	E235.SO4	601663	2	27	7.4	5.0	✓
Method Blanks (MB)							
Bromide in Water by IC (Low Level)	E235.Br-L	601659	2	27	7.4	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	601660	2	27	7.4	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	609957	2	36	5.5	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	609956	2	40	5.0	5.0	✓
Fluoride in Water by IC	E235.F	601658	2	27	7.4	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	601661	2	29	6.9	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	601662	2	29	6.9	5.0	✓
Sulfate in Water by IC	E235.SO4	601663	2	27	7.4	5.0	✓
Matrix Spikes (MS)							
Bromide in Water by IC (Low Level)	E235.Br-L	601659	2	27	7.4	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	601660	2	27	7.4	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	609957	2	36	5.5	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	609956	2	40	5.0	5.0	✓
Fluoride in Water by IC	E235.F	601658	2	27	7.4	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	601661	2	29	6.9	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	601662	2	29	6.9	5.0	✓
Sulfate in Water by IC	E235.SO4	601663	2	27	7.4	5.0	✓



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Bromide in Water by IC (Low Level)	E235.Br-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC (Low Level)	E235.Cl-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Dissolved Metals in Water by CRC ICPMS	E421 Calgary - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L Calgary - Environmental	Water	APHA 3030 B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS
Dissolved Hardness (Calculated)	EC100 Calgary - Environmental	Water	APHA 2340B	"Hardness (as CaCO ₃), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Metals Water Filtration	EP421 Calgary - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO ₃ .



QUALITY CONTROL REPORT

Work Order : CG2210765

Page : 1 of 15

Amendment : 1

Client : Teck Coal Limited
Contact : Mike Pope
Address : 421 Pine Avenue
Sparwood BC Canada V0B2G0

Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
Calgary, Alberta Canada T1Y 7B5

Telephone : ----
Project : REGIONAL EFFECTS PROGRAM
PO : VPO00816101
C-O-C number : August EVO LAEMP 2022 PW
Sampler : Tyler Mehler
Site : ----
Quote number : Teck Coal Master Quote
No. of samples received : 27
No. of samples analysed : 27

Telephone : +1 403 407 1800
Date Samples Received : 13-Aug-2022 08:50
Date Analysis Commenced : 13-Aug-2022
Issue Date : 23-Aug-2022 15:39

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
Matrix Spike (MS) Report; Recovery and Data Quality Objectives
Method Blank (MB) Report; Recovery and Data Quality Objectives
Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Table with 3 columns: Signatories, Position, Laboratory Department. Rows include Anthony Calero, Harpreet Chawla, Kevin Baxter, and Millicent Brentnall.



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 601658)											
CG2210765-001	RG_ERCKUT_1_PW-1_20 22-08_NP	fluoride	16984-48-8	E235.F	0.100	mg/L	0.114	0.116	0.002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 601659)											
CG2210765-001	RG_ERCKUT_1_PW-1_20 22-08_NP	bromide	24959-67-9	E235.Br-L	0.250	mg/L	<0.250	<0.250	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 601660)											
CG2210765-001	RG_ERCKUT_1_PW-1_20 22-08_NP	chloride	16887-00-6	E235.Cl-L	0.50	mg/L	5.22	5.24	0.483%	20%	----
Anions and Nutrients (QC Lot: 601661)											
CG2210765-001	RG_ERCKUT_1_PW-1_20 22-08_NP	nitrate (as N)	14797-55-8	E235.NO3-L	0.0250	mg/L	15.3	15.3	0.0372%	20%	----
Anions and Nutrients (QC Lot: 601662)											
CG2210765-001	RG_ERCKUT_1_PW-1_20 22-08_NP	nitrite (as N)	14797-65-0	E235.NO2-L	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 601663)											
CG2210765-001	RG_ERCKUT_1_PW-1_20 22-08_NP	sulfate (as SO4)	14808-79-8	E235.SO4	1.50	mg/L	719	720	0.0740%	20%	----
Anions and Nutrients (QC Lot: 601664)											
CG2210765-021	RG_ERCKMD_2_PW-1_20 22-08_NP	fluoride	16984-48-8	E235.F	0.100	mg/L	0.114	0.112	0.002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 601665)											
CG2210765-021	RG_ERCKMD_2_PW-1_20 22-08_NP	sulfate (as SO4)	14808-79-8	E235.SO4	1.50	mg/L	727	715	1.66%	20%	----
Anions and Nutrients (QC Lot: 601666)											
CG2210765-021	RG_ERCKMD_2_PW-1_20 22-08_NP	bromide	24959-67-9	E235.Br-L	0.250	mg/L	<0.250	<0.250	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 601667)											
CG2210765-021	RG_ERCKMD_2_PW-1_20 22-08_NP	chloride	16887-00-6	E235.Cl-L	0.50	mg/L	5.47	5.38	1.66%	20%	----
Anions and Nutrients (QC Lot: 601668)											
CG2210765-021	RG_ERCKMD_2_PW-1_20 22-08_NP	nitrate (as N)	14797-55-8	E235.NO3-L	0.0250	mg/L	15.6	15.4	1.16%	20%	----
Anions and Nutrients (QC Lot: 601669)											
CG2210765-021	RG_ERCKMD_2_PW-1_20 22-08_NP	nitrite (as N)	14797-65-0	E235.NO2-L	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 609956)											
CG2210758-003	Anonymous	aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0294	0.0289	1.82%	20%	----
		antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 609956) - continued											
CG2210758-003	Anonymous	arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00071	0.00069	0.00002	Diff <2x LOR	----
		barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.225	0.226	0.231%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.000020	mg/L	<0.020 µg/L	<0.000020	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.010	mg/L	0.088	0.090	0.003	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	0.0184 µg/L	0.0000174	0.0000010	Diff <2x LOR	----
		calcium, dissolved	7440-70-2	E421	0.050	mg/L	93.8	94.5	0.704%	20%	----
		cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	0.26 µg/L	0.00027	0.000008	Diff <2x LOR	----
		copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00036	0.00038	0.00002	Diff <2x LOR	----
		iron, dissolved	7439-89-6	E421	0.010	mg/L	0.717	0.717	0.0678%	20%	----
		lead, dissolved	7439-92-1	E421	0.000050	mg/L	0.000051	0.000052	0.0000010	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0476	0.0478	0.504%	20%	----
		magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	44.3	44.2	0.228%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.214	0.214	0.0177%	20%	----
		molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00208	0.00200	3.85%	20%	----
		nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00189	0.00184	0.00004	Diff <2x LOR	----
		potassium, dissolved	7440-09-7	E421	0.050	mg/L	1.84	1.85	0.404%	20%	----
		selenium, dissolved	7782-49-2	E421	0.000050	mg/L	0.646 µg/L	0.000591	8.83%	20%	----
		silicon, dissolved	7440-21-3	E421	0.050	mg/L	5.27	5.28	0.0918%	20%	----
		silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E421	0.050	mg/L	24.6	24.7	0.479%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.737	0.742	0.737%	20%	----
		sulfur, dissolved	7704-34-9	E421	0.50	mg/L	35.9	35.7	0.499%	20%	----
		thallium, dissolved	7440-28-0	E421	0.000010	mg/L	0.000012	0.000011	0.000001	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.00030	mg/L	0.00032	0.00031	0.00002	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.000635	0.000645	1.46%	20%	----
		vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0020	0.0019	0.0001	Diff <2x LOR	----
Dissolved Metals (QC Lot: 609957)											
CG2210758-003	Anonymous	chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 609958)											
CG2210765-016	RG_ERCKDT_WS-1_2022-08_NP"	aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0030	0.0033	0.0003	Diff <2x LOR	----
		antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00021	0.00021	0.000003	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00024	0.00024	0.000003	Diff <2x LOR	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 609958) - continued											
CG2210765-016	RG_ERCKDT_WS-1_2022-08_NP"	barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0617	0.0604	2.15%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.000020	mg/L	<0.020 µg/L	<0.000020	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.010	mg/L	0.013	0.013	0.0002	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	0.0766 µg/L	0.0000794	3.69%	20%	----
		calcium, dissolved	7440-70-2	E421	0.050	mg/L	229	231	0.894%	20%	----
		cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	<0.10 µg/L	<0.00010	0	Diff <2x LOR	----
		copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00021	0.00020	0.000010	Diff <2x LOR	----
		iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0266	0.0271	1.82%	20%	----
		magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	145	142	2.10%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00021	0.00023	0.00002	Diff <2x LOR	----
		molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00112	0.00112	0.193%	20%	----
		nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00082	0.00082	0.000002	Diff <2x LOR	----
		potassium, dissolved	7440-09-7	E421	0.050	mg/L	2.62	2.55	2.60%	20%	----
		selenium, dissolved	7782-49-2	E421	0.000050	mg/L	155 µg/L	0.156	0.270%	20%	----
		silicon, dissolved	7440-21-3	E421	0.050	mg/L	4.14	4.14	0.122%	20%	----
		silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E421	0.050	mg/L	3.54	3.49	1.51%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.206	0.211	1.97%	20%	----
		sulfur, dissolved	7704-34-9	E421	0.50	mg/L	190	189	0.246%	20%	----
		thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00796	0.00808	1.61%	20%	----
		vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0015	0.0017	0.0002	Diff <2x LOR	----
Dissolved Metals (QC Lot: 609959)											
CG2210765-016	RG_ERCKDT_WS-1_2022-08_NP"	chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	0.00020	0.00023	0.00002	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 601658)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 601659)						
bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 601660)						
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	----
Anions and Nutrients (QCLot: 601661)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 601662)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 601663)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 601664)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 601665)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 601666)						
bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 601667)						
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	----
Anions and Nutrients (QCLot: 601668)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 601669)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Dissolved Metals (QCLot: 609956)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 609956) - continued						
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	---
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	---
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	---
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	---
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	---
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	---
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	---
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	---
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	---
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	---
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	---
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	---
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	---
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	---
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	---
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	---
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	---
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	---
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	---
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	---
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	---
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	---
Dissolved Metals (QCLot: 609957)						
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	<0.00010	---
Dissolved Metals (QCLot: 609958)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	---
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	---
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	---
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	---
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	---
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	---
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	---
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	---
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	---
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	---
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	---



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 609958) - continued						
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
Dissolved Metals (QCLot: 609959)						
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	<0.00010	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Water					Laboratory Control Sample (LCS) Report				
					Spike Concentration	Recovery (%) LCS	Recovery Limits (%)		Qualifier
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Anions and Nutrients (QCLot: 601658)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	103	90.0	110	----
Anions and Nutrients (QCLot: 601659)									
bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	107	85.0	115	----
Anions and Nutrients (QCLot: 601660)									
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 601661)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 601662)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 601663)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 601664)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	103	90.0	110	----
Anions and Nutrients (QCLot: 601665)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 601666)									
bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	104	85.0	115	----
Anions and Nutrients (QCLot: 601667)									
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 601668)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 601669)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	100	90.0	110	----
Dissolved Metals (QCLot: 609956)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	100	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	100	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	96.0	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	98.4	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	99.6	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	96.8	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	97.0	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	98.4	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	98.2	80.0	120	----



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Dissolved Metals (QCLot: 609956) - continued									
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	98.8	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	98.9	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	113	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	97.8	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	102	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	99.6	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	101	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	102	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	98.2	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	99.4	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	94.4	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	104	60.0	140	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	98.2	80.0	120	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	104	80.0	120	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	99.9	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	99.5	80.0	120	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	93.3	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	100	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	104	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	99.6	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	99.3	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	95.4	80.0	120	----
Dissolved Metals (QCLot: 609957)									
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	0.25 mg/L	96.3	80.0	120	----
Dissolved Metals (QCLot: 609958)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	102	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	105	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	100	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	101	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	103	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	102	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	103	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	103	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	102	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	102	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	101	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	116	80.0	120	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Dissolved Metals (QCLot: 609958) - continued									
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	103	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	104	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	99.5	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	103	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	107	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	101	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	102	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	98.1	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	106	60.0	140	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	102	80.0	120	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	106	80.0	120	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	104	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	104	80.0	120	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	99.1	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	105	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	100	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	107	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	102	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	97.8	80.0	120	----
Dissolved Metals (QCLot: 609959)									
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	0.25 mg/L	101	80.0	120	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 601658)										
CG2210765-002	RG_ERCKUT_1_PW-2_2022-08_NP	fluoride	16984-48-8	E235.F	0.958 mg/L	1 mg/L	95.8	75.0	125	----
Anions and Nutrients (QCLot: 601659)										
CG2210765-002	RG_ERCKUT_1_PW-2_2022-08_NP	bromide	24959-67-9	E235.Br-L	0.542 mg/L	0.5 mg/L	108	75.0	125	----
Anions and Nutrients (QCLot: 601660)										
CG2210765-002	RG_ERCKUT_1_PW-2_2022-08_NP	chloride	16887-00-6	E235.Cl-L	103 mg/L	100 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 601661)										
CG2210765-002	RG_ERCKUT_1_PW-2_2022-08_NP	nitrate (as N)	14797-55-8	E235.NO3-L	ND mg/L	2.5 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 601662)										
CG2210765-002	RG_ERCKUT_1_PW-2_2022-08_NP	nitrite (as N)	14797-65-0	E235.NO2-L	0.520 mg/L	0.5 mg/L	104	75.0	125	----
Anions and Nutrients (QCLot: 601663)										
CG2210765-002	RG_ERCKUT_1_PW-2_2022-08_NP	sulfate (as SO4)	14808-79-8	E235.SO4	ND mg/L	100 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 601664)										
CG2210765-022	RG_ERCKMD_2_PW-2_2022-08_NP	fluoride	16984-48-8	E235.F	0.909 mg/L	1 mg/L	90.9	75.0	125	----
Anions and Nutrients (QCLot: 601665)										
CG2210765-022	RG_ERCKMD_2_PW-2_2022-08_NP	sulfate (as SO4)	14808-79-8	E235.SO4	ND mg/L	100 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 601666)										
CG2210765-022	RG_ERCKMD_2_PW-2_2022-08_NP	bromide	24959-67-9	E235.Br-L	0.532 mg/L	0.5 mg/L	106	75.0	125	----
Anions and Nutrients (QCLot: 601667)										
CG2210765-022	RG_ERCKMD_2_PW-2_2022-08_NP	chloride	16887-00-6	E235.Cl-L	100 mg/L	100 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 601668)										
CG2210765-022	RG_ERCKMD_2_PW-2_2022-08_NP	nitrate (as N)	14797-55-8	E235.NO3-L	ND mg/L	2.5 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 601669)										
CG2210765-022	RG_ERCKMD_2_PW-2_2022-08_NP	nitrite (as N)	14797-65-0	E235.NO2-L	0.507 mg/L	0.5 mg/L	101	75.0	125	----



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 609956)										
CG2210758-004	Anonymous	aluminum, dissolved	7429-90-5	E421	1.97 mg/L	2 mg/L	98.7	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.203 mg/L	0.2 mg/L	101	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.189 mg/L	0.2 mg/L	94.3	70.0	130	----
		barium, dissolved	7440-39-3	E421	0.186 mg/L	0.2 mg/L	93.0	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.409 mg/L	0.4 mg/L	102	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.100 mg/L	0.1 mg/L	100	70.0	130	----
		boron, dissolved	7440-42-8	E421	1.01 mg/L	1 mg/L	101	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.0406 mg/L	0.04 mg/L	102	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	40 mg/L	ND	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.199 mg/L	0.2 mg/L	99.6	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.201 mg/L	0.2 mg/L	101	70.0	130	----
		iron, dissolved	7439-89-6	E421	20.1 mg/L	20 mg/L	100	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.198 mg/L	0.2 mg/L	99.1	70.0	130	----
		lithium, dissolved	7439-93-2	E421	1.03 mg/L	1 mg/L	103	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	10 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E421	0.202 mg/L	0.2 mg/L	101	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.201 mg/L	0.2 mg/L	100	70.0	130	----
		nickel, dissolved	7440-02-0	E421	0.400 mg/L	0.4 mg/L	99.9	70.0	130	----
		potassium, dissolved	7440-09-7	E421	39.3 mg/L	40 mg/L	98.3	70.0	130	----
		selenium, dissolved	7782-49-2	E421	0.388 mg/L	0.4 mg/L	96.9	70.0	130	----
		silicon, dissolved	7440-21-3	E421	99.4 mg/L	100 mg/L	99.4	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.0438 mg/L	0.04 mg/L	109	70.0	130	----
		sodium, dissolved	7440-23-5	E421	20.5 mg/L	20 mg/L	102	70.0	130	----
		strontium, dissolved	7440-24-6	E421	ND mg/L	0.2 mg/L	ND	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	173 mg/L	200 mg/L	86.3	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.0386 mg/L	0.04 mg/L	96.5	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.199 mg/L	0.2 mg/L	99.4	70.0	130	----
		titanium, dissolved	7440-32-6	E421	0.412 mg/L	0.4 mg/L	103	70.0	130	----
		uranium, dissolved	7440-61-1	E421	0.0398 mg/L	0.04 mg/L	99.6	70.0	130	----
		vanadium, dissolved	7440-62-2	E421	0.990 mg/L	1 mg/L	99.0	70.0	130	----
		zinc, dissolved	7440-66-6	E421	3.96 mg/L	4 mg/L	99.0	70.0	130	----
Dissolved Metals (QCLot: 609957)										
CG2210758-004	Anonymous	chromium, dissolved	7440-47-3	E421.Cr-L	0.396 mg/L	0.4 mg/L	98.9	70.0	130	----
Dissolved Metals (QCLot: 609958)										
CG2210765-017	RG_ERCKDT_WS-2_2022-08_NP	aluminum, dissolved	7429-90-5	E421	2.02 mg/L	2 mg/L	101	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.207 mg/L	0.2 mg/L	103	70.0	130	----



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 609958) - continued										
CG2210765-017	RG_ERCKDT_WS-2_2022-08_NP	arsenic, dissolved	7440-38-2	E421	0.194 mg/L	0.2 mg/L	97.0	70.0	130	----
		barium, dissolved	7440-39-3	E421	0.195 mg/L	0.2 mg/L	97.7	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.411 mg/L	0.4 mg/L	103	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.103 mg/L	0.1 mg/L	103	70.0	130	----
		boron, dissolved	7440-42-8	E421	1.01 mg/L	1 mg/L	101	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.0398 mg/L	0.04 mg/L	99.6	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	40 mg/L	ND	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.200 mg/L	0.2 mg/L	100	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.200 mg/L	0.2 mg/L	99.8	70.0	130	----
		iron, dissolved	7439-89-6	E421	20.0 mg/L	20 mg/L	99.9	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.202 mg/L	0.2 mg/L	101	70.0	130	----
		lithium, dissolved	7439-93-2	E421	1.07 mg/L	1 mg/L	107	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	10 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E421	0.200 mg/L	0.2 mg/L	100	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.208 mg/L	0.2 mg/L	104	70.0	130	----
		nickel, dissolved	7440-02-0	E421	0.394 mg/L	0.4 mg/L	98.4	70.0	130	----
		potassium, dissolved	7440-09-7	E421	39.8 mg/L	40 mg/L	99.5	70.0	130	----
		selenium, dissolved	7782-49-2	E421	0.362 mg/L	0.4 mg/L	90.4	70.0	130	----
		silicon, dissolved	7440-21-3	E421	101 mg/L	100 mg/L	101	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.0442 mg/L	0.04 mg/L	111	70.0	130	----
		sodium, dissolved	7440-23-5	E421	20.9 mg/L	20 mg/L	104	70.0	130	----
		strontium, dissolved	7440-24-6	E421	ND mg/L	0.2 mg/L	ND	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	213 mg/L	200 mg/L	106	70.0	130	----
thallium, dissolved	7440-28-0	E421	0.0397 mg/L	0.04 mg/L	99.3	70.0	130	----		
tin, dissolved	7440-31-5	E421	0.203 mg/L	0.2 mg/L	102	70.0	130	----		
titanium, dissolved	7440-32-6	E421	0.402 mg/L	0.4 mg/L	100	70.0	130	----		
uranium, dissolved	7440-61-1	E421	0.0411 mg/L	0.04 mg/L	103	70.0	130	----		
vanadium, dissolved	7440-62-2	E421	1.01 mg/L	1 mg/L	101	70.0	130	----		
zinc, dissolved	7440-66-6	E421	3.88 mg/L	4 mg/L	97.1	70.0	130	----		
Dissolved Metals (QCLot: 609959)										
CG2210765-017	RG_ERCKDT_WS-2_2022-08_NP	chromium, dissolved	7440-47-3	E421.Cr-L	0.394 mg/L	0.4 mg/L	98.4	70.0	130	----



COC ID:		August EVO LAEMP 2022 PW		TURNAROUND TIME:			
PROJECT/CLIENT INFO				LABORATORY			
Facility Name / Job#		Regional EVO LAEMP		Lab Name		ALS Calgary	
Project Manager		Mike Pope		Lab Contact		Lyudmyla Shvets	
Email		mike.pope@teck.com		Email		lyudmyla.shvets@alsglobal.com	
Address		421 Pine Avenue		Address		2559 29 Street NE	
City		Sparwood		City		Calgary	
Postal Code		VOB 2G0		Postal Code		T1Y 7B5	
Phone Number		343-333-3905		Phone Number		1 403 407 1794	
Province		BC		Province		AB	
Country		Canada		Country		Canada	

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS REQUESTED	
								TECKCOAL-ANIONS	Dissolved metals
RG_ERCKUT_1_PW-1_2022-08_NP	RG_ERCKUT	PW	No	8/8/2022	10:00	G	2	X	X
RG_ERCKUT_1_PW-2_2022-08_NP	RG_ERCKUT	PW	No	8/8/2022	10:15	G	2	X	X
RG_ERCKUT_2_PW-1_2022-08_NP	RG_ERCKUT	PW	No	8/8/2022	10:30	G	2	X	X
RG_ERCKUT_2_PW-2_2022-08_NP	RG_ERCKUT	PW	No	8/8/2022	10:45	G	2	X	X
RG_ERCKUT_3_PW-1_2022-08_NP	RG_ERCKUT	PW	No	8/8/2022	11:00	G	2	X	X
RG_ERCKUT_3_PW-2_2022-08_NP	RG_ERCKUT	PW	No	8/8/2022	11:15	G	2	X	X
RG_ERCKUT_WS-1_2022-08_NP	RG_ERCKUT	PW	No	8/9/2022	11:30	G	2	X	X
RG_ERCKUT_WS-2_2022-08_NP	RG_ERCKUT	PW	No	8/9/2022	11:45	G	2	X	X
RG_ERCKUT_WS-3_2022-08_NP	RG_ERCKUT	PW	No	8/9/2022	12:00	G	2	X	X
RG_ERCKUT_1_PW-1_2022-08_NP	RG_ERCKUT	PW	No	8/9/2022	8:30	G	2	X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/APPELLATION	DATE/TIME	ACCEPTED BY/APPELLATION
ALS PO VPO00816101 Samples for Anions have "Anions" on the label Samples for dissolved metals have "dissolved" on the label	Tyler Mehler		<i>[Signature]</i> 8/13/22

NO OF BOTTLES RETURNED/DESCRIPTION	Sampler's Name	Mobile #
Regular (default) x	Tyler Mehler	
Priority (2-3 business days) - 50% surcharge	Sampler's Signature	Date/Time
Emergency (1 Business Day) - 100% surcharge		
For Emergency <1 Day, ASAP or Weekend - Contact ALS		

Environmental Division
 Calgary
 Work Order Reference
CG2210765



COC ID: August EVO LAEMP 2022 PW		TURNAROUND TIME:	
PROJECT/CLIENT INFO			
Facility Name / Job# Regional EVO LAEMP		Lab Name ALS Calgary	
Project Manager Mike Pope		Lab Contact Lyudmyla Shvets	
Email m.pope@teck.com		Email lyudmyla.shvets@alsglobal.com	
Address 421 Pine Avenue		Address 2559 29 Street NE	
City Sparwood		City Calgary	Province AB
Postal Code V0B 2G0	Province BC	Postal Code T1Y 7B5	Country Canada
Country Canada		Country Canada	
Phone Number 343-333-3905		Phone Number 403 407 1794	

SAMPLE DETAILS								ANALYSIS REQUESTED					
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	TECK COAL-ANIONS	Dissolved metals				
RG_ERCKDT_1_PW-2_2022-08_NP	RG_ERCKDT	PW	No	8/9/2022	8:45	G	2	X	X				
RG_ERCKDT_2_PW-1_2022-08_NP	RG_ERCKDT	PW	No	8/9/2022	9:00	G	2	X	X				
RG_ERCKDT_2_PW-2_2022-08_NP	RG_ERCKDT	PW	No	8/9/2022	9:15	G	2	X	X				
RG_ERCKDT_3_PW-1_2022-08_NP	RG_ERCKDT	PW	No	8/9/2022	9:30	G	2	X	X				
RG_ERCKDT_3_PW-2_2022-08_NP	RG_ERCKDT	PW	No	8/9/2022	9:45	G	2	X	X				
RG_ERCKDT_WS-1_2022-08_NP	RG_ERCKDT	PW	No	8/9/2022	10:00	G	2	X	X				
RG_ERCKDT_WS-2_2022-08_NP	RG_ERCKDT	PW	No	8/9/2022	10:15	G	2	X	X				
RG_ERCKDT_WS-3_2022-08_NP	RG_ERCKDT	PW	No	8/9/2022	10:30	G	2	X	X				
RG_ERCKMD_1_PW-1_2022-08_NP	RG_ERCKMD	PW	No	8/9/2022	13:15	G	2	X	X				
RG_ERCKMD_1_PW-2_2022-08_NP	RG_ERCKMD	PW	No	8/9/2022	13:30	G	2	X	X				

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/REGULATION	DATE/TIME	ACQUPIED BY/AFFILIATION
ALS PO VPO00816101 Samples for Anions have "Anions" on the label Samples for dissolved metals have "dissolved" on the label	Tyler Mehler		

NB OF BOTTLES RETURNED	DESCRIPTION	Sampler's Name	Mobile #
Regular (default) x		Tyler Mehler	
Priority (2-3 business days) - 50% surcharge		Sampler's Signature	Date/Time
Emergency (1 Business Day) - 100% surcharge			
For Emergency <1 Day, ASAP or Weekend - Contact ALS			

COC ID: August EVO LAEMP 2022 PW		TURNAROUND TIME:	
PROJECT/CLIENT INFO			
Facility Name / Job#	Regional EVO LAEMP	LABORATORY	
Project Manager	Mike Pope	Lab Name	ALS Calgary
Email	mpope@teck.com	Lab Contact	Lyudmyla Shvets
Address	421 Pine Avenue	Email	lyudmyla.shvets@alsglobal.com
City	Sparwood	Address	2559 29 Street NE
Postal Code	V0B 2G0	City	Calgary
Province	BC	Province	AB
Country	Canada	Postal Code	T1Y 7B5
Country	Canada	Country	Canada
Phone Number	343-333-3905	Phone Number	1 403 407 1794

SAMPLE DETAILS								ANALYSIS REQUESTED												
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	TECK COAL-ANIONS	Disolved metals											
RG_ERCKMD_2_PW-1_2022-08_NP	RG_ERCKMD	PW	No	8/9/2022	13:45	G	2	X	X											
RG_ERCKMD_2_PW-2_2022-08_NP	RG_ERCKMD	PW	No	8/9/2022	13:47	G	2	X	X											
RG_ERCKMD_3_PW-1_2022-08_NP	RG_ERCKMD	PW	No	8/9/2022	13:50	G	2	X	X											
RG_ERCKMD_3_PW-2_2022-08_NP	RG_ERCKMD	PW	No	8/9/2022	14:00	G	2	X	X											
RG_ERCKMD_WS-1_2022-08_NP	RG_ERCKMD	PW	No	8/9/2022	14:15	G	2	X	X											
RG_ERCKMD_WS-2_2022-08_NP	RG_ERCKMD	PW	No	8/9/2022	14:30	G	2	X	X											
RG_ERCKMD_WS-3_2022-08_NP	RG_ERCKMD	PW	No	8/9/2022	14:45	G	2	X	X											

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
ALS PO VPO00816101 Samples for Anions have "Anions" on the label Samples for dissolved metals have "dissolved" on the label	Tyler Mehler		

NB OF BOTTLES RETURNED/DESCRIPTION	Sampler's Name	Mobile #
Regular (default) x	Tyler Mehler	
Priority (2-3 business days) - 50% surcharge		
Emergency (1 Business Day) - 100% surcharge		
For Emergency <1 Day, ASAP or Weekend - Contact ALS		

CERTIFICATE OF ANALYSIS

Work Order : CG2213425 Amendment : 1 Client : Teck Coal Limited Contact : Mike Pope Address : 421 Pine Avenue Sparwood BC Canada V0B2G0 Telephone : ---- Project : REGIONAL EFFECTS PROGRAM PO : VPO00816101 C-O-C number : September_EVO LAEMP 2022 PW Sampler : TH Site : ---- Quote number : Teck Coal Master Quote No. of samples received : 26 No. of samples analysed : 26	Page : 1 of 14 Laboratory : Calgary - Environmental Account Manager : Lyudmyla Shvets Address : 2559 29th Street NE Calgary AB Canada T1Y 7B5 Telephone : +1 403 407 1800 Date Samples Received : 29-Sep-2022 09:00 Date Analysis Commenced : 30-Sep-2022 Issue Date : 06-Oct-2022 08:18
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This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Anthony Calero	Supervisor - Inorganic	Inorganics, Calgary, Alberta
Anthony Calero	Supervisor - Inorganic	Metals, Calgary, Alberta
Millicent Brentnall	Laboratory Analyst	Metals, Calgary, Alberta
Sara Niroomand		Inorganics, Calgary, Alberta



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

<i>Unit</i>	<i>Description</i>
-	No Unit
µg/L	micrograms per litre
mg/L	milligrams per litre

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

<i>Qualifier</i>	<i>Description</i>
DLDS	Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.



Analytical Results

Sub-Matrix: Water					Client sample ID				
(Matrix: Water)					RG_ERCKDT_1_	RG_ERCKDT_1_	RG_ERCKDT_1_	RG_ERCKDT_2_	RG_ERCKDT_2_
					PW-1_2022-09	PW-2_2022-09	PW-3_2022-09	PW-1_2022-09	PW-2_2022-09
					_NP	_NP	_NP	_NP	_NP
Client sampling date / time					27-Sep-2022	27-Sep-2022	27-Sep-2022	27-Sep-2022	27-Sep-2022
					10:00	10:15	10:18	10:30	10:45
Analyte	CAS Number	Method	LOR	Unit	CG2213425-001	CG2213425-002	CG2213425-003	CG2213425-004	CG2213425-005
					Result	Result	Result	Result	Result
Physical Tests									
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	1190	1270	1210	1250	1200
Anions and Nutrients									
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	5.14	5.16	5.22	5.14	5.11
fluoride	16984-48-8	E235.F	0.020	mg/L	0.111	0.116	0.117	0.112	0.112
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	15.3	15.5	15.5	15.5	15.4
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	723	732	732	732	730
Dissolved Metals									
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	<0.0020 ^{DLDS}	<0.0020 ^{DLDS}	<0.0020 ^{DLDS}	<0.0020 ^{DLDS}	<0.0020 ^{DLDS}
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00039	0.00021	0.00026	0.00026	0.00025
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00028	0.00028	0.00022	<0.00020 ^{DLDS}	0.00028
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0593	0.0670	0.0587	0.0593	0.0596
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.040 ^{DLDS}	<0.040 ^{DLDS}	<0.040 ^{DLDS}	<0.040 ^{DLDS}	<0.040 ^{DLDS}
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000100 ^{DLDS}	<0.000100 ^{DLDS}	<0.000100 ^{DLDS}	<0.000100 ^{DLDS}	<0.000100 ^{DLDS}
boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.020 ^{DLDS}	<0.020 ^{DLDS}	<0.020 ^{DLDS}	<0.020 ^{DLDS}	<0.020 ^{DLDS}
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.0892	0.0826	0.0943	0.0860	0.0812
calcium, dissolved	7440-70-2	E421	0.050	mg/L	240	242	255	269	254
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00020 ^{DLDS}	0.00020	0.00022	<0.00020 ^{DLDS}	<0.00020 ^{DLDS}
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	<0.20 ^{DLDS}	<0.20 ^{DLDS}	<0.20 ^{DLDS}	<0.20 ^{DLDS}	<0.20 ^{DLDS}
copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00040 ^{DLDS}	<0.00040 ^{DLDS}	0.00043	0.00614	<0.00040 ^{DLDS}
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.020 ^{DLDS}	<0.020 ^{DLDS}	<0.020 ^{DLDS}	<0.020 ^{DLDS}	<0.020 ^{DLDS}
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000100 ^{DLDS}	<0.000100 ^{DLDS}	<0.000100 ^{DLDS}	<0.000100 ^{DLDS}	<0.000100 ^{DLDS}
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0230	0.0296	0.0251	0.0273	0.0251
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	143	162	140	140	138
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00033	0.00036	0.00034	<0.00020 ^{DLDS}	<0.00020 ^{DLDS}
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00104	0.00104	0.00112	0.00110	0.00103
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	<0.00100 ^{DLDS}	<0.00100 ^{DLDS}	<0.00100 ^{DLDS}	<0.00100 ^{DLDS}	<0.00100 ^{DLDS}
potassium, dissolved	7440-09-7	E421	0.050	mg/L	2.59	2.89	2.71	2.50	2.59



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKDT_1_ PW-1_2022-09 _NP	RG_ERCKDT_1_ PW-2_2022-09 _NP	RG_ERCKDT_1_ PW-3_2022-09 _NP	RG_ERCKDT_2_ PW-1_2022-09 _NP	RG_ERCKDT_2_ PW-2_2022-09 _NP
Client sampling date / time					27-Sep-2022 10:00	27-Sep-2022 10:15	27-Sep-2022 10:18	27-Sep-2022 10:30	27-Sep-2022 10:45	
Analyte	CAS Number	Method	LOR	Unit	CG2213425-001 Result	CG2213425-002 Result	CG2213425-003 Result	CG2213425-004 Result	CG2213425-005 Result	
Dissolved Metals										
selenium, dissolved	7782-49-2	E421	0.050	µg/L	158	169	164	169	160	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	3.91	4.26	4.11	4.12	3.97	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000020 ^{DLDS}	<0.000020 ^{DLDS}	<0.000020 ^{DLDS}	<0.000020 ^{DLDS}	<0.000020 ^{DLDS}	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	2.94	3.18	2.94	2.88	2.91	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.197	0.229	0.214	0.220	0.207	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	254	254	259	264	254	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000020 ^{DLDS}	<0.000020 ^{DLDS}	<0.000020 ^{DLDS}	<0.000020 ^{DLDS}	<0.000020 ^{DLDS}	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00020 ^{DLDS}	<0.00020 ^{DLDS}	<0.00020 ^{DLDS}	<0.00020 ^{DLDS}	<0.00020 ^{DLDS}	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00060 ^{DLDS}	<0.00060 ^{DLDS}	<0.00060 ^{DLDS}	<0.00060 ^{DLDS}	<0.00060 ^{DLDS}	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00729	0.00766	0.00787	0.00844	0.00786	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00100 ^{DLDS}	<0.00100 ^{DLDS}	<0.00100 ^{DLDS}	<0.00100 ^{DLDS}	<0.00100 ^{DLDS}	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0028	0.0024	0.0022	<0.0020 ^{DLDS}	<0.0020 ^{DLDS}	
dissolved metals filtration location	----	EP421	-	-	Field	Field	Field	Field	Field	

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKDT_2_ PW-3_2022-09 _NP	RG_ERCKDT_3_ PW-1_2022-09 _NP	RG_ERCKDT_3_ PW-2_2022-09 _NP	RG_ERCKDT_W S-1_2022-09_N P	RG_ERCKMD_1 _PW-1_2022-0 9_NP
Client sampling date / time					27-Sep-2022 11:00	27-Sep-2022 11:15	27-Sep-2022 11:18	27-Sep-2022 11:30	27-Sep-2022 10:00	
Analyte	CAS Number	Method	LOR	Unit	CG2213425-006 Result	CG2213425-007 Result	CG2213425-008 Result	CG2213425-009 Result	CG2213425-010 Result	
Physical Tests										
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	1210	1190	1130	1190	1190	
Anions and Nutrients										
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.250 DLDS	<0.250 DLDS	<0.250 DLDS	<0.250 DLDS	<0.250 DLDS	
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	5.16	5.12	5.10	5.19	5.20	
fluoride	16984-48-8	E235.F	0.020	mg/L	0.118	0.110	0.110	0.114	0.114	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	12.2	15.3	15.2	15.5	15.2	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	0.192	<0.0050 DLDS	<0.0050 DLDS	<0.0050 DLDS	<0.0050 DLDS	
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	726	724	718	730	721	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	<0.0020 DLDS	<0.0020 DLDS	<0.0020 DLDS	<0.0020 DLDS	<0.0020 DLDS	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00026	0.00022	0.00021	0.00022	0.00022	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00047	0.00020	0.00023	<0.00020 DLDS	0.00024	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0493	0.0609	0.0574	0.0611	0.0624	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.040 DLDS	<0.040 DLDS	<0.040 DLDS	<0.040 DLDS	<0.040 DLDS	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000100 DLDS	<0.000100 DLDS	<0.000100 DLDS	<0.000100 DLDS	<0.000100 DLDS	
boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.020 DLDS	<0.020 DLDS	<0.020 DLDS	<0.020 DLDS	<0.020 DLDS	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.163	0.0850	0.0871	0.0913	0.0849	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	260	253	239	251	253	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00020 DLDS	<0.00020 DLDS	<0.00020 DLDS	<0.00020 DLDS	<0.00020 DLDS	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	1.00	<0.20 DLDS	<0.20 DLDS	<0.20 DLDS	<0.20 DLDS	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00040 DLDS	<0.00040 DLDS	<0.00040 DLDS	<0.00040 DLDS	<0.00040 DLDS	
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.020 DLDS	<0.020 DLDS	<0.020 DLDS	<0.020 DLDS	<0.020 DLDS	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000100 DLDS	<0.000100 DLDS	<0.000100 DLDS	<0.000100 DLDS	<0.000100 DLDS	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0261	0.0257	0.0258	0.0255	0.0256	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	137	135	129	136	136	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.171	0.00075	0.00119	<0.00020 DLDS	0.00121	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00213	0.00105	0.000979	0.00104	0.00112	
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.0149	<0.00100 DLDS	0.00107	<0.00100 DLDS	0.00109	
potassium, dissolved	7440-09-7	E421	0.050	mg/L	2.88	2.57	2.41	2.52	2.71	
selenium, dissolved	7782-49-2	E421	0.050	µg/L	149	151	157	153	160	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKDT_2_ PW-3_2022-09 _NP	RG_ERCKDT_3_ PW-1_2022-09 _NP	RG_ERCKDT_3_ PW-2_2022-09 _NP	RG_ERCKDT_W S-1_2022-09_N P	RG_ERCKMD_1 _PW-1_2022-0 9_NP
Client sampling date / time					27-Sep-2022 11:00	27-Sep-2022 11:15	27-Sep-2022 11:18	27-Sep-2022 11:30	27-Sep-2022 10:00	
Analyte	CAS Number	Method	LOR	Unit	CG2213425-006	CG2213425-007	CG2213425-008	CG2213425-009	CG2213425-010	
					Result	Result	Result	Result	Result	
Dissolved Metals										
silicon, dissolved	7440-21-3	E421	0.050	mg/L	10.8	3.85	3.80	3.75	3.90	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000020 DLDS	<0.000020 DLDS	<0.000020 DLDS	<0.000020 DLDS	<0.000020 DLDS	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	2.99	2.88	2.72	2.82	2.87	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.230	0.220	0.208	0.212	0.211	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	266	234	239	230	244	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	0.000033	<0.000020 DLDS	<0.000020 DLDS	<0.000020 DLDS	<0.000020 DLDS	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00020 DLDS	<0.00020 DLDS	<0.00020 DLDS	<0.00020 DLDS	<0.00020 DLDS	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00060 DLDS	<0.00060 DLDS	<0.00060 DLDS	<0.00060 DLDS	<0.00060 DLDS	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00852	0.00786	0.00786	0.00794	0.00759	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00100 DLDS	<0.00100 DLDS	<0.00100 DLDS	<0.00100 DLDS	<0.00100 DLDS	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0183	<0.0020 DLDS	<0.0020 DLDS	<0.0020 DLDS	<0.0020 DLDS	
dissolved metals filtration location	----	EP421	-	-	Field	Field	Field	Field	Field	

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKMD_1 _PW-2_2022-0 9_NP	RG_ERCKMD_1 _PW-3_2022-0 9_NP	RG_ERCKMD_2 _PW-1_2022-0 9_NP	RG_ERCKMD_2 _PW-2_2022-0 9_NP	RG_ERCKMD_2 _PW-3_2022-0 9_NP
Client sampling date / time					27-Sep-2022 10:15	27-Sep-2022 10:18	27-Sep-2022 10:30	27-Sep-2022 10:45	27-Sep-2022 11:00	
Analyte	CAS Number	Method	LOR	Unit	CG2213425-011 Result	CG2213425-012 Result	CG2213425-013 Result	CG2213425-014 Result	CG2213425-015 Result	
Physical Tests										
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	1190	1170	1200	1140	1160	
Anions and Nutrients										
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	4.90	5.08	5.14	5.06	5.18	
fluoride	16984-48-8	E235.F	0.020	mg/L	0.112	0.115	0.117	0.113	0.122	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	14.6	15.2	15.4	15.2	15.5	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	702	721	737	720	733	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	<0.0020 ^{DLDS}	<0.0020 ^{DLDS}	<0.0020 ^{DLDS}	<0.0020 ^{DLDS}	<0.0020 ^{DLDS}	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00022	0.00022	0.00022	0.00021	0.00022	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00021	0.00024	<0.00020 ^{DLDS}	0.00020	0.00028	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0639	0.0630	0.0632	0.0653	0.0669	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.040 ^{DLDS}	<0.040 ^{DLDS}	<0.040 ^{DLDS}	<0.040 ^{DLDS}	<0.040 ^{DLDS}	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000100 ^{DLDS}	<0.000100 ^{DLDS}	<0.000100 ^{DLDS}	<0.000100 ^{DLDS}	<0.000100 ^{DLDS}	
boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.020 ^{DLDS}	<0.020 ^{DLDS}	<0.020 ^{DLDS}	<0.020 ^{DLDS}	<0.020 ^{DLDS}	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.0832	0.101	0.0529	0.0695	0.0974	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	254	247	252	241	243	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00020 ^{DLDS}	0.00021	0.00025	<0.00020 ^{DLDS}	<0.00020 ^{DLDS}	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	<0.20 ^{DLDS}	<0.20 ^{DLDS}	<0.20 ^{DLDS}	<0.20 ^{DLDS}	<0.20 ^{DLDS}	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00046	<0.00040 ^{DLDS}	<0.00040 ^{DLDS}	<0.00040 ^{DLDS}	<0.00040 ^{DLDS}	
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.020 ^{DLDS}	<0.020 ^{DLDS}	<0.020 ^{DLDS}	<0.020 ^{DLDS}	0.039	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000100 ^{DLDS}	<0.000100 ^{DLDS}	<0.000100 ^{DLDS}	<0.000100 ^{DLDS}	<0.000100 ^{DLDS}	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0259	0.0249	0.0250	0.0266	0.0256	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	135	134	138	131	135	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00097	0.00054	0.00040	0.00055	0.00200	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00102	0.00104	0.00106	0.000927	0.00105	
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00112	0.00106	<0.00100 ^{DLDS}	<0.00100 ^{DLDS}	0.00122	
potassium, dissolved	7440-09-7	E421	0.050	mg/L	2.51	2.50	2.56	2.51	2.65	
selenium, dissolved	7782-49-2	E421	0.050	µg/L	162	156	157	155	162	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKMD_1 _PW-2_2022-0 9_NP	RG_ERCKMD_1 _PW-3_2022-0 9_NP	RG_ERCKMD_2 _PW-1_2022-0 9_NP	RG_ERCKMD_2 _PW-2_2022-0 9_NP	RG_ERCKMD_2 _PW-3_2022-0 9_NP
Client sampling date / time					27-Sep-2022 10:15	27-Sep-2022 10:18	27-Sep-2022 10:30	27-Sep-2022 10:45	27-Sep-2022 11:00	
Analyte	CAS Number	Method	LOR	Unit	CG2213425-011	CG2213425-012	CG2213425-013	CG2213425-014	CG2213425-015	
					Result	Result	Result	Result	Result	
Dissolved Metals										
silicon, dissolved	7440-21-3	E421	0.050	mg/L	4.00	4.06	4.02	3.69	3.93	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000020 DLDS	<0.000020 DLDS	<0.000020 DLDS	<0.000020 DLDS	<0.000020 DLDS	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	2.89	2.86	2.92	2.75	2.83	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.214	0.213	0.211	0.206	0.214	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	249	258	252	233	244	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000020 DLDS	<0.000020 DLDS	<0.000020 DLDS	<0.000020 DLDS	<0.000020 DLDS	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00020 DLDS	<0.00020 DLDS	<0.00020 DLDS	<0.00020 DLDS	<0.00020 DLDS	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00060 DLDS	<0.00060 DLDS	<0.00060 DLDS	<0.00060 DLDS	<0.00060 DLDS	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00808	0.00809	0.00804	0.00764	0.00807	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00100 DLDS	<0.00100 DLDS	<0.00100 DLDS	<0.00100 DLDS	<0.00100 DLDS	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0022	<0.0020 DLDS	<0.0020 DLDS	<0.0020 DLDS	<0.0020 DLDS	
dissolved metals filtration location	----	EP421	-	-	Field	Field	Field	Field	Field	

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKMD_3 _PW-1_2022-0 9_NP	RG_ERCKMD_3 _PW-2_2022-0 9_NP	RG_ERCKMD_3 _PW-3_2022-0 9_NP	RG_ERCKMD_ WS-1_2022-09 _NP	RG_ERCKUT_1_ PW-1_2022-09 _NP
Client sampling date / time					27-Sep-2022 11:15	27-Sep-2022 11:18	27-Sep-2022 11:28	27-Sep-2022 11:30	27-Sep-2022 10:00	
Analyte	CAS Number	Method	LOR	Unit	CG2213425-016 Result	CG2213425-017 Result	CG2213425-018 Result	CG2213425-019 Result	CG2213425-020 Result	
Physical Tests										
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	1240	1220	1120	1390	1180	
Anions and Nutrients										
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	5.11	5.13	5.12	5.13	5.20	
fluoride	16984-48-8	E235.F	0.020	mg/L	0.113	0.112	0.116	0.113	0.117	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	15.3	15.4	15.5	15.5	15.4	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	727	730	735	734	728	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	<0.0020 ^{DLDS}	<0.0020 ^{DLDS}	<0.0020 ^{DLDS}	<0.0020 ^{DLDS}	<0.0020 ^{DLDS}	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00022	0.00023	0.00021	0.00023	0.00021	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	<0.00020 ^{DLDS}	0.00024	<0.00020 ^{DLDS}	0.00023	0.00020	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0661	0.0739	0.0670	0.0723	0.0633	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.040 ^{DLDS}	<0.040 ^{DLDS}	<0.040 ^{DLDS}	<0.040 ^{DLDS}	<0.040 ^{DLDS}	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000100 ^{DLDS}	<0.000100 ^{DLDS}	<0.000100 ^{DLDS}	<0.000100 ^{DLDS}	<0.000100 ^{DLDS}	
boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.020 ^{DLDS}	<0.020 ^{DLDS}	<0.020 ^{DLDS}	<0.020 ^{DLDS}	<0.020 ^{DLDS}	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.0833	0.101	0.112	0.0960	0.102	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	267	260	237	298	246	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00020 ^{DLDS}	<0.00020 ^{DLDS}	0.00024	<0.00020 ^{DLDS}	<0.00020 ^{DLDS}	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	<0.20 ^{DLDS}	<0.20 ^{DLDS}	<0.20 ^{DLDS}	<0.20 ^{DLDS}	<0.20 ^{DLDS}	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00040 ^{DLDS}	<0.00040 ^{DLDS}	<0.00040 ^{DLDS}	<0.00040 ^{DLDS}	<0.00040 ^{DLDS}	
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.020 ^{DLDS}	<0.020 ^{DLDS}	<0.020 ^{DLDS}	<0.020 ^{DLDS}	<0.020 ^{DLDS}	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000100 ^{DLDS}	<0.000100 ^{DLDS}	<0.000100 ^{DLDS}	<0.000100 ^{DLDS}	<0.000100 ^{DLDS}	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0265	0.0275	0.0246	0.0293	0.0259	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	140	140	129	156	138	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00061	0.00209	0.00186	0.00041	0.00023	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00109	0.00137	0.000965	0.00119	0.00101	
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00106	0.00105	0.00113	0.00113	<0.00100 ^{DLDS}	
potassium, dissolved	7440-09-7	E421	0.050	mg/L	2.57	2.64	2.42	2.80	2.67	
selenium, dissolved	7782-49-2	E421	0.050	µg/L	161	154	148	176	167	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKMD_3 _PW-1_2022-0 9_NP	RG_ERCKMD_3 _PW-2_2022-0 9_NP	RG_ERCKMD_3 _PW-3_2022-0 9_NP	RG_ERCKMD_ WS-1_2022-09 _NP	RG_ERCKUT_1_ PW-1_2022-09 _NP
Client sampling date / time					27-Sep-2022 11:15	27-Sep-2022 11:18	27-Sep-2022 11:28	27-Sep-2022 11:30	27-Sep-2022 10:00	
Analyte	CAS Number	Method	LOR	Unit	CG2213425-016 Result	CG2213425-017 Result	CG2213425-018 Result	CG2213425-019 Result	CG2213425-020 Result	
Dissolved Metals										
silicon, dissolved	7440-21-3	E421	0.050	mg/L	4.10	3.90	3.65	4.58	4.01	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000020 ^{DLDS}	<0.000020 ^{DLDS}	<0.000020 ^{DLDS}	<0.000020 ^{DLDS}	<0.000020 ^{DLDS}	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	2.95	2.90	2.72	3.21	2.88	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.221	0.222	0.206	0.249	0.211	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	260	238	225	286	255	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000020 ^{DLDS}	<0.000020 ^{DLDS}	<0.000020 ^{DLDS}	<0.000020 ^{DLDS}	<0.000020 ^{DLDS}	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00020 ^{DLDS}	<0.00020 ^{DLDS}	<0.00020 ^{DLDS}	<0.00020 ^{DLDS}	<0.00020 ^{DLDS}	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00060 ^{DLDS}	<0.00060 ^{DLDS}	<0.00060 ^{DLDS}	<0.00060 ^{DLDS}	<0.00060 ^{DLDS}	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00798	0.00811	0.00747	0.00906	0.00789	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00100 ^{DLDS}	<0.00100 ^{DLDS}	<0.00100 ^{DLDS}	<0.00100 ^{DLDS}	<0.00100 ^{DLDS}	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0020 ^{DLDS}	<0.0020 ^{DLDS}	<0.0020 ^{DLDS}	0.0021	0.0026	
dissolved metals filtration location	----	EP421	-	-	Field	Field	Field	Field	Field	

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKUT_1_ PW-2_2022-09 _NP	RG_ERCKUT_2_ PW-1_2022-09 _NP	RG_ERCKUT_2_ PW-2_2022-09 _NP	RG_ERCKUT_3_ PW-1_2022-09 _NP	RG_ERCKUT_3_ PW-2_2022-09 _NP
Client sampling date / time					27-Sep-2022 10:15	27-Sep-2022 10:30	27-Sep-2022 10:32	27-Sep-2022 10:36	27-Sep-2022 11:00	
Analyte	CAS Number	Method	LOR	Unit	CG2213425-021 Result	CG2213425-022 Result	CG2213425-023 Result	CG2213425-024 Result	CG2213425-025 Result	
Physical Tests										
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	1200	1240	1240	1210	1060	
Anions and Nutrients										
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.250 DLDS	<0.250 DLDS	<0.250 DLDS	<0.250 DLDS	<0.250 DLDS	
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	5.12	5.06	5.17	5.08	5.11	
fluoride	16984-48-8	E235.F	0.020	mg/L	0.115	0.111	0.115	0.112	0.111	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	15.3	15.2	15.6	15.4	15.4	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0050 DLDS	<0.0050 DLDS	<0.0050 DLDS	<0.0050 DLDS	<0.0050 DLDS	
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	725	720	746	726	730	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	<0.0020 DLDS	<0.0020 DLDS	<0.0020 DLDS	<0.0020 DLDS	<0.0020 DLDS	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00040	0.00030	0.00026	0.00025	0.00021	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00023	0.00025	0.00023	0.00023	0.00022	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0658	0.0665	0.0632	0.0647	0.0588	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.040 DLDS	<0.040 DLDS	<0.040 DLDS	<0.040 DLDS	<0.040 DLDS	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000100 DLDS	<0.000100 DLDS	<0.000100 DLDS	<0.000100 DLDS	<0.000100 DLDS	
boron, dissolved	7440-42-8	E421	0.010	mg/L	0.400	<0.020 DLDS	<0.020 DLDS	0.763	0.020	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.0891	0.108	0.0881	0.0885	0.0824	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	247	256	268	255	221	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	0.00020	<0.00020 DLDS	<0.00020 DLDS	<0.00020 DLDS	<0.00020 DLDS	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	<0.20 DLDS	<0.20 DLDS	<0.20 DLDS	<0.20 DLDS	<0.20 DLDS	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00040 DLDS	<0.00040 DLDS	<0.00040 DLDS	<0.00040 DLDS	<0.00040 DLDS	
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.020 DLDS	<0.020 DLDS	<0.020 DLDS	<0.020 DLDS	<0.020 DLDS	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000100 DLDS	<0.000100 DLDS	<0.000100 DLDS	<0.000100 DLDS	<0.000100 DLDS	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0251	0.0278	0.0273	0.0254	0.0227	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	141	145	139	140	124	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	<0.00020 DLDS	<0.00020 DLDS	<0.00020 DLDS	<0.00020 DLDS	<0.00020 DLDS	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00104	0.00107	0.00107	0.00100	0.000865	
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	<0.00100 DLDS	<0.00100 DLDS	<0.00100 DLDS	<0.00100 DLDS	<0.00100 DLDS	
potassium, dissolved	7440-09-7	E421	0.050	mg/L	2.57	2.72	2.57	2.48	2.28	
selenium, dissolved	7782-49-2	E421	0.050	µg/L	157	164	157	155	150	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKUT_1_ PW-2_2022-09 _NP	RG_ERCKUT_2_ PW-1_2022-09 _NP	RG_ERCKUT_2_ PW-2_2022-09 _NP	RG_ERCKUT_3_ PW-1_2022-09 _NP	RG_ERCKUT_3_ PW-2_2022-09 _NP
Client sampling date / time					27-Sep-2022 10:15	27-Sep-2022 10:30	27-Sep-2022 10:32	27-Sep-2022 10:36	27-Sep-2022 11:00	
Analyte	CAS Number	Method	LOR	Unit	CG2213425-021	CG2213425-022	CG2213425-023	CG2213425-024	CG2213425-025	
					Result	Result	Result	Result	Result	
Dissolved Metals										
silicon, dissolved	7440-21-3	E421	0.050	mg/L	3.95	3.96	3.88	3.87	3.48	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000020 ^{DLDS}	<0.000020 ^{DLDS}	<0.000020 ^{DLDS}	<0.000020 ^{DLDS}	<0.000020 ^{DLDS}	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	2.90	3.00	2.84	2.83	2.57	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.199	0.216	0.219	0.209	0.188	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	255	260	254	258	230	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000020 ^{DLDS}	<0.000020 ^{DLDS}	<0.000020 ^{DLDS}	<0.000020 ^{DLDS}	<0.000020 ^{DLDS}	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00020 ^{DLDS}	<0.00020 ^{DLDS}	<0.00020 ^{DLDS}	<0.00020 ^{DLDS}	<0.00020 ^{DLDS}	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00060 ^{DLDS}	<0.00060 ^{DLDS}	<0.00060 ^{DLDS}	<0.00060 ^{DLDS}	<0.00060 ^{DLDS}	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00727	0.00784	0.00800	0.00797	0.00710	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00100 ^{DLDS}	<0.00100 ^{DLDS}	<0.00100 ^{DLDS}	<0.00100 ^{DLDS}	<0.00100 ^{DLDS}	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0021	<0.0020 ^{DLDS}	<0.0020 ^{DLDS}	0.0034	<0.0020 ^{DLDS}	
dissolved metals filtration location	----	EP421	-	-	Field	Field	Field	Field	Field	

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKUT_W S-1_2022-09_N P	----	----	----	----
Client sampling date / time					27-Sep-2022 10:00	----	----	----	----	
Analyte	CAS Number	Method	LOR	Unit	CG2213425-026	-----	-----	-----	-----	
					Result	----	----	----	----	
Physical Tests										
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	1260	----	----	----	----	
Anions and Nutrients										
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.250 ^{DLDS}	----	----	----	----	
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	5.13	----	----	----	----	
fluoride	16984-48-8	E235.F	0.020	mg/L	0.113	----	----	----	----	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	15.5	----	----	----	----	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0050 ^{DLDS}	----	----	----	----	
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	733	----	----	----	----	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	<0.0020 ^{DLDS}	----	----	----	----	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00024	----	----	----	----	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00022	----	----	----	----	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0656	----	----	----	----	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.040 ^{DLDS}	----	----	----	----	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000100 ^{DLDS}	----	----	----	----	
boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.020 ^{DLDS}	----	----	----	----	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.0995	----	----	----	----	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	266	----	----	----	----	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00020 ^{DLDS}	----	----	----	----	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	<0.20 ^{DLDS}	----	----	----	----	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00040 ^{DLDS}	----	----	----	----	
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.020 ^{DLDS}	----	----	----	----	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000100 ^{DLDS}	----	----	----	----	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0276	----	----	----	----	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	146	----	----	----	----	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	<0.00020 ^{DLDS}	----	----	----	----	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00106	----	----	----	----	
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	<0.00100 ^{DLDS}	----	----	----	----	
potassium, dissolved	7440-09-7	E421	0.050	mg/L	2.59	----	----	----	----	
selenium, dissolved	7782-49-2	E421	0.050	µg/L	156	----	----	----	----	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKUT_W S-1_2022-09_N P	----	----	----	----
Client sampling date / time					27-Sep-2022 10:00	----	----	----	----	
Analyte	CAS Number	Method	LOR	Unit	CG2213425-026	-----	-----	-----	-----	
					Result	----	----	----	----	
Dissolved Metals										
silicon, dissolved	7440-21-3	E421	0.050	mg/L	3.86	----	----	----	----	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000020 ^{DLDS}	----	----	----	----	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	2.94	----	----	----	----	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.220	----	----	----	----	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	255	----	----	----	----	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000020 ^{DLDS}	----	----	----	----	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00020 ^{DLDS}	----	----	----	----	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00060 ^{DLDS}	----	----	----	----	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00841	----	----	----	----	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00100 ^{DLDS}	----	----	----	----	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0020 ^{DLDS}	----	----	----	----	
dissolved metals filtration location	----	EP421	-	-	Field	----	----	----	----	

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: CG2213425	Page	: 1 of 28
Amendment	: 1		
Client	: Teck Coal Limited	Laboratory	: Calgary - Environmental
Contact	: Mike Pope	Account Manager	: Lyudmyla Shvets
Address	: 421 Pine Avenue Sparwood BC Canada V0B2G0	Address	: 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5
Telephone	: ----	Telephone	: +1 403 407 1800
Project	: REGIONAL EFFECTS PROGRAM	Date Samples Received	: 29-Sep-2022 09:00
PO	: VPO00816101	Issue Date	: 06-Oct-2022 08:19
C-O-C number	: September_EVO LAEMP 2022 PW		
Sampler	: TH		
Site	: ----		
Quote number	: Teck Coal Master Quote		
No. of samples received	: 26		
No. of samples analysed	: 26		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKDT_1_PW-1_2022-09_NP	E235.Br-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKDT_1_PW-2_2022-09_NP	E235.Br-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKDT_1_PW-3_2022-09_NP	E235.Br-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKDT_2_PW-1_2022-09_NP	E235.Br-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKDT_2_PW-2_2022-09_NP	E235.Br-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKDT_2_PW-3_2022-09_NP	E235.Br-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKDT_3_PW-1_2022-09_NP	E235.Br-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKDT_3_PW-2_2022-09_NP	E235.Br-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKDT_WS-1_2022-09_NP	E235.Br-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKMD_1_PW-1_2022-09_NP	E235.Br-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKMD_1_PW-2_2022-09_NP	E235.Br-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKMD_1_PW-3_2022-09_NP	E235.Br-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKMD_2_PW-1_2022-09_NP	E235.Br-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKMD_2_PW-2_2022-09_NP	E235.Br-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKMD_2_PW-3_2022-09_NP	E235.Br-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKMD_3_PW-1_2022-09_NP	E235.Br-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKMD_3_PW-2_2022-09_NP	E235.Br-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKMD_3_PW-3_2022-09_NP	E235.Br-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKMD_WS-1_2022-09_NP	E235.Br-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKUT_1_PW-1_2022-09_NP	E235.Br-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKUT_1_PW-2_2022-09_NP	E235.Br-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKUT_2_PW-1_2022-09_NP	E235.Br-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKUT_2_PW-2_2022-09_NP	E235.Br-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKUT_3_PW-1_2022-09_NP	E235.Br-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKUT_3_PW-2_2022-09_NP	E235.Br-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKUT_WS-1_2022-09_NP	E235.Br-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKDT_1_PW-1_2022-09_NP	E235.Cl-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKDT_1_PW-2_2022-09_NP	E235.Cl-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKDT_1_PW-3_2022-09_NP	E235.Cl-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKDT_2_PW-1_2022-09_NP	E235.Cl-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKDT_2_PW-2_2022-09_NP	E235.Cl-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKDT_2_PW-3_2022-09_NP	E235.Cl-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKDT_3_PW-1_2022-09_NP	E235.Cl-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKDT_3_PW-2_2022-09_NP	E235.Cl-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec Actual		Eval	Analysis Date	Holding Times Rec Actual		Eval
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_ERCKDT_WS-1_2022-09_NP	E235.CI-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_ERCKMD_1_PW-1_2022-09_NP	E235.CI-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_ERCKMD_1_PW-2_2022-09_NP	E235.CI-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_ERCKMD_1_PW-3_2022-09_NP	E235.CI-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_ERCKMD_2_PW-1_2022-09_NP	E235.CI-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_ERCKMD_2_PW-2_2022-09_NP	E235.CI-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_ERCKMD_2_PW-3_2022-09_NP	E235.CI-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_ERCKMD_3_PW-1_2022-09_NP	E235.CI-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_ERCKMD_3_PW-2_2022-09_NP	E235.CI-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_ERCKMD_3_PW-3_2022-09_NP	E235.CI-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_ERCKMD_WS-1_2022-09_NP	E235.CI-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_ERCKUT_1_PW-1_2022-09_NP	E235.CI-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_ERCKUT_1_PW-2_2022-09_NP	E235.CI-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_ERCKUT_2_PW-1_2022-09_NP	E235.CI-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_ERCKUT_2_PW-2_2022-09_NP	E235.CI-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_ERCKUT_3_PW-1_2022-09_NP	E235.CI-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_ERCKUT_3_PW-2_2022-09_NP	E235.CI-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_ERCKUT_WS-1_2022-09_NP	E235.CI-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKDT_1_PW-1_2022-09_NP	E235.F	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKDT_1_PW-2_2022-09_NP	E235.F	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKDT_1_PW-3_2022-09_NP	E235.F	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKDT_2_PW-1_2022-09_NP	E235.F	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKDT_2_PW-2_2022-09_NP	E235.F	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKDT_2_PW-3_2022-09_NP	E235.F	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKDT_3_PW-1_2022-09_NP	E235.F	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKDT_3_PW-2_2022-09_NP	E235.F	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKDT_WS-1_2022-09_NP	E235.F	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔	



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKMD_1_PW-1_2022-09_NP	E235.F	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKMD_1_PW-2_2022-09_NP	E235.F	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKMD_1_PW-3_2022-09_NP	E235.F	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKMD_2_PW-1_2022-09_NP	E235.F	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKMD_2_PW-2_2022-09_NP	E235.F	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKMD_2_PW-3_2022-09_NP	E235.F	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKMD_3_PW-1_2022-09_NP	E235.F	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKMD_3_PW-2_2022-09_NP	E235.F	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKMD_3_PW-3_2022-09_NP	E235.F	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔	



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKMD_WS-1_2022-09_NP	E235.F	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✓	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKUT_1_PW-1_2022-09_NP	E235.F	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✓	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKUT_1_PW-2_2022-09_NP	E235.F	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✓	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKUT_2_PW-1_2022-09_NP	E235.F	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✓	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKUT_2_PW-2_2022-09_NP	E235.F	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✓	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKUT_3_PW-1_2022-09_NP	E235.F	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✓	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKUT_3_PW-2_2022-09_NP	E235.F	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✓	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKUT_WS-1_2022-09_NP	E235.F	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKDT_1_PW-1_2022-09_NP	E235.NO3-L	27-Sep-2022	30-Sep-2022	3 days	3 days	✓	30-Sep-2022	3 days	0 days	✓	



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKDT_1_PW-2_2022-09_NP	E235.NO3-L	27-Sep-2022	30-Sep-2022	3 days	3 days	✔	30-Sep-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKDT_1_PW-3_2022-09_NP	E235.NO3-L	27-Sep-2022	30-Sep-2022	3 days	3 days	✔	30-Sep-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKDT_2_PW-1_2022-09_NP	E235.NO3-L	27-Sep-2022	30-Sep-2022	3 days	3 days	✔	30-Sep-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKDT_2_PW-2_2022-09_NP	E235.NO3-L	27-Sep-2022	30-Sep-2022	3 days	3 days	✔	30-Sep-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKDT_2_PW-3_2022-09_NP	E235.NO3-L	27-Sep-2022	30-Sep-2022	3 days	3 days	✔	30-Sep-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKDT_3_PW-1_2022-09_NP	E235.NO3-L	27-Sep-2022	30-Sep-2022	3 days	3 days	✔	30-Sep-2022	3 days	0 days	✔	
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HDPE RG_ERCKDT_3_PW-2_2022-09_NP	E235.NO3-L	27-Sep-2022	30-Sep-2022	3 days	3 days	✔	30-Sep-2022	3 days	0 days	✔	
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HDPE RG_ERCKDT_WS-1_2022-09_NP	E235.NO3-L	27-Sep-2022	30-Sep-2022	3 days	3 days	✔	30-Sep-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKMD_1_PW-1_2022-09_NP	E235.NO3-L	27-Sep-2022	30-Sep-2022	3 days	3 days	✔	30-Sep-2022	3 days	0 days	✔	



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKMD_1_PW-2_2022-09_NP	E235.NO3-L	27-Sep-2022	30-Sep-2022	3 days	3 days	✔	30-Sep-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKMD_1_PW-3_2022-09_NP	E235.NO3-L	27-Sep-2022	30-Sep-2022	3 days	3 days	✔	30-Sep-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKMD_2_PW-1_2022-09_NP	E235.NO3-L	27-Sep-2022	30-Sep-2022	3 days	3 days	✔	30-Sep-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKMD_2_PW-2_2022-09_NP	E235.NO3-L	27-Sep-2022	30-Sep-2022	3 days	3 days	✔	30-Sep-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKMD_2_PW-3_2022-09_NP	E235.NO3-L	27-Sep-2022	30-Sep-2022	3 days	3 days	✔	30-Sep-2022	3 days	0 days	✔	
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HDPE RG_ERCKMD_3_PW-1_2022-09_NP	E235.NO3-L	27-Sep-2022	30-Sep-2022	3 days	3 days	✔	30-Sep-2022	3 days	0 days	✔	
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HDPE RG_ERCKMD_3_PW-2_2022-09_NP	E235.NO3-L	27-Sep-2022	30-Sep-2022	3 days	3 days	✔	30-Sep-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKMD_3_PW-3_2022-09_NP	E235.NO3-L	27-Sep-2022	30-Sep-2022	3 days	3 days	✔	30-Sep-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKMD_WS-1_2022-09_NP	E235.NO3-L	27-Sep-2022	30-Sep-2022	3 days	3 days	✔	30-Sep-2022	3 days	0 days	✔	



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			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKUT_1_PW-1_2022-09_NP	E235.NO3-L	27-Sep-2022	30-Sep-2022	3 days	3 days	✔	30-Sep-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKUT_1_PW-2_2022-09_NP	E235.NO3-L	27-Sep-2022	30-Sep-2022	3 days	3 days	✔	30-Sep-2022	3 days	0 days	✔	
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HDPE RG_ERCKUT_2_PW-1_2022-09_NP	E235.NO3-L	27-Sep-2022	30-Sep-2022	3 days	3 days	✔	30-Sep-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKUT_2_PW-2_2022-09_NP	E235.NO3-L	27-Sep-2022	30-Sep-2022	3 days	3 days	✔	30-Sep-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKUT_3_PW-1_2022-09_NP	E235.NO3-L	27-Sep-2022	30-Sep-2022	3 days	3 days	✔	30-Sep-2022	3 days	0 days	✔	
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HDPE RG_ERCKUT_3_PW-2_2022-09_NP	E235.NO3-L	27-Sep-2022	30-Sep-2022	3 days	3 days	✔	30-Sep-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKUT_WS-1_2022-09_NP	E235.NO3-L	27-Sep-2022	30-Sep-2022	3 days	3 days	✔	30-Sep-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKDT_1_PW-1_2022-09_NP	E235.NO2-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	3 days	3 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKDT_1_PW-2_2022-09_NP	E235.NO2-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	3 days	3 days	✔	



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Anions and Nutrients : Nitrite in Water by IC (Low Level)											
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HDPE RG_ERCKDT_3_PW-2_2022-09_NP	E235.NO2-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	3 days	3 days	✔	
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HDPE RG_ERCKDT_WS-1_2022-09_NP	E235.NO2-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	3 days	3 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKMD_1_PW-1_2022-09_NP	E235.NO2-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	3 days	3 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKMD_1_PW-2_2022-09_NP	E235.NO2-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	3 days	3 days	✔	



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HDPE RG_ERCKMD_1_PW-3_2022-09_NP	E235.NO2-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	3 days	3 days	✔	
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HDPE RG_ERCKMD_2_PW-2_2022-09_NP	E235.NO2-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	3 days	3 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKMD_2_PW-3_2022-09_NP	E235.NO2-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	3 days	3 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKMD_3_PW-1_2022-09_NP	E235.NO2-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	3 days	3 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKMD_3_PW-2_2022-09_NP	E235.NO2-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	3 days	3 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKMD_3_PW-3_2022-09_NP	E235.NO2-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	3 days	3 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKMD_WS-1_2022-09_NP	E235.NO2-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	3 days	3 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKUT_1_PW-1_2022-09_NP	E235.NO2-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	3 days	3 days	✔	



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKUT_1_PW-2_2022-09_NP	E235.NO2-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	3 days	3 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKUT_2_PW-1_2022-09_NP	E235.NO2-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	3 days	3 days	✔	
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HDPE RG_ERCKUT_2_PW-2_2022-09_NP	E235.NO2-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	3 days	3 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKUT_3_PW-1_2022-09_NP	E235.NO2-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	3 days	3 days	✔	
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HDPE RG_ERCKUT_3_PW-2_2022-09_NP	E235.NO2-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	3 days	3 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKUT_WS-1_2022-09_NP	E235.NO2-L	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	3 days	3 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKDT_1_PW-1_2022-09_NP	E235.SO4	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKDT_1_PW-2_2022-09_NP	E235.SO4	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKDT_1_PW-3_2022-09_NP	E235.SO4	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔	



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			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKDT_2_PW-1_2022-09_NP	E235.S04	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKDT_2_PW-2_2022-09_NP	E235.S04	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKDT_2_PW-3_2022-09_NP	E235.S04	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKDT_3_PW-1_2022-09_NP	E235.S04	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔	
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HDPE RG_ERCKDT_WS-1_2022-09_NP	E235.S04	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKMD_1_PW-1_2022-09_NP	E235.S04	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKMD_1_PW-2_2022-09_NP	E235.S04	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKMD_1_PW-3_2022-09_NP	E235.S04	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔	



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Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKUT_1_PW-1_2022-09_NP	E235.S04	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔	
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HDPE RG_ERCKUT_1_PW-2_2022-09_NP	E235.S04	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔	



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			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
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HDPE RG_ERCKUT_2_PW-2_2022-09_NP	E235.SO4	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔	
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HDPE RG_ERCKUT_WS-1_2022-09_NP	E235.SO4	27-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	28 days	3 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKDT_1_PW-1_2022-09_NP	E421.Cr-L	27-Sep-2022	03-Oct-2022	----	----		04-Oct-2022	180 days	7 days	✔	
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HDPE - dissolved (lab preserved) RG_ERCKMD_3_PW-3_2022-09_NP	E421	27-Sep-2022	03-Oct-2022	----	----		04-Oct-2022	180 days	7 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ERCKMD_WS-1_2022-09_NP	E421	27-Sep-2022	03-Oct-2022	----	----		04-Oct-2022	180 days	7 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ERCKUT_1_PW-1_2022-09_NP	E421	27-Sep-2022	03-Oct-2022	----	----		04-Oct-2022	180 days	7 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ERCKUT_1_PW-2_2022-09_NP	E421	27-Sep-2022	03-Oct-2022	----	----		04-Oct-2022	180 days	7 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ERCKUT_2_PW-1_2022-09_NP	E421	27-Sep-2022	03-Oct-2022	----	----		04-Oct-2022	180 days	7 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ERCKUT_2_PW-2_2022-09_NP	E421	27-Sep-2022	03-Oct-2022	----	----		04-Oct-2022	180 days	7 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved) RG_ERCKUT_3_PW-1_2022-09_NP	E421	27-Sep-2022	03-Oct-2022	----	----		04-Oct-2022	180 days	7 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved) RG_ERCKUT_3_PW-2_2022-09_NP	E421	27-Sep-2022	03-Oct-2022	----	----		04-Oct-2022	180 days	7 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved) RG_ERCKUT_WS-1_2022-09_NP	E421	27-Sep-2022	03-Oct-2022	----	----		04-Oct-2022	180 days	7 days	✓

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
Analytical Methods							
Laboratory Duplicates (DUP)							
Bromide in Water by IC (Low Level)	E235.Br-L	674025	2	26	7.6	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	674026	2	26	7.6	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	678338	2	26	7.6	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	678339	2	26	7.6	5.0	✓
Fluoride in Water by IC	E235.F	674024	2	26	7.6	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	674027	2	26	7.6	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	674028	2	26	7.6	5.0	✓
Sulfate in Water by IC	E235.SO4	674029	2	26	7.6	5.0	✓
Laboratory Control Samples (LCS)							
Bromide in Water by IC (Low Level)	E235.Br-L	674025	2	26	7.6	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	674026	2	26	7.6	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	678338	2	26	7.6	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	678339	2	26	7.6	5.0	✓
Fluoride in Water by IC	E235.F	674024	2	26	7.6	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	674027	2	26	7.6	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	674028	2	26	7.6	5.0	✓
Sulfate in Water by IC	E235.SO4	674029	2	26	7.6	5.0	✓
Method Blanks (MB)							
Bromide in Water by IC (Low Level)	E235.Br-L	674025	2	26	7.6	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	674026	2	26	7.6	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	678338	2	26	7.6	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	678339	2	26	7.6	5.0	✓
Fluoride in Water by IC	E235.F	674024	2	26	7.6	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	674027	2	26	7.6	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	674028	2	26	7.6	5.0	✓
Sulfate in Water by IC	E235.SO4	674029	2	26	7.6	5.0	✓
Matrix Spikes (MS)							
Bromide in Water by IC (Low Level)	E235.Br-L	674025	2	26	7.6	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	674026	2	26	7.6	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	678338	2	26	7.6	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	678339	2	26	7.6	5.0	✓
Fluoride in Water by IC	E235.F	674024	2	26	7.6	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	674027	2	26	7.6	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	674028	2	26	7.6	5.0	✓
Sulfate in Water by IC	E235.SO4	674029	2	26	7.6	5.0	✓



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Bromide in Water by IC (Low Level)	E235.Br-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC (Low Level)	E235.Cl-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Dissolved Metals in Water by CRC ICPMS	E421 Calgary - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L Calgary - Environmental	Water	APHA 3030 B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS
Dissolved Hardness (Calculated)	EC100 Calgary - Environmental	Water	APHA 2340B	"Hardness (as CaCO ₃), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Metals Water Filtration	EP421 Calgary - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO ₃ .



QUALITY CONTROL REPORT

Work Order : CG2213425

Page : 1 of 15

Amendment : 1

Client : Teck Coal Limited
Contact : Mike Pope
Address : 421 Pine Avenue
Sparwood BC Canada V0B2G0

Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
Calgary, Alberta Canada T1Y 7B5

Telephone : ----
Project : REGIONAL EFFECTS PROGRAM
PO : VPO00816101
C-O-C number : September_EVO LAEMP 2022 PW
Sampler : TH
Site : ----
Quote number : Teck Coal Master Quote
No. of samples received : 26
No. of samples analysed : 26

Telephone : +1 403 407 1800
Date Samples Received : 29-Sep-2022 09:00
Date Analysis Commenced : 30-Sep-2022
Issue Date : 06-Oct-2022 08:19

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
Matrix Spike (MS) Report; Recovery and Data Quality Objectives
Method Blank (MB) Report; Recovery and Data Quality Objectives
Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Table with 3 columns: Signatories, Position, Laboratory Department. Rows include Anthony Calero (Supervisor - Inorganic), Millicent Brentnall (Laboratory Analyst), and Sara Niroomand (Laboratory Analyst).



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 674024)											
CG2213425-001	RG_ERCKDT_1_PW-1_20 22-09_NP	fluoride	16984-48-8	E235.F	0.100	mg/L	0.111	0.114	0.004	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 674025)											
CG2213425-001	RG_ERCKDT_1_PW-1_20 22-09_NP	bromide	24959-67-9	E235.Br-L	0.250	mg/L	<0.250	<0.250	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 674026)											
CG2213425-001	RG_ERCKDT_1_PW-1_20 22-09_NP	chloride	16887-00-6	E235.Cl-L	0.50	mg/L	5.14	5.12	0.185%	20%	----
Anions and Nutrients (QC Lot: 674027)											
CG2213425-001	RG_ERCKDT_1_PW-1_20 22-09_NP	nitrate (as N)	14797-55-8	E235.NO3-L	0.0250	mg/L	15.3	15.2	0.491%	20%	----
Anions and Nutrients (QC Lot: 674028)											
CG2213425-001	RG_ERCKDT_1_PW-1_20 22-09_NP	nitrite (as N)	14797-65-0	E235.NO2-L	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 674029)											
CG2213425-001	RG_ERCKDT_1_PW-1_20 22-09_NP	sulfate (as SO4)	14808-79-8	E235.SO4	1.50	mg/L	723	719	0.493%	20%	----
Anions and Nutrients (QC Lot: 674030)											
CG2213425-021	RG_ERCKUT_1_PW-2_20 22-09_NP	fluoride	16984-48-8	E235.F	0.100	mg/L	0.115	0.119	0.004	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 674031)											
CG2213425-021	RG_ERCKUT_1_PW-2_20 22-09_NP	sulfate (as SO4)	14808-79-8	E235.SO4	1.50	mg/L	725	731	0.876%	20%	----
Anions and Nutrients (QC Lot: 674032)											
CG2213425-021	RG_ERCKUT_1_PW-2_20 22-09_NP	bromide	24959-67-9	E235.Br-L	0.250	mg/L	<0.250	<0.250	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 674033)											
CG2213425-021	RG_ERCKUT_1_PW-2_20 22-09_NP	chloride	16887-00-6	E235.Cl-L	0.50	mg/L	5.12	5.17	0.988%	20%	----
Anions and Nutrients (QC Lot: 674034)											
CG2213425-021	RG_ERCKUT_1_PW-2_20 22-09_NP	nitrate (as N)	14797-55-8	E235.NO3-L	0.0250	mg/L	15.3	15.4	0.763%	20%	----
Anions and Nutrients (QC Lot: 674035)											
CG2213425-021	RG_ERCKUT_1_PW-2_20 22-09_NP	nitrite (as N)	14797-65-0	E235.NO2-L	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 678338)											
CG2213425-001	RG_ERCKDT_1_PW-1_20 22-09_NP	chromium, dissolved	7440-47-3	E421.Cr-L	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 678339)											



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 678339) - continued											
CG2213425-001	RG_ERCKDT_1_PW-1_2022-09_NP	aluminum, dissolved	7429-90-5	E421	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----
		antimony, dissolved	7440-36-0	E421	0.00020	mg/L	0.00039	0.00034	0.00005	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E421	0.00020	mg/L	0.00028	0.00023	0.00005	Diff <2x LOR	----
		barium, dissolved	7440-39-3	E421	0.00020	mg/L	0.0593	0.0596	0.603%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.000040	mg/L	<0.040 µg/L	<0.000040	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.020	mg/L	<0.020	0.021	0.001	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E421	0.0000100	mg/L	0.0892 µg/L	0.0000793	0.0000099	Diff <2x LOR	----
		calcium, dissolved	7440-70-2	E421	0.100	mg/L	240	265	9.96%	20%	----
		cobalt, dissolved	7440-48-4	E421	0.00020	mg/L	<0.20 µg/L	<0.00020	0	Diff <2x LOR	----
		copper, dissolved	7440-50-8	E421	0.00040	mg/L	<0.00040	<0.00040	0	Diff <2x LOR	----
		iron, dissolved	7439-89-6	E421	0.020	mg/L	<0.020	<0.020	0	Diff <2x LOR	----
		lead, dissolved	7439-92-1	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0020	mg/L	0.0230	0.0264	14.1%	20%	----
		magnesium, dissolved	7439-95-4	E421	0.0100	mg/L	143	144	0.745%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00020	mg/L	0.00033	0.00049	0.00016	Diff <2x LOR	----
		molybdenum, dissolved	7439-98-7	E421	0.000100	mg/L	0.00104	0.00111	6.50%	20%	----
		nickel, dissolved	7440-02-0	E421	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		potassium, dissolved	7440-09-7	E421	0.100	mg/L	2.59	2.60	0.498%	20%	----
		selenium, dissolved	7782-49-2	E421	0.000100	mg/L	158 µg/L	0.162	2.92%	20%	----
		silicon, dissolved	7440-21-3	E421	0.100	mg/L	3.91	4.11	5.07%	20%	----
		silver, dissolved	7440-22-4	E421	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E421	0.100	mg/L	2.94	3.02	2.64%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00040	mg/L	0.197	0.223	12.1%	20%	----
		sulfur, dissolved	7704-34-9	E421	1.00	mg/L	254	264	3.92%	20%	----
		thallium, dissolved	7440-28-0	E421	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.00060	mg/L	<0.00060	<0.00060	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000020	mg/L	0.00729	0.00791	8.11%	20%	----
		vanadium, dissolved	7440-62-2	E421	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E421	0.0020	mg/L	0.0028	0.0041	0.0012	Diff <2x LOR	----
Dissolved Metals (QC Lot: 678340)											
CG2213425-021	RG_ERCKUT_1_PW-2_2022-09_NP	aluminum, dissolved	7429-90-5	E421	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----
		antimony, dissolved	7440-36-0	E421	0.00020	mg/L	0.00040	0.00034	0.00006	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E421	0.00020	mg/L	0.00023	<0.00020	0.00003	Diff <2x LOR	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 678340) - continued											
CG2213425-021	RG_ERCKUT_1_PW-2_2022-09_NP	barium, dissolved	7440-39-3	E421	0.00020	mg/L	0.0658	0.0609	7.74%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.000040	mg/L	<0.040 µg/L	<0.000040	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.020	mg/L	0.400	0.414	3.59%	20%	----
		cadmium, dissolved	7440-43-9	E421	0.0000100	mg/L	0.0891 µg/L	0.000105	0.0000162	Diff <2x LOR	----
		calcium, dissolved	7440-70-2	E421	0.100	mg/L	247	246	0.617%	20%	----
		cobalt, dissolved	7440-48-4	E421	0.00020	mg/L	<0.20 µg/L	<0.00020	0	Diff <2x LOR	----
		copper, dissolved	7440-50-8	E421	0.00040	mg/L	<0.00040	<0.00040	0	Diff <2x LOR	----
		iron, dissolved	7439-89-6	E421	0.020	mg/L	<0.020	<0.020	0	Diff <2x LOR	----
		lead, dissolved	7439-92-1	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0020	mg/L	0.0251	0.0255	1.74%	20%	----
		magnesium, dissolved	7439-95-4	E421	0.0100	mg/L	141	138	1.87%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00020	mg/L	<0.00020	0.00026	0.00006	Diff <2x LOR	----
		molybdenum, dissolved	7439-98-7	E421	0.000100	mg/L	0.00104	0.00105	0.869%	20%	----
		nickel, dissolved	7440-02-0	E421	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		potassium, dissolved	7440-09-7	E421	0.100	mg/L	2.57	2.50	2.60%	20%	----
		selenium, dissolved	7782-49-2	E421	0.000100	mg/L	157 µg/L	0.155	1.32%	20%	----
		silicon, dissolved	7440-21-3	E421	0.100	mg/L	3.95	3.88	1.67%	20%	----
		silver, dissolved	7440-22-4	E421	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E421	0.100	mg/L	2.90	2.84	1.98%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00040	mg/L	0.199	0.204	2.27%	20%	----
		sulfur, dissolved	7704-34-9	E421	1.00	mg/L	255	247	3.01%	20%	----
		thallium, dissolved	7440-28-0	E421	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.00060	mg/L	<0.00060	<0.00060	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000020	mg/L	0.00727	0.00754	3.68%	20%	----
		vanadium, dissolved	7440-62-2	E421	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E421	0.0020	mg/L	0.0021	0.0024	0.0002	Diff <2x LOR	----
Dissolved Metals (QC Lot: 678341)											
CG2213425-021	RG_ERCKUT_1_PW-2_2022-09_NP	chromium, dissolved	7440-47-3	E421.Cr-L	0.00020	mg/L	0.00020	<0.00020	0.0000003	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 674024)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 674025)						
bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 674026)						
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	----
Anions and Nutrients (QCLot: 674027)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 674028)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 674029)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 674030)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 674031)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 674032)						
bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 674033)						
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	----
Anions and Nutrients (QCLot: 674034)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 674035)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Dissolved Metals (QCLot: 678338)						
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	<0.00010	----
Dissolved Metals (QCLot: 678339)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	----



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 678339) - continued						
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	---
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	---
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	---
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	---
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	---
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	---
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	---
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	---
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	---
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	---
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	---
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	---
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	---
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	---
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	---
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	---
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	---
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	---
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	---
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	---
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	---
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	---
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	---
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	---
Dissolved Metals (QCLot: 678340)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	---
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	---
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	---
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	---
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	---
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	---
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	---
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	---
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	---
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	---
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	---



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 678340) - continued						
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
Dissolved Metals (QCLot: 678341)						
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	<0.00010	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Anions and Nutrients (QCLot: 674024)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	98.6	90.0	110	----
Anions and Nutrients (QCLot: 674025)									
bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	99.3	85.0	115	----
Anions and Nutrients (QCLot: 674026)									
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	97.7	90.0	110	----
Anions and Nutrients (QCLot: 674027)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	98.2	90.0	110	----
Anions and Nutrients (QCLot: 674028)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	98.6	90.0	110	----
Anions and Nutrients (QCLot: 674029)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	98.6	90.0	110	----
Anions and Nutrients (QCLot: 674030)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	98.0	90.0	110	----
Anions and Nutrients (QCLot: 674031)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	98.5	90.0	110	----
Anions and Nutrients (QCLot: 674032)									
bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	99.1	85.0	115	----
Anions and Nutrients (QCLot: 674033)									
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	97.6	90.0	110	----
Anions and Nutrients (QCLot: 674034)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	98.1	90.0	110	----
Anions and Nutrients (QCLot: 674035)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	98.4	90.0	110	----
Dissolved Metals (QCLot: 678338)									
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	0.25 mg/L	97.8	80.0	120	----
Dissolved Metals (QCLot: 678339)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	101	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	99.4	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	94.4	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	97.8	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	87.1	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	96.7	80.0	120	----



Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 678339) - continued									
boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	107	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	94.9	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	100.0	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	95.6	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	94.5	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	91.0	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	99.5	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	99.5	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	100	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	95.5	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	98.2	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	95.8	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	99.4	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	92.6	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	102	60.0	140	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	94.3	80.0	120	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	99.9	80.0	120	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	95.5	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	106	80.0	120	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	96.6	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	96.6	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	96.4	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	98.3	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	101	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	90.2	80.0	120	----
Dissolved Metals (QCLot: 678340)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	98.8	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	98.0	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	94.8	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	104	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	94.1	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	89.5	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	98.5	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	94.7	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	97.5	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	96.2	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	95.5	80.0	120	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Dissolved Metals (QCLot: 678340) - continued									
iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	93.8	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	97.2	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	93.6	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	95.1	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	94.0	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	95.0	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	98.3	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	98.3	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	94.6	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	102	60.0	140	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	95.8	80.0	120	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	106	80.0	120	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	97.3	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	96.3	80.0	120	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	90.9	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	96.4	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	98.2	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	99.1	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	100	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	88.1	80.0	120	----
Dissolved Metals (QCLot: 678341)									
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	0.25 mg/L	97.0	80.0	120	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level $\geq 1x$ spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 674024)										
CG2213425-002	RG_ERCKDT_1_PW-2_2022-09_NP	fluoride	16984-48-8	E235.F	0.801 mg/L	1 mg/L	80.1	75.0	125	----
Anions and Nutrients (QCLot: 674025)										
CG2213425-002	RG_ERCKDT_1_PW-2_2022-09_NP	bromide	24959-67-9	E235.Br-L	0.503 mg/L	0.5 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 674026)										
CG2213425-002	RG_ERCKDT_1_PW-2_2022-09_NP	chloride	16887-00-6	E235.Cl-L	98.8 mg/L	100 mg/L	98.8	75.0	125	----
Anions and Nutrients (QCLot: 674027)										
CG2213425-002	RG_ERCKDT_1_PW-2_2022-09_NP	nitrate (as N)	14797-55-8	E235.NO3-L	ND mg/L	2.5 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 674028)										
CG2213425-002	RG_ERCKDT_1_PW-2_2022-09_NP	nitrite (as N)	14797-65-0	E235.NO2-L	0.495 mg/L	0.5 mg/L	99.0	75.0	125	----
Anions and Nutrients (QCLot: 674029)										
CG2213425-002	RG_ERCKDT_1_PW-2_2022-09_NP	sulfate (as SO4)	14808-79-8	E235.SO4	ND mg/L	100 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 674030)										
CG2213425-022	RG_ERCKUT_2_PW-1_2022-09_NP	fluoride	16984-48-8	E235.F	0.828 mg/L	1 mg/L	82.8	75.0	125	----
Anions and Nutrients (QCLot: 674031)										
CG2213425-022	RG_ERCKUT_2_PW-1_2022-09_NP	sulfate (as SO4)	14808-79-8	E235.SO4	ND mg/L	100 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 674032)										
CG2213425-022	RG_ERCKUT_2_PW-1_2022-09_NP	bromide	24959-67-9	E235.Br-L	0.510 mg/L	0.5 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 674033)										
CG2213425-022	RG_ERCKUT_2_PW-1_2022-09_NP	chloride	16887-00-6	E235.Cl-L	100 mg/L	100 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 674034)										
CG2213425-022	RG_ERCKUT_2_PW-1_2022-09_NP	nitrate (as N)	14797-55-8	E235.NO3-L	ND mg/L	2.5 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 674035)										
CG2213425-022	RG_ERCKUT_2_PW-1_2022-09_NP	nitrite (as N)	14797-65-0	E235.NO2-L	0.502 mg/L	0.5 mg/L	100	75.0	125	----



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 678338)										
CG2213425-002	RG_ERCKDT_1_PW-2_2022-09_NP	chromium, dissolved	7440-47-3	E421.Cr-L	0.363 mg/L	0.4 mg/L	90.8	70.0	130	----
Dissolved Metals (QCLot: 678339)										
CG2213425-002	RG_ERCKDT_1_PW-2_2022-09_NP	aluminum, dissolved	7429-90-5	E421	1.80 mg/L	2 mg/L	90.2	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.175 mg/L	0.2 mg/L	87.3	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.183 mg/L	0.2 mg/L	91.4	70.0	130	----
		barium, dissolved	7440-39-3	E421	0.169 mg/L	0.2 mg/L	84.7	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.349 mg/L	0.4 mg/L	87.4	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.0861 mg/L	0.1 mg/L	86.1	70.0	130	----
		boron, dissolved	7440-42-8	E421	0.893 mg/L	1 mg/L	89.3	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.0364 mg/L	0.04 mg/L	90.9	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	40 mg/L	ND	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.181 mg/L	0.2 mg/L	90.7	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.181 mg/L	0.2 mg/L	90.6	70.0	130	----
		iron, dissolved	7439-89-6	E421	17.5 mg/L	20 mg/L	87.6	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.187 mg/L	0.2 mg/L	93.5	70.0	130	----
		lithium, dissolved	7439-93-2	E421	0.819 mg/L	1 mg/L	81.9	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	10 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E421	0.189 mg/L	0.2 mg/L	94.3	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.176 mg/L	0.2 mg/L	88.0	70.0	130	----
		nickel, dissolved	7440-02-0	E421	0.358 mg/L	0.4 mg/L	89.6	70.0	130	----
		potassium, dissolved	7440-09-7	E421	35.9 mg/L	40 mg/L	89.8	70.0	130	----
		selenium, dissolved	7782-49-2	E421	0.322 mg/L	0.4 mg/L	80.4	70.0	130	----
		silicon, dissolved	7440-21-3	E421	86.0 mg/L	100 mg/L	86.0	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.0368 mg/L	0.04 mg/L	91.9	70.0	130	----
		sodium, dissolved	7440-23-5	E421	17.2 mg/L	20 mg/L	85.8	70.0	130	----
		strontium, dissolved	7440-24-6	E421	ND mg/L	0.2 mg/L	ND	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	ND mg/L	200 mg/L	ND	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.0347 mg/L	0.04 mg/L	86.8	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.170 mg/L	0.2 mg/L	85.0	70.0	130	----
		titanium, dissolved	7440-32-6	E421	0.357 mg/L	0.4 mg/L	89.3	70.0	130	----
		uranium, dissolved	7440-61-1	E421	0.0346 mg/L	0.04 mg/L	86.6	70.0	130	----
		vanadium, dissolved	7440-62-2	E421	0.912 mg/L	1 mg/L	91.2	70.0	130	----
		zinc, dissolved	7440-66-6	E421	3.66 mg/L	4 mg/L	91.4	70.0	130	----
Dissolved Metals (QCLot: 678340)										
CG2213425-022	RG_ERCKUT_2_PW-1_2022-09_NP	aluminum, dissolved	7429-90-5	E421	1.91 mg/L	2 mg/L	95.6	70.0	130	----



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 678340) - continued										
CG2213425-022	RG_ERCKUT_2_PW-1_202 2-09_NP	antimony, dissolved	7440-36-0	E421	0.208 mg/L	0.2 mg/L	104	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.193 mg/L	0.2 mg/L	96.7	70.0	130	----
		barium, dissolved	7440-39-3	E421	0.211 mg/L	0.2 mg/L	105	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.394 mg/L	0.4 mg/L	98.6	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.0972 mg/L	0.1 mg/L	97.2	70.0	130	----
		boron, dissolved	7440-42-8	E421	0.952 mg/L	1 mg/L	95.2	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.0400 mg/L	0.04 mg/L	100.0	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	40 mg/L	ND	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.196 mg/L	0.2 mg/L	98.2	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.196 mg/L	0.2 mg/L	98.3	70.0	130	----
		iron, dissolved	7439-89-6	E421	18.4 mg/L	20 mg/L	92.1	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.204 mg/L	0.2 mg/L	102	70.0	130	----
		lithium, dissolved	7439-93-2	E421	1.06 mg/L	1 mg/L	106	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	10 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E421	0.194 mg/L	0.2 mg/L	97.2	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.205 mg/L	0.2 mg/L	103	70.0	130	----
		nickel, dissolved	7440-02-0	E421	0.399 mg/L	0.4 mg/L	99.7	70.0	130	----
		potassium, dissolved	7440-09-7	E421	39.3 mg/L	40 mg/L	98.2	70.0	130	----
		selenium, dissolved	7782-49-2	E421	0.402 mg/L	0.4 mg/L	100	70.0	130	----
		silicon, dissolved	7440-21-3	E421	98.3 mg/L	100 mg/L	98.3	70.0	130	----
silver, dissolved	7440-22-4	E421	0.0437 mg/L	0.04 mg/L	109	70.0	130	----		
sodium, dissolved	7440-23-5	E421	19.0 mg/L	20 mg/L	95.3	70.0	130	----		
strontium, dissolved	7440-24-6	E421	ND mg/L	0.2 mg/L	ND	70.0	130	----		
sulfur, dissolved	7704-34-9	E421	ND mg/L	200 mg/L	ND	70.0	130	----		
thallium, dissolved	7440-28-0	E421	0.0385 mg/L	0.04 mg/L	96.2	70.0	130	----		
tin, dissolved	7440-31-5	E421	0.204 mg/L	0.2 mg/L	102	70.0	130	----		
titanium, dissolved	7440-32-6	E421	0.386 mg/L	0.4 mg/L	96.4	70.0	130	----		
uranium, dissolved	7440-61-1	E421	0.0418 mg/L	0.04 mg/L	104	70.0	130	----		
vanadium, dissolved	7440-62-2	E421	1.01 mg/L	1 mg/L	101	70.0	130	----		
zinc, dissolved	7440-66-6	E421	3.66 mg/L	4 mg/L	91.4	70.0	130	----		
Dissolved Metals (QCLot: 678341)										
CG2213425-022	RG_ERCKUT_2_PW-1_202 2-09_NP	chromium, dissolved	7440-47-3	E421.Cr-L	0.394 mg/L	0.4 mg/L	98.6	70.0	130	----



COC ID: *September*
~~August~~ EVO LAEMP 2022 PW

TURNAROUND TIME:

PROJECT/CLIENT INFO

LABORATORY

Facility Name / Job# Regional EVO LAEMP
Project Manager Mike Pope
Email mike.pope@teck.com
Address 421 Pine Avenue

Lab Name ALS Calgary
Lab Contact Lyudmyla Shvets
Email lyudmyla.shvets@alsglobal.com
Address 2559 29 Street NE

Excel	PDF	EDD
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
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<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

City Sparwood Province BC
Postal Code V0B 2G0 Country Canada
Phone Number 343-333-3905

City Calgary Province AB
Postal Code T1Y 7B5 Country Canada
Phone Number 1 403 407 1794

SAMPLE DETAILS

ANALYSIS REQUESTED

Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS REQUESTED	
								TECKCOAL-ANIONS	Dissolved metals
1	RG_ERCKDT_1_PW-1_2022-09_NP	PW	No	9/27/2022	10:00	G	2	X	X
2	RG_ERCKDT_1_PW-2_2022-09_NP	PW	No	9/27/2022	10:15	G	2	X	X
3	RG_ERCKDT_1_PW-3_2022-09_NP	PW	No	9/27/2022	10:18	G	2	X	X
4	RG_ERCKDT_2_PW-1_2022-09_NP	PW	No	9/27/2022	10:30	G	2	X	X
5	RG_ERCKDT_2_PW-2_2022-09_NP	PW	No	9/27/2022	10:45	G	2	X	X
6	RG_ERCKDT_2_PW-3_2022-09_NP	PW	No	9/27/2022	11:00	G	2	X	X
7	RG_ERCKDT_3_PW-1_2022-09_NP	PW	No	9/27/2022	11:15	G	2	X	X
8	RG_ERCKDT_3_PW-2_2022-09_NP	PW	No	9/27/2022	11:18	G	2	X	X
9	RG_ERCKDT_WS-1_2022-09_NP	PW	No	9/27/2022	11:30	G	2	X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS

RELINQUISHED BY/AFFILIATION

DATE/TIME

ACCEPTED BY/AFFILIATION

ALS PO VPO00816101
Samples for Anions have "Anions" on the label
Samples for dissolved metals have "dissolved" on the label. Dissolved Metals Need Preserved. Three pages for COC.

Tyler Mehler

NC

29/09/22 0900

NB OF BOTTLES RETURNED/DESCRIPTION

Regular (default) x
Priority (2-3 business days) - 50% surcharge
Emergency (1 Business Day) - 100% surcharge
For Emergency <1 Day, ASAP or Weekend - Contact ALS

Sampler's Name

Tyler Mehler

Mobile #

587-597-1612

Sampler's Signature

TM

Date/Time

9/27/2022

Environmental Division
Calgary
Work Order Reference
CG2213425



Telephone : +1 403 407 1600

8°C

COC ID: September August EVO LAEMP 2022 PW		TURNAROUND TIME:	
PROJECT/CLIENT INFO			
Facility Name / Job#	Regional EVO LAEMP		LABORATORY
Project Manager	Mike Pope	Lab Name	ALS Calgary
Email	mike.pope@teck.com	Lab Contact	Lyudmyla Shvets
Address	421 Pine Avenue	Email	lyudmyla.shvets@alsglobal.com
City	Sparwood	Province	AB
Postal Code	V0B 2G0	Country	Canada
Phone Number	343-333-3905	City	Calgary
		Postal Code	T1Y 7B5
		Phone Number	1 403 407 1794

SAMPLE DETAILS									ANALYSIS REQUESTED													
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.															
10	RG_ERCKMD_1_PW-1_2022-09_NP	RG_ERCKMD	PW	No	9/27/2022	10:00	G	2														
11	RG_ERCKMD_1_PW-2_2022-09_NP	RG_ERCKMD	PW	No	9/27/2022	10:15	G	2														
12	RG_ERCKMD_1_PW-3_2022-09_NP	RG_ERCKMD	PW	No	9/27/2022	10:18	G	2														
13	RG_ERCKMD_2_PW-1_2022-09_NP	RG_ERCKMD	PW	No	9/27/2022	10:30	G	2														
14	RG_ERCKMD_2_PW-2_2022-09_NP	RG_ERCKMD	PW	No	9/27/2022	10:45	G	2														
15	RG_ERCKMD_2_PW-3_2022-09_NP	RG_ERCKMD	PW	No	9/27/2022	11:00	G	2														
16	RG_ERCKMD_3_PW-1_2022-09_NP	RG_ERCKMD	PW	No	9/27/2022	11:15	G	2														
17	RG_ERCKMD_3_PW-2_2022-09_NP	RG_ERCKMD	PW	No	9/27/2022	11:18	G	2														
18	RG_ERCKMD_3_PW-3_2022-09_NP	RG_ERCKMD	PW	No	9/27/2022	11:28	G	2														
19	RG_ERCKMD_WS-1_2022-09_NP	RG_ERCKMD	PW	No	9/27/2022	11:30	G	2														

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
ALS PO VPO00816101 Samples for Anions have "Anions" on the label Samples for dissolved metals have "dissolved" on the label. Dissolved Metals Need Preserved. Three pages for COC.	Tyler Mehler		NC
			29/09/22 0900

NB OF BOTTLES RETURNED/DESCRIPTION	Regular (default) x	Priority (2-3 business days) - 50% surcharge	Emergency (1 Business Day) - 100% surcharge	For Emergency <1 Day, ASAP or Weekend - Contact ALS	Sampler's Name	Tyler Mehler	Mobile #	587-597-1612
					Sampler's Signature	<i>TM</i>	Date/Time	9-27-2022

8°C

COC ID:

September

August EVO LAEMP 2022 PW

TURNAROUND TIME:

PROJECT/CLIENT INFO

LABORATORY

Facility Name / Job#	Regional EVO LAEMP			Lab Name	ALS Calgary		Excel	PDF	EDD
Project Manager	Mike Pope			Lab Contact	Lyudmyla Shvets		mike.pope@teck.com	x	x
Email	mike.pope@teck.com			Email	lyudmyla.shvets@alsglobal.com				x
Address	421 Pine Avenue			Address	2559 29 Street NE		lbowton@minnow.ca	x	x
City	Sparwood	Province	BC	City	Calgary	Province	AB	tyler.mehler@minnow.ca	x
Postal Code	V0B 2G0	Country	Canada	Postal Code	T1Y 7B5	Country	Canada		
Phone Number	343-333-3905			Phone Number	1 403 407 1794				

SAMPLE DETAILS

ANALYSIS REQUESTED

Filtered - F: Field, L: Lab, FL: FRM & Lab, N: None

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS		Filtered - F: Field, L: Lab, FL: FRM & Lab, N: None								
								TECKCOAL-ANIONS	Dissolved metals									
20	RG_ERCKUT_1_PW-1_2022-09_NP	RG_ERCKUT	PW	No	9/27/2022	10:00	G	2	X	X								
21	RG_ERCKUT_1_PW-2_2022-09_NP	RG_ERCKUT	PW	No	9/27/2022	10:15	G	2	X	X								
22	RG_ERCKUT_2_PW-1_2022-09_NP	RG_ERCKUT	PW	No	9/27/2022	10:30	G	2	X	X								
23	RG_ERCKUT_2_PW-2_2022-09_NP	RG_ERCKUT	PW	No	9/27/2022	10:32	G	2	X	X								
24	RG_ERCKUT_3_PW-1_2022-09_NP	RG_ERCKUT	PW	No	9/27/2022	10:36	G	2	X	X								
25	RG_ERCKUT_3_PW-2_2022-09_NP	RG_ERCKUT	PW	No	9/27/2022	11:00	G	2	X	X								
26	RG_ERCKUT_WS-1_2022-09_NP	RG_ERCKUT	PW	No	9/27/2022	11:15	G	2	X	X								

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS

RELINQUISHED BY/AFFILIATION

DATE/TIME

ACCEPTED BY/AFFILIATION

ALS PO VPO00816101
 Samples for Anions have "Anions" on the label
 Samples for dissolved metals have "dissolved" on the label. Dissolved Metals Need Preserved. Three pages for COC.

Tyler Mehler

NC

24/09/22

0900

NB OF BOTTLES RETURNED/DESCRIPTION

Regular (default)	x
Priority (2-3 business days) - 50% surcharge	
Emergency (1 Business Day) - 100% surcharge	
For Emergency <1 Day, ASAP or Weekend - Contact ALS	

Sampler's Name

Tyler Mehler

Mobile #

587-597-1612

Sampler's Signature

Date/Time

9-27-2022

8°C



CERTIFICATE OF ANALYSIS

<p>Work Order : CG2215354</p> <p>Client : Teck Coal Limited</p> <p>Contact : Mike Pope</p> <p>Address : 421 Pine Avenue Sparwood BC Canada V0B2G0</p> <p>Telephone : ----</p> <p>Project : REGIONAL EFFECTS PROGRAM</p> <p>PO : VPO00847030</p> <p>C-O-C number : November EVO LAEMP 2022</p> <p>Sampler : AMC</p> <p>Site : ----</p> <p>Quote number : Teck Coal Master Quote</p> <p>No. of samples received : 10</p> <p>No. of samples analysed : 9</p>	<p>Page : 1 of 8</p> <p>Laboratory : Calgary - Environmental</p> <p>Account Manager : Lyudmyla Shvets</p> <p>Address : 2559 29th Street NE Calgary AB Canada T1Y 7B5</p> <p>Telephone : +1 403 407 1800</p> <p>Date Samples Received : 02-Nov-2022 09:00</p> <p>Date Analysis Commenced : 03-Nov-2022</p> <p>Issue Date : 04-Nov-2022 18:05</p>
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This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Anthony Calero	Supervisor - Inorganic	Inorganics, Calgary, Alberta
Elke Tabora		Inorganics, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Metals, Calgary, Alberta
Kevin Baxter		Metals, Calgary, Alberta
Parker Sgarbossa	Laboratory Analyst	Inorganics, Calgary, Alberta
Ruifang Zheng	Analyst	Inorganics, Calgary, Alberta
Shirley Li		Inorganics, Calgary, Alberta
Summie Lo	Lab Assistant	Metals, Calgary, Alberta
Vladka Stamenova	Analyst	Inorganics, Calgary, Alberta



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
 LOR: Limit of Reporting (detection limit).

<i>Unit</i>	<i>Description</i>
-	No Unit
%	percent
µg/L	micrograms per litre
µS/cm	Microsiemens per centimetre
meq/L	milliequivalents per litre
mg/L	milligrams per litre
mV	millivolts
NTU	nephelometric turbidity units
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

<i>Qualifier</i>	<i>Description</i>
DLDS	Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.
TKNI	TKN result may be biased low due to Nitrate interference. Nitrate-N is > 10x TKN.



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKUT_1_ PW-1_2022-10 _NP	RG_ERCKUT_1_ PW-2_2022-10 _NP	RG_ERCKUT_1_ PW-3_2022-10 _NP	RG_ERCKUT_2_ PW-1_2022-10 _NP	RG_ERCKUT_2_ PW-2_2022-10 _NP
Client sampling date / time					31-Oct-2022 13:00	31-Oct-2022 13:15	31-Oct-2022 13:30	31-Oct-2022 13:45	31-Oct-2022 14:00	
Analyte	CAS Number	Method	LOR	Unit	CG2215354-001	CG2215354-002	CG2215354-003	CG2215354-004	CG2215354-005	
					Result	Result	Result	Result	Result	
Physical Tests										
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	1190	1200	1210	1210	1220	
Anions and Nutrients										
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	5.51	5.56	5.46	5.47	5.56	
fluoride	16984-48-8	E235.F	0.020	mg/L	0.105	0.102	<0.100 ^{DLDS}	<0.100 ^{DLDS}	<0.100 ^{DLDS}	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	16.6	16.6	16.7	16.7	16.8	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	0.0104	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	760	764	765	767	773	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	0.0073	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0657	0.0681	0.0652	0.0656	0.0670	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.100 ^{DLDS}	<0.100 ^{DLDS}	<0.100 ^{DLDS}	<0.100 ^{DLDS}	<0.100 ^{DLDS}	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000250 ^{DLDS}	<0.000250 ^{DLDS}	<0.000250 ^{DLDS}	<0.000250 ^{DLDS}	<0.000250 ^{DLDS}	
boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.050 ^{DLDS}	<0.050 ^{DLDS}	<0.050 ^{DLDS}	<0.050 ^{DLDS}	<0.050 ^{DLDS}	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.122	0.0956	0.102	0.132	0.0908	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	241	242	245	248	248	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	<0.50 ^{DLDS}	<0.50 ^{DLDS}	<0.50 ^{DLDS}	<0.50 ^{DLDS}	<0.50 ^{DLDS}	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00100 ^{DLDS}	<0.00100 ^{DLDS}	<0.00100 ^{DLDS}	<0.00100 ^{DLDS}	<0.00100 ^{DLDS}	
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.050 ^{DLDS}	<0.050 ^{DLDS}	<0.050 ^{DLDS}	<0.050 ^{DLDS}	<0.050 ^{DLDS}	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000250 ^{DLDS}	<0.000250 ^{DLDS}	<0.000250 ^{DLDS}	<0.000250 ^{DLDS}	<0.000250 ^{DLDS}	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0288	0.0295	0.0298	0.0287	0.0294	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	142	145	146	144	147	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.000960	0.00100	0.000918	0.000970	0.00107	
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	<0.00250 ^{DLDS}	<0.00250 ^{DLDS}	<0.00250 ^{DLDS}	<0.00250 ^{DLDS}	<0.00250 ^{DLDS}	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKUT_1_ PW-1_2022-10 _NP	RG_ERCKUT_1_ PW-2_2022-10 _NP	RG_ERCKUT_1_ PW-3_2022-10 _NP	RG_ERCKUT_2_ PW-1_2022-10 _NP	RG_ERCKUT_2_ PW-2_2022-10 _NP
Client sampling date / time					31-Oct-2022 13:00	31-Oct-2022 13:15	31-Oct-2022 13:30	31-Oct-2022 13:45	31-Oct-2022 14:00	
Analyte	CAS Number	Method	LOR	Unit	CG2215354-001	CG2215354-002	CG2215354-003	CG2215354-004	CG2215354-005	
					Result	Result	Result	Result	Result	
Dissolved Metals										
potassium, dissolved	7440-09-7	E421	0.050	mg/L	2.55	2.77	2.63	2.61	2.61	
selenium, dissolved	7782-49-2	E421	0.050	µg/L	162	165	159	166	165	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	3.89	4.15	4.04	3.96	3.99	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	2.90	3.02	2.96	2.93	3.01	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.206	0.208	0.212	0.209	0.210	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	266	295	281	283	288	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00150 ^{DLDS}	<0.00150 ^{DLDS}	<0.00150 ^{DLDS}	<0.00150 ^{DLDS}	<0.00150 ^{DLDS}	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00759	0.00777	0.00782	0.00767	0.00766	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00250 ^{DLDS}	<0.00250 ^{DLDS}	<0.00250 ^{DLDS}	<0.00250 ^{DLDS}	<0.00250 ^{DLDS}	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	
dissolved metals filtration location	----	EP421	-	-	Laboratory	Laboratory	Laboratory	Laboratory	Laboratory	

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKUT_3_ PW-1_2022-11 _NP	RG_ERCKUT_3_ PW-2_2022-11 _NP	RG_ERCKUT_3_ PW-3_2022-11 _NP	RG_ERCKUT_W S_LAEMP_EVO _2022-11_NP	----
Client sampling date / time					01-Nov-2022 09:00	01-Nov-2022 09:05	01-Nov-2022 09:10	01-Nov-2022 09:15	----	
Analyte	CAS Number	Method	LOR	Unit	CG2215354-007	CG2215354-008	CG2215354-009	CG2215354-010	-----	
					Result	Result	Result	Result	----	
Physical Tests										
acidity (as CaCO3)	----	E283	2.0	mg/L	----	----	----	3.8	----	
alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	----	----	----	426	----	
alkalinity, bicarbonate (as HCO3)	71-52-3	E290	1.0	mg/L	----	----	----	520	----	
alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	----	----	----	<1.0	----	
alkalinity, carbonate (as CO3)	3812-32-6	E290	1.0	mg/L	----	----	----	<1.0	----	
alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	----	----	----	<1.0	----	
alkalinity, hydroxide (as OH)	14280-30-9	E290	1.0	mg/L	----	----	----	<1.0	----	
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	----	----	----	426	----	
conductivity	----	E100	2.0	µS/cm	----	----	----	1890	----	
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	1210	1210	1210	1230	----	
oxidation-reduction potential [ORP]	----	E125	0.10	mV	----	----	----	420	----	
pH	----	E108	0.10	pH units	----	----	----	8.12	----	
solids, total dissolved [TDS]	----	E162	10	mg/L	----	----	----	1530	----	
solids, total suspended [TSS]	----	E160-L	1.0	mg/L	----	----	----	3.5	----	
turbidity	----	E121	0.10	NTU	----	----	----	0.25	----	
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	----	----	----	<0.0050	----	
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	----	
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	5.41	5.51	5.46	5.48	----	
fluoride	16984-48-8	E235.F	0.020	mg/L	<0.100 ^{DLDS}	<0.100 ^{DLDS}	<0.100 ^{DLDS}	<0.100 ^{DLDS}	----	
Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	----	----	----	1.11 ^{TKN}	----	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	16.8	16.8	16.7	16.7	----	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	----	
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	----	----	----	0.0141	----	
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	----	----	----	0.0200	----	
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	765	767	766	762	----	
Organic / Inorganic Carbon										
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	----	----	----	0.60	----	
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	----	----	----	0.70	----	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKUT_3_ PW-1_2022-11 _NP	RG_ERCKUT_3_ PW-2_2022-11 _NP	RG_ERCKUT_3_ PW-3_2022-11 _NP	RG_ERCKUT_W S_LAEMP_EVO _2022-11_NP	----
Client sampling date / time					01-Nov-2022 09:00	01-Nov-2022 09:05	01-Nov-2022 09:10	01-Nov-2022 09:15	----	
Analyte	CAS Number	Method	LOR	Unit	CG2215354-007	CG2215354-008	CG2215354-009	CG2215354-010	-----	
					Result	Result	Result	Result	----	
Ion Balance										
anion sum	----	EC101	0.10	meq/L	----	----	----	25.7	----	
cation sum	----	EC101	0.10	meq/L	----	----	----	24.8	----	
ion balance (cations/anions)	----	EC101	0.010	%	----	----	----	96.5	----	
ion balance (APHA)	----	EC101	0.01	%	----	----	----	-1.78	----	
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L	----	----	----	<0.0060 ^{DLDS}	----	
antimony, total	7440-36-0	E420	0.00010	mg/L	----	----	----	0.00023	----	
arsenic, total	7440-38-2	E420	0.00010	mg/L	----	----	----	0.00025	----	
barium, total	7440-39-3	E420	0.00010	mg/L	----	----	----	0.0795	----	
beryllium, total	7440-41-7	E420	0.020	µg/L	----	----	----	<0.040 ^{DLDS}	----	
bismuth, total	7440-69-9	E420	0.000050	mg/L	----	----	----	<0.000100 ^{DLDS}	----	
boron, total	7440-42-8	E420	0.010	mg/L	----	----	----	0.024	----	
cadmium, total	7440-43-9	E420	0.0050	µg/L	----	----	----	0.109	----	
calcium, total	7440-70-2	E420	0.050	mg/L	----	----	----	268	----	
chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	----	----	----	<0.00020 ^{DLDS}	----	
cobalt, total	7440-48-4	E420	0.10	µg/L	----	----	----	<0.20 ^{DLDS}	----	
copper, total	7440-50-8	E420	0.00050	mg/L	----	----	----	<0.00100 ^{DLDS}	----	
iron, total	7439-89-6	E420	0.010	mg/L	----	----	----	<0.020 ^{DLDS}	----	
lead, total	7439-92-1	E420	0.000050	mg/L	----	----	----	<0.000100 ^{DLDS}	----	
lithium, total	7439-93-2	E420	0.0010	mg/L	----	----	----	0.0309	----	
magnesium, total	7439-95-4	E420	0.0050	mg/L	----	----	----	180	----	
manganese, total	7439-96-5	E420	0.00010	mg/L	----	----	----	0.00048	----	
mercury, total	7439-97-6	E508	0.0000050	mg/L	----	----	----	<0.0000050	----	
molybdenum, total	7439-98-7	E420	0.000050	mg/L	----	----	----	0.00107	----	
nickel, total	7440-02-0	E420	0.00050	mg/L	----	----	----	<0.00100 ^{DLDS}	----	
potassium, total	7440-09-7	E420	0.050	mg/L	----	----	----	2.94	----	
selenium, total	7782-49-2	E420	0.050	µg/L	----	----	----	163	----	
silicon, total	7440-21-3	E420	0.10	mg/L	----	----	----	4.35	----	
silver, total	7440-22-4	E420	0.000010	mg/L	----	----	----	<0.000020 ^{DLDS}	----	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKUT_3_ PW-1_2022-11 _NP	RG_ERCKUT_3_ PW-2_2022-11 _NP	RG_ERCKUT_3_ PW-3_2022-11 _NP	RG_ERCKUT_W S_LAEMP_EVO _2022-11_NP	----
Client sampling date / time					01-Nov-2022 09:00	01-Nov-2022 09:05	01-Nov-2022 09:10	01-Nov-2022 09:15	----	
Analyte	CAS Number	Method	LOR	Unit	CG2215354-007	CG2215354-008	CG2215354-009	CG2215354-010	-----	
					Result	Result	Result	Result	----	
Total Metals										
sodium, total	7440-23-5	E420	0.050	mg/L	----	----	----	3.35	----	
strontium, total	7440-24-6	E420	0.00020	mg/L	----	----	----	0.238	----	
sulfur, total	7704-34-9	E420	0.50	mg/L	----	----	----	282	----	
thallium, total	7440-28-0	E420	0.000010	mg/L	----	----	----	<0.000020 DLDS	----	
tin, total	7440-31-5	E420	0.00010	mg/L	----	----	----	<0.00020 DLDS	----	
titanium, total	7440-32-6	E420	0.00030	mg/L	----	----	----	<0.00060 DLDS	----	
uranium, total	7440-61-1	E420	0.000010	mg/L	----	----	----	0.00806	----	
vanadium, total	7440-62-2	E420	0.00050	mg/L	----	----	----	<0.00100 DLDS	----	
zinc, total	7440-66-6	E420	0.0030	mg/L	----	----	----	<0.0060 DLDS	----	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	<0.0050 DLDS	<0.0050 DLDS	<0.0050 DLDS	<0.0020 DLDS	----	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00050 DLDS	<0.00050 DLDS	<0.00050 DLDS	0.00020	----	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	<0.00050 DLDS	<0.00050 DLDS	<0.00050 DLDS	0.00023	----	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0660	0.0672	0.0649	0.0654	----	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.100 DLDS	<0.100 DLDS	<0.100 DLDS	<0.040 DLDS	----	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000250 DLDS	<0.000250 DLDS	<0.000250 DLDS	<0.000100 DLDS	----	
boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.050 DLDS	<0.050 DLDS	<0.050 DLDS	<0.020 DLDS	----	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.0704	0.0760	0.124	0.0862	----	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	244	246	242	250	----	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00050 DLDS	<0.00050 DLDS	<0.00050 DLDS	0.00024	----	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	<0.50 DLDS	<0.50 DLDS	<0.50 DLDS	<0.20 DLDS	----	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00100 DLDS	<0.00100 DLDS	<0.00100 DLDS	<0.00040 DLDS	----	
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.050 DLDS	<0.050 DLDS	<0.050 DLDS	<0.020 DLDS	----	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000250 DLDS	<0.000250 DLDS	<0.000250 DLDS	<0.000100 DLDS	----	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0288	0.0297	0.0289	0.0301	----	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	146	145	147	147	----	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	<0.00050 DLDS	<0.00050 DLDS	<0.00050 DLDS	<0.00020 DLDS	----	
mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	----	----	----	<0.0000050	----	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.000947	0.000977	0.00102	0.000962	----	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKUT_3_ PW-1_2022-11 _NP	RG_ERCKUT_3_ PW-2_2022-11 _NP	RG_ERCKUT_3_ PW-3_2022-11 _NP	RG_ERCKUT_W S_LAEMP_EVO _2022-11_NP	----
Client sampling date / time					01-Nov-2022 09:00	01-Nov-2022 09:05	01-Nov-2022 09:10	01-Nov-2022 09:15	----	
Analyte	CAS Number	Method	LOR	Unit	CG2215354-007	CG2215354-008	CG2215354-009	CG2215354-010	-----	
					Result	Result	Result	Result	----	
Dissolved Metals										
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	<0.00250 ^{DLDS}	<0.00250 ^{DLDS}	<0.00250 ^{DLDS}	<0.00100 ^{DLDS}	----	
potassium, dissolved	7440-09-7	E421	0.050	mg/L	2.59	2.56	2.70	2.82	----	
selenium, dissolved	7782-49-2	E421	0.050	µg/L	162	162	164	189	----	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	3.93	4.02	3.91	4.22	----	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	<0.000020 ^{DLDS}	----	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	2.92	2.99	2.96	3.05	----	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.207	0.209	0.207	0.208	----	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	277	278	274	314	----	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	<0.000020 ^{DLDS}	----	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00020 ^{DLDS}	----	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00150 ^{DLDS}	<0.00150 ^{DLDS}	<0.00150 ^{DLDS}	<0.00060 ^{DLDS}	----	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00766	0.00760	0.00770	0.00749	----	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00250 ^{DLDS}	<0.00250 ^{DLDS}	<0.00250 ^{DLDS}	<0.00100 ^{DLDS}	----	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	<0.0020 ^{DLDS}	----	
dissolved mercury filtration location	----	EP509	-	-	----	----	----	Field	----	
dissolved metals filtration location	----	EP421	-	-	Laboratory	Laboratory	Laboratory	Field	----	

Please refer to the General Comments section for an explanation of any qualifiers detected.



QUALITY CONTROL INTERPRETIVE REPORT

<p>Work Order : CG2215354</p> <p>Client : Teck Coal Limited</p> <p>Contact : Mike Pope</p> <p>Address : 421 Pine Avenue Sparwood BC Canada V0B2G0</p> <p>Telephone : ----</p> <p>Project : REGIONAL EFFECTS PROGRAM</p> <p>PO : VPO00847030</p> <p>C-O-C number : November EVO LAEMP 2022</p> <p>Sampler : AMC</p> <p>Site : ----</p> <p>Quote number : Teck Coal Master Quote</p> <p>No. of samples received : 10</p> <p>No. of samples analysed : 9</p>	<p>Page : 1 of 20</p> <p>Laboratory : Calgary - Environmental</p> <p>Account Manager : Lyudmyla Shvets</p> <p>Address : 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5</p> <p>Telephone : +1 403 407 1800</p> <p>Date Samples Received : 02-Nov-2022 09:00</p> <p>Issue Date : 04-Nov-2022 18:06</p>
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This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

- Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
 - CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
 - DQO: Data Quality Objective.
 - LOR: Limit of Reporting (detection limit).
 - RPD: Relative Percent Difference.
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Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers occur - please see following pages for full details.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP	E298	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKUT_3_PW-1_2022-11_NP	E235.Br-L	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKUT_3_PW-2_2022-11_NP	E235.Br-L	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKUT_3_PW-3_2022-11_NP	E235.Br-L	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP	E235.Br-L	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKUT_1_PW-1_2022-10_NP	E235.Br-L	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	3 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKUT_1_PW-2_2022-10_NP	E235.Br-L	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	3 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKUT_1_PW-3_2022-10_NP	E235.Br-L	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	3 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKUT_2_PW-1_2022-10_NP	E235.Br-L	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	3 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKUT_2_PW-2_2022-10_NP	E235.Br-L	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	3 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKUT_3_PW-1_2022-11_NP	E235.Cl-L	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKUT_3_PW-2_2022-11_NP	E235.Cl-L	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKUT_3_PW-3_2022-11_NP	E235.Cl-L	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP	E235.Cl-L	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKUT_1_PW-1_2022-10_NP	E235.Cl-L	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	3 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKUT_1_PW-2_2022-10_NP	E235.Cl-L	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	3 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_ERCKUT_1_PW-3_2022-10_NP	E235.Cl-L	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	3 days	✔
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_ERCKUT_2_PW-1_2022-10_NP	E235.Cl-L	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	3 days	✔
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_ERCKUT_2_PW-2_2022-10_NP	E235.Cl-L	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	3 days	✔
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP	E378-U	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	3 days	2 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE RG_ERCKUT_3_PW-1_2022-11_NP	E235.F	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE RG_ERCKUT_3_PW-2_2022-11_NP	E235.F	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE RG_ERCKUT_3_PW-3_2022-11_NP	E235.F	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP	E235.F	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE RG_ERCKUT_1_PW-1_2022-10_NP	E235.F	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	3 days	✔



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKUT_1_PW-2_2022-10_NP	E235.F	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	3 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKUT_1_PW-3_2022-10_NP	E235.F	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	3 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKUT_2_PW-1_2022-10_NP	E235.F	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	3 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKUT_2_PW-2_2022-10_NP	E235.F	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	3 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKUT_3_PW-1_2022-11_NP	E235.NO3-L	01-Nov-2022	03-Nov-2022	3 days	2 days	✔	03-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKUT_3_PW-2_2022-11_NP	E235.NO3-L	01-Nov-2022	03-Nov-2022	3 days	2 days	✔	03-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKUT_3_PW-3_2022-11_NP	E235.NO3-L	01-Nov-2022	03-Nov-2022	3 days	2 days	✔	03-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP	E235.NO3-L	01-Nov-2022	03-Nov-2022	3 days	2 days	✔	03-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKUT_1_PW-1_2022-10_NP	E235.NO3-L	31-Oct-2022	03-Nov-2022	3 days	3 days	✔	03-Nov-2022	3 days	0 days	✔	



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKUT_1_PW-2_2022-10_NP	E235.NO3-L	31-Oct-2022	03-Nov-2022	3 days	3 days	✔	03-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKUT_1_PW-3_2022-10_NP	E235.NO3-L	31-Oct-2022	03-Nov-2022	3 days	3 days	✔	03-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKUT_2_PW-1_2022-10_NP	E235.NO3-L	31-Oct-2022	03-Nov-2022	3 days	3 days	✔	03-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKUT_2_PW-2_2022-10_NP	E235.NO3-L	31-Oct-2022	03-Nov-2022	3 days	3 days	✔	03-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKUT_3_PW-1_2022-11_NP	E235.NO2-L	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKUT_3_PW-2_2022-11_NP	E235.NO2-L	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKUT_3_PW-3_2022-11_NP	E235.NO2-L	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP	E235.NO2-L	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKUT_1_PW-1_2022-10_NP	E235.NO2-L	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	3 days	3 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKUT_1_PW-2_2022-10_NP	E235.NO2-L	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	3 days	3 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKUT_1_PW-3_2022-10_NP	E235.NO2-L	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	3 days	3 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKUT_2_PW-1_2022-10_NP	E235.NO2-L	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	3 days	3 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKUT_2_PW-2_2022-10_NP	E235.NO2-L	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	3 days	3 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKUT_3_PW-1_2022-11_NP	E235.SO4	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKUT_3_PW-2_2022-11_NP	E235.SO4	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKUT_3_PW-3_2022-11_NP	E235.SO4	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP	E235.SO4	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKUT_1_PW-1_2022-10_NP	E235.SO4	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	3 days	✔	



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			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKUT_1_PW-2_2022-10_NP	E235.SO4	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	3 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKUT_1_PW-3_2022-10_NP	E235.SO4	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	3 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKUT_2_PW-1_2022-10_NP	E235.SO4	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	3 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKUT_2_PW-2_2022-10_NP	E235.SO4	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	3 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP	E318	01-Nov-2022	04-Nov-2022	----	----		04-Nov-2022	28 days	3 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP	E372-U	01-Nov-2022	03-Nov-2022	----	----		04-Nov-2022	28 days	3 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKUT_3_PW-1_2022-11_NP	E421.Cr-L	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	2 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKUT_3_PW-2_2022-11_NP	E421.Cr-L	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	2 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKUT_3_PW-3_2022-11_NP	E421.Cr-L	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	2 days	✔	



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP	E421.Cr-L	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	2 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKUT_1_PW-1_2022-10_NP	E421.Cr-L	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKUT_1_PW-2_2022-10_NP	E421.Cr-L	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKUT_1_PW-3_2022-10_NP	E421.Cr-L	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKUT_2_PW-1_2022-10_NP	E421.Cr-L	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKUT_2_PW-2_2022-10_NP	E421.Cr-L	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP	E509	01-Nov-2022	04-Nov-2022	----	----		04-Nov-2022	28 days	3 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ERCKUT_3_PW-1_2022-11_NP	E421	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	2 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ERCKUT_3_PW-2_2022-11_NP	E421	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	2 days	✔	



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			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ERCKUT_3_PW-3_2022-11_NP	E421	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	2 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP	E421	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	2 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ERCKUT_1_PW-1_2022-10_NP	E421	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ERCKUT_1_PW-2_2022-10_NP	E421	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ERCKUT_1_PW-3_2022-10_NP	E421	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ERCKUT_2_PW-1_2022-10_NP	E421	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ERCKUT_2_PW-2_2022-10_NP	E421	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	3 days	✔	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP	E358-L	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✔	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP	E355-L	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Acidity by Titration											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP	E283	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	14 days	2 days	✓	
Physical Tests : Alkalinity Species by Titration											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP	E290	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	14 days	2 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP	E100	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	2 days	✓	
Physical Tests : ORP by Electrode											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP	E125	01-Nov-2022	----	----	----		04-Nov-2022	0.25 hrs	74 hrs	* EHTR-FM	
Physical Tests : pH by Meter											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP	E108	01-Nov-2022	03-Nov-2022	----	----		03-Nov-2022	0.25 hrs	0.25 hrs	* EHTR-FM	
Physical Tests : TDS by Gravimetry											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP	E162	01-Nov-2022	----	----	----		03-Nov-2022	7 days	2 days	✓	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP	E160-L	01-Nov-2022	----	----	----		03-Nov-2022	7 days	2 days	✓	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP	E121	01-Nov-2022	----	----	----		03-Nov-2022	3 days	2 days	✓	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE - total (lab preserved) RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP	E420.Cr-L	01-Nov-2022	04-Nov-2022	----	----		04-Nov-2022	180 days	3 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP	E508	01-Nov-2022	04-Nov-2022	----	----		04-Nov-2022	28 days	3 days	✔
Total Metals : Total metals in Water by CRC ICPMS										
HDPE - total (lab preserved) RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP	E420	01-Nov-2022	04-Nov-2022	----	----		04-Nov-2022	180 days	3 days	✔

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended
 Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water** Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
Analytical Methods							
Laboratory Duplicates (DUP)							
Acidity by Titration	E283	729315	1	14	7.1	5.0	✔
Alkalinity Species by Titration	E290	729321	1	7	14.2	5.0	✔
Ammonia by Fluorescence	E298	728827	1	20	5.0	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	728818	1	20	5.0	5.0	✔
Chloride in Water by IC (Low Level)	E235.Cl-L	728819	1	20	5.0	5.0	✔
Conductivity in Water	E100	729320	1	7	14.2	5.0	✔
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	729266	1	9	11.1	5.0	✔
Dissolved Mercury in Water by CVAAS	E509	730111	1	9	11.1	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	729267	1	9	11.1	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	729328	1	9	11.1	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	729421	1	20	5.0	5.0	✔
Fluoride in Water by IC	E235.F	728816	1	20	5.0	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	728820	1	20	5.0	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	728821	1	20	5.0	5.0	✔
ORP by Electrode	E125	730396	1	9	11.1	5.0	✔
pH by Meter	E108	729319	1	7	14.2	5.0	✔
Sulfate in Water by IC	E235.SO4	728817	1	20	5.0	5.0	✔
TDS by Gravimetry	E162	729418	1	9	11.1	5.0	✔
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	729252	1	9	11.1	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	728945	0	15	0.0	5.0	✖
Total Mercury in Water by CVAAS	E508	730122	1	10	10.0	5.0	✔
Total metals in Water by CRC ICPMS	E420	729253	1	11	9.0	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	729329	1	9	11.1	5.0	✔
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	729343	1	6	16.6	5.0	✔
Turbidity by Nephelometry	E121	729146	1	20	5.0	5.0	✔
Laboratory Control Samples (LCS)							
Acidity by Titration	E283	729315	1	14	7.1	5.0	✔
Alkalinity Species by Titration	E290	729321	1	7	14.2	5.0	✔
Ammonia by Fluorescence	E298	728827	1	20	5.0	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	728818	1	20	5.0	5.0	✔
Chloride in Water by IC (Low Level)	E235.Cl-L	728819	1	20	5.0	5.0	✔
Conductivity in Water	E100	729320	1	7	14.2	5.0	✔
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	729266	1	9	11.1	5.0	✔
Dissolved Mercury in Water by CVAAS	E509	730111	1	9	11.1	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	729267	1	9	11.1	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	729328	1	9	11.1	5.0	✔



Matrix: **Water**

Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
Analytical Methods							
Laboratory Control Samples (LCS) - Continued							
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	729421	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	728816	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	728820	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	728821	1	20	5.0	5.0	✓
ORP by Electrode	E125	730396	1	9	11.1	5.0	✓
pH by Meter	E108	729319	1	7	14.2	5.0	✓
Sulfate in Water by IC	E235.SO4	728817	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	729418	1	9	11.1	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	729252	1	9	11.1	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	728945	1	15	6.6	5.0	✓
Total Mercury in Water by CVAAS	E508	730122	1	10	10.0	5.0	✓
Total metals in Water by CRC ICPMS	E420	729253	1	11	9.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	729329	1	9	11.1	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	729343	1	6	16.6	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	729431	1	9	11.1	5.0	✓
Turbidity by Nephelometry	E121	729146	1	20	5.0	5.0	✓
Method Blanks (MB)							
Acidity by Titration	E283	729315	1	14	7.1	5.0	✓
Alkalinity Species by Titration	E290	729321	1	7	14.2	5.0	✓
Ammonia by Fluorescence	E298	728827	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	728818	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	728819	1	20	5.0	5.0	✓
Conductivity in Water	E100	729320	1	7	14.2	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	729266	1	9	11.1	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	730111	1	9	11.1	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	729267	1	9	11.1	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	729328	1	9	11.1	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	729421	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	728816	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	728820	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	728821	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	728817	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	729418	1	9	11.1	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	729252	1	9	11.1	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	728945	1	15	6.6	5.0	✓
Total Mercury in Water by CVAAS	E508	730122	1	10	10.0	5.0	✓
Total metals in Water by CRC ICPMS	E420	729253	1	11	9.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	729329	1	9	11.1	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	729343	1	6	16.6	5.0	✓



Matrix: **Water** Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
<i>Analytical Methods</i>							
Method Blanks (MB) - Continued							
TSS by Gravimetry (Low Level)	E160-L	729431	1	9	11.1	5.0	✔
Turbidity by Nephelometry	E121	729146	1	20	5.0	5.0	✔
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	728827	1	20	5.0	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	728818	1	20	5.0	5.0	✔
Chloride in Water by IC (Low Level)	E235.Cl-L	728819	1	20	5.0	5.0	✔
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	729266	1	9	11.1	5.0	✔
Dissolved Mercury in Water by CVAAS	E509	730111	1	9	11.1	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	729267	1	9	11.1	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	729328	1	9	11.1	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	729421	1	20	5.0	5.0	✔
Fluoride in Water by IC	E235.F	728816	1	20	5.0	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	728820	1	20	5.0	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	728821	1	20	5.0	5.0	✔
Sulfate in Water by IC	E235.SO4	728817	1	20	5.0	5.0	✔
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	729252	1	9	11.1	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	728945	1	15	6.6	5.0	✔
Total Mercury in Water by CVAAS	E508	730122	1	10	10.0	5.0	✔
Total metals in Water by CRC ICPMS	E420	729253	1	11	9.0	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	729329	1	9	11.1	5.0	✔
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	729343	1	6	16.6	5.0	✔



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 Calgary - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 Calgary - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 Calgary - Environmental	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
ORP by Electrode	E125 Calgary - Environmental	Water	ASTM D1498 (mod)	Oxidation reduction potential is reported as the oxidation-reduction potential of the platinum metal-reference electrode employed, measured in mV. For high accuracy test results, it is recommended that this analysis be conducted in the field.
TSS by Gravimetry (Low Level)	E160-L Calgary - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 Calgary - Environmental	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC (Low Level)	E235.Cl-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Acidity by Titration	E283 Calgary - Environmental	Water	APHA 2310 B (mod)	Acidity is determined by potentiometric titration to pH endpoint of 8.3
Alkalinity Species by Titration	E290 Calgary - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 Calgary - Environmental	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 Calgary - Environmental	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L Calgary - Environmental	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Dissolved Organic Carbon by Combustion (Low Level)	E358-L Calgary - Environmental	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U Calgary - Environmental	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U Calgary - Environmental	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Total metals in Water by CRC ICPMS	E420 Calgary - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L Calgary - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Metals in Water by CRC ICPMS	E421 Calgary - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L Calgary - Environmental	Water	APHA 3030 B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS
Total Mercury in Water by CVAAS	E508 Calgary - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS
Dissolved Mercury in Water by CVAAS	E509 Calgary - Environmental	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
Dissolved Hardness (Calculated)	EC100 Calgary - Environmental	Water	APHA 2340B	"Hardness (as CaCO ₃), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Ion Balance using Dissolved Metals	EC101 Calgary - Environmental	Water	APHA 1030E	Cation Sum, Anion Sum, and Ion Balance are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present. Ion Balance cannot be calculated accurately for waters with very low electrical conductivity (EC).

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 Calgary - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 Calgary - Environmental	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Preparation for Total Organic Carbon by Combustion	EP355 Calgary - Environmental	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon by Combustion	EP358 Calgary - Environmental	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Phosphorus in water	EP372 Calgary - Environmental	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.



<i>Preparation Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
Dissolved Metals Water Filtration	EP421 Calgary - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.
Dissolved Mercury Water Filtration	EP509 Calgary - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.

QUALITY CONTROL REPORT

<p>Work Order : CG2215354</p> <p>Client : Teck Coal Limited</p> <p>Contact : Mike Pope</p> <p>Address : 421 Pine Avenue Sparwood BC Canada V0B2G0</p> <p>Telephone :</p> <p>Project : REGIONAL EFFECTS PROGRAM</p> <p>PO : VPO00847030</p> <p>C-O-C number : November EVO LAEMP 2022</p> <p>Sampler : AMC</p> <p>Site : ----</p> <p>Quote number : Teck Coal Master Quote</p> <p>No. of samples received : 10</p> <p>No. of samples analysed : 9</p>	<p>Page : 1 of 18</p> <p>Laboratory : Calgary - Environmental</p> <p>Account Manager : Lyudmyla Shvets</p> <p>Address : 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5</p> <p>Telephone : +1 403 407 1800</p> <p>Date Samples Received : 02-Nov-2022 09:00</p> <p>Date Analysis Commenced : 03-Nov-2022</p> <p>Issue Date : 04-Nov-2022 18:05</p>
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This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Anthony Calero	Supervisor - Inorganic	Calgary Inorganics, Calgary, Alberta
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Vladka Stamenova	Analyst	Calgary Inorganics, Calgary, Alberta

Page : 2 of 18
Work Order : CG2215354
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percent Difference
= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 729146)											
CG2215277-001	Anonymous	turbidity	----	E121	0.10	NTU	0.17	0.20	0.03	Diff <2x LOR	----
Physical Tests (QC Lot: 729315)											
CG2215311-010	Anonymous	acidity (as CaCO ₃)	----	E283	2.0	mg/L	<2.0	<2.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 729319)											
CG2215311-010	Anonymous	pH	----	E108	0.10	pH units	8.25	8.26	0.121%	4%	----
Physical Tests (QC Lot: 729320)											
CG2215311-010	Anonymous	conductivity	----	E100	2.0	µS/cm	1780	1780	0.112%	10%	----
Physical Tests (QC Lot: 729321)											
CG2215311-010	Anonymous	alkalinity, bicarbonate (as CaCO ₃)	----	E290	1.0	mg/L	424	420	0.830%	20%	----
		alkalinity, carbonate (as CaCO ₃)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, hydroxide (as CaCO ₃)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, total (as CaCO ₃)	----	E290	1.0	mg/L	424	420	0.830%	20%	----
Physical Tests (QC Lot: 729418)											
CG2215311-010	Anonymous	solids, total dissolved [TDS]	----	E162	40	mg/L	1540	1700	9.99%	20%	----
Physical Tests (QC Lot: 730396)											
CG2215311-010	Anonymous	oxidation-reduction potential [ORP]	----	E125	0.10	mV	378	383	1.42%	15%	----
Anions and Nutrients (QC Lot: 728816)											
CG2215352-001	Anonymous	fluoride	16984-48-8	E235.F	0.100	mg/L	0.116	0.117	0.001	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 728817)											
CG2215352-001	Anonymous	sulfate (as SO ₄)	14808-79-8	E235.SO4	1.50	mg/L	604	610	0.877%	20%	----
Anions and Nutrients (QC Lot: 728818)											
CG2215352-001	Anonymous	bromide	24959-67-9	E235.Br-L	0.250	mg/L	<0.250	<0.250	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 728819)											
CG2215352-001	Anonymous	chloride	16887-00-6	E235.Cl-L	0.50	mg/L	37.0	37.2	0.673%	20%	----
Anions and Nutrients (QC Lot: 728820)											
CG2215352-001	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	0.0250	mg/L	2.02	2.03	0.490%	20%	----
Anions and Nutrients (QC Lot: 728821)											
CG2215352-001	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.0050	mg/L	0.175	0.178	1.59%	20%	----
Anions and Nutrients (QC Lot: 728827)											
CG2215337-001	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 729343)											
CG2215338-001	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0043	0.0050	0.0007	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 729421)											
CG2215351-001	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 729328)											
CG2215352-001	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	1.41	1.45	0.04	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 729329)											
CG2215352-001	Anonymous	carbon, total organic [TOC]	----	E355-L	0.50	mg/L	1.61	1.43	0.18	Diff <2x LOR	----
Total Metals (QC Lot: 729252)											
CG2215304-010	Anonymous	chromium, total	7440-47-3	E420.Cr-L	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Total Metals (QC Lot: 729253)											
CG2215304-010	Anonymous	aluminum, total	7429-90-5	E420	0.0060	mg/L	<0.0060	<0.0060	0	Diff <2x LOR	----
		antimony, total	7440-36-0	E420	0.00020	mg/L	0.00021	0.00021	0.000002	Diff <2x LOR	----
		arsenic, total	7440-38-2	E420	0.00020	mg/L	0.00028	0.00036	0.00009	Diff <2x LOR	----
		barium, total	7440-39-3	E420	0.00020	mg/L	0.0590	0.0580	1.69%	20%	----
		beryllium, total	7440-41-7	E420	0.000040	mg/L	<0.040 µg/L	<0.000040	0	Diff <2x LOR	----
		bismuth, total	7440-69-9	E420	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		boron, total	7440-42-8	E420	0.020	mg/L	0.022	0.022	0.0005	Diff <2x LOR	----
		cadmium, total	7440-43-9	E420	0.0000100	mg/L	0.175 µg/L	0.000148	17.1%	20%	----
		calcium, total	7440-70-2	E420	0.100	mg/L	266	262	1.81%	20%	----
		cobalt, total	7440-48-4	E420	0.00020	mg/L	3.19 µg/L	0.00315	1.22%	20%	----
		copper, total	7440-50-8	E420	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		iron, total	7439-89-6	E420	0.020	mg/L	0.047	0.048	0.001	Diff <2x LOR	----
		lead, total	7439-92-1	E420	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		lithium, total	7439-93-2	E420	0.0020	mg/L	0.0530	0.0528	0.232%	20%	----
		magnesium, total	7439-95-4	E420	0.0100	mg/L	175	172	1.90%	20%	----
		manganese, total	7439-96-5	E420	0.00020	mg/L	0.0883	0.0906	2.60%	20%	----
		molybdenum, total	7439-98-7	E420	0.000100	mg/L	0.00455	0.00452	0.591%	20%	----
		nickel, total	7440-02-0	E420	0.00100	mg/L	0.0129	0.0135	4.17%	20%	----
		potassium, total	7440-09-7	E420	0.100	mg/L	3.43	3.49	1.76%	20%	----
		selenium, total	7782-49-2	E420	0.000100	mg/L	133 µg/L	0.136	2.75%	20%	----
silicon, total	7440-21-3	E420	0.20	mg/L	4.11	4.08	0.770%	20%	----		
silver, total	7440-22-4	E420	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----		
sodium, total	7440-23-5	E420	0.100	mg/L	5.37	5.38	0.165%	20%	----		
strontium, total	7440-24-6	E420	0.00040	mg/L	0.296	0.290	2.16%	20%	----		



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (QC Lot: 729253) - continued											
CG2215304-010	Anonymous	sulfur, total	7704-34-9	E420	1.00	mg/L	289	291	0.761%	20%	----
		thallium, total	7440-28-0	E420	0.000020	mg/L	0.000032	0.000029	0.000003	Diff <2x LOR	----
		tin, total	7440-31-5	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		titanium, total	7440-32-6	E420	0.00060	mg/L	<0.00060	<0.00060	0	Diff <2x LOR	----
		uranium, total	7440-61-1	E420	0.000020	mg/L	0.00885	0.00896	1.29%	20%	----
		vanadium, total	7440-62-2	E420	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		zinc, total	7440-66-6	E420	0.0060	mg/L	<0.0060	<0.0060	0	Diff <2x LOR	----
Total Metals (QC Lot: 730122)											
CG2215338-004	Anonymous	mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 729266)											
CG2215354-010	RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP	chromium, dissolved	7440-47-3	E421.Cr-L	0.00020	mg/L	0.00024	<0.00020	0.00004	Diff <2x LOR	----
Dissolved Metals (QC Lot: 729267)											
CG2215354-010	RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP	aluminum, dissolved	7429-90-5	E421	0.0020	mg/L	<0.0020	0.0027	0.0007	Diff <2x LOR	----
		antimony, dissolved	7440-36-0	E421	0.00020	mg/L	0.00020	<0.00020	0.0000010	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E421	0.00020	mg/L	0.00023	0.00024	0.000008	Diff <2x LOR	----
		barium, dissolved	7440-39-3	E421	0.00020	mg/L	0.0654	0.0656	0.378%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.000040	mg/L	<0.040 µg/L	<0.000040	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.020	mg/L	<0.020	<0.020	0	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E421	0.0000100	mg/L	0.0862 µg/L	0.0000836	0.0000027	Diff <2x LOR	----
		calcium, dissolved	7440-70-2	E421	0.100	mg/L	250	254	1.82%	20%	----
		cobalt, dissolved	7440-48-4	E421	0.00020	mg/L	<0.20 µg/L	<0.00020	0	Diff <2x LOR	----
		copper, dissolved	7440-50-8	E421	0.00040	mg/L	<0.00040	<0.00040	0	Diff <2x LOR	----
		iron, dissolved	7439-89-6	E421	0.020	mg/L	<0.020	<0.020	0	Diff <2x LOR	----
		lead, dissolved	7439-92-1	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0020	mg/L	0.0301	0.0299	0.653%	20%	----
		magnesium, dissolved	7439-95-4	E421	0.0100	mg/L	147	139	5.60%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		molybdenum, dissolved	7439-98-7	E421	0.000100	mg/L	0.000962	0.000991	0.000029	Diff <2x LOR	----
		nickel, dissolved	7440-02-0	E421	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		potassium, dissolved	7440-09-7	E421	0.100	mg/L	2.82	2.65	6.18%	20%	----
		selenium, dissolved	7782-49-2	E421	0.000100	mg/L	189 µg/L	0.193	2.28%	20%	----
		silicon, dissolved	7440-21-3	E421	0.100	mg/L	4.22	4.05	4.27%	20%	----



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 729267) - continued											
CG2215354-010	RG_ERCKUT_WS_LAEMP _EVO_2022-11_NP	silver, dissolved	7440-22-4	E421	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E421	0.100	mg/L	3.05	2.95	3.44%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00040	mg/L	0.208	0.213	2.07%	20%	----
		sulfur, dissolved	7704-34-9	E421	1.00	mg/L	314	303	3.34%	20%	----
		thallium, dissolved	7440-28-0	E421	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.00060	mg/L	<0.00060	<0.00060	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000020	mg/L	0.00749	0.00765	2.17%	20%	----
		vanadium, dissolved	7440-62-2	E421	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
zinc, dissolved	7440-66-6	E421	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----		
Dissolved Metals (QC Lot: 730111)											
CG2215338-005	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 729146)						
turbidity	---	E121	0.1	NTU	<0.10	---
Physical Tests (QCLot: 729315)						
acidity (as CaCO3)	---	E283	2	mg/L	2.1	---
Physical Tests (QCLot: 729320)						
conductivity	---	E100	1	µS/cm	<1.0	---
Physical Tests (QCLot: 729321)						
alkalinity, bicarbonate (as CaCO3)	---	E290	1	mg/L	<1.0	---
alkalinity, carbonate (as CaCO3)	---	E290	1	mg/L	<1.0	---
alkalinity, hydroxide (as CaCO3)	---	E290	1	mg/L	<1.0	---
alkalinity, total (as CaCO3)	---	E290	1	mg/L	<1.0	---
Physical Tests (QCLot: 729418)						
solids, total dissolved [TDS]	---	E162	10	mg/L	<10	---
Physical Tests (QCLot: 729431)						
solids, total suspended [TSS]	---	E160-L	1	mg/L	<1.0	---
Anions and Nutrients (QCLot: 728816)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	---
Anions and Nutrients (QCLot: 728817)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	---
Anions and Nutrients (QCLot: 728818)						
bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	---
Anions and Nutrients (QCLot: 728819)						
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	---
Anions and Nutrients (QCLot: 728820)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	---
Anions and Nutrients (QCLot: 728821)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	---
Anions and Nutrients (QCLot: 728827)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	---
Anions and Nutrients (QCLot: 728945)						
Kjeldahl nitrogen, total [TKN]	---	E318	0.05	mg/L	<0.050	---
Anions and Nutrients (QCLot: 729343)						
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	---



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 729421)						
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Organic / Inorganic Carbon (QCLot: 729328)						
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Organic / Inorganic Carbon (QCLot: 729329)						
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	<0.50	----
Total Metals (QCLot: 729252)						
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	<0.00010	----
Total Metals (QCLot: 729253)						
aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	----
antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	----
barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	----
boron, total	7440-42-8	E420	0.01	mg/L	<0.010	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	----
calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	----
copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	----
iron, total	7439-89-6	E420	0.01	mg/L	<0.010	----
lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	----
lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	----
magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	----
manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	----
nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	----
potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	----
selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	----
silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	----
silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	----
sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	----
strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	----
sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	----
thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	----
tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 729253) - continued						
titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	----
uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	----
zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	----
Total Metals (QCLot: 730122)						
mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 729266)						
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	<0.00010	----
Dissolved Metals (QCLot: 729267)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----



Sub-Matrix: **Water**

<i>Analyte</i>	<i>CAS Number</i>	<i>Method</i>	<i>LOR</i>	<i>Unit</i>	<i>Result</i>	<i>Qualifier</i>
Dissolved Metals (QCLot: 729267) - continued						
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
Dissolved Metals (QCLot: 730111)						
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Physical Tests (QCLot: 729146)									
turbidity	----	E121	0.1	NTU	200 NTU	102	85.0	115	----
Physical Tests (QCLot: 729315)									
acidity (as CaCO ₃)	----	E283	2	mg/L	50 mg/L	101	85.0	115	----
Physical Tests (QCLot: 729319)									
pH	----	E108	----	pH units	7 pH units	101	98.6	101	----
Physical Tests (QCLot: 729320)									
conductivity	----	E100	1	µS/cm	146.9 µS/cm	99.3	90.0	110	----
Physical Tests (QCLot: 729321)									
alkalinity, total (as CaCO ₃)	----	E290	1	mg/L	500 mg/L	97.0	85.0	115	----
Physical Tests (QCLot: 729418)									
solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	98.4	85.0	115	----
Physical Tests (QCLot: 729431)									
solids, total suspended [TSS]	----	E160-L	1	mg/L	150 mg/L	104	85.0	115	----
Physical Tests (QCLot: 730396)									
oxidation-reduction potential [ORP]	----	E125	----	mV	220 mV	101	95.4	104	----
Anions and Nutrients (QCLot: 728816)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	105	90.0	110	----
Anions and Nutrients (QCLot: 728817)									
sulfate (as SO ₄)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	103	90.0	110	----
Anions and Nutrients (QCLot: 728818)									
bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	100	85.0	115	----
Anions and Nutrients (QCLot: 728819)									
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	104	90.0	110	----
Anions and Nutrients (QCLot: 728820)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 728821)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 728827)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	97.4	85.0	115	----
Anions and Nutrients (QCLot: 728945)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	90.9	75.0	125	----



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Anions and Nutrients (QCLot: 729343)									
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.03 mg/L	83.7	80.0	120	----
Anions and Nutrients (QCLot: 729421)									
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.03 mg/L	83.6	80.0	120	----
Organic / Inorganic Carbon (QCLot: 729328)									
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	93.0	80.0	120	----
Organic / Inorganic Carbon (QCLot: 729329)									
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	98.9	80.0	120	----
Total Metals (QCLot: 729252)									
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	0.25 mg/L	104	80.0	120	----
Total Metals (QCLot: 729253)									
aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	103	80.0	120	----
antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	98.6	80.0	120	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	98.2	80.0	120	----
barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	106	80.0	120	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	104	80.0	120	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	100	80.0	120	----
boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	98.7	80.0	120	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	104	80.0	120	----
calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	101	80.0	120	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	101	80.0	120	----
copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	98.6	80.0	120	----
iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	108	80.0	120	----
lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	103	80.0	120	----
lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	102	80.0	120	----
magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	105	80.0	120	----
manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	104	80.0	120	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	101	80.0	120	----
nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	104	80.0	120	----
potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	103	80.0	120	----
selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	90.7	80.0	120	----
silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	105	60.0	140	----
silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	93.4	80.0	120	----
sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	105	80.0	120	----
strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	104	80.0	120	----



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 729253) - continued									
sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	105	80.0	120	----
thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	102	80.0	120	----
tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	98.5	80.0	120	----
titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	106	80.0	120	----
uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	100	80.0	120	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	102	80.0	120	----
zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	91.9	80.0	120	----
Total Metals (QCLot: 730122)									
mercury, total	7439-97-6	E508	0.000005	mg/L	0.0001 mg/L	99.6	80.0	120	----
Dissolved Metals (QCLot: 729266)									
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	0.25 mg/L	95.6	80.0	120	----
Dissolved Metals (QCLot: 729267)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	103	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	91.5	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	93.8	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	100	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	101	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	90.8	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	89.5	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	91.8	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	97.1	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	95.6	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	94.2	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	96.0	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	92.0	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	97.5	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	91.5	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	93.0	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	95.2	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	93.0	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	99.7	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	86.2	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	94.6	60.0	140	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	87.2	80.0	120	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	97.0	80.0	120	----



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 729267) - continued									
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	93.4	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	90.1	80.0	120	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	91.8	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	90.4	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	89.8	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	93.9	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	97.5	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	86.3	80.0	120	----
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	96.7	80.0	120	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 728816)										
CG2215352-002	Anonymous	fluoride	16984-48-8	E235.F	1.03 mg/L	1 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 728817)										
CG2215352-002	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	82.0 mg/L	100 mg/L	82.0	75.0	125	----
Anions and Nutrients (QCLot: 728818)										
CG2215352-002	Anonymous	bromide	24959-67-9	E235.Br-L	0.453 mg/L	0.5 mg/L	90.6	75.0	125	----
Anions and Nutrients (QCLot: 728819)										
CG2215352-002	Anonymous	chloride	16887-00-6	E235.Cl-L	91.1 mg/L	100 mg/L	91.1	75.0	125	----
Anions and Nutrients (QCLot: 728820)										
CG2215352-002	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	ND mg/L	2.5 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 728821)										
CG2215352-002	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	ND mg/L	0.5 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 728827)										
CG2215337-002	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.105 mg/L	0.1 mg/L	105	75.0	125	----
Anions and Nutrients (QCLot: 728945)										
CG2215332-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.14 mg/L	2.5 mg/L	85.8	70.0	130	----
Anions and Nutrients (QCLot: 729343)										
CG2215338-002	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0415 mg/L	0.05 mg/L	83.0	70.0	130	----
Anions and Nutrients (QCLot: 729421)										
CG2215351-002	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0478 mg/L	0.05 mg/L	95.7	70.0	130	----
Organic / Inorganic Carbon (QCLot: 729328)										
CG2215352-001	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	5.19 mg/L	5 mg/L	104	70.0	130	----
Organic / Inorganic Carbon (QCLot: 729329)										
CG2215352-001	Anonymous	carbon, total organic [TOC]	----	E355-L	5.19 mg/L	5 mg/L	104	70.0	130	----
Total Metals (QCLot: 729252)										
CG2215338-001	Anonymous	chromium, total	7440-47-3	E420.Cr-L	0.396 mg/L	0.4 mg/L	99.0	70.0	130	----
Total Metals (QCLot: 729253)										
CG2215338-001	Anonymous	aluminum, total	7429-90-5	E420	2.02 mg/L	2 mg/L	101	70.0	130	----



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 729253) - continued										
CG2215338-001	Anonymous	antimony, total	7440-36-0	E420	0.195 mg/L	0.2 mg/L	97.4	70.0	130	----
		arsenic, total	7440-38-2	E420	0.192 mg/L	0.2 mg/L	95.8	70.0	130	----
		barium, total	7440-39-3	E420	0.204 mg/L	0.2 mg/L	102	70.0	130	----
		beryllium, total	7440-41-7	E420	0.375 mg/L	0.4 mg/L	93.7	70.0	130	----
		bismuth, total	7440-69-9	E420	0.100 mg/L	0.1 mg/L	100	70.0	130	----
		boron, total	7440-42-8	E420	0.970 mg/L	1 mg/L	97.0	70.0	130	----
		cadmium, total	7440-43-9	E420	0.0409 mg/L	0.04 mg/L	102	70.0	130	----
		calcium, total	7440-70-2	E420	ND mg/L	40 mg/L	ND	70.0	130	----
		cobalt, total	7440-48-4	E420	0.191 mg/L	0.2 mg/L	95.7	70.0	130	----
		copper, total	7440-50-8	E420	0.192 mg/L	0.2 mg/L	95.8	70.0	130	----
		iron, total	7439-89-6	E420	19.9 mg/L	20 mg/L	99.5	70.0	130	----
		lead, total	7439-92-1	E420	0.203 mg/L	0.2 mg/L	102	70.0	130	----
		lithium, total	7439-93-2	E420	0.898 mg/L	1 mg/L	89.8	70.0	130	----
		magnesium, total	7439-95-4	E420	ND mg/L	10 mg/L	ND	70.0	130	----
		manganese, total	7439-96-5	E420	0.199 mg/L	0.2 mg/L	99.6	70.0	130	----
		molybdenum, total	7439-98-7	E420	0.200 mg/L	0.2 mg/L	99.8	70.0	130	----
		nickel, total	7440-02-0	E420	0.398 mg/L	0.4 mg/L	99.5	70.0	130	----
		potassium, total	7440-09-7	E420	38.1 mg/L	40 mg/L	95.2	70.0	130	----
		selenium, total	7782-49-2	E420	0.382 mg/L	0.4 mg/L	95.5	70.0	130	----
		silicon, total	7440-21-3	E420	89.9 mg/L	100 mg/L	89.9	70.0	130	----
		silver, total	7440-22-4	E420	0.0403 mg/L	0.04 mg/L	101	70.0	130	----
		sodium, total	7440-23-5	E420	20.4 mg/L	20 mg/L	102	70.0	130	----
		strontium, total	7440-24-6	E420	ND mg/L	0.2 mg/L	ND	70.0	130	----
		sulfur, total	7704-34-9	E420	ND mg/L	200 mg/L	ND	70.0	130	----
		thallium, total	7440-28-0	E420	0.0385 mg/L	0.04 mg/L	96.3	70.0	130	----
		tin, total	7440-31-5	E420	0.196 mg/L	0.2 mg/L	97.9	70.0	130	----
		titanium, total	7440-32-6	E420	0.420 mg/L	0.4 mg/L	105	70.0	130	----
		uranium, total	7440-61-1	E420	0.0393 mg/L	0.04 mg/L	98.2	70.0	130	----
		vanadium, total	7440-62-2	E420	0.985 mg/L	1 mg/L	98.5	70.0	130	----
		zinc, total	7440-66-6	E420	3.57 mg/L	4 mg/L	89.3	70.0	130	----
Total Metals (QCLot: 730122)										
CG2215338-005	Anonymous	mercury, total	7439-97-6	E508	0.0000990 mg/L	0.0001 mg/L	99.0	70.0	130	----
Dissolved Metals (QCLot: 729266)										
CG2215354-010	RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP	chromium, dissolved	7440-47-3	E421.Cr-L	0.372 mg/L	0.4 mg/L	93.1	70.0	130	----



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 729267)										
CG2215354-010	RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP	aluminum, dissolved	7429-90-5	E421	1.85 mg/L	2 mg/L	92.5	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.184 mg/L	0.2 mg/L	91.8	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.187 mg/L	0.2 mg/L	93.4	70.0	130	----
		barium, dissolved	7440-39-3	E421	0.197 mg/L	0.2 mg/L	98.5	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.397 mg/L	0.4 mg/L	99.2	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.0929 mg/L	0.1 mg/L	92.9	70.0	130	----
		boron, dissolved	7440-42-8	E421	0.977 mg/L	1 mg/L	97.7	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.0373 mg/L	0.04 mg/L	93.2	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	40 mg/L	ND	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.192 mg/L	0.2 mg/L	96.2	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.188 mg/L	0.2 mg/L	93.8	70.0	130	----
		iron, dissolved	7439-89-6	E421	19.2 mg/L	20 mg/L	96.0	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.190 mg/L	0.2 mg/L	94.9	70.0	130	----
		lithium, dissolved	7439-93-2	E421	0.896 mg/L	1 mg/L	89.6	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	10 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E421	0.195 mg/L	0.2 mg/L	97.3	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.192 mg/L	0.2 mg/L	95.9	70.0	130	----
		nickel, dissolved	7440-02-0	E421	0.366 mg/L	0.4 mg/L	91.6	70.0	130	----
		potassium, dissolved	7440-09-7	E421	38.0 mg/L	40 mg/L	94.9	70.0	130	----
		selenium, dissolved	7782-49-2	E421	0.368 mg/L	0.4 mg/L	91.9	70.0	130	----
		silicon, dissolved	7440-21-3	E421	87.0 mg/L	100 mg/L	87.0	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.0398 mg/L	0.04 mg/L	99.6	70.0	130	----
		sodium, dissolved	7440-23-5	E421	18.2 mg/L	20 mg/L	91.0	70.0	130	----
		strontium, dissolved	7440-24-6	E421	ND mg/L	0.2 mg/L	ND	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	ND mg/L	200 mg/L	ND	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.0365 mg/L	0.04 mg/L	91.2	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.184 mg/L	0.2 mg/L	91.9	70.0	130	----
		titanium, dissolved	7440-32-6	E421	0.365 mg/L	0.4 mg/L	91.2	70.0	130	----
uranium, dissolved	7440-61-1	E421	0.0376 mg/L	0.04 mg/L	94.0	70.0	130	----		
vanadium, dissolved	7440-62-2	E421	0.969 mg/L	1 mg/L	96.9	70.0	130	----		
zinc, dissolved	7440-66-6	E421	3.44 mg/L	4 mg/L	86.1	70.0	130	----		
Dissolved Metals (QCLot: 730111)										
CG2215352-001	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000950 mg/L	0.0001 mg/L	95.0	70.0	130	----



COC ID: November EVO LAEMP 2022		TURNAROUND TIME:	
PROJECT/CLIENT INFO			
Facility Name / Job# Regional Effects Program		Lab Name ALS Calgary	
Project Manager Mike Pope		Lab Contact Lyudmyla Shvets	
Address 421 Pine Avenue		Address 2539 29 Street NE	
City Sparwood	Province BC	City Calgary	Province AB
Postal Code V0B 2G0	Country Canada	Postal Code T1Y 7B5	Country Canada
Phone Number 343-333-3905		Phone Number 1 403 407 1794	

SAMPLE DETAILS								ANALYSIS REQUESTED								
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	TECKCOAL-ANIONS	Dissolved metals	TECKCOAL-ROUTINE-VA	ALS_Package-DOC	ALS_Package-TKN/TOC	HG-T-U-CYAF-VA	HG-D-CYAF-VA	TECKCOAL-MET-T-VA	TECKCOAL-MET-D-VA
RG_ERCKUT_1_PW-1_2022-10_NP	RG_ERCKUT	PW	No	10/31/2022	13:00	G	1	X	X							
RG_ERCKUT_1_PW-2_2022-10_NP	RG_ERCKUT	PW	No	10/31/2022	13:15	G	1	X	X							
RG_ERCKUT_1_PW-3_2022-10_NP	RG_ERCKUT	PW	No	10/31/2022	13:30	G	1									
RG_ERCKUT_2_PW-1_2022-10_NP	RG_ERCKUT	PW	No	10/31/2022	13:45	G	1	X	X							
RG_ERCKUT_2_PW-2_2022-10_NP	RG_ERCKUT	PW	No	10/31/2022	14:00	G	1	X	X							
RG_ERCKUT_2_PW-3_2022-10_NP	RG_ERCKUT	PW	No	10/31/2022	13:00	G	1	X	X							
RG_ERCKUT_3_PW-1_2022-11_NP	RG_ERCKUT	PW	No	11/1/2022	9:00	G	1	X	X							
RG_ERCKUT_3_PW-2_2022-11_NP	RG_ERCKUT	PW	No	11/1/2022	9:05	G	1	X	X							
RG_ERCKUT_3_PW-3_2022-11_NP	RG_ERCKUT	PW	No	11/1/2022	9:10	G	1	X	X							
RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP	RG_ERCKUT	WS	No	11/1/2022	9:15	G	7			X	X	X	X	X	X	X

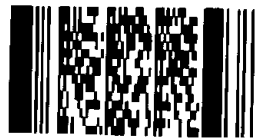
ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS		RELINQUISHED BY/AFFILIATION		DATE/TIME		ACCEPTED BY/AFFILIATION	
ALS PO VPO00847030		Alex McClymont, Minnow Environmental		November 1, 2022			
						11/2/2022 9:00am 70C	
NB OF BOTTLES RETURNED/DESCRIPTION		SAMPLER'S NAME		MOBILE #		DATE/TIME	
Regular (default)		Alex McClymont		780-293-6750		November 1, 2022	
Priority (2-3 business days) - 50% surcharge X		SAMPLER'S SIGNATURE					
Emergency (1 Business Day) - 100% surcharge							
For Emergency <1 Day, ASAP or Weekend - Contact ALS							

Environmental
Calgary
Work Order Reference
CG2215354



Telephone : +1 403 407 1800

Environmental Division
Calgary
Work Order Reference
CG2215354



Telephone : +1 403 407 1800



CERTIFICATE OF ANALYSIS

<p>Work Order : CG2215304</p> <p>Client : Teck Coal Limited</p> <p>Contact : Mike Pope</p> <p>Address : 421 Pine Avenue Sparwood BC Canada V0B2G0</p> <p>Telephone : ----</p> <p>Project : REGIONAL EFFECTS PROGRAM</p> <p>PO : VPO00847030</p> <p>C-O-C number : November EVO LAEMP 2022</p> <p>Sampler : A McC</p> <p>Site : ----</p> <p>Quote number : Teck Coal Master Quote</p> <p>No. of samples received : 10</p> <p>No. of samples analysed : 10</p>	<p>Page : 1 of 8</p> <p>Laboratory : Calgary - Environmental</p> <p>Account Manager : Lyudmyla Shvets</p> <p>Address : 2559 29th Street NE Calgary AB Canada T1Y 7B5</p> <p>Telephone : +1 403 407 1800</p> <p>Date Samples Received : 02-Nov-2022 09:00</p> <p>Date Analysis Commenced : 02-Nov-2022</p> <p>Issue Date : 04-Nov-2022 16:35</p>
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This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Anthony Calero	Supervisor - Inorganic	Inorganics, Calgary, Alberta
Anthony Calero	Supervisor - Inorganic	Metals, Calgary, Alberta
Elke Tabora		Inorganics, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Metals, Calgary, Alberta
Kevin Baxter		Metals, Calgary, Alberta
Ruifang Zheng	Analyst	Inorganics, Calgary, Alberta
Shirley Li		Inorganics, Calgary, Alberta
Summie Lo	Lab Assistant	Metals, Calgary, Alberta
Vladka Stamenova	Analyst	Inorganics, Calgary, Alberta



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
 LOR: Limit of Reporting (detection limit).

<i>Unit</i>	<i>Description</i>
-	No Unit
%	percent
µg/L	micrograms per litre
µS/cm	Microsiemens per centimetre
meq/L	milliequivalents per litre
mg/L	milligrams per litre
mV	millivolts
NTU	nephelometric turbidity units
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

<i>Qualifier</i>	<i>Description</i>
DLDS	Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.
TKNI	TKN result may be biased low due to Nitrate interference. Nitrate-N is > 10x TKN.



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKDT_1_ PW-1_2022-10 _NP	RG_ERCKDT_1_ PW-2_2022-10 _NP	RG_ERCKDT_1_ PW-3_2022-10 _NP	RG_ERCKDT_2_ PW-1_2022-10 _NP	RG_ERCKDT_2_ PW-2_2022-10 _NP
Client sampling date / time					31-Oct-2022 08:30	31-Oct-2022 08:45	31-Oct-2022 09:00	31-Oct-2022 09:15	31-Oct-2022 09:30	
Analyte	CAS Number	Method	LOR	Unit	CG2215304-001	CG2215304-002	CG2215304-003	CG2215304-004	CG2215304-005	
					Result	Result	Result	Result	Result	
Physical Tests										
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	1180	1150	1200	1180	1180	
Anions and Nutrients										
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	10.7	8.26	9.40	8.15	7.98	
fluoride	16984-48-8	E235.F	0.020	mg/L	0.155	0.157	0.205	0.155	0.157	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	12.0	9.68	9.80	9.86	9.83	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	0.0178	0.0134	0.0197	0.0134	0.0110	
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	751	761	772	768	762	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0075	0.0055	0.0087	0.0057	0.0096	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0434	0.0411	0.0445	0.0444	0.0450	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.100 ^{DLDS}	<0.100 ^{DLDS}	<0.100 ^{DLDS}	<0.100 ^{DLDS}	<0.100 ^{DLDS}	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000250 ^{DLDS}	<0.000250 ^{DLDS}	<0.000250 ^{DLDS}	<0.000250 ^{DLDS}	<0.000250 ^{DLDS}	
boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.050 ^{DLDS}	<0.050 ^{DLDS}	<0.050 ^{DLDS}	<0.050 ^{DLDS}	<0.050 ^{DLDS}	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.232	0.183	0.171	0.173	0.198	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	242	238	243	239	234	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	5.54	4.95	5.05	5.39	5.32	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00100 ^{DLDS}	<0.00100 ^{DLDS}	<0.00100 ^{DLDS}	<0.00100 ^{DLDS}	<0.00100 ^{DLDS}	
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.050 ^{DLDS}	<0.050 ^{DLDS}	<0.050 ^{DLDS}	<0.050 ^{DLDS}	<0.050 ^{DLDS}	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000250 ^{DLDS}	<0.000250 ^{DLDS}	<0.000250 ^{DLDS}	<0.000250 ^{DLDS}	<0.000250 ^{DLDS}	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0741	0.0711	0.0724	0.0715	0.0680	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	140	136	145	142	144	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.155	0.145	0.130	0.144	0.148	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00803	0.00758	0.00801	0.00752	0.00740	
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.0222	0.0211	0.0221	0.0217	0.0217	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKDT_1_ PW-1_2022-10 _NP	RG_ERCKDT_1_ PW-2_2022-10 _NP	RG_ERCKDT_1_ PW-3_2022-10 _NP	RG_ERCKDT_2_ PW-1_2022-10 _NP	RG_ERCKDT_2_ PW-2_2022-10 _NP
Client sampling date / time					31-Oct-2022 08:30	31-Oct-2022 08:45	31-Oct-2022 09:00	31-Oct-2022 09:15	31-Oct-2022 09:30	
Analyte	CAS Number	Method	LOR	Unit	CG2215304-001	CG2215304-002	CG2215304-003	CG2215304-004	CG2215304-005	
					Result	Result	Result	Result	Result	
Dissolved Metals										
potassium, dissolved	7440-09-7	E421	0.050	mg/L	3.66	3.28	3.69	3.34	3.47	
selenium, dissolved	7782-49-2	E421	0.050	µg/L	98.4	93.6	92.3	96.3	99.6	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	3.45	3.62	3.61	3.62	3.56	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	6.44	6.12	6.45	6.27	6.38	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.326	0.309	0.318	0.320	0.314	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	284	285	281	277	295	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00150 ^{DLDS}	<0.00150 ^{DLDS}	<0.00150 ^{DLDS}	<0.00150 ^{DLDS}	<0.00150 ^{DLDS}	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00919	0.00885	0.00917	0.00896	0.00880	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00250 ^{DLDS}	<0.00250 ^{DLDS}	<0.00250 ^{DLDS}	<0.00250 ^{DLDS}	<0.00250 ^{DLDS}	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0089	0.0102	0.0065	0.0084	0.0092	
dissolved metals filtration location	----	EP421	-	-	Laboratory	Laboratory	Laboratory	Laboratory	Laboratory	

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKDT_2_ PW-3_2022-10 _NP	RG_ERCKDT_3_ PW-1_2022-10 _NP	RG_ERCKDT_3_ PW-2_2022-10 _NP	RG_ERCKDT_3_ PW-3_2022-10 _NP	RG_ERCKDT_W S_LAEMP_EVO _2022-10_NP
Client sampling date / time					31-Oct-2022 09:45	31-Oct-2022 10:00	31-Oct-2022 10:15	31-Oct-2022 10:30	31-Oct-2022 10:35	
Analyte	CAS Number	Method	LOR	Unit	CG2215304-006	CG2215304-007	CG2215304-008	CG2215304-009	CG2215304-010	
					Result	Result	Result	Result	Result	
Physical Tests										
acidity (as CaCO3)	----	E283	2.0	mg/L	----	----	----	----	<2.0	
alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	----	----	----	----	457	
alkalinity, bicarbonate (as HCO3)	71-52-3	E290	1.0	mg/L	----	----	----	----	558	
alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	----	----	----	----	<1.0	
alkalinity, carbonate (as CO3)	3812-32-6	E290	1.0	mg/L	----	----	----	----	<1.0	
alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	----	----	----	----	<1.0	
alkalinity, hydroxide (as OH)	14280-30-9	E290	1.0	mg/L	----	----	----	----	<1.0	
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	----	----	----	----	457	
conductivity	----	E100	2.0	µS/cm	----	----	----	----	1890	
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	1160	1170	1180	1150	1200	
oxidation-reduction potential [ORP]	----	E125	0.10	mV	----	----	----	----	316	
pH	----	E108	0.10	pH units	----	----	----	----	7.80	
solids, total dissolved [TDS]	----	E162	10	mg/L	----	----	----	----	1550	
solids, total suspended [TSS]	----	E160-L	1.0	mg/L	----	----	----	----	1.1	
turbidity	----	E121	0.10	NTU	----	----	----	----	0.40	
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	----	----	----	----	0.0288	
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	8.18	8.79	8.89	8.95	6.75	
fluoride	16984-48-8	E235.F	0.020	mg/L	0.165	0.172	0.173	0.173	0.139	
Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	----	----	----	----	0.561 ^{TKN}	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	9.85	8.08	8.04	8.12	13.2	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	0.0143	0.0156	0.0239	0.0190	<0.0050 ^{DLDS}	
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	----	----	----	----	0.0174	
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	----	----	----	----	0.0159	
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	763	770	764	771	778	
Organic / Inorganic Carbon										
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	----	----	----	----	0.58	
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	----	----	----	----	<0.50	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKDT_2_ PW-3_2022-10 _NP	RG_ERCKDT_3_ PW-1_2022-10 _NP	RG_ERCKDT_3_ PW-2_2022-10 _NP	RG_ERCKDT_3_ PW-3_2022-10 _NP	RG_ERCKDT_W S_LAEMP_EVO _2022-10_NP
Client sampling date / time					31-Oct-2022 09:45	31-Oct-2022 10:00	31-Oct-2022 10:15	31-Oct-2022 10:30	31-Oct-2022 10:35	
Analyte	CAS Number	Method	LOR	Unit	CG2215304-006	CG2215304-007	CG2215304-008	CG2215304-009	CG2215304-010	
					Result	Result	Result	Result	Result	
Ion Balance										
anion sum	----	EC101	0.10	meq/L	----	----	----	----	26.5	
cation sum	----	EC101	0.10	meq/L	----	----	----	----	24.3	
ion balance (cations/anions)	----	EC101	0.010	%	----	----	----	----	91.7	
ion balance (APHA)	----	EC101	0.01	%	----	----	----	----	-4.33	
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L	----	----	----	----	<0.0060 ^{DLDS}	
antimony, total	7440-36-0	E420	0.00010	mg/L	----	----	----	----	0.00021	
arsenic, total	7440-38-2	E420	0.00010	mg/L	----	----	----	----	0.00028	
barium, total	7440-39-3	E420	0.00010	mg/L	----	----	----	----	0.0590	
beryllium, total	7440-41-7	E420	0.020	µg/L	----	----	----	----	<0.040 ^{DLDS}	
bismuth, total	7440-69-9	E420	0.000050	mg/L	----	----	----	----	<0.000100 ^{DLDS}	
boron, total	7440-42-8	E420	0.010	mg/L	----	----	----	----	0.022	
cadmium, total	7440-43-9	E420	0.0050	µg/L	----	----	----	----	0.175	
calcium, total	7440-70-2	E420	0.050	mg/L	----	----	----	----	266	
chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	----	----	----	----	<0.00020 ^{DLDS}	
cobalt, total	7440-48-4	E420	0.10	µg/L	----	----	----	----	3.19	
copper, total	7440-50-8	E420	0.00050	mg/L	----	----	----	----	<0.00100 ^{DLDS}	
iron, total	7439-89-6	E420	0.010	mg/L	----	----	----	----	0.047	
lead, total	7439-92-1	E420	0.000050	mg/L	----	----	----	----	<0.000100 ^{DLDS}	
lithium, total	7439-93-2	E420	0.0010	mg/L	----	----	----	----	0.0530	
magnesium, total	7439-95-4	E420	0.0050	mg/L	----	----	----	----	175	
manganese, total	7439-96-5	E420	0.00010	mg/L	----	----	----	----	0.0883	
mercury, total	7439-97-6	E508	0.0000050	mg/L	----	----	----	----	<0.0000050	
molybdenum, total	7439-98-7	E420	0.000050	mg/L	----	----	----	----	0.00455	
nickel, total	7440-02-0	E420	0.00050	mg/L	----	----	----	----	0.0129	
potassium, total	7440-09-7	E420	0.050	mg/L	----	----	----	----	3.43	
selenium, total	7782-49-2	E420	0.050	µg/L	----	----	----	----	133	
silicon, total	7440-21-3	E420	0.10	mg/L	----	----	----	----	4.11	
silver, total	7440-22-4	E420	0.000010	mg/L	----	----	----	----	<0.000020 ^{DLDS}	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKDT_2_ PW-3_2022-10 _NP	RG_ERCKDT_3_ PW-1_2022-10 _NP	RG_ERCKDT_3_ PW-2_2022-10 _NP	RG_ERCKDT_3_ PW-3_2022-10 _NP	RG_ERCKDT_W S_LAEMP_EVO _2022-10_NP
Client sampling date / time					31-Oct-2022 09:45	31-Oct-2022 10:00	31-Oct-2022 10:15	31-Oct-2022 10:30	31-Oct-2022 10:35	
Analyte	CAS Number	Method	LOR	Unit	CG2215304-006	CG2215304-007	CG2215304-008	CG2215304-009	CG2215304-010	
					Result	Result	Result	Result	Result	
Total Metals										
sodium, total	7440-23-5	E420	0.050	mg/L	---	---	---	---	5.37	
strontium, total	7440-24-6	E420	0.00020	mg/L	---	---	---	---	0.296	
sulfur, total	7704-34-9	E420	0.50	mg/L	---	---	---	---	289	
thallium, total	7440-28-0	E420	0.000010	mg/L	---	---	---	---	0.000032	
tin, total	7440-31-5	E420	0.00010	mg/L	---	---	---	---	<0.00020 DLDS	
titanium, total	7440-32-6	E420	0.00030	mg/L	---	---	---	---	<0.00060 DLDS	
uranium, total	7440-61-1	E420	0.000010	mg/L	---	---	---	---	0.00885	
vanadium, total	7440-62-2	E420	0.00050	mg/L	---	---	---	---	<0.00100 DLDS	
zinc, total	7440-66-6	E420	0.0030	mg/L	---	---	---	---	<0.0060 DLDS	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	<0.0050 DLDS	<0.0050 DLDS	<0.0050 DLDS	0.0082	<0.0020 DLDS	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00050 DLDS	<0.00050 DLDS	<0.00050 DLDS	<0.00050 DLDS	0.00020	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	<0.00050 DLDS	<0.00050 DLDS	<0.00050 DLDS	<0.00050 DLDS	0.00029	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0464	0.0383	0.0396	0.0391	0.0544	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.100 DLDS	<0.100 DLDS	<0.100 DLDS	<0.100 DLDS	<0.040 DLDS	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000250 DLDS	<0.000250 DLDS	<0.000250 DLDS	<0.000250 DLDS	<0.000100 DLDS	
boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.050 DLDS	<0.050 DLDS	<0.050 DLDS	<0.050 DLDS	0.020	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.218	0.250	0.226	0.237	0.152	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	237	235	236	233	245	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00050 DLDS	<0.00050 DLDS	<0.00050 DLDS	<0.00050 DLDS	<0.00020 DLDS	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	2.32	6.66	6.72	6.21	2.82	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00100 DLDS	<0.00100 DLDS	<0.00100 DLDS	<0.00100 DLDS	<0.00040 DLDS	
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.050 DLDS	<0.050 DLDS	<0.050 DLDS	<0.050 DLDS	<0.020 DLDS	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000250 DLDS	<0.000250 DLDS	<0.000250 DLDS	<0.000250 DLDS	<0.000100 DLDS	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0711	0.0797	0.0828	0.0819	0.0498	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	138	141	143	139	143	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.0592	0.185	0.185	0.176	0.0791	
mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	---	---	---	---	<0.0000050	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00778	0.00978	0.00960	0.00901	0.00433	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKDT_2_ PW-3_2022-10 _NP	RG_ERCKDT_3_ PW-1_2022-10 _NP	RG_ERCKDT_3_ PW-2_2022-10 _NP	RG_ERCKDT_3_ PW-3_2022-10 _NP	RG_ERCKDT_3_ PW-3_2022-10 _NP
Client sampling date / time					31-Oct-2022 09:45	31-Oct-2022 10:00	31-Oct-2022 10:15	31-Oct-2022 10:30	31-Oct-2022 10:35	
Analyte	CAS Number	Method	LOR	Unit	CG2215304-006	CG2215304-007	CG2215304-008	CG2215304-009	CG2215304-010	
					Result	Result	Result	Result	Result	
Dissolved Metals										
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.0137	0.0274	0.0278	0.0259	0.0114	
potassium, dissolved	7440-09-7	E421	0.050	mg/L	3.47	3.75	3.78	3.63	3.19	
selenium, dissolved	7782-49-2	E421	0.050	µg/L	99.9	79.5	82.3	80.0	151	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	3.58	3.39	3.30	3.29	4.04	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	<0.000020 ^{DLDS}	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	6.17	7.13	7.34	7.03	4.81	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.316	0.348	0.342	0.332	0.262	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	285	291	295	291	307	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000050 ^{DLDS}	0.000054	0.000052	<0.000050 ^{DLDS}	0.000031	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00020 ^{DLDS}	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00150 ^{DLDS}	<0.00150 ^{DLDS}	<0.00150 ^{DLDS}	<0.00150 ^{DLDS}	<0.00060 ^{DLDS}	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00893	0.00944	0.00928	0.00904	0.00818	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00250 ^{DLDS}	<0.00250 ^{DLDS}	<0.00250 ^{DLDS}	<0.00250 ^{DLDS}	<0.00100 ^{DLDS}	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0050 ^{DLDS}	0.0088	0.0095	0.0092	0.0044	
dissolved mercury filtration location	----	EP509	-	-	----	----	----	----	Field	
dissolved metals filtration location	----	EP421	-	-	Laboratory	Laboratory	Laboratory	Laboratory	Field	

Please refer to the General Comments section for an explanation of any qualifiers detected.



QUALITY CONTROL INTERPRETIVE REPORT

<p>Work Order : CG2215304</p> <p>Client : Teck Coal Limited</p> <p>Contact : Mike Pope</p> <p>Address : 421 Pine Avenue Sparwood BC Canada V0B2G0</p> <p>Telephone : ----</p> <p>Project : REGIONAL EFFECTS PROGRAM</p> <p>PO : VPO00847030</p> <p>C-O-C number : November EVO LAEMP 2022</p> <p>Sampler : A McC</p> <p>Site : ----</p> <p>Quote number : Teck Coal Master Quote</p> <p>No. of samples received : 10</p> <p>No. of samples analysed : 10</p>	<p>Page : 1 of 21</p> <p>Laboratory : Calgary - Environmental</p> <p>Account Manager : Lyudmyla Shvets</p> <p>Address : 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5</p> <p>Telephone : +1 403 407 1800</p> <p>Date Samples Received : 02-Nov-2022 09:00</p> <p>Issue Date : 04-Nov-2022 16:35</p>
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This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

- Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
- CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
- DQO: Data Quality Objective.
- LOR: Limit of Reporting (detection limit).
- RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP	E298	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKDT_1_PW-1_2022-10_NP	E235.Br-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKDT_1_PW-2_2022-10_NP	E235.Br-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKDT_1_PW-3_2022-10_NP	E235.Br-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKDT_2_PW-1_2022-10_NP	E235.Br-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKDT_2_PW-2_2022-10_NP	E235.Br-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKDT_2_PW-3_2022-10_NP	E235.Br-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKDT_3_PW-1_2022-10_NP	E235.Br-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKDT_3_PW-2_2022-10_NP	E235.Br-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKDT_3_PW-3_2022-10_NP	E235.Br-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP	E235.Br-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKDT_1_PW-1_2022-10_NP	E235.Cl-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKDT_1_PW-2_2022-10_NP	E235.Cl-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKDT_1_PW-3_2022-10_NP	E235.Cl-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKDT_2_PW-1_2022-10_NP	E235.Cl-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKDT_2_PW-2_2022-10_NP	E235.Cl-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKDT_2_PW-3_2022-10_NP	E235.Cl-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✓	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKDT_3_PW-1_2022-10_NP	E235.Cl-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✓	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKDT_3_PW-2_2022-10_NP	E235.Cl-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✓	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKDT_3_PW-3_2022-10_NP	E235.Cl-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✓	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP	E235.Cl-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✓	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP	E378-U	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	3 days	3 days	✓	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKDT_1_PW-1_2022-10_NP	E235.F	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✓	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKDT_1_PW-2_2022-10_NP	E235.F	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✓	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKDT_1_PW-3_2022-10_NP	E235.F	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKDT_2_PW-1_2022-10_NP	E235.F	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKDT_2_PW-2_2022-10_NP	E235.F	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKDT_2_PW-3_2022-10_NP	E235.F	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKDT_3_PW-1_2022-10_NP	E235.F	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKDT_3_PW-2_2022-10_NP	E235.F	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKDT_3_PW-3_2022-10_NP	E235.F	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP	E235.F	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKDT_1_PW-1_2022-10_NP	E235.NO3-L	31-Oct-2022	02-Nov-2022	3 days	2 days	✔	02-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKDT_1_PW-2_2022-10_NP	E235.NO3-L	31-Oct-2022	02-Nov-2022	3 days	2 days	✔	02-Nov-2022	3 days	0 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKDT_1_PW-3_2022-10_NP	E235.NO3-L	31-Oct-2022	02-Nov-2022	3 days	2 days	✔	02-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKDT_2_PW-1_2022-10_NP	E235.NO3-L	31-Oct-2022	02-Nov-2022	3 days	2 days	✔	02-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKDT_2_PW-2_2022-10_NP	E235.NO3-L	31-Oct-2022	02-Nov-2022	3 days	2 days	✔	02-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKDT_2_PW-3_2022-10_NP	E235.NO3-L	31-Oct-2022	02-Nov-2022	3 days	2 days	✔	02-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKDT_3_PW-1_2022-10_NP	E235.NO3-L	31-Oct-2022	02-Nov-2022	3 days	2 days	✔	02-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKDT_3_PW-2_2022-10_NP	E235.NO3-L	31-Oct-2022	02-Nov-2022	3 days	2 days	✔	02-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKDT_3_PW-3_2022-10_NP	E235.NO3-L	31-Oct-2022	02-Nov-2022	3 days	2 days	✔	02-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP	E235.NO3-L	31-Oct-2022	02-Nov-2022	3 days	2 days	✔	02-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKDT_1_PW-1_2022-10_NP	E235.NO2-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	3 days	2 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKDT_1_PW-2_2022-10_NP	E235.NO2-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKDT_1_PW-3_2022-10_NP	E235.NO2-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKDT_2_PW-1_2022-10_NP	E235.NO2-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKDT_2_PW-2_2022-10_NP	E235.NO2-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKDT_2_PW-3_2022-10_NP	E235.NO2-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKDT_3_PW-1_2022-10_NP	E235.NO2-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKDT_3_PW-2_2022-10_NP	E235.NO2-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKDT_3_PW-3_2022-10_NP	E235.NO2-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP	E235.NO2-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	3 days	2 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Sulfate in Water by IC										
HDPE RG_ERCKDT_1_PW-1_2022-10_NP	E235.S04	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔
Anions and Nutrients : Sulfate in Water by IC										
HDPE RG_ERCKDT_1_PW-2_2022-10_NP	E235.S04	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔
Anions and Nutrients : Sulfate in Water by IC										
HDPE RG_ERCKDT_1_PW-3_2022-10_NP	E235.S04	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔
Anions and Nutrients : Sulfate in Water by IC										
HDPE RG_ERCKDT_2_PW-1_2022-10_NP	E235.S04	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔
Anions and Nutrients : Sulfate in Water by IC										
HDPE RG_ERCKDT_2_PW-2_2022-10_NP	E235.S04	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔
Anions and Nutrients : Sulfate in Water by IC										
HDPE RG_ERCKDT_2_PW-3_2022-10_NP	E235.S04	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔
Anions and Nutrients : Sulfate in Water by IC										
HDPE RG_ERCKDT_3_PW-1_2022-10_NP	E235.S04	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔
Anions and Nutrients : Sulfate in Water by IC										
HDPE RG_ERCKDT_3_PW-2_2022-10_NP	E235.S04	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔
Anions and Nutrients : Sulfate in Water by IC										
HDPE RG_ERCKDT_3_PW-3_2022-10_NP	E235.S04	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP	E235.SO4	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP	E318	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	3 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP	E372-U	31-Oct-2022	03-Nov-2022	----	----		04-Nov-2022	28 days	4 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKDT_1_PW-1_2022-10_NP	E421.Cr-L	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKDT_1_PW-2_2022-10_NP	E421.Cr-L	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKDT_1_PW-3_2022-10_NP	E421.Cr-L	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKDT_2_PW-1_2022-10_NP	E421.Cr-L	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKDT_2_PW-2_2022-10_NP	E421.Cr-L	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKDT_2_PW-3_2022-10_NP	E421.Cr-L	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	3 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKDT_3_PW-1_2022-10_NP	E421.Cr-L	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKDT_3_PW-2_2022-10_NP	E421.Cr-L	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKDT_3_PW-3_2022-10_NP	E421.Cr-L	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP	E421.Cr-L	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP	E509	31-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	28 days	4 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ERCKDT_1_PW-1_2022-10_NP	E421	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ERCKDT_1_PW-2_2022-10_NP	E421	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ERCKDT_1_PW-3_2022-10_NP	E421	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ERCKDT_2_PW-1_2022-10_NP	E421	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	3 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved) RG_ERCKDT_2_PW-2_2022-10_NP	E421	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	3 days	✔
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved) RG_ERCKDT_2_PW-3_2022-10_NP	E421	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	3 days	✔
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved) RG_ERCKDT_3_PW-1_2022-10_NP	E421	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	3 days	✔
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved) RG_ERCKDT_3_PW-2_2022-10_NP	E421	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	3 days	✔
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved) RG_ERCKDT_3_PW-3_2022-10_NP	E421	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	3 days	✔
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved) RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP	E421	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	3 days	✔
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP	E358-L	31-Oct-2022	02-Nov-2022	----	----		03-Nov-2022	28 days	3 days	✔
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP	E355-L	31-Oct-2022	02-Nov-2022	----	----		03-Nov-2022	28 days	3 days	✔
Physical Tests : Acidity by Titration										
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP	E283	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	14 days	3 days	✔



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Alkalinity Species by Titration											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP	E290	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	14 days	3 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP	E100	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	3 days	✓	
Physical Tests : ORP by Electrode											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP	E125	31-Oct-2022	----	----	----		03-Nov-2022	0.25 hrs	75 hrs	* EHTR-FM	
Physical Tests : pH by Meter											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP	E108	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	0.25 hrs	0.27 hrs	* EHTR-FM	
Physical Tests : TDS by Gravimetry											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP	E162	31-Oct-2022	----	----	----		03-Nov-2022	7 days	3 days	✓	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP	E160-L	31-Oct-2022	----	----	----		03-Nov-2022	7 days	3 days	✓	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP	E121	31-Oct-2022	----	----	----		03-Nov-2022	3 days	3 days	✓	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE - total (lab preserved) RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP	E420.Cr-L	31-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	180 days	4 days	✓	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP	E508	31-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	28 days	4 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals : Total metals in Water by CRC ICPMS										
HDPE - total (lab preserved) RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP	E420	31-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	180 days	4 days	✔

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended

Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water** Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
Analytical Methods							
Laboratory Duplicates (DUP)							
Acidity by Titration	E283	728157	1	18	5.5	5.0	✔
Alkalinity Species by Titration	E290	728250	1	20	5.0	5.0	✔
Ammonia by Fluorescence	E298	727557	1	20	5.0	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	727388	2	29	6.9	5.0	✔
Chloride in Water by IC (Low Level)	E235.Cl-L	727389	2	29	6.9	5.0	✔
Conductivity in Water	E100	728248	1	20	5.0	5.0	✔
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	728447	1	11	9.0	5.0	✔
Dissolved Mercury in Water by CVAAS	E509	730110	1	20	5.0	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	728448	1	11	9.0	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	727550	1	17	5.8	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	728152	1	13	7.6	5.0	✔
Fluoride in Water by IC	E235.F	727387	2	29	6.9	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	727390	2	29	6.9	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	727391	2	29	6.9	5.0	✔
ORP by Electrode	E125	728320	1	20	5.0	5.0	✔
pH by Meter	E108	728249	1	20	5.0	5.0	✔
Sulfate in Water by IC	E235.SO4	727392	2	29	6.9	5.0	✔
TDS by Gravimetry	E162	727501	1	15	6.6	5.0	✔
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	729252	1	9	11.1	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	727559	1	2	50.0	5.0	✔
Total Mercury in Water by CVAAS	E508	730121	1	20	5.0	5.0	✔
Total metals in Water by CRC ICPMS	E420	729253	1	11	9.0	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	727551	1	19	5.2	5.0	✔
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	728382	1	17	5.8	5.0	✔
Turbidity by Nephelometry	E121	727502	1	20	5.0	5.0	✔
Laboratory Control Samples (LCS)							
Acidity by Titration	E283	728157	1	18	5.5	5.0	✔
Alkalinity Species by Titration	E290	728250	1	20	5.0	5.0	✔
Ammonia by Fluorescence	E298	727557	1	20	5.0	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	727388	2	29	6.9	5.0	✔
Chloride in Water by IC (Low Level)	E235.Cl-L	727389	2	29	6.9	5.0	✔
Conductivity in Water	E100	728248	1	20	5.0	5.0	✔
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	728447	1	11	9.0	5.0	✔
Dissolved Mercury in Water by CVAAS	E509	730110	1	20	5.0	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	728448	1	11	9.0	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	727550	1	17	5.8	5.0	✔



Matrix: **Water**

Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
Analytical Methods							
Laboratory Control Samples (LCS) - Continued							
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	728152	1	13	7.6	5.0	✓
Fluoride in Water by IC	E235.F	727387	2	29	6.9	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	727390	2	29	6.9	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	727391	2	29	6.9	5.0	✓
ORP by Electrode	E125	728320	1	20	5.0	5.0	✓
pH by Meter	E108	728249	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	727392	2	29	6.9	5.0	✓
TDS by Gravimetry	E162	727501	1	15	6.6	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	729252	1	9	11.1	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	727559	1	2	50.0	5.0	✓
Total Mercury in Water by CVAAS	E508	730121	1	20	5.0	5.0	✓
Total metals in Water by CRC ICPMS	E420	729253	1	11	9.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	727551	1	19	5.2	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	728382	1	17	5.8	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	727500	1	15	6.6	5.0	✓
Turbidity by Nephelometry	E121	727502	1	20	5.0	5.0	✓
Method Blanks (MB)							
Acidity by Titration	E283	728157	1	18	5.5	5.0	✓
Alkalinity Species by Titration	E290	728250	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	727557	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	727388	2	29	6.9	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	727389	2	29	6.9	5.0	✓
Conductivity in Water	E100	728248	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	728447	1	11	9.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	730110	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	728448	1	11	9.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	727550	1	17	5.8	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	728152	1	13	7.6	5.0	✓
Fluoride in Water by IC	E235.F	727387	2	29	6.9	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	727390	2	29	6.9	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	727391	2	29	6.9	5.0	✓
Sulfate in Water by IC	E235.SO4	727392	2	29	6.9	5.0	✓
TDS by Gravimetry	E162	727501	1	15	6.6	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	729252	1	9	11.1	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	727559	1	2	50.0	5.0	✓
Total Mercury in Water by CVAAS	E508	730121	1	20	5.0	5.0	✓
Total metals in Water by CRC ICPMS	E420	729253	1	11	9.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	727551	1	19	5.2	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	728382	1	17	5.8	5.0	✓



Matrix: **Water** Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
<i>Analytical Methods</i>							
Method Blanks (MB) - Continued							
TSS by Gravimetry (Low Level)	E160-L	727500	1	15	6.6	5.0	✔
Turbidity by Nephelometry	E121	727502	1	20	5.0	5.0	✔
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	727557	1	20	5.0	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	727388	2	29	6.9	5.0	✔
Chloride in Water by IC (Low Level)	E235.Cl-L	727389	2	29	6.9	5.0	✔
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	728447	1	11	9.0	5.0	✔
Dissolved Mercury in Water by CVAAS	E509	730110	1	20	5.0	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	728448	1	11	9.0	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	727550	1	17	5.8	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	728152	1	13	7.6	5.0	✔
Fluoride in Water by IC	E235.F	727387	2	29	6.9	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	727390	2	29	6.9	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	727391	2	29	6.9	5.0	✔
Sulfate in Water by IC	E235.SO4	727392	2	29	6.9	5.0	✔
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	729252	1	9	11.1	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	727559	1	2	50.0	5.0	✔
Total Mercury in Water by CVAAS	E508	730121	1	20	5.0	5.0	✔
Total metals in Water by CRC ICPMS	E420	729253	1	11	9.0	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	727551	1	19	5.2	5.0	✔
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	728382	1	17	5.8	5.0	✔



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 Calgary - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 Calgary - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 Calgary - Environmental	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
ORP by Electrode	E125 Calgary - Environmental	Water	ASTM D1498 (mod)	Oxidation reduction potential is reported as the oxidation-reduction potential of the platinum metal-reference electrode employed, measured in mV. For high accuracy test results, it is recommended that this analysis be conducted in the field.
TSS by Gravimetry (Low Level)	E160-L Calgary - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 Calgary - Environmental	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC (Low Level)	E235.Cl-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Acidity by Titration	E283 Calgary - Environmental	Water	APHA 2310 B (mod)	Acidity is determined by potentiometric titration to pH endpoint of 8.3
Alkalinity Species by Titration	E290 Calgary - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 Calgary - Environmental	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 Calgary - Environmental	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L Calgary - Environmental	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Dissolved Organic Carbon by Combustion (Low Level)	E358-L Calgary - Environmental	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U Calgary - Environmental	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U Calgary - Environmental	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Total metals in Water by CRC ICPMS	E420 Calgary - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L Calgary - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Metals in Water by CRC ICPMS	E421 Calgary - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L Calgary - Environmental	Water	APHA 3030 B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS
Total Mercury in Water by CVAAS	E508 Calgary - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS
Dissolved Mercury in Water by CVAAS	E509 Calgary - Environmental	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
Dissolved Hardness (Calculated)	EC100 Calgary - Environmental	Water	APHA 2340B	"Hardness (as CaCO ₃), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Ion Balance using Dissolved Metals	EC101 Calgary - Environmental	Water	APHA 1030E	Cation Sum, Anion Sum, and Ion Balance are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present. Ion Balance cannot be calculated accurately for waters with very low electrical conductivity (EC).

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 Calgary - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 Calgary - Environmental	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Preparation for Total Organic Carbon by Combustion	EP355 Calgary - Environmental	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon by Combustion	EP358 Calgary - Environmental	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Phosphorus in water	EP372 Calgary - Environmental	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.

Page : 21 of 21
Work Order : CG2215304
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



<i>Preparation Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
Dissolved Metals Water Filtration	EP421 Calgary - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.
Dissolved Mercury Water Filtration	EP509 Calgary - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.

QUALITY CONTROL REPORT

<p>Work Order : CG2215304</p> <p>Client : Teck Coal Limited</p> <p>Contact : Mike Pope</p> <p>Address : 421 Pine Avenue Sparwood BC Canada V0B2G0</p> <p>Telephone :</p> <p>Project : REGIONAL EFFECTS PROGRAM</p> <p>PO : VPO00847030</p> <p>C-O-C number : November EVO LAEMP 2022</p> <p>Sampler : A McC ----</p> <p>Site : ----</p> <p>Quote number : Teck Coal Master Quote</p> <p>No. of samples received : 10</p> <p>No. of samples analysed : 10</p>	<p>Page : 1 of 19</p> <p>Laboratory : Calgary - Environmental</p> <p>Account Manager : Lyudmyla Shvets</p> <p>Address : 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5</p> <p>Telephone : +1 403 407 1800</p> <p>Date Samples Received : 02-Nov-2022 09:00</p> <p>Date Analysis Commenced : 02-Nov-2022</p> <p>Issue Date : 04-Nov-2022 16:35</p>
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This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Anthony Calero	Supervisor - Inorganic	Calgary Inorganics, Calgary, Alberta
Anthony Calero	Supervisor - Inorganic	Calgary Metals, Calgary, Alberta
Elke Tabora		Calgary Inorganics, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Calgary Inorganics, Calgary, Alberta
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Page : 2 of 19
Work Order : CG2215304
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

- Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
- CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
- DQO = Data Quality Objective.
- LOR = Limit of Reporting (detection limit).
- RPD = Relative Percent Difference
- # = Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 727501)											
CG2215304-010	RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP	solids, total dissolved [TDS]	----	E162	40	mg/L	1550	1540	0.518%	20%	----
Physical Tests (QC Lot: 727502)											
CG2215208-002	Anonymous	turbidity	----	E121	0.10	NTU	0.40	0.38	0.01	Diff <2x LOR	----
Physical Tests (QC Lot: 728157)											
CG2215287-007	Anonymous	acidity (as CaCO3)	----	E283	2.0	mg/L	2.0	2.1	0.08	Diff <2x LOR	----
Physical Tests (QC Lot: 728248)											
CG2215287-005	Anonymous	conductivity	----	E100	2.0	µS/cm	1180	1180	0.508%	10%	----
Physical Tests (QC Lot: 728249)											
CG2215287-005	Anonymous	pH	----	E108	0.10	pH units	8.18	8.18	0.00%	4%	----
Physical Tests (QC Lot: 728250)											
CG2215287-005	Anonymous	alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	148	149	0.470%	20%	----
		alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	148	149	0.470%	20%	----
Physical Tests (QC Lot: 728320)											
CG2215287-001	Anonymous	oxidation-reduction potential [ORP]	----	E125	0.10	mV	287	294	2.38%	15%	----
Anions and Nutrients (QC Lot: 727387)											
CG2215304-001	RG_ERCKDT_1_PW-1_20_22-10_NP	fluoride	16984-48-8	E235.F	0.100	mg/L	0.155	0.154	0.0008	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 727388)											
CG2215304-001	RG_ERCKDT_1_PW-1_20_22-10_NP	bromide	24959-67-9	E235.Br-L	0.250	mg/L	<0.250	<0.250	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 727389)											
CG2215304-001	RG_ERCKDT_1_PW-1_20_22-10_NP	chloride	16887-00-6	E235.Cl-L	0.50	mg/L	10.7	10.6	0.922%	20%	----
Anions and Nutrients (QC Lot: 727390)											
CG2215304-001	RG_ERCKDT_1_PW-1_20_22-10_NP	nitrate (as N)	14797-55-8	E235.NO3-L	0.0250	mg/L	12.0	12.3	1.76%	20%	----
Anions and Nutrients (QC Lot: 727391)											
CG2215304-001	RG_ERCKDT_1_PW-1_20_22-10_NP	nitrite (as N)	14797-65-0	E235.NO2-L	0.0050	mg/L	0.0178	0.0166	0.0012	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 727392)											



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 727392) - continued											
CG2215304-001	RG_ERCKDT_1_PW-1_20 22-10_NP	sulfate (as SO4)	14808-79-8	E235.SO4	1.50	mg/L	751	759	1.07%	20%	----
Anions and Nutrients (QC Lot: 727508)											
CG2215304-010	RG_ERCKDT_WS_LAEMP _EVO_2022-10_NP	fluoride	16984-48-8	E235.F	0.100	mg/L	0.139	0.138	0.001	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 727509)											
CG2215304-010	RG_ERCKDT_WS_LAEMP _EVO_2022-10_NP	bromide	24959-67-9	E235.Br-L	0.250	mg/L	<0.250	<0.250	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 727510)											
CG2215304-010	RG_ERCKDT_WS_LAEMP _EVO_2022-10_NP	chloride	16887-00-6	E235.Cl-L	0.50	mg/L	6.75	6.73	0.323%	20%	----
Anions and Nutrients (QC Lot: 727511)											
CG2215304-010	RG_ERCKDT_WS_LAEMP _EVO_2022-10_NP	nitrate (as N)	14797-55-8	E235.NO3-L	0.0250	mg/L	13.2	13.2	0.202%	20%	----
Anions and Nutrients (QC Lot: 727512)											
CG2215304-010	RG_ERCKDT_WS_LAEMP _EVO_2022-10_NP	nitrite (as N)	14797-65-0	E235.NO2-L	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 727513)											
CG2215304-010	RG_ERCKDT_WS_LAEMP _EVO_2022-10_NP	sulfate (as SO4)	14808-79-8	E235.SO4	1.50	mg/L	778	776	0.163%	20%	----
Anions and Nutrients (QC Lot: 727557)											
CG2215282-001	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0500	mg/L	1.95	1.93	1.39%	20%	----
Anions and Nutrients (QC Lot: 727559)											
CG2215304-010	RG_ERCKDT_WS_LAEMP _EVO_2022-10_NP	Kjeldahl nitrogen, total [TKN]	----	E318	0.500	mg/L	0.561	1.26	0.695	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 728152)											
CG2215304-010	RG_ERCKDT_WS_LAEMP _EVO_2022-10_NP	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0174	0.0187	6.92%	20%	----
Anions and Nutrients (QC Lot: 728382)											
CG2215291-001	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 727550)											
CG2215304-010	RG_ERCKDT_WS_LAEMP _EVO_2022-10_NP	carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	0.58	0.63	0.05	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 727551)											
CG2215304-010	RG_ERCKDT_WS_LAEMP _EVO_2022-10_NP	carbon, total organic [TOC]	----	E355-L	0.50	mg/L	<0.50	0.53	0.03	Diff <2x LOR	----
Total Metals (QC Lot: 729252)											
CG2215304-010	RG_ERCKDT_WS_LAEMP _EVO_2022-10_NP	chromium, total	7440-47-3	E420.Cr-L	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Total Metals (QC Lot: 729253)											



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (QC Lot: 729253) - continued											
CG2215304-010	RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP	aluminum, total	7429-90-5	E420	0.0060	mg/L	<0.0060	<0.0060	0	Diff <2x LOR	----
		antimony, total	7440-36-0	E420	0.00020	mg/L	0.00021	0.00021	0.000002	Diff <2x LOR	----
		arsenic, total	7440-38-2	E420	0.00020	mg/L	0.00028	0.00036	0.00009	Diff <2x LOR	----
		barium, total	7440-39-3	E420	0.00020	mg/L	0.0590	0.0580	1.69%	20%	----
		beryllium, total	7440-41-7	E420	0.000040	mg/L	<0.040 µg/L	<0.000040	0	Diff <2x LOR	----
		bismuth, total	7440-69-9	E420	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		boron, total	7440-42-8	E420	0.020	mg/L	0.022	0.022	0.0005	Diff <2x LOR	----
		cadmium, total	7440-43-9	E420	0.0000100	mg/L	0.175 µg/L	0.000148	17.1%	20%	----
		calcium, total	7440-70-2	E420	0.100	mg/L	266	262	1.81%	20%	----
		cobalt, total	7440-48-4	E420	0.00020	mg/L	3.19 µg/L	0.00315	1.22%	20%	----
		copper, total	7440-50-8	E420	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		iron, total	7439-89-6	E420	0.020	mg/L	0.047	0.048	0.001	Diff <2x LOR	----
		lead, total	7439-92-1	E420	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		lithium, total	7439-93-2	E420	0.0020	mg/L	0.0530	0.0528	0.232%	20%	----
		magnesium, total	7439-95-4	E420	0.0100	mg/L	175	172	1.90%	20%	----
		manganese, total	7439-96-5	E420	0.00020	mg/L	0.0883	0.0906	2.60%	20%	----
		molybdenum, total	7439-98-7	E420	0.000100	mg/L	0.00455	0.00452	0.591%	20%	----
		nickel, total	7440-02-0	E420	0.00100	mg/L	0.0129	0.0135	4.17%	20%	----
		potassium, total	7440-09-7	E420	0.100	mg/L	3.43	3.49	1.76%	20%	----
		selenium, total	7782-49-2	E420	0.000100	mg/L	133 µg/L	0.136	2.75%	20%	----
		silicon, total	7440-21-3	E420	0.20	mg/L	4.11	4.08	0.770%	20%	----
		silver, total	7440-22-4	E420	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		sodium, total	7440-23-5	E420	0.100	mg/L	5.37	5.38	0.165%	20%	----
		strontium, total	7440-24-6	E420	0.00040	mg/L	0.296	0.290	2.16%	20%	----
		sulfur, total	7704-34-9	E420	1.00	mg/L	289	291	0.761%	20%	----
		thallium, total	7440-28-0	E420	0.000020	mg/L	0.000032	0.000029	0.000003	Diff <2x LOR	----
		tin, total	7440-31-5	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		titanium, total	7440-32-6	E420	0.00060	mg/L	<0.00060	<0.00060	0	Diff <2x LOR	----
		uranium, total	7440-61-1	E420	0.000020	mg/L	0.00885	0.00896	1.29%	20%	----
		vanadium, total	7440-62-2	E420	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		zinc, total	7440-66-6	E420	0.0060	mg/L	<0.0060	<0.0060	0	Diff <2x LOR	----
Total Metals (QC Lot: 730121)											
CG2215287-005	Anonymous	mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----

Dissolved Metals (QC Lot: 728447)



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 728447) - continued											
CG2215304-010	RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP	chromium, dissolved	7440-47-3	E421.Cr-L	0.00020	mg/L	<0.00020	0.00021	0.000008	Diff <2x LOR	----
Dissolved Metals (QC Lot: 728448)											
CG2215304-010	RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP	aluminum, dissolved	7429-90-5	E421	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----
		antimony, dissolved	7440-36-0	E421	0.00020	mg/L	0.00020	<0.00020	0.000002	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E421	0.00020	mg/L	0.00029	0.00029	0.000005	Diff <2x LOR	----
		barium, dissolved	7440-39-3	E421	0.00020	mg/L	0.0544	0.0539	0.920%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.000040	mg/L	<0.040 µg/L	<0.000040	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.020	mg/L	0.020	0.020	0.0001	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E421	0.0000100	mg/L	0.152 µg/L	0.000151	0.898%	20%	----
		calcium, dissolved	7440-70-2	E421	0.100	mg/L	245	244	0.0785%	20%	----
		cobalt, dissolved	7440-48-4	E421	0.00020	mg/L	2.82 µg/L	0.00296	4.95%	20%	----
		copper, dissolved	7440-50-8	E421	0.00040	mg/L	<0.00040	<0.00040	0	Diff <2x LOR	----
		iron, dissolved	7439-89-6	E421	0.020	mg/L	<0.020	<0.020	0	Diff <2x LOR	----
		lead, dissolved	7439-92-1	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0020	mg/L	0.0498	0.0504	1.14%	20%	----
		magnesium, dissolved	7439-95-4	E421	0.0100	mg/L	143	145	1.15%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00020	mg/L	0.0791	0.0826	4.28%	20%	----
		molybdenum, dissolved	7439-98-7	E421	0.000100	mg/L	0.00433	0.00443	2.42%	20%	----
		nickel, dissolved	7440-02-0	E421	0.00100	mg/L	0.0114	0.0116	2.35%	20%	----
		potassium, dissolved	7440-09-7	E421	0.100	mg/L	3.19	3.22	0.835%	20%	----
		selenium, dissolved	7782-49-2	E421	0.000100	mg/L	151 µg/L	0.154	2.11%	20%	----
		silicon, dissolved	7440-21-3	E421	0.100	mg/L	4.04	4.09	1.20%	20%	----
		silver, dissolved	7440-22-4	E421	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E421	0.100	mg/L	4.81	4.88	1.47%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00040	mg/L	0.262	0.267	1.88%	20%	----
		sulfur, dissolved	7704-34-9	E421	1.00	mg/L	307	299	2.60%	20%	----
		thallium, dissolved	7440-28-0	E421	0.000020	mg/L	0.000031	0.000028	0.000003	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.00060	mg/L	<0.00060	<0.00060	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000020	mg/L	0.00818	0.00833	1.92%	20%	----
		vanadium, dissolved	7440-62-2	E421	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E421	0.0020	mg/L	0.0044	0.0046	0.0001	Diff <2x LOR	----

Page : 7 of 19
 Work Order : CG2215304
 Client : Teck Coal Limited
 Project : REGIONAL EFFECTS PROGRAM



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 730110)											
CG2215304-010	RG_ERCKDT_WS_LAEMP _EVO_2022-10_NP	mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 727500)						
solids, total suspended [TSS]	---	E160-L	1	mg/L	<1.0	---
Physical Tests (QCLot: 727501)						
solids, total dissolved [TDS]	---	E162	10	mg/L	<10	---
Physical Tests (QCLot: 727502)						
turbidity	---	E121	0.1	NTU	<0.10	---
Physical Tests (QCLot: 728157)						
acidity (as CaCO3)	---	E283	2	mg/L	2.1	---
Physical Tests (QCLot: 728248)						
conductivity	---	E100	1	µS/cm	<1.0	---
Physical Tests (QCLot: 728250)						
alkalinity, bicarbonate (as CaCO3)	---	E290	1	mg/L	<1.0	---
alkalinity, carbonate (as CaCO3)	---	E290	1	mg/L	<1.0	---
alkalinity, hydroxide (as CaCO3)	---	E290	1	mg/L	<1.0	---
alkalinity, total (as CaCO3)	---	E290	1	mg/L	<1.0	---
Anions and Nutrients (QCLot: 727387)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	---
Anions and Nutrients (QCLot: 727388)						
bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	---
Anions and Nutrients (QCLot: 727389)						
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	---
Anions and Nutrients (QCLot: 727390)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	---
Anions and Nutrients (QCLot: 727391)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	---
Anions and Nutrients (QCLot: 727392)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	---
Anions and Nutrients (QCLot: 727508)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	---
Anions and Nutrients (QCLot: 727509)						
bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	---
Anions and Nutrients (QCLot: 727510)						
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	---



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 727511)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 727512)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 727513)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 727557)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 727559)						
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 728152)						
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 728382)						
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Organic / Inorganic Carbon (QCLot: 727550)						
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Organic / Inorganic Carbon (QCLot: 727551)						
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	<0.50	----
Total Metals (QCLot: 729252)						
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	<0.00010	----
Total Metals (QCLot: 729253)						
aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	----
antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	----
barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	----
boron, total	7440-42-8	E420	0.01	mg/L	<0.010	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	----
calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	----
copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	----
iron, total	7439-89-6	E420	0.01	mg/L	<0.010	----
lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	----
lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	----
magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 729253) - continued						
manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	----
nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	----
potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	----
selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	----
silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	----
silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	----
sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	----
strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	----
sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	----
thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	----
tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	----
titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	----
uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	----
zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	----
Total Metals (QCLot: 730121)						
mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 728447)						
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	<0.00010	----
Dissolved Metals (QCLot: 728448)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 728448) - continued						
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
Dissolved Metals (QCLot: 730110)						
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Physical Tests (QCLot: 727500)									
solids, total suspended [TSS]	----	E160-L	1	mg/L	150 mg/L	94.6	85.0	115	----
Physical Tests (QCLot: 727501)									
solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	96.1	85.0	115	----
Physical Tests (QCLot: 727502)									
turbidity	----	E121	0.1	NTU	200 NTU	110	85.0	115	----
Physical Tests (QCLot: 728157)									
acidity (as CaCO ₃)	----	E283	2	mg/L	50 mg/L	102	85.0	115	----
Physical Tests (QCLot: 728248)									
conductivity	----	E100	1	µS/cm	146.9 µS/cm	97.6	90.0	110	----
Physical Tests (QCLot: 728249)									
pH	----	E108	----	pH units	7 pH units	101	98.6	101	----
Physical Tests (QCLot: 728250)									
alkalinity, total (as CaCO ₃)	----	E290	1	mg/L	500 mg/L	96.9	85.0	115	----
Physical Tests (QCLot: 728320)									
oxidation-reduction potential [ORP]	----	E125	----	mV	220 mV	99.3	95.4	104	----
Anions and Nutrients (QCLot: 727387)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	98.0	90.0	110	----
Anions and Nutrients (QCLot: 727388)									
bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	95.1	85.0	115	----
Anions and Nutrients (QCLot: 727389)									
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	97.6	90.0	110	----
Anions and Nutrients (QCLot: 727390)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 727391)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	98.9	90.0	110	----
Anions and Nutrients (QCLot: 727392)									
sulfate (as SO ₄)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	99.3	90.0	110	----
Anions and Nutrients (QCLot: 727508)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 727509)									
bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	102	85.0	115	----



Sub-Matrix: Water					Laboratory Control Sample (LCS) Report				
					Spike Concentration	Recovery (%) LCS	Recovery Limits (%)		Qualifier
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Anions and Nutrients (QCLot: 727510)									
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	99.7	90.0	110	----
Anions and Nutrients (QCLot: 727511)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 727512)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	98.1	90.0	110	----
Anions and Nutrients (QCLot: 727513)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 727557)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	102	85.0	115	----
Anions and Nutrients (QCLot: 727559)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	83.8	75.0	125	----
Anions and Nutrients (QCLot: 728152)									
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.03 mg/L	96.2	80.0	120	----
Anions and Nutrients (QCLot: 728382)									
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.03 mg/L	100	80.0	120	----
Organic / Inorganic Carbon (QCLot: 727550)									
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	92.6	80.0	120	----
Organic / Inorganic Carbon (QCLot: 727551)									
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	98.4	80.0	120	----
Total Metals (QCLot: 729252)									
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	0.25 mg/L	104	80.0	120	----
Total Metals (QCLot: 729253)									
aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	103	80.0	120	----
antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	98.6	80.0	120	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	98.2	80.0	120	----
barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	106	80.0	120	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	104	80.0	120	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	100	80.0	120	----
boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	98.7	80.0	120	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	104	80.0	120	----
calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	101	80.0	120	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	101	80.0	120	----
copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	98.6	80.0	120	----
iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	108	80.0	120	----



Sub-Matrix: **Water**

Laboratory Control Sample (LCS) Report

Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Total Metals (QCLot: 729253) - continued									
lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	103	80.0	120	----
lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	102	80.0	120	----
magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	105	80.0	120	----
manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	104	80.0	120	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	101	80.0	120	----
nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	104	80.0	120	----
potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	103	80.0	120	----
selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	90.7	80.0	120	----
silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	105	60.0	140	----
silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	93.4	80.0	120	----
sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	105	80.0	120	----
strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	104	80.0	120	----
sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	105	80.0	120	----
thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	102	80.0	120	----
tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	98.5	80.0	120	----
titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	106	80.0	120	----
uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	100	80.0	120	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	102	80.0	120	----
zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	91.9	80.0	120	----
Total Metals (QCLot: 730121)									
mercury, total	7439-97-6	E508	0.000005	mg/L	0.0001 mg/L	100	80.0	120	----
Dissolved Metals (QCLot: 728447)									
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	0.25 mg/L	92.8	80.0	120	----
Dissolved Metals (QCLot: 728448)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	102	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	90.4	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	94.0	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	99.8	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	100	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	93.3	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	92.3	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	93.3	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	96.0	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	97.5	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	91.7	80.0	120	----



Sub-Matrix: Water					Laboratory Control Sample (LCS) Report				
					<i>Spike</i>	<i>Recovery (%)</i>	<i>Recovery Limits (%)</i>		<i>Qualifier</i>
<i>Analyte</i>	<i>CAS Number</i>	<i>Method</i>	<i>LOR</i>	<i>Unit</i>	<i>Concentration</i>	<i>LCS</i>	<i>Low</i>	<i>High</i>	
Dissolved Metals (QCLot: 728448) - continued									
iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	103	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	93.5	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	102	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	92.2	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	96.5	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	96.3	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	93.2	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	101	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	90.6	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	100	60.0	140	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	87.9	80.0	120	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	99.7	80.0	120	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	93.2	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	111	80.0	120	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	93.0	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	92.0	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	94.1	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	92.7	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	98.6	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	84.9	80.0	120	----
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	104	80.0	120	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 727387)										
CG2215304-002	RG_ERCKDT_1_PW-2_202 2-10_NP	fluoride	16984-48-8	E235.F	0.958 mg/L	1 mg/L	95.8	75.0	125	----
Anions and Nutrients (QCLot: 727388)										
CG2215304-002	RG_ERCKDT_1_PW-2_202 2-10_NP	bromide	24959-67-9	E235.Br-L	0.530 mg/L	0.5 mg/L	106	75.0	125	----
Anions and Nutrients (QCLot: 727389)										
CG2215304-002	RG_ERCKDT_1_PW-2_202 2-10_NP	chloride	16887-00-6	E235.Cl-L	101 mg/L	100 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 727390)										
CG2215304-002	RG_ERCKDT_1_PW-2_202 2-10_NP	nitrate (as N)	14797-55-8	E235.NO3-L	ND mg/L	2.5 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 727391)										
CG2215304-002	RG_ERCKDT_1_PW-2_202 2-10_NP	nitrite (as N)	14797-65-0	E235.NO2-L	0.521 mg/L	0.5 mg/L	104	75.0	125	----
Anions and Nutrients (QCLot: 727392)										
CG2215304-002	RG_ERCKDT_1_PW-2_202 2-10_NP	sulfate (as SO4)	14808-79-8	E235.SO4	ND mg/L	100 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 727508)										
CG2215311-001	Anonymous	fluoride	16984-48-8	E235.F	0.936 mg/L	1 mg/L	93.6	75.0	125	----
Anions and Nutrients (QCLot: 727509)										
CG2215311-001	Anonymous	bromide	24959-67-9	E235.Br-L	0.525 mg/L	0.5 mg/L	105	75.0	125	----
Anions and Nutrients (QCLot: 727510)										
CG2215311-001	Anonymous	chloride	16887-00-6	E235.Cl-L	106 mg/L	100 mg/L	106	75.0	125	----
Anions and Nutrients (QCLot: 727511)										
CG2215311-001	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	ND mg/L	2.5 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 727512)										
CG2215311-001	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.534 mg/L	0.5 mg/L	107	75.0	125	----
Anions and Nutrients (QCLot: 727513)										
CG2215311-001	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	ND mg/L	100 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 727557)										
CG2215282-002	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.109 mg/L	0.1 mg/L	109	75.0	125	----



Sub-Matrix: Water

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 727559)										
CG2215320-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.32 mg/L	2.5 mg/L	93.0	70.0	130	----
Anions and Nutrients (QCLot: 728152)										
CG2215311-010	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0516 mg/L	0.05 mg/L	103	70.0	130	----
Anions and Nutrients (QCLot: 728382)										
CG2215291-002	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0421 mg/L	0.05 mg/L	84.2	70.0	130	----
Organic / Inorganic Carbon (QCLot: 727550)										
CG2215304-010	RG_ERCKDT_WS_LAEMP_ EVO_2022-10_NP	carbon, dissolved organic [DOC]	----	E358-L	5.15 mg/L	5 mg/L	103	70.0	130	----
Organic / Inorganic Carbon (QCLot: 727551)										
CG2215304-010	RG_ERCKDT_WS_LAEMP_ EVO_2022-10_NP	carbon, total organic [TOC]	----	E355-L	5.59 mg/L	5 mg/L	112	70.0	130	----
Total Metals (QCLot: 729252)										
CG2215338-001	Anonymous	chromium, total	7440-47-3	E420.Cr-L	0.396 mg/L	0.4 mg/L	99.0	70.0	130	----
Total Metals (QCLot: 729253)										
CG2215338-001	Anonymous	aluminum, total	7429-90-5	E420	2.02 mg/L	2 mg/L	101	70.0	130	----
		antimony, total	7440-36-0	E420	0.195 mg/L	0.2 mg/L	97.4	70.0	130	----
		arsenic, total	7440-38-2	E420	0.192 mg/L	0.2 mg/L	95.8	70.0	130	----
		barium, total	7440-39-3	E420	0.204 mg/L	0.2 mg/L	102	70.0	130	----
		beryllium, total	7440-41-7	E420	0.375 mg/L	0.4 mg/L	93.7	70.0	130	----
		bismuth, total	7440-69-9	E420	0.100 mg/L	0.1 mg/L	100	70.0	130	----
		boron, total	7440-42-8	E420	0.970 mg/L	1 mg/L	97.0	70.0	130	----
		cadmium, total	7440-43-9	E420	0.0409 mg/L	0.04 mg/L	102	70.0	130	----
		calcium, total	7440-70-2	E420	ND mg/L	40 mg/L	ND	70.0	130	----
		cobalt, total	7440-48-4	E420	0.191 mg/L	0.2 mg/L	95.7	70.0	130	----
		copper, total	7440-50-8	E420	0.192 mg/L	0.2 mg/L	95.8	70.0	130	----
		iron, total	7439-89-6	E420	19.9 mg/L	20 mg/L	99.5	70.0	130	----
		lead, total	7439-92-1	E420	0.203 mg/L	0.2 mg/L	102	70.0	130	----
		lithium, total	7439-93-2	E420	0.898 mg/L	1 mg/L	89.8	70.0	130	----
		magnesium, total	7439-95-4	E420	ND mg/L	10 mg/L	ND	70.0	130	----
		manganese, total	7439-96-5	E420	0.199 mg/L	0.2 mg/L	99.6	70.0	130	----
		molybdenum, total	7439-98-7	E420	0.200 mg/L	0.2 mg/L	99.8	70.0	130	----
		nickel, total	7440-02-0	E420	0.398 mg/L	0.4 mg/L	99.5	70.0	130	----
		potassium, total	7440-09-7	E420	38.1 mg/L	40 mg/L	95.2	70.0	130	----
		selenium, total	7782-49-2	E420	0.382 mg/L	0.4 mg/L	95.5	70.0	130	----



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 729253) - continued										
CG2215338-001	Anonymous	silicon, total	7440-21-3	E420	89.9 mg/L	100 mg/L	89.9	70.0	130	----
		silver, total	7440-22-4	E420	0.0403 mg/L	0.04 mg/L	101	70.0	130	----
		sodium, total	7440-23-5	E420	20.4 mg/L	20 mg/L	102	70.0	130	----
		strontium, total	7440-24-6	E420	ND mg/L	0.2 mg/L	ND	70.0	130	----
		sulfur, total	7704-34-9	E420	ND mg/L	200 mg/L	ND	70.0	130	----
		thallium, total	7440-28-0	E420	0.0385 mg/L	0.04 mg/L	96.3	70.0	130	----
		tin, total	7440-31-5	E420	0.196 mg/L	0.2 mg/L	97.9	70.0	130	----
		titanium, total	7440-32-6	E420	0.420 mg/L	0.4 mg/L	105	70.0	130	----
		uranium, total	7440-61-1	E420	0.0393 mg/L	0.04 mg/L	98.2	70.0	130	----
		vanadium, total	7440-62-2	E420	0.985 mg/L	1 mg/L	98.5	70.0	130	----
		zinc, total	7440-66-6	E420	3.57 mg/L	4 mg/L	89.3	70.0	130	----
Total Metals (QCLot: 730121)										
CG2215287-006	Anonymous	mercury, total	7439-97-6	E508	0.0000985 mg/L	0.0001 mg/L	98.5	70.0	130	----
Dissolved Metals (QCLot: 728447)										
CG2215320-001	Anonymous	chromium, dissolved	7440-47-3	E421.Cr-L	0.379 mg/L	0.4 mg/L	94.7	70.0	130	----
Dissolved Metals (QCLot: 728448)										
CG2215320-001	Anonymous	aluminum, dissolved	7429-90-5	E421	2.03 mg/L	2 mg/L	101	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.188 mg/L	0.2 mg/L	94.2	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.194 mg/L	0.2 mg/L	96.8	70.0	130	----
		barium, dissolved	7440-39-3	E421	0.199 mg/L	0.2 mg/L	99.4	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.400 mg/L	0.4 mg/L	100	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.0977 mg/L	0.1 mg/L	97.7	70.0	130	----
		boron, dissolved	7440-42-8	E421	0.996 mg/L	1 mg/L	99.6	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.0395 mg/L	0.04 mg/L	98.7	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	40 mg/L	ND	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.196 mg/L	0.2 mg/L	98.1	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.188 mg/L	0.2 mg/L	94.0	70.0	130	----
		iron, dissolved	7439-89-6	E421	19.4 mg/L	20 mg/L	96.8	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.196 mg/L	0.2 mg/L	97.8	70.0	130	----
		lithium, dissolved	7439-93-2	E421	0.947 mg/L	1 mg/L	94.7	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	10 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E421	0.181 mg/L	0.2 mg/L	90.6	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.198 mg/L	0.2 mg/L	99.2	70.0	130	----
		nickel, dissolved	7440-02-0	E421	0.385 mg/L	0.4 mg/L	96.3	70.0	130	----



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 728448) - continued										
CG2215320-001	Anonymous	potassium, dissolved	7440-09-7	E421	39.6 mg/L	40 mg/L	99.1	70.0	130	----
		selenium, dissolved	7782-49-2	E421	0.423 mg/L	0.4 mg/L	106	70.0	130	----
		silicon, dissolved	7440-21-3	E421	90.0 mg/L	100 mg/L	90.0	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.0412 mg/L	0.04 mg/L	103	70.0	130	----
		sodium, dissolved	7440-23-5	E421	18.4 mg/L	20 mg/L	91.8	70.0	130	----
		strontium, dissolved	7440-24-6	E421	ND mg/L	0.2 mg/L	ND	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	185 mg/L	200 mg/L	92.7	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.0377 mg/L	0.04 mg/L	94.2	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.190 mg/L	0.2 mg/L	94.8	70.0	130	----
		titanium, dissolved	7440-32-6	E421	0.374 mg/L	0.4 mg/L	93.5	70.0	130	----
		uranium, dissolved	7440-61-1	E421	0.0385 mg/L	0.04 mg/L	96.2	70.0	130	----
		vanadium, dissolved	7440-62-2	E421	0.994 mg/L	1 mg/L	99.4	70.0	130	----
		zinc, dissolved	7440-66-6	E421	3.52 mg/L	4 mg/L	88.1	70.0	130	----
Dissolved Metals (QCLot: 730110)										
CG2215311-010	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000968 mg/L	0.0001 mg/L	96.8	70.0	130	----

COC ID: November EVO LAEMP 2022		TURNAROUND TIME:																																		
PROJECT/CLIENT INFO				LABORATORY																																
Facility Name / Job# Regional Effects Program		Lab Name ALS Calgary		Excel		PDF		EDD																												
Project Manager Mike Pope		Lab Contact Lyudmyla Shvets																																		
Email mike.pope@teck.com		Email lyudmyla.shvets@alsglobal.com		robin.valleau@minnow.ca																																
Address 421 Pine Avenue		Address 2559 29 Street NE		bowron@minnow.ca		x		x																												
City Sparwood		City Calgary		jessica.rtz@teck.com		x		x																												
Province BC		Province AB																																		
Postal Code V0B 2G0		Postal Code T1Y 7B5																																		
Country Canada		Country Canada																																		
Phone Number 343-333-3905		Phone Number 1 403 407 1794																																		
SAMPLE DETAILS				ANALYSIS REQUESTED																																
				Filtered - F: Field, L: Lab, P1: Field & Lab, N: None																																
				<table border="1"> <tr> <td>N</td> <td>F</td> <td>N</td> <td>F</td> <td>N</td> <td>N</td> <td>F</td> <td>N</td> <td>F</td> </tr> <tr> <td></td> <td></td> <td></td> <td>B2S04</td> <td>B2S04</td> <td></td> <td>HCL</td> <td>HNO3</td> <td>HNO3</td> </tr> <tr> <td>TECKCOAL-ANIONS</td> <td>Dissolved metals</td> <td>TECKCOAL-ROUTINE-VA</td> <td>ALS_Package-DOC</td> <td>ALS_Package-TKN/TOC</td> <td>HG-T-U-CVAF-VA</td> <td>HG-D-CVAF-VA</td> <td>TECKCOAL-MET-T-VA</td> <td>TECKCOAL-MET-D-VA</td> </tr> </table>						N	F	N	F	N	N	F	N	F				B2S04	B2S04		HCL	HNO3	HNO3	TECKCOAL-ANIONS	Dissolved metals	TECKCOAL-ROUTINE-VA	ALS_Package-DOC	ALS_Package-TKN/TOC	HG-T-U-CVAF-VA	HG-D-CVAF-VA	TECKCOAL-MET-T-VA	TECKCOAL-MET-D-VA
N	F	N	F	N	N	F	N	F																												
			B2S04	B2S04		HCL	HNO3	HNO3																												
TECKCOAL-ANIONS	Dissolved metals	TECKCOAL-ROUTINE-VA	ALS_Package-DOC	ALS_Package-TKN/TOC	HG-T-U-CVAF-VA	HG-D-CVAF-VA	TECKCOAL-MET-T-VA	TECKCOAL-MET-D-VA																												
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G-Grab C-Comp	# Of Cont.																													
RG_ERCKDT_1_PW-1_2022-10_NP	RG_ERCKDT	PW	No	10/31/2022	8:30	G	1	X	X																											
RG_ERCKDT_1_PW-2_2022-10_NP	RG_ERCKDT	PW	No	10/31/2022	8:45	G	1	X	X																											
RG_ERCKDT_1_PW-3_2022-10_NP	RG_ERCKDT	PW	No	10/31/2022	9:00	G	1	X	X																											
RG_ERCKDT_2_PW-1_2022-10_NP	RG_ERCKDT	PW	No	10/31/2022	9:15	G	1	X	X																											
RG_ERCKDT_2_PW-2_2022-10_NP	RG_ERCKDT	PW	No	10/31/2022	9:30	G	1	X	X																											
RG_ERCKDT_2_PW-3_2022-10_NP	RG_ERCKDT	PW	No	10/31/2022	9:45	G	1	X	X																											
RG_ERCKDT_3_PW-1_2022-10_NP	RG_ERCKDT	PW	No	10/31/2022	10:00	G	1	X	X																											
RG_ERCKDT_3_PW-2_2022-10_NP	RG_ERCKDT	PW	No	10/31/2022	10:15	G	1	X	X																											
RG_ERCKDT_3_PW-3_2022-10_NP	RG_ERCKDT	WS	No	10/31/2022	10:30	G	1	X	X																											
RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP	RG_ERCKDT	WS	No	10/31/2022	10:35	G	7	X	X																											
ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS				RELINQUISHED BY/AFFILIATION		DATE/TIME		ACCEPTED BY/AFFILIATION																												
ALS POVFO00847030				Alex McClymont, Minnow Environmental		November 1, 2022																														
NB OF BOTTLES RETURNED/DESCRIPTION				Sampler's Name		Mobile #		780-293-6750																												
Regular (default)				Alex McClymont																																
Priority (2-3 business days) - 50% surcharge X				Sampler's Signature		Date/Time		November 1, 2022																												
Emergency (1 Business Day) - 100% surcharge																																				
For Emergency <1 Day, ASAP or Weekend - Contact ALS																																				

Environmental Division
 Calgary
 Work Order Reference
CG2215304



Telephone : +1 403 407 1800



CERTIFICATE OF ANALYSIS

<p>Work Order : CG2215311</p> <p>Client : Teck Coal Limited</p> <p>Contact : Mike Pope</p> <p>Address : 421 Pine Avenue Sparwood BC Canada V0B2G0</p> <p>Telephone : ----</p> <p>Project : REGIONAL EFFECTS PROGRAM</p> <p>PO : VPO00847030</p> <p>C-O-C number : November EVO LAEMP 2022</p> <p>Sampler : AMC</p> <p>Site : ----</p> <p>Quote number : Teck Coal Master Quote</p> <p>No. of samples received : 10</p> <p>No. of samples analysed : 10</p>	<p>Page : 1 of 8</p> <p>Laboratory : Calgary - Environmental</p> <p>Account Manager : Lyudmyla Shvets</p> <p>Address : 2559 29th Street NE Calgary AB Canada T1Y 7B5</p> <p>Telephone : +1 403 407 1800</p> <p>Date Samples Received : 02-Nov-2022 09:00</p> <p>Date Analysis Commenced : 02-Nov-2022</p> <p>Issue Date : 04-Nov-2022 16:39</p>
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This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Anthony Calero	Supervisor - Inorganic	Inorganics, Calgary, Alberta
Anthony Calero	Supervisor - Inorganic	Metals, Calgary, Alberta
Elke Tabora		Inorganics, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Metals, Calgary, Alberta
Kevin Baxter		Inorganics, Calgary, Alberta
Kevin Baxter		Metals, Calgary, Alberta
Ruifang Zheng	Analyst	Inorganics, Calgary, Alberta
Shirley Li		Inorganics, Calgary, Alberta
Shirley Li		Metals, Calgary, Alberta
Summie Lo	Lab Assistant	Metals, Calgary, Alberta
Vladka Stamenova	Analyst	Inorganics, Calgary, Alberta



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

<i>Unit</i>	<i>Description</i>
-	No Unit
%	percent
µg/L	micrograms per litre
µS/cm	Microsiemens per centimetre
meq/L	milliequivalents per litre
mg/L	milligrams per litre
mV	millivolts
NTU	nephelometric turbidity units
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

<i>Qualifier</i>	<i>Description</i>
DLDS	Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
TKNI	TKN result may be biased low due to Nitrate interference. Nitrate-N is > 10x TKN.



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKMD_1 _PW-1_2022-1 0_NP	RG_ERCKMD_1 _PW-2_2022-1 0_NP	RG_ERCKMD_1 _PW-3_2022-1 0_NP	RG_ERCKMD_2 _PW-1_2022-1 0_NP	RG_ERCKMD_2 _PW-2_2022-1 0_NP
Client sampling date / time					31-Oct-2022 12:00	31-Oct-2022 12:15	31-Oct-2022 12:30	31-Oct-2022 12:45	31-Oct-2022 13:00	
Analyte	CAS Number	Method	LOR	Unit	CG2215311-001	CG2215311-002	CG2215311-003	CG2215311-004	CG2215311-005	
					Result	Result	Result	Result	Result	
Physical Tests										
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	1110	1150	1190	1150	1160	
Anions and Nutrients										
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	8.53	8.34	8.49	8.42	8.44	
fluoride	16984-48-8	E235.F	0.020	mg/L	0.179	0.176	0.189	0.176	0.178	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	9.69	9.64	9.62	9.66	9.69	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	0.0108	0.0112	0.0109	0.0125	<0.0050 ^{DLDS}	
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	794	793	790	790	789	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	<0.0050 ^{DLDS}	0.0074	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0423	0.0437	0.0450	0.0412	0.0466	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.100 ^{DLDS}	<0.100 ^{DLDS}	<0.100 ^{DLDS}	<0.100 ^{DLDS}	<0.100 ^{DLDS}	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000250 ^{DLDS}	<0.000250 ^{DLDS}	<0.000250 ^{DLDS}	<0.000250 ^{DLDS}	<0.000250 ^{DLDS}	
boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.050 ^{DLDS}	<0.050 ^{DLDS}	<0.050 ^{DLDS}	<0.050 ^{DLDS}	<0.050 ^{DLDS}	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.154	0.163	0.144	0.182	0.0997	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	218	236	241	233	232	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	3.59	3.62	3.00	3.78	0.74	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00340	<0.00100 ^{DLDS}	<0.00100 ^{DLDS}	<0.00100 ^{DLDS}	<0.00100 ^{DLDS}	
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.050 ^{DLDS}	<0.050 ^{DLDS}	<0.050 ^{DLDS}	<0.050 ^{DLDS}	<0.050 ^{DLDS}	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	0.00249	<0.000250 ^{DLDS}	<0.000250 ^{DLDS}	<0.000250 ^{DLDS}	<0.000250 ^{DLDS}	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0675	0.0716	0.0704	0.0693	0.0704	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	138	137	144	139	141	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.0932	0.0907	0.0648	0.0966	0.0112	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00699	0.00787	0.00782	0.00747	0.00760	
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.0194	0.0200	0.0200	0.0197	0.00725	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKMD_1 _PW-1_2022-1 0_NP	RG_ERCKMD_1 _PW-2_2022-1 0_NP	RG_ERCKMD_1 _PW-3_2022-1 0_NP	RG_ERCKMD_2 _PW-1_2022-1 0_NP	RG_ERCKMD_2 _PW-2_2022-1 0_NP
Client sampling date / time					31-Oct-2022 12:00	31-Oct-2022 12:15	31-Oct-2022 12:30	31-Oct-2022 12:45	31-Oct-2022 13:00	
Analyte	CAS Number	Method	LOR	Unit	CG2215311-001	CG2215311-002	CG2215311-003	CG2215311-004	CG2215311-005	
					Result	Result	Result	Result	Result	
Dissolved Metals										
potassium, dissolved	7440-09-7	E421	0.050	mg/L	3.28	3.45	3.78	3.44	3.54	
selenium, dissolved	7782-49-2	E421	0.050	µg/L	91.3	89.6	87.9	87.2	89.8	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	3.34	3.20	3.37	3.35	3.34	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	6.17	6.20	6.52	6.28	6.46	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.293	0.318	0.321	0.311	0.306	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	267	272	271	270	276	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00150 ^{DLDS}	<0.00150 ^{DLDS}	<0.00150 ^{DLDS}	<0.00150 ^{DLDS}	<0.00150 ^{DLDS}	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00816	0.00912	0.00873	0.00866	0.00862	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00250 ^{DLDS}	<0.00250 ^{DLDS}	<0.00250 ^{DLDS}	<0.00250 ^{DLDS}	<0.00250 ^{DLDS}	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0085	0.0064	0.0073	0.0077	<0.0050 ^{DLDS}	
dissolved metals filtration location	----	EP421	-	-	Laboratory	Laboratory	Laboratory	Laboratory	Laboratory	

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKMD_2 _PW-3_2022-1 0_NP	RG_ERCKMD_3 _PW-1_2022-1 0_NP	RG_ERCKMD_3 _PW-2_2022-1 0_NP	RG_ERCKMD_3 _PW-3_2022-1 0_NP	RG_ERCKMD_ WS_LAEMP_EV O_2022-10_NP
Client sampling date / time					31-Oct-2022 13:15	31-Oct-2022 13:30	31-Oct-2022 13:45	31-Oct-2022 14:00	31-Oct-2022 14:15	
Analyte	CAS Number	Method	LOR	Unit	CG2215311-006	CG2215311-007	CG2215311-008	CG2215311-009	CG2215311-010	
					Result	Result	Result	Result	Result	
Physical Tests										
acidity (as CaCO3)	----	E283	2.0	mg/L	----	----	----	----	<2.0	
alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	----	----	----	----	424	
alkalinity, bicarbonate (as HCO3)	71-52-3	E290	1.0	mg/L	----	----	----	----	517	
alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	----	----	----	----	<1.0	
alkalinity, carbonate (as CO3)	3812-32-6	E290	1.0	mg/L	----	----	----	----	<1.0	
alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	----	----	----	----	<1.0	
alkalinity, hydroxide (as OH)	14280-30-9	E290	1.0	mg/L	----	----	----	----	<1.0	
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	----	----	----	----	424	
conductivity	----	E100	2.0	µS/cm	----	----	----	----	1780	
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	1160	1140	1180	1170	1140	
oxidation-reduction potential [ORP]	----	E125	0.10	mV	----	----	----	----	378	
pH	----	E108	0.10	pH units	----	----	----	----	8.25	
solids, total dissolved [TDS]	----	E162	10	mg/L	----	----	----	----	1540	
solids, total suspended [TSS]	----	E160-L	1.0	mg/L	----	----	----	----	<1.0	
turbidity	----	E121	0.10	NTU	----	----	----	----	0.57	
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	----	----	----	----	0.0190	
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	8.44	8.44	8.41	8.50	8.53	
fluoride	16984-48-8	E235.F	0.020	mg/L	0.178	0.174	0.176	0.188	0.176	
Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	----	----	----	----	<0.500 ^{DLM,TKN}	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	9.68	9.69	9.67	9.72	9.77	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	0.0099	0.0131	0.0125	0.0115	0.0133	
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	----	----	----	----	0.0129	
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	----	----	----	----	0.0139	
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	791	793	791	795	802	
Organic / Inorganic Carbon										
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	----	----	----	----	0.54	
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	----	----	----	----	0.68	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKMD_2 _PW-3_2022-1 0_NP	RG_ERCKMD_3 _PW-1_2022-1 0_NP	RG_ERCKMD_3 _PW-2_2022-1 0_NP	RG_ERCKMD_3 _PW-3_2022-1 0_NP	RG_ERCKMD_ WS_LAEMP_EV O_2022-10_NP
Client sampling date / time					31-Oct-2022 13:15	31-Oct-2022 13:30	31-Oct-2022 13:45	31-Oct-2022 14:00	31-Oct-2022 14:15	
Analyte	CAS Number	Method	LOR	Unit	CG2215311-006	CG2215311-007	CG2215311-008	CG2215311-009	CG2215311-010	
					Result	Result	Result	Result	Result	
Ion Balance										
anion sum	----	EC101	0.10	meq/L	----	----	----	----	26.1	
cation sum	----	EC101	0.10	meq/L	----	----	----	----	23.1	
ion balance (cations/anions)	----	EC101	0.010	%	----	----	----	----	88.5	
ion balance (APHA)	----	EC101	0.01	%	----	----	----	----	-6.10	
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L	----	----	----	----	<0.0060 ^{DLDS}	
antimony, total	7440-36-0	E420	0.00010	mg/L	----	----	----	----	0.00021	
arsenic, total	7440-38-2	E420	0.00010	mg/L	----	----	----	----	0.00033	
barium, total	7440-39-3	E420	0.00010	mg/L	----	----	----	----	0.0447	
beryllium, total	7440-41-7	E420	0.020	µg/L	----	----	----	----	<0.040 ^{DLDS}	
bismuth, total	7440-69-9	E420	0.000050	mg/L	----	----	----	----	<0.000100 ^{DLDS}	
boron, total	7440-42-8	E420	0.010	mg/L	----	----	----	----	0.029	
cadmium, total	7440-43-9	E420	0.0050	µg/L	----	----	----	----	0.240	
calcium, total	7440-70-2	E420	0.050	mg/L	----	----	----	----	266	
chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	----	----	----	----	<0.00020 ^{DLDS}	
cobalt, total	7440-48-4	E420	0.10	µg/L	----	----	----	----	5.63	
copper, total	7440-50-8	E420	0.00050	mg/L	----	----	----	----	<0.00100 ^{DLDS}	
iron, total	7439-89-6	E420	0.010	mg/L	----	----	----	----	0.063	
lead, total	7439-92-1	E420	0.000050	mg/L	----	----	----	----	<0.000100 ^{DLDS}	
lithium, total	7439-93-2	E420	0.0010	mg/L	----	----	----	----	0.0710	
magnesium, total	7439-95-4	E420	0.0050	mg/L	----	----	----	----	153	
manganese, total	7439-96-5	E420	0.00010	mg/L	----	----	----	----	0.119	
mercury, total	7439-97-6	E508	0.0000050	mg/L	----	----	----	----	<0.0000050	
molybdenum, total	7439-98-7	E420	0.000050	mg/L	----	----	----	----	0.00808	
nickel, total	7440-02-0	E420	0.00050	mg/L	----	----	----	----	0.0217	
potassium, total	7440-09-7	E420	0.050	mg/L	----	----	----	----	3.69	
selenium, total	7782-49-2	E420	0.050	µg/L	----	----	----	----	94.2	
silicon, total	7440-21-3	E420	0.10	mg/L	----	----	----	----	3.92	
silver, total	7440-22-4	E420	0.000010	mg/L	----	----	----	----	<0.000020 ^{DLDS}	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKMD_2 _PW-3_2022-1 0_NP	RG_ERCKMD_3 _PW-1_2022-1 0_NP	RG_ERCKMD_3 _PW-2_2022-1 0_NP	RG_ERCKMD_3 _PW-3_2022-1 0_NP	RG_ERCKMD_ WS_LAEMP_EV O_2022-10_NP
Client sampling date / time					31-Oct-2022 13:15	31-Oct-2022 13:30	31-Oct-2022 13:45	31-Oct-2022 14:00	31-Oct-2022 14:15	
Analyte	CAS Number	Method	LOR	Unit	CG2215311-006	CG2215311-007	CG2215311-008	CG2215311-009	CG2215311-010	
					Result	Result	Result	Result	Result	
Total Metals										
sodium, total	7440-23-5	E420	0.050	mg/L	---	---	---	---	6.78	
strontium, total	7440-24-6	E420	0.00020	mg/L	---	---	---	---	0.339	
sulfur, total	7704-34-9	E420	0.50	mg/L	---	---	---	---	303	
thallium, total	7440-28-0	E420	0.000010	mg/L	---	---	---	---	0.000074	
tin, total	7440-31-5	E420	0.00010	mg/L	---	---	---	---	<0.00020 DLDS	
titanium, total	7440-32-6	E420	0.00030	mg/L	---	---	---	---	<0.00060 DLDS	
uranium, total	7440-61-1	E420	0.000010	mg/L	---	---	---	---	0.00893	
vanadium, total	7440-62-2	E420	0.00050	mg/L	---	---	---	---	<0.00100 DLDS	
zinc, total	7440-66-6	E420	0.0030	mg/L	---	---	---	---	0.0094	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	<0.0050 DLDS	<0.0050 DLDS	<0.0050 DLDS	<0.0050 DLDS	<0.0020 DLDS	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00050 DLDS	<0.00050 DLDS	<0.00050 DLDS	<0.00050 DLDS	<0.00020 DLDS	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	<0.00050 DLDS	<0.00050 DLDS	<0.00050 DLDS	<0.00050 DLDS	0.00027	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0444	0.0413	0.0424	0.0436	0.0400	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.100 DLDS	<0.100 DLDS	<0.100 DLDS	<0.100 DLDS	<0.040 DLDS	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000250 DLDS	<0.000250 DLDS	<0.000250 DLDS	<0.000250 DLDS	<0.000100 DLDS	
boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.050 DLDS	<0.050 DLDS	<0.050 DLDS	<0.050 DLDS	0.024	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.148	0.191	0.154	0.143	0.193	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	236	231	237	236	238	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00050 DLDS	<0.00050 DLDS	<0.00050 DLDS	<0.00050 DLDS	<0.00020 DLDS	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	1.83	4.00	4.23	2.40	3.95	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00100 DLDS	<0.00100 DLDS	<0.00100 DLDS	<0.00100 DLDS	<0.00040 DLDS	
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.050 DLDS	<0.050 DLDS	<0.050 DLDS	<0.050 DLDS	<0.020 DLDS	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000250 DLDS	<0.000250 DLDS	<0.000250 DLDS	<0.000250 DLDS	<0.000100 DLDS	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0718	0.0698	0.0732	0.0707	0.0734	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	140	137	144	141	132	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.0601	0.104	0.106	0.0467	0.107	
mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	---	---	---	---	<0.0000050	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00785	0.00763	0.00766	0.00755	0.00766	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKMD_2 _PW-3_2022-1 0_NP	RG_ERCKMD_3 _PW-1_2022-1 0_NP	RG_ERCKMD_3 _PW-2_2022-1 0_NP	RG_ERCKMD_3 _PW-3_2022-1 0_NP	RG_ERCKMD_ WS_LAEMP_EV O_2022-10_NP
Client sampling date / time					31-Oct-2022 13:15	31-Oct-2022 13:30	31-Oct-2022 13:45	31-Oct-2022 14:00	31-Oct-2022 14:15	
Analyte	CAS Number	Method	LOR	Unit	CG2215311-006	CG2215311-007	CG2215311-008	CG2215311-009	CG2215311-010	
					Result	Result	Result	Result	Result	
Dissolved Metals										
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.0122	0.0209	0.0217	0.0193	0.0189	
potassium, dissolved	7440-09-7	E421	0.050	mg/L	3.50	3.30	3.55	3.61	3.42	
selenium, dissolved	7782-49-2	E421	0.050	µg/L	91.5	89.5	97.3	92.4	106	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	3.46	3.31	3.58	3.44	3.50	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	<0.000020 ^{DLDS}	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	6.42	6.14	6.54	6.43	6.23	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.321	0.320	0.320	0.313	0.318	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	285	271	294	281	292	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	<0.000050 ^{DLDS}	0.000044	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00050 ^{DLDS}	<0.00020 ^{DLDS}	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00150 ^{DLDS}	<0.00150 ^{DLDS}	<0.00150 ^{DLDS}	<0.00150 ^{DLDS}	<0.00060 ^{DLDS}	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00897	0.00873	0.00879	0.00863	0.00847	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00250 ^{DLDS}	<0.00250 ^{DLDS}	<0.00250 ^{DLDS}	<0.00250 ^{DLDS}	<0.00100 ^{DLDS}	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0050 ^{DLDS}	0.0080	0.0078	0.0052	0.0059	
dissolved mercury filtration location	----	EP509	-	-	----	----	----	----	Field	
dissolved metals filtration location	----	EP421	-	-	Laboratory	Laboratory	Laboratory	Laboratory	Field	

Please refer to the General Comments section for an explanation of any qualifiers detected.



QUALITY CONTROL INTERPRETIVE REPORT

<p>Work Order : CG2215311</p> <p>Client : Teck Coal Limited</p> <p>Contact : Mike Pope</p> <p>Address : 421 Pine Avenue Sparwood BC Canada V0B2G0</p> <p>Telephone : ----</p> <p>Project : REGIONAL EFFECTS PROGRAM</p> <p>PO : VPO00847030</p> <p>C-O-C number : November EVO LAEMP 2022</p> <p>Sampler : AMC</p> <p>Site : ----</p> <p>Quote number : Teck Coal Master Quote</p> <p>No. of samples received : 10</p> <p>No. of samples analysed : 10</p>	<p>Page : 1 of 22</p> <p>Laboratory : Calgary - Environmental</p> <p>Account Manager : Lyudmyla Shvets</p> <p>Address : 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5</p> <p>Telephone : +1 403 407 1800</p> <p>Date Samples Received : 02-Nov-2022 09:00</p> <p>Issue Date : 04-Nov-2022 16:40</p>
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This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

- Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
- CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
- DQO: Data Quality Objective.
- LOR: Limit of Reporting (detection limit).
- RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- Method Blank value outliers occur - please see following pages for full details.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **Water**

Analyte Group	Laboratory sample ID	Client/Ref Sample ID	Analyte	CAS Number	Method	Result	Limits	Comment
Method Blank (MB) Values								
Total Metals	QC-MRG2-7289420 01	----	magnesium, total	7439-95-4	E420	0.0082 mg/L	0.005 mg/L	Blank result exceeds permitted value
Total Metals	QC-MRG2-7289420 01	----	chromium, total	7440-47-3	E420.Cr-L	0.00020 mg/L	0.0001 mg/L	Blank result exceeds permitted value



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP	E298	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKMD_1_PW-1_2022-10_NP	E235.Br-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKMD_1_PW-2_2022-10_NP	E235.Br-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKMD_1_PW-3_2022-10_NP	E235.Br-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKMD_2_PW-1_2022-10_NP	E235.Br-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKMD_2_PW-2_2022-10_NP	E235.Br-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE RG_ERCKMD_2_PW-3_2022-10_NP	E235.Br-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKMD_3_PW-1_2022-10_NP	E235.Br-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKMD_3_PW-2_2022-10_NP	E235.Br-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKMD_3_PW-3_2022-10_NP	E235.Br-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP	E235.Br-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKMD_1_PW-1_2022-10_NP	E235.Cl-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKMD_1_PW-2_2022-10_NP	E235.Cl-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKMD_1_PW-3_2022-10_NP	E235.Cl-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKMD_2_PW-1_2022-10_NP	E235.Cl-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
HDPE RG_ERCKMD_2_PW-2_2022-10_NP	E235.Cl-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_ERCKMD_2_PW-3_2022-10_NP	E235.Cl-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_ERCKMD_3_PW-1_2022-10_NP	E235.Cl-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_ERCKMD_3_PW-2_2022-10_NP	E235.Cl-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_ERCKMD_3_PW-3_2022-10_NP	E235.Cl-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP	E235.Cl-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP	E378-U	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	3 days	3 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE RG_ERCKMD_1_PW-1_2022-10_NP	E235.F	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE RG_ERCKMD_1_PW-2_2022-10_NP	E235.F	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE RG_ERCKMD_1_PW-3_2022-10_NP	E235.F	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKMD_2_PW-1_2022-10_NP	E235.F	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKMD_2_PW-2_2022-10_NP	E235.F	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKMD_2_PW-3_2022-10_NP	E235.F	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKMD_3_PW-1_2022-10_NP	E235.F	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKMD_3_PW-2_2022-10_NP	E235.F	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKMD_3_PW-3_2022-10_NP	E235.F	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP	E235.F	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKMD_1_PW-1_2022-10_NP	E235.NO3-L	31-Oct-2022	02-Nov-2022	3 days	2 days	✔	02-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKMD_1_PW-2_2022-10_NP	E235.NO3-L	31-Oct-2022	02-Nov-2022	3 days	2 days	✔	02-Nov-2022	3 days	0 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKMD_1_PW-3_2022-10_NP	E235.NO3-L	31-Oct-2022	02-Nov-2022	3 days	2 days	✔	02-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKMD_2_PW-1_2022-10_NP	E235.NO3-L	31-Oct-2022	02-Nov-2022	3 days	2 days	✔	02-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKMD_2_PW-2_2022-10_NP	E235.NO3-L	31-Oct-2022	02-Nov-2022	3 days	2 days	✔	02-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKMD_2_PW-3_2022-10_NP	E235.NO3-L	31-Oct-2022	02-Nov-2022	3 days	2 days	✔	02-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKMD_3_PW-1_2022-10_NP	E235.NO3-L	31-Oct-2022	02-Nov-2022	3 days	2 days	✔	02-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKMD_3_PW-2_2022-10_NP	E235.NO3-L	31-Oct-2022	02-Nov-2022	3 days	2 days	✔	02-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKMD_3_PW-3_2022-10_NP	E235.NO3-L	31-Oct-2022	02-Nov-2022	3 days	2 days	✔	02-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP	E235.NO3-L	31-Oct-2022	02-Nov-2022	3 days	2 days	✔	02-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKMD_1_PW-1_2022-10_NP	E235.NO2-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	3 days	2 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKMD_1_PW-2_2022-10_NP	E235.NO2-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKMD_1_PW-3_2022-10_NP	E235.NO2-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKMD_2_PW-1_2022-10_NP	E235.NO2-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKMD_2_PW-2_2022-10_NP	E235.NO2-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKMD_2_PW-3_2022-10_NP	E235.NO2-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKMD_3_PW-1_2022-10_NP	E235.NO2-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKMD_3_PW-2_2022-10_NP	E235.NO2-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKMD_3_PW-3_2022-10_NP	E235.NO2-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP	E235.NO2-L	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	3 days	2 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKMD_1_PW-1_2022-10_NP	E235.S04	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKMD_1_PW-2_2022-10_NP	E235.S04	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKMD_1_PW-3_2022-10_NP	E235.S04	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKMD_2_PW-1_2022-10_NP	E235.S04	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKMD_2_PW-2_2022-10_NP	E235.S04	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKMD_2_PW-3_2022-10_NP	E235.S04	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKMD_3_PW-1_2022-10_NP	E235.S04	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKMD_3_PW-2_2022-10_NP	E235.S04	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKMD_3_PW-3_2022-10_NP	E235.S04	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Sulfate in Water by IC											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP	E235.SO4	31-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	2 days	✔	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)											
Amber glass total (sulfuric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP	E318	31-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	28 days	4 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP	E372-U	31-Oct-2022	03-Nov-2022	----	----		04-Nov-2022	28 days	4 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKMD_1_PW-1_2022-10_NP	E421.Cr-L	31-Oct-2022	03-Nov-2022	----	----		04-Nov-2022	180 days	4 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKMD_1_PW-2_2022-10_NP	E421.Cr-L	31-Oct-2022	03-Nov-2022	----	----		04-Nov-2022	180 days	4 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKMD_1_PW-3_2022-10_NP	E421.Cr-L	31-Oct-2022	03-Nov-2022	----	----		04-Nov-2022	180 days	4 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKMD_2_PW-1_2022-10_NP	E421.Cr-L	31-Oct-2022	03-Nov-2022	----	----		04-Nov-2022	180 days	4 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKMD_2_PW-2_2022-10_NP	E421.Cr-L	31-Oct-2022	03-Nov-2022	----	----		04-Nov-2022	180 days	4 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKMD_2_PW-3_2022-10_NP	E421.Cr-L	31-Oct-2022	03-Nov-2022	----	----		04-Nov-2022	180 days	4 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKMD_3_PW-1_2022-10_NP	E421.Cr-L	31-Oct-2022	03-Nov-2022	----	----		04-Nov-2022	180 days	4 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKMD_3_PW-2_2022-10_NP	E421.Cr-L	31-Oct-2022	03-Nov-2022	----	----		04-Nov-2022	180 days	4 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKMD_3_PW-3_2022-10_NP	E421.Cr-L	31-Oct-2022	03-Nov-2022	----	----		04-Nov-2022	180 days	4 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP	E421.Cr-L	31-Oct-2022	03-Nov-2022	----	----		04-Nov-2022	180 days	4 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP	E509	31-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	28 days	4 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ERCKMD_1_PW-1_2022-10_NP	E421	31-Oct-2022	03-Nov-2022	----	----		04-Nov-2022	180 days	4 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ERCKMD_1_PW-2_2022-10_NP	E421	31-Oct-2022	03-Nov-2022	----	----		04-Nov-2022	180 days	4 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ERCKMD_1_PW-3_2022-10_NP	E421	31-Oct-2022	03-Nov-2022	----	----		04-Nov-2022	180 days	4 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ERCKMD_2_PW-1_2022-10_NP	E421	31-Oct-2022	03-Nov-2022	----	----		04-Nov-2022	180 days	4 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved) RG_ERCKMD_2_PW-2_2022-10_NP	E421	31-Oct-2022	03-Nov-2022	----	----		04-Nov-2022	180 days	4 days	✔
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved) RG_ERCKMD_2_PW-3_2022-10_NP	E421	31-Oct-2022	03-Nov-2022	----	----		04-Nov-2022	180 days	4 days	✔
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved) RG_ERCKMD_3_PW-1_2022-10_NP	E421	31-Oct-2022	03-Nov-2022	----	----		04-Nov-2022	180 days	4 days	✔
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved) RG_ERCKMD_3_PW-2_2022-10_NP	E421	31-Oct-2022	03-Nov-2022	----	----		04-Nov-2022	180 days	4 days	✔
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved) RG_ERCKMD_3_PW-3_2022-10_NP	E421	31-Oct-2022	03-Nov-2022	----	----		04-Nov-2022	180 days	4 days	✔
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved) RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP	E421	31-Oct-2022	03-Nov-2022	----	----		04-Nov-2022	180 days	4 days	✔
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP	E358-L	31-Oct-2022	02-Nov-2022	----	----		03-Nov-2022	28 days	3 days	✔
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP	E355-L	31-Oct-2022	02-Nov-2022	----	----		03-Nov-2022	28 days	3 days	✔
Physical Tests : Acidity by Titration										
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP	E283	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	14 days	3 days	✔



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Alkalinity Species by Titration											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP	E290	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	14 days	3 days	✓	
Physical Tests : Conductivity in Water											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP	E100	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	28 days	3 days	✓	
Physical Tests : ORP by Electrode											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP	E125	31-Oct-2022	----	----	----		04-Nov-2022	0.25 hrs	93 hrs	* EHTR-FM	
Physical Tests : pH by Meter											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP	E108	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	0.25 hrs	0.25 hrs	* EHTR-FM	
Physical Tests : TDS by Gravimetry											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP	E162	31-Oct-2022	----	----	----		03-Nov-2022	7 days	3 days	✓	
Physical Tests : TSS by Gravimetry (Low Level)											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP	E160-L	31-Oct-2022	----	----	----		03-Nov-2022	7 days	3 days	✓	
Physical Tests : Turbidity by Nephelometry											
HDPE RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP	E121	31-Oct-2022	----	----	----		03-Nov-2022	3 days	3 days	✓	
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)											
HDPE - total (lab preserved) RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP	E420.Cr-L	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	3 days	✓	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP	E508	31-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	28 days	4 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals : Total metals in Water by CRC ICPMS										
HDPE - total (lab preserved) RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP	E420	31-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	180 days	3 days	✔

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended

Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
Analytical Methods							
Laboratory Duplicates (DUP)							
Acidity by Titration	E283	729315	1	14	7.1	5.0	✓
Alkalinity Species by Titration	E290	729321	1	7	14.2	5.0	✓
Ammonia by Fluorescence	E298	727697	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	727509	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	727510	1	20	5.0	5.0	✓
Conductivity in Water	E100	729320	1	7	14.2	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	729263	1	15	6.6	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	730110	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	729264	1	15	6.6	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	727550	1	17	5.8	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	728152	1	13	7.6	5.0	✓
Fluoride in Water by IC	E235.F	727508	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	727511	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	727512	1	20	5.0	5.0	✓
ORP by Electrode	E125	730396	1	9	11.1	5.0	✓
pH by Meter	E108	729319	1	7	14.2	5.0	✓
Sulfate in Water by IC	E235.SO4	727513	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	729418	1	9	11.1	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	728943	1	11	9.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	728941	1	16	6.2	5.0	✓
Total Mercury in Water by CVAAS	E508	730121	1	20	5.0	5.0	✓
Total metals in Water by CRC ICPMS	E420	728942	1	20	5.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	727551	1	19	5.2	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	728394	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121	727502	1	20	5.0	5.0	✓
Laboratory Control Samples (LCS)							
Acidity by Titration	E283	729315	1	14	7.1	5.0	✓
Alkalinity Species by Titration	E290	729321	1	7	14.2	5.0	✓
Ammonia by Fluorescence	E298	727697	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	727509	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	727510	1	20	5.0	5.0	✓
Conductivity in Water	E100	729320	1	7	14.2	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	729263	1	15	6.6	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	730110	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	729264	1	15	6.6	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	727550	1	17	5.8	5.0	✓



Matrix: **Water**

Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
Analytical Methods							
Laboratory Control Samples (LCS) - Continued							
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	728152	1	13	7.6	5.0	✓
Fluoride in Water by IC	E235.F	727508	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	727511	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	727512	1	20	5.0	5.0	✓
ORP by Electrode	E125	730396	1	9	11.1	5.0	✓
pH by Meter	E108	729319	1	7	14.2	5.0	✓
Sulfate in Water by IC	E235.SO4	727513	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	729418	1	9	11.1	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	728943	1	11	9.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	728941	1	16	6.2	5.0	✓
Total Mercury in Water by CVAAS	E508	730121	1	20	5.0	5.0	✓
Total metals in Water by CRC ICPMS	E420	728942	1	20	5.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	727551	1	19	5.2	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	728394	1	20	5.0	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	729431	1	9	11.1	5.0	✓
Turbidity by Nephelometry	E121	727502	1	20	5.0	5.0	✓
Method Blanks (MB)							
Acidity by Titration	E283	729315	1	14	7.1	5.0	✓
Alkalinity Species by Titration	E290	729321	1	7	14.2	5.0	✓
Ammonia by Fluorescence	E298	727697	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	727509	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	727510	1	20	5.0	5.0	✓
Conductivity in Water	E100	729320	1	7	14.2	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	729263	1	15	6.6	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	730110	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	729264	1	15	6.6	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	727550	1	17	5.8	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	728152	1	13	7.6	5.0	✓
Fluoride in Water by IC	E235.F	727508	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	727511	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	727512	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	727513	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	729418	1	9	11.1	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	728943	1	11	9.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	728941	1	16	6.2	5.0	✓
Total Mercury in Water by CVAAS	E508	730121	1	20	5.0	5.0	✓
Total metals in Water by CRC ICPMS	E420	728942	1	20	5.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	727551	1	19	5.2	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	728394	1	20	5.0	5.0	✓



Matrix: **Water** Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
<i>Analytical Methods</i>							
Method Blanks (MB) - Continued							
TSS by Gravimetry (Low Level)	E160-L	729431	1	9	11.1	5.0	✔
Turbidity by Nephelometry	E121	727502	1	20	5.0	5.0	✔
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	727697	1	20	5.0	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	727509	1	20	5.0	5.0	✔
Chloride in Water by IC (Low Level)	E235.Cl-L	727510	1	20	5.0	5.0	✔
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	729263	1	15	6.6	5.0	✔
Dissolved Mercury in Water by CVAAS	E509	730110	1	20	5.0	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	729264	1	15	6.6	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	727550	1	17	5.8	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	728152	1	13	7.6	5.0	✔
Fluoride in Water by IC	E235.F	727508	1	20	5.0	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	727511	1	20	5.0	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	727512	1	20	5.0	5.0	✔
Sulfate in Water by IC	E235.SO4	727513	1	20	5.0	5.0	✔
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	728943	1	11	9.0	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	728941	1	16	6.2	5.0	✔
Total Mercury in Water by CVAAS	E508	730121	1	20	5.0	5.0	✔
Total metals in Water by CRC ICPMS	E420	728942	1	20	5.0	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	727551	1	19	5.2	5.0	✔
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	728394	1	20	5.0	5.0	✔



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 Calgary - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 Calgary - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 Calgary - Environmental	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
ORP by Electrode	E125 Calgary - Environmental	Water	ASTM D1498 (mod)	Oxidation reduction potential is reported as the oxidation-reduction potential of the platinum metal-reference electrode employed, measured in mV. For high accuracy test results, it is recommended that this analysis be conducted in the field.
TSS by Gravimetry (Low Level)	E160-L Calgary - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 Calgary - Environmental	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC (Low Level)	E235.Cl-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Acidity by Titration	E283 Calgary - Environmental	Water	APHA 2310 B (mod)	Acidity is determined by potentiometric titration to pH endpoint of 8.3
Alkalinity Species by Titration	E290 Calgary - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 Calgary - Environmental	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 Calgary - Environmental	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L Calgary - Environmental	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Dissolved Organic Carbon by Combustion (Low Level)	E358-L Calgary - Environmental	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U Calgary - Environmental	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U Calgary - Environmental	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Total metals in Water by CRC ICPMS	E420 Calgary - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L Calgary - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Metals in Water by CRC ICPMS	E421 Calgary - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L Calgary - Environmental	Water	APHA 3030 B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS
Total Mercury in Water by CVAAS	E508 Calgary - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS
Dissolved Mercury in Water by CVAAS	E509 Calgary - Environmental	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
Dissolved Hardness (Calculated)	EC100 Calgary - Environmental	Water	APHA 2340B	"Hardness (as CaCO ₃), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Ion Balance using Dissolved Metals	EC101 Calgary - Environmental	Water	APHA 1030E	Cation Sum, Anion Sum, and Ion Balance are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present. Ion Balance cannot be calculated accurately for waters with very low electrical conductivity (EC).

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 Calgary - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 Calgary - Environmental	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Preparation for Total Organic Carbon by Combustion	EP355 Calgary - Environmental	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon by Combustion	EP358 Calgary - Environmental	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Phosphorus in water	EP372 Calgary - Environmental	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.



<i>Preparation Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
Dissolved Metals Water Filtration	EP421 Calgary - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.
Dissolved Mercury Water Filtration	EP509 Calgary - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.

QUALITY CONTROL REPORT

<p>Work Order : CG2215311</p> <p>Client : Teck Coal Limited</p> <p>Contact : Mike Pope</p> <p>Address : 421 Pine Avenue Sparwood BC Canada V0B2G0</p> <p>Telephone :</p> <p>Project : REGIONAL EFFECTS PROGRAM</p> <p>PO : VPO00847030</p> <p>C-O-C number : November EVO LAEMP 2022</p> <p>Sampler : AMC</p> <p>Site : ----</p> <p>Quote number : Teck Coal Master Quote</p> <p>No. of samples received : 10</p> <p>No. of samples analysed : 10</p>	<p>Page : 1 of 17</p> <p>Laboratory : Calgary - Environmental</p> <p>Account Manager : Lyudmyla Shvets</p> <p>Address : 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5</p> <p>Telephone : +1 403 407 1800</p> <p>Date Samples Received : 02-Nov-2022 09:00</p> <p>Date Analysis Commenced : 02-Nov-2022</p> <p>Issue Date : 04-Nov-2022 16:40</p>
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This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Anthony Calero	Supervisor - Inorganic	Calgary Inorganics, Calgary, Alberta
Anthony Calero	Supervisor - Inorganic	Calgary Metals, Calgary, Alberta
Elke Tabora		Calgary Inorganics, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Calgary Inorganics, Calgary, Alberta
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Kevin Baxter		Calgary Inorganics, Calgary, Alberta
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Summie Lo	Lab Assistant	Calgary Metals, Calgary, Alberta
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Page : 2 of 17
Work Order : CG2215311
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percent Difference
= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 727502)											
CG2215208-002	Anonymous	turbidity	----	E121	0.10	NTU	0.40	0.38	0.01	Diff <2x LOR	----
Physical Tests (QC Lot: 729315)											
CG2215311-010	RG_ERCKMD_WS_LAEM P_EVO_2022-10_NP	acidity (as CaCO3)	----	E283	2.0	mg/L	<2.0	<2.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 729319)											
CG2215311-010	RG_ERCKMD_WS_LAEM P_EVO_2022-10_NP	pH	----	E108	0.10	pH units	8.25	8.26	0.121%	4%	----
Physical Tests (QC Lot: 729320)											
CG2215311-010	RG_ERCKMD_WS_LAEM P_EVO_2022-10_NP	conductivity	----	E100	2.0	µS/cm	1780	1780	0.112%	10%	----
Physical Tests (QC Lot: 729321)											
CG2215311-010	RG_ERCKMD_WS_LAEM P_EVO_2022-10_NP	alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	424	420	0.830%	20%	----
		alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	424	420	0.830%	20%	----
Physical Tests (QC Lot: 729418)											
CG2215311-010	RG_ERCKMD_WS_LAEM P_EVO_2022-10_NP	solids, total dissolved [TDS]	----	E162	40	mg/L	1540	1700	9.99%	20%	----
Physical Tests (QC Lot: 730396)											
CG2215311-010	RG_ERCKMD_WS_LAEM P_EVO_2022-10_NP	oxidation-reduction potential [ORP]	----	E125	0.10	mV	378	383	1.42%	15%	----
Anions and Nutrients (QC Lot: 727508)											
CG2215304-010	Anonymous	fluoride	16984-48-8	E235.F	0.100	mg/L	0.139	0.138	0.001	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 727509)											
CG2215304-010	Anonymous	bromide	24959-67-9	E235.Br-L	0.250	mg/L	<0.250	<0.250	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 727510)											
CG2215304-010	Anonymous	chloride	16887-00-6	E235.Cl-L	0.50	mg/L	6.75	6.73	0.323%	20%	----
Anions and Nutrients (QC Lot: 727511)											
CG2215304-010	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	0.0250	mg/L	13.2	13.2	0.202%	20%	----
Anions and Nutrients (QC Lot: 727512)											
CG2215304-010	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 727513)											



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 727513) - continued											
CG2215304-010	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	1.50	mg/L	778	776	0.163%	20%	----
Anions and Nutrients (QC Lot: 727697)											
CG2215305-001	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0240	0.0241	0.0001	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 728152)											
CG2215304-010	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0174	0.0187	6.92%	20%	----
Anions and Nutrients (QC Lot: 728394)											
CG2215307-001	Anonymous	phosphorus, total	7723-14-0	E372-U	0.200	mg/L	4.89	4.99	1.92%	20%	----
Anions and Nutrients (QC Lot: 728941)											
CG2215311-010	RG_ERCKMD_WS_LAEM P_EVO_2022-10_NP	Kjeldahl nitrogen, total [TKN]	----	E318	0.500	mg/L	<0.500	<0.500	0	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 727550)											
CG2215304-010	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	0.58	0.63	0.05	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 727551)											
CG2215304-010	Anonymous	carbon, total organic [TOC]	----	E355-L	0.50	mg/L	<0.50	0.53	0.03	Diff <2x LOR	----
Total Metals (QC Lot: 730121)											
CG2215287-005	Anonymous	mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 729263)											
CG2215338-001	Anonymous	chromium, dissolved	7440-47-3	E421.Cr-L	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 729264)											
CG2215338-001	Anonymous	aluminum, dissolved	7429-90-5	E421	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----
		antimony, dissolved	7440-36-0	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E421	0.00020	mg/L	0.00028	0.00025	0.00003	Diff <2x LOR	----
		barium, dissolved	7440-39-3	E421	0.00020	mg/L	0.0359	0.0345	3.91%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.000040	mg/L	<0.040 µg/L	<0.000040	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.020	mg/L	0.023	0.023	0.0007	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E421	0.0000100	mg/L	<0.0100 µg/L	<0.0000100	0	Diff <2x LOR	----
		calcium, dissolved	7440-70-2	E421	0.100	mg/L	212	207	2.79%	20%	----
		cobalt, dissolved	7440-48-4	E421	0.00020	mg/L	0.74 µg/L	0.00074	0.000004	Diff <2x LOR	----
		copper, dissolved	7440-50-8	E421	0.00040	mg/L	<0.00040	<0.00040	0	Diff <2x LOR	----
		iron, dissolved	7439-89-6	E421	0.020	mg/L	<0.020	<0.020	0	Diff <2x LOR	----
		lead, dissolved	7439-92-1	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0020	mg/L	0.0696	0.0667	4.18%	20%	----
		magnesium, dissolved	7439-95-4	E421	0.0100	mg/L	133	129	3.07%	20%	----



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 729264) - continued											
CG2215338-001	Anonymous	manganese, dissolved	7439-96-5	E421	0.00020	mg/L	0.0120	0.0116	2.67%	20%	----
		molybdenum, dissolved	7439-98-7	E421	0.000100	mg/L	0.00744	0.00727	2.25%	20%	----
		nickel, dissolved	7440-02-0	E421	0.00100	mg/L	0.0113	0.0109	3.54%	20%	----
		potassium, dissolved	7440-09-7	E421	0.100	mg/L	3.54	3.42	3.33%	20%	----
		selenium, dissolved	7782-49-2	E421	0.000100	mg/L	108 µg/L	0.107	0.954%	20%	----
		silicon, dissolved	7440-21-3	E421	0.100	mg/L	3.69	3.53	4.31%	20%	----
		silver, dissolved	7440-22-4	E421	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E421	0.100	mg/L	6.51	6.17	5.33%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00040	mg/L	0.297	0.292	1.65%	20%	----
		sulfur, dissolved	7704-34-9	E421	1.00	mg/L	310	288	7.24%	20%	----
		thallium, dissolved	7440-28-0	E421	0.000020	mg/L	0.000029	0.000028	0.0000005	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.00060	mg/L	<0.00060	<0.00060	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000020	mg/L	0.00857	0.00848	0.990%	20%	----
		vanadium, dissolved	7440-62-2	E421	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E421	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 730110)											
CG2215304-010	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 727502)						
turbidity	---	E121	0.1	NTU	<0.10	---
Physical Tests (QCLot: 729315)						
acidity (as CaCO3)	---	E283	2	mg/L	2.1	---
Physical Tests (QCLot: 729320)						
conductivity	---	E100	1	µS/cm	<1.0	---
Physical Tests (QCLot: 729321)						
alkalinity, bicarbonate (as CaCO3)	---	E290	1	mg/L	<1.0	---
alkalinity, carbonate (as CaCO3)	---	E290	1	mg/L	<1.0	---
alkalinity, hydroxide (as CaCO3)	---	E290	1	mg/L	<1.0	---
alkalinity, total (as CaCO3)	---	E290	1	mg/L	<1.0	---
Physical Tests (QCLot: 729418)						
solids, total dissolved [TDS]	---	E162	10	mg/L	<10	---
Physical Tests (QCLot: 729431)						
solids, total suspended [TSS]	---	E160-L	1	mg/L	<1.0	---
Anions and Nutrients (QCLot: 727508)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	---
Anions and Nutrients (QCLot: 727509)						
bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	---
Anions and Nutrients (QCLot: 727510)						
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	---
Anions and Nutrients (QCLot: 727511)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	---
Anions and Nutrients (QCLot: 727512)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	---
Anions and Nutrients (QCLot: 727513)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	---
Anions and Nutrients (QCLot: 727697)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	---
Anions and Nutrients (QCLot: 728152)						
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	---
Anions and Nutrients (QCLot: 728394)						
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	---



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 728941)						
Kjeldahl nitrogen, total [TKN]	---	E318	0.05	mg/L	<0.050	---
Organic / Inorganic Carbon (QCLot: 727550)						
carbon, dissolved organic [DOC]	---	E358-L	0.5	mg/L	<0.50	---
Organic / Inorganic Carbon (QCLot: 727551)						
carbon, total organic [TOC]	---	E355-L	0.5	mg/L	<0.50	---
Total Metals (QCLot: 728942)						
aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	---
antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	---
arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	---
barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	---
beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	---
bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	---
boron, total	7440-42-8	E420	0.01	mg/L	<0.010	---
cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	---
calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	---
cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	---
copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	---
iron, total	7439-89-6	E420	0.01	mg/L	<0.010	---
lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	---
lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	---
magnesium, total	7439-95-4	E420	0.005	mg/L	# 0.0082	---
manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	---
molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	---
nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	---
potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	---
selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	---
silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	---
silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	---
sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	---
strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	---
sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	---
thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	---
tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	---
titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	---
uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	---



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 728942) - continued						
vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	---
zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	---
Total Metals (QCLot: 728943)						
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	# 0.00020	---
Total Metals (QCLot: 730121)						
mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	---
Dissolved Metals (QCLot: 729263)						
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	<0.00010	---
Dissolved Metals (QCLot: 729264)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	---
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	---
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	---
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	---
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	---
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	---
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	---
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	---
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	---
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	---
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	---
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	---
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	---
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	---
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	---
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	---
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	---
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	---
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	---
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	---
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	---
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	---
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	---
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	---
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	---
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	---



Sub-Matrix: **Water**

<i>Analyte</i>	<i>CAS Number</i>	<i>Method</i>	<i>LOR</i>	<i>Unit</i>	<i>Result</i>	<i>Qualifier</i>
Dissolved Metals (QCLot: 729264) - continued						
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
Dissolved Metals (QCLot: 730110)						
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Physical Tests (QCLot: 727502)									
turbidity	----	E121	0.1	NTU	200 NTU	110	85.0	115	----
Physical Tests (QCLot: 729315)									
acidity (as CaCO3)	----	E283	2	mg/L	50 mg/L	101	85.0	115	----
Physical Tests (QCLot: 729319)									
pH	----	E108	----	pH units	7 pH units	101	98.6	101	----
Physical Tests (QCLot: 729320)									
conductivity	----	E100	1	µS/cm	146.9 µS/cm	99.3	90.0	110	----
Physical Tests (QCLot: 729321)									
alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	97.0	85.0	115	----
Physical Tests (QCLot: 729418)									
solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	98.4	85.0	115	----
Physical Tests (QCLot: 729431)									
solids, total suspended [TSS]	----	E160-L	1	mg/L	150 mg/L	104	85.0	115	----
Physical Tests (QCLot: 730396)									
oxidation-reduction potential [ORP]	----	E125	----	mV	220 mV	101	95.4	104	----
Anions and Nutrients (QCLot: 727508)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 727509)									
bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	102	85.0	115	----
Anions and Nutrients (QCLot: 727510)									
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	99.7	90.0	110	----
Anions and Nutrients (QCLot: 727511)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 727512)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	98.1	90.0	110	----
Anions and Nutrients (QCLot: 727513)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 727697)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	99.2	85.0	115	----
Anions and Nutrients (QCLot: 728152)									
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.03 mg/L	96.2	80.0	120	----



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Anions and Nutrients (QCLot: 728394)									
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.03 mg/L	87.5	80.0	120	----
Anions and Nutrients (QCLot: 728941)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	82.0	75.0	125	----
Organic / Inorganic Carbon (QCLot: 727550)									
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	92.6	80.0	120	----
Organic / Inorganic Carbon (QCLot: 727551)									
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	98.4	80.0	120	----
Total Metals (QCLot: 728942)									
aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	104	80.0	120	----
antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	99.5	80.0	120	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	91.5	80.0	120	----
barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	98.0	80.0	120	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	99.9	80.0	120	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	95.9	80.0	120	----
boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	99.0	80.0	120	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	95.0	80.0	120	----
calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	98.4	80.0	120	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	94.1	80.0	120	----
copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	94.6	80.0	120	----
iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	104	80.0	120	----
lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	96.4	80.0	120	----
lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	96.7	80.0	120	----
magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	95.8	80.0	120	----
manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	96.7	80.0	120	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	98.5	80.0	120	----
nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	92.3	80.0	120	----
potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	98.9	80.0	120	----
selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	88.4	80.0	120	----
silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	99.7	60.0	140	----
silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	92.5	80.0	120	----
sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	97.8	80.0	120	----
strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	96.8	80.0	120	----
sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	102	80.0	120	----
thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	95.6	80.0	120	----



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 728942) - continued									
tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	96.8	80.0	120	----
titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	98.6	80.0	120	----
uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	89.9	80.0	120	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	96.0	80.0	120	----
zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	94.0	80.0	120	----
Total Metals (QCLot: 728943)									
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	0.25 mg/L	93.0	80.0	120	----
Total Metals (QCLot: 730121)									
mercury, total	7439-97-6	E508	0.000005	mg/L	0.0001 mg/L	100	80.0	120	----
Dissolved Metals (QCLot: 729263)									
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	0.25 mg/L	92.7	80.0	120	----
Dissolved Metals (QCLot: 729264)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	105	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	92.4	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	92.1	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	98.4	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	98.8	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	91.5	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	87.8	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	91.8	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	95.4	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	94.3	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	92.1	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	102	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	93.3	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	102	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	85.7	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	90.4	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	97.2	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	92.3	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	98.6	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	87.8	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	99.1	60.0	140	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	88.7	80.0	120	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	94.9	80.0	120	----



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 729264) - continued									
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	95.8	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	104	80.0	120	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	93.0	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	91.6	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	94.0	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	91.7	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	95.4	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	84.0	80.0	120	----
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	104	80.0	120	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 727508)										
CG2215311-001	RG_ERCKMD_1_PW-1_2022-10_NP	fluoride	16984-48-8	E235.F	0.936 mg/L	1 mg/L	93.6	75.0	125	----
Anions and Nutrients (QCLot: 727509)										
CG2215311-001	RG_ERCKMD_1_PW-1_2022-10_NP	bromide	24959-67-9	E235.Br-L	0.525 mg/L	0.5 mg/L	105	75.0	125	----
Anions and Nutrients (QCLot: 727510)										
CG2215311-001	RG_ERCKMD_1_PW-1_2022-10_NP	chloride	16887-00-6	E235.Cl-L	106 mg/L	100 mg/L	106	75.0	125	----
Anions and Nutrients (QCLot: 727511)										
CG2215311-001	RG_ERCKMD_1_PW-1_2022-10_NP	nitrate (as N)	14797-55-8	E235.NO3-L	ND mg/L	2.5 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 727512)										
CG2215311-001	RG_ERCKMD_1_PW-1_2022-10_NP	nitrite (as N)	14797-65-0	E235.NO2-L	0.534 mg/L	0.5 mg/L	107	75.0	125	----
Anions and Nutrients (QCLot: 727513)										
CG2215311-001	RG_ERCKMD_1_PW-1_2022-10_NP	sulfate (as SO4)	14808-79-8	E235.SO4	ND mg/L	100 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 727697)										
CG2215311-010	RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP	ammonia, total (as N)	7664-41-7	E298	0.102 mg/L	0.1 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 728152)										
CG2215311-010	RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0516 mg/L	0.05 mg/L	103	70.0	130	----
Anions and Nutrients (QCLot: 728394)										
CG2215311-010	RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP	phosphorus, total	7723-14-0	E372-U	0.0375 mg/L	0.05 mg/L	75.0	70.0	130	----
Anions and Nutrients (QCLot: 728941)										
CG2215313-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.22 mg/L	2.5 mg/L	88.8	70.0	130	----
Organic / Inorganic Carbon (QCLot: 727550)										
CG2215304-010	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	5.15 mg/L	5 mg/L	103	70.0	130	----
Organic / Inorganic Carbon (QCLot: 727551)										
CG2215304-010	Anonymous	carbon, total organic [TOC]	----	E355-L	5.59 mg/L	5 mg/L	112	70.0	130	----



Sub-Matrix: Water

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 728942)										
CG2215260-002	Anonymous	aluminum, total	7429-90-5	E420	2.06 mg/L	2 mg/L	103	70.0	130	----
		antimony, total	7440-36-0	E420	0.193 mg/L	0.2 mg/L	96.6	70.0	130	----
		arsenic, total	7440-38-2	E420	0.184 mg/L	0.2 mg/L	92.1	70.0	130	----
		barium, total	7440-39-3	E420	0.194 mg/L	0.2 mg/L	96.9	70.0	130	----
		beryllium, total	7440-41-7	E420	0.388 mg/L	0.4 mg/L	97.1	70.0	130	----
		bismuth, total	7440-69-9	E420	0.0947 mg/L	0.1 mg/L	94.7	70.0	130	----
		boron, total	7440-42-8	E420	1.00 mg/L	1 mg/L	100	70.0	130	----
		cadmium, total	7440-43-9	E420	0.0382 mg/L	0.04 mg/L	95.6	70.0	130	----
		calcium, total	7440-70-2	E420	ND mg/L	40 mg/L	ND	70.0	130	----
		cobalt, total	7440-48-4	E420	0.189 mg/L	0.2 mg/L	94.5	70.0	130	----
		copper, total	7440-50-8	E420	0.189 mg/L	0.2 mg/L	94.6	70.0	130	----
		iron, total	7439-89-6	E420	18.6 mg/L	20 mg/L	92.9	70.0	130	----
		lead, total	7439-92-1	E420	0.183 mg/L	0.2 mg/L	91.4	70.0	130	----
		lithium, total	7439-93-2	E420	0.976 mg/L	1 mg/L	97.6	70.0	130	----
		magnesium, total	7439-95-4	E420	ND mg/L	10 mg/L	ND	70.0	130	----
		manganese, total	7439-96-5	E420	0.189 mg/L	0.2 mg/L	94.4	70.0	130	----
		molybdenum, total	7439-98-7	E420	0.195 mg/L	0.2 mg/L	97.4	70.0	130	----
		nickel, total	7440-02-0	E420	0.373 mg/L	0.4 mg/L	93.2	70.0	130	----
		potassium, total	7440-09-7	E420	38.2 mg/L	40 mg/L	95.6	70.0	130	----
		selenium, total	7782-49-2	E420	0.359 mg/L	0.4 mg/L	89.8	70.0	130	----
		silicon, total	7440-21-3	E420	95.8 mg/L	100 mg/L	95.8	70.0	130	----
		silver, total	7440-22-4	E420	0.0415 mg/L	0.04 mg/L	104	70.0	130	----
		sodium, total	7440-23-5	E420	18.6 mg/L	20 mg/L	93.0	70.0	130	----
		strontium, total	7440-24-6	E420	ND mg/L	0.2 mg/L	ND	70.0	130	----
		sulfur, total	7704-34-9	E420	ND mg/L	200 mg/L	ND	70.0	130	----
		thallium, total	7440-28-0	E420	0.0374 mg/L	0.04 mg/L	93.6	70.0	130	----
		tin, total	7440-31-5	E420	0.191 mg/L	0.2 mg/L	95.4	70.0	130	----
		titanium, total	7440-32-6	E420	0.390 mg/L	0.4 mg/L	97.4	70.0	130	----
		uranium, total	7440-61-1	E420	0.0362 mg/L	0.04 mg/L	90.5	70.0	130	----
		vanadium, total	7440-62-2	E420	0.956 mg/L	1 mg/L	95.6	70.0	130	----
		zinc, total	7440-66-6	E420	3.77 mg/L	4 mg/L	94.3	70.0	130	----
Total Metals (QCLot: 728943)										
CG2215260-002	Anonymous	chromium, total	7440-47-3	E420.Cr-L	0.371 mg/L	0.4 mg/L	92.8	70.0	130	----
Total Metals (QCLot: 730121)										
CG2215287-006	Anonymous	mercury, total	7439-97-6	E508	0.0000985 mg/L	0.0001 mg/L	98.5	70.0	130	----



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 729263)										
CG2215338-002	Anonymous	chromium, dissolved	7440-47-3	E421.Cr-L	0.376 mg/L	0.4 mg/L	93.9	70.0	130	----
Dissolved Metals (QCLot: 729264)										
CG2215338-002	Anonymous	aluminum, dissolved	7429-90-5	E421	2.01 mg/L	2 mg/L	101	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.187 mg/L	0.2 mg/L	93.4	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.191 mg/L	0.2 mg/L	95.7	70.0	130	----
		barium, dissolved	7440-39-3	E421	0.194 mg/L	0.2 mg/L	97.2	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.382 mg/L	0.4 mg/L	95.4	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.0947 mg/L	0.1 mg/L	94.7	70.0	130	----
		boron, dissolved	7440-42-8	E421	0.922 mg/L	1 mg/L	92.2	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.0376 mg/L	0.04 mg/L	94.1	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	40 mg/L	ND	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.194 mg/L	0.2 mg/L	97.1	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.190 mg/L	0.2 mg/L	94.8	70.0	130	----
		iron, dissolved	7439-89-6	E421	18.8 mg/L	20 mg/L	94.2	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.195 mg/L	0.2 mg/L	97.6	70.0	130	----
		lithium, dissolved	7439-93-2	E421	0.922 mg/L	1 mg/L	92.2	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	10 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E421	0.179 mg/L	0.2 mg/L	89.6	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.192 mg/L	0.2 mg/L	96.3	70.0	130	----
		nickel, dissolved	7440-02-0	E421	0.378 mg/L	0.4 mg/L	94.6	70.0	130	----
		potassium, dissolved	7440-09-7	E421	38.6 mg/L	40 mg/L	96.4	70.0	130	----
		selenium, dissolved	7782-49-2	E421	0.384 mg/L	0.4 mg/L	96.1	70.0	130	----
		silicon, dissolved	7440-21-3	E421	81.1 mg/L	100 mg/L	81.1	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.0395 mg/L	0.04 mg/L	98.8	70.0	130	----
		sodium, dissolved	7440-23-5	E421	18.2 mg/L	20 mg/L	91.1	70.0	130	----
		strontium, dissolved	7440-24-6	E421	ND mg/L	0.2 mg/L	ND	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	ND mg/L	200 mg/L	ND	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.0368 mg/L	0.04 mg/L	92.1	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.184 mg/L	0.2 mg/L	92.2	70.0	130	----
		titanium, dissolved	7440-32-6	E421	0.378 mg/L	0.4 mg/L	94.5	70.0	130	----
		uranium, dissolved	7440-61-1	E421	0.0371 mg/L	0.04 mg/L	92.8	70.0	130	----
		vanadium, dissolved	7440-62-2	E421	0.965 mg/L	1 mg/L	96.5	70.0	130	----
		zinc, dissolved	7440-66-6	E421	3.43 mg/L	4 mg/L	85.7	70.0	130	----
Dissolved Metals (QCLot: 730110)										

Page : 17 of 17
 Work Order : CG2215311
 Client : Teck Coal Limited
 Project : REGIONAL EFFECTS PROGRAM



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 730110) - continued										
CG2215311-010	RG_ERCKMD_WS_LAEMP _EVO_2022-10_NP	mercury, dissolved	7439-97-6	E509	0.0000968 mg/L	0.0001 mg/L	96.8	70.0	130	----

COC ID: November EVO LAEMP 2022 TURNAROUND TIME:

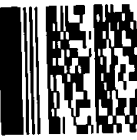
PROJECT/CLIENT INFO				LABORATORY			
Facility Name / Job#	Regional Effects Program			Lab Name	ALS Calgary		
Project Manager	Mike Pope			Lab Contact	Lyudmyla Shvets		
Address	421 Pinc Avenue			Address	2559 29 Street NE		
City	Sparwood	Province	BC	City	Calgary	Province	AB
Postal Code	V0B 2G0	Country	Canada	Postal Code	T1Y 7B5	Country	Canada
Phone Number	343-333-3905			Phone Number	1 403 407 1794		

SAMPLE DETAILS								ANALYSIS REQUESTED								
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	TECKCOAL-ANIONS	Dissolved metals	TECKCOAL-ROUTINE-VA	ALS_Package-DOC	ALS_Package-TKN/TOC	HG-T-U-CVAF-VA	HG-D-CVAF-VA	TECKCOAL-MET-T-VA	TECKCOAL-MET-D-VA
RG_ERCKMD_1_PW-1_2022-10_NP	RG_ERCKMD	PW	No	10/31/2022	12:00	G	1	X	X							
RG_ERCKMD_1_PW-2_2022-10_NP	RG_ERCKMD	PW	No	10/31/2022	12:15	G	1	X	X							
RG_ERCKMD_1_PW-3_2022-10_NP	RG_ERCKMD	PW	No	10/31/2022	12:30	G	1	X	X							
RG_ERCKMD_2_PW-1_2022-10_NP	RG_ERCKMD	PW	No	10/31/2022	12:45	G	1	X	X							
RG_ERCKMD_2_PW-2_2022-10_NP	RG_ERCKMD	PW	No	10/31/2022	13:00	G	1	X	X							
RG_ERCKMD_2_PW-3_2022-10_NP	RG_ERCKMD	PW	No	10/31/2022	13:15	G	1	X	X							
RG_ERCKMD_3_PW-1_2022-10_NP	RG_ERCKMD	PW	No	10/31/2022	13:30	G	1	X	X							
RG_ERCKMD_3_PW-2_2022-10_NP	RG_ERCKMD	PW	No	10/31/2022	13:45	G	1	X	X							
RG_ERCKMD_3_PW-3_2022-10_NP	RG_ERCKMD	PW	No	10/31/2022	14:00	G	1	X	X							
RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP	RG_ERCKMD	WS	No	10/31/2022	14:15	G	7	X	X	X	X	X	X	X	X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
ALS PO VPO00847030	Alex McClymont, Minnow Environmental	November 1, 2022	

NB OF BOTTLES RETURNED/DESCRIPTION	Sampler's Name	Mobile #
Regular (default)	Alex McClymont	780-293-6750
Priority (2-3 business days) - 50% surcharge X	Sampler's Signature	Date/Time
Emergency (1 Business Day) - 100% surcharge		November 1, 2022
For Emergency <1 Day, ASAP or Weekend - Contact ALS		

Environmental
Calgary
Work Order Ref
CG221



Telephone : + 1 403 407

Environmental Division
Calgary
Work Order Reference
CG2215311



Telephone : + 1 403 407 1800

11/2/2022

9:00 am 7°C



CERTIFICATE OF ANALYSIS

<p>Work Order : CG2216630</p> <p>Client : Teck Coal Limited</p> <p>Contact : Mike Pope</p> <p>Address : 421 Pine Avenue Sparwood BC Canada V0B2G0</p> <p>Telephone : ----</p> <p>Project : REGIONAL EFFECTS PROGRAM</p> <p>PO : VPO00847030</p> <p>C-O-C number : November EVO LAEMP 2022</p> <p>Sampler : Liva Ramanjehimanana</p> <p>Site : ----</p> <p>Quote number : Teck Coal Master Quote</p> <p>No. of samples received : 25</p> <p>No. of samples analysed : 25</p>	<p>Page : 1 of 12</p> <p>Laboratory : Calgary - Environmental</p> <p>Account Manager : Lyudmyla Shvets</p> <p>Address : 2559 29th Street NE Calgary AB Canada T1Y 7B5</p> <p>Telephone : +1 403 407 1800</p> <p>Date Samples Received : 30-Nov-2022 09:55</p> <p>Date Analysis Commenced : 30-Nov-2022</p> <p>Issue Date : 02-Dec-2022 15:16</p>
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This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Anthony Calero	Supervisor - Inorganic	Inorganics, Calgary, Alberta
Kevin Baxter	Team Leader - Inorganics	Metals, Calgary, Alberta
Naeun Kim	Analyst	Metals, Calgary, Alberta
Vladka Stamenova	Analyst	Inorganics, Calgary, Alberta



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

<i>Unit</i>	<i>Description</i>
-	no units
µg/L	micrograms per litre
mg/L	milligrams per litre

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

<i>Qualifier</i>	<i>Description</i>
DLDS	Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.
DLIS	Detection Limit Adjusted due to insufficient sample.



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKDT_1_ PW_1_2022-12 _N	RG_ERCKDT_1_ PW_2_2022-12 _N	RG_ERCKDT_1_ PW_3_2022-12 _N	RG_ERCKDT_2_ PW_1_2022-12 _N	RG_ERCKDT_2_ PW_2_2022-12 _N
Client sampling date / time					28-Nov-2022 13:00	28-Nov-2022 13:15	28-Nov-2022 13:30	28-Nov-2022 14:00	28-Nov-2022 14:15	
Analyte	CAS Number	Method	LOR	Unit	CG2216630-001	CG2216630-002	CG2216630-003	CG2216630-004	CG2216630-005	
					Result	Result	Result	Result	Result	
Physical Tests										
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	1280	1320	1260	1310	1300	
Anions and Nutrients										
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	<0.250 ^{DLDS}	
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	8.36	8.34	8.51	8.34	8.36	
fluoride	16984-48-8	E235.F	0.020	mg/L	0.193	0.187	0.212	0.198	0.199	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	8.84	8.86	8.92	9.00	8.95	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	0.0217	0.0238	0.0052	0.0201	0.0161	
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	815	817	818	820	819	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0070	0.0062	0.0136	0.0060	0.0057	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0366	0.0391	0.0386	0.0381	0.0380	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.100 ^{DLIS}	<0.100 ^{DLIS}	<0.100 ^{DLIS}	<0.100 ^{DLIS}	<0.100 ^{DLIS}	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000250 ^{DLIS}	<0.000250 ^{DLIS}	<0.000250 ^{DLIS}	<0.000250 ^{DLIS}	<0.000250 ^{DLIS}	
boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.050 ^{DLIS}	<0.050 ^{DLIS}	<0.050 ^{DLIS}	<0.050 ^{DLIS}	<0.050 ^{DLIS}	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.245	0.210	0.134	0.230	0.230	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	248	260	242	257	249	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	5.94	6.02	0.60	6.80	6.73	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00100 ^{DLIS}	<0.00100 ^{DLIS}	<0.00100 ^{DLIS}	<0.00100 ^{DLIS}	<0.00100 ^{DLIS}	
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.050 ^{DLIS}	<0.050 ^{DLIS}	<0.050 ^{DLIS}	<0.050 ^{DLIS}	<0.050 ^{DLIS}	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000250 ^{DLIS}	<0.000250 ^{DLIS}	<0.000250 ^{DLIS}	<0.000250 ^{DLIS}	<0.000250 ^{DLIS}	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0642	0.0618	0.0640	0.0653	0.0685	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	161	163	160	162	164	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.160	0.166	0.0138	0.180	0.185	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00852	0.00859	0.00828	0.00912	0.00842	
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.0289	0.0295	0.0195	0.0289	0.0294	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKDT_1_ PW_1_2022-12 _N	RG_ERCKDT_1_ PW_2_2022-12 _N	RG_ERCKDT_1_ PW_3_2022-12 _N	RG_ERCKDT_2_ PW_1_2022-12 _N	RG_ERCKDT_2_ PW_2_2022-12 _N
Client sampling date / time					28-Nov-2022 13:00	28-Nov-2022 13:15	28-Nov-2022 13:30	28-Nov-2022 14:00	28-Nov-2022 14:15	
Analyte	CAS Number	Method	LOR	Unit	CG2216630-001	CG2216630-002	CG2216630-003	CG2216630-004	CG2216630-005	
					Result	Result	Result	Result	Result	
Dissolved Metals										
potassium, dissolved	7440-09-7	E421	0.050	mg/L	3.72	3.69	4.10	3.54	3.67	
selenium, dissolved	7782-49-2	E421	0.050	µg/L	82.3	79.8	81.0	82.2	85.2	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	3.47	3.42	4.16	3.35	3.35	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000050 ^{DLIS}	<0.000050 ^{DLIS}	<0.000050 ^{DLIS}	<0.000050 ^{DLIS}	<0.000050 ^{DLIS}	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	6.81	6.80	6.74	6.58	6.75	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.317	0.330	0.314	0.328	0.314	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	289	287	288	286	282	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	0.000051	<0.000050 ^{DLIS}	<0.000050 ^{DLIS}	0.000052	0.000052	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00150 ^{DLIS}	<0.00150 ^{DLIS}	<0.00150 ^{DLIS}	<0.00150 ^{DLIS}	<0.00150 ^{DLIS}	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.0101	0.00976	0.00982	0.0101	0.0103	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00250 ^{DLIS}	<0.00250 ^{DLIS}	<0.00250 ^{DLIS}	<0.00250 ^{DLIS}	<0.00250 ^{DLIS}	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0145	0.0134	0.0056	0.0149	0.0121	
dissolved metals filtration location	----	EP421	-	-	Laboratory	Laboratory	Laboratory	Laboratory	Laboratory	

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKDT_2_ PW_3_2022-12 _N	RG_ERCKDT_3_ PW_1_2022-12 _N	RG_ERCKDT_3_ PW_2_2022-12 _N	RG_ERCKDT_3_ PW_3_2022-12 _N	RG_ERCKUT_1_ PW_1_2022-12 _N
Client sampling date / time					28-Nov-2022 14:30	28-Nov-2022 14:50	28-Nov-2022 15:05	28-Nov-2022 15:20	29-Nov-2022 09:30	
Analyte	CAS Number	Method	LOR	Unit	CG2216630-006	CG2216630-007	CG2216630-008	CG2216630-009	CG2216630-010	
					Result	Result	Result	Result	Result	
Physical Tests										
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	1290	1290	1300	1270	815	
Anions and Nutrients										
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.250 ^{DLIS}	<0.250 ^{DLIS}	<0.250 ^{DLIS}	<0.250 ^{DLIS}	<0.250 ^{DLIS}	
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	8.38	8.38	8.50	8.48	3.53	
fluoride	16984-48-8	E235.F	0.020	mg/L	0.199	0.193	0.198	0.209	<0.100 ^{DLIS}	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	9.01	8.88	8.90	8.84	10.5	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	0.0160	0.0149	0.0144	0.0151	<0.0050 ^{DLIS}	
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	823	820	824	823	513	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0063	<0.0050 ^{DLIS}	0.0070	0.0067	0.0054	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0362	0.0382	0.0386	0.0381	0.0335	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.100 ^{DLIS}	<0.100 ^{DLIS}	<0.100 ^{DLIS}	<0.100 ^{DLIS}	<0.100 ^{DLIS}	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000250 ^{DLIS}	<0.000250 ^{DLIS}	<0.000250 ^{DLIS}	<0.000250 ^{DLIS}	<0.000250 ^{DLIS}	
boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.050 ^{DLIS}	<0.050 ^{DLIS}	<0.050 ^{DLIS}	<0.050 ^{DLIS}	<0.050 ^{DLIS}	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.167	0.243	0.258	0.222	<0.0250 ^{DLIS}	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	248	257	255	241	160	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	3.28	7.04	4.63	1.00	<0.50 ^{DLIS}	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00100 ^{DLIS}	<0.00100 ^{DLIS}	<0.00100 ^{DLIS}	<0.00100 ^{DLIS}	<0.00100 ^{DLIS}	
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.050 ^{DLIS}	<0.050 ^{DLIS}	<0.050 ^{DLIS}	<0.050 ^{DLIS}	<0.050 ^{DLIS}	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000250 ^{DLIS}	<0.000250 ^{DLIS}	<0.000250 ^{DLIS}	<0.000250 ^{DLIS}	<0.000250 ^{DLIS}	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0670	0.0686	0.0656	0.0688	0.0155	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	164	158	161	163	101	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.0827	0.182	0.165	0.0644	0.00051	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00864	0.00879	0.00879	0.00828	0.000636	
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.0212	0.0298	0.0208	0.00912	<0.00250 ^{DLIS}	
potassium, dissolved	7440-09-7	E421	0.050	mg/L	3.68	3.69	3.55	3.39	1.68	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKDT_2_ PW_3_2022-12 _N	RG_ERCKDT_3_ PW_1_2022-12 _N	RG_ERCKDT_3_ PW_2_2022-12 _N	RG_ERCKDT_3_ PW_3_2022-12 _N	RG_ERCKUT_1_ PW_1_2022-12 _N
Client sampling date / time					28-Nov-2022 14:30	28-Nov-2022 14:50	28-Nov-2022 15:05	28-Nov-2022 15:20	29-Nov-2022 09:30	
Analyte	CAS Number	Method	LOR	Unit	CG2216630-006	CG2216630-007	CG2216630-008	CG2216630-009	CG2216630-010	
					Result	Result	Result	Result	Result	
Dissolved Metals										
selenium, dissolved	7782-49-2	E421	0.050	µg/L	82.9	82.1	81.3	85.1	97.6	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	3.44	3.37	3.45	4.38	2.35	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000050 ^{DLIS}	<0.000050 ^{DLIS}	<0.000050 ^{DLIS}	<0.000050 ^{DLIS}	<0.000050 ^{DLIS}	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	6.68	6.68	6.72	6.70	1.80	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.318	0.323	0.320	0.294	0.127	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	291	280	284	286	178	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000050 ^{DLIS}	0.000056	<0.000050 ^{DLIS}	<0.000050 ^{DLIS}	<0.000050 ^{DLIS}	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00150 ^{DLIS}	<0.00150 ^{DLIS}	<0.00150 ^{DLIS}	<0.00150 ^{DLIS}	<0.00150 ^{DLIS}	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.0101	0.0103	0.00962	0.0104	0.00498	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00250 ^{DLIS}	<0.00250 ^{DLIS}	<0.00250 ^{DLIS}	<0.00250 ^{DLIS}	<0.00250 ^{DLIS}	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0060	0.0148	0.0072	0.0062	<0.0050 ^{DLIS}	
dissolved metals filtration location	----	EP421	-	-	Laboratory	Laboratory	Laboratory	Laboratory	Laboratory	

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKUT_1_ PW_2_2022-12 _N	RG_ERCKUT_2_ PW_1_2022-12 _N	RG_ERCKUT_2_ PW_2_2022-12 _N	RG_ERCKUT_2_ PW_3_2022-12 _N	RG_ERCKUT_3_ PW_1_2022-12 _N
Client sampling date / time					29-Nov-2022 09:45	29-Nov-2022 10:15	29-Nov-2022 10:30	29-Nov-2022 10:45	29-Nov-2022 11:15	
Analyte	CAS Number	Method	LOR	Unit	CG2216630-011	CG2216630-012	CG2216630-013	CG2216630-014	CG2216630-015	
					Result	Result	Result	Result	Result	
Physical Tests										
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	1250	1300	1300	1260	1270	
Anions and Nutrients										
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.250 ^{DLIS}	<0.250 ^{DLIS}	<0.250 ^{DLIS}	<0.250 ^{DLIS}	<0.250 ^{DLIS}	
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	5.28	5.51	5.59	5.47	5.47	
fluoride	16984-48-8	E235.F	0.020	mg/L	0.102	0.119	0.116	0.115	0.115	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	16.0	16.6	16.7	16.6	16.7	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0050 ^{DLIS}	<0.0050 ^{DLIS}	<0.0050 ^{DLIS}	<0.0050 ^{DLIS}	<0.0050 ^{DLIS}	
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	741	782	788	780	783	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0094	0.0066	0.0057	0.0058	0.0062	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00205	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0610	0.0643	0.0612	0.0634	0.0599	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.100 ^{DLIS}	<0.100 ^{DLIS}	<0.100 ^{DLIS}	<0.100 ^{DLIS}	<0.100 ^{DLIS}	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000250 ^{DLIS}	<0.000250 ^{DLIS}	<0.000250 ^{DLIS}	<0.000250 ^{DLIS}	<0.000250 ^{DLIS}	
boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.050 ^{DLIS}	<0.050 ^{DLIS}	<0.050 ^{DLIS}	<0.050 ^{DLIS}	<0.050 ^{DLIS}	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.117	0.0928	0.0766	0.0966	0.0808	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	242	251	255	243	246	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	0.00064	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	<0.50 ^{DLIS}	<0.50 ^{DLIS}	<0.50 ^{DLIS}	<0.50 ^{DLIS}	<0.50 ^{DLIS}	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00100 ^{DLIS}	<0.00100 ^{DLIS}	<0.00100 ^{DLIS}	<0.00100 ^{DLIS}	<0.00100 ^{DLIS}	
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.050 ^{DLIS}	<0.050 ^{DLIS}	<0.050 ^{DLIS}	<0.050 ^{DLIS}	<0.050 ^{DLIS}	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000250 ^{DLIS}	<0.000250 ^{DLIS}	<0.000250 ^{DLIS}	<0.000250 ^{DLIS}	<0.000250 ^{DLIS}	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0255	0.0288	0.0274	0.0276	0.0266	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	157	164	161	158	159	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.000926	0.000888	0.00102	0.000993	0.000934	
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	<0.00250 ^{DLIS}	<0.00250 ^{DLIS}	<0.00250 ^{DLIS}	<0.00250 ^{DLIS}	<0.00250 ^{DLIS}	
potassium, dissolved	7440-09-7	E421	0.050	mg/L	2.78	2.64	2.63	2.60	2.64	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKUT_1_ PW_2_2022-12 _N	RG_ERCKUT_2_ PW_1_2022-12 _N	RG_ERCKUT_2_ PW_2_2022-12 _N	RG_ERCKUT_2_ PW_3_2022-12 _N	RG_ERCKUT_3_ PW_1_2022-12 _N
Client sampling date / time					29-Nov-2022 09:45	29-Nov-2022 10:15	29-Nov-2022 10:30	29-Nov-2022 10:45	29-Nov-2022 11:15	
Analyte	CAS Number	Method	LOR	Unit	CG2216630-011	CG2216630-012	CG2216630-013	CG2216630-014	CG2216630-015	
					Result	Result	Result	Result	Result	
Dissolved Metals										
selenium, dissolved	7782-49-2	E421	0.050	µg/L	149	158	152	149	152	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	3.84	4.08	3.81	3.80	3.83	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000050 ^{DLIS}	<0.000050 ^{DLIS}	<0.000050 ^{DLIS}	<0.000050 ^{DLIS}	<0.000050 ^{DLIS}	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	2.89	2.89	2.89	2.80	2.80	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.192	0.206	0.208	0.196	0.205	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	264	280	272	270	268	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000050 ^{DLIS}	<0.000050 ^{DLIS}	<0.000050 ^{DLIS}	<0.000050 ^{DLIS}	<0.000050 ^{DLIS}	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00150 ^{DLIS}	<0.00150 ^{DLIS}	<0.00150 ^{DLIS}	<0.00150 ^{DLIS}	<0.00150 ^{DLIS}	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00775	0.00819	0.00788	0.00787	0.00778	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00250 ^{DLIS}	<0.00250 ^{DLIS}	<0.00250 ^{DLIS}	<0.00250 ^{DLIS}	<0.00250 ^{DLIS}	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0050 ^{DLIS}	0.0050	<0.0050 ^{DLIS}	<0.0050 ^{DLIS}	0.0050	
dissolved metals filtration location	----	EP421	-	-	Laboratory	Laboratory	Laboratory	Laboratory	Laboratory	

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKUT_3_PW_2_2022-12_N	RG_ERCKMD_1_PW_1_2022-1_2_N	RG_ERCKMD_1_PW_2_2022-1_2_N	RG_ERCKMD_1_PW_3_2022-1_2_N	RG_ERCKMD_2_PW_1_2022-1_2_N
Client sampling date / time					29-Nov-2022 11:30	28-Nov-2022 09:30	28-Nov-2022 09:45	28-Nov-2022 10:00	28-Nov-2022 10:30	
Analyte	CAS Number	Method	LOR	Unit	CG2216630-016	CG2216630-017	CG2216630-018	CG2216630-019	CG2216630-020	
					Result	Result	Result	Result	Result	
Physical Tests										
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	1240	1240	1260	1260	1280	
Anions and Nutrients										
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.250 ^{DLIS}	<0.250 ^{DLIS}	<0.250 ^{DLIS}	<0.250 ^{DLIS}	<0.250 ^{DLIS}	
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	5.57	8.21	8.37	8.42	8.48	
fluoride	16984-48-8	E235.F	0.020	mg/L	0.117	0.195	0.199	0.200	0.195	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	16.6	8.70	8.77	8.76	8.74	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0050 ^{DLIS}	0.0197	0.0189	0.0177	0.0234	
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	780	808	822	821	814	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0056	0.0084	0.0077	0.0066	<0.0050 ^{DLIS}	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0639	0.0371	0.0379	0.0386	0.0376	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.100 ^{DLIS}	<0.100 ^{DLIS}	<0.100 ^{DLIS}	<0.100 ^{DLIS}	<0.100 ^{DLIS}	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000250 ^{DLIS}	<0.000250 ^{DLIS}	<0.000250 ^{DLIS}	<0.000250 ^{DLIS}	<0.000250 ^{DLIS}	
boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.050 ^{DLIS}	<0.050 ^{DLIS}	<0.050 ^{DLIS}	<0.050 ^{DLIS}	<0.050 ^{DLIS}	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.0801	0.172	0.172	0.221	0.213	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	236	232	237	236	249	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	<0.50 ^{DLIS}	4.86	4.53	3.98	5.13	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00100 ^{DLIS}	<0.00100 ^{DLIS}	<0.00100 ^{DLIS}	<0.00100 ^{DLIS}	<0.00100 ^{DLIS}	
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.050 ^{DLIS}	<0.050 ^{DLIS}	<0.050 ^{DLIS}	<0.050 ^{DLIS}	<0.050 ^{DLIS}	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000250 ^{DLIS}	<0.000250 ^{DLIS}	<0.000250 ^{DLIS}	<0.000250 ^{DLIS}	<0.000250 ^{DLIS}	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0251	0.0645	0.0678	0.0680	0.0628	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	159	160	163	162	161	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	<0.00050 ^{DLIS}	0.120	0.111	0.0868	0.149	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.000969	0.00831	0.00831	0.00845	0.00895	
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	<0.00250 ^{DLIS}	0.0265	0.0258	0.0278	0.0273	
potassium, dissolved	7440-09-7	E421	0.050	mg/L	2.68	3.57	3.67	3.80	3.63	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKUT_3_PW_2_2022-12_N	RG_ERCKMD_1_PW_1_2022-12_N	RG_ERCKMD_1_PW_2_2022-12_N	RG_ERCKMD_1_PW_3_2022-12_N	RG_ERCKMD_2_PW_1_2022-12_N
Client sampling date / time					29-Nov-2022 11:30	28-Nov-2022 09:30	28-Nov-2022 09:45	28-Nov-2022 10:00	28-Nov-2022 10:30	
Analyte	CAS Number	Method	LOR	Unit	CG2216630-016	CG2216630-017	CG2216630-018	CG2216630-019	CG2216630-020	
					Result	Result	Result	Result	Result	
Dissolved Metals										
selenium, dissolved	7782-49-2	E421	0.050	µg/L	154	80.0	77.1	81.2	82.7	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	3.81	3.34	3.30	3.35	3.41	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000050 ^{DLIS}	<0.000050 ^{DLIS}	<0.000050 ^{DLIS}	<0.000050 ^{DLIS}	<0.000050 ^{DLIS}	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	2.81	6.60	6.70	6.72	6.71	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.190	0.301	0.303	0.302	0.331	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	265	281	282	286	286	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000050 ^{DLIS}	0.000051	<0.000050 ^{DLIS}	<0.000050 ^{DLIS}	<0.000050 ^{DLIS}	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00150 ^{DLIS}	<0.00150 ^{DLIS}	<0.00150 ^{DLIS}	<0.00150 ^{DLIS}	<0.00150 ^{DLIS}	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00778	0.00984	0.00976	0.0101	0.0100	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00250 ^{DLIS}	<0.00250 ^{DLIS}	<0.00250 ^{DLIS}	<0.00250 ^{DLIS}	<0.00250 ^{DLIS}	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0050 ^{DLIS}	0.0134	0.0088	0.0086	0.0121	
dissolved metals filtration location	----	EP421	-	-	Laboratory	Laboratory	Laboratory	Laboratory	Laboratory	

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKMD_2 _PW_2_2022-1 2_N	RG_ERCKMD_2 _PW_3_2022-1 2_N	RG_ERCKMD_3 _PW_1_2022-1 2_N	RG_ERCKMD_3 _PW_2_2022-1 2_N	RG_ERCKMD_3 _PW_3_2022-1 2_N
Client sampling date / time					28-Nov-2022 10:45	28-Nov-2022 11:00	28-Nov-2022 11:30	28-Nov-2022 11:45	28-Nov-2022 12:00	
Analyte	CAS Number	Method	LOR	Unit	CG2216630-021	CG2216630-022	CG2216630-023	CG2216630-024	CG2216630-025	
					Result	Result	Result	Result	Result	
Physical Tests										
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	1210	1280	1310	1300	1330	
Anions and Nutrients										
bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.250 ^{DLIS}	<0.250 ^{DLIS}	<0.250 ^{DLIS}	<0.250 ^{DLIS}	<0.250 ^{DLIS}	
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	8.41	8.95	8.25	8.22	8.62	
fluoride	16984-48-8	E235.F	0.020	mg/L	0.200	0.264	0.196	0.198	0.236	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	8.75	8.75	8.59	8.57	8.82	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	0.0202	0.0059	0.0246	0.0252	0.0199	
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	816	820	802	807	826	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0058	0.0059	0.0068	0.0061	<0.0050 ^{DLIS}	
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0376	0.0435	0.0378	0.0375	0.0404	
beryllium, dissolved	7440-41-7	E421	0.020	µg/L	<0.100 ^{DLIS}	<0.100 ^{DLIS}	<0.100 ^{DLIS}	<0.100 ^{DLIS}	<0.100 ^{DLIS}	
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000250 ^{DLIS}	<0.000250 ^{DLIS}	<0.000250 ^{DLIS}	<0.000250 ^{DLIS}	<0.000250 ^{DLIS}	
boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.050 ^{DLIS}	<0.050 ^{DLIS}	<0.050 ^{DLIS}	<0.050 ^{DLIS}	<0.050 ^{DLIS}	
cadmium, dissolved	7440-43-9	E421	0.0050	µg/L	0.209	0.222	0.153	0.220	0.142	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	230	249	263	252	260	
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	
cobalt, dissolved	7440-48-4	E421	0.10	µg/L	4.37	0.56	5.36	5.42	1.70	
copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00100 ^{DLIS}	<0.00100 ^{DLIS}	<0.00100 ^{DLIS}	<0.00100 ^{DLIS}	<0.00100 ^{DLIS}	
iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.050 ^{DLIS}	<0.050 ^{DLIS}	<0.050 ^{DLIS}	<0.050 ^{DLIS}	<0.050 ^{DLIS}	
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000250 ^{DLIS}	<0.000250 ^{DLIS}	<0.000250 ^{DLIS}	<0.000250 ^{DLIS}	<0.000250 ^{DLIS}	
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0660	0.0696	0.0693	0.0683	0.0727	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	155	160	158	163	165	
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.106	0.0188	0.141	0.141	0.0202	
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00818	0.00813	0.00867	0.00856	0.00916	
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.0256	0.0233	0.0274	0.0275	0.0174	
potassium, dissolved	7440-09-7	E421	0.050	mg/L	3.58	4.44	3.57	3.65	4.14	



Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_ERCKMD_2 _PW_2_2022-1 2_N	RG_ERCKMD_2 _PW_3_2022-1 2_N	RG_ERCKMD_3 _PW_1_2022-1 2_N	RG_ERCKMD_3 _PW_2_2022-1 2_N	RG_ERCKMD_3 _PW_3_2022-1 2_N
Client sampling date / time					28-Nov-2022 10:45	28-Nov-2022 11:00	28-Nov-2022 11:30	28-Nov-2022 11:45	28-Nov-2022 12:00	
Analyte	CAS Number	Method	LOR	Unit	CG2216630-021	CG2216630-022	CG2216630-023	CG2216630-024	CG2216630-025	
					Result	Result	Result	Result	Result	
Dissolved Metals										
selenium, dissolved	7782-49-2	E421	0.050	µg/L	75.3	84.5	79.3	80.7	82.1	
silicon, dissolved	7440-21-3	E421	0.050	mg/L	3.26	5.72	3.38	3.46	3.63	
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000050 ^{DLIS}	<0.000050 ^{DLIS}	<0.000050 ^{DLIS}	<0.000050 ^{DLIS}	<0.000050 ^{DLIS}	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	6.47	6.77	6.67	6.78	6.88	
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.284	0.314	0.329	0.311	0.313	
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	272	279	278	286	286	
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000050 ^{DLIS}	<0.000050 ^{DLIS}	<0.000050 ^{DLIS}	<0.000050 ^{DLIS}	<0.000050 ^{DLIS}	
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	<0.00050 ^{DLIS}	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00150 ^{DLIS}	<0.00150 ^{DLIS}	<0.00150 ^{DLIS}	<0.00150 ^{DLIS}	<0.00150 ^{DLIS}	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00917	0.00949	0.00963	0.00987	0.00962	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00250 ^{DLIS}	<0.00250 ^{DLIS}	<0.00250 ^{DLIS}	<0.00250 ^{DLIS}	<0.00250 ^{DLIS}	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0100	0.0103	0.0130	0.0128	0.0064	
dissolved metals filtration location	----	EP421	-	-	Laboratory	Laboratory	Laboratory	Laboratory	Laboratory	

Please refer to the General Comments section for an explanation of any qualifiers detected.



QUALITY CONTROL INTERPRETIVE REPORT

<p>Work Order : CG2216630</p> <p>Client : Teck Coal Limited</p> <p>Contact : Mike Pope</p> <p>Address : 421 Pine Avenue Sparwood BC Canada V0B2G0</p> <p>Telephone : ----</p> <p>Project : REGIONAL EFFECTS PROGRAM</p> <p>PO : VPO00847030</p> <p>C-O-C number : November EVO LAEMP 2022</p> <p>Sampler : Liva Ramanjehimanana</p> <p>Site : ----</p> <p>Quote number : Teck Coal Master Quote</p> <p>No. of samples received : 25</p> <p>No. of samples analysed : 25</p>	<p>Page : 1 of 27</p> <p>Laboratory : Calgary - Environmental</p> <p>Account Manager : Lyudmyla Shvets</p> <p>Address : 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5</p> <p>Telephone : +1 403 407 1800</p> <p>Date Samples Received : 30-Nov-2022 09:55</p> <p>Issue Date : 02-Dec-2022 15:17</p>
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This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

- Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
- CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
- DQO: Data Quality Objective.
- LOR: Limit of Reporting (detection limit).
- RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Bromide in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKUT_1_PW_1_2022-12_N	E235.Br-L	29-Nov-2022	30-Nov-2022	28 days	1 days	✓	30-Nov-2022	27 days	0 days	✓	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKUT_1_PW_2_2022-12_N	E235.Br-L	29-Nov-2022	30-Nov-2022	28 days	1 days	✓	30-Nov-2022	27 days	0 days	✓	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKUT_2_PW_1_2022-12_N	E235.Br-L	29-Nov-2022	30-Nov-2022	28 days	1 days	✓	30-Nov-2022	27 days	0 days	✓	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKUT_2_PW_2_2022-12_N	E235.Br-L	29-Nov-2022	30-Nov-2022	28 days	1 days	✓	30-Nov-2022	27 days	0 days	✓	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKUT_2_PW_3_2022-12_N	E235.Br-L	29-Nov-2022	30-Nov-2022	28 days	1 days	✓	30-Nov-2022	27 days	0 days	✓	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKUT_3_PW_1_2022-12_N	E235.Br-L	29-Nov-2022	30-Nov-2022	28 days	1 days	✓	30-Nov-2022	27 days	0 days	✓	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKUT_3_PW_2_2022-12_N	E235.Br-L	29-Nov-2022	30-Nov-2022	28 days	1 days	✓	30-Nov-2022	27 days	0 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Bromide in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKDT_1_PW_1_2022-12_N	E235.Br-L	28-Nov-2022	30-Nov-2022	28 days	2 days	✔	30-Nov-2022	26 days	0 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKDT_1_PW_2_2022-12_N	E235.Br-L	28-Nov-2022	30-Nov-2022	28 days	2 days	✔	30-Nov-2022	26 days	0 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKDT_1_PW_3_2022-12_N	E235.Br-L	28-Nov-2022	30-Nov-2022	28 days	2 days	✔	30-Nov-2022	26 days	0 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKDT_2_PW_1_2022-12_N	E235.Br-L	28-Nov-2022	30-Nov-2022	28 days	2 days	✔	30-Nov-2022	26 days	0 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKDT_2_PW_2_2022-12_N	E235.Br-L	28-Nov-2022	30-Nov-2022	28 days	2 days	✔	30-Nov-2022	26 days	0 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKDT_2_PW_3_2022-12_N	E235.Br-L	28-Nov-2022	30-Nov-2022	28 days	2 days	✔	30-Nov-2022	26 days	0 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKDT_3_PW_1_2022-12_N	E235.Br-L	28-Nov-2022	30-Nov-2022	28 days	2 days	✔	30-Nov-2022	26 days	0 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKDT_3_PW_2_2022-12_N	E235.Br-L	28-Nov-2022	30-Nov-2022	28 days	2 days	✔	30-Nov-2022	26 days	0 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKDT_3_PW_3_2022-12_N	E235.Br-L	28-Nov-2022	30-Nov-2022	28 days	2 days	✔	30-Nov-2022	26 days	0 days	✔	



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Bromide in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKMD_1_PW_1_2022-12_N	E235.Br-L	28-Nov-2022	30-Nov-2022	28 days	2 days	✔	30-Nov-2022	26 days	0 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKMD_1_PW_2_2022-12_N	E235.Br-L	28-Nov-2022	30-Nov-2022	28 days	2 days	✔	30-Nov-2022	26 days	0 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKMD_1_PW_3_2022-12_N	E235.Br-L	28-Nov-2022	30-Nov-2022	28 days	2 days	✔	30-Nov-2022	26 days	0 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKMD_2_PW_1_2022-12_N	E235.Br-L	28-Nov-2022	30-Nov-2022	28 days	2 days	✔	30-Nov-2022	26 days	0 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKMD_2_PW_2_2022-12_N	E235.Br-L	28-Nov-2022	30-Nov-2022	28 days	2 days	✔	30-Nov-2022	26 days	0 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKMD_2_PW_3_2022-12_N	E235.Br-L	28-Nov-2022	30-Nov-2022	28 days	2 days	✔	30-Nov-2022	26 days	0 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKMD_3_PW_1_2022-12_N	E235.Br-L	28-Nov-2022	30-Nov-2022	28 days	2 days	✔	30-Nov-2022	26 days	0 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKMD_3_PW_2_2022-12_N	E235.Br-L	28-Nov-2022	30-Nov-2022	28 days	2 days	✔	30-Nov-2022	26 days	0 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKMD_3_PW_3_2022-12_N	E235.Br-L	28-Nov-2022	30-Nov-2022	28 days	2 days	✔	30-Nov-2022	26 days	0 days	✔	



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Chloride in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKUT_1_PW_1_2022-12_N	E235.CI-L	29-Nov-2022	30-Nov-2022	28 days	1 days	✔	30-Nov-2022	27 days	0 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKUT_1_PW_2_2022-12_N	E235.CI-L	29-Nov-2022	30-Nov-2022	28 days	1 days	✔	30-Nov-2022	27 days	0 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKUT_2_PW_1_2022-12_N	E235.CI-L	29-Nov-2022	30-Nov-2022	28 days	1 days	✔	30-Nov-2022	27 days	0 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKUT_2_PW_2_2022-12_N	E235.CI-L	29-Nov-2022	30-Nov-2022	28 days	1 days	✔	30-Nov-2022	27 days	0 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKUT_2_PW_3_2022-12_N	E235.CI-L	29-Nov-2022	30-Nov-2022	28 days	1 days	✔	30-Nov-2022	27 days	0 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKUT_3_PW_1_2022-12_N	E235.CI-L	29-Nov-2022	30-Nov-2022	28 days	1 days	✔	30-Nov-2022	27 days	0 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKUT_3_PW_2_2022-12_N	E235.CI-L	29-Nov-2022	30-Nov-2022	28 days	1 days	✔	30-Nov-2022	27 days	0 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKDT_1_PW_1_2022-12_N	E235.CI-L	28-Nov-2022	30-Nov-2022	28 days	2 days	✔	30-Nov-2022	26 days	0 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKDT_1_PW_2_2022-12_N	E235.CI-L	28-Nov-2022	30-Nov-2022	28 days	2 days	✔	30-Nov-2022	26 days	0 days	✔	



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Chloride in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKDT_1_PW_3_2022-12_N	E235.CI-L	28-Nov-2022	30-Nov-2022	28 days	2 days	✔	30-Nov-2022	26 days	0 days	✔	
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Opaque HDPE-unpreserved RG_ERCKDT_2_PW_1_2022-12_N	E235.CI-L	28-Nov-2022	30-Nov-2022	28 days	2 days	✔	30-Nov-2022	26 days	0 days	✔	
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Opaque HDPE-unpreserved RG_ERCKDT_2_PW_2_2022-12_N	E235.CI-L	28-Nov-2022	30-Nov-2022	28 days	2 days	✔	30-Nov-2022	26 days	0 days	✔	
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Opaque HDPE-unpreserved RG_ERCKDT_3_PW_2_2022-12_N	E235.CI-L	28-Nov-2022	30-Nov-2022	28 days	2 days	✔	30-Nov-2022	26 days	0 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKDT_3_PW_3_2022-12_N	E235.CI-L	28-Nov-2022	30-Nov-2022	28 days	2 days	✔	30-Nov-2022	26 days	0 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKMD_1_PW_1_2022-12_N	E235.CI-L	28-Nov-2022	30-Nov-2022	28 days	2 days	✔	30-Nov-2022	26 days	0 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKMD_1_PW_2_2022-12_N	E235.CI-L	28-Nov-2022	30-Nov-2022	28 days	2 days	✔	30-Nov-2022	26 days	0 days	✔	



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			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Chloride in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKMD_1_PW_3_2022-12_N	E235.Cl-L	28-Nov-2022	30-Nov-2022	28 days	2 days	✔	30-Nov-2022	26 days	0 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKMD_2_PW_1_2022-12_N	E235.Cl-L	28-Nov-2022	30-Nov-2022	28 days	2 days	✔	30-Nov-2022	26 days	0 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKMD_2_PW_2_2022-12_N	E235.Cl-L	28-Nov-2022	30-Nov-2022	28 days	2 days	✔	30-Nov-2022	26 days	0 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKMD_2_PW_3_2022-12_N	E235.Cl-L	28-Nov-2022	30-Nov-2022	28 days	2 days	✔	30-Nov-2022	26 days	0 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKMD_3_PW_1_2022-12_N	E235.Cl-L	28-Nov-2022	30-Nov-2022	28 days	2 days	✔	30-Nov-2022	26 days	0 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKMD_3_PW_2_2022-12_N	E235.Cl-L	28-Nov-2022	30-Nov-2022	28 days	2 days	✔	30-Nov-2022	26 days	0 days	✔	
Anions and Nutrients : Chloride in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKMD_3_PW_3_2022-12_N	E235.Cl-L	28-Nov-2022	30-Nov-2022	28 days	2 days	✔	30-Nov-2022	26 days	0 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
Opaque HDPE-unpreserved RG_ERCKUT_1_PW_1_2022-12_N	E235.F	29-Nov-2022	30-Nov-2022	28 days	1 days	✔	30-Nov-2022	27 days	0 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
Opaque HDPE-unpreserved RG_ERCKUT_1_PW_2_2022-12_N	E235.F	29-Nov-2022	30-Nov-2022	28 days	1 days	✔	30-Nov-2022	27 days	0 days	✔	



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			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Fluoride in Water by IC											
Opaque HDPE-unpreserved RG_ERCKUT_2_PW_1_2022-12_N	E235.F	29-Nov-2022	30-Nov-2022	28 days	1 days	✔	30-Nov-2022	27 days	0 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
Opaque HDPE-unpreserved RG_ERCKUT_2_PW_2_2022-12_N	E235.F	29-Nov-2022	30-Nov-2022	28 days	1 days	✔	30-Nov-2022	27 days	0 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
Opaque HDPE-unpreserved RG_ERCKUT_2_PW_3_2022-12_N	E235.F	29-Nov-2022	30-Nov-2022	28 days	1 days	✔	30-Nov-2022	27 days	0 days	✔	
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Opaque HDPE-unpreserved RG_ERCKUT_3_PW_2_2022-12_N	E235.F	29-Nov-2022	30-Nov-2022	28 days	1 days	✔	30-Nov-2022	27 days	0 days	✔	
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Opaque HDPE-unpreserved RG_ERCKDT_2_PW_2_2022-12_N	E235.F	28-Nov-2022	30-Nov-2022	28 days	2 days	✔	30-Nov-2022	26 days	0 days	✔	
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Anions and Nutrients : Fluoride in Water by IC											
Opaque HDPE-unpreserved RG_ERCKMD_1_PW_1_2022-12_N	E235.F	28-Nov-2022	30-Nov-2022	28 days	2 days	✔	30-Nov-2022	26 days	0 days	✔	
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Opaque HDPE-unpreserved RG_ERCKMD_1_PW_2_2022-12_N	E235.F	28-Nov-2022	30-Nov-2022	28 days	2 days	✔	30-Nov-2022	26 days	0 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
Opaque HDPE-unpreserved RG_ERCKMD_1_PW_3_2022-12_N	E235.F	28-Nov-2022	30-Nov-2022	28 days	2 days	✔	30-Nov-2022	26 days	0 days	✔	
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Opaque HDPE-unpreserved RG_ERCKMD_3_PW_3_2022-12_N	E235.F	28-Nov-2022	30-Nov-2022	28 days	2 days	✔	30-Nov-2022	26 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKUT_1_PW_1_2022-12_N	E235.NO3-L	29-Nov-2022	30-Nov-2022	3 days	1 days	✔	30-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKUT_1_PW_2_2022-12_N	E235.NO3-L	29-Nov-2022	30-Nov-2022	3 days	1 days	✔	30-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKUT_2_PW_1_2022-12_N	E235.NO3-L	29-Nov-2022	30-Nov-2022	3 days	1 days	✔	30-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKUT_2_PW_2_2022-12_N	E235.NO3-L	29-Nov-2022	30-Nov-2022	3 days	1 days	✔	30-Nov-2022	3 days	0 days	✔	



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			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
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Opaque HDPE-unpreserved RG_ERCKUT_2_PW_3_2022-12_N	E235.NO3-L	29-Nov-2022	30-Nov-2022	3 days	1 days	✔	30-Nov-2022	3 days	0 days	✔	
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Opaque HDPE-unpreserved RG_ERCKUT_3_PW_2_2022-12_N	E235.NO3-L	29-Nov-2022	30-Nov-2022	3 days	1 days	✔	30-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKDT_1_PW_1_2022-12_N	E235.NO3-L	28-Nov-2022	30-Nov-2022	3 days	2 days	✔	30-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKDT_1_PW_2_2022-12_N	E235.NO3-L	28-Nov-2022	30-Nov-2022	3 days	2 days	✔	30-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKDT_1_PW_3_2022-12_N	E235.NO3-L	28-Nov-2022	30-Nov-2022	3 days	2 days	✔	30-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKDT_2_PW_1_2022-12_N	E235.NO3-L	28-Nov-2022	30-Nov-2022	3 days	2 days	✔	30-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKDT_2_PW_2_2022-12_N	E235.NO3-L	28-Nov-2022	30-Nov-2022	3 days	2 days	✔	30-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKDT_2_PW_3_2022-12_N	E235.NO3-L	28-Nov-2022	30-Nov-2022	3 days	2 days	✔	30-Nov-2022	3 days	0 days	✔	



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKDT_3_PW_1_2022-12_N	E235.NO3-L	28-Nov-2022	30-Nov-2022	3 days	2 days	✔	30-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKDT_3_PW_2_2022-12_N	E235.NO3-L	28-Nov-2022	30-Nov-2022	3 days	2 days	✔	30-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKDT_3_PW_3_2022-12_N	E235.NO3-L	28-Nov-2022	30-Nov-2022	3 days	2 days	✔	30-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKMD_1_PW_1_2022-12_N	E235.NO3-L	28-Nov-2022	30-Nov-2022	3 days	2 days	✔	30-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKMD_1_PW_2_2022-12_N	E235.NO3-L	28-Nov-2022	30-Nov-2022	3 days	2 days	✔	30-Nov-2022	3 days	0 days	✔	
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Opaque HDPE-unpreserved RG_ERCKMD_1_PW_3_2022-12_N	E235.NO3-L	28-Nov-2022	30-Nov-2022	3 days	2 days	✔	30-Nov-2022	3 days	0 days	✔	
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Opaque HDPE-unpreserved RG_ERCKMD_2_PW_1_2022-12_N	E235.NO3-L	28-Nov-2022	30-Nov-2022	3 days	2 days	✔	30-Nov-2022	3 days	0 days	✔	
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Opaque HDPE-unpreserved RG_ERCKMD_2_PW_2_2022-12_N	E235.NO3-L	28-Nov-2022	30-Nov-2022	3 days	2 days	✔	30-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKMD_2_PW_3_2022-12_N	E235.NO3-L	28-Nov-2022	30-Nov-2022	3 days	2 days	✔	30-Nov-2022	3 days	0 days	✔	



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				Rec	Actual			Rec	Actual		
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKMD_3_PW_1_2022-12_N	E235.NO3-L	28-Nov-2022	30-Nov-2022	3 days	2 days	✔	30-Nov-2022	3 days	0 days	✔	
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Opaque HDPE-unpreserved RG_ERCKMD_3_PW_3_2022-12_N	E235.NO3-L	28-Nov-2022	30-Nov-2022	3 days	2 days	✔	30-Nov-2022	3 days	0 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKUT_1_PW_1_2022-12_N	E235.NO2-L	29-Nov-2022	30-Nov-2022	3 days	1 days	✔	30-Nov-2022	2 days	0 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKUT_1_PW_2_2022-12_N	E235.NO2-L	29-Nov-2022	30-Nov-2022	3 days	1 days	✔	30-Nov-2022	2 days	0 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKUT_2_PW_1_2022-12_N	E235.NO2-L	29-Nov-2022	30-Nov-2022	3 days	1 days	✔	30-Nov-2022	2 days	0 days	✔	
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Opaque HDPE-unpreserved RG_ERCKUT_2_PW_2_2022-12_N	E235.NO2-L	29-Nov-2022	30-Nov-2022	3 days	1 days	✔	30-Nov-2022	2 days	0 days	✔	
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Opaque HDPE-unpreserved RG_ERCKUT_2_PW_3_2022-12_N	E235.NO2-L	29-Nov-2022	30-Nov-2022	3 days	1 days	✔	30-Nov-2022	2 days	0 days	✔	
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Opaque HDPE-unpreserved RG_ERCKUT_3_PW_1_2022-12_N	E235.NO2-L	29-Nov-2022	30-Nov-2022	3 days	1 days	✔	30-Nov-2022	2 days	0 days	✔	



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			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
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Opaque HDPE-unpreserved RG_ERCKUT_3_PW_2_2022-12_N	E235.NO2-L	29-Nov-2022	30-Nov-2022	3 days	1 days	✔	30-Nov-2022	2 days	0 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKDT_1_PW_1_2022-12_N	E235.NO2-L	28-Nov-2022	30-Nov-2022	3 days	2 days	✔	30-Nov-2022	1 days	0 days	✔	
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Opaque HDPE-unpreserved RG_ERCKDT_2_PW_2_2022-12_N	E235.NO2-L	28-Nov-2022	30-Nov-2022	3 days	2 days	✔	30-Nov-2022	1 days	0 days	✔	
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Opaque HDPE-unpreserved RG_ERCKDT_2_PW_3_2022-12_N	E235.NO2-L	28-Nov-2022	30-Nov-2022	3 days	2 days	✔	30-Nov-2022	1 days	0 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKDT_3_PW_1_2022-12_N	E235.NO2-L	28-Nov-2022	30-Nov-2022	3 days	2 days	✔	30-Nov-2022	1 days	0 days	✔	
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Opaque HDPE-unpreserved RG_ERCKDT_3_PW_2_2022-12_N	E235.NO2-L	28-Nov-2022	30-Nov-2022	3 days	2 days	✔	30-Nov-2022	1 days	0 days	✔	



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				Rec	Actual			Rec	Actual		
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Opaque HDPE-unpreserved RG_ERCKDT_3_PW_3_2022-12_N	E235.NO2-L	28-Nov-2022	30-Nov-2022	3 days	2 days	✔	30-Nov-2022	1 days	0 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKMD_1_PW_1_2022-12_N	E235.NO2-L	28-Nov-2022	30-Nov-2022	3 days	2 days	✔	30-Nov-2022	1 days	0 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKMD_1_PW_2_2022-12_N	E235.NO2-L	28-Nov-2022	30-Nov-2022	3 days	2 days	✔	30-Nov-2022	1 days	0 days	✔	
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Opaque HDPE-unpreserved RG_ERCKMD_1_PW_3_2022-12_N	E235.NO2-L	28-Nov-2022	30-Nov-2022	3 days	2 days	✔	30-Nov-2022	1 days	0 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKMD_2_PW_1_2022-12_N	E235.NO2-L	28-Nov-2022	30-Nov-2022	3 days	2 days	✔	30-Nov-2022	1 days	0 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKMD_2_PW_2_2022-12_N	E235.NO2-L	28-Nov-2022	30-Nov-2022	3 days	2 days	✔	30-Nov-2022	1 days	0 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKMD_2_PW_3_2022-12_N	E235.NO2-L	28-Nov-2022	30-Nov-2022	3 days	2 days	✔	30-Nov-2022	1 days	0 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKMD_3_PW_1_2022-12_N	E235.NO2-L	28-Nov-2022	30-Nov-2022	3 days	2 days	✔	30-Nov-2022	1 days	0 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKMD_3_PW_2_2022-12_N	E235.NO2-L	28-Nov-2022	30-Nov-2022	3 days	2 days	✔	30-Nov-2022	1 days	0 days	✔	



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			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
Opaque HDPE-unpreserved RG_ERCKMD_3_PW_3_2022-12_N	E235.NO2-L	28-Nov-2022	30-Nov-2022	3 days	2 days	✔	30-Nov-2022	1 days	0 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
Opaque HDPE-unpreserved RG_ERCKUT_1_PW_1_2022-12_N	E235.SO4	29-Nov-2022	30-Nov-2022	28 days	1 days	✔	30-Nov-2022	27 days	0 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
Opaque HDPE-unpreserved RG_ERCKUT_1_PW_2_2022-12_N	E235.SO4	29-Nov-2022	30-Nov-2022	28 days	1 days	✔	30-Nov-2022	27 days	0 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
Opaque HDPE-unpreserved RG_ERCKUT_2_PW_1_2022-12_N	E235.SO4	29-Nov-2022	30-Nov-2022	28 days	1 days	✔	30-Nov-2022	27 days	0 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
Opaque HDPE-unpreserved RG_ERCKUT_2_PW_2_2022-12_N	E235.SO4	29-Nov-2022	30-Nov-2022	28 days	1 days	✔	30-Nov-2022	27 days	0 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
Opaque HDPE-unpreserved RG_ERCKUT_2_PW_3_2022-12_N	E235.SO4	29-Nov-2022	30-Nov-2022	28 days	1 days	✔	30-Nov-2022	27 days	0 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
Opaque HDPE-unpreserved RG_ERCKUT_3_PW_1_2022-12_N	E235.SO4	29-Nov-2022	30-Nov-2022	28 days	1 days	✔	30-Nov-2022	27 days	0 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
Opaque HDPE-unpreserved RG_ERCKUT_3_PW_2_2022-12_N	E235.SO4	29-Nov-2022	30-Nov-2022	28 days	1 days	✔	30-Nov-2022	27 days	0 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
Opaque HDPE-unpreserved RG_ERCKDT_1_PW_1_2022-12_N	E235.SO4	28-Nov-2022	30-Nov-2022	28 days	2 days	✔	30-Nov-2022	26 days	0 days	✔	



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			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Anions and Nutrients : Sulfate in Water by IC											
Opaque HDPE-unpreserved RG_ERCKDT_1_PW_2_2022-12_N	E235.S04	28-Nov-2022	30-Nov-2022	28 days	2 days	✔	30-Nov-2022	26 days	0 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
Opaque HDPE-unpreserved RG_ERCKDT_1_PW_3_2022-12_N	E235.S04	28-Nov-2022	30-Nov-2022	28 days	2 days	✔	30-Nov-2022	26 days	0 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
Opaque HDPE-unpreserved RG_ERCKDT_2_PW_1_2022-12_N	E235.S04	28-Nov-2022	30-Nov-2022	28 days	2 days	✔	30-Nov-2022	26 days	0 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
Opaque HDPE-unpreserved RG_ERCKDT_2_PW_2_2022-12_N	E235.S04	28-Nov-2022	30-Nov-2022	28 days	2 days	✔	30-Nov-2022	26 days	0 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
Opaque HDPE-unpreserved RG_ERCKDT_2_PW_3_2022-12_N	E235.S04	28-Nov-2022	30-Nov-2022	28 days	2 days	✔	30-Nov-2022	26 days	0 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
Opaque HDPE-unpreserved RG_ERCKDT_3_PW_1_2022-12_N	E235.S04	28-Nov-2022	30-Nov-2022	28 days	2 days	✔	30-Nov-2022	26 days	0 days	✔	
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Opaque HDPE-unpreserved RG_ERCKDT_3_PW_2_2022-12_N	E235.S04	28-Nov-2022	30-Nov-2022	28 days	2 days	✔	30-Nov-2022	26 days	0 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
Opaque HDPE-unpreserved RG_ERCKDT_3_PW_3_2022-12_N	E235.S04	28-Nov-2022	30-Nov-2022	28 days	2 days	✔	30-Nov-2022	26 days	0 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
Opaque HDPE-unpreserved RG_ERCKMD_1_PW_1_2022-12_N	E235.S04	28-Nov-2022	30-Nov-2022	28 days	2 days	✔	30-Nov-2022	26 days	0 days	✔	



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				Rec	Actual			Rec	Actual		
Anions and Nutrients : Sulfate in Water by IC											
Opaque HDPE-unpreserved RG_ERCKMD_1_PW_2_2022-12_N	E235.SO4	28-Nov-2022	30-Nov-2022	28 days	2 days	✔	30-Nov-2022	26 days	0 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
Opaque HDPE-unpreserved RG_ERCKMD_1_PW_3_2022-12_N	E235.SO4	28-Nov-2022	30-Nov-2022	28 days	2 days	✔	30-Nov-2022	26 days	0 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
Opaque HDPE-unpreserved RG_ERCKMD_2_PW_1_2022-12_N	E235.SO4	28-Nov-2022	30-Nov-2022	28 days	2 days	✔	30-Nov-2022	26 days	0 days	✔	
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Anions and Nutrients : Sulfate in Water by IC											
Opaque HDPE-unpreserved RG_ERCKMD_3_PW_3_2022-12_N	E235.SO4	28-Nov-2022	30-Nov-2022	28 days	2 days	✔	30-Nov-2022	26 days	0 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKUT_1_PW_1_2022-12_N	E421.Cr-L	29-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	2 days	✔	



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				Rec	Actual			Rec	Actual	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)										
HDPE - dissolved (lab preserved) RG_ERCKUT_1_PW_2_2022-12_N	E421.Cr-L	29-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	2 days	✔
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)										
HDPE - dissolved (lab preserved) RG_ERCKUT_2_PW_1_2022-12_N	E421.Cr-L	29-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	2 days	✔
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)										
HDPE - dissolved (lab preserved) RG_ERCKUT_2_PW_2_2022-12_N	E421.Cr-L	29-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	2 days	✔
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)										
HDPE - dissolved (lab preserved) RG_ERCKUT_2_PW_3_2022-12_N	E421.Cr-L	29-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	2 days	✔
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HDPE - dissolved (lab preserved) RG_ERCKUT_3_PW_1_2022-12_N	E421.Cr-L	29-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	2 days	✔
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HDPE - dissolved (lab preserved) RG_ERCKUT_3_PW_2_2022-12_N	E421.Cr-L	29-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	2 days	✔
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)										
HDPE - dissolved (lab preserved) RG_ERCKDT_1_PW_1_2022-12_N	E421.Cr-L	28-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	3 days	✔
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)										
HDPE - dissolved (lab preserved) RG_ERCKDT_1_PW_2_2022-12_N	E421.Cr-L	28-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	3 days	✔
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)										
HDPE - dissolved (lab preserved) RG_ERCKDT_1_PW_3_2022-12_N	E421.Cr-L	28-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	3 days	✔



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKDT_2_PW_1_2022-12_N	E421.Cr-L	28-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKDT_2_PW_2_2022-12_N	E421.Cr-L	28-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKDT_2_PW_3_2022-12_N	E421.Cr-L	28-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
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Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKDT_3_PW_3_2022-12_N	E421.Cr-L	28-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKMD_1_PW_1_2022-12_N	E421.Cr-L	28-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	3 days	✔	
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKMD_1_PW_2_2022-12_N	E421.Cr-L	28-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	3 days	✔	
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HDPE - dissolved (lab preserved) RG_ERCKMD_1_PW_3_2022-12_N	E421.Cr-L	28-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	3 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)											
HDPE - dissolved (lab preserved) RG_ERCKMD_2_PW_1_2022-12_N	E421.Cr-L	28-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	3 days	✔	
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HDPE - dissolved (lab preserved) RG_ERCKUT_1_PW_1_2022-12_N	E421	29-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	2 days	✔	
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HDPE - dissolved (lab preserved) RG_ERCKUT_2_PW_1_2022-12_N	E421	29-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	2 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ERCKUT_2_PW_2_2022-12_N	E421	29-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	2 days	✔	
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Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ERCKDT_1_PW_1_2022-12_N	E421	28-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	3 days	✔	
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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) RG_ERCKDT_2_PW_3_2022-12_N	E421	28-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	3 days	✔	
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Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
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HDPE - dissolved (lab preserved) RG_ERCKMD_2_PW_3_2022-12_N	E421	28-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	3 days	✔
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HDPE - dissolved (lab preserved) RG_ERCKMD_3_PW_3_2022-12_N	E421	28-Nov-2022	01-Dec-2022	----	----		01-Dec-2022	180 days	3 days	✔

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water** Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
Analytical Methods							
Laboratory Duplicates (DUP)							
Bromide in Water by IC (Low Level)	E235.Br-L	763192	2	37	5.4	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	763193	2	37	5.4	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	763861	2	36	5.5	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	763862	2	36	5.5	5.0	✓
Fluoride in Water by IC	E235.F	763191	2	37	5.4	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	763194	2	37	5.4	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	763195	2	37	5.4	5.0	✓
Sulfate in Water by IC	E235.SO4	763196	2	37	5.4	5.0	✓
Laboratory Control Samples (LCS)							
Bromide in Water by IC (Low Level)	E235.Br-L	763192	2	37	5.4	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	763193	2	37	5.4	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	763861	2	36	5.5	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	763862	2	36	5.5	5.0	✓
Fluoride in Water by IC	E235.F	763191	2	37	5.4	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	763194	2	37	5.4	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	763195	2	37	5.4	5.0	✓
Sulfate in Water by IC	E235.SO4	763196	2	37	5.4	5.0	✓
Method Blanks (MB)							
Bromide in Water by IC (Low Level)	E235.Br-L	763192	2	37	5.4	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	763193	2	37	5.4	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	763861	2	36	5.5	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	763862	2	36	5.5	5.0	✓
Fluoride in Water by IC	E235.F	763191	2	37	5.4	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	763194	2	37	5.4	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	763195	2	37	5.4	5.0	✓
Sulfate in Water by IC	E235.SO4	763196	2	37	5.4	5.0	✓
Matrix Spikes (MS)							
Bromide in Water by IC (Low Level)	E235.Br-L	763192	2	37	5.4	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	763193	2	37	5.4	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	763861	2	36	5.5	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	763862	2	36	5.5	5.0	✓
Fluoride in Water by IC	E235.F	763191	2	37	5.4	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	763194	2	37	5.4	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	763195	2	37	5.4	5.0	✓
Sulfate in Water by IC	E235.SO4	763196	2	37	5.4	5.0	✓



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Bromide in Water by IC (Low Level)	E235.Br-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC (Low Level)	E235.Cl-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Dissolved Metals in Water by CRC ICPMS	E421 Calgary - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L Calgary - Environmental	Water	APHA 3030 B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS
Dissolved Hardness (Calculated)	EC100 Calgary - Environmental	Water	APHA 2340B	"Hardness (as CaCO ₃), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Metals Water Filtration	EP421 Calgary - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO ₃ .

QUALITY CONTROL REPORT

<p>Work Order : CG2216630</p> <p>Client : Teck Coal Limited</p> <p>Contact : Mike Pope</p> <p>Address : 421 Pine Avenue Sparwood BC Canada V0B2G0</p> <p>Telephone :</p> <p>Project : REGIONAL EFFECTS PROGRAM</p> <p>PO : VPO00847030</p> <p>C-O-C number : November EVO LAEMP 2022</p> <p>Sampler : Liva Ramanjehimanana</p> <p>Site : ---</p> <p>Quote number : Teck Coal Master Quote</p> <p>No. of samples received : 25</p> <p>No. of samples analysed : 25</p>	<p>Page : 1 of 15</p> <p>Laboratory : Calgary - Environmental</p> <p>Account Manager : Lyudmyla Shvets</p> <p>Address : 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5</p> <p>Telephone : +1 403 407 1800</p> <p>Date Samples Received : 30-Nov-2022 09:55</p> <p>Date Analysis Commenced : 30-Nov-2022</p> <p>Issue Date : 02-Dec-2022 15:17</p>
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This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Anthony Calero	Supervisor - Inorganic	Calgary Inorganics, Calgary, Alberta
Kevin Baxter	Team Leader - Inorganics	Calgary Metals, Calgary, Alberta
Naeun Kim	Analyst	Calgary Metals, Calgary, Alberta
Vladka Stamenova	Analyst	Calgary Inorganics, Calgary, Alberta



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 763191)											
CG2216630-001	RG_ERCKDT_1_PW_1_20 22-12_N	fluoride	16984-48-8	E235.F	0.100	mg/L	0.193	0.200	0.007	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 763192)											
CG2216630-001	RG_ERCKDT_1_PW_1_20 22-12_N	bromide	24959-67-9	E235.Br-L	0.250	mg/L	<0.250	<0.250	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 763193)											
CG2216630-001	RG_ERCKDT_1_PW_1_20 22-12_N	chloride	16887-00-6	E235.Cl-L	0.50	mg/L	8.36	8.58	2.58%	20%	----
Anions and Nutrients (QC Lot: 763194)											
CG2216630-001	RG_ERCKDT_1_PW_1_20 22-12_N	nitrate (as N)	14797-55-8	E235.NO3-L	0.0250	mg/L	8.84	8.84	0.00565%	20%	----
Anions and Nutrients (QC Lot: 763195)											
CG2216630-001	RG_ERCKDT_1_PW_1_20 22-12_N	nitrite (as N)	14797-65-0	E235.NO2-L	0.0050	mg/L	0.0217	0.0217	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 763196)											
CG2216630-001	RG_ERCKDT_1_PW_1_20 22-12_N	sulfate (as SO4)	14808-79-8	E235.SO4	1.50	mg/L	815	815	0.0653%	20%	----
Anions and Nutrients (QC Lot: 763197)											
CG2216630-021	RG_ERCKMD_2_PW_2_2 022-12_N	fluoride	16984-48-8	E235.F	0.100	mg/L	0.200	0.201	0.001	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 763198)											
CG2216630-021	RG_ERCKMD_2_PW_2_2 022-12_N	sulfate (as SO4)	14808-79-8	E235.SO4	1.50	mg/L	816	814	0.294%	20%	----
Anions and Nutrients (QC Lot: 763199)											
CG2216630-021	RG_ERCKMD_2_PW_2_2 022-12_N	bromide	24959-67-9	E235.Br-L	0.250	mg/L	<0.250	<0.250	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 763200)											
CG2216630-021	RG_ERCKMD_2_PW_2_2 022-12_N	chloride	16887-00-6	E235.Cl-L	0.50	mg/L	8.41	8.37	0.382%	20%	----
Anions and Nutrients (QC Lot: 763201)											
CG2216630-021	RG_ERCKMD_2_PW_2_2 022-12_N	nitrate (as N)	14797-55-8	E235.NO3-L	0.0250	mg/L	8.75	8.72	0.368%	20%	----
Anions and Nutrients (QC Lot: 763202)											
CG2216630-021	RG_ERCKMD_2_PW_2_2 022-12_N	nitrite (as N)	14797-65-0	E235.NO2-L	0.0050	mg/L	0.0202	0.0207	0.0005	Diff <2x LOR	----
Dissolved Metals (QC Lot: 763861)											



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 763861) - continued											
CG2216630-001	RG_ERCKDT_1_PW_1_20 22-12_N	chromium, dissolved	7440-47-3	E421.Cr-L	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 763862)											
CG2216630-001	RG_ERCKDT_1_PW_1_20 22-12_N	aluminum, dissolved	7429-90-5	E421	0.0050	mg/L	0.0070	0.0074	0.0004	Diff <2x LOR	----
		antimony, dissolved	7440-36-0	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		barium, dissolved	7440-39-3	E421	0.00050	mg/L	0.0366	0.0382	4.44%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.000100	mg/L	<0.100 µg/L	<0.000100	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000250	mg/L	<0.000250	<0.000250	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E421	0.0000250	mg/L	0.245 µg/L	0.000205	0.0000406	Diff <2x LOR	----
		calcium, dissolved	7440-70-2	E421	0.250	mg/L	248	250	0.716%	20%	----
		cobalt, dissolved	7440-48-4	E421	0.00050	mg/L	5.94 µg/L	0.00611	2.86%	20%	----
		copper, dissolved	7440-50-8	E421	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		iron, dissolved	7439-89-6	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		lead, dissolved	7439-92-1	E421	0.000250	mg/L	<0.000250	<0.000250	0	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0050	mg/L	0.0642	0.0650	1.34%	20%	----
		magnesium, dissolved	7439-95-4	E421	0.0250	mg/L	161	164	1.62%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00050	mg/L	0.160	0.165	2.96%	20%	----
		molybdenum, dissolved	7439-98-7	E421	0.000250	mg/L	0.00852	0.00855	0.294%	20%	----
		nickel, dissolved	7440-02-0	E421	0.00250	mg/L	0.0289	0.0294	1.71%	20%	----
		potassium, dissolved	7440-09-7	E421	0.250	mg/L	3.72	3.65	2.11%	20%	----
		selenium, dissolved	7782-49-2	E421	0.000250	mg/L	82.3 µg/L	0.0815	1.05%	20%	----
		silicon, dissolved	7440-21-3	E421	0.250	mg/L	3.47	3.48	0.458%	20%	----
		silver, dissolved	7440-22-4	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E421	0.250	mg/L	6.81	6.80	0.112%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00100	mg/L	0.317	0.325	2.36%	20%	----
		sulfur, dissolved	7704-34-9	E421	2.50	mg/L	289	285	1.39%	20%	----
		thallium, dissolved	7440-28-0	E421	0.000050	mg/L	0.000051	0.000056	0.000005	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.00150	mg/L	<0.00150	<0.00150	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000050	mg/L	0.0101	0.0102	1.01%	20%	----
		vanadium, dissolved	7440-62-2	E421	0.00250	mg/L	<0.00250	<0.00250	0	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E421	0.0050	mg/L	0.0145	0.0159	0.0014	Diff <2x LOR	----



Sub-Matrix: Water

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 763863)											
CG2216630-021	RG_ERCKMD_2_PW_2_2 022-12_N	aluminum, dissolved	7429-90-5	E421	0.0050	mg/L	0.0058	<0.0050	0.0008	Diff <2x LOR	----
		antimony, dissolved	7440-36-0	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		barium, dissolved	7440-39-3	E421	0.00050	mg/L	0.0376	0.0382	1.41%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.000100	mg/L	<0.100 µg/L	<0.000100	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000250	mg/L	<0.000250	<0.000250	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E421	0.0000250	mg/L	0.209 µg/L	0.000207	0.0000023	Diff <2x LOR	----
		calcium, dissolved	7440-70-2	E421	0.250	mg/L	230	250	8.66%	20%	----
		cobalt, dissolved	7440-48-4	E421	0.00050	mg/L	4.37 µg/L	0.00447	0.00010	Diff <2x LOR	----
		copper, dissolved	7440-50-8	E421	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		iron, dissolved	7439-89-6	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		lead, dissolved	7439-92-1	E421	0.000250	mg/L	<0.000250	<0.000250	0	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0050	mg/L	0.0660	0.0669	1.32%	20%	----
		magnesium, dissolved	7439-95-4	E421	0.0250	mg/L	155	158	1.98%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00050	mg/L	0.106	0.109	2.52%	20%	----
		molybdenum, dissolved	7439-98-7	E421	0.000250	mg/L	0.00818	0.00882	7.46%	20%	----
		nickel, dissolved	7440-02-0	E421	0.00250	mg/L	0.0256	0.0265	3.35%	20%	----
		potassium, dissolved	7440-09-7	E421	0.250	mg/L	3.58	3.64	1.61%	20%	----
		selenium, dissolved	7782-49-2	E421	0.000250	mg/L	75.3 µg/L	0.0808	7.05%	20%	----
		silicon, dissolved	7440-21-3	E421	0.250	mg/L	3.26	3.25	0.447%	20%	----
		silver, dissolved	7440-22-4	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E421	0.250	mg/L	6.47	6.72	3.76%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00100	mg/L	0.284	0.307	7.66%	20%	----
sulfur, dissolved	7704-34-9	E421	2.50	mg/L	272	280	3.04%	20%	----		
thallium, dissolved	7440-28-0	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----		
tin, dissolved	7440-31-5	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----		
titanium, dissolved	7440-32-6	E421	0.00150	mg/L	<0.00150	<0.00150	0	Diff <2x LOR	----		
uranium, dissolved	7440-61-1	E421	0.000050	mg/L	0.00917	0.00962	4.76%	20%	----		
vanadium, dissolved	7440-62-2	E421	0.00250	mg/L	<0.00250	<0.00250	0	Diff <2x LOR	----		
zinc, dissolved	7440-66-6	E421	0.0050	mg/L	0.0100	0.0102	0.0002	Diff <2x LOR	----		
Dissolved Metals (QC Lot: 763864)											
CG2216630-021	RG_ERCKMD_2_PW_2_2 022-12_N	chromium, dissolved	7440-47-3	E421.Cr-L	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 763191)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 763192)						
bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 763193)						
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	----
Anions and Nutrients (QCLot: 763194)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 763195)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 763196)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 763197)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 763198)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 763199)						
bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 763200)						
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	----
Anions and Nutrients (QCLot: 763201)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 763202)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Dissolved Metals (QCLot: 763861)						
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	<0.00010	----
Dissolved Metals (QCLot: 763862)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 763862) - continued						
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
Dissolved Metals (QCLot: 763863)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 763863) - continued						
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
Dissolved Metals (QCLot: 763864)						
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	<0.00010	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Anions and Nutrients (QCLot: 763191)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 763192)									
bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	101	85.0	115	----
Anions and Nutrients (QCLot: 763193)									
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 763194)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 763195)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 763196)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	103	90.0	110	----
Anions and Nutrients (QCLot: 763197)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 763198)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	103	90.0	110	----
Anions and Nutrients (QCLot: 763199)									
bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	101	85.0	115	----
Anions and Nutrients (QCLot: 763200)									
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 763201)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 763202)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	100	90.0	110	----
Dissolved Metals (QCLot: 763861)									
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	0.25 mg/L	98.4	80.0	120	----
Dissolved Metals (QCLot: 763862)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	105	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	91.9	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	96.6	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	93.2	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	99.4	80.0	120	----



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 763862) - continued									
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	92.6	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	92.9	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	102	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	91.5	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	99.6	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	97.3	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	98.5	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	97.7	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	95.2	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	112	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	104	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	96.0	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	97.9	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	98.4	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	96.0	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	100	60.0	140	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	90.1	80.0	120	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	94.8	80.0	120	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	91.7	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	116	80.0	120	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	94.3	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	96.6	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	97.8	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	96.5	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	98.4	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	95.0	80.0	120	----
Dissolved Metals (QCLot: 763863)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	101	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	90.8	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	97.1	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	94.3	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	97.5	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	94.9	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	91.9	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	98.6	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	89.5	80.0	120	----



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 763863) - continued									
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	97.4	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	95.7	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	92.0	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	98.4	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	97.1	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	108	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	99.6	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	91.4	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	96.9	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	98.0	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	95.4	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	95.0	60.0	140	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	88.1	80.0	120	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	96.5	80.0	120	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	88.3	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	105	80.0	120	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	95.7	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	93.3	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	99.0	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	96.0	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	97.4	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	96.6	80.0	120	----
Dissolved Metals (QCLot: 763864)									
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	0.25 mg/L	95.8	80.0	120	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 763191)										
CG2216630-002	RG_ERCKDT_1_PW_2_2022-12_N	fluoride	16984-48-8	E235.F	0.915 mg/L	1 mg/L	91.5	75.0	125	----
Anions and Nutrients (QCLot: 763192)										
CG2216630-002	RG_ERCKDT_1_PW_2_2022-12_N	bromide	24959-67-9	E235.Br-L	0.515 mg/L	0.5 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 763193)										
CG2216630-002	RG_ERCKDT_1_PW_2_2022-12_N	chloride	16887-00-6	E235.Cl-L	102 mg/L	100 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 763194)										
CG2216630-002	RG_ERCKDT_1_PW_2_2022-12_N	nitrate (as N)	14797-55-8	E235.NO3-L	ND mg/L	2.5 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 763195)										
CG2216630-002	RG_ERCKDT_1_PW_2_2022-12_N	nitrite (as N)	14797-65-0	E235.NO2-L	0.515 mg/L	0.5 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 763196)										
CG2216630-002	RG_ERCKDT_1_PW_2_2022-12_N	sulfate (as SO4)	14808-79-8	E235.SO4	ND mg/L	100 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 763197)										
CG2216630-022	RG_ERCKMD_2_PW_3_2022-12_N	fluoride	16984-48-8	E235.F	0.907 mg/L	1 mg/L	90.7	75.0	125	----
Anions and Nutrients (QCLot: 763198)										
CG2216630-022	RG_ERCKMD_2_PW_3_2022-12_N	sulfate (as SO4)	14808-79-8	E235.SO4	ND mg/L	100 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 763199)										
CG2216630-022	RG_ERCKMD_2_PW_3_2022-12_N	bromide	24959-67-9	E235.Br-L	0.521 mg/L	0.5 mg/L	104	75.0	125	----
Anions and Nutrients (QCLot: 763200)										
CG2216630-022	RG_ERCKMD_2_PW_3_2022-12_N	chloride	16887-00-6	E235.Cl-L	102 mg/L	100 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 763201)										
CG2216630-022	RG_ERCKMD_2_PW_3_2022-12_N	nitrate (as N)	14797-55-8	E235.NO3-L	ND mg/L	2.5 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 763202)										



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 763202) - continued										
CG2216630-022	RG_ERCKMD_2_PW_3_2022-12_N	nitrite (as N)	14797-65-0	E235.NO2-L	0.519 mg/L	0.5 mg/L	104	75.0	125	----
Dissolved Metals (QCLot: 763861)										
CG2216630-002	RG_ERCKDT_1_PW_2_2022-12_N	chromium, dissolved	7440-47-3	E421.Cr-L	0.394 mg/L	0.4 mg/L	98.4	70.0	130	----
Dissolved Metals (QCLot: 763862)										
CG2216630-002	RG_ERCKDT_1_PW_2_2022-12_N	aluminum, dissolved	7429-90-5	E421	2.03 mg/L	2 mg/L	101	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.192 mg/L	0.2 mg/L	95.9	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.199 mg/L	0.2 mg/L	99.6	70.0	130	----
		barium, dissolved	7440-39-3	E421	0.184 mg/L	0.2 mg/L	91.9	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.411 mg/L	0.4 mg/L	103	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.0960 mg/L	0.1 mg/L	96.0	70.0	130	----
		boron, dissolved	7440-42-8	E421	0.983 mg/L	1 mg/L	98.3	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.0416 mg/L	0.04 mg/L	104	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	40 mg/L	ND	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.200 mg/L	0.2 mg/L	100	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.196 mg/L	0.2 mg/L	98.3	70.0	130	----
		iron, dissolved	7439-89-6	E421	19.4 mg/L	20 mg/L	97.0	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.197 mg/L	0.2 mg/L	98.4	70.0	130	----
		lithium, dissolved	7439-93-2	E421	1.00 mg/L	1 mg/L	100	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	10 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E421	0.200 mg/L	0.2 mg/L	99.8	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.198 mg/L	0.2 mg/L	98.8	70.0	130	----
		nickel, dissolved	7440-02-0	E421	0.393 mg/L	0.4 mg/L	98.2	70.0	130	----
		potassium, dissolved	7440-09-7	E421	39.2 mg/L	40 mg/L	98.0	70.0	130	----
		selenium, dissolved	7782-49-2	E421	0.400 mg/L	0.4 mg/L	100.0	70.0	130	----
		silicon, dissolved	7440-21-3	E421	97.6 mg/L	100 mg/L	97.6	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.0407 mg/L	0.04 mg/L	102	70.0	130	----
		sodium, dissolved	7440-23-5	E421	17.5 mg/L	20 mg/L	87.5	70.0	130	----
		strontium, dissolved	7440-24-6	E421	ND mg/L	0.2 mg/L	ND	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	ND mg/L	200 mg/L	ND	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.0392 mg/L	0.04 mg/L	98.0	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.195 mg/L	0.2 mg/L	97.6	70.0	130	----
		titanium, dissolved	7440-32-6	E421	0.392 mg/L	0.4 mg/L	97.9	70.0	130	----
		uranium, dissolved	7440-61-1	E421	0.0400 mg/L	0.04 mg/L	100	70.0	130	----
		vanadium, dissolved	7440-62-2	E421	0.990 mg/L	1 mg/L	99.0	70.0	130	----



Sub-Matrix: Water

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 763862) - continued										
CG2216630-002	RG_ERCKDT_1_PW_2_202	zinc, dissolved	7440-66-6	E421	3.89 mg/L	4 mg/L	97.3	70.0	130	----
Dissolved Metals (QCLot: 763863)										
CG2216630-022	RG_ERCKMD_2_PW_3_2022-12_N	aluminum, dissolved	7429-90-5	E421	2.05 mg/L	2 mg/L	102	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.186 mg/L	0.2 mg/L	93.2	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.197 mg/L	0.2 mg/L	98.5	70.0	130	----
		barium, dissolved	7440-39-3	E421	0.184 mg/L	0.2 mg/L	91.8	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.411 mg/L	0.4 mg/L	103	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.0939 mg/L	0.1 mg/L	93.9	70.0	130	----
		boron, dissolved	7440-42-8	E421	0.958 mg/L	1 mg/L	95.8	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.0410 mg/L	0.04 mg/L	102	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	40 mg/L	ND	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.196 mg/L	0.2 mg/L	98.3	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.192 mg/L	0.2 mg/L	95.9	70.0	130	----
		iron, dissolved	7439-89-6	E421	19.5 mg/L	20 mg/L	97.4	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.193 mg/L	0.2 mg/L	96.6	70.0	130	----
		lithium, dissolved	7439-93-2	E421	1.06 mg/L	1 mg/L	106	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	10 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E421	0.195 mg/L	0.2 mg/L	97.6	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.194 mg/L	0.2 mg/L	97.1	70.0	130	----
		nickel, dissolved	7440-02-0	E421	0.380 mg/L	0.4 mg/L	95.0	70.0	130	----
		potassium, dissolved	7440-09-7	E421	38.6 mg/L	40 mg/L	96.6	70.0	130	----
		selenium, dissolved	7782-49-2	E421	0.415 mg/L	0.4 mg/L	104	70.0	130	----
		silicon, dissolved	7440-21-3	E421	94.6 mg/L	100 mg/L	94.6	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.0396 mg/L	0.04 mg/L	99.1	70.0	130	----
		sodium, dissolved	7440-23-5	E421	18.7 mg/L	20 mg/L	93.4	70.0	130	----
		strontium, dissolved	7440-24-6	E421	ND mg/L	0.2 mg/L	ND	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	ND mg/L	200 mg/L	ND	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.0384 mg/L	0.04 mg/L	96.1	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.190 mg/L	0.2 mg/L	95.1	70.0	130	----
		titanium, dissolved	7440-32-6	E421	0.372 mg/L	0.4 mg/L	93.1	70.0	130	----
		uranium, dissolved	7440-61-1	E421	0.0387 mg/L	0.04 mg/L	96.7	70.0	130	----
		vanadium, dissolved	7440-62-2	E421	0.977 mg/L	1 mg/L	97.7	70.0	130	----
		zinc, dissolved	7440-66-6	E421	4.13 mg/L	4 mg/L	103	70.0	130	----
Dissolved Metals (QCLot: 763864)										

Page : 15 of 15
 Work Order : CG2216630
 Client : Teck Coal Limited
 Project : REGIONAL EFFECTS PROGRAM



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 763864) - continued										
CG2216630-022	RG_ERCKMD_2_PW_3_20 22-12_N	chromium, dissolved	7440-47-3	E421.Cr-L	0.388 mg/L	0.4 mg/L	97.1	70.0	130	----

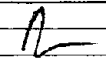
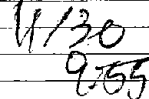
COC ID: November EVO LAEMP 2022		TURNAROUND TIME:					
PROJECT/CLIENT INFO				LABORATORY			
Facility Name / Job#	Regional Effects Program			Lab Name	ALS Calgary		
Project Manager	Mike Pope			Lab Contact	Lyudmyla Shvets		
Email	mike.pope@teck.com			Email	lyudmyla.shvets@alsglobal.com		
Address	421 Pine Avenue			Address	2559 29 Street NE		
City	Sparwood	Province	BC	City	Calgary	Province	AB
Postal Code	V0B 2G0	Country	Canada	Postal Code	T1Y 7B5	Country	Canada
Phone Number	343-333-3905			Phone Number	1 403 407 1794		

SAMPLE DETAILS									ANALYSIS REQUESTED									
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.		TH	N	F	N	F	N	N	F	N	F
RG_ERCKDT_1_PW_1_2022-12_N	RG_ERCKDT	PW	No	11/28/2022	13:00	G	1						H2SO4	H2SO4		HCL	HNO3	HNO3
RG_ERCKDT_1_PW_2_2022-12_N	RG_ERCKDT	PW	No	11/28/2022	13:15	G	1											
RG_ERCKDT_1_PW_3_2022-12_N	RG_ERCKDT	PW	No	11/28/2022	13:30	G	1											
RG_ERCKDT_2_PW_1_2022-12_N	RG_ERCKDT	PW	No	11/28/2022	14:00	G	1											
RG_ERCKDT_2_PW_2_2022-12_N	RG_ERCKDT	PW	No	11/28/2022	14:15	G	1							OC				
RG_ERCKDT_2_PW_3_2022-12_N	RG_ERCKDT	PW	No	11/28/2022	14:30	G	1											
RG_ERCKDT_3_PW_1_2022-12_N	RG_ERCKDT	PW	No	11/28/2022	14:50	G	1											
RG_ERCKDT_3_PW_2_2022-12_N	RG_ERCKDT	PW	No	11/28/2022	15:05	G	1											
RG_ERCKDT_3_PW_3_2022-12_N	RG_ERCKDT	PW	No	11/28/2022	15:20	G	1											

Environmental Division
Calgary
Work Order Reference
CG2216630



Telephone : +1 403 407 1800

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS		RELINQUISHED BY/AFFILIATION		DATE/TIME		ACCEPTED BY/AFFILIATION	
ALS POVPO00847030		Liva Ramanjehimanana/Minnow Environmental		November 29, 2022		 	
NB OF BOTTLES RETURNED/DESCRIPTION		Sampler's Name		Mobile #			
Regular (default)		Liva Ramanjehimanana		416-684-0886			
Priority (2-3 business days) - 50% surcharge X		Sampler's Signature		Date/Time		November 29, 2022	
Emergency (1 Business Day) - 100% surcharge		Liva Ramanjehimanana					
For Emergency <1 Day, ASAP or Weekend - Contact ALS							

lc

COC ID:

December EVO LAEMP 2022

TURNAROUND TIME:

PROJECT/CLIENT INFO

LABORATORY

Facility Name / Job# Regional Effects Program

Lab Name ALS Calgary

Project Manager Mike Pope

Lab Contact Lyudmyla Shvets

Email mike.pope@teck.com

Email lyudmyla.shvets@alsglobal.com

Address 421 Pine Avenue

Address 2559 29 Street NE

City

Sparwood

Province BC

City Calgary

Province AB

Postal Code

VOB 2G0

Country Canada

Postal Code T1Y 7B5

Country Canada

Phone Number 343-333-3905

Phone Number 413 407 1794

SAMPLE DETAILS

ANALYSIS REQUESTED

Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS REQUESTED													
								TECKCOAL-ANIONS	Dissolved metals	TECKCOAL-ROUTINE-VA	ALS_Package-DOC	ALS_Package-TKN/TOC	HG-T-U-CYAF-VA	HG-D-CYAF-VA	TECKCOAL-MET-T-VA	TECKCOAL-MET-D-VA					
RG_ERCKUT_1_PW_1_2022-12_N	RG_ERCKUT	PW	No	11/29/2022	9:30	G	1	X	X												
RG_ERCKUT_1_PW_2_2022-12_N	RG_ERCKUT	PW	No	11/29/2022	9:45	G	1	X	X												
RG_ERCKUT_2_PW_1_2022-12_N	RG_ERCKUT	PW	No	11/29/2022	10:15	G	1	X	X												
RG_ERCKUT_2_PW_2_2022-12_N	RG_ERCKUT	PW	No	11/29/2022	10:30	G	1	X	X												
RG_ERCKUT_2_PW_3_2022-12_N	RG_ERCKUT	PW	No	11/29/2022	10:45	G	1	X	X												
RG_ERCKUT_3_PW_1_2022-12_N	RG_ERCKUT	PW	No	11/29/2022	11:15	G	1	X	X												
RG_ERCKUT_3_PW_2_2022-12_N	RG_ERCKUT	PW	No	11/29/2022	11:30	G	1	X	X												

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS

RELINQUISHED BY/AFFILIATION

DATE/TIME

ACCEPTED BY/AFFILIATION

ALS PO VPO00847030

Liva Ramanjehimanana/Minnow environmental

November 29, 2022

NB OF BOTTLES RETURNED/DESCRIPTION

Regular (default)
 Priority (2-3 business days) - 50% surcharge X
 Emergency (1 Business Day) - 100% surcharge
 For Emergency <1 Day, ASAP or Weekend - Contact ALS

Sampler's Name

Liva Ramanjehimanana

Mobile #

416-684-0886

Sampler's Signature

Liva Ramanjehimanana

Date/Time

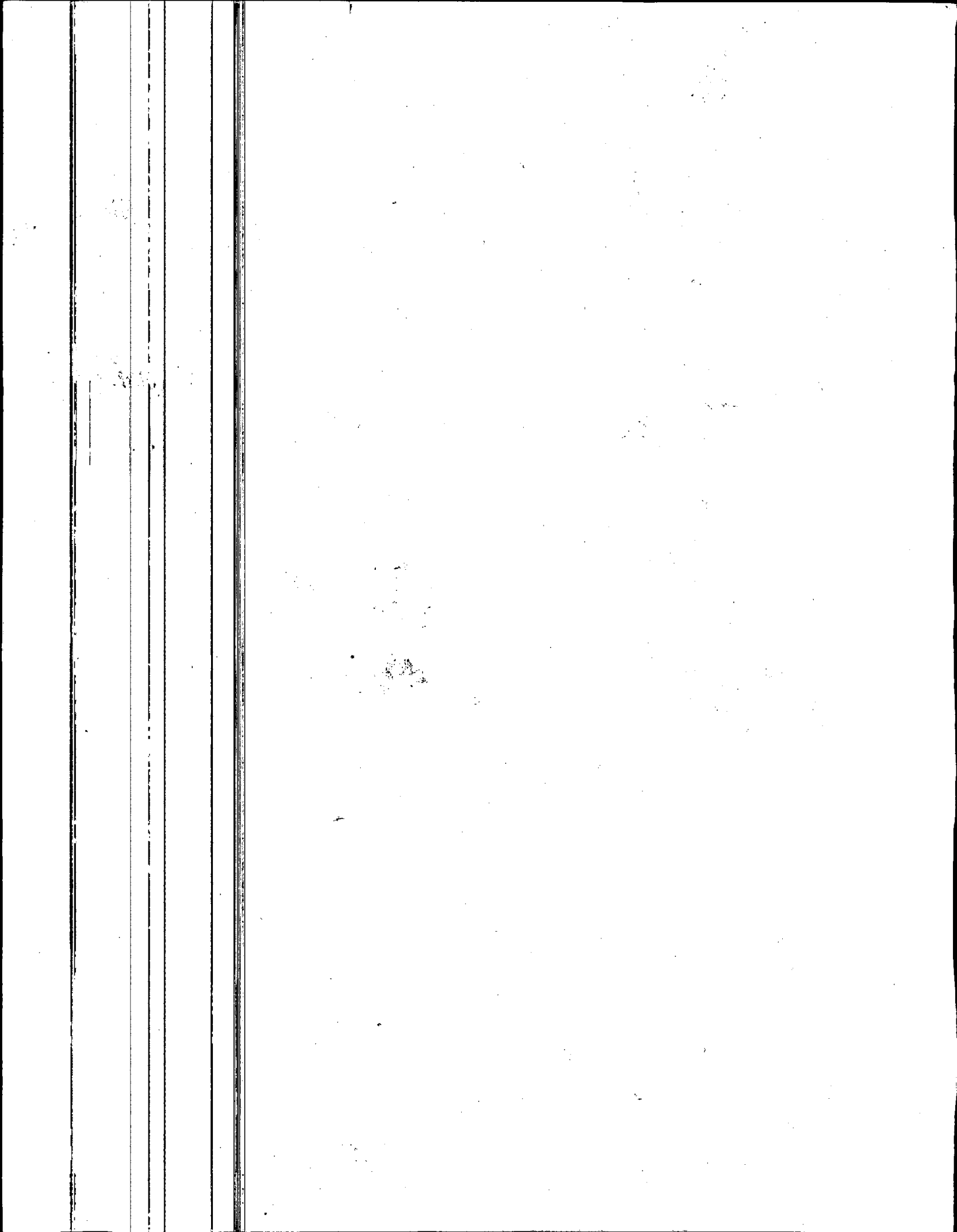
November 29, 2022

COC ID:		November EVO LAEMP 2022		TURNAROUND TIME:			
PROJECT/CLIENT INFO				LABORATORY			
Facility Name / Job#		Regional Effects Program		Lab Name		ALS Calgary	
Project Manager:		Mike Pope		Lab Contact		Lyudmyla Shvets	
Email:		mike.pope@teck.com		Email:		lyudmyla.shvets@alsglobal.com	
Address:		421 Pine Avenue		Address:		2559 29 Street NE	
City:		Sparwood		City:		Calgary	
Postal Code:		V0B 2G0		Postal Code:		T1Y 7B5	
Province:		BC		Province:		AB	
Country:		Canada		Country:		Canada	
Phone Number:		343-333-3905		Phone Number:		403 407 1794	

SAMPLE DETAILS								ANALYSIS REQUESTED																				
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	PK	N	F	N	F	N	N	F	N	F											
								PREP.	TECKCOAL-ANIONS		Dissolved metals		TECKCOAL-ROUTINE-VA		ALS_Package-DIC		ALS_Package-TKN/TOC		HG-T-U-CVAF-VA		HG-D-CVAF-VA		TECKCOAL-MET-T-VA		TECKCOAL-MET-D-VA			
RG_ERCKMD_1_PW_1_2022-12_N	RG_ERCKMD	PW	No	11/28/2022	9:30	G	1			X	X																	
RG_ERCKMD_1_PW_2_2022-12_N	RG_ERCKMD	PW	No	11/28/2022	9:45	G	1			X	X																	
RG_ERCKMD_1_PW_3_2022-12_N	RG_ERCKMD	PW	No	11/28/2022	10:00	G	1			X	X																	
RG_ERCKMD_2_PW_1_2022-12_N	RG_ERCKMD	PW	No	11/28/2022	10:30	G	1			X	X																	
RG_ERCKMD_2_PW_2_2022-12_N	RG_ERCKMD	PW	No	11/28/2022	10:45	G	1			X	X																	
RG_ERCKMD_2_PW_3_2022-12_N	RG_ERCKMD	PW	No	11/28/2022	11:00	G	1			X	X																	
RG_ERCKMD_3_PW_1_2022-12_N	RG_ERCKMD	PW	No	11/28/2022	11:30	G	1			X	X																	
RG_ERCKMD_3_PW_2_2022-12_N	RG_ERCKMD	PW	No	11/28/2022	11:45	G	1			X	X																	
RG_ERCKMD_3_PW_3_2022-12_N	RG_ERCKMD	PW	No	10/28/2022	12:00	G	1			X	X																	

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS				RELINQUISHED BY/AFFILIATION				DATE/TIME		ACCEPTED BY/AFFILIATION			
ALS PO VPO00847030				Liva Ramanjehimanana/Minnow environmental				November 29, 2022		 11/30 9:55			
NB OF BOTTLES RETURNED/DESCRIPTION													
Regular (default)													
Priority (2-3 business days) - 50% surcharge													
Emergency (1 Business Day) - 100% surcharge													
For Emergency <1 Day, ASAP or Weekend - Contact ALS													
				Sampler's Name				Liva Ramanjehimanana		Mobile #			
				Sampler's Signature				Liva Ramanjehimanana		Date/Time			
										November 29, 2022			

lc



SEDIMENT CHEMISTRY

ALS Laboratory Reports



CERTIFICATE OF ANALYSIS

Work Order : **CG2202822**
Client : **Teck Coal Limited**
Contact : Mike Pope
Address : RR#1 HWY#3
Sparwood BC Canada V0B 2G1
Telephone : ----
Project : REGIONAL EFFECTS PROGRAM
PO : VPO00816101
C-O-C number : MARCH EVO LAEMP 2022
Sampler : Maddy Stokes
Site : ----
Quote number : Teck Coal Master Quote
No. of samples received : 27
No. of samples analysed : 27

Page : 1 of 21
Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
Calgary AB Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 12-Mar-2022 09:20
Date Analysis Commenced : 15-Mar-2022
Issue Date : 31-Mar-2022 17:59

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Colby Bingham	Quality Systems Coordinator	Inorganics, Saskatoon, Saskatchewan
Colby Bingham	Quality Systems Coordinator	Metals, Saskatoon, Saskatchewan
Hedy Lai	Team Leader - Inorganics	Inorganics, Saskatoon, Saskatchewan
Lian Nesbitt	Laboratory Analyst	Metals, Saskatoon, Saskatchewan
Maria Painchaud	Laboratory Assistant	Inorganics, Saskatoon, Saskatchewan
Rosalie Van Deelen	Laboratory Assistant	Organics, Calgary, Alberta
Sorina Motea	Laboratory Analyst	Organics, Calgary, Alberta
Xihua Yao	Laboratory Analyst	Inorganics, Saskatoon, Saskatchewan



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
 LOR: Limit of Reporting (detection limit).

Unit	Description
-	No Unit
%	percent
mg/kg	milligrams per kilogram
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Sample Comments

Sample	Client Id	Comment
CG2202822-001	RG_ERCK_SE-01_2022-03-02_1050	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2202822-002	RG_ERCK_SE-02_2022-03-02_1050	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2202822-003	RG_ERCK_SE-03_2022-03-02_1050	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2202822-004	RG_ERCK_SE-04_2022-03-02_1050	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2202822-005	RG_ERCK_SE-05_2022-03-02_1050	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2202822-011	RG_ERCKUT_SE-01_2022-03-03_1000	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2202822-012	RG_ERCKUT_SE-02_2022-03-03_1010	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2202822-013	RG_ERCKUT_SE-03_2022-03-03_1015	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.



CG2202822-014	RG_ERCKUT_SE-04_2022-03-03_1020	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2202822-015	RG_ERCKUT_SE-05_2022-03-03_1030	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2202822-016	RG_ERCKDT_SE-01_2022-03-03_1200	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2202822-017	RG_ERCKDT_SE-02_2022-03-03_1215	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2202822-018	RG_ERCKDT_SE-03_2022-03-03_1220	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2202822-019	RG_ERCKDT_SE-04_2022-03-03_1230	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2202822-020	RG_ERCKDT_SE-05_2022-03-03_1240	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2202822-021	RG_ERCKDT_SE-06_2022-03-03_1245	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2202822-022	RG_ERCKDT_SE-07_2022-03-03_1250	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2202822-023	RG_ERCKMD_SE-01_2022-03-03_1430	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2202822-024	RG_ERCKMD_SE-02_2022-03-03_1435	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2202822-025	RG_ERCKMD_SE-03_2022-03-03_1445	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2202822-026	RG_ERCKMD_SE-04_2022-03-03_1450	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2202822-027	RG_ERCKMD_SE-05_2022-03-03_1500	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.

Qualifiers

Qualifier	Description
DLCI	Detection Limit Raised: Chromatographic interference due to co-elution.



Analytical Results

Sub-Matrix: Soil					Client sample ID	RG_ERCK_SE-0	RG_ERCK_SE-0	RG_ERCK_SE-0	RG_ERCK_SE-0	RG_ERCK_SE-0
(Matrix: Soil/Solid)						1_2022-03-02_1050	2_2022-03-02_1050	3_2022-03-02_1050	4_2022-03-02_1050	5_2022-03-02_1050
Client sampling date / time						02-Mar-2022 10:50	02-Mar-2022 10:50	02-Mar-2022 10:50	02-Mar-2022 10:50	02-Mar-2022 10:50
Analyte	CAS Number	Method	LOR	Unit	CG2202822-001	CG2202822-002	CG2202822-003	CG2202822-004	CG2202822-005	
					Result	Result	Result	Result	Result	
Physical Tests										
moisture	----	E144	0.25	%	42.9	35.5	37.9	30.8	34.2	
pH (1:2 soil:water)	----	E108	0.10	pH units	7.95	7.85	7.93	8.12	7.89	
Particle Size										
texture class	----	E180A	-	-	Loamy Sand	Sand	Loamy Sand	Sand	Loamy Sand	
silt (0.05mm - 0.002mm)	----	E180A	1.0	%	12.7	12.1	15.4	10.1	13.4	
sand (2.0mm - 0.05mm)	----	E180A	1.0	%	85.3	86.2	83.0	88.4	85.0	
clay (<0.002mm)	----	E180A	1.0	%	2.0	1.6	1.6	1.5	1.5	
Organic / Inorganic Carbon										
carbon, inorganic [IC], <63 µm	----	E354A	0.050	%	1.44	1.33	1.87	1.25	1.15	
carbon, total [TC], <63µm	----	E351A	0.050	%	3.62	3.19	3.96	2.79	2.83	
carbon, total organic [TOC], <63µm	----	EC356A	0.050	%	2.18	1.86	2.09	1.54	1.68	
Metals										
aluminum	7429-90-5	E440	50	mg/kg	5900	5430	5560	5540	5420	
antimony	7440-36-0	E440	0.10	mg/kg	0.93	0.89	0.84	0.89	0.89	
arsenic	7440-38-2	E440	0.10	mg/kg	6.18	6.11	5.94	6.33	6.48	
barium	7440-39-3	E440	0.50	mg/kg	126	128	147	126	141	
beryllium	7440-41-7	E440	0.10	mg/kg	0.54	0.48	0.47	0.49	0.48	
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20	
boron	7440-42-8	E440	5.0	mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0	
cadmium	7440-43-9	E440	0.020	mg/kg	1.02	0.990	0.934	0.954	0.976	
calcium	7440-70-2	E440	50	mg/kg	32500	30700	41900	29200	31600	
chromium	7440-47-3	E440	0.50	mg/kg	10.8	10.1	9.94	10.7	9.95	
cobalt	7440-48-4	E440	0.10	mg/kg	9.27	9.57	11.9	8.98	8.39	
copper	7440-50-8	E440	0.50	mg/kg	11.6	11.4	10.6	11.0	10.7	
iron	7439-89-6	E440	50	mg/kg	13500	13200	13000	13600	13400	
lead	7439-92-1	E440	0.50	mg/kg	8.50	8.19	8.11	8.33	8.27	
lithium	7439-93-2	E440	2.0	mg/kg	8.5	7.3	7.9	7.5	7.6	
magnesium	7439-95-4	E440	20	mg/kg	4940	4800	5220	4970	4900	
manganese	7439-96-5	E440	1.0	mg/kg	311	315	349	299	283	



Analytical Results

Sub-Matrix: Soil

(Matrix: Soil/Solid)

Client sample ID

					RG_ERCK_SE-0 1_2022-03-02_ 1050	RG_ERCK_SE-0 2_2022-03-02_ 1050	RG_ERCK_SE-0 3_2022-03-02_ 1050	RG_ERCK_SE-0 4_2022-03-02_ 1050	RG_ERCK_SE-0 5_2022-03-02_ 1050
Client sampling date / time					02-Mar-2022 10:50	02-Mar-2022 10:50	02-Mar-2022 10:50	02-Mar-2022 10:50	02-Mar-2022 10:50
Analyte	CAS Number	Method	LOR	Unit	CG2202822-001	CG2202822-002	CG2202822-003	CG2202822-004	CG2202822-005
					Result	Result	Result	Result	Result
Metals									
mercury	7439-97-6	E510	0.0050	mg/kg	0.0348	0.0315	0.0328	0.0294	0.0308
molybdenum	7439-98-7	E440	0.10	mg/kg	1.52	1.51	1.57	1.63	1.74
nickel	7440-02-0	E440	0.50	mg/kg	35.5	33.8	38.8	32.7	32.2
phosphorus	7723-14-0	E440	50	mg/kg	1220	1140	1160	1140	1220
potassium	7440-09-7	E440	100	mg/kg	1140	1000	1030	980	970
selenium	7782-49-2	E440	0.20	mg/kg	0.91	0.88	1.08	0.82	0.84
silver	7440-22-4	E440	0.10	mg/kg	0.15	0.15	0.14	0.14	0.15
sodium	7440-23-5	E440	50	mg/kg	61	54	53	<50	74
strontium	7440-24-6	E440	0.50	mg/kg	50.3	48.4	56.3	48.7	52.2
sulfur	7704-34-9	E440	1000	mg/kg	<1000	<1000	<1000	<1000	<1000
thallium	7440-28-0	E440	0.050	mg/kg	0.234	0.219	0.222	0.214	0.204
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
titanium	7440-32-6	E440	1.0	mg/kg	35.3	33.8	33.6	31.2	33.4
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
uranium	7440-61-1	E440	0.050	mg/kg	1.12	1.05	1.09	1.05	1.12
vanadium	7440-62-2	E440	0.20	mg/kg	30.0	29.6	28.1	29.8	29.6
zinc	7440-66-6	E440	2.0	mg/kg	84.2	77.6	77.8	80.9	80.8
zirconium	7440-67-7	E440	1.0	mg/kg	1.5	1.3	1.3	1.4	1.2
Polycyclic Aromatic Hydrocarbons									
acenaphthene	83-32-9	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
acenaphthylene	208-96-8	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
acridine	260-94-6	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
anthracene	120-12-7	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
benz(a)anthracene	56-55-3	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
benzo(a)pyrene	50-32-8	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
benzo(b+j)fluoranthene	n/a	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
benzo(b+j+k)fluoranthene	n/a	E641A	0.075	mg/kg	<0.075	<0.075	<0.075	<0.075	<0.075
benzo(g,h,i)perylene	191-24-2	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
benzo(k)fluoranthene	207-08-9	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
chrysene	218-01-9	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050



Analytical Results

Sub-Matrix: Soil

(Matrix: Soil/Solid)

Client sample ID

					RG_ERCK_SE-0 1_2022-03-02_ 1050	RG_ERCK_SE-0 2_2022-03-02_ 1050	RG_ERCK_SE-0 3_2022-03-02_ 1050	RG_ERCK_SE-0 4_2022-03-02_ 1050	RG_ERCK_SE-0 5_2022-03-02_ 1050
Client sampling date / time					02-Mar-2022 10:50	02-Mar-2022 10:50	02-Mar-2022 10:50	02-Mar-2022 10:50	02-Mar-2022 10:50
Analyte	CAS Number	Method	LOR	Unit	CG2202822-001	CG2202822-002	CG2202822-003	CG2202822-004	CG2202822-005
					Result	Result	Result	Result	Result
Polycyclic Aromatic Hydrocarbons									
dibenz(a,h)anthracene	53-70-3	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
fluoranthene	206-44-0	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
fluorene	86-73-7	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
methylnaphthalene, 1-	90-12-0	E641A	0.050	mg/kg	0.063	0.104	<0.050	0.059	0.073
methylnaphthalene, 1+2-	----	E641A	0.075	mg/kg	0.137	0.238	<0.075	0.127	0.166
methylnaphthalene, 2-	91-57-6	E641A	0.050	mg/kg	0.074	0.134	0.052	0.068	0.093
naphthalene	91-20-3	E641A	0.050	mg/kg	<0.050	0.065	<0.050	<0.050	<0.050
phenanthrene	85-01-8	E641A	0.050	mg/kg	0.112	0.162	0.091	0.119	0.148
pyrene	129-00-0	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
quinoline	91-22-5	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
B(a)P total potency equivalents [B(a)P TPE]	----	E641A	0.065	mg/kg	<0.065	<0.065	<0.065	<0.065	<0.065
IACR (CCME)	----	E641A	0.60	-	<0.60	<0.60	<0.60	<0.60	<0.60
IACR AB (coarse)	----	E641A	0.10	-	<0.10	<0.10	<0.10	<0.10	<0.10
IACR AB (fine)	----	E641A	0.10	-	<0.10	<0.10	<0.10	<0.10	<0.10
PAHs, total (BC Sched 3.4)	n/a	E641A	0.20	mg/kg	<0.20	0.36	<0.20	<0.20	0.24
PAHs, total (EPA 16)	n/a	E641A	0.20	mg/kg	<0.20	0.23	<0.20	<0.20	<0.20
Polycyclic Aromatic Hydrocarbons Surrogates									
acridine-d9	34749-75-2	E641A	0.1	%	83.2	82.4	89.4	86.5	77.4
chrysene-d12	1719-03-5	E641A	0.1	%	90.0	89.7	83.0	88.9	86.6
naphthalene-d8	1146-65-2	E641A	0.1	%	82.2	84.3	76.2	82.9	78.7
phenanthrene-d10	1517-22-2	E641A	0.1	%	88.4	86.4	81.5	86.5	84.2

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Soil (Matrix: Soil/Solid)					Client sample ID	RG_MIDER_SE-01_2022-03-02_1600	RG_MIDER_SE-02_2022-03-02_1610	RG_MIDER_SE-03_2022-03-02_1620	RG_MIDER_SE-04_2022-03-02_1630	RG_MIDER_SE-05_2022-03-02_1640
Client sampling date / time					02-Mar-2022 16:00	02-Mar-2022 16:10	02-Mar-2022 16:20	02-Mar-2022 16:30	02-Mar-2022 16:40	
Analyte	CAS Number	Method	LOR	Unit	CG2202822-006	CG2202822-007	CG2202822-008	CG2202822-009	CG2202822-010	
					Result	Result	Result	Result	Result	
Physical Tests										
moisture	----	E144	0.25	%	27.2	28.4	26.3	26.2	27.1	
pH (1:2 soil:water)	----	E108	0.10	pH units	8.16	8.13	8.32	8.12	8.49	
Particle Size										
texture class	----	E180A	-	-	Sand	Loamy Sand	Sand	Loamy Sand	Sand	
silt (0.05mm - 0.002mm)	----	E180A	1.0	%	8.4	14.7	9.7	23.9	9.1	
sand (2.0mm - 0.05mm)	----	E180A	1.0	%	90.6	83.9	89.0	74.2	89.8	
clay (<0.002mm)	----	E180A	1.0	%	1.0	1.4	1.2	1.9	1.1	
Organic / Inorganic Carbon										
carbon, inorganic [IC], <63 µm	----	E354A	0.050	%	0.760	0.454	0.668	0.647	0.653	
carbon, total [TC], <63µm	----	E351A	0.050	%	2.12	1.60	1.82	1.65	1.64	
carbon, total organic [TOC], <63µm	----	EC356A	0.050	%	1.36	1.15	1.15	1.00	0.987	
Metals										
aluminum	7429-90-5	E440	50	mg/kg	5110	5490	5380	5560	5260	
antimony	7440-36-0	E440	0.10	mg/kg	0.97	0.96	0.96	0.96	0.91	
arsenic	7440-38-2	E440	0.10	mg/kg	7.30	6.50	6.96	6.62	6.54	
barium	7440-39-3	E440	0.50	mg/kg	167	210	176	201	182	
beryllium	7440-41-7	E440	0.10	mg/kg	0.55	0.50	0.52	0.53	0.48	
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20	
boron	7440-42-8	E440	5.0	mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0	
cadmium	7440-43-9	E440	0.020	mg/kg	1.16	1.08	1.19	1.18	1.02	
calcium	7440-70-2	E440	50	mg/kg	28400	20600	21900	22400	21300	
chromium	7440-47-3	E440	0.50	mg/kg	10.2	10.7	10.5	10.7	10.2	
cobalt	7440-48-4	E440	0.10	mg/kg	4.91	5.02	5.38	5.19	5.01	
copper	7440-50-8	E440	0.50	mg/kg	11.6	11.4	11.6	11.6	10.5	
iron	7439-89-6	E440	50	mg/kg	14800	14200	15600	14300	14300	
lead	7439-92-1	E440	0.50	mg/kg	8.73	9.84	8.51	8.18	8.16	
lithium	7439-93-2	E440	2.0	mg/kg	6.8	6.8	6.8	7.2	6.8	
magnesium	7439-95-4	E440	20	mg/kg	4420	4380	4260	4780	4460	
manganese	7439-96-5	E440	1.0	mg/kg	229	224	241	279	216	
mercury	7439-97-6	E510	0.0050	mg/kg	0.0441	0.0329	0.0329	0.0340	0.0327	



Analytical Results

Sub-Matrix: Soil

(Matrix: Soil/Solid)

Client sample ID

					RG_MIDER_SE-01_2022-03-02_1600	RG_MIDER_SE-02_2022-03-02_1610	RG_MIDER_SE-03_2022-03-02_1620	RG_MIDER_SE-04_2022-03-02_1630	RG_MIDER_SE-05_2022-03-02_1640
Client sampling date / time					02-Mar-2022 16:00	02-Mar-2022 16:10	02-Mar-2022 16:20	02-Mar-2022 16:30	02-Mar-2022 16:40
Analyte	CAS Number	Method	LOR	Unit	CG2202822-006	CG2202822-007	CG2202822-008	CG2202822-009	CG2202822-010
					Result	Result	Result	Result	Result
Metals									
molybdenum	7439-98-7	E440	0.10	mg/kg	1.71	1.59	1.52	1.65	1.44
nickel	7440-02-0	E440	0.50	mg/kg	21.3	20.9	21.8	21.0	20.3
phosphorus	7723-14-0	E440	50	mg/kg	1120	1190	1220	1070	1270
potassium	7440-09-7	E440	100	mg/kg	900	940	920	970	920
selenium	7782-49-2	E440	0.20	mg/kg	0.59	0.55	0.60	0.60	0.58
silver	7440-22-4	E440	0.10	mg/kg	0.16	0.15	0.16	0.18	0.13
sodium	7440-23-5	E440	50	mg/kg	<50	53	147	57	298
strontium	7440-24-6	E440	0.50	mg/kg	57.9	47.6	47.1	49.4	49.3
sulfur	7704-34-9	E440	1000	mg/kg	<1000	<1000	<1000	<1000	<1000
thallium	7440-28-0	E440	0.050	mg/kg	0.183	0.192	0.192	0.202	0.180
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
titanium	7440-32-6	E440	1.0	mg/kg	22.6	32.0	26.7	31.9	32.4
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
uranium	7440-61-1	E440	0.050	mg/kg	1.04	1.08	1.07	1.04	1.10
vanadium	7440-62-2	E440	0.20	mg/kg	30.8	32.6	31.9	31.8	30.6
zinc	7440-66-6	E440	2.0	mg/kg	84.8	84.0	83.7	83.4	79.8
zirconium	7440-67-7	E440	1.0	mg/kg	1.4	1.4	1.4	1.3	1.5
Polycyclic Aromatic Hydrocarbons									
acenaphthene	83-32-9	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
acenaphthylene	208-96-8	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
acridine	260-94-6	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
anthracene	120-12-7	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
benz(a)anthracene	56-55-3	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
benzo(a)pyrene	50-32-8	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
benzo(b+j)fluoranthene	n/a	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
benzo(b+j+k)fluoranthene	n/a	E641A	0.075	mg/kg	<0.075	<0.075	<0.075	<0.075	<0.075
benzo(g,h,i)perylene	191-24-2	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
benzo(k)fluoranthene	207-08-9	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
chrysene	218-01-9	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
dibenz(a,h)anthracene	53-70-3	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050



Analytical Results

Sub-Matrix: Soil

(Matrix: Soil/Solid)

Client sample ID

					RG_MIDER_SE-01_2022-03-02_1600	RG_MIDER_SE-02_2022-03-02_1610	RG_MIDER_SE-03_2022-03-02_1620	RG_MIDER_SE-04_2022-03-02_1630	RG_MIDER_SE-05_2022-03-02_1640
Client sampling date / time					02-Mar-2022 16:00	02-Mar-2022 16:10	02-Mar-2022 16:20	02-Mar-2022 16:30	02-Mar-2022 16:40
Analyte	CAS Number	Method	LOR	Unit	CG2202822-006	CG2202822-007	CG2202822-008	CG2202822-009	CG2202822-010
					Result	Result	Result	Result	Result
Polycyclic Aromatic Hydrocarbons									
fluoranthene	206-44-0	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
fluorene	86-73-7	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
methylnaphthalene, 1-	90-12-0	E641A	0.050	mg/kg	0.055	<0.050	0.057	0.096	<0.050
methylnaphthalene, 1+2-	----	E641A	0.075	mg/kg	0.122	<0.075	0.127	0.217	<0.075
methylnaphthalene, 2-	91-57-6	E641A	0.050	mg/kg	0.067	0.051	0.070	0.121	0.055
naphthalene	91-20-3	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	0.064	<0.050
phenanthrene	85-01-8	E641A	0.050	mg/kg	0.123	0.079	0.119	0.181	0.090
pyrene	129-00-0	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
quinoline	91-22-5	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
B(a)P total potency equivalents [B(a)P TPE]	----	E641A	0.065	mg/kg	<0.065	<0.065	<0.065	<0.065	<0.065
IACR (CCME)	----	E641A	0.60	-	<0.60	<0.60	<0.60	<0.60	<0.60
IACR AB (coarse)	----	E641A	0.10	-	<0.10	<0.10	<0.10	<0.10	<0.10
IACR AB (fine)	----	E641A	0.10	-	<0.10	<0.10	<0.10	<0.10	<0.10
PAHs, total (BC Sched 3.4)	n/a	E641A	0.20	mg/kg	<0.20	<0.20	<0.20	0.37	<0.20
PAHs, total (EPA 16)	n/a	E641A	0.20	mg/kg	<0.20	<0.20	<0.20	0.24	<0.20
Polycyclic Aromatic Hydrocarbons Surrogates									
acridine-d9	34749-75-2	E641A	0.1	%	81.9	94.9	74.2	75.9	70.6
chrysene-d12	1719-03-5	E641A	0.1	%	88.7	89.4	87.8	86.1	83.7
naphthalene-d8	1146-65-2	E641A	0.1	%	82.8	84.3	82.8	84.2	81.2
phenanthrene-d10	1517-22-2	E641A	0.1	%	87.8	86.2	85.7	85.7	83.4

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Soil

(Matrix: Soil/Solid)

Client sample ID

					RG_ERCKUT_S E-01_2022-03-0 3_1000	RG_ERCKUT_S E-02_2022-03-0 3_1010	RG_ERCKUT_S E-03_2022-03-0 3_1015	RG_ERCKUT_S E-04_2022-03-0 3_1020	RG_ERCKUT_S E-05_2022-03-0 3_1030
Client sampling date / time					03-Mar-2022 10:00	03-Mar-2022 10:10	03-Mar-2022 10:15	03-Mar-2022 10:20	03-Mar-2022 10:30
Analyte	CAS Number	Method	LOR	Unit	CG2202822-011	CG2202822-012	CG2202822-013	CG2202822-014	CG2202822-015
					Result	Result	Result	Result	Result
Physical Tests									
moisture	----	E144	0.25	%	69.1	79.3	81.5	85.6	82.3
pH (1:2 soil:water)	----	E108	0.1	pH units	----	NR	NR	NR	NR
pH (1:2 soil:water)	----	E108	0.10	pH units	7.62	----	----	----	----
Particle Size									
texture class	----	E180A	-	-	Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam
silt (0.05mm - 0.002mm)	----	E180A	1.0	%	30.3	46.7	49.2	45.2	36.4
sand (2.0mm - 0.05mm)	----	E180A	1.0	%	67.9	50.8	48.3	51.8	61.2
clay (<0.002mm)	----	E180A	1.0	%	1.8	2.4	2.5	3.0	2.4
Organic / Inorganic Carbon									
carbon, inorganic [IC], <63µm	----	E354A	0.050	%	1.65	3.69	3.73	2.36	2.32
carbon, total [TC], <63µm	----	E351A	0.050	%	9.86	13.6	15.1	16.8	17.4
carbon, total organic [TOC], <63µm	----	EC356A	0.050	%	8.21	9.91	11.4	14.4	15.1
Metals									
aluminum	7429-90-5	E440	50	mg/kg	4140	2570	2570	3180	3320
antimony	7440-36-0	E440	0.10	mg/kg	1.07	0.90	0.90	1.62	1.41
arsenic	7440-38-2	E440	0.10	mg/kg	4.88	3.54	3.51	3.88	4.23
barium	7440-39-3	E440	0.50	mg/kg	180	172	176	182	198
beryllium	7440-41-7	E440	0.10	mg/kg	0.56	0.38	0.38	0.48	0.47
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20
boron	7440-42-8	E440	5.0	mg/kg	5.9	5.8	6.5	9.1	7.2
cadmium	7440-43-9	E440	0.020	mg/kg	1.36	1.56	1.55	1.94	1.73
calcium	7440-70-2	E440	50	mg/kg	51600	118000	123000	75000	65500
chromium	7440-47-3	E440	0.50	mg/kg	10.2	6.54	6.64	9.13	8.43
cobalt	7440-48-4	E440	0.10	mg/kg	4.65	3.13	3.05	3.53	3.82
copper	7440-50-8	E440	0.50	mg/kg	15.7	11.4	11.0	15.6	15.1
iron	7439-89-6	E440	50	mg/kg	11600	7520	7340	8800	10000
lead	7439-92-1	E440	0.50	mg/kg	8.55	5.86	5.52	6.50	6.98
lithium	7439-93-2	E440	2.0	mg/kg	5.6	3.9	3.8	4.6	4.1
magnesium	7439-95-4	E440	20	mg/kg	6160	5380	5670	6690	6210
manganese	7439-96-5	E440	1.0	mg/kg	156	127	121	152	135



Analytical Results

Sub-Matrix: Soil

(Matrix: Soil/Solid)

Client sample ID

					RG_ERCKUT_S E-01_2022-03-0 3_1000	RG_ERCKUT_S E-02_2022-03-0 3_1010	RG_ERCKUT_S E-03_2022-03-0 3_1015	RG_ERCKUT_S E-04_2022-03-0 3_1020	RG_ERCKUT_S E-05_2022-03-0 3_1030
Client sampling date / time					03-Mar-2022 10:00	03-Mar-2022 10:10	03-Mar-2022 10:15	03-Mar-2022 10:20	03-Mar-2022 10:30
Analyte	CAS Number	Method	LOR	Unit	CG2202822-011	CG2202822-012	CG2202822-013	CG2202822-014	CG2202822-015
					Result	Result	Result	Result	Result
Metals									
mercury	7439-97-6	E510	0.0050	mg/kg	0.0516	0.0313	0.0361	0.0468	0.0430
molybdenum	7439-98-7	E440	0.10	mg/kg	1.17	0.93	0.92	1.14	1.23
nickel	7440-02-0	E440	0.50	mg/kg	22.4	16.8	16.0	22.2	21.2
phosphorus	7723-14-0	E440	50	mg/kg	1100	1130	1130	1180	1180
potassium	7440-09-7	E440	100	mg/kg	880	1060	1070	970	930
selenium	7782-49-2	E440	0.20	mg/kg	14.9	12.4	11.4	22.6	22.2
silver	7440-22-4	E440	0.10	mg/kg	0.21	0.15	0.16	0.20	0.19
sodium	7440-23-5	E440	50	mg/kg	69	94	98	118	102
strontium	7440-24-6	E440	0.50	mg/kg	50.8	64.0	68.4	51.4	56.9
sulfur	7704-34-9	E440	1000	mg/kg	1400	3000	3300	2700	2400
thallium	7440-28-0	E440	0.050	mg/kg	0.181	0.124	0.128	0.168	0.144
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
titanium	7440-32-6	E440	1.0	mg/kg	14.7	10.8	14.7	12.3	10.6
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
uranium	7440-61-1	E440	0.050	mg/kg	1.57	1.88	1.83	2.08	1.80
vanadium	7440-62-2	E440	0.20	mg/kg	20.5	14.4	14.2	20.4	20.0
zinc	7440-66-6	E440	2.0	mg/kg	82.6	64.3	62.1	78.8	84.0
zirconium	7440-67-7	E440	1.0	mg/kg	1.8	1.4	1.6	1.8	1.8
Polycyclic Aromatic Hydrocarbons									
acenaphthene	83-32-9	E641A	0.050	mg/kg	<0.050	<0.050	<0.072	<0.074	<0.071
acenaphthylene	208-96-8	E641A	0.050	mg/kg	<0.050	<0.050	<0.072	<0.074	<0.071
acridine	260-94-6	E641A	0.050	mg/kg	<0.050	<0.050	<0.072	<0.074	<0.071
anthracene	120-12-7	E641A	0.050	mg/kg	<0.050	<0.050	<0.072	<0.074	<0.071
benz(a)anthracene	56-55-3	E641A	0.050	mg/kg	0.105	0.078	<0.072	0.097	0.105
benzo(a)pyrene	50-32-8	E641A	0.050	mg/kg	<0.050	<0.050	<0.072	<0.074	<0.071
benzo(b+j)fluoranthene	n/a	E641A	0.050	mg/kg	0.070	0.056	<0.072	0.082	<0.071
benzo(b+j+k)fluoranthene	n/a	E641A	0.075	mg/kg	<0.075	<0.075	<0.102	<0.105	<0.100
benzo(g,h,i)perylene	191-24-2	E641A	0.050	mg/kg	<0.050	<0.050	<0.072	<0.074	<0.071
benzo(k)fluoranthene	207-08-9	E641A	0.050	mg/kg	<0.050	<0.050	<0.072	<0.074	<0.071
chrysene	218-01-9	E641A	0.050	mg/kg	0.076	0.064	0.088	0.119	0.092



Analytical Results

Sub-Matrix: Soil

(Matrix: Soil/Solid)

Client sample ID

					RG_ERCKUT_S E-01_2022-03-0 3_1000	RG_ERCKUT_S E-02_2022-03-0 3_1010	RG_ERCKUT_S E-03_2022-03-0 3_1015	RG_ERCKUT_S E-04_2022-03-0 3_1020	RG_ERCKUT_S E-05_2022-03-0 3_1030
Client sampling date / time					03-Mar-2022 10:00	03-Mar-2022 10:10	03-Mar-2022 10:15	03-Mar-2022 10:20	03-Mar-2022 10:30
Analyte	CAS Number	Method	LOR	Unit	CG2202822-011	CG2202822-012	CG2202822-013	CG2202822-014	CG2202822-015
					Result	Result	Result	Result	Result
Polycyclic Aromatic Hydrocarbons									
dibenz(a,h)anthracene	53-70-3	E641A	0.050	mg/kg	<0.050	<0.050	<0.072	<0.074	<0.071
fluoranthene	206-44-0	E641A	0.050	mg/kg	<0.050	<0.050	<0.072	0.079	<0.071
fluorene	86-73-7	E641A	0.050	mg/kg	<0.050	0.051	<0.072	0.076	<0.071
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.050	mg/kg	<0.050	<0.050	<0.072	<0.074	<0.071
methylnaphthalene, 1-	90-12-0	E641A	0.050	mg/kg	0.222	0.249	0.286	0.343	0.299
methylnaphthalene, 1+2-	----	E641A	0.075	mg/kg	0.596	0.650	0.758	0.857	0.797
methylnaphthalene, 2-	91-57-6	E641A	0.050	mg/kg	0.374	0.401	0.472	0.514	0.498
naphthalene	91-20-3	E641A	0.050	mg/kg	0.184	0.166	0.184	0.203	0.187
phenanthrene	85-01-8	E641A	0.050	mg/kg	0.561	0.530	0.601	0.626	0.588
pyrene	129-00-0	E641A	0.050	mg/kg	<0.050	<0.050	<0.072	<0.074	<0.071
quinoline	91-22-5	E641A	0.050	mg/kg	<0.050	<0.050	<0.072	<0.074	<0.071
B(a)P total potency equivalents [B(a)P TPE]	----	E641A	0.065	mg/kg	0.074	0.069	0.088	0.101	0.093
IACR (CCME)	----	E641A	0.60	-	1.14	0.96	0.87	1.37	1.07
IACR AB (coarse)	----	E641A	0.10	-	<0.10	<0.10	<0.10	<0.10	<0.10
IACR AB (fine)	----	E641A	0.10	-	<0.10	<0.10	<0.10	0.12	0.10
PAHs, total (BC Sched 3.4)	n/a	E641A	0.20	mg/kg	1.30	1.29	1.34	1.71	1.47
PAHs, total (EPA 16)	n/a	E641A	0.20	mg/kg	1.00	0.94	0.87	1.28	0.97
Polycyclic Aromatic Hydrocarbons Surrogates									
acridine-d9	34749-75-2	E641A	0.1	%	79.3	93.4	93.3	92.1	86.3
chrysene-d12	1719-03-5	E641A	0.1	%	91.4	104	104	96.8	94.4
naphthalene-d8	1146-65-2	E641A	0.1	%	86.8	95.6	93.5	88.6	87.8
phenanthrene-d10	1517-22-2	E641A	0.1	%	89.8	99.9	99.8	93.4	91.3

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Soil

Client sample ID

(Matrix: Soil/Solid)

					RG_ERCKDT_S E-01_2022-03-0 3_1200	RG_ERCKDT_S E-02_2022-03-0 3_1215	RG_ERCKDT_S E-03_2022-03-0 3_1220	RG_ERCKDT_S E-04_2022-03-0 3_1230	RG_ERCKDT_S E-05_2022-03-0 3_1240
Client sampling date / time					03-Mar-2022 12:00	03-Mar-2022 12:15	03-Mar-2022 12:20	03-Mar-2022 12:30	03-Mar-2022 12:40
Analyte	CAS Number	Method	LOR	Unit	CG2202822-016	CG2202822-017	CG2202822-018	CG2202822-019	CG2202822-020
					Result	Result	Result	Result	Result
Physical Tests									
moisture	----	E144	0.25	%	80.6	81.4	75.5	78.4	79.2
pH (1:2 soil:water)	----	E108	0.1	pH units	NR	NR	NR	NR	NR
Particle Size									
texture class	----	E180A	-	-	Silt Loam	Silt Loam	Silt Loam	Silt Loam	Silt Loam
silt (0.05mm - 0.002mm)	----	E180A	1.0	%	69.6	63.8	66.9	69.7	57.4
sand (2.0mm - 0.05mm)	----	E180A	1.0	%	24.6	27.4	28.5	22.0	36.4
clay (<0.002mm)	----	E180A	1.0	%	5.8	8.7	4.6	8.3	6.3
Organic / Inorganic Carbon									
carbon, inorganic [IC], <63 µm	----	E354A	0.050	%	3.09	3.18	2.66	3.10	2.97
carbon, total [TC], <63µm	----	E351A	0.050	%	12.6	13.4	13.5	13.1	13.2
carbon, total organic [TOC], <63µm	----	EC356A	0.050	%	9.51	10.2	10.8	10.0	10.2
Metals									
aluminum	7429-90-5	E440	50	mg/kg	3240	2800	3570	3320	3640
antimony	7440-36-0	E440	0.10	mg/kg	1.06	1.25	0.93	1.31	1.16
arsenic	7440-38-2	E440	0.10	mg/kg	12.8	18.9	9.58	23.7	17.8
barium	7440-39-3	E440	0.50	mg/kg	227	244	223	250	244
beryllium	7440-41-7	E440	0.10	mg/kg	0.48	0.49	0.50	0.59	0.59
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20
boron	7440-42-8	E440	5.0	mg/kg	7.7	7.0	5.6	7.4	6.3
cadmium	7440-43-9	E440	0.020	mg/kg	5.57	9.77	3.80	9.18	6.62
calcium	7440-70-2	E440	50	mg/kg	103000	109000	74400	98600	82300
chromium	7440-47-3	E440	0.50	mg/kg	7.61	7.22	8.31	8.06	8.02
cobalt	7440-48-4	E440	0.10	mg/kg	123	226	35.2	222	160
copper	7440-50-8	E440	0.50	mg/kg	15.6	16.6	17.4	16.3	16.6
iron	7439-89-6	E440	50	mg/kg	22300	32400	18900	38600	31100
lead	7439-92-1	E440	0.50	mg/kg	8.47	11.0	8.44	11.8	10.7
lithium	7439-93-2	E440	2.0	mg/kg	5.4	5.0	4.8	5.7	5.4
magnesium	7439-95-4	E440	20	mg/kg	11200	10500	7630	10600	8960
manganese	7439-96-5	E440	1.0	mg/kg	2610	4980	560	5000	3120
mercury	7439-97-6	E510	0.0050	mg/kg	0.0409	0.0416	0.0489	0.0438	0.0425



Analytical Results

Sub-Matrix: Soil

(Matrix: Soil/Solid)

Client sample ID

					RG_ERCKDT_S E-01_2022-03-0 3_1200	RG_ERCKDT_S E-02_2022-03-0 3_1215	RG_ERCKDT_S E-03_2022-03-0 3_1220	RG_ERCKDT_S E-04_2022-03-0 3_1230	RG_ERCKDT_S E-05_2022-03-0 3_1240
Client sampling date / time					03-Mar-2022 12:00	03-Mar-2022 12:15	03-Mar-2022 12:20	03-Mar-2022 12:30	03-Mar-2022 12:40
Analyte	CAS Number	Method	LOR	Unit	CG2202822-016	CG2202822-017	CG2202822-018	CG2202822-019	CG2202822-020
					Result	Result	Result	Result	Result
Metals									
molybdenum	7439-98-7	E440	0.10	mg/kg	2.82	4.22	1.56	4.23	3.06
nickel	7440-02-0	E440	0.50	mg/kg	119	158	62.9	164	124
phosphorus	7723-14-0	E440	50	mg/kg	1580	1780	1400	1660	1620
potassium	7440-09-7	E440	100	mg/kg	890	860	800	930	960
selenium	7782-49-2	E440	0.20	mg/kg	23.9	24.2	19.0	25.9	22.4
silver	7440-22-4	E440	0.10	mg/kg	0.21	0.22	0.25	0.24	0.23
sodium	7440-23-5	E440	50	mg/kg	131	179	95	129	124
strontium	7440-24-6	E440	0.50	mg/kg	91.9	99.4	75.5	103	88.3
sulfur	7704-34-9	E440	1000	mg/kg	2700	3400	1800	2900	2400
thallium	7440-28-0	E440	0.050	mg/kg	0.359	0.525	0.242	0.485	0.376
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
titanium	7440-32-6	E440	1.0	mg/kg	10.3	12.6	10.1	10.6	9.2
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
uranium	7440-61-1	E440	0.050	mg/kg	1.94	2.32	1.29	2.27	1.89
vanadium	7440-62-2	E440	0.20	mg/kg	16.9	17.0	18.7	19.1	20.6
zinc	7440-66-6	E440	2.0	mg/kg	217	295	168	340	277
zirconium	7440-67-7	E440	1.0	mg/kg	<1.0	<1.0	1.3	<1.0	<1.0
Polycyclic Aromatic Hydrocarbons									
acenaphthene	83-32-9	E641A	0.050	mg/kg	<0.074	0.090	0.053	0.101	<0.100 ^{DLCL}
acenaphthylene	208-96-8	E641A	0.050	mg/kg	<0.074	<0.072	<0.050	<0.050	<0.050
acridine	260-94-6	E641A	0.050	mg/kg	0.124	0.221	0.098	0.199	<0.250 ^{DLCL}
anthracene	120-12-7	E641A	0.050	mg/kg	<0.074	<0.072	<0.050	<0.050	<0.050
benz(a)anthracene	56-55-3	E641A	0.050	mg/kg	0.142	0.170	0.221	0.127	<0.250 ^{DLCL}
benzo(a)pyrene	50-32-8	E641A	0.050	mg/kg	<0.074	<0.072	<0.050	<0.050	<0.050
benzo(b+j)fluoranthene	n/a	E641A	0.050	mg/kg	0.086	0.116	0.107	0.101	0.164
benzo(b+j+k)fluoranthene	n/a	E641A	0.075	mg/kg	<0.105	0.116	0.107	0.101	0.164
benzo(g,h,i)perylene	191-24-2	E641A	0.050	mg/kg	<0.074	<0.072	<0.050	0.051	0.074
benzo(k)fluoranthene	207-08-9	E641A	0.050	mg/kg	<0.074	<0.072	<0.050	<0.050	<0.050
chrysene	218-01-9	E641A	0.050	mg/kg	0.093	0.201	0.121	0.159	0.234
dibenz(a,h)anthracene	53-70-3	E641A	0.050	mg/kg	<0.074	<0.072	<0.050	<0.050	<0.050



Analytical Results

Sub-Matrix: Soil

(Matrix: Soil/Solid)

Client sample ID

					RG_ERCKDT_S E-01_2022-03-0 3_1200	RG_ERCKDT_S E-02_2022-03-0 3_1215	RG_ERCKDT_S E-03_2022-03-0 3_1220	RG_ERCKDT_S E-04_2022-03-0 3_1230	RG_ERCKDT_S E-05_2022-03-0 3_1240
Client sampling date / time					03-Mar-2022 12:00	03-Mar-2022 12:15	03-Mar-2022 12:20	03-Mar-2022 12:30	03-Mar-2022 12:40
Analyte	CAS Number	Method	LOR	Unit	CG2202822-016	CG2202822-017	CG2202822-018	CG2202822-019	CG2202822-020
					Result	Result	Result	Result	Result
Polycyclic Aromatic Hydrocarbons									
fluoranthene	206-44-0	E641A	0.050	mg/kg	<0.074	<0.072	<0.050	<0.050	<0.050
fluorene	86-73-7	E641A	0.050	mg/kg	0.184	0.330	0.128	0.300	0.276
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.050	mg/kg	<0.074	<0.072	<0.050	<0.050	<0.050
methylnaphthalene, 1-	90-12-0	E641A	0.050	mg/kg	0.598	0.891	0.559	0.870	0.833
methylnaphthalene, 1+2-	----	E641A	0.075	mg/kg	1.78	2.76	1.57	2.65	2.53
methylnaphthalene, 2-	91-57-6	E641A	0.050	mg/kg	1.18	1.87	1.01	1.78	1.70
naphthalene	91-20-3	E641A	0.050	mg/kg	0.327	0.523	0.343	0.483	0.504
phenanthrene	85-01-8	E641A	0.050	mg/kg	0.824	1.17	1.02	1.10	1.27
pyrene	129-00-0	E641A	0.050	mg/kg	<0.074	0.093	0.078	0.082	0.096
quinoline	91-22-5	E641A	0.050	mg/kg	<0.074	<0.072	<0.050	<0.050	<0.050
B(a)P total potency equivalents [B(a)P TPE]	----	E641A	0.065	mg/kg	0.106	0.110	0.089	0.080	0.087
IACR (CCME)	----	E641A	0.60	-	1.52	1.83	1.74	1.44	1.87
IACR AB (coarse)	----	E641A	0.10	-	<0.10	<0.10	<0.10	<0.10	<0.10
IACR AB (fine)	----	E641A	0.10	-	0.12	0.14	0.12	0.11	0.13
PAHs, total (BC Sched 3.4)	n/a	E641A	0.20	mg/kg	2.75	4.45	2.97	4.13	4.08
PAHs, total (EPA 16)	n/a	E641A	0.20	mg/kg	1.66	2.69	2.07	2.50	2.62
Polycyclic Aromatic Hydrocarbons Surrogates									
acridine-d9	34749-75-2	E641A	0.1	%	88.5	90.1	84.0	89.1	94.0
chrysene-d12	1719-03-5	E641A	0.1	%	94.8	99.5	95.9	95.7	100
naphthalene-d8	1146-65-2	E641A	0.1	%	87.2	90.3	88.5	89.0	88.7
phenanthrene-d10	1517-22-2	E641A	0.1	%	92.3	95.2	93.4	93.1	95.1

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Soil

(Matrix: Soil/Solid)

Client sample ID

					RG_ERCKDT_S E-06_2022-03-0 3_1245	RG_ERCKDT_S E-07_2022-03-0 3_1250	RG_ERCKMD_S E-01_2022-03-0 3_1430	RG_ERCKMD_S E-02_2022-03-0 3_1435	RG_ERCKMD_S E-03_2022-03-0 3_1445
Client sampling date / time					03-Mar-2022 12:45	03-Mar-2022 12:50	03-Mar-2022 14:30	03-Mar-2022 14:35	03-Mar-2022 14:45
Analyte	CAS Number	Method	LOR	Unit	CG2202822-021	CG2202822-022	CG2202822-023	CG2202822-024	CG2202822-025
					Result	Result	Result	Result	Result
Physical Tests									
moisture	----	E144	0.25	%	74.7	67.4	82.1	70.8	64.5
pH (1:2 soil:water)	----	E108	0.1	pH units	NR	----	NR	----	----
pH (1:2 soil:water)	----	E108	0.10	pH units	----	7.94	----	8.00	7.92
Particle Size									
texture class	----	E180A	-	-	Silt Loam	Sandy Loam	Sandy Loam	Loamy Sand	Loamy Sand
silt (0.05mm - 0.002mm)	----	E180A	1.0	%	65.5	38.7	33.3	21.0	22.2
sand (2.0mm - 0.05mm)	----	E180A	1.0	%	25.6	55.8	63.0	76.6	75.3
clay (<0.002mm)	----	E180A	1.0	%	8.8	5.5	3.7	2.4	2.5
Organic / Inorganic Carbon									
carbon, inorganic [IC], <63µm	----	E354A	0.050	%	3.16	2.81	2.71	2.50	2.68
carbon, total [TC], <63µm	----	E351A	0.050	%	12.8	13.0	14.1	13.2	15.0
carbon, total organic [TOC], <63µm	----	EC356A	0.050	%	9.64	10.2	11.4	10.7	12.3
Metals									
aluminum	7429-90-5	E440	50	mg/kg	3480	4620	3330	3880	3810
antimony	7440-36-0	E440	0.10	mg/kg	1.23	1.17	0.94	0.96	0.91
arsenic	7440-38-2	E440	0.10	mg/kg	23.4	19.8	10.3	8.89	9.13
barium	7440-39-3	E440	0.50	mg/kg	248	246	209	196	197
beryllium	7440-41-7	E440	0.10	mg/kg	0.56	0.63	0.52	0.49	0.54
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20
boron	7440-42-8	E440	5.0	mg/kg	8.0	6.3	7.4	5.6	5.3
cadmium	7440-43-9	E440	0.020	mg/kg	9.12	4.72	4.93	3.56	3.72
calcium	7440-70-2	E440	50	mg/kg	98900	56700	84500	66700	69400
chromium	7440-47-3	E440	0.50	mg/kg	8.42	9.38	6.78	7.57	8.31
cobalt	7440-48-4	E440	0.10	mg/kg	229	151	155	93.9	103
copper	7440-50-8	E440	0.50	mg/kg	16.5	15.4	15.0	13.7	14.2
iron	7439-89-6	E440	50	mg/kg	37600	32600	19500	18500	18900
lead	7439-92-1	E440	0.50	mg/kg	11.3	11.2	8.47	8.71	8.86
lithium	7439-93-2	E440	2.0	mg/kg	5.9	5.9	4.6	4.5	5.3
magnesium	7439-95-4	E440	20	mg/kg	11200	7220	6380	5430	5250
manganese	7439-96-5	E440	1.0	mg/kg	5240	2440	4620	2820	3100



Analytical Results

Sub-Matrix: Soil

(Matrix: Soil/Solid)

Client sample ID

					RG_ERCKDT_S E-06_2022-03-0 3_1245	RG_ERCKDT_S E-07_2022-03-0 3_1250	RG_ERCKMD_S E-01_2022-03-0 3_1430	RG_ERCKMD_S E-02_2022-03-0 3_1435	RG_ERCKMD_S E-03_2022-03-0 3_1445
Client sampling date / time					03-Mar-2022 12:45	03-Mar-2022 12:50	03-Mar-2022 14:30	03-Mar-2022 14:35	03-Mar-2022 14:45
Analyte	CAS Number	Method	LOR	Unit	CG2202822-021	CG2202822-022	CG2202822-023	CG2202822-024	CG2202822-025
					Result	Result	Result	Result	Result
Metals									
mercury	7439-97-6	E510	0.0050	mg/kg	0.0452	0.0424	0.0506	0.0492	0.0421
molybdenum	7439-98-7	E440	0.10	mg/kg	4.53	2.55	2.61	2.32	2.26
nickel	7440-02-0	E440	0.50	mg/kg	174	109	186	122	130
phosphorus	7723-14-0	E440	50	mg/kg	1780	1570	1260	1200	1210
potassium	7440-09-7	E440	100	mg/kg	990	1180	840	980	930
selenium	7782-49-2	E440	0.20	mg/kg	28.8	20.5	21.8	13.7	13.9
silver	7440-22-4	E440	0.10	mg/kg	0.22	0.19	0.19	0.16	0.16
sodium	7440-23-5	E440	50	mg/kg	137	86	98	73	75
strontium	7440-24-6	E440	0.50	mg/kg	98.7	76.6	72.8	66.2	63.9
sulfur	7704-34-9	E440	1000	mg/kg	2800	1600	2800	1900	1900
thallium	7440-28-0	E440	0.050	mg/kg	0.474	0.346	0.371	0.321	0.337
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
titanium	7440-32-6	E440	1.0	mg/kg	11.9	10.3	11.3	9.6	8.8
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
uranium	7440-61-1	E440	0.050	mg/kg	2.38	1.71	1.88	1.56	1.54
vanadium	7440-62-2	E440	0.20	mg/kg	19.3	24.9	18.4	21.7	21.3
zinc	7440-66-6	E440	2.0	mg/kg	346	281	285	221	231
zirconium	7440-67-7	E440	1.0	mg/kg	<1.0	<1.0	1.1	<1.0	<1.0
Polycyclic Aromatic Hydrocarbons									
acenaphthene	83-32-9	E641A	0.050	mg/kg	<0.150	<0.100	<0.073	<0.050	<0.050
acenaphthylene	208-96-8	E641A	0.050	mg/kg	<0.050	<0.050	<0.073	<0.050	<0.050
acridine	260-94-6	E641A	0.050	mg/kg	<0.350	<0.200	<0.073	<0.050	<0.050
anthracene	120-12-7	E641A	0.050	mg/kg	<0.050	<0.050	<0.073	<0.050	<0.050
benz(a)anthracene	56-55-3	E641A	0.050	mg/kg	<0.350	<0.200	<0.200 ^{DLCI}	<0.150 ^{DLCI}	<0.150 ^{DLCI}
benzo(a)pyrene	50-32-8	E641A	0.050	mg/kg	<0.050	<0.050	<0.073	<0.050	<0.050
benzo(b+j)fluoranthene	n/a	E641A	0.050	mg/kg	0.179	0.158	0.137	0.097	0.095
benzo(b+j+k)fluoranthene	n/a	E641A	0.075	mg/kg	0.179	0.158	0.137	0.097	0.095
benzo(g,h,i)perylene	191-24-2	E641A	0.050	mg/kg	0.094	0.062	<0.073	<0.050	<0.050
benzo(k)fluoranthene	207-08-9	E641A	0.050	mg/kg	<0.050	<0.050	<0.073	<0.050	<0.050
chrysene	218-01-9	E641A	0.050	mg/kg	0.260	<0.250	0.126	0.102	0.076



Analytical Results

Sub-Matrix: Soil

(Matrix: Soil/Solid)

Client sample ID

					RG_ERCKDT_S E-06_2022-03-0 3_1245	RG_ERCKDT_S E-07_2022-03-0 3_1250	RG_ERCKMD_S E-01_2022-03-0 3_1430	RG_ERCKMD_S E-02_2022-03-0 3_1435	RG_ERCKMD_S E-03_2022-03-0 3_1445
Client sampling date / time					03-Mar-2022 12:45	03-Mar-2022 12:50	03-Mar-2022 14:30	03-Mar-2022 14:35	03-Mar-2022 14:45
Analyte	CAS Number	Method	LOR	Unit	CG2202822-021	CG2202822-022	CG2202822-023	CG2202822-024	CG2202822-025
					Result	Result	Result	Result	Result
Polycyclic Aromatic Hydrocarbons									
dibenz(a,h)anthracene	53-70-3	E641A	0.050	mg/kg	<0.050	<0.050	<0.073	<0.050	<0.050
fluoranthene	206-44-0	E641A	0.050	mg/kg	0.084	0.055	<0.073	<0.050	<0.050
fluorene	86-73-7	E641A	0.050	mg/kg	0.416	0.210	<0.100 ^{DLCI}	0.056	<0.050
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.050	mg/kg	<0.050	<0.050	<0.073	<0.050	<0.050
methylnaphthalene, 1-	90-12-0	E641A	0.050	mg/kg	1.17	0.736	0.369	0.248	0.216
methylnaphthalene, 1+2-	----	E641A	0.075	mg/kg	3.55	2.14	1.01	0.657	0.580
methylnaphthalene, 2-	91-57-6	E641A	0.050	mg/kg	2.38	1.40	0.641	0.409	0.364
naphthalene	91-20-3	E641A	0.050	mg/kg	0.637	0.370	0.260	0.168	0.143
phenanthrene	85-01-8	E641A	0.050	mg/kg	1.56	1.14	0.872	0.586	0.537
pyrene	129-00-0	E641A	0.050	mg/kg	0.129	0.089	<0.073	<0.050	<0.050
quinoline	91-22-5	E641A	0.050	mg/kg	<0.050	<0.050	<0.073	<0.050	<0.050
B(a)P total potency equivalents [B(a)P TPE]	----	E641A	0.065	mg/kg	0.094	0.083	0.106	0.073	0.073
IACR (CCME)	----	E641A	0.60	-	2.13	1.70	1.72	1.23	1.20
IACR AB (coarse)	----	E641A	0.10	-	<0.10	<0.10	<0.10	<0.10	<0.10
IACR AB (fine)	----	E641A	0.10	-	0.14	0.12	0.14	<0.10	<0.10
PAHs, total (BC Sched 3.4)	n/a	E641A	0.20	mg/kg	5.47	3.26	1.90	1.32	1.12
PAHs, total (EPA 16)	n/a	E641A	0.20	mg/kg	3.36	2.08	1.40	1.01	0.85
Polycyclic Aromatic Hydrocarbons Surrogates									
acridine-d9	34749-75-2	E641A	0.1	%	97.6	90.4	90.2	88.8	95.4
chrysene-d12	1719-03-5	E641A	0.1	%	103	97.4	102	100	102
naphthalene-d8	1146-65-2	E641A	0.1	%	89.2	87.8	87.8	85.4	87.2
phenanthrene-d10	1517-22-2	E641A	0.1	%	97.5	92.3	95.8	95.4	95.0

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Soil (Matrix: Soil/Solid)					Client sample ID	RG_ERCKMD_S E-04_2022-03-0 3_1450	RG_ERCKMD_S E-05_2022-03-0 3_1500	----	----	----
Client sampling date / time					03-Mar-2022 14:50	03-Mar-2022 15:00	----	----	----	
Analyte	CAS Number	Method	LOR	Unit	CG2202822-026 Result	CG2202822-027 Result	-----	-----	-----	
Physical Tests										
moisture	----	E144	0.25	%	71.6	75.4	----	----	----	
pH (1:2 soil:water)	----	E108	0.10	pH units	7.72	7.87	----	----	----	
Particle Size										
texture class	----	E180A	-	-	Silt Loam	Silt Loam	----	----	----	
silt (0.05mm - 0.002mm)	----	E180A	1.0	%	66.0	68.3	----	----	----	
sand (2.0mm - 0.05mm)	----	E180A	1.0	%	19.9	23.9	----	----	----	
clay (<0.002mm)	----	E180A	1.0	%	14.1	7.8	----	----	----	
Organic / Inorganic Carbon										
carbon, inorganic [IC], <63 µm	----	E354A	0.050	%	1.55	1.69	----	----	----	
carbon, total [TC], <63µm	----	E351A	0.050	%	8.77	9.89	----	----	----	
carbon, total organic [TOC], <63µm	----	EC356A	0.050	%	7.22	8.20	----	----	----	
Metals										
aluminum	7429-90-5	E440	50	mg/kg	6990	5390	----	----	----	
antimony	7440-36-0	E440	0.10	mg/kg	0.98	0.76	----	----	----	
arsenic	7440-38-2	E440	0.10	mg/kg	9.54	13.0	----	----	----	
barium	7440-39-3	E440	0.50	mg/kg	197	186	----	----	----	
beryllium	7440-41-7	E440	0.10	mg/kg	0.72	0.62	----	----	----	
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	----	----	----	
boron	7440-42-8	E440	5.0	mg/kg	6.3	6.1	----	----	----	
cadmium	7440-43-9	E440	0.020	mg/kg	4.08	5.19	----	----	----	
calcium	7440-70-2	E440	50	mg/kg	50800	57400	----	----	----	
chromium	7440-47-3	E440	0.50	mg/kg	12.2	9.10	----	----	----	
cobalt	7440-48-4	E440	0.10	mg/kg	64.5	111	----	----	----	
copper	7440-50-8	E440	0.50	mg/kg	22.0	17.7	----	----	----	
iron	7439-89-6	E440	50	mg/kg	18600	24800	----	----	----	
lead	7439-92-1	E440	0.50	mg/kg	10.7	10.5	----	----	----	
lithium	7439-93-2	E440	2.0	mg/kg	9.4	7.4	----	----	----	
magnesium	7439-95-4	E440	20	mg/kg	7820	7800	----	----	----	
manganese	7439-96-5	E440	1.0	mg/kg	1990	3560	----	----	----	
mercury	7439-97-6	E510	0.0050	mg/kg	0.0732	0.0659	----	----	----	



Analytical Results

Sub-Matrix: Soil (Matrix: Soil/Solid)					Client sample ID	RG_ERCKMD_S E-04_2022-03-0 3_1450	RG_ERCKMD_S E-05_2022-03-0 3_1500	---	---	---
Client sampling date / time					03-Mar-2022 14:50	03-Mar-2022 15:00	---	---	---	
Analyte	CAS Number	Method	LOR	Unit	CG2202822-026 Result	CG2202822-027 Result	----- ---	----- ---	----- ---	
Metals										
molybdenum	7439-98-7	E440	0.10	mg/kg	1.92	1.53	---	---	---	
nickel	7440-02-0	E440	0.50	mg/kg	108	140	---	---	---	
phosphorus	7723-14-0	E440	50	mg/kg	1500	1440	---	---	---	
potassium	7440-09-7	E440	100	mg/kg	1510	1010	---	---	---	
selenium	7782-49-2	E440	0.20	mg/kg	11.8	19.5	---	---	---	
silver	7440-22-4	E440	0.10	mg/kg	0.37	0.34	---	---	---	
sodium	7440-23-5	E440	50	mg/kg	109	114	---	---	---	
strontium	7440-24-6	E440	0.50	mg/kg	69.0	61.3	---	---	---	
sulfur	7704-34-9	E440	1000	mg/kg	2000	2600	---	---	---	
thallium	7440-28-0	E440	0.050	mg/kg	0.441	0.404	---	---	---	
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	---	---	---	
titanium	7440-32-6	E440	1.0	mg/kg	11.6	10.4	---	---	---	
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	---	---	---	
uranium	7440-61-1	E440	0.050	mg/kg	1.14	1.22	---	---	---	
vanadium	7440-62-2	E440	0.20	mg/kg	30.0	21.3	---	---	---	
zinc	7440-66-6	E440	2.0	mg/kg	245	329	---	---	---	
zirconium	7440-67-7	E440	1.0	mg/kg	1.0	1.1	---	---	---	
Polycyclic Aromatic Hydrocarbons										
acenaphthene	83-32-9	E641A	0.050	mg/kg	<0.050	<0.050	---	---	---	
acenaphthylene	208-96-8	E641A	0.050	mg/kg	<0.050	<0.050	---	---	---	
acridine	260-94-6	E641A	0.050	mg/kg	<0.100 ^{DLCL}	<0.100 ^{DLCL}	---	---	---	
anthracene	120-12-7	E641A	0.050	mg/kg	<0.050	<0.050	---	---	---	
benz(a)anthracene	56-55-3	E641A	0.050	mg/kg	<0.200 ^{DLCL}	<0.150 ^{DLCL}	---	---	---	
benzo(a)pyrene	50-32-8	E641A	0.050	mg/kg	<0.050	<0.050	---	---	---	
benzo(b+j)fluoranthene	n/a	E641A	0.050	mg/kg	0.125	0.121	---	---	---	
benzo(b+j+k)fluoranthene	n/a	E641A	0.075	mg/kg	0.125	0.121	---	---	---	
benzo(g,h,i)perylene	191-24-2	E641A	0.050	mg/kg	<0.050	<0.050	---	---	---	
benzo(k)fluoranthene	207-08-9	E641A	0.050	mg/kg	<0.050	<0.050	---	---	---	
chrysene	218-01-9	E641A	0.050	mg/kg	<0.250 ^{DLCL}	0.101	---	---	---	
dibenz(a,h)anthracene	53-70-3	E641A	0.050	mg/kg	<0.050	<0.050	---	---	---	



Analytical Results

Sub-Matrix: Soil (Matrix: Soil/Solid)					Client sample ID	RG_ERCKMD_S E-04_2022-03-0 3_1450	RG_ERCKMD_S E-05_2022-03-0 3_1500	----	----	----
Client sampling date / time					03-Mar-2022 14:50	03-Mar-2022 15:00	----	----	----	
Analyte	CAS Number	Method	LOR	Unit	CG2202822-026 Result	CG2202822-027 Result	-----	-----	-----	
Polycyclic Aromatic Hydrocarbons										
fluoranthene	206-44-0	E641A	0.050	mg/kg	<0.100 ^{DLCI}	<0.050	----	----	----	
fluorene	86-73-7	E641A	0.050	mg/kg	<0.100 ^{DLCI}	0.065	----	----	----	
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.050	mg/kg	<0.050	<0.050	----	----	----	
methylnaphthalene, 1-	90-12-0	E641A	0.050	mg/kg	0.337	0.275	----	----	----	
methylnaphthalene, 1+2-	----	E641A	0.075	mg/kg	0.798	0.732	----	----	----	
methylnaphthalene, 2-	91-57-6	E641A	0.050	mg/kg	0.461	0.457	----	----	----	
naphthalene	91-20-3	E641A	0.050	mg/kg	0.130	0.159	----	----	----	
phenanthrene	85-01-8	E641A	0.050	mg/kg	0.805	0.583	----	----	----	
pyrene	129-00-0	E641A	0.050	mg/kg	0.074	0.058	----	----	----	
quinoline	91-22-5	E641A	0.050	mg/kg	<0.050	<0.050	----	----	----	
B(a)P total potency equivalents [B(a)P TPE]	----	E641A	0.065	mg/kg	0.079	0.076	----	----	----	
IACR (CCME)	----	E641A	0.60	-	1.49	1.38	----	----	----	
IACR AB (coarse)	----	E641A	0.10	-	<0.10	<0.10	----	----	----	
IACR AB (fine)	----	E641A	0.10	-	0.11	0.10	----	----	----	
PAHs, total (BC Sched 3.4)	n/a	E641A	0.20	mg/kg	1.47	1.42	----	----	----	
PAHs, total (EPA 16)	n/a	E641A	0.20	mg/kg	1.13	1.09	----	----	----	
Polycyclic Aromatic Hydrocarbons Surrogates										
acridine-d9	34749-75-2	E641A	0.1	%	90.8	94.8	----	----	----	
chrysene-d12	1719-03-5	E641A	0.1	%	100	105	----	----	----	
naphthalene-d8	1146-65-2	E641A	0.1	%	85.9	92.6	----	----	----	
phenanthrene-d10	1517-22-2	E641A	0.1	%	93.8	100	----	----	----	

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: CG2202822	Page	: 1 of 30
Client	: Teck Coal Limited	Laboratory	: Calgary - Environmental
Contact	: Mike Pope	Account Manager	: Lyudmyla Shvets
Address	: RR#1 HWY#3 Sparwood BC Canada V0B 2G1	Address	: 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5
Telephone	: ----	Telephone	: +1 403 407 1800
Project	: REGIONAL EFFECTS PROGRAM	Date Samples Received	: 12-Mar-2022 09:20
PO	: VPO00816101	Issue Date	: 31-Mar-2022 18:00
C-O-C number	: MARCH EVO LAEMP 2022		
Sampler	: Maddy Stokes		
Site	: ----		
Quote number	: Teck Coal Master Quote		
No. of samples received	: 27		
No. of samples analysed	: 27		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers occur - please see following pages for full details.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Soil/Solid**

Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-01_2022-03-03_1200	E510	03-Mar-2022	22-Mar-2022	----	----		22-Mar-2022	28 days	19 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-02_2022-03-03_1215	E510	03-Mar-2022	22-Mar-2022	----	----		22-Mar-2022	28 days	19 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-03_2022-03-03_1220	E510	03-Mar-2022	22-Mar-2022	----	----		22-Mar-2022	28 days	19 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-04_2022-03-03_1230	E510	03-Mar-2022	22-Mar-2022	----	----		22-Mar-2022	28 days	19 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-05_2022-03-03_1240	E510	03-Mar-2022	22-Mar-2022	----	----		22-Mar-2022	28 days	19 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-06_2022-03-03_1245	E510	03-Mar-2022	22-Mar-2022	----	----		22-Mar-2022	28 days	19 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-07_2022-03-03_1250	E510	03-Mar-2022	22-Mar-2022	----	----		22-Mar-2022	28 days	19 days	✓	



Matrix: **Soil/Solid**

Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap RG_ERCKMD_SE-01_2022-03-03_1430	E510	03-Mar-2022	22-Mar-2022	----	----		22-Mar-2022	28 days	19 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap RG_ERCKMD_SE-02_2022-03-03_1435	E510	03-Mar-2022	22-Mar-2022	----	----		22-Mar-2022	28 days	19 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap RG_ERCKMD_SE-03_2022-03-03_1445	E510	03-Mar-2022	22-Mar-2022	----	----		22-Mar-2022	28 days	19 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap RG_ERCKMD_SE-04_2022-03-03_1450	E510	03-Mar-2022	22-Mar-2022	----	----		22-Mar-2022	28 days	19 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap RG_ERCKMD_SE-05_2022-03-03_1500	E510	03-Mar-2022	22-Mar-2022	----	----		22-Mar-2022	28 days	19 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-01_2022-03-03_1000	E510	03-Mar-2022	22-Mar-2022	----	----		22-Mar-2022	28 days	19 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-02_2022-03-03_1010	E510	03-Mar-2022	22-Mar-2022	----	----		22-Mar-2022	28 days	19 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-03_2022-03-03_1015	E510	03-Mar-2022	22-Mar-2022	----	----		22-Mar-2022	28 days	19 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-04_2022-03-03_1020	E510	03-Mar-2022	22-Mar-2022	----	----		22-Mar-2022	28 days	19 days	✓	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-05_2022-03-03_1030	E510	03-Mar-2022	22-Mar-2022	----	----		22-Mar-2022	28 days	19 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap RG_ERCK_SE-01_2022-03-02_1050	E510	02-Mar-2022	22-Mar-2022	----	----		22-Mar-2022	28 days	20 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap RG_ERCK_SE-02_2022-03-02_1050	E510	02-Mar-2022	22-Mar-2022	----	----		22-Mar-2022	28 days	20 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap RG_ERCK_SE-03_2022-03-02_1050	E510	02-Mar-2022	22-Mar-2022	----	----		22-Mar-2022	28 days	20 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap RG_ERCK_SE-04_2022-03-02_1050	E510	02-Mar-2022	22-Mar-2022	----	----		22-Mar-2022	28 days	20 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap RG_ERCK_SE-05_2022-03-02_1050	E510	02-Mar-2022	22-Mar-2022	----	----		22-Mar-2022	28 days	20 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap RG_MIDER_SE-01_2022-03-02_1600	E510	02-Mar-2022	22-Mar-2022	----	----		22-Mar-2022	28 days	20 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap RG_MIDER_SE-02_2022-03-02_1610	E510	02-Mar-2022	22-Mar-2022	----	----		22-Mar-2022	28 days	20 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap RG_MIDER_SE-03_2022-03-02_1620	E510	02-Mar-2022	22-Mar-2022	----	----		22-Mar-2022	28 days	20 days	✔	



Matrix: **Soil/Solid**

Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap RG_MIDER_SE-04_2022-03-02_1630	E510	02-Mar-2022	22-Mar-2022	----	----		22-Mar-2022	28 days	20 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap RG_MIDER_SE-05_2022-03-02_1640	E510	02-Mar-2022	22-Mar-2022	----	----		22-Mar-2022	28 days	20 days	✓	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-01_2022-03-03_1200	E440	03-Mar-2022	22-Mar-2022	----	----		22-Mar-2022	180 days	19 days	✓	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-02_2022-03-03_1215	E440	03-Mar-2022	22-Mar-2022	----	----		22-Mar-2022	180 days	19 days	✓	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-03_2022-03-03_1220	E440	03-Mar-2022	22-Mar-2022	----	----		22-Mar-2022	180 days	19 days	✓	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-04_2022-03-03_1230	E440	03-Mar-2022	22-Mar-2022	----	----		22-Mar-2022	180 days	19 days	✓	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-05_2022-03-03_1240	E440	03-Mar-2022	22-Mar-2022	----	----		22-Mar-2022	180 days	19 days	✓	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-06_2022-03-03_1245	E440	03-Mar-2022	22-Mar-2022	----	----		22-Mar-2022	180 days	19 days	✓	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-07_2022-03-03_1250	E440	03-Mar-2022	22-Mar-2022	----	----		22-Mar-2022	180 days	19 days	✓	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap RG_ERCKMD_SE-01_2022-03-03_1430	E440	03-Mar-2022	22-Mar-2022	----	----		22-Mar-2022	180 days	19 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap RG_ERCKMD_SE-02_2022-03-03_1435	E440	03-Mar-2022	22-Mar-2022	----	----		22-Mar-2022	180 days	19 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap RG_ERCKMD_SE-03_2022-03-03_1445	E440	03-Mar-2022	22-Mar-2022	----	----		22-Mar-2022	180 days	19 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap RG_ERCKMD_SE-04_2022-03-03_1450	E440	03-Mar-2022	22-Mar-2022	----	----		22-Mar-2022	180 days	19 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap RG_ERCKMD_SE-05_2022-03-03_1500	E440	03-Mar-2022	22-Mar-2022	----	----		22-Mar-2022	180 days	19 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-01_2022-03-03_1000	E440	03-Mar-2022	22-Mar-2022	----	----		22-Mar-2022	180 days	19 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-02_2022-03-03_1010	E440	03-Mar-2022	22-Mar-2022	----	----		22-Mar-2022	180 days	19 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-03_2022-03-03_1015	E440	03-Mar-2022	22-Mar-2022	----	----		22-Mar-2022	180 days	19 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-04_2022-03-03_1020	E440	03-Mar-2022	22-Mar-2022	----	----		22-Mar-2022	180 days	19 days	✔	



Matrix: **Soil/Solid**

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-05_2022-03-03_1030	E440	03-Mar-2022	22-Mar-2022	----	----		22-Mar-2022	180 days	19 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap RG_ERCK_SE-01_2022-03-02_1050	E440	02-Mar-2022	22-Mar-2022	----	----		22-Mar-2022	180 days	20 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap RG_ERCK_SE-02_2022-03-02_1050	E440	02-Mar-2022	22-Mar-2022	----	----		22-Mar-2022	180 days	20 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap RG_ERCK_SE-03_2022-03-02_1050	E440	02-Mar-2022	22-Mar-2022	----	----		22-Mar-2022	180 days	20 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap RG_ERCK_SE-04_2022-03-02_1050	E440	02-Mar-2022	22-Mar-2022	----	----		22-Mar-2022	180 days	20 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap RG_ERCK_SE-05_2022-03-02_1050	E440	02-Mar-2022	22-Mar-2022	----	----		22-Mar-2022	180 days	20 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap RG_MIDER_SE-01_2022-03-02_1600	E440	02-Mar-2022	22-Mar-2022	----	----		22-Mar-2022	180 days	20 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap RG_MIDER_SE-02_2022-03-02_1610	E440	02-Mar-2022	22-Mar-2022	----	----		22-Mar-2022	180 days	20 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap RG_MIDER_SE-03_2022-03-02_1620	E440	02-Mar-2022	22-Mar-2022	----	----		22-Mar-2022	180 days	20 days	✔	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap RG_MIDER_SE-04_2022-03-02_1630	E440	02-Mar-2022	22-Mar-2022	----	----		22-Mar-2022	180 days	20 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap RG_MIDER_SE-05_2022-03-02_1640	E440	02-Mar-2022	22-Mar-2022	----	----		22-Mar-2022	180 days	20 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion (<63 µm)											
Glass soil jar/Teflon lined cap RG_ERCK_SE-01_2022-03-02_1050	E351A	02-Mar-2022	----	----	----		22-Mar-2022	----	0 days		
Organic / Inorganic Carbon : Total Carbon by Combustion (<63 µm)											
Glass soil jar/Teflon lined cap RG_ERCK_SE-02_2022-03-02_1050	E351A	02-Mar-2022	----	----	----		22-Mar-2022	----	0 days		
Organic / Inorganic Carbon : Total Carbon by Combustion (<63 µm)											
Glass soil jar/Teflon lined cap RG_ERCK_SE-03_2022-03-02_1050	E351A	02-Mar-2022	----	----	----		22-Mar-2022	----	0 days		
Organic / Inorganic Carbon : Total Carbon by Combustion (<63 µm)											
Glass soil jar/Teflon lined cap RG_ERCK_SE-04_2022-03-02_1050	E351A	02-Mar-2022	----	----	----		22-Mar-2022	----	0 days		
Organic / Inorganic Carbon : Total Carbon by Combustion (<63 µm)											
Glass soil jar/Teflon lined cap RG_ERCK_SE-05_2022-03-02_1050	E351A	02-Mar-2022	----	----	----		22-Mar-2022	----	0 days		
Organic / Inorganic Carbon : Total Carbon by Combustion (<63 µm)											
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-01_2022-03-03_1200	E351A	03-Mar-2022	----	----	----		22-Mar-2022	----	0 days		
Organic / Inorganic Carbon : Total Carbon by Combustion (<63 µm)											
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-02_2022-03-03_1215	E351A	03-Mar-2022	----	----	----		22-Mar-2022	----	0 days		



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Total Carbon by Combustion (<63 µm)										
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-03_2022-03-03_1220	E351A	03-Mar-2022	----	----	----		22-Mar-2022	----	0 days	
Organic / Inorganic Carbon : Total Carbon by Combustion (<63 µm)										
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-04_2022-03-03_1230	E351A	03-Mar-2022	----	----	----		22-Mar-2022	----	0 days	
Organic / Inorganic Carbon : Total Carbon by Combustion (<63 µm)										
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-05_2022-03-03_1240	E351A	03-Mar-2022	----	----	----		22-Mar-2022	----	0 days	
Organic / Inorganic Carbon : Total Carbon by Combustion (<63 µm)										
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-06_2022-03-03_1245	E351A	03-Mar-2022	----	----	----		22-Mar-2022	----	0 days	
Organic / Inorganic Carbon : Total Carbon by Combustion (<63 µm)										
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-07_2022-03-03_1250	E351A	03-Mar-2022	----	----	----		22-Mar-2022	----	0 days	
Organic / Inorganic Carbon : Total Carbon by Combustion (<63 µm)										
Glass soil jar/Teflon lined cap RG_ERCKMD_SE-01_2022-03-03_1430	E351A	03-Mar-2022	----	----	----		22-Mar-2022	----	0 days	
Organic / Inorganic Carbon : Total Carbon by Combustion (<63 µm)										
Glass soil jar/Teflon lined cap RG_ERCKMD_SE-02_2022-03-03_1435	E351A	03-Mar-2022	----	----	----		22-Mar-2022	----	0 days	
Organic / Inorganic Carbon : Total Carbon by Combustion (<63 µm)										
Glass soil jar/Teflon lined cap RG_ERCKMD_SE-03_2022-03-03_1445	E351A	03-Mar-2022	----	----	----		22-Mar-2022	----	0 days	
Organic / Inorganic Carbon : Total Carbon by Combustion (<63 µm)										
Glass soil jar/Teflon lined cap RG_ERCKMD_SE-04_2022-03-03_1450	E351A	03-Mar-2022	----	----	----		22-Mar-2022	----	0 days	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis		
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times	
				Rec	Actual			Rec	Actual
Organic / Inorganic Carbon : Total Carbon by Combustion (<63 µm)									
Glass soil jar/Teflon lined cap RG_ERCKMD_SE-05_2022-03-03_1500	E351A	03-Mar-2022	----	----	----		22-Mar-2022	----	0 days
Organic / Inorganic Carbon : Total Carbon by Combustion (<63 µm)									
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-01_2022-03-03_1000	E351A	03-Mar-2022	----	----	----		22-Mar-2022	----	0 days
Organic / Inorganic Carbon : Total Carbon by Combustion (<63 µm)									
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-02_2022-03-03_1010	E351A	03-Mar-2022	----	----	----		22-Mar-2022	----	0 days
Organic / Inorganic Carbon : Total Carbon by Combustion (<63 µm)									
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-03_2022-03-03_1015	E351A	03-Mar-2022	----	----	----		22-Mar-2022	----	0 days
Organic / Inorganic Carbon : Total Carbon by Combustion (<63 µm)									
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-04_2022-03-03_1020	E351A	03-Mar-2022	----	----	----		22-Mar-2022	----	0 days
Organic / Inorganic Carbon : Total Carbon by Combustion (<63 µm)									
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-05_2022-03-03_1030	E351A	03-Mar-2022	----	----	----		22-Mar-2022	----	0 days
Organic / Inorganic Carbon : Total Carbon by Combustion (<63 µm)									
Glass soil jar/Teflon lined cap RG_MIDER_SE-01_2022-03-02_1600	E351A	02-Mar-2022	----	----	----		22-Mar-2022	----	0 days
Organic / Inorganic Carbon : Total Carbon by Combustion (<63 µm)									
Glass soil jar/Teflon lined cap RG_MIDER_SE-02_2022-03-02_1610	E351A	02-Mar-2022	----	----	----		22-Mar-2022	----	0 days
Organic / Inorganic Carbon : Total Carbon by Combustion (<63 µm)									
Glass soil jar/Teflon lined cap RG_MIDER_SE-03_2022-03-02_1620	E351A	02-Mar-2022	----	----	----		22-Mar-2022	----	0 days



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Total Carbon by Combustion (<63 µm)										
Glass soil jar/Teflon lined cap RG_MIDER_SE-04_2022-03-02_1630	E351A	02-Mar-2022	----	----	----		22-Mar-2022	----	0 days	
Organic / Inorganic Carbon : Total Carbon by Combustion (<63 µm)										
Glass soil jar/Teflon lined cap RG_MIDER_SE-05_2022-03-02_1640	E351A	02-Mar-2022	----	----	----		22-Mar-2022	----	0 days	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve (<63 µm)										
Glass soil jar/Teflon lined cap RG_ERCK_SE-01_2022-03-02_1050	E354A	02-Mar-2022	----	----	----		22-Mar-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve (<63 µm)										
Glass soil jar/Teflon lined cap RG_ERCK_SE-02_2022-03-02_1050	E354A	02-Mar-2022	----	----	----		22-Mar-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve (<63 µm)										
Glass soil jar/Teflon lined cap RG_ERCK_SE-03_2022-03-02_1050	E354A	02-Mar-2022	----	----	----		22-Mar-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve (<63 µm)										
Glass soil jar/Teflon lined cap RG_ERCK_SE-04_2022-03-02_1050	E354A	02-Mar-2022	----	----	----		22-Mar-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve (<63 µm)										
Glass soil jar/Teflon lined cap RG_ERCK_SE-05_2022-03-02_1050	E354A	02-Mar-2022	----	----	----		22-Mar-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve (<63 µm)										
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-01_2022-03-03_1200	E354A	03-Mar-2022	----	----	----		22-Mar-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve (<63 µm)										
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-02_2022-03-03_1215	E354A	03-Mar-2022	----	----	----		22-Mar-2022	----	----	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve (<63 µm)										
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-03_2022-03-03_1220	E354A	03-Mar-2022	----	----	----		22-Mar-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve (<63 µm)										
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-04_2022-03-03_1230	E354A	03-Mar-2022	----	----	----		22-Mar-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve (<63 µm)										
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-05_2022-03-03_1240	E354A	03-Mar-2022	----	----	----		22-Mar-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve (<63 µm)										
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-06_2022-03-03_1245	E354A	03-Mar-2022	----	----	----		22-Mar-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve (<63 µm)										
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-07_2022-03-03_1250	E354A	03-Mar-2022	----	----	----		22-Mar-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve (<63 µm)										
Glass soil jar/Teflon lined cap RG_ERCKMD_SE-01_2022-03-03_1430	E354A	03-Mar-2022	----	----	----		22-Mar-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve (<63 µm)										
Glass soil jar/Teflon lined cap RG_ERCKMD_SE-02_2022-03-03_1435	E354A	03-Mar-2022	----	----	----		22-Mar-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve (<63 µm)										
Glass soil jar/Teflon lined cap RG_ERCKMD_SE-03_2022-03-03_1445	E354A	03-Mar-2022	----	----	----		22-Mar-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve (<63 µm)										
Glass soil jar/Teflon lined cap RG_ERCKMD_SE-04_2022-03-03_1450	E354A	03-Mar-2022	----	----	----		22-Mar-2022	----	----	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve (<63 µm)										
Glass soil jar/Teflon lined cap RG_ERCKMD_SE-05_2022-03-03_1500	E354A	03-Mar-2022	----	----	----		22-Mar-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve (<63 µm)										
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-01_2022-03-03_1000	E354A	03-Mar-2022	----	----	----		22-Mar-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve (<63 µm)										
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-02_2022-03-03_1010	E354A	03-Mar-2022	----	----	----		22-Mar-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve (<63 µm)										
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-03_2022-03-03_1015	E354A	03-Mar-2022	----	----	----		22-Mar-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve (<63 µm)										
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-04_2022-03-03_1020	E354A	03-Mar-2022	----	----	----		22-Mar-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve (<63 µm)										
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-05_2022-03-03_1030	E354A	03-Mar-2022	----	----	----		22-Mar-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve (<63 µm)										
Glass soil jar/Teflon lined cap RG_MIDER_SE-01_2022-03-02_1600	E354A	02-Mar-2022	----	----	----		22-Mar-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve (<63 µm)										
Glass soil jar/Teflon lined cap RG_MIDER_SE-02_2022-03-02_1610	E354A	02-Mar-2022	----	----	----		22-Mar-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve (<63 µm)										
Glass soil jar/Teflon lined cap RG_MIDER_SE-03_2022-03-02_1620	E354A	02-Mar-2022	----	----	----		22-Mar-2022	----	----	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve (<63 µm)										
Glass soil jar/Teflon lined cap RG_MIDER_SE-04_2022-03-02_1630	E354A	02-Mar-2022	----	----	----		22-Mar-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve (<63 µm)										
Glass soil jar/Teflon lined cap RG_MIDER_SE-05_2022-03-02_1640	E354A	02-Mar-2022	----	----	----		22-Mar-2022	----	----	
Particle Size : CSSC Particle Size Classification (Mini Pipet Method)										
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-01_2022-03-03_1200	E180A	03-Mar-2022	----	----	----		21-Mar-2022	365 days	18 days	✔
Particle Size : CSSC Particle Size Classification (Mini Pipet Method)										
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-02_2022-03-03_1215	E180A	03-Mar-2022	----	----	----		21-Mar-2022	365 days	18 days	✔
Particle Size : CSSC Particle Size Classification (Mini Pipet Method)										
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-03_2022-03-03_1220	E180A	03-Mar-2022	----	----	----		21-Mar-2022	365 days	18 days	✔
Particle Size : CSSC Particle Size Classification (Mini Pipet Method)										
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-04_2022-03-03_1230	E180A	03-Mar-2022	----	----	----		21-Mar-2022	365 days	18 days	✔
Particle Size : CSSC Particle Size Classification (Mini Pipet Method)										
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-05_2022-03-03_1240	E180A	03-Mar-2022	----	----	----		21-Mar-2022	365 days	18 days	✔
Particle Size : CSSC Particle Size Classification (Mini Pipet Method)										
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-06_2022-03-03_1245	E180A	03-Mar-2022	----	----	----		21-Mar-2022	365 days	18 days	✔
Particle Size : CSSC Particle Size Classification (Mini Pipet Method)										
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-07_2022-03-03_1250	E180A	03-Mar-2022	----	----	----		21-Mar-2022	365 days	18 days	✔



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Particle Size : CSSC Particle Size Classification (Mini Pipet Method)											
Glass soil jar/Teflon lined cap RG_ERCKMD_SE-01_2022-03-03_1430	E180A	03-Mar-2022	----	----	----		21-Mar-2022	365 days	18 days	✔	
Particle Size : CSSC Particle Size Classification (Mini Pipet Method)											
Glass soil jar/Teflon lined cap RG_ERCKMD_SE-02_2022-03-03_1435	E180A	03-Mar-2022	----	----	----		21-Mar-2022	365 days	18 days	✔	
Particle Size : CSSC Particle Size Classification (Mini Pipet Method)											
Glass soil jar/Teflon lined cap RG_ERCKMD_SE-03_2022-03-03_1445	E180A	03-Mar-2022	----	----	----		21-Mar-2022	365 days	18 days	✔	
Particle Size : CSSC Particle Size Classification (Mini Pipet Method)											
Glass soil jar/Teflon lined cap RG_ERCKMD_SE-04_2022-03-03_1450	E180A	03-Mar-2022	----	----	----		21-Mar-2022	365 days	18 days	✔	
Particle Size : CSSC Particle Size Classification (Mini Pipet Method)											
Glass soil jar/Teflon lined cap RG_ERCKMD_SE-05_2022-03-03_1500	E180A	03-Mar-2022	----	----	----		21-Mar-2022	365 days	18 days	✔	
Particle Size : CSSC Particle Size Classification (Mini Pipet Method)											
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-01_2022-03-03_1000	E180A	03-Mar-2022	----	----	----		21-Mar-2022	365 days	18 days	✔	
Particle Size : CSSC Particle Size Classification (Mini Pipet Method)											
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-02_2022-03-03_1010	E180A	03-Mar-2022	----	----	----		21-Mar-2022	365 days	18 days	✔	
Particle Size : CSSC Particle Size Classification (Mini Pipet Method)											
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-03_2022-03-03_1015	E180A	03-Mar-2022	----	----	----		21-Mar-2022	365 days	18 days	✔	
Particle Size : CSSC Particle Size Classification (Mini Pipet Method)											
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-04_2022-03-03_1020	E180A	03-Mar-2022	----	----	----		21-Mar-2022	365 days	18 days	✔	



Matrix: **Soil/Solid**

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Particle Size : CSSC Particle Size Classification (Mini Pipet Method)											
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-05_2022-03-03_1030	E180A	03-Mar-2022	----	----	----		21-Mar-2022	365 days	18 days	✔	
Particle Size : CSSC Particle Size Classification (Mini Pipet Method)											
Glass soil jar/Teflon lined cap RG_ERCK_SE-01_2022-03-02_1050	E180A	02-Mar-2022	----	----	----		21-Mar-2022	365 days	19 days	✔	
Particle Size : CSSC Particle Size Classification (Mini Pipet Method)											
Glass soil jar/Teflon lined cap RG_ERCK_SE-02_2022-03-02_1050	E180A	02-Mar-2022	----	----	----		21-Mar-2022	365 days	19 days	✔	
Particle Size : CSSC Particle Size Classification (Mini Pipet Method)											
Glass soil jar/Teflon lined cap RG_ERCK_SE-03_2022-03-02_1050	E180A	02-Mar-2022	----	----	----		21-Mar-2022	365 days	19 days	✔	
Particle Size : CSSC Particle Size Classification (Mini Pipet Method)											
Glass soil jar/Teflon lined cap RG_ERCK_SE-04_2022-03-02_1050	E180A	02-Mar-2022	----	----	----		21-Mar-2022	365 days	19 days	✔	
Particle Size : CSSC Particle Size Classification (Mini Pipet Method)											
Glass soil jar/Teflon lined cap RG_ERCK_SE-05_2022-03-02_1050	E180A	02-Mar-2022	----	----	----		21-Mar-2022	365 days	19 days	✔	
Particle Size : CSSC Particle Size Classification (Mini Pipet Method)											
Glass soil jar/Teflon lined cap RG_MIDER_SE-01_2022-03-02_1600	E180A	02-Mar-2022	----	----	----		21-Mar-2022	365 days	19 days	✔	
Particle Size : CSSC Particle Size Classification (Mini Pipet Method)											
Glass soil jar/Teflon lined cap RG_MIDER_SE-02_2022-03-02_1610	E180A	02-Mar-2022	----	----	----		21-Mar-2022	365 days	19 days	✔	
Particle Size : CSSC Particle Size Classification (Mini Pipet Method)											
Glass soil jar/Teflon lined cap RG_MIDER_SE-03_2022-03-02_1620	E180A	02-Mar-2022	----	----	----		21-Mar-2022	365 days	19 days	✔	



Matrix: **Soil/Solid**

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Particle Size : CSSC Particle Size Classification (Mini Pipet Method)										
Glass soil jar/Teflon lined cap RG_MIDER_SE-04_2022-03-02_1630	E180A	02-Mar-2022	----	----	----		21-Mar-2022	365 days	19 days	✔
Particle Size : CSSC Particle Size Classification (Mini Pipet Method)										
Glass soil jar/Teflon lined cap RG_MIDER_SE-05_2022-03-02_1640	E180A	02-Mar-2022	----	----	----		21-Mar-2022	365 days	19 days	✔
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap RG_ERCK_SE-01_2022-03-02_1050	E144	02-Mar-2022	----	----	----		15-Mar-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap RG_ERCK_SE-02_2022-03-02_1050	E144	02-Mar-2022	----	----	----		15-Mar-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap RG_ERCK_SE-03_2022-03-02_1050	E144	02-Mar-2022	----	----	----		15-Mar-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap RG_ERCK_SE-04_2022-03-02_1050	E144	02-Mar-2022	----	----	----		15-Mar-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap RG_ERCK_SE-05_2022-03-02_1050	E144	02-Mar-2022	----	----	----		15-Mar-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-01_2022-03-03_1200	E144	03-Mar-2022	----	----	----		15-Mar-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-02_2022-03-03_1215	E144	03-Mar-2022	----	----	----		15-Mar-2022	----	----	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-03_2022-03-03_1220	E144	03-Mar-2022	----	----	----		15-Mar-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-04_2022-03-03_1230	E144	03-Mar-2022	----	----	----		15-Mar-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-05_2022-03-03_1240	E144	03-Mar-2022	----	----	----		15-Mar-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-06_2022-03-03_1245	E144	03-Mar-2022	----	----	----		15-Mar-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-07_2022-03-03_1250	E144	03-Mar-2022	----	----	----		15-Mar-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap RG_ERCKMD_SE-01_2022-03-03_1430	E144	03-Mar-2022	----	----	----		15-Mar-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap RG_ERCKMD_SE-02_2022-03-03_1435	E144	03-Mar-2022	----	----	----		15-Mar-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap RG_ERCKMD_SE-03_2022-03-03_1445	E144	03-Mar-2022	----	----	----		15-Mar-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap RG_ERCKMD_SE-04_2022-03-03_1450	E144	03-Mar-2022	----	----	----		15-Mar-2022	----	----	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		
				Rec	Actual			Rec	Actual	Eval
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap RG_ERCKMD_SE-05_2022-03-03_1500	E144	03-Mar-2022	----	----	----		15-Mar-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-01_2022-03-03_1000	E144	03-Mar-2022	----	----	----		15-Mar-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-02_2022-03-03_1010	E144	03-Mar-2022	----	----	----		15-Mar-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-03_2022-03-03_1015	E144	03-Mar-2022	----	----	----		15-Mar-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-04_2022-03-03_1020	E144	03-Mar-2022	----	----	----		15-Mar-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-05_2022-03-03_1030	E144	03-Mar-2022	----	----	----		15-Mar-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap RG_MIDER_SE-01_2022-03-02_1600	E144	02-Mar-2022	----	----	----		15-Mar-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap RG_MIDER_SE-02_2022-03-02_1610	E144	02-Mar-2022	----	----	----		15-Mar-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap RG_MIDER_SE-03_2022-03-02_1620	E144	02-Mar-2022	----	----	----		15-Mar-2022	----	----	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Moisture Content by Gravimetry											
Glass soil jar/Teflon lined cap RG_MIDER_SE-04_2022-03-02_1630	E144	02-Mar-2022	----	----	----		15-Mar-2022	----	----		
Physical Tests : Moisture Content by Gravimetry											
Glass soil jar/Teflon lined cap RG_MIDER_SE-05_2022-03-02_1640	E144	02-Mar-2022	----	----	----		15-Mar-2022	----	----		
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-07_2022-03-03_1250	E108	03-Mar-2022	24-Mar-2022	----	----		24-Mar-2022	30 days	21 days		✔
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap RG_ERCKMD_SE-02_2022-03-03_1435	E108	03-Mar-2022	24-Mar-2022	----	----		24-Mar-2022	30 days	21 days		✔
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap RG_ERCKMD_SE-03_2022-03-03_1445	E108	03-Mar-2022	24-Mar-2022	----	----		24-Mar-2022	30 days	21 days		✔
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap RG_ERCKMD_SE-04_2022-03-03_1450	E108	03-Mar-2022	24-Mar-2022	----	----		24-Mar-2022	30 days	21 days		✔
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap RG_ERCKMD_SE-05_2022-03-03_1500	E108	03-Mar-2022	24-Mar-2022	----	----		24-Mar-2022	30 days	21 days		✔
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-01_2022-03-03_1000	E108	03-Mar-2022	24-Mar-2022	----	----		24-Mar-2022	30 days	21 days		✔
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap RG_ERCK_SE-01_2022-03-02_1050	E108	02-Mar-2022	24-Mar-2022	----	----		24-Mar-2022	30 days	22 days		✔



Matrix: **Soil/Solid**

Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap RG_ERCK_SE-02_2022-03-02_1050	E108	02-Mar-2022	24-Mar-2022	----	----		24-Mar-2022	30 days	22 days	✓	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap RG_ERCK_SE-03_2022-03-02_1050	E108	02-Mar-2022	24-Mar-2022	----	----		24-Mar-2022	30 days	22 days	✓	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap RG_ERCK_SE-04_2022-03-02_1050	E108	02-Mar-2022	24-Mar-2022	----	----		24-Mar-2022	30 days	22 days	✓	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap RG_ERCK_SE-05_2022-03-02_1050	E108	02-Mar-2022	24-Mar-2022	----	----		24-Mar-2022	30 days	22 days	✓	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap RG_MIDER_SE-01_2022-03-02_1600	E108	02-Mar-2022	24-Mar-2022	----	----		24-Mar-2022	30 days	22 days	✓	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap RG_MIDER_SE-02_2022-03-02_1610	E108	02-Mar-2022	24-Mar-2022	----	----		24-Mar-2022	30 days	22 days	✓	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap RG_MIDER_SE-03_2022-03-02_1620	E108	02-Mar-2022	24-Mar-2022	----	----		24-Mar-2022	30 days	22 days	✓	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap RG_MIDER_SE-04_2022-03-02_1630	E108	02-Mar-2022	24-Mar-2022	----	----		24-Mar-2022	30 days	22 days	✓	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap RG_MIDER_SE-05_2022-03-02_1640	E108	02-Mar-2022	24-Mar-2022	----	----		24-Mar-2022	30 days	22 days	✓	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-01_2022-03-03_1200	E108	03-Mar-2022	28-Mar-2022	----	----		28-Mar-2022	30 days	25 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-02_2022-03-03_1215	E108	03-Mar-2022	28-Mar-2022	----	----		28-Mar-2022	30 days	25 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-03_2022-03-03_1220	E108	03-Mar-2022	28-Mar-2022	----	----		28-Mar-2022	30 days	25 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-04_2022-03-03_1230	E108	03-Mar-2022	28-Mar-2022	----	----		28-Mar-2022	30 days	25 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-05_2022-03-03_1240	E108	03-Mar-2022	28-Mar-2022	----	----		28-Mar-2022	30 days	25 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-06_2022-03-03_1245	E108	03-Mar-2022	28-Mar-2022	----	----		28-Mar-2022	30 days	25 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap RG_ERCKMD_SE-01_2022-03-03_1430	E108	03-Mar-2022	28-Mar-2022	----	----		28-Mar-2022	30 days	25 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-02_2022-03-03_1010	E108	03-Mar-2022	28-Mar-2022	----	----		28-Mar-2022	30 days	25 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-03_2022-03-03_1015	E108	03-Mar-2022	28-Mar-2022	----	----		28-Mar-2022	30 days	25 days	✔	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-04_2022-03-03_1020	E108	03-Mar-2022	28-Mar-2022	----	----		28-Mar-2022	30 days	25 days	✔
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-05_2022-03-03_1030	E108	03-Mar-2022	28-Mar-2022	----	----		28-Mar-2022	30 days	25 days	✔
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS										
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-01_2022-03-03_1200	E641A	03-Mar-2022	15-Mar-2022	14 days	12 days	✔	16-Mar-2022	40 days	1 days	✔
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS										
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-02_2022-03-03_1215	E641A	03-Mar-2022	15-Mar-2022	14 days	12 days	✔	16-Mar-2022	40 days	1 days	✔
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS										
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-03_2022-03-03_1220	E641A	03-Mar-2022	15-Mar-2022	14 days	12 days	✔	16-Mar-2022	40 days	1 days	✔
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS										
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-04_2022-03-03_1230	E641A	03-Mar-2022	15-Mar-2022	14 days	12 days	✔	16-Mar-2022	40 days	1 days	✔
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS										
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-05_2022-03-03_1240	E641A	03-Mar-2022	15-Mar-2022	14 days	12 days	✔	16-Mar-2022	40 days	1 days	✔
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS										
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-06_2022-03-03_1245	E641A	03-Mar-2022	15-Mar-2022	14 days	12 days	✔	16-Mar-2022	40 days	1 days	✔
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS										
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-07_2022-03-03_1250	E641A	03-Mar-2022	15-Mar-2022	14 days	12 days	✔	16-Mar-2022	40 days	1 days	✔



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap RG_ERCKMD_SE-01_2022-03-03_1430	E641A	03-Mar-2022	15-Mar-2022	14 days	12 days	✔	16-Mar-2022	40 days	1 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap RG_ERCKMD_SE-02_2022-03-03_1435	E641A	03-Mar-2022	15-Mar-2022	14 days	12 days	✔	16-Mar-2022	40 days	1 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap RG_ERCKMD_SE-03_2022-03-03_1445	E641A	03-Mar-2022	15-Mar-2022	14 days	12 days	✔	16-Mar-2022	40 days	1 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap RG_ERCKMD_SE-04_2022-03-03_1450	E641A	03-Mar-2022	15-Mar-2022	14 days	12 days	✔	16-Mar-2022	40 days	1 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap RG_ERCKMD_SE-05_2022-03-03_1500	E641A	03-Mar-2022	15-Mar-2022	14 days	12 days	✔	16-Mar-2022	40 days	1 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-01_2022-03-03_1000	E641A	03-Mar-2022	15-Mar-2022	14 days	12 days	✔	16-Mar-2022	40 days	1 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-02_2022-03-03_1010	E641A	03-Mar-2022	15-Mar-2022	14 days	12 days	✔	16-Mar-2022	40 days	1 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-03_2022-03-03_1015	E641A	03-Mar-2022	15-Mar-2022	14 days	12 days	✔	16-Mar-2022	40 days	1 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-04_2022-03-03_1020	E641A	03-Mar-2022	15-Mar-2022	14 days	12 days	✔	16-Mar-2022	40 days	1 days	✔	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS										
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-05_2022-03-03_1030	E641A	03-Mar-2022	15-Mar-2022	14 days	12 days	✔	16-Mar-2022	40 days	1 days	✔
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS										
Glass soil jar/Teflon lined cap RG_ERCK_SE-01_2022-03-02_1050	E641A	02-Mar-2022	15-Mar-2022	14 days	13 days	✔	16-Mar-2022	40 days	1 days	✔
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS										
Glass soil jar/Teflon lined cap RG_ERCK_SE-02_2022-03-02_1050	E641A	02-Mar-2022	15-Mar-2022	14 days	13 days	✔	16-Mar-2022	40 days	1 days	✔
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS										
Glass soil jar/Teflon lined cap RG_ERCK_SE-03_2022-03-02_1050	E641A	02-Mar-2022	15-Mar-2022	14 days	13 days	✔	16-Mar-2022	40 days	1 days	✔
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS										
Glass soil jar/Teflon lined cap RG_ERCK_SE-04_2022-03-02_1050	E641A	02-Mar-2022	15-Mar-2022	14 days	13 days	✔	16-Mar-2022	40 days	1 days	✔
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS										
Glass soil jar/Teflon lined cap RG_ERCK_SE-05_2022-03-02_1050	E641A	02-Mar-2022	15-Mar-2022	14 days	13 days	✔	16-Mar-2022	40 days	1 days	✔
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS										
Glass soil jar/Teflon lined cap RG_MIDER_SE-01_2022-03-02_1600	E641A	02-Mar-2022	15-Mar-2022	14 days	13 days	✔	16-Mar-2022	40 days	1 days	✔
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS										
Glass soil jar/Teflon lined cap RG_MIDER_SE-02_2022-03-02_1610	E641A	02-Mar-2022	15-Mar-2022	14 days	13 days	✔	16-Mar-2022	40 days	1 days	✔
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS										
Glass soil jar/Teflon lined cap RG_MIDER_SE-03_2022-03-02_1620	E641A	02-Mar-2022	15-Mar-2022	14 days	13 days	✔	16-Mar-2022	40 days	1 days	✔



Matrix: **Soil/Solid**

Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS										
Glass soil jar/Teflon lined cap RG_MIDER_SE-04_2022-03-02_1630	E641A	02-Mar-2022	15-Mar-2022	14 days	13 days	✓	16-Mar-2022	40 days	1 days	✓
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS										
Glass soil jar/Teflon lined cap RG_MIDER_SE-05_2022-03-02_1640	E641A	02-Mar-2022	15-Mar-2022	14 days	13 days	✓	16-Mar-2022	40 days	1 days	✓

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Soil/Solid**

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
Analytical Methods							
Laboratory Duplicates (DUP)							
CSSC Particle Size Classification (Mini Pipet Method)	E180A	438308	2	27	7.4	5.0	✔
Mercury in Soil/Solid by CVAAS	E510	438903	2	27	7.4	5.0	✔
Metals in Soil/Solid by CRC ICPMS	E440	438904	2	27	7.4	5.0	✔
Moisture Content by Gravimetry	E144	432883	2	40	5.0	5.0	✔
PAHs by Hex:Ace GC-MS	E641A	432881	2	27	7.4	5.0	✔
pH by Meter (1:2 Soil:Water Extraction)	E108	441606	1	27	3.7	5.0	✖
Total Carbon by Combustion (<63 µm)	E351A	439143	2	27	7.4	5.0	✔
Total Inorganic Carbon by Acetic Acid pH Standard Curve (<63 µm)	E354A	439051	2	29	6.9	5.0	✔
Laboratory Control Samples (LCS)							
CSSC Particle Size Classification (Mini Pipet Method)	E180A	438308	2	27	7.4	5.0	✔
Mercury in Soil/Solid by CVAAS	E510	438903	4	27	14.8	10.0	✔
Metals in Soil/Solid by CRC ICPMS	E440	438904	4	27	14.8	10.0	✔
Moisture Content by Gravimetry	E144	432883	2	40	5.0	5.0	✔
PAHs by Hex:Ace GC-MS	E641A	432881	2	27	7.4	5.0	✔
pH by Meter (1:2 Soil:Water Extraction)	E108	441606	4	27	14.8	10.0	✔
Total Carbon by Combustion (<63 µm)	E351A	439143	4	27	14.8	10.0	✔
Total Inorganic Carbon by Acetic Acid pH Standard Curve (<63 µm)	E354A	439051	4	29	13.7	10.0	✔
Method Blanks (MB)							
Mercury in Soil/Solid by CVAAS	E510	438903	2	27	7.4	5.0	✔
Metals in Soil/Solid by CRC ICPMS	E440	438904	2	27	7.4	5.0	✔
Moisture Content by Gravimetry	E144	432883	2	40	5.0	5.0	✔
PAHs by Hex:Ace GC-MS	E641A	432881	2	27	7.4	5.0	✔
Total Carbon by Combustion (<63 µm)	E351A	439143	2	27	7.4	5.0	✔
Total Inorganic Carbon by Acetic Acid pH Standard Curve (<63 µm)	E354A	439051	2	29	6.9	5.0	✔
Matrix Spikes (MS)							
PAHs by Hex:Ace GC-MS	E641A	432881	2	27	7.4	5.0	✔



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
pH by Meter (1:2 Soil:Water Extraction)	E108 Saskatoon - Environmental	Soil/Solid	BC Lab Manual	pH is determined by potentiometric measurement with a pH electrode at ambient laboratory temperature (normally 20 ± 5°C), and is carried out in accordance with procedures described in the BC Lab Manual (prescriptive method). The procedure involves mixing the dried (at <60 °C) and sieved (10mesh/2mm) sample with ultra pure water at a 1:2 ratio of sediment to water. The pH is then measured by a standard pH probe.
Moisture Content by Gravimetry	E144 Calgary - Environmental	Soil/Solid	CCME PHC in Soil - Tier 1	Moisture is measured gravimetrically by drying the sample at 105°C. Moisture content is calculated as the weight loss (due to water) divided by the wet weight of the sample, expressed as a percentage.
CSSC Particle Size Classification (Mini Pipet Method)	E180A Saskatoon - Environmental	Soil/Solid	CCME Vol 4 Analytical Methods	A soil sample is disaggregated to pass a 2mm sieve. The <2mm specimen is then further disaggregated using Calgon solution and suspended in solution. Two pipette aliquots are taken, dried, and measured gravimetrically at specific times to determine %clay and %silt+clay using the principles of Stokes' law. %silt and %sand are determined mathematically.
Total Carbon by Combustion (<63 µm)	E351A Saskatoon - Environmental	Soil/Solid	CSSS (2008) 21.2 (mod)	Total Carbon is determined on a sample which is first sieved through a 63 µm sieve prior to analysis by the high temperature combustion method with measurement by an infrared detector.
Total Inorganic Carbon by Acetic Acid pH Standard Curve (<63 µm)	E354A Saskatoon - Environmental	Soil/Solid	CSSS (2008) 20.2	Total Inorganic Carbon is determined on a sample which is first sieved through a 63 µm sieve prior to analysis by acetic acid pH standard curve, where a known quantity of acetic acid is consumed by reaction with carbonates in the soil. The pH of the resulting solution is measured and compared against a standard curve relating pH to weight of carbonate.
Metals in Soil/Solid by CRC ICPMS	E440 Saskatoon - Environmental	Soil/Solid	EPA 6020B (mod)	This method is intended to liberate metals that may be environmentally available. Samples are dried, then sieved through a 2 mm sieve, and digested with HNO ₃ and HCl. Dependent on sample matrix, some metals may be only partially recovered, including Al, Ba, Be, Cr, Sr, Ti, Tl, V, W, and Zr. Silicate minerals are not solubilized. Volatile forms of sulfur (including sulfide) may not be captured, as they may be lost during sampling, storage, or digestion. This method does not adequately recover elemental sulfur, and is unsuitable for assessment of elemental sulfur standards or guidelines. Analysis is by Collision/Reaction Cell ICPMS.
Mercury in Soil/Solid by CVAAS	E510 Saskatoon - Environmental	Soil/Solid	EPA 200.2/1631 Appendix (mod)	Samples are dried, then sieved through a 2 mm sieve, and digested with HNO ₃ and HCl, followed by CVAAS analysis.
PAHs by Hex:Ace GC-MS	E641A Calgary - Environmental	Soil/Solid	EPA 8270E (mod)	Polycyclic Aromatic Hydrocarbons (PAHs) are extracted with hexane/acetone and analyzed by GC-MS. If reported, IACR (index of additive cancer risk, unitless) and B(a)P toxic potency equivalent (in soil concentration units) are calculated as per CCME PAH Soil Quality Guidelines fact sheet (2010) or ABT1.



<i>Analytical Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
Total Organic Carbon (Calculated) in soil (<63 µm)	EC356A Saskatoon - Environmental	Soil/Solid	CSSS (2008) 21.2	Total Organic Carbon (TOC) is calculated by the difference between total carbon (TC) and total inorganic carbon (TIC) analyzed on material passing a 63 µm sieve.
<i>Preparation Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
Leach 1:2 Soil:Water for pH/EC	EP108 Saskatoon - Environmental	Soil/Solid	BC WLAP METHOD: PH, ELECTROMETRIC, SOIL	The procedure involves mixing the dried (at <60°C) and sieved (No. 10 / 2mm) sample with deionized/distilled water at a 1:2 ratio of sediment to water.
Digestion for Metals and Mercury	EP440 Saskatoon - Environmental	Soil/Solid	EPA 200.2 (mod)	Samples are dried, then sieved through a 2 mm sieve, and digested with HNO ₃ and HCl. This method is intended to liberate metals that may be environmentally available.
PHCs and PAHs Hexane-Acetone Tumbler Extraction	EP601 Calgary - Environmental	Soil/Solid	CCME PHC in Soil - Tier 1 (mod)	Samples are subsampled and Petroleum Hydrocarbons (PHC) and PAHs are extracted with 1:1 hexane:acetone using a rotary extractor.
Dry and Grind	EPP442 Calgary - Environmental	Soil/Solid	Soil Sampling and Methods of Analysis, Carter 2008	After removal of any coarse fragments and reservation of wet subsamples a portion of homogenized sample is set in a tray and dried at less than 60°C until dry. The sample is then particle size reduced with an automated crusher or mortar and pestle, typically to <2 mm. Further size reduction may be needed for particular tests.

QUALITY CONTROL REPORT

Work Order : **CG2202822**

Page : 1 of 20

Client : Teck Coal Limited
Contact : Mike Pope
Address : RR#1 HWY#3
 Sparwood BC Canada V0B 2G1
Telephone : ----
Project : REGIONAL EFFECTS PROGRAM
PO : VPO00816101
C-O-C number : MARCH EVO LAEMP 2022
Sampler : Maddy Stokes
Site : ----
Quote number : Teck Coal Master Quote
No. of samples received : 27
No. of samples analysed : 27

Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
 Calgary, Alberta Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 12-Mar-2022 09:20
Date Analysis Commenced : 15-Mar-2022
Issue Date : 31-Mar-2022 18:00

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits
- Reference Material (RM) Report; Recovery and Acceptance Limits
- Method Blank (MB) Report; Recovery and Acceptance Limits
- Laboratory Control Sample (LCS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Colby Bingham	Quality Systems Coordinator	Inorganics, Saskatoon, Saskatchewan
Colby Bingham	Quality Systems Coordinator	Metals, Saskatoon, Saskatchewan
Hedy Lai	Team Leader - Inorganics	Inorganics, Saskatoon, Saskatchewan
Lian Nesbitt	Laboratory Analyst	Metals, Saskatoon, Saskatchewan
Maria Painchaud	Laboratory Assistant	Inorganics, Saskatoon, Saskatchewan
Rosalie Van Deelen	Laboratory Assistant	Organics, Calgary, Alberta
Sorina Motea	Laboratory Analyst	Organics, Calgary, Alberta
Xihua Yao	Laboratory Analyst	Inorganics, Saskatoon, Saskatchewan



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Services number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percentage Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test specific).

Sub-Matrix: Soil/Solid

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 432883)											
CG2202822-001	RG_ERCK_SE-01_2022-03-02_1050	moisture	----	E144	0.25	%	42.9	47.3	9.73%	20%	----
Physical Tests (QC Lot: 433117)											
CG2202867-010	Anonymous	moisture	----	E144	0.25	%	10.6	10.2	3.67%	20%	----
Physical Tests (QC Lot: 441606)											
CG2202822-001	RG_ERCK_SE-01_2022-03-02_1050	pH (1:2 soil:water)	----	E108	0.10	pH units	7.95	7.95	0.00%	10%	----
Particle Size (QC Lot: 438308)											
CG2202822-006	RG_MIDER_SE-01_2022-03-02_1600	clay (<0.002mm)	----	E180A	1.0	%	1.0	1.0	0.0%	20%	----
		sand (2.0mm - 0.05mm)	----	E180A	1.0	%	90.6	91.6	1.1%	20%	----
		silt (0.05mm - 0.002mm)	----	E180A	1.0	%	8.4	7.4	12.8%	20%	----
Particle Size (QC Lot: 438312)											
CG2202822-026	RG_ERCKMD_SE-04_2022-03-03_1450	clay (<0.002mm)	----	E180A	1.0	%	14.1	15.2	7.4%	20%	----
		sand (2.0mm - 0.05mm)	----	E180A	1.0	%	19.9	19.2	3.2%	20%	----
		silt (0.05mm - 0.002mm)	----	E180A	1.0	%	66.0	65.6	0.7%	20%	----
Organic / Inorganic Carbon (QC Lot: 439051)											
CG2202822-009	RG_MIDER_SE-04_2022-03-02_1630	carbon, inorganic [IC], <63 µm	----	E354A	0.050	%	0.647	0.630	2.70%	20%	----
Organic / Inorganic Carbon (QC Lot: 439079)											
EO2201632-002	Anonymous	carbon, inorganic [IC], <63 µm	----	E354A	0.050	%	11.7	11.7	0.00770%	20%	----
Organic / Inorganic Carbon (QC Lot: 439143)											
CG2202822-005	RG_ERCK_SE-05_2022-03-02_1050	carbon, total [TC], <63µm	----	E351A	0.050	%	2.83	2.85	0.833%	20%	----
Organic / Inorganic Carbon (QC Lot: 439151)											
CG2202822-023	RG_ERCKMD_SE-01_2022-03-03_1430	carbon, total [TC], <63µm	----	E351A	0.050	%	14.1	14.6	3.04%	20%	----
Metals (QC Lot: 438903)											
CG2202822-001	RG_ERCK_SE-01_2022-03-02_1050	mercury	7439-97-6	E510	0.0050	mg/kg	0.0348	0.0327	6.22%	40%	----
Metals (QC Lot: 438904)											
CG2202822-001	RG_ERCK_SE-01_2022-03-02_1050	aluminum	7429-90-5	E440	50	mg/kg	5900	5710	3.37%	40%	----
		antimony	7440-36-0	E440	0.10	mg/kg	0.93	0.90	2.23%	30%	----
		arsenic	7440-38-2	E440	0.10	mg/kg	6.18	6.17	0.279%	30%	----



Sub-Matrix: Soil/Solid

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Metals (QC Lot: 438904) - continued											
CG2202822-001	RG_ERCK_SE-01_2022-03-02_1050	barium	7440-39-3	E440	0.50	mg/kg	126	128	1.04%	40%	----
		beryllium	7440-41-7	E440	0.10	mg/kg	0.54	0.52	0.02	Diff <2x LOR	----
		bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	0	Diff <2x LOR	----
		boron	7440-42-8	E440	5.0	mg/kg	<5.0	<5.0	0	Diff <2x LOR	----
		cadmium	7440-43-9	E440	0.020	mg/kg	1.02	1.00	1.36%	30%	----
		calcium	7440-70-2	E440	50	mg/kg	32500	29600	9.37%	30%	----
		chromium	7440-47-3	E440	0.50	mg/kg	10.8	10.8	0.535%	30%	----
		cobalt	7440-48-4	E440	0.10	mg/kg	9.27	8.92	3.83%	30%	----
		copper	7440-50-8	E440	0.50	mg/kg	11.6	11.3	2.90%	30%	----
		iron	7439-89-6	E440	50	mg/kg	13500	13600	1.06%	30%	----
		lead	7439-92-1	E440	0.50	mg/kg	8.50	8.72	2.59%	40%	----
		lithium	7439-93-2	E440	2.0	mg/kg	8.5	8.0	0.5	Diff <2x LOR	----
		magnesium	7439-95-4	E440	20	mg/kg	4940	4860	1.62%	30%	----
		manganese	7439-96-5	E440	1.0	mg/kg	311	302	2.78%	30%	----
		molybdenum	7439-98-7	E440	0.10	mg/kg	1.52	1.64	7.62%	40%	----
		nickel	7440-02-0	E440	0.50	mg/kg	35.5	34.9	1.76%	30%	----
		phosphorus	7723-14-0	E440	50	mg/kg	1220	1120	8.61%	30%	----
		potassium	7440-09-7	E440	100	mg/kg	1140	1050	7.93%	40%	----
		selenium	7782-49-2	E440	0.20	mg/kg	0.91	0.93	0.03	Diff <2x LOR	----
		silver	7440-22-4	E440	0.10	mg/kg	0.15	0.16	0.007	Diff <2x LOR	----
		sodium	7440-23-5	E440	50	mg/kg	61	61	0.09	Diff <2x LOR	----
		strontium	7440-24-6	E440	0.50	mg/kg	50.3	51.5	2.29%	40%	----
		sulfur	7704-34-9	E440	1000	mg/kg	<1000	<1000	0	Diff <2x LOR	----
		thallium	7440-28-0	E440	0.050	mg/kg	0.234	0.231	0.003	Diff <2x LOR	----
		tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	0	Diff <2x LOR	----
		titanium	7440-32-6	E440	1.0	mg/kg	35.3	34.7	1.77%	40%	----
		tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	0	Diff <2x LOR	----
		uranium	7440-61-1	E440	0.050	mg/kg	1.12	1.11	0.632%	30%	----
		vanadium	7440-62-2	E440	0.20	mg/kg	30.0	30.1	0.232%	30%	----
		zinc	7440-66-6	E440	2.0	mg/kg	84.2	80.0	5.18%	30%	----
		zirconium	7440-67-7	E440	1.0	mg/kg	1.5	1.4	0.07	Diff <2x LOR	----
Metals (QC Lot: 438905)											
CG2202822-015	RG_ERCKUT_SE-05_2022-03-03_1030	aluminum	7429-90-5	E440	50	mg/kg	3320	3590	7.67%	40%	----
		antimony	7440-36-0	E440	0.10	mg/kg	1.41	1.60	12.4%	30%	----
		arsenic	7440-38-2	E440	0.10	mg/kg	4.23	4.42	4.30%	30%	----



Sub-Matrix: Soil/Solid

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Metals (QC Lot: 438905) - continued											
CG2202822-015	RG_ERCKUT_SE-05_2022-03-03_1030	barium	7440-39-3	E440	0.50	mg/kg	198	203	2.72%	40%	----
		beryllium	7440-41-7	E440	0.10	mg/kg	0.47	0.49	0.02	Diff <2x LOR	----
		bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	0	Diff <2x LOR	----
		boron	7440-42-8	E440	5.0	mg/kg	7.2	9.0	1.9	Diff <2x LOR	----
		cadmium	7440-43-9	E440	0.020	mg/kg	1.73	1.86	7.20%	30%	----
		calcium	7440-70-2	E440	50	mg/kg	65500	69700	6.23%	30%	----
		chromium	7440-47-3	E440	0.50	mg/kg	8.43	9.25	9.34%	30%	----
		cobalt	7440-48-4	E440	0.10	mg/kg	3.82	3.81	0.331%	30%	----
		copper	7440-50-8	E440	0.50	mg/kg	15.1	16.2	6.72%	30%	----
		iron	7439-89-6	E440	50	mg/kg	10000	9440	5.71%	30%	----
		lead	7439-92-1	E440	0.50	mg/kg	6.98	6.64	4.97%	40%	----
		lithium	7439-93-2	E440	2.0	mg/kg	4.1	4.8	0.8	Diff <2x LOR	----
		magnesium	7439-95-4	E440	20	mg/kg	6210	6500	4.53%	30%	----
		manganese	7439-96-5	E440	1.0	mg/kg	135	134	0.475%	30%	----
		molybdenum	7439-98-7	E440	0.10	mg/kg	1.23	1.26	2.68%	40%	----
		nickel	7440-02-0	E440	0.50	mg/kg	21.2	22.1	4.29%	30%	----
		phosphorus	7723-14-0	E440	50	mg/kg	1180	1280	7.74%	30%	----
		potassium	7440-09-7	E440	100	mg/kg	930	1030	10.8%	40%	----
		selenium	7782-49-2	E440	0.20	mg/kg	22.2	26.2	16.5%	30%	----
		silver	7440-22-4	E440	0.10	mg/kg	0.19	0.21	0.02	Diff <2x LOR	----
		sodium	7440-23-5	E440	50	mg/kg	102	106	4	Diff <2x LOR	----
		strontium	7440-24-6	E440	0.50	mg/kg	56.9	56.5	0.710%	40%	----
		sulfur	7704-34-9	E440	1000	mg/kg	2400	2600	200	Diff <2x LOR	----
		thallium	7440-28-0	E440	0.050	mg/kg	0.144	0.152	0.007	Diff <2x LOR	----
		tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	0	Diff <2x LOR	----
		titanium	7440-32-6	E440	1.0	mg/kg	10.6	11.3	6.06%	40%	----
		tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	0	Diff <2x LOR	----
		uranium	7440-61-1	E440	0.050	mg/kg	1.80	1.90	5.44%	30%	----
		vanadium	7440-62-2	E440	0.20	mg/kg	20.0	21.1	5.51%	30%	----
		zinc	7440-66-6	E440	2.0	mg/kg	84.0	81.8	2.74%	30%	----
		zirconium	7440-67-7	E440	1.0	mg/kg	1.8	1.8	0.007	Diff <2x LOR	----
Metals (QC Lot: 438906)											
CG2202822-015	RG_ERCKUT_SE-05_2022-03-03_1030	mercury	7439-97-6	E510	0.0050	mg/kg	0.0430	0.0472	9.17%	40%	----
Polycyclic Aromatic Hydrocarbons (QC Lot: 432881)											



Sub-Matrix: Soil/Solid

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Polycyclic Aromatic Hydrocarbons (QC Lot: 432881) - continued											
CG2202822-001	RG_ERCK_SE-01_2022-03-02_1050	acenaphthene	83-32-9	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		acenaphthylene	208-96-8	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		acridine	260-94-6	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		anthracene	120-12-7	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		benz(a)anthracene	56-55-3	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		benzo(a)pyrene	50-32-8	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		benzo(b+j)fluoranthene	n/a	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		benzo(g,h,i)perylene	191-24-2	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		benzo(k)fluoranthene	207-08-9	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		chrysene	218-01-9	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		dibenz(a,h)anthracene	53-70-3	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		fluoranthene	206-44-0	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		fluorene	86-73-7	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		methylnaphthalene, 1-	90-12-0	E641A	0.050	mg/kg	0.063	0.075	0.013	Diff <2x LOR	----
		methylnaphthalene, 2-	91-57-6	E641A	0.050	mg/kg	0.074	0.096	0.021	Diff <2x LOR	----
		naphthalene	91-20-3	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
phenanthrene	85-01-8	E641A	0.050	mg/kg	0.112	0.138	0.026	Diff <2x LOR	----		
pyrene	129-00-0	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----		
quinoline	91-22-5	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----		
Polycyclic Aromatic Hydrocarbons (QC Lot: 433112)											
CG2202822-020	RG_ERCKDT_SE-05_2022-03-03_1240	acenaphthene	83-32-9	E641A	0.100	mg/kg	<0.100	<0.100	0	Diff <2x LOR	----
		acenaphthylene	208-96-8	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		acridine	260-94-6	E641A	0.250	mg/kg	<0.250	<0.250	0	Diff <2x LOR	----
		anthracene	120-12-7	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		benz(a)anthracene	56-55-3	E641A	0.250	mg/kg	<0.250	<0.250	0	Diff <2x LOR	----
		benzo(a)pyrene	50-32-8	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		benzo(b+j)fluoranthene	n/a	E641A	0.050	mg/kg	0.164	0.166	0.001	Diff <2x LOR	----
		benzo(g,h,i)perylene	191-24-2	E641A	0.050	mg/kg	0.074	0.075	0.001	Diff <2x LOR	----
		benzo(k)fluoranthene	207-08-9	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		chrysene	218-01-9	E641A	0.050	mg/kg	0.234	0.244	4.20%	50%	----
		dibenz(a,h)anthracene	53-70-3	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		fluoranthene	206-44-0	E641A	0.050	mg/kg	<0.050	0.060	0.010	Diff <2x LOR	----
		fluorene	86-73-7	E641A	0.050	mg/kg	0.276	0.289	4.53%	50%	----
		indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----



Sub-Matrix: **Soil/Solid**

Laboratory Duplicate (DUP) Report

<i>Laboratory sample ID</i>	<i>Client sample ID</i>	<i>Analyte</i>	<i>CAS Number</i>	<i>Method</i>	<i>LOR</i>	<i>Unit</i>	<i>Original Result</i>	<i>Duplicate Result</i>	<i>RPD(%) or Difference</i>	<i>Duplicate Limits</i>	<i>Qualifier</i>
Polycyclic Aromatic Hydrocarbons (QC Lot: 433112) - continued											
CG2202822-020	RG_ERCKDT_SE-05_2022-03-03_1240	methylnaphthalene, 1-	90-12-0	E641A	0.050	mg/kg	0.833	0.899	7.61%	50%	----
		methylnaphthalene, 2-	91-57-6	E641A	0.050	mg/kg	1.70	1.77	3.87%	50%	----
		naphthalene	91-20-3	E641A	0.050	mg/kg	0.504	0.496	1.67%	50%	----
		phenanthrene	85-01-8	E641A	0.050	mg/kg	1.27	1.31	2.63%	50%	----
		pyrene	129-00-0	E641A	0.050	mg/kg	0.096	0.088	0.009	Diff <2x LOR	----
		quinoline	91-22-5	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 432883)						
moisture	----	E144	0.25	%	<0.25	----
Physical Tests (QCLot: 433117)						
moisture	----	E144	0.25	%	<0.25	----
Organic / Inorganic Carbon (QCLot: 439051)						
carbon, inorganic [IC], <63 µm	----	E354A	0.05	%	<0.050	----
Organic / Inorganic Carbon (QCLot: 439079)						
carbon, inorganic [IC], <63 µm	----	E354A	0.05	%	<0.050	----
Organic / Inorganic Carbon (QCLot: 439143)						
carbon, total [TC], <63µm	----	E351A	0.05	%	<0.050	----
Organic / Inorganic Carbon (QCLot: 439151)						
carbon, total [TC], <63µm	----	E351A	0.05	%	<0.050	----
Metals (QCLot: 438903)						
mercury	7439-97-6	E510	0.005	mg/kg	<0.0050	----
Metals (QCLot: 438904)						
aluminum	7429-90-5	E440	50	mg/kg	<50	----
antimony	7440-36-0	E440	0.1	mg/kg	<0.10	----
arsenic	7440-38-2	E440	0.1	mg/kg	<0.10	----
barium	7440-39-3	E440	0.5	mg/kg	<0.50	----
beryllium	7440-41-7	E440	0.1	mg/kg	<0.10	----
bismuth	7440-69-9	E440	0.2	mg/kg	<0.20	----
boron	7440-42-8	E440	5	mg/kg	<5.0	----
cadmium	7440-43-9	E440	0.02	mg/kg	<0.020	----
calcium	7440-70-2	E440	50	mg/kg	<50	----
chromium	7440-47-3	E440	0.5	mg/kg	<0.50	----
cobalt	7440-48-4	E440	0.1	mg/kg	<0.10	----
copper	7440-50-8	E440	0.5	mg/kg	<0.50	----
iron	7439-89-6	E440	50	mg/kg	<50	----
lead	7439-92-1	E440	0.5	mg/kg	<0.50	----
lithium	7439-93-2	E440	2	mg/kg	<2.0	----
magnesium	7439-95-4	E440	20	mg/kg	<20	----
manganese	7439-96-5	E440	1	mg/kg	<1.0	----
molybdenum	7439-98-7	E440	0.1	mg/kg	<0.10	----
nickel	7440-02-0	E440	0.5	mg/kg	<0.50	----



Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Metals (QCLot: 438904) - continued						
phosphorus	7723-14-0	E440	50	mg/kg	<50	---
potassium	7440-09-7	E440	100	mg/kg	<100	---
selenium	7782-49-2	E440	0.2	mg/kg	<0.20	---
silver	7440-22-4	E440	0.1	mg/kg	<0.10	---
sodium	7440-23-5	E440	50	mg/kg	<50	---
strontium	7440-24-6	E440	0.5	mg/kg	<0.50	---
sulfur	7704-34-9	E440	1000	mg/kg	<1000	---
thallium	7440-28-0	E440	0.05	mg/kg	<0.050	---
tin	7440-31-5	E440	2	mg/kg	<2.0	---
titanium	7440-32-6	E440	1	mg/kg	<1.0	---
tungsten	7440-33-7	E440	0.5	mg/kg	<0.50	---
uranium	7440-61-1	E440	0.05	mg/kg	<0.050	---
vanadium	7440-62-2	E440	0.2	mg/kg	<0.20	---
zinc	7440-66-6	E440	2	mg/kg	<2.0	---
zirconium	7440-67-7	E440	1	mg/kg	<1.0	---
Metals (QCLot: 438905)						
aluminum	7429-90-5	E440	50	mg/kg	<50	---
antimony	7440-36-0	E440	0.1	mg/kg	<0.10	---
arsenic	7440-38-2	E440	0.1	mg/kg	<0.10	---
barium	7440-39-3	E440	0.5	mg/kg	<0.50	---
beryllium	7440-41-7	E440	0.1	mg/kg	<0.10	---
bismuth	7440-69-9	E440	0.2	mg/kg	<0.20	---
boron	7440-42-8	E440	5	mg/kg	<5.0	---
cadmium	7440-43-9	E440	0.02	mg/kg	<0.020	---
calcium	7440-70-2	E440	50	mg/kg	<50	---
chromium	7440-47-3	E440	0.5	mg/kg	<0.50	---
cobalt	7440-48-4	E440	0.1	mg/kg	<0.10	---
copper	7440-50-8	E440	0.5	mg/kg	<0.50	---
iron	7439-89-6	E440	50	mg/kg	<50	---
lead	7439-92-1	E440	0.5	mg/kg	<0.50	---
lithium	7439-93-2	E440	2	mg/kg	<2.0	---
magnesium	7439-95-4	E440	20	mg/kg	<20	---
manganese	7439-96-5	E440	1	mg/kg	<1.0	---
molybdenum	7439-98-7	E440	0.1	mg/kg	<0.10	---
nickel	7440-02-0	E440	0.5	mg/kg	<0.50	---
phosphorus	7723-14-0	E440	50	mg/kg	<50	---



Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Metals (QCLot: 438905) - continued						
potassium	7440-09-7	E440	100	mg/kg	<100	---
selenium	7782-49-2	E440	0.2	mg/kg	<0.20	---
silver	7440-22-4	E440	0.1	mg/kg	<0.10	---
sodium	7440-23-5	E440	50	mg/kg	<50	---
strontium	7440-24-6	E440	0.5	mg/kg	<0.50	---
sulfur	7704-34-9	E440	1000	mg/kg	<1000	---
thallium	7440-28-0	E440	0.05	mg/kg	<0.050	---
tin	7440-31-5	E440	2	mg/kg	<2.0	---
titanium	7440-32-6	E440	1	mg/kg	<1.0	---
tungsten	7440-33-7	E440	0.5	mg/kg	<0.50	---
uranium	7440-61-1	E440	0.05	mg/kg	<0.050	---
vanadium	7440-62-2	E440	0.2	mg/kg	<0.20	---
zinc	7440-66-6	E440	2	mg/kg	<2.0	---
zirconium	7440-67-7	E440	1	mg/kg	<1.0	---
Metals (QCLot: 438906)						
mercury	7439-97-6	E510	0.005	mg/kg	<0.0050	---
Polycyclic Aromatic Hydrocarbons (QCLot: 432881)						
acenaphthene	83-32-9	E641A	0.05	mg/kg	<0.050	---
acenaphthylene	208-96-8	E641A	0.05	mg/kg	<0.050	---
acridine	260-94-6	E641A	0.05	mg/kg	<0.050	---
anthracene	120-12-7	E641A	0.05	mg/kg	<0.050	---
benz(a)anthracene	56-55-3	E641A	0.05	mg/kg	<0.050	---
benzo(a)pyrene	50-32-8	E641A	0.05	mg/kg	<0.050	---
benzo(b+j)fluoranthene	n/a	E641A	0.05	mg/kg	<0.050	---
benzo(g,h,i)perylene	191-24-2	E641A	0.05	mg/kg	<0.050	---
benzo(k)fluoranthene	207-08-9	E641A	0.05	mg/kg	<0.050	---
chrysene	218-01-9	E641A	0.05	mg/kg	<0.050	---
dibenz(a,h)anthracene	53-70-3	E641A	0.05	mg/kg	<0.050	---
fluoranthene	206-44-0	E641A	0.05	mg/kg	<0.050	---
fluorene	86-73-7	E641A	0.05	mg/kg	<0.050	---
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.05	mg/kg	<0.050	---
methylnaphthalene, 1-	90-12-0	E641A	0.05	mg/kg	<0.050	---
methylnaphthalene, 2-	91-57-6	E641A	0.05	mg/kg	<0.050	---
naphthalene	91-20-3	E641A	0.05	mg/kg	<0.050	---
phenanthrene	85-01-8	E641A	0.05	mg/kg	<0.050	---
pyrene	129-00-0	E641A	0.05	mg/kg	<0.050	---



Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Polycyclic Aromatic Hydrocarbons (QCLot: 432881) - continued						
quinoline	91-22-5	E641A	0.05	mg/kg	<0.050	----
Polycyclic Aromatic Hydrocarbons (QCLot: 433112)						
acenaphthene	83-32-9	E641A	0.05	mg/kg	<0.050	----
acenaphthylene	208-96-8	E641A	0.05	mg/kg	<0.050	----
acridine	260-94-6	E641A	0.05	mg/kg	<0.050	----
anthracene	120-12-7	E641A	0.05	mg/kg	<0.050	----
benz(a)anthracene	56-55-3	E641A	0.05	mg/kg	<0.050	----
benzo(a)pyrene	50-32-8	E641A	0.05	mg/kg	<0.050	----
benzo(b+j)fluoranthene	n/a	E641A	0.05	mg/kg	<0.050	----
benzo(g,h,i)perylene	191-24-2	E641A	0.05	mg/kg	<0.050	----
benzo(k)fluoranthene	207-08-9	E641A	0.05	mg/kg	<0.050	----
chrysene	218-01-9	E641A	0.05	mg/kg	<0.050	----
dibenz(a,h)anthracene	53-70-3	E641A	0.05	mg/kg	<0.050	----
fluoranthene	206-44-0	E641A	0.05	mg/kg	<0.050	----
fluorene	86-73-7	E641A	0.05	mg/kg	<0.050	----
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.05	mg/kg	<0.050	----
methylnaphthalene, 1-	90-12-0	E641A	0.05	mg/kg	<0.050	----
methylnaphthalene, 2-	91-57-6	E641A	0.05	mg/kg	<0.050	----
naphthalene	91-20-3	E641A	0.05	mg/kg	<0.050	----
phenanthrene	85-01-8	E641A	0.05	mg/kg	<0.050	----
pyrene	129-00-0	E641A	0.05	mg/kg	<0.050	----
quinoline	91-22-5	E641A	0.05	mg/kg	<0.050	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Soil/Solid

					Laboratory Control Sample (LCS) Report				
Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Physical Tests (QCLot: 432883)									
moisture	---	E144	0.25	%	50 %	97.9	90.0	110	---
Physical Tests (QCLot: 433117)									
moisture	---	E144	0.25	%	50 %	96.9	90.0	110	---
Physical Tests (QCLot: 441606)									
pH (1:2 soil:water)	---	E108	---	pH units	6.86 pH units	100	97.0	103	---
Organic / Inorganic Carbon (QCLot: 439051)									
carbon, inorganic [IC], <63 µm	---	E354A	0.05	%	0.5 %	93.1	80.0	120	---
Organic / Inorganic Carbon (QCLot: 439079)									
carbon, inorganic [IC], <63 µm	---	E354A	0.05	%	0.5 %	93.4	80.0	120	---
Organic / Inorganic Carbon (QCLot: 439143)									
carbon, total [TC], <63µm	---	E351A	0.05	%	48 %	95.8	90.0	110	---
Organic / Inorganic Carbon (QCLot: 439151)									
carbon, total [TC], <63µm	---	E351A	0.05	%	48 %	100.0	90.0	110	---
Metals (QCLot: 438903)									
mercury	7439-97-6	E510	0.005	mg/kg	0.1 mg/kg	94.0	80.0	120	---
Metals (QCLot: 438904)									
aluminum	7429-90-5	E440	50	mg/kg	200 mg/kg	104	80.0	120	---
antimony	7440-36-0	E440	0.1	mg/kg	100 mg/kg	99.9	80.0	120	---
arsenic	7440-38-2	E440	0.1	mg/kg	100 mg/kg	99.8	80.0	120	---
barium	7440-39-3	E440	0.5	mg/kg	25 mg/kg	98.3	80.0	120	---
beryllium	7440-41-7	E440	0.1	mg/kg	10 mg/kg	106	80.0	120	---
bismuth	7440-69-9	E440	0.2	mg/kg	100 mg/kg	107	80.0	120	---
boron	7440-42-8	E440	5	mg/kg	100 mg/kg	104	80.0	120	---
cadmium	7440-43-9	E440	0.02	mg/kg	10 mg/kg	97.7	80.0	120	---
calcium	7440-70-2	E440	50	mg/kg	5000 mg/kg	104	80.0	120	---
chromium	7440-47-3	E440	0.5	mg/kg	25 mg/kg	101	80.0	120	---
cobalt	7440-48-4	E440	0.1	mg/kg	25 mg/kg	100	80.0	120	---
copper	7440-50-8	E440	0.5	mg/kg	25 mg/kg	99.1	80.0	120	---
iron	7439-89-6	E440	50	mg/kg	100 mg/kg	111	80.0	120	---
lead	7439-92-1	E440	0.5	mg/kg	50 mg/kg	104	80.0	120	---
lithium	7439-93-2	E440	2	mg/kg	25 mg/kg	106	80.0	120	---
magnesium	7439-95-4	E440	20	mg/kg	5000 mg/kg	102	80.0	120	---
manganese	7439-96-5	E440	1	mg/kg	25 mg/kg	100	80.0	120	---



Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Metals (QCLot: 438904) - continued									
molybdenum	7439-98-7	E440	0.1	mg/kg	25 mg/kg	102	80.0	120	----
nickel	7440-02-0	E440	0.5	mg/kg	50 mg/kg	96.9	80.0	120	----
phosphorus	7723-14-0	E440	50	mg/kg	1000 mg/kg	101	80.0	120	----
potassium	7440-09-7	E440	100	mg/kg	5000 mg/kg	103	80.0	120	----
selenium	7782-49-2	E440	0.2	mg/kg	100 mg/kg	103	80.0	120	----
silver	7440-22-4	E440	0.1	mg/kg	10 mg/kg	101	80.0	120	----
sodium	7440-23-5	E440	50	mg/kg	5000 mg/kg	102	80.0	120	----
strontium	7440-24-6	E440	0.5	mg/kg	25 mg/kg	105	80.0	120	----
sulfur	7704-34-9	E440	1000	mg/kg	5000 mg/kg	104	80.0	120	----
thallium	7440-28-0	E440	0.05	mg/kg	100 mg/kg	100	80.0	120	----
tin	7440-31-5	E440	2	mg/kg	50 mg/kg	100	80.0	120	----
titanium	7440-32-6	E440	1	mg/kg	25 mg/kg	92.3	80.0	120	----
tungsten	7440-33-7	E440	0.5	mg/kg	10 mg/kg	99.6	80.0	120	----
uranium	7440-61-1	E440	0.05	mg/kg	0.5 mg/kg	104	80.0	120	----
vanadium	7440-62-2	E440	0.2	mg/kg	50 mg/kg	100	80.0	120	----
zinc	7440-66-6	E440	2	mg/kg	50 mg/kg	95.1	80.0	120	----
zirconium	7440-67-7	E440	1	mg/kg	10 mg/kg	99.4	80.0	120	----
Metals (QCLot: 438905)									
aluminum	7429-90-5	E440	50	mg/kg	200 mg/kg	99.7	80.0	120	----
antimony	7440-36-0	E440	0.1	mg/kg	100 mg/kg	102	80.0	120	----
arsenic	7440-38-2	E440	0.1	mg/kg	100 mg/kg	101	80.0	120	----
barium	7440-39-3	E440	0.5	mg/kg	25 mg/kg	103	80.0	120	----
beryllium	7440-41-7	E440	0.1	mg/kg	10 mg/kg	99.1	80.0	120	----
bismuth	7440-69-9	E440	0.2	mg/kg	100 mg/kg	99.1	80.0	120	----
boron	7440-42-8	E440	5	mg/kg	100 mg/kg	96.2	80.0	120	----
cadmium	7440-43-9	E440	0.02	mg/kg	10 mg/kg	99.6	80.0	120	----
calcium	7440-70-2	E440	50	mg/kg	5000 mg/kg	99.9	80.0	120	----
chromium	7440-47-3	E440	0.5	mg/kg	25 mg/kg	97.0	80.0	120	----
cobalt	7440-48-4	E440	0.1	mg/kg	25 mg/kg	102	80.0	120	----
copper	7440-50-8	E440	0.5	mg/kg	25 mg/kg	98.5	80.0	120	----
iron	7439-89-6	E440	50	mg/kg	100 mg/kg	108	80.0	120	----
lead	7439-92-1	E440	0.5	mg/kg	50 mg/kg	97.8	80.0	120	----
lithium	7439-93-2	E440	2	mg/kg	25 mg/kg	102	80.0	120	----
magnesium	7439-95-4	E440	20	mg/kg	5000 mg/kg	105	80.0	120	----
manganese	7439-96-5	E440	1	mg/kg	25 mg/kg	99.6	80.0	120	----
molybdenum	7439-98-7	E440	0.1	mg/kg	25 mg/kg	105	80.0	120	----
nickel	7440-02-0	E440	0.5	mg/kg	50 mg/kg	98.3	80.0	120	----



Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Metals (QCLot: 438905) - continued									
phosphorus	7723-14-0	E440	50	mg/kg	1000 mg/kg	107	80.0	120	----
potassium	7440-09-7	E440	100	mg/kg	5000 mg/kg	104	80.0	120	----
selenium	7782-49-2	E440	0.2	mg/kg	100 mg/kg	103	80.0	120	----
silver	7440-22-4	E440	0.1	mg/kg	10 mg/kg	100	80.0	120	----
sodium	7440-23-5	E440	50	mg/kg	5000 mg/kg	102	80.0	120	----
strontium	7440-24-6	E440	0.5	mg/kg	25 mg/kg	102	80.0	120	----
sulfur	7704-34-9	E440	1000	mg/kg	5000 mg/kg	103	80.0	120	----
thallium	7440-28-0	E440	0.05	mg/kg	100 mg/kg	96.4	80.0	120	----
tin	7440-31-5	E440	2	mg/kg	50 mg/kg	98.4	80.0	120	----
titanium	7440-32-6	E440	1	mg/kg	25 mg/kg	96.2	80.0	120	----
tungsten	7440-33-7	E440	0.5	mg/kg	10 mg/kg	99.0	80.0	120	----
uranium	7440-61-1	E440	0.05	mg/kg	0.5 mg/kg	96.3	80.0	120	----
vanadium	7440-62-2	E440	0.2	mg/kg	50 mg/kg	99.4	80.0	120	----
zinc	7440-66-6	E440	2	mg/kg	50 mg/kg	98.1	80.0	120	----
zirconium	7440-67-7	E440	1	mg/kg	10 mg/kg	104	80.0	120	----
Metals (QCLot: 438906)									
mercury	7439-97-6	E510	0.005	mg/kg	0.1 mg/kg	95.4	80.0	120	----
Polycyclic Aromatic Hydrocarbons (QCLot: 432881)									
acenaphthene	83-32-9	E641A	0.05	mg/kg	0.5 mg/kg	98.9	60.0	130	----
acenaphthylene	208-96-8	E641A	0.05	mg/kg	0.5 mg/kg	86.7	60.0	130	----
acridine	260-94-6	E641A	0.05	mg/kg	0.5 mg/kg	81.5	60.0	130	----
anthracene	120-12-7	E641A	0.05	mg/kg	0.5 mg/kg	87.1	60.0	130	----
benz(a)anthracene	56-55-3	E641A	0.05	mg/kg	0.5 mg/kg	77.4	60.0	130	----
benzo(a)pyrene	50-32-8	E641A	0.05	mg/kg	0.5 mg/kg	78.2	60.0	130	----
benzo(b+j)fluoranthene	n/a	E641A	0.05	mg/kg	0.5 mg/kg	70.8	60.0	130	----
benzo(g,h,i)perylene	191-24-2	E641A	0.05	mg/kg	0.5 mg/kg	105	60.0	130	----
benzo(k)fluoranthene	207-08-9	E641A	0.05	mg/kg	0.5 mg/kg	90.6	60.0	130	----
chrysene	218-01-9	E641A	0.05	mg/kg	0.5 mg/kg	74.6	60.0	130	----
dibenz(a,h)anthracene	53-70-3	E641A	0.05	mg/kg	0.5 mg/kg	78.6	60.0	130	----
fluoranthene	206-44-0	E641A	0.05	mg/kg	0.5 mg/kg	93.5	60.0	130	----
fluorene	86-73-7	E641A	0.05	mg/kg	0.5 mg/kg	89.6	60.0	130	----
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.05	mg/kg	0.5 mg/kg	90.3	60.0	130	----
methylnaphthalene, 1-	90-12-0	E641A	0.05	mg/kg	0.5 mg/kg	97.0	60.0	130	----
methylnaphthalene, 2-	91-57-6	E641A	0.05	mg/kg	0.5 mg/kg	97.5	60.0	130	----
naphthalene	91-20-3	E641A	0.05	mg/kg	0.5 mg/kg	104	50.0	130	----
phenanthrene	85-01-8	E641A	0.05	mg/kg	0.5 mg/kg	93.7	60.0	130	----



Sub-Matrix: Soil/Solid

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Polycyclic Aromatic Hydrocarbons (QCLot: 432881) - continued									
pyrene	129-00-0	E641A	0.05	mg/kg	0.5 mg/kg	95.0	60.0	130	----
quinoline	91-22-5	E641A	0.05	mg/kg	0.5 mg/kg	108	60.0	130	----
Polycyclic Aromatic Hydrocarbons (QCLot: 433112)									
acenaphthene	83-32-9	E641A	0.05	mg/kg	0.5 mg/kg	106	60.0	130	----
acenaphthylene	208-96-8	E641A	0.05	mg/kg	0.5 mg/kg	94.8	60.0	130	----
acridine	260-94-6	E641A	0.05	mg/kg	0.5 mg/kg	85.5	60.0	130	----
anthracene	120-12-7	E641A	0.05	mg/kg	0.5 mg/kg	93.9	60.0	130	----
benz(a)anthracene	56-55-3	E641A	0.05	mg/kg	0.5 mg/kg	87.1	60.0	130	----
benzo(a)pyrene	50-32-8	E641A	0.05	mg/kg	0.5 mg/kg	84.2	60.0	130	----
benzo(b+j)fluoranthene	n/a	E641A	0.05	mg/kg	0.5 mg/kg	79.6	60.0	130	----
benzo(g,h,i)perylene	191-24-2	E641A	0.05	mg/kg	0.5 mg/kg	97.3	60.0	130	----
benzo(k)fluoranthene	207-08-9	E641A	0.05	mg/kg	0.5 mg/kg	78.3	60.0	130	----
chrysene	218-01-9	E641A	0.05	mg/kg	0.5 mg/kg	103	60.0	130	----
dibenz(a,h)anthracene	53-70-3	E641A	0.05	mg/kg	0.5 mg/kg	83.2	60.0	130	----
fluoranthene	206-44-0	E641A	0.05	mg/kg	0.5 mg/kg	101	60.0	130	----
fluorene	86-73-7	E641A	0.05	mg/kg	0.5 mg/kg	96.0	60.0	130	----
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.05	mg/kg	0.5 mg/kg	86.8	60.0	130	----
methylnaphthalene, 1-	90-12-0	E641A	0.05	mg/kg	0.5 mg/kg	103	60.0	130	----
methylnaphthalene, 2-	91-57-6	E641A	0.05	mg/kg	0.5 mg/kg	103	60.0	130	----
naphthalene	91-20-3	E641A	0.05	mg/kg	0.5 mg/kg	111	50.0	130	----
phenanthrene	85-01-8	E641A	0.05	mg/kg	0.5 mg/kg	102	60.0	130	----
pyrene	129-00-0	E641A	0.05	mg/kg	0.5 mg/kg	104	60.0	130	----
quinoline	91-22-5	E641A	0.05	mg/kg	0.5 mg/kg	75.7	60.0	130	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level $\geq 1 \times$ spike level.

Sub-Matrix: Soil/Solid

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	Target	MS	Low	High	
Polycyclic Aromatic Hydrocarbons (QCLot: 432881)										
CG2202822-001	RG_ERCK_SE-01_2022-03-02_1050	acenaphthene	83-32-9	E641A	0.383 mg/kg	0.5 mg/kg	101	50.0	140	----
		acenaphthylene	208-96-8	E641A	0.349 mg/kg	0.5 mg/kg	91.7	50.0	140	----
		acridine	260-94-6	E641A	0.332 mg/kg	0.5 mg/kg	87.2	50.0	140	----
		anthracene	120-12-7	E641A	0.350 mg/kg	0.5 mg/kg	92.0	50.0	140	----
		benz(a)anthracene	56-55-3	E641A	0.337 mg/kg	0.5 mg/kg	88.6	50.0	140	----
		benzo(a)pyrene	50-32-8	E641A	0.321 mg/kg	0.5 mg/kg	84.4	50.0	140	----
		benzo(b+j)fluoranthene	n/a	E641A	0.305 mg/kg	0.5 mg/kg	80.2	50.0	140	----
		benzo(g,h,i)perylene	191-24-2	E641A	0.395 mg/kg	0.5 mg/kg	104	50.0	140	----
		benzo(k)fluoranthene	207-08-9	E641A	0.363 mg/kg	0.5 mg/kg	95.5	50.0	140	----
		chrysene	218-01-9	E641A	0.373 mg/kg	0.5 mg/kg	98.1	50.0	140	----
		dibenz(a,h)anthracene	53-70-3	E641A	0.304 mg/kg	0.5 mg/kg	80.0	50.0	140	----
		fluoranthene	206-44-0	E641A	0.382 mg/kg	0.5 mg/kg	100	50.0	140	----
		fluorene	86-73-7	E641A	0.356 mg/kg	0.5 mg/kg	93.4	50.0	140	----
		indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.349 mg/kg	0.5 mg/kg	91.6	50.0	140	----
		methylnaphthalene, 1-	90-12-0	E641A	0.402 mg/kg	0.5 mg/kg	106	50.0	140	----
		methylnaphthalene, 2-	91-57-6	E641A	0.413 mg/kg	0.5 mg/kg	108	50.0	140	----
		naphthalene	91-20-3	E641A	0.428 mg/kg	0.5 mg/kg	112	50.0	140	----
		phenanthrene	85-01-8	E641A	0.420 mg/kg	0.5 mg/kg	110	50.0	140	----
		pyrene	129-00-0	E641A	0.388 mg/kg	0.5 mg/kg	102	50.0	140	----
		quinoline	91-22-5	E641A	0.360 mg/kg	0.5 mg/kg	94.7	50.0	140	----
Polycyclic Aromatic Hydrocarbons (QCLot: 433112)										
CG2202822-020	RG_ERCKDT_SE-05_2022-03-03_1240	acenaphthene	83-32-9	E641A	0.413 mg/kg	0.5 mg/kg	104	50.0	140	----
		acenaphthylene	208-96-8	E641A	0.380 mg/kg	0.5 mg/kg	95.6	50.0	140	----
		acridine	260-94-6	E641A	0.352 mg/kg	0.5 mg/kg	88.7	50.0	140	----
		anthracene	120-12-7	E641A	0.372 mg/kg	0.5 mg/kg	93.6	50.0	140	----
		benz(a)anthracene	56-55-3	E641A	0.388 mg/kg	0.5 mg/kg	97.6	50.0	140	----
		benzo(a)pyrene	50-32-8	E641A	0.325 mg/kg	0.5 mg/kg	81.8	50.0	140	----
		benzo(b+j)fluoranthene	n/a	E641A	0.363 mg/kg	0.5 mg/kg	91.4	50.0	140	----
		benzo(g,h,i)perylene	191-24-2	E641A	0.379 mg/kg	0.5 mg/kg	95.4	50.0	140	----
		benzo(k)fluoranthene	207-08-9	E641A	0.403 mg/kg	0.5 mg/kg	101	50.0	140	----
		chrysene	218-01-9	E641A	0.406 mg/kg	0.5 mg/kg	102	50.0	140	----



Sub-Matrix: **Soil/Solid**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		Qualifier
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	
Polycyclic Aromatic Hydrocarbons (QCLot: 433112) - continued										
CG2202822-020	RG_ERCKDT_SE-05_2022-03-03_1240	dibenz(a,h)anthracene	53-70-3	E641A	0.365 mg/kg	0.5 mg/kg	91.9	50.0	140	----
		fluoranthene	206-44-0	E641A	0.420 mg/kg	0.5 mg/kg	106	50.0	140	----
		fluorene	86-73-7	E641A	0.396 mg/kg	0.5 mg/kg	99.7	50.0	140	----
		indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.402 mg/kg	0.5 mg/kg	101	50.0	140	----
		methylnaphthalene, 1-	90-12-0	E641A	0.407 mg/kg	0.5 mg/kg	102	50.0	140	----
		methylnaphthalene, 2-	91-57-6	E641A	0.414 mg/kg	0.5 mg/kg	104	50.0	140	----
		naphthalene	91-20-3	E641A	0.442 mg/kg	0.5 mg/kg	111	50.0	140	----
		phenanthrene	85-01-8	E641A	0.430 mg/kg	0.5 mg/kg	108	50.0	140	----
		pyrene	129-00-0	E641A	0.427 mg/kg	0.5 mg/kg	108	50.0	140	----
		quinoline	91-22-5	E641A	0.346 mg/kg	0.5 mg/kg	87.1	50.0	140	----



Reference Material (RM) Report

A Reference Material (RM) is a homogenous material with known and well-established analyte concentrations. RMs are processed in an identical manner to test samples, and are used to monitor and control the accuracy and precision of a test method for a typical sample matrix. RM results are expressed as percent recovery of the target analyte concentration. RM targets may be certified target concentrations provided by the RM supplier, or may be ALS long-term mean values (for empirical test methods).

Sub-Matrix: **Soil/Solid**

Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Reference Material (RM) Report				
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%)		Qualifier
							Low	High	
Physical Tests (QCLot: 441606)									
QC-441606-002	RM	pH (1:2 soil:water)	----	E108	8.13 pH units	97.9	96.0	104	----
Particle Size (QCLot: 438308)									
QC-438308-001	RM	clay (<0.002mm)	----	E180A	19.34 %	101	74.0	126	----
QC-438308-001	RM	sand (2.0mm - 0.05mm)	----	E180A	50.71 %	104	90.0	110	----
QC-438308-001	RM	silt (0.05mm - 0.002mm)	----	E180A	29.96 %	93.0	85.0	115	----
Particle Size (QCLot: 438312)									
QC-438312-001	RM	clay (<0.002mm)	----	E180A	19.34 %	104	74.0	126	----
QC-438312-001	RM	sand (2.0mm - 0.05mm)	----	E180A	50.71 %	102	90.0	110	----
QC-438312-001	RM	silt (0.05mm - 0.002mm)	----	E180A	29.96 %	93.4	85.0	115	----
Organic / Inorganic Carbon (QCLot: 439051)									
QC-439051-003	RM	carbon, inorganic [IC], <63 µm	----	E354A	0.383 %	94.7	80.0	120	----
Organic / Inorganic Carbon (QCLot: 439079)									
QC-439079-003	RM	carbon, inorganic [IC], <63 µm	----	E354A	0.383 %	97.3	80.0	120	----
Organic / Inorganic Carbon (QCLot: 439143)									
QC-439143-003	RM	carbon, total [TC], <63µm	----	E351A	1.4 %	99.8	80.0	120	----
Organic / Inorganic Carbon (QCLot: 439151)									
QC-439151-003	RM	carbon, total [TC], <63µm	----	E351A	1.4 %	103	80.0	120	----
Metals (QCLot: 438903)									
QC-438903-003	RM	mercury	7439-97-6	E510	0.059 mg/kg	96.7	70.0	130	----
Metals (QCLot: 438904)									
QC-438904-003	RM	aluminum	7429-90-5	E440	9817 mg/kg	101	70.0	130	----
QC-438904-003	RM	antimony	7440-36-0	E440	3.99 mg/kg	88.7	70.0	130	----
QC-438904-003	RM	arsenic	7440-38-2	E440	3.73 mg/kg	106	70.0	130	----
QC-438904-003	RM	barium	7440-39-3	E440	105 mg/kg	101	70.0	130	----
QC-438904-003	RM	beryllium	7440-41-7	E440	0.349 mg/kg	106	70.0	130	----
QC-438904-003	RM	boron	7440-42-8	E440	8.5 mg/kg	113	40.0	160	----
QC-438904-003	RM	cadmium	7440-43-9	E440	0.91 mg/kg	98.4	70.0	130	----
QC-438904-003	RM	calcium	7440-70-2	E440	31082 mg/kg	105	70.0	130	----
QC-438904-003	RM	chromium	7440-47-3	E440	101 mg/kg	95.6	70.0	130	----



Sub-Matrix: Soil/Solid

Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Reference Material (RM) Report				
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%)		Qualifier
							Low	High	
Metals (QCLot: 438904) - continued									
QC-438904-003	RM	cobalt	7440-48-4	E440	6.9 mg/kg	99.4	70.0	130	----
QC-438904-003	RM	copper	7440-50-8	E440	123 mg/kg	102	70.0	130	----
QC-438904-003	RM	iron	7439-89-6	E440	23558 mg/kg	100	70.0	130	----
QC-438904-003	RM	lead	7439-92-1	E440	267 mg/kg	105	70.0	130	----
QC-438904-003	RM	lithium	7439-93-2	E440	9.5 mg/kg	113	70.0	130	----
QC-438904-003	RM	magnesium	7439-95-4	E440	5509 mg/kg	99.6	70.0	130	----
QC-438904-003	RM	manganese	7439-96-5	E440	269 mg/kg	98.6	70.0	130	----
QC-438904-003	RM	molybdenum	7439-98-7	E440	1.03 mg/kg	99.6	70.0	130	----
QC-438904-003	RM	nickel	7440-02-0	E440	26.7 mg/kg	99.3	70.0	130	----
QC-438904-003	RM	phosphorus	7723-14-0	E440	752 mg/kg	95.1	70.0	130	----
QC-438904-003	RM	potassium	7440-09-7	E440	1587 mg/kg	105	70.0	130	----
QC-438904-003	RM	silver	7440-22-4	E440	4.06 mg/kg	89.8	70.0	130	----
QC-438904-003	RM	sodium	7440-23-5	E440	797 mg/kg	113	70.0	130	----
QC-438904-003	RM	strontium	7440-24-6	E440	86.1 mg/kg	97.1	70.0	130	----
QC-438904-003	RM	thallium	7440-28-0	E440	0.0786 mg/kg	147	40.0	160	----
QC-438904-003	RM	tin	7440-31-5	E440	10.6 mg/kg	96.5	70.0	130	----
QC-438904-003	RM	titanium	7440-32-6	E440	839 mg/kg	88.0	70.0	130	----
QC-438904-003	RM	uranium	7440-61-1	E440	0.52 mg/kg	116	70.0	130	----
QC-438904-003	RM	vanadium	7440-62-2	E440	32.7 mg/kg	96.9	70.0	130	----
QC-438904-003	RM	zinc	7440-66-6	E440	297 mg/kg	96.0	70.0	130	----
QC-438904-003	RM	zirconium	7440-67-7	E440	5.73 mg/kg	102	70.0	130	----
Metals (QCLot: 438905)									
QC-438905-003	RM	aluminum	7429-90-5	E440	9817 mg/kg	97.4	70.0	130	----
QC-438905-003	RM	antimony	7440-36-0	E440	3.99 mg/kg	94.5	70.0	130	----
QC-438905-003	RM	arsenic	7440-38-2	E440	3.73 mg/kg	108	70.0	130	----
QC-438905-003	RM	barium	7440-39-3	E440	105 mg/kg	102	70.0	130	----
QC-438905-003	RM	beryllium	7440-41-7	E440	0.349 mg/kg	98.2	70.0	130	----
QC-438905-003	RM	boron	7440-42-8	E440	8.5 mg/kg	103	40.0	160	----
QC-438905-003	RM	cadmium	7440-43-9	E440	0.91 mg/kg	107	70.0	130	----
QC-438905-003	RM	calcium	7440-70-2	E440	31082 mg/kg	94.0	70.0	130	----
QC-438905-003	RM	chromium	7440-47-3	E440	101 mg/kg	95.6	70.0	130	----
QC-438905-003	RM	cobalt	7440-48-4	E440	6.9 mg/kg	102	70.0	130	----



Sub-Matrix: Soil/Solid

Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Reference Material (RM) Report					
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%)		Qualifier	
							Low	High		
Metals (QCLot: 438905) - continued										
QC-438905-003	RM	copper	7440-50-8	E440	123 mg/kg	103	70.0	130	----	
QC-438905-003	RM	iron	7439-89-6	E440	23558 mg/kg	99.8	70.0	130	----	
QC-438905-003	RM	lead	7439-92-1	E440	267 mg/kg	98.6	70.0	130	----	
QC-438905-003	RM	lithium	7439-93-2	E440	9.5 mg/kg	99.8	70.0	130	----	
QC-438905-003	RM	magnesium	7439-95-4	E440	5509 mg/kg	101	70.0	130	----	
QC-438905-003	RM	manganese	7439-96-5	E440	269 mg/kg	100	70.0	130	----	
QC-438905-003	RM	molybdenum	7439-98-7	E440	1.03 mg/kg	106	70.0	130	----	
QC-438905-003	RM	nickel	7440-02-0	E440	26.7 mg/kg	101	70.0	130	----	
QC-438905-003	RM	phosphorus	7723-14-0	E440	752 mg/kg	102	70.0	130	----	
QC-438905-003	RM	potassium	7440-09-7	E440	1587 mg/kg	98.9	70.0	130	----	
QC-438905-003	RM	silver	7440-22-4	E440	4.06 mg/kg	102	70.0	130	----	
QC-438905-003	RM	sodium	7440-23-5	E440	797 mg/kg	98.1	70.0	130	----	
QC-438905-003	RM	strontium	7440-24-6	E440	86.1 mg/kg	98.5	70.0	130	----	
QC-438905-003	RM	thallium	7440-28-0	E440	0.0786 mg/kg	139	40.0	160	----	
QC-438905-003	RM	tin	7440-31-5	E440	10.6 mg/kg	103	70.0	130	----	
QC-438905-003	RM	titanium	7440-32-6	E440	839 mg/kg	96.0	70.0	130	----	
QC-438905-003	RM	uranium	7440-61-1	E440	0.52 mg/kg	102	70.0	130	----	
QC-438905-003	RM	vanadium	7440-62-2	E440	32.7 mg/kg	97.7	70.0	130	----	
QC-438905-003	RM	zinc	7440-66-6	E440	297 mg/kg	98.4	70.0	130	----	
QC-438905-003	RM	zirconium	7440-67-7	E440	5.73 mg/kg	102	70.0	130	----	
Metals (QCLot: 438906)										
QC-438906-003	RM	mercury	7439-97-6	E510	0.059 mg/kg	95.8	70.0	130	----	

COCID: MARCH EVO LAEMP 2022 TURNAROUND TIME:

PROJECT/CLIENT INFO				LABORATORY			
Facility Name / Job#	REP	Lab Name	ALS Calgary	Excel	PDF	EDD	
Project Manager	Mike Pope	Lab Contact	Lyudmyla Shvets				
Email	mike.pope@teck.com	Email	lyudmyla.shvets@alsglobal.com				
Address	421 Pine Avenue	Address	2559 29 Street NE				
	Sparwood	Province	BC	City	Calgary	Province	AB
	V0B 2G0	Country	Canada	Postal Code	T1Y 7B5	Country	Canada
	425-8202			Phone Number	1 403 407 1794		

Environmental Division
Calgary
Work Order Reference
CG2202822



Telephone : +1 403 407 1800

SAMPLE DETAILS								ANALYSIS REQUESTED									
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	C-TOC-SK	MET-CCME-FULL-CL	MOISTURE-CL - % Moisture	PSA-PIPET-DETAIL-SK Particle Size	PAH-TMB-D/A-MS-CL- PAHS					
RG_ERCK_SE-01_2022-03-02_1050	RG_ERCK	SE	No	3/2/2022	10:50	G	1	X	X	X	X	X					
RG_ERCK_SE-02_2022-03-02_1050	RG_ERCK	SE	No	3/2/2022	10:50	G	1	X	X	X	X	X					
RG_ERCK_SE-03_2022-03-02_1050	RG_ERCK	SE	No	3/2/2022	10:50	G	1	X	X	X	X	X					
RG_ERCK_SE-04_2022-03-02_1050	RG_ERCK	SE	No	3/2/2022	10:50	G	1	X	X	X	X	X					
RG_ERCK_SE-05_2022-03-02_1050	RG_ERCK	SE	No	3/2/2022	10:50	G	1	X	X	X	X	X					
RG_MIDER_SE-01_2022-03-02_1600	RG_MIDER	SE	No	3/2/2022	16:00	G	1	X	X	X	X	X					
RG_MIDER_SE-02_2022-03-02_1610	RG_MIDER	SE	No	3/2/2022	16:10	G	1	X	X	X	X	X					
RG_MIDER_SE-03_2022-03-02_1620	RG_MIDER	SE	No	3/2/2022	16:20	G	1	X	X	X	X	X					
RG_MIDER_SE-04_2022-03-02_1630	RG_MIDER	SE	No	3/2/2022	16:30	G	1	X	X	X	X	X					
RG_MIDER_SE-05_2022-03-02_1640	RG_MIDER	SE	No	3/2/2022	16:40	G	1	X	X	X	X	X					

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
VPO00816101	Maddy Stokes/Minnow		<i>[Signature]</i> 3/12/22

NO OF BOTTLES RETURNED/DESCRIPTION	Samplers Name	Mobile #
Regular (default) x Priority (2-3 business days) - 50% surcharge Emergency (1 Business Day) - 100% surcharge For Emergency <1 Day, ASAP or Weekend - Contact ALS	Maddy Stokes <i>[Signature]</i>	647-522-0672
	Samplers Signature	Date/Time
		11 - MAR - 22

8

COC ID: MARCH EVO LAEMP 2022 TURNAROUND TIME:

PROJECT/CLIENT INFO				LABORATORY			
Facility Name / Job#	REP	Lab Name	ALS Calgary	Excel	PDF	EDD	
Project Manager	Mike Pope	Lab Contact	Lyudmyla Shvets				
Email	mike.pope@teck.com	Email	lyudmyla.shvets@alsglobal.com				
Address	421 Pine Avenue	Address	2559 29 Street NE				
City	Sparwood	Province	BC	City	Calgary	Province	AB
Postal Code	V0B 2G0	Country	Canada	Postal Code	T1Y 7B5	Country	Canada
Phone Number	250-425-8202	Phone Number	1 403 407 1794				

SAMPLE DETAILS								ANALYSIS REQUESTED									
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	C-TOC-SK	MET-CCME-FULL-CL	MOISTURE-CL - % Moisture	PSA-PIPEL-DETAIL-SK Particle Size	PAH-TMB-D/A-MS-CL- PAHs					
RG_ERCKUT_SE-01_2022-03-03_1000	RG_ERCKUT	SE	No	3/3/2022	1000	G	1	X	X	X	X	X					
RG_ERCKUT_SE-02_2022-03-03_1010	RG_ERCKUT	SE	No	3/3/2022	1010	G	1	X	X	X	X	X					
RG_ERCKUT_SE-03_2022-03-03_1015	RG_ERCKUT	SE	No	3/3/2022	1015	G	1	X	X	X	X	X					
RG_ERCKUT_SE-04_2022-03-03_1020	RG_ERCKUT	SE	No	3/3/2022	1020	G	1	X	X	X	X	X					
RG_ERCKUT_SE-05_2022-03-03_1030	RG_ERCKUT	SE	No	3/3/2022	1030	G	1	X	X	X	X	X					
RG_ERCKDT_SE-01_2022-03-03_1200	RG_ERCKDT	SE	No	3/3/2022	1200	G	1	X	X	X	X	X					
RG_ERCKDT_SE-02_2022-03-03_1215	RG_ERCKDT	SE	No	3/3/2022	1215	G	1	X	X	X	X	X					
RG_ERCKDT_SE-03_2022-03-03_1220	RG_ERCKDT	SE	No	3/3/2022	1220	G	1	X	X	X	X	X					
RG_ERCKDT_SE-04_2022-03-03_1230	RG_ERCKDT	SE	No	3/3/2022	1230	G	1	X	X	X	X	X					
RG_ERCKDT_SE-05_2022-03-03_1240	RG_ERCKDT	SE	No	3/3/2022	1240	G	1	X	X	X	X	X					

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
VPO00816101			

NO. OF DOZZLES RETURNED/DESCRIPTION	Regular (default) <input checked="" type="checkbox"/>	Priority (2-3 business days) - 50% surcharge	Emergency (1 Business Day) - 100% surcharge	For Emergency <1 Day, ASAP or Weekend - Contact ALS	Sampler's Name	Maddy Stokes	Mobile #	647-522-0672
					Sampler's Signature		Date/Time	

COC ID: MARCH EVO LAEMP 2022

TURNAROUND TIME:

PROJECT/CLIENT INFO				LABORATORY			
Facility Name / Job#	RIIP	Lab Name	ALS Calgary	Excel	PDF	EDD	
Project Manager	Mike Pope	Lab Contact	Lyudmyla Shvets				
Email	mike.pope@teck.com	Email	lyudmyla.shvets@alsglobal.com				
Address	421 Pine Avenue	Address	2559 29 Street NE				
City	Spawood	Province	BC	City	Calgary	Province	AB
Postal Code	V0B 2G0	Country	Canada	Postal Code	T1Y 7B5	Country	Canada
Phone Number	250-425-8202	Phone Number	1 403 407 1794				

SAMPLE DETAILS								ANALYSIS REQUESTED							
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	C-TOC-SK	MET-CCME-FULL-CL	MOISTURE-CL - % Moisture	PSA-PIPET-DETAIL-SK Particle Size	PAH-TMB-D/A-MS-CL- PAHs			
RG_ERCKDT_SE-06_2022-03-03_1245	RG_ERCKDT	SE	No	3/3/2022	1245	G	1	X	X	X	X	X			
RG_ERCKDT_SE-07_2022-03-03_1250	RG_ERCKDT	SE	No	3/3/2022	1250	G	1	X	X	X	X	X			
RG_ERCKMD_SE-01_2022-03-03_1430	RG_ERCKMD	SE	No	3/3/2022	1430	G	1	X	X	X	X	X			
RG_ERCKMD_SE-02_2022-03-03_1435	RG_ERCKMD	SE	No	3/3/2022	1435	G	1	X	X	X	X	X			
RG_ERCKMD_SE-03_2022-03-03_1445	RG_ERCKMD	SE	No	3/3/2022	1445	G	1	X	X	X	X	X			
RG_ERCKMD_SE-04_2022-03-03_1450	RG_ERCKMD	SE	No	3/3/2022	1450	G	1	X	X	X	X	X			
RG_ERCKMD_SE-05_2022-03-03_1500	RG_ERCKMD	SE	No	3/3/2022	1500	G	1	X	X	X	X	X			

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
VPO00816101			

NE OF BOTTLES RETURNED/DESCRIPTION	Sampler's Name	Mobile #
Regular (default) x Priority (2-3 business days) - 50% surcharge Emergency (1 Business Day) - 100% surcharge For Emergency <1 Day, ASAP or Weekend - Contact ALS	Maddy Stokes	647-522-0672
	Sampler's Signature	Date/Time



Environmental

CERTIFICATE OF ANALYSIS

Work Order : **CG2204662**
Client : **Teck Coal Limited**
Contact : Mike Pope
Address : 421 PINE AVE
Sparwood BC Canada V0B 2G0
Telephone : ----
Project : REGIONAL EFFECTS PROGRAM
PO : VPO00816101
C-O-C number : APRIL EVO LAEMP 2022
Sampler : Alex McClymont
Site : ----
Quote number : Teck Coal Master Quote
No. of samples received : 4
No. of samples analysed : 4

Page : 1 of 4
Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
Calgary AB Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 23-Apr-2022 08:45
Date Analysis Commenced : 28-Apr-2022
Issue Date : 06-May-2022 17:47

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Brian Wong	Laboratory Assistant	Organics, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Metals, Calgary, Alberta
Hedy Lai	Team Leader - Inorganics	Inorganics, Saskatoon, Saskatchewan
Sara Niroomand		Metals, Calgary, Alberta
Vishnu Patel		Inorganics, Calgary, Alberta



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
 LOR: Limit of Reporting (detection limit).

Unit	Description
-	No Unit
%	percent
mg/kg	milligrams per kilogram
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Sample Comments

Sample	Client Id	Comment
CG2204662-001	RG_GATE_SE-01_2022-04-2 1	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2204662-001	RG_GATE_SE-01_2022-04-2 1	Updated WO to rush TAT as per client.
CG2204662-002	RG_GATE_SE-02_2022-04-2 1	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2204662-003	RG_GATE_SE-03_2022-04-2 1	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2204662-004	RG_RIVER_SE-01_2022-04-2 1	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.



Analytical Results

Sub-Matrix: Soil					Client sample ID	RG_GATE_SE-0	RG_GATE_SE-0	RG_GATE_SE-0	RG_RIVER_SE-0	----
(Matrix: Soil/Solid)						1_2022-04-21	2_2022-04-21	3_2022-04-21	1_2022-04-21	----
Client sampling date / time						21-Apr-2022 10:45	21-Apr-2022 10:45	21-Apr-2022 10:45	21-Apr-2022 10:45	----
Analyte	CAS Number	Method	LOR	Unit	CG2204662-001	CG2204662-002	CG2204662-003	CG2204662-004	-----	
					Result	Result	Result	Result	----	
Physical Tests										
moisture	----	E144	0.25	%	58.6	61.6	60.6	53.8	----	
pH (1:2 soil:water)	----	E108	0.10	pH units	7.78	7.92	7.82	7.81	----	
Particle Size										
grain size curve	----	E185A	-	-	See Attached	See Attached	See Attached	See Attached	----	
clay (<0.004mm)	----	EC184A	1.0	%	13.7	22.8	21.0	11.0	----	
silt (0.063mm - 0.0312mm)	----	EC184A	1.0	%	9.8	16.0	19.2	10.4	----	
silt (0.0312mm - 0.004mm)	----	EC184A	1.0	%	25.5	46.1	42.4	24.6	----	
sand (0.125mm - 0.063mm)	----	EC184A	1.0	%	4.1	4.6	6.4	3.2	----	
sand (0.25mm - 0.125mm)	----	EC184A	1.0	%	3.7	3.2	5.5	3.3	----	
sand (0.5mm - 0.25mm)	----	EC184A	1.0	%	4.5	1.7	3.0	4.0	----	
sand (1.0mm - 0.50mm)	----	EC184A	1.0	%	5.2	2.5	1.7	4.1	----	
sand (2.0mm - 1.0mm)	----	EC184A	1.0	%	7.6	2.4	<1.0	5.4	----	
gravel (>2mm)	----	EC184A	1.0	%	25.9	<1.0	<1.0	34.0	----	
Organic / Inorganic Carbon										
carbon, total [TC]	----	E351	0.050	%	16.0	20.5	19.4	16.6	----	
carbon, inorganic [IC]	----	E354	0.050	%	3.08	3.82	3.42	3.09	----	
carbon, inorganic [IC], (as CaCO3 equivalent)	----	E354	0.40	%	25.7	31.9	28.5	25.7	----	
carbon, total organic [TOC]	----	EC356	0.050	%	12.9	16.7	16.0	13.5	----	
Metals										
aluminum	7429-90-5	E440	50	mg/kg	9680	7510	6370	5100	----	
antimony	7440-36-0	E440	0.10	mg/kg	1.62	1.24	1.28	0.99	----	
arsenic	7440-38-2	E440	0.10	mg/kg	8.08	5.56	6.70	5.92	----	
barium	7440-39-3	E440	0.50	mg/kg	1030	484	854	1640	----	
beryllium	7440-41-7	E440	0.10	mg/kg	0.77	0.75	0.70	0.57	----	
bismuth	7440-69-9	E440	0.20	mg/kg	0.24	<0.20	<0.20	<0.20	----	
boron	7440-42-8	E440	5.0	mg/kg	12.7	9.0	7.7	5.2	----	
cadmium	7440-43-9	E440	0.020	mg/kg	7.65	7.34	8.14	5.72	----	
calcium	7440-70-2	E440	50	mg/kg	145000	189000	170000	139000	----	
chromium	7440-47-3	E440	0.50	mg/kg	24.1	15.1	13.1	18.4	----	



Analytical Results

Sub-Matrix: Soil (Matrix: Soil/Solid)					Client sample ID	RG_GATE_SE-0 1_2022-04-21	RG_GATE_SE-0 2_2022-04-21	RG_GATE_SE-0 3_2022-04-21	RG_RIVER_SE-0 1_2022-04-21	----
Client sampling date / time					21-Apr-2022 10:45	21-Apr-2022 10:45	21-Apr-2022 10:45	21-Apr-2022 10:45	----	
Analyte	CAS Number	Method	LOR	Unit	CG2204662-001	CG2204662-002	CG2204662-003	CG2204662-004	-----	
					Result	Result	Result	Result	---	
Metals										
cobalt	7440-48-4	E440	0.10	mg/kg	13.1	11.2	11.2	10.5	----	
copper	7440-50-8	E440	0.50	mg/kg	30.9	24.0	27.8	23.4	----	
iron	7439-89-6	E440	50	mg/kg	18400	11400	14400	15500	----	
lead	7439-92-1	E440	0.50	mg/kg	14.4	11.7	11.2	10.5	----	
lithium	7439-93-2	E440	2.0	mg/kg	10.2	8.9	8.8	8.5	----	
magnesium	7439-95-4	E440	20	mg/kg	11100	8540	8660	10300	----	
manganese	7439-96-5	E440	1.0	mg/kg	394	274	300	325	----	
mercury	7439-97-6	E510	0.0050	mg/kg	0.0469	0.0484	0.0489	0.0304	----	
molybdenum	7439-98-7	E440	0.10	mg/kg	3.24	2.59	2.88	2.46	----	
nickel	7440-02-0	E440	0.50	mg/kg	95.0	84.2	98.1	76.0	----	
phosphorus	7723-14-0	E440	50	mg/kg	1390	1030	1280	992	----	
potassium	7440-09-7	E440	100	mg/kg	2550	2220	1820	1160	----	
selenium	7782-49-2	E440	0.20	mg/kg	17.8	23.6	25.1	10.7	----	
silver	7440-22-4	E440	0.10	mg/kg	0.44	0.37	0.43	0.34	----	
sodium	7440-23-5	E440	50	mg/kg	139	140	125	102	----	
strontium	7440-24-6	E440	0.50	mg/kg	959	1020	973	642	----	
sulfur	7704-34-9	E440	1000	mg/kg	3400	4800	4200	2700	----	
thallium	7440-28-0	E440	0.050	mg/kg	0.400	0.223	0.310	0.175	----	
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	----	
titanium	7440-32-6	E440	1.0	mg/kg	25.1	9.3	8.2	11.9	----	
tungsten	7440-33-7	E440	0.50	mg/kg	4.21	0.80	0.87	2.37	----	
uranium	7440-61-1	E440	0.050	mg/kg	2.22	2.47	2.49	1.70	----	
vanadium	7440-62-2	E440	0.20	mg/kg	47.1	38.1	36.9	25.2	----	
zinc	7440-66-6	E440	2.0	mg/kg	485	494	506	375	----	
zirconium	7440-67-7	E440	1.0	mg/kg	<1.0	1.1	1.1	<1.0	----	

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: CG2204662	Page	: 1 of 10
Client	: Teck Coal Limited	Laboratory	: Calgary - Environmental
Contact	: Mike Pope	Account Manager	: Lyudmyla Shvets
Address	: 421 PINE AVE Sparwood BC Canada V0B 2G0	Address	: 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5
Telephone	: ----	Telephone	: +1 403 407 1800
Project	: REGIONAL EFFECTS PROGRAM	Date Samples Received	: 23-Apr-2022 08:45
PO	: VPO00816101	Issue Date	: 06-May-2022 17:47
C-O-C number	: APRIL EVO LAEMP 2022		
Sampler	: Alex McClymont		
Site	: ----		
Quote number	: Teck Coal Master Quote		
No. of samples received	: 4		
No. of samples analysed	: 4		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- Method Blank value outliers occur - please see following pages for full details.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **Soil/Solid**

Analyte Group	Laboratory sample ID	Client/Ref Sample ID	Analyte	CAS Number	Method	Result	Limits	Comment
Method Blank (MB) Values								
Metals	QC-MRG2-4724040 01	----	vanadium	7440-62-2	E440	0.24 ^{MB-LOR} mg/kg	0.2 mg/kg	Blank result exceeds permitted value

Result Qualifiers

Qualifier	Description
MB-LOR	Method Blank exceeds ALS DQO. Limits of Reporting have been adjusted for samples with positive hits below 5x blank level.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Soil/Solid**

Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_GATE_SE-01_2022-04-21	E510	21-Apr-2022	29-Apr-2022	----	----		29-Apr-2022	28 days	8 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_GATE_SE-02_2022-04-21	E510	21-Apr-2022	29-Apr-2022	----	----		29-Apr-2022	28 days	8 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_GATE_SE-03_2022-04-21	E510	21-Apr-2022	29-Apr-2022	----	----		29-Apr-2022	28 days	8 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_RIVER_SE-01_2022-04-21	E510	21-Apr-2022	29-Apr-2022	----	----		29-Apr-2022	28 days	8 days	✓	
Metals : Metals in Soil/Solid by CRC ICPMs											
LDPE bag RG_GATE_SE-01_2022-04-21	E440	21-Apr-2022	29-Apr-2022	----	----		30-Apr-2022	180 days	9 days	✓	
Metals : Metals in Soil/Solid by CRC ICPMs											
LDPE bag RG_GATE_SE-02_2022-04-21	E440	21-Apr-2022	29-Apr-2022	----	----		30-Apr-2022	180 days	9 days	✓	
Metals : Metals in Soil/Solid by CRC ICPMs											
LDPE bag RG_GATE_SE-03_2022-04-21	E440	21-Apr-2022	29-Apr-2022	----	----		30-Apr-2022	180 days	9 days	✓	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_RIVER_SE-01_2022-04-21	E440	21-Apr-2022	29-Apr-2022	----	----		30-Apr-2022	180 days	9 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_GATE_SE-01_2022-04-21	E351	21-Apr-2022	----	----	----		05-May-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_GATE_SE-02_2022-04-21	E351	21-Apr-2022	----	----	----		05-May-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_GATE_SE-03_2022-04-21	E351	21-Apr-2022	----	----	----		05-May-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_RIVER_SE-01_2022-04-21	E351	21-Apr-2022	----	----	----		05-May-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve											
LDPE bag RG_GATE_SE-01_2022-04-21	E354	21-Apr-2022	----	----	----		05-May-2022	----	----		
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve											
LDPE bag RG_GATE_SE-02_2022-04-21	E354	21-Apr-2022	----	----	----		05-May-2022	----	----		
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve											
LDPE bag RG_GATE_SE-03_2022-04-21	E354	21-Apr-2022	----	----	----		05-May-2022	----	----		
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve											
LDPE bag RG_RIVER_SE-01_2022-04-21	E354	21-Apr-2022	----	----	----		05-May-2022	----	----		



Matrix: **Soil/Solid**

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_GATE_SE-01_2022-04-21	E185A	21-Apr-2022	----	----	----		06-May-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_GATE_SE-02_2022-04-21	E185A	21-Apr-2022	----	----	----		06-May-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_GATE_SE-03_2022-04-21	E185A	21-Apr-2022	----	----	----		06-May-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_RIVER_SE-01_2022-04-21	E185A	21-Apr-2022	----	----	----		06-May-2022	365 days	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_GATE_SE-01_2022-04-21	E144	21-Apr-2022	----	----	----		29-Apr-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_GATE_SE-02_2022-04-21	E144	21-Apr-2022	----	----	----		29-Apr-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_GATE_SE-03_2022-04-21	E144	21-Apr-2022	----	----	----		29-Apr-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_RIVER_SE-01_2022-04-21	E144	21-Apr-2022	----	----	----		29-Apr-2022	----	----	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag RG_GATE_SE-01_2022-04-21	E108	21-Apr-2022	29-Apr-2022	----	----		29-Apr-2022	30 days	8 days	✔



Matrix: **Soil/Solid**

Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag RG_GATE_SE-02_2022-04-21	E108	21-Apr-2022	29-Apr-2022	----	----		29-Apr-2022	30 days	8 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag RG_GATE_SE-03_2022-04-21	E108	21-Apr-2022	29-Apr-2022	----	----		29-Apr-2022	30 days	8 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag RG_RIVER_SE-01_2022-04-21	E108	21-Apr-2022	29-Apr-2022	----	----		29-Apr-2022	30 days	8 days	✓

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Soil/Solid**

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
Analytical Methods							
Laboratory Duplicates (DUP)							
Mercury in Soil/Solid by CVAAS	E510	472404	1	20	5.0	5.0	✔
Metals in Soil/Solid by CRC ICPMS	E440	472405	1	20	5.0	5.0	✔
Moisture Content by Gravimetry	E144	472107	1	4	25.0	5.0	✔
pH by Meter (1:2 Soil:Water Extraction)	E108	472725	1	5	20.0	5.0	✔
Total Carbon by Combustion	E351	478024	1	14	7.1	5.0	✔
Total Inorganic Carbon by Acetic Acid pH Standard Curve	E354	478096	1	15	6.6	5.0	✔
Laboratory Control Samples (LCS)							
Mercury in Soil/Solid by CVAAS	E510	472404	2	20	10.0	10.0	✔
Metals in Soil/Solid by CRC ICPMS	E440	472405	2	20	10.0	10.0	✔
Moisture Content by Gravimetry	E144	472107	1	4	25.0	5.0	✔
pH by Meter (1:2 Soil:Water Extraction)	E108	472725	2	5	40.0	10.0	✔
Total Carbon by Combustion	E351	478024	2	14	14.2	10.0	✔
Total Inorganic Carbon by Acetic Acid pH Standard Curve	E354	478096	2	15	13.3	10.0	✔
Method Blanks (MB)							
Mercury in Soil/Solid by CVAAS	E510	472404	1	20	5.0	5.0	✔
Metals in Soil/Solid by CRC ICPMS	E440	472405	1	20	5.0	5.0	✔
Moisture Content by Gravimetry	E144	472107	1	4	25.0	5.0	✔
Total Carbon by Combustion	E351	478024	1	14	7.1	5.0	✔
Total Inorganic Carbon by Acetic Acid pH Standard Curve	E354	478096	1	15	6.6	5.0	✔



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
pH by Meter (1:2 Soil:Water Extraction)	E108 Calgary - Environmental	Soil/Solid	BC Lab Manual	pH is determined by potentiometric measurement with a pH electrode at ambient laboratory temperature (normally $20 \pm 5^\circ\text{C}$), and is carried out in accordance with procedures described in the BC Lab Manual (prescriptive method). The procedure involves mixing the dried (at $<60^\circ\text{C}$) and sieved (10mesh/2mm) sample with ultra pure water at a 1:2 ratio of sediment to water. The pH is then measured by a standard pH probe.
Moisture Content by Gravimetry	E144 Calgary - Environmental	Soil/Solid	CCME PHC in Soil - Tier 1	Moisture is measured gravimetrically by drying the sample at 105°C . Moisture content is calculated as the weight loss (due to water) divided by the wet weight of the sample, expressed as a percentage.
Grain Size Report (Attachment) Pipet/Sieve Method	E185A Saskatoon - Environmental	Soil/Solid	SSIR-51 Method 3.2.1	A grain size curve is a graphical representation of the particle sizing of a sample representing the percent passing against the effective particle size.
Total Carbon by Combustion	E351 Saskatoon - Environmental	Soil/Solid	CSSS (2008) 21.2 (mod)	Total Carbon is determined by the high temperature combustion method with measurement by an infrared detector.
Total Inorganic Carbon by Acetic Acid pH Standard Curve	E354 Saskatoon - Environmental	Soil/Solid	CSSS (2008) 20.2	Total Inorganic Carbon is determined by acetic acid pH standard curve, where a known quantity of acetic acid is consumed by reaction with carbonates in the soil. The pH of the resulting solution is measured and compared against a standard curve relating pH to weight of carbonate.
Metals in Soil/Solid by CRC ICPMS	E440 Calgary - Environmental	Soil/Solid	EPA 6020B (mod)	This method is intended to liberate metals that may be environmentally available. Samples are dried, then sieved through a 2 mm sieve, and digested with HNO_3 and HCl . Dependent on sample matrix, some metals may be only partially recovered, including Al, Ba, Be, Cr, Sr, Ti, Tl, V, W, and Zr. Silicate minerals are not solubilized. Volatile forms of sulfur (including sulfide) may not be captured, as they may be lost during sampling, storage, or digestion. This method does not adequately recover elemental sulfur, and is unsuitable for assessment of elemental sulfur standards or guidelines. Analysis is by Collision/Reaction Cell ICPMS.
Mercury in Soil/Solid by CVAAS	E510 Calgary - Environmental	Soil/Solid	EPA 200.2/1631 Appendix (mod)	Samples are dried, then sieved through a 2 mm sieve, and digested with HNO_3 and HCl , followed by CVAAS analysis.
Particle Size Analysis (Pipette) - Wentworth Classification	EC184A Saskatoon - Environmental	Soil/Solid	Modified Wentworth	The particle size determination is performed by various methods to generate a Grain Size curve. The data from the curve is then used to produce particle size ranges based on the Modified Wentworth Classification system.



<i>Analytical Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
Total Organic Carbon (Calculated) in soil	EC356 Saskatoon - Environmental	Soil/Solid	CSSS (2008) 21.2	Total Organic Carbon (TOC) is calculated by the difference between total carbon (TC) and total inorganic carbon (TIC).
<i>Preparation Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
Leach 1:2 Soil:Water for pH/EC	EP108 Calgary - Environmental	Soil/Solid	BC WLAP METHOD: PH, ELECTROMETRIC, SOIL	The procedure involves mixing the dried (at <60°C) and sieved (No. 10 / 2mm) sample with deionized/distilled water at a 1:2 ratio of sediment to water.
Digestion for Metals and Mercury	EP440 Calgary - Environmental	Soil/Solid	EPA 200.2 (mod)	Samples are dried, then sieved through a 2 mm sieve, and digested with HNO ₃ and HCl. This method is intended to liberate metals that may be environmentally available.
Dry and Grind	EPP442 Calgary - Environmental	Soil/Solid	Soil Sampling and Methods of Analysis, Carter 2008	After removal of any coarse fragments and reservation of wet subsamples a portion of homogenized sample is set in a tray and dried at less than 60°C until dry. The sample is then particle size reduced with an automated crusher or mortar and pestle, typically to <2 mm. Further size reduction may be needed for particular tests.



QUALITY CONTROL REPORT

Work Order : CG2204662

Page : 1 of 10

Client : Teck Coal Limited
Contact : Mike Pope
Address : 421 PINE AVE
Sparwood BC Canada V0B 2G0
Telephone : ----
Project : REGIONAL EFFECTS PROGRAM
PO : VPO00816101
C-O-C number : APRIL EVO LAEMP 2022
Sampler : Alex McClymont
Site : ----
Quote number : Teck Coal Master Quote
No. of samples received : 4
No. of samples analysed : 4

Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
Calgary, Alberta Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 23-Apr-2022 08:45
Date Analysis Commenced : 28-Apr-2022
Issue Date : 06-May-2022 17:47

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
Matrix Spike (MS) Report; Recovery and Acceptance Limits
Reference Material (RM) Report; Recovery and Acceptance Limits
Method Blank (MB) Report; Recovery and Acceptance Limits
Laboratory Control Sample (LCS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Table with 3 columns: Signatories, Position, Laboratory Department. Rows include Brian Wong, Harpreet Chawla, Hedy Lai, Sara Niroomand, and Vishnu Patel.



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Services number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percentage Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test specific).

Sub-Matrix: Soil/Solid

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 472107)											
CG2204662-001	RG_GATE_SE-01_2022-04-21	moisture	----	E144	0.25	%	58.6	56.8	3.07%	20%	----
Physical Tests (QC Lot: 472725)											
CG2204662-001	RG_GATE_SE-01_2022-04-21	pH (1:2 soil:water)	----	E108	0.10	pH units	7.78	7.79	0.128%	5%	----
Organic / Inorganic Carbon (QC Lot: 478024)											
VA22A9169-001	Anonymous	carbon, total [TC]	----	E351	0.050	%	0.541	0.497	8.51%	20%	----
Organic / Inorganic Carbon (QC Lot: 478096)											
CG2204662-001	RG_GATE_SE-01_2022-04-21	carbon, inorganic [IC]	----	E354	0.050	%	3.08	3.05	0.953%	20%	----
Metals (QC Lot: 472404)											
CG2204662-001	RG_GATE_SE-01_2022-04-21	mercury	7439-97-6	E510	0.0050	mg/kg	0.0469	0.0507	7.86%	40%	----
Metals (QC Lot: 472405)											
CG2204662-001	RG_GATE_SE-01_2022-04-21	aluminum	7429-90-5	E440	50	mg/kg	9680	8460	13.5%	40%	----
		antimony	7440-36-0	E440	0.10	mg/kg	1.62	1.33	19.3%	30%	----
		arsenic	7440-38-2	E440	0.10	mg/kg	8.08	7.08	13.1%	30%	----
		barium	7440-39-3	E440	0.50	mg/kg	1030	970	5.86%	40%	----
		beryllium	7440-41-7	E440	0.10	mg/kg	0.77	0.69	10.7%	30%	----
		bismuth	7440-69-9	E440	0.20	mg/kg	0.24	0.23	0.01	Diff <2x LOR	----
		boron	7440-42-8	E440	5.0	mg/kg	12.7	11.8	0.9	Diff <2x LOR	----
		cadmium	7440-43-9	E440	0.020	mg/kg	7.65	6.55	15.6%	30%	----
		calcium	7440-70-2	E440	50	mg/kg	145000	128000	12.8%	30%	----
		chromium	7440-47-3	E440	0.50	mg/kg	24.1	19.6	20.4%	30%	----
		cobalt	7440-48-4	E440	0.10	mg/kg	13.1	11.5	13.3%	30%	----
		copper	7440-50-8	E440	0.50	mg/kg	30.9	26.7	14.4%	30%	----
		iron	7439-89-6	E440	50	mg/kg	18400	16900	8.28%	30%	----
		lead	7439-92-1	E440	0.50	mg/kg	14.4	14.7	2.44%	40%	----
		lithium	7439-93-2	E440	2.0	mg/kg	10.2	9.2	1.0	Diff <2x LOR	----
		magnesium	7439-95-4	E440	20	mg/kg	11100	9760	13.2%	30%	----
		manganese	7439-96-5	E440	1.0	mg/kg	394	337	15.6%	30%	----
		molybdenum	7439-98-7	E440	0.10	mg/kg	3.24	2.72	17.3%	40%	----
		nickel	7440-02-0	E440	0.50	mg/kg	95.0	84.5	11.6%	30%	----



Sub-Matrix: **Soil/Solid**

Laboratory Duplicate (DUP) Report

<i>Laboratory sample ID</i>	<i>Client sample ID</i>	<i>Analyte</i>	<i>CAS Number</i>	<i>Method</i>	<i>LOR</i>	<i>Unit</i>	<i>Original Result</i>	<i>Duplicate Result</i>	<i>RPD(%) or Difference</i>	<i>Duplicate Limits</i>	<i>Qualifier</i>
Metals (QC Lot: 472405) - continued											
CG2204662-001	RG_GATE_SE-01_2022-04-21	phosphorus	7723-14-0	E440	50	mg/kg	1390	1150	19.1%	30%	----
		potassium	7440-09-7	E440	100	mg/kg	2550	2280	11.3%	40%	----
		selenium	7782-49-2	E440	0.20	mg/kg	17.8	16.4	8.17%	30%	----
		silver	7440-22-4	E440	0.10	mg/kg	0.44	0.36	0.08	Diff <2x LOR	----
		sodium	7440-23-5	E440	50	mg/kg	139	118	21	Diff <2x LOR	----
		strontium	7440-24-6	E440	0.50	mg/kg	959	820	15.7%	40%	----
		sulfur	7704-34-9	E440	1000	mg/kg	3400	2800	600	Diff <2x LOR	----
		thallium	7440-28-0	E440	0.050	mg/kg	0.400	0.348	13.8%	30%	----
		tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	0	Diff <2x LOR	----
		titanium	7440-32-6	E440	1.0	mg/kg	25.1	22.8	9.47%	40%	----
		tungsten	7440-33-7	E440	0.50	mg/kg	4.21	3.42	20.7%	30%	----
		uranium	7440-61-1	E440	0.050	mg/kg	2.22	1.96	12.6%	30%	----
		vanadium	7440-62-2	E440	0.20	mg/kg	47.1	40.8	14.2%	30%	----
		zinc	7440-66-6	E440	2.0	mg/kg	485	414	15.7%	30%	----
		zirconium	7440-67-7	E440	1.0	mg/kg	<1.0	<1.0	0	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 472107)						
moisture	----	E144	0.25	%	<0.25	----
Organic / Inorganic Carbon (QCLot: 478024)						
carbon, total [TC]	----	E351	0.05	%	<0.050	----
Organic / Inorganic Carbon (QCLot: 478096)						
carbon, inorganic [IC]	----	E354	0.05	%	<0.050	----
Metals (QCLot: 472404)						
mercury	7439-97-6	E510	0.005	mg/kg	<0.0050	----
Metals (QCLot: 472405)						
aluminum	7429-90-5	E440	50	mg/kg	<50	----
antimony	7440-36-0	E440	0.1	mg/kg	<0.10	----
arsenic	7440-38-2	E440	0.1	mg/kg	<0.10	----
barium	7440-39-3	E440	0.5	mg/kg	<0.50	----
beryllium	7440-41-7	E440	0.1	mg/kg	<0.10	----
bismuth	7440-69-9	E440	0.2	mg/kg	<0.20	----
boron	7440-42-8	E440	5	mg/kg	<5.0	----
cadmium	7440-43-9	E440	0.02	mg/kg	<0.020	----
calcium	7440-70-2	E440	50	mg/kg	<50	----
chromium	7440-47-3	E440	0.5	mg/kg	<0.50	----
cobalt	7440-48-4	E440	0.1	mg/kg	<0.10	----
copper	7440-50-8	E440	0.5	mg/kg	<0.50	----
iron	7439-89-6	E440	50	mg/kg	<50	----
lead	7439-92-1	E440	0.5	mg/kg	<0.50	----
lithium	7439-93-2	E440	2	mg/kg	<2.0	----
magnesium	7439-95-4	E440	20	mg/kg	<20	----
manganese	7439-96-5	E440	1	mg/kg	<1.0	----
molybdenum	7439-98-7	E440	0.1	mg/kg	<0.10	----
nickel	7440-02-0	E440	0.5	mg/kg	<0.50	----
phosphorus	7723-14-0	E440	50	mg/kg	<50	----
potassium	7440-09-7	E440	100	mg/kg	<100	----
selenium	7782-49-2	E440	0.2	mg/kg	<0.20	----
silver	7440-22-4	E440	0.1	mg/kg	<0.10	----
sodium	7440-23-5	E440	50	mg/kg	<50	----
strontium	7440-24-6	E440	0.5	mg/kg	<0.50	----



Sub-Matrix: **Soil/Solid**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Metals (QCLot: 472405) - continued						
sulfur	7704-34-9	E440	1000	mg/kg	<1000	----
thallium	7440-28-0	E440	0.05	mg/kg	<0.050	----
tin	7440-31-5	E440	2	mg/kg	<2.0	----
titanium	7440-32-6	E440	1	mg/kg	<1.0	----
tungsten	7440-33-7	E440	0.5	mg/kg	<0.50	----
uranium	7440-61-1	E440	0.05	mg/kg	<0.050	----
vanadium	7440-62-2	E440	0.2	mg/kg	# 0.24	MB-LOR
zinc	7440-66-6	E440	2	mg/kg	<2.0	----
zirconium	7440-67-7	E440	1	mg/kg	<1.0	----

Qualifiers

Qualifier	Description
MB-LOR	Method Blank exceeds ALS DQO. Limits of Reporting have been adjusted for samples with positive hits below 5x blank level.



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Soil/Solid

					Laboratory Control Sample (LCS) Report				
Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Physical Tests (QCLot: 472107)									
moisture	---	E144	0.25	%	50 %	97.2	90.0	110	---
Physical Tests (QCLot: 472725)									
pH (1:2 soil:water)	---	E108	---	pH units	7 pH units	100	97.0	103	---
Organic / Inorganic Carbon (QCLot: 478024)									
carbon, total [TC]	---	E351	0.05	%	48 %	97.0	90.0	110	---
Organic / Inorganic Carbon (QCLot: 478096)									
carbon, inorganic [IC]	---	E354	0.05	%	0.5 %	96.7	90.0	110	---
Metals (QCLot: 472404)									
mercury	7439-97-6	E510	0.005	mg/kg	0.1 mg/kg	96.6	80.0	120	---
Metals (QCLot: 472405)									
aluminum	7429-90-5	E440	50	mg/kg	200 mg/kg	105	80.0	120	---
antimony	7440-36-0	E440	0.1	mg/kg	100 mg/kg	115	80.0	120	---
arsenic	7440-38-2	E440	0.1	mg/kg	100 mg/kg	108	80.0	120	---
barium	7440-39-3	E440	0.5	mg/kg	25 mg/kg	110	80.0	120	---
beryllium	7440-41-7	E440	0.1	mg/kg	10 mg/kg	98.2	80.0	120	---
bismuth	7440-69-9	E440	0.2	mg/kg	100 mg/kg	101	80.0	120	---
boron	7440-42-8	E440	5	mg/kg	100 mg/kg	100	80.0	120	---
cadmium	7440-43-9	E440	0.02	mg/kg	10 mg/kg	108	80.0	120	---
calcium	7440-70-2	E440	50	mg/kg	5000 mg/kg	99.7	80.0	120	---
chromium	7440-47-3	E440	0.5	mg/kg	25 mg/kg	113	80.0	120	---
cobalt	7440-48-4	E440	0.1	mg/kg	25 mg/kg	106	80.0	120	---
copper	7440-50-8	E440	0.5	mg/kg	25 mg/kg	106	80.0	120	---
iron	7439-89-6	E440	50	mg/kg	100 mg/kg	117	80.0	120	---
lead	7439-92-1	E440	0.5	mg/kg	50 mg/kg	103	80.0	120	---
lithium	7439-93-2	E440	2	mg/kg	25 mg/kg	99.6	80.0	120	---
magnesium	7439-95-4	E440	20	mg/kg	5000 mg/kg	105	80.0	120	---
manganese	7439-96-5	E440	1	mg/kg	25 mg/kg	106	80.0	120	---
molybdenum	7439-98-7	E440	0.1	mg/kg	25 mg/kg	102	80.0	120	---
nickel	7440-02-0	E440	0.5	mg/kg	50 mg/kg	114	80.0	120	---
phosphorus	7723-14-0	E440	50	mg/kg	1000 mg/kg	110	80.0	120	---
potassium	7440-09-7	E440	100	mg/kg	5000 mg/kg	115	80.0	120	---
selenium	7782-49-2	E440	0.2	mg/kg	100 mg/kg	107	80.0	120	---



Sub-Matrix: Soil/Solid

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Metals (QCLot: 472405) - continued									
silver	7440-22-4	E440	0.1	mg/kg	10 mg/kg	92.1	80.0	120	----
sodium	7440-23-5	E440	50	mg/kg	5000 mg/kg	106	80.0	120	----
strontium	7440-24-6	E440	0.5	mg/kg	25 mg/kg	94.9	80.0	120	----
sulfur	7704-34-9	E440	1000	mg/kg	5000 mg/kg	94.7	80.0	120	----
thallium	7440-28-0	E440	0.05	mg/kg	100 mg/kg	97.4	80.0	120	----
tin	7440-31-5	E440	2	mg/kg	50 mg/kg	104	80.0	120	----
titanium	7440-32-6	E440	1	mg/kg	25 mg/kg	109	80.0	120	----
tungsten	7440-33-7	E440	0.5	mg/kg	10 mg/kg	101	80.0	120	----
uranium	7440-61-1	E440	0.05	mg/kg	0.5 mg/kg	105	80.0	120	----
vanadium	7440-62-2	E440	0.2	mg/kg	50 mg/kg	107	80.0	120	----
zinc	7440-66-6	E440	2	mg/kg	50 mg/kg	107	80.0	120	----
zirconium	7440-67-7	E440	1	mg/kg	10 mg/kg	97.2	80.0	120	----



Reference Material (RM) Report

A Reference Material (RM) is a homogenous material with known and well-established analyte concentrations. RMs are processed in an identical manner to test samples, and are used to monitor and control the accuracy and precision of a test method for a typical sample matrix. RM results are expressed as percent recovery of the target analyte concentration. RM targets may be certified target concentrations provided by the RM supplier, or may be ALS long-term mean values (for empirical test methods).

Sub-Matrix: **Soil/Solid**

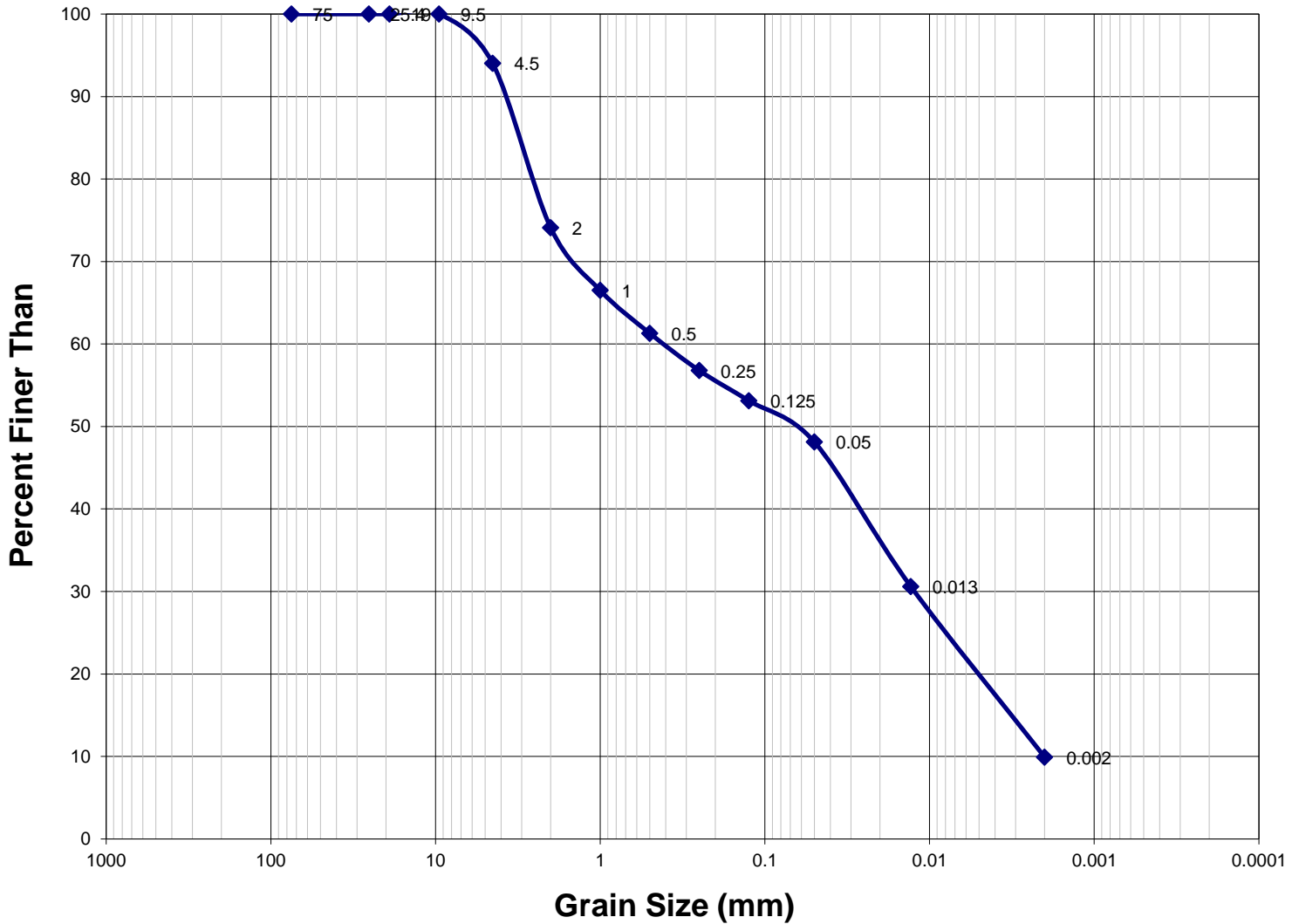
Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Reference Material (RM) Report				
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%)		Qualifier
							Low	High	
Physical Tests (QCLot: 472725)									
QC-472725-002	RM	pH (1:2 soil:water)	----	E108	8.06 pH units	98.8	96.0	104	----
Organic / Inorganic Carbon (QCLot: 478024)									
QC-478024-003	RM	carbon, total [TC]	----	E351	1.4 %	99.9	80.0	120	----
Organic / Inorganic Carbon (QCLot: 478096)									
QC-478096-003	RM	carbon, inorganic [IC]	----	E354	0.383 %	97.5	80.0	120	----
Metals (QCLot: 472404)									
QC-472404-003	RM	mercury	7439-97-6	E510	0.062 mg/kg	91.0	70.0	130	----
Metals (QCLot: 472405)									
QC-472405-003	RM	aluminum	7429-90-5	E440	9817 mg/kg	108	70.0	130	----
QC-472405-003	RM	antimony	7440-36-0	E440	3.99 mg/kg	110	70.0	130	----
QC-472405-003	RM	arsenic	7440-38-2	E440	3.73 mg/kg	104	70.0	130	----
QC-472405-003	RM	barium	7440-39-3	E440	105 mg/kg	108	70.0	130	----
QC-472405-003	RM	beryllium	7440-41-7	E440	0.349 mg/kg	110	70.0	130	----
QC-472405-003	RM	boron	7440-42-8	E440	8.5 mg/kg	124	40.0	160	----
QC-472405-003	RM	cadmium	7440-43-9	E440	0.91 mg/kg	104	70.0	130	----
QC-472405-003	RM	calcium	7440-70-2	E440	31082 mg/kg	104	70.0	130	----
QC-472405-003	RM	chromium	7440-47-3	E440	101 mg/kg	117	70.0	130	----
QC-472405-003	RM	cobalt	7440-48-4	E440	6.9 mg/kg	109	70.0	130	----
QC-472405-003	RM	copper	7440-50-8	E440	123 mg/kg	110	70.0	130	----
QC-472405-003	RM	iron	7439-89-6	E440	23558 mg/kg	108	70.0	130	----
QC-472405-003	RM	lead	7439-92-1	E440	267 mg/kg	104	70.0	130	----
QC-472405-003	RM	lithium	7439-93-2	E440	9.5 mg/kg	117	70.0	130	----
QC-472405-003	RM	magnesium	7439-95-4	E440	5509 mg/kg	110	70.0	130	----
QC-472405-003	RM	manganese	7439-96-5	E440	269 mg/kg	110	70.0	130	----
QC-472405-003	RM	molybdenum	7439-98-7	E440	1.03 mg/kg	106	70.0	130	----
QC-472405-003	RM	nickel	7440-02-0	E440	26.7 mg/kg	121	70.0	130	----
QC-472405-003	RM	phosphorus	7723-14-0	E440	752 mg/kg	103	70.0	130	----
QC-472405-003	RM	potassium	7440-09-7	E440	1587 mg/kg	115	70.0	130	----
QC-472405-003	RM	silver	7440-22-4	E440	4.06 mg/kg	103	70.0	130	----



Sub-Matrix: Soil/Solid

Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Reference Material (RM) Report					
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%)		Qualifier	
							Low	High		
Metals (QCLot: 472405) - continued										
QC-472405-003	RM	sodium	7440-23-5	E440	797 mg/kg	112	70.0	130	----	
QC-472405-003	RM	strontium	7440-24-6	E440	86.1 mg/kg	98.3	70.0	130	----	
QC-472405-003	RM	thallium	7440-28-0	E440	0.0786 mg/kg	98.4	40.0	160	----	
QC-472405-003	RM	tin	7440-31-5	E440	10.6 mg/kg	104	70.0	130	----	
QC-472405-003	RM	titanium	7440-32-6	E440	839 mg/kg	113	70.0	130	----	
QC-472405-003	RM	uranium	7440-61-1	E440	0.52 mg/kg	106	70.0	130	----	
QC-472405-003	RM	vanadium	7440-62-2	E440	32.7 mg/kg	109	70.0	130	----	
QC-472405-003	RM	zinc	7440-66-6	E440	297 mg/kg	108	70.0	130	----	
QC-472405-003	RM	zirconium	7440-67-7	E440	5.73 mg/kg	99.0	70.0	130	----	

Particle Size Distribution Curve



Summary of Results

Unified Soil Classification System (USCS)

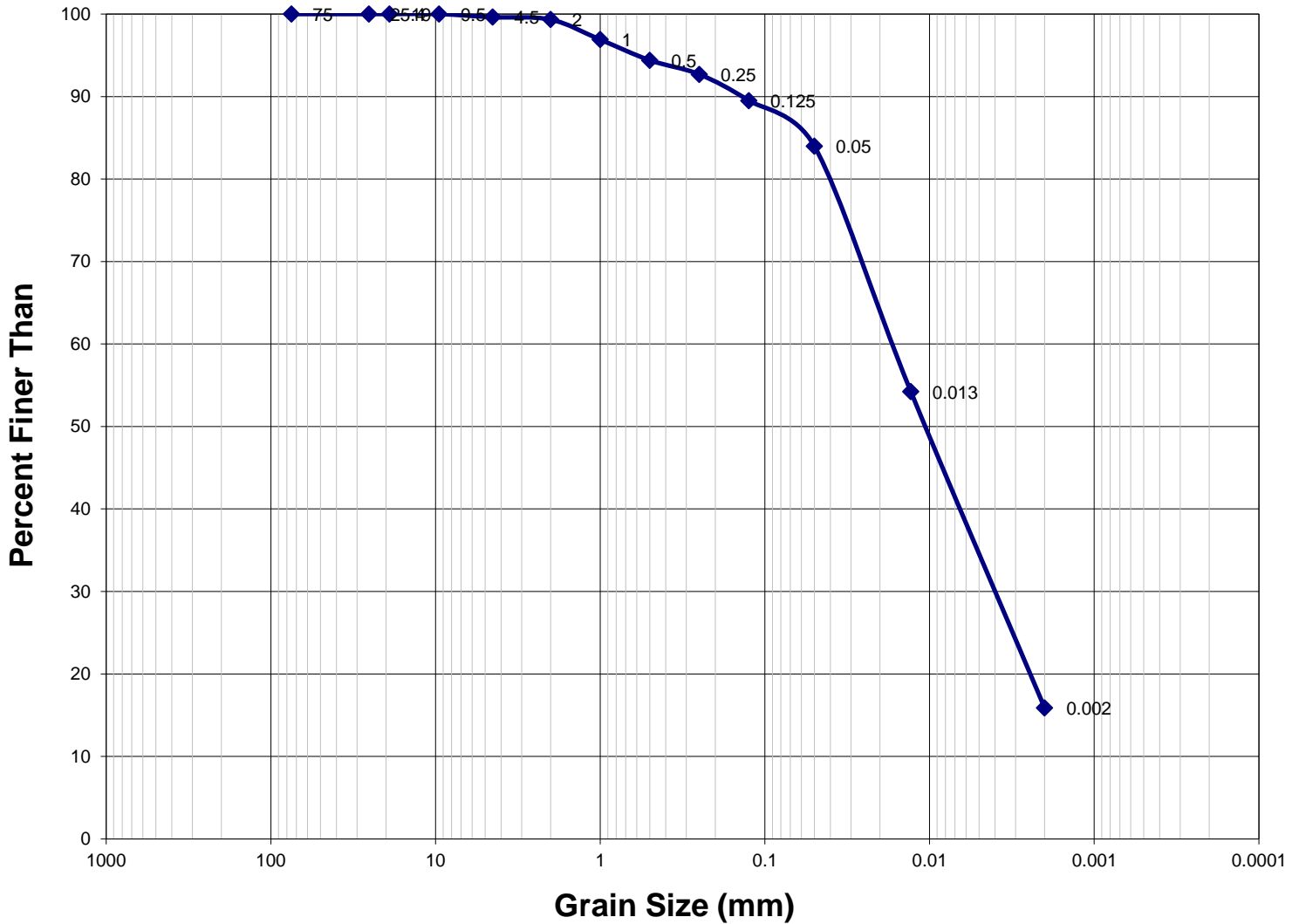
Size Class	Size Range	Wt. (%)
Cobbles	> 3"	0
Gravel	4.75mm - 3"	6
Coarse Sand	2.0mm - 4.75mm	20
Medium Sand	0.425mm - 2.0mm	13
Fine Sand	0.075mm - 0.425mm	12
Fines	< 0.075mm	50

Canadian Soil Survey Committee (CSSC)

Size Class	Size Range	Wt. (%)
Cobbles	> 3"	0
Gravel	2mm - 3"	26
Sand	0.05mm - 2mm	26
Silt	0.002mm - 0.05mm	38
Clay	< 0.002mm	10

Texture: Sample contains material greater than 4.75mm. T

Particle Size Distribution Curve



Summary of Results

Unified Soil Classification System (USCS)

Size Class	Size Range	Wt. (%)
Cobbles	> 3"	0
Gravel	4.75mm - 3"	0
Coarse Sand	2.0mm - 4.75mm	0
Medium Sand	0.425mm - 2.0mm	5
Fine Sand	0.075mm - 0.425mm	9
Fines	< 0.075mm	86

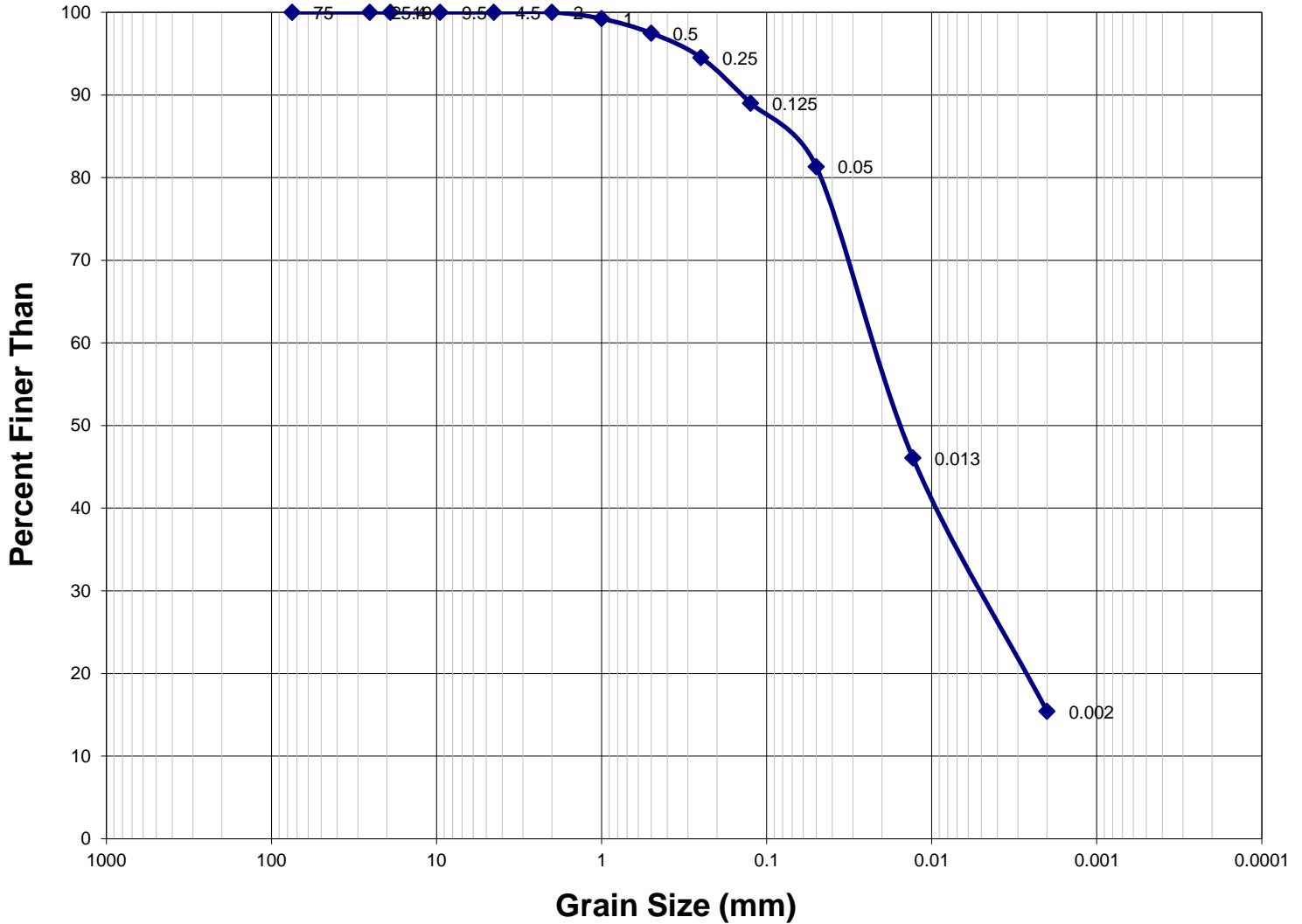
Canadian Soil Survey Committee (CSSC)

Size Class	Size Range	Wt. (%)
Cobbles	> 3"	0
Gravel	2mm - 3"	1
Sand	0.05mm - 2mm	15
Silt	0.002mm - 0.05mm	68
Clay	< 0.002mm	16

Texture Sample contains material greater than 4.75mm. T



Particle Size Distribution Curve



Summary of Results

Unified Soil Classification System (USCS)

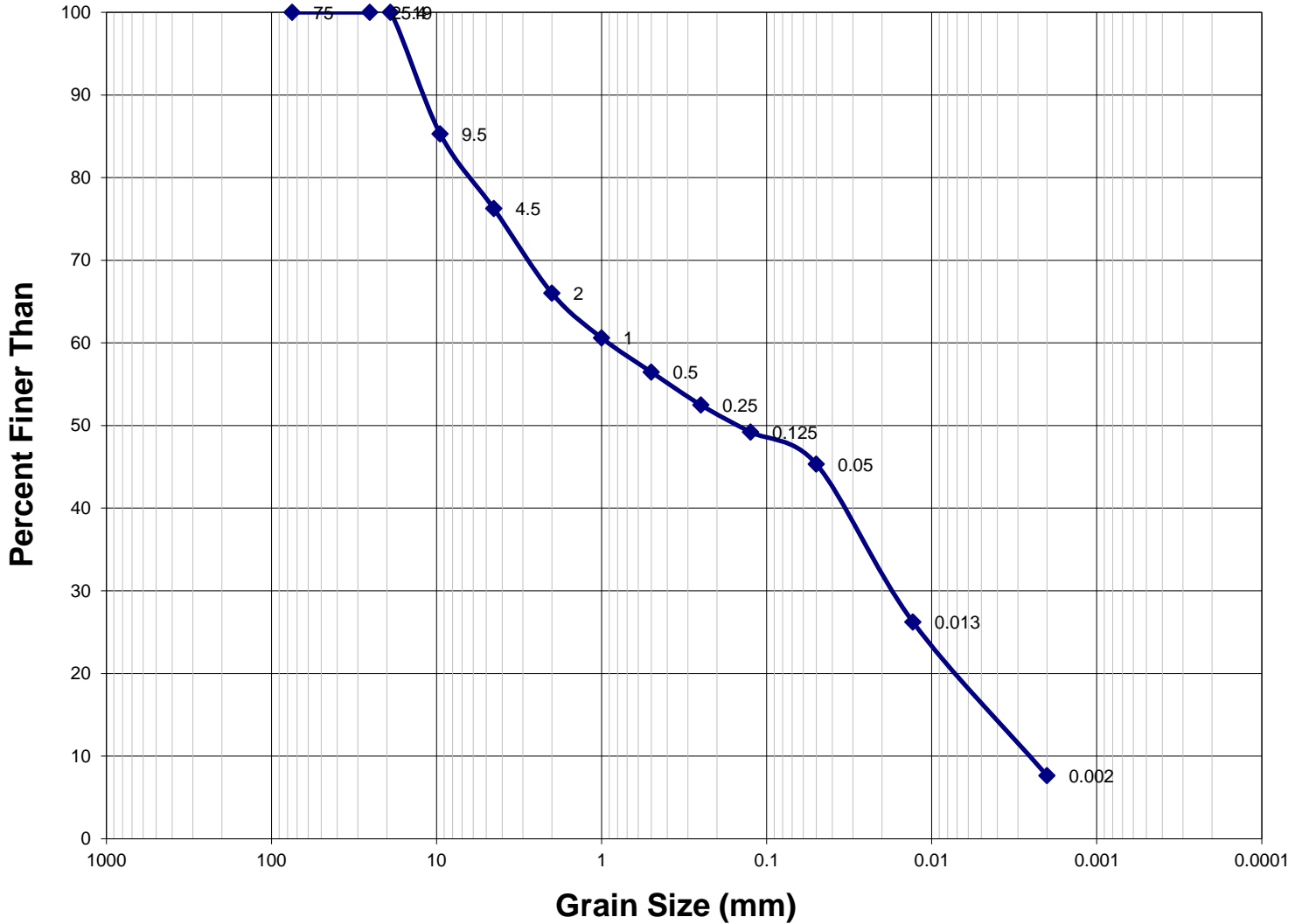
Size Class	Size Range	Wt. (%)
Cobbles	> 3"	0
Gravel	4.75mm - 3"	0
Coarse Sand	2.0mm - 4.75mm	0
Medium Sand	0.425mm - 2.0mm	3
Fine Sand	0.075mm - 0.425mm	14
Fines	< 0.075mm	84

Canadian Soil Survey Committee (CSCS)

Size Class	Size Range	Wt. (%)
Cobbles	> 3"	0
Gravel	2mm - 3"	0
Sand	0.05mm - 2mm	19
Silt	0.002mm - 0.05mm	66
Clay	< 0.002mm	15

Texture: Silt loam

Particle Size Distribution Curve



Summary of Results

Unified Soil Classification System (USCS)

Size Class	Size Range	Wt. (%)
Cobbles	> 3"	0
Gravel	4.75mm - 3"	23
Coarse Sand	2.0mm - 4.75mm	11
Medium Sand	0.425mm - 2.0mm	10
Fine Sand	0.075mm - 0.425mm	10
Fines	< 0.075mm	47

Canadian Soil Survey Committee (CSSC)

Size Class	Size Range	Wt. (%)
Cobbles	> 3"	0
Gravel	2mm - 3"	34
Sand	0.05mm - 2mm	21
Silt	0.002mm - 0.05mm	38
Clay	< 0.002mm	8

Texture Sample contains material greater than 4.75mm. T

Teck

COC ID: APRIL EVO LAEMP 2022 TURNAROUND TIME:

PROJECT/CLIENT INFO				LABORATORY			
Facility Name / Job#	REP	City		Lab Name	ALS Calgary	Excel	
Project Manager	Mike Pope	Province		Lab Contact	Lyudmyla Shvets		
Email	mike.pope@teck.com	Country		Email	lyudmyla.shvets@alsglobal.com		
Address	421 Pine Avenue	City		Address	2559 29 Street NE		
		Province					
		Country					
City	Sparwood	Province	BC	City	Calgary	Province	AB
Postal Code	V0B 2G0	Country	Canada	Postal Code	T1Y 7B5	Country	Canada
Phone Number	250-425-8202	Phone Number		1 403 407 1794			

Environmental Division
Calgary
Work Order Reference
CG2204662



Telephone : +1 403 407 1800

SAMPLE DETAILS							ANALYSIS REQUESTED									
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	C-TUC-SK	MET-COME+FULL-CL	MOISTURE-CL - % Moisture	PSA-PIPET-DETAIL-SK Particle Size	PAH-TMB-DA-MS-CL- PAHs				
RG_GATE_SE-01_2022-04-21	RG_GATE	SE	Z	4/21/2022	10:45	G	3	x	x	x	x	x				
RG_GATE_SF-02_2022-04-21	RG_GATE	SE	Z	4/21/2022	10:45	G	3	x	x	x	x	x				
RG_GATE_SE-02_2022-04-21	RG_GATE	SE	Z	4/21/2022	10:45	G	3	x	x	x	x	x				
RG_RIVER_SE-01_2022-04-21	RG_RIVER	SE	Z	4/21/2022	10:45	G	3	x	x	x	x	x				

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
VPO00816101	Alex McClymont		<i>[Signature]</i> 2/2/24 8:45

NB OF BOTTLES RETURNED/DESCRIPTION	Sampler's Name	Mobile #
Regular (default) <input checked="" type="checkbox"/> Priority (2-3 business days) - 50% surcharge Emergency (1 Business Day) - 100% surcharge For Emergency <1 Day, ASAP or Weekend - Contact ALS	Alex McClymont	780-293-6750
	Sampler's Signature	Date/Time
	<i>[Signature]</i>	April 22, 2022

Environmental Division
Calgary
Work Order Reference
CG2204662





CERTIFICATE OF ANALYSIS

Work Order : **CG2204883**
Client : **Teck Coal Limited**
Contact : Mike Pope
Address : RR#1 HWY#3
Sparwood BC Canada V0B 2G1
Telephone : ----
Project : REGIONAL EFFECTS PROGRAM
PO : VPO00816101
C-O-C number : APRIL EVO LAEMP 2022
Sampler : AM
Site : ----
Quote number : Teck Coal Master Quote
No. of samples received : 10
No. of samples analysed : 8

Page : 1 of 7
Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
Calgary AB Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 27-Apr-2022 10:10
Date Analysis Commenced : 28-Apr-2022
Issue Date : 12-May-2022 17:14

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Dwayne Bennett	Supervisor - Inorganic	Metals, Calgary, Alberta
Hedy Lai	Team Leader - Inorganics	Inorganics, Saskatoon, Saskatchewan
Kevin Baxter		Metals, Calgary, Alberta
Kuljeet Chawla		Inorganics, Calgary, Alberta
Oscar Ruiz	Lab Assistant	Metals, Calgary, Alberta
Rosalie Van Deelen	Laboratory Assistant	Organics, Calgary, Alberta



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
 LOR: Limit of Reporting (detection limit).

Unit	Description
-	No Unit
%	percent
mg/kg	milligrams per kilogram
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Sample Comments

Sample	Client Id	Comment
CG2204883-001	RG_MIDBO_SE-01_2022-04_NP	Removed PAH analysis from all samples. Jars were not submitted.
CG2204883-001	RG_MIDBO_SE-01_2022-04_NP	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2204883-002	RG_MIDBO_SE-02_2022-04_NP	Removed PAH analysis from all samples. Jars were not submitted.
CG2204883-002	RG_MIDBO_SE-02_2022-04_NP	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2204883-003	RG_MI3_SE-01_2022-04_NP	Removed PAH analysis from all samples. Jars were not submitted.
CG2204883-003	RG_MI3_SE-01_2022-04_NP	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2204883-004	RG_MI3_SE-02_2022-04_NP	Removed PAH analysis from all samples. Jars were not submitted.
CG2204883-005	RG_MIDER_SE-01_2022-04_NP	Removed PAH analysis from all samples. Jars were not submitted.
CG2204883-008	RG_ERCKUT_SE-01_2022-04_NP	Removed PAH analysis from all samples. Jars were not submitted.



CG2204883-009	RG_ERCKUT_SE-02_2022-04 _NP	Removed PAH analysis from all samples. Jars were not submitted.
CG2204883-010	RG_ERCKUT_SE-03_2022-04 _NP	Removed PAH analysis from all samples. Jars were not submitted.



Analytical Results

Sub-Matrix: Soil					Client sample ID	RG_MIDBO_SE-01_2022-04_NP	RG_MIDBO_SE-02_2022-04_NP	RG_MI3_SE-01_2022-04_NP	RG_MI3_SE-02_2022-04_NP	RG_MIDER_SE-01_2022-04_NP
(Matrix: Soil/Solid)					Client sampling date / time	26-Apr-2022 14:00	26-Apr-2022 14:00	26-Apr-2022 09:00	26-Apr-2022 09:00	26-Apr-2022 11:30
Analyte	CAS Number	Method	LOR	Unit	CG2204883-001	CG2204883-002	CG2204883-003	CG2204883-004	CG2204883-005	
					Result	Result	Result	Result	Result	
Physical Tests										
moisture	----	E144	0.25	%	20.9	25.7	21.4	21.6	22.0	
pH (1:2 soil:water)	----	E108	0.10	pH units	8.40	8.40	8.40	8.50	8.43	
Particle Size										
grain size curve	----	E185A	-	-	See Attached	See Attached	See Attached	See Attached	See Attached	
clay (<0.004mm)	----	EC184A	1.0	%	2.5	2.9	2.3	2.7	1.3	
silt (0.063mm - 0.0312mm)	----	EC184A	1.0	%	5.2	5.3	12.6	11.5	1.8	
silt (0.0312mm - 0.004mm)	----	EC184A	1.0	%	5.4	6.2	7.7	8.8	2.8	
sand (0.125mm - 0.063mm)	----	EC184A	1.0	%	11.8	10.2	34.4	26.9	3.1	
sand (0.25mm - 0.125mm)	----	EC184A	1.0	%	25.3	23.7	25.2	23.8	7.8	
sand (0.5mm - 0.25mm)	----	EC184A	1.0	%	34.5	35.3	9.6	14.3	16.1	
sand (1.0mm - 0.50mm)	----	EC184A	1.0	%	11.1	12.4	4.2	6.0	15.7	
sand (2.0mm - 1.0mm)	----	EC184A	1.0	%	2.6	2.7	2.3	3.1	7.6	
gravel (>2mm)	----	EC184A	1.0	%	1.6	1.3	1.7	2.9	43.8	
Organic / Inorganic Carbon										
carbon, total [TC]	----	E351	0.050	%	2.62	2.96	2.01	2.00	2.34	
carbon, inorganic [IC]	----	E354	0.050	%	0.951	1.00	0.547	0.641	1.15	
carbon, inorganic [IC], (as CaCO3 equivalent)	----	E354	0.40	%	7.93	8.38	4.56	5.34	9.58	
carbon, total organic [TOC]	----	EC356	0.050	%	1.67	1.96	1.46	1.36	1.19	
Metals										
aluminum	7429-90-5	E440	50	mg/kg	6690	8690	8320	8340	5770	
antimony	7440-36-0	E440	0.10	mg/kg	1.12	1.26	1.18	1.20	2.38	
arsenic	7440-38-2	E440	0.10	mg/kg	7.43	9.42	7.33	7.32	16.6	
barium	7440-39-3	E440	0.50	mg/kg	187	253	280	256	234	
beryllium	7440-41-7	E440	0.10	mg/kg	0.58	0.65	0.60	0.66	0.73	
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20	
boron	7440-42-8	E440	5.0	mg/kg	<5.0	6.6	<5.0	<5.0	<5.0	
cadmium	7440-43-9	E440	0.020	mg/kg	1.20	1.40	1.33	1.36	1.82	
calcium	7440-70-2	E440	50	mg/kg	42400	46100	27100	26100	46000	
chromium	7440-47-3	E440	0.50	mg/kg	12.1	15.5	14.0	14.4	12.8	



Analytical Results

Sub-Matrix: Soil

(Matrix: Soil/Solid)

Client sample ID

					RG_MIDBO_SE-01_2022-04_NP	RG_MIDBO_SE-02_2022-04_NP	RG_MI3_SE-01_2022-04_NP	RG_MI3_SE-02_2022-04_NP	RG_MIDER_SE-01_2022-04_NP
Client sampling date / time					26-Apr-2022 14:00	26-Apr-2022 14:00	26-Apr-2022 09:00	26-Apr-2022 09:00	26-Apr-2022 11:30
Analyte	CAS Number	Method	LOR	Unit	CG2204883-001	CG2204883-002	CG2204883-003	CG2204883-004	CG2204883-005
					Result	Result	Result	Result	Result
Metals									
cobalt	7440-48-4	E440	0.10	mg/kg	6.68	6.91	6.63	6.54	7.24
copper	7440-50-8	E440	0.50	mg/kg	13.4	14.3	13.1	13.5	14.9
iron	7439-89-6	E440	50	mg/kg	16100	17200	14600	15500	37400
lead	7439-92-1	E440	0.50	mg/kg	12.0	11.2	10.5	11.4	12.7
lithium	7439-93-2	E440	2.0	mg/kg	8.4	9.3	9.0	9.0	7.5
magnesium	7439-95-4	E440	20	mg/kg	6820	7760	5830	5610	7650
manganese	7439-96-5	E440	1.0	mg/kg	294	307	269	274	455
mercury	7439-97-6	E510	0.0050	mg/kg	0.0340	0.0663	0.0342	0.0346	0.0285
molybdenum	7439-98-7	E440	0.10	mg/kg	1.96	2.27	1.75	1.89	5.49
nickel	7440-02-0	E440	0.50	mg/kg	27.4	29.0	26.1	26.5	33.1
phosphorus	7723-14-0	E440	50	mg/kg	1580	1810	1570	1530	1840
potassium	7440-09-7	E440	100	mg/kg	1100	1620	1350	1390	920
selenium	7782-49-2	E440	0.20	mg/kg	1.03	0.96	0.74	0.70	0.94
silver	7440-22-4	E440	0.10	mg/kg	0.18	0.23	0.18	0.18	0.19
sodium	7440-23-5	E440	50	mg/kg	65	76	62	62	61
strontium	7440-24-6	E440	0.50	mg/kg	72.0	83.0	59.7	61.3	79.1
sulfur	7704-34-9	E440	1000	mg/kg	<1000	<1000	<1000	<1000	<1000
thallium	7440-28-0	E440	0.050	mg/kg	0.246	0.267	0.238	0.259	0.201
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
titanium	7440-32-6	E440	1.0	mg/kg	20.9	31.0	38.1	37.0	29.2
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
uranium	7440-61-1	E440	0.050	mg/kg	1.23	1.42	1.34	1.31	1.48
vanadium	7440-62-2	E440	0.20	mg/kg	35.5	45.7	43.6	44.6	52.4
zinc	7440-66-6	E440	2.0	mg/kg	121	136	124	127	163
zirconium	7440-67-7	E440	1.0	mg/kg	1.2	1.3	1.4	1.3	1.7

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Soil (Matrix: Soil/Solid)					Client sample ID	RG_ERCKUT_S E-01_2022-04_ NP	RG_ERCKUT_S E-02_2022-04_ NP	RG_ERCKUT_S E-03_2022-04_ NP	----	----
Client sampling date / time					26-Apr-2022 12:00	26-Apr-2022 12:00	26-Apr-2022 12:00	----	----	
Analyte	CAS Number	Method	LOR	Unit	CG2204883-008 Result	CG2204883-009 Result	CG2204883-010 Result	----- ----	----- ----	
Physical Tests										
moisture	----	E144	0.25	%	55.0	80.8	61.3	----	----	
pH (1:2 soil:water)	----	E108	0.10	pH units	7.95	7.91	7.96	----	----	
Particle Size										
grain size curve	----	E185A	-	-	See Attached	See Attached	See Attached	----	----	
clay (<0.004mm)	----	EC184A	1.0	%	3.0	4.0	3.1	----	----	
silt (0.063mm - 0.0312mm)	----	EC184A	1.0	%	9.1	19.6	11.9	----	----	
silt (0.0312mm - 0.004mm)	----	EC184A	1.0	%	10.8	22.8	13.4	----	----	
sand (0.125mm - 0.063mm)	----	EC184A	1.0	%	9.1	12.4	11.1	----	----	
sand (0.25mm - 0.125mm)	----	EC184A	1.0	%	13.7	15.1	16.1	----	----	
sand (0.5mm - 0.25mm)	----	EC184A	1.0	%	15.3	9.8	12.5	----	----	
sand (1.0mm - 0.50mm)	----	EC184A	1.0	%	10.3	3.9	5.7	----	----	
sand (2.0mm - 1.0mm)	----	EC184A	1.0	%	11.2	2.3	4.6	----	----	
gravel (>2mm)	----	EC184A	1.0	%	17.5	10.1	21.6	----	----	
Organic / Inorganic Carbon										
carbon, total [TC]	----	E351	0.050	%	6.79	11.0	6.56	----	----	
carbon, inorganic [IC]	----	E354	0.050	%	0.437	0.953	0.782	----	----	
carbon, inorganic [IC], (as CaCO3 equivalent)	----	E354	0.40	%	3.64	7.94	6.52	----	----	
carbon, total organic [TOC]	----	EC356	0.050	%	6.35	10.0	5.78	----	----	
Metals										
aluminum	7429-90-5	E440	50	mg/kg	7670	6640	6540	----	----	
antimony	7440-36-0	E440	0.10	mg/kg	1.11	1.10	0.96	----	----	
arsenic	7440-38-2	E440	0.10	mg/kg	7.68	6.29	5.84	----	----	
barium	7440-39-3	E440	0.50	mg/kg	383	254	228	----	----	
beryllium	7440-41-7	E440	0.10	mg/kg	0.84	0.74	0.80	----	----	
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	<0.20	----	----	
boron	7440-42-8	E440	5.0	mg/kg	5.3	6.4	5.3	----	----	
cadmium	7440-43-9	E440	0.020	mg/kg	1.84	1.78	1.35	----	----	
calcium	7440-70-2	E440	50	mg/kg	25100	44200	36400	----	----	
chromium	7440-47-3	E440	0.50	mg/kg	13.1	13.0	11.6	----	----	



Analytical Results

Sub-Matrix: Soil

(Matrix: Soil/Solid)

Client sample ID

					RG_ERCKUT_S E-01_2022-04_ NP	RG_ERCKUT_S E-02_2022-04_ NP	RG_ERCKUT_S E-03_2022-04_ NP	----	----
Client sampling date / time					26-Apr-2022 12:00	26-Apr-2022 12:00	26-Apr-2022 12:00	----	----
Analyte	CAS Number	Method	LOR	Unit	CG2204883-008	CG2204883-009	CG2204883-010	-----	-----
					Result	Result	Result	----	----
Metals									
cobalt	7440-48-4	E440	0.10	mg/kg	8.19	6.74	6.05	----	----
copper	7440-50-8	E440	0.50	mg/kg	22.6	22.7	17.5	----	----
iron	7439-89-6	E440	50	mg/kg	17600	12700	15000	----	----
lead	7439-92-1	E440	0.50	mg/kg	14.1	12.1	11.3	----	----
lithium	7439-93-2	E440	2.0	mg/kg	9.1	7.3	8.3	----	----
magnesium	7439-95-4	E440	20	mg/kg	5360	5940	4930	----	----
manganese	7439-96-5	E440	1.0	mg/kg	325	271	215	----	----
mercury	7439-97-6	E510	0.0050	mg/kg	0.0656	0.0486	0.0576	----	----
molybdenum	7439-98-7	E440	0.10	mg/kg	1.65	1.81	1.48	----	----
nickel	7440-02-0	E440	0.50	mg/kg	29.9	31.0	24.6	----	----
phosphorus	7723-14-0	E440	50	mg/kg	1520	1470	1200	----	----
potassium	7440-09-7	E440	100	mg/kg	1390	1200	1240	----	----
selenium	7782-49-2	E440	0.20	mg/kg	7.13	11.0	8.30	----	----
silver	7440-22-4	E440	0.10	mg/kg	0.39	0.40	0.31	----	----
sodium	7440-23-5	E440	50	mg/kg	65	76	65	----	----
strontium	7440-24-6	E440	0.50	mg/kg	53.8	57.0	51.0	----	----
sulfur	7704-34-9	E440	1000	mg/kg	<1000	1600	<1000	----	----
thallium	7440-28-0	E440	0.050	mg/kg	0.260	0.255	0.225	----	----
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	<2.0	----	----
titanium	7440-32-6	E440	1.0	mg/kg	9.3	10.1	6.5	----	----
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	<0.50	----	----
uranium	7440-61-1	E440	0.050	mg/kg	1.64	2.35	1.60	----	----
vanadium	7440-62-2	E440	0.20	mg/kg	32.2	29.7	29.1	----	----
zinc	7440-66-6	E440	2.0	mg/kg	149	125	97.4	----	----
zirconium	7440-67-7	E440	1.0	mg/kg	1.4	1.9	1.0	----	----

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: CG2204883	Page	: 1 of 12
Client	: Teck Coal Limited	Laboratory	: Calgary - Environmental
Contact	: Mike Pope	Account Manager	: Lyudmyla Shvets
Address	: RR#1 HWY#3 Sparwood BC Canada V0B 2G1	Address	: 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5
Telephone	: ----	Telephone	: +1 403 407 1800
Project	: REGIONAL EFFECTS PROGRAM	Date Samples Received	: 27-Apr-2022 10:10
PO	: VPO00816101	Issue Date	: 12-May-2022 17:14
C-O-C number	: APRIL EVO LAEMP 2022		
Sampler	: AM		
Site	: ----		
Quote number	: Teck Coal Master Quote		
No. of samples received	: 10		
No. of samples analysed	: 8		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

- Anonymous:** Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Soil/Solid**

Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-01_2022-04_NP	E510	26-Apr-2022	04-May-2022	----	----		04-May-2022	28 days	8 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-02_2022-04_NP	E510	26-Apr-2022	04-May-2022	----	----		04-May-2022	28 days	8 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-03_2022-04_NP	E510	26-Apr-2022	04-May-2022	----	----		04-May-2022	28 days	8 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap RG_MI3_SE-01_2022-04_NP	E510	26-Apr-2022	04-May-2022	----	----		04-May-2022	28 days	8 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap RG_MI3_SE-02_2022-04_NP	E510	26-Apr-2022	04-May-2022	----	----		04-May-2022	28 days	8 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap RG_MIDBO_SE-01_2022-04_NP	E510	26-Apr-2022	04-May-2022	----	----		04-May-2022	28 days	8 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap RG_MIDBO_SE-02_2022-04_NP	E510	26-Apr-2022	04-May-2022	----	----		04-May-2022	28 days	8 days	✓	



Matrix: **Soil/Solid**

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap RG_MIDER_SE-01_2022-04_NP	E510	26-Apr-2022	04-May-2022	----	----		04-May-2022	28 days	8 days	✔	
Metals : Metals in Soil/Solid by CRC ICPCS											
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-01_2022-04_NP	E440	26-Apr-2022	04-May-2022	----	----		05-May-2022	180 days	9 days	✔	
Metals : Metals in Soil/Solid by CRC ICPCS											
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-02_2022-04_NP	E440	26-Apr-2022	04-May-2022	----	----		05-May-2022	180 days	9 days	✔	
Metals : Metals in Soil/Solid by CRC ICPCS											
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-03_2022-04_NP	E440	26-Apr-2022	04-May-2022	----	----		05-May-2022	180 days	9 days	✔	
Metals : Metals in Soil/Solid by CRC ICPCS											
Glass soil jar/Teflon lined cap RG_MI3_SE-01_2022-04_NP	E440	26-Apr-2022	04-May-2022	----	----		05-May-2022	180 days	9 days	✔	
Metals : Metals in Soil/Solid by CRC ICPCS											
Glass soil jar/Teflon lined cap RG_MI3_SE-02_2022-04_NP	E440	26-Apr-2022	04-May-2022	----	----		05-May-2022	180 days	9 days	✔	
Metals : Metals in Soil/Solid by CRC ICPCS											
Glass soil jar/Teflon lined cap RG_MIDBO_SE-01_2022-04_NP	E440	26-Apr-2022	04-May-2022	----	----		05-May-2022	180 days	9 days	✔	
Metals : Metals in Soil/Solid by CRC ICPCS											
Glass soil jar/Teflon lined cap RG_MIDBO_SE-02_2022-04_NP	E440	26-Apr-2022	04-May-2022	----	----		05-May-2022	180 days	9 days	✔	
Metals : Metals in Soil/Solid by CRC ICPCS											
Glass soil jar/Teflon lined cap RG_MIDER_SE-01_2022-04_NP	E440	26-Apr-2022	04-May-2022	----	----		05-May-2022	180 days	9 days	✔	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKUT_SE-01_2022-04_NP	E351	26-Apr-2022	----	----	----		05-May-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKUT_SE-02_2022-04_NP	E351	26-Apr-2022	----	----	----		05-May-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKUT_SE-03_2022-04_NP	E351	26-Apr-2022	----	----	----		05-May-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_MI3_SE-01_2022-04_NP	E351	26-Apr-2022	----	----	----		05-May-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_MI3_SE-02_2022-04_NP	E351	26-Apr-2022	----	----	----		05-May-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_MIDBO_SE-01_2022-04_NP	E351	26-Apr-2022	----	----	----		05-May-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_MIDBO_SE-02_2022-04_NP	E351	26-Apr-2022	----	----	----		05-May-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_MIDER_SE-01_2022-04_NP	E351	26-Apr-2022	----	----	----		05-May-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve											
LDPE bag RG_ERCKUT_SE-01_2022-04_NP	E354	26-Apr-2022	----	----	----		05-May-2022	----	----		



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKUT_SE-02_2022-04_NP	E354	26-Apr-2022	----	----	----		05-May-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKUT_SE-03_2022-04_NP	E354	26-Apr-2022	----	----	----		05-May-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_MI3_SE-01_2022-04_NP	E354	26-Apr-2022	----	----	----		05-May-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_MI3_SE-02_2022-04_NP	E354	26-Apr-2022	----	----	----		05-May-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_MIDBO_SE-01_2022-04_NP	E354	26-Apr-2022	----	----	----		05-May-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_MIDBO_SE-02_2022-04_NP	E354	26-Apr-2022	----	----	----		05-May-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_MIDER_SE-01_2022-04_NP	E354	26-Apr-2022	----	----	----		05-May-2022	----	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKUT_SE-01_2022-04_NP	E185A	26-Apr-2022	----	----	----		06-May-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKUT_SE-02_2022-04_NP	E185A	26-Apr-2022	----	----	----		06-May-2022	365 days	----	



Matrix: **Soil/Solid**

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKUT_SE-03_2022-04_NP	E185A	26-Apr-2022	----	----	----		06-May-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_MI3_SE-01_2022-04_NP	E185A	26-Apr-2022	----	----	----		06-May-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_MI3_SE-02_2022-04_NP	E185A	26-Apr-2022	----	----	----		06-May-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_MIDBO_SE-01_2022-04_NP	E185A	26-Apr-2022	----	----	----		06-May-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_MIDBO_SE-02_2022-04_NP	E185A	26-Apr-2022	----	----	----		06-May-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_MIDER_SE-01_2022-04_NP	E185A	26-Apr-2022	----	----	----		06-May-2022	365 days	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-01_2022-04_NP	E144	26-Apr-2022	----	----	----		12-May-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-02_2022-04_NP	E144	26-Apr-2022	----	----	----		12-May-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-03_2022-04_NP	E144	26-Apr-2022	----	----	----		12-May-2022	----	----	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Moisture Content by Gravimetry											
Glass soil jar/Teflon lined cap RG_MI3_SE-01_2022-04_NP	E144	26-Apr-2022	----	----	----		12-May-2022	----	----		
Physical Tests : Moisture Content by Gravimetry											
Glass soil jar/Teflon lined cap RG_MI3_SE-02_2022-04_NP	E144	26-Apr-2022	----	----	----		12-May-2022	----	----		
Physical Tests : Moisture Content by Gravimetry											
Glass soil jar/Teflon lined cap RG_MIDBO_SE-01_2022-04_NP	E144	26-Apr-2022	----	----	----		12-May-2022	----	----		
Physical Tests : Moisture Content by Gravimetry											
Glass soil jar/Teflon lined cap RG_MIDBO_SE-02_2022-04_NP	E144	26-Apr-2022	----	----	----		12-May-2022	----	----		
Physical Tests : Moisture Content by Gravimetry											
Glass soil jar/Teflon lined cap RG_MIDER_SE-01_2022-04_NP	E144	26-Apr-2022	----	----	----		12-May-2022	----	----		
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-01_2022-04_NP	E108	26-Apr-2022	04-May-2022	----	----		04-May-2022	30 days	8 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-02_2022-04_NP	E108	26-Apr-2022	04-May-2022	----	----		04-May-2022	30 days	8 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-03_2022-04_NP	E108	26-Apr-2022	04-May-2022	----	----		04-May-2022	30 days	8 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap RG_MI3_SE-01_2022-04_NP	E108	26-Apr-2022	04-May-2022	----	----		04-May-2022	30 days	8 days	✔	



Matrix: **Soil/Solid**

Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
Glass soil jar/Teflon lined cap RG_MI3_SE-02_2022-04_NP	E108	26-Apr-2022	04-May-2022	----	----		04-May-2022	30 days	8 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
Glass soil jar/Teflon lined cap RG_MIDBO_SE-01_2022-04_NP	E108	26-Apr-2022	04-May-2022	----	----		04-May-2022	30 days	8 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
Glass soil jar/Teflon lined cap RG_MIDBO_SE-02_2022-04_NP	E108	26-Apr-2022	04-May-2022	----	----		04-May-2022	30 days	8 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
Glass soil jar/Teflon lined cap RG_MIDER_SE-01_2022-04_NP	E108	26-Apr-2022	04-May-2022	----	----		04-May-2022	30 days	8 days	✓

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Soil/Solid**

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
Analytical Methods							
Laboratory Duplicates (DUP)							
Mercury in Soil/Solid by CVAAS	E510	476932	1	20	5.0	5.0	✔
Metals in Soil/Solid by CRC ICPMS	E440	476933	1	20	5.0	5.0	✔
Moisture Content by Gravimetry	E144	485059	1	12	8.3	5.0	✔
pH by Meter (1:2 Soil:Water Extraction)	E108	477011	1	8	12.5	5.0	✔
Total Carbon by Combustion	E351	478024	1	14	7.1	5.0	✔
Total Inorganic Carbon by Acetic Acid pH Standard Curve	E354	478096	1	15	6.6	5.0	✔
Laboratory Control Samples (LCS)							
Mercury in Soil/Solid by CVAAS	E510	476932	2	20	10.0	10.0	✔
Metals in Soil/Solid by CRC ICPMS	E440	476933	2	20	10.0	10.0	✔
Moisture Content by Gravimetry	E144	485059	1	12	8.3	5.0	✔
pH by Meter (1:2 Soil:Water Extraction)	E108	477011	2	8	25.0	10.0	✔
Total Carbon by Combustion	E351	478024	2	14	14.2	10.0	✔
Total Inorganic Carbon by Acetic Acid pH Standard Curve	E354	478096	2	15	13.3	10.0	✔
Method Blanks (MB)							
Mercury in Soil/Solid by CVAAS	E510	476932	1	20	5.0	5.0	✔
Metals in Soil/Solid by CRC ICPMS	E440	476933	1	20	5.0	5.0	✔
Moisture Content by Gravimetry	E144	485059	1	12	8.3	5.0	✔
Total Carbon by Combustion	E351	478024	1	14	7.1	5.0	✔
Total Inorganic Carbon by Acetic Acid pH Standard Curve	E354	478096	1	15	6.6	5.0	✔



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
pH by Meter (1:2 Soil:Water Extraction)	E108 Calgary - Environmental	Soil/Solid	BC Lab Manual	pH is determined by potentiometric measurement with a pH electrode at ambient laboratory temperature (normally $20 \pm 5^\circ\text{C}$), and is carried out in accordance with procedures described in the BC Lab Manual (prescriptive method). The procedure involves mixing the dried (at $<60^\circ\text{C}$) and sieved (10mesh/2mm) sample with ultra pure water at a 1:2 ratio of sediment to water. The pH is then measured by a standard pH probe.
Moisture Content by Gravimetry	E144 Calgary - Environmental	Soil/Solid	CCME PHC in Soil - Tier 1	Moisture is measured gravimetrically by drying the sample at 105°C . Moisture content is calculated as the weight loss (due to water) divided by the wet weight of the sample, expressed as a percentage.
Grain Size Report (Attachment) Pipet/Sieve Method	E185A Saskatoon - Environmental	Soil/Solid	SSIR-51 Method 3.2.1	A grain size curve is a graphical representation of the particle sizing of a sample representing the percent passing against the effective particle size.
Total Carbon by Combustion	E351 Saskatoon - Environmental	Soil/Solid	CSSS (2008) 21.2 (mod)	Total Carbon is determined by the high temperature combustion method with measurement by an infrared detector.
Total Inorganic Carbon by Acetic Acid pH Standard Curve	E354 Saskatoon - Environmental	Soil/Solid	CSSS (2008) 20.2	Total Inorganic Carbon is determined by acetic acid pH standard curve, where a known quantity of acetic acid is consumed by reaction with carbonates in the soil. The pH of the resulting solution is measured and compared against a standard curve relating pH to weight of carbonate.
Metals in Soil/Solid by CRC ICPMS	E440 Calgary - Environmental	Soil/Solid	EPA 6020B (mod)	This method is intended to liberate metals that may be environmentally available. Samples are dried, then sieved through a 2 mm sieve, and digested with HNO_3 and HCl . Dependent on sample matrix, some metals may be only partially recovered, including Al, Ba, Be, Cr, Sr, Ti, Tl, V, W, and Zr. Silicate minerals are not solubilized. Volatile forms of sulfur (including sulfide) may not be captured, as they may be lost during sampling, storage, or digestion. This method does not adequately recover elemental sulfur, and is unsuitable for assessment of elemental sulfur standards or guidelines. Analysis is by Collision/Reaction Cell ICPMS.
Mercury in Soil/Solid by CVAAS	E510 Calgary - Environmental	Soil/Solid	EPA 200.2/1631 Appendix (mod)	Samples are dried, then sieved through a 2 mm sieve, and digested with HNO_3 and HCl , followed by CVAAS analysis.
Particle Size Analysis (Pipette) - Wentworth Classification	EC184A Saskatoon - Environmental	Soil/Solid	Modified Wentworth	The particle size determination is performed by various methods to generate a Grain Size curve. The data from the curve is then used to produce particle size ranges based on the Modified Wentworth Classification system.



<i>Analytical Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
Total Organic Carbon (Calculated) in soil	EC356 Saskatoon - Environmental	Soil/Solid	CSSS (2008) 21.2	Total Organic Carbon (TOC) is calculated by the difference between total carbon (TC) and total inorganic carbon (TIC).
<i>Preparation Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
Leach 1:2 Soil:Water for pH/EC	EP108 Calgary - Environmental	Soil/Solid	BC WLAP METHOD: PH, ELECTROMETRIC, SOIL	The procedure involves mixing the dried (at <60°C) and sieved (No. 10 / 2mm) sample with deionized/distilled water at a 1:2 ratio of sediment to water.
Digestion for Metals and Mercury	EP440 Calgary - Environmental	Soil/Solid	EPA 200.2 (mod)	Samples are dried, then sieved through a 2 mm sieve, and digested with HNO ₃ and HCl. This method is intended to liberate metals that may be environmentally available.
Dry and Grind	EPP442 Calgary - Environmental	Soil/Solid	Soil Sampling and Methods of Analysis, Carter 2008	After removal of any coarse fragments and reservation of wet subsamples a portion of homogenized sample is set in a tray and dried at less than 60°C until dry. The sample is then particle size reduced with an automated crusher or mortar and pestle, typically to <2 mm. Further size reduction may be needed for particular tests.



QUALITY CONTROL REPORT

Work Order : CG2204883

Page : 1 of 10

Client : Teck Coal Limited
Contact : Mike Pope
Address : RR#1 HWY#3
Sparwood BC Canada V0B 2G1
Telephone : ----
Project : REGIONAL EFFECTS PROGRAM
PO : VPO00816101
C-O-C number : APRIL EVO LAEMP 2022
Sampler : AM
Site : ----
Quote number : Teck Coal Master Quote
No. of samples received : 10
No. of samples analysed : 8

Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
Calgary, Alberta Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 27-Apr-2022 10:10
Date Analysis Commenced : 28-Apr-2022
Issue Date : 12-May-2022 17:14

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
Matrix Spike (MS) Report; Recovery and Acceptance Limits
Reference Material (RM) Report; Recovery and Acceptance Limits
Method Blank (MB) Report; Recovery and Acceptance Limits
Laboratory Control Sample (LCS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Table with 3 columns: Signatories, Position, Laboratory Department. Rows include Dwayne Bennett (Supervisor - Inorganic, Metals, Calgary, Alberta), Hedy Lai (Team Leader - Inorganics, Inorganics, Saskatoon, Saskatchewan), Kevin Baxter (Metals, Calgary, Alberta), Kuljeet Chawla (Inorganics, Calgary, Alberta), Oscar Ruiz (Metals, Calgary, Alberta), and Rosalie Van Deelen (Laboratory Assistant, Organics, Calgary, Alberta).

Page : 2 of 10
Work Order : CG2204883
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Services number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percentage Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test specific).

Sub-Matrix: Soil/Solid

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 477011)											
CG2204883-001	RG_MIDBO_SE-01_2022-04_NP	pH (1:2 soil:water)	----	E108	0.10	pH units	8.40	8.36	0.477%	5%	----
Physical Tests (QC Lot: 485059)											
CG2204883-001	RG_MIDBO_SE-01_2022-04_NP	moisture	----	E144	0.25	%	20.9	20.9	0.0105%	20%	----
Organic / Inorganic Carbon (QC Lot: 478024)											
VA22A9169-001	Anonymous	carbon, total [TC]	----	E351	0.050	%	0.541	0.497	8.51%	20%	----
Organic / Inorganic Carbon (QC Lot: 478096)											
CG2204662-001	Anonymous	carbon, inorganic [IC]	----	E354	0.050	%	3.08	3.05	0.953%	20%	----
Metals (QC Lot: 476932)											
CG2204883-001	RG_MIDBO_SE-01_2022-04_NP	mercury	7439-97-6	E510	0.0050	mg/kg	0.0340	0.0321	5.75%	40%	----
Metals (QC Lot: 476933)											
CG2204883-001	RG_MIDBO_SE-01_2022-04_NP	aluminum	7429-90-5	E440	50	mg/kg	6690	7830	15.7%	40%	----
		antimony	7440-36-0	E440	0.10	mg/kg	1.12	1.14	1.60%	30%	----
		arsenic	7440-38-2	E440	0.10	mg/kg	7.43	7.98	7.17%	30%	----
		barium	7440-39-3	E440	0.50	mg/kg	187	213	13.0%	40%	----
		beryllium	7440-41-7	E440	0.10	mg/kg	0.58	0.60	0.02	Diff <2x LOR	----
		bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	0	Diff <2x LOR	----
		boron	7440-42-8	E440	5.0	mg/kg	<5.0	5.1	0.09	Diff <2x LOR	----
		cadmium	7440-43-9	E440	0.020	mg/kg	1.20	1.32	9.82%	30%	----
		calcium	7440-70-2	E440	50	mg/kg	42400	44200	4.09%	30%	----
		chromium	7440-47-3	E440	0.50	mg/kg	12.1	13.9	13.3%	30%	----
		cobalt	7440-48-4	E440	0.10	mg/kg	6.68	6.91	3.37%	30%	----
		copper	7440-50-8	E440	0.50	mg/kg	13.4	14.3	6.94%	30%	----
		iron	7439-89-6	E440	50	mg/kg	16100	17400	7.87%	30%	----
		lead	7439-92-1	E440	0.50	mg/kg	12.0	10.5	13.7%	40%	----
		lithium	7439-93-2	E440	2.0	mg/kg	8.4	9.1	0.7	Diff <2x LOR	----
		magnesium	7439-95-4	E440	20	mg/kg	6820	7340	7.41%	30%	----
		manganese	7439-96-5	E440	1.0	mg/kg	294	301	2.38%	30%	----
		molybdenum	7439-98-7	E440	0.10	mg/kg	1.96	1.94	0.544%	40%	----
		nickel	7440-02-0	E440	0.50	mg/kg	27.4	28.2	3.08%	30%	----
		phosphorus	7723-14-0	E440	50	mg/kg	1580	1700	6.99%	30%	----



Sub-Matrix: **Soil/Solid**

Laboratory Duplicate (DUP) Report

<i>Laboratory sample ID</i>	<i>Client sample ID</i>	<i>Analyte</i>	<i>CAS Number</i>	<i>Method</i>	<i>LOR</i>	<i>Unit</i>	<i>Original Result</i>	<i>Duplicate Result</i>	<i>RPD(%) or Difference</i>	<i>Duplicate Limits</i>	<i>Qualifier</i>
Metals (QC Lot: 476933) - continued											
CG2204883-001	RG_MIDBO_SE-01_2022-04_NP	potassium	7440-09-7	E440	100	mg/kg	1100	1320	17.9%	40%	----
		selenium	7782-49-2	E440	0.20	mg/kg	1.03	1.03	0.002	Diff <2x LOR	----
		silver	7440-22-4	E440	0.10	mg/kg	0.18	0.19	0.008	Diff <2x LOR	----
		sodium	7440-23-5	E440	50	mg/kg	65	69	4	Diff <2x LOR	----
		strontium	7440-24-6	E440	0.50	mg/kg	72.0	78.2	8.27%	40%	----
		sulfur	7704-34-9	E440	1000	mg/kg	<1000	<1000	0	Diff <2x LOR	----
		thallium	7440-28-0	E440	0.050	mg/kg	0.246	0.263	0.016	Diff <2x LOR	----
		tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	0	Diff <2x LOR	----
		titanium	7440-32-6	E440	1.0	mg/kg	20.9	30.4	36.9%	40%	----
		tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	0	Diff <2x LOR	----
		uranium	7440-61-1	E440	0.050	mg/kg	1.23	1.38	10.8%	30%	----
		vanadium	7440-62-2	E440	0.20	mg/kg	35.5	41.4	15.6%	30%	----
		zinc	7440-66-6	E440	2.0	mg/kg	121	131	8.23%	30%	----
		zirconium	7440-67-7	E440	1.0	mg/kg	1.2	1.4	0.1	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 485059)						
moisture	----	E144	0.25	%	<0.25	----
Organic / Inorganic Carbon (QCLot: 478024)						
carbon, total [TC]	----	E351	0.05	%	<0.050	----
Organic / Inorganic Carbon (QCLot: 478096)						
carbon, inorganic [IC]	----	E354	0.05	%	<0.050	----
Metals (QCLot: 476932)						
mercury	7439-97-6	E510	0.005	mg/kg	<0.0050	----
Metals (QCLot: 476933)						
aluminum	7429-90-5	E440	50	mg/kg	<50	----
antimony	7440-36-0	E440	0.1	mg/kg	<0.10	----
arsenic	7440-38-2	E440	0.1	mg/kg	<0.10	----
barium	7440-39-3	E440	0.5	mg/kg	<0.50	----
beryllium	7440-41-7	E440	0.1	mg/kg	<0.10	----
bismuth	7440-69-9	E440	0.2	mg/kg	<0.20	----
boron	7440-42-8	E440	5	mg/kg	<5.0	----
cadmium	7440-43-9	E440	0.02	mg/kg	<0.020	----
calcium	7440-70-2	E440	50	mg/kg	<50	----
chromium	7440-47-3	E440	0.5	mg/kg	<0.50	----
cobalt	7440-48-4	E440	0.1	mg/kg	<0.10	----
copper	7440-50-8	E440	0.5	mg/kg	<0.50	----
iron	7439-89-6	E440	50	mg/kg	<50	----
lead	7439-92-1	E440	0.5	mg/kg	<0.50	----
lithium	7439-93-2	E440	2	mg/kg	<2.0	----
magnesium	7439-95-4	E440	20	mg/kg	<20	----
manganese	7439-96-5	E440	1	mg/kg	<1.0	----
molybdenum	7439-98-7	E440	0.1	mg/kg	<0.10	----
nickel	7440-02-0	E440	0.5	mg/kg	<0.50	----
phosphorus	7723-14-0	E440	50	mg/kg	<50	----
potassium	7440-09-7	E440	100	mg/kg	<100	----
selenium	7782-49-2	E440	0.2	mg/kg	<0.20	----
silver	7440-22-4	E440	0.1	mg/kg	<0.10	----
sodium	7440-23-5	E440	50	mg/kg	<50	----
strontium	7440-24-6	E440	0.5	mg/kg	<0.50	----



Sub-Matrix: **Soil/Solid**

<i>Analyte</i>	<i>CAS Number</i>	<i>Method</i>	<i>LOR</i>	<i>Unit</i>	<i>Result</i>	<i>Qualifier</i>
Metals (QCLot: 476933) - continued						
sulfur	7704-34-9	E440	1000	mg/kg	<1000	----
thallium	7440-28-0	E440	0.05	mg/kg	<0.050	----
tin	7440-31-5	E440	2	mg/kg	<2.0	----
titanium	7440-32-6	E440	1	mg/kg	<1.0	----
tungsten	7440-33-7	E440	0.5	mg/kg	<0.50	----
uranium	7440-61-1	E440	0.05	mg/kg	<0.050	----
vanadium	7440-62-2	E440	0.2	mg/kg	<0.20	----
zinc	7440-66-6	E440	2	mg/kg	<2.0	----
zirconium	7440-67-7	E440	1	mg/kg	<1.0	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Soil/Solid

					Laboratory Control Sample (LCS) Report				
Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Physical Tests (QCLot: 477011)									
pH (1:2 soil:water)	---	E108	---	pH units	7 pH units	99.8	97.0	103	---
Physical Tests (QCLot: 485059)									
moisture	---	E144	0.25	%	50 %	97.5	90.0	110	---
Organic / Inorganic Carbon (QCLot: 478024)									
carbon, total [TC]	---	E351	0.05	%	48 %	97.0	90.0	110	---
Organic / Inorganic Carbon (QCLot: 478096)									
carbon, inorganic [IC]	---	E354	0.05	%	0.5 %	96.7	90.0	110	---
Metals (QCLot: 476932)									
mercury	7439-97-6	E510	0.005	mg/kg	0.1 mg/kg	110	80.0	120	---
Metals (QCLot: 476933)									
aluminum	7429-90-5	E440	50	mg/kg	200 mg/kg	114	80.0	120	---
antimony	7440-36-0	E440	0.1	mg/kg	100 mg/kg	113	80.0	120	---
arsenic	7440-38-2	E440	0.1	mg/kg	100 mg/kg	110	80.0	120	---
barium	7440-39-3	E440	0.5	mg/kg	25 mg/kg	107	80.0	120	---
beryllium	7440-41-7	E440	0.1	mg/kg	10 mg/kg	110	80.0	120	---
bismuth	7440-69-9	E440	0.2	mg/kg	100 mg/kg	107	80.0	120	---
boron	7440-42-8	E440	5	mg/kg	100 mg/kg	110	80.0	120	---
cadmium	7440-43-9	E440	0.02	mg/kg	10 mg/kg	108	80.0	120	---
calcium	7440-70-2	E440	50	mg/kg	5000 mg/kg	114	80.0	120	---
chromium	7440-47-3	E440	0.5	mg/kg	25 mg/kg	110	80.0	120	---
cobalt	7440-48-4	E440	0.1	mg/kg	25 mg/kg	112	80.0	120	---
copper	7440-50-8	E440	0.5	mg/kg	25 mg/kg	109	80.0	120	---
iron	7439-89-6	E440	50	mg/kg	100 mg/kg	103	80.0	120	---
lead	7439-92-1	E440	0.5	mg/kg	50 mg/kg	114	80.0	120	---
lithium	7439-93-2	E440	2	mg/kg	25 mg/kg	110	80.0	120	---
magnesium	7439-95-4	E440	20	mg/kg	5000 mg/kg	103	80.0	120	---
manganese	7439-96-5	E440	1	mg/kg	25 mg/kg	110	80.0	120	---
molybdenum	7439-98-7	E440	0.1	mg/kg	25 mg/kg	112	80.0	120	---
nickel	7440-02-0	E440	0.5	mg/kg	50 mg/kg	109	80.0	120	---
phosphorus	7723-14-0	E440	50	mg/kg	1000 mg/kg	119	80.0	120	---
potassium	7440-09-7	E440	100	mg/kg	5000 mg/kg	105	80.0	120	---
selenium	7782-49-2	E440	0.2	mg/kg	100 mg/kg	108	80.0	120	---



Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Metals (QCLot: 476933) - continued									
silver	7440-22-4	E440	0.1	mg/kg	10 mg/kg	100	80.0	120	----
sodium	7440-23-5	E440	50	mg/kg	5000 mg/kg	115	80.0	120	----
strontium	7440-24-6	E440	0.5	mg/kg	25 mg/kg	107	80.0	120	----
sulfur	7704-34-9	E440	1000	mg/kg	5000 mg/kg	104	80.0	120	----
thallium	7440-28-0	E440	0.05	mg/kg	100 mg/kg	104	80.0	120	----
tin	7440-31-5	E440	2	mg/kg	50 mg/kg	110	80.0	120	----
titanium	7440-32-6	E440	1	mg/kg	25 mg/kg	111	80.0	120	----
tungsten	7440-33-7	E440	0.5	mg/kg	10 mg/kg	118	80.0	120	----
uranium	7440-61-1	E440	0.05	mg/kg	0.5 mg/kg	113	80.0	120	----
vanadium	7440-62-2	E440	0.2	mg/kg	50 mg/kg	113	80.0	120	----
zinc	7440-66-6	E440	2	mg/kg	50 mg/kg	96.9	80.0	120	----
zirconium	7440-67-7	E440	1	mg/kg	10 mg/kg	110	80.0	120	----



Reference Material (RM) Report

A Reference Material (RM) is a homogenous material with known and well-established analyte concentrations. RMs are processed in an identical manner to test samples, and are used to monitor and control the accuracy and precision of a test method for a typical sample matrix. RM results are expressed as percent recovery of the target analyte concentration. RM targets may be certified target concentrations provided by the RM supplier, or may be ALS long-term mean values (for empirical test methods).

Sub-Matrix: **Soil/Solid**

Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Reference Material (RM) Report				
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%)		Qualifier
							Low	High	
Physical Tests (QCLot: 477011)									
QC-477011-002	RM	pH (1:2 soil:water)	----	E108	8.06 pH units	97.9	96.0	104	----
Organic / Inorganic Carbon (QCLot: 478024)									
QC-478024-003	RM	carbon, total [TC]	----	E351	1.4 %	99.9	80.0	120	----
Organic / Inorganic Carbon (QCLot: 478096)									
QC-478096-003	RM	carbon, inorganic [IC]	----	E354	0.383 %	97.5	80.0	120	----
Metals (QCLot: 476932)									
QC-476932-003	RM	mercury	7439-97-6	E510	0.062 mg/kg	101	70.0	130	----
Metals (QCLot: 476933)									
QC-476933-003	RM	aluminum	7429-90-5	E440	9817 mg/kg	97.1	70.0	130	----
QC-476933-003	RM	antimony	7440-36-0	E440	3.99 mg/kg	116	70.0	130	----
QC-476933-003	RM	arsenic	7440-38-2	E440	3.73 mg/kg	97.5	70.0	130	----
QC-476933-003	RM	barium	7440-39-3	E440	105 mg/kg	98.3	70.0	130	----
QC-476933-003	RM	beryllium	7440-41-7	E440	0.349 mg/kg	98.2	70.0	130	----
QC-476933-003	RM	boron	7440-42-8	E440	8.5 mg/kg	99.2	40.0	160	----
QC-476933-003	RM	cadmium	7440-43-9	E440	0.91 mg/kg	100	70.0	130	----
QC-476933-003	RM	calcium	7440-70-2	E440	31082 mg/kg	100.0	70.0	130	----
QC-476933-003	RM	chromium	7440-47-3	E440	101 mg/kg	95.3	70.0	130	----
QC-476933-003	RM	cobalt	7440-48-4	E440	6.9 mg/kg	101	70.0	130	----
QC-476933-003	RM	copper	7440-50-8	E440	123 mg/kg	105	70.0	130	----
QC-476933-003	RM	iron	7439-89-6	E440	23558 mg/kg	99.4	70.0	130	----
QC-476933-003	RM	lead	7439-92-1	E440	267 mg/kg	113	70.0	130	----
QC-476933-003	RM	lithium	7439-93-2	E440	9.5 mg/kg	104	70.0	130	----
QC-476933-003	RM	magnesium	7439-95-4	E440	5509 mg/kg	100	70.0	130	----
QC-476933-003	RM	manganese	7439-96-5	E440	269 mg/kg	102	70.0	130	----
QC-476933-003	RM	molybdenum	7439-98-7	E440	1.03 mg/kg	120	70.0	130	----
QC-476933-003	RM	nickel	7440-02-0	E440	26.7 mg/kg	102	70.0	130	----
QC-476933-003	RM	phosphorus	7723-14-0	E440	752 mg/kg	103	70.0	130	----
QC-476933-003	RM	potassium	7440-09-7	E440	1587 mg/kg	92.0	70.0	130	----
QC-476933-003	RM	silver	7440-22-4	E440	4.06 mg/kg	114	70.0	130	----



Sub-Matrix: Soil/Solid

Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Reference Material (RM) Report					
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%)		Qualifier	
							Low	High		
Metals (QCLot: 476933) - continued										
QC-476933-003	RM	sodium	7440-23-5	E440	797 mg/kg	96.1	70.0	130	----	
QC-476933-003	RM	strontium	7440-24-6	E440	86.1 mg/kg	96.4	70.0	130	----	
QC-476933-003	RM	thallium	7440-28-0	E440	0.0786 mg/kg	97.7	40.0	160	----	
QC-476933-003	RM	tin	7440-31-5	E440	10.6 mg/kg	105	70.0	130	----	
QC-476933-003	RM	titanium	7440-32-6	E440	839 mg/kg	87.7	70.0	130	----	
QC-476933-003	RM	uranium	7440-61-1	E440	0.52 mg/kg	100	70.0	130	----	
QC-476933-003	RM	vanadium	7440-62-2	E440	32.7 mg/kg	97.7	70.0	130	----	
QC-476933-003	RM	zinc	7440-66-6	E440	297 mg/kg	98.2	70.0	130	----	
QC-476933-003	RM	zirconium	7440-67-7	E440	5.73 mg/kg	97.3	70.0	130	----	

COC ID: APRIL EVO LAEMP 2022

TURNAROUND TIME:

PROJECT/CLIENT INFO					LAB/CITY				
Facility Name / Job#	RFP				Lab Name	ALS Calgary			
Project Manager	Mike Pope				Lab Contact	Lyudmyla Shvets			
Email	m.pope@teck.com				Email	lyudmyla.shvets@alsglobal.com			
Address	421 Pine Avenue				Address	2559 29 Street NE			
City	Sparwood	Province	BC		City	Calgary	Province	AB	
Postal Code	V0B 2G0	Country	Canada		Postal Code	T1Y 7B5	Country	Canada	
Phone Number	250-425-8202				Phone Number	1 403 407 1774			

Environmental Division
Calgary
Work Order Reference
CG2204883



SAMPLE DETAILS									ANALYSIS REQUESTED				
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.		IN	N	N	N	N
									NONE	MOIST	NONE	NONE	NONE
									C-TOC-SK	MET-COME-FULL-CL	MOISTURE-CL - % Moisture	PSA-PIPET-DETAIL-SK Particle Size	PAH-TMB-D/A-MS-CL-PAHs
RG_MIDBO_SE-01_2022-04_NP	RG MIDBO	SE	No	4/25/2022	14:00	G	1		X	X	X	X	X
RG_MIDBO_SE-02_2022-04_NP	RG MIDBO	SE	No	4/25/2022	14:00	G	1		X	X	X	X	X
RG_M13_SE-01_2022-04_NP	RG M13	SE	No	4/25/2022	9:00	G	1		X	X	X	X	X
RG_M13_SE-02_2022-04_NP	RG M13	SE	No	4/25/2022	9:00	G	1		X	X	X	X	X
RG_MIDER_SE-01_2022-04_NP	RG MIDER	SE	No	4/25/2022	11:30	G	1		X	X	X	X	X
RG_MIDER_SE-02_2022-04_NP	RG MIDER	SE	No	4/25/2022	11:30	G	1		X	X	X	X	X
RG_MIDER_SE-03_2022-04_NP	RG MIDER	SE	No	4/25/2022	11:30	G	1		X	X	X	X	X
RG_ERCKUT_SE-01_2022-04_NP	RG ERCKUT	SE	No	4/26/2022	12:00	G	1		X	X	X	X	X
RG_ERCKUT_SE-02_2022-04_NP	RG ERCKUT	SE	No	4/26/2022	12:00	G	1		X	X	X	X	X
RG_ERCKUT_SE-03_2022-04_NP	RG ERCKUT	SE	No	4/26/2022	12:00	G	1		X	X	X	X	X

1-988-722-5153

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
VPO00815101	Alex McClymont	April 26, 2022	<i>[Signature]</i> 4/27 10:10

Environmental Division
Calgary
Work Order Reference
CG2204883



Telephone : +1 403 407 1800

AS RETURNED/DESCRIPTION	Regular (default) <input checked="" type="checkbox"/>	Priority (2-3 business days) - 50% surcharge	Emergency (1 Business Day) - 100% surcharge	For Emergency <1 Day, ASAP or Weekend - Contact ALS
Sampler's Name	Alex McClymont			
Sampler's Signature	<i>[Signature]</i>			
Mobile #	780-293-6750			
Date/Time	April 26, 2022			

Fe

CERTIFICATE OF ANALYSIS

Work Order : CG2204941 Amendment : (Partial Results) Client : Teck Coal Limited Contact : Mike Pope Address : RR#1 HWY#3 Sparwood BC Canada V0B 2G1 Telephone : ---- Project : REGIONAL EFFECTS PROGRAM PO : C-O-C number : APRIL EVO LAEMP 2022 Sampler : ---- Site : ---- Quote number : Teck Coal Master Quote No. of samples received : 2 No. of samples analysed : 2	Page : 1 of 4 Laboratory : Calgary - Environmental Account Manager : Lyudmyla Shvets Address : 2559 29th Street NE Calgary AB Canada T1Y 7B5 Telephone : +1 403 407 1800 Date Samples Received : 27-Apr-2022 10:10 Date Analysis Commenced : 28-Apr-2022 Issue Date : 04-May-2022 16:53
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This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Harpreet Chawla	Team Leader - Inorganics	Metals, Calgary, Alberta
Rosalie Van Deelen	Laboratory Assistant	Organics, Calgary, Alberta
Sara Niroomand		Metals, Calgary, Alberta
Vishnu Patel		Inorganics, Calgary, Alberta

(Partial Results)

Page : 2 of 4
Work Order : CG2204941
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

<i>Unit</i>	<i>Description</i>
%	percent
mg/kg	milligrams per kilogram
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

(Partial Results)

Page : 3 of 4
 Work Order : CG2204941
 Client : Teck Coal Limited
 Project : REGIONAL EFFECTS PROGRAM



Analytical Results

					Client sample ID	RG_ERCKUT_S E-04_2022-04_ NP	RG_ERCKUT_S E-05_2022-04_ NP	----	----	----
					Client sampling date / time	26-Apr-2022 12:00	26-Apr-2022 12:00	----	----	----
Analyte	CAS Number	Method	LOR	Unit	CG2204941-001	CG2204941-002	-----	-----	-----	
					Result	Result	---	---	---	
Physical Tests										
moisture	----	E144	0.25	%	43.0	53.9	----	----	----	
pH (1:2 soil:water)	----	E108	0.10	pH units	7.36	7.32	----	----	----	
Metals										
aluminum	7429-90-5	E440	50	mg/kg	7470	9230	----	----	----	
antimony	7440-36-0	E440	0.10	mg/kg	1.21	1.26	----	----	----	
arsenic	7440-38-2	E440	0.10	mg/kg	7.64	8.76	----	----	----	
barium	7440-39-3	E440	0.50	mg/kg	202	299	----	----	----	
beryllium	7440-41-7	E440	0.10	mg/kg	0.76	1.01	----	----	----	
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	----	----	----	
boron	7440-42-8	E440	5.0	mg/kg	7.3	10.2	----	----	----	
cadmium	7440-43-9	E440	0.020	mg/kg	1.47	1.79	----	----	----	
calcium	7440-70-2	E440	50	mg/kg	53800	34900	----	----	----	
chromium	7440-47-3	E440	0.50	mg/kg	14.3	17.1	----	----	----	
cobalt	7440-48-4	E440	0.10	mg/kg	7.10	8.27	----	----	----	
copper	7440-50-8	E440	0.50	mg/kg	17.2	22.4	----	----	----	
iron	7439-89-6	E440	50	mg/kg	16600	19600	----	----	----	
lead	7439-92-1	E440	0.50	mg/kg	11.0	14.1	----	----	----	
lithium	7439-93-2	E440	2.0	mg/kg	9.3	10.8	----	----	----	
magnesium	7439-95-4	E440	20	mg/kg	8470	5060	----	----	----	
manganese	7439-96-5	E440	1.0	mg/kg	225	307	----	----	----	
mercury	7439-97-6	E510	0.0050	mg/kg	0.0430	0.0436	----	----	----	
molybdenum	7439-98-7	E440	0.10	mg/kg	1.48	1.91	----	----	----	
nickel	7440-02-0	E440	0.50	mg/kg	25.7	31.7	----	----	----	
phosphorus	7723-14-0	E440	50	mg/kg	1360	1780	----	----	----	
potassium	7440-09-7	E440	100	mg/kg	1670	2500	----	----	----	
selenium	7782-49-2	E440	0.20	mg/kg	6.40	32.5	----	----	----	
silver	7440-22-4	E440	0.10	mg/kg	0.25	0.31	----	----	----	
sodium	7440-23-5	E440	50	mg/kg	70	86	----	----	----	
strontium	7440-24-6	E440	0.50	mg/kg	71.3	74.0	----	----	----	

(Partial Results)

Page : 4 of 4
 Work Order : CG2204941
 Client : Teck Coal Limited
 Project : REGIONAL EFFECTS PROGRAM



Analytical Results

Sub-Matrix: Soil (Matrix: Soil/Solid)					Client sample ID	RG_ERCKUT_S E-04_2022-04_ NP	RG_ERCKUT_S E-05_2022-04_ NP	---	---	---
Client sampling date / time					26-Apr-2022 12:00	26-Apr-2022 12:00	---	---	---	
Analyte	CAS Number	Method	LOR	Unit	CG2204941-001 Result	CG2204941-002 Result	-----	-----	-----	
Metals										
sulfur	7704-34-9	E440	1000	mg/kg	<1000	1600	---	---	---	
thallium	7440-28-0	E440	0.050	mg/kg	0.350	0.260	---	---	---	
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	---	---	---	
titanium	7440-32-6	E440	1.0	mg/kg	13.8	20.4	---	---	---	
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	---	---	---	
uranium	7440-61-1	E440	0.050	mg/kg	1.51	2.00	---	---	---	
vanadium	7440-62-2	E440	0.20	mg/kg	33.3	42.3	---	---	---	
zinc	7440-66-6	E440	2.0	mg/kg	110	136	---	---	---	
zirconium	7440-67-7	E440	1.0	mg/kg	<1.0	1.2	---	---	---	

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: CG2204941	Page	: 1 of 7
Amendment	: (Partial Results)		
Client	: Teck Coal Limited	Laboratory	: Calgary - Environmental
Contact	: Mike Pope	Account Manager	: Lyudmyla Shvets
Address	: RR#1 HWY#3 Spanwood BC Canada V0B 2G1	Address	: 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5
Telephone	: ----	Telephone	: +1 403 407 1800
Project	: REGIONAL EFFECTS PROGRAM	Date Samples Received	: 27-Apr-2022 10:10
PO	:	Issue Date	: 04-May-2022 16:53
C-O-C number	: APRIL EVO LAEMP 2022		
Sampler	: ----		
Site	: ----		
Quote number	: Teck Coal Master Quote		
No. of samples received	: 2		
No. of samples analysed	: 2		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

(Partial Results)

Page : 3 of 7
Work Order : CG2204941
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Soil/Solid**

Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKUT_SE-04_2022-04_NP	E510	26-Apr-2022	30-Apr-2022	----	----		30-Apr-2022	28 days	4 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKUT_SE-05_2022-04_NP	E510	26-Apr-2022	30-Apr-2022	----	----		30-Apr-2022	28 days	4 days	✓	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_ERCKUT_SE-04_2022-04_NP	E440	26-Apr-2022	30-Apr-2022	----	----		02-May-2022	180 days	6 days	✓	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_ERCKUT_SE-05_2022-04_NP	E440	26-Apr-2022	30-Apr-2022	----	----		02-May-2022	180 days	6 days	✓	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKUT_SE-04_2022-04_NP	E351	26-Apr-2022	----	----	----			180 days	----		
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKUT_SE-05_2022-04_NP	E351	26-Apr-2022	----	----	----			180 days	----		
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve											
LDPE bag RG_ERCKUT_SE-04_2022-04_NP	E354	26-Apr-2022	----	----	----			----	----		

(Partial Results)

Page : 4 of 7
 Work Order : CG2204941
 Client : Teck Coal Limited
 Project : REGIONAL EFFECTS PROGRAM



Matrix: Soil/Solid

Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKUT_SE-05_2022-04_NP	E354	26-Apr-2022	----	----	----			----	----	
Particle Size : CSSC Particle Size Classification (Mini Pipet Method)										
LDPE bag RG_ERCKUT_SE-04_2022-04_NP	E180A	26-Apr-2022	----	----	----			365 days	----	EHT
Particle Size : CSSC Particle Size Classification (Mini Pipet Method)										
LDPE bag RG_ERCKUT_SE-05_2022-04_NP	E180A	26-Apr-2022	----	----	----			365 days	----	EHT
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKUT_SE-04_2022-04_NP	E144	26-Apr-2022	----	----	----		03-May-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKUT_SE-05_2022-04_NP	E144	26-Apr-2022	----	----	----		03-May-2022	----	----	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag RG_ERCKUT_SE-04_2022-04_NP	E108	26-Apr-2022	30-Apr-2022	----	----		30-Apr-2022	30 days	4 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag RG_ERCKUT_SE-05_2022-04_NP	E108	26-Apr-2022	30-Apr-2022	----	----		30-Apr-2022	30 days	4 days	✓

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).

(Partial Results)

Page : 5 of 7
Work Order : CG2204941
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Soil/Solid**

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
Analytical Methods							
Laboratory Duplicates (DUP)							
Mercury in Soil/Solid by CVAAS	E510	473104	1	20	5.0	5.0	✔
Metals in Soil/Solid by CRC ICPMS	E440	473103	1	20	5.0	5.0	✔
Moisture Content by Gravimetry	E144	475969	1	4	25.0	5.0	✔
pH by Meter (1:2 Soil:Water Extraction)	E108	473155	1	19	5.2	5.0	✔
Laboratory Control Samples (LCS)							
Mercury in Soil/Solid by CVAAS	E510	473104	2	20	10.0	10.0	✔
Metals in Soil/Solid by CRC ICPMS	E440	473103	2	20	10.0	10.0	✔
Moisture Content by Gravimetry	E144	475969	1	4	25.0	5.0	✔
pH by Meter (1:2 Soil:Water Extraction)	E108	473155	2	19	10.5	10.0	✔
Method Blanks (MB)							
Mercury in Soil/Solid by CVAAS	E510	473104	1	20	5.0	5.0	✔
Metals in Soil/Solid by CRC ICPMS	E440	473103	1	20	5.0	5.0	✔
Moisture Content by Gravimetry	E144	475969	1	4	25.0	5.0	✔

(Partial Results)

Page : 6 of 7
Work Order : CG2204941
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
pH by Meter (1:2 Soil:Water Extraction)	E108 Calgary - Environmental	Soil/Solid	BC Lab Manual	pH is determined by potentiometric measurement with a pH electrode at ambient laboratory temperature (normally $20 \pm 5^\circ\text{C}$), and is carried out in accordance with procedures described in the BC Lab Manual (prescriptive method). The procedure involves mixing the dried (at $<60^\circ\text{C}$) and sieved (10mesh/2mm) sample with ultra pure water at a 1:2 ratio of sediment to water. The pH is then measured by a standard pH probe.
Moisture Content by Gravimetry	E144 Calgary - Environmental	Soil/Solid	CCME PHC in Soil - Tier 1	Moisture is measured gravimetrically by drying the sample at 105°C . Moisture content is calculated as the weight loss (due to water) divided by the wet weight of the sample, expressed as a percentage.
CSSC Particle Size Classification (Mini Pipet Method)	E180A Saskatoon - Environmental	Soil/Solid	CCME Vol 4 Analytical Methods	A soil sample is disaggregated to pass a 2mm sieve. The $<2\text{mm}$ specimen is then further disaggregated using Calgon solution and suspended in solution. Two pipette aliquots are taken, dried, and measured gravimetrically at specific times to determine %clay and %silt+clay using the principles of Stokes' law. %silt and %sand are determined mathematically.
Total Carbon by Combustion	E351 Saskatoon - Environmental	Soil/Solid	CSSS (2008) 21.2 (mod)	Total Carbon is determined by the high temperature combustion method with measurement by an infrared detector.
Total Inorganic Carbon by Acetic Acid pH Standard Curve	E354 Saskatoon - Environmental	Soil/Solid	CSSS (2008) 20.2	Total Inorganic Carbon is determined by acetic acid pH standard curve, where a known quantity of acetic acid is consumed by reaction with carbonates in the soil. The pH of the resulting solution is measured and compared against a standard curve relating pH to weight of carbonate.
Metals in Soil/Solid by CRC ICPMS	E440 Calgary - Environmental	Soil/Solid	EPA 6020B (mod)	<p>This method is intended to liberate metals that may be environmentally available. Samples are dried, then sieved through a 2 mm sieve, and digested with HNO_3 and HCl.</p> <p>Dependent on sample matrix, some metals may be only partially recovered, including Al, Ba, Be, Cr, Sr, Ti, Tl, V, W, and Zr. Silicate minerals are not solubilized. Volatile forms of sulfur (including sulfide) may not be captured, as they may be lost during sampling, storage, or digestion. This method does not adequately recover elemental sulfur, and is unsuitable for assessment of elemental sulfur standards or guidelines.</p> <p>Analysis is by Collision/Reaction Cell ICPMS.</p>
Mercury in Soil/Solid by CVAAS	E510 Calgary - Environmental	Soil/Solid	EPA 200.2/1631 Appendix (mod)	Samples are dried, then sieved through a 2 mm sieve, and digested with HNO_3 and HCl , followed by CVAAS analysis.
Total Organic Carbon (Calculated) in soil	EC356 Saskatoon - Environmental	Soil/Solid	CSSS (2008) 21.2	Total Organic Carbon (TOC) is calculated by the difference between total carbon (TC) and total inorganic carbon (TIC).

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
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(Partial Results)

Page : 7 of 7
Work Order : CG2204941
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



<i>Preparation Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
Leach 1:2 Soil:Water for pH/EC	EP108 Calgary - Environmental	Soil/Solid	BC WLAP METHOD: PH, ELECTROMETRIC, SOIL	The procedure involves mixing the dried (at <60°C) and sieved (No. 10 / 2mm) sample with deionized/distilled water at a 1:2 ratio of sediment to water.
Digestion for Metals and Mercury	EP440 Calgary - Environmental	Soil/Solid	EPA 200.2 (mod)	Samples are dried, then sieved through a 2 mm sieve, and digested with HNO ₃ and HCl. This method is intended to liberate metals that may be environmentally available.
PHCs and PAHs Hexane-Acetone Tumbler Extraction	EP601 Calgary - Environmental	Soil/Solid	CCME PHC in Soil - Tier 1 (mod)	Samples are subsampled and Petroleum Hydrocarbons (PHC) and PAHs are extracted with 1:1 hexane:acetone using a rotary extractor.
Dry and Grind	EPP442 Calgary - Environmental	Soil/Solid	Soil Sampling and Methods of Analysis, Carter 2008	After removal of any coarse fragments and reservation of wet subsamples a portion of homogenized sample is set in a tray and dried at less than 60°C until dry. The sample is then particle size reduced with an automated crusher or mortar and pestle, typically to <2 mm. Further size reduction may be needed for particular tests.



QUALITY CONTROL REPORT

Work Order : CG2204941
Amendment : (Partial Results)

Page : 1 of 10

Client : Teck Coal Limited
Contact : Mike Pope
Address : RR#1 HWY#3
Sparwood BC Canada V0B 2G1
Telephone : ----
Project : REGIONAL EFFECTS PROGRAM
PO :
C-O-C number : APRIL EVO LAEMP 2022
Sampler : ----
Site : ----
Quote number : Teck Coal Master Quote
No. of samples received : 2
No. of samples analysed : 2

Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
Calgary, Alberta Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 27-Apr-2022 10:10
Date Analysis Commenced : 28-Apr-2022
Issue Date : 04-May-2022 16:53

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
Matrix Spike (MS) Report; Recovery and Acceptance Limits
Reference Material (RM) Report; Recovery and Acceptance Limits
Method Blank (MB) Report; Recovery and Acceptance Limits
Laboratory Control Sample (LCS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Table with 3 columns: Signatories, Position, Laboratory Department. Rows include Harpreet Chawla (Team Leader - Inorganics), Rosalie Van Deelen (Laboratory Assistant), Sara Niroomand (Metals), and Vishnu Patel (Inorganics).

(Partial Results)

Page : 2 of 10
Work Order : CG2204941
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Services number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percentage Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

(Partial Results)

Page : 3 of 10
Work Order : CG2204941
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test specific).

Sub-Matrix: Soil/Solid

Table with columns: Laboratory sample ID, Client sample ID, Analyte, CAS Number, Method, LOR, Unit, Original Result, Duplicate Result, RPD(%) or Difference, Duplicate Limits, Qualifier. Includes sections for Physical Tests (QC Lot: 473155), Physical Tests (QC Lot: 475969), and Metals (QC Lot: 473103).

(Partial Results)

Page : 4 of 10
Work Order : CG2204941
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



Sub-Matrix: Soil/Solid

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Metals (QC Lot: 473103) - continued											
CG2204889-001	Anonymous	tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	0	Diff <2x LOR	----
		titanium	7440-32-6	E440	1.0	mg/kg	68.4	52.4	26.5%	40%	----
		tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	0	Diff <2x LOR	----
		uranium	7440-61-1	E440	0.050	mg/kg	1.14	0.968	16.2%	30%	----
		vanadium	7440-62-2	E440	0.20	mg/kg	35.3	27.4	25.4%	30%	----
		zinc	7440-66-6	E440	2.0	mg/kg	91.7	79.6	14.2%	30%	----
		zirconium	7440-67-7	E440	1.0	mg/kg	2.9	2.5	0.4	Diff <2x LOR	----
Metals (QC Lot: 473104)											
CG2204889-001	Anonymous	mercury	7439-97-6	E510	0.0050	mg/kg	0.0365	0.0354	3.03%	40%	----

(Partial Results)

Page : 5 of 10
Work Order : CG2204941
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Soil/Solid

Table with 7 columns: Analyte, CAS Number, Method, LOR, Unit, Result, Qualifier. Rows include Physical Tests (moisture) and Metals (aluminum, antimony, arsenic, barium, beryllium, bismuth, boron, cadmium, calcium, chromium, cobalt, copper, iron, lead, lithium, magnesium, manganese, molybdenum, nickel, phosphorus, potassium, selenium, silver, sodium, strontium, sulfur, thallium, tin, titanium, tungsten, uranium).

(Partial Results)



Page : 6 of 10
Work Order : CG2204941
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM

Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Metals (QCLot: 473103) - continued						
vanadium	7440-62-2	E440	0.2	mg/kg	<0.20	----
zinc	7440-66-6	E440	2	mg/kg	<2.0	----
zirconium	7440-67-7	E440	1	mg/kg	<1.0	----
Metals (QCLot: 473104)						
mercury	7439-97-6	E510	0.005	mg/kg	<0.0050	----

(Partial Results)

Page : 7 of 10
Work Order : CG2204941
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Soil/Solid

					Laboratory Control Sample (LCS) Report				
Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Physical Tests (QCLot: 473155)									
pH (1:2 soil:water)	---	E108	---	pH units	7 pH units	100	97.0	103	---
Physical Tests (QCLot: 475969)									
moisture	---	E144	0.25	%	50 %	96.8	90.0	110	---
Metals (QCLot: 473103)									
aluminum	7429-90-5	E440	50	mg/kg	200 mg/kg	99.4	80.0	120	---
antimony	7440-36-0	E440	0.1	mg/kg	100 mg/kg	108	80.0	120	---
arsenic	7440-38-2	E440	0.1	mg/kg	100 mg/kg	94.9	80.0	120	---
barium	7440-39-3	E440	0.5	mg/kg	25 mg/kg	101	80.0	120	---
beryllium	7440-41-7	E440	0.1	mg/kg	10 mg/kg	97.9	80.0	120	---
bismuth	7440-69-9	E440	0.2	mg/kg	100 mg/kg	94.9	80.0	120	---
boron	7440-42-8	E440	5	mg/kg	100 mg/kg	101	80.0	120	---
cadmium	7440-43-9	E440	0.02	mg/kg	10 mg/kg	95.8	80.0	120	---
calcium	7440-70-2	E440	50	mg/kg	5000 mg/kg	96.6	80.0	120	---
chromium	7440-47-3	E440	0.5	mg/kg	25 mg/kg	98.2	80.0	120	---
cobalt	7440-48-4	E440	0.1	mg/kg	25 mg/kg	96.6	80.0	120	---
copper	7440-50-8	E440	0.5	mg/kg	25 mg/kg	93.4	80.0	120	---
iron	7439-89-6	E440	50	mg/kg	100 mg/kg	106	80.0	120	---
lead	7439-92-1	E440	0.5	mg/kg	50 mg/kg	97.4	80.0	120	---
lithium	7439-93-2	E440	2	mg/kg	25 mg/kg	103	80.0	120	---
magnesium	7439-95-4	E440	20	mg/kg	5000 mg/kg	96.6	80.0	120	---
manganese	7439-96-5	E440	1	mg/kg	25 mg/kg	98.4	80.0	120	---
molybdenum	7439-98-7	E440	0.1	mg/kg	25 mg/kg	100	80.0	120	---
nickel	7440-02-0	E440	0.5	mg/kg	50 mg/kg	95.4	80.0	120	---
phosphorus	7723-14-0	E440	50	mg/kg	1000 mg/kg	100	80.0	120	---
potassium	7440-09-7	E440	100	mg/kg	5000 mg/kg	96.5	80.0	120	---
selenium	7782-49-2	E440	0.2	mg/kg	100 mg/kg	98.5	80.0	120	---
silver	7440-22-4	E440	0.1	mg/kg	10 mg/kg	85.7	80.0	120	---
sodium	7440-23-5	E440	50	mg/kg	5000 mg/kg	97.3	80.0	120	---
strontium	7440-24-6	E440	0.5	mg/kg	25 mg/kg	97.2	80.0	120	---
sulfur	7704-34-9	E440	1000	mg/kg	5000 mg/kg	103	80.0	120	---
thallium	7440-28-0	E440	0.05	mg/kg	100 mg/kg	95.0	80.0	120	---
tin	7440-31-5	E440	2	mg/kg	50 mg/kg	97.4	80.0	120	---
titanium	7440-32-6	E440	1	mg/kg	25 mg/kg	95.0	80.0	120	---

(Partial Results)

Page : 8 of 10
Work Order : CG2204941
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



Sub-Matrix: Soil/Solid

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Metals (QCLot: 473103) - continued									
tungsten	7440-33-7	E440	0.5	mg/kg	10 mg/kg	94.5	80.0	120	----
uranium	7440-61-1	E440	0.05	mg/kg	0.5 mg/kg	99.1	80.0	120	----
vanadium	7440-62-2	E440	0.2	mg/kg	50 mg/kg	99.2	80.0	120	----
zinc	7440-66-6	E440	2	mg/kg	50 mg/kg	91.3	80.0	120	----
zirconium	7440-67-7	E440	1	mg/kg	10 mg/kg	94.9	80.0	120	----
Metals (QCLot: 473104)									
mercury	7439-97-6	E510	0.005	mg/kg	0.1 mg/kg	119	80.0	120	----

(Partial Results)

Page : 9 of 10
Work Order : CG2204941
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



Reference Material (RM) Report

A Reference Material (RM) is a homogenous material with known and well-established analyte concentrations. RMs are processed in an identical manner to test samples, and are used to monitor and control the accuracy and precision of a test method for a typical sample matrix. RM results are expressed as percent recovery of the target analyte concentration. RM targets may be certified target concentrations provided by the RM supplier, or may be ALS long-term mean values (for empirical test methods).

Sub-Matrix: **Soil/Solid**

Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Reference Material (RM) Report				
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%)		Qualifier
							Low	High	
Physical Tests (QCLot: 473155)									
QC-473155-002	RM	pH (1:2 soil:water)	----	E108	8.06 pH units	99.5	96.0	104	----
Metals (QCLot: 473103)									
QC-473103-003	RM	aluminum	7429-90-5	E440	9817 mg/kg	105	70.0	130	----
QC-473103-003	RM	antimony	7440-36-0	E440	3.99 mg/kg	96.0	70.0	130	----
QC-473103-003	RM	arsenic	7440-38-2	E440	3.73 mg/kg	94.3	70.0	130	----
QC-473103-003	RM	barium	7440-39-3	E440	105 mg/kg	102	70.0	130	----
QC-473103-003	RM	beryllium	7440-41-7	E440	0.349 mg/kg	103	70.0	130	----
QC-473103-003	RM	boron	7440-42-8	E440	8.5 mg/kg	111	40.0	160	----
QC-473103-003	RM	cadmium	7440-43-9	E440	0.91 mg/kg	96.8	70.0	130	----
QC-473103-003	RM	calcium	7440-70-2	E440	31082 mg/kg	97.3	70.0	130	----
QC-473103-003	RM	chromium	7440-47-3	E440	101 mg/kg	102	70.0	130	----
QC-473103-003	RM	cobalt	7440-48-4	E440	6.9 mg/kg	100	70.0	130	----
QC-473103-003	RM	copper	7440-50-8	E440	123 mg/kg	94.3	70.0	130	----
QC-473103-003	RM	iron	7439-89-6	E440	23558 mg/kg	98.0	70.0	130	----
QC-473103-003	RM	lead	7439-92-1	E440	267 mg/kg	97.3	70.0	130	----
QC-473103-003	RM	lithium	7439-93-2	E440	9.5 mg/kg	116	70.0	130	----
QC-473103-003	RM	magnesium	7439-95-4	E440	5509 mg/kg	98.2	70.0	130	----
QC-473103-003	RM	manganese	7439-96-5	E440	269 mg/kg	103	70.0	130	----
QC-473103-003	RM	molybdenum	7439-98-7	E440	1.03 mg/kg	98.8	70.0	130	----
QC-473103-003	RM	nickel	7440-02-0	E440	26.7 mg/kg	99.4	70.0	130	----
QC-473103-003	RM	phosphorus	7723-14-0	E440	752 mg/kg	95.4	70.0	130	----
QC-473103-003	RM	potassium	7440-09-7	E440	1587 mg/kg	104	70.0	130	----
QC-473103-003	RM	silver	7440-22-4	E440	4.06 mg/kg	96.8	70.0	130	----
QC-473103-003	RM	sodium	7440-23-5	E440	797 mg/kg	96.1	70.0	130	----
QC-473103-003	RM	strontium	7440-24-6	E440	86.1 mg/kg	96.5	70.0	130	----
QC-473103-003	RM	thallium	7440-28-0	E440	0.0786 mg/kg	99.4	40.0	160	----
QC-473103-003	RM	tin	7440-31-5	E440	10.6 mg/kg	97.7	70.0	130	----
QC-473103-003	RM	titanium	7440-32-6	E440	839 mg/kg	106	70.0	130	----
QC-473103-003	RM	uranium	7440-61-1	E440	0.52 mg/kg	102	70.0	130	----

(Partial Results)

Page : 10 of 10
Work Order : CG2204941
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



Sub-Matrix: Soil/Solid

Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Reference Material (RM) Report				
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%)		Qualifier
							Low	High	
Metals (QCLot: 473103) - continued									
QC-473103-003	RM	vanadium	7440-62-2	E440	32.7 mg/kg	101	70.0	130	----
QC-473103-003	RM	zinc	7440-66-6	E440	297 mg/kg	93.2	70.0	130	----
QC-473103-003	RM	zirconium	7440-67-7	E440	5.73 mg/kg	97.2	70.0	130	----
Metals (QCLot: 473104)									
QC-473104-003	RM	mercury	7439-97-6	E510	0.062 mg/kg	110	70.0	130	----

COC ID:

APRIL EVO LAEMP 2022

TURNAROUND TIME:

PROJECT/CLIENT INFO					LABORATORY				
Facility Name / Job#	REP				Lab Name	ALS Calgary			
Project Manager	Mike Pope				Lab Contact	Lyudmyla Shvets			
Email	mike.pope@teck.com				Email	lyudmyla.shvets@alsglobal.com			
Address	421 Pine Avenue				Address	2559 29 Street NE			
City	Sparwood		Province	BC	City	Calgary	Province	AB	
Postal Code	V0B 2G0		Country	Canada	Postal Code	T1Y 7B5	Country	Canada	
Phone Number	250-425-8202				Phone Number	1 403 407 1794			

SAMPLE DETAILS									ANALYSIS REQUESTED								
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.										
RG_ERCKUT_SE-04_2022-04_NP	RG_ERCKUT	SE	No	4/26/2022	12:00	G	1										
RG_ERCKUT_SE-05_2022-04_NP	RG_ERCKUT	SE	No	4/26/2022	12:00	G	1										

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELEASUED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
VPO00816101	Alex McClymont	April 26, 2022	<i>[Signature]</i> 4/27 10:10

NB OF BOTTLES RETURNED/DESCRIPTION	Sampler's Name	Mobile #
Regular (default) x Priority (2-3 business days) - 50% surcharge Emergency (1 Business Day) - 100% surcharge For Emergency <1 Day, ASAP or Weekend - Contact ALS!	Alex McClymont	780-293-6750
	<i>[Signature]</i>	Date/Time April 26, 2022

Environmental Division
Calgary
Work Order Reference
CG2204941



7c



CERTIFICATE OF ANALYSIS

Work Order : **CG2205458**
Client : **Teck Coal Limited**
Contact : Mike Pope
Address : 421 PINE AVE
Sparwood BC Canada V0B 2G0
Telephone : ----
Project : REGIONAL EFFECTS PROGRAM
PO : VPO00816101
C-O-C number : APRIL EVO LAEMP 2022
Sampler : Alex McClymont
Site : ----
Quote number : Teck Coal Master Quote
No. of samples received : 25
No. of samples analysed : 21

Page : 1 of 23
Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
Calgary AB Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 05-May-2022 10:10
Date Analysis Commenced : 10-May-2022
Issue Date : 18-May-2022 18:15

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Hedy Lai	Team Leader - Inorganics	Inorganics, Saskatoon, Saskatchewan
Kevin Baxter		Metals, Calgary, Alberta
Maqsood UHassan	Laboratory Analyst	Organics, Calgary, Alberta
Oscar Ruiz	Lab Assistant	Metals, Calgary, Alberta
Rosalie Van Deelen	Laboratory Assistant	Organics, Calgary, Alberta
Sara Niroomand		Metals, Calgary, Alberta
Vishnu Patel		Inorganics, Calgary, Alberta



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
 LOR: Limit of Reporting (detection limit).

Unit	Description
-	No Unit
%	percent
mg/kg	milligrams per kilogram
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Workorder Comments

PAH Test results may be unreliable due to improper container. subsampled from bag, no jar provided.

Sample Comments

Sample	Client Id	Comment
CG2205458-001	RG_ERCKDT_SE-01_2022-04_NP	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2205458-001	RG_ERCKDT_SE-01_2022-04_NP	Updated WO to rush TAT as per client.
CG2205458-002	RG_ERCKDT_SE-02_2022-04_NP	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2205458-003	RG_ERCKDT_SE-03_2022-04_NP	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2205458-004	RG_ERCKDT_SE-04_2022-04_NP	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.



CG2205458-013	RG_RIVER_SE-01_2022-04_N P	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2205458-016	RG_ERCKUC_SE-03_2022-04 _NP	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2205458-023	RG_ERCKBR_SE-01_2022-04 _NP	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2205458-024	RG_ERCKBR_SE-02_2022-04 _NP	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.

Qualifiers

<i>Qualifier</i>	<i>Description</i>
<i>DLCI</i>	<i>Detection Limit Raised: Chromatographic interference due to co-elution.</i>
<i>DLHM</i>	<i>Detection Limit Adjusted: Sample has high moisture content.</i>
<i>RRV</i>	<i>Reported result verified by repeat analysis.</i>



Analytical Results

Sub-Matrix: Soil					Client sample ID	RG_ERCKDT_S E-01_2022-04_ NP	RG_ERCKDT_S E-02_2022-04_ NP	RG_ERCKDT_S E-03_2022-04_ NP	RG_ERCKDT_S E-04_2022-04_ NP	RG_ERCKDT_S E-05_2022-04_ NP
(Matrix: Soil/Solid)					Client sampling date / time	27-Apr-2022 11:15	27-Apr-2022 11:15	27-Apr-2022 11:15	27-Apr-2022 11:15	27-Apr-2022 11:15
Analyte	CAS Number	Method	LOR	Unit	CG2205458-001	CG2205458-002	CG2205458-003	CG2205458-004	CG2205458-005	
					Result	Result	Result	Result	Result	
Physical Tests										
moisture	----	E144	0.25	%	86.9	82.7	64.9	73.8	79.4	
pH (1:2 soil:water)	----	E108	0.10	pH units	7.81	7.77	7.76	7.70	7.84	
Particle Size										
grain size curve	----	E185A	-	-	See Attached	See Attached	See Attached	See Attached	See Attached	
clay (<0.004mm)	----	EC184A	1.0	%	13.9	10.3	5.7	6.9	14.4	
silt (0.063mm - 0.0312mm)	----	EC184A	1.0	%	27.7	27.0	14.5	19.1	25.5	
silt (0.0312mm - 0.004mm)	----	EC184A	1.0	%	45.8	40.7	22.6	28.5	43.1	
sand (0.125mm - 0.063mm)	----	EC184A	1.0	%	3.3	4.5	7.5	5.5	5.2	
sand (0.25mm - 0.125mm)	----	EC184A	1.0	%	3.0	4.1	10.6	6.8	3.5	
sand (0.5mm - 0.25mm)	----	EC184A	1.0	%	2.3	3.2	10.7	5.7	2.4	
sand (1.0mm - 0.50mm)	----	EC184A	1.0	%	1.4	2.7	8.9	4.0	3.2	
sand (2.0mm - 1.0mm)	----	EC184A	1.0	%	<1.0	3.6	7.1	4.9	2.4	
gravel (>2mm)	----	EC184A	1.0	%	2.2	3.9	12.4	18.6	<1.0	
Organic / Inorganic Carbon										
carbon, total [TC]	----	E351	0.050	%	14.3	13.8	11.3	11.8	13.5	
carbon, inorganic [IC]	----	E354	0.050	%	2.81	2.52	1.72	1.95	2.50	
carbon, inorganic [IC], (as CaCO3 equivalent)	----	E354	0.40	%	23.4	21.0	14.4	16.2	20.8	
carbon, total organic [TOC]	----	EC356	0.050	%	11.5	11.3	9.58	9.85	11.0	
Metals										
aluminum	7429-90-5	E440	50	mg/kg	2470	3430	4050	3450	2570	
antimony	7440-36-0	E440	0.10	mg/kg	1.00	1.15	1.11	1.02	1.04	
arsenic	7440-38-2	E440	0.10	mg/kg	22.2	21.0	13.1	14.7	23.1	
barium	7440-39-3	E440	0.50	mg/kg	199	222	204	195	233	
beryllium	7440-41-7	E440	0.10	mg/kg	0.54	0.57	0.59	0.55	0.57	
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20	
boron	7440-42-8	E440	5.0	mg/kg	8.4	8.5	6.7	7.4	7.8	
cadmium	7440-43-9	E440	0.020	mg/kg	7.96	8.57	3.93	6.22	8.57	
calcium	7440-70-2	E440	50	mg/kg	94000	78000	58200	63300	82700	
chromium	7440-47-3	E440	0.50	mg/kg	6.47	8.18	8.56	7.37	6.45	



Analytical Results

Sub-Matrix: Soil

(Matrix: Soil/Solid)

Client sample ID

					RG_ERCKDT_S E-01_2022-04_ NP	RG_ERCKDT_S E-02_2022-04_ NP	RG_ERCKDT_S E-03_2022-04_ NP	RG_ERCKDT_S E-04_2022-04_ NP	RG_ERCKDT_S E-05_2022-04_ NP
Client sampling date / time					27-Apr-2022 11:15	27-Apr-2022 11:15	27-Apr-2022 11:15	27-Apr-2022 11:15	27-Apr-2022 11:15
Analyte	CAS Number	Method	LOR	Unit	CG2205458-001	CG2205458-002	CG2205458-003	CG2205458-004	CG2205458-005
					Result	Result	Result	Result	Result
Metals									
cobalt	7440-48-4	E440	0.10	mg/kg	159	174	86.2	176	262
copper	7440-50-8	E440	0.50	mg/kg	16.2	16.6	16.6	15.6	16.8
iron	7439-89-6	E440	50	mg/kg	38000	37300	25500	28200	41400
lead	7439-92-1	E440	0.50	mg/kg	10.6	10.8	9.68	9.81	11.6
lithium	7439-93-2	E440	2.0	mg/kg	4.5	5.1	5.6	5.0	4.4
magnesium	7439-95-4	E440	20	mg/kg	9990	8700	7110	7210	9260
manganese	7439-96-5	E440	1.0	mg/kg	2890 ^{RRV}	3030 ^{RRV}	1500 ^{RRV}	3480 ^{RRV}	4840 ^{RRV}
mercury	7439-97-6	E510	0.0050	mg/kg	0.0408	0.0401	0.0385	0.0429	0.0402
molybdenum	7439-98-7	E440	0.10	mg/kg	2.48	2.70	2.42	2.78	2.71
nickel	7440-02-0	E440	0.50	mg/kg	147	154	87.0	174	170
phosphorus	7723-14-0	E440	50	mg/kg	1530	1550	1360	1380	1610
potassium	7440-09-7	E440	100	mg/kg	740	970	1010	850	700
selenium	7782-49-2	E440	0.20	mg/kg	35.1	37.2	29.8	28.8	32.0
silver	7440-22-4	E440	0.10	mg/kg	0.20	0.21	0.20	0.20	0.22
sodium	7440-23-5	E440	50	mg/kg	217	186	168	99	104
strontium	7440-24-6	E440	0.50	mg/kg	89.0	83.0	70.1	69.0	91.3
sulfur	7704-34-9	E440	1000	mg/kg	2900	2200	1400	1800	1900
thallium	7440-28-0	E440	0.050	mg/kg	0.362	0.424	0.280	0.376	0.368
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
titanium	7440-32-6	E440	1.0	mg/kg	10.1	11.5	10.8	10.6	10.0
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
uranium	7440-61-1	E440	0.050	mg/kg	2.04	1.82	1.88	1.93	2.02
vanadium	7440-62-2	E440	0.20	mg/kg	16.2	19.8	22.4	19.1	16.6
zinc	7440-66-6	E440	2.0	mg/kg	359	344	214	270	365
zirconium	7440-67-7	E440	1.0	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
Polycyclic Aromatic Hydrocarbons									
acenaphthene	83-32-9	E641A	0.050	mg/kg	<0.050 ^{DLCI}	<0.050 ^{DLCI}	<0.050	<0.050	<0.050 ^{DLCI}
acenaphthylene	208-96-8	E641A	0.050	mg/kg	<0.050 ^{DLHM}	<0.050 ^{DLHM}	<0.050	<0.050	<0.050
acridine	260-94-6	E641A	0.050	mg/kg	<0.050 ^{DLCI}	<0.050 ^{DLCI}	<0.050 ^{DLCI}	<0.050 ^{DLCI}	<0.050 ^{DLCI}
anthracene	120-12-7	E641A	0.050	mg/kg	<0.050 ^{DLHM}	<0.050 ^{DLHM}	<0.050	<0.050	<0.050



Analytical Results

Sub-Matrix: Soil

(Matrix: Soil/Solid)

Client sample ID

					RG_ERCKDT_S E-01_2022-04_ NP	RG_ERCKDT_S E-02_2022-04_ NP	RG_ERCKDT_S E-03_2022-04_ NP	RG_ERCKDT_S E-04_2022-04_ NP	RG_ERCKDT_S E-05_2022-04_ NP
Client sampling date / time					27-Apr-2022 11:15	27-Apr-2022 11:15	27-Apr-2022 11:15	27-Apr-2022 11:15	27-Apr-2022 11:15
Analyte	CAS Number	Method	LOR	Unit	CG2205458-001	CG2205458-002	CG2205458-003	CG2205458-004	CG2205458-005
					Result	Result	Result	Result	Result
Polycyclic Aromatic Hydrocarbons									
benzo(a)anthracene	56-55-3	E641A	0.050	mg/kg	<0.050 ^{DLHM}	0.082	0.054	<0.050	0.061
benzo(a)pyrene	50-32-8	E641A	0.050	mg/kg	<0.050 ^{DLHM}	<0.050 ^{DLHM}	<0.050	<0.050	<0.050
benzo(b+j)fluoranthene	n/a	E641A	0.050	mg/kg	0.158	0.156	0.136	0.128	0.159
benzo(b+j+k)fluoranthene	n/a	E641A	0.075	mg/kg	0.158	0.156	0.136	0.128	0.159
benzo(g,h,i)perylene	191-24-2	E641A	0.050	mg/kg	<0.050 ^{DLHM}	<0.050 ^{DLHM}	<0.050	<0.050	0.055
benzo(k)fluoranthene	207-08-9	E641A	0.050	mg/kg	<0.050 ^{DLHM}	<0.050 ^{DLHM}	<0.050	<0.050	<0.050
chrysene	218-01-9	E641A	0.050	mg/kg	0.307	0.340	0.240	0.264	0.342
dibenz(a,h)anthracene	53-70-3	E641A	0.050	mg/kg	<0.050 ^{DLHM}	<0.050 ^{DLHM}	<0.050	<0.050	<0.050
fluoranthene	206-44-0	E641A	0.050	mg/kg	<0.050 ^{DLHM}	0.074	0.063	0.052	0.068
fluorene	86-73-7	E641A	0.050	mg/kg	0.258	0.314	0.138	0.184	0.252
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.050	mg/kg	<0.050 ^{DLHM}	<0.050 ^{DLHM}	<0.050	<0.050	<0.050
methylnaphthalene, 1-	90-12-0	E641A	0.050	mg/kg	0.798	0.884	0.424	0.560	0.855
methylnaphthalene, 1+2-	----	E641A	0.075	mg/kg	2.36	2.65	1.19	1.62	2.56
methylnaphthalene, 2-	91-57-6	E641A	0.050	mg/kg	1.56	1.77	0.768	1.06	1.71
naphthalene	91-20-3	E641A	0.050	mg/kg	0.423	0.482	0.238	0.303	0.471
phenanthrene	85-01-8	E641A	0.050	mg/kg	1.09	1.26	0.770	0.888	1.18
pyrene	129-00-0	E641A	0.050	mg/kg	0.098	0.121	0.080	0.074	0.102
quinoline	91-22-5	E641A	0.050	mg/kg	<0.050 ^{DLHM}	<0.050 ^{DLHM}	<0.050	<0.050	<0.050
B(a)P total potency equivalents [B(a)P TPE]	----	E641A	0.065	mg/kg	0.104	0.106	0.077	0.073	0.081
IACR (CCME)	----	E641A	0.60	-	1.76	1.88	1.47	1.35	1.69
IACR AB (coarse)	----	E641A	0.10	-	<0.10	<0.10	<0.10	<0.10	<0.10
IACR AB (fine)	----	E641A	0.10	-	0.14	0.14	0.11	0.10	0.12
PAHs, total (BC Sched 3.4)	n/a	E641A	0.20	mg/kg	3.74	4.44	2.35	2.82	4.19
PAHs, total (EPA 16)	n/a	E641A	0.20	mg/kg	2.33	2.83	1.72	1.89	2.69
Polycyclic Aromatic Hydrocarbons Surrogates									
acridine-d9	34749-75-2	E641A	0.1	%	113	119	113	119	103
chrysene-d12	1719-03-5	E641A	0.1	%	120	123	120	121	128
naphthalene-d8	1146-65-2	E641A	0.1	%	116	120	116	114	120
phenanthrene-d10	1517-22-2	E641A	0.1	%	129	123	124	126	126



Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Soil (Matrix: Soil/Solid)					Client sample ID	RG_ERCKDT _SE-06_2022-0 4_NP	RG_ERCKDT _SE-07_2022-0 4_NP	RG_ALUSM_SE- 01_2022-04_NP	RG_RIVER_SE-0 1_2022-04_NP	RG_ERCKUC_S E-01_2022-04_ NP
Client sampling date / time					27-Apr-2022 11:15	27-Apr-2022 11:15	28-Apr-2022 14:00	28-Apr-2022 14:00	28-Apr-2022 10:55	
Analyte	CAS Number	Method	LOR	Unit	CG2205458-006 Result	CG2205458-007 Result	CG2205458-008 Result	CG2205458-013 Result	CG2205458-014 Result	
Physical Tests										
moisture	----	E144	0.25	%	74.1	77.7	34.5	68.7	73.3	
pH (1:2 soil:water)	----	E108	0.10	pH units	7.79	7.54	8.04	7.48	7.95	
Particle Size										
grain size curve	----	E185A	-	-	See Attached	See Attached	See Attached	See Attached	See Attached	
clay (<0.004mm)	----	EC184A	1.0	%	15.1	7.6	2.0	9.3	4.5	
silt (0.063mm - 0.0312mm)	----	EC184A	1.0	%	24.8	22.6	3.3	22.9	16.5	
silt (0.0312mm - 0.004mm)	----	EC184A	1.0	%	46.9	33.9	4.1	35.8	22.2	
sand (0.125mm - 0.063mm)	----	EC184A	1.0	%	8.0	14.8	5.3	9.9	9.6	
sand (0.25mm - 0.125mm)	----	EC184A	1.0	%	4.5	12.2	13.7	5.6	14.6	
sand (0.5mm - 0.25mm)	----	EC184A	1.0	%	<1.0	3.2	17.8	2.2	15.7	
sand (1.0mm - 0.50mm)	----	EC184A	1.0	%	<1.0	1.1	11.1	6.1	10.4	
sand (2.0mm - 1.0mm)	----	EC184A	1.0	%	<1.0	<1.0	10.2	6.1	5.6	
gravel (>2mm)	----	EC184A	1.0	%	<1.0	4.0	32.5	2.1	<1.0	
Organic / Inorganic Carbon										
carbon, total [TC]	----	E351	0.050	%	12.0	15.7	2.36	10.5	16.7	
carbon, inorganic [IC]	----	E354	0.050	%	2.50	2.33	0.843	2.94	4.07	
carbon, inorganic [IC], (as CaCO3 equivalent)	----	E354	0.40	%	20.8	19.4	7.03	24.5	33.9	
carbon, total organic [TOC]	----	EC356	0.050	%	9.50	13.4	1.52	7.56	12.6	
Metals										
aluminum	7429-90-5	E440	50	mg/kg	4900	4410	9390	4590	2480	
antimony	7440-36-0	E440	0.10	mg/kg	1.04	0.87	0.44	0.81	0.57	
arsenic	7440-38-2	E440	0.10	mg/kg	20.6	11.0	8.00	6.56	2.92	
barium	7440-39-3	E440	0.50	mg/kg	234	237	228	178	172	
beryllium	7440-41-7	E440	0.10	mg/kg	0.61	0.54	0.64	0.42	0.27	
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20	
boron	7440-42-8	E440	5.0	mg/kg	8.9	6.8	7.2	7.7	7.6	
cadmium	7440-43-9	E440	0.020	mg/kg	6.60	4.51	0.606	3.56	0.944	
calcium	7440-70-2	E440	50	mg/kg	86900	75800	30200	105000	177000	
chromium	7440-47-3	E440	0.50	mg/kg	10.9	9.39	13.3	9.58	5.60	



Analytical Results

Sub-Matrix: Soil

(Matrix: Soil/Solid)

Client sample ID

					RG_ERCKDT _SE-06_2022-0 4_NP	RG_ERCKDT _SE-07_2022-0 4_NP	RG_ALUSM_SE- 01_2022-04_NP	RG_RIVER_SE-0 1_2022-04_NP	RG_ERCKUC_S E-01_2022-04_ NP
Client sampling date / time					27-Apr-2022 11:15	27-Apr-2022 11:15	28-Apr-2022 14:00	28-Apr-2022 14:00	28-Apr-2022 10:55
Analyte	CAS Number	Method	LOR	Unit	CG2205458-006	CG2205458-007	CG2205458-008	CG2205458-013	CG2205458-014
					Result	Result	Result	Result	Result
Metals									
cobalt	7440-48-4	E440	0.10	mg/kg	101	54.6	6.31	26.2	41.4
copper	7440-50-8	E440	0.50	mg/kg	17.2	16.8	14.3	12.7	10.3
iron	7439-89-6	E440	50	mg/kg	36000	21300	20200	13600	5600
lead	7439-92-1	E440	0.50	mg/kg	10.7	8.75	10.1	6.93	6.26
lithium	7439-93-2	E440	2.0	mg/kg	7.0	5.3	15.1	7.1	3.2
magnesium	7439-95-4	E440	20	mg/kg	12100	7520	9160	12900	6070
manganese	7439-96-5	E440	1.0	mg/kg	1660 ^{RRV}	741	111	431	792
mercury	7439-97-6	E510	0.0050	mg/kg	0.0455	0.0446	0.0228	0.0337	0.0523
molybdenum	7439-98-7	E440	0.10	mg/kg	2.23	1.44	1.43	3.46	1.32
nickel	7440-02-0	E440	0.50	mg/kg	116	74.5	19.2	57.4	155
phosphorus	7723-14-0	E440	50	mg/kg	1640	1390	1160	1280	776
potassium	7440-09-7	E440	100	mg/kg	1250	1090	2030	1240	760
selenium	7782-49-2	E440	0.20	mg/kg	25.8	18.6	0.67	18.4	8.49
silver	7440-22-4	E440	0.10	mg/kg	0.24	0.22	<0.10	0.17	0.14
sodium	7440-23-5	E440	50	mg/kg	117	101	141	144	82
strontium	7440-24-6	E440	0.50	mg/kg	95.0	78.5	54.7	95.7	101
sulfur	7704-34-9	E440	1000	mg/kg	2000	1400	<1000	2900	3700
thallium	7440-28-0	E440	0.050	mg/kg	0.396	0.296	0.200	0.361	0.316
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
titanium	7440-32-6	E440	1.0	mg/kg	11.8	11.8	7.5	13.5	9.4
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
uranium	7440-61-1	E440	0.050	mg/kg	1.59	1.45	0.621	2.10	1.80
vanadium	7440-62-2	E440	0.20	mg/kg	23.6	22.2	22.9	19.5	13.1
zinc	7440-66-6	E440	2.0	mg/kg	316	190	90.1	152	55.0
zirconium	7440-67-7	E440	1.0	mg/kg	<1.0	<1.0	1.0	<1.0	<1.0
Polycyclic Aromatic Hydrocarbons									
acenaphthene	83-32-9	E641A	0.050	mg/kg	<0.050 ^{DLCI}	<0.050 ^{DLCI}	<0.050	<0.050	<0.050
acenaphthylene	208-96-8	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
acridine	260-94-6	E641A	0.050	mg/kg	<0.050 ^{DLCI}	<0.050 ^{DLCI}	<0.050	<0.050 ^{DLCI}	<0.050
anthracene	120-12-7	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050



Analytical Results

Sub-Matrix: Soil

(Matrix: Soil/Solid)

Client sample ID

					RG_ERCKDT _SE-06_2022-0 4_NP	RG_ERCKDT _SE-07_2022-0 4_NP	RG_ALUSM_SE- 01_2022-04_NP	RG_RIVER_SE-0 1_2022-04_NP	RG_ERCKUC_S E-01_2022-04_ NP
Client sampling date / time					27-Apr-2022 11:15	27-Apr-2022 11:15	28-Apr-2022 14:00	28-Apr-2022 14:00	28-Apr-2022 10:55
Analyte	CAS Number	Method	LOR	Unit	CG2205458-006	CG2205458-007	CG2205458-008	CG2205458-013	CG2205458-014
					Result	Result	Result	Result	Result
Polycyclic Aromatic Hydrocarbons									
benzo(a)anthracene	56-55-3	E641A	0.050	mg/kg	0.052	0.061	<0.050	<0.050	<0.050
benzo(a)pyrene	50-32-8	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
benzo(b+j)fluoranthene	n/a	E641A	0.050	mg/kg	0.118	0.151	<0.050	0.077	0.134
benzo(b+j+k)fluoranthene	n/a	E641A	0.075	mg/kg	0.118	0.151	<0.075	0.077	0.134
benzo(g,h,i)perylene	191-24-2	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
benzo(k)fluoranthene	207-08-9	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
chrysene	218-01-9	E641A	0.050	mg/kg	0.261	0.314	<0.050	0.167	0.191
dibenz(a,h)anthracene	53-70-3	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
fluoranthene	206-44-0	E641A	0.050	mg/kg	0.054	0.059	<0.050	<0.050	0.071
fluorene	86-73-7	E641A	0.050	mg/kg	0.212	0.182	<0.050	0.088	<0.050
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
methylnaphthalene, 1-	90-12-0	E641A	0.050	mg/kg	0.632	0.640	<0.050	0.263	0.176
methylnaphthalene, 1+2-	----	E641A	0.075	mg/kg	1.88	1.83	<0.075	0.729	0.386
methylnaphthalene, 2-	91-57-6	E641A	0.050	mg/kg	1.25	1.19	<0.050	0.466	0.210
naphthalene	91-20-3	E641A	0.050	mg/kg	0.352	0.378	<0.050	0.167	0.077
phenanthrene	85-01-8	E641A	0.050	mg/kg	0.884	1.14	0.056	0.484	<0.050 ^{DLC}
pyrene	129-00-0	E641A	0.050	mg/kg	0.082	0.091	<0.050	0.054	0.059
quinoline	91-22-5	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
B(a)P total potency equivalents [B(a)P TPE]	----	E641A	0.065	mg/kg	0.075	0.080	<0.065	0.067	0.073
IACR (CCME)	----	E641A	0.60	-	1.36	1.62	<0.60	0.98	1.35
IACR AB (coarse)	----	E641A	0.10	-	<0.10	<0.10	<0.10	<0.10	<0.10
IACR AB (fine)	----	E641A	0.10	-	0.10	0.12	<0.10	<0.10	0.10
PAHs, total (BC Sched 3.4)	n/a	E641A	0.20	mg/kg	3.15	3.42	<0.20	1.43	0.61
PAHs, total (EPA 16)	n/a	E641A	0.20	mg/kg	2.02	2.38	<0.20	1.04	<0.20
Polycyclic Aromatic Hydrocarbons Surrogates									
acridine-d9	34749-75-2	E641A	0.1	%	115	110	101	114	111
chrysene-d12	1719-03-5	E641A	0.1	%	126	129	111	128	123
naphthalene-d8	1146-65-2	E641A	0.1	%	110	114	94.2	109	106
phenanthrene-d10	1517-22-2	E641A	0.1	%	124	128	106	123	120



Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Soil

(Matrix: Soil/Solid)

Client sample ID

					RG_ERCKUC_S E-02_2022-04_ NP	RG_ERCKUC_S E-03_2022-04_ NP	RG_ERCK _SE-01_2022-0 4_NP	RG_MICOMP_S E-01_2022-04_ NP	RG_MICOMP_S E-02_2022-04_ NP
Client sampling date / time					28-Apr-2022 10:55	28-Apr-2022 10:55	28-Apr-2022 08:50	27-Apr-2022 15:15	27-Apr-2022 15:15
Analyte	CAS Number	Method	LOR	Unit	CG2205458-015	CG2205458-016	CG2205458-017	CG2205458-018	CG2205458-019
					Result	Result	Result	Result	Result
Physical Tests									
moisture	----	E144	0.25	%	84.3	76.2	91.0	57.4	62.2
pH (1:2 soil:water)	----	E108	0.10	pH units	7.86	7.82	7.64	7.63	7.47
Particle Size									
grain size curve	----	E185A	-	-	See Attached	See Attached	See Attached	See Attached	See Attached
clay (<0.004mm)	----	EC184A	1.0	%	4.7	4.9	2.0	2.8	2.3
silt (0.063mm - 0.0312mm)	----	EC184A	1.0	%	13.6	13.8	7.4	4.8	3.8
silt (0.0312mm - 0.004mm)	----	EC184A	1.0	%	18.1	18.9	6.7	6.8	5.9
sand (0.125mm - 0.063mm)	----	EC184A	1.0	%	6.4	9.1	13.8	4.8	2.8
sand (0.25mm - 0.125mm)	----	EC184A	1.0	%	8.6	17.7	22.7	6.9	6.2
sand (0.5mm - 0.25mm)	----	EC184A	1.0	%	13.0	14.8	16.4	16.3	27.1
sand (1.0mm - 0.50mm)	----	EC184A	1.0	%	19.7	15.6	12.1	30.7	39.2
sand (2.0mm - 1.0mm)	----	EC184A	1.0	%	13.9	4.7	11.1	22.2	9.5
gravel (>2mm)	----	EC184A	1.0	%	2.0	<1.0	7.8	4.7	3.2
Organic / Inorganic Carbon									
carbon, total [TC]	----	E351	0.050	%	20.4	18.3	7.55	3.72	3.00
carbon, inorganic [IC]	----	E354	0.050	%	5.35	4.09	4.13	1.52	1.32
carbon, inorganic [IC], (as CaCO3 equivalent)	----	E354	0.40	%	44.6	34.1	34.4	12.7	11.0
carbon, total organic [TOC]	----	EC356	0.050	%	15.0	14.2	3.42	2.20	1.68
Metals									
aluminum	7429-90-5	E440	50	mg/kg	1460	1140	3180	5280	5990
antimony	7440-36-0	E440	0.10	mg/kg	0.76	0.69	0.50	0.83	0.95
arsenic	7440-38-2	E440	0.10	mg/kg	1.94	1.42	3.44	6.45	6.54
barium	7440-39-3	E440	0.50	mg/kg	183	165	139	201	189
beryllium	7440-41-7	E440	0.10	mg/kg	0.20	0.13	0.26	0.47	0.50
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20
boron	7440-42-8	E440	5.0	mg/kg	15.6	11.4	<5.0	<5.0	<5.0
cadmium	7440-43-9	E440	0.020	mg/kg	1.66	1.23	0.627	1.23	1.30
calcium	7440-70-2	E440	50	mg/kg	156000	233000	187000	52700	45700
chromium	7440-47-3	E440	0.50	mg/kg	5.55	3.93	5.90	11.0	12.0



Analytical Results

Sub-Matrix: Soil

(Matrix: Soil/Solid)

Client sample ID

					RG_ERCKUC_S E-02_2022-04_ NP	RG_ERCKUC_S E-03_2022-04_ NP	RG_ERCK _SE-01_2022-0 4_NP	RG_MICOMP_S E-01_2022-04_ NP	RG_MICOMP_S E-02_2022-04_ NP
Client sampling date / time					28-Apr-2022 10:55	28-Apr-2022 10:55	28-Apr-2022 08:50	27-Apr-2022 15:15	27-Apr-2022 15:15
Analyte	CAS Number	Method	LOR	Unit	CG2205458-015	CG2205458-016	CG2205458-017	CG2205458-018	CG2205458-019
					Result	Result	Result	Result	Result
Metals									
cobalt	7440-48-4	E440	0.10	mg/kg	26.5	65.8	57.2	4.60	5.95
copper	7440-50-8	E440	0.50	mg/kg	14.4	8.47	6.80	11.8	13.8
iron	7439-89-6	E440	50	mg/kg	3180	2000	7230	14700	15400
lead	7439-92-1	E440	0.50	mg/kg	4.11	2.27	4.13	7.66	8.97
lithium	7439-93-2	E440	2.0	mg/kg	2.1	<2.0	4.8	6.0	7.0
magnesium	7439-95-4	E440	20	mg/kg	6200	5780	5700	6830	7160
manganese	7439-96-5	E440	1.0	mg/kg	531	1270	1180	268	302
mercury	7439-97-6	E510	0.0050	mg/kg	0.0496	0.0333	0.0208	0.0404	0.0377
molybdenum	7439-98-7	E440	0.10	mg/kg	2.29	1.24	1.35	1.63	1.65
nickel	7440-02-0	E440	0.50	mg/kg	174	197	100	20.5	25.5
phosphorus	7723-14-0	E440	50	mg/kg	700	612	700	1280	1370
potassium	7440-09-7	E440	100	mg/kg	460	410	680	1110	1220
selenium	7782-49-2	E440	0.20	mg/kg	21.7	14.5	2.49	0.84	1.02
silver	7440-22-4	E440	0.10	mg/kg	0.13	<0.10	<0.10	0.18	0.19
sodium	7440-23-5	E440	50	mg/kg	86	84	94	66	74
strontium	7440-24-6	E440	0.50	mg/kg	80.1	125	125	91.6	77.1
sulfur	7704-34-9	E440	1000	mg/kg	3900	5300	3800	<1000	<1000
thallium	7440-28-0	E440	0.050	mg/kg	0.399	0.320	0.197	0.174	0.196
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
titanium	7440-32-6	E440	1.0	mg/kg	9.6	6.4	19.1	20.2	23.3
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
uranium	7440-61-1	E440	0.050	mg/kg	3.32	2.28	1.26	1.15	1.06
vanadium	7440-62-2	E440	0.20	mg/kg	11.4	7.28	16.3	29.8	34.0
zinc	7440-66-6	E440	2.0	mg/kg	63.9	41.5	44.8	80.8	96.1
zirconium	7440-67-7	E440	1.0	mg/kg	1.4	<1.0	<1.0	<1.0	<1.0
Polycyclic Aromatic Hydrocarbons									
acenaphthene	83-32-9	E641A	0.050	mg/kg	<0.050 ^{DLHM}	<0.050	<0.050 ^{DLHM}	<0.050	<0.050
acenaphthylene	208-96-8	E641A	0.050	mg/kg	<0.050 ^{DLHM}	<0.050	<0.050 ^{DLHM}	<0.050	<0.050
acridine	260-94-6	E641A	0.050	mg/kg	<0.050 ^{DLHM}	<0.050	<0.050 ^{DLHM}	<0.050	<0.050
anthracene	120-12-7	E641A	0.050	mg/kg	<0.050 ^{DLHM}	<0.050	<0.050 ^{DLHM}	<0.050	<0.050



Analytical Results

Sub-Matrix: Soil

(Matrix: Soil/Solid)

Client sample ID

					RG_ERCKUC_S E-02_2022-04_ NP	RG_ERCKUC_S E-03_2022-04_ NP	RG_ERCK _SE-01_2022-0 4_NP	RG_MICOMP_S E-01_2022-04_ NP	RG_MICOMP_S E-02_2022-04_ NP
Client sampling date / time					28-Apr-2022 10:55	28-Apr-2022 10:55	28-Apr-2022 08:50	27-Apr-2022 15:15	27-Apr-2022 15:15
Analyte	CAS Number	Method	LOR	Unit	CG2205458-015	CG2205458-016	CG2205458-017	CG2205458-018	CG2205458-019
					Result	Result	Result	Result	Result
Polycyclic Aromatic Hydrocarbons									
benzo(a)anthracene	56-55-3	E641A	0.050	mg/kg	<0.050 ^{DLHM}	<0.050	<0.050 ^{DLHM}	<0.050	<0.050
benzo(a)pyrene	50-32-8	E641A	0.050	mg/kg	<0.050 ^{DLHM}	<0.050	<0.050 ^{DLHM}	<0.050	<0.050
benzo(b+j)fluoranthene	n/a	E641A	0.050	mg/kg	0.113	0.074	<0.050 ^{DLHM}	0.063	<0.050
benzo(b+j+k)fluoranthene	n/a	E641A	0.075	mg/kg	0.113	<0.075	<0.075 ^{DLHM}	<0.075	<0.075
benzo(g,h,i)perylene	191-24-2	E641A	0.050	mg/kg	<0.050 ^{DLHM}	<0.050	<0.050 ^{DLHM}	<0.050	<0.050
benzo(k)fluoranthene	207-08-9	E641A	0.050	mg/kg	<0.050 ^{DLHM}	<0.050	<0.050 ^{DLHM}	<0.050	<0.050
chrysene	218-01-9	E641A	0.050	mg/kg	0.202 ^{DLHM}	0.115	<0.050 ^{DLHM}	0.056	0.059
dibenz(a,h)anthracene	53-70-3	E641A	0.050	mg/kg	<0.050 ^{DLHM}	<0.050	<0.050 ^{DLHM}	<0.050	<0.050
fluoranthene	206-44-0	E641A	0.050	mg/kg	<0.050 ^{DLHM}	<0.050	<0.050 ^{DLHM}	<0.050	<0.050
fluorene	86-73-7	E641A	0.050	mg/kg	<0.050 ^{DLHM}	<0.050	<0.050 ^{DLHM}	<0.050	<0.050
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.050	mg/kg	<0.050 ^{DLHM}	<0.050	<0.050 ^{DLHM}	<0.050	<0.050
methylnaphthalene, 1-	90-12-0	E641A	0.050	mg/kg	0.128	0.066	<0.050 ^{DLHM}	0.118	0.084
methylnaphthalene, 1+2-	----	E641A	0.075	mg/kg	0.319	0.169	<0.075 ^{DLHM}	0.307	0.216
methylnaphthalene, 2-	91-57-6	E641A	0.050	mg/kg	0.191	0.103	<0.050 ^{DLHM}	0.189	0.132
naphthalene	91-20-3	E641A	0.050	mg/kg	<0.050 ^{DLHM}	<0.050	<0.050 ^{DLHM}	0.124	0.081
phenanthrene	85-01-8	E641A	0.050	mg/kg	0.478	0.229	0.203	0.160	0.161
pyrene	129-00-0	E641A	0.050	mg/kg	<0.050 ^{DLHM}	<0.050	<0.050 ^{DLHM}	<0.050	<0.050
quinoline	91-22-5	E641A	0.050	mg/kg	<0.050 ^{DLHM}	<0.050	<0.050 ^{DLHM}	<0.050	<0.050
B(a)P total potency equivalents [B(a)P TPE]	----	E641A	0.065	mg/kg	0.095	0.066	0.166	<0.065	<0.065
IACR (CCME)	----	E641A	0.60	-	1.40	0.94	1.61	0.84	0.60
IACR AB (coarse)	----	E641A	0.10	-	<0.10	<0.10	<0.10	<0.10	<0.10
IACR AB (fine)	----	E641A	0.10	-	0.12	<0.10	0.17	<0.10	<0.10
PAHs, total (BC Sched 3.4)	n/a	E641A	0.20	mg/kg	0.87	0.45	<0.20	0.53	0.43
PAHs, total (EPA 16)	n/a	E641A	0.20	mg/kg	0.79	0.42	<0.20	0.40	0.30
Polycyclic Aromatic Hydrocarbons Surrogates									
acridine-d9	34749-75-2	E641A	0.1	%	114	116	120	110	114
chrysene-d12	1719-03-5	E641A	0.1	%	123	127	122	114	125
naphthalene-d8	1146-65-2	E641A	0.1	%	112	108	121	99.7	108
phenanthrene-d10	1517-22-2	E641A	0.1	%	124	121	124	111	121



Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Soil (Matrix: Soil/Solid)					Client sample ID	RG_MICOMP_S E-03_2022-04_ NP	RG_MICOMP_S E-04_2022-04_ NP	RG_MICOMP_S E-05_2022-04_ NP	RG_ERCKBR_S E-01_2022-04_ NP	RG_ERCKBR_S E-02_2022-04_ NP
Client sampling date / time					27-Apr-2022 15:15	27-Apr-2022 15:15	27-Apr-2022 15:15	28-Apr-2022 10:30	28-Apr-2022 10:30	
Analyte	CAS Number	Method	LOR	Unit	CG2205458-020 Result	CG2205458-021 Result	CG2205458-022 Result	CG2205458-023 Result	CG2205458-024 Result	
Physical Tests										
moisture	----	E144	0.25	%	86.5	20.2	23.0	66.8	76.9	
pH (1:2 soil:water)	----	E108	0.10	pH units	7.41	8.39	8.02	7.41	7.04	
Particle Size										
grain size curve	----	E185A	-	-	See Attached	See Attached	See Attached	See Attached	See Attached	
clay (<0.004mm)	----	EC184A	1.0	%	1.9	<1.0	1.7	9.3	5.4	
silt (0.063mm - 0.0312mm)	----	EC184A	1.0	%	7.7	1.1	6.9	22.6	16.9	
silt (0.0312mm - 0.004mm)	----	EC184A	1.0	%	5.9	2.2	5.9	38.1	21.7	
sand (0.125mm - 0.063mm)	----	EC184A	1.0	%	15.7	1.2	13.0	7.5	8.5	
sand (0.25mm - 0.125mm)	----	EC184A	1.0	%	33.7	7.1	24.2	5.3	9.6	
sand (0.5mm - 0.25mm)	----	EC184A	1.0	%	26.6	33.0	25.3	2.4	4.8	
sand (1.0mm - 0.50mm)	----	EC184A	1.0	%	5.7	33.6	13.1	6.3	5.0	
sand (2.0mm - 1.0mm)	----	EC184A	1.0	%	2.2	13.2	5.8	5.1	6.0	
gravel (>2mm)	----	EC184A	1.0	%	<1.0	8.6	4.1	3.4	22.1	
Organic / Inorganic Carbon										
carbon, total [TC]	----	E351	0.050	%	4.25	2.92	2.35	10.2	10.6	
carbon, inorganic [IC]	----	E354	0.050	%	0.864	1.44	1.04	2.93	2.92	
carbon, inorganic [IC], (as CaCO3 equivalent)	----	E354	0.40	%	7.20	12.0	8.64	24.4	24.4	
carbon, total organic [TOC]	----	EC356	0.050	%	3.39	1.48	1.31	7.27	7.68	
Metals										
aluminum	7429-90-5	E440	50	mg/kg	6600	4100	5520	4860	3680	
antimony	7440-36-0	E440	0.10	mg/kg	0.87	0.90	0.85	0.68	0.82	
arsenic	7440-38-2	E440	0.10	mg/kg	5.73	7.67	7.66	6.73	5.18	
barium	7440-39-3	E440	0.50	mg/kg	284	161	204	187	167	
beryllium	7440-41-7	E440	0.10	mg/kg	0.57	0.44	0.46	0.45	0.44	
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20	
boron	7440-42-8	E440	5.0	mg/kg	5.9	<5.0	<5.0	8.7	7.9	
cadmium	7440-43-9	E440	0.020	mg/kg	1.62	1.10	1.08	3.63	2.99	
calcium	7440-70-2	E440	50	mg/kg	29800	55400	38400	107000	107000	
chromium	7440-47-3	E440	0.50	mg/kg	12.5	9.40	10.8	10.4	8.27	



Analytical Results

Sub-Matrix: Soil

(Matrix: Soil/Solid)

Client sample ID

					RG_MICOMP_S E-03_2022-04_ NP	RG_MICOMP_S E-04_2022-04_ NP	RG_MICOMP_S E-05_2022-04_ NP	RG_ERCKBR_S E-01_2022-04_ NP	RG_ERCKBR_S E-02_2022-04_ NP
Client sampling date / time					27-Apr-2022 15:15	27-Apr-2022 15:15	27-Apr-2022 15:15	28-Apr-2022 10:30	28-Apr-2022 10:30
Analyte	CAS Number	Method	LOR	Unit	CG2205458-020	CG2205458-021	CG2205458-022	CG2205458-023	CG2205458-024
					Result	Result	Result	Result	Result
Metals									
cobalt	7440-48-4	E440	0.10	mg/kg	6.50	4.00	4.91	27.5	31.1
copper	7440-50-8	E440	0.50	mg/kg	16.5	11.0	11.8	12.8	11.0
iron	7439-89-6	E440	50	mg/kg	13400	18100	16000	13200	11000
lead	7439-92-1	E440	0.50	mg/kg	9.51	7.95	7.61	6.81	6.13
lithium	7439-93-2	E440	2.0	mg/kg	7.9	5.7	6.8	7.5	5.3
magnesium	7439-95-4	E440	20	mg/kg	5790	7110	6390	13000	8850
manganese	7439-96-5	E440	1.0	mg/kg	296	296	270	433	515
mercury	7439-97-6	E510	0.0050	mg/kg	0.0537	0.0307	0.0375	0.0325	0.0299
molybdenum	7439-98-7	E440	0.10	mg/kg	1.52	2.39	1.63	3.17	3.59
nickel	7440-02-0	E440	0.50	mg/kg	29.7	18.4	21.2	59.4	43.7
phosphorus	7723-14-0	E440	50	mg/kg	1200	1140	1220	1350	1300
potassium	7440-09-7	E440	100	mg/kg	1300	790	1110	1370	1150
selenium	7782-49-2	E440	0.20	mg/kg	1.84	0.64	0.67	20.5	32.6
silver	7440-22-4	E440	0.10	mg/kg	0.24	0.15	0.15	0.17	0.14
sodium	7440-23-5	E440	50	mg/kg	92	54	<50	118	116
strontium	7440-24-6	E440	0.50	mg/kg	69.8	93.5	70.0	100	85.9
sulfur	7704-34-9	E440	1000	mg/kg	<1000	<1000	<1000	3200	3000
thallium	7440-28-0	E440	0.050	mg/kg	0.234	0.147	0.199	0.401	0.262
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
titanium	7440-32-6	E440	1.0	mg/kg	25.8	16.0	21.3	12.4	11.1
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
uranium	7440-61-1	E440	0.050	mg/kg	1.05	1.07	0.943	2.04	2.23
vanadium	7440-62-2	E440	0.20	mg/kg	34.8	26.7	31.0	19.9	17.9
zinc	7440-66-6	E440	2.0	mg/kg	95.4	75.8	84.6	149	114
zirconium	7440-67-7	E440	1.0	mg/kg	<1.0	1.5	<1.0	<1.0	<1.0
Polycyclic Aromatic Hydrocarbons									
acenaphthene	83-32-9	E641A	0.050	mg/kg	0.082	<0.050	<0.050	<0.050	<0.050
acenaphthylene	208-96-8	E641A	0.050	mg/kg	0.168	<0.050	<0.050	<0.050	<0.050
acridine	260-94-6	E641A	0.050	mg/kg	0.111	<0.050	<0.050	<0.050 ^{DLCL}	<0.050 ^{DLCL}
anthracene	120-12-7	E641A	0.050	mg/kg	<0.050 ^{DLCL}	<0.050	<0.050	<0.050	<0.050



Analytical Results

Sub-Matrix: Soil

(Matrix: Soil/Solid)

Client sample ID

					RG_MICOMP_S E-03_2022-04_ NP	RG_MICOMP_S E-04_2022-04_ NP	RG_MICOMP_S E-05_2022-04_ NP	RG_ERCKBR_S E-01_2022-04_ NP	RG_ERCKBR_S E-02_2022-04_ NP
Client sampling date / time					27-Apr-2022 15:15	27-Apr-2022 15:15	27-Apr-2022 15:15	28-Apr-2022 10:30	28-Apr-2022 10:30
Analyte	CAS Number	Method	LOR	Unit	CG2205458-020	CG2205458-021	CG2205458-022	CG2205458-023	CG2205458-024
					Result	Result	Result	Result	Result
Polycyclic Aromatic Hydrocarbons									
benzo(a)anthracene	56-55-3	E641A	0.050	mg/kg	0.450	<0.050	<0.050	<0.050	<0.050
benzo(a)pyrene	50-32-8	E641A	0.050	mg/kg	0.630	<0.050	<0.050	<0.050	<0.050
benzo(b+j)fluoranthene	n/a	E641A	0.050	mg/kg	1.18	<0.050	<0.050	0.080	0.091
benzo(b+j+k)fluoranthene	n/a	E641A	0.075	mg/kg	1.37	<0.075	<0.075	0.080	0.091
benzo(g,h,i)perylene	191-24-2	E641A	0.050	mg/kg	0.426	<0.050	<0.050	<0.050	<0.050
benzo(k)fluoranthene	207-08-9	E641A	0.050	mg/kg	0.194	<0.050	<0.050	<0.050	<0.050
chrysene	218-01-9	E641A	0.050	mg/kg	0.688	<0.050	0.051	0.175	0.195
dibenz(a,h)anthracene	53-70-3	E641A	0.050	mg/kg	0.124	<0.050	<0.050	<0.050	<0.050
fluoranthene	206-44-0	E641A	0.050	mg/kg	0.554	<0.050	<0.050	<0.050	<0.050
fluorene	86-73-7	E641A	0.050	mg/kg	0.186	<0.050	<0.050	0.082	0.078
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.050	mg/kg	0.456	<0.050	<0.050	<0.050	<0.050
methylnaphthalene, 1-	90-12-0	E641A	0.050	mg/kg	0.574	0.070	0.105	0.271	0.266
methylnaphthalene, 1+2-	----	E641A	0.075	mg/kg	1.52	0.174	0.256	0.749	0.711
methylnaphthalene, 2-	91-57-6	E641A	0.050	mg/kg	0.947	0.104	0.151	0.478	0.445
naphthalene	91-20-3	E641A	0.050	mg/kg	1.14	<0.050	0.063	0.185	0.173
phenanthrene	85-01-8	E641A	0.050	mg/kg	1.21	0.119	0.155	0.486	0.559
pyrene	129-00-0	E641A	0.050	mg/kg	0.397	<0.050	<0.050	0.050	0.052
quinoline	91-22-5	E641A	0.050	mg/kg	<0.050 ^{DLHM}	<0.050	<0.050	<0.050	<0.050
B(a)P total potency equivalents [B(a)P TPE]	----	E641A	0.065	mg/kg	0.993	<0.065	<0.065	0.068	0.069
IACR (CCME)	----	E641A	0.60	-	12.8	<0.60	0.60	1.00	1.08
IACR AB (coarse)	----	E641A	0.10	-	0.48	<0.10	<0.10	<0.10	<0.10
IACR AB (fine)	----	E641A	0.10	-	0.91	<0.10	<0.10	<0.10	<0.10
PAHs, total (BC Sched 3.4)	n/a	E641A	0.20	mg/kg	6.58	0.22	0.42	1.46	1.50
PAHs, total (EPA 16)	n/a	E641A	0.20	mg/kg	7.88	<0.20	0.27	1.06	1.15
Polycyclic Aromatic Hydrocarbons Surrogates									
acridine-d9	34749-75-2	E641A	0.1	%	109	103	110	113	103
chrysene-d12	1719-03-5	E641A	0.1	%	116	114	117	121	127
naphthalene-d8	1146-65-2	E641A	0.1	%	98.6	100	105	116	110
phenanthrene-d10	1517-22-2	E641A	0.1	%	115	108	115	122	120



Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Soil (Matrix: Soil/Solid)					Client sample ID	RG_ERCKBR_S E-03_2022-04_ NP	----	----	----	----
Client sampling date / time					28-Apr-2022 10:30	----	----	----	----	
Analyte	CAS Number	Method	LOR	Unit	CG2205458-025	-----	-----	-----	-----	
					Result	----	----	----	----	
Physical Tests										
moisture	----	E144	0.25	%	49.0	----	----	----	----	
pH (1:2 soil:water)	----	E108	0.10	pH units	7.30	----	----	----	----	
Particle Size										
grain size curve	----	E185A	-	-	See Attached	----	----	----	----	
clay (<0.004mm)	----	EC184A	1.0	%	2.0	----	----	----	----	
silt (0.063mm - 0.0312mm)	----	EC184A	1.0	%	4.3	----	----	----	----	
silt (0.0312mm - 0.004mm)	----	EC184A	1.0	%	5.6	----	----	----	----	
sand (0.125mm - 0.063mm)	----	EC184A	1.0	%	4.8	----	----	----	----	
sand (0.25mm - 0.125mm)	----	EC184A	1.0	%	4.4	----	----	----	----	
sand (0.5mm - 0.25mm)	----	EC184A	1.0	%	9.6	----	----	----	----	
sand (1.0mm - 0.50mm)	----	EC184A	1.0	%	37.0	----	----	----	----	
sand (2.0mm - 1.0mm)	----	EC184A	1.0	%	22.0	----	----	----	----	
gravel (>2mm)	----	EC184A	1.0	%	10.3	----	----	----	----	
Organic / Inorganic Carbon										
carbon, total [TC]	----	E351	0.050	%	7.15	----	----	----	----	
carbon, inorganic [IC]	----	E354	0.050	%	2.76	----	----	----	----	
carbon, inorganic [IC], (as CaCO3 equivalent)	----	E354	0.40	%	23.0	----	----	----	----	
carbon, total organic [TOC]	----	EC356	0.050	%	4.39	----	----	----	----	
Metals										
aluminum	7429-90-5	E440	50	mg/kg	4020	----	----	----	----	
antimony	7440-36-0	E440	0.10	mg/kg	0.66	----	----	----	----	
arsenic	7440-38-2	E440	0.10	mg/kg	4.96	----	----	----	----	
barium	7440-39-3	E440	0.50	mg/kg	142	----	----	----	----	
beryllium	7440-41-7	E440	0.10	mg/kg	0.37	----	----	----	----	
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	----	----	----	----	
boron	7440-42-8	E440	5.0	mg/kg	<5.0	----	----	----	----	
cadmium	7440-43-9	E440	0.020	mg/kg	1.84	----	----	----	----	
calcium	7440-70-2	E440	50	mg/kg	105000	----	----	----	----	
chromium	7440-47-3	E440	0.50	mg/kg	7.78	----	----	----	----	



Analytical Results

Sub-Matrix: Soil (Matrix: Soil/Solid)					Client sample ID	RG_ERCKBR_S E-03_2022-04_ NP	----	----	----	----
Client sampling date / time					28-Apr-2022 10:30	----	----	----	----	
Analyte	CAS Number	Method	LOR	Unit	CG2205458-025	-----	-----	-----	-----	
					Result	----	----	----	----	
Metals										
cobalt	7440-48-4	E440	0.10	mg/kg	10.9	----	----	----	----	
copper	7440-50-8	E440	0.50	mg/kg	10.6	----	----	----	----	
iron	7439-89-6	E440	50	mg/kg	11800	----	----	----	----	
lead	7439-92-1	E440	0.50	mg/kg	6.75	----	----	----	----	
lithium	7439-93-2	E440	2.0	mg/kg	6.0	----	----	----	----	
magnesium	7439-95-4	E440	20	mg/kg	7460	----	----	----	----	
manganese	7439-96-5	E440	1.0	mg/kg	270	----	----	----	----	
mercury	7439-97-6	E510	0.0050	mg/kg	0.0342	----	----	----	----	
molybdenum	7439-98-7	E440	0.10	mg/kg	1.93	----	----	----	----	
nickel	7440-02-0	E440	0.50	mg/kg	24.0	----	----	----	----	
phosphorus	7723-14-0	E440	50	mg/kg	1310	----	----	----	----	
potassium	7440-09-7	E440	100	mg/kg	920	----	----	----	----	
selenium	7782-49-2	E440	0.20	mg/kg	11.2	----	----	----	----	
silver	7440-22-4	E440	0.10	mg/kg	0.11	----	----	----	----	
sodium	7440-23-5	E440	50	mg/kg	77	----	----	----	----	
strontium	7440-24-6	E440	0.50	mg/kg	96.7	----	----	----	----	
sulfur	7704-34-9	E440	1000	mg/kg	1500	----	----	----	----	
thallium	7440-28-0	E440	0.050	mg/kg	0.150	----	----	----	----	
tin	7440-31-5	E440	2.0	mg/kg	<2.0	----	----	----	----	
titanium	7440-32-6	E440	1.0	mg/kg	10.0	----	----	----	----	
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	----	----	----	----	
uranium	7440-61-1	E440	0.050	mg/kg	1.59	----	----	----	----	
vanadium	7440-62-2	E440	0.20	mg/kg	16.7	----	----	----	----	
zinc	7440-66-6	E440	2.0	mg/kg	84.7	----	----	----	----	
zirconium	7440-67-7	E440	1.0	mg/kg	<1.0	----	----	----	----	
Polycyclic Aromatic Hydrocarbons										
acenaphthene	83-32-9	E641A	0.050	mg/kg	<0.050	----	----	----	----	
acenaphthylene	208-96-8	E641A	0.050	mg/kg	<0.050	----	----	----	----	
acridine	260-94-6	E641A	0.050	mg/kg	<0.050	----	----	----	----	
anthracene	120-12-7	E641A	0.050	mg/kg	<0.050	----	----	----	----	



Analytical Results

Sub-Matrix: Soil (Matrix: Soil/Solid)					Client sample ID	RG_ERCKBR_S E-03_2022-04_ NP	----	----	----	----
Client sampling date / time					28-Apr-2022 10:30	----	----	----	----	
Analyte	CAS Number	Method	LOR	Unit	CG2205458-025	-----	-----	-----	-----	
					Result	----	----	----	----	
Polycyclic Aromatic Hydrocarbons										
benz(a)anthracene	56-55-3	E641A	0.050	mg/kg	<0.050	----	----	----	----	
benzo(a)pyrene	50-32-8	E641A	0.050	mg/kg	<0.050	----	----	----	----	
benzo(b+j)fluoranthene	n/a	E641A	0.050	mg/kg	<0.050	----	----	----	----	
benzo(b+j+k)fluoranthene	n/a	E641A	0.075	mg/kg	<0.075	----	----	----	----	
benzo(g,h,i)perylene	191-24-2	E641A	0.050	mg/kg	<0.050	----	----	----	----	
benzo(k)fluoranthene	207-08-9	E641A	0.050	mg/kg	<0.050	----	----	----	----	
chrysene	218-01-9	E641A	0.050	mg/kg	0.052	----	----	----	----	
dibenz(a,h)anthracene	53-70-3	E641A	0.050	mg/kg	<0.050	----	----	----	----	
fluoranthene	206-44-0	E641A	0.050	mg/kg	<0.050	----	----	----	----	
fluorene	86-73-7	E641A	0.050	mg/kg	<0.050	----	----	----	----	
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.050	mg/kg	<0.050	----	----	----	----	
methylnaphthalene, 1-	90-12-0	E641A	0.050	mg/kg	0.084	----	----	----	----	
methylnaphthalene, 1+2-	----	E641A	0.075	mg/kg	0.223	----	----	----	----	
methylnaphthalene, 2-	91-57-6	E641A	0.050	mg/kg	0.139	----	----	----	----	
naphthalene	91-20-3	E641A	0.050	mg/kg	<0.050	----	----	----	----	
phenanthrene	85-01-8	E641A	0.050	mg/kg	0.154	----	----	----	----	
pyrene	129-00-0	E641A	0.050	mg/kg	<0.050	----	----	----	----	
quinoline	91-22-5	E641A	0.050	mg/kg	<0.050	----	----	----	----	
B(a)P total potency equivalents [B(a)P TPE]	----	E641A	0.065	mg/kg	<0.065	----	----	----	----	
IACR (CCME)	----	E641A	0.60	-	0.60	----	----	----	----	
IACR AB (coarse)	----	E641A	0.10	-	<0.10	----	----	----	----	
IACR AB (fine)	----	E641A	0.10	-	<0.10	----	----	----	----	
PAHs, total (BC Sched 3.4)	n/a	E641A	0.20	mg/kg	0.34	----	----	----	----	
PAHs, total (EPA 16)	n/a	E641A	0.20	mg/kg	0.21	----	----	----	----	
Polycyclic Aromatic Hydrocarbons Surrogates										
acridine-d9	34749-75-2	E641A	0.1	%	105	----	----	----	----	
chrysene-d12	1719-03-5	E641A	0.1	%	115	----	----	----	----	
naphthalene-d8	1146-65-2	E641A	0.1	%	99.3	----	----	----	----	
phenanthrene-d10	1517-22-2	E641A	0.1	%	108	----	----	----	----	



Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: CG2205458	Page	: 1 of 25
Client	: Teck Coal Limited	Laboratory	: Calgary - Environmental
Contact	: Mike Pope	Account Manager	: Lyudmyla Shvets
Address	: 421 PINE AVE Sparwood BC Canada V0B 2G0	Address	: 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5
Telephone	: ----	Telephone	: +1 403 407 1800
Project	: REGIONAL EFFECTS PROGRAM	Date Samples Received	: 05-May-2022 10:10
PO	: VPO00816101	Issue Date	: 18-May-2022 18:16
C-O-C number	: APRIL EVO LAEMP 2022		
Sampler	: Alex McClymont		
Site	: ----		
Quote number	: Teck Coal Master Quote		
No. of samples received	: 25		
No. of samples analysed	: 21		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- Duplicate outliers occur - please see following pages for full details.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **Soil/Solid**

Analyte Group	Laboratory sample ID	Client/Ref Sample ID	Analyte	CAS Number	Method	Result	Limits	Comment
Duplicate (DUP) RPDs								
Polycyclic Aromatic Hydrocarbons	CG2205458-020	RG_MICOMP_SE-03_2022-04_NP	benz(a)anthracene	56-55-3	E641A	65.6 % DUP-H	50%	Duplicate RPD does not meet the DQO for this test.
Polycyclic Aromatic Hydrocarbons	CG2205458-020	RG_MICOMP_SE-03_2022-04_NP	benzo(a)pyrene	50-32-8	E641A	57.3 % DUP-H	50%	Duplicate RPD does not meet the DQO for this test.
Polycyclic Aromatic Hydrocarbons	CG2205458-020	RG_MICOMP_SE-03_2022-04_NP	benzo(b+j)fluoranthene	n/a	E641A	51.0 % DUP-H	50%	Duplicate RPD does not meet the DQO for this test.
Polycyclic Aromatic Hydrocarbons	CG2205458-020	RG_MICOMP_SE-03_2022-04_NP	benzo(k)fluoranthene	207-08-9	E641A	74.6 % DUP-H	50%	Duplicate RPD does not meet the DQO for this test.
Polycyclic Aromatic Hydrocarbons	CG2205458-020	RG_MICOMP_SE-03_2022-04_NP	indeno(1,2,3-c,d)pyrene	193-39-5	E641A	54.0 % DUP-H	50%	Duplicate RPD does not meet the DQO for this test.

Result Qualifiers

Qualifier	Description
DUP-H	Duplicate results outside ALS DQO, due to sample heterogeneity.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Soil/Solid**

Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag RG_ALUSM_SE-01_2022-04_NP	E510	28-Apr-2022	11-May-2022	----	----		12-May-2022	28 days	14 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag RG_ERCK_SE-01_2022-04_NP	E510	28-Apr-2022	11-May-2022	----	----		12-May-2022	28 days	14 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag RG_ERCKBR_SE-01_2022-04_NP	E510	28-Apr-2022	11-May-2022	----	----		12-May-2022	28 days	14 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag RG_ERCKBR_SE-02_2022-04_NP	E510	28-Apr-2022	11-May-2022	----	----		12-May-2022	28 days	14 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag RG_ERCKBR_SE-03_2022-04_NP	E510	28-Apr-2022	11-May-2022	----	----		12-May-2022	28 days	14 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag RG_ERCKUC_SE-01_2022-04_NP	E510	28-Apr-2022	11-May-2022	----	----		12-May-2022	28 days	14 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag RG_ERCKUC_SE-02_2022-04_NP	E510	28-Apr-2022	11-May-2022	----	----		12-May-2022	28 days	14 days	✓



Matrix: **Soil/Solid**

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKUC_SE-03_2022-04_NP	E510	28-Apr-2022	11-May-2022	----	----		12-May-2022	28 days	14 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_RIVER_SE-01_2022-04_NP	E510	28-Apr-2022	11-May-2022	----	----		12-May-2022	28 days	14 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKDT_SE-06_2022-04_NP	E510	27-Apr-2022	11-May-2022	----	----		12-May-2022	28 days	15 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKDT_SE-07_2022-04_NP	E510	27-Apr-2022	11-May-2022	----	----		12-May-2022	28 days	15 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKDT_SE-01_2022-04_NP	E510	27-Apr-2022	11-May-2022	----	----		12-May-2022	28 days	15 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKDT_SE-02_2022-04_NP	E510	27-Apr-2022	11-May-2022	----	----		12-May-2022	28 days	15 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKDT_SE-03_2022-04_NP	E510	27-Apr-2022	11-May-2022	----	----		12-May-2022	28 days	15 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKDT_SE-04_2022-04_NP	E510	27-Apr-2022	11-May-2022	----	----		12-May-2022	28 days	15 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKDT_SE-05_2022-04_NP	E510	27-Apr-2022	11-May-2022	----	----		12-May-2022	28 days	15 days	✔	



Matrix: **Soil/Solid**

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_MICOMP_SE-01_2022-04_NP	E510	27-Apr-2022	11-May-2022	----	----		12-May-2022	28 days	15 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_MICOMP_SE-02_2022-04_NP	E510	27-Apr-2022	11-May-2022	----	----		12-May-2022	28 days	15 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_MICOMP_SE-03_2022-04_NP	E510	27-Apr-2022	11-May-2022	----	----		12-May-2022	28 days	15 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_MICOMP_SE-04_2022-04_NP	E510	27-Apr-2022	11-May-2022	----	----		12-May-2022	28 days	15 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_MICOMP_SE-05_2022-04_NP	E510	27-Apr-2022	11-May-2022	----	----		12-May-2022	28 days	15 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_ALUSM_SE-01_2022-04_NP	E440	28-Apr-2022	11-May-2022	----	----		12-May-2022	180 days	14 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_ERCK_SE-01_2022-04_NP	E440	28-Apr-2022	11-May-2022	----	----		12-May-2022	180 days	14 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_ERCKBR_SE-01_2022-04_NP	E440	28-Apr-2022	11-May-2022	----	----		12-May-2022	180 days	14 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_ERCKBR_SE-02_2022-04_NP	E440	28-Apr-2022	11-May-2022	----	----		12-May-2022	180 days	14 days	✔	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Metals in Soil/Solid by CRC ICPSMS											
LDPE bag RG_ERCKBR_SE-03_2022-04_NP	E440	28-Apr-2022	11-May-2022	----	----		12-May-2022	180 days	14 days	✔	
Metals : Metals in Soil/Solid by CRC ICPSMS											
LDPE bag RG_ERCKUC_SE-01_2022-04_NP	E440	28-Apr-2022	11-May-2022	----	----		12-May-2022	180 days	14 days	✔	
Metals : Metals in Soil/Solid by CRC ICPSMS											
LDPE bag RG_ERCKUC_SE-02_2022-04_NP	E440	28-Apr-2022	11-May-2022	----	----		12-May-2022	180 days	14 days	✔	
Metals : Metals in Soil/Solid by CRC ICPSMS											
LDPE bag RG_ERCKUC_SE-03_2022-04_NP	E440	28-Apr-2022	11-May-2022	----	----		12-May-2022	180 days	14 days	✔	
Metals : Metals in Soil/Solid by CRC ICPSMS											
LDPE bag RG_RIVER_SE-01_2022-04_NP	E440	28-Apr-2022	11-May-2022	----	----		12-May-2022	180 days	14 days	✔	
Metals : Metals in Soil/Solid by CRC ICPSMS											
LDPE bag RG_ERCKDT_SE-06_2022-04_NP	E440	27-Apr-2022	11-May-2022	----	----		12-May-2022	180 days	15 days	✔	
Metals : Metals in Soil/Solid by CRC ICPSMS											
LDPE bag RG_ERCKDT_SE-07_2022-04_NP	E440	27-Apr-2022	11-May-2022	----	----		12-May-2022	180 days	15 days	✔	
Metals : Metals in Soil/Solid by CRC ICPSMS											
LDPE bag RG_ERCKDT_SE-01_2022-04_NP	E440	27-Apr-2022	11-May-2022	----	----		12-May-2022	180 days	15 days	✔	
Metals : Metals in Soil/Solid by CRC ICPSMS											
LDPE bag RG_ERCKDT_SE-02_2022-04_NP	E440	27-Apr-2022	11-May-2022	----	----		12-May-2022	180 days	15 days	✔	



Matrix: **Soil/Solid**

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_ERCKDT_SE-03_2022-04_NP	E440	27-Apr-2022	11-May-2022	----	----		12-May-2022	180 days	15 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_ERCKDT_SE-04_2022-04_NP	E440	27-Apr-2022	11-May-2022	----	----		12-May-2022	180 days	15 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_ERCKDT_SE-05_2022-04_NP	E440	27-Apr-2022	11-May-2022	----	----		12-May-2022	180 days	15 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_MICOMP_SE-01_2022-04_NP	E440	27-Apr-2022	11-May-2022	----	----		12-May-2022	180 days	15 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_MICOMP_SE-02_2022-04_NP	E440	27-Apr-2022	11-May-2022	----	----		12-May-2022	180 days	15 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_MICOMP_SE-03_2022-04_NP	E440	27-Apr-2022	11-May-2022	----	----		12-May-2022	180 days	15 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_MICOMP_SE-04_2022-04_NP	E440	27-Apr-2022	11-May-2022	----	----		12-May-2022	180 days	15 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_MICOMP_SE-05_2022-04_NP	E440	27-Apr-2022	11-May-2022	----	----		12-May-2022	180 days	15 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ALUSM_SE-01_2022-04_NP	E351	28-Apr-2022	----	----	----		12-May-2022	180 days	0 days	✔	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCK_SE-01_2022-04_NP	E351	28-Apr-2022	----	----	----		12-May-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKBR_SE-01_2022-04_NP	E351	28-Apr-2022	----	----	----		12-May-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKBR_SE-02_2022-04_NP	E351	28-Apr-2022	----	----	----		11-May-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKBR_SE-03_2022-04_NP	E351	28-Apr-2022	----	----	----		11-May-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKDT_SE-06_2022-04_NP	E351	27-Apr-2022	----	----	----		12-May-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKDT_SE-07_2022-04_NP	E351	27-Apr-2022	----	----	----		12-May-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKDT_SE-01_2022-04_NP	E351	27-Apr-2022	----	----	----		12-May-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKDT_SE-02_2022-04_NP	E351	27-Apr-2022	----	----	----		12-May-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKDT_SE-03_2022-04_NP	E351	27-Apr-2022	----	----	----		12-May-2022	180 days	0 days	✔	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKDT_SE-04_2022-04_NP	E351	27-Apr-2022	----	----	----		12-May-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKDT_SE-05_2022-04_NP	E351	27-Apr-2022	----	----	----		12-May-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKUC_SE-01_2022-04_NP	E351	28-Apr-2022	----	----	----		12-May-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKUC_SE-02_2022-04_NP	E351	28-Apr-2022	----	----	----		12-May-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKUC_SE-03_2022-04_NP	E351	28-Apr-2022	----	----	----		12-May-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_MICOMP_SE-01_2022-04_NP	E351	27-Apr-2022	----	----	----		11-May-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_MICOMP_SE-02_2022-04_NP	E351	27-Apr-2022	----	----	----		11-May-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_MICOMP_SE-03_2022-04_NP	E351	27-Apr-2022	----	----	----		12-May-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_MICOMP_SE-04_2022-04_NP	E351	27-Apr-2022	----	----	----		11-May-2022	180 days	0 days	✔	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Total Carbon by Combustion										
LDPE bag RG_MICOMP_SE-05_2022-04_NP	E351	27-Apr-2022	----	----	----		11-May-2022	180 days	0 days	✔
Organic / Inorganic Carbon : Total Carbon by Combustion										
LDPE bag RG_RIVER_SE-01_2022-04_NP	E351	28-Apr-2022	----	----	----		12-May-2022	180 days	0 days	✔
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ALUSM_SE-01_2022-04_NP	E354	28-Apr-2022	----	----	----		12-May-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCK_SE-01_2022-04_NP	E354	28-Apr-2022	----	----	----		12-May-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKBR_SE-01_2022-04_NP	E354	28-Apr-2022	----	----	----		12-May-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKBR_SE-02_2022-04_NP	E354	28-Apr-2022	----	----	----		12-May-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKBR_SE-03_2022-04_NP	E354	28-Apr-2022	----	----	----		12-May-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKDT_SE-06_2022-04_NP	E354	27-Apr-2022	----	----	----		12-May-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKDT_SE-07_2022-04_NP	E354	27-Apr-2022	----	----	----		12-May-2022	----	----	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKDT_SE-01_2022-04_NP	E354	27-Apr-2022	----	----	----		12-May-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKDT_SE-02_2022-04_NP	E354	27-Apr-2022	----	----	----		12-May-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKDT_SE-03_2022-04_NP	E354	27-Apr-2022	----	----	----		12-May-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKDT_SE-04_2022-04_NP	E354	27-Apr-2022	----	----	----		12-May-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKDT_SE-05_2022-04_NP	E354	27-Apr-2022	----	----	----		12-May-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKUC_SE-01_2022-04_NP	E354	28-Apr-2022	----	----	----		12-May-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKUC_SE-02_2022-04_NP	E354	28-Apr-2022	----	----	----		12-May-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKUC_SE-03_2022-04_NP	E354	28-Apr-2022	----	----	----		12-May-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_MICOMP_SE-01_2022-04_NP	E354	27-Apr-2022	----	----	----		12-May-2022	----	----	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec Actual		Eval	Analysis Date	Holding Times Rec Actual		Eval
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_MICOMP_SE-02_2022-04_NP	E354	27-Apr-2022	----	----	----		12-May-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_MICOMP_SE-03_2022-04_NP	E354	27-Apr-2022	----	----	----		12-May-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_MICOMP_SE-04_2022-04_NP	E354	27-Apr-2022	----	----	----		12-May-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_MICOMP_SE-05_2022-04_NP	E354	27-Apr-2022	----	----	----		12-May-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_RIVER_SE-01_2022-04_NP	E354	28-Apr-2022	----	----	----		12-May-2022	----	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ALUSM_SE-01_2022-04_NP	E185A	28-Apr-2022	----	----	----		13-May-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCK_SE-01_2022-04_NP	E185A	28-Apr-2022	----	----	----		13-May-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKBR_SE-01_2022-04_NP	E185A	28-Apr-2022	----	----	----		13-May-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKBR_SE-02_2022-04_NP	E185A	28-Apr-2022	----	----	----		13-May-2022	365 days	----	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKBR_SE-03_2022-04_NP	E185A	28-Apr-2022	----	----	----		12-May-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKDT_SE-06_2022-04_NP	E185A	27-Apr-2022	----	----	----		13-May-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKDT_SE-07_2022-04_NP	E185A	27-Apr-2022	----	----	----		13-May-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKDT_SE-01_2022-04_NP	E185A	27-Apr-2022	----	----	----		13-May-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKDT_SE-02_2022-04_NP	E185A	27-Apr-2022	----	----	----		13-May-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKDT_SE-03_2022-04_NP	E185A	27-Apr-2022	----	----	----		13-May-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKDT_SE-04_2022-04_NP	E185A	27-Apr-2022	----	----	----		13-May-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKDT_SE-05_2022-04_NP	E185A	27-Apr-2022	----	----	----		13-May-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKUC_SE-01_2022-04_NP	E185A	28-Apr-2022	----	----	----		13-May-2022	365 days	----	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKUC_SE-02_2022-04_NP	E185A	28-Apr-2022	----	----	----		13-May-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKUC_SE-03_2022-04_NP	E185A	28-Apr-2022	----	----	----		13-May-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_MICOMP_SE-01_2022-04_NP	E185A	27-Apr-2022	----	----	----		13-May-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_MICOMP_SE-02_2022-04_NP	E185A	27-Apr-2022	----	----	----		13-May-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_MICOMP_SE-03_2022-04_NP	E185A	27-Apr-2022	----	----	----		13-May-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_MICOMP_SE-04_2022-04_NP	E185A	27-Apr-2022	----	----	----		13-May-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_MICOMP_SE-05_2022-04_NP	E185A	27-Apr-2022	----	----	----		13-May-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_RIVER_SE-01_2022-04_NP	E185A	28-Apr-2022	----	----	----		13-May-2022	365 days	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ALUSM_SE-01_2022-04_NP	E144	28-Apr-2022	----	----	----		10-May-2022	----	----	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCK_SE-01_2022-04_NP	E144	28-Apr-2022	----	----	----		10-May-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKBR_SE-01_2022-04_NP	E144	28-Apr-2022	----	----	----		10-May-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKBR_SE-02_2022-04_NP	E144	28-Apr-2022	----	----	----		10-May-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKBR_SE-03_2022-04_NP	E144	28-Apr-2022	----	----	----		10-May-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKDT_SE-06_2022-04_NP	E144	27-Apr-2022	----	----	----		10-May-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKDT_SE-07_2022-04_NP	E144	27-Apr-2022	----	----	----		10-May-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKDT_SE-01_2022-04_NP	E144	27-Apr-2022	----	----	----		10-May-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKDT_SE-02_2022-04_NP	E144	27-Apr-2022	----	----	----		10-May-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKDT_SE-03_2022-04_NP	E144	27-Apr-2022	----	----	----		10-May-2022	----	----	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKDT_SE-04_2022-04_NP	E144	27-Apr-2022	----	----	----		10-May-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKDT_SE-05_2022-04_NP	E144	27-Apr-2022	----	----	----		10-May-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKUC_SE-01_2022-04_NP	E144	28-Apr-2022	----	----	----		10-May-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKUC_SE-02_2022-04_NP	E144	28-Apr-2022	----	----	----		10-May-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKUC_SE-03_2022-04_NP	E144	28-Apr-2022	----	----	----		10-May-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_MICOMP_SE-01_2022-04_NP	E144	27-Apr-2022	----	----	----		10-May-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_MICOMP_SE-02_2022-04_NP	E144	27-Apr-2022	----	----	----		10-May-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_MICOMP_SE-03_2022-04_NP	E144	27-Apr-2022	----	----	----		10-May-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_MICOMP_SE-04_2022-04_NP	E144	27-Apr-2022	----	----	----		10-May-2022	----	----	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Moisture Content by Gravimetry											
LDPE bag RG_MICOMP_SE-05_2022-04_NP	E144	27-Apr-2022	----	----	----		10-May-2022	----	----		
Physical Tests : Moisture Content by Gravimetry											
LDPE bag RG_RIVER_SE-01_2022-04_NP	E144	28-Apr-2022	----	----	----		10-May-2022	----	----		
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ALUSM_SE-01_2022-04_NP	E108	28-Apr-2022	12-May-2022	----	----		12-May-2022	30 days	14 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCK_SE-01_2022-04_NP	E108	28-Apr-2022	12-May-2022	----	----		12-May-2022	30 days	14 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKBR_SE-01_2022-04_NP	E108	28-Apr-2022	12-May-2022	----	----		12-May-2022	30 days	14 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKBR_SE-02_2022-04_NP	E108	28-Apr-2022	12-May-2022	----	----		12-May-2022	30 days	14 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKBR_SE-03_2022-04_NP	E108	28-Apr-2022	12-May-2022	----	----		12-May-2022	30 days	14 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKUC_SE-01_2022-04_NP	E108	28-Apr-2022	12-May-2022	----	----		12-May-2022	30 days	14 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKUC_SE-02_2022-04_NP	E108	28-Apr-2022	12-May-2022	----	----		12-May-2022	30 days	14 days	✔	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKUC_SE-03_2022-04_NP	E108	28-Apr-2022	12-May-2022	----	----		12-May-2022	30 days	14 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_RIVER_SE-01_2022-04_NP	E108	28-Apr-2022	12-May-2022	----	----		12-May-2022	30 days	14 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKDT_SE-06_2022-04_NP	E108	27-Apr-2022	12-May-2022	----	----		12-May-2022	30 days	15 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKDT_SE-07_2022-04_NP	E108	27-Apr-2022	12-May-2022	----	----		12-May-2022	30 days	15 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKDT_SE-01_2022-04_NP	E108	27-Apr-2022	12-May-2022	----	----		12-May-2022	30 days	15 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKDT_SE-02_2022-04_NP	E108	27-Apr-2022	12-May-2022	----	----		12-May-2022	30 days	15 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKDT_SE-03_2022-04_NP	E108	27-Apr-2022	12-May-2022	----	----		12-May-2022	30 days	15 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKDT_SE-04_2022-04_NP	E108	27-Apr-2022	12-May-2022	----	----		12-May-2022	30 days	15 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKDT_SE-05_2022-04_NP	E108	27-Apr-2022	12-May-2022	----	----		12-May-2022	30 days	15 days	✔	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_MICOMP_SE-01_2022-04_NP	E108	27-Apr-2022	12-May-2022	----	----		12-May-2022	30 days	15 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_MICOMP_SE-02_2022-04_NP	E108	27-Apr-2022	12-May-2022	----	----		12-May-2022	30 days	15 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_MICOMP_SE-03_2022-04_NP	E108	27-Apr-2022	12-May-2022	----	----		12-May-2022	30 days	15 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_MICOMP_SE-04_2022-04_NP	E108	27-Apr-2022	12-May-2022	----	----		12-May-2022	30 days	15 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_MICOMP_SE-05_2022-04_NP	E108	27-Apr-2022	12-May-2022	----	----		12-May-2022	30 days	15 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap RG_ALUSM_SE-01_2022-04_NP	E641A	28-Apr-2022	10-May-2022	14 days	12 days	✔	11-May-2022	40 days	1 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap RG_ERCK_SE-01_2022-04_NP	E641A	28-Apr-2022	10-May-2022	14 days	12 days	✔	11-May-2022	40 days	1 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap RG_ERCKBR_SE-01_2022-04_NP	E641A	28-Apr-2022	10-May-2022	14 days	12 days	✔	11-May-2022	40 days	1 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap RG_ERCKBR_SE-02_2022-04_NP	E641A	28-Apr-2022	10-May-2022	14 days	12 days	✔	11-May-2022	40 days	1 days	✔	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap RG_ERCKBR_SE-03_2022-04_NP	E641A	28-Apr-2022	10-May-2022	14 days	12 days	✔	11-May-2022	40 days	1 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap RG_ERCKUC_SE-01_2022-04_NP	E641A	28-Apr-2022	10-May-2022	14 days	12 days	✔	11-May-2022	40 days	1 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap RG_ERCKUC_SE-02_2022-04_NP	E641A	28-Apr-2022	10-May-2022	14 days	12 days	✔	11-May-2022	40 days	1 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap RG_ERCKUC_SE-03_2022-04_NP	E641A	28-Apr-2022	10-May-2022	14 days	12 days	✔	11-May-2022	40 days	1 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap RG_RIVER_SE-01_2022-04_NP	E641A	28-Apr-2022	10-May-2022	14 days	12 days	✔	11-May-2022	40 days	1 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-06_2022-04_NP	E641A	27-Apr-2022	10-May-2022	14 days	13 days	✔	11-May-2022	40 days	1 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-07_2022-04_NP	E641A	27-Apr-2022	10-May-2022	14 days	13 days	✔	11-May-2022	40 days	1 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-01_2022-04_NP	E641A	27-Apr-2022	10-May-2022	14 days	13 days	✔	11-May-2022	40 days	1 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-02_2022-04_NP	E641A	27-Apr-2022	10-May-2022	14 days	13 days	✔	11-May-2022	40 days	1 days	✔	



Matrix: **Soil/Solid**

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS										
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-03_2022-04_NP	E641A	27-Apr-2022	10-May-2022	14 days	13 days	✔	11-May-2022	40 days	1 days	✔
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS										
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-04_2022-04_NP	E641A	27-Apr-2022	10-May-2022	14 days	13 days	✔	11-May-2022	40 days	1 days	✔
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS										
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-05_2022-04_NP	E641A	27-Apr-2022	10-May-2022	14 days	13 days	✔	11-May-2022	40 days	1 days	✔
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS										
Glass soil jar/Teflon lined cap RG_MICOMP_SE-01_2022-04_NP	E641A	27-Apr-2022	10-May-2022	14 days	13 days	✔	11-May-2022	40 days	1 days	✔
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS										
Glass soil jar/Teflon lined cap RG_MICOMP_SE-02_2022-04_NP	E641A	27-Apr-2022	10-May-2022	14 days	13 days	✔	11-May-2022	40 days	1 days	✔
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS										
Glass soil jar/Teflon lined cap RG_MICOMP_SE-03_2022-04_NP	E641A	27-Apr-2022	10-May-2022	14 days	13 days	✔	11-May-2022	40 days	1 days	✔
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS										
Glass soil jar/Teflon lined cap RG_MICOMP_SE-04_2022-04_NP	E641A	27-Apr-2022	10-May-2022	14 days	13 days	✔	11-May-2022	40 days	1 days	✔
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS										
Glass soil jar/Teflon lined cap RG_MICOMP_SE-05_2022-04_NP	E641A	27-Apr-2022	10-May-2022	14 days	13 days	✔	11-May-2022	40 days	1 days	✔

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Soil/Solid**

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
Analytical Methods							
Laboratory Duplicates (DUP)							
Mercury in Soil/Solid by CVAAS	E510	484435	2	22	9.0	5.0	✔
Metals in Soil/Solid by CRC ICPMS	E440	484434	2	31	6.4	5.0	✔
Moisture Content by Gravimetry	E144	482825	2	26	7.6	5.0	✔
PAHs by Hex:Ace GC-MS	E641A	482823	2	21	9.5	5.0	✔
pH by Meter (1:2 Soil:Water Extraction)	E108	485164	2	21	9.5	5.0	✔
Total Carbon by Combustion	E351	483925	2	30	6.6	5.0	✔
Total Inorganic Carbon by Acetic Acid pH Standard Curve	E354	485448	2	28	7.1	5.0	✔
Laboratory Control Samples (LCS)							
Mercury in Soil/Solid by CVAAS	E510	484435	4	22	18.1	10.0	✔
Metals in Soil/Solid by CRC ICPMS	E440	484434	4	31	12.9	10.0	✔
Moisture Content by Gravimetry	E144	482825	2	26	7.6	5.0	✔
PAHs by Hex:Ace GC-MS	E641A	482823	2	21	9.5	5.0	✔
pH by Meter (1:2 Soil:Water Extraction)	E108	485164	4	21	19.0	10.0	✔
Total Carbon by Combustion	E351	483925	4	30	13.3	10.0	✔
Total Inorganic Carbon by Acetic Acid pH Standard Curve	E354	485448	4	28	14.2	10.0	✔
Method Blanks (MB)							
Mercury in Soil/Solid by CVAAS	E510	484435	2	22	9.0	5.0	✔
Metals in Soil/Solid by CRC ICPMS	E440	484434	2	31	6.4	5.0	✔
Moisture Content by Gravimetry	E144	482825	2	26	7.6	5.0	✔
PAHs by Hex:Ace GC-MS	E641A	482823	2	21	9.5	5.0	✔
Total Carbon by Combustion	E351	483925	2	30	6.6	5.0	✔
Total Inorganic Carbon by Acetic Acid pH Standard Curve	E354	485448	2	28	7.1	5.0	✔
Matrix Spikes (MS)							
PAHs by Hex:Ace GC-MS	E641A	482823	2	21	9.5	5.0	✔



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
pH by Meter (1:2 Soil:Water Extraction)	E108 Calgary - Environmental	Soil/Solid	BC Lab Manual	pH is determined by potentiometric measurement with a pH electrode at ambient laboratory temperature (normally 20 ± 5°C), and is carried out in accordance with procedures described in the BC Lab Manual (prescriptive method). The procedure involves mixing the dried (at <60 °C) and sieved (10mesh/2mm) sample with ultra pure water at a 1:2 ratio of sediment to water. The pH is then measured by a standard pH probe.
Moisture Content by Gravimetry	E144 Calgary - Environmental	Soil/Solid	CCME PHC in Soil - Tier 1	Moisture is measured gravimetrically by drying the sample at 105°C. Moisture content is calculated as the weight loss (due to water) divided by the wet weight of the sample, expressed as a percentage.
Grain Size Report (Attachment) Pipet/Sieve Method	E185A Saskatoon - Environmental	Soil/Solid	SSIR-51 Method 3.2.1	A grain size curve is a graphical representation of the particle sizing of a sample representing the percent passing against the effective particle size.
Total Carbon by Combustion	E351 Saskatoon - Environmental	Soil/Solid	CSSS (2008) 21.2 (mod)	Total Carbon is determined by the high temperature combustion method with measurement by an infrared detector.
Total Inorganic Carbon by Acetic Acid pH Standard Curve	E354 Saskatoon - Environmental	Soil/Solid	CSSS (2008) 20.2	Total Inorganic Carbon is determined by acetic acid pH standard curve, where a known quantity of acetic acid is consumed by reaction with carbonates in the soil. The pH of the resulting solution is measured and compared against a standard curve relating pH to weight of carbonate.
Metals in Soil/Solid by CRC ICPMS	E440 Calgary - Environmental	Soil/Solid	EPA 6020B (mod)	This method is intended to liberate metals that may be environmentally available. Samples are dried, then sieved through a 2 mm sieve, and digested with HNO ₃ and HCl. Dependent on sample matrix, some metals may be only partially recovered, including Al, Ba, Be, Cr, Sr, Ti, Tl, V, W, and Zr. Silicate minerals are not solubilized. Volatile forms of sulfur (including sulfide) may not be captured, as they may be lost during sampling, storage, or digestion. This method does not adequately recover elemental sulfur, and is unsuitable for assessment of elemental sulfur standards or guidelines. Analysis is by Collision/Reaction Cell ICPMS.
Mercury in Soil/Solid by CVAAS	E510 Calgary - Environmental	Soil/Solid	EPA 200.2/1631 Appendix (mod)	Samples are dried, then sieved through a 2 mm sieve, and digested with HNO ₃ and HCl, followed by CVAAS analysis.
PAHs by Hex:Ace GC-MS	E641A Calgary - Environmental	Soil/Solid	EPA 8270E (mod)	Polycyclic Aromatic Hydrocarbons (PAHs) are extracted with hexane/acetone and analyzed by GC-MS. If reported, IACR (index of additive cancer risk, unitless) and B(a)P toxic potency equivalent (in soil concentration units) are calculated as per CCME PAH Soil Quality Guidelines fact sheet (2010) or ABT1.



<i>Analytical Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
Particle Size Analysis (Pipette) - Wentworth Classification	EC184A Saskatoon - Environmental	Soil/Solid	Modified Wentworth	The particle size determination is performed by various methods to generate a Grain Size curve. The data from the curve is then used to produce particle size ranges based on the Modified Wentworth Classification system.
Total Organic Carbon (Calculated) in soil	EC356 Saskatoon - Environmental	Soil/Solid	CSSS (2008) 21.2	Total Organic Carbon (TOC) is calculated by the difference between total carbon (TC) and total inorganic carbon (TIC).
<i>Preparation Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
Leach 1:2 Soil:Water for pH/EC	EP108 Calgary - Environmental	Soil/Solid	BC WLAP METHOD: PH, ELECTROMETRIC, SOIL	The procedure involves mixing the dried (at <60°C) and sieved (No. 10 / 2mm) sample with deionized/distilled water at a 1:2 ratio of sediment to water.
Digestion for Metals and Mercury	EP440 Calgary - Environmental	Soil/Solid	EPA 200.2 (mod)	Samples are dried, then sieved through a 2 mm sieve, and digested with HNO ₃ and HCl. This method is intended to liberate metals that may be environmentally available.
PHCs and PAHs Hexane-Acetone Tumbler Extraction	EP601 Calgary - Environmental	Soil/Solid	CCME PHC in Soil - Tier 1 (mod)	Samples are subsampled and Petroleum Hydrocarbons (PHC) and PAHs are extracted with 1:1 hexane:acetone using a rotary extractor.
Dry and Grind	EPP442 Calgary - Environmental	Soil/Solid	Soil Sampling and Methods of Analysis, Carter 2008	After removal of any coarse fragments and reservation of wet subsamples a portion of homogenized sample is set in a tray and dried at less than 60°C until dry. The sample is then particle size reduced with an automated crusher or mortar and pestle, typically to <2 mm. Further size reduction may be needed for particular tests.



QUALITY CONTROL REPORT

Work Order : **CG2205458**

Client : Teck Coal Limited

Contact : Mike Pope

Address : 421 PINE AVE
Sparwood BC Canada V0B 2G0

Telephone : ----

Project : REGIONAL EFFECTS PROGRAM

PO : VPO00816101

C-O-C number : APRIL EVO LAEMP 2022

Sampler : Alex McClymont

Site : ----

Quote number : Teck Coal Master Quote

No. of samples received : 25

No. of samples analysed : 21

Page : 1 of 20

Laboratory : Calgary - Environmental

Account Manager : Lyudmyla Shvets

Address : 2559 29th Street NE
Calgary, Alberta Canada T1Y 7B5

Telephone : +1 403 407 1800

Date Samples Received : 05-May-2022 10:10

Date Analysis Commenced : 10-May-2022

Issue Date : 18-May-2022 18:16

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Reference Material (RM) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Hedy Lai	Team Leader - Inorganics	Saskatoon Inorganics, Saskatoon, Saskatchewan
Kevin Baxter		Calgary Metals, Calgary, Alberta
Maqsood UHassan	Laboratory Analyst	Calgary Organics, Calgary, Alberta
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Page : 2 of 20
Work Order : CG2205458
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Soil/Solid

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 482825)											
CG2205458-001	RG_ERCKDT_SE-01_2022-04_NP	moisture	----	E144	0.25	%	86.9	87.3	0.410%	20%	----
Physical Tests (QC Lot: 483051)											
CG2205458-020	RG_MICOMP_SE-03_2022-04_NP	moisture	----	E144	0.25	%	86.5	86.5	0.0378%	20%	----
Physical Tests (QC Lot: 485164)											
CG2205458-001	RG_ERCKDT_SE-01_2022-04_NP	pH (1:2 soil:water)	----	E108	0.10	pH units	7.81	7.86	0.638%	5%	----
Physical Tests (QC Lot: 485165)											
CG2205458-025	RG_ERCKBR_SE-03_2022-04_NP	pH (1:2 soil:water)	----	E108	0.10	pH units	7.30	7.37	0.954%	5%	----
Organic / Inorganic Carbon (QC Lot: 483925)											
VA22A9357-002	Anonymous	carbon, total [TC]	----	E351	0.050	%	2.31	2.31	0.0193%	20%	----
Organic / Inorganic Carbon (QC Lot: 484664)											
KS2201374-001	Anonymous	carbon, total [TC]	----	E351	0.050	%	36.6	37.2	1.84%	20%	----
Organic / Inorganic Carbon (QC Lot: 485448)											
CG2205458-002	RG_ERCKDT_SE-02_2022-04_NP	carbon, inorganic [IC]	----	E354	0.050	%	2.52	2.49	1.48%	20%	----
Organic / Inorganic Carbon (QC Lot: 485459)											
VA22A9862-020	Anonymous	carbon, inorganic [IC]	----	E354	0.050	%	0.132	0.123	0.009	Diff <2x LOR	----
Metals (QC Lot: 484434)											
CG2205435-001	Anonymous	aluminum	7429-90-5	E440	50	mg/kg	2140	2040	4.88%	40%	----
		antimony	7440-36-0	E440	0.10	mg/kg	0.30	0.25	0.05	Diff <2x LOR	----
		arsenic	7440-38-2	E440	0.10	mg/kg	2.87	2.77	3.45%	30%	----
		barium	7440-39-3	E440	0.50	mg/kg	54.2	47.9	12.4%	40%	----
		beryllium	7440-41-7	E440	0.10	mg/kg	0.14	0.14	0.008	Diff <2x LOR	----
		bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	0	Diff <2x LOR	----
		boron	7440-42-8	E440	5.0	mg/kg	<5.0	<5.0	0	Diff <2x LOR	----
		cadmium	7440-43-9	E440	0.020	mg/kg	0.128	0.122	0.006	Diff <2x LOR	----
		calcium	7440-70-2	E440	50	mg/kg	96300	95200	1.17%	30%	----
		chromium	7440-47-3	E440	0.50	mg/kg	10.8	8.31	26.3%	30%	----
		cobalt	7440-48-4	E440	0.10	mg/kg	2.42	2.40	1.09%	30%	----
		copper	7440-50-8	E440	0.50	mg/kg	9.85	8.10	19.5%	30%	----
		iron	7439-89-6	E440	50	mg/kg	8990	8760	2.61%	30%	----



Sub-Matrix: Soil/Solid

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Metals (QC Lot: 484434) - continued											
CG2205435-001	Anonymous	lead	7439-92-1	E440	0.50	mg/kg	2.40	2.33	0.07	Diff <2x LOR	----
		lithium	7439-93-2	E440	2.0	mg/kg	4.3	4.3	0.04	Diff <2x LOR	----
		magnesium	7439-95-4	E440	20	mg/kg	20900	21000	0.436%	30%	----
		manganese	7439-96-5	E440	1.0	mg/kg	263	260	1.37%	30%	----
		molybdenum	7439-98-7	E440	0.10	mg/kg	1.03	1.03	0.115%	40%	----
		nickel	7440-02-0	E440	0.50	mg/kg	7.92	7.38	7.09%	30%	----
		phosphorus	7723-14-0	E440	50	mg/kg	426	404	5.19%	30%	----
		potassium	7440-09-7	E440	100	mg/kg	420	390	30	Diff <2x LOR	----
		selenium	7782-49-2	E440	0.20	mg/kg	<0.20	<0.20	0	Diff <2x LOR	----
		silver	7440-22-4	E440	0.10	mg/kg	<0.10	<0.10	0	Diff <2x LOR	----
		sodium	7440-23-5	E440	50	mg/kg	221	220	0.6	Diff <2x LOR	----
		strontium	7440-24-6	E440	0.50	mg/kg	86.1	85.1	1.11%	40%	----
		sulfur	7704-34-9	E440	1000	mg/kg	<1000	<1000	0	Diff <2x LOR	----
		thallium	7440-28-0	E440	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	0	Diff <2x LOR	----
		titanium	7440-32-6	E440	1.0	mg/kg	13.6	12.4	9.11%	40%	----
		tungsten	7440-33-7	E440	0.50	mg/kg	2.04	1.89	0.15	Diff <2x LOR	----
		uranium	7440-61-1	E440	0.050	mg/kg	0.494	0.460	7.05%	30%	----
		vanadium	7440-62-2	E440	0.20	mg/kg	8.50	8.01	6.02%	30%	----
		zinc	7440-66-6	E440	2.0	mg/kg	16.9	16.2	4.07%	30%	----
		zirconium	7440-67-7	E440	1.0	mg/kg	1.6	1.5	0.06	Diff <2x LOR	----
Metals (QC Lot: 484435)											
CG2205458-001	RG_ERCKDT_SE-01_2022-04_NP	mercury	7439-97-6	E510	0.0050	mg/kg	0.0408	0.0432	5.78%	40%	----
Metals (QC Lot: 484436)											
CG2205458-021	RG_MICOMP_SE-04_2022-04_NP	aluminum	7429-90-5	E440	50	mg/kg	4100	4600	11.6%	40%	----
		antimony	7440-36-0	E440	0.10	mg/kg	0.90	0.89	1.04%	30%	----
		arsenic	7440-38-2	E440	0.10	mg/kg	7.67	7.69	0.324%	30%	----
		barium	7440-39-3	E440	0.50	mg/kg	161	146	9.54%	40%	----
		beryllium	7440-41-7	E440	0.10	mg/kg	0.44	0.47	0.03	Diff <2x LOR	----
		bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	0	Diff <2x LOR	----
		boron	7440-42-8	E440	5.0	mg/kg	<5.0	<5.0	0	Diff <2x LOR	----
		cadmium	7440-43-9	E440	0.020	mg/kg	1.10	1.07	2.50%	30%	----
		calcium	7440-70-2	E440	50	mg/kg	55400	49100	12.0%	30%	----
		chromium	7440-47-3	E440	0.50	mg/kg	9.40	9.74	3.59%	30%	----



Sub-Matrix: Soil/Solid

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Metals (QC Lot: 484436) - continued											
CG2205458-021	RG_MICOMP_SE-04_2022-04_NP	cobalt	7440-48-4	E440	0.10	mg/kg	4.00	4.22	5.39%	30%	----
		copper	7440-50-8	E440	0.50	mg/kg	11.0	10.4	5.32%	30%	----
		iron	7439-89-6	E440	50	mg/kg	18100	20900	14.7%	30%	----
		lead	7439-92-1	E440	0.50	mg/kg	7.95	7.47	6.20%	40%	----
		lithium	7439-93-2	E440	2.0	mg/kg	5.7	6.6	1.0	Diff <2x LOR	----
		magnesium	7439-95-4	E440	20	mg/kg	7110	7510	5.58%	30%	----
		manganese	7439-96-5	E440	1.0	mg/kg	296	345	15.2%	30%	----
		molybdenum	7439-98-7	E440	0.10	mg/kg	2.39	1.87	24.7%	40%	----
		nickel	7440-02-0	E440	0.50	mg/kg	18.4	19.8	7.19%	30%	----
		phosphorus	7723-14-0	E440	50	mg/kg	1140	1390	19.6%	30%	----
		potassium	7440-09-7	E440	100	mg/kg	790	840	6.48%	40%	----
		selenium	7782-49-2	E440	0.20	mg/kg	0.64	0.63	0.007	Diff <2x LOR	----
		silver	7440-22-4	E440	0.10	mg/kg	0.15	0.14	0.01	Diff <2x LOR	----
		sodium	7440-23-5	E440	50	mg/kg	54	<50	4	Diff <2x LOR	----
		strontium	7440-24-6	E440	0.50	mg/kg	93.5	78.1	17.9%	40%	----
		sulfur	7704-34-9	E440	1000	mg/kg	<1000	<1000	0	Diff <2x LOR	----
		thallium	7440-28-0	E440	0.050	mg/kg	0.147	0.147	0.0002	Diff <2x LOR	----
		tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	0	Diff <2x LOR	----
		titanium	7440-32-6	E440	1.0	mg/kg	16.0	17.8	11.1%	40%	----
		tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	0	Diff <2x LOR	----
		uranium	7440-61-1	E440	0.050	mg/kg	1.07	1.06	1.14%	30%	----
		vanadium	7440-62-2	E440	0.20	mg/kg	26.7	27.5	2.87%	30%	----
		zinc	7440-66-6	E440	2.0	mg/kg	75.8	82.0	7.86%	30%	----
		zirconium	7440-67-7	E440	1.0	mg/kg	1.5	1.6	0.1	Diff <2x LOR	----
Metals (QC Lot: 484437)											
CG2205458-025	RG_ERCKBR_SE-03_2022-04_NP	mercury	7439-97-6	E510	0.0050	mg/kg	0.0342	0.0348	1.86%	40%	----
Polycyclic Aromatic Hydrocarbons (QC Lot: 482823)											
CG2205458-001	RG_ERCKDT_SE-01_2022-04_NP	acenaphthene	83-32-9	E641A	0.074	mg/kg	<0.080	<0.074	0.005	Diff <2x LOR	----
		acenaphthylene	208-96-8	E641A	0.074	mg/kg	<0.074	<0.074	0.074	Diff <2x LOR	----
		acridine	260-94-6	E641A	0.200	mg/kg	<0.200	<0.200	0	Diff <2x LOR	----
		anthracene	120-12-7	E641A	0.074	mg/kg	<0.074	<0.074	0.074	Diff <2x LOR	----
		benz(a)anthracene	56-55-3	E641A	0.074	mg/kg	<0.074	<0.074	0.074	Diff <2x LOR	----
		benzo(a)pyrene	50-32-8	E641A	0.074	mg/kg	<0.074	<0.074	0.074	Diff <2x LOR	----
		benzo(b+j)fluoranthene	n/a	E641A	0.074	mg/kg	0.158	0.146	0.012	Diff <2x LOR	----



Sub-Matrix: Soil/Solid

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Polycyclic Aromatic Hydrocarbons (QC Lot: 482823) - continued											
CG2205458-001	RG_ERCKDT_SE-01_2022-04_NP	benzo(g,h,i)perylene	191-24-2	E641A	0.074	mg/kg	<0.074	<0.074	0.074	Diff <2x LOR	----
		benzo(k)fluoranthene	207-08-9	E641A	0.074	mg/kg	<0.074	<0.074	0.074	Diff <2x LOR	----
		chrysene	218-01-9	E641A	0.074	mg/kg	0.307	0.287	6.68%	50%	----
		dibenz(a,h)anthracene	53-70-3	E641A	0.074	mg/kg	<0.074	<0.074	0.074	Diff <2x LOR	----
		fluoranthene	206-44-0	E641A	0.074	mg/kg	<0.074	<0.074	0.074	Diff <2x LOR	----
		fluorene	86-73-7	E641A	0.074	mg/kg	0.258	0.236	0.022	Diff <2x LOR	----
		indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.074	mg/kg	<0.074	<0.074	0.074	Diff <2x LOR	----
		methylnaphthalene, 1-	90-12-0	E641A	0.074	mg/kg	0.798	0.734	8.41%	50%	----
		methylnaphthalene, 2-	91-57-6	E641A	0.074	mg/kg	1.56	1.43	9.04%	50%	----
		naphthalene	91-20-3	E641A	0.074	mg/kg	0.423	0.382	10.1%	50%	----
		phenanthrene	85-01-8	E641A	0.074	mg/kg	1.09	1.04	4.20%	50%	----
		pyrene	129-00-0	E641A	0.074	mg/kg	0.098	0.094	0.005	Diff <2x LOR	----
		quinoline	91-22-5	E641A	0.074	mg/kg	<0.074	<0.074	0.074	Diff <2x LOR	----
Polycyclic Aromatic Hydrocarbons (QC Lot: 483050)											
CG2205458-020	RG_MICOMP_SE-03_2022-04_NP	acenaphthene	83-32-9	E641A	0.072	mg/kg	0.082	0.087	0.005	Diff <2x LOR	----
		acenaphthylene	208-96-8	E641A	0.072	mg/kg	0.168	0.219	0.050	Diff <2x LOR	----
		acridine	260-94-6	E641A	0.072	mg/kg	0.111	0.156	0.045	Diff <2x LOR	----
		anthracene	120-12-7	E641A	0.325	mg/kg	<0.225	<0.325	0.100	Diff <2x LOR	----
		benz(a)anthracene	56-55-3	E641A	0.072	mg/kg	0.450	0.890	65.6%	50%	DUP-H
		benzo(a)pyrene	50-32-8	E641A	0.072	mg/kg	0.630	1.14	57.3%	50%	DUP-H
		benzo(b+j)fluoranthene	n/a	E641A	0.072	mg/kg	1.18	1.98	51.0%	50%	DUP-H
		benzo(g,h,i)perylene	191-24-2	E641A	0.072	mg/kg	0.426	0.684	46.6%	50%	----
		benzo(k)fluoranthene	207-08-9	E641A	0.072	mg/kg	0.194	0.425	74.6%	50%	DUP-H
		chrysene	218-01-9	E641A	0.072	mg/kg	0.688	1.10	46.4%	50%	----
		dibenz(a,h)anthracene	53-70-3	E641A	0.072	mg/kg	0.124	0.235	0.111	Diff <2x LOR	----
		fluoranthene	206-44-0	E641A	0.072	mg/kg	0.554	0.693	22.3%	50%	----
		fluorene	86-73-7	E641A	0.072	mg/kg	0.186	0.223	0.036	Diff <2x LOR	----
		indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.072	mg/kg	0.456	0.794	54.0%	50%	DUP-H
		methylnaphthalene, 1-	90-12-0	E641A	0.072	mg/kg	0.574	0.552	3.89%	50%	----
		methylnaphthalene, 2-	91-57-6	E641A	0.072	mg/kg	0.947	0.976	2.99%	50%	----
		naphthalene	91-20-3	E641A	0.072	mg/kg	1.14	1.17	3.30%	50%	----
		phenanthrene	85-01-8	E641A	0.072	mg/kg	1.21	1.24	3.22%	50%	----
		pyrene	129-00-0	E641A	0.072	mg/kg	0.397	0.573	36.3%	50%	----
		quinoline	91-22-5	E641A	0.072	mg/kg	<0.072	<0.072	0.00004	Diff <2x LOR	----

Page : 7 of 20
Work Order : CG2205458
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



Qualifiers

<i>Qualifier</i>	<i>Description</i>
DUP-H	<i>Duplicate results outside ALS DQO, due to sample heterogeneity.</i>



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 482825)						
moisture	----	E144	0.25	%	<0.25	----
Physical Tests (QCLot: 483051)						
moisture	----	E144	0.25	%	<0.25	----
Organic / Inorganic Carbon (QCLot: 483925)						
carbon, total [TC]	----	E351	0.05	%	<0.050	----
Organic / Inorganic Carbon (QCLot: 484664)						
carbon, total [TC]	----	E351	0.05	%	<0.050	----
Organic / Inorganic Carbon (QCLot: 485448)						
carbon, inorganic [IC]	----	E354	0.05	%	<0.050	----
Organic / Inorganic Carbon (QCLot: 485459)						
carbon, inorganic [IC]	----	E354	0.05	%	<0.050	----
Metals (QCLot: 484434)						
aluminum	7429-90-5	E440	50	mg/kg	<50	----
antimony	7440-36-0	E440	0.1	mg/kg	<0.10	----
arsenic	7440-38-2	E440	0.1	mg/kg	<0.10	----
barium	7440-39-3	E440	0.5	mg/kg	<0.50	----
beryllium	7440-41-7	E440	0.1	mg/kg	<0.10	----
bismuth	7440-69-9	E440	0.2	mg/kg	<0.20	----
boron	7440-42-8	E440	5	mg/kg	<5.0	----
cadmium	7440-43-9	E440	0.02	mg/kg	<0.020	----
calcium	7440-70-2	E440	50	mg/kg	<50	----
chromium	7440-47-3	E440	0.5	mg/kg	<0.50	----
cobalt	7440-48-4	E440	0.1	mg/kg	<0.10	----
copper	7440-50-8	E440	0.5	mg/kg	<0.50	----
iron	7439-89-6	E440	50	mg/kg	<50	----
lead	7439-92-1	E440	0.5	mg/kg	<0.50	----
lithium	7439-93-2	E440	2	mg/kg	<2.0	----
magnesium	7439-95-4	E440	20	mg/kg	<20	----
manganese	7439-96-5	E440	1	mg/kg	<1.0	----
molybdenum	7439-98-7	E440	0.1	mg/kg	<0.10	----
nickel	7440-02-0	E440	0.5	mg/kg	<0.50	----
phosphorus	7723-14-0	E440	50	mg/kg	<50	----
potassium	7440-09-7	E440	100	mg/kg	<100	----



Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Metals (QCLot: 484434) - continued						
selenium	7782-49-2	E440	0.2	mg/kg	<0.20	---
silver	7440-22-4	E440	0.1	mg/kg	<0.10	---
sodium	7440-23-5	E440	50	mg/kg	<50	---
strontium	7440-24-6	E440	0.5	mg/kg	<0.50	---
sulfur	7704-34-9	E440	1000	mg/kg	<1000	---
thallium	7440-28-0	E440	0.05	mg/kg	<0.050	---
tin	7440-31-5	E440	2	mg/kg	<2.0	---
titanium	7440-32-6	E440	1	mg/kg	<1.0	---
tungsten	7440-33-7	E440	0.5	mg/kg	<0.50	---
uranium	7440-61-1	E440	0.05	mg/kg	<0.050	---
vanadium	7440-62-2	E440	0.2	mg/kg	<0.20	---
zinc	7440-66-6	E440	2	mg/kg	<2.0	---
zirconium	7440-67-7	E440	1	mg/kg	<1.0	---
Metals (QCLot: 484435)						
mercury	7439-97-6	E510	0.005	mg/kg	<0.0050	---
Metals (QCLot: 484436)						
aluminum	7429-90-5	E440	50	mg/kg	<50	---
antimony	7440-36-0	E440	0.1	mg/kg	<0.10	---
arsenic	7440-38-2	E440	0.1	mg/kg	<0.10	---
barium	7440-39-3	E440	0.5	mg/kg	<0.50	---
beryllium	7440-41-7	E440	0.1	mg/kg	<0.10	---
bismuth	7440-69-9	E440	0.2	mg/kg	<0.20	---
boron	7440-42-8	E440	5	mg/kg	<5.0	---
cadmium	7440-43-9	E440	0.02	mg/kg	<0.020	---
calcium	7440-70-2	E440	50	mg/kg	<50	---
chromium	7440-47-3	E440	0.5	mg/kg	<0.50	---
cobalt	7440-48-4	E440	0.1	mg/kg	<0.10	---
copper	7440-50-8	E440	0.5	mg/kg	<0.50	---
iron	7439-89-6	E440	50	mg/kg	<50	---
lead	7439-92-1	E440	0.5	mg/kg	<0.50	---
lithium	7439-93-2	E440	2	mg/kg	<2.0	---
magnesium	7439-95-4	E440	20	mg/kg	<20	---
manganese	7439-96-5	E440	1	mg/kg	<1.0	---
molybdenum	7439-98-7	E440	0.1	mg/kg	<0.10	---
nickel	7440-02-0	E440	0.5	mg/kg	<0.50	---
phosphorus	7723-14-0	E440	50	mg/kg	<50	---



Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Metals (QCLot: 484436) - continued						
potassium	7440-09-7	E440	100	mg/kg	<100	---
selenium	7782-49-2	E440	0.2	mg/kg	<0.20	---
silver	7440-22-4	E440	0.1	mg/kg	<0.10	---
sodium	7440-23-5	E440	50	mg/kg	<50	---
strontium	7440-24-6	E440	0.5	mg/kg	<0.50	---
sulfur	7704-34-9	E440	1000	mg/kg	<1000	---
thallium	7440-28-0	E440	0.05	mg/kg	<0.050	---
tin	7440-31-5	E440	2	mg/kg	<2.0	---
titanium	7440-32-6	E440	1	mg/kg	<1.0	---
tungsten	7440-33-7	E440	0.5	mg/kg	<0.50	---
uranium	7440-61-1	E440	0.05	mg/kg	<0.050	---
vanadium	7440-62-2	E440	0.2	mg/kg	<0.20	---
zinc	7440-66-6	E440	2	mg/kg	<2.0	---
zirconium	7440-67-7	E440	1	mg/kg	<1.0	---
Metals (QCLot: 484437)						
mercury	7439-97-6	E510	0.005	mg/kg	<0.0050	---
Polycyclic Aromatic Hydrocarbons (QCLot: 482823)						
acenaphthene	83-32-9	E641A	0.05	mg/kg	<0.050	---
acenaphthylene	208-96-8	E641A	0.05	mg/kg	<0.050	---
acridine	260-94-6	E641A	0.05	mg/kg	<0.050	---
anthracene	120-12-7	E641A	0.05	mg/kg	<0.050	---
benz(a)anthracene	56-55-3	E641A	0.05	mg/kg	<0.050	---
benzo(a)pyrene	50-32-8	E641A	0.05	mg/kg	<0.050	---
benzo(b+j)fluoranthene	n/a	E641A	0.05	mg/kg	<0.050	---
benzo(g,h,i)perylene	191-24-2	E641A	0.05	mg/kg	<0.050	---
benzo(k)fluoranthene	207-08-9	E641A	0.05	mg/kg	<0.050	---
chrysene	218-01-9	E641A	0.05	mg/kg	<0.050	---
dibenz(a,h)anthracene	53-70-3	E641A	0.05	mg/kg	<0.050	---
fluoranthene	206-44-0	E641A	0.05	mg/kg	<0.050	---
fluorene	86-73-7	E641A	0.05	mg/kg	<0.050	---
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.05	mg/kg	<0.050	---
methylnaphthalene, 1-	90-12-0	E641A	0.05	mg/kg	<0.050	---
methylnaphthalene, 2-	91-57-6	E641A	0.05	mg/kg	<0.050	---
naphthalene	91-20-3	E641A	0.05	mg/kg	<0.050	---
phenanthrene	85-01-8	E641A	0.05	mg/kg	<0.050	---
pyrene	129-00-0	E641A	0.05	mg/kg	<0.050	---



Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Polycyclic Aromatic Hydrocarbons (QCLot: 482823) - continued						
quinoline	91-22-5	E641A	0.05	mg/kg	<0.050	----
Polycyclic Aromatic Hydrocarbons (QCLot: 483050)						
acenaphthene	83-32-9	E641A	0.05	mg/kg	<0.050	----
acenaphthylene	208-96-8	E641A	0.05	mg/kg	<0.050	----
acridine	260-94-6	E641A	0.05	mg/kg	<0.050	----
anthracene	120-12-7	E641A	0.05	mg/kg	<0.050	----
benz(a)anthracene	56-55-3	E641A	0.05	mg/kg	<0.050	----
benzo(a)pyrene	50-32-8	E641A	0.05	mg/kg	<0.050	----
benzo(b+j)fluoranthene	n/a	E641A	0.05	mg/kg	<0.050	----
benzo(g,h,i)perylene	191-24-2	E641A	0.05	mg/kg	<0.050	----
benzo(k)fluoranthene	207-08-9	E641A	0.05	mg/kg	<0.050	----
chrysene	218-01-9	E641A	0.05	mg/kg	<0.050	----
dibenz(a,h)anthracene	53-70-3	E641A	0.05	mg/kg	<0.050	----
fluoranthene	206-44-0	E641A	0.05	mg/kg	<0.050	----
fluorene	86-73-7	E641A	0.05	mg/kg	<0.050	----
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.05	mg/kg	<0.050	----
methylnaphthalene, 1-	90-12-0	E641A	0.05	mg/kg	<0.050	----
methylnaphthalene, 2-	91-57-6	E641A	0.05	mg/kg	<0.050	----
naphthalene	91-20-3	E641A	0.05	mg/kg	<0.050	----
phenanthrene	85-01-8	E641A	0.05	mg/kg	<0.050	----
pyrene	129-00-0	E641A	0.05	mg/kg	<0.050	----
quinoline	91-22-5	E641A	0.05	mg/kg	<0.050	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Soil/Solid

					Laboratory Control Sample (LCS) Report				
Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Physical Tests (QCLot: 482825)									
moisture	---	E144	0.25	%	50 %	95.7	90.0	110	---
Physical Tests (QCLot: 483051)									
moisture	---	E144	0.25	%	50 %	96.5	90.0	110	---
Physical Tests (QCLot: 485164)									
pH (1:2 soil:water)	---	E108	---	pH units	7 pH units	100	97.0	103	---
Physical Tests (QCLot: 485165)									
pH (1:2 soil:water)	---	E108	---	pH units	7 pH units	100	97.0	103	---
Organic / Inorganic Carbon (QCLot: 483925)									
carbon, total [TC]	---	E351	0.05	%	48 %	101	90.0	110	---
Organic / Inorganic Carbon (QCLot: 484664)									
carbon, total [TC]	---	E351	0.05	%	48 %	103	90.0	110	---
Organic / Inorganic Carbon (QCLot: 485448)									
carbon, inorganic [IC]	---	E354	0.05	%	0.5 %	97.1	90.0	110	---
Organic / Inorganic Carbon (QCLot: 485459)									
carbon, inorganic [IC]	---	E354	0.05	%	0.5 %	93.8	90.0	110	---
Metals (QCLot: 484434)									
aluminum	7429-90-5	E440	50	mg/kg	200 mg/kg	102	80.0	120	---
antimony	7440-36-0	E440	0.1	mg/kg	100 mg/kg	112	80.0	120	---
arsenic	7440-38-2	E440	0.1	mg/kg	100 mg/kg	104	80.0	120	---
barium	7440-39-3	E440	0.5	mg/kg	25 mg/kg	104	80.0	120	---
beryllium	7440-41-7	E440	0.1	mg/kg	10 mg/kg	102	80.0	120	---
bismuth	7440-69-9	E440	0.2	mg/kg	100 mg/kg	102	80.0	120	---
boron	7440-42-8	E440	5	mg/kg	100 mg/kg	91.9	80.0	120	---
cadmium	7440-43-9	E440	0.02	mg/kg	10 mg/kg	102	80.0	120	---
calcium	7440-70-2	E440	50	mg/kg	5000 mg/kg	101	80.0	120	---
chromium	7440-47-3	E440	0.5	mg/kg	25 mg/kg	104	80.0	120	---
cobalt	7440-48-4	E440	0.1	mg/kg	25 mg/kg	102	80.0	120	---
copper	7440-50-8	E440	0.5	mg/kg	25 mg/kg	102	80.0	120	---
iron	7439-89-6	E440	50	mg/kg	100 mg/kg	106	80.0	120	---
lead	7439-92-1	E440	0.5	mg/kg	50 mg/kg	106	80.0	120	---
lithium	7439-93-2	E440	2	mg/kg	25 mg/kg	101	80.0	120	---
magnesium	7439-95-4	E440	20	mg/kg	5000 mg/kg	104	80.0	120	---



Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Metals (QCLot: 484434) - continued									
manganese	7439-96-5	E440	1	mg/kg	25 mg/kg	101	80.0	120	----
molybdenum	7439-98-7	E440	0.1	mg/kg	25 mg/kg	108	80.0	120	----
nickel	7440-02-0	E440	0.5	mg/kg	50 mg/kg	102	80.0	120	----
phosphorus	7723-14-0	E440	50	mg/kg	1000 mg/kg	106	80.0	120	----
potassium	7440-09-7	E440	100	mg/kg	5000 mg/kg	103	80.0	120	----
selenium	7782-49-2	E440	0.2	mg/kg	100 mg/kg	100	80.0	120	----
silver	7440-22-4	E440	0.1	mg/kg	10 mg/kg	93.1	80.0	120	----
sodium	7440-23-5	E440	50	mg/kg	5000 mg/kg	104	80.0	120	----
strontium	7440-24-6	E440	0.5	mg/kg	25 mg/kg	104	80.0	120	----
sulfur	7704-34-9	E440	1000	mg/kg	5000 mg/kg	102	80.0	120	----
thallium	7440-28-0	E440	0.05	mg/kg	100 mg/kg	103	80.0	120	----
tin	7440-31-5	E440	2	mg/kg	50 mg/kg	106	80.0	120	----
titanium	7440-32-6	E440	1	mg/kg	25 mg/kg	104	80.0	120	----
tungsten	7440-33-7	E440	0.5	mg/kg	10 mg/kg	99.6	80.0	120	----
uranium	7440-61-1	E440	0.05	mg/kg	0.5 mg/kg	99.9	80.0	120	----
vanadium	7440-62-2	E440	0.2	mg/kg	50 mg/kg	104	80.0	120	----
zinc	7440-66-6	E440	2	mg/kg	50 mg/kg	100	80.0	120	----
zirconium	7440-67-7	E440	1	mg/kg	10 mg/kg	105	80.0	120	----
Metals (QCLot: 484435)									
mercury	7439-97-6	E510	0.005	mg/kg	0.1 mg/kg	103	80.0	120	----
Metals (QCLot: 484436)									
aluminum	7429-90-5	E440	50	mg/kg	200 mg/kg	105	80.0	120	----
antimony	7440-36-0	E440	0.1	mg/kg	100 mg/kg	110	80.0	120	----
arsenic	7440-38-2	E440	0.1	mg/kg	100 mg/kg	105	80.0	120	----
barium	7440-39-3	E440	0.5	mg/kg	25 mg/kg	103	80.0	120	----
beryllium	7440-41-7	E440	0.1	mg/kg	10 mg/kg	97.6	80.0	120	----
bismuth	7440-69-9	E440	0.2	mg/kg	100 mg/kg	102	80.0	120	----
boron	7440-42-8	E440	5	mg/kg	100 mg/kg	96.9	80.0	120	----
cadmium	7440-43-9	E440	0.02	mg/kg	10 mg/kg	101	80.0	120	----
calcium	7440-70-2	E440	50	mg/kg	5000 mg/kg	99.0	80.0	120	----
chromium	7440-47-3	E440	0.5	mg/kg	25 mg/kg	103	80.0	120	----
cobalt	7440-48-4	E440	0.1	mg/kg	25 mg/kg	103	80.0	120	----
copper	7440-50-8	E440	0.5	mg/kg	25 mg/kg	102	80.0	120	----
iron	7439-89-6	E440	50	mg/kg	100 mg/kg	107	80.0	120	----
lead	7439-92-1	E440	0.5	mg/kg	50 mg/kg	106	80.0	120	----
lithium	7439-93-2	E440	2	mg/kg	25 mg/kg	102	80.0	120	----
magnesium	7439-95-4	E440	20	mg/kg	5000 mg/kg	105	80.0	120	----



Sub-Matrix: Soil/Solid

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Metals (QCLot: 484436) - continued									
manganese	7439-96-5	E440	1	mg/kg	25 mg/kg	102	80.0	120	----
molybdenum	7439-98-7	E440	0.1	mg/kg	25 mg/kg	108	80.0	120	----
nickel	7440-02-0	E440	0.5	mg/kg	50 mg/kg	103	80.0	120	----
phosphorus	7723-14-0	E440	50	mg/kg	1000 mg/kg	109	80.0	120	----
potassium	7440-09-7	E440	100	mg/kg	5000 mg/kg	104	80.0	120	----
selenium	7782-49-2	E440	0.2	mg/kg	100 mg/kg	101	80.0	120	----
silver	7440-22-4	E440	0.1	mg/kg	10 mg/kg	92.8	80.0	120	----
sodium	7440-23-5	E440	50	mg/kg	5000 mg/kg	102	80.0	120	----
strontium	7440-24-6	E440	0.5	mg/kg	25 mg/kg	104	80.0	120	----
sulfur	7704-34-9	E440	1000	mg/kg	5000 mg/kg	94.6	80.0	120	----
thallium	7440-28-0	E440	0.05	mg/kg	100 mg/kg	104	80.0	120	----
tin	7440-31-5	E440	2	mg/kg	50 mg/kg	105	80.0	120	----
titanium	7440-32-6	E440	1	mg/kg	25 mg/kg	106	80.0	120	----
tungsten	7440-33-7	E440	0.5	mg/kg	10 mg/kg	100	80.0	120	----
uranium	7440-61-1	E440	0.05	mg/kg	0.5 mg/kg	99.1	80.0	120	----
vanadium	7440-62-2	E440	0.2	mg/kg	50 mg/kg	103	80.0	120	----
zinc	7440-66-6	E440	2	mg/kg	50 mg/kg	99.1	80.0	120	----
zirconium	7440-67-7	E440	1	mg/kg	10 mg/kg	105	80.0	120	----
Metals (QCLot: 484437)									
mercury	7439-97-6	E510	0.005	mg/kg	0.1 mg/kg	97.9	80.0	120	----
Polycyclic Aromatic Hydrocarbons (QCLot: 482823)									
acenaphthene	83-32-9	E641A	0.05	mg/kg	0.5 mg/kg	94.6	60.0	130	----
acenaphthylene	208-96-8	E641A	0.05	mg/kg	0.5 mg/kg	93.6	60.0	130	----
acridine	260-94-6	E641A	0.05	mg/kg	0.5 mg/kg	94.2	60.0	130	----
anthracene	120-12-7	E641A	0.05	mg/kg	0.5 mg/kg	103	60.0	130	----
benz(a)anthracene	56-55-3	E641A	0.05	mg/kg	0.5 mg/kg	97.1	60.0	130	----
benzo(a)pyrene	50-32-8	E641A	0.05	mg/kg	0.5 mg/kg	101	60.0	130	----
benzo(b+j)fluoranthene	n/a	E641A	0.05	mg/kg	0.5 mg/kg	107	60.0	130	----
benzo(g,h,i)perylene	191-24-2	E641A	0.05	mg/kg	0.5 mg/kg	89.0	60.0	130	----
benzo(k)fluoranthene	207-08-9	E641A	0.05	mg/kg	0.5 mg/kg	101	60.0	130	----
chrysene	218-01-9	E641A	0.05	mg/kg	0.5 mg/kg	89.9	60.0	130	----
dibenz(a,h)anthracene	53-70-3	E641A	0.05	mg/kg	0.5 mg/kg	88.1	60.0	130	----
fluoranthene	206-44-0	E641A	0.05	mg/kg	0.5 mg/kg	95.6	60.0	130	----
fluorene	86-73-7	E641A	0.05	mg/kg	0.5 mg/kg	98.9	60.0	130	----
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.05	mg/kg	0.5 mg/kg	92.0	60.0	130	----
methylnaphthalene, 1-	90-12-0	E641A	0.05	mg/kg	0.5 mg/kg	92.7	60.0	130	----



Sub-Matrix: Soil/Solid

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Polycyclic Aromatic Hydrocarbons (QCLot: 482823) - continued									
methylnaphthalene, 2-	91-57-6	E641A	0.05	mg/kg	0.5 mg/kg	94.1	60.0	130	----
naphthalene	91-20-3	E641A	0.05	mg/kg	0.5 mg/kg	102	50.0	130	----
phenanthrene	85-01-8	E641A	0.05	mg/kg	0.5 mg/kg	106	60.0	130	----
pyrene	129-00-0	E641A	0.05	mg/kg	0.5 mg/kg	97.9	60.0	130	----
quinoline	91-22-5	E641A	0.05	mg/kg	0.5 mg/kg	88.4	60.0	130	----
Polycyclic Aromatic Hydrocarbons (QCLot: 483050)									
acenaphthene	83-32-9	E641A	0.05	mg/kg	0.5 mg/kg	81.1	60.0	130	----
acenaphthylene	208-96-8	E641A	0.05	mg/kg	0.5 mg/kg	79.6	60.0	130	----
acridine	260-94-6	E641A	0.05	mg/kg	0.5 mg/kg	79.6	60.0	130	----
anthracene	120-12-7	E641A	0.05	mg/kg	0.5 mg/kg	87.5	60.0	130	----
benz(a)anthracene	56-55-3	E641A	0.05	mg/kg	0.5 mg/kg	85.4	60.0	130	----
benzo(a)pyrene	50-32-8	E641A	0.05	mg/kg	0.5 mg/kg	86.2	60.0	130	----
benzo(b+j)fluoranthene	n/a	E641A	0.05	mg/kg	0.5 mg/kg	97.8	60.0	130	----
benzo(g,h,i)perylene	191-24-2	E641A	0.05	mg/kg	0.5 mg/kg	77.9	60.0	130	----
benzo(k)fluoranthene	207-08-9	E641A	0.05	mg/kg	0.5 mg/kg	85.2	60.0	130	----
chrysene	218-01-9	E641A	0.05	mg/kg	0.5 mg/kg	77.8	60.0	130	----
dibenz(a,h)anthracene	53-70-3	E641A	0.05	mg/kg	0.5 mg/kg	75.9	60.0	130	----
fluoranthene	206-44-0	E641A	0.05	mg/kg	0.5 mg/kg	81.8	60.0	130	----
fluorene	86-73-7	E641A	0.05	mg/kg	0.5 mg/kg	82.8	60.0	130	----
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.05	mg/kg	0.5 mg/kg	88.9	60.0	130	----
methylnaphthalene, 1-	90-12-0	E641A	0.05	mg/kg	0.5 mg/kg	79.2	60.0	130	----
methylnaphthalene, 2-	91-57-6	E641A	0.05	mg/kg	0.5 mg/kg	81.4	60.0	130	----
naphthalene	91-20-3	E641A	0.05	mg/kg	0.5 mg/kg	85.7	50.0	130	----
phenanthrene	85-01-8	E641A	0.05	mg/kg	0.5 mg/kg	89.0	60.0	130	----
pyrene	129-00-0	E641A	0.05	mg/kg	0.5 mg/kg	83.3	60.0	130	----
quinoline	91-22-5	E641A	0.05	mg/kg	0.5 mg/kg	79.9	60.0	130	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level $\geq 1 \times$ spike level.

Sub-Matrix: Soil/Solid

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	Target	MS	Low	High	
Polycyclic Aromatic Hydrocarbons (QCLot: 482823)										
CG2205458-001	RG_ERCKDT_SE-01_2022-04_NP	acenaphthene	83-32-9	E641A	0.380 mg/kg	0.5 mg/kg	102	50.0	140	----
		acenaphthylene	208-96-8	E641A	0.402 mg/kg	0.5 mg/kg	108	50.0	140	----
		acridine	260-94-6	E641A	0.365 mg/kg	0.5 mg/kg	98.2	50.0	140	----
		anthracene	120-12-7	E641A	0.409 mg/kg	0.5 mg/kg	110	50.0	140	----
		benz(a)anthracene	56-55-3	E641A	0.426 mg/kg	0.5 mg/kg	115	50.0	140	----
		benzo(a)pyrene	50-32-8	E641A	0.418 mg/kg	0.5 mg/kg	113	50.0	140	----
		benzo(b+j)fluoranthene	n/a	E641A	0.457 mg/kg	0.5 mg/kg	123	50.0	140	----
		benzo(g,h,i)perylene	191-24-2	E641A	0.382 mg/kg	0.5 mg/kg	103	50.0	140	----
		benzo(k)fluoranthene	207-08-9	E641A	0.380 mg/kg	0.5 mg/kg	102	50.0	140	----
		chrysene	218-01-9	E641A	0.403 mg/kg	0.5 mg/kg	108	50.0	140	----
		dibenz(a,h)anthracene	53-70-3	E641A	0.400 mg/kg	0.5 mg/kg	108	50.0	140	----
		fluoranthene	206-44-0	E641A	0.434 mg/kg	0.5 mg/kg	117	50.0	140	----
		fluorene	86-73-7	E641A	0.410 mg/kg	0.5 mg/kg	110	50.0	140	----
		indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.350 mg/kg	0.5 mg/kg	94.2	50.0	140	----
		methylnaphthalene, 1-	90-12-0	E641A	0.402 mg/kg	0.5 mg/kg	108	50.0	140	----
		methylnaphthalene, 2-	91-57-6	E641A	0.406 mg/kg	0.5 mg/kg	109	50.0	140	----
		naphthalene	91-20-3	E641A	0.413 mg/kg	0.5 mg/kg	111	50.0	140	----
		phenanthrene	85-01-8	E641A	0.461 mg/kg	0.5 mg/kg	124	50.0	140	----
		pyrene	129-00-0	E641A	0.415 mg/kg	0.5 mg/kg	112	50.0	140	----
		quinoline	91-22-5	E641A	0.332 mg/kg	0.5 mg/kg	89.4	50.0	140	----
Polycyclic Aromatic Hydrocarbons (QCLot: 483050)										
CG2205458-020	RG_MICOMP_SE-03_2022-04_NP	acenaphthene	83-32-9	E641A	0.366 mg/kg	0.5 mg/kg	96.9	50.0	140	----
		acenaphthylene	208-96-8	E641A	0.366 mg/kg	0.5 mg/kg	96.9	50.0	140	----
		acridine	260-94-6	E641A	0.346 mg/kg	0.5 mg/kg	91.6	50.0	140	----
		anthracene	120-12-7	E641A	0.429 mg/kg	0.5 mg/kg	114	50.0	140	----
		benz(a)anthracene	56-55-3	E641A	0.417 mg/kg	0.5 mg/kg	110	50.0	140	----
		benzo(a)pyrene	50-32-8	E641A	0.429 mg/kg	0.5 mg/kg	113	50.0	140	----
		benzo(b+j)fluoranthene	n/a	E641A	0.450 mg/kg	0.5 mg/kg	119	50.0	140	----
		benzo(g,h,i)perylene	191-24-2	E641A	0.368 mg/kg	0.5 mg/kg	97.4	50.0	140	----
		benzo(k)fluoranthene	207-08-9	E641A	0.431 mg/kg	0.5 mg/kg	114	50.0	140	----
		chrysene	218-01-9	E641A	0.407 mg/kg	0.5 mg/kg	108	50.0	140	----
		dibenz(a,h)anthracene	53-70-3	E641A	0.340 mg/kg	0.5 mg/kg	90.0	50.0	140	----



Sub-Matrix: **Soil/Solid**

					<i>Matrix Spike (MS) Report</i>					
					<i>Spike</i>		<i>Recovery (%)</i>	<i>Recovery Limits (%)</i>		
<i>Laboratory sample ID</i>	<i>Client sample ID</i>	<i>Analyte</i>	<i>CAS Number</i>	<i>Method</i>	<i>Concentration</i>	<i>Target</i>	<i>MS</i>	<i>Low</i>	<i>High</i>	<i>Qualifier</i>
Polycyclic Aromatic Hydrocarbons (QCLot: 483050) - continued										
CG2205458-020	RG_MICOMP_SE-03_2022-04_NP	fluoranthene	206-44-0	E641A	0.388 mg/kg	0.5 mg/kg	103	50.0	140	----
		fluorene	86-73-7	E641A	0.384 mg/kg	0.5 mg/kg	101	50.0	140	----
		indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.338 mg/kg	0.5 mg/kg	89.5	50.0	140	----
		methylnaphthalene, 1-	90-12-0	E641A	0.327 mg/kg	0.5 mg/kg	86.4	50.0	140	----
		methylnaphthalene, 2-	91-57-6	E641A	0.326 mg/kg	0.5 mg/kg	86.3	50.0	140	----
		naphthalene	91-20-3	E641A	0.340 mg/kg	0.5 mg/kg	89.8	50.0	140	----
		phenanthrene	85-01-8	E641A	0.358 mg/kg	0.5 mg/kg	94.7	50.0	140	----
		pyrene	129-00-0	E641A	0.397 mg/kg	0.5 mg/kg	105	50.0	140	----
		quinoline	91-22-5	E641A	0.349 mg/kg	0.5 mg/kg	92.2	50.0	140	----



Reference Material (RM) Report

A Reference Material (RM) is a homogenous material with known and well-established analyte concentrations. RMs are processed in an identical manner to test samples, and are used to monitor and control the accuracy and precision of a test method for a typical sample matrix. RM results are expressed as percent recovery of the target analyte concentration. RM targets may be certified target concentrations provided by the RM supplier, or may be ALS long-term mean values (for empirical test methods).

Sub-Matrix:

Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Reference Material (RM) Report				
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%)		Qualifier
							Low	High	
Physical Tests (QCLot: 485164)									
	RM	pH (1:2 soil:water)	----	E108	8.06 pH units	100	96.0	104	----
Physical Tests (QCLot: 485165)									
	RM	pH (1:2 soil:water)	----	E108	8.06 pH units	100	96.0	104	----
Organic / Inorganic Carbon (QCLot: 483925)									
	RM	carbon, total [TC]	----	E351	1.4 %	106	80.0	120	----
Organic / Inorganic Carbon (QCLot: 484664)									
	RM	carbon, total [TC]	----	E351	1.4 %	104	80.0	120	----
Organic / Inorganic Carbon (QCLot: 485448)									
	RM	carbon, inorganic [IC]	----	E354	0.383 %	97.7	80.0	120	----
Organic / Inorganic Carbon (QCLot: 485459)									
	RM	carbon, inorganic [IC]	----	E354	0.383 %	98.8	80.0	120	----
Metals (QCLot: 484434)									
	RM	aluminum	7429-90-5	E440	9817 mg/kg	102	70.0	130	----
	RM	antimony	7440-36-0	E440	3.99 mg/kg	103	70.0	130	----
	RM	arsenic	7440-38-2	E440	3.73 mg/kg	105	70.0	130	----
	RM	barium	7440-39-3	E440	105 mg/kg	111	70.0	130	----
	RM	beryllium	7440-41-7	E440	0.349 mg/kg	103	70.0	130	----
	RM	boron	7440-42-8	E440	8.5 mg/kg	101	40.0	160	----
	RM	cadmium	7440-43-9	E440	0.91 mg/kg	129	70.0	130	----
	RM	calcium	7440-70-2	E440	31082 mg/kg	99.4	70.0	130	----
	RM	chromium	7440-47-3	E440	101 mg/kg	104	70.0	130	----
	RM	cobalt	7440-48-4	E440	6.9 mg/kg	105	70.0	130	----
	RM	copper	7440-50-8	E440	123 mg/kg	108	70.0	130	----
	RM	iron	7439-89-6	E440	23558 mg/kg	104	70.0	130	----
	RM	lead	7439-92-1	E440	267 mg/kg	109	70.0	130	----
	RM	lithium	7439-93-2	E440	9.5 mg/kg	105	70.0	130	----
	RM	magnesium	7439-95-4	E440	5509 mg/kg	104	70.0	130	----
	RM	manganese	7439-96-5	E440	269 mg/kg	104	70.0	130	----
	RM	molybdenum	7439-98-7	E440	1.03 mg/kg	117	70.0	130	----



Sub-Matrix:

Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Reference Material (RM) Report				
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%)		Qualifier
							Low	High	
Metals (QCLot: 484434) - continued									
	RM	nickel	7440-02-0	E440	26.7 mg/kg	109	70.0	130	----
	RM	phosphorus	7723-14-0	E440	752 mg/kg	105	70.0	130	----
	RM	potassium	7440-09-7	E440	1587 mg/kg	100	70.0	130	----
	RM	silver	7440-22-4	E440	4.06 mg/kg	98.2	70.0	130	----
	RM	sodium	7440-23-5	E440	797 mg/kg	106	70.0	130	----
	RM	strontium	7440-24-6	E440	86.1 mg/kg	105	70.0	130	----
	RM	thallium	7440-28-0	E440	0.0786 mg/kg	92.4	40.0	160	----
	RM	tin	7440-31-5	E440	10.6 mg/kg	101	70.0	130	----
	RM	titanium	7440-32-6	E440	839 mg/kg	99.2	70.0	130	----
	RM	uranium	7440-61-1	E440	0.52 mg/kg	96.6	70.0	130	----
	RM	vanadium	7440-62-2	E440	32.7 mg/kg	101	70.0	130	----
	RM	zinc	7440-66-6	E440	297 mg/kg	102	70.0	130	----
	RM	zirconium	7440-67-7	E440	5.73 mg/kg	96.6	70.0	130	----
Metals (QCLot: 484435)									
	RM	mercury	7439-97-6	E510	0.062 mg/kg	99.7	70.0	130	----
Metals (QCLot: 484436)									
	RM	aluminum	7429-90-5	E440	9817 mg/kg	104	70.0	130	----
	RM	antimony	7440-36-0	E440	3.99 mg/kg	106	70.0	130	----
	RM	arsenic	7440-38-2	E440	3.73 mg/kg	101	70.0	130	----
	RM	barium	7440-39-3	E440	105 mg/kg	108	70.0	130	----
	RM	beryllium	7440-41-7	E440	0.349 mg/kg	104	70.0	130	----
	RM	boron	7440-42-8	E440	8.5 mg/kg	106	40.0	160	----
	RM	cadmium	7440-43-9	E440	0.91 mg/kg	102	70.0	130	----
	RM	calcium	7440-70-2	E440	31082 mg/kg	98.0	70.0	130	----
	RM	chromium	7440-47-3	E440	101 mg/kg	109	70.0	130	----
	RM	cobalt	7440-48-4	E440	6.9 mg/kg	105	70.0	130	----
	RM	copper	7440-50-8	E440	123 mg/kg	108	70.0	130	----
	RM	iron	7439-89-6	E440	23558 mg/kg	105	70.0	130	----
	RM	lead	7439-92-1	E440	267 mg/kg	109	70.0	130	----
	RM	lithium	7439-93-2	E440	9.5 mg/kg	104	70.0	130	----
	RM	magnesium	7439-95-4	E440	5509 mg/kg	106	70.0	130	----
	RM	manganese	7439-96-5	E440	269 mg/kg	106	70.0	130	----
	RM	molybdenum	7439-98-7	E440	1.03 mg/kg	120	70.0	130	----

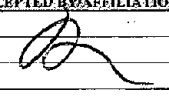


Sub-Matrix:

Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Reference Material (RM) Report				
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%)		Qualifier
							Low	High	
Metals (QCLot: 484436) - continued									
	RM	nickel	7440-02-0	E440	26.7 mg/kg	108	70.0	130	----
	RM	phosphorus	7723-14-0	E440	752 mg/kg	106	70.0	130	----
	RM	potassium	7440-09-7	E440	1587 mg/kg	104	70.0	130	----
	RM	silver	7440-22-4	E440	4.06 mg/kg	92.7	70.0	130	----
	RM	sodium	7440-23-5	E440	797 mg/kg	100	70.0	130	----
	RM	strontium	7440-24-6	E440	86.1 mg/kg	103	70.0	130	----
	RM	thallium	7440-28-0	E440	0.0786 mg/kg	95.3	40.0	160	----
	RM	tin	7440-31-5	E440	10.6 mg/kg	107	70.0	130	----
	RM	titanium	7440-32-6	E440	839 mg/kg	106	70.0	130	----
	RM	uranium	7440-61-1	E440	0.52 mg/kg	95.7	70.0	130	----
	RM	vanadium	7440-62-2	E440	32.7 mg/kg	102	70.0	130	----
	RM	zinc	7440-66-6	E440	297 mg/kg	99.1	70.0	130	----
	RM	zirconium	7440-67-7	E440	5.73 mg/kg	101	70.0	130	----
Metals (QCLot: 484437)									
	RM	mercury	7439-97-6	E510	0.062 mg/kg	95.7	70.0	130	----

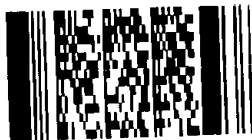
COC ID:		APRIL EVO LAEMP 2022				TURNAROUND TIME:						
PROJECT/CLIENT INFO						LABORATORY						
Facility Name / Job#		REP				Lab Name		ALS Calgary		Excel	PDF	EDD
Project Manager		Mike Pape				Lab Contact		Lyudmyla Shvets		X	X	X
Email		[redacted]				Email		lyudmyla.shvets@alsglobal.com		X	X	X
Address		421 Pine Avenue				Address		2559 29 Street NE		X	X	X
City		Sparwood		Province	BC	City		Calgary	Province	AB	X	X
Postal Code		V0B 2G0		Country	Canada	Postal Code		T1Y 7B5	Country	Canada	X	X
Phone Number		250-425-8202				Phone Number		1 403 407 1794		X	X	X

SAMPLE DETAILS								ANALYSIS REQUESTED							
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont	PHL	N	N	N	N	N		
								ANALYSIS	NONE	NONE	NONE	NONE	NONE		
								C-TOC-SK	MET-CCME-FULL-CL	MOISTURE-CL - % Moisture	PSA-PIPE-DETAIL-SK Particle Size	PAH-TMB-D/A-MS-CL- PAHS			
RG_ERCKDT_SE-01_2022-04_NP	RG_ERCKDT	SE	No	4/27/2022	11:15	G	1	X	X	X	X	X			
RG_ERCKDT_SE-02_2022-04_NP	RG_ERCKDT	SE	No	4/27/2022	11:15	G	1	X	X	X	X	X			
RG_ERCKDT_SE-03_2022-04_NP	RG_ERCKDT	SE	No	4/27/2022	11:15	G	1	X	X	X	X	X			
RG_ERCKDT_SE-04_2022-04_NP	RG_ERCKDT	SE	No	4/27/2022	11:15	G	1	X	X	X	X	X			
RG_ERCKDT_SE-05_2022-04_NP	RG_ERCKDT	SE	No	4/27/2022	11:15	G	1	X	X	X	X	X			
RG_ERCKDT_SE-06_2022-04_NP	RG_ERCKDT	SE	No	4/27/2022	11:15	G	1	X	X	X	X	X			
RG_ERCKDT_SE-07_2022-04_NP	RG_ERCKDT	SE	No	4/27/2022	11:15	G	1	X	X	X	X	X			
RG_ALUSM_SE-01_2022-04_NP	RG_ALUSM	SE	No	4/28/2022	14:00	G	1	X	X	X	X	X			
RG_ALUSM_SE-02_2022-04_NP	RG_ALUSM	SE	No	4/28/2022	14:00	G	1	X	X	X	X	X			
RG_ALUSM_SE-03_2022-04_NP	RG_ALUSM	SE	No	4/28/2022	14:00	G	1	X	X	X	X	X			

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS		RELINQUISHED BY/AFFILIATION		DATE/TIME		ACCEPTED BY/AFFILIATION	
VPO00816101		Alex McClymont		May 4, 2022		 579 1010	

NB OF BOTTLES RETURNED/DESCRIPTION		Sampler's Name		Mobile #	
Regular (default) x		Alex McClymont		780-293-6750	
Priority (2-3 business days) - 50% surcharge		Sampler's Signature		Date/Time	
Emergency (1 Business Day) - 100% surcharge				May 4, 2022	
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

Environmental Division
 Calgary
 Work Order Reference
CG2205458



20

COC ID:	APRIL EVO LAEMP 2022				TURNAROUND TIME:				
PROJECT/CLIENT INFO					LABORATORY				
Facility Name / Job#	REP				Lab Name	ALS Calgary			
Project Manager	Mike Pope				Lab Contact	Lyudmyla Shvets			
Email	m.pope@tack.com				Email	lyudmyla.shvets@alsglobal.com			
Address	421 Pine Avenue				Address	2559 29 Street NE			
City	Sparwood		Province	BC	City	Calgary	Province	AB	
Postal Code	V0B 2G0		Country	Canada	Postal Code	T1Y 7B5	Country	Canada	
Phone Number	250-425-8202				Phone Number	1 403 407 1794			

SAMPLE DETAILS

ANALYSIS REQUESTED

Filtered: P: Field, L: Lab, F1: FMD & L&S, N: None

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS REQUESTED						
								C-TOC-SK	MET-CCME-FULL-CL	MOISTURE-CL - % Moisture	PSA-PIPET-DETAIL-SK Particle Size	PAH-TMB-D/A-MS-CL- PAHS		
X RG_ALUSM_SE-04_2022-04_NP	RG_ALUSM	SE	No	4/28/2022	14:00	G	1	X	X	X	X	X		
X RG_ALUSM_SE-05_2022-04_NP	RG_ALUSM	SE	No	4/28/2022	14:00	G	1	X	X	X	X	X		
RG_RIVER_SE-01_2022-04_NP	RG_RIVER	SE	No	4/28/2022	14:00	G	1	X	X	X	X	X		
RG_ERCKUC_SE-01_2022-04_NP	RG_ERCKUC	SE	No	4/28/2022	10:55	G	1	X	X	X	X	X		
RG_ERCKUC_SE-02_2022-04_NP	RG_ERCKUC	SE	No	4/28/2022	10:55	G	1	X	X	X	X	X		
RG_ERCKUC_SE-03_2022-04_NP	RG_ERCKUC	SE	No	4/28/2022	10:55	G	1	X	X	X	X	X		
RG_ERCK_SE-01_2022-04_NP	RG_ERCK	SE	No	4/28/2022	8:50	G	1	X	X	X	X	X		
RG_MICOMP_SE-01_2022-04_NP	RG_MICOMP	SE	No	27-Apr-22	15:15	G	1	X	X	X	X	X		
RG_MICOMP_SE-02_2022-04_NP	RG_MICOMP	SE	No	27-Apr-22	15:15	G	1	X	X	X	X	X		
RG_MICOMP_SE-03_2022-04_NP	RG_MICOMP	SE	No	27-Apr-22	15:15	G	1	X	X	X	X	X		

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS

RELINQUISHED BY/AFFILIATION

DATE/TIME

ACCEPTED BY/AFFILIATION

VPO00816101

Alex McClymont

May 4, 2022

NB. OF BOTTLES RETURNED/DESCRIPTION

Regular (default) x

Priority (2-3 business days) - 50% surcharge

Emergency (1 Business Day) - 100% surcharge

For Emergency <1 Day, ASAP or Weekend - Contact ALS

Sampler's Name

Alex McClymont

Mobile #

780-293-6750

Sampler's Signature

Date/Time

May 4, 2022

COC ID: APRIL EVO LAEMP 2022 TURNAROUND TIME:

PROJECT/CLIENT INFO				LABORATORY			
Facility Name / Job#	REP	Lab Name	ALS Calgary	Excel	PDF	EDD	
Project Manager	Mike Pope	Lab Contact	Lyudmyla Shvets				
Email		Email	lyudmyla.shvets@alsglobal.com				
Address	421 Pine Avenue	Address	2559 29 Street NE				
City	Sparwood	Province	BC				
Postal Code	V0B 2G0	Country	Canada				
Phone Number	250-425-8202	Phone Number	1 403 407 1794				

SAMPLE DETAILS								ANALYSIS REQUESTED																													
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	PHENOL	CHLORIDE	SULFIDE	AMMONIUM	ARSENIC	LEAD	CADMIUM	COPPER	ZINC	CHROMIUM	COBALT	IRON	NIQUEL	MANGANESE	ALUMINUM	SILICA	PHOSPHORUS	ANTHRACENE	FLUORENTHENE	FLUORANTHENE	ANTHRACENE	FLUORENTHENE	FLUORANTHENE	ANTHRACENE	FLUORENTHENE	FLUORANTHENE				
RG_MICOMP_SE-04_2022-04_NP	RG_MICOMP	SE	No	27-Apr-22	15:15	G	1	NONE	NONE	NONE	NONE	NONE																									
RG_MICOMP_SE-05_2022-04_NP	RG_MICOMP	SE	No	27-Apr-22	15:15	G	1																														
RG - CHECKER SE-01				28-Apr	10:30																																

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
VPO00816101	Alex McClymont	May 4, 2022	

NB OF BOTTLES RETURNED/DESCRIPTION	Sampler's Name	Mobile #	Sampler's Signature	Date/Time
Regular (default) x	Alex McClymont	780-293-6750		May 4, 2022
Priority (2-3 business days) - 50% surcharge				
Emergency (1 Business Day) - 100% surcharge				
For Emergency <1 Day, ASAP or Weekend - Contact ALS				



CERTIFICATE OF ANALYSIS

Work Order : CG2205899
Client : Teck Coal Limited
Contact : Mike Pope
Address : 421 PINE AVE
Sparwood BC Canada V0B 2G0
Telephone : ---
Project : REGIONAL EFFECTS PROGRAM
PO : VPO00816101
C-O-C number : MAY EVO LAEMP 2022
Sampler : Robin Valleau
Site : ---
Quote number : Teck Coal Master Quote
No. of samples received : 14
No. of samples analysed : 14

Page : 1 of 15
Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
Calgary AB Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 17-May-2022 08:43
Date Analysis Commenced : 17-May-2022
Issue Date : 27-May-2022 17:17

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
Analytical Results
Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Table with 3 columns: Signatories, Position, Laboratory Department. Lists names like Colby Bingham, Hedy Lai, Jwan Abdalla, Nancy Cruse, Rosalie Van Deelen, Sorina Motea, Xihua Yao and their respective roles and departments.



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
 LOR: Limit of Reporting (detection limit).

Unit	Description
-	No Unit
%	percent
mg/kg	milligrams per kilogram
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Workorder Comments

only 1 bag received for each sample - PAH to be qualified

Sample Comments

Sample	Client Id	Comment
CG2205899-001	RG_ERCKUT_SE-01_2022-05-12_NP	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2205899-003	RG_ERCKUT_SE-03_2022-05-12_NP	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2205899-004	RG_ERCKUT_SE-04_2022-05-12_NP	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2205899-005	RG_ERCKUT_SE-05_2022-05-12_NP	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2205899-006	RG_ERCKDT_SE-01_2022-05-12_NP	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.



CG2205899-007	RG_ERCKDT_SE-02_2022-05-12_NP	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2205899-009	RG_ERCKDT_SE-04_2022-05-12_NP	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2205899-011	RG_ERCKDT_SE-06_2022-05-12_NP	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2205899-012	RG_ERCKMD_SE-01_2022-05-13_NP	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2205899-013	RG_ERCKMD_SE-02_2022-05-13_NP	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2205899-014	RG_ERCKMD_SE-03_2022-05-13_NP	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.

Qualifiers

Qualifier	Description
DLCI	Detection Limit Raised: Chromatographic interference due to co-elution.
FR5	As per applicable reference method(s), soil:water ratio for Fixed Ratio Leach was modified to 1:5 due to high soil organic content



Analytical Results

Sub-Matrix: Sediment
 (Matrix: Soil/Solid)

Client sample ID

					RG_ERCKUT_S E-01_2022-05-1 2_NP	RG_ERCKUT_S E-02_2022-05-1 2_NP	RG_ERCKUT_S E-03_2022-05-1 2_NP	RG_ERCKUT_S E-04_2022-05-1 2_NP	RG_ERCKUT_S E-05_2022-05-1 2_NP
Client sampling date / time					12-May-2022 10:00	12-May-2022 10:00	12-May-2022 10:00	12-May-2022 10:00	12-May-2022 10:00
Analyte	CAS Number	Method	LOR	Unit	CG2205899-001	CG2205899-002	CG2205899-003	CG2205899-004	CG2205899-005
					Result	Result	Result	Result	Result
Physical Tests									
moisture	----	E144	0.25	%	66.0	74.4	49.3	71.7	82.6
pH (1:2 soil:water)	----	E108	0.10	pH units	7.73 ^{FRS}	----	7.52	7.81	7.62
Particle Size									
grain size curve	----	E185A	-	-	See Attached	----	See Attached	See Attached	See Attached
clay (<0.004mm)	----	EC184A	1.0	%	2.5	----	2.0	3.1	3.0
silt (0.063mm - 0.0312mm)	----	EC184A	1.0	%	10.0	----	4.7	8.5	12.5
silt (0.0312mm - 0.004mm)	----	EC184A	1.0	%	9.6	----	6.0	10.2	13.5
sand (0.125mm - 0.063mm)	----	EC184A	1.0	%	13.9	----	5.1	9.9	5.5
sand (0.25mm - 0.125mm)	----	EC184A	1.0	%	24.1	----	10.5	21.9	13.5
sand (0.5mm - 0.25mm)	----	EC184A	1.0	%	25.9	----	16.2	27.9	20.2
sand (1.0mm - 0.50mm)	----	EC184A	1.0	%	5.8	----	18.0	15.9	10.2
sand (2.0mm - 1.0mm)	----	EC184A	1.0	%	3.9	----	18.4	2.1	9.7
gravel (>2mm)	----	EC184A	1.0	%	4.3	----	19.1	<1.0	11.9
Organic / Inorganic Carbon									
carbon, total [TC]	----	E351	0.050	%	12.9	10.0	6.86	14.1	13.6
carbon, inorganic [IC]	----	E354	0.050	%	5.70	1.16	1.07	6.41	5.17
carbon, inorganic [IC], (as CaCO3 equivalent)	----	E354	0.40	%	47.5	9.68	8.91	53.4	43.1
carbon, total organic [TOC]	----	EC356	0.050	%	7.20	8.84	5.79	7.69	8.43
Metals									
aluminum	7429-90-5	E440	50	mg/kg	1600	4300	4320	444	1820
antimony	7440-36-0	E440	0.10	mg/kg	0.76	1.54	1.33	0.57	2.23
arsenic	7440-38-2	E440	0.10	mg/kg	2.03	5.67	6.41	0.49	2.66
barium	7440-39-3	E440	0.50	mg/kg	145	164	197	120	174
beryllium	7440-41-7	E440	0.10	mg/kg	0.25	0.59	0.75	<0.10	0.30
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20
boron	7440-42-8	E440	5.0	mg/kg	<5.0	7.0	6.3	6.0	10.0
cadmium	7440-43-9	E440	0.020	mg/kg	1.38	1.65	1.76	1.08	1.84
calcium	7440-70-2	E440	50	mg/kg	140000	32600	42600	210000	185000
chromium	7440-47-3	E440	0.50	mg/kg	3.95	8.52	9.69	1.41	5.25



Analytical Results

Sub-Matrix: Sediment

(Matrix: Soil/Solid)

Client sample ID

					RG_ERCKUT_S E-01_2022-05-1 2_NP	RG_ERCKUT_S E-02_2022-05-1 2_NP	RG_ERCKUT_S E-03_2022-05-1 2_NP	RG_ERCKUT_S E-04_2022-05-1 2_NP	RG_ERCKUT_S E-05_2022-05-1 2_NP
Client sampling date / time					12-May-2022 10:00	12-May-2022 10:00	12-May-2022 10:00	12-May-2022 10:00	12-May-2022 10:00
Analyte	CAS Number	Method	LOR	Unit	CG2205899-001	CG2205899-002	CG2205899-003	CG2205899-004	CG2205899-005
					Result	Result	Result	Result	Result
Metals									
cobalt	7440-48-4	E440	0.10	mg/kg	1.98	5.88	6.45	0.30	2.37
copper	7440-50-8	E440	0.50	mg/kg	7.48	15.5	16.3	3.56	12.3
iron	7439-89-6	E440	50	mg/kg	4430	15000	25800	836	6180
lead	7439-92-1	E440	0.50	mg/kg	3.03	8.35	8.62	0.54	3.51
lithium	7439-93-2	E440	2.0	mg/kg	2.5	5.3	6.0	<2.0	2.8
magnesium	7439-95-4	E440	20	mg/kg	4140	4210	3860	4020	5850
manganese	7439-96-5	E440	1.0	mg/kg	103	303	366	17.7	117
mercury	7439-97-6	E510	0.0050	mg/kg	0.0203	0.0356	0.0371	0.0068	0.0240
molybdenum	7439-98-7	E440	0.10	mg/kg	0.54	1.57	1.65	0.30	1.01
nickel	7440-02-0	E440	0.50	mg/kg	9.90	23.2	25.3	3.86	13.3
phosphorus	7723-14-0	E440	50	mg/kg	573	1290	1230	371	1020
potassium	7440-09-7	E440	100	mg/kg	450	1330	1110	280	900
selenium	7782-49-2	E440	0.20	mg/kg	3.72	4.66	3.39	2.87	6.58
silver	7440-22-4	E440	0.10	mg/kg	<0.10	0.18	0.16	<0.10	0.13
sodium	7440-23-5	E440	50	mg/kg	95	91	64	110	122
strontium	7440-24-6	E440	0.50	mg/kg	56.8	45.4	50.6	65.9	72.7
sulfur	7704-34-9	E440	1000	mg/kg	2400	1200	<1000	3800	3800
thallium	7440-28-0	E440	0.050	mg/kg	0.094	0.206	0.198	<0.050	0.112
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
titanium	7440-32-6	E440	1.0	mg/kg	11.6	12.3	15.2	5.0	11.5
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
uranium	7440-61-1	E440	0.050	mg/kg	1.92	1.36	1.39	2.37	2.69
vanadium	7440-62-2	E440	0.20	mg/kg	9.46	24.7	29.5	3.38	13.6
zinc	7440-66-6	E440	2.0	mg/kg	42.9	97.6	115	22.0	59.8
zirconium	7440-67-7	E440	1.0	mg/kg	<1.0	<1.0	<1.0	<1.0	1.7
Polycyclic Aromatic Hydrocarbons									
acenaphthene	83-32-9	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.070
acenaphthylene	208-96-8	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.070
acridine	260-94-6	E641A	0.050	mg/kg	<0.100 ^{DLCL}	<0.300 ^{DLCL}	<0.200 ^{DLCL}	<0.050	<0.070
anthracene	120-12-7	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.070



Analytical Results

Sub-Matrix: Sediment

Client sample ID

(Matrix: Soil/Solid)

					RG_ERCKUT_S E-01_2022-05-1 2_NP	RG_ERCKUT_S E-02_2022-05-1 2_NP	RG_ERCKUT_S E-03_2022-05-1 2_NP	RG_ERCKUT_S E-04_2022-05-1 2_NP	RG_ERCKUT_S E-05_2022-05-1 2_NP
Client sampling date / time					12-May-2022 10:00	12-May-2022 10:00	12-May-2022 10:00	12-May-2022 10:00	12-May-2022 10:00
Analyte	CAS Number	Method	LOR	Unit	CG2205899-001	CG2205899-002	CG2205899-003	CG2205899-004	CG2205899-005
					Result	Result	Result	Result	Result
Polycyclic Aromatic Hydrocarbons									
benzo(a)anthracene	56-55-3	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.070
benzo(a)pyrene	50-32-8	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.070
benzo(b+j)fluoranthene	n/a	E641A	0.050	mg/kg	0.108	0.088	0.055	<0.050	<0.070
benzo(b+j+k)fluoranthene	n/a	E641A	0.075	mg/kg	0.108	0.088	<0.075	<0.075	<0.099
benzo(g,h,i)perylene	191-24-2	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.070
benzo(k)fluoranthene	207-08-9	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.070
chrysene	218-01-9	E641A	0.050	mg/kg	0.239	0.202	0.102	<0.050	0.071
dibenz(a,h)anthracene	53-70-3	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.070
fluoranthene	206-44-0	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.070
fluorene	86-73-7	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.070
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.070
methylnaphthalene, 1-	90-12-0	E641A	0.050	mg/kg	0.273	0.182	0.125	0.070	0.169
methylnaphthalene, 1+2-	----	E641A	0.075	mg/kg	0.692	0.466	0.329	0.186	0.449
methylnaphthalene, 2-	91-57-6	E641A	0.050	mg/kg	0.419	0.284	0.204	0.116	0.280
naphthalene	91-20-3	E641A	0.050	mg/kg	0.222	0.161	0.112	<0.050	0.113
phenanthrene	85-01-8	E641A	0.050	mg/kg	0.694	0.456	0.320	0.086	0.249
pyrene	129-00-0	E641A	0.050	mg/kg	0.056	<0.050	<0.050	<0.050	<0.070
quinoline	91-22-5	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.070
B(a)P total potency equivalents [B(a)P TPE]	----	E641A	0.065	mg/kg	0.071	0.068	<0.065	<0.065	0.085
IACR (CCME)	----	E641A	0.60	-	1.21	1.07	0.81	<0.60	0.84
IACR AB (coarse)	----	E641A	0.10	-	<0.10	<0.10	<0.10	<0.10	<0.10
IACR AB (fine)	----	E641A	0.10	-	<0.10	<0.10	<0.10	<0.10	<0.10
PAHs, total (BC Sched 3.4)	n/a	E641A	0.20	mg/kg	1.63	1.10	0.74	0.20	0.71
PAHs, total (EPA 16)	n/a	E641A	0.20	mg/kg	1.32	0.91	0.59	<0.20	0.43
Polycyclic Aromatic Hydrocarbons Surrogates									
acridine-d9	34749-75-2	E641A	0.1	%	88.0	99.7	96.4	116	110
chrysene-d12	1719-03-5	E641A	0.1	%	124	114	121	115	118
naphthalene-d8	1146-65-2	E641A	0.1	%	119	105	120	118	128
phenanthrene-d10	1517-22-2	E641A	0.1	%	120	106	118	125	130



Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Sediment

(Matrix: Soil/Solid)

Client sample ID

					RG_ERCKDT_S E-01_2022-05-1 2_NP	RG_ERCKDT_S E-02_2022-05-1 2_NP	RG_ERCKDT_S E-03_2022-05-1 2_NP	RG_ERCKDT_S E-04_2022-05-1 2_NP	RG_ERCKDT_S E-05_2022-05-1 2_NP
Client sampling date / time					12-May-2022 14:30	12-May-2022 14:30	12-May-2022 14:30	12-May-2022 14:30	12-May-2022 14:30
Analyte	CAS Number	Method	LOR	Unit	CG2205899-006	CG2205899-007	CG2205899-008	CG2205899-009	CG2205899-010
					Result	Result	Result	Result	Result
Physical Tests									
moisture	----	E144	0.25	%	75.6	87.4	77.6	84.5	77.1
pH (1:2 soil:water)	----	E108	0.10	pH units	7.85	----	7.72	----	7.88
Particle Size									
grain size curve	----	E185A	-	-	See Attached	See Attached	See Attached	See Attached	See Attached
clay (<0.004mm)	----	EC184A	1.0	%	9.4	12.0	11.9	5.2	8.1
silt (0.063mm - 0.0312mm)	----	EC184A	1.0	%	15.6	21.2	24.4	10.7	12.2
silt (0.0312mm - 0.004mm)	----	EC184A	1.0	%	26.9	37.1	44.9	17.2	23.2
sand (0.125mm - 0.063mm)	----	EC184A	1.0	%	8.9	13.4	11.0	5.4	6.8
sand (0.25mm - 0.125mm)	----	EC184A	1.0	%	11.6	11.5	5.8	6.7	5.1
sand (0.5mm - 0.25mm)	----	EC184A	1.0	%	13.8	2.9	1.5	8.4	4.8
sand (1.0mm - 0.50mm)	----	EC184A	1.0	%	11.2	1.0	<1.0	6.8	15.5
sand (2.0mm - 1.0mm)	----	EC184A	1.0	%	2.6	<1.0	<1.0	1.6	16.0
gravel (>2mm)	----	EC184A	1.0	%	<1.0	<1.0	<1.0	38.0	8.3
Organic / Inorganic Carbon									
carbon, total [TC]	----	E351	0.050	%	13.3	14.0	13.4	10.9	10.2
carbon, inorganic [IC]	----	E354	0.050	%	6.02	3.06	2.77	2.38	2.10
carbon, inorganic [IC], (as CaCO3 equivalent)	----	E354	0.40	%	50.2	25.5	23.0	19.8	17.5
carbon, total organic [TOC]	----	EC356	0.050	%	7.28	10.9	10.6	8.52	8.10
Metals									
aluminum	7429-90-5	E440	50	mg/kg	2190	2500	3230	2690	3780
antimony	7440-36-0	E440	0.10	mg/kg	1.17	1.12	0.98	0.99	1.33
arsenic	7440-38-2	E440	0.10	mg/kg	19.0	19.9	20.8	8.64	25.8
barium	7440-39-3	E440	0.50	mg/kg	264	239	254	192	267
beryllium	7440-41-7	E440	0.10	mg/kg	0.44	0.55	0.58	0.48	0.66
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20
boron	7440-42-8	E440	5.0	mg/kg	6.7	5.8	7.8	6.6	6.5
cadmium	7440-43-9	E440	0.020	mg/kg	6.52	8.00	6.86	4.14	5.84
calcium	7440-70-2	E440	50	mg/kg	192000	115000	104000	79400	71900
chromium	7440-47-3	E440	0.50	mg/kg	5.78	7.07	8.67	6.68	9.48



Analytical Results

Sub-Matrix: Sediment

(Matrix: Soil/Solid)

Client sample ID

					RG_ERCKDT_S E-01_2022-05-1 2_NP	RG_ERCKDT_S E-02_2022-05-1 2_NP	RG_ERCKDT_S E-03_2022-05-1 2_NP	RG_ERCKDT_S E-04_2022-05-1 2_NP	RG_ERCKDT_S E-05_2022-05-1 2_NP
Client sampling date / time					12-May-2022 14:30	12-May-2022 14:30	12-May-2022 14:30	12-May-2022 14:30	12-May-2022 14:30
Analyte	CAS Number	Method	LOR	Unit	CG2205899-006	CG2205899-007	CG2205899-008	CG2205899-009	CG2205899-010
					Result	Result	Result	Result	Result
Metals									
cobalt	7440-48-4	E440	0.10	mg/kg	271	253	112	199	198
copper	7440-50-8	E440	0.50	mg/kg	11.2	15.1	17.2	13.7	16.6
iron	7439-89-6	E440	50	mg/kg	28200	32000	34600	17900	41000
lead	7439-92-1	E440	0.50	mg/kg	7.65	9.68	10.4	7.83	10.7
lithium	7439-93-2	E440	2.0	mg/kg	3.9	4.2	5.5	4.3	4.6
magnesium	7439-95-4	E440	20	mg/kg	8750	9320	11000	6600	7060
manganese	7439-96-5	E440	1.0	mg/kg	7290	6720	2170	5640	4870
mercury	7439-97-6	E510	0.0050	mg/kg	0.0451	0.0492	0.0448	0.0320	0.0419
molybdenum	7439-98-7	E440	0.10	mg/kg	4.12	4.13	2.31	2.57	3.90
nickel	7440-02-0	E440	0.50	mg/kg	173	190	112	99.9	201
phosphorus	7723-14-0	E440	50	mg/kg	1360	1570	1750	1610	1780
potassium	7440-09-7	E440	100	mg/kg	680	700	820	870	990
selenium	7782-49-2	E440	0.20	mg/kg	20.6	21.4	40.1	11.6	19.5
silver	7440-22-4	E440	0.10	mg/kg	0.16	0.21	0.24	0.16	0.21
sodium	7440-23-5	E440	50	mg/kg	121	140	107	83	84
strontium	7440-24-6	E440	0.50	mg/kg	104	84.6	85.0	60.3	79.5
sulfur	7704-34-9	E440	1000	mg/kg	4000	2900	2500	2000	1800
thallium	7440-28-0	E440	0.050	mg/kg	0.335	0.344	0.368	0.234	0.374
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
titanium	7440-32-6	E440	1.0	mg/kg	12.7	14.5	17.3	11.8	14.2
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
uranium	7440-61-1	E440	0.050	mg/kg	2.68	2.17	1.97	1.48	2.11
vanadium	7440-62-2	E440	0.20	mg/kg	13.9	16.1	18.2	17.3	24.5
zinc	7440-66-6	E440	2.0	mg/kg	291	322	291	178	350
zirconium	7440-67-7	E440	1.0	mg/kg	<1.0	1.1	1.2	<1.0	<1.0
Polycyclic Aromatic Hydrocarbons									
acenaphthene	83-32-9	E641A	0.050	mg/kg	0.052	0.116	0.134	<0.070	0.103
acenaphthylene	208-96-8	E641A	0.050	mg/kg	<0.050	<0.073	<0.050	<0.070	<0.050
acridine	260-94-6	E641A	0.050	mg/kg	<0.150 ^{DLCI}	<0.300 ^{DLCI}	<0.300 ^{DLCI}	<0.200 ^{DLCI}	<0.250 ^{DLCI}
anthracene	120-12-7	E641A	0.050	mg/kg	<0.050	<0.073	<0.050	<0.070	<0.050



Analytical Results

Sub-Matrix: Sediment

Client sample ID

(Matrix: Soil/Solid)

					RG_ERCKDT_S E-01_2022-05-1 2_NP	RG_ERCKDT_S E-02_2022-05-1 2_NP	RG_ERCKDT_S E-03_2022-05-1 2_NP	RG_ERCKDT_S E-04_2022-05-1 2_NP	RG_ERCKDT_S E-05_2022-05-1 2_NP
Client sampling date / time					12-May-2022 14:30	12-May-2022 14:30	12-May-2022 14:30	12-May-2022 14:30	12-May-2022 14:30
Analyte	CAS Number	Method	LOR	Unit	CG2205899-006	CG2205899-007	CG2205899-008	CG2205899-009	CG2205899-010
					Result	Result	Result	Result	Result
Polycyclic Aromatic Hydrocarbons									
benzo(a)anthracene	56-55-3	E641A	0.050	mg/kg	<0.050	0.100	0.094	<0.070	0.084
benzo(a)pyrene	50-32-8	E641A	0.050	mg/kg	<0.050	<0.073	0.054	<0.070	<0.050
benzo(b+j)fluoranthene	n/a	E641A	0.050	mg/kg	0.088	0.225	0.197	0.112	0.169
benzo(b+j+k)fluoranthene	n/a	E641A	0.075	mg/kg	0.088	0.225	0.197	0.112	0.169
benzo(g,h,i)perylene	191-24-2	E641A	0.050	mg/kg	<0.050	0.089	0.085	<0.070	0.074
benzo(k)fluoranthene	207-08-9	E641A	0.050	mg/kg	<0.050	<0.073	<0.050	<0.070	<0.050
chrysene	218-01-9	E641A	0.050	mg/kg	0.214	0.485	0.403	0.270	0.388
dibenz(a,h)anthracene	53-70-3	E641A	0.050	mg/kg	<0.050	<0.073	<0.050	<0.070	<0.050
fluoranthene	206-44-0	E641A	0.050	mg/kg	<0.050	0.099	0.094	<0.070	0.072
fluorene	86-73-7	E641A	0.050	mg/kg	0.177	0.370	0.448	0.209	0.342
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.050	mg/kg	<0.050	<0.073	<0.050	<0.070	<0.050
methylnaphthalene, 1-	90-12-0	E641A	0.050	mg/kg	0.520	1.15	1.22	0.631	0.981
methylnaphthalene, 1+2-	----	E641A	0.075	mg/kg	1.54	3.38	3.63	1.86	2.88
methylnaphthalene, 2-	91-57-6	E641A	0.050	mg/kg	1.02	2.23	2.41	1.23	1.90
naphthalene	91-20-3	E641A	0.050	mg/kg	0.326	0.696	0.677	0.364	0.522
phenanthrene	85-01-8	E641A	0.050	mg/kg	0.688	1.62	1.61	0.848	1.26
pyrene	129-00-0	E641A	0.050	mg/kg	0.065	0.125	0.139	0.082	0.110
quinoline	91-22-5	E641A	0.050	mg/kg	<0.050	<0.073	<0.050	<0.070	<0.050
B(a)P total potency equivalents [B(a)P TPE]	----	E641A	0.065	mg/kg	0.069	0.118	0.118	0.095	0.085
IACR (CCME)	----	E641A	0.60	-	1.07	2.45	2.14	1.42	1.85
IACR AB (coarse)	----	E641A	0.10	-	<0.10	<0.10	<0.10	<0.10	<0.10
IACR AB (fine)	----	E641A	0.10	-	<0.10	0.17	0.14	0.12	0.13
PAHs, total (BC Sched 3.4)	n/a	E641A	0.20	mg/kg	2.54	5.84	6.06	3.00	4.78
PAHs, total (EPA 16)	n/a	E641A	0.20	mg/kg	1.61	3.92	3.94	1.88	3.12
Polycyclic Aromatic Hydrocarbons Surrogates									
acridine-d9	34749-75-2	E641A	0.1	%	109	109	111	105	104
chrysene-d12	1719-03-5	E641A	0.1	%	130	122	128	122	117
naphthalene-d8	1146-65-2	E641A	0.1	%	119	118	121	114	109
phenanthrene-d10	1517-22-2	E641A	0.1	%	123	126	124	123	111



Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Sediment
 (Matrix: Soil/Solid)

Client sample ID

					RG_ERCKDT_S E-06_2022-05-1 2_NP	RG_ERCKMD_S E-01_2022-05-1 3_NP	RG_ERCKMD_S E-02_2022-05-1 3_NP	RG_ERCKMD_S E-03_2022-05-1 3_NP	----
Client sampling date / time					12-May-2022 14:30	13-May-2022 09:30	13-May-2022 09:30	13-May-2022 09:30	----
Analyte	CAS Number	Method	LOR	Unit	CG2205899-011	CG2205899-012	CG2205899-013	CG2205899-014	-----
					Result	Result	Result	Result	----
Physical Tests									
moisture	----	E144	0.25	%	85.2	82.8	87.9	79.4	----
pH (1:2 soil:water)	----	E108	0.10	pH units	7.60	7.78	7.82	8.03	----
Particle Size									
grain size curve	----	E185A	-	-	See Attached	See Attached	See Attached	See Attached	----
clay (<0.004mm)	----	EC184A	1.0	%	8.9	6.2	10.0	5.2	----
silt (0.063mm - 0.0312mm)	----	EC184A	1.0	%	16.5	15.0	28.2	12.3	----
silt (0.0312mm - 0.004mm)	----	EC184A	1.0	%	24.1	20.5	37.1	16.0	----
sand (0.125mm - 0.063mm)	----	EC184A	1.0	%	15.9	9.0	10.9	7.2	----
sand (0.25mm - 0.125mm)	----	EC184A	1.0	%	18.7	15.6	9.4	16.9	----
sand (0.5mm - 0.25mm)	----	EC184A	1.0	%	9.3	18.9	2.7	30.9	----
sand (1.0mm - 0.50mm)	----	EC184A	1.0	%	4.9	11.7	1.3	10.6	----
sand (2.0mm - 1.0mm)	----	EC184A	1.0	%	1.7	3.1	<1.0	<1.0	----
gravel (>2mm)	----	EC184A	1.0	%	<1.0	<1.0	<1.0	<1.0	----
Organic / Inorganic Carbon									
carbon, total [TC]	----	E351	0.050	%	11.8	14.0	15.9	13.5	----
carbon, inorganic [IC]	----	E354	0.050	%	2.38	6.80	3.84	6.78	----
carbon, inorganic [IC], (as CaCO3 equivalent)	----	E354	0.40	%	19.9	56.6	32.0	56.5	----
carbon, total organic [TOC]	----	EC356	0.050	%	9.42	7.20	12.1	6.72	----
Metals									
aluminum	7429-90-5	E440	50	mg/kg	2960	1020	1950	957	----
antimony	7440-36-0	E440	0.10	mg/kg	1.16	0.49	1.16	0.66	----
arsenic	7440-38-2	E440	0.10	mg/kg	14.2	7.90	23.5	16.7	----
barium	7440-39-3	E440	0.50	mg/kg	234	242	403	367	----
beryllium	7440-41-7	E440	0.10	mg/kg	0.51	0.25	0.60	0.30	----
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	----
boron	7440-42-8	E440	5.0	mg/kg	6.0	6.0	8.0	<5.0	----
cadmium	7440-43-9	E440	0.020	mg/kg	5.87	7.41	14.6	12.5	----
calcium	7440-70-2	E440	50	mg/kg	84200	203000	125000	268000	----
chromium	7440-47-3	E440	0.50	mg/kg	7.12	2.57	5.13	2.71	----



Analytical Results

Sub-Matrix: Sediment

(Matrix: Soil/Solid)

Client sample ID

					RG_ERCKDT_S E-06_2022-05-1 2_NP	RG_ERCKMD_S E-01_2022-05-1 3_NP	RG_ERCKMD_S E-02_2022-05-1 3_NP	RG_ERCKMD_S E-03_2022-05-1 3_NP	----
Client sampling date / time					12-May-2022 14:30	13-May-2022 09:30	13-May-2022 09:30	13-May-2022 09:30	----
Analyte	CAS Number	Method	LOR	Unit	CG2205899-011	CG2205899-012	CG2205899-013	CG2205899-014	-----
					Result	Result	Result	Result	----
Metals									
cobalt	7440-48-4	E440	0.10	mg/kg	243	155	466	288	----
copper	7440-50-8	E440	0.50	mg/kg	15.8	7.97	17.1	9.22	----
iron	7439-89-6	E440	50	mg/kg	23400	14700	42400	29600	----
lead	7439-92-1	E440	0.50	mg/kg	9.48	4.23	10.6	6.40	----
lithium	7439-93-2	E440	2.0	mg/kg	4.2	2.0	3.3	2.0	----
magnesium	7439-95-4	E440	20	mg/kg	8110	5590	6940	5420	----
manganese	7439-96-5	E440	1.0	mg/kg	5720	6200	18800	10900	----
mercury	7439-97-6	E510	0.0050	mg/kg	0.0356	0.0246	0.0531	0.0252	----
molybdenum	7439-98-7	E440	0.10	mg/kg	3.60	1.16	2.94	1.47	----
nickel	7440-02-0	E440	0.50	mg/kg	189	89.3	280	122	----
phosphorus	7723-14-0	E440	50	mg/kg	1540	1020	1660	1130	----
potassium	7440-09-7	E440	100	mg/kg	910	550	700	360	----
selenium	7782-49-2	E440	0.20	mg/kg	13.5	15.6	32.2	20.0	----
silver	7440-22-4	E440	0.10	mg/kg	0.20	0.10	0.24	0.12	----
sodium	7440-23-5	E440	50	mg/kg	80	125	112	124	----
strontium	7440-24-6	E440	0.50	mg/kg	69.1	93.3	87.6	111	----
sulfur	7704-34-9	E440	1000	mg/kg	2300	5000	4100	5900	----
thallium	7440-28-0	E440	0.050	mg/kg	0.437	0.262	0.820	0.536	----
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	----
titanium	7440-32-6	E440	1.0	mg/kg	13.6	9.5	11.3	8.8	----
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	----
uranium	7440-61-1	E440	0.050	mg/kg	1.77	2.01	2.13	2.65	----
vanadium	7440-62-2	E440	0.20	mg/kg	18.7	7.74	16.8	10.1	----
zinc	7440-66-6	E440	2.0	mg/kg	245	263	759	454	----
zirconium	7440-67-7	E440	1.0	mg/kg	<1.0	<1.0	<1.0	<1.0	----
Polycyclic Aromatic Hydrocarbons									
acenaphthene	83-32-9	E641A	0.050	mg/kg	0.150	<0.073	<0.074	<0.050	----
acenaphthylene	208-96-8	E641A	0.050	mg/kg	<0.069	<0.073	<0.074	<0.050	----
acridine	260-94-6	E641A	0.050	mg/kg	<0.350 ^{DLCI}	<0.073	<0.150 ^{DLCI}	<0.400 ^{DLCI}	----
anthracene	120-12-7	E641A	0.050	mg/kg	<0.069	<0.073	<0.074	<0.050	----



Analytical Results

Sub-Matrix: Sediment

Client sample ID

(Matrix: Soil/Solid)

					RG_ERCKDT_S E-06_2022-05-1 2_NP	RG_ERCKMD_S E-01_2022-05-1 3_NP	RG_ERCKMD_S E-02_2022-05-1 3_NP	RG_ERCKMD_S E-03_2022-05-1 3_NP	----
Client sampling date / time					12-May-2022 14:30	13-May-2022 09:30	13-May-2022 09:30	13-May-2022 09:30	----
Analyte	CAS Number	Method	LOR	Unit	CG2205899-011	CG2205899-012	CG2205899-013	CG2205899-014	-----
					Result	Result	Result	Result	----
Polycyclic Aromatic Hydrocarbons									
benzo(a)anthracene	56-55-3	E641A	0.050	mg/kg	0.119	<0.073	<0.074	<0.050	----
benzo(a)pyrene	50-32-8	E641A	0.050	mg/kg	<0.069	<0.073	<0.074	<0.050	----
benzo(b+j)fluoranthene	n/a	E641A	0.050	mg/kg	0.221	<0.073	0.138	0.056	----
benzo(b+j+k)fluoranthene	n/a	E641A	0.075	mg/kg	0.221	<0.103	0.138	<0.075	----
benzo(g,h,i)perylene	191-24-2	E641A	0.050	mg/kg	0.101	<0.073	<0.074	<0.050	----
benzo(k)fluoranthene	207-08-9	E641A	0.050	mg/kg	<0.069	<0.073	<0.074	<0.050	----
chrysene	218-01-9	E641A	0.050	mg/kg	0.524	0.136	0.291	0.109	----
dibenz(a,h)anthracene	53-70-3	E641A	0.050	mg/kg	<0.069	<0.073	<0.074	<0.050	----
fluoranthene	206-44-0	E641A	0.050	mg/kg	0.102	<0.073	<0.074	<0.050	----
fluorene	86-73-7	E641A	0.050	mg/kg	0.452	<0.073	0.155	0.092	----
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.050	mg/kg	<0.069	<0.073	<0.074	<0.050	----
methylnaphthalene, 1-	90-12-0	E641A	0.050	mg/kg	1.46	0.198	0.448	0.230	----
methylnaphthalene, 1+2-	----	E641A	0.075	mg/kg	4.40	0.550	1.23	0.663	----
methylnaphthalene, 2-	91-57-6	E641A	0.050	mg/kg	2.94	0.352	0.779	0.433	----
naphthalene	91-20-3	E641A	0.050	mg/kg	0.794	0.115	0.233	0.122	----
phenanthrene	85-01-8	E641A	0.050	mg/kg	1.81	0.354	0.749	0.350	----
pyrene	129-00-0	E641A	0.050	mg/kg	0.149	<0.073	0.077	<0.050	----
quinoline	91-22-5	E641A	0.050	mg/kg	<0.069	<0.073	<0.074	<0.050	----
B(a)P total potency equivalents [B(a)P TPE]	----	E641A	0.065	mg/kg	0.116	0.089	0.102	<0.065	----
IACR (CCME)	----	E641A	0.60	-	2.48	0.91	1.62	0.82	----
IACR AB (coarse)	----	E641A	0.10	-	<0.10	<0.10	<0.10	<0.10	----
IACR AB (fine)	----	E641A	0.10	-	0.17	<0.10	0.13	<0.10	----
PAHs, total (BC Sched 3.4)	n/a	E641A	0.20	mg/kg	7.04	0.96	2.28	1.11	----
PAHs, total (EPA 16)	n/a	E641A	0.20	mg/kg	4.42	0.60	1.64	0.73	----
Polycyclic Aromatic Hydrocarbons Surrogates									
acridine-d9	34749-75-2	E641A	0.1	%	110	108	123	120	----
chrysene-d12	1719-03-5	E641A	0.1	%	121	123	128	116	----
naphthalene-d8	1146-65-2	E641A	0.1	%	124	126	129	119	----
phenanthrene-d10	1517-22-2	E641A	0.1	%	123	114	126	114	----



Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: CG2205899	Page	: 1 of 18
Client	: Teck Coal Limited	Laboratory	: Calgary - Environmental
Contact	: Mike Pope	Account Manager	: Lyudmyla Shvets
Address	: 421 PINE AVE Sparwood BC Canada V0B 2G0	Address	: 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5
Telephone	: ----	Telephone	: +1 403 407 1800
Project	: REGIONAL EFFECTS PROGRAM	Date Samples Received	: 17-May-2022 08:43
PO	: VPO00816101	Issue Date	: 27-May-2022 17:18
C-O-C number	: MAY EVO LAEMP 2022		
Sampler	: Robin Valleau		
Site	: ----		
Quote number	: Teck Coal Master Quote		
No. of samples received	: 14		
No. of samples analysed	: 14		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Soil/Solid**

Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag RG_ERCKMD_SE-01_2022-05-13_NP	E510	13-May-2022	24-May-2022	----	----		25-May-2022	28 days	12 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag RG_ERCKMD_SE-02_2022-05-13_NP	E510	13-May-2022	24-May-2022	----	----		25-May-2022	28 days	12 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag RG_ERCKMD_SE-03_2022-05-13_NP	E510	13-May-2022	24-May-2022	----	----		25-May-2022	28 days	12 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag RG_ERCKDT_SE-01_2022-05-12_NP	E510	12-May-2022	24-May-2022	----	----		25-May-2022	28 days	13 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag RG_ERCKDT_SE-02_2022-05-12_NP	E510	12-May-2022	24-May-2022	----	----		25-May-2022	28 days	13 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag RG_ERCKDT_SE-03_2022-05-12_NP	E510	12-May-2022	24-May-2022	----	----		25-May-2022	28 days	13 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag RG_ERCKDT_SE-04_2022-05-12_NP	E510	12-May-2022	24-May-2022	----	----		25-May-2022	28 days	13 days	✓



Matrix: **Soil/Solid**

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKDT_SE-05_2022-05-12_NP	E510	12-May-2022	24-May-2022	----	----		25-May-2022	28 days	13 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKDT_SE-06_2022-05-12_NP	E510	12-May-2022	24-May-2022	----	----		25-May-2022	28 days	13 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKUT_SE-01_2022-05-12_NP	E510	12-May-2022	24-May-2022	----	----		25-May-2022	28 days	13 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKUT_SE-02_2022-05-12_NP	E510	12-May-2022	24-May-2022	----	----		25-May-2022	28 days	13 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKUT_SE-03_2022-05-12_NP	E510	12-May-2022	24-May-2022	----	----		25-May-2022	28 days	13 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKUT_SE-04_2022-05-12_NP	E510	12-May-2022	24-May-2022	----	----		25-May-2022	28 days	13 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKUT_SE-05_2022-05-12_NP	E510	12-May-2022	24-May-2022	----	----		25-May-2022	28 days	13 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_ERCKMD_SE-01_2022-05-13_NP	E440	13-May-2022	24-May-2022	----	----		25-May-2022	180 days	12 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_ERCKMD_SE-02_2022-05-13_NP	E440	13-May-2022	24-May-2022	----	----		25-May-2022	180 days	12 days	✔	



Matrix: **Soil/Solid**

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Metals in Soil/Solid by CRC ICPSMS											
LDPE bag RG_ERCKMD_SE-03_2022-05-13_NP	E440	13-May-2022	24-May-2022	----	----		25-May-2022	180 days	12 days	✔	
Metals : Metals in Soil/Solid by CRC ICPSMS											
LDPE bag RG_ERCKDT_SE-01_2022-05-12_NP	E440	12-May-2022	24-May-2022	----	----		25-May-2022	180 days	13 days	✔	
Metals : Metals in Soil/Solid by CRC ICPSMS											
LDPE bag RG_ERCKDT_SE-02_2022-05-12_NP	E440	12-May-2022	24-May-2022	----	----		25-May-2022	180 days	13 days	✔	
Metals : Metals in Soil/Solid by CRC ICPSMS											
LDPE bag RG_ERCKDT_SE-03_2022-05-12_NP	E440	12-May-2022	24-May-2022	----	----		25-May-2022	180 days	13 days	✔	
Metals : Metals in Soil/Solid by CRC ICPSMS											
LDPE bag RG_ERCKDT_SE-04_2022-05-12_NP	E440	12-May-2022	24-May-2022	----	----		25-May-2022	180 days	13 days	✔	
Metals : Metals in Soil/Solid by CRC ICPSMS											
LDPE bag RG_ERCKDT_SE-05_2022-05-12_NP	E440	12-May-2022	24-May-2022	----	----		25-May-2022	180 days	13 days	✔	
Metals : Metals in Soil/Solid by CRC ICPSMS											
LDPE bag RG_ERCKDT_SE-06_2022-05-12_NP	E440	12-May-2022	24-May-2022	----	----		25-May-2022	180 days	13 days	✔	
Metals : Metals in Soil/Solid by CRC ICPSMS											
LDPE bag RG_ERCKUT_SE-01_2022-05-12_NP	E440	12-May-2022	24-May-2022	----	----		25-May-2022	180 days	13 days	✔	
Metals : Metals in Soil/Solid by CRC ICPSMS											
LDPE bag RG_ERCKUT_SE-02_2022-05-12_NP	E440	12-May-2022	24-May-2022	----	----		25-May-2022	180 days	13 days	✔	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_ERCKUT_SE-03_2022-05-12_NP	E440	12-May-2022	24-May-2022	----	----		25-May-2022	180 days	13 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_ERCKUT_SE-04_2022-05-12_NP	E440	12-May-2022	24-May-2022	----	----		25-May-2022	180 days	13 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_ERCKUT_SE-05_2022-05-12_NP	E440	12-May-2022	24-May-2022	----	----		25-May-2022	180 days	13 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKDT_SE-01_2022-05-12_NP	E351	12-May-2022	----	----	----		24-May-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKDT_SE-02_2022-05-12_NP	E351	12-May-2022	----	----	----		24-May-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKDT_SE-03_2022-05-12_NP	E351	12-May-2022	----	----	----		24-May-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKDT_SE-04_2022-05-12_NP	E351	12-May-2022	----	----	----		24-May-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKDT_SE-05_2022-05-12_NP	E351	12-May-2022	----	----	----		24-May-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKDT_SE-06_2022-05-12_NP	E351	12-May-2022	----	----	----		24-May-2022	180 days	0 days	✔	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKMD_SE-01_2022-05-13_NP	E351	13-May-2022	----	----	----		24-May-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKMD_SE-02_2022-05-13_NP	E351	13-May-2022	----	----	----		24-May-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKMD_SE-03_2022-05-13_NP	E351	13-May-2022	----	----	----		24-May-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKUT_SE-01_2022-05-12_NP	E351	12-May-2022	----	----	----		24-May-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKUT_SE-02_2022-05-12_NP	E351	12-May-2022	----	----	----		24-May-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKUT_SE-03_2022-05-12_NP	E351	12-May-2022	----	----	----		24-May-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKUT_SE-04_2022-05-12_NP	E351	12-May-2022	----	----	----		24-May-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKUT_SE-05_2022-05-12_NP	E351	12-May-2022	----	----	----		24-May-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve											
LDPE bag RG_ERCKDT_SE-01_2022-05-12_NP	E354	12-May-2022	----	----	----		24-May-2022	----	----		



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKDT_SE-02_2022-05-12_NP	E354	12-May-2022	----	----	----		24-May-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKDT_SE-03_2022-05-12_NP	E354	12-May-2022	----	----	----		24-May-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKDT_SE-04_2022-05-12_NP	E354	12-May-2022	----	----	----		24-May-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKDT_SE-05_2022-05-12_NP	E354	12-May-2022	----	----	----		24-May-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKDT_SE-06_2022-05-12_NP	E354	12-May-2022	----	----	----		24-May-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKMD_SE-01_2022-05-13_NP	E354	13-May-2022	----	----	----		24-May-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKMD_SE-02_2022-05-13_NP	E354	13-May-2022	----	----	----		24-May-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKMD_SE-03_2022-05-13_NP	E354	13-May-2022	----	----	----		24-May-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKUT_SE-01_2022-05-12_NP	E354	12-May-2022	----	----	----		24-May-2022	----	----	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve											
LDPE bag RG_ERCKUT_SE-02_2022-05-12_NP	E354	12-May-2022	----	----	----		24-May-2022	----	----		
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve											
LDPE bag RG_ERCKUT_SE-03_2022-05-12_NP	E354	12-May-2022	----	----	----		24-May-2022	----	----		
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve											
LDPE bag RG_ERCKUT_SE-04_2022-05-12_NP	E354	12-May-2022	----	----	----		24-May-2022	----	----		
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve											
LDPE bag RG_ERCKUT_SE-05_2022-05-12_NP	E354	12-May-2022	----	----	----		24-May-2022	----	----		
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method											
LDPE bag RG_ERCKDT_SE-01_2022-05-12_NP	E185A	12-May-2022	----	----	----		25-May-2022	365 days	----		
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method											
LDPE bag RG_ERCKDT_SE-02_2022-05-12_NP	E185A	12-May-2022	----	----	----		25-May-2022	365 days	----		
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method											
LDPE bag RG_ERCKDT_SE-03_2022-05-12_NP	E185A	12-May-2022	----	----	----		25-May-2022	365 days	----		
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method											
LDPE bag RG_ERCKDT_SE-04_2022-05-12_NP	E185A	12-May-2022	----	----	----		25-May-2022	365 days	----		
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method											
LDPE bag RG_ERCKDT_SE-05_2022-05-12_NP	E185A	12-May-2022	----	----	----		25-May-2022	365 days	----		



Matrix: **Soil/Solid**

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKDT_SE-06_2022-05-12_NP	E185A	12-May-2022	----	----	----		25-May-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKMD_SE-01_2022-05-13_NP	E185A	13-May-2022	----	----	----		25-May-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKMD_SE-02_2022-05-13_NP	E185A	13-May-2022	----	----	----		25-May-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKMD_SE-03_2022-05-13_NP	E185A	13-May-2022	----	----	----		25-May-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKUT_SE-01_2022-05-12_NP	E185A	12-May-2022	----	----	----		25-May-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKUT_SE-03_2022-05-12_NP	E185A	12-May-2022	----	----	----		25-May-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKUT_SE-04_2022-05-12_NP	E185A	12-May-2022	----	----	----		25-May-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKUT_SE-05_2022-05-12_NP	E185A	12-May-2022	----	----	----		25-May-2022	365 days	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKDT_SE-01_2022-05-12_NP	E144	12-May-2022	----	----	----		17-May-2022	----	----	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKDT_SE-02_2022-05-12_NP	E144	12-May-2022	----	----	----		17-May-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKDT_SE-03_2022-05-12_NP	E144	12-May-2022	----	----	----		17-May-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKDT_SE-04_2022-05-12_NP	E144	12-May-2022	----	----	----		17-May-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKDT_SE-05_2022-05-12_NP	E144	12-May-2022	----	----	----		17-May-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKDT_SE-06_2022-05-12_NP	E144	12-May-2022	----	----	----		17-May-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKMD_SE-01_2022-05-13_NP	E144	13-May-2022	----	----	----		17-May-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKMD_SE-02_2022-05-13_NP	E144	13-May-2022	----	----	----		17-May-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKMD_SE-03_2022-05-13_NP	E144	13-May-2022	----	----	----		17-May-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKUT_SE-01_2022-05-12_NP	E144	12-May-2022	----	----	----		17-May-2022	----	----	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Moisture Content by Gravimetry											
LDPE bag RG_ERCKUT_SE-02_2022-05-12_NP	E144	12-May-2022	----	----	----		17-May-2022	----	----		
Physical Tests : Moisture Content by Gravimetry											
LDPE bag RG_ERCKUT_SE-03_2022-05-12_NP	E144	12-May-2022	----	----	----		17-May-2022	----	----		
Physical Tests : Moisture Content by Gravimetry											
LDPE bag RG_ERCKUT_SE-04_2022-05-12_NP	E144	12-May-2022	----	----	----		17-May-2022	----	----		
Physical Tests : Moisture Content by Gravimetry											
LDPE bag RG_ERCKUT_SE-05_2022-05-12_NP	E144	12-May-2022	----	----	----		17-May-2022	----	----		
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKMD_SE-01_2022-05-13_NP	E108	13-May-2022	27-May-2022	----	----		27-May-2022	30 days	14 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKMD_SE-02_2022-05-13_NP	E108	13-May-2022	27-May-2022	----	----		27-May-2022	30 days	14 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKMD_SE-03_2022-05-13_NP	E108	13-May-2022	27-May-2022	----	----		27-May-2022	30 days	14 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKDT_SE-01_2022-05-12_NP	E108	12-May-2022	27-May-2022	----	----		27-May-2022	30 days	15 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKDT_SE-03_2022-05-12_NP	E108	12-May-2022	27-May-2022	----	----		27-May-2022	30 days	15 days	✔	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
Rec	Actual	Rec		Actual							
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKDT_SE-05_2022-05-12_NP	E108	12-May-2022	27-May-2022	----	----		27-May-2022	30 days	15 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKDT_SE-06_2022-05-12_NP	E108	12-May-2022	27-May-2022	----	----		27-May-2022	30 days	15 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKUT_SE-01_2022-05-12_NP	E108	12-May-2022	27-May-2022	----	----		27-May-2022	30 days	15 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKUT_SE-03_2022-05-12_NP	E108	12-May-2022	27-May-2022	----	----		27-May-2022	30 days	15 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKUT_SE-04_2022-05-12_NP	E108	12-May-2022	27-May-2022	----	----		27-May-2022	30 days	15 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKUT_SE-05_2022-05-12_NP	E108	12-May-2022	27-May-2022	----	----		27-May-2022	30 days	15 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
LDPE bag RG_ERCKMD_SE-01_2022-05-13_NP	E641A	13-May-2022	17-May-2022	14 days	4 days	✔	18-May-2022	40 days	1 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
LDPE bag RG_ERCKMD_SE-02_2022-05-13_NP	E641A	13-May-2022	17-May-2022	14 days	4 days	✔	18-May-2022	40 days	1 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
LDPE bag RG_ERCKMD_SE-03_2022-05-13_NP	E641A	13-May-2022	17-May-2022	14 days	4 days	✔	18-May-2022	40 days	1 days	✔	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
LDPE bag RG_ERCKDT_SE-01_2022-05-12_NP	E641A	12-May-2022	17-May-2022	14 days	5 days	✔	18-May-2022	40 days	1 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
LDPE bag RG_ERCKDT_SE-02_2022-05-12_NP	E641A	12-May-2022	17-May-2022	14 days	5 days	✔	18-May-2022	40 days	1 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
LDPE bag RG_ERCKDT_SE-03_2022-05-12_NP	E641A	12-May-2022	17-May-2022	14 days	5 days	✔	18-May-2022	40 days	1 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
LDPE bag RG_ERCKDT_SE-04_2022-05-12_NP	E641A	12-May-2022	17-May-2022	14 days	5 days	✔	18-May-2022	40 days	1 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
LDPE bag RG_ERCKDT_SE-05_2022-05-12_NP	E641A	12-May-2022	17-May-2022	14 days	5 days	✔	18-May-2022	40 days	1 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
LDPE bag RG_ERCKDT_SE-06_2022-05-12_NP	E641A	12-May-2022	17-May-2022	14 days	5 days	✔	18-May-2022	40 days	1 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
LDPE bag RG_ERCKUT_SE-01_2022-05-12_NP	E641A	12-May-2022	17-May-2022	14 days	5 days	✔	18-May-2022	40 days	1 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
LDPE bag RG_ERCKUT_SE-02_2022-05-12_NP	E641A	12-May-2022	17-May-2022	14 days	5 days	✔	18-May-2022	40 days	1 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
LDPE bag RG_ERCKUT_SE-03_2022-05-12_NP	E641A	12-May-2022	17-May-2022	14 days	5 days	✔	18-May-2022	40 days	1 days	✔	



Matrix: **Soil/Solid**

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS										
LDPE bag RG_ERCKUT_SE-04_2022-05-12_NP	E641A	12-May-2022	17-May-2022	14 days	5 days	✔	18-May-2022	40 days	1 days	✔
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS										
LDPE bag RG_ERCKUT_SE-05_2022-05-12_NP	E641A	12-May-2022	17-May-2022	14 days	5 days	✔	18-May-2022	40 days	1 days	✔

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Soil/Solid**

Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
Analytical Methods							
Laboratory Duplicates (DUP)							
Mercury in Soil/Solid by CVAAS	E510	497260	1	14	7.1	5.0	✓
Metals in Soil/Solid by CRC ICPMS	E440	497261	1	14	7.1	5.0	✓
Moisture Content by Gravimetry	E144	491127	1	14	7.1	5.0	✓
PAHs by Hex:Ace GC-MS	E641A	491126	1	14	7.1	5.0	✓
pH by Meter (1:2 Soil:Water Extraction)	E108	501175	1	11	9.0	5.0	✓
Total Carbon by Combustion	E351	497870	1	16	6.2	5.0	✓
Total Inorganic Carbon by Acetic Acid pH Standard Curve	E354	497373	1	16	6.2	5.0	✓
Laboratory Control Samples (LCS)							
Mercury in Soil/Solid by CVAAS	E510	497260	2	14	14.2	10.0	✓
Metals in Soil/Solid by CRC ICPMS	E440	497261	2	14	14.2	10.0	✓
Moisture Content by Gravimetry	E144	491127	1	14	7.1	5.0	✓
PAHs by Hex:Ace GC-MS	E641A	491126	1	14	7.1	5.0	✓
pH by Meter (1:2 Soil:Water Extraction)	E108	501175	2	11	18.1	10.0	✓
Total Carbon by Combustion	E351	497870	2	16	12.5	10.0	✓
Total Inorganic Carbon by Acetic Acid pH Standard Curve	E354	497373	2	16	12.5	10.0	✓
Method Blanks (MB)							
Mercury in Soil/Solid by CVAAS	E510	497260	1	14	7.1	5.0	✓
Metals in Soil/Solid by CRC ICPMS	E440	497261	1	14	7.1	5.0	✓
Moisture Content by Gravimetry	E144	491127	1	14	7.1	5.0	✓
PAHs by Hex:Ace GC-MS	E641A	491126	1	14	7.1	5.0	✓
Total Carbon by Combustion	E351	497870	1	16	6.2	5.0	✓
Total Inorganic Carbon by Acetic Acid pH Standard Curve	E354	497373	1	16	6.2	5.0	✓
Matrix Spikes (MS)							
PAHs by Hex:Ace GC-MS	E641A	491126	1	14	7.1	5.0	✓



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
pH by Meter (1:2 Soil:Water Extraction)	E108 Saskatoon - Environmental	Soil/Solid	BC Lab Manual	pH is determined by potentiometric measurement with a pH electrode at ambient laboratory temperature (normally $20 \pm 5^\circ\text{C}$), and is carried out in accordance with procedures described in the BC Lab Manual (prescriptive method). The procedure involves mixing the dried (at $<60^\circ\text{C}$) and sieved (10mesh/2mm) sample with ultra pure water at a 1:2 ratio of sediment to water. The pH is then measured by a standard pH probe.
Moisture Content by Gravimetry	E144 Calgary - Environmental	Soil/Solid	CCME PHC in Soil - Tier 1	Moisture is measured gravimetrically by drying the sample at 105°C . Moisture content is calculated as the weight loss (due to water) divided by the wet weight of the sample, expressed as a percentage.
Grain Size Report (Attachment) Pipet/Sieve Method	E185A Saskatoon - Environmental	Soil/Solid	SSIR-51 Method 3.2.1	A grain size curve is a graphical representation of the particle sizing of a sample representing the percent passing against the effective particle size.
Total Carbon by Combustion	E351 Saskatoon - Environmental	Soil/Solid	CSSS (2008) 21.2 (mod)	Total Carbon is determined by the high temperature combustion method with measurement by an infrared detector.
Total Inorganic Carbon by Acetic Acid pH Standard Curve	E354 Saskatoon - Environmental	Soil/Solid	CSSS (2008) 20.2	Total Inorganic Carbon is determined by acetic acid pH standard curve, where a known quantity of acetic acid is consumed by reaction with carbonates in the soil. The pH of the resulting solution is measured and compared against a standard curve relating pH to weight of carbonate.
Metals in Soil/Solid by CRC ICPMS	E440 Saskatoon - Environmental	Soil/Solid	EPA 6020B (mod)	This method is intended to liberate metals that may be environmentally available. Samples are dried, then sieved through a 2 mm sieve, and digested with HNO_3 and HCl . Dependent on sample matrix, some metals may be only partially recovered, including Al, Ba, Be, Cr, Sr, Ti, Tl, V, W, and Zr. Silicate minerals are not solubilized. Volatile forms of sulfur (including sulfide) may not be captured, as they may be lost during sampling, storage, or digestion. This method does not adequately recover elemental sulfur, and is unsuitable for assessment of elemental sulfur standards or guidelines. Analysis is by Collision/Reaction Cell ICPMS.
Mercury in Soil/Solid by CVAAS	E510 Saskatoon - Environmental	Soil/Solid	EPA 200.2/1631 Appendix (mod)	Samples are dried, then sieved through a 2 mm sieve, and digested with HNO_3 and HCl , followed by CVAAS analysis.
PAHs by Hex:Ace GC-MS	E641A Calgary - Environmental	Soil/Solid	EPA 8270E (mod)	Polycyclic Aromatic Hydrocarbons (PAHs) are extracted with hexane/acetone and analyzed by GC-MS. If reported, IACR (index of additive cancer risk, unitless) and B(a)P toxic potency equivalent (in soil concentration units) are calculated as per CCME PAH Soil Quality Guidelines fact sheet (2010) or ABT1.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Particle Size Analysis (Pipette) - Wentworth Classification	EC184A Saskatoon - Environmental	Soil/Solid	Modified Wentworth	The particle size determination is performed by various methods to generate a Grain Size curve. The data from the curve is then used to produce particle size ranges based on the Modified Wentworth Classification system.
Total Organic Carbon (Calculated) in soil	EC356 Saskatoon - Environmental	Soil/Solid	CSSS (2008) 21.2	Total Organic Carbon (TOC) is calculated by the difference between total carbon (TC) and total inorganic carbon (TIC).

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Leach 1:2 Soil:Water for pH/EC	EP108 Saskatoon - Environmental	Soil/Solid	BC WLAP METHOD: PH, ELECTROMETRIC, SOIL	The procedure involves mixing the dried (at <60°C) and sieved (No. 10 / 2mm) sample with deionized/distilled water at a 1:2 ratio of sediment to water.
Digestion for Metals and Mercury	EP440 Saskatoon - Environmental	Soil/Solid	EPA 200.2 (mod)	Samples are dried, then sieved through a 2 mm sieve, and digested with HNO ₃ and HCl. This method is intended to liberate metals that may be environmentally available.
PHCs and PAHs Hexane-Acetone Tumbler Extraction	EP601 Calgary - Environmental	Soil/Solid	CCME PHC in Soil - Tier 1 (mod)	Samples are subsampled and Petroleum Hydrocarbons (PHC) and PAHs are extracted with 1:1 hexane:acetone using a rotary extractor.
Dry and Grind	EPP442 Saskatoon - Environmental	Soil/Solid	Soil Sampling and Methods of Analysis, Carter 2008	After removal of any coarse fragments and reservation of wet subsamples a portion of homogenized sample is set in a tray and dried at less than 60°C until dry. The sample is then particle size reduced with an automated crusher or mortar and pestle, typically to <2 mm. Further size reduction may be needed for particular tests.



QUALITY CONTROL REPORT

Work Order : CG2205899
Client : Teck Coal Limited
Contact : Mike Pope
Address : 421 PINE AVE
Sparwood BC Canada V0B 2G0
Telephone : ---
Project : REGIONAL EFFECTS PROGRAM
PO : VPO00816101
C-O-C number : MAY EVO LAEMP 2022
Sampler : Robin Valleau
Site : ---
Quote number : Teck Coal Master Quote
No. of samples received : 14
No. of samples analysed : 14

Page : 1 of 12
Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
Calgary, Alberta Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 17-May-2022 08:43
Date Analysis Commenced : 17-May-2022
Issue Date : 27-May-2022 17:17

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
Matrix Spike (MS) Report; Recovery and Data Quality Objectives
Reference Material (RM) Report; Recovery and Data Quality Objectives
Method Blank (MB) Report; Recovery and Data Quality Objectives
Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Table with 3 columns: Signatories, Position, Laboratory Department. Rows include Colby Bingham, Hedy Lai, Jwan Abdalla, Nancy Cruse, Rosalie Van Deelen, Sorina Motea, and Xihua Yao.

Page : 2 of 12
Work Order : CG2205899
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Soil/Solid

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 491127)											
CG2205899-001	RG_ERCKUT_SE-01_2022-05-12_NP	moisture	----	E144	0.25	%	66.0	67.7	2.48%	20%	----
Physical Tests (QC Lot: 501175)											
CG2205899-001	RG_ERCKUT_SE-01_2022-05-12_NP	pH (1:2 soil:water)	----	E108	0.10	pH units	7.73	7.76	0.387%	10%	----
Organic / Inorganic Carbon (QC Lot: 497373)											
CG2205899-006	RG_ERCKDT_SE-01_2022-05-12_NP	carbon, inorganic [IC]	----	E354	0.050	%	6.02	5.98	0.706%	20%	----
Organic / Inorganic Carbon (QC Lot: 497870)											
CG2205899-006	RG_ERCKDT_SE-01_2022-05-12_NP	carbon, total [TC]	----	E351	0.050	%	13.3	13.3	0.461%	20%	----
Metals (QC Lot: 497260)											
CG2205899-001	RG_ERCKUT_SE-01_2022-05-12_NP	mercury	7439-97-6	E510	0.0050	mg/kg	0.0203	0.0262	0.0059	Diff <2x LOR	----
Metals (QC Lot: 497261)											
CG2205899-001	RG_ERCKUT_SE-01_2022-05-12_NP	aluminum	7429-90-5	E440	50	mg/kg	1600	2080	26.2%	40%	----
		antimony	7440-36-0	E440	0.10	mg/kg	0.76	0.88	14.8%	30%	----
		arsenic	7440-38-2	E440	0.10	mg/kg	2.03	2.43	17.8%	30%	----
		barium	7440-39-3	E440	0.50	mg/kg	145	167	13.9%	40%	----
		beryllium	7440-41-7	E440	0.10	mg/kg	0.25	0.29	0.04	Diff <2x LOR	----
		bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	0	Diff <2x LOR	----
		boron	7440-42-8	E440	5.0	mg/kg	<5.0	5.7	0.7	Diff <2x LOR	----
		cadmium	7440-43-9	E440	0.020	mg/kg	1.38	1.61	15.6%	30%	----
		calcium	7440-70-2	E440	50	mg/kg	140000	162000	14.9%	30%	----
		chromium	7440-47-3	E440	0.50	mg/kg	3.95	4.93	22.0%	30%	----
		cobalt	7440-48-4	E440	0.10	mg/kg	1.98	2.10	6.18%	30%	----
		copper	7440-50-8	E440	0.50	mg/kg	7.48	8.70	15.1%	30%	----
		iron	7439-89-6	E440	50	mg/kg	4430	4960	11.2%	30%	----
		lead	7439-92-1	E440	0.50	mg/kg	3.03	3.33	9.32%	40%	----
		lithium	7439-93-2	E440	2.0	mg/kg	2.5	3.2	0.7	Diff <2x LOR	----
		magnesium	7439-95-4	E440	20	mg/kg	4140	5100	20.9%	30%	----
		manganese	7439-96-5	E440	1.0	mg/kg	103	93.8	9.33%	30%	----
		molybdenum	7439-98-7	E440	0.10	mg/kg	0.54	0.69	24.2%	40%	----
		nickel	7440-02-0	E440	0.50	mg/kg	9.90	11.2	12.1%	30%	----



Sub-Matrix: Soil/Solid

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Metals (QC Lot: 497261) - continued											
CG2205899-001	RG_ERCKUT_SE-01_2022-05-12_NP	phosphorus	7723-14-0	E440	50	mg/kg	573	656	13.5%	30%	----
		potassium	7440-09-7	E440	100	mg/kg	450	570	23.7%	40%	----
		selenium	7782-49-2	E440	0.20	mg/kg	3.72	4.67	22.6%	30%	----
		silver	7440-22-4	E440	0.10	mg/kg	<0.10	0.11	0.010	Diff <2x LOR	----
		sodium	7440-23-5	E440	50	mg/kg	95	111	16	Diff <2x LOR	----
		strontium	7440-24-6	E440	0.50	mg/kg	56.8	64.8	13.3%	40%	----
		sulfur	7704-34-9	E440	1000	mg/kg	2400	2800	400	Diff <2x LOR	----
		thallium	7440-28-0	E440	0.050	mg/kg	0.094	0.095	0.001	Diff <2x LOR	----
		tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	0	Diff <2x LOR	----
		titanium	7440-32-6	E440	1.0	mg/kg	11.6	13.4	13.7%	40%	----
		tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	0	Diff <2x LOR	----
		uranium	7440-61-1	E440	0.050	mg/kg	1.92	2.21	13.9%	30%	----
		vanadium	7440-62-2	E440	0.20	mg/kg	9.46	11.0	15.4%	30%	----
		zinc	7440-66-6	E440	2.0	mg/kg	42.9	48.8	13.0%	30%	----
		zirconium	7440-67-7	E440	1.0	mg/kg	<1.0	<1.0	0	Diff <2x LOR	----
Polycyclic Aromatic Hydrocarbons (QC Lot: 491126)											
CG2205899-001	RG_ERCKUT_SE-01_2022-05-12_NP	acenaphthene	83-32-9	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		acenaphthylene	208-96-8	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		acridine	260-94-6	E641A	0.100	mg/kg	<0.100	<0.100	0	Diff <2x LOR	----
		anthracene	120-12-7	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		benz(a)anthracene	56-55-3	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		benzo(a)pyrene	50-32-8	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		benzo(b+j)fluoranthene	n/a	E641A	0.050	mg/kg	0.108	0.106	0.002	Diff <2x LOR	----
		benzo(g,h,i)perylene	191-24-2	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		benzo(k)fluoranthene	207-08-9	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		chrysene	218-01-9	E641A	0.050	mg/kg	0.239	0.213	11.5%	50%	----
		dibenz(a,h)anthracene	53-70-3	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		fluoranthene	206-44-0	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		fluorene	86-73-7	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		methylnaphthalene, 1-	90-12-0	E641A	0.050	mg/kg	0.273	0.262	3.82%	50%	----
		methylnaphthalene, 2-	91-57-6	E641A	0.050	mg/kg	0.419	0.399	4.95%	50%	----
		naphthalene	91-20-3	E641A	0.050	mg/kg	0.222	0.208	6.76%	50%	----
		phenanthrene	85-01-8	E641A	0.050	mg/kg	0.694	0.590	16.2%	50%	----
		pyrene	129-00-0	E641A	0.050	mg/kg	0.056	<0.050	0.006	Diff <2x LOR	----

Page : 5 of 12
 Work Order : CG2205899
 Client : Teck Coal Limited
 Project : REGIONAL EFFECTS PROGRAM



Sub-Matrix: **Soil/Solid**

Laboratory Duplicate (DUP) Report

<i>Laboratory sample ID</i>	<i>Client sample ID</i>	<i>Analyte</i>	<i>CAS Number</i>	<i>Method</i>	<i>LOR</i>	<i>Unit</i>	<i>Original Result</i>	<i>Duplicate Result</i>	<i>RPD(%) or Difference</i>	<i>Duplicate Limits</i>	<i>Qualifier</i>
Polycyclic Aromatic Hydrocarbons (QC Lot: 491126) - continued											
CG2205899-001	RG_ERCKUT_SE-01_2022-05-12_NP	quinoline	91-22-5	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 491127)						
moisture	---	E144	0.25	%	<0.25	---
Organic / Inorganic Carbon (QCLot: 497373)						
carbon, inorganic [IC]	---	E354	0.05	%	<0.050	---
Organic / Inorganic Carbon (QCLot: 497870)						
carbon, total [TC]	---	E351	0.05	%	<0.050	---
Metals (QCLot: 497260)						
mercury	7439-97-6	E510	0.005	mg/kg	<0.0050	---
Metals (QCLot: 497261)						
aluminum	7429-90-5	E440	50	mg/kg	<50	---
antimony	7440-36-0	E440	0.1	mg/kg	<0.10	---
arsenic	7440-38-2	E440	0.1	mg/kg	<0.10	---
barium	7440-39-3	E440	0.5	mg/kg	<0.50	---
beryllium	7440-41-7	E440	0.1	mg/kg	<0.10	---
bismuth	7440-69-9	E440	0.2	mg/kg	<0.20	---
boron	7440-42-8	E440	5	mg/kg	<5.0	---
cadmium	7440-43-9	E440	0.02	mg/kg	<0.020	---
calcium	7440-70-2	E440	50	mg/kg	<50	---
chromium	7440-47-3	E440	0.5	mg/kg	<0.50	---
cobalt	7440-48-4	E440	0.1	mg/kg	<0.10	---
copper	7440-50-8	E440	0.5	mg/kg	<0.50	---
iron	7439-89-6	E440	50	mg/kg	<50	---
lead	7439-92-1	E440	0.5	mg/kg	<0.50	---
lithium	7439-93-2	E440	2	mg/kg	<2.0	---
magnesium	7439-95-4	E440	20	mg/kg	<20	---
manganese	7439-96-5	E440	1	mg/kg	<1.0	---
molybdenum	7439-98-7	E440	0.1	mg/kg	<0.10	---
nickel	7440-02-0	E440	0.5	mg/kg	<0.50	---
phosphorus	7723-14-0	E440	50	mg/kg	<50	---
potassium	7440-09-7	E440	100	mg/kg	<100	---
selenium	7782-49-2	E440	0.2	mg/kg	<0.20	---
silver	7440-22-4	E440	0.1	mg/kg	<0.10	---
sodium	7440-23-5	E440	50	mg/kg	<50	---
strontium	7440-24-6	E440	0.5	mg/kg	<0.50	---



Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Metals (QCLot: 497261) - continued						
sulfur	7704-34-9	E440	1000	mg/kg	<1000	----
thallium	7440-28-0	E440	0.05	mg/kg	<0.050	----
tin	7440-31-5	E440	2	mg/kg	<2.0	----
titanium	7440-32-6	E440	1	mg/kg	<1.0	----
tungsten	7440-33-7	E440	0.5	mg/kg	<0.50	----
uranium	7440-61-1	E440	0.05	mg/kg	<0.050	----
vanadium	7440-62-2	E440	0.2	mg/kg	<0.20	----
zinc	7440-66-6	E440	2	mg/kg	<2.0	----
zirconium	7440-67-7	E440	1	mg/kg	<1.0	----
Polycyclic Aromatic Hydrocarbons (QCLot: 491126)						
acenaphthene	83-32-9	E641A	0.05	mg/kg	<0.050	----
acenaphthylene	208-96-8	E641A	0.05	mg/kg	<0.050	----
acridine	260-94-6	E641A	0.05	mg/kg	<0.050	----
anthracene	120-12-7	E641A	0.05	mg/kg	<0.050	----
benz(a)anthracene	56-55-3	E641A	0.05	mg/kg	<0.050	----
benzo(a)pyrene	50-32-8	E641A	0.05	mg/kg	<0.050	----
benzo(b+j)fluoranthene	n/a	E641A	0.05	mg/kg	<0.050	----
benzo(g,h,i)perylene	191-24-2	E641A	0.05	mg/kg	<0.050	----
benzo(k)fluoranthene	207-08-9	E641A	0.05	mg/kg	<0.050	----
chrysene	218-01-9	E641A	0.05	mg/kg	<0.050	----
dibenz(a,h)anthracene	53-70-3	E641A	0.05	mg/kg	<0.050	----
fluoranthene	206-44-0	E641A	0.05	mg/kg	<0.050	----
fluorene	86-73-7	E641A	0.05	mg/kg	<0.050	----
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.05	mg/kg	<0.050	----
methylnaphthalene, 1-	90-12-0	E641A	0.05	mg/kg	<0.050	----
methylnaphthalene, 2-	91-57-6	E641A	0.05	mg/kg	<0.050	----
naphthalene	91-20-3	E641A	0.05	mg/kg	<0.050	----
phenanthrene	85-01-8	E641A	0.05	mg/kg	<0.050	----
pyrene	129-00-0	E641A	0.05	mg/kg	<0.050	----
quinoline	91-22-5	E641A	0.05	mg/kg	<0.050	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Soil/Solid

					Laboratory Control Sample (LCS) Report				
Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Physical Tests (QCLot: 491127)									
moisture	---	E144	0.25	%	50 %	96.0	90.0	110	---
Physical Tests (QCLot: 501175)									
pH (1:2 soil:water)	---	E108	---	pH units	6.86 pH units	100	97.0	103	---
Organic / Inorganic Carbon (QCLot: 497373)									
carbon, inorganic [IC]	---	E354	0.05	%	0.5 %	95.8	90.0	110	---
Organic / Inorganic Carbon (QCLot: 497870)									
carbon, total [TC]	---	E351	0.05	%	48 %	103	90.0	110	---
Metals (QCLot: 497260)									
mercury	7439-97-6	E510	0.005	mg/kg	0.1 mg/kg	94.0	80.0	120	---
Metals (QCLot: 497261)									
aluminum	7429-90-5	E440	50	mg/kg	200 mg/kg	102	80.0	120	---
antimony	7440-36-0	E440	0.1	mg/kg	100 mg/kg	104	80.0	120	---
arsenic	7440-38-2	E440	0.1	mg/kg	100 mg/kg	101	80.0	120	---
barium	7440-39-3	E440	0.5	mg/kg	25 mg/kg	109	80.0	120	---
beryllium	7440-41-7	E440	0.1	mg/kg	10 mg/kg	105	80.0	120	---
bismuth	7440-69-9	E440	0.2	mg/kg	100 mg/kg	98.6	80.0	120	---
boron	7440-42-8	E440	5	mg/kg	100 mg/kg	102	80.0	120	---
cadmium	7440-43-9	E440	0.02	mg/kg	10 mg/kg	105	80.0	120	---
calcium	7440-70-2	E440	50	mg/kg	5000 mg/kg	104	80.0	120	---
chromium	7440-47-3	E440	0.5	mg/kg	25 mg/kg	103	80.0	120	---
cobalt	7440-48-4	E440	0.1	mg/kg	25 mg/kg	98.8	80.0	120	---
copper	7440-50-8	E440	0.5	mg/kg	25 mg/kg	98.9	80.0	120	---
iron	7439-89-6	E440	50	mg/kg	100 mg/kg	106	80.0	120	---
lead	7439-92-1	E440	0.5	mg/kg	50 mg/kg	96.9	80.0	120	---
lithium	7439-93-2	E440	2	mg/kg	25 mg/kg	109	80.0	120	---
magnesium	7439-95-4	E440	20	mg/kg	5000 mg/kg	104	80.0	120	---
manganese	7439-96-5	E440	1	mg/kg	25 mg/kg	102	80.0	120	---
molybdenum	7439-98-7	E440	0.1	mg/kg	25 mg/kg	105	80.0	120	---
nickel	7440-02-0	E440	0.5	mg/kg	50 mg/kg	101	80.0	120	---
phosphorus	7723-14-0	E440	50	mg/kg	1000 mg/kg	98.8	80.0	120	---
potassium	7440-09-7	E440	100	mg/kg	5000 mg/kg	96.2	80.0	120	---
selenium	7782-49-2	E440	0.2	mg/kg	100 mg/kg	97.3	80.0	120	---



Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Metals (QCLot: 497261) - continued									
silver	7440-22-4	E440	0.1	mg/kg	10 mg/kg	104	80.0	120	----
sodium	7440-23-5	E440	50	mg/kg	5000 mg/kg	106	80.0	120	----
strontium	7440-24-6	E440	0.5	mg/kg	25 mg/kg	102	80.0	120	----
sulfur	7704-34-9	E440	1000	mg/kg	5000 mg/kg	99.2	80.0	120	----
thallium	7440-28-0	E440	0.05	mg/kg	100 mg/kg	98.2	80.0	120	----
tin	7440-31-5	E440	2	mg/kg	50 mg/kg	105	80.0	120	----
titanium	7440-32-6	E440	1	mg/kg	25 mg/kg	99.7	80.0	120	----
tungsten	7440-33-7	E440	0.5	mg/kg	10 mg/kg	98.9	80.0	120	----
uranium	7440-61-1	E440	0.05	mg/kg	0.5 mg/kg	97.8	80.0	120	----
vanadium	7440-62-2	E440	0.2	mg/kg	50 mg/kg	104	80.0	120	----
zinc	7440-66-6	E440	2	mg/kg	50 mg/kg	98.2	80.0	120	----
zirconium	7440-67-7	E440	1	mg/kg	10 mg/kg	107	80.0	120	----
Polycyclic Aromatic Hydrocarbons (QCLot: 491126)									
acenaphthene	83-32-9	E641A	0.05	mg/kg	0.5 mg/kg	97.2	60.0	130	----
acenaphthylene	208-96-8	E641A	0.05	mg/kg	0.5 mg/kg	94.8	60.0	130	----
acridine	260-94-6	E641A	0.05	mg/kg	0.5 mg/kg	88.3	60.0	130	----
anthracene	120-12-7	E641A	0.05	mg/kg	0.5 mg/kg	98.1	60.0	130	----
benz(a)anthracene	56-55-3	E641A	0.05	mg/kg	0.5 mg/kg	116	60.0	130	----
benzo(a)pyrene	50-32-8	E641A	0.05	mg/kg	0.5 mg/kg	83.4	60.0	130	----
benzo(b+j)fluoranthene	n/a	E641A	0.05	mg/kg	0.5 mg/kg	110	60.0	130	----
benzo(g,h,i)perylene	191-24-2	E641A	0.05	mg/kg	0.5 mg/kg	100	60.0	130	----
benzo(k)fluoranthene	207-08-9	E641A	0.05	mg/kg	0.5 mg/kg	107	60.0	130	----
chrysene	218-01-9	E641A	0.05	mg/kg	0.5 mg/kg	123	60.0	130	----
dibenz(a,h)anthracene	53-70-3	E641A	0.05	mg/kg	0.5 mg/kg	81.4	60.0	130	----
fluoranthene	206-44-0	E641A	0.05	mg/kg	0.5 mg/kg	120	60.0	130	----
fluorene	86-73-7	E641A	0.05	mg/kg	0.5 mg/kg	95.4	60.0	130	----
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.05	mg/kg	0.5 mg/kg	84.1	60.0	130	----
methylnaphthalene, 1-	90-12-0	E641A	0.05	mg/kg	0.5 mg/kg	95.1	60.0	130	----
methylnaphthalene, 2-	91-57-6	E641A	0.05	mg/kg	0.5 mg/kg	97.0	60.0	130	----
naphthalene	91-20-3	E641A	0.05	mg/kg	0.5 mg/kg	108	50.0	130	----
phenanthrene	85-01-8	E641A	0.05	mg/kg	0.5 mg/kg	101	60.0	130	----
pyrene	129-00-0	E641A	0.05	mg/kg	0.5 mg/kg	112	60.0	130	----
quinoline	91-22-5	E641A	0.05	mg/kg	0.5 mg/kg	87.4	60.0	130	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level $\geq 1 \times$ spike level.

Sub-Matrix: **Soil/Solid**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Polycyclic Aromatic Hydrocarbons (QCLot: 491126)										
CG2205899-001	RG_ERCKUT_SE-01_2022-05-12_NP	acenaphthene	83-32-9	E641A	0.404 mg/kg	0.5 mg/kg	102	50.0	140	----
		acenaphthylene	208-96-8	E641A	0.402 mg/kg	0.5 mg/kg	102	50.0	140	----
		acridine	260-94-6	E641A	0.325 mg/kg	0.5 mg/kg	82.3	50.0	140	----
		anthracene	120-12-7	E641A	0.411 mg/kg	0.5 mg/kg	104	50.0	140	----
		benz(a)anthracene	56-55-3	E641A	0.405 mg/kg	0.5 mg/kg	102	50.0	140	----
		benzo(a)pyrene	50-32-8	E641A	0.390 mg/kg	0.5 mg/kg	98.7	50.0	140	----
		benzo(b+j)fluoranthene	n/a	E641A	0.432 mg/kg	0.5 mg/kg	109	50.0	140	----
		benzo(g,h,i)perylene	191-24-2	E641A	0.369 mg/kg	0.5 mg/kg	93.5	50.0	140	----
		benzo(k)fluoranthene	207-08-9	E641A	0.424 mg/kg	0.5 mg/kg	107	50.0	140	----
		chrysene	218-01-9	E641A	0.364 mg/kg	0.5 mg/kg	92.1	50.0	140	----
		dibenz(a,h)anthracene	53-70-3	E641A	0.346 mg/kg	0.5 mg/kg	87.5	50.0	140	----
		fluoranthene	206-44-0	E641A	0.402 mg/kg	0.5 mg/kg	102	50.0	140	----
		fluorene	86-73-7	E641A	0.400 mg/kg	0.5 mg/kg	101	50.0	140	----
		indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.397 mg/kg	0.5 mg/kg	100	50.0	140	----
		methylnaphthalene, 1-	90-12-0	E641A	0.386 mg/kg	0.5 mg/kg	97.8	50.0	140	----
		methylnaphthalene, 2-	91-57-6	E641A	0.399 mg/kg	0.5 mg/kg	101	50.0	140	----
		naphthalene	91-20-3	E641A	0.396 mg/kg	0.5 mg/kg	100	50.0	140	----
		phenanthrene	85-01-8	E641A	0.368 mg/kg	0.5 mg/kg	93.0	50.0	140	----
		pyrene	129-00-0	E641A	0.414 mg/kg	0.5 mg/kg	105	50.0	140	----
		quinoline	91-22-5	E641A	0.366 mg/kg	0.5 mg/kg	92.5	50.0	140	----



Reference Material (RM) Report

A Reference Material (RM) is a homogenous material with known and well-established analyte concentrations. RMs are processed in an identical manner to test samples, and are used to monitor and control the accuracy and precision of a test method for a typical sample matrix. RM results are expressed as percent recovery of the target analyte concentration. RM targets may be certified target concentrations provided by the RM supplier, or may be ALS long-term mean values (for empirical test methods).

Sub-Matrix:

Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Reference Material (RM) Report				
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%)		Qualifier
							Low	High	
Physical Tests (QCLot: 501175)									
	RM	pH (1:2 soil:water)	----	E108	8.13 pH units	98.4	96.0	104	----
Organic / Inorganic Carbon (QCLot: 497373)									
	RM	carbon, inorganic [IC]	----	E354	0.383 %	98.4	80.0	120	----
Organic / Inorganic Carbon (QCLot: 497870)									
	RM	carbon, total [TC]	----	E351	1.4 %	103	80.0	120	----
Metals (QCLot: 497260)									
	RM	mercury	7439-97-6	E510	0.059 mg/kg	97.0	70.0	130	----
Metals (QCLot: 497261)									
	RM	aluminum	7429-90-5	E440	9817 mg/kg	97.1	70.0	130	----
	RM	antimony	7440-36-0	E440	3.99 mg/kg	98.4	70.0	130	----
	RM	arsenic	7440-38-2	E440	3.73 mg/kg	108	70.0	130	----
	RM	barium	7440-39-3	E440	105 mg/kg	114	70.0	130	----
	RM	beryllium	7440-41-7	E440	0.349 mg/kg	106	70.0	130	----
	RM	boron	7440-42-8	E440	8.5 mg/kg	106	40.0	160	----
	RM	cadmium	7440-43-9	E440	0.91 mg/kg	114	70.0	130	----
	RM	calcium	7440-70-2	E440	31082 mg/kg	105	70.0	130	----
	RM	chromium	7440-47-3	E440	101 mg/kg	94.8	70.0	130	----
	RM	cobalt	7440-48-4	E440	6.9 mg/kg	95.2	70.0	130	----
	RM	copper	7440-50-8	E440	123 mg/kg	106	70.0	130	----
	RM	iron	7439-89-6	E440	23558 mg/kg	99.1	70.0	130	----
	RM	lead	7439-92-1	E440	267 mg/kg	97.4	70.0	130	----
	RM	lithium	7439-93-2	E440	9.5 mg/kg	110	70.0	130	----
	RM	magnesium	7439-95-4	E440	5509 mg/kg	96.2	70.0	130	----
	RM	manganese	7439-96-5	E440	269 mg/kg	100	70.0	130	----
	RM	molybdenum	7439-98-7	E440	1.03 mg/kg	102	70.0	130	----
	RM	nickel	7440-02-0	E440	26.7 mg/kg	105	70.0	130	----
	RM	phosphorus	7723-14-0	E440	752 mg/kg	97.2	70.0	130	----
	RM	potassium	7440-09-7	E440	1587 mg/kg	88.4	70.0	130	----
	RM	silver	7440-22-4	E440	4.06 mg/kg	120	70.0	130	----



Sub-Matrix:

Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Reference Material (RM) Report				
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%)		Qualifier
							Low	High	
Metals (QCLot: 497261) - continued									
	RM	sodium	7440-23-5	E440	797 mg/kg	107	70.0	130	----
	RM	strontium	7440-24-6	E440	86.1 mg/kg	97.3	70.0	130	----
	RM	thallium	7440-28-0	E440	0.0786 mg/kg	140	40.0	160	----
	RM	tin	7440-31-5	E440	10.6 mg/kg	104	70.0	130	----
	RM	titanium	7440-32-6	E440	839 mg/kg	87.0	70.0	130	----
	RM	uranium	7440-61-1	E440	0.52 mg/kg	91.0	70.0	130	----
	RM	vanadium	7440-62-2	E440	32.7 mg/kg	95.8	70.0	130	----
	RM	zinc	7440-66-6	E440	297 mg/kg	103	70.0	130	----
	RM	zirconium	7440-67-7	E440	5.73 mg/kg	96.8	70.0	130	----

Teck

COC ID:

MAY EVO LAEMP 2022

TURNAROUND TIME:

PROJECT/CLIENT INFO				LABORATORY				
Facility Name / Job#	REP			Lab Name	ALS Calgary			
Project Manager	Mike Pope			Lab Contact	Lyudmyla Shvets			
Email	mike.pope@teck.com			Email	lyudmyla.shvets@alsglobal.com			
Address	421 Pine Avenue			Address	2559 29 Street NE			
City	Sparwood		Province	BC	City	Calgary	Province	AB
Postal Code	VOB 2G0		Country	Canada	Postal Code	T1Y 7B5	Country	Canada
Phone Number	250-425-8202			Phone Number	1 403 407 1794			

ANALYSIS REQUESTED

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	C-TOC-SK	MET-CCME+FULL-CL	MOISTURE-CL - % Moisture	PSA-PIPE-DETAIL-SK Particle Size	PAH-TMB-D/A-MS-CL- PAHs
RG_ERCKUT_SE-01_2022-05-12_NP	RG_ERCKUT	SE	No	5/12/2022	10:00	G	1	X	X	X	X	X
RG_ERCKUT_SE-02_2022-05-12_NP	RG_ERCKUT	SE	No	5/12/2022	10:00	G	1	X	X	X	X	X
RG_ERCKUT_SE-03_2022-05-12_NP	RG_ERCKUT	SE	No	5/12/2022	10:00	G	1	X	X	X	X	X
RG_ERCKUT_SE-04_2022-05-12_NP	RG_ERCKUT	SE	No	5/12/2022	10:00	G	1	X	X	X	X	X
RG_ERCKUT_SE-05_2022-05-12_NP	RG_ERCKUT	SE	No	5/12/2022	10:00	G	1	X	X	X	X	X
RG_ERCKDT_SE-01_2022-05-12_NP	RG_ERCKDT	SE	No	5/12/2022	14:30	G	1	X	X	X	X	X
RG_ERCKDT_SE-02_2022-05-12_NP	RG_ERCKDT	SE	No	5/12/2022	14:30	G	1	X	X	X	X	X
RG_ERCKDT_SE-03_2022-05-12_NP	RG_ERCKDT	SE	No	5/12/2022	14:30	G	1	X	X	X	X	X
RG_ERCKDT_SE-04_2022-05-12_NP	RG_ERCKDT	SE	No	5/12/2022	14:30	G	1	X	X	X	X	X
RG_ERCKDT_SE-05_2022-05-12_NP	RG_ERCKDT	SE	No	5/12/2022	14:30	G	1	X	X	X	X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELEASED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
VPO00816101	Robin Valteau/Minnow		<i>[Signature]</i> 5/17 8:43

NO. OF BOTTLES RETURNED	DESCRIPTION	Sampler's Name	Mobile #	Date/Time
Regular (default) <input checked="" type="checkbox"/>	Priority (2-3 business days) - 50% surcharge	Robin Valteau	416-970-7535	May 16, 2022
Emergency (1 Business Day) - 100% surcharge	For Emergency <1 Day, ASAP or Weekend - Contact ALS!	Sampler's Signature		

Environmental Division
Calgary
Work Order Reference
CG2205899



Telephone : +1 403 407 1600

30

COC ID:	MAY EVO LAEMP 2022				TURNAROUND TIME:				
PROJECT/CLIENT INFO					LABORATORY				
Facility Name / Job#	REP				Lab Name	ALS Calgary			
Project Manager	Mike Pope				Lab Contact	Lyudmyla Shvets			
Email	m.pope@teck.com				Email	lyudmyla.shvets@alsglobal.com			
Address	421 Pine Avenue				Address	2559 29 Street NE			
City	Sparwood		Province	BC	City	Calgary	Province	AB	
Postal Code	V0B 2G0		Country	Canada	Postal Code	T1Y 7B5	Country	Canada	
Phone Number	250-425-8202				Phone Number	403 407 1794			

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G-Grab C=Comp	# Of Cont.	C-TOC-SK	MET-CCME-FULL-CL	MOISTURE-CL - % Moisture	PSA-PIPET-DETAIL-SK Particle Size	PAH-TMB-D/A-MS-CL- PAHs	Excel	PDF	EDD
RG_ERCKDT_SE-06_2022-05-12_NP	RG_ERCKDT	SE	No	5/12/2022	14:30	G	1	X	X	X	X	X			
RG_ERCKMD_SE-01_2022-05-13_NP	RG_ERCKMD	SE	No	5/13/2022	9:30	G	1	X	X	X	X	X			
RG_ERCKMD_SE-02_2022-05-13_NP	RG_ERCKMD	SE	No	5/13/2022	9:30	G	1	X	X	X	X	X			
RG_ERCKMD_SE-03_2022-05-13_NP	RG_ERCKMD	SE	No	5/13/2022	9:30	G	1	X	X	X	X	X			

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELEASED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
VPO00816101	Robin Valteau/Minnow		<i>WAL</i> 5/17 8:43

NB OF BOTTLES RETURNED/DESCRIPTION	Regular (default) <input checked="" type="checkbox"/>	Priority (2-3 business days) - 50% surcharge	Emergency (1 Business Day) - 100% surcharge	For Emergency <1 Day, ASAP or Weekend - Contact ALS
Sampler's Name	Robin Valteau	Mobile #	416-970-7535	
Sampler's Signature		Date/Time	May 16/2022	

3c



CERTIFICATE OF ANALYSIS

Work Order : **CG2208372**
Client : **Teck Coal Limited**
Contact : Mike Pope
Address : 421 Pine Avenue
Sparwood BC Canada V0B2G0
Telephone : ----
Project : REGIONAL EFFECTS PROGRAM
PO : VPO00816101
C-O-C number : MAY EVO LAEMP 2022
Sampler : ----
Site : ----
Quote number : Teck Coal Master Quote
No. of samples received : 9
No. of samples analysed : 9

Page : 1 of 8
Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
Calgary AB Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 29-Jun-2022 08:50
Date Analysis Commenced : 30-Jun-2022
Issue Date : 10-Jul-2022 10:31

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Harpreet Chawla	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Metals, Calgary, Alberta
Hedy Lai	Team Leader - Inorganics	Inorganics, Saskatoon, Saskatchewan
Joshua Stessun	Laboratory Analyst	Organics, Calgary, Alberta
Maqsood UIHassan	Laboratory Analyst	Organics, Calgary, Alberta
Sara Niroomand		Metals, Calgary, Alberta
Xihua Yao	Laboratory Analyst	Inorganics, Saskatoon, Saskatchewan



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
 LOR: Limit of Reporting (detection limit).

Unit	Description
-	No Unit
%	percent
mg/kg	milligrams per kilogram
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Sample Comments

Sample	Client Id	Comment
CG2208372-001	RG_BOCKRD_SE-1_LAEMP_EV VO_2022-06-28_NP	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2208372-005	RG_BOCK_SE-2_LAEMP_EV O_2022-06-28_NP	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2208372-007	RG_GATE_SE-1_LAEMP_EV O_2022-6-28_NP	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2208372-008	RG_GATE_SE-2_LAEMP_EV O_2022-6-28_NP	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.



Analytical Results

Sub-Matrix: Soil					Client sample ID				
(Matrix: Soil/Solid)					RG_BOCKRD_S E-1_LAEMP_EV O_2022-06-28_ NP	RG_BOCKRD_S E-2_LAEMP_EV O_2022-06-28_ NP	RG_BOCKRD_S E-3_LAEMP_EV O_2022-06-28_ NP	RG_BOCK_SE-1 _LAEMP_EVO_ 2022-06-28_NP	RG_BOCK_SE-2 _LAEMP_EVO_ 2022-06-28_NP
Client sampling date / time					28-Jun-2022 11:00	28-Jun-2022 11:05	28-Jun-2022 11:10	28-Jun-2022 09:30	28-Jun-2022 09:35
Analyte	CAS Number	Method	LOR	Unit	CG2208372-001	CG2208372-002	CG2208372-003	CG2208372-004	CG2208372-005
					Result	Result	Result	Result	Result
Physical Tests									
moisture	----	E144	0.25	%	54.7	50.4	47.7	37.4	43.2
pH (1:2 soil:water)	----	E108	0.10	pH units	7.92	7.96	8.01	8.16	8.09
Particle Size									
grain size curve	----	E185A	-	-	See Attached	See Attached	See Attached	See Attached	See Attached
clay (<0.004mm)	----	EC184A	1.0	%	5.2	14.6	4.5	5.2	12.7
silt (0.063mm - 0.0312mm)	----	EC184A	1.0	%	11.2	9.0	8.8	4.9	14.7
silt (0.0312mm - 0.004mm)	----	EC184A	1.0	%	15.1	22.3	11.6	10.5	31.1
sand (0.125mm - 0.063mm)	----	EC184A	1.0	%	15.0	13.3	12.1	6.2	14.9
sand (0.25mm - 0.125mm)	----	EC184A	1.0	%	20.1	18.8	18.9	7.3	14.3
sand (0.5mm - 0.25mm)	----	EC184A	1.0	%	19.5	12.4	15.5	10.3	7.2
sand (1.0mm - 0.50mm)	----	EC184A	1.0	%	9.5	5.6	9.6	21.4	4.1
sand (2.0mm - 1.0mm)	----	EC184A	1.0	%	3.4	3.0	6.6	27.4	1.0
gravel (>2mm)	----	EC184A	1.0	%	1.0	1.0	12.4	6.8	<1.0
Organic / Inorganic Carbon									
carbon, total [TC]	----	E351	0.050	%	15.4	21.2	12.1	12.5	13.5
carbon, inorganic [IC]	----	E354	0.050	%	6.26	6.10	6.03	6.92	7.98
carbon, inorganic [IC], (as CaCO3 equivalent)	----	E354	0.40	%	52.2	50.8	50.2	57.7	66.5
carbon, total organic [TOC]	----	EC356	0.050	%	9.14	15.1	6.07	5.58	5.52
Metals									
aluminum	7429-90-5	E440	50	mg/kg	1020	2840	2320	3660	4340
antimony	7440-36-0	E440	0.10	mg/kg	0.36	0.84	0.54	0.68	0.88
arsenic	7440-38-2	E440	0.10	mg/kg	1.96	3.12	3.45	2.34	3.18
barium	7440-39-3	E440	0.50	mg/kg	610	792	343	735	510
beryllium	7440-41-7	E440	0.10	mg/kg	0.11	0.31	0.18	0.23	0.32
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20
boron	7440-42-8	E440	5.0	mg/kg	9.4	8.3	6.4	6.2	6.4
cadmium	7440-43-9	E440	0.020	mg/kg	9.21	8.73	8.28	7.59	12.7
calcium	7440-70-2	E440	50	mg/kg	277000	237000	249000	336000	322000



Analytical Results

Sub-Matrix: Soil

(Matrix: Soil/Solid)

Client sample ID

					RG_BOCKRD_S E-1_LAEMP_EV O_2022-06-28_ NP	RG_BOCKRD_S E-2_LAEMP_EV O_2022-06-28_ NP	RG_BOCKRD_S E-3_LAEMP_EV O_2022-06-28_ NP	RG_BOCK_SE-1 _LAEMP_EVO_ 2022-06-28_NP	RG_BOCK_SE-2 _LAEMP_EVO_ 2022-06-28_NP
Client sampling date / time					28-Jun-2022 11:00	28-Jun-2022 11:05	28-Jun-2022 11:10	28-Jun-2022 09:30	28-Jun-2022 09:35
Analyte	CAS Number	Method	LOR	Unit	CG2208372-001	CG2208372-002	CG2208372-003	CG2208372-004	CG2208372-005
					Result	Result	Result	Result	Result
Metals									
chromium	7440-47-3	E440	0.50	mg/kg	1.90	4.92	3.92	6.45	7.50
cobalt	7440-48-4	E440	0.10	mg/kg	5.49	13.9	6.50	6.01	9.30
copper	7440-50-8	E440	0.50	mg/kg	6.77	15.0	8.24	11.7	15.0
iron	7439-89-6	E440	50	mg/kg	3490	3920	6810	4170	5810
lead	7439-92-1	E440	0.50	mg/kg	2.62	5.78	3.20	5.00	6.33
lithium	7439-93-2	E440	2.0	mg/kg	2.6	3.8	4.1	6.3	6.9
magnesium	7439-95-4	E440	20	mg/kg	4360	4980	5110	7430	7070
manganese	7439-96-5	E440	1.0	mg/kg	175	303	224	163	252
mercury	7439-97-6	E510	0.0050	mg/kg	0.0135	0.0313	0.0140	0.0167	0.0220
molybdenum	7439-98-7	E440	0.10	mg/kg	0.72	1.79	1.24	1.04	1.39
nickel	7440-02-0	E440	0.50	mg/kg	51.7	89.9	64.0	118	129
phosphorus	7723-14-0	E440	50	mg/kg	325	536	475	366	538
potassium	7440-09-7	E440	100	mg/kg	490	970	840	1170	1300
selenium	7782-49-2	E440	0.20	mg/kg	3.54	6.70	4.72	13.0	12.7
silver	7440-22-4	E440	0.10	mg/kg	<0.10	0.19	<0.10	0.12	0.16
sodium	7440-23-5	E440	50	mg/kg	106	112	119	168	158
strontium	7440-24-6	E440	0.50	mg/kg	485	294	1060	506	572
sulfur	7704-34-9	E440	1000	mg/kg	7200	6000	6100	5100	4700
thallium	7440-28-0	E440	0.050	mg/kg	0.136	0.181	0.167	0.307	0.321
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
titanium	7440-32-6	E440	1.0	mg/kg	5.7	5.4	8.6	11.1	11.6
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	<0.50	2.17	1.09
uranium	7440-61-1	E440	0.050	mg/kg	1.48	2.02	2.08	3.76	3.64
vanadium	7440-62-2	E440	0.20	mg/kg	5.90	16.3	11.3	15.8	19.8
zinc	7440-66-6	E440	2.0	mg/kg	436	430	416	482	746
zirconium	7440-67-7	E440	1.0	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
Polycyclic Aromatic Hydrocarbons									
acenaphthene	83-32-9	E641A-L	0.0050	mg/kg	0.0921	0.256	0.0930	0.0478	0.114
acenaphthylene	208-96-8	E641A-L	0.0050	mg/kg	<0.0056	0.0141	0.0092	0.0132	0.0330



Analytical Results

Sub-Matrix: Soil

(Matrix: Soil/Solid)

Client sample ID

					RG_BOCKRD_S E-1_LAEMP_EV O_2022-06-28_ NP	RG_BOCKRD_S E-2_LAEMP_EV O_2022-06-28_ NP	RG_BOCKRD_S E-3_LAEMP_EV O_2022-06-28_ NP	RG_BOCK_SE-1 LAEMP_EVO_ 2022-06-28_NP	RG_BOCK_SE-2 LAEMP_EVO_ 2022-06-28_NP
Client sampling date / time					28-Jun-2022 11:00	28-Jun-2022 11:05	28-Jun-2022 11:10	28-Jun-2022 09:30	28-Jun-2022 09:35
Analyte	CAS Number	Method	LOR	Unit	CG2208372-001	CG2208372-002	CG2208372-003	CG2208372-004	CG2208372-005
					Result	Result	Result	Result	Result
Polycyclic Aromatic Hydrocarbons									
anthracene	120-12-7	E641A-L	0.0040	mg/kg	<0.0056	<0.0057	<0.0040	0.0301	0.0848
benz(a)anthracene	56-55-3	E641A-L	0.010	mg/kg	0.079	0.209	0.075	0.057	0.147
benzo(a)pyrene	50-32-8	E641A-L	0.010	mg/kg	0.048	0.137	0.047	0.032	0.093
benzo(b+j)fluoranthene	n/a	E641A-L	0.010	mg/kg	0.126	0.333	0.126	0.094	0.251
benzo(g,h,i)perylene	191-24-2	E641A-L	0.010	mg/kg	0.086	0.206	0.086	0.055	0.143
benzo(k)fluoranthene	207-08-9	E641A-L	0.010	mg/kg	0.015	0.024	0.012	0.014	0.043
chrysene	218-01-9	E641A-L	0.010	mg/kg	0.335	0.987	0.329	0.200	0.491
dibenz(a,h)anthracene	53-70-3	E641A-L	0.0050	mg/kg	0.0444	0.103	0.0368	0.0210	0.0587
fluoranthene	206-44-0	E641A-L	0.010	mg/kg	0.067	0.165	0.069	0.103	0.258
fluorene	86-73-7	E641A-L	0.010	mg/kg	0.387	1.26	0.355	0.142	0.327
indeno(1,2,3-c,d)pyrene	193-39-5	E641A-L	0.010	mg/kg	0.032	0.068	0.028	0.024	0.074
naphthalene	91-20-3	E641A-L	0.010	mg/kg	0.482	1.44	0.490	0.235	0.520
phenanthrene	85-01-8	E641A-L	0.010	mg/kg	1.08	3.12	1.09	0.590	1.33
pyrene	129-00-0	E641A-L	0.010	mg/kg	0.111	0.314	0.112	0.092	0.232
B(a)P total potency equivalents [B(a)P TPE]	----	E641A-L	0.020	mg/kg	0.122	0.315	0.112	0.074	0.210
IACR AB (coarse)	----	E641A-L	0.10	-	<0.10	0.13	<0.10	<0.10	0.11
IACR AB (fine)	----	E641A-L	0.10	-	0.10	0.25	<0.10	<0.10	0.22
Polycyclic Aromatic Hydrocarbons Surrogates									
acridine-d9	34749-75-2	E641A-L	0.1	%	105	107	117	112	111
chrysene-d12	1719-03-5	E641A-L	0.1	%	118	116	122	124	125
naphthalene-d8	1146-65-2	E641A-L	0.1	%	124	120	122	127	118
phenanthrene-d10	1517-22-2	E641A-L	0.1	%	110	110	123	119	120

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Soil (Matrix: Soil/Solid)					Client sample ID	RG_BOCK_SE-3 _LAEMP_EVO_ 2022-06-28_NP	RG_GATE_SE-1 _LAEMP_EVO_ 2022-6-28_NP	RG_GATE_SE-2 _LAEMP_EVO_ 2022-6-28_NP	RG_GATE_SE-3 _LAEMP_EVO_ 2022-6-28_NP	----
Client sampling date / time					28-Jun-2022 09:40	28-Jun-2022 08:30	28-Jun-2022 08:35	28-Jun-2022 08:40	----	
Analyte	CAS Number	Method	LOR	Unit	CG2208372-006 Result	CG2208372-007 Result	CG2208372-008 Result	CG2208372-009 Result	----- ----	
Physical Tests										
moisture	----	E144	0.25	%	48.3	63.7	62.7	55.3	----	
pH (1:2 soil:water)	----	E108	0.10	pH units	8.11	7.93	8.01	7.94	----	
Particle Size										
grain size curve	----	E185A	-	-	See Attached	See Attached	See Attached	See Attached	----	
clay (<0.004mm)	----	EC184A	1.0	%	11.7	22.7	23.2	23.2	----	
silt (0.063mm - 0.0312mm)	----	EC184A	1.0	%	13.7	16.6	13.8	18.7	----	
silt (0.0312mm - 0.004mm)	----	EC184A	1.0	%	30.9	42.9	38.3	40.4	----	
sand (0.125mm - 0.063mm)	----	EC184A	1.0	%	14.1	11.0	12.1	11.2	----	
sand (0.25mm - 0.125mm)	----	EC184A	1.0	%	14.3	5.1	9.7	4.7	----	
sand (0.5mm - 0.25mm)	----	EC184A	1.0	%	8.9	1.3	2.3	1.4	----	
sand (1.0mm - 0.50mm)	----	EC184A	1.0	%	4.7	<1.0	<1.0	<1.0	----	
sand (2.0mm - 1.0mm)	----	EC184A	1.0	%	1.7	<1.0	<1.0	<1.0	----	
gravel (>2mm)	----	EC184A	1.0	%	<1.0	<1.0	<1.0	<1.0	----	
Organic / Inorganic Carbon										
carbon, total [TC]	----	E351	0.050	%	13.7	21.5	23.4	21.2	----	
carbon, inorganic [IC]	----	E354	0.050	%	7.88	3.83	3.92	3.87	----	
carbon, inorganic [IC], (as CaCO3 equivalent)	----	E354	0.40	%	65.7	31.9	32.6	32.2	----	
carbon, total organic [TOC]	----	EC356	0.050	%	5.82	17.7	19.5	17.3	----	
Metals										
aluminum	7429-90-5	E440	50	mg/kg	3580	4620	5740	5620	----	
antimony	7440-36-0	E440	0.10	mg/kg	0.84	1.09	1.27	1.14	----	
arsenic	7440-38-2	E440	0.10	mg/kg	3.18	5.25	6.18	5.67	----	
barium	7440-39-3	E440	0.50	mg/kg	864	406	459	474	----	
beryllium	7440-41-7	E440	0.10	mg/kg	0.30	0.49	0.57	0.56	----	
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	----	
boron	7440-42-8	E440	5.0	mg/kg	5.7	7.5	9.4	8.1	----	
cadmium	7440-43-9	E440	0.020	mg/kg	12.0	6.71	8.16	7.51	----	
calcium	7440-70-2	E440	50	mg/kg	307000	133000	170000	155000	----	
chromium	7440-47-3	E440	0.50	mg/kg	6.39	8.47	10.3	10.1	----	



Analytical Results

Sub-Matrix: Soil (Matrix: Soil/Solid)					Client sample ID	RG_BOCK_SE-3 _LAEMP_EVO_ 2022-06-28_NP	RG_GATE_SE-1 _LAEMP_EVO_ 2022-6-28_NP	RG_GATE_SE-2 _LAEMP_EVO_ 2022-6-28_NP	RG_GATE_SE-3 _LAEMP_EVO_ 2022-6-28_NP	----
Client sampling date / time					28-Jun-2022 09:40	28-Jun-2022 08:30	28-Jun-2022 08:35	28-Jun-2022 08:40	----	
Analyte	CAS Number	Method	LOR	Unit	CG2208372-006 Result	CG2208372-007 Result	CG2208372-008 Result	CG2208372-009 Result	----- ----	
Metals										
cobalt	7440-48-4	E440	0.10	mg/kg	8.92	11.2	13.4	12.0	----	
copper	7440-50-8	E440	0.50	mg/kg	15.5	20.0	23.6	21.4	----	
iron	7439-89-6	E440	50	mg/kg	5880	10400	11900	11000	----	
lead	7439-92-1	E440	0.50	mg/kg	6.65	8.66	10.3	9.43	----	
lithium	7439-93-2	E440	2.0	mg/kg	6.2	5.5	6.6	6.2	----	
magnesium	7439-95-4	E440	20	mg/kg	6840	5630	6810	6230	----	
manganese	7439-96-5	E440	1.0	mg/kg	245	272	327	295	----	
mercury	7439-97-6	E510	0.0050	mg/kg	0.0191	0.0414	0.0428	0.0275	----	
molybdenum	7439-98-7	E440	0.10	mg/kg	1.36	2.13	2.51	2.24	----	
nickel	7440-02-0	E440	0.50	mg/kg	126	83.3	95.0	84.2	----	
phosphorus	7723-14-0	E440	50	mg/kg	490	939	1010	958	----	
potassium	7440-09-7	E440	100	mg/kg	1080	1340	1670	1650	----	
selenium	7782-49-2	E440	0.20	mg/kg	12.2	14.5	16.0	14.2	----	
silver	7440-22-4	E440	0.10	mg/kg	0.17	0.30	0.36	0.33	----	
sodium	7440-23-5	E440	50	mg/kg	146	99	126	128	----	
strontium	7440-24-6	E440	0.50	mg/kg	518	784	953	876	----	
sulfur	7704-34-9	E440	1000	mg/kg	4600	4800	5400	4700	----	
thallium	7440-28-0	E440	0.050	mg/kg	0.297	0.272	0.303	0.272	----	
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	----	
titanium	7440-32-6	E440	1.0	mg/kg	10.8	12.3	12.9	13.1	----	
tungsten	7440-33-7	E440	0.50	mg/kg	1.13	<0.50	0.53	<0.50	----	
uranium	7440-61-1	E440	0.050	mg/kg	3.49	1.82	2.17	1.90	----	
vanadium	7440-62-2	E440	0.20	mg/kg	17.1	26.3	31.8	30.5	----	
zinc	7440-66-6	E440	2.0	mg/kg	705	380	456	423	----	
zirconium	7440-67-7	E440	1.0	mg/kg	<1.0	<1.0	<1.0	<1.0	----	
Polycyclic Aromatic Hydrocarbons										
acenaphthene	83-32-9	E641A-L	0.0050	mg/kg	0.133	0.373	0.405	0.470	----	
acenaphthylene	208-96-8	E641A-L	0.0050	mg/kg	0.0388	0.0786	0.149	0.0940	----	
anthracene	120-12-7	E641A-L	0.0040	mg/kg	0.0970	0.122	0.200	0.150	----	
benz(a)anthracene	56-55-3	E641A-L	0.010	mg/kg	0.179	0.418	0.775	0.478	----	



Analytical Results

Sub-Matrix: Soil

(Matrix: Soil/Solid)

Client sample ID

					RG_BOCK_SE-3 _LAEMP_EVO_ 2022-06-28_NP	RG_GATE_SE-1 _LAEMP_EVO_ 2022-6-28_NP	RG_GATE_SE-2 _LAEMP_EVO_ 2022-6-28_NP	RG_GATE_SE-3 _LAEMP_EVO_ 2022-6-28_NP	----
Client sampling date / time					28-Jun-2022 09:40	28-Jun-2022 08:30	28-Jun-2022 08:35	28-Jun-2022 08:40	----
Analyte	CAS Number	Method	LOR	Unit	CG2208372-006	CG2208372-007	CG2208372-008	CG2208372-009	-----
					Result	Result	Result	Result	----
Polycyclic Aromatic Hydrocarbons									
benzo(a)pyrene	50-32-8	E641A-L	0.010	mg/kg	0.117	0.268	0.622	0.325	----
benzo(b+j)fluoranthene	n/a	E641A-L	0.010	mg/kg	0.310	0.660	1.25	0.767	----
benzo(g,h,i)perylene	191-24-2	E641A-L	0.010	mg/kg	0.178	0.360	0.607	0.395	----
benzo(k)fluoranthene	207-08-9	E641A-L	0.010	mg/kg	0.061	0.082	0.268	0.133	----
chrysene	218-01-9	E641A-L	0.010	mg/kg	0.568	1.39	1.86	1.58	----
dibenz(a,h)anthracene	53-70-3	E641A-L	0.0050	mg/kg	0.0710	0.165	0.262	0.192	----
fluoranthene	206-44-0	E641A-L	0.010	mg/kg	0.305	0.446	0.888	0.510	----
fluorene	86-73-7	E641A-L	0.010	mg/kg	0.377	1.44	1.62	1.69	----
indeno(1,2,3-c,d)pyrene	193-39-5	E641A-L	0.010	mg/kg	0.083	0.167	0.376	0.198	----
naphthalene	91-20-3	E641A-L	0.010	mg/kg	0.594	2.31	2.62	2.63	----
phenanthrene	85-01-8	E641A-L	0.010	mg/kg	1.54	4.24	4.69	4.79	----
pyrene	129-00-0	E641A-L	0.010	mg/kg	0.270	0.566	0.936	0.647	----
B(a)P total potency equivalents [B(a)P TPE]	----	E641A-L	0.020	mg/kg	0.259	0.583	1.18	0.694	----
IACR AB (coarse)	----	E641A-L	0.10	-	0.14	0.28	0.61	0.35	----
IACR AB (fine)	----	E641A-L	0.10	-	0.28	0.53	1.16	0.67	----
Polycyclic Aromatic Hydrocarbons Surrogates									
acridine-d9	34749-75-2	E641A-L	0.1	%	114	110	112	107	----
chrysene-d12	1719-03-5	E641A-L	0.1	%	129	126	130	128	----
naphthalene-d8	1146-65-2	E641A-L	0.1	%	122	120	118	123	----
phenanthrene-d10	1517-22-2	E641A-L	0.1	%	123	121	128	126	----

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: CG2208372	Page	: 1 of 14
Client	: Teck Coal Limited	Laboratory	: Calgary - Environmental
Contact	: Mike Pope	Account Manager	: Lyudmyla Shvets
Address	: 421 Pine Avenue Sparwood BC Canada V0B2G0	Address	: 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5
Telephone	: ----	Telephone	: +1 403 407 1800
Project	: REGIONAL EFFECTS PROGRAM	Date Samples Received	: 29-Jun-2022 08:50
PO	: VPO00816101	Issue Date	: 10-Jul-2022 10:31
C-O-C number	: MAY EVO LAEMP 2022		
Sampler	: ----		
Site	: ----		
Quote number	: Teck Coal Master Quote		
No. of samples received	: 9		
No. of samples analysed	: 9		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Soil/Solid**

Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_BOCK_SE-1_LAEMP_EVO_2022-06-28_NP	E510	28-Jun-2022	30-Jun-2022	----	----		01-Jul-2022	28 days	3 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_BOCK_SE-2_LAEMP_EVO_2022-06-28_NP	E510	28-Jun-2022	30-Jun-2022	----	----		01-Jul-2022	28 days	3 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_BOCK_SE-3_LAEMP_EVO_2022-06-28_NP	E510	28-Jun-2022	30-Jun-2022	----	----		01-Jul-2022	28 days	3 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_BOCKRD_SE-1_LAEMP_EVO_2022-06-28_NP	E510	28-Jun-2022	30-Jun-2022	----	----		01-Jul-2022	28 days	3 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_BOCKRD_SE-2_LAEMP_EVO_2022-06-28_NP	E510	28-Jun-2022	30-Jun-2022	----	----		01-Jul-2022	28 days	3 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_BOCKRD_SE-3_LAEMP_EVO_2022-06-28_NP	E510	28-Jun-2022	30-Jun-2022	----	----		01-Jul-2022	28 days	3 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_GATE_SE-1_LAEMP_EVO_2022-6-28_NP	E510	28-Jun-2022	30-Jun-2022	----	----		01-Jul-2022	28 days	3 days	✓	



Matrix: **Soil/Solid**

Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_GATE_SE-2_LAEMP_EVO_2022-6-28_NP	E510	28-Jun-2022	30-Jun-2022	----	----		01-Jul-2022	28 days	3 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_GATE_SE-3_LAEMP_EVO_2022-6-28_NP	E510	28-Jun-2022	30-Jun-2022	----	----		01-Jul-2022	28 days	3 days	✓	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_BOCK_SE-1_LAEMP_EVO_2022-06-28_NP	E440	28-Jun-2022	30-Jun-2022	----	----		02-Jul-2022	180 days	4 days	✓	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_BOCK_SE-2_LAEMP_EVO_2022-06-28_NP	E440	28-Jun-2022	30-Jun-2022	----	----		02-Jul-2022	180 days	4 days	✓	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_BOCK_SE-3_LAEMP_EVO_2022-06-28_NP	E440	28-Jun-2022	30-Jun-2022	----	----		02-Jul-2022	180 days	4 days	✓	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_BOCKRD_SE-1_LAEMP_EVO_2022-06-28_NP	E440	28-Jun-2022	30-Jun-2022	----	----		02-Jul-2022	180 days	4 days	✓	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_BOCKRD_SE-2_LAEMP_EVO_2022-06-28_NP	E440	28-Jun-2022	30-Jun-2022	----	----		02-Jul-2022	180 days	4 days	✓	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_BOCKRD_SE-3_LAEMP_EVO_2022-06-28_NP	E440	28-Jun-2022	30-Jun-2022	----	----		02-Jul-2022	180 days	4 days	✓	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_GATE_SE-1_LAEMP_EVO_2022-6-28_NP	E440	28-Jun-2022	30-Jun-2022	----	----		02-Jul-2022	180 days	4 days	✓	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_GATE_SE-2_LAEMP_EVO_2022-6-28_NP	E440	28-Jun-2022	30-Jun-2022	----	----		02-Jul-2022	180 days	4 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_GATE_SE-3_LAEMP_EVO_2022-6-28_NP	E440	28-Jun-2022	30-Jun-2022	----	----		02-Jul-2022	180 days	4 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
Paper Bag (Brown) RG_BOCK_SE-1_LAEMP_EVO_2022-06-28_NP	E351	28-Jun-2022	----	----	----		08-Jul-2022	0 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
Paper Bag (Brown) RG_BOCK_SE-2_LAEMP_EVO_2022-06-28_NP	E351	28-Jun-2022	----	----	----		08-Jul-2022	0 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
Paper Bag (Brown) RG_BOCK_SE-3_LAEMP_EVO_2022-06-28_NP	E351	28-Jun-2022	----	----	----		08-Jul-2022	0 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
Paper Bag (Brown) RG_BOCKRD_SE-1_LAEMP_EVO_2022-06-28_NP	E351	28-Jun-2022	----	----	----		08-Jul-2022	0 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
Paper Bag (Brown) RG_BOCKRD_SE-2_LAEMP_EVO_2022-06-28_NP	E351	28-Jun-2022	----	----	----		08-Jul-2022	0 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
Paper Bag (Brown) RG_BOCKRD_SE-3_LAEMP_EVO_2022-06-28_NP	E351	28-Jun-2022	----	----	----		08-Jul-2022	0 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
Paper Bag (Brown) RG_GATE_SE-1_LAEMP_EVO_2022-6-28_NP	E351	28-Jun-2022	----	----	----		08-Jul-2022	0 days	0 days	✔	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Total Carbon by Combustion										
Paper Bag (Brown) RG_GATE_SE-2_LAEMP_EVO_2022-6-28_NP	E351	28-Jun-2022	----	----	----		08-Jul-2022	0 days	0 days	✔
Organic / Inorganic Carbon : Total Carbon by Combustion										
Paper Bag (Brown) RG_GATE_SE-3_LAEMP_EVO_2022-6-28_NP	E351	28-Jun-2022	----	----	----		08-Jul-2022	0 days	0 days	✔
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
Paper Bag (Brown) RG_BOCK_SE-1_LAEMP_EVO_2022-06-28_NP	E354	28-Jun-2022	----	----	----		07-Jul-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
Paper Bag (Brown) RG_BOCK_SE-2_LAEMP_EVO_2022-06-28_NP	E354	28-Jun-2022	----	----	----		07-Jul-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
Paper Bag (Brown) RG_BOCK_SE-3_LAEMP_EVO_2022-06-28_NP	E354	28-Jun-2022	----	----	----		07-Jul-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
Paper Bag (Brown) RG_BOCKRD_SE-1_LAEMP_EVO_2022-06-28_NP	E354	28-Jun-2022	----	----	----		07-Jul-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
Paper Bag (Brown) RG_BOCKRD_SE-2_LAEMP_EVO_2022-06-28_NP	E354	28-Jun-2022	----	----	----		07-Jul-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
Paper Bag (Brown) RG_BOCKRD_SE-3_LAEMP_EVO_2022-06-28_NP	E354	28-Jun-2022	----	----	----		07-Jul-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
Paper Bag (Brown) RG_GATE_SE-1_LAEMP_EVO_2022-6-28_NP	E354	28-Jun-2022	----	----	----		07-Jul-2022	----	----	



Matrix: Soil/Solid

Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		
				Rec	Actual			Rec	Actual	Eval
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
Paper Bag (Brown) RG_GATE_SE-2_LAEMP_EVO_2022-6-28_NP	E354	28-Jun-2022	----	----	----		07-Jul-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
Paper Bag (Brown) RG_GATE_SE-3_LAEMP_EVO_2022-6-28_NP	E354	28-Jun-2022	----	----	----		07-Jul-2022	----	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
Paper Bag (Brown) RG_BOCK_SE-1_LAEMP_EVO_2022-06-28_NP	E185A	28-Jun-2022	----	----	----		08-Jul-2022	----	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
Paper Bag (Brown) RG_BOCK_SE-2_LAEMP_EVO_2022-06-28_NP	E185A	28-Jun-2022	----	----	----		08-Jul-2022	----	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
Paper Bag (Brown) RG_BOCK_SE-3_LAEMP_EVO_2022-06-28_NP	E185A	28-Jun-2022	----	----	----		08-Jul-2022	----	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
Paper Bag (Brown) RG_BOCKRD_SE-1_LAEMP_EVO_2022-06-28_NP	E185A	28-Jun-2022	----	----	----		08-Jul-2022	----	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
Paper Bag (Brown) RG_BOCKRD_SE-2_LAEMP_EVO_2022-06-28_NP	E185A	28-Jun-2022	----	----	----		08-Jul-2022	----	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
Paper Bag (Brown) RG_BOCKRD_SE-3_LAEMP_EVO_2022-06-28_NP	E185A	28-Jun-2022	----	----	----		08-Jul-2022	----	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
Paper Bag (Brown) RG_GATE_SE-1_LAEMP_EVO_2022-6-28_NP	E185A	28-Jun-2022	----	----	----		08-Jul-2022	----	----	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
Paper Bag (Brown) RG_GATE_SE-2_LAEMP_EVO_2022-6-28_NP	E185A	28-Jun-2022	----	----	----		08-Jul-2022	----	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
Paper Bag (Brown) RG_GATE_SE-3_LAEMP_EVO_2022-6-28_NP	E185A	28-Jun-2022	----	----	----		08-Jul-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_BOCK_SE-1_LAEMP_EVO_2022-06-28_NP	E144	28-Jun-2022	----	----	----		30-Jun-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_BOCK_SE-2_LAEMP_EVO_2022-06-28_NP	E144	28-Jun-2022	----	----	----		30-Jun-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_BOCK_SE-3_LAEMP_EVO_2022-06-28_NP	E144	28-Jun-2022	----	----	----		30-Jun-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_BOCKRD_SE-1_LAEMP_EVO_2022-06-28_NP	E144	28-Jun-2022	----	----	----		30-Jun-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_BOCKRD_SE-2_LAEMP_EVO_2022-06-28_NP	E144	28-Jun-2022	----	----	----		30-Jun-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_BOCKRD_SE-3_LAEMP_EVO_2022-06-28_NP	E144	28-Jun-2022	----	----	----		30-Jun-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_GATE_SE-1_LAEMP_EVO_2022-6-28_NP	E144	28-Jun-2022	----	----	----		30-Jun-2022	----	----	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Moisture Content by Gravimetry											
LDPE bag RG_GATE_SE-2_LAEMP_EVO_2022-6-28_NP	E144	28-Jun-2022	----	----	----		30-Jun-2022	----	----		
Physical Tests : Moisture Content by Gravimetry											
LDPE bag RG_GATE_SE-3_LAEMP_EVO_2022-6-28_NP	E144	28-Jun-2022	----	----	----		30-Jun-2022	----	----		
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_BOCK_SE-1_LAEMP_EVO_2022-06-28_NP	E108	28-Jun-2022	02-Jul-2022	----	----		02-Jul-2022	30 days	4 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_BOCK_SE-2_LAEMP_EVO_2022-06-28_NP	E108	28-Jun-2022	02-Jul-2022	----	----		02-Jul-2022	30 days	4 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_BOCK_SE-3_LAEMP_EVO_2022-06-28_NP	E108	28-Jun-2022	02-Jul-2022	----	----		02-Jul-2022	30 days	4 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_BOCKRD_SE-1_LAEMP_EVO_2022-06-28_NP	E108	28-Jun-2022	02-Jul-2022	----	----		02-Jul-2022	30 days	4 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_BOCKRD_SE-2_LAEMP_EVO_2022-06-28_NP	E108	28-Jun-2022	02-Jul-2022	----	----		02-Jul-2022	30 days	4 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_BOCKRD_SE-3_LAEMP_EVO_2022-06-28_NP	E108	28-Jun-2022	02-Jul-2022	----	----		02-Jul-2022	30 days	4 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_GATE_SE-1_LAEMP_EVO_2022-6-28_NP	E108	28-Jun-2022	02-Jul-2022	----	----		02-Jul-2022	30 days	4 days	✔	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_GATE_SE-2_LAEMP_EVO_2022-6-28_NP	E108	28-Jun-2022	02-Jul-2022	----	----		02-Jul-2022	30 days	4 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_GATE_SE-3_LAEMP_EVO_2022-6-28_NP	E108	28-Jun-2022	02-Jul-2022	----	----		02-Jul-2022	30 days	4 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS (Low Level CCME)											
LDPE bag RG_BOCK_SE-1_LAEMP_EVO_2022-06-28_NP	E641A-L	28-Jun-2022	30-Jun-2022	14 days	2 days	✔	30-Jun-2022	40 days	0 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS (Low Level CCME)											
LDPE bag RG_BOCK_SE-2_LAEMP_EVO_2022-06-28_NP	E641A-L	28-Jun-2022	30-Jun-2022	14 days	2 days	✔	30-Jun-2022	40 days	0 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS (Low Level CCME)											
LDPE bag RG_BOCK_SE-3_LAEMP_EVO_2022-06-28_NP	E641A-L	28-Jun-2022	30-Jun-2022	14 days	2 days	✔	30-Jun-2022	40 days	0 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS (Low Level CCME)											
LDPE bag RG_BOCKRD_SE-1_LAEMP_EVO_2022-06-28_NP	E641A-L	28-Jun-2022	30-Jun-2022	14 days	2 days	✔	30-Jun-2022	40 days	0 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS (Low Level CCME)											
LDPE bag RG_BOCKRD_SE-2_LAEMP_EVO_2022-06-28_NP	E641A-L	28-Jun-2022	30-Jun-2022	14 days	2 days	✔	30-Jun-2022	40 days	0 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS (Low Level CCME)											
LDPE bag RG_BOCKRD_SE-3_LAEMP_EVO_2022-06-28_NP	E641A-L	28-Jun-2022	30-Jun-2022	14 days	2 days	✔	30-Jun-2022	40 days	0 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS (Low Level CCME)											
LDPE bag RG_GATE_SE-1_LAEMP_EVO_2022-6-28_NP	E641A-L	28-Jun-2022	30-Jun-2022	14 days	2 days	✔	30-Jun-2022	40 days	0 days	✔	



Matrix: **Soil/Solid**

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex: Ace GC-MS (Low Level CCME)										
LDPE bag RG_GATE_SE-2_LAEMP_EVO_2022-6-28_NP	E641A-L	28-Jun-2022	30-Jun-2022	14 days	2 days	✔	30-Jun-2022	40 days	0 days	✔
Polycyclic Aromatic Hydrocarbons : PAHs by Hex: Ace GC-MS (Low Level CCME)										
LDPE bag RG_GATE_SE-3_LAEMP_EVO_2022-6-28_NP	E641A-L	28-Jun-2022	30-Jun-2022	14 days	2 days	✔	30-Jun-2022	40 days	0 days	✔

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Soil/Solid**

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
Analytical Methods							
Laboratory Duplicates (DUP)							
Mercury in Soil/Solid by CVAAS	E510	544979	1	10	10.0	5.0	✔
Metals in Soil/Solid by CRC ICPMS	E440	544980	1	10	10.0	5.0	✔
Moisture Content by Gravimetry	E144	544389	1	17	5.8	5.0	✔
PAHs by Hex:Ace GC-MS (Low Level CCME)	E641A-L	544388	1	17	5.8	5.0	✔
pH by Meter (1:2 Soil:Water Extraction)	E108	546598	1	10	10.0	5.0	✔
Total Carbon by Combustion	E351	554401	1	14	7.1	5.0	✔
Total Inorganic Carbon by Acetic Acid pH Standard Curve	E354	553326	2	40	5.0	5.0	✔
Laboratory Control Samples (LCS)							
Mercury in Soil/Solid by CVAAS	E510	544979	2	10	20.0	10.0	✔
Metals in Soil/Solid by CRC ICPMS	E440	544980	2	10	20.0	10.0	✔
Moisture Content by Gravimetry	E144	544389	1	17	5.8	5.0	✔
PAHs by Hex:Ace GC-MS (Low Level CCME)	E641A-L	544388	1	17	5.8	5.0	✔
pH by Meter (1:2 Soil:Water Extraction)	E108	546598	2	10	20.0	10.0	✔
Total Carbon by Combustion	E351	554401	2	14	14.2	10.0	✔
Total Inorganic Carbon by Acetic Acid pH Standard Curve	E354	553326	4	40	10.0	10.0	✔
Method Blanks (MB)							
Mercury in Soil/Solid by CVAAS	E510	544979	1	10	10.0	5.0	✔
Metals in Soil/Solid by CRC ICPMS	E440	544980	1	10	10.0	5.0	✔
Moisture Content by Gravimetry	E144	544389	1	17	5.8	5.0	✔
PAHs by Hex:Ace GC-MS (Low Level CCME)	E641A-L	544388	1	17	5.8	5.0	✔
Total Carbon by Combustion	E351	554401	1	14	7.1	5.0	✔
Total Inorganic Carbon by Acetic Acid pH Standard Curve	E354	553326	2	40	5.0	5.0	✔
Matrix Spikes (MS)							
PAHs by Hex:Ace GC-MS (Low Level CCME)	E641A-L	544388	1	17	5.8	5.0	✔



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
pH by Meter (1:2 Soil:Water Extraction)	E108 Calgary - Environmental	Soil/Solid	BC Lab Manual	pH is determined by potentiometric measurement with a pH electrode at ambient laboratory temperature (normally $20 \pm 5^{\circ}\text{C}$), and is carried out in accordance with procedures described in the BC Lab Manual (prescriptive method). The procedure involves mixing the dried (at $<60^{\circ}\text{C}$) and sieved (10mesh/2mm) sample with ultra pure water at a 1:2 ratio of sediment to water. The pH is then measured by a standard pH probe.
Moisture Content by Gravimetry	E144 Calgary - Environmental	Soil/Solid	CCME PHC in Soil - Tier 1	Moisture is measured gravimetrically by drying the sample at 105°C . Moisture content is calculated as the weight loss (due to water) divided by the wet weight of the sample, expressed as a percentage.
Grain Size Report (Attachment) Pipet/Sieve Method	E185A Saskatoon - Environmental	Soil/Solid	SSIR-51 Method 3.2.1	A grain size curve is a graphical representation of the particle sizing of a sample representing the percent passing against the effective particle size.
Total Carbon by Combustion	E351 Saskatoon - Environmental	Soil/Solid	CSSS (2008) 21.2 (mod)	Total Carbon is determined by the high temperature combustion method with measurement by an infrared detector.
Total Inorganic Carbon by Acetic Acid pH Standard Curve	E354 Saskatoon - Environmental	Soil/Solid	CSSS (2008) 20.2	Total Inorganic Carbon is determined by acetic acid pH standard curve, where a known quantity of acetic acid is consumed by reaction with carbonates in the soil. The pH of the resulting solution is measured and compared against a standard curve relating pH to weight of carbonate.
Metals in Soil/Solid by CRC ICPMS	E440 Calgary - Environmental	Soil/Solid	EPA 6020B (mod)	This method is intended to liberate metals that may be environmentally available. Samples are dried, then sieved through a 2 mm sieve, and digested with HNO_3 and HCl . Dependent on sample matrix, some metals may be only partially recovered, including Al, Ba, Be, Cr, Sr, Ti, Tl, V, W, and Zr. Silicate minerals are not solubilized. Volatile forms of sulfur (including sulfide) may not be captured, as they may be lost during sampling, storage, or digestion. This method does not adequately recover elemental sulfur, and is unsuitable for assessment of elemental sulfur standards or guidelines. Analysis is by Collision/Reaction Cell ICPMS.
Mercury in Soil/Solid by CVAAS	E510 Calgary - Environmental	Soil/Solid	EPA 200.2/1631 Appendix (mod)	Samples are dried, then sieved through a 2 mm sieve, and digested with HNO_3 and HCl , followed by CVAAS analysis.
PAHs by Hex:Ace GC-MS (Low Level CCME)	E641A-L Calgary - Environmental	Soil/Solid	EPA 8270E (mod)	Polycyclic Aromatic Hydrocarbons (PAHs) are extracted with hexane/acetone and analyzed by GC-MS. If reported, IACR (index of additive cancer risk, unitless) and B(a)P toxic potency equivalent (in soil concentration units) are calculated as per CCME PAH Soil Quality Guidelines fact sheet (2010) or ABT1.



<i>Analytical Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
Particle Size Analysis (Pipette) - Wentworth Classification	EC184A Saskatoon - Environmental	Soil/Solid	Modified Wentworth	The particle size determination is performed by various methods to generate a Grain Size curve. The data from the curve is then used to produce particle size ranges based on the Modified Wentworth Classification system.
Total Organic Carbon (Calculated) in soil	EC356 Saskatoon - Environmental	Soil/Solid	CSSS (2008) 21.2	Total Organic Carbon (TOC) is calculated by the difference between total carbon (TC) and total inorganic carbon (TIC).
<i>Preparation Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
Leach 1:2 Soil:Water for pH/EC	EP108 Calgary - Environmental	Soil/Solid	BC WLAP METHOD: PH, ELECTROMETRIC, SOIL	The procedure involves mixing the dried (at <60°C) and sieved (No. 10 / 2mm) sample with deionized/distilled water at a 1:2 ratio of sediment to water.
Digestion for Metals and Mercury	EP440 Calgary - Environmental	Soil/Solid	EPA 200.2 (mod)	Samples are dried, then sieved through a 2 mm sieve, and digested with HNO ₃ and HCl. This method is intended to liberate metals that may be environmentally available.
PHCs and PAHs Hexane-Acetone Tumbler Extraction	EP601 Calgary - Environmental	Soil/Solid	CCME PHC in Soil - Tier 1 (mod)	Samples are subsampled and Petroleum Hydrocarbons (PHC) and PAHs are extracted with 1:1 hexane:acetone using a rotary extractor.
Dry and Grind	EPP442 Calgary - Environmental	Soil/Solid	Soil Sampling and Methods of Analysis, Carter 2008	After removal of any coarse fragments and reservation of wet subsamples a portion of homogenized sample is set in a tray and dried at less than 60°C until dry. The sample is then particle size reduced with an automated crusher or mortar and pestle, typically to <2 mm. Further size reduction may be needed for particular tests.



QUALITY CONTROL REPORT

Work Order : **CG2208372**
Client : Teck Coal Limited
Contact : Mike Pope
Address : 421 Pine Avenue
 Sparwood BC Canada V0B2G0
Telephone : ----
Project : REGIONAL EFFECTS PROGRAM
PO : VPO00816101
C-O-C number : MAY EVO LAEMP 2022
Sampler : ----
Site : ----
Quote number : Teck Coal Master Quote
No. of samples received : 9
No. of samples analysed : 9

Page : 1 of 11
Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
 Calgary, Alberta Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 29-Jun-2022 08:50
Date Analysis Commenced : 30-Jun-2022
Issue Date : 10-Jul-2022 10:31

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Reference Material (RM) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Harpreet Chawla	Team Leader - Inorganics	Calgary Inorganics, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Calgary Metals, Calgary, Alberta
Hedy Lai	Team Leader - Inorganics	Saskatoon Inorganics, Saskatoon, Saskatchewan
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Page : 2 of 11
Work Order : CG2208372
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Soil/Solid

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 544389)											
CG2208190-001	Anonymous	moisture	----	E144	0.25	%	3.33	3.35	0.832%	20%	----
Physical Tests (QC Lot: 546598)											
CG2208372-001	RG_BOCKRD_SE-1_LAE MP_EVO_2022-06-28_NP	pH (1:2 soil:water)	----	E108	0.10	pH units	7.92	7.98	0.755%	5%	----
Organic / Inorganic Carbon (QC Lot: 553301)											
CG2208372-001	RG_BOCKRD_SE-1_LAE MP_EVO_2022-06-28_NP	carbon, inorganic [IC]	----	E354	0.050	%	6.26	6.63	5.74%	20%	----
Organic / Inorganic Carbon (QC Lot: 553326)											
CG2208372-004	RG_BOCK_SE-1_LAEMP_ EVO_2022-06-28_NP	carbon, inorganic [IC]	----	E354	0.050	%	6.92	6.97	0.676%	20%	----
Organic / Inorganic Carbon (QC Lot: 554401)											
CG2208372-004	RG_BOCK_SE-1_LAEMP_ EVO_2022-06-28_NP	carbon, total [TC]	----	E351	0.050	%	12.5	12.3	1.57%	20%	----
Metals (QC Lot: 544979)											
CG2208372-001	RG_BOCKRD_SE-1_LAE MP_EVO_2022-06-28_NP	mercury	7439-97-6	E510	0.0050	mg/kg	0.0135	0.0126	0.0009	Diff <2x LOR	----
Metals (QC Lot: 544980)											
CG2208372-001	RG_BOCKRD_SE-1_LAE MP_EVO_2022-06-28_NP	aluminum	7429-90-5	E440	50	mg/kg	1020	1110	8.25%	40%	----
		antimony	7440-36-0	E440	0.10	mg/kg	0.36	0.40	0.04	Diff <2x LOR	----
		arsenic	7440-38-2	E440	0.10	mg/kg	1.96	2.20	11.3%	30%	----
		barium	7440-39-3	E440	0.50	mg/kg	610	583	4.53%	40%	----
		beryllium	7440-41-7	E440	0.10	mg/kg	0.11	0.13	0.02	Diff <2x LOR	----
		bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	0	Diff <2x LOR	----
		boron	7440-42-8	E440	5.0	mg/kg	9.4	7.7	1.7	Diff <2x LOR	----
		cadmium	7440-43-9	E440	0.020	mg/kg	9.21	9.62	4.37%	30%	----
		calcium	7440-70-2	E440	50	mg/kg	277000	291000	4.77%	30%	----
		chromium	7440-47-3	E440	0.50	mg/kg	1.90	1.98	0.08	Diff <2x LOR	----
		cobalt	7440-48-4	E440	0.10	mg/kg	5.49	5.76	4.85%	30%	----
		copper	7440-50-8	E440	0.50	mg/kg	6.77	7.11	4.92%	30%	----
		iron	7439-89-6	E440	50	mg/kg	3490	3720	6.63%	30%	----
		lead	7439-92-1	E440	0.50	mg/kg	2.62	2.40	8.48%	40%	----
		lithium	7439-93-2	E440	2.0	mg/kg	2.6	2.7	0.06	Diff <2x LOR	----
		magnesium	7439-95-4	E440	20	mg/kg	4360	4580	4.90%	30%	----
		manganese	7439-96-5	E440	1.0	mg/kg	175	180	2.68%	30%	----



Sub-Matrix: Soil/Solid

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Metals (QC Lot: 544980) - continued											
CG2208372-001	RG_BOCKRD_SE-1_LAE MP_EVO_2022-06-28_NP	molybdenum	7439-98-7	E440	0.10	mg/kg	0.72	0.78	8.08%	40%	----
		nickel	7440-02-0	E440	0.50	mg/kg	51.7	54.7	5.72%	30%	----
		phosphorus	7723-14-0	E440	50	mg/kg	325	370	12.9%	30%	----
		potassium	7440-09-7	E440	100	mg/kg	490	520	6.34%	40%	----
		selenium	7782-49-2	E440	0.20	mg/kg	3.54	3.93	10.3%	30%	----
		silver	7440-22-4	E440	0.10	mg/kg	<0.10	<0.10	0	Diff <2x LOR	----
		sodium	7440-23-5	E440	50	mg/kg	106	113	7	Diff <2x LOR	----
		strontium	7440-24-6	E440	0.50	mg/kg	485	507	4.43%	40%	----
		sulfur	7704-34-9	E440	1000	mg/kg	7200	7500	3.93%	30%	----
		thallium	7440-28-0	E440	0.050	mg/kg	0.136	0.136	0.0004	Diff <2x LOR	----
		tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	0	Diff <2x LOR	----
		titanium	7440-32-6	E440	1.0	mg/kg	5.7	5.8	1.08%	40%	----
		tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	0	Diff <2x LOR	----
		uranium	7440-61-1	E440	0.050	mg/kg	1.48	1.55	4.50%	30%	----
		vanadium	7440-62-2	E440	0.20	mg/kg	5.90	6.39	8.10%	30%	----
		zinc	7440-66-6	E440	2.0	mg/kg	436	452	3.58%	30%	----
		zirconium	7440-67-7	E440	1.0	mg/kg	<1.0	<1.0	0	Diff <2x LOR	----
Polycyclic Aromatic Hydrocarbons (QC Lot: 544388)											
CG2208190-001	Anonymous	acenaphthene	83-32-9	E641A-L	0.0050	mg/kg	0.0842	0.0813	3.43%	50%	----
		acenaphthylene	208-96-8	E641A-L	0.0050	mg/kg	0.0109	0.0103	0.0006	Diff <2x LOR	----
		anthracene	120-12-7	E641A-L	0.0040	mg/kg	<0.0040	<0.0040	0	Diff <2x LOR	----
		benz(a)anthracene	56-55-3	E641A-L	0.010	mg/kg	0.049	0.046	6.76%	50%	----
		benzo(a)pyrene	50-32-8	E641A-L	0.010	mg/kg	0.028	0.026	0.001	Diff <2x LOR	----
		benzo(b+j)fluoranthene	n/a	E641A-L	0.010	mg/kg	0.087	0.081	7.08%	50%	----
		benzo(g,h,i)perylene	191-24-2	E641A-L	0.010	mg/kg	0.058	0.051	11.8%	50%	----
		benzo(k)fluoranthene	207-08-9	E641A-L	0.010	mg/kg	<0.010	0.010	0.0002	Diff <2x LOR	----
		chrysene	218-01-9	E641A-L	0.010	mg/kg	0.246	0.234	5.14%	50%	----
		dibenz(a,h)anthracene	53-70-3	E641A-L	0.0050	mg/kg	0.0322	0.0257	22.4%	50%	----
		fluoranthene	206-44-0	E641A-L	0.010	mg/kg	0.042	0.037	0.006	Diff <2x LOR	----
		fluorene	86-73-7	E641A-L	0.010	mg/kg	0.257	0.259	0.732%	50%	----
		indeno(1,2,3-c,d)pyrene	193-39-5	E641A-L	0.010	mg/kg	0.022	0.018	0.004	Diff <2x LOR	----
		naphthalene	91-20-3	E641A-L	0.010	mg/kg	0.744	0.726	2.39%	50%	----
		phenanthrene	85-01-8	E641A-L	0.010	mg/kg	0.779	0.782	0.352%	50%	----
		pyrene	129-00-0	E641A-L	0.010	mg/kg	0.076	0.072	5.78%	50%	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 544389)						
moisture	---	E144	0.25	%	<0.25	---
Organic / Inorganic Carbon (QCLot: 553301)						
carbon, inorganic [IC]	---	E354	0.05	%	<0.050	---
Organic / Inorganic Carbon (QCLot: 553326)						
carbon, inorganic [IC]	---	E354	0.05	%	<0.050	---
Organic / Inorganic Carbon (QCLot: 554401)						
carbon, total [TC]	---	E351	0.05	%	<0.050	---
Metals (QCLot: 544979)						
mercury	7439-97-6	E510	0.005	mg/kg	<0.0075	---
Metals (QCLot: 544980)						
aluminum	7429-90-5	E440	50	mg/kg	<50	---
antimony	7440-36-0	E440	0.1	mg/kg	<0.10	---
arsenic	7440-38-2	E440	0.1	mg/kg	<0.10	---
barium	7440-39-3	E440	0.5	mg/kg	<0.50	---
beryllium	7440-41-7	E440	0.1	mg/kg	<0.10	---
bismuth	7440-69-9	E440	0.2	mg/kg	<0.20	---
boron	7440-42-8	E440	5	mg/kg	<5.0	---
cadmium	7440-43-9	E440	0.02	mg/kg	<0.020	---
calcium	7440-70-2	E440	50	mg/kg	<50	---
chromium	7440-47-3	E440	0.5	mg/kg	<0.50	---
cobalt	7440-48-4	E440	0.1	mg/kg	<0.10	---
copper	7440-50-8	E440	0.5	mg/kg	<0.50	---
iron	7439-89-6	E440	50	mg/kg	<50	---
lead	7439-92-1	E440	0.5	mg/kg	<0.50	---
lithium	7439-93-2	E440	2	mg/kg	<2.0	---
magnesium	7439-95-4	E440	20	mg/kg	<20	---
manganese	7439-96-5	E440	1	mg/kg	<1.0	---
molybdenum	7439-98-7	E440	0.1	mg/kg	<0.10	---
nickel	7440-02-0	E440	0.5	mg/kg	<0.50	---
phosphorus	7723-14-0	E440	50	mg/kg	<50	---
potassium	7440-09-7	E440	100	mg/kg	<100	---
selenium	7782-49-2	E440	0.2	mg/kg	<0.20	---
silver	7440-22-4	E440	0.1	mg/kg	<0.10	---



Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Metals (QCLot: 544980) - continued						
sodium	7440-23-5	E440	50	mg/kg	<50	---
strontium	7440-24-6	E440	0.5	mg/kg	<0.50	---
sulfur	7704-34-9	E440	1000	mg/kg	<1000	---
thallium	7440-28-0	E440	0.05	mg/kg	<0.050	---
tin	7440-31-5	E440	2	mg/kg	<2.0	---
titanium	7440-32-6	E440	1	mg/kg	<1.0	---
tungsten	7440-33-7	E440	0.5	mg/kg	<0.50	---
uranium	7440-61-1	E440	0.05	mg/kg	<0.050	---
vanadium	7440-62-2	E440	0.2	mg/kg	<0.20	---
zinc	7440-66-6	E440	2	mg/kg	<2.0	---
zirconium	7440-67-7	E440	1	mg/kg	<1.0	---
Polycyclic Aromatic Hydrocarbons (QCLot: 544388)						
acenaphthene	83-32-9	E641A-L	0.005	mg/kg	<0.0050	---
acenaphthylene	208-96-8	E641A-L	0.005	mg/kg	<0.0050	---
anthracene	120-12-7	E641A-L	0.004	mg/kg	<0.0040	---
benz(a)anthracene	56-55-3	E641A-L	0.01	mg/kg	<0.010	---
benzo(a)pyrene	50-32-8	E641A-L	0.01	mg/kg	<0.010	---
benzo(b+j)fluoranthene	n/a	E641A-L	0.01	mg/kg	<0.010	---
benzo(g,h,i)perylene	191-24-2	E641A-L	0.01	mg/kg	<0.010	---
benzo(k)fluoranthene	207-08-9	E641A-L	0.01	mg/kg	<0.010	---
chrysene	218-01-9	E641A-L	0.01	mg/kg	<0.010	---
dibenz(a,h)anthracene	53-70-3	E641A-L	0.005	mg/kg	<0.0050	---
fluoranthene	206-44-0	E641A-L	0.01	mg/kg	<0.010	---
fluorene	86-73-7	E641A-L	0.01	mg/kg	<0.010	---
indeno(1,2,3-c,d)pyrene	193-39-5	E641A-L	0.01	mg/kg	<0.010	---
naphthalene	91-20-3	E641A-L	0.01	mg/kg	<0.010	---
phenanthrene	85-01-8	E641A-L	0.01	mg/kg	<0.010	---
pyrene	129-00-0	E641A-L	0.01	mg/kg	<0.010	---



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Soil/Solid

					Laboratory Control Sample (LCS) Report				
Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Physical Tests (QCLot: 544389)									
moisture	---	E144	0.25	%	50 %	97.0	90.0	110	---
Physical Tests (QCLot: 546598)									
pH (1:2 soil:water)	---	E108	---	pH units	7 pH units	100	97.0	103	---
Organic / Inorganic Carbon (QCLot: 553301)									
carbon, inorganic [IC]	---	E354	0.05	%	0.5 %	96.8	90.0	110	---
Organic / Inorganic Carbon (QCLot: 553326)									
carbon, inorganic [IC]	---	E354	0.05	%	0.5 %	96.5	90.0	110	---
Organic / Inorganic Carbon (QCLot: 554401)									
carbon, total [TC]	---	E351	0.05	%	48 %	101	90.0	110	---
Metals (QCLot: 544979)									
mercury	7439-97-6	E510	0.005	mg/kg	0.1 mg/kg	104	80.0	120	---
Metals (QCLot: 544980)									
aluminum	7429-90-5	E440	50	mg/kg	200 mg/kg	114	80.0	120	---
antimony	7440-36-0	E440	0.1	mg/kg	100 mg/kg	116	80.0	120	---
arsenic	7440-38-2	E440	0.1	mg/kg	100 mg/kg	112	80.0	120	---
barium	7440-39-3	E440	0.5	mg/kg	25 mg/kg	106	80.0	120	---
beryllium	7440-41-7	E440	0.1	mg/kg	10 mg/kg	108	80.0	120	---
bismuth	7440-69-9	E440	0.2	mg/kg	100 mg/kg	109	80.0	120	---
boron	7440-42-8	E440	5	mg/kg	100 mg/kg	116	80.0	120	---
cadmium	7440-43-9	E440	0.02	mg/kg	10 mg/kg	110	80.0	120	---
calcium	7440-70-2	E440	50	mg/kg	5000 mg/kg	111	80.0	120	---
chromium	7440-47-3	E440	0.5	mg/kg	25 mg/kg	112	80.0	120	---
cobalt	7440-48-4	E440	0.1	mg/kg	25 mg/kg	108	80.0	120	---
copper	7440-50-8	E440	0.5	mg/kg	25 mg/kg	109	80.0	120	---
iron	7439-89-6	E440	50	mg/kg	100 mg/kg	110	80.0	120	---
lead	7439-92-1	E440	0.5	mg/kg	50 mg/kg	111	80.0	120	---
lithium	7439-93-2	E440	2	mg/kg	25 mg/kg	113	80.0	120	---
magnesium	7439-95-4	E440	20	mg/kg	5000 mg/kg	113	80.0	120	---
manganese	7439-96-5	E440	1	mg/kg	25 mg/kg	112	80.0	120	---
molybdenum	7439-98-7	E440	0.1	mg/kg	25 mg/kg	116	80.0	120	---
nickel	7440-02-0	E440	0.5	mg/kg	50 mg/kg	110	80.0	120	---
phosphorus	7723-14-0	E440	50	mg/kg	1000 mg/kg	117	80.0	120	---



Sub-Matrix: Soil/Solid

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Metals (QCLot: 544980) - continued									
potassium	7440-09-7	E440	100	mg/kg	5000 mg/kg	111	80.0	120	----
selenium	7782-49-2	E440	0.2	mg/kg	100 mg/kg	112	80.0	120	----
silver	7440-22-4	E440	0.1	mg/kg	10 mg/kg	106	80.0	120	----
sodium	7440-23-5	E440	50	mg/kg	5000 mg/kg	113	80.0	120	----
strontium	7440-24-6	E440	0.5	mg/kg	25 mg/kg	111	80.0	120	----
sulfur	7704-34-9	E440	1000	mg/kg	5000 mg/kg	120	80.0	120	----
thallium	7440-28-0	E440	0.05	mg/kg	100 mg/kg	110	80.0	120	----
tin	7440-31-5	E440	2	mg/kg	50 mg/kg	113	80.0	120	----
titanium	7440-32-6	E440	1	mg/kg	25 mg/kg	109	80.0	120	----
tungsten	7440-33-7	E440	0.5	mg/kg	10 mg/kg	115	80.0	120	----
uranium	7440-61-1	E440	0.05	mg/kg	0.5 mg/kg	111	80.0	120	----
vanadium	7440-62-2	E440	0.2	mg/kg	50 mg/kg	113	80.0	120	----
zinc	7440-66-6	E440	2	mg/kg	50 mg/kg	106	80.0	120	----
zirconium	7440-67-7	E440	1	mg/kg	10 mg/kg	114	80.0	120	----
Polycyclic Aromatic Hydrocarbons (QCLot: 544388)									
acenaphthene	83-32-9	E641A-L	0.005	mg/kg	0.5 mg/kg	115	60.0	130	----
acenaphthylene	208-96-8	E641A-L	0.005	mg/kg	0.5 mg/kg	108	60.0	130	----
anthracene	120-12-7	E641A-L	0.004	mg/kg	0.5 mg/kg	108	60.0	130	----
benz(a)anthracene	56-55-3	E641A-L	0.01	mg/kg	0.5 mg/kg	94.2	60.0	130	----
benzo(a)pyrene	50-32-8	E641A-L	0.01	mg/kg	0.5 mg/kg	83.7	60.0	130	----
benzo(b+j)fluoranthene	n/a	E641A-L	0.01	mg/kg	0.5 mg/kg	88.4	60.0	130	----
benzo(g,h,i)perylene	191-24-2	E641A-L	0.01	mg/kg	0.5 mg/kg	116	60.0	130	----
benzo(k)fluoranthene	207-08-9	E641A-L	0.01	mg/kg	0.5 mg/kg	85.1	60.0	130	----
chrysene	218-01-9	E641A-L	0.01	mg/kg	0.5 mg/kg	99.9	60.0	130	----
dibenz(a,h)anthracene	53-70-3	E641A-L	0.005	mg/kg	0.5 mg/kg	93.2	60.0	130	----
fluoranthene	206-44-0	E641A-L	0.01	mg/kg	0.5 mg/kg	112	60.0	130	----
fluorene	86-73-7	E641A-L	0.01	mg/kg	0.5 mg/kg	109	60.0	130	----
indeno(1,2,3-c,d)pyrene	193-39-5	E641A-L	0.01	mg/kg	0.5 mg/kg	78.6	60.0	130	----
naphthalene	91-20-3	E641A-L	0.01	mg/kg	0.5 mg/kg	121	50.0	130	----
phenanthrene	85-01-8	E641A-L	0.01	mg/kg	0.5 mg/kg	115	60.0	130	----
pyrene	129-00-0	E641A-L	0.01	mg/kg	0.5 mg/kg	114	60.0	130	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level \geq 1x spike level.

Sub-Matrix: **Soil/Solid**

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	Target	MS	Low	High	
Polycyclic Aromatic Hydrocarbons (QCLot: 544388)										
CG2208190-001	Anonymous	acenaphthene	83-32-9	E641A-L	0.432 mg/kg	0.5 mg/kg	112	50.0	140	----
		acenaphthylene	208-96-8	E641A-L	0.414 mg/kg	0.5 mg/kg	107	50.0	140	----
		anthracene	120-12-7	E641A-L	0.429 mg/kg	0.5 mg/kg	112	50.0	140	----
		benz(a)anthracene	56-55-3	E641A-L	0.384 mg/kg	0.5 mg/kg	99.9	50.0	140	----
		benzo(a)pyrene	50-32-8	E641A-L	0.325 mg/kg	0.5 mg/kg	84.4	50.0	140	----
		benzo(b+j)fluoranthene	n/a	E641A-L	0.358 mg/kg	0.5 mg/kg	93.0	50.0	140	----
		benzo(g,h,i)perylene	191-24-2	E641A-L	0.378 mg/kg	0.5 mg/kg	98.2	50.0	140	----
		benzo(k)fluoranthene	207-08-9	E641A-L	0.364 mg/kg	0.5 mg/kg	94.6	50.0	140	----
		chrysene	218-01-9	E641A-L	0.373 mg/kg	0.5 mg/kg	96.9	50.0	140	----
		dibenz(a,h)anthracene	53-70-3	E641A-L	0.348 mg/kg	0.5 mg/kg	90.4	50.0	140	----
		fluoranthene	206-44-0	E641A-L	0.422 mg/kg	0.5 mg/kg	110	50.0	140	----
		fluorene	86-73-7	E641A-L	0.402 mg/kg	0.5 mg/kg	104	50.0	140	----
		indeno(1,2,3-c,d)pyrene	193-39-5	E641A-L	0.297 mg/kg	0.5 mg/kg	77.2	50.0	140	----
		naphthalene	91-20-3	E641A-L	ND mg/kg	0.5 mg/kg	ND	50.0	140	----
		phenanthrene	85-01-8	E641A-L	ND mg/kg	0.5 mg/kg	ND	50.0	140	----
		pyrene	129-00-0	E641A-L	0.436 mg/kg	0.5 mg/kg	113	50.0	140	----



Reference Material (RM) Report

A Reference Material (RM) is a homogenous material with known and well-established analyte concentrations. RMs are processed in an identical manner to test samples, and are used to monitor and control the accuracy and precision of a test method for a typical sample matrix. RM results are expressed as percent recovery of the target analyte concentration. RM targets may be certified target concentrations provided by the RM supplier, or may be ALS long-term mean values (for empirical test methods).

Sub-Matrix:

Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Reference Material (RM) Report				
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%)		Qualifier
							Low	High	
Physical Tests (QCLot: 546598)									
	RM	pH (1:2 soil:water)	----	E108	8.06 pH units	97.5	96.0	104	----
Organic / Inorganic Carbon (QCLot: 553301)									
	RM	carbon, inorganic [IC]	----	E354	0.383 %	101	80.0	120	----
Organic / Inorganic Carbon (QCLot: 553326)									
	RM	carbon, inorganic [IC]	----	E354	0.383 %	98.3	80.0	120	----
Organic / Inorganic Carbon (QCLot: 554401)									
	RM	carbon, total [TC]	----	E351	1.4 %	99.3	80.0	120	----
Metals (QCLot: 544979)									
	RM	mercury	7439-97-6	E510	0.062 mg/kg	104	70.0	130	----
Metals (QCLot: 544980)									
	RM	aluminum	7429-90-5	E440	9817 mg/kg	125	70.0	130	----
	RM	antimony	7440-36-0	E440	3.99 mg/kg	129	70.0	130	----
	RM	arsenic	7440-38-2	E440	3.73 mg/kg	84.8	70.0	130	----
	RM	barium	7440-39-3	E440	105 mg/kg	115	70.0	130	----
	RM	beryllium	7440-41-7	E440	0.349 mg/kg	120	70.0	130	----
	RM	boron	7440-42-8	E440	8.5 mg/kg	140	40.0	160	----
	RM	cadmium	7440-43-9	E440	0.91 mg/kg	115	70.0	130	----
	RM	calcium	7440-70-2	E440	31082 mg/kg	122	70.0	130	----
	RM	chromium	7440-47-3	E440	101 mg/kg	121	70.0	130	----
	RM	cobalt	7440-48-4	E440	6.9 mg/kg	118	70.0	130	----
	RM	copper	7440-50-8	E440	123 mg/kg	120	70.0	130	----
	RM	iron	7439-89-6	E440	23558 mg/kg	121	70.0	130	----
	RM	lead	7439-92-1	E440	267 mg/kg	121	70.0	130	----
	RM	lithium	7439-93-2	E440	9.5 mg/kg	124	70.0	130	----
	RM	magnesium	7439-95-4	E440	5509 mg/kg	121	70.0	130	----
	RM	manganese	7439-96-5	E440	269 mg/kg	123	70.0	130	----
	RM	molybdenum	7439-98-7	E440	1.03 mg/kg	94.6	70.0	130	----
	RM	nickel	7440-02-0	E440	26.7 mg/kg	124	70.0	130	----
	RM	phosphorus	7723-14-0	E440	752 mg/kg	118	70.0	130	----

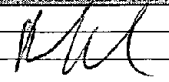


Sub-Matrix:

Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Reference Material (RM) Report				
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%)		Qualifier
							Low	High	
Metals (QCLot: 544980) - continued									
	RM	potassium	7440-09-7	E440	1587 mg/kg	124	70.0	130	----
	RM	silver	7440-22-4	E440	4.06 mg/kg	94.0	70.0	130	----
	RM	sodium	7440-23-5	E440	797 mg/kg	119	70.0	130	----
	RM	strontium	7440-24-6	E440	86.1 mg/kg	121	70.0	130	----
	RM	thallium	7440-28-0	E440	0.0786 mg/kg	146	40.0	160	----
	RM	tin	7440-31-5	E440	10.6 mg/kg	123	70.0	130	----
	RM	titanium	7440-32-6	E440	839 mg/kg	128	70.0	130	----
	RM	uranium	7440-61-1	E440	0.52 mg/kg	129	70.0	130	----
	RM	vanadium	7440-62-2	E440	32.7 mg/kg	121	70.0	130	----
	RM	zinc	7440-66-6	E440	297 mg/kg	113	70.0	130	----
	RM	zirconium	7440-67-7	E440	5.73 mg/kg	124	70.0	130	----

COC ID:		MAY EVO LAEMP 2022				TURNAROUND TIME:		RUSH		
PROJECT/CLIENT INFO						LABORATORY				
Facility Name / Job#		REP				Lab Name		ALS Calgary		
Project Manager		Mike Pope				Lab Contact		Iyudmyla Shvets		
Email		mike.pope@teck.com				Email		lyudmyla.shvets@alsglobal.com		
Address		421 Pine Avenue				Address		2559 29 Street NE		
City		Sparwood		Province	BC	City		Calgary	Province	AB
Postal Code		V0B 2G0		Country	Canada	Postal Code		T1Y 7B5	Country	Canada
Phone Number		250-425-8202				Phone Number		1 403 407 1794		

SAMPLE DETAILS								ANALYSIS REQUESTED				
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	None	None	None	None	None
								C-TOC-SK	MEP-COMF-FULL-CL	MOISTURE-CL - % Moisture	PSA-PIPET-DETAIL-SK Particle Size	PAH-TMB-D/A-MS-CL PAHs
RG_BOCKRD_SE-1_LAEMP_EVO_2022-06-28_NP	RG_BOCKRD	SE	No	6/28/2022	11:00	G	1	X	X	X	X	X
RG_BOCKRD_SE-2_LAEMP_EVO_2022-06-28_NP	RG_BOCKRD	SE	No	6/28/2022	11:05	G	1	X	X	X	X	X
RG_BOCKRD_SE-3_LAEMP_EVO_2022-06-28_NP	RG_BOCKRD	SE	No	6/28/2022	11:10	G	1	X	X	X	X	X
RG_BOCK_SE-1_LAEMP_EVO_2022-06-28_NP	RG_BOCK	SE	No	6/28/2022	9:30	G	1	X	X	X	X	X
RG_BOCK_SE-2_LAEMP_EVO_2022-06-28_NP	RG_BOCK	SE	No	6/28/2022	9:35	G	1	X	X	X	X	X
RG_BOCK_SE-3_LAEMP_EVO_2022-06-28_NP	RG_BOCK	SE	No	6/28/2022	9:40	G	1	X	X	X	X	X
RG_GATE_SE-1_LAEMP_EVO_2022-6-28_NP	RG_GATE	SE	No	6/28/2022	8:30	G	1	X	X	X	X	X
RG_GATE_SE-2_LAEMP_EVO_2022-6-28_NP	RG_GATE	SE	No	6/28/2022	8:35	G	1	X	X	X	X	X
RG_GATE_SE-3LAEMP_EVO_2022-6-28_NP	RG_GATE	SE	No	6/28/2022	8:40	G	1	X	X	X	X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS		RELINQUISHED BY/AFFILIATION		DATE/TIME		ACCEPTED BY/AFFILIATION	
VPO00816101		Robin Valteau/Minnow				 6/28 8:50	

NO OF BOTTLES RETURNED/DESCRIPTION	Regular (default)	Priority (2-3 business days) - 50% surcharge	Emergency (1 Business Day) - 100% surcharge	For Emergency <1 Day, ASAP or Weekend - Contact ALS	Sampler's Name	Sampler's Signature	Mobile #	Date/Time
		X			Robin Valteau		416-970-7535	June 28th 2022

Environmental Division
 Calgary
 Work Order Reference
CG2208372



13C



CERTIFICATE OF ANALYSIS

Work Order : **CG2208561**
Amendment : **2**
Client : **Teck Coal Limited**
Contact : Mike Pope
Address : RR#1 HWY#3
Sparwood BC Canada V0B 2G1
Telephone : ----
Project : REGIONAL EFFECTS PROGRAM
PO : VPO00816101
C-O-C number : JUNE EVO LAEMP 2022
Sampler : Robin Valleau
Site : ----
Quote number : Teck Coal Master Quote
No. of samples received : 3
No. of samples analysed : 3

Page : 1 of 6
Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
Calgary AB Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 02-Jul-2022 10:30
Date Analysis Commenced : 06-Jul-2022
Issue Date : 11-Jul-2022 12:44

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Dwayne Bennett	Supervisor - Inorganic	Metals, Calgary, Alberta
Hedy Lai	Team Leader - Inorganics	Inorganics, Saskatoon, Saskatchewan
Rosalie Van Deelen	Laboratory Assistant	Organics, Calgary, Alberta
Victoria Piguing	Laboratory Analyst	Organics, Calgary, Alberta
Vishnu Patel		Inorganics, Calgary, Alberta



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

<i>Unit</i>	<i>Description</i>
-	No Unit
%	percent
mg/kg	milligrams per kilogram
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Sample Comments

<i>Sample</i>	<i>Client Id</i>	<i>Comment</i>
CG2208561-002	RG_MI25_SE-2_LAEMP_EVO _2022-06_NP	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.



Analytical Results

Sub-Matrix: Sediment
 (Matrix: Soil/Solid)

Client sample ID

					RG_MI25_SE-1_ LAEMP_EVO_2 022-06_NP	RG_MI25_SE-2_ LAEMP_EVO_2 022-06_NP	RG_MI25_SE-3_ LAEMP_EVO_2 022-06_NP	----	----
Client sampling date / time					30-Jun-2022 09:25	30-Jun-2022 09:45	30-Jun-2022 09:55	----	----
Analyte	CAS Number	Method	LOR	Unit	CG2208561-001	CG2208561-002	CG2208561-003	-----	-----
					Result	Result	Result	---	---
Physical Tests									
moisture	----	E144	0.25	%	44.1	36.4	36.5	----	----
pH (1:2 soil:water)	----	E108	0.10	pH units	7.90	8.05	8.20	----	----
Particle Size									
grain size curve	----	E185A	-	-	See Attached	See Attached	See Attached	----	----
clay (<0.004mm)	----	EC184A	1.0	%	10.0	10.7	4.5	----	----
silt (0.063mm - 0.0312mm)	----	EC184A	1.0	%	13.8	13.8	13.6	----	----
silt (0.0312mm - 0.004mm)	----	EC184A	1.0	%	20.4	19.9	14.4	----	----
sand (0.125mm - 0.063mm)	----	EC184A	1.0	%	12.2	12.9	18.4	----	----
sand (0.25mm - 0.125mm)	----	EC184A	1.0	%	12.4	12.9	24.4	----	----
sand (0.5mm - 0.25mm)	----	EC184A	1.0	%	9.9	8.2	15.1	----	----
sand (1.0mm - 0.50mm)	----	EC184A	1.0	%	9.2	7.2	7.1	----	----
sand (2.0mm - 1.0mm)	----	EC184A	1.0	%	6.2	8.2	1.9	----	----
gravel (>2mm)	----	EC184A	1.0	%	5.9	6.2	<1.0	----	----
Organic / Inorganic Carbon									
carbon, total [TC]	----	E351	0.050	%	2.95	2.64	2.68	----	----
carbon, inorganic [IC]	----	E354	0.050	%	0.322	0.302	0.341	----	----
carbon, inorganic [IC], (as CaCO3 equivalent)	----	E354	0.40	%	2.69	2.52	2.84	----	----
carbon, total organic [TOC]	----	EC356	0.050	%	2.63	2.34	2.34	----	----
Metals									
aluminum	7429-90-5	E440	50	mg/kg	14000	14800	13300	----	----
antimony	7440-36-0	E440	0.10	mg/kg	0.68	0.58	0.58	----	----
arsenic	7440-38-2	E440	0.10	mg/kg	11.8	10.9	11.0	----	----
barium	7440-39-3	E440	0.50	mg/kg	162	165	168	----	----
beryllium	7440-41-7	E440	0.10	mg/kg	1.00	0.98	0.92	----	----
bismuth	7440-69-9	E440	0.20	mg/kg	0.25	0.24	0.24	----	----
boron	7440-42-8	E440	5.0	mg/kg	11.8	13.1	10.8	----	----
cadmium	7440-43-9	E440	0.020	mg/kg	1.43	1.37	1.14	----	----
calcium	7440-70-2	E440	50	mg/kg	17300	12800	12700	----	----
chromium	7440-47-3	E440	0.50	mg/kg	18.4	19.4	18.0	----	----



Analytical Results

Sub-Matrix: Sediment

(Matrix: Soil/Solid)

Client sample ID

					RG_MI25_SE-1_ LAEMP_EVO_2 022-06_NP	RG_MI25_SE-2_ LAEMP_EVO_2 022-06_NP	RG_MI25_SE-3_ LAEMP_EVO_2 022-06_NP	----	----
Client sampling date / time					30-Jun-2022 09:25	30-Jun-2022 09:45	30-Jun-2022 09:55	----	----
Analyte	CAS Number	Method	LOR	Unit	CG2208561-001	CG2208561-002	CG2208561-003	-----	-----
					Result	Result	Result	----	----
Metals									
cobalt	7440-48-4	E440	0.10	mg/kg	9.29	9.13	8.81	----	----
copper	7440-50-8	E440	0.50	mg/kg	28.2	27.0	26.0	----	----
iron	7439-89-6	E440	50	mg/kg	25200	25200	23600	----	----
lead	7439-92-1	E440	0.50	mg/kg	19.1	15.6	14.9	----	----
lithium	7439-93-2	E440	2.0	mg/kg	24.5	24.6	23.0	----	----
magnesium	7439-95-4	E440	20	mg/kg	6470	6660	6350	----	----
manganese	7439-96-5	E440	1.0	mg/kg	492	595	613	----	----
mercury	7439-97-6	E510	0.0050	mg/kg	0.0274	0.0262	0.0235	----	----
molybdenum	7439-98-7	E440	0.10	mg/kg	5.78	5.26	5.24	----	----
nickel	7440-02-0	E440	0.50	mg/kg	34.1	34.2	33.6	----	----
phosphorus	7723-14-0	E440	50	mg/kg	1280	1330	1180	----	----
potassium	7440-09-7	E440	100	mg/kg	2610	2890	2420	----	----
selenium	7782-49-2	E440	0.20	mg/kg	0.89	1.27	0.86	----	----
silver	7440-22-4	E440	0.10	mg/kg	0.15	0.15	0.14	----	----
sodium	7440-23-5	E440	50	mg/kg	79	92	79	----	----
strontium	7440-24-6	E440	0.50	mg/kg	43.6	38.0	37.3	----	----
sulfur	7704-34-9	E440	1000	mg/kg	<1000	<1000	<1000	----	----
thallium	7440-28-0	E440	0.050	mg/kg	0.739	0.679	0.659	----	----
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	<2.0	----	----
titanium	7440-32-6	E440	1.0	mg/kg	21.5	39.3	29.3	----	----
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	<0.50	----	----
uranium	7440-61-1	E440	0.050	mg/kg	0.914	0.973	0.866	----	----
vanadium	7440-62-2	E440	0.20	mg/kg	34.3	35.0	32.2	----	----
zinc	7440-66-6	E440	2.0	mg/kg	150	133	125	----	----
zirconium	7440-67-7	E440	1.0	mg/kg	1.6	1.5	1.6	----	----
Polycyclic Aromatic Hydrocarbons									
acenaphthene	83-32-9	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	----	----
acenaphthylene	208-96-8	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	----	----
acridine	260-94-6	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	----	----
anthracene	120-12-7	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	----	----



Analytical Results

Sub-Matrix: Sediment

(Matrix: Soil/Solid)

Client sample ID

					RG_MI25_SE-1_ LAEMP_EVO_2 022-06_NP	RG_MI25_SE-2_ LAEMP_EVO_2 022-06_NP	RG_MI25_SE-3_ LAEMP_EVO_2 022-06_NP	----	----
Client sampling date / time					30-Jun-2022 09:25	30-Jun-2022 09:45	30-Jun-2022 09:55	----	----
Analyte	CAS Number	Method	LOR	Unit	CG2208561-001	CG2208561-002	CG2208561-003	-----	-----
					Result	Result	Result	----	----
Polycyclic Aromatic Hydrocarbons									
benzo(a)anthracene	56-55-3	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	----	----
benzo(a)pyrene	50-32-8	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	----	----
benzo(b+j)fluoranthene	n/a	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	----	----
benzo(b+j+k)fluoranthene	n/a	E641A	0.075	mg/kg	<0.075	<0.075	<0.075	----	----
benzo(g,h,i)perylene	191-24-2	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	----	----
benzo(k)fluoranthene	207-08-9	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	----	----
chrysene	218-01-9	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	----	----
dibenz(a,h)anthracene	53-70-3	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	----	----
fluoranthene	206-44-0	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	----	----
fluorene	86-73-7	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	----	----
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	----	----
methylnaphthalene, 1-	90-12-0	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	----	----
methylnaphthalene, 1+2-	----	E641A	0.075	mg/kg	<0.075	<0.075	<0.075	----	----
methylnaphthalene, 2-	91-57-6	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	----	----
naphthalene	91-20-3	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	----	----
phenanthrene	85-01-8	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	----	----
pyrene	129-00-0	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	----	----
quinoline	91-22-5	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	----	----
B(a)P total potency equivalents [B(a)P TPE]	----	E641A	0.065	mg/kg	<0.065	<0.065	<0.065	----	----
IACR (CCME)	----	E641A	0.60	-	<0.60	<0.60	<0.60	----	----
IACR AB (coarse)	----	E641A	0.10	-	<0.10	<0.10	<0.10	----	----
IACR AB (fine)	----	E641A	0.10	-	<0.10	<0.10	<0.10	----	----
PAHs, total (BC Sched 3.4)	n/a	E641A	0.20	mg/kg	<0.20	<0.20	<0.20	----	----
PAHs, total (EPA 16)	n/a	E641A	0.20	mg/kg	<0.20	<0.20	<0.20	----	----
Polycyclic Aromatic Hydrocarbons Surrogates									
acridine-d9	34749-75-2	E641A	0.1	%	89.6	99.2	94.3	----	----
chrysene-d12	1719-03-5	E641A	0.1	%	106	115	112	----	----
naphthalene-d8	1146-65-2	E641A	0.1	%	112	111	111	----	----
phenanthrene-d10	1517-22-2	E641A	0.1	%	101	108	106	----	----



Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: CG2208561	Page	: 1 of 8
Amendment	: 2		
Client	: Teck Coal Limited	Laboratory	: Calgary - Environmental
Contact	: Mike Pope	Account Manager	: Lyudmyla Shvets
Address	: RR#1 HWY#3 Spanwood BC Canada V0B 2G1	Address	: 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5
Telephone	: ----	Telephone	: +1 403 407 1800
Project	: REGIONAL EFFECTS PROGRAM	Date Samples Received	: 02-Jul-2022 10:30
PO	: VPO00816101	Issue Date	: 11-Jul-2022 12:45
C-O-C number	: JUNE EVO LAEMP 2022		
Sampler	: Robin Valleau		
Site	: ----		
Quote number	: Teck Coal Master Quote		
No. of samples received	: 3		
No. of samples analysed	: 3		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Soil/Solid**

Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Metals : Mercury in Soil/Solid by CVAAS										
Glass soil jar/Teflon lined cap RG_MI25_SE-1_LAEMP_EVO_2022-06_NP	E510	30-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	28 days	7 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
Glass soil jar/Teflon lined cap RG_MI25_SE-2_LAEMP_EVO_2022-06_NP	E510	30-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	28 days	7 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
Glass soil jar/Teflon lined cap RG_MI25_SE-3_LAEMP_EVO_2022-06_NP	E510	30-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	28 days	7 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
Glass soil jar/Teflon lined cap RG_MI25_SE-1_LAEMP_EVO_2022-06_NP	E440	30-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	180 days	7 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
Glass soil jar/Teflon lined cap RG_MI25_SE-2_LAEMP_EVO_2022-06_NP	E440	30-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	180 days	7 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
Glass soil jar/Teflon lined cap RG_MI25_SE-3_LAEMP_EVO_2022-06_NP	E440	30-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	180 days	7 days	✓
Organic / Inorganic Carbon : Total Carbon by Combustion										
Glass soil jar/Teflon lined cap RG_MI25_SE-1_LAEMP_EVO_2022-06_NP	E351	30-Jun-2022	----	----	----		09-Jul-2022	180 days	0 days	✓



Matrix: **Soil/Solid**

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Total Carbon by Combustion										
Glass soil jar/Teflon lined cap RG_MI25_SE-2_LAEMP_EVO_2022-06_NP	E351	30-Jun-2022	----	----	----		09-Jul-2022	180 days	0 days	✔
Organic / Inorganic Carbon : Total Carbon by Combustion										
Glass soil jar/Teflon lined cap RG_MI25_SE-3_LAEMP_EVO_2022-06_NP	E351	30-Jun-2022	----	----	----		09-Jul-2022	180 days	0 days	✔
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
Glass soil jar/Teflon lined cap RG_MI25_SE-1_LAEMP_EVO_2022-06_NP	E354	30-Jun-2022	----	----	----		09-Jul-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
Glass soil jar/Teflon lined cap RG_MI25_SE-2_LAEMP_EVO_2022-06_NP	E354	30-Jun-2022	----	----	----		09-Jul-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
Glass soil jar/Teflon lined cap RG_MI25_SE-3_LAEMP_EVO_2022-06_NP	E354	30-Jun-2022	----	----	----		09-Jul-2022	----	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
Glass soil jar/Teflon lined cap RG_MI25_SE-1_LAEMP_EVO_2022-06_NP	E185A	30-Jun-2022	----	----	----		07-Jul-2022	----	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
Glass soil jar/Teflon lined cap RG_MI25_SE-2_LAEMP_EVO_2022-06_NP	E185A	30-Jun-2022	----	----	----		07-Jul-2022	----	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
Glass soil jar/Teflon lined cap RG_MI25_SE-3_LAEMP_EVO_2022-06_NP	E185A	30-Jun-2022	----	----	----		07-Jul-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap RG_MI25_SE-1_LAEMP_EVO_2022-06_NP	E144	30-Jun-2022	----	----	----		06-Jul-2022	----	----	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap RG_MI25_SE-2_LAEMP_EVO_2022-06_NP	E144	30-Jun-2022	----	----	----		06-Jul-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap RG_MI25_SE-3_LAEMP_EVO_2022-06_NP	E144	30-Jun-2022	----	----	----		06-Jul-2022	----	----	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
Glass soil jar/Teflon lined cap RG_MI25_SE-1_LAEMP_EVO_2022-06_NP	E108	30-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	30 days	7 days	✔
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
Glass soil jar/Teflon lined cap RG_MI25_SE-2_LAEMP_EVO_2022-06_NP	E108	30-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	30 days	7 days	✔
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
Glass soil jar/Teflon lined cap RG_MI25_SE-3_LAEMP_EVO_2022-06_NP	E108	30-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	30 days	7 days	✔
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS										
Glass soil jar/Teflon lined cap RG_MI25_SE-1_LAEMP_EVO_2022-06_NP	E641A	30-Jun-2022	06-Jul-2022	14 days	6 days	✔	06-Jul-2022	40 days	0 days	✔
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS										
Glass soil jar/Teflon lined cap RG_MI25_SE-2_LAEMP_EVO_2022-06_NP	E641A	30-Jun-2022	06-Jul-2022	14 days	6 days	✔	06-Jul-2022	40 days	0 days	✔
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS										
Glass soil jar/Teflon lined cap RG_MI25_SE-3_LAEMP_EVO_2022-06_NP	E641A	30-Jun-2022	06-Jul-2022	14 days	6 days	✔	06-Jul-2022	40 days	0 days	✔

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Soil/Solid**

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
Analytical Methods							
Laboratory Duplicates (DUP)							
Mercury in Soil/Solid by CVAAS	E510	552465	1	9	11.1	5.0	✔
Metals in Soil/Solid by CRC ICPMS	E440	552466	1	9	11.1	5.0	✔
Moisture Content by Gravimetry	E144	550788	1	14	7.1	5.0	✔
PAHs by Hex:Ace GC-MS	E641A	550787	1	7	14.2	5.0	✔
pH by Meter (1:2 Soil:Water Extraction)	E108	552971	1	18	5.5	5.0	✔
Total Carbon by Combustion	E351	556093	1	8	12.5	5.0	✔
Total Inorganic Carbon by Acetic Acid pH Standard Curve	E354	556240	1	19	5.2	5.0	✔
Laboratory Control Samples (LCS)							
Mercury in Soil/Solid by CVAAS	E510	552465	2	9	22.2	10.0	✔
Metals in Soil/Solid by CRC ICPMS	E440	552466	2	9	22.2	10.0	✔
Moisture Content by Gravimetry	E144	550788	1	14	7.1	5.0	✔
PAHs by Hex:Ace GC-MS	E641A	550787	1	7	14.2	5.0	✔
pH by Meter (1:2 Soil:Water Extraction)	E108	552971	2	18	11.1	10.0	✔
Total Carbon by Combustion	E351	556093	2	8	25.0	10.0	✔
Total Inorganic Carbon by Acetic Acid pH Standard Curve	E354	556240	2	19	10.5	10.0	✔
Method Blanks (MB)							
Mercury in Soil/Solid by CVAAS	E510	552465	1	9	11.1	5.0	✔
Metals in Soil/Solid by CRC ICPMS	E440	552466	1	9	11.1	5.0	✔
Moisture Content by Gravimetry	E144	550788	1	14	7.1	5.0	✔
PAHs by Hex:Ace GC-MS	E641A	550787	1	7	14.2	5.0	✔
Total Carbon by Combustion	E351	556093	1	8	12.5	5.0	✔
Total Inorganic Carbon by Acetic Acid pH Standard Curve	E354	556240	1	19	5.2	5.0	✔
Matrix Spikes (MS)							
PAHs by Hex:Ace GC-MS	E641A	550787	1	7	14.2	5.0	✔



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
pH by Meter (1:2 Soil:Water Extraction)	E108 Calgary - Environmental	Soil/Solid	BC Lab Manual	pH is determined by potentiometric measurement with a pH electrode at ambient laboratory temperature (normally $20 \pm 5^\circ\text{C}$), and is carried out in accordance with procedures described in the BC Lab Manual (prescriptive method). The procedure involves mixing the dried (at $<60^\circ\text{C}$) and sieved (10mesh/2mm) sample with ultra pure water at a 1:2 ratio of sediment to water. The pH is then measured by a standard pH probe.
Moisture Content by Gravimetry	E144 Calgary - Environmental	Soil/Solid	CCME PHC in Soil - Tier 1	Moisture is measured gravimetrically by drying the sample at 105°C . Moisture content is calculated as the weight loss (due to water) divided by the wet weight of the sample, expressed as a percentage.
Grain Size Report (Attachment) Pipet/Sieve Method	E185A Saskatoon - Environmental	Soil/Solid	SSIR-51 Method 3.2.1	A grain size curve is a graphical representation of the particle sizing of a sample representing the percent passing against the effective particle size.
Total Carbon by Combustion	E351 Saskatoon - Environmental	Soil/Solid	CSSS (2008) 21.2 (mod)	Total Carbon is determined by the high temperature combustion method with measurement by an infrared detector.
Total Inorganic Carbon by Acetic Acid pH Standard Curve	E354 Saskatoon - Environmental	Soil/Solid	CSSS (2008) 20.2	Total Inorganic Carbon is determined by acetic acid pH standard curve, where a known quantity of acetic acid is consumed by reaction with carbonates in the soil. The pH of the resulting solution is measured and compared against a standard curve relating pH to weight of carbonate.
Metals in Soil/Solid by CRC ICPMS	E440 Calgary - Environmental	Soil/Solid	EPA 6020B (mod)	This method is intended to liberate metals that may be environmentally available. Samples are dried, then sieved through a 2 mm sieve, and digested with HNO_3 and HCl . Dependent on sample matrix, some metals may be only partially recovered, including Al, Ba, Be, Cr, Sr, Ti, Tl, V, W, and Zr. Silicate minerals are not solubilized. Volatile forms of sulfur (including sulfide) may not be captured, as they may be lost during sampling, storage, or digestion. This method does not adequately recover elemental sulfur, and is unsuitable for assessment of elemental sulfur standards or guidelines. Analysis is by Collision/Reaction Cell ICPMS.
Mercury in Soil/Solid by CVAAS	E510 Calgary - Environmental	Soil/Solid	EPA 200.2/1631 Appendix (mod)	Samples are dried, then sieved through a 2 mm sieve, and digested with HNO_3 and HCl , followed by CVAAS analysis.
PAHs by Hex:Ace GC-MS	E641A Calgary - Environmental	Soil/Solid	EPA 8270E (mod)	Polycyclic Aromatic Hydrocarbons (PAHs) are extracted with hexane/acetone and analyzed by GC-MS. If reported, IACR (index of additive cancer risk, unitless) and B(a)P toxic potency equivalent (in soil concentration units) are calculated as per CCME PAH Soil Quality Guidelines fact sheet (2010) or ABT1.



<i>Analytical Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
Particle Size Analysis (Pipette) - Wentworth Classification	EC184A Saskatoon - Environmental	Soil/Solid	Modified Wentworth	The particle size determination is performed by various methods to generate a Grain Size curve. The data from the curve is then used to produce particle size ranges based on the Modified Wentworth Classification system.
Total Organic Carbon (Calculated) in soil	EC356 Saskatoon - Environmental	Soil/Solid	CSSS (2008) 21.2	Total Organic Carbon (TOC) is calculated by the difference between total carbon (TC) and total inorganic carbon (TIC).
<i>Preparation Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
Leach 1:2 Soil:Water for pH/EC	EP108 Calgary - Environmental	Soil/Solid	BC WLAP METHOD: PH, ELECTROMETRIC, SOIL	The procedure involves mixing the dried (at <60°C) and sieved (No. 10 / 2mm) sample with deionized/distilled water at a 1:2 ratio of sediment to water.
Digestion for Metals and Mercury	EP440 Calgary - Environmental	Soil/Solid	EPA 200.2 (mod)	Samples are dried, then sieved through a 2 mm sieve, and digested with HNO ₃ and HCl. This method is intended to liberate metals that may be environmentally available.
PHCs and PAHs Hexane-Acetone Tumbler Extraction	EP601 Calgary - Environmental	Soil/Solid	CCME PHC in Soil - Tier 1 (mod)	Samples are subsampled and Petroleum Hydrocarbons (PHC) and PAHs are extracted with 1:1 hexane:acetone using a rotary extractor.
Dry and Grind	EPP442 Calgary - Environmental	Soil/Solid	Soil Sampling and Methods of Analysis, Carter 2008	After removal of any coarse fragments and reservation of wet subsamples a portion of homogenized sample is set in a tray and dried at less than 60°C until dry. The sample is then particle size reduced with an automated crusher or mortar and pestle, typically to <2 mm. Further size reduction may be needed for particular tests.



QUALITY CONTROL REPORT

Work Order : CG2208561

Page : 1 of 11

Amendment : 2

Client : Teck Coal Limited
Contact : Mike Pope
Address : RR#1 HWY#3
Sparwood BC Canada V0B 2G1

Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
Calgary, Alberta Canada T1Y 7B5

Telephone : ----
Project : REGIONAL EFFECTS PROGRAM
PO : VPO00816101
C-O-C number : JUNE EVO LAEMP 2022
Sampler : Robin Valleau
Site : ----
Quote number : Teck Coal Master Quote
No. of samples received : 3
No. of samples analysed : 3

Telephone : +1 403 407 1800
Date Samples Received : 02-Jul-2022 10:30
Date Analysis Commenced : 06-Jul-2022
Issue Date : 11-Jul-2022 12:44

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
Matrix Spike (MS) Report; Recovery and Data Quality Objectives
Reference Material (RM) Report; Recovery and Data Quality Objectives
Method Blank (MB) Report; Recovery and Data Quality Objectives
Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Table with 3 columns: Signatories, Position, Laboratory Department. Rows include Dwayne Bennett, Hedy Lai, Rosalie Van Deelen, Victoria Piguing, and Vishnu Patel.



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Soil/Solid

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 550788)											
CG2208692-001	Anonymous	moisture	----	E144	0.25	%	14.2	14.0	1.34%	20%	----
Physical Tests (QC Lot: 552971)											
CG2208505-009	Anonymous	pH (1:2 soil:water)	----	E108	0.10	pH units	7.70	7.75	0.647%	5%	----
Organic / Inorganic Carbon (QC Lot: 556093)											
CG2208561-001	RG_MI25_SE-1_LAEMP_E VO_2022-06_NP	carbon, total [TC]	----	E351	0.050	%	2.95	3.05	3.43%	20%	----
Organic / Inorganic Carbon (QC Lot: 556240)											
CG2208567-026	Anonymous	carbon, inorganic [IC]	----	E354	0.050	%	3.18	3.18	0.0242%	20%	----
Metals (QC Lot: 552465)											
CG2208474-001	Anonymous	mercury	7439-97-6	E510	0.0050	mg/kg	0.0082	0.0080	0.0002	Diff <2x LOR	----
Metals (QC Lot: 552466)											
CG2208474-001	Anonymous	aluminum	7429-90-5	E440	50	mg/kg	2140	1850	14.3%	40%	----
		antimony	7440-36-0	E440	0.10	mg/kg	0.25	0.19	0.06	Diff <2x LOR	----
		arsenic	7440-38-2	E440	0.10	mg/kg	33.3	26.7	22.1%	30%	----
		barium	7440-39-3	E440	0.50	mg/kg	93.0	89.8	3.48%	40%	----
		beryllium	7440-41-7	E440	0.10	mg/kg	0.13	0.15	0.02	Diff <2x LOR	----
		bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	0	Diff <2x LOR	----
		boron	7440-42-8	E440	5.0	mg/kg	<5.0	<5.0	0	Diff <2x LOR	----
		cadmium	7440-43-9	E440	0.020	mg/kg	0.142	0.133	6.45%	30%	----
		calcium	7440-70-2	E440	50	mg/kg	100000	102000	1.85%	30%	----
		chromium	7440-47-3	E440	0.50	mg/kg	35.9	32.4	10.4%	30%	----
		cobalt	7440-48-4	E440	0.10	mg/kg	1.50	1.50	0.668%	30%	----
		copper	7440-50-8	E440	0.50	mg/kg	59.9	54.1	10.0%	30%	----
		iron	7439-89-6	E440	50	mg/kg	5370	5640	4.92%	30%	----
		lead	7439-92-1	E440	0.50	mg/kg	2.36	2.41	0.04	Diff <2x LOR	----
		lithium	7439-93-2	E440	2.0	mg/kg	4.9	4.0	1.0	Diff <2x LOR	----
		magnesium	7439-95-4	E440	20	mg/kg	41500	39700	4.40%	30%	----
		manganese	7439-96-5	E440	1.0	mg/kg	463	459	0.889%	30%	----
		molybdenum	7439-98-7	E440	0.10	mg/kg	0.81	0.75	7.56%	40%	----
		nickel	7440-02-0	E440	0.50	mg/kg	7.15	8.07	12.1%	30%	----
		phosphorus	7723-14-0	E440	50	mg/kg	541	679	22.6%	30%	----
		potassium	7440-09-7	E440	100	mg/kg	390	420	30	Diff <2x LOR	----



Sub-Matrix: **Soil/Solid**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Metals (QC Lot: 552466) - continued											
CG2208474-001	Anonymous	selenium	7782-49-2	E440	0.20	mg/kg	<0.20	<0.20	0	Diff <2x LOR	----
		silver	7440-22-4	E440	0.10	mg/kg	<0.10	<0.10	0	Diff <2x LOR	----
		sodium	7440-23-5	E440	50	mg/kg	120	123	2	Diff <2x LOR	----
		strontium	7440-24-6	E440	0.50	mg/kg	74.3	75.8	2.04%	40%	----
		sulfur	7704-34-9	E440	1000	mg/kg	<1000	<1000	0	Diff <2x LOR	----
		thallium	7440-28-0	E440	0.050	mg/kg	0.050	<0.050	0.0002	Diff <2x LOR	----
		tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	0	Diff <2x LOR	----
		titanium	7440-32-6	E440	1.0	mg/kg	26.0	24.2	7.46%	40%	----
		tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	0	Diff <2x LOR	----
		uranium	7440-61-1	E440	0.050	mg/kg	0.348	0.368	5.49%	30%	----
		vanadium	7440-62-2	E440	0.20	mg/kg	8.40	7.89	6.27%	30%	----
		zinc	7440-66-6	E440	2.0	mg/kg	19.1	18.0	5.88%	30%	----
		zirconium	7440-67-7	E440	1.0	mg/kg	<1.0	1.8	0.8	Diff <2x LOR	----
Polycyclic Aromatic Hydrocarbons (QC Lot: 550787)											
CG2208561-001	RG_MI25_SE-1_LAEMP_E VO_2022-06_NP	acenaphthene	83-32-9	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		acenaphthylene	208-96-8	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		acridine	260-94-6	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		anthracene	120-12-7	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		benz(a)anthracene	56-55-3	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		benzo(a)pyrene	50-32-8	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		benzo(b+j)fluoranthene	n/a	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		benzo(g,h,i)perylene	191-24-2	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		benzo(k)fluoranthene	207-08-9	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		chrysene	218-01-9	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		dibenz(a,h)anthracene	53-70-3	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		fluoranthene	206-44-0	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		fluorene	86-73-7	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		methylnaphthalene, 1-	90-12-0	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		methylnaphthalene, 2-	91-57-6	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		naphthalene	91-20-3	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		phenanthrene	85-01-8	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		pyrene	129-00-0	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		quinoline	91-22-5	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 550788)						
moisture	---	E144	0.25	%	<0.25	---
Organic / Inorganic Carbon (QCLot: 556093)						
carbon, total [TC]	---	E351	0.05	%	<0.050	---
Organic / Inorganic Carbon (QCLot: 556240)						
carbon, inorganic [IC]	---	E354	0.05	%	<0.050	---
Metals (QCLot: 552465)						
mercury	7439-97-6	E510	0.005	mg/kg	<0.0050	---
Metals (QCLot: 552466)						
aluminum	7429-90-5	E440	50	mg/kg	<50	---
antimony	7440-36-0	E440	0.1	mg/kg	<0.10	---
arsenic	7440-38-2	E440	0.1	mg/kg	<0.10	---
barium	7440-39-3	E440	0.5	mg/kg	<0.50	---
beryllium	7440-41-7	E440	0.1	mg/kg	<0.10	---
bismuth	7440-69-9	E440	0.2	mg/kg	<0.20	---
boron	7440-42-8	E440	5	mg/kg	<5.0	---
cadmium	7440-43-9	E440	0.02	mg/kg	<0.020	---
calcium	7440-70-2	E440	50	mg/kg	<50	---
chromium	7440-47-3	E440	0.5	mg/kg	<0.50	---
cobalt	7440-48-4	E440	0.1	mg/kg	<0.10	---
copper	7440-50-8	E440	0.5	mg/kg	<0.50	---
iron	7439-89-6	E440	50	mg/kg	<50	---
lead	7439-92-1	E440	0.5	mg/kg	<0.50	---
lithium	7439-93-2	E440	2	mg/kg	<2.0	---
magnesium	7439-95-4	E440	20	mg/kg	<20	---
manganese	7439-96-5	E440	1	mg/kg	<1.0	---
molybdenum	7439-98-7	E440	0.1	mg/kg	<0.10	---
nickel	7440-02-0	E440	0.5	mg/kg	<0.50	---
phosphorus	7723-14-0	E440	50	mg/kg	<50	---
potassium	7440-09-7	E440	100	mg/kg	<100	---
selenium	7782-49-2	E440	0.2	mg/kg	<0.20	---
silver	7440-22-4	E440	0.1	mg/kg	<0.10	---
sodium	7440-23-5	E440	50	mg/kg	<50	---
strontium	7440-24-6	E440	0.5	mg/kg	<0.50	---



Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Metals (QCLot: 552466) - continued						
sulfur	7704-34-9	E440	1000	mg/kg	<1000	----
thallium	7440-28-0	E440	0.05	mg/kg	<0.050	----
tin	7440-31-5	E440	2	mg/kg	<2.0	----
titanium	7440-32-6	E440	1	mg/kg	<1.0	----
tungsten	7440-33-7	E440	0.5	mg/kg	<0.50	----
uranium	7440-61-1	E440	0.05	mg/kg	<0.050	----
vanadium	7440-62-2	E440	0.2	mg/kg	<0.20	----
zinc	7440-66-6	E440	2	mg/kg	<2.0	----
zirconium	7440-67-7	E440	1	mg/kg	<1.0	----
Polycyclic Aromatic Hydrocarbons (QCLot: 550787)						
acenaphthene	83-32-9	E641A	0.05	mg/kg	<0.050	----
acenaphthylene	208-96-8	E641A	0.05	mg/kg	<0.050	----
acridine	260-94-6	E641A	0.05	mg/kg	<0.050	----
anthracene	120-12-7	E641A	0.05	mg/kg	<0.050	----
benz(a)anthracene	56-55-3	E641A	0.05	mg/kg	<0.050	----
benzo(a)pyrene	50-32-8	E641A	0.05	mg/kg	<0.050	----
benzo(b+j)fluoranthene	n/a	E641A	0.05	mg/kg	<0.050	----
benzo(g,h,i)perylene	191-24-2	E641A	0.05	mg/kg	<0.050	----
benzo(k)fluoranthene	207-08-9	E641A	0.05	mg/kg	<0.050	----
chrysene	218-01-9	E641A	0.05	mg/kg	<0.050	----
dibenz(a,h)anthracene	53-70-3	E641A	0.05	mg/kg	<0.050	----
fluoranthene	206-44-0	E641A	0.05	mg/kg	<0.050	----
fluorene	86-73-7	E641A	0.05	mg/kg	<0.050	----
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.05	mg/kg	<0.050	----
methylnaphthalene, 1-	90-12-0	E641A	0.05	mg/kg	<0.050	----
methylnaphthalene, 2-	91-57-6	E641A	0.05	mg/kg	<0.050	----
naphthalene	91-20-3	E641A	0.05	mg/kg	<0.050	----
phenanthrene	85-01-8	E641A	0.05	mg/kg	<0.050	----
pyrene	129-00-0	E641A	0.05	mg/kg	<0.050	----
quinoline	91-22-5	E641A	0.05	mg/kg	<0.050	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Soil/Solid

					Laboratory Control Sample (LCS) Report				
Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Physical Tests (QCLot: 550788)									
moisture	---	E144	0.25	%	50 %	97.4	90.0	110	---
Physical Tests (QCLot: 552971)									
pH (1:2 soil:water)	---	E108	---	pH units	7 pH units	100	97.0	103	---
Organic / Inorganic Carbon (QCLot: 556093)									
carbon, total [TC]	---	E351	0.05	%	48 %	101	90.0	110	---
Organic / Inorganic Carbon (QCLot: 556240)									
carbon, inorganic [IC]	---	E354	0.05	%	0.5 %	94.6	90.0	110	---
Metals (QCLot: 552465)									
mercury	7439-97-6	E510	0.005	mg/kg	0.1 mg/kg	89.5	80.0	120	---
Metals (QCLot: 552466)									
aluminum	7429-90-5	E440	50	mg/kg	200 mg/kg	96.6	80.0	120	---
antimony	7440-36-0	E440	0.1	mg/kg	100 mg/kg	104	80.0	120	---
arsenic	7440-38-2	E440	0.1	mg/kg	100 mg/kg	94.9	80.0	120	---
barium	7440-39-3	E440	0.5	mg/kg	25 mg/kg	97.3	80.0	120	---
beryllium	7440-41-7	E440	0.1	mg/kg	10 mg/kg	94.0	80.0	120	---
bismuth	7440-69-9	E440	0.2	mg/kg	100 mg/kg	97.7	80.0	120	---
boron	7440-42-8	E440	5	mg/kg	100 mg/kg	94.7	80.0	120	---
cadmium	7440-43-9	E440	0.02	mg/kg	10 mg/kg	98.3	80.0	120	---
calcium	7440-70-2	E440	50	mg/kg	5000 mg/kg	97.4	80.0	120	---
chromium	7440-47-3	E440	0.5	mg/kg	25 mg/kg	95.6	80.0	120	---
cobalt	7440-48-4	E440	0.1	mg/kg	25 mg/kg	94.9	80.0	120	---
copper	7440-50-8	E440	0.5	mg/kg	25 mg/kg	96.1	80.0	120	---
iron	7439-89-6	E440	50	mg/kg	100 mg/kg	114	80.0	120	---
lead	7439-92-1	E440	0.5	mg/kg	50 mg/kg	99.3	80.0	120	---
lithium	7439-93-2	E440	2	mg/kg	25 mg/kg	101	80.0	120	---
magnesium	7439-95-4	E440	20	mg/kg	5000 mg/kg	99.6	80.0	120	---
manganese	7439-96-5	E440	1	mg/kg	25 mg/kg	96.4	80.0	120	---
molybdenum	7439-98-7	E440	0.1	mg/kg	25 mg/kg	100	80.0	120	---
nickel	7440-02-0	E440	0.5	mg/kg	50 mg/kg	96.3	80.0	120	---
phosphorus	7723-14-0	E440	50	mg/kg	1000 mg/kg	94.8	80.0	120	---
potassium	7440-09-7	E440	100	mg/kg	5000 mg/kg	96.2	80.0	120	---
selenium	7782-49-2	E440	0.2	mg/kg	100 mg/kg	97.2	80.0	120	---



Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Metals (QCLot: 552466) - continued									
silver	7440-22-4	E440	0.1	mg/kg	10 mg/kg	91.5	80.0	120	----
sodium	7440-23-5	E440	50	mg/kg	5000 mg/kg	95.2	80.0	120	----
strontium	7440-24-6	E440	0.5	mg/kg	25 mg/kg	99.1	80.0	120	----
sulfur	7704-34-9	E440	1000	mg/kg	5000 mg/kg	93.8	80.0	120	----
thallium	7440-28-0	E440	0.05	mg/kg	100 mg/kg	98.6	80.0	120	----
tin	7440-31-5	E440	2	mg/kg	50 mg/kg	99.5	80.0	120	----
titanium	7440-32-6	E440	1	mg/kg	25 mg/kg	92.2	80.0	120	----
tungsten	7440-33-7	E440	0.5	mg/kg	10 mg/kg	97.6	80.0	120	----
uranium	7440-61-1	E440	0.05	mg/kg	0.5 mg/kg	96.8	80.0	120	----
vanadium	7440-62-2	E440	0.2	mg/kg	50 mg/kg	96.7	80.0	120	----
zinc	7440-66-6	E440	2	mg/kg	50 mg/kg	97.6	80.0	120	----
zirconium	7440-67-7	E440	1	mg/kg	10 mg/kg	99.3	80.0	120	----
Polycyclic Aromatic Hydrocarbons (QCLot: 550787)									
acenaphthene	83-32-9	E641A	0.05	mg/kg	0.5 mg/kg	103	60.0	130	----
acenaphthylene	208-96-8	E641A	0.05	mg/kg	0.5 mg/kg	95.4	60.0	130	----
acridine	260-94-6	E641A	0.05	mg/kg	0.5 mg/kg	89.2	60.0	130	----
anthracene	120-12-7	E641A	0.05	mg/kg	0.5 mg/kg	99.5	60.0	130	----
benz(a)anthracene	56-55-3	E641A	0.05	mg/kg	0.5 mg/kg	93.9	60.0	130	----
benzo(a)pyrene	50-32-8	E641A	0.05	mg/kg	0.5 mg/kg	88.1	60.0	130	----
benzo(b+j)fluoranthene	n/a	E641A	0.05	mg/kg	0.5 mg/kg	96.1	60.0	130	----
benzo(g,h,i)perylene	191-24-2	E641A	0.05	mg/kg	0.5 mg/kg	101	60.0	130	----
benzo(k)fluoranthene	207-08-9	E641A	0.05	mg/kg	0.5 mg/kg	94.1	60.0	130	----
chrysene	218-01-9	E641A	0.05	mg/kg	0.5 mg/kg	96.1	60.0	130	----
dibenz(a,h)anthracene	53-70-3	E641A	0.05	mg/kg	0.5 mg/kg	92.9	60.0	130	----
fluoranthene	206-44-0	E641A	0.05	mg/kg	0.5 mg/kg	102	60.0	130	----
fluorene	86-73-7	E641A	0.05	mg/kg	0.5 mg/kg	97.4	60.0	130	----
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.05	mg/kg	0.5 mg/kg	96.1	60.0	130	----
methylnaphthalene, 1-	90-12-0	E641A	0.05	mg/kg	0.5 mg/kg	99.3	60.0	130	----
methylnaphthalene, 2-	91-57-6	E641A	0.05	mg/kg	0.5 mg/kg	103	60.0	130	----
naphthalene	91-20-3	E641A	0.05	mg/kg	0.5 mg/kg	113	50.0	130	----
phenanthrene	85-01-8	E641A	0.05	mg/kg	0.5 mg/kg	105	60.0	130	----
pyrene	129-00-0	E641A	0.05	mg/kg	0.5 mg/kg	105	60.0	130	----
quinoline	91-22-5	E641A	0.05	mg/kg	0.5 mg/kg	88.8	60.0	130	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level $\geq 1 \times$ spike level.

Sub-Matrix: **Soil/Solid**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Polycyclic Aromatic Hydrocarbons (QCLot: 550787)										
CG2208561-001	RG_MI25_SE-1_LAEMP_EV O_2022-06_NP	acenaphthene	83-32-9	E641A	0.380 mg/kg	0.5 mg/kg	104	50.0	140	----
		acenaphthylene	208-96-8	E641A	0.361 mg/kg	0.5 mg/kg	98.3	50.0	140	----
		acridine	260-94-6	E641A	0.339 mg/kg	0.5 mg/kg	92.4	50.0	140	----
		anthracene	120-12-7	E641A	0.382 mg/kg	0.5 mg/kg	104	50.0	140	----
		benz(a)anthracene	56-55-3	E641A	0.363 mg/kg	0.5 mg/kg	98.8	50.0	140	----
		benzo(a)pyrene	50-32-8	E641A	0.328 mg/kg	0.5 mg/kg	89.3	50.0	140	----
		benzo(b+j)fluoranthene	n/a	E641A	0.354 mg/kg	0.5 mg/kg	96.5	50.0	140	----
		benzo(g,h,i)perylene	191-24-2	E641A	0.350 mg/kg	0.5 mg/kg	95.4	50.0	140	----
		benzo(k)fluoranthene	207-08-9	E641A	0.358 mg/kg	0.5 mg/kg	97.7	50.0	140	----
		chrysene	218-01-9	E641A	0.361 mg/kg	0.5 mg/kg	98.4	50.0	140	----
		dibenz(a,h)anthracene	53-70-3	E641A	0.339 mg/kg	0.5 mg/kg	92.4	50.0	140	----
		fluoranthene	206-44-0	E641A	0.384 mg/kg	0.5 mg/kg	104	50.0	140	----
		fluorene	86-73-7	E641A	0.370 mg/kg	0.5 mg/kg	101	50.0	140	----
		indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.377 mg/kg	0.5 mg/kg	103	50.0	140	----
		methylnaphthalene, 1-	90-12-0	E641A	0.365 mg/kg	0.5 mg/kg	99.4	50.0	140	----
		methylnaphthalene, 2-	91-57-6	E641A	0.378 mg/kg	0.5 mg/kg	103	50.0	140	----
		naphthalene	91-20-3	E641A	0.414 mg/kg	0.5 mg/kg	113	50.0	140	----
		phenanthrene	85-01-8	E641A	0.389 mg/kg	0.5 mg/kg	106	50.0	140	----
		pyrene	129-00-0	E641A	0.400 mg/kg	0.5 mg/kg	109	50.0	140	----
		quinoline	91-22-5	E641A	0.321 mg/kg	0.5 mg/kg	87.5	50.0	140	----



Reference Material (RM) Report

A Reference Material (RM) is a homogenous material with known and well-established analyte concentrations. RMs are processed in an identical manner to test samples, and are used to monitor and control the accuracy and precision of a test method for a typical sample matrix. RM results are expressed as percent recovery of the target analyte concentration. RM targets may be certified target concentrations provided by the RM supplier, or may be ALS long-term mean values (for empirical test methods).

Sub-Matrix:

Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Reference Material (RM) Report				
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%)		Qualifier
							Low	High	
Physical Tests (QCLot: 552971)									
	RM	pH (1:2 soil:water)	----	E108	8.06 pH units	99.5	96.0	104	----
Organic / Inorganic Carbon (QCLot: 556093)									
	RM	carbon, total [TC]	----	E351	1.4 %	103	80.0	120	----
Organic / Inorganic Carbon (QCLot: 556240)									
	RM	carbon, inorganic [IC]	----	E354	0.383 %	96.0	80.0	120	----
Metals (QCLot: 552465)									
	RM	mercury	7439-97-6	E510	0.062 mg/kg	75.7	70.0	130	----
Metals (QCLot: 552466)									
	RM	aluminum	7429-90-5	E440	9817 mg/kg	96.7	70.0	130	----
	RM	antimony	7440-36-0	E440	3.99 mg/kg	100.0	70.0	130	----
	RM	arsenic	7440-38-2	E440	3.73 mg/kg	99.2	70.0	130	----
	RM	barium	7440-39-3	E440	105 mg/kg	99.0	70.0	130	----
	RM	beryllium	7440-41-7	E440	0.349 mg/kg	100	70.0	130	----
	RM	boron	7440-42-8	E440	8.5 mg/kg	105	40.0	160	----
	RM	cadmium	7440-43-9	E440	0.91 mg/kg	98.2	70.0	130	----
	RM	calcium	7440-70-2	E440	31082 mg/kg	90.5	70.0	130	----
	RM	chromium	7440-47-3	E440	101 mg/kg	95.6	70.0	130	----
	RM	cobalt	7440-48-4	E440	6.9 mg/kg	97.9	70.0	130	----
	RM	copper	7440-50-8	E440	123 mg/kg	97.6	70.0	130	----
	RM	iron	7439-89-6	E440	23558 mg/kg	98.2	70.0	130	----
	RM	lead	7439-92-1	E440	267 mg/kg	97.4	70.0	130	----
	RM	lithium	7439-93-2	E440	9.5 mg/kg	100	70.0	130	----
	RM	magnesium	7439-95-4	E440	5509 mg/kg	102	70.0	130	----
	RM	manganese	7439-96-5	E440	269 mg/kg	97.8	70.0	130	----
	RM	molybdenum	7439-98-7	E440	1.03 mg/kg	110	70.0	130	----
	RM	nickel	7440-02-0	E440	26.7 mg/kg	100	70.0	130	----
	RM	phosphorus	7723-14-0	E440	752 mg/kg	95.0	70.0	130	----
	RM	potassium	7440-09-7	E440	1587 mg/kg	104	70.0	130	----
	RM	silver	7440-22-4	E440	4.06 mg/kg	130	70.0	130	----



Sub-Matrix:

Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Reference Material (RM) Report				
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%)		Qualifier
							Low	High	
Metals (QCLot: 552466) - continued									
	RM	sodium	7440-23-5	E440	797 mg/kg	103	70.0	130	----
	RM	strontium	7440-24-6	E440	86.1 mg/kg	100	70.0	130	----
	RM	thallium	7440-28-0	E440	0.0786 mg/kg	94.8	40.0	160	----
	RM	tin	7440-31-5	E440	10.6 mg/kg	102	70.0	130	----
	RM	titanium	7440-32-6	E440	839 mg/kg	98.6	70.0	130	----
	RM	uranium	7440-61-1	E440	0.52 mg/kg	93.4	70.0	130	----
	RM	vanadium	7440-62-2	E440	32.7 mg/kg	97.0	70.0	130	----
	RM	zinc	7440-66-6	E440	297 mg/kg	97.5	70.0	130	----
	RM	zirconium	7440-67-7	E440	5.73 mg/kg	96.4	70.0	130	----

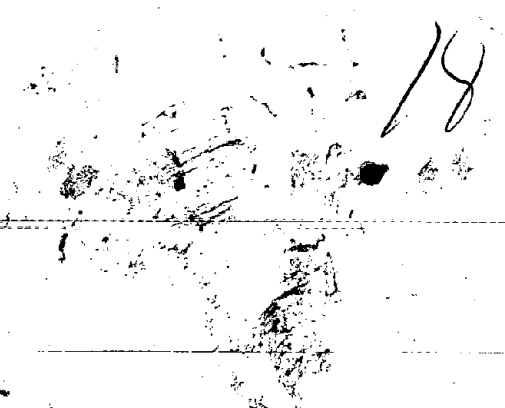
COC ID: JUNE EVO LAEMP 2022		TURNAROUND TIME: RUSH	
PROJECT/CLIENT INFO			
Facility Name / Job#: REP		Lab Name: ALS Calgary	
Project Manager: Mike Pope		Lab Contact: Lyudmyla Shvets	
Email: mike.pope@teck.com		Email: lyudmyla.shvets@alsglobal.com	
Address: 421 Pine Avenue		Address: 2559 29 Street NE	
City: Sparwood	Province: BC	City: Calgary	Province: AB
Postal Code: V0B 2G0	Country: Canada	Postal Code: T1Y 7B5	Country: Canada
Phone Number: 250-425-8202		Phone Number: 1 403 407 1794	

SAMPLE DETAILS								ANALYSIS REQUESTED								
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	C-TOC-SK	MET-CCME-FULL-CL	MOISTURE-CL - % Moisture	PSA-PIPET-DETAIL-SK Particle Size	PAH-TMB-D/A-MS-CL PAHs				
RG_MI25_SE-1_LAEMP_EVO_2022-06_NP	RG MI25	SE	No	6/30/2022	9:25	G	2	X	X	X	X	X				
RG_MI25_SE-2_LAEMP_EVO_2022-06_NP	RG MI25	SE	No	6/30/2022	9:45	G	1	X	X	X	X	X				
RG_MI25_SE-3_LAEMP_EVO_2022-06_NP	RG MI25	SE	No	6/30/2022	9:55	G	2	X	X	X	X	X				

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
VPO00816101	Robin Valleau/Minnow		<i>[Signature]</i> 7/2/2022

NO OF BOTTLES RETURNED/DISCRIPED Regular (default) Priority (2-3 business days) - 50% surcharge X Emergency (1 Business Day) - 100% surcharge For Emergency <1 Day, ASAP or Weekend - Contact ALS	Sampler's Name: Robin Valleau Sampler's Signature:	Mobile #: 416-970-7535 Date/Time: June 28th 2022
---	---	---

Environmental Division
 Calgary
 Work Order Reference
CG2208561



CERTIFICATE OF ANALYSIS

Work Order : **CG2208567**
Amendment : **1**
Client : **Teck Coal Limited**
Contact : Mike Pope
Address : RR#1 HWY#3
 Sparwood BC Canada V0B 2G1
Telephone : ----
Project : Regional Effects Program
PO : VPO00816101
C-O-C number : MAY EVO LAEMP 2022
Sampler : Robin Valleau
Site : ----
Quote number : Teck Coal Master Quote
No. of samples received : 26
No. of samples analysed : 22

Page : 1 of 23

Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
 Calgary AB Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 02-Jul-2022 10:30
Date Analysis Commenced : 03-Jul-2022
Issue Date : 29-Jul-2022 11:25

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Colby Bingham	Quality Systems Coordinator	Inorganics, Saskatoon, Saskatchewan
Colby Bingham	Quality Systems Coordinator	Metals, Saskatoon, Saskatchewan
Hedy Lai	Team Leader - Inorganics	Inorganics, Saskatoon, Saskatchewan
Lian Nesbitt	Laboratory Analyst	Metals, Saskatoon, Saskatchewan
Maqsood UHassan	Laboratory Analyst	Organics, Calgary, Alberta
Rosalie Van Deelen	Laboratory Assistant	Organics, Calgary, Alberta



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
 LOR: Limit of Reporting (detection limit).

Unit	Description
-	No Unit
%	percent
mg/kg	milligrams per kilogram
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Workorder Comments

Only bags submitted, improper container for PAH.

CG2208567 , Samples were weighed out from the Plastic bags instead of Glass Jars

Sample Comments

Sample	Client Id	Comment
CG2208567-006	RG_ERCKUT_BRYOSE-1_LA EMP_EVO_2022-06_29_NP	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2208567-007	RG_ERCKUT_BRYOSE-2_LA EMP_EVO_2022-06_29_NP	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2208567-008	RG_ERCKUT_BRYOSE-3_LA EMP_EVO_2022-06_29_NP	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2208567-011	RG_ERCKMD_SE-3_LAEMP_E VO_2022-06_29_NP	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2208567-012	RG_ERCKMD_BRYOSE-1_LA EMP_EVO_2022-06_29_NP	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.



CG2208567-013	RG_ERCKMD_BRYOSE-2_LA EMP_EVO_2022-06_29_NP	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2208567-014	RG_ERCKMD_BRYOSE-3_LA EMP_EVO_2022-06_29_NP	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2208567-015	RG_ERCKDT_SE-1_LAEMP_E VO_2022-06_29_NP	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2208567-016	RG_ERCKDT_SE-2_LAEMP_E VO_2022-06_29_NP	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2208567-018	RG_ERCKDT_SE-4_LAEMP_E VO_2022-06_29_NP	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2208567-022	RG_ERCKDT_BRYOSE-1_LA EMP_EVO_2022-06_29_NP	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2208567-023	RG_ERCKDT_BRYOSE-2_LA EMP_EVO_2022-06_29_NP	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2208567-024	RG_ERCKDT_BRYOSE-3_LA EMP_EVO_2022-06_29_NP	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.



Analytical Results

Sub-Matrix: Sediment

Client sample ID

(Matrix: Soil/Solid)

					RG_ERCKUT_S E-1_LAEMP_EV O_2022-06_29_ NP	RG_ERCKUT_S E-2_LAEMP_EV O_2022-06_29_ NP	RG_ERCKUT_S E-3_LAEMP_EV O_2022-06_29_ NP	RG_ERCKUT_S E-4_LAEMP_EV O_2022-06_29_ NP	RG_ERCKUT_S E-5_LAEMP_EV O_2022-06_29_ NP
Client sampling date / time					29-Jun-2022 08:00	29-Jun-2022 08:05	29-Jun-2022 08:10	29-Jun-2022 08:15	29-Jun-2022 08:20
Analyte	CAS Number	Method	LOR	Unit	CG2208567-001	CG2208567-002	CG2208567-003	CG2208567-004	CG2208567-005
					Result	Result	Result	Result	Result
Physical Tests									
moisture	----	E144	0.25	%	42.4	55.9	54.3	49.1	65.0
pH (1:2 soil:water)	----	E108	0.10	pH units	7.96	7.79	7.88	7.84	7.72
Particle Size									
grain size curve	----	E185A	-	-	See Attached	See Attached	See Attached	See Attached	See Attached
clay (<0.004mm)	----	EC184A	1.0	%	3.8	2.6	6.3	6.5	2.6
silt (0.063mm - 0.0312mm)	----	EC184A	1.0	%	9.8	18.8	18.2	12.6	11.7
silt (0.0312mm - 0.004mm)	----	EC184A	1.0	%	11.1	17.5	23.3	15.7	11.1
sand (0.125mm - 0.063mm)	----	EC184A	1.0	%	12.5	15.6	11.9	12.2	11.8
sand (0.25mm - 0.125mm)	----	EC184A	1.0	%	22.2	22.2	16.9	28.6	26.5
sand (0.5mm - 0.25mm)	----	EC184A	1.0	%	23.3	16.7	16.9	20.2	20.4
sand (1.0mm - 0.50mm)	----	EC184A	1.0	%	6.2	5.6	4.9	3.5	9.7
sand (2.0mm - 1.0mm)	----	EC184A	1.0	%	4.6	1.0	1.0	<1.0	5.2
gravel (>2mm)	----	EC184A	1.0	%	6.5	<1.0	<1.0	<1.0	1.0
Organic / Inorganic Carbon									
carbon, total [TC]	----	E351	0.050	%	5.43	18.2	9.32	7.09	9.43
carbon, inorganic [IC]	----	E354	0.050	%	0.688	0.528	0.820	0.406	0.698
carbon, inorganic [IC], (as CaCO3 equivalent)	----	E354	0.40	%	5.73	4.40	6.83	3.38	5.82
carbon, total organic [TOC]	----	EC356	0.050	%	4.74	17.7	8.50	6.68	8.73
Metals									
aluminum	7429-90-5	E440	50	mg/kg	5150	4000	5350	5550	5000
antimony	7440-36-0	E440	0.10	mg/kg	0.92	1.01	0.90	0.77	0.99
arsenic	7440-38-2	E440	0.10	mg/kg	7.00	5.81	6.21	5.40	6.05
barium	7440-39-3	E440	0.50	mg/kg	172	461	159	156	174
beryllium	7440-41-7	E440	0.10	mg/kg	0.61	0.61	0.65	0.65	0.65
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20
boron	7440-42-8	E440	5.0	mg/kg	<5.0	<5.0	5.0	<5.0	5.6
cadmium	7440-43-9	E440	0.020	mg/kg	1.27	1.64	1.43	1.10	1.23
calcium	7440-70-2	E440	50	mg/kg	21200	20300	30400	16800	26700



Analytical Results

Sub-Matrix: Sediment
 (Matrix: Soil/Solid)

Client sample ID

					RG_ERCKUT_S E-1_LAEMP_EV O_2022-06_29_ NP	RG_ERCKUT_S E-2_LAEMP_EV O_2022-06_29_ NP	RG_ERCKUT_S E-3_LAEMP_EV O_2022-06_29_ NP	RG_ERCKUT_S E-4_LAEMP_EV O_2022-06_29_ NP	RG_ERCKUT_S E-5_LAEMP_EV O_2022-06_29_ NP
Client sampling date / time					29-Jun-2022 08:00	29-Jun-2022 08:05	29-Jun-2022 08:10	29-Jun-2022 08:15	29-Jun-2022 08:20
Analyte	CAS Number	Method	LOR	Unit	CG2208567-001	CG2208567-002	CG2208567-003	CG2208567-004	CG2208567-005
					Result	Result	Result	Result	Result
Metals									
chromium	7440-47-3	E440	0.50	mg/kg	32.5	8.84	11.8	15.0	12.4
cobalt	7440-48-4	E440	0.10	mg/kg	7.06	5.75	6.09	7.62	6.38
copper	7440-50-8	E440	0.50	mg/kg	15.0	17.3	17.3	15.2	14.6
iron	7439-89-6	E440	50	mg/kg	16500	10900	14100	10900	15000
lead	7439-92-1	E440	0.50	mg/kg	10.5	9.91	10.4	10.6	9.75
lithium	7439-93-2	E440	2.0	mg/kg	6.2	4.6	7.4	7.2	6.1
magnesium	7439-95-4	E440	20	mg/kg	4020	2020	4620	2470	3620
manganese	7439-96-5	E440	1.0	mg/kg	266	205	180	163	233
mercury	7439-97-6	E510	0.0050	mg/kg	0.0444	0.0528	0.0581	0.0500	0.0367
molybdenum	7439-98-7	E440	0.10	mg/kg	4.15	1.76	1.57	1.87	1.96
nickel	7440-02-0	E440	0.50	mg/kg	36.6	22.3	24.2	23.7	24.1
phosphorus	7723-14-0	E440	50	mg/kg	1040	997	1100	998	1170
potassium	7440-09-7	E440	100	mg/kg	1030	880	1000	990	1130
selenium	7782-49-2	E440	0.20	mg/kg	3.78	4.47	5.65	1.72	12.8
silver	7440-22-4	E440	0.10	mg/kg	0.21	0.24	0.34	0.29	0.18
sodium	7440-23-5	E440	50	mg/kg	72	69	59	<50	60
strontium	7440-24-6	E440	0.50	mg/kg	44.1	51.0	40.8	35.5	50.0
sulfur	7704-34-9	E440	1000	mg/kg	<1000	<1000	<1000	<1000	<1000
thallium	7440-28-0	E440	0.050	mg/kg	0.183	0.144	0.191	0.178	0.184
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
titanium	7440-32-6	E440	1.0	mg/kg	12.9	16.9	15.3	12.6	12.8
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
uranium	7440-61-1	E440	0.050	mg/kg	1.14	1.35	1.26	1.10	1.57
vanadium	7440-62-2	E440	0.20	mg/kg	25.5	22.6	23.2	21.9	25.3
zinc	7440-66-6	E440	2.0	mg/kg	105	88.0	97.8	90.9	95.6
zirconium	7440-67-7	E440	1.0	mg/kg	<1.0	1.3	1.5	1.3	<1.0
Polycyclic Aromatic Hydrocarbons									
acenaphthene	83-32-9	E641A	0.050	mg/kg	<0.050	0.056	<0.050	<0.050	<0.050
acenaphthylene	208-96-8	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050



Analytical Results

Sub-Matrix: Sediment
 (Matrix: Soil/Solid)

Client sample ID

					RG_ERCKUT_S E-1_LAEMP_EV O_2022-06_29_ NP	RG_ERCKUT_S E-2_LAEMP_EV O_2022-06_29_ NP	RG_ERCKUT_S E-3_LAEMP_EV O_2022-06_29_ NP	RG_ERCKUT_S E-4_LAEMP_EV O_2022-06_29_ NP	RG_ERCKUT_S E-5_LAEMP_EV O_2022-06_29_ NP
Client sampling date / time					29-Jun-2022 08:00	29-Jun-2022 08:05	29-Jun-2022 08:10	29-Jun-2022 08:15	29-Jun-2022 08:20
Analyte	CAS Number	Method	LOR	Unit	CG2208567-001	CG2208567-002	CG2208567-003	CG2208567-004	CG2208567-005
					Result	Result	Result	Result	Result
Polycyclic Aromatic Hydrocarbons									
acridine	260-94-6	E641A	0.050	mg/kg	<0.050	0.080	<0.050	<0.050	<0.050
anthracene	120-12-7	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
benz(a)anthracene	56-55-3	E641A	0.050	mg/kg	<0.050	0.061	<0.050	<0.050	<0.050
benzo(a)pyrene	50-32-8	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
benzo(b+j)fluoranthene	n/a	E641A	0.050	mg/kg	<0.050	0.209	0.098	0.074	0.099
benzo(b+j+k)fluoranthene	n/a	E641A	0.075	mg/kg	<0.075	0.209	0.098	<0.075	0.099
benzo(g,h,i)perylene	191-24-2	E641A	0.050	mg/kg	<0.050	0.059	<0.050	<0.050	<0.050
benzo(k)fluoranthene	207-08-9	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
chrysene	218-01-9	E641A	0.050	mg/kg	0.086	0.443	0.196	0.139	0.203
dibenz(a,h)anthracene	53-70-3	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
fluoranthene	206-44-0	E641A	0.050	mg/kg	<0.050	0.084	<0.050	<0.050	<0.050
fluorene	86-73-7	E641A	0.050	mg/kg	<0.050	0.115	<0.050	<0.050	<0.050
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
methylnaphthalene, 1-	90-12-0	E641A	0.050	mg/kg	0.088	0.706	0.204	0.117	0.242
methylnaphthalene, 1+2-	----	E641A	0.075	mg/kg	0.221	1.76	0.512	0.313	0.614
methylnaphthalene, 2-	91-57-6	E641A	0.050	mg/kg	0.133	1.05	0.308	0.196	0.372
naphthalene	91-20-3	E641A	0.050	mg/kg	0.080	0.383	0.143	0.097	0.190
phenanthrene	85-01-8	E641A	0.050	mg/kg	0.244	1.36	0.498	0.310	0.584
pyrene	129-00-0	E641A	0.050	mg/kg	<0.050	0.119	<0.050	<0.050	<0.050
quinoline	91-22-5	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
B(a)P total potency equivalents [B(a)P TPE]	----	E641A	0.065	mg/kg	<0.065	0.087	0.070	0.066	0.070
IACR (CCME)	----	E641A	0.60	-	0.62	2.05	1.13	0.95	1.14
IACR AB (coarse)	----	E641A	0.10	-	<0.10	<0.10	<0.10	<0.10	<0.10
IACR AB (fine)	----	E641A	0.10	-	<0.10	0.14	<0.10	<0.10	<0.10
PAHs, total (BC Sched 3.4)	n/a	E641A	0.20	mg/kg	0.54	3.67	1.14	0.74	1.35
PAHs, total (EPA 16)	n/a	E641A	0.20	mg/kg	0.41	2.89	0.94	0.62	1.08
Polycyclic Aromatic Hydrocarbons Surrogates									
acridine-d9	34749-75-2	E641A	0.1	%	99.0	89.0	106	101	114
chrysene-d12	1719-03-5	E641A	0.1	%	116	109	127	120	118



Analytical Results

Sub-Matrix: **Sediment**
 (Matrix: **Soil/Solid**)

Client sample ID

					RG_ERCKUT_S E-1_LAEMP_EV O_2022-06_29_ NP	RG_ERCKUT_S E-2_LAEMP_EV O_2022-06_29_ NP	RG_ERCKUT_S E-3_LAEMP_EV O_2022-06_29_ NP	RG_ERCKUT_S E-4_LAEMP_EV O_2022-06_29_ NP	RG_ERCKUT_S E-5_LAEMP_EV O_2022-06_29_ NP
Client sampling date / time					29-Jun-2022 08:00	29-Jun-2022 08:05	29-Jun-2022 08:10	29-Jun-2022 08:15	29-Jun-2022 08:20
Analyte	CAS Number	Method	LOR	Unit	CG2208567-001	CG2208567-002	CG2208567-003	CG2208567-004	CG2208567-005
					Result	Result	Result	Result	Result
Polycyclic Aromatic Hydrocarbons Surrogates									
naphthalene-d8	1146-65-2	E641A	0.1	%	129	110	123	116	127
phenanthrene-d10	1517-22-2	E641A	0.1	%	104	102	116	109	121

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Sediment

(Matrix: Soil/Solid)

Client sample ID

					RG_ERCKUT_B RYOSE-1_LAEM P_EVO_2022-0 6_29_NP	RG_ERCKUT_B RYOSE-2_LAEM P_EVO_2022-0 6_29_NP	RG_ERCKUT_B RYOSE-3_LAEM P_EVO_2022-0 6_29_NP	RG_ERCKMD_S E-1_LAEMP_EV O_2022-06_29_ NP	RG_ERCKMD_S E-2_LAEMP_EV O_2022-06_29_ NP
Client sampling date / time					29-Jun-2022 08:25	29-Jun-2022 08:30	29-Jun-2022 08:35	29-Jun-2022 08:00	29-Jun-2022 08:05
Analyte	CAS Number	Method	LOR	Unit	CG2208567-006	CG2208567-007	CG2208567-008	CG2208567-009	CG2208567-010
					Result	Result	Result	Result	Result
Physical Tests									
moisture	----	E144	0.25	%	88.7	74.9	92.4	57.6	64.5
pH (1:2 soil:water)	----	E108	0.10	pH units	----	7.79	7.73	8.02	7.85
Particle Size									
grain size curve	----	E185A	-	-	See Attached	See Attached	See Attached	See Attached	See Attached
clay (<0.004mm)	----	EC184A	1.0	%	6.2	3.3	6.8	10.7	10.2
silt (0.063mm - 0.0312mm)	----	EC184A	1.0	%	23.5	7.6	20.2	20.8	11.7
silt (0.0312mm - 0.004mm)	----	EC184A	1.0	%	25.6	8.0	25.1	33.1	21.5
sand (0.125mm - 0.063mm)	----	EC184A	1.0	%	12.2	6.8	8.9	13.3	8.0
sand (0.25mm - 0.125mm)	----	EC184A	1.0	%	14.7	18.9	15.0	13.8	7.3
sand (0.5mm - 0.25mm)	----	EC184A	1.0	%	12.0	30.3	15.3	6.5	8.8
sand (1.0mm - 0.50mm)	----	EC184A	1.0	%	4.3	19.8	7.6	1.5	7.6
sand (2.0mm - 1.0mm)	----	EC184A	1.0	%	1.5	5.1	1.1	<1.0	4.9
gravel (>2mm)	----	EC184A	1.0	%	<1.0	<1.0	<1.0	<1.0	20.0
Organic / Inorganic Carbon									
carbon, total [TC]	----	E351	0.050	%	16.4	14.5	16.1	8.94	6.06
carbon, inorganic [IC]	----	E354	0.050	%	5.22	6.85	5.82	2.34	1.34
carbon, inorganic [IC], (as CaCO3 equivalent)	----	E354	0.40	%	43.5	57.1	48.5	19.5	11.1
carbon, total organic [TOC]	----	EC356	0.050	%	11.2	7.65	10.3	6.60	4.72
Metals									
aluminum	7429-90-5	E440	50	mg/kg	2500	514	2150	4440	5680
antimony	7440-36-0	E440	0.10	mg/kg	1.15	0.33	1.44	0.58	0.90
arsenic	7440-38-2	E440	0.10	mg/kg	2.65	0.56	2.05	5.09	7.43
barium	7440-39-3	E440	0.50	mg/kg	183	148	186	285	198
beryllium	7440-41-7	E440	0.10	mg/kg	0.28	<0.10	0.26	0.46	0.64
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20
boron	7440-42-8	E440	5.0	mg/kg	9.8	<5.0	11.5	7.6	5.5
cadmium	7440-43-9	E440	0.020	mg/kg	1.73	1.30	1.87	1.49	2.27
calcium	7440-70-2	E440	50	mg/kg	162000	279000	194000	87200	40900
chromium	7440-47-3	E440	0.50	mg/kg	6.03	1.40	5.58	10.1	32.9



Analytical Results

Sub-Matrix: Sediment

(Matrix: Soil/Solid)

Client sample ID

					RG_ERCKUT_B RYOSE-1_LAEM P_EVO_2022-0 6_29_NP	RG_ERCKUT_B RYOSE-2_LAEM P_EVO_2022-0 6_29_NP	RG_ERCKUT_B RYOSE-3_LAEM P_EVO_2022-0 6_29_NP	RG_ERCKMD_S E-1_LAEMP_EV O_2022-06_29_ NP	RG_ERCKMD_S E-2_LAEMP_EV O_2022-06_29_ NP
Client sampling date / time					29-Jun-2022 08:25	29-Jun-2022 08:30	29-Jun-2022 08:35	29-Jun-2022 08:00	29-Jun-2022 08:05
Analyte	CAS Number	Method	LOR	Unit	CG2208567-006	CG2208567-007	CG2208567-008	CG2208567-009	CG2208567-010
					Result	Result	Result	Result	Result
Metals									
cobalt	7440-48-4	E440	0.10	mg/kg	4.25	0.50	1.72	13.0	23.6
copper	7440-50-8	E440	0.50	mg/kg	11.6	2.59	17.3	11.2	16.7
iron	7439-89-6	E440	50	mg/kg	6070	1160	3970	10700	15300
lead	7439-92-1	E440	0.50	mg/kg	3.71	0.71	3.13	7.09	9.85
lithium	7439-93-2	E440	2.0	mg/kg	3.3	2.0	3.8	7.2	6.8
magnesium	7439-95-4	E440	20	mg/kg	6010	5590	7090	12900	5940
manganese	7439-96-5	E440	1.0	mg/kg	178	24.2	97.5	547	694
mercury	7439-97-6	E510	0.0050	mg/kg	0.0282	0.0091	0.0290	0.0404	0.0518
molybdenum	7439-98-7	E440	0.10	mg/kg	1.66	0.35	1.20	1.48	4.36
nickel	7440-02-0	E440	0.50	mg/kg	15.8	4.26	14.0	31.9	56.8
phosphorus	7723-14-0	E440	50	mg/kg	932	425	1010	998	1380
potassium	7440-09-7	E440	100	mg/kg	850	340	950	910	1170
selenium	7782-49-2	E440	0.20	mg/kg	15.8	6.53	12.0	5.98	6.12
silver	7440-22-4	E440	0.10	mg/kg	0.14	<0.10	0.15	0.19	0.29
sodium	7440-23-5	E440	50	mg/kg	162	142	260	74	63
strontium	7440-24-6	E440	0.50	mg/kg	73.6	93.3	84.3	82.9	61.2
sulfur	7704-34-9	E440	1000	mg/kg	3900	5400	5200	1000	<1000
thallium	7440-28-0	E440	0.050	mg/kg	0.153	<0.050	0.127	0.221	0.262
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
titanium	7440-32-6	E440	1.0	mg/kg	11.1	3.4	9.8	14.0	15.2
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
uranium	7440-61-1	E440	0.050	mg/kg	3.90	3.44	3.57	1.33	1.34
vanadium	7440-62-2	E440	0.20	mg/kg	14.5	3.61	12.5	18.2	27.6
zinc	7440-66-6	E440	2.0	mg/kg	64.9	28.4	57.5	80.5	143
zirconium	7440-67-7	E440	1.0	mg/kg	<1.0	<1.0	1.0	1.5	<1.0
Polycyclic Aromatic Hydrocarbons									
acenaphthene	83-32-9	E641A	0.050	mg/kg	<0.072	<0.050	<0.146	<0.050	<0.050
acenaphthylene	208-96-8	E641A	0.050	mg/kg	<0.072	<0.050	<0.146	<0.050	<0.050
acridine	260-94-6	E641A	0.050	mg/kg	<0.072	<0.050	0.188	<0.050	<0.050



Analytical Results

Sub-Matrix: Sediment

(Matrix: Soil/Solid)

Client sample ID

					RG_ERCKUT_B RYOSE-1_LAEM P_EVO_2022-0 6_29_NP	RG_ERCKUT_B RYOSE-2_LAEM P_EVO_2022-0 6_29_NP	RG_ERCKUT_B RYOSE-3_LAEM P_EVO_2022-0 6_29_NP	RG_ERCKMD_S E-1_LAEMP_EV O_2022-06_29_ NP	RG_ERCKMD_S E-2_LAEMP_EV O_2022-06_29_ NP
Client sampling date / time					29-Jun-2022 08:25	29-Jun-2022 08:30	29-Jun-2022 08:35	29-Jun-2022 08:00	29-Jun-2022 08:05
Analyte	CAS Number	Method	LOR	Unit	CG2208567-006	CG2208567-007	CG2208567-008	CG2208567-009	CG2208567-010
					Result	Result	Result	Result	Result
Polycyclic Aromatic Hydrocarbons									
anthracene	120-12-7	E641A	0.050	mg/kg	<0.072	<0.050	<0.146	<0.050	<0.050
benz(a)anthracene	56-55-3	E641A	0.050	mg/kg	<0.072	<0.050	<0.146	<0.050	<0.050
benzo(a)pyrene	50-32-8	E641A	0.050	mg/kg	<0.072	<0.050	<0.146	<0.050	<0.050
benzo(b+j)fluoranthene	n/a	E641A	0.050	mg/kg	<0.072	<0.050	<0.146	<0.050	0.088
benzo(b+j+k)fluoranthene	n/a	E641A	0.075	mg/kg	<0.102	<0.075	<0.206	<0.075	0.088
benzo(g,h,i)perylene	191-24-2	E641A	0.050	mg/kg	<0.072	<0.050	<0.146	<0.050	<0.050
benzo(k)fluoranthene	207-08-9	E641A	0.050	mg/kg	<0.072	<0.050	<0.146	<0.050	<0.050
chrysene	218-01-9	E641A	0.050	mg/kg	0.090	<0.050	<0.146	0.076	0.211
dibenz(a,h)anthracene	53-70-3	E641A	0.050	mg/kg	<0.072	<0.050	<0.146	<0.050	<0.050
fluoranthene	206-44-0	E641A	0.050	mg/kg	<0.072	<0.050	<0.146	<0.050	<0.050
fluorene	86-73-7	E641A	0.050	mg/kg	<0.072	<0.050	<0.146	<0.050	<0.050
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.050	mg/kg	<0.072	<0.050	<0.146	<0.050	<0.050
methylnaphthalene, 1-	90-12-0	E641A	0.050	mg/kg	0.168	0.090	0.216	0.091	0.232
methylnaphthalene, 1+2-	----	E641A	0.075	mg/kg	0.442	0.236	0.563	0.230	0.536
methylnaphthalene, 2-	91-57-6	E641A	0.050	mg/kg	0.274	0.146	0.347	0.139	0.304
naphthalene	91-20-3	E641A	0.050	mg/kg	0.102	<0.050	<0.146	0.058	0.101
phenanthrene	85-01-8	E641A	0.050	mg/kg	0.246	0.102	0.297	0.181	0.502
pyrene	129-00-0	E641A	0.050	mg/kg	<0.072	<0.050	<0.146	<0.050	0.053
quinoline	91-22-5	E641A	0.050	mg/kg	<0.072	<0.050	<0.146	<0.050	<0.050
B(a)P total potency equivalents [B(a)P TPE]	----	E641A	0.065	mg/kg	0.088	<0.065	0.177	<0.065	0.069
IACR (CCME)	----	E641A	0.60	-	0.87	<0.60	1.72	0.61	1.07
IACR AB (coarse)	----	E641A	0.10	-	<0.10	<0.10	<0.15	<0.10	<0.10
IACR AB (fine)	----	E641A	0.10	-	<0.10	<0.10	0.18	<0.10	<0.10
PAHs, total (BC Sched 3.4)	n/a	E641A	0.20	mg/kg	0.71	0.25	0.64	0.45	1.17
PAHs, total (EPA 16)	n/a	E641A	0.20	mg/kg	0.44	<0.20	<0.58	0.32	0.96
Polycyclic Aromatic Hydrocarbons Surrogates									
acridine-d9	34749-75-2	E641A	0.1	%	114	116	127	105	102
chrysene-d12	1719-03-5	E641A	0.1	%	121	130	116	120	115
naphthalene-d8	1146-65-2	E641A	0.1	%	123	121	121	116	115



Analytical Results

Sub-Matrix: **Sediment**
 (Matrix: **Soil/Solid**)

Client sample ID

					RG_ERCKUT_B RYOSE-1_LAEM P_EVO_2022-0 6_29_NP	RG_ERCKUT_B RYOSE-2_LAEM P_EVO_2022-0 6_29_NP	RG_ERCKUT_B RYOSE-3_LAEM P_EVO_2022-0 6_29_NP	RG_ERCKMD_S E-1_LAEMP_EV O_2022-06_29_ NP	RG_ERCKMD_S E-2_LAEMP_EV O_2022-06_29_ NP
Client sampling date / time					29-Jun-2022 08:25	29-Jun-2022 08:30	29-Jun-2022 08:35	29-Jun-2022 08:00	29-Jun-2022 08:05
Analyte	CAS Number	Method	LOR	Unit	CG2208567-006	CG2208567-007	CG2208567-008	CG2208567-009	CG2208567-010
					Result	Result	Result	Result	Result
Polycyclic Aromatic Hydrocarbons Surrogates									
phenanthrene-d10	1517-22-2	E641A	0.1	%	118	118	129	111	107

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Sediment

(Matrix: Soil/Solid)

Client sample ID

					RG_ERCKMD_S E-3_LAEMP_EV O_2022-06_29_ NP	RG_ERCKMD_B RYOSE-1_LAEM P_EVO_2022-0 6_29_NP	RG_ERCKMD_B RYOSE-2_LAEM P_EVO_2022-0 6_29_NP	RG_ERCKMD_B RYOSE-3_LAEM P_EVO_2022-0 6_29_NP	RG_ERCKDT_S E-1_LAEMP_EV O_2022-06_29_ NP
Client sampling date / time					29-Jun-2022 08:10	29-Jun-2022 08:25	29-Jun-2022 08:30	29-Jun-2022 08:35	29-Jun-2022 08:00
Analyte	CAS Number	Method	LOR	Unit	CG2208567-011	CG2208567-012	CG2208567-013	CG2208567-014	CG2208567-015
					Result	Result	Result	Result	Result
Physical Tests									
moisture	----	E144	0.25	%	77.8	88.8	81.2	77.7	67.9
pH (1:2 soil:water)	----	E108	0.10	pH units	7.91	8.01	8.02	8.12	7.87
Particle Size									
grain size curve	----	E185A	-	-	See Attached	See Attached	See Attached	See Attached	See Attached
clay (<0.004mm)	----	EC184A	1.0	%	7.2	11.2	8.7	7.6	7.6
silt (0.063mm - 0.0312mm)	----	EC184A	1.0	%	29.6	21.7	13.9	11.4	17.0
silt (0.0312mm - 0.004mm)	----	EC184A	1.0	%	36.8	31.4	20.0	17.0	25.0
sand (0.125mm - 0.063mm)	----	EC184A	1.0	%	6.7	9.0	5.4	5.1	7.0
sand (0.25mm - 0.125mm)	----	EC184A	1.0	%	7.2	14.7	8.9	10.4	9.8
sand (0.5mm - 0.25mm)	----	EC184A	1.0	%	7.3	9.8	13.8	15.9	17.2
sand (1.0mm - 0.50mm)	----	EC184A	1.0	%	4.1	2.0	16.1	19.8	11.5
sand (2.0mm - 1.0mm)	----	EC184A	1.0	%	<1.0	<1.0	11.2	12.7	4.0
gravel (>2mm)	----	EC184A	1.0	%	<1.0	<1.0	2.0	<1.0	<1.0
Organic / Inorganic Carbon									
carbon, total [TC]	----	E351	0.050	%	14.7	13.7	14.2	13.3	12.0
carbon, inorganic [IC]	----	E354	0.050	%	2.52	4.59	7.59	8.32	1.98
carbon, inorganic [IC], (as CaCO3 equivalent)	----	E354	0.40	%	21.0	38.2	63.2	69.4	16.5
carbon, total organic [TOC]	----	EC356	0.050	%	12.2	9.11	6.61	4.98	10.0
Metals									
aluminum	7429-90-5	E440	50	mg/kg	3790	2040	1190	1260	3940
antimony	7440-36-0	E440	0.10	mg/kg	1.07	0.94	0.70	0.60	1.22
arsenic	7440-38-2	E440	0.10	mg/kg	6.12	15.5	12.1	9.52	12.8
barium	7440-39-3	E440	0.50	mg/kg	183	306	297	278	204
beryllium	7440-41-7	E440	0.10	mg/kg	0.51	0.45	0.28	0.26	0.60
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20
boron	7440-42-8	E440	5.0	mg/kg	9.0	7.5	8.3	5.9	7.7
cadmium	7440-43-9	E440	0.020	mg/kg	5.04	9.62	8.89	7.76	4.37
calcium	7440-70-2	E440	50	mg/kg	86800	146000	237000	240000	62200
chromium	7440-47-3	E440	0.50	mg/kg	10.5	4.89	3.15	3.13	8.58



Analytical Results

Sub-Matrix: Sediment
 (Matrix: Soil/Solid)

Client sample ID

					RG_ERCKMD_S E-3_LAEMP_EV O_2022-06_29_ NP	RG_ERCKMD_B RYOSE-1_LAEM P_EVO_2022-0 6_29_NP	RG_ERCKMD_B RYOSE-2_LAEM P_EVO_2022-0 6_29_NP	RG_ERCKMD_B RYOSE-3_LAEM P_EVO_2022-0 6_29_NP	RG_ERCKDT_S E-1_LAEMP_EV O_2022-06_29_ NP
Client sampling date / time					29-Jun-2022 08:10	29-Jun-2022 08:25	29-Jun-2022 08:30	29-Jun-2022 08:35	29-Jun-2022 08:00
Analyte	CAS Number	Method	LOR	Unit	CG2208567-011	CG2208567-012	CG2208567-013	CG2208567-014	CG2208567-015
					Result	Result	Result	Result	Result
Metals									
cobalt	7440-48-4	E440	0.10	mg/kg	180	243	214	164	124
copper	7440-50-8	E440	0.50	mg/kg	15.9	13.2	8.27	7.32	15.2
iron	7439-89-6	E440	50	mg/kg	12700	29300	21800	17400	23200
lead	7439-92-1	E440	0.50	mg/kg	8.04	9.56	6.06	5.23	10.2
lithium	7439-93-2	E440	2.0	mg/kg	5.2	3.2	2.4	2.3	5.3
magnesium	7439-95-4	E440	20	mg/kg	6720	6580	5640	5530	6270
manganese	7439-96-5	E440	1.0	mg/kg	4860	9110	7680	5530	2990
mercury	7439-97-6	E510	0.0050	mg/kg	0.0653	0.0408	0.0303	0.0259	0.0486
molybdenum	7439-98-7	E440	0.10	mg/kg	2.85	1.97	1.65	1.41	3.19
nickel	7440-02-0	E440	0.50	mg/kg	223	116	103	75.6	137
phosphorus	7723-14-0	E440	50	mg/kg	1190	1520	1220	1010	1360
potassium	7440-09-7	E440	100	mg/kg	860	740	590	520	990
selenium	7782-49-2	E440	0.20	mg/kg	21.2	21.8	16.8	12.6	17.3
silver	7440-22-4	E440	0.10	mg/kg	0.24	0.20	0.12	0.11	0.20
sodium	7440-23-5	E440	50	mg/kg	82	150	134	112	69
strontium	7440-24-6	E440	0.50	mg/kg	69.7	99.5	112	114	68.5
sulfur	7704-34-9	E440	1000	mg/kg	2600	4300	5300	5500	1700
thallium	7440-28-0	E440	0.050	mg/kg	0.353	0.488	0.418	0.313	0.400
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
titanium	7440-32-6	E440	1.0	mg/kg	13.5	8.8	7.4	7.2	9.8
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
uranium	7440-61-1	E440	0.050	mg/kg	1.76	2.12	2.73	2.64	2.16
vanadium	7440-62-2	E440	0.20	mg/kg	18.7	16.5	10.4	9.76	21.6
zinc	7440-66-6	E440	2.0	mg/kg	255	356	326	257	206
zirconium	7440-67-7	E440	1.0	mg/kg	1.5	<1.0	<1.0	<1.0	<1.0
Polycyclic Aromatic Hydrocarbons									
acenaphthene	83-32-9	E641A	0.050	mg/kg	<0.050	<0.065	<0.071	<0.050	0.052
acenaphthylene	208-96-8	E641A	0.050	mg/kg	<0.050	<0.065	<0.071	<0.050	<0.050
acridine	260-94-6	E641A	0.050	mg/kg	0.069	0.093	<0.071	0.050	0.096



Analytical Results

Sub-Matrix: Sediment
 (Matrix: Soil/Solid)

Client sample ID

					RG_ERCKMD_S E-3_LAEMP_EV O_2022-06_29_ NP	RG_ERCKMD_B RYOSE-1_LAEM P_EVO_2022-0 6_29_NP	RG_ERCKMD_B RYOSE-2_LAEM P_EVO_2022-0 6_29_NP	RG_ERCKMD_B RYOSE-3_LAEM P_EVO_2022-0 6_29_NP	RG_ERCKDT_S E-1_LAEMP_EV O_2022-06_29_ NP
Client sampling date / time					29-Jun-2022 08:10	29-Jun-2022 08:25	29-Jun-2022 08:30	29-Jun-2022 08:35	29-Jun-2022 08:00
Analyte	CAS Number	Method	LOR	Unit	CG2208567-011	CG2208567-012	CG2208567-013	CG2208567-014	CG2208567-015
					Result	Result	Result	Result	Result
Polycyclic Aromatic Hydrocarbons									
anthracene	120-12-7	E641A	0.050	mg/kg	<0.050	<0.065	<0.071	<0.050	<0.050
benz(a)anthracene	56-55-3	E641A	0.050	mg/kg	<0.050	<0.065	<0.071	<0.050	<0.050
benzo(a)pyrene	50-32-8	E641A	0.050	mg/kg	<0.050	<0.065	<0.071	<0.050	<0.050
benzo(b+j)fluoranthene	n/a	E641A	0.050	mg/kg	0.121	0.076	<0.071	0.051	0.079
benzo(b+j+k)fluoranthene	n/a	E641A	0.075	mg/kg	0.121	<0.092	<0.100	<0.075	0.079
benzo(g,h,i)perylene	191-24-2	E641A	0.050	mg/kg	<0.050	<0.065	<0.071	<0.050	<0.050
benzo(k)fluoranthene	207-08-9	E641A	0.050	mg/kg	<0.050	<0.065	<0.071	<0.050	<0.050
chrysene	218-01-9	E641A	0.050	mg/kg	0.268	0.181	<0.071	0.109	0.200
dibenz(a,h)anthracene	53-70-3	E641A	0.050	mg/kg	<0.050	<0.065	<0.071	<0.050	<0.050
fluoranthene	206-44-0	E641A	0.050	mg/kg	0.055	<0.065	<0.071	<0.050	<0.050
fluorene	86-73-7	E641A	0.050	mg/kg	0.102	0.123	<0.071	0.072	0.148
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.050	mg/kg	<0.050	<0.065	<0.071	<0.050	<0.050
methylnaphthalene, 1-	90-12-0	E641A	0.050	mg/kg	0.320	0.377	0.152	0.233	0.460
methylnaphthalene, 1+2-	----	E641A	0.075	mg/kg	0.824	1.08	0.425	0.660	1.31
methylnaphthalene, 2-	91-57-6	E641A	0.050	mg/kg	0.504	0.704	0.273	0.427	0.849
naphthalene	91-20-3	E641A	0.050	mg/kg	0.152	0.206	0.083	0.126	0.238
phenanthrene	85-01-8	E641A	0.050	mg/kg	0.654	0.538	0.194	0.329	0.639
pyrene	129-00-0	E641A	0.050	mg/kg	0.083	<0.065	<0.071	<0.050	0.056
quinoline	91-22-5	E641A	0.050	mg/kg	<0.050	<0.065	<0.071	<0.050	<0.050
B(a)P total potency equivalents [B(a)P TPE]	----	E641A	0.065	mg/kg	0.072	0.084	0.086	<0.065	0.068
IACR (CCME)	----	E641A	0.60	-	1.30	1.11	0.84	0.79	1.01
IACR AB (coarse)	----	E641A	0.10	-	<0.10	<0.10	<0.10	<0.10	<0.10
IACR AB (fine)	----	E641A	0.10	-	<0.10	<0.10	<0.10	<0.10	<0.10
PAHs, total (BC Sched 3.4)	n/a	E641A	0.20	mg/kg	1.82	1.75	0.55	1.06	2.18
PAHs, total (EPA 16)	n/a	E641A	0.20	mg/kg	1.44	1.12	<0.28	0.69	1.41
Polycyclic Aromatic Hydrocarbons Surrogates									
acridine-d9	34749-75-2	E641A	0.1	%	104	106	118	127	122
chrysene-d12	1719-03-5	E641A	0.1	%	120	118	121	113	124
naphthalene-d8	1146-65-2	E641A	0.1	%	114	115	128	123	124



Analytical Results

Sub-Matrix: **Sediment**
 (Matrix: **Soil/Solid**)

Client sample ID

					RG_ERCKMD_S E-3_LAEMP_EV O_2022-06_29_ NP	RG_ERCKMD_B RYOSE-1_LAEM P_EVO_2022-0 6_29_NP	RG_ERCKMD_B RYOSE-2_LAEM P_EVO_2022-0 6_29_NP	RG_ERCKMD_B RYOSE-3_LAEM P_EVO_2022-0 6_29_NP	RG_ERCKDT_S E-1_LAEMP_EV O_2022-06_29_ NP	
					Client sampling date / time	29-Jun-2022 08:10	29-Jun-2022 08:25	29-Jun-2022 08:30	29-Jun-2022 08:35	29-Jun-2022 08:00
Analyte	CAS Number	Method	LOR	Unit	CG2208567-011	CG2208567-012	CG2208567-013	CG2208567-014	CG2208567-015	
					Result	Result	Result	Result	Result	
Polycyclic Aromatic Hydrocarbons Surrogates										
phenanthrene-d10	1517-22-2	E641A	0.1	%	110	108	123	125	126	

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Sediment

(Matrix: Soil/Solid)

Client sample ID

					RG_ERCKDT_S E-2_LAEMP_EV O_2022-06_29_ NP	RG_ERCKDT_S E-3_LAEMP_EV O_2022-06_29_ NP	RG_ERCKDT_S E-4_LAEMP_EV O_2022-06_29_ NP	RG_ERCKDT_B RYOSE-1_LAEM P_EVO_2022-0 6_29_NP	RG_ERCKDT_B RYOSE-2_LAEM P_EVO_2022-0 6_29_NP
Client sampling date / time					29-Jun-2022 08:05	29-Jun-2022 08:10	29-Jun-2022 08:15	29-Jun-2022 08:25	29-Jun-2022 08:30
Analyte	CAS Number	Method	LOR	Unit	CG2208567-016	CG2208567-017	CG2208567-018	CG2208567-022	CG2208567-023
					Result	Result	Result	Result	Result
Physical Tests									
moisture	----	E144	0.25	%	77.0	66.8	80.5	87.5	80.1
pH (1:2 soil:water)	----	E108	0.10	pH units	7.78	7.88	7.79	7.64	7.90
Particle Size									
grain size curve	----	E185A	-	-	See Attached	See Attached	See Attached	See Attached	See Attached
clay (<0.004mm)	----	EC184A	1.0	%	6.4	8.6	8.6	11.2	17.5
silt (0.063mm - 0.0312mm)	----	EC184A	1.0	%	21.5	20.0	29.1	26.1	26.8
silt (0.0312mm - 0.004mm)	----	EC184A	1.0	%	29.1	28.8	40.9	37.3	49.4
sand (0.125mm - 0.063mm)	----	EC184A	1.0	%	5.7	11.7	9.2	8.0	4.3
sand (0.25mm - 0.125mm)	----	EC184A	1.0	%	7.5	12.2	7.8	9.2	1.1
sand (0.5mm - 0.25mm)	----	EC184A	1.0	%	7.3	9.6	3.3	5.6	<1.0
sand (1.0mm - 0.50mm)	----	EC184A	1.0	%	8.0	5.7	<1.0	1.7	<1.0
sand (2.0mm - 1.0mm)	----	EC184A	1.0	%	8.8	2.9	<1.0	<1.0	<1.0
gravel (>2mm)	----	EC184A	1.0	%	5.7	<1.0	<1.0	<1.0	<1.0
Organic / Inorganic Carbon									
carbon, total [TC]	----	E351	0.050	%	15.0	11.8	16.2	14.9	13.0
carbon, inorganic [IC]	----	E354	0.050	%	1.81	2.70	2.31	3.54	2.89
carbon, inorganic [IC], (as CaCO3 equivalent)	----	E354	0.40	%	15.1	22.5	19.3	29.5	24.1
carbon, total organic [TOC]	----	EC356	0.050	%	13.2	9.10	13.9	11.4	10.1
Metals									
aluminum	7429-90-5	E440	50	mg/kg	3560	3680	3490	2920	3040
antimony	7440-36-0	E440	0.10	mg/kg	1.31	0.72	0.91	1.21	1.29
arsenic	7440-38-2	E440	0.10	mg/kg	8.07	6.20	10.9	9.11	22.1
barium	7440-39-3	E440	0.50	mg/kg	187	201	238	216	268
beryllium	7440-41-7	E440	0.10	mg/kg	0.44	0.44	0.52	0.42	0.59
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20
boron	7440-42-8	E440	5.0	mg/kg	10.9	<5.0	6.4	8.7	6.5
cadmium	7440-43-9	E440	0.020	mg/kg	3.76	2.44	4.70	4.84	8.73
calcium	7440-70-2	E440	50	mg/kg	64600	82100	77100	115000	89500
chromium	7440-47-3	E440	0.50	mg/kg	53.2	28.6	9.52	7.16	7.91



Analytical Results

Sub-Matrix: Sediment

(Matrix: Soil/Solid)

Client sample ID

					RG_ERCKDT_S E-2_LAEMP_EV O_2022-06_29_ NP	RG_ERCKDT_S E-3_LAEMP_EV O_2022-06_29_ NP	RG_ERCKDT_S E-4_LAEMP_EV O_2022-06_29_ NP	RG_ERCKDT_B RYOSE-1_LAEM P_EVO_2022-0 6_29_NP	RG_ERCKDT_B RYOSE-2_LAEM P_EVO_2022-0 6_29_NP
Client sampling date / time					29-Jun-2022 08:05	29-Jun-2022 08:10	29-Jun-2022 08:15	29-Jun-2022 08:25	29-Jun-2022 08:30
Analyte	CAS Number	Method	LOR	Unit	CG2208567-016	CG2208567-017	CG2208567-018	CG2208567-022	CG2208567-023
					Result	Result	Result	Result	Result
Metals									
cobalt	7440-48-4	E440	0.10	mg/kg	112	14.8	41.4	211	267
copper	7440-50-8	E440	0.50	mg/kg	17.3	13.3	15.8	13.5	16.0
iron	7439-89-6	E440	50	mg/kg	16200	16300	20800	15800	37100
lead	7439-92-1	E440	0.50	mg/kg	8.42	7.20	9.07	7.28	12.8
lithium	7439-93-2	E440	2.0	mg/kg	4.7	4.5	4.8	4.6	5.4
magnesium	7439-95-4	E440	20	mg/kg	6980	4020	6460	8420	10700
manganese	7439-96-5	E440	1.0	mg/kg	2840	291	528	5550	6730
mercury	7439-97-6	E510	0.0050	mg/kg	0.0630	0.0445	0.0490	0.0375	0.0396
molybdenum	7439-98-7	E440	0.10	mg/kg	8.38	3.61	1.71	3.48	4.35
nickel	7440-02-0	E440	0.50	mg/kg	240	43.2	59.4	117	165
phosphorus	7723-14-0	E440	50	mg/kg	1360	1150	1470	1570	1760
potassium	7440-09-7	E440	100	mg/kg	890	720	790	1080	810
selenium	7782-49-2	E440	0.20	mg/kg	14.0	6.25	20.9	16.3	23.5
silver	7440-22-4	E440	0.10	mg/kg	0.23	0.19	0.24	0.19	0.26
sodium	7440-23-5	E440	50	mg/kg	79	53	85	118	110
strontium	7440-24-6	E440	0.50	mg/kg	63.5	71.4	74.7	85.0	93.7
sulfur	7704-34-9	E440	1000	mg/kg	2400	<1000	1500	3200	2400
thallium	7440-28-0	E440	0.050	mg/kg	0.420	0.174	0.260	0.268	0.467
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
titanium	7440-32-6	E440	1.0	mg/kg	11.2	9.1	10.6	10.0	9.7
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
uranium	7440-61-1	E440	0.050	mg/kg	2.23	1.11	1.32	2.22	2.18
vanadium	7440-62-2	E440	0.20	mg/kg	18.8	20.3	18.3	16.3	18.3
zinc	7440-66-6	E440	2.0	mg/kg	183	116	173	178	348
zirconium	7440-67-7	E440	1.0	mg/kg	1.5	1.2	1.2	<1.0	<1.0
Polycyclic Aromatic Hydrocarbons									
acenaphthene	83-32-9	E641A	0.050	mg/kg	0.052	<0.050	0.069	<0.074	0.095
acenaphthylene	208-96-8	E641A	0.050	mg/kg	<0.050	<0.050	<0.067	<0.074	<0.073
acridine	260-94-6	E641A	0.050	mg/kg	0.092	0.074	0.154	0.130	0.229



Analytical Results

Sub-Matrix: Sediment

(Matrix: Soil/Solid)

Client sample ID

					RG_ERCKDT_S E-2_LAEMP_EV O_2022-06_29_ NP	RG_ERCKDT_S E-3_LAEMP_EV O_2022-06_29_ NP	RG_ERCKDT_S E-4_LAEMP_EV O_2022-06_29_ NP	RG_ERCKDT_B RYOSE-1_LAEM P_EVO_2022-0 6_29_NP	RG_ERCKDT_B RYOSE-2_LAEM P_EVO_2022-0 6_29_NP
Client sampling date / time					29-Jun-2022 08:05	29-Jun-2022 08:10	29-Jun-2022 08:15	29-Jun-2022 08:25	29-Jun-2022 08:30
Analyte	CAS Number	Method	LOR	Unit	CG2208567-016	CG2208567-017	CG2208567-018	CG2208567-022	CG2208567-023
					Result	Result	Result	Result	Result
Polycyclic Aromatic Hydrocarbons									
anthracene	120-12-7	E641A	0.050	mg/kg	<0.050	<0.050	<0.067	<0.074	<0.073
benz(a)anthracene	56-55-3	E641A	0.050	mg/kg	<0.050	<0.050	<0.067	<0.074	<0.073
benzo(a)pyrene	50-32-8	E641A	0.050	mg/kg	<0.050	<0.050	<0.067	<0.074	<0.073
benzo(b+j)fluoranthene	n/a	E641A	0.050	mg/kg	0.103	0.093	0.128	0.112	0.132
benzo(b+j+k)fluoranthene	n/a	E641A	0.075	mg/kg	0.103	0.093	0.128	0.112	0.132
benzo(g,h,i)perylene	191-24-2	E641A	0.050	mg/kg	<0.050	<0.050	<0.067	<0.074	<0.073
benzo(k)fluoranthene	207-08-9	E641A	0.050	mg/kg	<0.050	<0.050	<0.067	<0.074	<0.073
chrysene	218-01-9	E641A	0.050	mg/kg	0.234	0.216	0.325	0.264	0.345
dibenz(a,h)anthracene	53-70-3	E641A	0.050	mg/kg	<0.050	<0.050	<0.067	<0.074	<0.073
fluoranthene	206-44-0	E641A	0.050	mg/kg	<0.050	<0.050	<0.067	<0.074	0.074
fluorene	86-73-7	E641A	0.050	mg/kg	0.133	0.108	0.228	0.173	0.328
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.050	mg/kg	<0.050	<0.050	<0.067	<0.074	<0.073
methylnaphthalene, 1-	90-12-0	E641A	0.050	mg/kg	0.449	0.390	0.731	0.576	0.949
methylnaphthalene, 1+2-	----	E641A	0.075	mg/kg	1.24	1.10	2.12	1.63	2.86
methylnaphthalene, 2-	91-57-6	E641A	0.050	mg/kg	0.787	0.710	1.39	1.05	1.91
naphthalene	91-20-3	E641A	0.050	mg/kg	0.229	0.248	0.432	0.304	0.523
phenanthrene	85-01-8	E641A	0.050	mg/kg	0.687	0.666	1.06	0.771	1.16
pyrene	129-00-0	E641A	0.050	mg/kg	0.065	0.058	0.092	<0.074	0.106
quinoline	91-22-5	E641A	0.050	mg/kg	<0.050	<0.050	<0.067	<0.074	<0.073
B(a)P total potency equivalents [B(a)P TPE]	----	E641A	0.065	mg/kg	0.070	0.069	0.093	0.099	0.101
IACR (CCME)	----	E641A	0.60	-	1.18	1.10	1.52	1.45	1.60
IACR AB (coarse)	----	E641A	0.10	-	<0.10	<0.10	<0.10	<0.10	<0.10
IACR AB (fine)	----	E641A	0.10	-	<0.10	<0.10	0.12	0.12	0.13
PAHs, total (BC Sched 3.4)	n/a	E641A	0.20	mg/kg	2.19	2.01	3.60	2.56	4.54
PAHs, total (EPA 16)	n/a	E641A	0.20	mg/kg	1.50	1.39	2.33	1.62	2.76
Polycyclic Aromatic Hydrocarbons Surrogates									
acridine-d9	34749-75-2	E641A	0.1	%	111	110	120	110	108
chrysene-d12	1719-03-5	E641A	0.1	%	128	124	120	124	122
naphthalene-d8	1146-65-2	E641A	0.1	%	125	122	121	120	121



Analytical Results

Sub-Matrix: **Sediment**
 (Matrix: **Soil/Solid**)

Client sample ID

					RG_ERCKDT_S E-2_LAEMP_EV O_2022-06_29_ NP	RG_ERCKDT_S E-3_LAEMP_EV O_2022-06_29_ NP	RG_ERCKDT_S E-4_LAEMP_EV O_2022-06_29_ NP	RG_ERCKDT_B RYOSE-1_LAEM P_EVO_2022-0 6_29_NP	RG_ERCKDT_B RYOSE-2_LAEM P_EVO_2022-0 6_29_NP
Client sampling date / time					29-Jun-2022 08:05	29-Jun-2022 08:10	29-Jun-2022 08:15	29-Jun-2022 08:25	29-Jun-2022 08:30
Analyte	CAS Number	Method	LOR	Unit	CG2208567-016	CG2208567-017	CG2208567-018	CG2208567-022	CG2208567-023
					Result	Result	Result	Result	Result
Polycyclic Aromatic Hydrocarbons Surrogates									
phenanthrene-d10	1517-22-2	E641A	0.1	%	116	116	127	112	113

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Sediment

(Matrix: Soil/Solid)

Client sample ID

					RG_ERCKDT_B RYOSE-3_LAEM P_EVO_2022-0 6_29_NP	RG_ERCKDT_S E-5_LAEMP_EV O_2022-06-29_ NP	----	----	----
Client sampling date / time					29-Jun-2022 08:20	29-Jun-2022 08:00	----	----	----
Analyte	CAS Number	Method	LOR	Unit	CG2208567-024 Result	CG2208567-026 Result	----- ----	----- ----	----- ----
Physical Tests									
moisture	----	E144	0.25	%	87.6	64.0	----	----	----
pH (1:2 soil:water)	----	E108	0.10	pH units	7.72	7.61	----	----	----
Particle Size									
grain size curve	----	E185A	-	-	See Attached	See Attached	----	----	----
clay (<0.004mm)	----	EC184A	1.0	%	9.7	10.1	----	----	----
silt (0.063mm - 0.0312mm)	----	EC184A	1.0	%	16.4	16.9	----	----	----
silt (0.0312mm - 0.004mm)	----	EC184A	1.0	%	26.0	27.8	----	----	----
sand (0.125mm - 0.063mm)	----	EC184A	1.0	%	9.5	10.8	----	----	----
sand (0.25mm - 0.125mm)	----	EC184A	1.0	%	16.7	14.1	----	----	----
sand (0.5mm - 0.25mm)	----	EC184A	1.0	%	13.8	9.3	----	----	----
sand (1.0mm - 0.50mm)	----	EC184A	1.0	%	7.2	5.6	----	----	----
sand (2.0mm - 1.0mm)	----	EC184A	1.0	%	<1.0	2.0	----	----	----
gravel (>2mm)	----	EC184A	1.0	%	<1.0	3.4	----	----	----
Organic / Inorganic Carbon									
carbon, total [TC]	----	E351	0.050	%	16.6	10.1	----	----	----
carbon, inorganic [IC]	----	E354	0.050	%	5.28	3.18	----	----	----
carbon, inorganic [IC], (as CaCO3 equivalent)	----	E354	0.40	%	44.0	26.5	----	----	----
carbon, total organic [TOC]	----	EC356	0.050	%	11.3	6.92	----	----	----
Metals									
aluminum	7429-90-5	E440	50	mg/kg	2150	3300	----	----	----
antimony	7440-36-0	E440	0.10	mg/kg	1.02	0.62	----	----	----
arsenic	7440-38-2	E440	0.10	mg/kg	6.22	5.78	----	----	----
barium	7440-39-3	E440	0.50	mg/kg	197	148	----	----	----
beryllium	7440-41-7	E440	0.10	mg/kg	0.31	0.37	----	----	----
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	----	----	----
boron	7440-42-8	E440	5.0	mg/kg	8.5	5.4	----	----	----
cadmium	7440-43-9	E440	0.020	mg/kg	4.79	2.08	----	----	----
calcium	7440-70-2	E440	50	mg/kg	168000	95300	----	----	----
chromium	7440-47-3	E440	0.50	mg/kg	5.29	23.9	----	----	----



Analytical Results

Sub-Matrix: Sediment
 (Matrix: Soil/Solid)

Client sample ID

					RG_ERCKDT_B RYOSE-3_LAEM P_EVO_2022-0 6_29_NP	RG_ERCKDT_S E-5_LAEMP_EV O_2022-06-29_ NP	----	----	----
Client sampling date / time					29-Jun-2022 08:20	29-Jun-2022 08:00	----	----	----
Analyte	CAS Number	Method	LOR	Unit	CG2208567-024 Result	CG2208567-026 Result	----- ---	----- ---	----- ---
Metals									
cobalt	7440-48-4	E440	0.10	mg/kg	307	21.7	---	---	---
copper	7440-50-8	E440	0.50	mg/kg	10.2	11.3	---	---	---
iron	7439-89-6	E440	50	mg/kg	10000	11600	---	---	---
lead	7439-92-1	E440	0.50	mg/kg	4.00	6.19	---	---	---
lithium	7439-93-2	E440	2.0	mg/kg	3.5	5.3	---	---	---
magnesium	7439-95-4	E440	20	mg/kg	7370	9180	---	---	---
manganese	7439-96-5	E440	1.0	mg/kg	6440	392	---	---	---
mercury	7439-97-6	E510	0.0050	mg/kg	0.0362	0.0348	---	---	---
molybdenum	7439-98-7	E440	0.10	mg/kg	4.48	3.51	---	---	---
nickel	7440-02-0	E440	0.50	mg/kg	215	43.9	---	---	---
phosphorus	7723-14-0	E440	50	mg/kg	1030	1090	---	---	---
potassium	7440-09-7	E440	100	mg/kg	810	960	---	---	---
selenium	7782-49-2	E440	0.20	mg/kg	18.8	12.0	---	---	---
silver	7440-22-4	E440	0.10	mg/kg	0.12	0.13	---	---	---
sodium	7440-23-5	E440	50	mg/kg	232	118	---	---	---
strontium	7440-24-6	E440	0.50	mg/kg	111	84.2	---	---	---
sulfur	7704-34-9	E440	1000	mg/kg	4100	1900	---	---	---
thallium	7440-28-0	E440	0.050	mg/kg	0.259	0.219	---	---	---
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	---	---	---
titanium	7440-32-6	E440	1.0	mg/kg	10.6	10.7	---	---	---
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	---	---	---
uranium	7440-61-1	E440	0.050	mg/kg	2.47	1.59	---	---	---
vanadium	7440-62-2	E440	0.20	mg/kg	13.0	16.2	---	---	---
zinc	7440-66-6	E440	2.0	mg/kg	198	102	---	---	---
zirconium	7440-67-7	E440	1.0	mg/kg	<1.0	<1.0	---	---	---
Polycyclic Aromatic Hydrocarbons									
acenaphthene	83-32-9	E641A	0.050	mg/kg	<0.070	<0.050	---	---	---
acenaphthylene	208-96-8	E641A	0.050	mg/kg	<0.070	<0.050	---	---	---
acridine	260-94-6	E641A	0.050	mg/kg	0.083	<0.050	---	---	---



Analytical Results

Sub-Matrix: Sediment
 (Matrix: Soil/Solid)

Client sample ID

					RG_ERCKDT_B RYOSE-3_LAEM P_EVO_2022-0 6_29_NP	RG_ERCKDT_S E-5_LAEMP_EV O_2022-06-29_ NP	----	----	----
Client sampling date / time					29-Jun-2022 08:20	29-Jun-2022 08:00	----	----	----
Analyte	CAS Number	Method	LOR	Unit	CG2208567-024 Result	CG2208567-026 Result	----- ----	----- ----	----- ----
Polycyclic Aromatic Hydrocarbons									
anthracene	120-12-7	E641A	0.050	mg/kg	<0.070	<0.050	----	----	----
benz(a)anthracene	56-55-3	E641A	0.050	mg/kg	<0.070	<0.050	----	----	----
benzo(a)pyrene	50-32-8	E641A	0.050	mg/kg	<0.070	<0.050	----	----	----
benzo(b+j)fluoranthene	n/a	E641A	0.050	mg/kg	0.071	<0.050	----	----	----
benzo(b+j+k)fluoranthene	n/a	E641A	0.075	mg/kg	<0.099	<0.075	----	----	----
benzo(g,h,i)perylene	191-24-2	E641A	0.050	mg/kg	<0.070	<0.050	----	----	----
benzo(k)fluoranthene	207-08-9	E641A	0.050	mg/kg	<0.070	<0.050	----	----	----
chrysene	218-01-9	E641A	0.050	mg/kg	0.170	0.116	----	----	----
dibenz(a,h)anthracene	53-70-3	E641A	0.050	mg/kg	<0.070	<0.050	----	----	----
fluoranthene	206-44-0	E641A	0.050	mg/kg	<0.070	<0.050	----	----	----
fluorene	86-73-7	E641A	0.050	mg/kg	0.117	0.056	----	----	----
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.050	mg/kg	<0.070	<0.050	----	----	----
methylnaphthalene, 1-	90-12-0	E641A	0.050	mg/kg	0.423	0.196	----	----	----
methylnaphthalene, 1+2-	----	E641A	0.075	mg/kg	1.18	0.536	----	----	----
methylnaphthalene, 2-	91-57-6	E641A	0.050	mg/kg	0.757	0.340	----	----	----
naphthalene	91-20-3	E641A	0.050	mg/kg	0.218	0.120	----	----	----
phenanthrene	85-01-8	E641A	0.050	mg/kg	0.543	0.315	----	----	----
pyrene	129-00-0	E641A	0.050	mg/kg	<0.070	<0.050	----	----	----
quinoline	91-22-5	E641A	0.050	mg/kg	<0.070	<0.050	----	----	----
B(a)P total potency equivalents [B(a)P TPE]	----	E641A	0.065	mg/kg	0.090	<0.065	----	----	----
IACR (CCME)	----	E641A	0.60	-	1.11	0.63	----	----	----
IACR AB (coarse)	----	E641A	0.10	-	<0.10	<0.10	----	----	----
IACR AB (fine)	----	E641A	0.10	-	0.10	<0.10	----	----	----
PAHs, total (BC Sched 3.4)	n/a	E641A	0.20	mg/kg	1.80	0.95	----	----	----
PAHs, total (EPA 16)	n/a	E641A	0.20	mg/kg	1.12	0.61	----	----	----
Polycyclic Aromatic Hydrocarbons Surrogates									
acridine-d9	34749-75-2	E641A	0.1	%	107	109	----	----	----
chrysene-d12	1719-03-5	E641A	0.1	%	122	124	----	----	----
naphthalene-d8	1146-65-2	E641A	0.1	%	119	122	----	----	----



Analytical Results

Sub-Matrix: **Sediment**
 (Matrix: **Soil/Solid**)

					Client sample ID	RG_ERCKDT_B RYOSE-3_LAEM P_EVO_2022-0 6_29_NP	RG_ERCKDT_S E-5_LAEMP_EV O_2022-06-29_ NP	----	----	----
					Client sampling date / time	29-Jun-2022 08:20	29-Jun-2022 08:00	----	----	----
Analyte	CAS Number	Method	LOR	Unit	CG2208567-024	CG2208567-026	-----	-----	-----	
					Result	Result	----	----	----	
Polycyclic Aromatic Hydrocarbons Surrogates										
phenanthrene-d10	1517-22-2	E641A	0.1	%	112	114	----	----	----	

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: CG2208567	Page	: 1 of 26
Amendment	: 1		
Client	: Teck Coal Limited	Laboratory	: Calgary - Environmental
Contact	: Mike Pope	Account Manager	: Lyudmyla Shvets
Address	: RR#1 HWY#3 Spanwood BC Canada V0B 2G1	Address	: 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5
Telephone	: ----	Telephone	: +1 403 407 1800
Project	: Regional Effects Program	Date Samples Received	: 02-Jul-2022 10:30
PO	: VPO00816101	Issue Date	: 29-Jul-2022 11:26
C-O-C number	: MAY EVO LAEMP 2022		
Sampler	: Robin Valleau		
Site	: ----		
Quote number	: Teck Coal Master Quote		
No. of samples received	: 26		
No. of samples analysed	: 22		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- Duplicate outliers occur - please see following pages for full details.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **Soil/Solid**

Analyte Group	Laboratory sample ID	Client/Ref Sample ID	Analyte	CAS Number	Method	Result	Limits	Comment
Duplicate (DUP) RPDs								
Metals	CG2208567-001	RG_ERCKUT_SE-1_L AEMP_EVO_2022-06 _29_NP	chromium	7440-47-3	E440	38.5 % DUP-H	30%	Duplicate RPD does not meet the DQO for this test.
Metals	CG2208567-001	RG_ERCKUT_SE-1_L AEMP_EVO_2022-06 _29_NP	molybdenum	7439-98-7	E440	40.6 % DUP-H	40%	Duplicate RPD does not meet the DQO for this test.
Metals	CG2208567-024	RG_ERCKDT_BRYO SE-3_LAEMP_EVO_2 022-06_29_NP	sodium	7440-23-5	E440	106 % DUP-H	Diff <2x LOR	Low Level DUP DQO exceeded (difference > 2 LOR).

Result Qualifiers

Qualifier	Description
DUP-H	Duplicate results outside ALS DQO, due to sample heterogeneity.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: Soil/Solid

Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKDT_BRYOSE-1_LAEMP_EVO_2022-06_29_NP	E510	29-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	28 days	8 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKDT_BRYOSE-2_LAEMP_EVO_2022-06_29_NP	E510	29-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	28 days	8 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKDT_BRYOSE-3_LAEMP_EVO_2022-06_29_NP	E510	29-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	28 days	8 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKDT_SE-1_LAEMP_EVO_2022-06_29_NP	E510	29-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	28 days	8 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKDT_SE-2_LAEMP_EVO_2022-06_29_NP	E510	29-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	28 days	8 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKDT_SE-3_LAEMP_EVO_2022-06_29_NP	E510	29-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	28 days	8 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKDT_SE-4_LAEMP_EVO_2022-06_29_NP	E510	29-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	28 days	8 days	✓	



Matrix: **Soil/Solid**

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKDT_SE-5_LAEMP_EVO_2022-06-29_NP	E510	29-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	28 days	8 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKMD_BRYOSE-1_LAEMP_EVO_2022-06_29_NP	E510	29-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	28 days	8 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKMD_BRYOSE-2_LAEMP_EVO_2022-06_29_NP	E510	29-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	28 days	8 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKMD_BRYOSE-3_LAEMP_EVO_2022-06_29_NP	E510	29-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	28 days	8 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKMD_SE-1_LAEMP_EVO_2022-06_29_NP	E510	29-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	28 days	8 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKMD_SE-2_LAEMP_EVO_2022-06_29_NP	E510	29-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	28 days	8 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKMD_SE-3_LAEMP_EVO_2022-06_29_NP	E510	29-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	28 days	8 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKUT_BRYOSE-1_LAEMP_EVO_2022-06_29_NP	E510	29-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	28 days	8 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKUT_BRYOSE-2_LAEMP_EVO_2022-06_29_NP	E510	29-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	28 days	8 days	✔	



Matrix: **Soil/Solid**

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKUT_BRYOSE-3_LAEMP_EVO_2022-06_29_NP	E510	29-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	28 days	8 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKUT_SE-1_LAEMP_EVO_2022-06_29_NP	E510	29-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	28 days	8 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKUT_SE-2_LAEMP_EVO_2022-06_29_NP	E510	29-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	28 days	8 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKUT_SE-3_LAEMP_EVO_2022-06_29_NP	E510	29-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	28 days	8 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKUT_SE-4_LAEMP_EVO_2022-06_29_NP	E510	29-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	28 days	8 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKUT_SE-5_LAEMP_EVO_2022-06_29_NP	E510	29-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	28 days	8 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_ERCKDT_BRYOSE-1_LAEMP_EVO_2022-06_29_NP	E440	29-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	180 days	8 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_ERCKDT_BRYOSE-2_LAEMP_EVO_2022-06_29_NP	E440	29-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	180 days	8 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_ERCKDT_BRYOSE-3_LAEMP_EVO_2022-06_29_NP	E440	29-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	180 days	8 days	✔	



Matrix: **Soil/Solid**

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_ERCKDT_SE-1_LAEMP_EVO_2022-06_29_NP	E440	29-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	180 days	8 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_ERCKDT_SE-2_LAEMP_EVO_2022-06_29_NP	E440	29-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	180 days	8 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_ERCKDT_SE-3_LAEMP_EVO_2022-06_29_NP	E440	29-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	180 days	8 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_ERCKDT_SE-4_LAEMP_EVO_2022-06_29_NP	E440	29-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	180 days	8 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_ERCKDT_SE-5_LAEMP_EVO_2022-06-29_NP	E440	29-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	180 days	8 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_ERCKMD_BRYOSE-1_LAEMP_EVO_2022-06_29_NP	E440	29-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	180 days	8 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_ERCKMD_BRYOSE-2_LAEMP_EVO_2022-06_29_NP	E440	29-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	180 days	8 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_ERCKMD_BRYOSE-3_LAEMP_EVO_2022-06_29_NP	E440	29-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	180 days	8 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_ERCKMD_SE-1_LAEMP_EVO_2022-06_29_NP	E440	29-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	180 days	8 days	✔	



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_ERCKMD_SE-2_LAEMP_EVO_2022-06_29_NP	E440	29-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	180 days	8 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_ERCKMD_SE-3_LAEMP_EVO_2022-06_29_NP	E440	29-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	180 days	8 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_ERCKUT_BRYOSE-1_LAEMP_EVO_2022-06_29_NP	E440	29-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	180 days	8 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_ERCKUT_BRYOSE-2_LAEMP_EVO_2022-06_29_NP	E440	29-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	180 days	8 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_ERCKUT_BRYOSE-3_LAEMP_EVO_2022-06_29_NP	E440	29-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	180 days	8 days	✔	
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LDPE bag RG_ERCKUT_SE-1_LAEMP_EVO_2022-06_29_NP	E440	29-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	180 days	8 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_ERCKUT_SE-2_LAEMP_EVO_2022-06_29_NP	E440	29-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	180 days	8 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_ERCKUT_SE-3_LAEMP_EVO_2022-06_29_NP	E440	29-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	180 days	8 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_ERCKUT_SE-4_LAEMP_EVO_2022-06_29_NP	E440	29-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	180 days	8 days	✔	



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Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_ERCKUT_SE-5_LAEMP_EVO_2022-06_29_NP	E440	29-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	180 days	8 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKDT_BRYOSE-1_LAEMP_EVO_2022-06_29_NP	E351	29-Jun-2022	----	----	----		08-Jul-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKDT_BRYOSE-2_LAEMP_EVO_2022-06_29_NP	E351	29-Jun-2022	----	----	----		08-Jul-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKDT_BRYOSE-3_LAEMP_EVO_2022-06_29_NP	E351	29-Jun-2022	----	----	----		08-Jul-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKDT_SE-1_LAEMP_EVO_2022-06_29_NP	E351	29-Jun-2022	----	----	----		08-Jul-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKDT_SE-2_LAEMP_EVO_2022-06_29_NP	E351	29-Jun-2022	----	----	----		08-Jul-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKDT_SE-3_LAEMP_EVO_2022-06_29_NP	E351	29-Jun-2022	----	----	----		08-Jul-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKDT_SE-4_LAEMP_EVO_2022-06_29_NP	E351	29-Jun-2022	----	----	----		08-Jul-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKDT_SE-5_LAEMP_EVO_2022-06-29_NP	E351	29-Jun-2022	----	----	----		08-Jul-2022	180 days	0 days	✔	



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKMD_BRYOSE-1_LAEMP_EVO_2022-06_29_NP	E351	29-Jun-2022	----	----	----		08-Jul-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKMD_BRYOSE-2_LAEMP_EVO_2022-06_29_NP	E351	29-Jun-2022	----	----	----		08-Jul-2022	180 days	0 days	✔	
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LDPE bag RG_ERCKMD_BRYOSE-3_LAEMP_EVO_2022-06_29_NP	E351	29-Jun-2022	----	----	----		08-Jul-2022	180 days	0 days	✔	
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Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKMD_SE-3_LAEMP_EVO_2022-06_29_NP	E351	29-Jun-2022	----	----	----		08-Jul-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKUT_BRYOSE-1_LAEMP_EVO_2022-06_29_NP	E351	29-Jun-2022	----	----	----		08-Jul-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKUT_BRYOSE-2_LAEMP_EVO_2022-06_29_NP	E351	29-Jun-2022	----	----	----		08-Jul-2022	180 days	0 days	✔	
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LDPE bag RG_ERCKUT_BRYOSE-3_LAEMP_EVO_2022-06_29_NP	E351	29-Jun-2022	----	----	----		08-Jul-2022	180 days	0 days	✔	



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Total Carbon by Combustion										
LDPE bag RG_ERCKUT_SE-1_LAEMP_EVO_2022-06_29_NP	E351	29-Jun-2022	----	----	----		08-Jul-2022	180 days	0 days	✔
Organic / Inorganic Carbon : Total Carbon by Combustion										
LDPE bag RG_ERCKUT_SE-2_LAEMP_EVO_2022-06_29_NP	E351	29-Jun-2022	----	----	----		08-Jul-2022	180 days	0 days	✔
Organic / Inorganic Carbon : Total Carbon by Combustion										
LDPE bag RG_ERCKUT_SE-3_LAEMP_EVO_2022-06_29_NP	E351	29-Jun-2022	----	----	----		08-Jul-2022	180 days	0 days	✔
Organic / Inorganic Carbon : Total Carbon by Combustion										
LDPE bag RG_ERCKUT_SE-4_LAEMP_EVO_2022-06_29_NP	E351	29-Jun-2022	----	----	----		08-Jul-2022	180 days	0 days	✔
Organic / Inorganic Carbon : Total Carbon by Combustion										
LDPE bag RG_ERCKUT_SE-5_LAEMP_EVO_2022-06_29_NP	E351	29-Jun-2022	----	----	----		08-Jul-2022	180 days	0 days	✔
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKDT_BRYOSE-1_LAEMP_EVO_2022-06_29_NP	E354	29-Jun-2022	----	----	----		08-Jul-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKDT_BRYOSE-2_LAEMP_EVO_2022-06_29_NP	E354	29-Jun-2022	----	----	----		08-Jul-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKDT_BRYOSE-3_LAEMP_EVO_2022-06_29_NP	E354	29-Jun-2022	----	----	----		09-Jul-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKDT_SE-1_LAEMP_EVO_2022-06_29_NP	E354	29-Jun-2022	----	----	----		08-Jul-2022	----	----	



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		
				Rec	Actual			Rec	Actual	
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LDPE bag RG_ERCKDT_SE-2_LAEMP_EVO_2022-06_29_NP	E354	29-Jun-2022	----	----	----		08-Jul-2022	----	----	
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LDPE bag RG_ERCKDT_SE-3_LAEMP_EVO_2022-06_29_NP	E354	29-Jun-2022	----	----	----		08-Jul-2022	----	----	
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LDPE bag RG_ERCKDT_SE-4_LAEMP_EVO_2022-06_29_NP	E354	29-Jun-2022	----	----	----		08-Jul-2022	----	----	
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LDPE bag RG_ERCKDT_SE-5_LAEMP_EVO_2022-06-29_NP	E354	29-Jun-2022	----	----	----		09-Jul-2022	----	----	
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LDPE bag RG_ERCKMD_BRYOSE-1_LAEMP_EVO_2022-06_29_NP	E354	29-Jun-2022	----	----	----		08-Jul-2022	----	----	
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LDPE bag RG_ERCKMD_SE-1_LAEMP_EVO_2022-06_29_NP	E354	29-Jun-2022	----	----	----		08-Jul-2022	----	----	
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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKDT_BRYOSE-1_LAEMP_EVO_2022-06_29_NP	E185A	29-Jun-2022	----	----	----		11-Jul-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKDT_BRYOSE-2_LAEMP_EVO_2022-06_29_NP	E185A	29-Jun-2022	----	----	----		11-Jul-2022	365 days	----	
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LDPE bag RG_ERCKUT_SE-3_LAEMP_EVO_2022-06_29_NP	E185A	29-Jun-2022	----	----	----		11-Jul-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKUT_SE-4_LAEMP_EVO_2022-06_29_NP	E185A	29-Jun-2022	----	----	----		11-Jul-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKUT_SE-5_LAEMP_EVO_2022-06_29_NP	E185A	29-Jun-2022	----	----	----		11-Jul-2022	365 days	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKDT_BRYOSE-1_LAEMP_EVO_2022-06_29_NP	E144	29-Jun-2022	----	----	----		03-Jul-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKDT_BRYOSE-2_LAEMP_EVO_2022-06_29_NP	E144	29-Jun-2022	----	----	----		03-Jul-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKDT_BRYOSE-3_LAEMP_EVO_2022-06_29_NP	E144	29-Jun-2022	----	----	----		03-Jul-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKDT_SE-1_LAEMP_EVO_2022-06_29_NP	E144	29-Jun-2022	----	----	----		03-Jul-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKDT_SE-2_LAEMP_EVO_2022-06_29_NP	E144	29-Jun-2022	----	----	----		03-Jul-2022	----	----	



Matrix: **Soil/Solid**

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKDT_SE-3_LAEMP_EVO_2022-06_29_NP	E144	29-Jun-2022	----	----	----		03-Jul-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKDT_SE-4_LAEMP_EVO_2022-06_29_NP	E144	29-Jun-2022	----	----	----		03-Jul-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKDT_SE-5_LAEMP_EVO_2022-06-29_NP	E144	29-Jun-2022	----	----	----		03-Jul-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKMD_BRYOSE-1_LAEMP_EVO_2022-06_29_NP	E144	29-Jun-2022	----	----	----		03-Jul-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKMD_BRYOSE-2_LAEMP_EVO_2022-06_29_NP	E144	29-Jun-2022	----	----	----		03-Jul-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKMD_BRYOSE-3_LAEMP_EVO_2022-06_29_NP	E144	29-Jun-2022	----	----	----		03-Jul-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKMD_SE-1_LAEMP_EVO_2022-06_29_NP	E144	29-Jun-2022	----	----	----		03-Jul-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKMD_SE-2_LAEMP_EVO_2022-06_29_NP	E144	29-Jun-2022	----	----	----		03-Jul-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKMD_SE-3_LAEMP_EVO_2022-06_29_NP	E144	29-Jun-2022	----	----	----		03-Jul-2022	----	----	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKUT_BRYOSE-1_LAEMP_EVO_2022-06_29_NP	E144	29-Jun-2022	----	----	----		03-Jul-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKUT_BRYOSE-2_LAEMP_EVO_2022-06_29_NP	E144	29-Jun-2022	----	----	----		03-Jul-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKUT_BRYOSE-3_LAEMP_EVO_2022-06_29_NP	E144	29-Jun-2022	----	----	----		03-Jul-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKUT_SE-1_LAEMP_EVO_2022-06_29_NP	E144	29-Jun-2022	----	----	----		03-Jul-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKUT_SE-2_LAEMP_EVO_2022-06_29_NP	E144	29-Jun-2022	----	----	----		03-Jul-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKUT_SE-3_LAEMP_EVO_2022-06_29_NP	E144	29-Jun-2022	----	----	----		03-Jul-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKUT_SE-4_LAEMP_EVO_2022-06_29_NP	E144	29-Jun-2022	----	----	----		03-Jul-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKUT_SE-5_LAEMP_EVO_2022-06_29_NP	E144	29-Jun-2022	----	----	----		03-Jul-2022	----	----	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag RG_ERCKDT_BRYOSE-1_LAEMP_EVO_2022-06_29_NP	E108	29-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	30 days	8 days	✔



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKDT_BRYOSE-2_LAEMP_EVO_2022-06_29_NP	E108	29-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	30 days	8 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKDT_BRYOSE-3_LAEMP_EVO_2022-06_29_NP	E108	29-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	30 days	8 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKDT_SE-1_LAEMP_EVO_2022-06_29_NP	E108	29-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	30 days	8 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKDT_SE-2_LAEMP_EVO_2022-06_29_NP	E108	29-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	30 days	8 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKDT_SE-3_LAEMP_EVO_2022-06_29_NP	E108	29-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	30 days	8 days	✔	
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LDPE bag RG_ERCKDT_SE-4_LAEMP_EVO_2022-06_29_NP	E108	29-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	30 days	8 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKDT_SE-5_LAEMP_EVO_2022-06-29_NP	E108	29-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	30 days	8 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKMD_BRYOSE-1_LAEMP_EVO_2022-06_29_NP	E108	29-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	30 days	8 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKMD_BRYOSE-2_LAEMP_EVO_2022-06_29_NP	E108	29-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	30 days	8 days	✔	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKMD_BRYOSE-3_LAEMP_EVO_2022-06_29_NP	E108	29-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	30 days	8 days	✔	
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LDPE bag RG_ERCKMD_SE-1_LAEMP_EVO_2022-06_29_NP	E108	29-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	30 days	8 days	✔	
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LDPE bag RG_ERCKMD_SE-2_LAEMP_EVO_2022-06_29_NP	E108	29-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	30 days	8 days	✔	
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LDPE bag RG_ERCKMD_SE-3_LAEMP_EVO_2022-06_29_NP	E108	29-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	30 days	8 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKUT_BRYOSE-2_LAEMP_EVO_2022-06_29_NP	E108	29-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	30 days	8 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKUT_BRYOSE-3_LAEMP_EVO_2022-06_29_NP	E108	29-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	30 days	8 days	✔	
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LDPE bag RG_ERCKUT_SE-2_LAEMP_EVO_2022-06_29_NP	E108	29-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	30 days	8 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKUT_SE-3_LAEMP_EVO_2022-06_29_NP	E108	29-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	30 days	8 days	✔	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKUT_SE-4_LAEMP_EVO_2022-06_29_NP	E108	29-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	30 days	8 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKUT_SE-5_LAEMP_EVO_2022-06_29_NP	E108	29-Jun-2022	07-Jul-2022	----	----		07-Jul-2022	30 days	8 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
LDPE bag RG_ERCKDT_BRYOSE-1_LAEMP_EVO_2022-06_29_NP	E641A	29-Jun-2022	03-Jul-2022	14 days	4 days	✔	03-Jul-2022	40 days	0 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
LDPE bag RG_ERCKDT_BRYOSE-2_LAEMP_EVO_2022-06_29_NP	E641A	29-Jun-2022	03-Jul-2022	14 days	4 days	✔	03-Jul-2022	40 days	0 days	✔	
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LDPE bag RG_ERCKDT_SE-4_LAEMP_EVO_2022-06_29_NP	E641A	29-Jun-2022	03-Jul-2022	14 days	4 days	✔	03-Jul-2022	40 days	0 days	✔	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
LDPE bag RG_ERCKDT_SE-5_LAEMP_EVO_2022-06-29_NP	E641A	29-Jun-2022	03-Jul-2022	14 days	4 days	✔	03-Jul-2022	40 days	0 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
LDPE bag RG_ERCKMD_BRYOSE-1_LAEMP_EVO_2022-06_29_NP	E641A	29-Jun-2022	03-Jul-2022	14 days	4 days	✔	03-Jul-2022	40 days	0 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
LDPE bag RG_ERCKMD_BRYOSE-2_LAEMP_EVO_2022-06_29_NP	E641A	29-Jun-2022	03-Jul-2022	14 days	4 days	✔	03-Jul-2022	40 days	0 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
LDPE bag RG_ERCKMD_BRYOSE-3_LAEMP_EVO_2022-06_29_NP	E641A	29-Jun-2022	03-Jul-2022	14 days	4 days	✔	03-Jul-2022	40 days	0 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
LDPE bag RG_ERCKMD_SE-1_LAEMP_EVO_2022-06_29_NP	E641A	29-Jun-2022	03-Jul-2022	14 days	4 days	✔	03-Jul-2022	40 days	0 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
LDPE bag RG_ERCKMD_SE-2_LAEMP_EVO_2022-06_29_NP	E641A	29-Jun-2022	03-Jul-2022	14 days	4 days	✔	03-Jul-2022	40 days	0 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
LDPE bag RG_ERCKMD_SE-3_LAEMP_EVO_2022-06_29_NP	E641A	29-Jun-2022	03-Jul-2022	14 days	4 days	✔	03-Jul-2022	40 days	0 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
LDPE bag RG_ERCKUT_BRYOSE-1_LAEMP_EVO_2022-06_29_NP	E641A	29-Jun-2022	03-Jul-2022	14 days	4 days	✔	03-Jul-2022	40 days	0 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
LDPE bag RG_ERCKUT_BRYOSE-2_LAEMP_EVO_2022-06_29_NP	E641A	29-Jun-2022	03-Jul-2022	14 days	4 days	✔	03-Jul-2022	40 days	0 days	✔	



Matrix: **Soil/Solid**

Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
LDPE bag RG_ERCKUT_BRYOSE-3_LAEMP_EVO_2022-06_29_NP	E641A	29-Jun-2022	03-Jul-2022	14 days	4 days	✓	03-Jul-2022	40 days	0 days	✓	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
LDPE bag RG_ERCKUT_SE-1_LAEMP_EVO_2022-06_29_NP	E641A	29-Jun-2022	03-Jul-2022	14 days	4 days	✓	03-Jul-2022	40 days	0 days	✓	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
LDPE bag RG_ERCKUT_SE-2_LAEMP_EVO_2022-06_29_NP	E641A	29-Jun-2022	03-Jul-2022	14 days	4 days	✓	03-Jul-2022	40 days	0 days	✓	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
LDPE bag RG_ERCKUT_SE-3_LAEMP_EVO_2022-06_29_NP	E641A	29-Jun-2022	03-Jul-2022	14 days	4 days	✓	03-Jul-2022	40 days	0 days	✓	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
LDPE bag RG_ERCKUT_SE-4_LAEMP_EVO_2022-06_29_NP	E641A	29-Jun-2022	03-Jul-2022	14 days	4 days	✓	03-Jul-2022	40 days	0 days	✓	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
LDPE bag RG_ERCKUT_SE-5_LAEMP_EVO_2022-06_29_NP	E641A	29-Jun-2022	03-Jul-2022	14 days	4 days	✓	03-Jul-2022	40 days	0 days	✓	

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Soil/Solid**

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
Analytical Methods							
Laboratory Duplicates (DUP)							
Mercury in Soil/Solid by CVAAS	E510	550129	2	22	9.0	5.0	✔
Metals in Soil/Solid by CRC ICPMS	E440	550130	2	28	7.1	5.0	✔
Moisture Content by Gravimetry	E144	546884	2	22	9.0	5.0	✔
PAHs by Hex:Ace GC-MS	E641A	546882	2	22	9.0	5.0	✔
pH by Meter (1:2 Soil:Water Extraction)	E108	551852	2	21	9.5	5.0	✔
Total Carbon by Combustion	E351	554401	2	33	6.0	5.0	✔
Total Inorganic Carbon by Acetic Acid pH Standard Curve	E354	554325	2	39	5.1	5.0	✔
Laboratory Control Samples (LCS)							
Mercury in Soil/Solid by CVAAS	E510	550129	4	22	18.1	10.0	✔
Metals in Soil/Solid by CRC ICPMS	E440	550130	4	28	14.2	10.0	✔
Moisture Content by Gravimetry	E144	546884	2	22	9.0	5.0	✔
PAHs by Hex:Ace GC-MS	E641A	546882	2	22	9.0	5.0	✔
pH by Meter (1:2 Soil:Water Extraction)	E108	551852	4	21	19.0	10.0	✔
Total Carbon by Combustion	E351	554401	4	33	12.1	10.0	✔
Total Inorganic Carbon by Acetic Acid pH Standard Curve	E354	554325	4	39	10.2	10.0	✔
Method Blanks (MB)							
Mercury in Soil/Solid by CVAAS	E510	550129	2	22	9.0	5.0	✔
Metals in Soil/Solid by CRC ICPMS	E440	550130	2	28	7.1	5.0	✔
Moisture Content by Gravimetry	E144	546884	2	22	9.0	5.0	✔
PAHs by Hex:Ace GC-MS	E641A	546882	2	22	9.0	5.0	✔
Total Carbon by Combustion	E351	554401	2	33	6.0	5.0	✔
Total Inorganic Carbon by Acetic Acid pH Standard Curve	E354	554325	2	39	5.1	5.0	✔
Matrix Spikes (MS)							
PAHs by Hex:Ace GC-MS	E641A	546882	2	22	9.0	5.0	✔



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
pH by Meter (1:2 Soil:Water Extraction)	E108 Saskatoon - Environmental	Soil/Solid	BC Lab Manual	pH is determined by potentiometric measurement with a pH electrode at ambient laboratory temperature (normally $20 \pm 5^\circ\text{C}$), and is carried out in accordance with procedures described in the BC Lab Manual (prescriptive method). The procedure involves mixing the dried (at $<60^\circ\text{C}$) and sieved (10mesh/2mm) sample with ultra pure water at a 1:2 ratio of sediment to water. The pH is then measured by a standard pH probe.
Moisture Content by Gravimetry	E144 Calgary - Environmental	Soil/Solid	CCME PHC in Soil - Tier 1	Moisture is measured gravimetrically by drying the sample at 105°C . Moisture content is calculated as the weight loss (due to water) divided by the wet weight of the sample, expressed as a percentage.
Grain Size Report (Attachment) Pipet/Sieve Method	E185A Saskatoon - Environmental	Soil/Solid	SSIR-51 Method 3.2.1	A grain size curve is a graphical representation of the particle sizing of a sample representing the percent passing against the effective particle size.
Total Carbon by Combustion	E351 Saskatoon - Environmental	Soil/Solid	CSSS (2008) 21.2 (mod)	Total Carbon is determined by the high temperature combustion method with measurement by an infrared detector.
Total Inorganic Carbon by Acetic Acid pH Standard Curve	E354 Saskatoon - Environmental	Soil/Solid	CSSS (2008) 20.2	Total Inorganic Carbon is determined by acetic acid pH standard curve, where a known quantity of acetic acid is consumed by reaction with carbonates in the soil. The pH of the resulting solution is measured and compared against a standard curve relating pH to weight of carbonate.
Metals in Soil/Solid by CRC ICPMS	E440 Saskatoon - Environmental	Soil/Solid	EPA 6020B (mod)	This method is intended to liberate metals that may be environmentally available. Samples are dried, then sieved through a 2 mm sieve, and digested with HNO_3 and HCl . Dependent on sample matrix, some metals may be only partially recovered, including Al, Ba, Be, Cr, Sr, Ti, Tl, V, W, and Zr. Silicate minerals are not solubilized. Volatile forms of sulfur (including sulfide) may not be captured, as they may be lost during sampling, storage, or digestion. This method does not adequately recover elemental sulfur, and is unsuitable for assessment of elemental sulfur standards or guidelines. Analysis is by Collision/Reaction Cell ICPMS.
Mercury in Soil/Solid by CVAAS	E510 Saskatoon - Environmental	Soil/Solid	EPA 200.2/1631 Appendix (mod)	Samples are dried, then sieved through a 2 mm sieve, and digested with HNO_3 and HCl , followed by CVAAS analysis.
PAHs by Hex:Ace GC-MS	E641A Calgary - Environmental	Soil/Solid	EPA 8270E (mod)	Polycyclic Aromatic Hydrocarbons (PAHs) are extracted with hexane/acetone and analyzed by GC-MS. If reported, IACR (index of additive cancer risk, unitless) and B(a)P toxic potency equivalent (in soil concentration units) are calculated as per CCME PAH Soil Quality Guidelines fact sheet (2010) or ABT1.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Particle Size Analysis (Pipette) - Wentworth Classification	EC184A Saskatoon - Environmental	Soil/Solid	Modified Wentworth	The particle size determination is performed by various methods to generate a Grain Size curve. The data from the curve is then used to produce particle size ranges based on the Modified Wentworth Classification system.
Total Organic Carbon (Calculated) in soil	EC356 Saskatoon - Environmental	Soil/Solid	CSSS (2008) 21.2	Total Organic Carbon (TOC) is calculated by the difference between total carbon (TC) and total inorganic carbon (TIC).

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Leach 1:2 Soil:Water for pH/EC	EP108 Saskatoon - Environmental	Soil/Solid	BC WLAP METHOD: PH, ELECTROMETRIC, SOIL	The procedure involves mixing the dried (at <60°C) and sieved (No. 10 / 2mm) sample with deionized/distilled water at a 1:2 ratio of sediment to water.
Digestion for Metals and Mercury	EP440 Saskatoon - Environmental	Soil/Solid	EPA 200.2 (mod)	Samples are dried, then sieved through a 2 mm sieve, and digested with HNO ₃ and HCl. This method is intended to liberate metals that may be environmentally available.
PHCs and PAHs Hexane-Acetone Tumbler Extraction	EP601 Calgary - Environmental	Soil/Solid	CCME PHC in Soil - Tier 1 (mod)	Samples are subsampled and Petroleum Hydrocarbons (PHC) and PAHs are extracted with 1:1 hexane:acetone using a rotary extractor.
Dry and Grind	EPP442 Saskatoon - Environmental	Soil/Solid	Soil Sampling and Methods of Analysis, Carter 2008	After removal of any coarse fragments and reservation of wet subsamples a portion of homogenized sample is set in a tray and dried at less than 60°C until dry. The sample is then particle size reduced with an automated crusher or mortar and pestle, typically to <2 mm. Further size reduction may be needed for particular tests.



QUALITY CONTROL REPORT

Work Order : **CG2208567**

Page : 1 of 20

Amendment : **1**

Client : Teck Coal Limited
 Contact : Mike Pope
 Address : RR#1 HWY#3
 Sparwood BC Canada V0B 2G1
 Telephone : ----
 Project : Regional Effects Program
 PO : VPO00816101
 C-O-C number : MAY EVO LAEMP 2022
 Sampler : Robin Valleau
 Site : ----
 Quote number : Teck Coal Master Quote
 No. of samples received : 26
 No. of samples analysed : 22

Laboratory : Calgary - Environmental
 Account Manager : Lyudmyla Shvets
 Address : 2559 29th Street NE
 Calgary, Alberta Canada T1Y 7B5
 Telephone : +1 403 407 1800
 Date Samples Received : 02-Jul-2022 10:30
 Date Analysis Commenced : 03-Jul-2022
 Issue Date : 29-Jul-2022 11:25

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Reference Material (RM) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	Position	Laboratory Department
Colby Bingham	Quality Systems Coordinator	Saskatoon Inorganics, Saskatoon, Saskatchewan
Colby Bingham	Quality Systems Coordinator	Saskatoon Metals, Saskatoon, Saskatchewan
Hedy Lai	Team Leader - Inorganics	Saskatoon Inorganics, Saskatoon, Saskatchewan
Lian Nesbitt	Laboratory Analyst	Saskatoon Metals, Saskatoon, Saskatchewan
Maqsood UHassan	Laboratory Analyst	Calgary Organics, Calgary, Alberta
Rosalie Van Deelen	Laboratory Assistant	Calgary Organics, Calgary, Alberta

Page : 2 of 20
Work Order : CG2208567 Amendment 1
Client : Teck Coal Limited
Project : Regional Effects Program



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Soil/Solid

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 546884)											
CG2208567-001	RG_ERCKUT_SE-1_LAEM P_EVO_2022-06_29_NP	moisture	----	E144	0.25	%	42.4	42.0	0.825%	20%	----
Physical Tests (QC Lot: 546885)											
CG2208567-024	RG_ERCKDT_BRYOSE-3 _LAEMP_EVO_2022-06_29 _NP	moisture	----	E144	0.25	%	87.6	86.5	1.24%	20%	----
Physical Tests (QC Lot: 551852)											
CG2208567-005	RG_ERCKUT_SE-5_LAEM P_EVO_2022-06_29_NP	pH (1:2 soil:water)	----	E108	0.10	pH units	7.72	7.73	0.129%	10%	----
Physical Tests (QC Lot: 551853)											
CG2208567-026	RG_ERCKDT_SE-5_LAEM P_EVO_2022-06-29_NP	pH (1:2 soil:water)	----	E108	0.10	pH units	7.61	7.61	0.00%	10%	----
Organic / Inorganic Carbon (QC Lot: 554325)											
CG2208567-001	RG_ERCKUT_SE-1_LAEM P_EVO_2022-06_29_NP	carbon, inorganic [IC]	----	E354	0.050	%	0.688	0.686	0.283%	20%	----
Organic / Inorganic Carbon (QC Lot: 554401)											
CG2208372-004	Anonymous	carbon, total [TC]	----	E351	0.050	%	12.5	12.3	1.57%	20%	----
Organic / Inorganic Carbon (QC Lot: 554566)											
CG2208567-009	RG_ERCKMD_SE-1_LAE MP_EVO_2022-06_29_NP	carbon, total [TC]	----	E351	0.050	%	8.94	8.74	2.27%	20%	----
Organic / Inorganic Carbon (QC Lot: 556240)											
CG2208567-026	RG_ERCKDT_SE-5_LAEM P_EVO_2022-06-29_NP	carbon, inorganic [IC]	----	E354	0.050	%	3.18	3.18	0.0242%	20%	----
Metals (QC Lot: 550129)											
CG2208567-001	RG_ERCKUT_SE-1_LAEM P_EVO_2022-06_29_NP	mercury	7439-97-6	E510	0.0050	mg/kg	0.0444	0.0430	3.05%	40%	----
Metals (QC Lot: 550130)											
CG2208567-001	RG_ERCKUT_SE-1_LAEM P_EVO_2022-06_29_NP	aluminum	7429-90-5	E440	50	mg/kg	5150	4780	7.36%	40%	----
		antimony	7440-36-0	E440	0.10	mg/kg	0.92	0.87	6.44%	30%	----
		arsenic	7440-38-2	E440	0.10	mg/kg	7.00	6.56	6.50%	30%	----
		barium	7440-39-3	E440	0.50	mg/kg	172	162	6.44%	40%	----
		beryllium	7440-41-7	E440	0.10	mg/kg	0.61	0.62	0.007	Diff <2x LOR	----
		bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	0	Diff <2x LOR	----
		boron	7440-42-8	E440	5.0	mg/kg	<5.0	<5.0	0	Diff <2x LOR	----
		cadmium	7440-43-9	E440	0.020	mg/kg	1.27	1.24	2.08%	30%	----
		calcium	7440-70-2	E440	50	mg/kg	21200	21700	1.98%	30%	----



Sub-Matrix: Soil/Solid

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Metals (QC Lot: 550130) - continued											
CG2208567-001	RG_ERCKUT_SE-1_LAEM P_EVO_2022-06_29_NP	chromium	7440-47-3	E440	0.50	mg/kg	32.5	48.1	38.5%	30%	DUP-H
		cobalt	7440-48-4	E440	0.10	mg/kg	7.06	6.88	2.61%	30%	----
		copper	7440-50-8	E440	0.50	mg/kg	15.0	15.0	0.0418%	30%	----
		iron	7439-89-6	E440	50	mg/kg	16500	16300	1.22%	30%	----
		lead	7439-92-1	E440	0.50	mg/kg	10.5	9.93	5.42%	40%	----
		lithium	7439-93-2	E440	2.0	mg/kg	6.2	5.8	0.4	Diff <2x LOR	----
		magnesium	7439-95-4	E440	20	mg/kg	4020	3620	10.4%	30%	----
		manganese	7439-96-5	E440	1.0	mg/kg	266	259	2.42%	30%	----
		molybdenum	7439-98-7	E440	0.10	mg/kg	4.15	6.26	40.6%	40%	DUP-H
		nickel	7440-02-0	E440	0.50	mg/kg	36.6	45.0	20.6%	30%	----
		phosphorus	7723-14-0	E440	50	mg/kg	1040	1160	10.7%	30%	----
		potassium	7440-09-7	E440	100	mg/kg	1030	1010	2.10%	40%	----
		selenium	7782-49-2	E440	0.20	mg/kg	3.78	3.60	5.00%	30%	----
		silver	7440-22-4	E440	0.10	mg/kg	0.21	0.19	0.02	Diff <2x LOR	----
		sodium	7440-23-5	E440	50	mg/kg	72	59	14	Diff <2x LOR	----
		strontium	7440-24-6	E440	0.50	mg/kg	44.1	43.8	0.789%	40%	----
		sulfur	7704-34-9	E440	1000	mg/kg	<1000	<1000	0	Diff <2x LOR	----
		thallium	7440-28-0	E440	0.050	mg/kg	0.183	0.173	0.010	Diff <2x LOR	----
		tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	0	Diff <2x LOR	----
		titanium	7440-32-6	E440	1.0	mg/kg	12.9	11.8	9.14%	40%	----
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	0	Diff <2x LOR	----		
uranium	7440-61-1	E440	0.050	mg/kg	1.14	1.21	5.86%	30%	----		
vanadium	7440-62-2	E440	0.20	mg/kg	25.5	24.7	3.18%	30%	----		
zinc	7440-66-6	E440	2.0	mg/kg	105	100	4.16%	30%	----		
zirconium	7440-67-7	E440	1.0	mg/kg	<1.0	<1.0	0	Diff <2x LOR	----		
Metals (QC Lot: 550131)											
CG2208567-024	RG_ERCKDT_BRYOSE-3 _LAEMP_EVO_2022-06_29 _NP	aluminum	7429-90-5	E440	50	mg/kg	2150	2100	2.61%	40%	----
		antimony	7440-36-0	E440	0.10	mg/kg	1.02	1.02	0.266%	30%	----
		arsenic	7440-38-2	E440	0.10	mg/kg	6.22	6.19	0.370%	30%	----
		barium	7440-39-3	E440	0.50	mg/kg	197	189	4.23%	40%	----
		beryllium	7440-41-7	E440	0.10	mg/kg	0.31	0.28	0.04	Diff <2x LOR	----
		bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	0	Diff <2x LOR	----
		boron	7440-42-8	E440	5.0	mg/kg	8.5	7.9	0.6	Diff <2x LOR	----
		cadmium	7440-43-9	E440	0.020	mg/kg	4.79	4.74	1.09%	30%	----



Sub-Matrix: **Soil/Solid**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Metals (QC Lot: 550131) - continued											
CG2208567-024	RG_ERCKDT_BRYOSE-3 _LAEMP_EVO_2022-06_29 _NP	calcium	7440-70-2	E440	50	mg/kg	168000	171000	1.43%	30%	----
		chromium	7440-47-3	E440	0.50	mg/kg	5.29	5.25	0.785%	30%	----
		cobalt	7440-48-4	E440	0.10	mg/kg	307	302	1.68%	30%	----
		copper	7440-50-8	E440	0.50	mg/kg	10.2	9.98	2.28%	30%	----
		iron	7439-89-6	E440	50	mg/kg	10000	10000	0.427%	30%	----
		lead	7439-92-1	E440	0.50	mg/kg	4.00	4.34	8.27%	40%	----
		lithium	7439-93-2	E440	2.0	mg/kg	3.5	3.4	0.08	Diff <2x LOR	----
		magnesium	7439-95-4	E440	20	mg/kg	7370	7400	0.403%	30%	----
		manganese	7439-96-5	E440	7.2	mg/kg	6440	7100	9.79%	30%	----
		molybdenum	7439-98-7	E440	0.10	mg/kg	4.48	4.09	9.14%	40%	----
		nickel	7440-02-0	E440	0.50	mg/kg	215	206	4.67%	30%	----
		phosphorus	7723-14-0	E440	50	mg/kg	1030	984	4.93%	30%	----
		potassium	7440-09-7	E440	100	mg/kg	810	770	5.65%	40%	----
		selenium	7782-49-2	E440	0.20	mg/kg	18.8	18.5	1.74%	30%	----
		silver	7440-22-4	E440	0.10	mg/kg	0.12	0.13	0.009	Diff <2x LOR	----
		sodium	7440-23-5	E440	50	mg/kg	232	# 127	106	Diff <2x LOR	DUP-H
		strontium	7440-24-6	E440	0.50	mg/kg	111	114	2.94%	40%	----
		sulfur	7704-34-9	E440	1000	mg/kg	4100	3900	200	Diff <2x LOR	----
		thallium	7440-28-0	E440	0.050	mg/kg	0.259	0.266	0.007	Diff <2x LOR	----
		tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	0	Diff <2x LOR	----
		titanium	7440-32-6	E440	1.0	mg/kg	10.6	10.4	1.82%	40%	----
		tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	0	Diff <2x LOR	----
		uranium	7440-61-1	E440	0.050	mg/kg	2.47	2.36	4.59%	30%	----
		vanadium	7440-62-2	E440	0.20	mg/kg	13.0	12.6	3.13%	30%	----
		zinc	7440-66-6	E440	2.0	mg/kg	198	196	1.33%	30%	----
		zirconium	7440-67-7	E440	1.0	mg/kg	<1.0	<1.0	0	Diff <2x LOR	----
Metals (QC Lot: 550132)											
CG2208567-024	RG_ERCKDT_BRYOSE-3 _LAEMP_EVO_2022-06_29 _NP	mercury	7439-97-6	E510	0.0050	mg/kg	0.0362	0.0364	0.587%	40%	----
Polycyclic Aromatic Hydrocarbons (QC Lot: 546882)											
CG2208567-001	RG_ERCKUT_SE-1_LAEM P_EVO_2022-06_29_NP	acenaphthene	83-32-9	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		acenaphthylene	208-96-8	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		acridine	260-94-6	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		anthracene	120-12-7	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----



Sub-Matrix: Soil/Solid

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Polycyclic Aromatic Hydrocarbons (QC Lot: 546882) - continued											
CG2208567-001	RG_ERCKUT_SE-1_LAEM P_EVO_2022-06_29_NP	benz(a)anthracene	56-55-3	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		benzo(a)pyrene	50-32-8	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		benzo(b+j)fluoranthene	n/a	E641A	0.050	mg/kg	<0.050	0.059	0.009	Diff <2x LOR	----
		benzo(g,h,i)perylene	191-24-2	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		benzo(k)fluoranthene	207-08-9	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		chrysene	218-01-9	E641A	0.050	mg/kg	0.086	0.115	0.029	Diff <2x LOR	----
		dibenz(a,h)anthracene	53-70-3	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		fluoranthene	206-44-0	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		fluorene	86-73-7	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		methylnaphthalene, 1-	90-12-0	E641A	0.050	mg/kg	0.088	0.105	0.017	Diff <2x LOR	----
		methylnaphthalene, 2-	91-57-6	E641A	0.050	mg/kg	0.133	0.159	0.026	Diff <2x LOR	----
		naphthalene	91-20-3	E641A	0.050	mg/kg	0.080	0.102	0.022	Diff <2x LOR	----
		phenanthrene	85-01-8	E641A	0.050	mg/kg	0.244	0.274	11.8%	50%	----
		pyrene	129-00-0	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
quinoline	91-22-5	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----		
Polycyclic Aromatic Hydrocarbons (QC Lot: 546883)											
CG2208567-024	RG_ERCKDT_BRYOSE-3 _LAEMP_EVO_2022-06_29 _NP	acenaphthene	83-32-9	E641A	0.077	mg/kg	<0.070	<0.077	0.070	Diff <2x LOR	----
		acenaphthylene	208-96-8	E641A	0.077	mg/kg	<0.070	<0.077	0.070	Diff <2x LOR	----
		acridine	260-94-6	E641A	0.077	mg/kg	0.083	<0.077	0.083	Diff <2x LOR	----
		anthracene	120-12-7	E641A	0.077	mg/kg	<0.070	<0.077	0.070	Diff <2x LOR	----
		benz(a)anthracene	56-55-3	E641A	0.077	mg/kg	<0.070	<0.077	0.070	Diff <2x LOR	----
		benzo(a)pyrene	50-32-8	E641A	0.077	mg/kg	<0.070	<0.077	0.070	Diff <2x LOR	----
		benzo(b+j)fluoranthene	n/a	E641A	0.077	mg/kg	0.071	<0.077	0.071	Diff <2x LOR	----
		benzo(g,h,i)perylene	191-24-2	E641A	0.077	mg/kg	<0.070	<0.077	0.070	Diff <2x LOR	----
		benzo(k)fluoranthene	207-08-9	E641A	0.077	mg/kg	<0.070	<0.077	0.070	Diff <2x LOR	----
		chrysene	218-01-9	E641A	0.077	mg/kg	0.170	0.168	0.002	Diff <2x LOR	----
		dibenz(a,h)anthracene	53-70-3	E641A	0.077	mg/kg	<0.070	<0.077	0.070	Diff <2x LOR	----
		fluoranthene	206-44-0	E641A	0.077	mg/kg	<0.070	<0.077	0.070	Diff <2x LOR	----
		fluorene	86-73-7	E641A	0.077	mg/kg	0.117	0.112	0.005	Diff <2x LOR	----
		indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.077	mg/kg	<0.070	<0.077	0.070	Diff <2x LOR	----
		methylnaphthalene, 1-	90-12-0	E641A	0.077	mg/kg	0.423	0.427	0.848%	50%	----
methylnaphthalene, 2-	91-57-6	E641A	0.077	mg/kg	0.757	0.765	1.04%	50%	----		
naphthalene	91-20-3	E641A	0.077	mg/kg	0.218	0.212	0.005	Diff <2x LOR	----		



Sub-Matrix: **Soil/Solid**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Polycyclic Aromatic Hydrocarbons (QC Lot: 546883) - continued											
CG2208567-024	RG_ERCKDT_BRYOSE-3 _LAEMP_EVO_2022-06_29 _NP	phenanthrene	85-01-8	E641A	0.077	mg/kg	0.543	0.546	0.570%	50%	----
		pyrene	129-00-0	E641A	0.077	mg/kg	<0.070	<0.077	0.070	Diff <2x LOR	----
		quinoline	91-22-5	E641A	0.077	mg/kg	<0.070	<0.077	0.070	Diff <2x LOR	----

Qualifiers

Qualifier	Description
DUP-H	Duplicate results outside ALS DQO, due to sample heterogeneity.



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 546884)						
moisture	----	E144	0.25	%	<0.25	----
Physical Tests (QCLot: 546885)						
moisture	----	E144	0.25	%	<0.25	----
Organic / Inorganic Carbon (QCLot: 554325)						
carbon, inorganic [IC]	----	E354	0.05	%	<0.050	----
Organic / Inorganic Carbon (QCLot: 554401)						
carbon, total [TC]	----	E351	0.05	%	<0.050	----
Organic / Inorganic Carbon (QCLot: 554566)						
carbon, total [TC]	----	E351	0.05	%	<0.050	----
Organic / Inorganic Carbon (QCLot: 556240)						
carbon, inorganic [IC]	----	E354	0.05	%	<0.050	----
Metals (QCLot: 550129)						
mercury	7439-97-6	E510	0.005	mg/kg	<0.0050	----
Metals (QCLot: 550130)						
aluminum	7429-90-5	E440	50	mg/kg	<50	----
antimony	7440-36-0	E440	0.1	mg/kg	<0.10	----
arsenic	7440-38-2	E440	0.1	mg/kg	<0.10	----
barium	7440-39-3	E440	0.5	mg/kg	<0.50	----
beryllium	7440-41-7	E440	0.1	mg/kg	<0.10	----
bismuth	7440-69-9	E440	0.2	mg/kg	<0.20	----
boron	7440-42-8	E440	5	mg/kg	<5.0	----
cadmium	7440-43-9	E440	0.02	mg/kg	<0.020	----
calcium	7440-70-2	E440	50	mg/kg	<50	----
chromium	7440-47-3	E440	0.5	mg/kg	<0.50	----
cobalt	7440-48-4	E440	0.1	mg/kg	<0.10	----
copper	7440-50-8	E440	0.5	mg/kg	<0.50	----
iron	7439-89-6	E440	50	mg/kg	<50	----
lead	7439-92-1	E440	0.5	mg/kg	<0.50	----
lithium	7439-93-2	E440	2	mg/kg	<2.0	----
magnesium	7439-95-4	E440	20	mg/kg	<20	----
manganese	7439-96-5	E440	1	mg/kg	<1.0	----
molybdenum	7439-98-7	E440	0.1	mg/kg	<0.10	----
nickel	7440-02-0	E440	0.5	mg/kg	<0.50	----



Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Metals (QCLot: 550130) - continued						
phosphorus	7723-14-0	E440	50	mg/kg	<50	---
potassium	7440-09-7	E440	100	mg/kg	<100	---
selenium	7782-49-2	E440	0.2	mg/kg	<0.20	---
silver	7440-22-4	E440	0.1	mg/kg	<0.10	---
sodium	7440-23-5	E440	50	mg/kg	<50	---
strontium	7440-24-6	E440	0.5	mg/kg	<0.50	---
sulfur	7704-34-9	E440	1000	mg/kg	<1000	---
thallium	7440-28-0	E440	0.05	mg/kg	<0.050	---
tin	7440-31-5	E440	2	mg/kg	<2.0	---
titanium	7440-32-6	E440	1	mg/kg	<1.0	---
tungsten	7440-33-7	E440	0.5	mg/kg	<0.50	---
uranium	7440-61-1	E440	0.05	mg/kg	<0.050	---
vanadium	7440-62-2	E440	0.2	mg/kg	<0.20	---
zinc	7440-66-6	E440	2	mg/kg	<2.0	---
zirconium	7440-67-7	E440	1	mg/kg	<1.0	---
Metals (QCLot: 550131)						
aluminum	7429-90-5	E440	50	mg/kg	<50	---
antimony	7440-36-0	E440	0.1	mg/kg	<0.10	---
arsenic	7440-38-2	E440	0.1	mg/kg	<0.10	---
barium	7440-39-3	E440	0.5	mg/kg	<0.50	---
beryllium	7440-41-7	E440	0.1	mg/kg	<0.10	---
bismuth	7440-69-9	E440	0.2	mg/kg	<0.20	---
boron	7440-42-8	E440	5	mg/kg	<5.0	---
cadmium	7440-43-9	E440	0.02	mg/kg	<0.020	---
calcium	7440-70-2	E440	50	mg/kg	<50	---
chromium	7440-47-3	E440	0.5	mg/kg	<0.50	---
cobalt	7440-48-4	E440	0.1	mg/kg	<0.10	---
copper	7440-50-8	E440	0.5	mg/kg	<0.50	---
iron	7439-89-6	E440	50	mg/kg	<50	---
lead	7439-92-1	E440	0.5	mg/kg	<0.50	---
lithium	7439-93-2	E440	2	mg/kg	<2.0	---
magnesium	7439-95-4	E440	20	mg/kg	<20	---
manganese	7439-96-5	E440	1	mg/kg	<1.0	---
molybdenum	7439-98-7	E440	0.1	mg/kg	<0.10	---
nickel	7440-02-0	E440	0.5	mg/kg	<0.50	---
phosphorus	7723-14-0	E440	50	mg/kg	<50	---



Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Metals (QCLot: 550131) - continued						
potassium	7440-09-7	E440	100	mg/kg	<100	---
selenium	7782-49-2	E440	0.2	mg/kg	<0.20	---
silver	7440-22-4	E440	0.1	mg/kg	<0.10	---
sodium	7440-23-5	E440	50	mg/kg	<50	---
strontium	7440-24-6	E440	0.5	mg/kg	<0.50	---
sulfur	7704-34-9	E440	1000	mg/kg	<1000	---
thallium	7440-28-0	E440	0.05	mg/kg	<0.050	---
tin	7440-31-5	E440	2	mg/kg	<2.0	---
titanium	7440-32-6	E440	1	mg/kg	<1.0	---
tungsten	7440-33-7	E440	0.5	mg/kg	<0.50	---
uranium	7440-61-1	E440	0.05	mg/kg	<0.050	---
vanadium	7440-62-2	E440	0.2	mg/kg	<0.20	---
zinc	7440-66-6	E440	2	mg/kg	<2.0	---
zirconium	7440-67-7	E440	1	mg/kg	<1.0	---
Metals (QCLot: 550132)						
mercury	7439-97-6	E510	0.005	mg/kg	<0.0050	---
Polycyclic Aromatic Hydrocarbons (QCLot: 546882)						
acenaphthene	83-32-9	E641A	0.05	mg/kg	<0.050	---
acenaphthylene	208-96-8	E641A	0.05	mg/kg	<0.050	---
acridine	260-94-6	E641A	0.05	mg/kg	<0.050	---
anthracene	120-12-7	E641A	0.05	mg/kg	<0.050	---
benz(a)anthracene	56-55-3	E641A	0.05	mg/kg	<0.050	---
benzo(a)pyrene	50-32-8	E641A	0.05	mg/kg	<0.050	---
benzo(b+j)fluoranthene	n/a	E641A	0.05	mg/kg	<0.050	---
benzo(g,h,i)perylene	191-24-2	E641A	0.05	mg/kg	<0.050	---
benzo(k)fluoranthene	207-08-9	E641A	0.05	mg/kg	<0.050	---
chrysene	218-01-9	E641A	0.05	mg/kg	<0.050	---
dibenz(a,h)anthracene	53-70-3	E641A	0.05	mg/kg	<0.050	---
fluoranthene	206-44-0	E641A	0.05	mg/kg	<0.050	---
fluorene	86-73-7	E641A	0.05	mg/kg	<0.050	---
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.05	mg/kg	<0.050	---
methylnaphthalene, 1-	90-12-0	E641A	0.05	mg/kg	<0.050	---
methylnaphthalene, 2-	91-57-6	E641A	0.05	mg/kg	<0.050	---
naphthalene	91-20-3	E641A	0.05	mg/kg	<0.050	---
phenanthrene	85-01-8	E641A	0.05	mg/kg	<0.050	---
pyrene	129-00-0	E641A	0.05	mg/kg	<0.050	---



Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Polycyclic Aromatic Hydrocarbons (QCLot: 546882) - continued						
quinoline	91-22-5	E641A	0.05	mg/kg	<0.050	----
Polycyclic Aromatic Hydrocarbons (QCLot: 546883)						
acenaphthene	83-32-9	E641A	0.05	mg/kg	<0.050	----
acenaphthylene	208-96-8	E641A	0.05	mg/kg	<0.050	----
acridine	260-94-6	E641A	0.05	mg/kg	<0.050	----
anthracene	120-12-7	E641A	0.05	mg/kg	<0.050	----
benz(a)anthracene	56-55-3	E641A	0.05	mg/kg	<0.050	----
benzo(a)pyrene	50-32-8	E641A	0.05	mg/kg	<0.050	----
benzo(b+j)fluoranthene	n/a	E641A	0.05	mg/kg	<0.050	----
benzo(g,h,i)perylene	191-24-2	E641A	0.05	mg/kg	<0.050	----
benzo(k)fluoranthene	207-08-9	E641A	0.05	mg/kg	<0.050	----
chrysene	218-01-9	E641A	0.05	mg/kg	<0.050	----
dibenz(a,h)anthracene	53-70-3	E641A	0.05	mg/kg	<0.050	----
fluoranthene	206-44-0	E641A	0.05	mg/kg	<0.050	----
fluorene	86-73-7	E641A	0.05	mg/kg	<0.050	----
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.05	mg/kg	<0.050	----
methylnaphthalene, 1-	90-12-0	E641A	0.05	mg/kg	<0.050	----
methylnaphthalene, 2-	91-57-6	E641A	0.05	mg/kg	<0.050	----
naphthalene	91-20-3	E641A	0.05	mg/kg	<0.050	----
phenanthrene	85-01-8	E641A	0.05	mg/kg	<0.050	----
pyrene	129-00-0	E641A	0.05	mg/kg	<0.050	----
quinoline	91-22-5	E641A	0.05	mg/kg	<0.050	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Soil/Solid

					Laboratory Control Sample (LCS) Report				
Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Physical Tests (QCLot: 546884)									
moisture	---	E144	0.25	%	50 %	99.8	90.0	110	---
Physical Tests (QCLot: 546885)									
moisture	---	E144	0.25	%	50 %	94.4	90.0	110	---
Physical Tests (QCLot: 551852)									
pH (1:2 soil:water)	---	E108	---	pH units	6.86 pH units	100	97.0	103	---
Physical Tests (QCLot: 551853)									
pH (1:2 soil:water)	---	E108	---	pH units	6.86 pH units	100	97.0	103	---
Organic / Inorganic Carbon (QCLot: 554325)									
carbon, inorganic [IC]	---	E354	0.05	%	0.5 %	96.4	90.0	110	---
Organic / Inorganic Carbon (QCLot: 554401)									
carbon, total [TC]	---	E351	0.05	%	48 %	101	90.0	110	---
Organic / Inorganic Carbon (QCLot: 554566)									
carbon, total [TC]	---	E351	0.05	%	48 %	102	90.0	110	---
Organic / Inorganic Carbon (QCLot: 556240)									
carbon, inorganic [IC]	---	E354	0.05	%	0.5 %	94.6	90.0	110	---
Metals (QCLot: 550129)									
mercury	7439-97-6	E510	0.005	mg/kg	0.1 mg/kg	92.3	80.0	120	---
Metals (QCLot: 550130)									
aluminum	7429-90-5	E440	50	mg/kg	200 mg/kg	107	80.0	120	---
antimony	7440-36-0	E440	0.1	mg/kg	100 mg/kg	101	80.0	120	---
arsenic	7440-38-2	E440	0.1	mg/kg	100 mg/kg	96.4	80.0	120	---
barium	7440-39-3	E440	0.5	mg/kg	25 mg/kg	102	80.0	120	---
beryllium	7440-41-7	E440	0.1	mg/kg	10 mg/kg	105	80.0	120	---
bismuth	7440-69-9	E440	0.2	mg/kg	100 mg/kg	105	80.0	120	---
boron	7440-42-8	E440	5	mg/kg	100 mg/kg	98.5	80.0	120	---
cadmium	7440-43-9	E440	0.02	mg/kg	10 mg/kg	99.7	80.0	120	---
calcium	7440-70-2	E440	50	mg/kg	5000 mg/kg	102	80.0	120	---
chromium	7440-47-3	E440	0.5	mg/kg	25 mg/kg	101	80.0	120	---
cobalt	7440-48-4	E440	0.1	mg/kg	25 mg/kg	100	80.0	120	---
copper	7440-50-8	E440	0.5	mg/kg	25 mg/kg	96.6	80.0	120	---
iron	7439-89-6	E440	50	mg/kg	100 mg/kg	111	80.0	120	---
lead	7439-92-1	E440	0.5	mg/kg	50 mg/kg	104	80.0	120	---



Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Metals (QCLot: 550130) - continued									
lithium	7439-93-2	E440	2	mg/kg	25 mg/kg	100	80.0	120	----
magnesium	7439-95-4	E440	20	mg/kg	5000 mg/kg	106	80.0	120	----
manganese	7439-96-5	E440	1	mg/kg	25 mg/kg	99.9	80.0	120	----
molybdenum	7439-98-7	E440	0.1	mg/kg	25 mg/kg	106	80.0	120	----
nickel	7440-02-0	E440	0.5	mg/kg	50 mg/kg	99.2	80.0	120	----
phosphorus	7723-14-0	E440	50	mg/kg	1000 mg/kg	101	80.0	120	----
potassium	7440-09-7	E440	100	mg/kg	5000 mg/kg	98.2	80.0	120	----
selenium	7782-49-2	E440	0.2	mg/kg	100 mg/kg	98.2	80.0	120	----
silver	7440-22-4	E440	0.1	mg/kg	10 mg/kg	106	80.0	120	----
sodium	7440-23-5	E440	50	mg/kg	5000 mg/kg	100	80.0	120	----
strontium	7440-24-6	E440	0.5	mg/kg	25 mg/kg	102	80.0	120	----
sulfur	7704-34-9	E440	1000	mg/kg	5000 mg/kg	104	80.0	120	----
thallium	7440-28-0	E440	0.05	mg/kg	100 mg/kg	103	80.0	120	----
tin	7440-31-5	E440	2	mg/kg	50 mg/kg	99.8	80.0	120	----
titanium	7440-32-6	E440	1	mg/kg	25 mg/kg	99.4	80.0	120	----
tungsten	7440-33-7	E440	0.5	mg/kg	10 mg/kg	109	80.0	120	----
uranium	7440-61-1	E440	0.05	mg/kg	0.5 mg/kg	109	80.0	120	----
vanadium	7440-62-2	E440	0.2	mg/kg	50 mg/kg	99.7	80.0	120	----
zinc	7440-66-6	E440	2	mg/kg	50 mg/kg	101	80.0	120	----
zirconium	7440-67-7	E440	1	mg/kg	10 mg/kg	105	80.0	120	----
Metals (QCLot: 550131)									
aluminum	7429-90-5	E440	50	mg/kg	200 mg/kg	91.9	80.0	120	----
antimony	7440-36-0	E440	0.1	mg/kg	100 mg/kg	103	80.0	120	----
arsenic	7440-38-2	E440	0.1	mg/kg	100 mg/kg	96.6	80.0	120	----
barium	7440-39-3	E440	0.5	mg/kg	25 mg/kg	95.6	80.0	120	----
beryllium	7440-41-7	E440	0.1	mg/kg	10 mg/kg	94.1	80.0	120	----
bismuth	7440-69-9	E440	0.2	mg/kg	100 mg/kg	97.9	80.0	120	----
boron	7440-42-8	E440	5	mg/kg	100 mg/kg	87.0	80.0	120	----
cadmium	7440-43-9	E440	0.02	mg/kg	10 mg/kg	95.1	80.0	120	----
calcium	7440-70-2	E440	50	mg/kg	5000 mg/kg	91.5	80.0	120	----
chromium	7440-47-3	E440	0.5	mg/kg	25 mg/kg	99.3	80.0	120	----
cobalt	7440-48-4	E440	0.1	mg/kg	25 mg/kg	98.6	80.0	120	----
copper	7440-50-8	E440	0.5	mg/kg	25 mg/kg	96.3	80.0	120	----
iron	7439-89-6	E440	50	mg/kg	100 mg/kg	104	80.0	120	----
lead	7439-92-1	E440	0.5	mg/kg	50 mg/kg	97.6	80.0	120	----
lithium	7439-93-2	E440	2	mg/kg	25 mg/kg	95.2	80.0	120	----
magnesium	7439-95-4	E440	20	mg/kg	5000 mg/kg	95.7	80.0	120	----



Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Metals (QCLot: 550131) - continued									
manganese	7439-96-5	E440	1	mg/kg	25 mg/kg	95.0	80.0	120	----
molybdenum	7439-98-7	E440	0.1	mg/kg	25 mg/kg	101	80.0	120	----
nickel	7440-02-0	E440	0.5	mg/kg	50 mg/kg	95.4	80.0	120	----
phosphorus	7723-14-0	E440	50	mg/kg	1000 mg/kg	102	80.0	120	----
potassium	7440-09-7	E440	100	mg/kg	5000 mg/kg	98.9	80.0	120	----
selenium	7782-49-2	E440	0.2	mg/kg	100 mg/kg	93.2	80.0	120	----
silver	7440-22-4	E440	0.1	mg/kg	10 mg/kg	99.9	80.0	120	----
sodium	7440-23-5	E440	50	mg/kg	5000 mg/kg	98.0	80.0	120	----
strontium	7440-24-6	E440	0.5	mg/kg	25 mg/kg	101	80.0	120	----
sulfur	7704-34-9	E440	1000	mg/kg	5000 mg/kg	93.5	80.0	120	----
thallium	7440-28-0	E440	0.05	mg/kg	100 mg/kg	94.3	80.0	120	----
tin	7440-31-5	E440	2	mg/kg	50 mg/kg	97.4	80.0	120	----
titanium	7440-32-6	E440	1	mg/kg	25 mg/kg	92.3	80.0	120	----
tungsten	7440-33-7	E440	0.5	mg/kg	10 mg/kg	97.0	80.0	120	----
uranium	7440-61-1	E440	0.05	mg/kg	0.5 mg/kg	97.4	80.0	120	----
vanadium	7440-62-2	E440	0.2	mg/kg	50 mg/kg	98.2	80.0	120	----
zinc	7440-66-6	E440	2	mg/kg	50 mg/kg	94.5	80.0	120	----
zirconium	7440-67-7	E440	1	mg/kg	10 mg/kg	102	80.0	120	----
Metals (QCLot: 550132)									
mercury	7439-97-6	E510	0.005	mg/kg	0.1 mg/kg	91.2	80.0	120	----
Polycyclic Aromatic Hydrocarbons (QCLot: 546882)									
acenaphthene	83-32-9	E641A	0.05	mg/kg	0.5 mg/kg	110	60.0	130	----
acenaphthylene	208-96-8	E641A	0.05	mg/kg	0.5 mg/kg	105	60.0	130	----
acridine	260-94-6	E641A	0.05	mg/kg	0.5 mg/kg	101	60.0	130	----
anthracene	120-12-7	E641A	0.05	mg/kg	0.5 mg/kg	110	60.0	130	----
benz(a)anthracene	56-55-3	E641A	0.05	mg/kg	0.5 mg/kg	105	60.0	130	----
benzo(a)pyrene	50-32-8	E641A	0.05	mg/kg	0.5 mg/kg	100	60.0	130	----
benzo(b+j)fluoranthene	n/a	E641A	0.05	mg/kg	0.5 mg/kg	110	60.0	130	----
benzo(g,h,i)perylene	191-24-2	E641A	0.05	mg/kg	0.5 mg/kg	109	60.0	130	----
benzo(k)fluoranthene	207-08-9	E641A	0.05	mg/kg	0.5 mg/kg	103	60.0	130	----
chrysene	218-01-9	E641A	0.05	mg/kg	0.5 mg/kg	104	60.0	130	----
dibenz(a,h)anthracene	53-70-3	E641A	0.05	mg/kg	0.5 mg/kg	101	60.0	130	----
fluoranthene	206-44-0	E641A	0.05	mg/kg	0.5 mg/kg	109	60.0	130	----
fluorene	86-73-7	E641A	0.05	mg/kg	0.5 mg/kg	107	60.0	130	----
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.05	mg/kg	0.5 mg/kg	105	60.0	130	----
methylnaphthalene, 1-	90-12-0	E641A	0.05	mg/kg	0.5 mg/kg	109	60.0	130	----



Sub-Matrix: Soil/Solid

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Polycyclic Aromatic Hydrocarbons (QCLot: 546882) - continued									
methylnaphthalene, 2-	91-57-6	E641A	0.05	mg/kg	0.5 mg/kg	113	60.0	130	----
naphthalene	91-20-3	E641A	0.05	mg/kg	0.5 mg/kg	126	50.0	130	----
phenanthrene	85-01-8	E641A	0.05	mg/kg	0.5 mg/kg	114	60.0	130	----
pyrene	129-00-0	E641A	0.05	mg/kg	0.5 mg/kg	113	60.0	130	----
quinoline	91-22-5	E641A	0.05	mg/kg	0.5 mg/kg	106	60.0	130	----
Polycyclic Aromatic Hydrocarbons (QCLot: 546883)									
acenaphthene	83-32-9	E641A	0.05	mg/kg	0.5 mg/kg	111	60.0	130	----
acenaphthylene	208-96-8	E641A	0.05	mg/kg	0.5 mg/kg	105	60.0	130	----
acridine	260-94-6	E641A	0.05	mg/kg	0.5 mg/kg	100	60.0	130	----
anthracene	120-12-7	E641A	0.05	mg/kg	0.5 mg/kg	110	60.0	130	----
benz(a)anthracene	56-55-3	E641A	0.05	mg/kg	0.5 mg/kg	102	60.0	130	----
benzo(a)pyrene	50-32-8	E641A	0.05	mg/kg	0.5 mg/kg	94.8	60.0	130	----
benzo(b+j)fluoranthene	n/a	E641A	0.05	mg/kg	0.5 mg/kg	104	60.0	130	----
benzo(g,h,i)perylene	191-24-2	E641A	0.05	mg/kg	0.5 mg/kg	110	60.0	130	----
benzo(k)fluoranthene	207-08-9	E641A	0.05	mg/kg	0.5 mg/kg	100	60.0	130	----
chrysene	218-01-9	E641A	0.05	mg/kg	0.5 mg/kg	103	60.0	130	----
dibenz(a,h)anthracene	53-70-3	E641A	0.05	mg/kg	0.5 mg/kg	100	60.0	130	----
fluoranthene	206-44-0	E641A	0.05	mg/kg	0.5 mg/kg	110	60.0	130	----
fluorene	86-73-7	E641A	0.05	mg/kg	0.5 mg/kg	106	60.0	130	----
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.05	mg/kg	0.5 mg/kg	103	60.0	130	----
methylnaphthalene, 1-	90-12-0	E641A	0.05	mg/kg	0.5 mg/kg	109	60.0	130	----
methylnaphthalene, 2-	91-57-6	E641A	0.05	mg/kg	0.5 mg/kg	113	60.0	130	----
naphthalene	91-20-3	E641A	0.05	mg/kg	0.5 mg/kg	126	50.0	130	----
phenanthrene	85-01-8	E641A	0.05	mg/kg	0.5 mg/kg	113	60.0	130	----
pyrene	129-00-0	E641A	0.05	mg/kg	0.5 mg/kg	113	60.0	130	----
quinoline	91-22-5	E641A	0.05	mg/kg	0.5 mg/kg	97.6	60.0	130	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: Soil/Solid

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Polycyclic Aromatic Hydrocarbons (QCLot: 546882)										
CG2208567-001	RG_ERCKUT_SE-1_LAEMP_EVO_2022-06_29_NP	acenaphthene	83-32-9	E641A	0.406 mg/kg	0.5 mg/kg	108	50.0	140	----
		acenaphthylene	208-96-8	E641A	0.388 mg/kg	0.5 mg/kg	103	50.0	140	----
		acridine	260-94-6	E641A	0.350 mg/kg	0.5 mg/kg	93.1	50.0	140	----
		anthracene	120-12-7	E641A	0.414 mg/kg	0.5 mg/kg	110	50.0	140	----
		benz(a)anthracene	56-55-3	E641A	0.394 mg/kg	0.5 mg/kg	105	50.0	140	----
		benzo(a)pyrene	50-32-8	E641A	0.352 mg/kg	0.5 mg/kg	93.5	50.0	140	----
		benzo(b+j)fluoranthene	n/a	E641A	0.387 mg/kg	0.5 mg/kg	103	50.0	140	----
		benzo(g,h,i)perylene	191-24-2	E641A	0.358 mg/kg	0.5 mg/kg	95.4	50.0	140	----
		benzo(k)fluoranthene	207-08-9	E641A	0.374 mg/kg	0.5 mg/kg	99.6	50.0	140	----
		chrysene	218-01-9	E641A	0.387 mg/kg	0.5 mg/kg	103	50.0	140	----
		dibenz(a,h)anthracene	53-70-3	E641A	0.357 mg/kg	0.5 mg/kg	95.0	50.0	140	----
		fluoranthene	206-44-0	E641A	0.407 mg/kg	0.5 mg/kg	108	50.0	140	----
		fluorene	86-73-7	E641A	0.396 mg/kg	0.5 mg/kg	105	50.0	140	----
		indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.360 mg/kg	0.5 mg/kg	95.8	50.0	140	----
		methylnaphthalene, 1-	90-12-0	E641A	0.407 mg/kg	0.5 mg/kg	108	50.0	140	----
		methylnaphthalene, 2-	91-57-6	E641A	0.426 mg/kg	0.5 mg/kg	113	50.0	140	----
		naphthalene	91-20-3	E641A	0.473 mg/kg	0.5 mg/kg	126	50.0	140	----
		phenanthrene	85-01-8	E641A	0.426 mg/kg	0.5 mg/kg	113	50.0	140	----
		pyrene	129-00-0	E641A	0.420 mg/kg	0.5 mg/kg	112	50.0	140	----
		quinoline	91-22-5	E641A	0.381 mg/kg	0.5 mg/kg	101	50.0	140	----
Polycyclic Aromatic Hydrocarbons (QCLot: 546883)										
CG2208567-024	RG_ERCKDT_BRYOSE-3_LAEMP_EVO_2022-06_29_NP	acenaphthene	83-32-9	E641A	0.475 mg/kg	0.5 mg/kg	116	50.0	140	----
		acenaphthylene	208-96-8	E641A	0.452 mg/kg	0.5 mg/kg	110	50.0	140	----
		acridine	260-94-6	E641A	0.438 mg/kg	0.5 mg/kg	107	50.0	140	----
		anthracene	120-12-7	E641A	0.484 mg/kg	0.5 mg/kg	118	50.0	140	----
		benz(a)anthracene	56-55-3	E641A	0.452 mg/kg	0.5 mg/kg	111	50.0	140	----
		benzo(a)pyrene	50-32-8	E641A	0.413 mg/kg	0.5 mg/kg	101	50.0	140	----
		benzo(b+j)fluoranthene	n/a	E641A	0.438 mg/kg	0.5 mg/kg	107	50.0	140	----
		benzo(g,h,i)perylene	191-24-2	E641A	0.459 mg/kg	0.5 mg/kg	112	50.0	140	----
		benzo(k)fluoranthene	207-08-9	E641A	0.444 mg/kg	0.5 mg/kg	108	50.0	140	----
		chrysene	218-01-9	E641A	0.442 mg/kg	0.5 mg/kg	108	50.0	140	----
		dibenz(a,h)anthracene	53-70-3	E641A	0.428 mg/kg	0.5 mg/kg	105	50.0	140	----



Sub-Matrix: **Soil/Solid**

					<i>Matrix Spike (MS) Report</i>					
					<i>Spike</i>		<i>Recovery (%)</i>	<i>Recovery Limits (%)</i>		
<i>Laboratory sample ID</i>	<i>Client sample ID</i>	<i>Analyte</i>	<i>CAS Number</i>	<i>Method</i>	<i>Concentration</i>	<i>Target</i>	<i>MS</i>	<i>Low</i>	<i>High</i>	<i>Qualifier</i>
Polycyclic Aromatic Hydrocarbons (QCLot: 546883) - continued										
CG2208567-024	RG_ERCKDT_BRYOSE-3_ LAEMP_EVO_2022-06_29_ NP	fluoranthene	206-44-0	E641A	0.474 mg/kg	0.5 mg/kg	116	50.0	140	----
		fluorene	86-73-7	E641A	0.459 mg/kg	0.5 mg/kg	112	50.0	140	----
		indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.439 mg/kg	0.5 mg/kg	107	50.0	140	----
		methylnaphthalene, 1-	90-12-0	E641A	0.460 mg/kg	0.5 mg/kg	112	50.0	140	----
		methylnaphthalene, 2-	91-57-6	E641A	0.481 mg/kg	0.5 mg/kg	118	50.0	140	----
		naphthalene	91-20-3	E641A	0.490 mg/kg	0.5 mg/kg	120	50.0	140	----
		phenanthrene	85-01-8	E641A	0.484 mg/kg	0.5 mg/kg	118	50.0	140	----
		pyrene	129-00-0	E641A	0.491 mg/kg	0.5 mg/kg	120	50.0	140	----
		quinoline	91-22-5	E641A	0.451 mg/kg	0.5 mg/kg	110	50.0	140	----



Reference Material (RM) Report

A Reference Material (RM) is a homogenous material with known and well-established analyte concentrations. RMs are processed in an identical manner to test samples, and are used to monitor and control the accuracy and precision of a test method for a typical sample matrix. RM results are expressed as percent recovery of the target analyte concentration. RM targets may be certified target concentrations provided by the RM supplier, or may be ALS long-term mean values (for empirical test methods).

Sub-Matrix:

Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Reference Material (RM) Report				
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%)		Qualifier
							Low	High	
Physical Tests (QCLot: 551852)									
	RM	pH (1:2 soil:water)	----	E108	8.13 pH units	100	96.0	104	----
Physical Tests (QCLot: 551853)									
	RM	pH (1:2 soil:water)	----	E108	8.13 pH units	101	96.0	104	----
Organic / Inorganic Carbon (QCLot: 554325)									
	RM	carbon, inorganic [IC]	----	E354	0.383 %	94.9	80.0	120	----
Organic / Inorganic Carbon (QCLot: 554401)									
	RM	carbon, total [TC]	----	E351	1.4 %	99.3	80.0	120	----
Organic / Inorganic Carbon (QCLot: 554566)									
	RM	carbon, total [TC]	----	E351	1.4 %	103	80.0	120	----
Organic / Inorganic Carbon (QCLot: 556240)									
	RM	carbon, inorganic [IC]	----	E354	0.383 %	96.0	80.0	120	----
Metals (QCLot: 550129)									
	RM	mercury	7439-97-6	E510	0.059 mg/kg	91.5	70.0	130	----
Metals (QCLot: 550130)									
	RM	aluminum	7429-90-5	E440	9817 mg/kg	97.2	70.0	130	----
	RM	antimony	7440-36-0	E440	3.99 mg/kg	94.5	70.0	130	----
	RM	arsenic	7440-38-2	E440	3.73 mg/kg	111	70.0	130	----
	RM	barium	7440-39-3	E440	105 mg/kg	99.6	70.0	130	----
	RM	beryllium	7440-41-7	E440	0.349 mg/kg	99.9	70.0	130	----
	RM	boron	7440-42-8	E440	8.5 mg/kg	101	40.0	160	----
	RM	cadmium	7440-43-9	E440	0.91 mg/kg	98.0	70.0	130	----
	RM	calcium	7440-70-2	E440	31082 mg/kg	95.7	70.0	130	----
	RM	chromium	7440-47-3	E440	101 mg/kg	89.2	70.0	130	----
	RM	cobalt	7440-48-4	E440	6.9 mg/kg	96.9	70.0	130	----
	RM	copper	7440-50-8	E440	123 mg/kg	94.9	70.0	130	----
	RM	iron	7439-89-6	E440	23558 mg/kg	94.3	70.0	130	----
	RM	lead	7439-92-1	E440	267 mg/kg	98.6	70.0	130	----
	RM	lithium	7439-93-2	E440	9.5 mg/kg	107	70.0	130	----
	RM	magnesium	7439-95-4	E440	5509 mg/kg	99.4	70.0	130	----



Sub-Matrix:

Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Reference Material (RM) Report				
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%)		Qualifier
							Low	High	
Metals (QCLot: 550130) - continued									
	RM	manganese	7439-96-5	E440	269 mg/kg	94.2	70.0	130	----
	RM	molybdenum	7439-98-7	E440	1.03 mg/kg	103	70.0	130	----
	RM	nickel	7440-02-0	E440	26.7 mg/kg	97.8	70.0	130	----
	RM	phosphorus	7723-14-0	E440	752 mg/kg	92.6	70.0	130	----
	RM	potassium	7440-09-7	E440	1587 mg/kg	86.7	70.0	130	----
	RM	silver	7440-22-4	E440	4.06 mg/kg	111	70.0	130	----
	RM	sodium	7440-23-5	E440	797 mg/kg	89.1	70.0	130	----
	RM	strontium	7440-24-6	E440	86.1 mg/kg	96.8	70.0	130	----
	RM	thallium	7440-28-0	E440	0.0786 mg/kg	113	40.0	160	----
	RM	tin	7440-31-5	E440	10.6 mg/kg	101	70.0	130	----
	RM	titanium	7440-32-6	E440	839 mg/kg	85.9	70.0	130	----
	RM	uranium	7440-61-1	E440	0.52 mg/kg	98.6	70.0	130	----
	RM	vanadium	7440-62-2	E440	32.7 mg/kg	91.7	70.0	130	----
	RM	zinc	7440-66-6	E440	297 mg/kg	98.2	70.0	130	----
	RM	zirconium	7440-67-7	E440	5.73 mg/kg	95.3	70.0	130	----
Metals (QCLot: 550131)									
	RM	aluminum	7429-90-5	E440	9817 mg/kg	88.8	70.0	130	----
	RM	antimony	7440-36-0	E440	3.99 mg/kg	94.0	70.0	130	----
	RM	arsenic	7440-38-2	E440	3.73 mg/kg	102	70.0	130	----
	RM	barium	7440-39-3	E440	105 mg/kg	91.5	70.0	130	----
	RM	beryllium	7440-41-7	E440	0.349 mg/kg	89.2	70.0	130	----
	RM	boron	7440-42-8	E440	8.5 mg/kg	91.1	40.0	160	----
	RM	cadmium	7440-43-9	E440	0.91 mg/kg	93.8	70.0	130	----
	RM	calcium	7440-70-2	E440	31082 mg/kg	88.6	70.0	130	----
	RM	chromium	7440-47-3	E440	101 mg/kg	91.2	70.0	130	----
	RM	cobalt	7440-48-4	E440	6.9 mg/kg	96.0	70.0	130	----
	RM	copper	7440-50-8	E440	123 mg/kg	99.7	70.0	130	----
	RM	iron	7439-89-6	E440	23558 mg/kg	95.4	70.0	130	----
	RM	lead	7439-92-1	E440	267 mg/kg	92.4	70.0	130	----
	RM	lithium	7439-93-2	E440	9.5 mg/kg	98.8	70.0	130	----
	RM	magnesium	7439-95-4	E440	5509 mg/kg	90.7	70.0	130	----
	RM	manganese	7439-96-5	E440	269 mg/kg	91.9	70.0	130	----



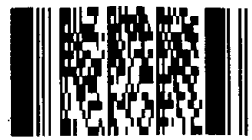
Sub-Matrix:

Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Reference Material (RM) Report				
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%)		Qualifier
							Low	High	
Metals (QCLot: 550131) - continued									
	RM	molybdenum	7439-98-7	E440	1.03 mg/kg	95.4	70.0	130	----
	RM	nickel	7440-02-0	E440	26.7 mg/kg	96.7	70.0	130	----
	RM	phosphorus	7723-14-0	E440	752 mg/kg	96.1	70.0	130	----
	RM	potassium	7440-09-7	E440	1587 mg/kg	88.2	70.0	130	----
	RM	silver	7440-22-4	E440	4.06 mg/kg	93.4	70.0	130	----
	RM	sodium	7440-23-5	E440	797 mg/kg	85.9	70.0	130	----
	RM	strontium	7440-24-6	E440	86.1 mg/kg	94.9	70.0	130	----
	RM	thallium	7440-28-0	E440	0.0786 mg/kg	139	40.0	160	----
	RM	tin	7440-31-5	E440	10.6 mg/kg	101	70.0	130	----
	RM	titanium	7440-32-6	E440	839 mg/kg	84.0	70.0	130	----
	RM	uranium	7440-61-1	E440	0.52 mg/kg	89.5	70.0	130	----
	RM	vanadium	7440-62-2	E440	32.7 mg/kg	91.0	70.0	130	----
	RM	zinc	7440-66-6	E440	297 mg/kg	97.1	70.0	130	----
	RM	zirconium	7440-67-7	E440	5.73 mg/kg	87.7	70.0	130	----
Metals (QCLot: 550132)									
	RM	mercury	7439-97-6	E510	0.059 mg/kg	94.4	70.0	130	----

COC ID: MAY EVO LAEMP 2022 TURNAROUND TIME: RUSH

PROJECT/CLIENT INFO		LABORATORY	
Facility Name / Job#	REP	Lab Name	ALS Calgary
Project Manager	Mike Pope	Lab Contact	Lyudmyla Shvets
Email	mike.pope@teck.com	Email	lyudmyla.shvets@alsglobal.com
Address	421 Pine Avenue	Address	2559 29 Street NE

**Environmental Division
Calgary**
Work Order Reference
CG2208567



Telephone : +1 403 407 1800

Sparwood Province BC City Calgary Province AB
 V0B 2G0 Country Canada Postal Code T1Y 7B5 Country Canada
 Phone Number 1 403 407 1794

SAMPLE DETAILS								ANALYSIS REQUESTED									
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	C-TOC-SK	MET-CCME-FULL-CL	MOISTURE-CL - % Moisture	PSA-PIPET-DETAIL-SK Particle Size	PAH-TMB-D/A-MS-CL- PAHs					
RG_ERCKUT_SE-1_LAEMP_EVO_2022-06_29_NP	RG_ERCKUT	SE	No	6/29/2022	8:00	G	1	X	X	X	X	X					
RG_ERCKUT_SE-2_LAEMP_EVO_2022-06_29_NP	RG_ERCKUT	SE	No	6/29/2022	8:05	G	1	X	X	X	X	X					
RG_ERCKUT_SE-3_LAEMP_EVO_2022-06_29_NP	RG_ERCKUT	SE	No	6/29/2022	8:10	G	1	X	X	X	X	X					
RG_ERCKUT_SE-4_LAEMP_EVO_2022-06_29_NP	RG_ERCKUT	SE	No	6/29/2022	8:15	G	1	X	X	X	X	X					
RG_ERCKUT_SE-5_LAEMP_EVO_2022-06_29_NP	RG_ERCKUT	SE	No	6/29/2022	8:20	G	1	X	X	X	X	X					
RG_ERCKUT_BRYOSE-1_LAEMP_EVO_2022-06_29_NP	RG_ERCKUT	SE	No	6/29/2022	8:25	G	1	X	X	X	X	X					
RG_ERCKUT_BRYOSE-2_LAEMP_EVO_2022-06_29_NP	RG_ERCKUT	SE	No	6/29/2022	8:30	G	1	X	X	X	X	X					
RG_ERCKUT_BRYOSE-3_LAEMP_EVO_2022-06_29_NP	RG_ERCKUT	SE	No	6/29/2022	8:35	G	1	X	X	X	X	X					

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
VPO00816101	Robin Valteau/Minnow		<i>[Signature]</i> 7/2 1030

NO. OF BOTTLES RETURNED/DESCRIPTION	Samplers Name	Mobile #
Regular (default)	Robin Valteau	416-970-7535
Priority (2-3 business days) - 50% surcharge X	Samplers Signature	Date/Time
Emergency (1 Business Day) - 100% surcharge		JUNE 30 2022
For Emergency <1 Day, ASAP or Weekend - Contact ALS		14

COC ID: MAY EVO LAEMP 2022		TURNAROUND TIME:		RUSH			
PROJECT/CLIENT INFO				LABORATORY			
Facility Name / Job#	REP	Lab Name	ALS Calgary		Excel	PDF	EDD
Project Manager	Mike Pope	Lab Contact	Lyudmyla Shvets		mike.pope@teck.com		
Email	mike.pope@teck.com	Email	lyudmyla.shvets@alsglobal.com		teck@alsglobal.com		
Address	421 Pine Avenue	Address	2559.29 Street NE		lab@teck.com		
City	Sparwood	Province	BC	City	Calgary	Province	AB
Postal Code	V0B 2G0	Country	Canada	Postal Code	T1Y 7B5	Country	Canada
Phone Number	250-425-8102	Phone Number	1 403 407 1794				

SAMPLE DETAILS								ANALYSIS REQUESTED									
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	C-TOC-SK	MET-COME-FULL-CL	MOISTURE-CL - % Moisture	PSA-PIPET-DETAIL-SK Particle Size	PAH-TMB-D/A-MS-CL- PAHs					
RG_ERCKMD_SE-1_LAEMP_EVO_2022-06_29_NP	RG_ERCKMD	SE	No	6/29/2022	8:00	G	1	X	X	X	X	X					
RG_ERCKMD_SE-2_LAEMP_EVO_2022-06_29_NP	RG_ERCKMD	SE	No	6/29/2022	8:05	G	1	X	X	X	X	X					
RG_ERCKMD_SE-3_LAEMP_EVO_2022-06_29_NP	RG_ERCKMD	SE	No	6/29/2022	8:10	G	1	X	X	X	X	X					
RG_ERCKMD_BRYOSE-1_LAEMP_EVO_2022-06_29_NP	RG_ERCKMD	SE	No	6/29/2022	8:25	G	1	X	X	X	X	X					
RG_ERCKMD_BRYOSE-2_LAEMP_EVO_2022-06_29_NP	RG_ERCKMD	SE	No	6/29/2022	8:30	G	1	X	X	X	X	X					
RG_ERCKMD_BRYOSE-3_LAEMP_EVO_2022-06_29_NP	RG_ERCKMD	SE	No	6/29/2022	8:35	G	1	X	X	X	X	X					

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
VPO00816101	Robin Vallean/Minnow		<i>[Signature]</i> 7/2/2022

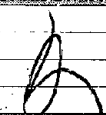
NB OF BOTTLES RETURNED/DESCRIPTION		Sampler's Name	Mobile #
Regular (default)		Robin Vallean	416-970-7535
Priority (2-3 business days) - 50% surcharge	X	Sampler's Signature	Date/Time
Emergency (1 Business Day) - 100% surcharge			JUNE 30 2022
For Emergency <1 Day, ASAP or Weekend - Contact ALS			

Teck

COC ID:		MAY EVO LAEMP 2022			TURNAROUND TIME:		RUSH		
PROJECT/CLIENT INFO					LABORATORY				
Facility Name / Job#		REP			Lab Name		ALS Calgary		
Project Manager		Mike Pope			Lab Contact		Lyudmyla Shvets		
Email		m.ke.pope@eck.com			Email		lyudmyla.shvets@alsglobal.com		
Address		421 Pine Avenue			Address		2559 29 Street NE		
City		Sparwood		Province	BC		City		Calgary
Postal Code		VOB 2G0		Country	Canada		Postal Code		T1Y 7B5
Phone Number		250-425-8202			Phone Number		1 403 407 1794		

SAMPLE DETAILS									ANALYSIS REQUESTED					
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.							
RG_ERCKDT_SE-1_LAEMP_EVO_2022-06_29_NP	RG_ERCKDT	SE	No	6/29/2022	8:00	G	1	X	X	X	X	X		
RG_ERCKDT_SE-2_LAEMP_EVO_2022-06_29_NP	RG_ERCKDT	SE	No	6/29/2022	8:05	G	1	X	X	X	X	X		
RG_ERCKDT_SE-3_LAEMP_EVO_2022-06_29_NP	RG_ERCKDT	SE	No	6/29/2022	8:10	G	1	X	X	X	X	X		
RG_ERCKDT_SE-4_LAEMP_EVO_2022-06_29_NP	RG_ERCKDT	SE	No	6/29/2022	8:15	G	1	X	X	X	X	X		
RG_ERCKDT_SE-5_LAEMP_EVO_2022-06_29_NP	RG_ERCKDT	SE	No	6/29/2022	8:20	G	1	X	X	X	X	X		
RG_ERCKDT_SE-6_LAEMP_EVO_2022-06_29_NP	RG_ERCKDT	SE	No	6/29/2022	8:25	G	1	X	X	X	X	X		
RG_ERCKDT_SE-7_LAEMP_EVO_2022-06_29_NP	RG_ERCKDT	SE	No	6/29/2022	8:30	G	1	X	X	X	X	X		

X
X
X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS		RELINQUISHED BY/AFFILIATION		DATE/TIME		ACCEPTED BY/AFFILIATION	
VPO00816101		Robin Vallean/Minnow				 7/2/2022	

NE OF BOTTLES RETURNED/DESCRIPTION				SAMPLER'S NAME		MOBILE #	
Regular (default)				Robin Vallean		416-970-7535	
Priority (2-3 business days) - 50% surcharge X				SAMPLER'S SIGNATURE		DATE/TIME	
Emergencv (1 Business Day) - 100% surcharge:						JUNE 30 2022	
For Emergency <1 Day, ASAP or Weekend - Contact ALS							

79

Teck

COC ID:		MAY EVO LAEMP 2022				TURNAROUND TIME:		RUSH				
PROJECT/CLIENT INFO						LABORATORY						
Facility Name / Job#		REP				Lab Name			ALS Calgary	Excel	PDF	EDD
Project Manager		Mike Pope				Lab Contact			Lyudmyla Shvets	mike.pope@teck.com		
Email		mike.pope@teck.com				Email			lyudmyla.shvets@alsglobal.com	teckcorp@equi-schedule.com		
Address		421 Pine Avenue				Address			2559-29 Street-NE	lyudmyla@minnow.ca		
City		Sparwood		Province	BC	City		Calgary	Province	AB		
Postal Code		V0B 2G0		Country	Canada	Postal Code		T1Y 7B5	Country	Canada		
Phone Number		250-425-8202				Phone Number		1 403 407 1794				

SAMPLE DETAILS								ANALYSIS REQUESTED									
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	C-TOC-SK	MET-CCME-FULL-CL	MOISTURE-CL - % Moisture	PSA-PIPET-DETAIL-SK Particle Size	PAH-TMB-D/A-MS-CL- PAHS					
RG_ERCKDT_BRYOSE-1_LAEMP_EVO_2022-06_29_NP	RG_ERCKDT	SE	No	6/29/2022	8:25	G	1	X	X	X	X	X					
RG_ERCKDT_BRYOSE-2_LAEMP_EVO_2022-06_29_NP	RG_ERCKDT	SE	No	6/29/2022	8:30	G	1	X	X	X	X	X					
RG_ERCKDT_BRYOSE-3_LAEMP_EVO_2022-06_29_NP	RG_ERCKDT	SE	No	6/29/2022	8:35	G	1	X	X	X	X	X					
RG_ERCKDT_BRYOSE-4_LAEMP_EVO_2022-06_29_NP	RG_ERCKDT	SE	No	6/29/2022	8:15	G	1	X	X	X	X	X					
RG_ERCKDT_BRYOSE-5_LAEMP_EVO_2022-06_29_NP	RG_ERCKDT	SE	No	6/29/2022	8:20	G	1	X	X	X	X	X					
		SE	No														

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS		RELINQUISHED BY/AFFILIATION		DATE/TIME		ACCEPTED BY/AFFILIATION	
VPO00816101		Robin Valteau/Minnow					

NO. OF BOTTLES RETURNED/DESCRIPTION				SAMPLER'S NAME		MOBILE #	
Regular (default)				Robin Valteau		416-970-7535	
Priority (2-3 business days) - 50% surcharge X				SAMPLER'S SIGNATURE		DATE/TIME	
Emergency (1 Business Day) - 100% surcharge						JUNE 30 2022	
For Emergency <1 Day, ASAP or Weekend - Contact ALS							



CERTIFICATE OF ANALYSIS

Work Order : **CG2209855**
Client : **Teck Coal Limited**
Contact : Mike Pope
Address : RR#1 HWY#3
Sparwood BC Canada V0B 2G1
Telephone : ----
Project : Regional Effects Program
PO : VPO00847030
C-O-C number : July EVO LAEMP 2022
Sampler : Robin Valleau
Site : ----
Quote number : Teck Coal Master Quote
No. of samples received : 33
No. of samples analysed : 33

Page : 1 of 17
Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
Calgary AB Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 27-Jul-2022 08:50
Date Analysis Commenced : 27-Jul-2022
Issue Date : 05-Aug-2022 18:47

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Colby Bingham	Quality Systems Coordinator	Metals, Saskatoon, Saskatchewan
Hedy Lai	Team Leader - Inorganics	Inorganics, Saskatoon, Saskatchewan
Jwan Abdalla	Laboratory Analyst	Metals, Saskatoon, Saskatchewan
Nancy Cruse	Laboratory _ Supervisor	Inorganics, Saskatoon, Saskatchewan



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
 LOR: Limit of Reporting (detection limit).

Unit	Description
-	No Unit
%	percent
mg/kg	milligrams per kilogram
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Workorder Comments

: Jars not received at laboratory, but PAH requested on Chain of Custody / analytical request form. - Samples will be analyzed from bag.

Samples 1, 2, 5, 7, 9, 14, 16, 20 & 21 potentially contaminated in shipment to Saskatoon

Sample Comments

Sample	Client Id	Comment
CG2209855-001	RG_BOCKRD_SE-1_LAEMP_E VO_2022-07_26_NP	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2209855-002	RG_BOCKRD_SE-2_LAEMP_E VO_2022-07_26_NP	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2209855-003	RG_BOCKRD_SE-3_LAEMP_E VO_2022-07_26_NP	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2209855-004	RG_GATE_SE-1_LAEMP_EV O_2022-07_25_NP	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2209855-008	RG_BOCK_SE-2_LAEMP_EV O_2022-07_25_NP	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.



CG2209855-010	RG_ERCKDT_SE-1_LAEMP_E VO_2022-07_26_NP	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2209855-011	RG_ERCKDT_SE-2_LAEMP_E VO_2022-07_26_NP	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2209855-012	RG_ERCKDT_SE-3_LAEMP_E VO_2022-07_26_NP	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2209855-013	RG_ERCKDT_SE-4_LAEMP_E VO_2022-07_26_NP	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2209855-018	RG_ERCKDT_BRYOSE-2_LA EMP_EVO_2022-07_26_NP	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2209855-025	RG_ERCKUT_BRYOSE-1_LA EMP_EVO_2022-07_26_NP	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2209855-027	RG_ERCKUT_BRYOSE-3_LA EMP_EVO_2022-07_26_NP	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2209855-028	RG_ERCKMD_SE-1_LAEMP_E VO_2022-07_26_NP	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2209855-029	RG_ERCKMD_SE-2_LAEMP_E VO_2022-07_26_NP	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2209855-031	RG_ERCKMD_BRYOSE-1_LA EMP_EVO_2022-07_26_NP	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2209855-033	RG_ERCKMD_BRYOSE-3_LA EMP_EVO_2022-07_26_NP	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.

Qualifiers

Qualifier	Description
FR5	As per applicable reference method(s), soil:water ratio for Fixed Ratio Leach was modified to 1:5 due to high soil organic content



Analytical Results

Sub-Matrix: Sediment
 (Matrix: Soil/Solid)

Client sample ID

					RG_BOCKRD_S E-1_LAEMP_EV O_2022-07_26_ NP	RG_BOCKRD_S E-2_LAEMP_EV O_2022-07_26_ NP	RG_BOCKRD_S E-3_LAEMP_EV O_2022-07_26_ NP	RG_GATE_SE-1 _LAEMP_EVO_ 2022-07_25_NP	RG_GATE_SE-2 _LAEMP_EVO_ 2022-07_25_NP
Client sampling date / time					26-Jul-2022 14:30	26-Jul-2022 14:35	26-Jul-2022 14:40	25-Jul-2022 09:00	25-Jul-2022 09:05
Analyte	CAS Number	Method	LOR	Unit	CG2209855-001	CG2209855-002	CG2209855-003	CG2209855-004	CG2209855-005
					Result	Result	Result	Result	Result
Physical Tests									
pH (1:2 soil:water)	----	E108	0.10	pH units	----	8.07	8.23	8.06	8.04
Particle Size									
grain size curve	----	E185A	-	-	See Attached	See Attached	See Attached	See Attached	See Attached
clay (<0.004mm)	----	EC184A	1.0	%	5.9	5.8	7.9	19.2	11.3
silt (0.063mm - 0.0312mm)	----	EC184A	1.0	%	12.8	11.2	7.9	15.4	16.8
silt (0.0312mm - 0.004mm)	----	EC184A	1.0	%	19.5	17.2	15.6	41.5	32.0
sand (0.125mm - 0.063mm)	----	EC184A	1.0	%	13.5	16.0	15.3	5.6	19.0
sand (0.25mm - 0.125mm)	----	EC184A	1.0	%	15.8	19.7	19.7	4.8	13.8
sand (0.5mm - 0.25mm)	----	EC184A	1.0	%	13.4	15.8	17.1	3.9	5.6
sand (1.0mm - 0.50mm)	----	EC184A	1.0	%	10.3	8.2	10.8	3.2	1.3
sand (2.0mm - 1.0mm)	----	EC184A	1.0	%	5.1	5.0	5.7	3.9	<1.0
gravel (>2mm)	----	EC184A	1.0	%	3.7	1.1	<1.0	2.5	<1.0
Organic / Inorganic Carbon									
carbon, total [TC]	----	E351	0.050	%	12.8	15.2	18.0	23.7	17.5
carbon, inorganic [IC]	----	E354	0.050	%	7.02	9.00	7.06	2.48	4.45
carbon, inorganic [IC], (as CaCO3 equivalent)	----	E354	0.40	%	58.5	75.0	58.8	20.7	37.0
carbon, total organic [TOC]	----	EC356	0.050	%	5.78	6.20	10.9	21.2	13.0
Metals									
aluminum	7429-90-5	E440	50	mg/kg	2250	1470	1690	4420	3950
antimony	7440-36-0	E440	0.10	mg/kg	0.50	0.44	0.47	1.11	0.77
arsenic	7440-38-2	E440	0.10	mg/kg	3.74	2.70	1.91	5.33	4.21
barium	7440-39-3	E440	0.50	mg/kg	542	554	934	1520	798
beryllium	7440-41-7	E440	0.10	mg/kg	0.22	0.16	0.16	0.47	0.39
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20
boron	7440-42-8	E440	5.0	mg/kg	6.2	<5.0	<5.0	5.8	6.0
cadmium	7440-43-9	E440	0.020	mg/kg	7.36	9.21	10.5	4.23	6.37
calcium	7440-70-2	E440	50	mg/kg	219000	272000	280000	86400	145000
chromium	7440-47-3	E440	0.50	mg/kg	4.03	2.62	2.87	9.89	7.30
cobalt	7440-48-4	E440	0.10	mg/kg	6.23	6.98	7.77	12.0	6.21



Analytical Results

Sub-Matrix: Sediment
 (Matrix: Soil/Solid)

Client sample ID

					RG_BOCKRD_S E-1_LAEMP_EV O_2022-07_26_ NP	RG_BOCKRD_S E-2_LAEMP_EV O_2022-07_26_ NP	RG_BOCKRD_S E-3_LAEMP_EV O_2022-07_26_ NP	RG_GATE_SE-1 LAEMP_EVO_ 2022-07_25_NP	RG_GATE_SE-2 LAEMP_EVO_ 2022-07_25_NP
Client sampling date / time					26-Jul-2022 14:30	26-Jul-2022 14:35	26-Jul-2022 14:40	25-Jul-2022 09:00	25-Jul-2022 09:05
Analyte	CAS Number	Method	LOR	Unit	CG2209855-001	CG2209855-002	CG2209855-003	CG2209855-004	CG2209855-005
					Result	Result	Result	Result	Result
Metals									
copper	7440-50-8	E440	0.50	mg/kg	8.61	7.44	8.45	22.6	15.4
iron	7439-89-6	E440	50	mg/kg	8490	5440	2720	11100	8900
lead	7439-92-1	E440	0.50	mg/kg	3.17	2.32	3.04	13.9	6.79
lithium	7439-93-2	E440	2.0	mg/kg	4.0	3.1	2.8	5.0	5.5
magnesium	7439-95-4	E440	20	mg/kg	5050	5080	4950	8760	6580
manganese	7439-96-5	E440	1.0	mg/kg	243	253	210	304	199
mercury	7439-97-6	E510	0.0050	mg/kg	0.0160	0.0169	0.0222	0.0590	0.0424
molybdenum	7439-98-7	E440	0.10	mg/kg	0.96	0.89	0.88	2.34	1.66
nickel	7440-02-0	E440	0.50	mg/kg	63.8	60.4	53.3	56.0	58.7
phosphorus	7723-14-0	E440	50	mg/kg	478	396	325	895	884
potassium	7440-09-7	E440	100	mg/kg	810	600	590	1190	1090
selenium	7782-49-2	E440	0.20	mg/kg	4.92	4.18	3.56	7.20	11.2
silver	7440-22-4	E440	0.10	mg/kg	0.10	<0.10	0.11	0.33	0.23
sodium	7440-23-5	E440	50	mg/kg	135	144	115	91	108
strontium	7440-24-6	E440	0.50	mg/kg	892	677	331	322	590
sulfur	7704-34-9	E440	1000	mg/kg	7000	7800	7400	2200	3800
thallium	7440-28-0	E440	0.050	mg/kg	0.172	0.135	0.128	0.157	0.216
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
titanium	7440-32-6	E440	1.0	mg/kg	18.4	14.9	20.8	21.6	21.8
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	<0.50	2.09	<0.50
uranium	7440-61-1	E440	0.050	mg/kg	1.76	1.82	1.61	1.27	1.63
vanadium	7440-62-2	E440	0.20	mg/kg	11.3	8.38	9.09	26.8	21.5
zinc	7440-66-6	E440	2.0	mg/kg	369	451	501	331	352
zirconium	7440-67-7	E440	1.0	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Sediment

(Matrix: Soil/Solid)

Client sample ID

					RG_GATE_SE-3 _LAEMP_EVO_ 2022-07_25_NP	RG_BOCK_SE-1 _LAEMP_EVO_ 2022-07_25_NP	RG_BOCK_SE-2 _LAEMP_EVO_ 2022-07_25_NP	RG_BOCK_SE-3 _LAEMP_EVO_ 2022-07_25_NP	RG_ERCKDT_S E-1_LAEMP_EV O_2022-07_26_ NP
Client sampling date / time					25-Jul-2022 09:10	25-Jul-2022 10:00	25-Jul-2022 10:05	25-Jul-2022 10:10	26-Jul-2022 11:30
Analyte	CAS Number	Method	LOR	Unit	CG2209855-006	CG2209855-007	CG2209855-008	CG2209855-009	CG2209855-010
					Result	Result	Result	Result	Result
Physical Tests									
pH (1:2 soil:water)	----	E108	0.10	pH units	----	8.27	8.05	8.20	7.79
Particle Size									
grain size curve	----	E185A	-	-	See Attached	See Attached	See Attached	See Attached	See Attached
clay (<0.004mm)	----	EC184A	1.0	%	20.8	9.0	8.9	11.3	4.5
silt (0.063mm - 0.0312mm)	----	EC184A	1.0	%	19.1	10.5	13.4	13.1	8.4
silt (0.0312mm - 0.004mm)	----	EC184A	1.0	%	51.3	22.3	27.9	30.4	12.8
sand (0.125mm - 0.063mm)	----	EC184A	1.0	%	5.3	7.7	8.1	9.5	7.5
sand (0.25mm - 0.125mm)	----	EC184A	1.0	%	2.5	9.5	11.6	9.7	11.9
sand (0.5mm - 0.25mm)	----	EC184A	1.0	%	<1.0	9.8	12.0	9.0	15.4
sand (1.0mm - 0.50mm)	----	EC184A	1.0	%	<1.0	13.2	9.1	9.1	15.0
sand (2.0mm - 1.0mm)	----	EC184A	1.0	%	<1.0	18.0	7.2	6.4	11.2
gravel (>2mm)	----	EC184A	1.0	%	<1.0	<1.0	1.8	1.5	13.3
Organic / Inorganic Carbon									
carbon, total [TC]	----	E351	0.050	%	26.0	13.4	14.8	13.8	10.1
carbon, inorganic [IC]	----	E354	0.050	%	3.35	9.67	6.46	8.77	2.04
carbon, inorganic [IC], (as CaCO3 equivalent)	----	E354	0.40	%	28.0	80.6	53.9	73.0	17.0
carbon, total organic [TOC]	----	EC356	0.050	%	22.6	3.73	8.34	5.03	8.06
Metals									
aluminum	7429-90-5	E440	50	mg/kg	4820	2510	3380	2880	4540
antimony	7440-36-0	E440	0.10	mg/kg	1.00	0.54	0.73	0.66	0.95
arsenic	7440-38-2	E440	0.10	mg/kg	4.91	2.05	2.94	2.92	7.03
barium	7440-39-3	E440	0.50	mg/kg	924	1480	1240	1250	188
beryllium	7440-41-7	E440	0.10	mg/kg	0.51	0.20	0.28	0.24	0.55
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20
boron	7440-42-8	E440	5.0	mg/kg	7.0	<5.0	5.9	<5.0	5.6
cadmium	7440-43-9	E440	0.020	mg/kg	5.00	4.73	8.70	8.62	2.38
calcium	7440-70-2	E440	50	mg/kg	113000	293000	224000	274000	71800
chromium	7440-47-3	E440	0.50	mg/kg	9.34	4.72	6.21	5.12	9.33
cobalt	7440-48-4	E440	0.10	mg/kg	9.55	5.70	7.17	6.14	35.9



Analytical Results

Sub-Matrix: Sediment
 (Matrix: Soil/Solid)

Client sample ID

					RG_GATE_SE-3 _LAEMP_EVO_ 2022-07_25_NP	RG_BOCK_SE-1 _LAEMP_EVO_ 2022-07_25_NP	RG_BOCK_SE-2 _LAEMP_EVO_ 2022-07_25_NP	RG_BOCK_SE-3 _LAEMP_EVO_ 2022-07_25_NP	RG_ERCKDT_S E-1_LAEMP_EV O_2022-07_26_ NP
Client sampling date / time					25-Jul-2022 09:10	25-Jul-2022 10:00	25-Jul-2022 10:05	25-Jul-2022 10:10	26-Jul-2022 11:30
Analyte	CAS Number	Method	LOR	Unit	CG2209855-006	CG2209855-007	CG2209855-008	CG2209855-009	CG2209855-010
					Result	Result	Result	Result	Result
Metals									
copper	7440-50-8	E440	0.50	mg/kg	21.7	10.6	14.3	12.9	14.2
iron	7439-89-6	E440	50	mg/kg	8730	3930	6300	4830	16100
lead	7439-92-1	E440	0.50	mg/kg	10.6	4.32	12.5	5.62	8.23
lithium	7439-93-2	E440	2.0	mg/kg	5.8	5.5	6.7	6.2	6.2
magnesium	7439-95-4	E440	20	mg/kg	5670	7060	6580	6610	5600
manganese	7439-96-5	E440	1.0	mg/kg	222	164	190	154	952
mercury	7439-97-6	E510	0.0050	mg/kg	0.0593	0.0211	0.0300	0.0229	0.0409
molybdenum	7439-98-7	E440	0.10	mg/kg	2.10	0.88	1.11	1.05	1.77
nickel	7440-02-0	E440	0.50	mg/kg	63.2	102	122	110	59.1
phosphorus	7723-14-0	E440	50	mg/kg	904	389	651	530	1120
potassium	7440-09-7	E440	100	mg/kg	1350	800	910	880	960
selenium	7782-49-2	E440	0.20	mg/kg	15.6	10.8	16.6	13.3	10.4
silver	7440-22-4	E440	0.10	mg/kg	0.32	0.12	0.16	0.14	0.18
sodium	7440-23-5	E440	50	mg/kg	103	169	148	156	69
strontium	7440-24-6	E440	0.50	mg/kg	555	416	366	420	64.3
sulfur	7704-34-9	E440	1000	mg/kg	3700	5100	4300	4600	1700
thallium	7440-28-0	E440	0.050	mg/kg	0.162	0.234	0.232	0.223	0.225
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
titanium	7440-32-6	E440	1.0	mg/kg	18.7	21.7	27.0	17.9	19.5
tungsten	7440-33-7	E440	0.50	mg/kg	0.51	1.78	1.45	1.57	<0.50
uranium	7440-61-1	E440	0.050	mg/kg	1.56	3.23	2.62	3.03	1.56
vanadium	7440-62-2	E440	0.20	mg/kg	27.9	11.2	15.4	13.5	22.4
zinc	7440-66-6	E440	2.0	mg/kg	278	321	580	574	118
zirconium	7440-67-7	E440	1.0	mg/kg	1.1	<1.0	1.3	1.0	1.4

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Sediment

(Matrix: Soil/Solid)

Client sample ID

					RG_ERCKDT_S E-2_LAEMP_EV O_2022-07_26_ NP	RG_ERCKDT_S E-3_LAEMP_EV O_2022-07_26_ NP	RG_ERCKDT_S E-4_LAEMP_EV O_2022-07_26_ NP	RG_ERCKDT_S E-5_LAEMP_EV O_2022-07_26_ NP	RG_ERCKDT_S E-6_LAEMP_EV O_2022-07_26_ NP
Client sampling date / time					26-Jul-2022 11:35	26-Jul-2022 11:40	26-Jul-2022 11:45	26-Jul-2022 11:50	26-Jul-2022 11:55
Analyte	CAS Number	Method	LOR	Unit	CG2209855-011	CG2209855-012	CG2209855-013	CG2209855-014	CG2209855-015
					Result	Result	Result	Result	Result
Physical Tests									
pH (1:2 soil:water)	----	E108	0.10	pH units	7.78	7.81	7.70	7.92	7.78
Particle Size									
grain size curve	----	E185A	-	-	See Attached	See Attached	See Attached	See Attached	See Attached
clay (<0.004mm)	----	EC184A	1.0	%	3.1	3.2	8.6	1.2	6.8
silt (0.063mm - 0.0312mm)	----	EC184A	1.0	%	9.6	17.5	31.9	4.0	25.6
silt (0.0312mm - 0.004mm)	----	EC184A	1.0	%	13.4	19.9	46.7	5.1	36.3
sand (0.125mm - 0.063mm)	----	EC184A	1.0	%	6.4	11.4	6.6	5.1	11.1
sand (0.25mm - 0.125mm)	----	EC184A	1.0	%	13.4	20.8	3.6	12.6	10.5
sand (0.5mm - 0.25mm)	----	EC184A	1.0	%	17.6	15.7	1.7	22.7	7.0
sand (1.0mm - 0.50mm)	----	EC184A	1.0	%	13.3	6.7	<1.0	24.7	2.1
sand (2.0mm - 1.0mm)	----	EC184A	1.0	%	10.6	3.1	<1.0	12.2	<1.0
gravel (>2mm)	----	EC184A	1.0	%	12.6	1.7	<1.0	12.4	<1.0
Organic / Inorganic Carbon									
carbon, total [TC]	----	E351	0.050	%	10.2	11.5	14.3	5.08	13.0
carbon, inorganic [IC]	----	E354	0.050	%	2.76	1.62	2.65	0.999	1.90
carbon, inorganic [IC], (as CaCO3 equivalent)	----	E354	0.40	%	23.0	13.5	22.1	8.32	15.8
carbon, total organic [TOC]	----	EC356	0.050	%	7.44	9.88	11.6	4.08	11.1
Metals									
aluminum	7429-90-5	E440	50	mg/kg	3260	3830	3750	4440	4110
antimony	7440-36-0	E440	0.10	mg/kg	1.07	1.00	0.94	0.95	0.87
arsenic	7440-38-2	E440	0.10	mg/kg	7.73	6.69	10.5	6.64	9.91
barium	7440-39-3	E440	0.50	mg/kg	194	153	265	174	241
beryllium	7440-41-7	E440	0.10	mg/kg	0.47	0.49	0.50	0.59	0.55
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20
boron	7440-42-8	E440	5.0	mg/kg	6.2	5.4	7.0	<5.0	6.1
cadmium	7440-43-9	E440	0.020	mg/kg	2.88	2.06	4.70	1.48	3.88
calcium	7440-70-2	E440	50	mg/kg	98800	57600	95300	38500	65700
chromium	7440-47-3	E440	0.50	mg/kg	7.31	8.52	8.40	9.23	8.46
cobalt	7440-48-4	E440	0.10	mg/kg	61.3	38.2	38.9	18.6	30.0



Analytical Results

Sub-Matrix: Sediment
 (Matrix: Soil/Solid)

Client sample ID

					RG_ERCKDT_S E-2_LAEMP_EV O_2022-07_26_ NP	RG_ERCKDT_S E-3_LAEMP_EV O_2022-07_26_ NP	RG_ERCKDT_S E-4_LAEMP_EV O_2022-07_26_ NP	RG_ERCKDT_S E-5_LAEMP_EV O_2022-07_26_ NP	RG_ERCKDT_S E-6_LAEMP_EV O_2022-07_26_ NP
Client sampling date / time					26-Jul-2022 11:35	26-Jul-2022 11:40	26-Jul-2022 11:45	26-Jul-2022 11:50	26-Jul-2022 11:55
Analyte	CAS Number	Method	LOR	Unit	CG2209855-011	CG2209855-012	CG2209855-013	CG2209855-014	CG2209855-015
					Result	Result	Result	Result	Result
Metals									
copper	7440-50-8	E440	0.50	mg/kg	13.6	14.6	17.2	14.0	16.9
iron	7439-89-6	E440	50	mg/kg	15100	13900	19900	18900	19300
lead	7439-92-1	E440	0.50	mg/kg	7.57	8.09	8.39	8.85	8.54
lithium	7439-93-2	E440	2.0	mg/kg	4.4	5.2	5.6	5.1	5.4
magnesium	7439-95-4	E440	20	mg/kg	5800	6790	8070	4050	6260
manganese	7439-96-5	E440	1.0	mg/kg	1570	888	606	491	376
mercury	7439-97-6	E510	0.0050	mg/kg	0.0524	0.0474	0.0568	0.0364	0.0559
molybdenum	7439-98-7	E440	0.10	mg/kg	1.99	1.56	1.42	1.54	1.44
nickel	7440-02-0	E440	0.50	mg/kg	79.7	76.4	56.8	47.0	53.4
phosphorus	7723-14-0	E440	50	mg/kg	1200	1200	1490	1270	1360
potassium	7440-09-7	E440	100	mg/kg	810	830	860	1000	920
selenium	7782-49-2	E440	0.20	mg/kg	10.6	21.3	17.6	5.32	21.3
silver	7440-22-4	E440	0.10	mg/kg	0.15	0.19	0.23	0.15	0.24
sodium	7440-23-5	E440	50	mg/kg	74	78	92	57	89
strontium	7440-24-6	E440	0.50	mg/kg	67.8	58.7	78.5	62.5	69.6
sulfur	7704-34-9	E440	1000	mg/kg	2100	1300	1600	<1000	1600
thallium	7440-28-0	E440	0.050	mg/kg	0.232	0.223	0.231	0.213	0.214
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
titanium	7440-32-6	E440	1.0	mg/kg	16.5	16.6	18.1	17.5	15.0
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
uranium	7440-61-1	E440	0.050	mg/kg	1.86	1.43	1.21	1.11	1.22
vanadium	7440-62-2	E440	0.20	mg/kg	19.4	18.9	19.5	28.4	19.9
zinc	7440-66-6	E440	2.0	mg/kg	134	125	173	126	152
zirconium	7440-67-7	E440	1.0	mg/kg	1.2	1.6	1.6	1.1	1.5

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Sediment

(Matrix: Soil/Solid)

Client sample ID

					RG_ERCKDT_S E-7_LAEMP_EV O_2022-07_26_ NP	RG_ERCKDT_B RYOSE-1_LAEM P_EVO_2022-0 7_26_NP	RG_ERCKDT_B RYOSE-2_LAEM P_EVO_2022-0 7_26_NP	RG_ERCKDT_B RYOSE-3_LAEM P_EVO_2022-0 7_26_NP	RG_ERCKUT_S E-1_LAEMP_EV O_2022-07_26_ NP
Client sampling date / time					26-Jul-2022 12:00	26-Jul-2022 11:30	26-Jul-2022 11:35	26-Jul-2022 11:40	26-Jul-2022 10:00
Analyte	CAS Number	Method	LOR	Unit	CG2209855-016	CG2209855-017	CG2209855-018	CG2209855-019	CG2209855-020
					Result	Result	Result	Result	Result
Physical Tests									
pH (1:2 soil:water)	----	E108	0.10	pH units	8.10	----	7.75	7.86	7.85
Particle Size									
grain size curve	----	E185A	-	-	See Attached	----	See Attached	See Attached	See Attached
clay (<0.004mm)	----	EC184A	1.0	%	30.7	----	8.0	1.7	4.5
silt (0.063mm - 0.0312mm)	----	EC184A	1.0	%	12.8	----	12.2	2.5	12.8
silt (0.0312mm - 0.004mm)	----	EC184A	1.0	%	41.2	----	21.7	4.3	14.5
sand (0.125mm - 0.063mm)	----	EC184A	1.0	%	5.9	----	6.4	2.2	13.8
sand (0.25mm - 0.125mm)	----	EC184A	1.0	%	4.5	----	11.3	6.4	19.8
sand (0.5mm - 0.25mm)	----	EC184A	1.0	%	2.6	----	18.1	16.5	16.2
sand (1.0mm - 0.50mm)	----	EC184A	1.0	%	1.0	----	13.6	25.8	6.6
sand (2.0mm - 1.0mm)	----	EC184A	1.0	%	<1.0	----	6.5	29.3	3.5
gravel (>2mm)	----	EC184A	1.0	%	<1.0	----	2.2	11.3	8.3
Organic / Inorganic Carbon									
carbon, total [TC]	----	E351	0.050	%	6.03	12.0	11.2	5.15	7.04
carbon, inorganic [IC]	----	E354	0.050	%	4.21	4.30	6.27	1.88	0.799
carbon, inorganic [IC], (as CaCO3 equivalent)	----	E354	0.40	%	35.1	35.8	52.2	15.7	6.66
carbon, total organic [TOC]	----	EC356	0.050	%	1.82	7.70	4.93	3.27	6.24
Metals									
aluminum	7429-90-5	E440	50	mg/kg	8200	2860	2150	3420	4710
antimony	7440-36-0	E440	0.10	mg/kg	0.74	1.04	0.74	1.03	0.90
arsenic	7440-38-2	E440	0.10	mg/kg	7.49	8.01	7.69	6.86	6.10
barium	7440-39-3	E440	0.50	mg/kg	252	242	224	173	166
beryllium	7440-41-7	E440	0.10	mg/kg	0.57	0.32	0.28	0.55	0.59
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20
boron	7440-42-8	E440	5.0	mg/kg	9.5	7.3	5.3	<5.0	<5.0
cadmium	7440-43-9	E440	0.020	mg/kg	1.31	4.40	4.59	2.18	1.35
calcium	7440-70-2	E440	50	mg/kg	124000	135000	199000	64200	30900
chromium	7440-47-3	E440	0.50	mg/kg	17.0	6.95	5.34	7.32	8.40
cobalt	7440-48-4	E440	0.10	mg/kg	6.68	201	153	60.4	6.16



Analytical Results

Sub-Matrix: Sediment

(Matrix: Soil/Solid)

Client sample ID

					RG_ERCKDT_S E-7_LAEMP_EV O_2022-07_26_ NP	RG_ERCKDT_B RYOSE-1_LAEM P_EVO_2022-0 7_26_NP	RG_ERCKDT_B RYOSE-2_LAEM P_EVO_2022-0 7_26_NP	RG_ERCKDT_B RYOSE-3_LAEM P_EVO_2022-0 7_26_NP	RG_ERCKUT_S E-1_LAEMP_EV O_2022-07_26_ NP
Client sampling date / time					26-Jul-2022 12:00	26-Jul-2022 11:30	26-Jul-2022 11:35	26-Jul-2022 11:40	26-Jul-2022 10:00
Analyte	CAS Number	Method	LOR	Unit	CG2209855-016	CG2209855-017	CG2209855-018	CG2209855-019	CG2209855-020
					Result	Result	Result	Result	Result
Metals									
copper	7440-50-8	E440	0.50	mg/kg	16.7	13.0	9.36	13.7	14.8
iron	7439-89-6	E440	50	mg/kg	14900	14000	14100	20100	15600
lead	7439-92-1	E440	0.50	mg/kg	7.81	6.26	5.02	8.49	9.28
lithium	7439-93-2	E440	2.0	mg/kg	12.5	4.3	3.5	4.3	6.4
magnesium	7439-95-4	E440	20	mg/kg	21900	8970	8070	3910	4400
manganese	7439-96-5	E440	1.0	mg/kg	562	5180	4110	1690	292
mercury	7439-97-6	E510	0.0050	mg/kg	0.0340	0.0343	0.0264	0.0299	0.0534
molybdenum	7439-98-7	E440	0.10	mg/kg	2.90	2.75	1.89	1.93	1.23
nickel	7440-02-0	E440	0.50	mg/kg	25.6	91.0	68.8	54.2	22.3
phosphorus	7723-14-0	E440	50	mg/kg	1130	1570	1220	1160	1040
potassium	7440-09-7	E440	100	mg/kg	1870	1130	790	860	880
selenium	7782-49-2	E440	0.20	mg/kg	1.47	11.0	9.98	3.64	3.24
silver	7440-22-4	E440	0.10	mg/kg	0.19	0.17	0.12	0.13	0.23
sodium	7440-23-5	E440	50	mg/kg	142	131	141	66	55
strontium	7440-24-6	E440	0.50	mg/kg	139	86.0	106	59.8	41.0
sulfur	7704-34-9	E440	1000	mg/kg	<1000	3800	4000	1200	<1000
thallium	7440-28-0	E440	0.050	mg/kg	0.281	0.202	0.158	0.188	0.163
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
titanium	7440-32-6	E440	1.0	mg/kg	37.4	16.4	13.2	11.9	19.9
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
uranium	7440-61-1	E440	0.050	mg/kg	1.10	2.07	2.24	1.26	1.06
vanadium	7440-62-2	E440	0.20	mg/kg	30.8	15.6	12.7	23.2	22.8
zinc	7440-66-6	E440	2.0	mg/kg	91.2	148	158	135	96.9
zirconium	7440-67-7	E440	1.0	mg/kg	3.3	<1.0	<1.0	<1.0	1.3

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Sediment

(Matrix: Soil/Solid)

Client sample ID

					RG_ERCKUT_S E-2_LAEMP_EV O_2022-07_26_ NP	RG_ERCKUT_S E-3_LAEMP_EV O_2022-07_26_ NP	RG_ERCKUT_S E-4_LAEMP_EV O_2022-07_26_ NP	RG_ERCKUT_S E-5_LAEMP_EV O_2022-07_26_ NP	RG_ERCKUT_B RYOSE-1_LAEMP P_EVO_2022-0 7_26_NP
Client sampling date / time					26-Jul-2022 10:05	26-Jul-2022 10:10	26-Jul-2022 10:15	26-Jul-2022 10:20	26-Jul-2022 10:00
Analyte	CAS Number	Method	LOR	Unit	CG2209855-021	CG2209855-022	CG2209855-023	CG2209855-024	CG2209855-025
					Result	Result	Result	Result	Result
Physical Tests									
pH (1:2 soil:water)	----	E108	0.10	pH units	8.03	7.72	7.76	7.64	7.98
Particle Size									
grain size curve	----	E185A	-	-	See Attached	See Attached	See Attached	See Attached	See Attached
clay (<0.004mm)	----	EC184A	1.0	%	<1.0	7.0	3.7	3.4	<1.0
silt (0.063mm - 0.0312mm)	----	EC184A	1.0	%	3.9	12.0	11.1	5.6	2.2
silt (0.0312mm - 0.004mm)	----	EC184A	1.0	%	4.4	17.9	13.1	7.2	3.2
sand (0.125mm - 0.063mm)	----	EC184A	1.0	%	7.1	11.8	13.2	9.0	1.6
sand (0.25mm - 0.125mm)	----	EC184A	1.0	%	27.4	19.5	19.2	30.6	4.4
sand (0.5mm - 0.25mm)	----	EC184A	1.0	%	38.2	20.8	19.9	29.3	13.8
sand (1.0mm - 0.50mm)	----	EC184A	1.0	%	9.2	7.4	10.5	8.9	25.9
sand (2.0mm - 1.0mm)	----	EC184A	1.0	%	4.2	2.2	4.3	1.8	20.1
gravel (>2mm)	----	EC184A	1.0	%	5.6	1.4	5.0	4.2	28.8
Organic / Inorganic Carbon									
carbon, total [TC]	----	E351	0.050	%	4.12	7.01	6.02	5.24	4.09
carbon, inorganic [IC]	----	E354	0.050	%	1.14	0.417	0.520	0.434	0.805
carbon, inorganic [IC], (as CaCO3 equivalent)	----	E354	0.40	%	9.47	3.48	4.34	3.62	6.71
carbon, total organic [TOC]	----	EC356	0.050	%	2.98	6.59	5.50	4.81	3.28
Metals									
aluminum	7429-90-5	E440	50	mg/kg	4480	6180	5180	5220	4210
antimony	7440-36-0	E440	0.10	mg/kg	0.96	0.90	0.80	0.90	1.30
arsenic	7440-38-2	E440	0.10	mg/kg	6.52	6.61	5.75	6.15	7.48
barium	7440-39-3	E440	0.50	mg/kg	189	168	158	175	205
beryllium	7440-41-7	E440	0.10	mg/kg	0.59	0.70	0.62	0.67	0.68
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20
boron	7440-42-8	E440	5.0	mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0
cadmium	7440-43-9	E440	0.020	mg/kg	1.23	1.41	1.20	1.15	1.59
calcium	7440-70-2	E440	50	mg/kg	41000	16200	21800	18800	27400
chromium	7440-47-3	E440	0.50	mg/kg	8.74	10.4	9.31	8.57	9.55
cobalt	7440-48-4	E440	0.10	mg/kg	6.49	6.99	5.87	7.46	6.11



Analytical Results

Sub-Matrix: Sediment

(Matrix: Soil/Solid)

Client sample ID

					RG_ERCKUT_S E-2_LAEMP_EV O_2022-07_26_ NP	RG_ERCKUT_S E-3_LAEMP_EV O_2022-07_26_ NP	RG_ERCKUT_S E-4_LAEMP_EV O_2022-07_26_ NP	RG_ERCKUT_S E-5_LAEMP_EV O_2022-07_26_ NP	RG_ERCKUT_B RYOSE-1_LAEM P_EVO_2022-0 7_26_NP
Client sampling date / time					26-Jul-2022 10:05	26-Jul-2022 10:10	26-Jul-2022 10:15	26-Jul-2022 10:20	26-Jul-2022 10:00
Analyte	CAS Number	Method	LOR	Unit	CG2209855-021	CG2209855-022	CG2209855-023	CG2209855-024	CG2209855-025
					Result	Result	Result	Result	Result
Metals									
copper	7440-50-8	E440	0.50	mg/kg	12.9	18.4	14.9	15.6	15.9
iron	7439-89-6	E440	50	mg/kg	16900	16200	14300	13400	24700
lead	7439-92-1	E440	0.50	mg/kg	9.39	10.3	9.32	10.0	9.20
lithium	7439-93-2	E440	2.0	mg/kg	5.6	8.1	7.1	7.4	4.2
magnesium	7439-95-4	E440	20	mg/kg	4540	4330	4260	2950	3310
manganese	7439-96-5	E440	1.0	mg/kg	269	174	174	208	291
mercury	7439-97-6	E510	0.0050	mg/kg	0.0375	0.0640	0.0506	0.0469	0.0307
molybdenum	7439-98-7	E440	0.10	mg/kg	1.39	1.26	1.18	1.26	1.73
nickel	7440-02-0	E440	0.50	mg/kg	21.5	24.7	21.5	21.3	27.8
phosphorus	7723-14-0	E440	50	mg/kg	1100	1160	1140	1070	1350
potassium	7440-09-7	E440	100	mg/kg	1000	1160	980	980	1140
selenium	7782-49-2	E440	0.20	mg/kg	2.64	2.92	3.00	3.21	1.84
silver	7440-22-4	E440	0.10	mg/kg	0.14	0.34	0.23	0.24	0.15
sodium	7440-23-5	E440	50	mg/kg	59	68	<50	60	62
strontium	7440-24-6	E440	0.50	mg/kg	52.9	38.7	41.0	37.0	64.8
sulfur	7704-34-9	E440	1000	mg/kg	<1000	<1000	<1000	<1000	<1000
thallium	7440-28-0	E440	0.050	mg/kg	0.160	0.197	0.165	0.165	0.197
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
titanium	7440-32-6	E440	1.0	mg/kg	19.5	31.2	27.8	21.8	15.2
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
uranium	7440-61-1	E440	0.050	mg/kg	1.02	0.980	1.03	1.03	1.18
vanadium	7440-62-2	E440	0.20	mg/kg	24.4	26.0	23.4	23.4	31.1
zinc	7440-66-6	E440	2.0	mg/kg	100	106	102	99.8	141
zirconium	7440-67-7	E440	1.0	mg/kg	<1.0	1.8	1.7	1.7	<1.0

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Sediment

(Matrix: Soil/Solid)

Client sample ID

					RG_ERCKUT_B RYOSE-2_LAEM P_EVO_2022-0 7_26_NP	RG_ERCKUT_B RYOSE-3_LAEM P_EVO_2022-0 7_26_NP	RG_ERCKMD_S E-1_LAEMP_EV O_2022-07_26_ NP	RG_ERCKMD_S E-2_LAEMP_EV O_2022-07_26_ NP	RG_ERCKMD_S E-3_LAEMP_EV O_2022-07_26_ NP
Client sampling date / time					26-Jul-2022 10:05	26-Jul-2022 10:10	26-Jul-2022 13:30	26-Jul-2022 13:35	26-Jul-2022 13:40
Analyte	CAS Number	Method	LOR	Unit	CG2209855-026	CG2209855-027	CG2209855-028	CG2209855-029	CG2209855-030
					Result	Result	Result	Result	Result
Physical Tests									
pH (1:2 soil:water)	----	E108	0.10	pH units	----	7.55 ^{FRS}	7.84 ^{FRS}	8.05 ^{FRS}	----
Particle Size									
grain size curve	----	E185A	-	-	----	See Attached	See Attached	See Attached	----
clay (<0.004mm)	----	EC184A	1.0	%	----	3.6	10.6	5.9	----
silt (0.063mm - 0.0312mm)	----	EC184A	1.0	%	----	20.3	27.6	19.5	----
silt (0.0312mm - 0.004mm)	----	EC184A	1.0	%	----	22.7	43.0	28.3	----
sand (0.125mm - 0.063mm)	----	EC184A	1.0	%	----	9.0	8.6	12.3	----
sand (0.25mm - 0.125mm)	----	EC184A	1.0	%	----	18.7	5.9	13.1	----
sand (0.5mm - 0.25mm)	----	EC184A	1.0	%	----	14.7	2.3	8.9	----
sand (1.0mm - 0.50mm)	----	EC184A	1.0	%	----	7.8	1.0	4.8	----
sand (2.0mm - 1.0mm)	----	EC184A	1.0	%	----	3.1	<1.0	2.8	----
gravel (>2mm)	----	EC184A	1.0	%	----	<1.0	<1.0	4.4	----
Organic / Inorganic Carbon									
carbon, total [TC]	----	E351	0.050	%	10.7	16.4	12.7	9.92	15.8
carbon, inorganic [IC]	----	E354	0.050	%	1.24	4.92	2.37	1.57	3.22
carbon, inorganic [IC], (as CaCO3 equivalent)	----	E354	0.40	%	10.3	41.0	19.7	13.1	26.9
carbon, total organic [TOC]	----	EC356	0.050	%	9.46	11.5	10.3	8.35	12.6
Metals									
aluminum	7429-90-5	E440	50	mg/kg	4070	2280	4290	4970	2870
antimony	7440-36-0	E440	0.10	mg/kg	1.69	1.64	0.91	0.87	1.37
arsenic	7440-38-2	E440	0.10	mg/kg	6.00	2.41	13.5	6.79	26.3
barium	7440-39-3	E440	0.50	mg/kg	175	188	253	190	384
beryllium	7440-41-7	E440	0.10	mg/kg	0.55	0.30	0.60	0.57	0.59
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20
boron	7440-42-8	E440	5.0	mg/kg	7.4	10.0	8.0	7.2	11.0
cadmium	7440-43-9	E440	0.020	mg/kg	1.90	1.64	6.37	2.71	11.6
calcium	7440-70-2	E440	50	mg/kg	38700	153000	85300	51800	101000
chromium	7440-47-3	E440	0.50	mg/kg	8.86	6.34	8.32	9.98	7.54
cobalt	7440-48-4	E440	0.10	mg/kg	6.57	2.18	181	59.6	388



Analytical Results

Sub-Matrix: Sediment

(Matrix: Soil/Solid)

Client sample ID

					RG_ERCKUT_B RYOSE-2_LAEM P_EVO_2022-0 7_26_NP	RG_ERCKUT_B RYOSE-3_LAEM P_EVO_2022-0 7_26_NP	RG_ERCKMD_S E-1_LAEMP_EV O_2022-07_26_ NP	RG_ERCKMD_S E-2_LAEMP_EV O_2022-07_26_ NP	RG_ERCKMD_S E-3_LAEMP_EV O_2022-07_26_ NP
Client sampling date / time					26-Jul-2022 10:05	26-Jul-2022 10:10	26-Jul-2022 13:30	26-Jul-2022 13:35	26-Jul-2022 13:40
Analyte	CAS Number	Method	LOR	Unit	CG2209855-026	CG2209855-027	CG2209855-028	CG2209855-029	CG2209855-030
					Result	Result	Result	Result	Result
Metals									
copper	7440-50-8	E440	0.50	mg/kg	16.6	12.6	16.8	15.4	19.5
iron	7439-89-6	E440	50	mg/kg	16100	5020	27000	14700	47900
lead	7439-92-1	E440	0.50	mg/kg	7.74	3.44	9.62	9.15	12.2
lithium	7439-93-2	E440	2.0	mg/kg	5.1	3.2	5.9	6.5	3.8
magnesium	7439-95-4	E440	20	mg/kg	5490	6660	7090	8050	8720
manganese	7439-96-5	E440	1.0	mg/kg	292	118	4860	1860	12000
mercury	7439-97-6	E510	0.0050	mg/kg	0.0381	0.0358	0.0596	0.0631	0.0608
molybdenum	7439-98-7	E440	0.10	mg/kg	1.52	1.20	1.66	1.58	3.30
nickel	7440-02-0	E440	0.50	mg/kg	23.1	15.3	124	77.7	184
phosphorus	7723-14-0	E440	50	mg/kg	1470	1010	1540	1210	2300
potassium	7440-09-7	E440	100	mg/kg	1940	800	910	1030	850
selenium	7782-49-2	E440	0.20	mg/kg	5.51	12.8	24.2	10.9	39.8
silver	7440-22-4	E440	0.10	mg/kg	0.17	0.14	0.28	0.24	0.26
sodium	7440-23-5	E440	50	mg/kg	90	144	91	73	123
strontium	7440-24-6	E440	0.50	mg/kg	50.1	74.5	73.3	57.0	89.3
sulfur	7704-34-9	E440	1000	mg/kg	1800	4700	3200	1300	4100
thallium	7440-28-0	E440	0.050	mg/kg	0.162	0.129	0.356	0.264	0.580
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
titanium	7440-32-6	E440	1.0	mg/kg	18.4	16.8	19.5	25.0	18.2
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
uranium	7440-61-1	E440	0.050	mg/kg	1.27	2.93	1.56	1.28	2.37
vanadium	7440-62-2	E440	0.20	mg/kg	23.3	14.3	20.8	23.2	24.5
zinc	7440-66-6	E440	2.0	mg/kg	99.3	53.9	295	148	457
zirconium	7440-67-7	E440	1.0	mg/kg	<1.0	1.8	1.4	1.7	1.1

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Sediment

(Matrix: Soil/Solid)

Client sample ID

					RG_ERCKMD_B RYOSE-1_LAEM P_EVO_2022-0 7_26_NP	RG_ERCKMD_B RYOSE-2_LAEM P_EVO_2022-0 7_26_NP	RG_ERCKMD_B RYOSE-3_LAEM P_EVO_2022-0 7_26_NP	----	----
					26-Jul-2022 13:30	26-Jul-2022 13:35	26-Jul-2022 13:40	----	----
Analyte	CAS Number	Method	LOR	Unit	CG2209855-031	CG2209855-032	CG2209855-033	-----	-----
					Result	Result	Result	----	----
Physical Tests									
pH (1:2 soil:water)	----	E108	0.10	pH units	7.98	----	7.89	----	----
Particle Size									
grain size curve	----	E185A	-	-	See Attached	----	See Attached	----	----
clay (<0.004mm)	----	EC184A	1.0	%	5.0	----	2.1	----	----
silt (0.063mm - 0.0312mm)	----	EC184A	1.0	%	14.6	----	4.6	----	----
silt (0.0312mm - 0.004mm)	----	EC184A	1.0	%	17.7	----	7.1	----	----
sand (0.125mm - 0.063mm)	----	EC184A	1.0	%	12.0	----	4.5	----	----
sand (0.25mm - 0.125mm)	----	EC184A	1.0	%	19.9	----	14.9	----	----
sand (0.5mm - 0.25mm)	----	EC184A	1.0	%	15.8	----	37.2	----	----
sand (1.0mm - 0.50mm)	----	EC184A	1.0	%	11.3	----	26.9	----	----
sand (2.0mm - 1.0mm)	----	EC184A	1.0	%	3.5	----	2.7	----	----
gravel (>2mm)	----	EC184A	1.0	%	<1.0	----	<1.0	----	----
Organic / Inorganic Carbon									
carbon, total [TC]	----	E351	0.050	%	12.2	12.7	9.37	----	----
carbon, inorganic [IC]	----	E354	0.050	%	5.60	6.38	3.94	----	----
carbon, inorganic [IC], (as CaCO3 equivalent)	----	E354	0.40	%	46.7	53.1	32.9	----	----
carbon, total organic [TOC]	----	EC356	0.050	%	6.60	6.32	5.43	----	----
Metals									
aluminum	7429-90-5	E440	50	mg/kg	1940	1820	3140	----	----
antimony	7440-36-0	E440	0.10	mg/kg	0.64	0.73	0.80	----	----
arsenic	7440-38-2	E440	0.10	mg/kg	8.80	11.4	6.21	----	----
barium	7440-39-3	E440	0.50	mg/kg	246	339	204	----	----
beryllium	7440-41-7	E440	0.10	mg/kg	0.31	0.34	0.41	----	----
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	<0.20	----	----
boron	7440-42-8	E440	5.0	mg/kg	<5.0	5.7	<5.0	----	----
cadmium	7440-43-9	E440	0.020	mg/kg	6.32	7.89	3.28	----	----
calcium	7440-70-2	E440	50	mg/kg	144000	210000	117000	----	----
chromium	7440-47-3	E440	0.50	mg/kg	4.18	4.13	6.32	----	----
cobalt	7440-48-4	E440	0.10	mg/kg	185	205	63.4	----	----



Analytical Results

Sub-Matrix: Sediment
 (Matrix: Soil/Solid)

Client sample ID

					RG_ERCKMD_B RYOSE-1_LAEM P_EVO_2022-0 7_26_NP	RG_ERCKMD_B RYOSE-2_LAEM P_EVO_2022-0 7_26_NP	RG_ERCKMD_B RYOSE-3_LAEM P_EVO_2022-0 7_26_NP	----	----	
					Client sampling date / time	26-Jul-2022 13:30	26-Jul-2022 13:35	26-Jul-2022 13:40	----	----
Analyte	CAS Number	Method	LOR	Unit	CG2209855-031	CG2209855-032	CG2209855-033	-----	-----	
					Result	Result	Result	----	----	
Metals										
copper	7440-50-8	E440	0.50	mg/kg	8.75	10.6	10.7	----	----	
iron	7439-89-6	E440	50	mg/kg	16200	20900	14400	----	----	
lead	7439-92-1	E440	0.50	mg/kg	5.55	6.09	6.94	----	----	
lithium	7439-93-2	E440	2.0	mg/kg	3.2	3.0	3.8	----	----	
magnesium	7439-95-4	E440	20	mg/kg	5350	6510	4600	----	----	
manganese	7439-96-5	E440	1.0	mg/kg	6130	6800	1980	----	----	
mercury	7439-97-6	E510	0.0050	mg/kg	0.0310	0.0347	0.0333	----	----	
molybdenum	7439-98-7	E440	0.10	mg/kg	1.25	1.67	1.54	----	----	
nickel	7440-02-0	E440	0.50	mg/kg	86.7	99.8	68.5	----	----	
phosphorus	7723-14-0	E440	50	mg/kg	994	1310	1100	----	----	
potassium	7440-09-7	E440	100	mg/kg	540	650	880	----	----	
selenium	7782-49-2	E440	0.20	mg/kg	11.1	13.7	8.58	----	----	
silver	7440-22-4	E440	0.10	mg/kg	0.12	0.14	0.12	----	----	
sodium	7440-23-5	E440	50	mg/kg	87	118	74	----	----	
strontium	7440-24-6	E440	0.50	mg/kg	73.4	102	74.2	----	----	
sulfur	7704-34-9	E440	1000	mg/kg	3600	5200	2400	----	----	
thallium	7440-28-0	E440	0.050	mg/kg	0.302	0.313	0.198	----	----	
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	<2.0	----	----	
titanium	7440-32-6	E440	1.0	mg/kg	12.8	13.7	12.8	----	----	
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	<0.50	----	----	
uranium	7440-61-1	E440	0.050	mg/kg	1.66	2.31	1.68	----	----	
vanadium	7440-62-2	E440	0.20	mg/kg	12.1	14.2	18.1	----	----	
zinc	7440-66-6	E440	2.0	mg/kg	239	277	150	----	----	
zirconium	7440-67-7	E440	1.0	mg/kg	<1.0	<1.0	<1.0	----	----	

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: CG2209855	Page	: 1 of 27
Client	: Teck Coal Limited	Laboratory	: Calgary - Environmental
Contact	: Mike Pope	Account Manager	: Lyudmyla Shvets
Address	: RR#1 HWY#3 Sparwood BC Canada V0B 2G1	Address	: 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5
Telephone	: ----	Telephone	: +1 403 407 1800
Project	: Regional Effects Program	Date Samples Received	: 27-Jul-2022 08:50
PO	: VPO00847030	Issue Date	: 05-Aug-2022 18:48
C-O-C number	: July EVO LAEMP 2022		
Sampler	: Robin Valleau		
Site	: ----		
Quote number	: Teck Coal Master Quote		
No. of samples received	: 33		
No. of samples analysed	: 33		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

RIGHT SOLUTIONS | RIGHT PARTNER



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Soil/Solid**

Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag RG_BOCKRD_SE-1_LAEMP_EVO_2022-07_26_NP	E510	26-Jul-2022	02-Aug-2022	----	----		02-Aug-2022	28 days	7 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag RG_BOCKRD_SE-2_LAEMP_EVO_2022-07_26_NP	E510	26-Jul-2022	02-Aug-2022	----	----		02-Aug-2022	28 days	7 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag RG_BOCKRD_SE-3_LAEMP_EVO_2022-07_26_NP	E510	26-Jul-2022	02-Aug-2022	----	----		02-Aug-2022	28 days	7 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag RG_ERCKDT_BRYOSE-1_LAEMP_EVO_2022-07_26_NP	E510	26-Jul-2022	02-Aug-2022	----	----		02-Aug-2022	28 days	7 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag RG_ERCKDT_BRYOSE-2_LAEMP_EVO_2022-07_26_NP	E510	26-Jul-2022	02-Aug-2022	----	----		02-Aug-2022	28 days	7 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag RG_ERCKDT_BRYOSE-3_LAEMP_EVO_2022-07_26_NP	E510	26-Jul-2022	02-Aug-2022	----	----		02-Aug-2022	28 days	7 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag RG_ERCKDT_SE-1_LAEMP_EVO_2022-07_26_NP	E510	26-Jul-2022	02-Aug-2022	----	----		02-Aug-2022	28 days	7 days	✓



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKDT_SE-2_LAEMP_EVO_2022-07_26_NP	E510	26-Jul-2022	02-Aug-2022	----	----		02-Aug-2022	28 days	7 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKDT_SE-3_LAEMP_EVO_2022-07_26_NP	E510	26-Jul-2022	02-Aug-2022	----	----		02-Aug-2022	28 days	7 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKDT_SE-4_LAEMP_EVO_2022-07_26_NP	E510	26-Jul-2022	02-Aug-2022	----	----		02-Aug-2022	28 days	7 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKDT_SE-5_LAEMP_EVO_2022-07_26_NP	E510	26-Jul-2022	02-Aug-2022	----	----		02-Aug-2022	28 days	7 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKDT_SE-6_LAEMP_EVO_2022-07_26_NP	E510	26-Jul-2022	02-Aug-2022	----	----		02-Aug-2022	28 days	7 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKDT_SE-7_LAEMP_EVO_2022-07_26_NP	E510	26-Jul-2022	02-Aug-2022	----	----		02-Aug-2022	28 days	7 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKMD_BRYOSE-1_LAEMP_EVO_2022-07_26_NP	E510	26-Jul-2022	02-Aug-2022	----	----		02-Aug-2022	28 days	7 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKMD_BRYOSE-2_LAEMP_EVO_2022-07_26_NP	E510	26-Jul-2022	02-Aug-2022	----	----		02-Aug-2022	28 days	7 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKMD_BRYOSE-3_LAEMP_EVO_2022-07_26_NP	E510	26-Jul-2022	02-Aug-2022	----	----		02-Aug-2022	28 days	7 days	✔	



Matrix: **Soil/Solid**

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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKMD_SE-1_LAEMP_EVO_2022-07_26_NP	E510	26-Jul-2022	02-Aug-2022	----	----		02-Aug-2022	28 days	7 days	✔	
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LDPE bag RG_ERCKMD_SE-2_LAEMP_EVO_2022-07_26_NP	E510	26-Jul-2022	02-Aug-2022	----	----		02-Aug-2022	28 days	7 days	✔	
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Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKUT_BRYOSE-1_LAEMP_EVO_2022-07_26_NP	E510	26-Jul-2022	02-Aug-2022	----	----		02-Aug-2022	28 days	7 days	✔	
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LDPE bag RG_ERCKUT_BRYOSE-2_LAEMP_EVO_2022-07_26_NP	E510	26-Jul-2022	02-Aug-2022	----	----		02-Aug-2022	28 days	7 days	✔	
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LDPE bag RG_ERCKUT_BRYOSE-3_LAEMP_EVO_2022-07_26_NP	E510	26-Jul-2022	02-Aug-2022	----	----		02-Aug-2022	28 days	7 days	✔	
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LDPE bag RG_ERCKUT_SE-1_LAEMP_EVO_2022-07_26_NP	E510	26-Jul-2022	02-Aug-2022	----	----		02-Aug-2022	28 days	7 days	✔	
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LDPE bag RG_ERCKUT_SE-2_LAEMP_EVO_2022-07_26_NP	E510	26-Jul-2022	02-Aug-2022	----	----		02-Aug-2022	28 days	7 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKUT_SE-3_LAEMP_EVO_2022-07_26_NP	E510	26-Jul-2022	02-Aug-2022	----	----		02-Aug-2022	28 days	7 days	✔	



Matrix: **Soil/Solid**

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKUT_SE-4_LAEMP_EVO_2022-07_26_NP	E510	26-Jul-2022	02-Aug-2022	----	----		02-Aug-2022	28 days	7 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKUT_SE-5_LAEMP_EVO_2022-07_26_NP	E510	26-Jul-2022	02-Aug-2022	----	----		02-Aug-2022	28 days	7 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_BOCK_SE-1_LAEMP_EVO_2022-07_25_NP	E510	25-Jul-2022	02-Aug-2022	----	----		02-Aug-2022	28 days	8 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_BOCK_SE-2_LAEMP_EVO_2022-07_25_NP	E510	25-Jul-2022	02-Aug-2022	----	----		02-Aug-2022	28 days	8 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_BOCK_SE-3_LAEMP_EVO_2022-07_25_NP	E510	25-Jul-2022	02-Aug-2022	----	----		02-Aug-2022	28 days	8 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_GATE_SE-1_LAEMP_EVO_2022-07_25_NP	E510	25-Jul-2022	02-Aug-2022	----	----		02-Aug-2022	28 days	8 days	✔	
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LDPE bag RG_GATE_SE-2_LAEMP_EVO_2022-07_25_NP	E510	25-Jul-2022	02-Aug-2022	----	----		02-Aug-2022	28 days	8 days	✔	
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LDPE bag RG_GATE_SE-3_LAEMP_EVO_2022-07_25_NP	E510	25-Jul-2022	02-Aug-2022	----	----		02-Aug-2022	28 days	8 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_BOCKRD_SE-1_LAEMP_EVO_2022-07_26_NP	E440	26-Jul-2022	02-Aug-2022	----	----		02-Aug-2022	180 days	7 days	✔	



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			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_BOCKRD_SE-2_LAEMP_EVO_2022-07_26_NP	E440	26-Jul-2022	02-Aug-2022	----	----		02-Aug-2022	180 days	7 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_BOCKRD_SE-3_LAEMP_EVO_2022-07_26_NP	E440	26-Jul-2022	02-Aug-2022	----	----		02-Aug-2022	180 days	7 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_ERCKDT_BRYOSE-1_LAEMP_EVO_2022-07_26_NP	E440	26-Jul-2022	02-Aug-2022	----	----		02-Aug-2022	180 days	7 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_ERCKDT_BRYOSE-2_LAEMP_EVO_2022-07_26_NP	E440	26-Jul-2022	02-Aug-2022	----	----		02-Aug-2022	180 days	7 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_ERCKDT_BRYOSE-3_LAEMP_EVO_2022-07_26_NP	E440	26-Jul-2022	02-Aug-2022	----	----		02-Aug-2022	180 days	7 days	✔	
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Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_ERCKDT_SE-3_LAEMP_EVO_2022-07_26_NP	E440	26-Jul-2022	02-Aug-2022	----	----		02-Aug-2022	180 days	7 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_ERCKDT_SE-4_LAEMP_EVO_2022-07_26_NP	E440	26-Jul-2022	02-Aug-2022	----	----		02-Aug-2022	180 days	7 days	✔	



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			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_ERCKDT_SE-5_LAEMP_EVO_2022-07_26_NP	E440	26-Jul-2022	02-Aug-2022	----	----		02-Aug-2022	180 days	7 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_ERCKDT_SE-6_LAEMP_EVO_2022-07_26_NP	E440	26-Jul-2022	02-Aug-2022	----	----		02-Aug-2022	180 days	7 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_ERCKDT_SE-7_LAEMP_EVO_2022-07_26_NP	E440	26-Jul-2022	02-Aug-2022	----	----		02-Aug-2022	180 days	7 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_ERCKMD_BRYOSE-1_LAEMP_EVO_2022-07_26_NP	E440	26-Jul-2022	02-Aug-2022	----	----		02-Aug-2022	180 days	7 days	✔	
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LDPE bag RG_ERCKMD_BRYOSE-2_LAEMP_EVO_2022-07_26_NP	E440	26-Jul-2022	02-Aug-2022	----	----		02-Aug-2022	180 days	7 days	✔	
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			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
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Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_ERCKUT_BRYOSE-1_LAEMP_EVO_2022-07_26_NP	E440	26-Jul-2022	02-Aug-2022	----	----		02-Aug-2022	180 days	7 days	✔	
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LDPE bag RG_ERCKUT_SE-3_LAEMP_EVO_2022-07_26_NP	E440	26-Jul-2022	02-Aug-2022	----	----		02-Aug-2022	180 days	7 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_ERCKUT_SE-4_LAEMP_EVO_2022-07_26_NP	E440	26-Jul-2022	02-Aug-2022	----	----		02-Aug-2022	180 days	7 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_ERCKUT_SE-5_LAEMP_EVO_2022-07_26_NP	E440	26-Jul-2022	02-Aug-2022	----	----		02-Aug-2022	180 days	7 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_BOCK_SE-1_LAEMP_EVO_2022-07_25_NP	E440	25-Jul-2022	02-Aug-2022	----	----		02-Aug-2022	180 days	8 days	✔	



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LDPE bag RG_BOCK_SE-2_LAEMP_EVO_2022-07_25_NP	E440	25-Jul-2022	02-Aug-2022	----	----		02-Aug-2022	180 days	8 days	✔	
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Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_BOCK_SE-1_LAEMP_EVO_2022-07_25_NP	E351	25-Jul-2022	03-Aug-2022	----	----		03-Aug-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_BOCK_SE-2_LAEMP_EVO_2022-07_25_NP	E351	25-Jul-2022	03-Aug-2022	----	----		03-Aug-2022	180 days	0 days	✔	
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LDPE bag RG_BOCKRD_SE-2_LAEMP_EVO_2022-07_26_NP	E351	26-Jul-2022	03-Aug-2022	----	----		03-Aug-2022	180 days	0 days	✔	
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Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKDT_BRYOSE-1_LAEMP_EVO_2022-07_26_NP	E351	26-Jul-2022	03-Aug-2022	----	----		03-Aug-2022	180 days	0 days	✔	
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Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKDT_SE-4_LAEMP_EVO_2022-07_26_NP	E351	26-Jul-2022	03-Aug-2022	----	----		03-Aug-2022	180 days	0 days	✔	



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Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKDT_SE-6_LAEMP_EVO_2022-07_26_NP	E351	26-Jul-2022	03-Aug-2022	----	----		03-Aug-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKDT_SE-7_LAEMP_EVO_2022-07_26_NP	E351	26-Jul-2022	03-Aug-2022	----	----		03-Aug-2022	180 days	0 days	✔	
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LDPE bag RG_ERCKMD_BRYOSE-1_LAEMP_EVO_2022-07_26_NP	E351	26-Jul-2022	03-Aug-2022	----	----		03-Aug-2022	180 days	0 days	✔	
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Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKUT_BRYOSE-1_LAEMP_EVO_2022-07_26_NP	E351	26-Jul-2022	03-Aug-2022	----	----		03-Aug-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKUT_BRYOSE-2_LAEMP_EVO_2022-07_26_NP	E351	26-Jul-2022	03-Aug-2022	----	----		03-Aug-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKUT_BRYOSE-3_LAEMP_EVO_2022-07_26_NP	E351	26-Jul-2022	03-Aug-2022	----	----		03-Aug-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKUT_SE-1_LAEMP_EVO_2022-07_26_NP	E351	26-Jul-2022	03-Aug-2022	----	----		03-Aug-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKUT_SE-2_LAEMP_EVO_2022-07_26_NP	E351	26-Jul-2022	03-Aug-2022	----	----		03-Aug-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKUT_SE-3_LAEMP_EVO_2022-07_26_NP	E351	26-Jul-2022	03-Aug-2022	----	----		03-Aug-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKUT_SE-4_LAEMP_EVO_2022-07_26_NP	E351	26-Jul-2022	03-Aug-2022	----	----		03-Aug-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKUT_SE-5_LAEMP_EVO_2022-07_26_NP	E351	26-Jul-2022	03-Aug-2022	----	----		03-Aug-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_GATE_SE-1_LAEMP_EVO_2022-07_25_NP	E351	25-Jul-2022	03-Aug-2022	----	----		03-Aug-2022	180 days	0 days	✔	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_GATE_SE-2_LAEMP_EVO_2022-07_25_NP	E351	25-Jul-2022	03-Aug-2022	----	----		03-Aug-2022	180 days	0 days		✔
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_GATE_SE-3_LAEMP_EVO_2022-07_25_NP	E351	25-Jul-2022	03-Aug-2022	----	----		03-Aug-2022	180 days	0 days		✔
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve											
LDPE bag RG_BOCK_SE-1_LAEMP_EVO_2022-07_25_NP	E354	25-Jul-2022	----	----	----		03-Aug-2022	----	----		
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve											
LDPE bag RG_BOCK_SE-2_LAEMP_EVO_2022-07_25_NP	E354	25-Jul-2022	----	----	----		02-Aug-2022	----	----		
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve											
LDPE bag RG_BOCK_SE-3_LAEMP_EVO_2022-07_25_NP	E354	25-Jul-2022	----	----	----		03-Aug-2022	----	----		
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve											
LDPE bag RG_BOCKRD_SE-1_LAEMP_EVO_2022-07_26_NP	E354	26-Jul-2022	----	----	----		03-Aug-2022	----	----		
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve											
LDPE bag RG_BOCKRD_SE-2_LAEMP_EVO_2022-07_26_NP	E354	26-Jul-2022	----	----	----		03-Aug-2022	----	----		
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve											
LDPE bag RG_BOCKRD_SE-3_LAEMP_EVO_2022-07_26_NP	E354	26-Jul-2022	----	----	----		02-Aug-2022	----	----		
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve											
LDPE bag RG_ERCKDT_BRYOSE-1_LAEMP_EVO_2022-07_26_NP	E354	26-Jul-2022	----	----	----		03-Aug-2022	----	----		



Matrix: **Soil/Solid**

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKDT_BRYOSE-2_LAEMP_EVO_2022-07_26_NP	E354	26-Jul-2022	----	----	----		03-Aug-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKDT_BRYOSE-3_LAEMP_EVO_2022-07_26_NP	E354	26-Jul-2022	----	----	----		03-Aug-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKDT_SE-1_LAEMP_EVO_2022-07_26_NP	E354	26-Jul-2022	----	----	----		02-Aug-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKDT_SE-2_LAEMP_EVO_2022-07_26_NP	E354	26-Jul-2022	----	----	----		02-Aug-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKDT_SE-3_LAEMP_EVO_2022-07_26_NP	E354	26-Jul-2022	----	----	----		02-Aug-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKDT_SE-4_LAEMP_EVO_2022-07_26_NP	E354	26-Jul-2022	----	----	----		02-Aug-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKDT_SE-5_LAEMP_EVO_2022-07_26_NP	E354	26-Jul-2022	----	----	----		03-Aug-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKDT_SE-6_LAEMP_EVO_2022-07_26_NP	E354	26-Jul-2022	----	----	----		02-Aug-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKDT_SE-7_LAEMP_EVO_2022-07_26_NP	E354	26-Jul-2022	----	----	----		03-Aug-2022	----	----	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKMD_BRYOSE-1_LAEMP_EVO_2022-07_26_NP	E354	26-Jul-2022	----	----	----		03-Aug-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKMD_BRYOSE-2_LAEMP_EVO_2022-07_26_NP	E354	26-Jul-2022	----	----	----		03-Aug-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKMD_BRYOSE-3_LAEMP_EVO_2022-07_26_NP	E354	26-Jul-2022	----	----	----		03-Aug-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKMD_SE-1_LAEMP_EVO_2022-07_26_NP	E354	26-Jul-2022	----	----	----		03-Aug-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKMD_SE-2_LAEMP_EVO_2022-07_26_NP	E354	26-Jul-2022	----	----	----		03-Aug-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKMD_SE-3_LAEMP_EVO_2022-07_26_NP	E354	26-Jul-2022	----	----	----		03-Aug-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKUT_BRYOSE-1_LAEMP_EVO_2022-07_26_NP	E354	26-Jul-2022	----	----	----		03-Aug-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKUT_BRYOSE-2_LAEMP_EVO_2022-07_26_NP	E354	26-Jul-2022	----	----	----		03-Aug-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKUT_BRYOSE-3_LAEMP_EVO_2022-07_26_NP	E354	26-Jul-2022	----	----	----		03-Aug-2022	----	----	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKUT_SE-1_LAEMP_EVO_2022-07_26_NP	E354	26-Jul-2022	----	----	----		03-Aug-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKUT_SE-2_LAEMP_EVO_2022-07_26_NP	E354	26-Jul-2022	----	----	----		03-Aug-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKUT_SE-3_LAEMP_EVO_2022-07_26_NP	E354	26-Jul-2022	----	----	----		03-Aug-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKUT_SE-4_LAEMP_EVO_2022-07_26_NP	E354	26-Jul-2022	----	----	----		03-Aug-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKUT_SE-5_LAEMP_EVO_2022-07_26_NP	E354	26-Jul-2022	----	----	----		03-Aug-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_GATE_SE-1_LAEMP_EVO_2022-07_25_NP	E354	25-Jul-2022	----	----	----		02-Aug-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_GATE_SE-2_LAEMP_EVO_2022-07_25_NP	E354	25-Jul-2022	----	----	----		03-Aug-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_GATE_SE-3_LAEMP_EVO_2022-07_25_NP	E354	25-Jul-2022	----	----	----		02-Aug-2022	----	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_BOCK_SE-1_LAEMP_EVO_2022-07_25_NP	E185A	25-Jul-2022	----	----	----		04-Aug-2022	365 days	----	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_BOCK_SE-2_LAEMP_EVO_2022-07_25_NP	E185A	25-Jul-2022	----	----	----		04-Aug-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_BOCK_SE-3_LAEMP_EVO_2022-07_25_NP	E185A	25-Jul-2022	----	----	----		04-Aug-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_BOCKRD_SE-1_LAEMP_EVO_2022-07_26_NP	E185A	26-Jul-2022	----	----	----		04-Aug-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_BOCKRD_SE-2_LAEMP_EVO_2022-07_26_NP	E185A	26-Jul-2022	----	----	----		04-Aug-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_BOCKRD_SE-3_LAEMP_EVO_2022-07_26_NP	E185A	26-Jul-2022	----	----	----		04-Aug-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKDT_BRYOSE-2_LAEMP_EVO_2022-07_26_NP	E185A	26-Jul-2022	----	----	----		04-Aug-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKDT_BRYOSE-3_LAEMP_EVO_2022-07_26_NP	E185A	26-Jul-2022	----	----	----		04-Aug-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKDT_SE-1_LAEMP_EVO_2022-07_26_NP	E185A	26-Jul-2022	----	----	----		04-Aug-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKDT_SE-2_LAEMP_EVO_2022-07_26_NP	E185A	26-Jul-2022	----	----	----		04-Aug-2022	365 days	----	



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Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKDT_SE-3_LAEMP_EVO_2022-07_26_NP	E185A	26-Jul-2022	----	----	----		04-Aug-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKDT_SE-4_LAEMP_EVO_2022-07_26_NP	E185A	26-Jul-2022	----	----	----		04-Aug-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKDT_SE-5_LAEMP_EVO_2022-07_26_NP	E185A	26-Jul-2022	----	----	----		04-Aug-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKDT_SE-6_LAEMP_EVO_2022-07_26_NP	E185A	26-Jul-2022	----	----	----		04-Aug-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKDT_SE-7_LAEMP_EVO_2022-07_26_NP	E185A	26-Jul-2022	----	----	----		04-Aug-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKMD_BRYOSE-1_LAEMP_EVO_2022-07_26_NP	E185A	26-Jul-2022	----	----	----		04-Aug-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKMD_BRYOSE-3_LAEMP_EVO_2022-07_26_NP	E185A	26-Jul-2022	----	----	----		04-Aug-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKMD_SE-1_LAEMP_EVO_2022-07_26_NP	E185A	26-Jul-2022	----	----	----		04-Aug-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKMD_SE-2_LAEMP_EVO_2022-07_26_NP	E185A	26-Jul-2022	----	----	----		04-Aug-2022	365 days	----	



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Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
Rec	Actual	Rec		Actual						
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKUT_BRYOSE-1_LAEMP_EVO_2022-07_26_NP	E185A	26-Jul-2022	----	----	----		04-Aug-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKUT_BRYOSE-3_LAEMP_EVO_2022-07_26_NP	E185A	26-Jul-2022	----	----	----		04-Aug-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKUT_SE-1_LAEMP_EVO_2022-07_26_NP	E185A	26-Jul-2022	----	----	----		04-Aug-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKUT_SE-2_LAEMP_EVO_2022-07_26_NP	E185A	26-Jul-2022	----	----	----		04-Aug-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKUT_SE-3_LAEMP_EVO_2022-07_26_NP	E185A	26-Jul-2022	----	----	----		04-Aug-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKUT_SE-4_LAEMP_EVO_2022-07_26_NP	E185A	26-Jul-2022	----	----	----		04-Aug-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKUT_SE-5_LAEMP_EVO_2022-07_26_NP	E185A	26-Jul-2022	----	----	----		04-Aug-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_GATE_SE-1_LAEMP_EVO_2022-07_25_NP	E185A	25-Jul-2022	----	----	----		04-Aug-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_GATE_SE-2_LAEMP_EVO_2022-07_25_NP	E185A	25-Jul-2022	----	----	----		04-Aug-2022	365 days	----	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec Actual		Eval	Analysis Date	Holding Times Rec Actual		Eval
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_GATE_SE-3_LAEMP_EVO_2022-07_25_NP	E185A	25-Jul-2022	----	----	----		04-Aug-2022	365 days	----	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag RG_BOCK_SE-1_LAEMP_EVO_2022-07_25_NP	E108	25-Jul-2022	04-Aug-2022	----	----		04-Aug-2022	30 days	10 days	✔
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag RG_BOCK_SE-3_LAEMP_EVO_2022-07_25_NP	E108	25-Jul-2022	04-Aug-2022	----	----		04-Aug-2022	30 days	10 days	✔
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag RG_GATE_SE-2_LAEMP_EVO_2022-07_25_NP	E108	25-Jul-2022	04-Aug-2022	----	----		04-Aug-2022	30 days	10 days	✔
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag RG_BOCKRD_SE-3_LAEMP_EVO_2022-07_26_NP	E108	26-Jul-2022	03-Aug-2022	----	----		03-Aug-2022	30 days	8 days	✔
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag RG_ERCKDT_BRYOSE-2_LAEMP_EVO_2022-07_26_NP	E108	26-Jul-2022	03-Aug-2022	----	----		03-Aug-2022	30 days	8 days	✔
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag RG_ERCKDT_BRYOSE-3_LAEMP_EVO_2022-07_26_NP	E108	26-Jul-2022	03-Aug-2022	----	----		03-Aug-2022	30 days	8 days	✔
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag RG_ERCKDT_SE-1_LAEMP_EVO_2022-07_26_NP	E108	26-Jul-2022	03-Aug-2022	----	----		03-Aug-2022	30 days	8 days	✔
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag RG_ERCKDT_SE-2_LAEMP_EVO_2022-07_26_NP	E108	26-Jul-2022	03-Aug-2022	----	----		03-Aug-2022	30 days	8 days	✔



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Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKDT_SE-3_LAEMP_EVO_2022-07_26_NP	E108	26-Jul-2022	03-Aug-2022	----	----		03-Aug-2022	30 days	8 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKDT_SE-4_LAEMP_EVO_2022-07_26_NP	E108	26-Jul-2022	03-Aug-2022	----	----		03-Aug-2022	30 days	8 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKDT_SE-6_LAEMP_EVO_2022-07_26_NP	E108	26-Jul-2022	03-Aug-2022	----	----		03-Aug-2022	30 days	8 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKMD_BRYOSE-1_LAEMP_EVO_2022-07_26_NP	E108	26-Jul-2022	03-Aug-2022	----	----		03-Aug-2022	30 days	8 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKMD_BRYOSE-3_LAEMP_EVO_2022-07_26_NP	E108	26-Jul-2022	03-Aug-2022	----	----		03-Aug-2022	30 days	8 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKMD_SE-1_LAEMP_EVO_2022-07_26_NP	E108	26-Jul-2022	03-Aug-2022	----	----		03-Aug-2022	30 days	8 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKMD_SE-2_LAEMP_EVO_2022-07_26_NP	E108	26-Jul-2022	03-Aug-2022	----	----		03-Aug-2022	30 days	8 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKUT_BRYOSE-1_LAEMP_EVO_2022-07_26_NP	E108	26-Jul-2022	03-Aug-2022	----	----		03-Aug-2022	30 days	8 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKUT_BRYOSE-3_LAEMP_EVO_2022-07_26_NP	E108	26-Jul-2022	03-Aug-2022	----	----		03-Aug-2022	30 days	8 days	✔	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKUT_SE-3_LAEMP_EVO_2022-07_26_NP	E108	26-Jul-2022	03-Aug-2022	----	----		03-Aug-2022	30 days	8 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKUT_SE-4_LAEMP_EVO_2022-07_26_NP	E108	26-Jul-2022	03-Aug-2022	----	----		03-Aug-2022	30 days	8 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKUT_SE-5_LAEMP_EVO_2022-07_26_NP	E108	26-Jul-2022	03-Aug-2022	----	----		03-Aug-2022	30 days	8 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_BOCK_SE-2_LAEMP_EVO_2022-07_25_NP	E108	25-Jul-2022	03-Aug-2022	----	----		03-Aug-2022	30 days	9 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_BOCKRD_SE-2_LAEMP_EVO_2022-07_26_NP	E108	26-Jul-2022	04-Aug-2022	----	----		04-Aug-2022	30 days	9 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKDT_SE-5_LAEMP_EVO_2022-07_26_NP	E108	26-Jul-2022	04-Aug-2022	----	----		04-Aug-2022	30 days	9 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKDT_SE-7_LAEMP_EVO_2022-07_26_NP	E108	26-Jul-2022	04-Aug-2022	----	----		04-Aug-2022	30 days	9 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKUT_SE-1_LAEMP_EVO_2022-07_26_NP	E108	26-Jul-2022	04-Aug-2022	----	----		04-Aug-2022	30 days	9 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKUT_SE-2_LAEMP_EVO_2022-07_26_NP	E108	26-Jul-2022	04-Aug-2022	----	----		04-Aug-2022	30 days	9 days	✔	



Matrix: **Soil/Solid**

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag RG_GATE_SE-1_LAEMP_EVO_2022-07_25_NP	E108	25-Jul-2022	03-Aug-2022	----	----		03-Aug-2022	30 days	9 days	✔

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Soil/Solid**

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
Analytical Methods							
Laboratory Duplicates (DUP)							
Mercury in Soil/Solid by CVAAS	E510	584949	2	40	5.0	5.0	✔
Metals in Soil/Solid by CRC ICPMS	E440	584948	2	40	5.0	5.0	✔
pH by Meter (1:2 Soil:Water Extraction)	E108	584000	4	33	12.1	5.0	✔
Total Carbon by Combustion	E351	583935	2	40	5.0	5.0	✔
Total Inorganic Carbon by Acetic Acid pH Standard Curve	E354	585602	3	60	5.0	5.0	✔
Laboratory Control Samples (LCS)							
Mercury in Soil/Solid by CVAAS	E510	584949	4	40	10.0	10.0	✔
Metals in Soil/Solid by CRC ICPMS	E440	584948	4	40	10.0	10.0	✔
pH by Meter (1:2 Soil:Water Extraction)	E108	584000	8	33	24.2	10.0	✔
Total Carbon by Combustion	E351	583935	4	40	10.0	10.0	✔
Total Inorganic Carbon by Acetic Acid pH Standard Curve	E354	585602	6	60	10.0	10.0	✔
Method Blanks (MB)							
Mercury in Soil/Solid by CVAAS	E510	584949	2	40	5.0	5.0	✔
Metals in Soil/Solid by CRC ICPMS	E440	584948	2	40	5.0	5.0	✔
Total Carbon by Combustion	E351	583935	2	40	5.0	5.0	✔
Total Inorganic Carbon by Acetic Acid pH Standard Curve	E354	585602	3	60	5.0	5.0	✔



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
pH by Meter (1:2 Soil:Water Extraction)	E108 Saskatoon - Environmental	Soil/Solid	BC Lab Manual	pH is determined by potentiometric measurement with a pH electrode at ambient laboratory temperature (normally $20 \pm 5^\circ\text{C}$), and is carried out in accordance with procedures described in the BC Lab Manual (prescriptive method). The procedure involves mixing the dried (at $<60^\circ\text{C}$) and sieved (10mesh/2mm) sample with ultra pure water at a 1:2 ratio of sediment to water. The pH is then measured by a standard pH probe.
Grain Size Report (Attachment) Pipet/Sieve Method	E185A Saskatoon - Environmental	Soil/Solid	SSIR-51 Method 3.2.1	A grain size curve is a graphical representation of the particle sizing of a sample representing the percent passing against the effective particle size.
Total Carbon by Combustion	E351 Saskatoon - Environmental	Soil/Solid	CSSS (2008) 21.2 (mod)	Total Carbon is determined by the high temperature combustion method with measurement by an infrared detector.
Total Inorganic Carbon by Acetic Acid pH Standard Curve	E354 Saskatoon - Environmental	Soil/Solid	CSSS (2008) 20.2	Total Inorganic Carbon is determined by acetic acid pH standard curve, where a known quantity of acetic acid is consumed by reaction with carbonates in the soil. The pH of the resulting solution is measured and compared against a standard curve relating pH to weight of carbonate.
Metals in Soil/Solid by CRC ICPMS	E440 Saskatoon - Environmental	Soil/Solid	EPA 6020B (mod)	This method is intended to liberate metals that may be environmentally available. Samples are dried, then sieved through a 2 mm sieve, and digested with HNO ₃ and HCl. Dependent on sample matrix, some metals may be only partially recovered, including Al, Ba, Be, Cr, Sr, Ti, V, W, and Zr. Silicate minerals are not solubilized. Volatile forms of sulfur (including sulfide) may not be captured, as they may be lost during sampling, storage, or digestion. This method does not adequately recover elemental sulfur, and is unsuitable for assessment of elemental sulfur standards or guidelines. Analysis is by Collision/Reaction Cell ICPMS.
Mercury in Soil/Solid by CVAAS	E510 Saskatoon - Environmental	Soil/Solid	EPA 200.2/1631 Appendix (mod)	Samples are dried, then sieved through a 2 mm sieve, and digested with HNO ₃ and HCl, followed by CVAAS analysis.
Particle Size Analysis (Pipette) - Wentworth Classification	EC184A Saskatoon - Environmental	Soil/Solid	Modified Wentworth	The particle size determination is performed by various methods to generate a Grain Size curve. The data from the curve is then used to produce particle size ranges based on the Modified Wentworth Classification system.
Total Organic Carbon (Calculated) in soil	EC356 Saskatoon - Environmental	Soil/Solid	CSSS (2008) 21.2	Total Organic Carbon (TOC) is calculated by the difference between total carbon (TC) and total inorganic carbon (TIC).

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
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<i>Preparation Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
Leach 1:2 Soil:Water for pH/EC	EP108 Saskatoon - Environmental	Soil/Solid	BC WLAP METHOD: PH, ELECTROMETRIC, SOIL	The procedure involves mixing the dried (at <60°C) and sieved (No. 10 / 2mm) sample with deionized/distilled water at a 1:2 ratio of sediment to water.
Digestion for Metals and Mercury	EP440 Saskatoon - Environmental	Soil/Solid	EPA 200.2 (mod)	Samples are dried, then sieved through a 2 mm sieve, and digested with HNO ₃ and HCl. This method is intended to liberate metals that may be environmentally available.
PHCs and PAHs Hexane-Acetone Tumbler Extraction	EP601 Calgary - Environmental	Soil/Solid	CCME PHC in Soil - Tier 1 (mod)	Samples are subsampled and Petroleum Hydrocarbons (PHC) and PAHs are extracted with 1:1 hexane:acetone using a rotary extractor.
Dry and Grind	EPP442 Saskatoon - Environmental	Soil/Solid	Soil Sampling and Methods of Analysis, Carter 2008	After removal of any coarse fragments and reservation of wet subsamples a portion of homogenized sample is set in a tray and dried at less than 60°C until dry. The sample is then particle size reduced with an automated crusher or mortar and pestle, typically to <2 mm. Further size reduction may be needed for particular tests.



QUALITY CONTROL REPORT

Work Order : **CG2209855**

Client : Teck Coal Limited

Contact : Mike Pope

Address : RR#1 HWY#3
Sparwood BC Canada V0B 2G1

Telephone : ----

Project : Regional Effects Program

PO : VPO00847030

C-O-C number : July EVO LAEMP 2022

Sampler : Robin Valleau

Site : ----

Quote number : Teck Coal Master Quote

No. of samples received : 33

No. of samples analysed : 33

Page : 1 of 14

Laboratory : Calgary - Environmental

Account Manager : Lyudmyla Shvets

Address : 2559 29th Street NE
Calgary, Alberta Canada T1Y 7B5

Telephone : +1 403 407 1800

Date Samples Received : 27-Jul-2022 08:50

Date Analysis Commenced : 27-Jul-2022

Issue Date : 05-Aug-2022 18:47

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Reference Material (RM) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Colby Bingham	Quality Systems Coordinator	Saskatoon Metals, Saskatoon, Saskatchewan
Hedy Lai	Team Leader - Inorganics	Saskatoon Inorganics, Saskatoon, Saskatchewan
Jwan Abdalla	Laboratory Analyst	Saskatoon Metals, Saskatoon, Saskatchewan
Nancy Cruse	Laboratory _ Supervisor	Saskatoon Inorganics, Saskatoon, Saskatchewan

Page : 2 of 14
Work Order : CG2209855
Client : Teck Coal Limited
Project : Regional Effects Program



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Soil/Solid

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 584000)											
CG2209855-023	RG_ERCKUT_SE-4_LAEMP_EVO_2022-07_26_NP	pH (1:2 soil:water)	----	E108	0.10	pH units	7.76	7.81	0.642%	10%	----
Physical Tests (QC Lot: 584007)											
CG2209855-033	RG_ERCKMD_BRYOSE-3_LAEMP_EVO_2022-07_26_NP	pH (1:2 soil:water)	----	E108	0.10	pH units	7.89	7.98	1.13%	10%	----
Physical Tests (QC Lot: 585204)											
CG2209855-004	RG_GATE_SE-1_LAEMP_EVO_2022-07_25_NP	pH (1:2 soil:water)	----	E108	0.10	pH units	8.06	8.07	0.124%	10%	----
Physical Tests (QC Lot: 587384)											
CG2209855-002	RG_BOCKRD_SE-2_LAEMP_MP_EVO_2022-07_26_NP	pH (1:2 soil:water)	----	E108	0.10	pH units	8.07	8.06	0.124%	10%	----
Organic / Inorganic Carbon (QC Lot: 583935)											
CG2209855-017	RG_ERCKDT_BRYOSE-1_LAEMP_EVO_2022-07_26_NP	carbon, total [TC]	----	E351	0.050	%	12.0	12.2	0.823%	20%	----
Organic / Inorganic Carbon (QC Lot: 585602)											
CG2209855-006	RG_GATE_SE-3_LAEMP_EVO_2022-07_25_NP	carbon, inorganic [IC]	----	E354	0.050	%	3.35	3.36	0.124%	20%	----
Organic / Inorganic Carbon (QC Lot: 587051)											
CG2209855-023	RG_ERCKUT_SE-4_LAEMP_P_EVO_2022-07_26_NP	carbon, inorganic [IC]	----	E354	0.050	%	0.520	0.538	3.40%	20%	----
Organic / Inorganic Carbon (QC Lot: 587063)											
FJ2202004-001	Anonymous	carbon, inorganic [IC]	----	E354	0.050	%	0.426	0.423	0.002	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 587079)											
CG2209855-009	RG_BOCK_SE-3_LAEMP_EVO_2022-07_25_NP	carbon, total [TC]	----	E351	0.050	%	13.8	13.6	1.12%	20%	----
Metals (QC Lot: 584948)											
CG2209855-001	RG_BOCKRD_SE-1_LAEMP_MP_EVO_2022-07_26_NP	aluminum	7429-90-5	E440	50	mg/kg	2250	2070	8.28%	40%	----
		antimony	7440-36-0	E440	0.10	mg/kg	0.50	0.49	0.01	Diff <2x LOR	----
		arsenic	7440-38-2	E440	0.10	mg/kg	3.74	3.80	1.80%	30%	----
		barium	7440-39-3	E440	1.86	mg/kg	542	559	3.17%	40%	----
		beryllium	7440-41-7	E440	0.10	mg/kg	0.22	0.20	0.02	Diff <2x LOR	----
		bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	0	Diff <2x LOR	----
		boron	7440-42-8	E440	5.0	mg/kg	6.2	5.4	0.8	Diff <2x LOR	----
		cadmium	7440-43-9	E440	0.020	mg/kg	7.36	7.60	3.17%	30%	----



Sub-Matrix: Soil/Solid

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Metals (QC Lot: 584948) - continued											
CG2209855-001	RG_BOCKRD_SE-1_LAE MP_EVO_2022-07_26_NP	calcium	7440-70-2	E440	50	mg/kg	219000	231000	5.35%	30%	----
		chromium	7440-47-3	E440	0.50	mg/kg	4.03	3.78	6.44%	30%	----
		cobalt	7440-48-4	E440	0.10	mg/kg	6.23	6.25	0.258%	30%	----
		copper	7440-50-8	E440	0.50	mg/kg	8.61	8.23	4.51%	30%	----
		iron	7439-89-6	E440	50	mg/kg	8490	9970	16.1%	30%	----
		lead	7439-92-1	E440	0.50	mg/kg	3.17	3.25	2.40%	40%	----
		lithium	7439-93-2	E440	2.0	mg/kg	4.0	3.9	0.10	Diff <2x LOR	----
		magnesium	7439-95-4	E440	20	mg/kg	5050	5410	6.92%	30%	----
		manganese	7439-96-5	E440	1.0	mg/kg	243	265	8.65%	30%	----
		molybdenum	7439-98-7	E440	0.10	mg/kg	0.96	1.07	10.9%	40%	----
		nickel	7440-02-0	E440	0.50	mg/kg	63.8	62.4	2.31%	30%	----
		phosphorus	7723-14-0	E440	50	mg/kg	478	493	3.10%	30%	----
		potassium	7440-09-7	E440	100	mg/kg	810	720	12.2%	40%	----
		selenium	7782-49-2	E440	0.20	mg/kg	4.92	4.63	6.26%	30%	----
		silver	7440-22-4	E440	0.10	mg/kg	0.10	<0.10	0.002	Diff <2x LOR	----
		sodium	7440-23-5	E440	50	mg/kg	135	143	8	Diff <2x LOR	----
		strontium	7440-24-6	E440	0.50	mg/kg	892	810	9.65%	40%	----
		sulfur	7704-34-9	E440	1000	mg/kg	7000	7000	0.188%	30%	----
		thallium	7440-28-0	E440	0.050	mg/kg	0.172	0.156	0.016	Diff <2x LOR	----
		tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	0	Diff <2x LOR	----
titanium	7440-32-6	E440	1.0	mg/kg	18.4	16.3	12.1%	40%	----		
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	0	Diff <2x LOR	----		
uranium	7440-61-1	E440	0.050	mg/kg	1.76	1.76	0.551%	30%	----		
vanadium	7440-62-2	E440	0.20	mg/kg	11.3	10.8	4.51%	30%	----		
zinc	7440-66-6	E440	2.0	mg/kg	369	381	3.39%	30%	----		
zirconium	7440-67-7	E440	1.0	mg/kg	<1.0	<1.0	0	Diff <2x LOR	----		
Metals (QC Lot: 584949)											
CG2209855-001	RG_BOCKRD_SE-1_LAE MP_EVO_2022-07_26_NP	mercury	7439-97-6	E510	0.0050	mg/kg	0.0160	0.0169	0.0010	Diff <2x LOR	----
Metals (QC Lot: 585436)											
CG2209855-021	RG_ERCKUT_SE-2_LAEM P_EVO_2022-07_26_NP	aluminum	7429-90-5	E440	50	mg/kg	4480	4620	2.93%	40%	----
		antimony	7440-36-0	E440	0.10	mg/kg	0.96	0.94	2.81%	30%	----
		arsenic	7440-38-2	E440	0.10	mg/kg	6.52	6.18	5.32%	30%	----
		barium	7440-39-3	E440	0.50	mg/kg	189	211	11.0%	40%	----
		beryllium	7440-41-7	E440	0.10	mg/kg	0.59	0.56	0.03	Diff <2x LOR	----



Sub-Matrix: Soil/Solid

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Metals (QC Lot: 585436) - continued											
CG2209855-021	RG_ERCKUT_SE-2_LAEM P_EVO_2022-07_26_NP	bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	0	Diff <2x LOR	----
		boron	7440-42-8	E440	5.0	mg/kg	<5.0	<5.0	0	Diff <2x LOR	----
		cadmium	7440-43-9	E440	0.020	mg/kg	1.23	1.21	1.46%	30%	----
		calcium	7440-70-2	E440	50	mg/kg	41000	43500	5.94%	30%	----
		chromium	7440-47-3	E440	0.50	mg/kg	8.74	8.90	1.74%	30%	----
		cobalt	7440-48-4	E440	0.10	mg/kg	6.49	6.37	1.87%	30%	----
		copper	7440-50-8	E440	0.50	mg/kg	12.9	12.9	0.512%	30%	----
		iron	7439-89-6	E440	50	mg/kg	16900	15400	8.93%	30%	----
		lead	7439-92-1	E440	0.50	mg/kg	9.39	9.51	1.28%	40%	----
		lithium	7439-93-2	E440	2.0	mg/kg	5.6	5.9	0.3	Diff <2x LOR	----
		magnesium	7439-95-4	E440	20	mg/kg	4540	5220	14.0%	30%	----
		manganese	7439-96-5	E440	1.0	mg/kg	269	259	3.93%	30%	----
		molybdenum	7439-98-7	E440	0.10	mg/kg	1.39	1.33	4.53%	40%	----
		nickel	7440-02-0	E440	0.50	mg/kg	21.5	21.3	0.958%	30%	----
		phosphorus	7723-14-0	E440	50	mg/kg	1100	1200	8.61%	30%	----
		potassium	7440-09-7	E440	100	mg/kg	1000	1040	3.91%	40%	----
		selenium	7782-49-2	E440	0.20	mg/kg	2.64	2.72	2.94%	30%	----
		silver	7440-22-4	E440	0.10	mg/kg	0.14	0.13	0.008	Diff <2x LOR	----
		sodium	7440-23-5	E440	50	mg/kg	59	58	1	Diff <2x LOR	----
		strontium	7440-24-6	E440	0.50	mg/kg	52.9	55.8	5.42%	40%	----
		sulfur	7704-34-9	E440	1000	mg/kg	<1000	<1000	0	Diff <2x LOR	----
thallium	7440-28-0	E440	0.050	mg/kg	0.160	0.162	0.002	Diff <2x LOR	----		
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	0	Diff <2x LOR	----		
titanium	7440-32-6	E440	1.0	mg/kg	19.5	21.1	7.88%	40%	----		
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	0	Diff <2x LOR	----		
uranium	7440-61-1	E440	0.050	mg/kg	1.02	1.08	5.46%	30%	----		
vanadium	7440-62-2	E440	0.20	mg/kg	24.4	23.8	2.36%	30%	----		
zinc	7440-66-6	E440	2.0	mg/kg	100	99.2	0.871%	30%	----		
zirconium	7440-67-7	E440	1.0	mg/kg	<1.0	1.2	0.2	Diff <2x LOR	----		
Metals (QC Lot: 585437)											
CG2209855-021	RG_ERCKUT_SE-2_LAEM P_EVO_2022-07_26_NP	mercury	7439-97-6	E510	0.0050	mg/kg	0.0375	0.0309	19.2%	40%	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Soil/Solid**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Organic / Inorganic Carbon (QCLot: 583935)						
carbon, total [TC]	----	E351	0.05	%	<0.050	----
Organic / Inorganic Carbon (QCLot: 585602)						
carbon, inorganic [IC]	----	E354	0.05	%	<0.050	----
Organic / Inorganic Carbon (QCLot: 587051)						
carbon, inorganic [IC]	----	E354	0.05	%	<0.050	----
Organic / Inorganic Carbon (QCLot: 587063)						
carbon, inorganic [IC]	----	E354	0.05	%	<0.050	----
Organic / Inorganic Carbon (QCLot: 587079)						
carbon, total [TC]	----	E351	0.05	%	<0.050	----
Metals (QCLot: 584948)						
aluminum	7429-90-5	E440	50	mg/kg	<50	----
antimony	7440-36-0	E440	0.1	mg/kg	<0.10	----
arsenic	7440-38-2	E440	0.1	mg/kg	<0.10	----
barium	7440-39-3	E440	0.5	mg/kg	<0.50	----
beryllium	7440-41-7	E440	0.1	mg/kg	<0.10	----
bismuth	7440-69-9	E440	0.2	mg/kg	<0.20	----
boron	7440-42-8	E440	5	mg/kg	<5.0	----
cadmium	7440-43-9	E440	0.02	mg/kg	<0.020	----
calcium	7440-70-2	E440	50	mg/kg	<50	----
chromium	7440-47-3	E440	0.5	mg/kg	<0.50	----
cobalt	7440-48-4	E440	0.1	mg/kg	<0.10	----
copper	7440-50-8	E440	0.5	mg/kg	<0.50	----
iron	7439-89-6	E440	50	mg/kg	<50	----
lead	7439-92-1	E440	0.5	mg/kg	<0.50	----
lithium	7439-93-2	E440	2	mg/kg	<2.0	----
magnesium	7439-95-4	E440	20	mg/kg	<20	----
manganese	7439-96-5	E440	1	mg/kg	<1.0	----
molybdenum	7439-98-7	E440	0.1	mg/kg	<0.10	----
nickel	7440-02-0	E440	0.5	mg/kg	<0.50	----
phosphorus	7723-14-0	E440	50	mg/kg	<50	----
potassium	7440-09-7	E440	100	mg/kg	<100	----
selenium	7782-49-2	E440	0.2	mg/kg	<0.20	----
silver	7440-22-4	E440	0.1	mg/kg	<0.10	----



Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Metals (QCLot: 584948) - continued						
sodium	7440-23-5	E440	50	mg/kg	<50	---
strontium	7440-24-6	E440	0.5	mg/kg	<0.50	---
sulfur	7704-34-9	E440	1000	mg/kg	<1000	---
thallium	7440-28-0	E440	0.05	mg/kg	<0.050	---
tin	7440-31-5	E440	2	mg/kg	<2.0	---
titanium	7440-32-6	E440	1	mg/kg	<1.0	---
tungsten	7440-33-7	E440	0.5	mg/kg	<0.50	---
uranium	7440-61-1	E440	0.05	mg/kg	<0.050	---
vanadium	7440-62-2	E440	0.2	mg/kg	<0.20	---
zinc	7440-66-6	E440	2	mg/kg	<2.0	---
zirconium	7440-67-7	E440	1	mg/kg	<1.0	---
Metals (QCLot: 584949)						
mercury	7439-97-6	E510	0.005	mg/kg	<0.0050	---
Metals (QCLot: 585436)						
aluminum	7429-90-5	E440	50	mg/kg	<50	---
antimony	7440-36-0	E440	0.1	mg/kg	<0.10	---
arsenic	7440-38-2	E440	0.1	mg/kg	<0.10	---
barium	7440-39-3	E440	0.5	mg/kg	<0.50	---
beryllium	7440-41-7	E440	0.1	mg/kg	<0.10	---
bismuth	7440-69-9	E440	0.2	mg/kg	<0.20	---
boron	7440-42-8	E440	5	mg/kg	<5.0	---
cadmium	7440-43-9	E440	0.02	mg/kg	<0.020	---
calcium	7440-70-2	E440	50	mg/kg	<50	---
chromium	7440-47-3	E440	0.5	mg/kg	<0.50	---
cobalt	7440-48-4	E440	0.1	mg/kg	<0.10	---
copper	7440-50-8	E440	0.5	mg/kg	<0.50	---
iron	7439-89-6	E440	50	mg/kg	<50	---
lead	7439-92-1	E440	0.5	mg/kg	<0.50	---
lithium	7439-93-2	E440	2	mg/kg	<2.0	---
magnesium	7439-95-4	E440	20	mg/kg	<20	---
manganese	7439-96-5	E440	1	mg/kg	<1.0	---
molybdenum	7439-98-7	E440	0.1	mg/kg	<0.10	---
nickel	7440-02-0	E440	0.5	mg/kg	<0.50	---
phosphorus	7723-14-0	E440	50	mg/kg	<50	---
potassium	7440-09-7	E440	100	mg/kg	<100	---
selenium	7782-49-2	E440	0.2	mg/kg	<0.20	---



Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Metals (QCLot: 585436) - continued						
silver	7440-22-4	E440	0.1	mg/kg	<0.10	----
sodium	7440-23-5	E440	50	mg/kg	<50	----
strontium	7440-24-6	E440	0.5	mg/kg	<0.50	----
sulfur	7704-34-9	E440	1000	mg/kg	<1000	----
thallium	7440-28-0	E440	0.05	mg/kg	<0.050	----
tin	7440-31-5	E440	2	mg/kg	<2.0	----
titanium	7440-32-6	E440	1	mg/kg	<1.0	----
tungsten	7440-33-7	E440	0.5	mg/kg	<0.50	----
uranium	7440-61-1	E440	0.05	mg/kg	<0.050	----
vanadium	7440-62-2	E440	0.2	mg/kg	<0.20	----
zinc	7440-66-6	E440	2	mg/kg	<2.0	----
zirconium	7440-67-7	E440	1	mg/kg	<1.0	----
Metals (QCLot: 585437)						
mercury	7439-97-6	E510	0.005	mg/kg	<0.0050	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Soil/Solid

					Laboratory Control Sample (LCS) Report				
Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Physical Tests (QCLot: 584000)									
pH (1:2 soil:water)	---	E108	---	pH units	6.86 pH units	100	97.0	103	---
Physical Tests (QCLot: 584007)									
pH (1:2 soil:water)	---	E108	---	pH units	6.86 pH units	99.8	97.0	103	---
Physical Tests (QCLot: 585204)									
pH (1:2 soil:water)	---	E108	---	pH units	6.86 pH units	100	97.0	103	---
Physical Tests (QCLot: 587384)									
pH (1:2 soil:water)	---	E108	---	pH units	6.86 pH units	99.3	97.0	103	---
Organic / Inorganic Carbon (QCLot: 583935)									
carbon, total [TC]	---	E351	0.05	%	48 %	103	90.0	110	---
Organic / Inorganic Carbon (QCLot: 585602)									
carbon, inorganic [IC]	---	E354	0.05	%	0.5 %	93.9	90.0	110	---
Organic / Inorganic Carbon (QCLot: 587051)									
carbon, inorganic [IC]	---	E354	0.05	%	0.5 %	94.1	90.0	110	---
Organic / Inorganic Carbon (QCLot: 587063)									
carbon, inorganic [IC]	---	E354	0.05	%	0.5 %	93.7	90.0	110	---
Organic / Inorganic Carbon (QCLot: 587079)									
carbon, total [TC]	---	E351	0.05	%	48 %	102	90.0	110	---
Metals (QCLot: 584948)									
aluminum	7429-90-5	E440	50	mg/kg	200 mg/kg	103	80.0	120	---
antimony	7440-36-0	E440	0.1	mg/kg	100 mg/kg	106	80.0	120	---
arsenic	7440-38-2	E440	0.1	mg/kg	100 mg/kg	97.4	80.0	120	---
barium	7440-39-3	E440	0.5	mg/kg	25 mg/kg	106	80.0	120	---
beryllium	7440-41-7	E440	0.1	mg/kg	10 mg/kg	96.8	80.0	120	---
bismuth	7440-69-9	E440	0.2	mg/kg	100 mg/kg	90.5	80.0	120	---
boron	7440-42-8	E440	5	mg/kg	100 mg/kg	95.2	80.0	120	---
cadmium	7440-43-9	E440	0.02	mg/kg	10 mg/kg	97.8	80.0	120	---
calcium	7440-70-2	E440	50	mg/kg	5000 mg/kg	95.2	80.0	120	---
chromium	7440-47-3	E440	0.5	mg/kg	25 mg/kg	100	80.0	120	---
cobalt	7440-48-4	E440	0.1	mg/kg	25 mg/kg	98.2	80.0	120	---
copper	7440-50-8	E440	0.5	mg/kg	25 mg/kg	96.3	80.0	120	---
iron	7439-89-6	E440	50	mg/kg	100 mg/kg	103	80.0	120	---
lead	7439-92-1	E440	0.5	mg/kg	50 mg/kg	94.1	80.0	120	---



Sub-Matrix: Soil/Solid

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Metals (QCLot: 584948) - continued									
lithium	7439-93-2	E440	2	mg/kg	25 mg/kg	98.5	80.0	120	----
magnesium	7439-95-4	E440	20	mg/kg	5000 mg/kg	107	80.0	120	----
manganese	7439-96-5	E440	1	mg/kg	25 mg/kg	99.6	80.0	120	----
molybdenum	7439-98-7	E440	0.1	mg/kg	25 mg/kg	104	80.0	120	----
nickel	7440-02-0	E440	0.5	mg/kg	50 mg/kg	98.9	80.0	120	----
phosphorus	7723-14-0	E440	50	mg/kg	1000 mg/kg	109	80.0	120	----
potassium	7440-09-7	E440	100	mg/kg	5000 mg/kg	102	80.0	120	----
selenium	7782-49-2	E440	0.2	mg/kg	100 mg/kg	99.2	80.0	120	----
silver	7440-22-4	E440	0.1	mg/kg	10 mg/kg	92.7	80.0	120	----
sodium	7440-23-5	E440	50	mg/kg	5000 mg/kg	107	80.0	120	----
strontium	7440-24-6	E440	0.5	mg/kg	25 mg/kg	104	80.0	120	----
sulfur	7704-34-9	E440	1000	mg/kg	5000 mg/kg	99.9	80.0	120	----
thallium	7440-28-0	E440	0.05	mg/kg	100 mg/kg	92.2	80.0	120	----
tin	7440-31-5	E440	2	mg/kg	50 mg/kg	99.8	80.0	120	----
titanium	7440-32-6	E440	1	mg/kg	25 mg/kg	96.2	80.0	120	----
tungsten	7440-33-7	E440	0.5	mg/kg	10 mg/kg	92.1	80.0	120	----
uranium	7440-61-1	E440	0.05	mg/kg	0.5 mg/kg	96.3	80.0	120	----
vanadium	7440-62-2	E440	0.2	mg/kg	50 mg/kg	101	80.0	120	----
zinc	7440-66-6	E440	2	mg/kg	50 mg/kg	95.3	80.0	120	----
zirconium	7440-67-7	E440	1	mg/kg	10 mg/kg	104	80.0	120	----
Metals (QCLot: 584949)									
mercury	7439-97-6	E510	0.005	mg/kg	0.1 mg/kg	89.3	80.0	120	----
Metals (QCLot: 585436)									
aluminum	7429-90-5	E440	50	mg/kg	200 mg/kg	104	80.0	120	----
antimony	7440-36-0	E440	0.1	mg/kg	100 mg/kg	105	80.0	120	----
arsenic	7440-38-2	E440	0.1	mg/kg	100 mg/kg	97.8	80.0	120	----
barium	7440-39-3	E440	0.5	mg/kg	25 mg/kg	106	80.0	120	----
beryllium	7440-41-7	E440	0.1	mg/kg	10 mg/kg	99.1	80.0	120	----
bismuth	7440-69-9	E440	0.2	mg/kg	100 mg/kg	94.6	80.0	120	----
boron	7440-42-8	E440	5	mg/kg	100 mg/kg	98.1	80.0	120	----
cadmium	7440-43-9	E440	0.02	mg/kg	10 mg/kg	96.6	80.0	120	----
calcium	7440-70-2	E440	50	mg/kg	5000 mg/kg	99.4	80.0	120	----
chromium	7440-47-3	E440	0.5	mg/kg	25 mg/kg	100	80.0	120	----
cobalt	7440-48-4	E440	0.1	mg/kg	25 mg/kg	98.4	80.0	120	----
copper	7440-50-8	E440	0.5	mg/kg	25 mg/kg	97.8	80.0	120	----
iron	7439-89-6	E440	50	mg/kg	100 mg/kg	105	80.0	120	----
lead	7439-92-1	E440	0.5	mg/kg	50 mg/kg	98.8	80.0	120	----



Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Metals (QCLot: 585436) - continued									
lithium	7439-93-2	E440	2	mg/kg	25 mg/kg	94.2	80.0	120	----
magnesium	7439-95-4	E440	20	mg/kg	5000 mg/kg	106	80.0	120	----
manganese	7439-96-5	E440	1	mg/kg	25 mg/kg	101	80.0	120	----
molybdenum	7439-98-7	E440	0.1	mg/kg	25 mg/kg	103	80.0	120	----
nickel	7440-02-0	E440	0.5	mg/kg	50 mg/kg	99.1	80.0	120	----
phosphorus	7723-14-0	E440	50	mg/kg	1000 mg/kg	103	80.0	120	----
potassium	7440-09-7	E440	100	mg/kg	5000 mg/kg	97.6	80.0	120	----
selenium	7782-49-2	E440	0.2	mg/kg	100 mg/kg	99.2	80.0	120	----
silver	7440-22-4	E440	0.1	mg/kg	10 mg/kg	91.9	80.0	120	----
sodium	7440-23-5	E440	50	mg/kg	5000 mg/kg	102	80.0	120	----
strontium	7440-24-6	E440	0.5	mg/kg	25 mg/kg	103	80.0	120	----
sulfur	7704-34-9	E440	1000	mg/kg	5000 mg/kg	104	80.0	120	----
thallium	7440-28-0	E440	0.05	mg/kg	100 mg/kg	96.2	80.0	120	----
tin	7440-31-5	E440	2	mg/kg	50 mg/kg	99.2	80.0	120	----
titanium	7440-32-6	E440	1	mg/kg	25 mg/kg	96.7	80.0	120	----
tungsten	7440-33-7	E440	0.5	mg/kg	10 mg/kg	94.7	80.0	120	----
uranium	7440-61-1	E440	0.05	mg/kg	0.5 mg/kg	99.1	80.0	120	----
vanadium	7440-62-2	E440	0.2	mg/kg	50 mg/kg	101	80.0	120	----
zinc	7440-66-6	E440	2	mg/kg	50 mg/kg	95.8	80.0	120	----
zirconium	7440-67-7	E440	1	mg/kg	10 mg/kg	105	80.0	120	----
Metals (QCLot: 585437)									
mercury	7439-97-6	E510	0.005	mg/kg	0.1 mg/kg	93.5	80.0	120	----



Reference Material (RM) Report

A Reference Material (RM) is a homogenous material with known and well-established analyte concentrations. RMs are processed in an identical manner to test samples, and are used to monitor and control the accuracy and precision of a test method for a typical sample matrix. RM results are expressed as percent recovery of the target analyte concentration. RM targets may be certified target concentrations provided by the RM supplier, or may be ALS long-term mean values (for empirical test methods).

Sub-Matrix:

Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Reference Material (RM) Report				
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%)		Qualifier
							Low	High	
Physical Tests (QCLot: 584000)									
	RM	pH (1:2 soil:water)	----	E108	8.13 pH units	100	96.0	104	----
Physical Tests (QCLot: 584007)									
	RM	pH (1:2 soil:water)	----	E108	8.13 pH units	99.8	96.0	104	----
Physical Tests (QCLot: 585204)									
	RM	pH (1:2 soil:water)	----	E108	8.13 pH units	101	96.0	104	----
Physical Tests (QCLot: 587384)									
	RM	pH (1:2 soil:water)	----	E108	8.13 pH units	100	96.0	104	----
Organic / Inorganic Carbon (QCLot: 583935)									
	RM	carbon, total [TC]	----	E351	1.4 %	97.8	80.0	120	----
Organic / Inorganic Carbon (QCLot: 585602)									
	RM	carbon, inorganic [IC]	----	E354	0.383 %	93.8	80.0	120	----
Organic / Inorganic Carbon (QCLot: 587051)									
	RM	carbon, inorganic [IC]	----	E354	0.383 %	95.6	80.0	120	----
Organic / Inorganic Carbon (QCLot: 587063)									
	RM	carbon, inorganic [IC]	----	E354	0.383 %	93.7	80.0	120	----
Organic / Inorganic Carbon (QCLot: 587079)									
	RM	carbon, total [TC]	----	E351	1.4 %	113	80.0	120	----
Metals (QCLot: 584948)									
	RM	aluminum	7429-90-5	E440	9817 mg/kg	103	70.0	130	----
	RM	antimony	7440-36-0	E440	3.99 mg/kg	90.2	70.0	130	----
	RM	arsenic	7440-38-2	E440	3.73 mg/kg	104	70.0	130	----
	RM	barium	7440-39-3	E440	105 mg/kg	117	70.0	130	----
	RM	beryllium	7440-41-7	E440	0.349 mg/kg	93.6	70.0	130	----
	RM	boron	7440-42-8	E440	8.5 mg/kg	96.4	40.0	160	----
	RM	cadmium	7440-43-9	E440	0.91 mg/kg	109	70.0	130	----
	RM	calcium	7440-70-2	E440	31082 mg/kg	95.2	70.0	130	----
	RM	chromium	7440-47-3	E440	101 mg/kg	95.3	70.0	130	----
	RM	cobalt	7440-48-4	E440	6.9 mg/kg	98.1	70.0	130	----
	RM	copper	7440-50-8	E440	123 mg/kg	99.4	70.0	130	----



Sub-Matrix:

Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Reference Material (RM) Report				
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%)		Qualifier
							Low	High	
Metals (QCLot: 584948) - continued									
	RM	iron	7439-89-6	E440	23558 mg/kg	94.6	70.0	130	----
	RM	lead	7439-92-1	E440	267 mg/kg	94.6	70.0	130	----
	RM	lithium	7439-93-2	E440	9.5 mg/kg	96.9	70.0	130	----
	RM	magnesium	7439-95-4	E440	5509 mg/kg	100.0	70.0	130	----
	RM	manganese	7439-96-5	E440	269 mg/kg	96.3	70.0	130	----
	RM	molybdenum	7439-98-7	E440	1.03 mg/kg	105	70.0	130	----
	RM	nickel	7440-02-0	E440	26.7 mg/kg	100.0	70.0	130	----
	RM	phosphorus	7723-14-0	E440	752 mg/kg	99.2	70.0	130	----
	RM	potassium	7440-09-7	E440	1587 mg/kg	102	70.0	130	----
	RM	silver	7440-22-4	E440	4.06 mg/kg	85.8	70.0	130	----
	RM	sodium	7440-23-5	E440	797 mg/kg	108	70.0	130	----
	RM	strontium	7440-24-6	E440	86.1 mg/kg	97.4	70.0	130	----
	RM	thallium	7440-28-0	E440	0.0786 mg/kg	128	40.0	160	----
	RM	tin	7440-31-5	E440	10.6 mg/kg	95.5	70.0	130	----
	RM	titanium	7440-32-6	E440	839 mg/kg	92.4	70.0	130	----
	RM	uranium	7440-61-1	E440	0.52 mg/kg	94.2	70.0	130	----
	RM	vanadium	7440-62-2	E440	32.7 mg/kg	96.2	70.0	130	----
	RM	zinc	7440-66-6	E440	297 mg/kg	94.4	70.0	130	----
	RM	zirconium	7440-67-7	E440	5.73 mg/kg	102	70.0	130	----
Metals (QCLot: 584949)									
	RM	mercury	7439-97-6	E510	0.059 mg/kg	91.4	70.0	130	----
Metals (QCLot: 585436)									
	RM	aluminum	7429-90-5	E440	9817 mg/kg	96.8	70.0	130	----
	RM	antimony	7440-36-0	E440	3.99 mg/kg	89.7	70.0	130	----
	RM	arsenic	7440-38-2	E440	3.73 mg/kg	105	70.0	130	----
	RM	barium	7440-39-3	E440	105 mg/kg	113	70.0	130	----
	RM	beryllium	7440-41-7	E440	0.349 mg/kg	101	70.0	130	----
	RM	boron	7440-42-8	E440	8.5 mg/kg	98.9	40.0	160	----
	RM	cadmium	7440-43-9	E440	0.91 mg/kg	96.2	70.0	130	----
	RM	calcium	7440-70-2	E440	31082 mg/kg	98.8	70.0	130	----
	RM	chromium	7440-47-3	E440	101 mg/kg	87.9	70.0	130	----
	RM	cobalt	7440-48-4	E440	6.9 mg/kg	96.6	70.0	130	----
	RM	copper	7440-50-8	E440	123 mg/kg	97.8	70.0	130	----



Sub-Matrix:

Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Reference Material (RM) Report				
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%)		Qualifier
							Low	High	
Metals (QCLot: 585436) - continued									
	RM	iron	7439-89-6	E440	23558 mg/kg	94.2	70.0	130	----
	RM	lead	7439-92-1	E440	267 mg/kg	94.0	70.0	130	----
	RM	lithium	7439-93-2	E440	9.5 mg/kg	111	70.0	130	----
	RM	magnesium	7439-95-4	E440	5509 mg/kg	99.1	70.0	130	----
	RM	manganese	7439-96-5	E440	269 mg/kg	94.3	70.0	130	----
	RM	molybdenum	7439-98-7	E440	1.03 mg/kg	118	70.0	130	----
	RM	nickel	7440-02-0	E440	26.7 mg/kg	98.5	70.0	130	----
	RM	phosphorus	7723-14-0	E440	752 mg/kg	105	70.0	130	----
	RM	potassium	7440-09-7	E440	1587 mg/kg	94.7	70.0	130	----
	RM	silver	7440-22-4	E440	4.06 mg/kg	93.2	70.0	130	----
	RM	sodium	7440-23-5	E440	797 mg/kg	105	70.0	130	----
	RM	strontium	7440-24-6	E440	86.1 mg/kg	96.8	70.0	130	----
	RM	thallium	7440-28-0	E440	0.0786 mg/kg	123	40.0	160	----
	RM	tin	7440-31-5	E440	10.6 mg/kg	89.0	70.0	130	----
	RM	titanium	7440-32-6	E440	839 mg/kg	85.4	70.0	130	----
	RM	uranium	7440-61-1	E440	0.52 mg/kg	90.2	70.0	130	----
	RM	vanadium	7440-62-2	E440	32.7 mg/kg	92.3	70.0	130	----
	RM	zinc	7440-66-6	E440	297 mg/kg	94.4	70.0	130	----
	RM	zirconium	7440-67-7	E440	5.73 mg/kg	97.9	70.0	130	----
Metals (QCLot: 585437)									
	RM	mercury	7439-97-6	E510	0.059 mg/kg	93.1	70.0	130	----

COC ID: July EVO LAEMP 2022		TURNAROUND TIME: RUSH																																	
<table border="1"> <tr> <th colspan="2">PROJECT INFORMATION</th> <th colspan="2">LABORATORY</th> </tr> <tr> <td>Facility Name / Job#</td> <td>REP</td> <td>Lab Name</td> <td>ALS Calgary</td> </tr> <tr> <td>Project Manager</td> <td>Mike Pope</td> <td>Lab Contact</td> <td>Lyudmyla Shvets</td> </tr> <tr> <td>Email</td> <td>mike.pope@teck.com</td> <td>Email</td> <td>lyudmyla.shvets@alsglobal.com</td> </tr> <tr> <td>Address</td> <td>421 Pine Avenue</td> <td>Address</td> <td>2559 29 Street NE</td> </tr> <tr> <td>City</td> <td>Sperwood</td> <td>City</td> <td>Calgary</td> </tr> <tr> <td>Postal Code</td> <td>V0B 2G0</td> <td>Province</td> <td>AB</td> </tr> <tr> <td>Phone Number</td> <td>250-425-8202</td> <td>Country</td> <td>Canada</td> </tr> </table>				PROJECT INFORMATION		LABORATORY		Facility Name / Job#	REP	Lab Name	ALS Calgary	Project Manager	Mike Pope	Lab Contact	Lyudmyla Shvets	Email	mike.pope@teck.com	Email	lyudmyla.shvets@alsglobal.com	Address	421 Pine Avenue	Address	2559 29 Street NE	City	Sperwood	City	Calgary	Postal Code	V0B 2G0	Province	AB	Phone Number	250-425-8202	Country	Canada
PROJECT INFORMATION		LABORATORY																																	
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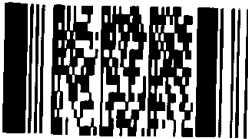
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS REQUESTED						
								C-TOC-SK	MET-CCME+FULL-CL	MOISTURE-CL - % Moisture	PSA-PIPE-T-DETAIL-SK Particle Size	PAH-TMB-DA-MS-CL- PAHs		
RG_BOCKRD_SE-1_LAEMP_EVO_2022-07-26_N	RG_BOCKRD	SE	N	7/26/2022	14:30	G	1	X	X	X	X	X		
RG_BOCKRD_SE-2_LAEMP_EVO_2022-07-26_N	RG_BOCKRD	SE	N	7/26/2022	14:35	G	1	X	X	X	X	X		
RG_BOCKRD_SE-3_LAEMP_EVO_2022-07-26_N	RG_BOCKRD	SE	N	7/26/2022	14:40	G	1	X	X	X	X	X		
RG_GATE_SE-1_LAEMP_EVO_2022-07-25_N	RG_GATE	SE	N	7/25/2022	9:00	G	1	X	X	X	X	X		
RG_GATE_SE-2_LAEMP_EVO_2022-07-25_N	RG_GATE	SE	N	7/25/2022	9:05	G	1	X	X	X	X	X		
RG_GATE_SE-3_LAEMP_EVO_2022-07-25_N	RG_GATE	SE	N	7/25/2022	9:10	G	1	X	X	X	X	X		
RG_BOCK SE-1_LAEMP_EVO_2022-07-25_N	RG_BOCK	SE	N	7/25/2022	10:00	G	1	X	X	X	X	X		
RG_BOCK SE-2_LAEMP_EVO_2022-07-25_N	RG_BOCK	SE	N	7/25/2022	10:05	G	1	X	X	X	X	X		
RG_BOCK SE-3_LAEMP_EVO_2022-07-25_N	RG_BOCK	SE	N	7/25/2022	10:10	G	1	X	X	X	X	X		

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RG_GATE SE-1

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
VPO00847030	Robin Valteau/Minnow		<i>[Signature]</i>
NO. OF BOTTLES RETURNED/DESCRIPTION	Sampler's Name	Robin Valteau	Mobile # 416-970-7535
Regular (default)	Sampler's Signature		Date/Time July 26, 2022
Priority (2-3 business days) - 50% surcharge			
Emergency (1 Business Day) - 100% surcharge			
For Emergency <1 Day, ASAP or Weekend - Contact ALS			

Environmental Division
Calgary
Work Order Reference
CG2209855



COC ID:

July EVO LAEMP 2022

TURNAROUND TIME:

RUSH

PROJECT/CLIENT INFO				LABORATORY			
Facility Name / Job#	REP	Lab Name	ALS Calgary	Excel	PDF	EDD	
Project Manager	Mike Pope	Lab Contact	Lyudmyla Shvets				
Email	mike.pope@teck.com	Email	lyudmyla.shvets@alsglobal.com				
Address	421 Pine Avenue	Address	2559 29 Street NE				
City	Sparwood	City	Calgary				
Postal Code	V0B 2G0	Postal Code	T1Y 7B5				
Phone Number	250-425-8202	Phone Number	1 403 407 1794				

SAMPLE DETAILS								ANALYSIS REQUESTED								
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	C-TOC-SK	MET-CCME+FULL-CL	MOISTURE-CL - % Moisture	PSA-PIPET-DETAIL-SK Particle Size	PAH-TMB-DA-MS-CL- PAHs				
RG_ERCKUT_SE-1_LAEMP_EVO_2022-07-26_N	RG_ERCKUT	SE	N	7/26/2022	10:00	G	1	X	X	X	X	X				
RG_ERCKUT_SE-2_LAEMP_EVO_2022-07-26_N	RG_ERCKUT	SE	N	7/26/2022	10:05	G	1	X	X	X	X	X				
RG_ERCKUT_SE-3_LAEMP_EVO_2022-07-26_N	RG_ERCKUT	SE	N	7/26/2022	10:10	G	1	X	X	X	X	X				
RG_ERCKUT_SE-4_LAEMP_EVO_2022-07-26_N	RG_ERCKUT	SE	N	7/26/2022	10:15	G	1	X	X	X	X	X				
RG_ERCKUT_SE-5_LAEMP_EVO_2022-07-26_N	RG_ERCKUT	SE	N	7/26/2022	10:20	G	1	X	X	X	X	X				
RG_ERCKUT_BRYOSE-1_LAEMP_EVO_2022-07-26_N	RG_ERCKUT	SE	N	7/26/2022	10:00	G	1	X	X	X	X	X				
RG_ERCKUT_BRYOSE-2_LAEMP_EVO_2022-07-26_N	RG_ERCKUT	SE	N	7/26/2022	10:05	G	1	X	X	X	X	X				
RG_ERCKUT_BRYOSE-3_LAEMP_EVO_2022-07-26_N	RG_ERCKUT	SE	N	7/26/2022	10:10	G	1	X	X	X	X	X				

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS

VPO00847030

RELINQUISHED BY/AFFILIATION

Robin Valteau/Minnow

DATE/TIME

ACCEPTED BY/AFFILIATION

(Signature) 7/27/2022

NO OF BOTTLES RETURNED/DESCRIPTION

Regular (default)

Priority (2-3 business days) - 50% surcharge

Emergency (1 Business Day) - 100% surcharge

For Emergency <1 Day, ASAP or Weekend - Contact ALS

Sampler's Name

Robin Valteau

Mobile #

416-970-7535

Sampler's Signature

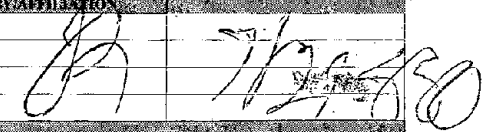
Date/Time

July 26, 2022

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COC ID: July EVO LAEMP 2022		TURNAROUND TIME:		RUSH	
Facility Name / Job# REP		Lab Name ALS Calgary		Excel PDF EDD	
Project Manager Mike Pope		Lab Contact Lyudmyla Shvets		mike.pope@teck.com	
Email mike.pope@teck.com		Email lyudmyla.shvets@alsglobal.com		lyudmyla.shvets@alsglobal.com	
Address 421 Pine Avenue		Address 2559 29 Street NE		robin.valleau@minnow.ca	
City Sparwood		City Calgary		Province AB	
Postal Code V0B 2G0		Postal Code T1Y 7B5		Country Canada	
Phone Number 250-425-8202		Phone Number 1 403 407 1794			

SAMPLE DETAILS								ANALYSIS REQUEST									
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	C-TOC-SK	MET-CCME+FULL-CL	MOISTURE-CL - % Moisture	PSA-PIPET-DETAIL-SK Particle Size	PAH-TMB-D/A-MS-CL- PAH					
RG_ERCKMD_SE-1_LAEMP_EVO_2022-07-26_N	RG_ERCKMD	SE	N	7/26/2022	13:30	G	1	X	X	X	X	X					
RG_ERCKMD_SE-2_LAEMP_EVO_2022-07-26_N	RG_ERCKMD	SE	N	7/26/2022	13:35	G	1	X	X	X	X	X					
RG_ERCKMD_SE-3_LAEMP_EVO_2022-07-26_N	RG_ERCKMD	SE	N	7/26/2022	13:40	G	1	X	X	X	X	X					
RG_ERCKMD_BRYOSE-1_LAEMP_EVO_2022-07-26_N	RG_ERCKMD	SE	N	7/26/2022	13:30	G	1	X	X	X	X	X					
RG_ERCKMD_BRYOSE-2_LAEMP_EVO_2022-07-26_N	RG_ERCKMD	SE	N	7/26/2022	13:35	G	1	X	X	X	X	X					
RG_ERCKMD_BRYOSE-3_LAEMP_EVO_2022-07-26_N	RG_ERCKMD	SE	N	7/26/2022	13:40	G	1	X	X	X	X	X					

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
VPO00847030	Robin Valleau/Minnow		

NO OF BOTTLES RETURNED-DESCRIPTION		SAMPLER'S NAME		MOBILE #	
Regular (default)		Robin Valleau		416-970-7535	
Priority (2-3 business days) - 50% surcharge	X	SAMPLER'S SIGNATURE		DATE/TIME	
Emergency (1 Business Day) - 100% surcharge				July 26, 2022	
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

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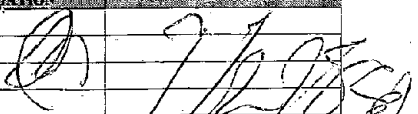
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COC ID: July EVO LAEMP 2022		TURNAROUND TIME: RUSH	
PROJECT CLIENT INFO			
Facility Name / Job#	REP	Lab Name	ALS Calgary
Project Manager	Mike Pope	Lab Contact	Lyudmyla Shvets
Email	mike.pope@teck.com	Email	lyudmyla.shvets@alsglobal.com
Address	421 Pine Avenue	Address	2559 29 Street NE
City	Sparwood	City	Calgary
Province	BC	Province	AB
Postal Code	V0B 2G0	Postal Code	T1Y 7B5
Country	Canada	Country	Canada
Phone Number	250-425-8202	Phone Number	403 407 1794

Excel	PDF	EDD

SAMPLE DETAILS									ANALYSIS REQUESTED					
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.			C-TOC-SK	MET-CCME-FULL-CL	MOISTURE-CL - % Moisture	PSA-PIPET-DETAIL-SK Particle Size	PAH-TMB-D/A-MS-CL- PAHs
RG_ERCKDT_SE-1_LAEMP_EVO_2022-07-26_N	RG_ERCKDT	SE	N	7/26/2022	11:30	G	1			X	X	X	X	X
RG_ERCKDT_SE-2_LAEMP_EVO_2022-07-26_N	RG_ERCKDT	SE	N	7/26/2022	11:35	G	1			X	X	X	X	X
RG_ERCKDT_SE-3_LAEMP_EVO_2022-07-26_N	RG_ERCKDT	SE	N	7/26/2022	11:40	G	1			X	X	X	X	X
RG_ERCKDT_SE-4_LAEMP_EVO_2022-07-26_N	RG_ERCKDT	SE	N	7/26/2022	11:45	G	1			X	X	X	X	X
RG_ERCKDT_SE-5_LAEMP_EVO_2022-07-26_N	RG_ERCKDT	SE	N	7/26/2022	11:50	G	1			X	X	X	X	X
RG_ERCKDT_SE-6_LAEMP_EVO_2022-07-26_N	RG_ERCKDT	SE	N	7/26/2022	11:55	G	1			X	X	X	X	X
RG_ERCKDT_SE-7_LAEMP_EVO_2022-07-26_N	RG_ERCKDT	SE	N	7/26/2022	12:00	G	1			X	X	X	X	X
RG_ERCKDT_BRYOSE-1_LAEMP_EVO_2022-07-26_N	RG_ERCKDT	SE	N	7/26/2022	11:30	G	1			X	X	X	X	X
RG_ERCKDT_BRYOSE-2_LAEMP_EVO_2022-07-26_N	RG_ERCKDT	SE	N	7/26/2022	11:35	G	1			X	X	X	X	X
RG_ERCKDT_BRYOSE-3_LAEMP_EVO_2022-07-26_N	RG_ERCKDT	SE	N	7/26/2022	11:40	G	1			X	X	X	X	X

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ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELEASED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
VPO00847030	Robin Valteau/Minnow		

NO OF BOTTLES RETURNED/DESCRIPTION	Sampler's Name	Mobile #
Regular (default)	Robin Valteau	416-970-7535
Priority (2-3 business days) - 50% surcharge X	Sampler's Signature	Date/Time
Emergency (1 Business Day) - 100% surcharge		July 26, 2022
For Emergency <1 Day, ASAP or Weekend - Contact ALS:		

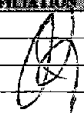
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COC ID:		July EVO LAEMP 2022				TURNAROUND TIME:		RUSH		
PROJECT/CLIENT INFO						LABORATORY				
Facility Name / Job# REP						Lab Name ALS Calgary		Excel PDF EDD		
Project Manager Mike Pope						Lab Contact Lyudmyla Shvets		mike.pope@teck.com		
Email mike.pope@teck.com						Email lyudmyla.shvets@alsglobal.com		lyudmyla.shvets@alsglobal.com		
Address 421 Pine Avenue						Address 2559 29 Street NE		mike.pope@teck.com		
City Sparwood		Province BC		City Calgary		Province AB		tyler.mehler@minnow.com		
Postal Code V0B 2G0		Country Canada		Postal Code T1Y 7B5		Country Canada				
Phone Number 250-425-8202				Phone Number 1 403 407 1794						

SAMPLE DETAILS									ANALYSIS REQUESTED									
Sample ID	Sample Location	Field Matrix	Hazardous Maternal (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.											
RG_ERCKUT_SE-1_LAEMP_EVO_2022-07-26_N	RG_ERCKUT	SE	N	7/26/2022	10:00	G	1	X	X	X	X	X						
RG_ERCKUT_SE-2_LAEMP_EVO_2022-07-26_N	RG_ERCKUT	SE	N	7/26/2022	10:05	G	1	X	X	X	X	X						
RG_ERCKUT_SE-3_LAEMP_EVO_2022-07-26_N	RG_ERCKUT	SE	N	7/26/2022	10:10	G	1	X	X	X	X	X						
RG_ERCKUT_SE-4_LAEMP_EVO_2022-07-26_N	RG_ERCKUT	SE	N	7/26/2022	10:15	G	1	X	X	X	X	X						
RG_ERCKUT_SE-5_LAEMP_EVO_2022-07-26_N	RG_ERCKUT	SE	N	7/26/2022	10:20	G	1	X	X	X	X	X						
RG_ERCKUT_BRYOSE-1_LAEMP_EVO_2022-07-26_N	RG_ERCKUT	SE	N	7/26/2022	10:00	G	1	X	X	X	X	X						
RG_ERCKUT_BRYOSE-2_LAEMP_EVO_2022-07-26_N	RG_ERCKUT	SE	N	7/26/2022	10:05	G	1	X	X	X	X	X						
RG_ERCKUT_BRYOSE-3_LAEMP_EVO_2022-07-26_N	RG_ERCKUT	SE	N	7/26/2022	10:10	G	1	X	X	X	X	X						

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ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
VPO00847030	Robin Valleau/Minnow		 7/27/2022

NO OF BOTTLES RETURNED/DESCRIPTION	Regular (default)	Priority (2-3 business days) - 50% surcharge	Emergency (1 Business Day) - 100% surcharge	For Emergency <1 Day, ASAP or Weekend - Contact ALS	Sampler's Name	Robin Valleau	Mobile #	416-970-7535
		X			Sampler's Signature		Date/Time	July 26, 2022

B

Teck

COC ID:

July EVO LAEMP 2022

TURNAROUND TIME:

RUSH

PROJECT/CLIENT INFO				LABORATORY			
Facility Name / Job#	REP			Lab Name	ALS Calgary		
Project Manager	Mike Pope			Lab Contact	Lyudmyla Shvets		
Email	mike.pope@teck.com			Email	lyudmyla.shvets@alsglobal.com		
Address	421 Pine Avenue			Address	2559 29 Street NE		
City	Sparwood	Province	BC	City	Calgary	Province	AB
Postal Code	V0B 2G0	Country	Canada	Postal Code	T1Y 7B5	Country	Canada
Phone Number	250-425-8202			Phone Number	1 403 407 1794		

Excel	PDF	EDD
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SAMPLE DETAILS

ANALYSIS REQUESTED

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G-Grab C=Comp	# Of Cont.	ANALYSIS REQUESTED										
								C-TOC-SK	MET-CCME-FULL-CL	MOISTURE-CL - % Moisture	PSA-PIPET-DETAIL-SK Particle Size	PAH-TMB-D/A-MS-CL- PAHs						
RG_ERCKMD_SE-1_LAEMP_EVO_2022-07-26_N	RG_ERCKMD	SE	N	7/26/2022	13:30	G	1	X	X	X	X	X						
RG_ERCKMD_SE-2_LAEMP_EVO_2022-07-26_N	RG_ERCKMD	SE	N	7/26/2022	13:35	G	1	X	X	X	X	X						
RG_ERCKMD_SE-3_LAEMP_EVO_2022-07-26_N	RG_ERCKMD	SE	N	7/26/2022	13:40	G	1	X	X	X	X	X						
RG_ERCKMD_BRYOSE-1_LAEMP_EVO_2022-07-26_N	RG_ERCKMD	SE	N	7/26/2022	13:30	G	1	X	X	X	X	X						
RG_ERCKMD_BRYOSE-2_LAEMP_EVO_2022-07-26_N	RG_ERCKMD	SE	N	7/26/2022	13:35	G	1	X	X	X	X	X						
RG_ERCKMD_BRYOSE-3_LAEMP_EVO_2022-07-26_N	RG_ERCKMD	SE	N	7/26/2022	13:40	G	1	X	X	X	X	X						

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS

RELINQUISHED BY/AFFILIATION

DATE/TIME

ACCEPTED BY/AFFILIATION

VPO00847030

Robin Valteau/Minnow

[Handwritten Signature]
[Handwritten Date: 7/26/2022]

NO. OF BOTTLES RETURNED/DESCRIPTION

NO. OF BOTTLES RETURNED/DESCRIPTION	Sampler's Name	Mobile #
Regular (default)	Robin Valteau	416-970-7535
Priority (2-3 business days) - 50% surcharge <input checked="" type="checkbox"/>		
Emergency (1 Business Day) - 100% surcharge		
For Emergency <1 Day, ASAP or Weekend - Contact ALS	Sampler's Signature	Date/Time
		July 26, 2022

13



CERTIFICATE OF ANALYSIS

Work Order : **CG2209989**
Client : **Teck Coal Limited**
Contact : Mike Pope
Address : 421 Pine Avenue
Sparwood BC Canada V0B2G0
Telephone : ----
Project : Regional Effects Program
PO : VPO00847030
C-O-C number : July EVO LAEMP 2022
Sampler : BB
Site : ----
Quote number : Teck Coal Master Quote
No. of samples received : 8
No. of samples analysed : 8

Page : 1 of 6
Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
Calgary AB Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 29-Jul-2022 08:50
Date Analysis Commenced : 30-Jul-2022
Issue Date : 05-Aug-2022 17:17

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Colby Bingham	Quality Systems Coordinator	Metals, Saskatoon, Saskatchewan
Hedy Lai	Team Leader - Inorganics	Inorganics, Saskatoon, Saskatchewan
Justin Kuzek	Team Leader - Organics	Organics, Saskatoon, Saskatchewan
Jwan Abdalla	Laboratory Analyst	Metals, Saskatoon, Saskatchewan
Nancy Cruse	Laboratory _ Supervisor	Inorganics, Saskatoon, Saskatchewan



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
 LOR: Limit of Reporting (detection limit).

Unit	Description
-	No Unit
%	percent
mg/kg	milligrams per kilogram
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Sample Comments

Sample	Client Id	Comment
CG2209989-002	RG_ERCKUC_SE-1_LAEMP_E VO_2022-07-27_N	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2209989-003	RG_ERCKUC_SE-2_LAEMP_E VO_2022-07-27_N	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2209989-005	RG_ERCKUC_BRYOSE-1_LA EMP_EVO_2022-07-27_N	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2209989-008	RG_GATEDP_SE-1_LAEMP_E VO_2022-07-25_N	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.

Qualifiers

Qualifier	Description
FR5	As per applicable reference method(s), soil:water ratio for Fixed Ratio Leach was modified to 1:5 due to high soil organic content



Analytical Results

Sub-Matrix: Sediment

Client sample ID

(Matrix: Soil/Solid)

					RG_ERCK_SE-1 _LAEMP_EVO_ 2022-07-27_N	RG_ERCKUC_S E-1_LAEMP_EV O_2022-07-27_ N	RG_ERCKUC_S E-2_LAEMP_EV O_2022-07-27_ N	RG_ERCKUC_S E-3_LAEMP_EV O_2022-07-27_ N	RG_ERCKUC_B RYOSE-1_LAEM P_EVO_2022-0 7-27_N
Client sampling date / time					27-Jul-2022 10:00	27-Jul-2022 08:30	27-Jul-2022 08:35	27-Jul-2022 08:40	27-Jul-2022 08:30
Analyte	CAS Number	Method	LOR	Unit	CG2209989-001	CG2209989-002	CG2209989-003	CG2209989-004	CG2209989-005
					Result	Result	Result	Result	Result
Physical Tests									
moisture	----	E144	0.25	%	39.7	35.7	66.2	83.4	52.8
pH (1:2 soil:water)	----	E108	0.10	pH units	8.35	8.05	8.02 ^{FRS}	----	7.73
Particle Size									
grain size curve	----	E185A	-	-	See Attached	See Attached	See Attached	----	See Attached
clay (<0.004mm)	----	EC184A	1.0	%	1.7	1.2	1.9	----	1.1
silt (0.063mm - 0.0312mm)	----	EC184A	1.0	%	9.9	4.3	9.2	----	5.5
silt (0.0312mm - 0.004mm)	----	EC184A	1.0	%	7.7	5.1	11.2	----	5.1
sand (0.125mm - 0.063mm)	----	EC184A	1.0	%	20.1	5.6	7.1	----	11.2
sand (0.25mm - 0.125mm)	----	EC184A	1.0	%	24.7	13.4	12.8	----	24.7
sand (0.5mm - 0.25mm)	----	EC184A	1.0	%	16.0	21.2	21.0	----	28.6
sand (1.0mm - 0.50mm)	----	EC184A	1.0	%	8.3	19.9	22.8	----	16.4
sand (2.0mm - 1.0mm)	----	EC184A	1.0	%	8.7	15.1	14.0	----	7.4
gravel (>2mm)	----	EC184A	1.0	%	2.9	14.2	<1.0	----	<1.0
Organic / Inorganic Carbon									
carbon, total [TC]	----	E351	0.050	%	8.23	12.8	17.0	19.4	13.0
carbon, inorganic [IC]	----	E354	0.050	%	6.76	7.20	8.00	9.14	11.2
carbon, inorganic [IC], (as CaCO3 equivalent)	----	E354	0.40	%	56.3	60.0	66.7	76.2	93.4
carbon, total organic [TOC]	----	EC356	0.050	%	1.47	5.60	9.00	10.3	1.80
Metals									
aluminum	7429-90-5	E440	50	mg/kg	2020	1990	305	227	80
antimony	7440-36-0	E440	0.10	mg/kg	0.32	0.58	0.58	0.28	<0.10
arsenic	7440-38-2	E440	0.10	mg/kg	2.68	3.72	3.02	0.56	0.20
barium	7440-39-3	E440	0.50	mg/kg	132	957	151	142	116
beryllium	7440-41-7	E440	0.10	mg/kg	0.18	0.17	<0.10	<0.10	<0.10
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20
boron	7440-42-8	E440	5.0	mg/kg	<5.0	<5.0	7.1	7.6	<5.0
cadmium	7440-43-9	E440	0.020	mg/kg	0.522	7.40	0.978	0.896	0.229
calcium	7440-70-2	E440	50	mg/kg	218000	225000	241000	260000	252000
chromium	7440-47-3	E440	0.50	mg/kg	4.16	10.5	19.0	1.08	0.90



Analytical Results

Sub-Matrix: Sediment
 (Matrix: Soil/Solid)

Client sample ID

					RG_ERCK_SE-1 _LAEMP_EVO_ 2022-07-27_N	RG_ERCKUC_S E-1_LAEMP_EV O_2022-07-27_ N	RG_ERCKUC_S E-2_LAEMP_EV O_2022-07-27_ N	RG_ERCKUC_S E-3_LAEMP_EV O_2022-07-27_ N	RG_ERCKUC_B RYOSE-1_LAEM P_EVO_2022-0 7-27_N
Client sampling date / time					27-Jul-2022 10:00	27-Jul-2022 08:30	27-Jul-2022 08:35	27-Jul-2022 08:40	27-Jul-2022 08:30
Analyte	CAS Number	Method	LOR	Unit	CG2209989-001	CG2209989-002	CG2209989-003	CG2209989-004	CG2209989-005
					Result	Result	Result	Result	Result
Metals									
cobalt	7440-48-4	E440	0.10	mg/kg	43.5	13.4	31.6	61.9	5.86
copper	7440-50-8	E440	0.50	mg/kg	4.81	7.81	15.6	4.32	0.95
iron	7439-89-6	E440	50	mg/kg	5380	9960	94500	566	364
lead	7439-92-1	E440	0.50	mg/kg	3.16	11.0	2.47	0.81	0.58
lithium	7439-93-2	E440	2.0	mg/kg	3.9	2.1	<2.0	<2.0	<2.0
magnesium	7439-95-4	E440	20	mg/kg	5280	6240	4850	5340	4150
manganese	7439-96-5	E440	1.0	mg/kg	988	349	1020	1360	174
mercury	7439-97-6	E510	0.0050	mg/kg	0.0148	0.0162	0.0210	0.0172	<0.0050
molybdenum	7439-98-7	E440	0.10	mg/kg	0.92	2.77	6.26	1.00	0.84
nickel	7440-02-0	E440	0.50	mg/kg	72.5	42.4	90.0	115	10.8
phosphorus	7723-14-0	E440	50	mg/kg	601	834	401	424	163
potassium	7440-09-7	E440	100	mg/kg	460	430	260	290	160
selenium	7782-49-2	E440	0.20	mg/kg	2.33	9.40	17.7	12.6	1.67
silver	7440-22-4	E440	0.10	mg/kg	<0.10	0.10	<0.10	<0.10	<0.10
sodium	7440-23-5	E440	50	mg/kg	95	107	73	87	92
strontium	7440-24-6	E440	0.50	mg/kg	122	124	109	140	98.6
sulfur	7704-34-9	E440	1000	mg/kg	4300	4200	5300	7000	4800
thallium	7440-28-0	E440	0.050	mg/kg	0.128	0.121	0.085	0.096	<0.050
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
titanium	7440-32-6	E440	1.0	mg/kg	17.7	19.4	6.2	4.1	1.6
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
uranium	7440-61-1	E440	0.050	mg/kg	1.34	1.94	2.29	2.43	2.07
vanadium	7440-62-2	E440	0.20	mg/kg	10.1	13.7	4.40	3.43	0.70
zinc	7440-66-6	E440	2.0	mg/kg	34.7	83.1	48.8	39.0	8.8
zirconium	7440-67-7	E440	1.0	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Sediment

(Matrix: Soil/Solid)

Client sample ID

					RG_ERCKUC_B RYOSE-2_LAEM P_EVO_2022-0 7-27_N	RG_ERCKUC_B RYOSE-3_LAEM P_EVO_2022-0 7-27_N	RG_GATEDP_S E-1_LAEMP_EV O_2022-07-25_ N	----	----	
					Client sampling date / time	27-Jul-2022 08:35	27-Jul-2022 08:40	25-Jul-2022 12:30	----	----
Analyte	CAS Number	Method	LOR	Unit	CG2209989-006	CG2209989-007	CG2209989-008	-----	-----	
					Result	Result	Result	----	----	
Physical Tests										
moisture	----	E144	0.25	%	47.3	66.7	69.1	----	----	
pH (1:2 soil:water)	----	E108	0.10	pH units	----	----	8.06	----	----	
Particle Size										
grain size curve	----	E185A	-	-	----	----	See Attached	----	----	
clay (<0.004mm)	----	EC184A	1.0	%	----	----	15.7	----	----	
silt (0.063mm - 0.0312mm)	----	EC184A	1.0	%	----	----	18.0	----	----	
silt (0.0312mm - 0.004mm)	----	EC184A	1.0	%	----	----	40.5	----	----	
sand (0.125mm - 0.063mm)	----	EC184A	1.0	%	----	----	12.7	----	----	
sand (0.25mm - 0.125mm)	----	EC184A	1.0	%	----	----	5.7	----	----	
sand (0.5mm - 0.25mm)	----	EC184A	1.0	%	----	----	6.0	----	----	
sand (1.0mm - 0.50mm)	----	EC184A	1.0	%	----	----	1.4	----	----	
sand (2.0mm - 1.0mm)	----	EC184A	1.0	%	----	----	<1.0	----	----	
gravel (>2mm)	----	EC184A	1.0	%	----	----	<1.0	----	----	
Organic / Inorganic Carbon										
carbon, total [TC]	----	E351	0.050	%	12.4	13.0	16.7	----	----	
carbon, inorganic [IC]	----	E354	0.050	%	11.3	10.7	7.65	----	----	
carbon, inorganic [IC], (as CaCO3 equivalent)	----	E354	0.40	%	94.1	89.0	63.8	----	----	
carbon, total organic [TOC]	----	EC356	0.050	%	<1.59	2.30	9.05	----	----	
Metals										
aluminum	7429-90-5	E440	50	mg/kg	131	125	2080	----	----	
antimony	7440-36-0	E440	0.10	mg/kg	0.12	0.13	0.55	----	----	
arsenic	7440-38-2	E440	0.10	mg/kg	0.35	0.32	2.88	----	----	
barium	7440-39-3	E440	0.50	mg/kg	123	89.1	800	----	----	
beryllium	7440-41-7	E440	0.10	mg/kg	<0.10	<0.10	0.23	----	----	
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	<0.20	----	----	
boron	7440-42-8	E440	5.0	mg/kg	<5.0	<5.0	<5.0	----	----	
cadmium	7440-43-9	E440	0.020	mg/kg	0.420	0.265	3.98	----	----	
calcium	7440-70-2	E440	50	mg/kg	243000	174000	227000	----	----	
chromium	7440-47-3	E440	0.50	mg/kg	<0.50	0.55	4.24	----	----	
cobalt	7440-48-4	E440	0.10	mg/kg	5.55	2.92	5.82	----	----	



Analytical Results

Sub-Matrix: Sediment
 (Matrix: Soil/Solid)

Client sample ID

					RG_ERCKUC_B RYOSE-2_LAEM P_EVO_2022-0 7-27_N	RG_ERCKUC_B RYOSE-3_LAEM P_EVO_2022-0 7-27_N	RG_GATEDP_S E-1_LAEMP_EV O_2022-07-25_ N	----	----
Client sampling date / time					27-Jul-2022 08:35	27-Jul-2022 08:40	25-Jul-2022 12:30	----	----
Analyte	CAS Number	Method	LOR	Unit	CG2209989-006	CG2209989-007	CG2209989-008	-----	-----
					Result	Result	Result	----	----
Metals									
copper	7440-50-8	E440	0.50	mg/kg	1.21	1.28	11.5	----	----
iron	7439-89-6	E440	50	mg/kg	209	244	5510	----	----
lead	7439-92-1	E440	0.50	mg/kg	<0.50	<0.50	4.61	----	----
lithium	7439-93-2	E440	2.0	mg/kg	<2.0	<2.0	4.2	----	----
magnesium	7439-95-4	E440	20	mg/kg	3690	3030	5690	----	----
manganese	7439-96-5	E440	1.0	mg/kg	191	103	193	----	----
mercury	7439-97-6	E510	0.0050	mg/kg	<0.0050	<0.0050	0.0338	----	----
molybdenum	7439-98-7	E440	0.10	mg/kg	0.16	0.18	1.25	----	----
nickel	7440-02-0	E440	0.50	mg/kg	9.59	8.89	53.7	----	----
phosphorus	7723-14-0	E440	50	mg/kg	244	218	476	----	----
potassium	7440-09-7	E440	100	mg/kg	210	190	730	----	----
selenium	7782-49-2	E440	0.20	mg/kg	1.35	2.09	8.58	----	----
silver	7440-22-4	E440	0.10	mg/kg	<0.10	<0.10	0.21	----	----
sodium	7440-23-5	E440	50	mg/kg	84	75	150	----	----
strontium	7440-24-6	E440	0.50	mg/kg	88.7	61.8	372	----	----
sulfur	7704-34-9	E440	1000	mg/kg	4600	3500	6000	----	----
thallium	7440-28-0	E440	0.050	mg/kg	<0.050	<0.050	0.122	----	----
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	<2.0	----	----
titanium	7440-32-6	E440	1.0	mg/kg	1.5	1.9	17.3	----	----
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	<0.50	----	----
uranium	7440-61-1	E440	0.050	mg/kg	2.06	1.63	1.91	----	----
vanadium	7440-62-2	E440	0.20	mg/kg	1.06	1.07	12.9	----	----
zinc	7440-66-6	E440	2.0	mg/kg	13.6	10.4	203	----	----
zirconium	7440-67-7	E440	1.0	mg/kg	<1.0	<1.0	1.1	----	----

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: CG2209989	Page	: 1 of 12
Client	: Teck Coal Limited	Laboratory	: Calgary - Environmental
Contact	: Mike Pope	Account Manager	: Lyudmyla Shvets
Address	: 421 Pine Avenue Sparwood BC Canada V0B2G0	Address	: 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5
Telephone	: ----	Telephone	: +1 403 407 1800
Project	: Regional Effects Program	Date Samples Received	: 29-Jul-2022 08:50
PO	: VPO00847030	Issue Date	: 05-Aug-2022 17:18
C-O-C number	: July EVO LAEMP 2022		
Sampler	: BB		
Site	: ----		
Quote number	: Teck Coal Master Quote		
No. of samples received	: 8		
No. of samples analysed	: 8		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- Duplicate outliers occur - please see following pages for full details.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers occur - please see following pages for full details.

RIGHT SOLUTIONS | RIGHT PARTNER



Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **Soil/Solid**

Analyte Group	Laboratory sample ID	Client/Ref Sample ID	Analyte	CAS Number	Method	Result	Limits	Comment
Duplicate (DUP) RPDs								
Metals	CG2209989-006	RG_ERCKUC_BRYO SE-2_LAEMP_EVO_2 022-07-27_N	cobalt	7440-48-4	E440	33.2 % DUP-H	30%	Duplicate RPD does not meet the DQO for this test.
Metals	CG2209989-006	RG_ERCKUC_BRYO SE-2_LAEMP_EVO_2 022-07-27_N	manganese	7439-96-5	E440	34.7 % DUP-H	30%	Duplicate RPD does not meet the DQO for this test.
Metals	CG2209989-006	RG_ERCKUC_BRYO SE-2_LAEMP_EVO_2 022-07-27_N	nickel	7440-02-0	E440	31.7 % DUP-H	30%	Duplicate RPD does not meet the DQO for this test.
Metals	CG2209989-006	RG_ERCKUC_BRYO SE-2_LAEMP_EVO_2 022-07-27_N	selenium	7782-49-2	E440	38.0 % DUP-H	30%	Duplicate RPD does not meet the DQO for this test.

Result Qualifiers

Qualifier	Description
DUP-H	Duplicate results outside ALS DQO, due to sample heterogeneity.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Soil/Solid**

Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCK_SE-1_LAEMP_EVO_2022-07-27_N	E510	27-Jul-2022	02-Aug-2022	----	----		02-Aug-2022	28 days	6 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKUC_BRYOSE-1_LAEMP_EVO_2022-07-27_N	E510	27-Jul-2022	02-Aug-2022	----	----		02-Aug-2022	28 days	6 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKUC_BRYOSE-3_LAEMP_EVO_2022-07-27_N	E510	27-Jul-2022	02-Aug-2022	----	----		02-Aug-2022	28 days	6 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKUC_SE-1_LAEMP_EVO_2022-07-27_N	E510	27-Jul-2022	02-Aug-2022	----	----		02-Aug-2022	28 days	6 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKUC_SE-2_LAEMP_EVO_2022-07-27_N	E510	27-Jul-2022	02-Aug-2022	----	----		02-Aug-2022	28 days	6 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKUC_SE-3_LAEMP_EVO_2022-07-27_N	E510	27-Jul-2022	02-Aug-2022	----	----		02-Aug-2022	28 days	6 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKUC_BRYOSE-2_LAEMP_EVO_2022-07-27_N	E510	27-Jul-2022	03-Aug-2022	----	----		03-Aug-2022	28 days	7 days	✓	



Matrix: **Soil/Solid**

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_GATEDP_SE-1_LAEMP_EVO_2022-07-25_N	E510	25-Jul-2022	02-Aug-2022	----	----		02-Aug-2022	28 days	8 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_ERCK_SE-1_LAEMP_EVO_2022-07-27_N	E440	27-Jul-2022	02-Aug-2022	----	----		02-Aug-2022	180 days	6 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_ERCKUC_BRYOSE-1_LAEMP_EVO_2022-07-27_N	E440	27-Jul-2022	02-Aug-2022	----	----		02-Aug-2022	180 days	6 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_ERCKUC_BRYOSE-3_LAEMP_EVO_2022-07-27_N	E440	27-Jul-2022	02-Aug-2022	----	----		02-Aug-2022	180 days	6 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_ERCKUC_SE-1_LAEMP_EVO_2022-07-27_N	E440	27-Jul-2022	02-Aug-2022	----	----		02-Aug-2022	180 days	6 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_ERCKUC_SE-2_LAEMP_EVO_2022-07-27_N	E440	27-Jul-2022	02-Aug-2022	----	----		02-Aug-2022	180 days	6 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_ERCKUC_SE-3_LAEMP_EVO_2022-07-27_N	E440	27-Jul-2022	02-Aug-2022	----	----		02-Aug-2022	180 days	6 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_ERCKUC_BRYOSE-2_LAEMP_EVO_2022-07-27_N	E440	27-Jul-2022	03-Aug-2022	----	----		03-Aug-2022	180 days	7 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_GATEDP_SE-1_LAEMP_EVO_2022-07-25_N	E440	25-Jul-2022	02-Aug-2022	----	----		02-Aug-2022	180 days	8 days	✔	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCK_SE-1_LAEMP_EVO_2022-07-27_N	E351	27-Jul-2022	03-Aug-2022	----	----		03-Aug-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKUC_BRYOSE-1_LAEMP_EVO_2022-07-27_N	E351	27-Jul-2022	03-Aug-2022	----	----		03-Aug-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKUC_BRYOSE-2_LAEMP_EVO_2022-07-27_N	E351	27-Jul-2022	03-Aug-2022	----	----		03-Aug-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKUC_BRYOSE-3_LAEMP_EVO_2022-07-27_N	E351	27-Jul-2022	03-Aug-2022	----	----		03-Aug-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKUC_SE-1_LAEMP_EVO_2022-07-27_N	E351	27-Jul-2022	03-Aug-2022	----	----		03-Aug-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKUC_SE-2_LAEMP_EVO_2022-07-27_N	E351	27-Jul-2022	03-Aug-2022	----	----		03-Aug-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKUC_SE-3_LAEMP_EVO_2022-07-27_N	E351	27-Jul-2022	03-Aug-2022	----	----		03-Aug-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_GATEDP_SE-1_LAEMP_EVO_2022-07-25_N	E351	25-Jul-2022	04-Aug-2022	----	----		04-Aug-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve											
LDPE bag RG_ERCK_SE-1_LAEMP_EVO_2022-07-27_N	E354	27-Jul-2022	----	----	----		02-Aug-2022	----	----		



Matrix: **Soil/Solid**

Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKUC_BRYOSE-1_LAEMP_EVO_2022-07-27_N	E354	27-Jul-2022	----	----	----		02-Aug-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKUC_BRYOSE-2_LAEMP_EVO_2022-07-27_N	E354	27-Jul-2022	----	----	----		02-Aug-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKUC_BRYOSE-3_LAEMP_EVO_2022-07-27_N	E354	27-Jul-2022	----	----	----		02-Aug-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKUC_SE-1_LAEMP_EVO_2022-07-27_N	E354	27-Jul-2022	----	----	----		02-Aug-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKUC_SE-2_LAEMP_EVO_2022-07-27_N	E354	27-Jul-2022	----	----	----		02-Aug-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKUC_SE-3_LAEMP_EVO_2022-07-27_N	E354	27-Jul-2022	----	----	----		02-Aug-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_GATEDP_SE-1_LAEMP_EVO_2022-07-25_N	E354	25-Jul-2022	----	----	----		02-Aug-2022	----	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCK_SE-1_LAEMP_EVO_2022-07-27_N	E185A	27-Jul-2022	----	----	----		03-Aug-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKUC_BRYOSE-1_LAEMP_EVO_2022-07-27_N	E185A	27-Jul-2022	----	----	----		03-Aug-2022	365 days	----	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method											
LDPE bag RG_ERCKUC_SE-1_LAEMP_EVO_2022-07-27_N	E185A	27-Jul-2022	----	----	----		03-Aug-2022	365 days	----		
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method											
LDPE bag RG_ERCKUC_SE-2_LAEMP_EVO_2022-07-27_N	E185A	27-Jul-2022	----	----	----		03-Aug-2022	365 days	----		
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method											
LDPE bag RG_GATEDP_SE-1_LAEMP_EVO_2022-07-25_N	E185A	25-Jul-2022	----	----	----		03-Aug-2022	365 days	----		
Physical Tests : Moisture Content by Gravimetry											
LDPE bag RG_ERCK_SE-1_LAEMP_EVO_2022-07-27_N	E144	27-Jul-2022	----	----	----		03-Aug-2022	----	----		
Physical Tests : Moisture Content by Gravimetry											
LDPE bag RG_ERCKUC_BRYOSE-1_LAEMP_EVO_2022-07-27_N	E144	27-Jul-2022	----	----	----		03-Aug-2022	----	----		
Physical Tests : Moisture Content by Gravimetry											
LDPE bag RG_ERCKUC_BRYOSE-2_LAEMP_EVO_2022-07-27_N	E144	27-Jul-2022	----	----	----		03-Aug-2022	----	----		
Physical Tests : Moisture Content by Gravimetry											
LDPE bag RG_ERCKUC_BRYOSE-3_LAEMP_EVO_2022-07-27_N	E144	27-Jul-2022	----	----	----		03-Aug-2022	----	----		
Physical Tests : Moisture Content by Gravimetry											
LDPE bag RG_ERCKUC_SE-1_LAEMP_EVO_2022-07-27_N	E144	27-Jul-2022	----	----	----		03-Aug-2022	----	----		
Physical Tests : Moisture Content by Gravimetry											
LDPE bag RG_ERCKUC_SE-2_LAEMP_EVO_2022-07-27_N	E144	27-Jul-2022	----	----	----		03-Aug-2022	----	----		



Matrix: **Soil/Solid**

Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Moisture Content by Gravimetry											
LDPE bag RG_ERCKUC_SE-3_LAEMP_EVO_2022-07-27_N	E144	27-Jul-2022	----	----	----		03-Aug-2022	----	----		
Physical Tests : Moisture Content by Gravimetry											
LDPE bag RG_GATEDP_SE-1_LAEMP_EVO_2022-07-25_N	E144	25-Jul-2022	----	----	----		03-Aug-2022	----	----		
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCK_SE-1_LAEMP_EVO_2022-07-27_N	E108	27-Jul-2022	03-Aug-2022	----	----		03-Aug-2022	30 days	7 days		✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKUC_BRYOSE-1_LAEMP_EVO_2022-07-27_N	E108	27-Jul-2022	03-Aug-2022	----	----		03-Aug-2022	30 days	7 days		✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKUC_SE-1_LAEMP_EVO_2022-07-27_N	E108	27-Jul-2022	03-Aug-2022	----	----		03-Aug-2022	30 days	7 days		✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKUC_SE-2_LAEMP_EVO_2022-07-27_N	E108	27-Jul-2022	03-Aug-2022	----	----		03-Aug-2022	30 days	7 days		✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_GATEDP_SE-1_LAEMP_EVO_2022-07-25_N	E108	25-Jul-2022	03-Aug-2022	----	----		03-Aug-2022	30 days	9 days		✓

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Soil/Solid**

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
Analytical Methods							
Laboratory Duplicates (DUP)							
Mercury in Soil/Solid by CVAAS	E510	586364	2	35	5.7	5.0	✔
Metals in Soil/Solid by CRC ICPMS	E440	586363	2	40	5.0	5.0	✔
Moisture Content by Gravimetry	E144	586544	0	19	0.0	5.0	✖
pH by Meter (1:2 Soil:Water Extraction)	E108	584000	1	14	7.1	5.0	✔
Total Carbon by Combustion	E351	588669	2	24	8.3	5.0	✔
Total Inorganic Carbon by Acetic Acid pH Standard Curve	E354	585602	1	20	5.0	5.0	✔
Laboratory Control Samples (LCS)							
Mercury in Soil/Solid by CVAAS	E510	586364	4	35	11.4	10.0	✔
Metals in Soil/Solid by CRC ICPMS	E440	586363	4	40	10.0	10.0	✔
Moisture Content by Gravimetry	E144	586544	1	19	5.2	5.0	✔
pH by Meter (1:2 Soil:Water Extraction)	E108	584000	2	14	14.2	10.0	✔
Total Carbon by Combustion	E351	588669	4	24	16.6	10.0	✔
Total Inorganic Carbon by Acetic Acid pH Standard Curve	E354	585602	2	20	10.0	10.0	✔
Method Blanks (MB)							
Mercury in Soil/Solid by CVAAS	E510	586364	2	35	5.7	5.0	✔
Metals in Soil/Solid by CRC ICPMS	E440	586363	2	40	5.0	5.0	✔
Moisture Content by Gravimetry	E144	586544	1	19	5.2	5.0	✔
Total Carbon by Combustion	E351	588669	2	24	8.3	5.0	✔
Total Inorganic Carbon by Acetic Acid pH Standard Curve	E354	585602	1	20	5.0	5.0	✔



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
pH by Meter (1:2 Soil:Water Extraction)	E108 Saskatoon - Environmental	Soil/Solid	BC Lab Manual	pH is determined by potentiometric measurement with a pH electrode at ambient laboratory temperature (normally $20 \pm 5^\circ\text{C}$), and is carried out in accordance with procedures described in the BC Lab Manual (prescriptive method). The procedure involves mixing the dried (at $<60^\circ\text{C}$) and sieved (10mesh/2mm) sample with ultra pure water at a 1:2 ratio of sediment to water. The pH is then measured by a standard pH probe.
Moisture Content by Gravimetry	E144 Saskatoon - Environmental	Soil/Solid	CCME PHC in Soil - Tier 1	Moisture is measured gravimetrically by drying the sample at 105°C . Moisture content is calculated as the weight loss (due to water) divided by the wet weight of the sample, expressed as a percentage.
Grain Size Report (Attachment) Pipet/Sieve Method	E185A Saskatoon - Environmental	Soil/Solid	SSIR-51 Method 3.2.1	A grain size curve is a graphical representation of the particle sizing of a sample representing the percent passing against the effective particle size.
Total Carbon by Combustion	E351 Saskatoon - Environmental	Soil/Solid	CSSS (2008) 21.2 (mod)	Total Carbon is determined by the high temperature combustion method with measurement by an infrared detector.
Total Inorganic Carbon by Acetic Acid pH Standard Curve	E354 Saskatoon - Environmental	Soil/Solid	CSSS (2008) 20.2	Total Inorganic Carbon is determined by acetic acid pH standard curve, where a known quantity of acetic acid is consumed by reaction with carbonates in the soil. The pH of the resulting solution is measured and compared against a standard curve relating pH to weight of carbonate.
Metals in Soil/Solid by CRC ICPMS	E440 Saskatoon - Environmental	Soil/Solid	EPA 6020B (mod)	This method is intended to liberate metals that may be environmentally available. Samples are dried, then sieved through a 2 mm sieve, and digested with HNO_3 and HCl . Dependent on sample matrix, some metals may be only partially recovered, including Al, Ba, Be, Cr, Sr, Ti, Tl, V, W, and Zr. Silicate minerals are not solubilized. Volatile forms of sulfur (including sulfide) may not be captured, as they may be lost during sampling, storage, or digestion. This method does not adequately recover elemental sulfur, and is unsuitable for assessment of elemental sulfur standards or guidelines. Analysis is by Collision/Reaction Cell ICPMS.
Mercury in Soil/Solid by CVAAS	E510 Saskatoon - Environmental	Soil/Solid	EPA 200.2/1631 Appendix (mod)	Samples are dried, then sieved through a 2 mm sieve, and digested with HNO_3 and HCl , followed by CVAAS analysis.
Particle Size Analysis (Pipette) - Wentworth Classification	EC184A Saskatoon - Environmental	Soil/Solid	Modified Wentworth	The particle size determination is performed by various methods to generate a Grain Size curve. The data from the curve is then used to produce particle size ranges based on the Modified Wentworth Classification system.



<i>Analytical Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
Total Organic Carbon (Calculated) in soil	EC356 Saskatoon - Environmental	Soil/Solid	CSSS (2008) 21.2	Total Organic Carbon (TOC) is calculated by the difference between total carbon (TC) and total inorganic carbon (TIC).
<i>Preparation Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
Leach 1:2 Soil:Water for pH/EC	EP108 Saskatoon - Environmental	Soil/Solid	BC WLAP METHOD: PH, ELECTROMETRIC, SOIL	The procedure involves mixing the dried (at <60°C) and sieved (No. 10 / 2mm) sample with deionized/distilled water at a 1:2 ratio of sediment to water.
Digestion for Metals and Mercury	EP440 Saskatoon - Environmental	Soil/Solid	EPA 200.2 (mod)	Samples are dried, then sieved through a 2 mm sieve, and digested with HNO ₃ and HCl. This method is intended to liberate metals that may be environmentally available.
Dry and Grind	EPP442 Saskatoon - Environmental	Soil/Solid	Soil Sampling and Methods of Analysis, Carter 2008	After removal of any coarse fragments and reservation of wet subsamples a portion of homogenized sample is set in a tray and dried at less than 60°C until dry. The sample is then particle size reduced with an automated crusher or mortar and pestle, typically to <2 mm. Further size reduction may be needed for particular tests.



QUALITY CONTROL REPORT

Work Order : **CG2209989**

Client : Teck Coal Limited
Contact : Mike Pope
Address : 421 Pine Avenue
Sparwood BC Canada V0B2G0

Telephone : ----

Project : Regional Effects Program
PO : VPO00847030
C-O-C number : July EVO LAEMP 2022
Sampler : BB
Site : ----
Quote number : Teck Coal Master Quote
No. of samples received : 8
No. of samples analysed : 8

Page : 1 of 14

Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
Calgary, Alberta Canada T1Y 7B5

Telephone : +1 403 407 1800
Date Samples Received : 29-Jul-2022 08:50
Date Analysis Commenced : 30-Jul-2022
Issue Date : 05-Aug-2022 17:18

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Reference Material (RM) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Colby Bingham	Quality Systems Coordinator	Saskatoon Metals, Saskatoon, Saskatchewan
Hedy Lai	Team Leader - Inorganics	Saskatoon Inorganics, Saskatoon, Saskatchewan
Justin Kuzek	Team Leader - Organics	Saskatoon Organics, Saskatoon, Saskatchewan
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Nancy Cruse	Laboratory _ Supervisor	Saskatoon Inorganics, Saskatoon, Saskatchewan

Page : 2 of 14
Work Order : CG2209989
Client : Teck Coal Limited
Project : Regional Effects Program



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Soil/Solid

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 584000)											
CG2209855-023	Anonymous	pH (1:2 soil:water)	----	E108	0.10	pH units	7.76	7.81	0.642%	10%	----
Organic / Inorganic Carbon (QC Lot: 585602)											
CG2209855-006	Anonymous	carbon, inorganic [IC]	----	E354	0.050	%	3.35	3.36	0.124%	20%	----
Organic / Inorganic Carbon (QC Lot: 587079)											
CG2209855-009	Anonymous	carbon, total [TC]	----	E351	0.050	%	13.8	13.6	1.12%	20%	----
Organic / Inorganic Carbon (QC Lot: 588669)											
FJ2201986-001	Anonymous	carbon, total [TC]	----	E351	0.050	%	26.0	25.2	3.16%	20%	----
Metals (QC Lot: 585436)											
CG2209855-021	Anonymous	aluminum	7429-90-5	E440	50	mg/kg	4480	4620	2.93%	40%	----
		antimony	7440-36-0	E440	0.10	mg/kg	0.96	0.94	2.81%	30%	----
		arsenic	7440-38-2	E440	0.10	mg/kg	6.52	6.18	5.32%	30%	----
		barium	7440-39-3	E440	0.50	mg/kg	189	211	11.0%	40%	----
		beryllium	7440-41-7	E440	0.10	mg/kg	0.59	0.56	0.03	Diff <2x LOR	----
		bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	0	Diff <2x LOR	----
		boron	7440-42-8	E440	5.0	mg/kg	<5.0	<5.0	0	Diff <2x LOR	----
		cadmium	7440-43-9	E440	0.020	mg/kg	1.23	1.21	1.46%	30%	----
		calcium	7440-70-2	E440	50	mg/kg	41000	43500	5.94%	30%	----
		chromium	7440-47-3	E440	0.50	mg/kg	8.74	8.90	1.74%	30%	----
		cobalt	7440-48-4	E440	0.10	mg/kg	6.49	6.37	1.87%	30%	----
		copper	7440-50-8	E440	0.50	mg/kg	12.9	12.9	0.512%	30%	----
		iron	7439-89-6	E440	50	mg/kg	16900	15400	8.93%	30%	----
		lead	7439-92-1	E440	0.50	mg/kg	9.39	9.51	1.28%	40%	----
		lithium	7439-93-2	E440	2.0	mg/kg	5.6	5.9	0.3	Diff <2x LOR	----
		magnesium	7439-95-4	E440	20	mg/kg	4540	5220	14.0%	30%	----
		manganese	7439-96-5	E440	1.0	mg/kg	269	259	3.93%	30%	----
		molybdenum	7439-98-7	E440	0.10	mg/kg	1.39	1.33	4.53%	40%	----
		nickel	7440-02-0	E440	0.50	mg/kg	21.5	21.3	0.958%	30%	----
		phosphorus	7723-14-0	E440	50	mg/kg	1100	1200	8.61%	30%	----
		potassium	7440-09-7	E440	100	mg/kg	1000	1040	3.91%	40%	----
		selenium	7782-49-2	E440	0.20	mg/kg	2.64	2.72	2.94%	30%	----
		silver	7440-22-4	E440	0.10	mg/kg	0.14	0.13	0.008	Diff <2x LOR	----



Sub-Matrix: Soil/Solid

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Metals (QC Lot: 585436) - continued											
CG2209855-021	Anonymous	sodium	7440-23-5	E440	50	mg/kg	59	58	1	Diff <2x LOR	----
		strontium	7440-24-6	E440	0.50	mg/kg	52.9	55.8	5.42%	40%	----
		sulfur	7704-34-9	E440	1000	mg/kg	<1000	<1000	0	Diff <2x LOR	----
		thallium	7440-28-0	E440	0.050	mg/kg	0.160	0.162	0.002	Diff <2x LOR	----
		tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	0	Diff <2x LOR	----
		titanium	7440-32-6	E440	1.0	mg/kg	19.5	21.1	7.88%	40%	----
		tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	0	Diff <2x LOR	----
		uranium	7440-61-1	E440	0.050	mg/kg	1.02	1.08	5.46%	30%	----
		vanadium	7440-62-2	E440	0.20	mg/kg	24.4	23.8	2.36%	30%	----
		zinc	7440-66-6	E440	2.0	mg/kg	100	99.2	0.871%	30%	----
		zirconium	7440-67-7	E440	1.0	mg/kg	<1.0	1.2	0.2	Diff <2x LOR	----
Metals (QC Lot: 585437)											
CG2209855-021	Anonymous	mercury	7439-97-6	E510	0.0050	mg/kg	0.0375	0.0309	19.2%	40%	----
Metals (QC Lot: 586363)											
CG2209989-006	RG_ERCKUC_BRYOSE-2 _LAEMP_EVO_2022-07-27 _N	aluminum	7429-90-5	E440	50	mg/kg	131	174	43	Diff <2x LOR	----
		antimony	7440-36-0	E440	0.10	mg/kg	0.12	0.17	0.05	Diff <2x LOR	----
		arsenic	7440-38-2	E440	0.10	mg/kg	0.35	0.47	0.12	Diff <2x LOR	----
		barium	7440-39-3	E440	0.50	mg/kg	123	165	28.7%	40%	----
		beryllium	7440-41-7	E440	0.10	mg/kg	<0.10	<0.10	0	Diff <2x LOR	----
		bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	0	Diff <2x LOR	----
		boron	7440-42-8	E440	5.0	mg/kg	<5.0	<5.0	0	Diff <2x LOR	----
		cadmium	7440-43-9	E440	0.020	mg/kg	0.420	0.554	27.7%	30%	----
		calcium	7440-70-2	E440	50	mg/kg	243000	328000	30.0%	30%	----
		chromium	7440-47-3	E440	0.50	mg/kg	<0.50	0.64	0.14	Diff <2x LOR	----
		cobalt	7440-48-4	E440	0.10	mg/kg	5.55	7.77	33.2%	30%	DUP-H
		copper	7440-50-8	E440	0.50	mg/kg	1.21	1.60	0.39	Diff <2x LOR	----
		iron	7439-89-6	E440	50	mg/kg	209	281	72	Diff <2x LOR	----
		lead	7439-92-1	E440	0.50	mg/kg	<0.50	<0.50	0	Diff <2x LOR	----
		lithium	7439-93-2	E440	2.0	mg/kg	<2.0	<2.0	0	Diff <2x LOR	----
		magnesium	7439-95-4	E440	20	mg/kg	3690	4740	24.9%	30%	----
		manganese	7439-96-5	E440	1.0	mg/kg	191	272	34.7%	30%	DUP-H
		molybdenum	7439-98-7	E440	0.10	mg/kg	0.16	0.22	0.06	Diff <2x LOR	----
		nickel	7440-02-0	E440	0.50	mg/kg	9.59	13.2	31.7%	30%	DUP-H
		phosphorus	7723-14-0	E440	50	mg/kg	244	336	92	Diff <2x LOR	----



Sub-Matrix: **Soil/Solid**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Metals (QC Lot: 586363) - continued											
CG2209989-006	RG_ERCKUC_BRYOSE-2 _LAEMP_EVO_2022-07-27 _N	potassium	7440-09-7	E440	100	mg/kg	210	310	90	Diff <2x LOR	----
		selenium	7782-49-2	E440	0.20	mg/kg	1.35	1.98	38.0%	30%	DUP-H
		silver	7440-22-4	E440	0.10	mg/kg	<0.10	<0.10	0	Diff <2x LOR	----
		sodium	7440-23-5	E440	50	mg/kg	84	115	31	Diff <2x LOR	----
		strontium	7440-24-6	E440	0.50	mg/kg	88.7	124	33.6%	40%	----
		sulfur	7704-34-9	E440	1000	mg/kg	4600	6400	1700	Diff <2x LOR	----
		thallium	7440-28-0	E440	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	0	Diff <2x LOR	----
		titanium	7440-32-6	E440	1.0	mg/kg	1.5	2.2	0.7	Diff <2x LOR	----
		tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	0	Diff <2x LOR	----
		uranium	7440-61-1	E440	0.050	mg/kg	2.06	2.75	28.5%	30%	----
		vanadium	7440-62-2	E440	0.20	mg/kg	1.06	1.45	0.38	Diff <2x LOR	----
		zinc	7440-66-6	E440	2.0	mg/kg	13.6	18.1	29.0%	30%	----
		zirconium	7440-67-7	E440	1.0	mg/kg	<1.0	<1.0	0	Diff <2x LOR	----
Metals (QC Lot: 586364)											
CG2209989-006	RG_ERCKUC_BRYOSE-2 _LAEMP_EVO_2022-07-27 _N	mercury	7439-97-6	E510	0.0050	mg/kg	<0.0050	<0.0050	0	Diff <2x LOR	----

Qualifiers

Qualifier	Description
DUP-H	Duplicate results outside ALS DQO, due to sample heterogeneity.



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 586544)						
moisture	----	E144	0.25	%	<0.25	----
Organic / Inorganic Carbon (QCLot: 585602)						
carbon, inorganic [IC]	----	E354	0.05	%	<0.050	----
Organic / Inorganic Carbon (QCLot: 587079)						
carbon, total [TC]	----	E351	0.05	%	<0.050	----
Organic / Inorganic Carbon (QCLot: 588669)						
carbon, total [TC]	----	E351	0.05	%	<0.050	----
Metals (QCLot: 585436)						
aluminum	7429-90-5	E440	50	mg/kg	<50	----
antimony	7440-36-0	E440	0.1	mg/kg	<0.10	----
arsenic	7440-38-2	E440	0.1	mg/kg	<0.10	----
barium	7440-39-3	E440	0.5	mg/kg	<0.50	----
beryllium	7440-41-7	E440	0.1	mg/kg	<0.10	----
bismuth	7440-69-9	E440	0.2	mg/kg	<0.20	----
boron	7440-42-8	E440	5	mg/kg	<5.0	----
cadmium	7440-43-9	E440	0.02	mg/kg	<0.020	----
calcium	7440-70-2	E440	50	mg/kg	<50	----
chromium	7440-47-3	E440	0.5	mg/kg	<0.50	----
cobalt	7440-48-4	E440	0.1	mg/kg	<0.10	----
copper	7440-50-8	E440	0.5	mg/kg	<0.50	----
iron	7439-89-6	E440	50	mg/kg	<50	----
lead	7439-92-1	E440	0.5	mg/kg	<0.50	----
lithium	7439-93-2	E440	2	mg/kg	<2.0	----
magnesium	7439-95-4	E440	20	mg/kg	<20	----
manganese	7439-96-5	E440	1	mg/kg	<1.0	----
molybdenum	7439-98-7	E440	0.1	mg/kg	<0.10	----
nickel	7440-02-0	E440	0.5	mg/kg	<0.50	----
phosphorus	7723-14-0	E440	50	mg/kg	<50	----
potassium	7440-09-7	E440	100	mg/kg	<100	----
selenium	7782-49-2	E440	0.2	mg/kg	<0.20	----
silver	7440-22-4	E440	0.1	mg/kg	<0.10	----
sodium	7440-23-5	E440	50	mg/kg	<50	----
strontium	7440-24-6	E440	0.5	mg/kg	<0.50	----



Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Metals (QCLot: 585436) - continued						
sulfur	7704-34-9	E440	1000	mg/kg	<1000	---
thallium	7440-28-0	E440	0.05	mg/kg	<0.050	---
tin	7440-31-5	E440	2	mg/kg	<2.0	---
titanium	7440-32-6	E440	1	mg/kg	<1.0	---
tungsten	7440-33-7	E440	0.5	mg/kg	<0.50	---
uranium	7440-61-1	E440	0.05	mg/kg	<0.050	---
vanadium	7440-62-2	E440	0.2	mg/kg	<0.20	---
zinc	7440-66-6	E440	2	mg/kg	<2.0	---
zirconium	7440-67-7	E440	1	mg/kg	<1.0	---
Metals (QCLot: 585437)						
mercury	7439-97-6	E510	0.005	mg/kg	<0.0050	---
Metals (QCLot: 586363)						
aluminum	7429-90-5	E440	50	mg/kg	<50	---
antimony	7440-36-0	E440	0.1	mg/kg	<0.10	---
arsenic	7440-38-2	E440	0.1	mg/kg	<0.10	---
barium	7440-39-3	E440	0.5	mg/kg	<0.50	---
beryllium	7440-41-7	E440	0.1	mg/kg	<0.10	---
bismuth	7440-69-9	E440	0.2	mg/kg	<0.20	---
boron	7440-42-8	E440	5	mg/kg	<5.0	---
cadmium	7440-43-9	E440	0.02	mg/kg	<0.020	---
calcium	7440-70-2	E440	50	mg/kg	<50	---
chromium	7440-47-3	E440	0.5	mg/kg	<0.50	---
cobalt	7440-48-4	E440	0.1	mg/kg	<0.10	---
copper	7440-50-8	E440	0.5	mg/kg	<0.50	---
iron	7439-89-6	E440	50	mg/kg	<50	---
lead	7439-92-1	E440	0.5	mg/kg	<0.50	---
lithium	7439-93-2	E440	2	mg/kg	<2.0	---
magnesium	7439-95-4	E440	20	mg/kg	<20	---
manganese	7439-96-5	E440	1	mg/kg	<1.0	---
molybdenum	7439-98-7	E440	0.1	mg/kg	<0.10	---
nickel	7440-02-0	E440	0.5	mg/kg	<0.50	---
phosphorus	7723-14-0	E440	50	mg/kg	<50	---
potassium	7440-09-7	E440	100	mg/kg	<100	---
selenium	7782-49-2	E440	0.2	mg/kg	<0.20	---
silver	7440-22-4	E440	0.1	mg/kg	<0.10	---
sodium	7440-23-5	E440	50	mg/kg	<50	---



Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Metals (QCLot: 586363) - continued						
strontium	7440-24-6	E440	0.5	mg/kg	<0.50	----
sulfur	7704-34-9	E440	1000	mg/kg	<1000	----
thallium	7440-28-0	E440	0.05	mg/kg	<0.050	----
tin	7440-31-5	E440	2	mg/kg	<2.0	----
titanium	7440-32-6	E440	1	mg/kg	<1.0	----
tungsten	7440-33-7	E440	0.5	mg/kg	<0.50	----
uranium	7440-61-1	E440	0.05	mg/kg	<0.050	----
vanadium	7440-62-2	E440	0.2	mg/kg	<0.20	----
zinc	7440-66-6	E440	2	mg/kg	<2.0	----
zirconium	7440-67-7	E440	1	mg/kg	<1.0	----
Metals (QCLot: 586364)						
mercury	7439-97-6	E510	0.005	mg/kg	<0.0050	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Soil/Solid

					Laboratory Control Sample (LCS) Report				
Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Physical Tests (QCLot: 584000)									
pH (1:2 soil:water)	----	E108	----	pH units	6.86 pH units	100	97.0	103	----
Physical Tests (QCLot: 586544)									
moisture	----	E144	0.25	%	50 %	100	90.0	110	----
Organic / Inorganic Carbon (QCLot: 585602)									
carbon, inorganic [IC]	----	E354	0.05	%	0.5 %	93.9	90.0	110	----
Organic / Inorganic Carbon (QCLot: 587079)									
carbon, total [TC]	----	E351	0.05	%	48 %	102	90.0	110	----
Organic / Inorganic Carbon (QCLot: 588669)									
carbon, total [TC]	----	E351	0.05	%	48 %	103	90.0	110	----
Metals (QCLot: 585436)									
aluminum	7429-90-5	E440	50	mg/kg	200 mg/kg	104	80.0	120	----
antimony	7440-36-0	E440	0.1	mg/kg	100 mg/kg	105	80.0	120	----
arsenic	7440-38-2	E440	0.1	mg/kg	100 mg/kg	97.8	80.0	120	----
barium	7440-39-3	E440	0.5	mg/kg	25 mg/kg	106	80.0	120	----
beryllium	7440-41-7	E440	0.1	mg/kg	10 mg/kg	99.1	80.0	120	----
bismuth	7440-69-9	E440	0.2	mg/kg	100 mg/kg	94.6	80.0	120	----
boron	7440-42-8	E440	5	mg/kg	100 mg/kg	98.1	80.0	120	----
cadmium	7440-43-9	E440	0.02	mg/kg	10 mg/kg	96.6	80.0	120	----
calcium	7440-70-2	E440	50	mg/kg	5000 mg/kg	99.4	80.0	120	----
chromium	7440-47-3	E440	0.5	mg/kg	25 mg/kg	100	80.0	120	----
cobalt	7440-48-4	E440	0.1	mg/kg	25 mg/kg	98.4	80.0	120	----
copper	7440-50-8	E440	0.5	mg/kg	25 mg/kg	97.8	80.0	120	----
iron	7439-89-6	E440	50	mg/kg	100 mg/kg	105	80.0	120	----
lead	7439-92-1	E440	0.5	mg/kg	50 mg/kg	98.8	80.0	120	----
lithium	7439-93-2	E440	2	mg/kg	25 mg/kg	94.2	80.0	120	----
magnesium	7439-95-4	E440	20	mg/kg	5000 mg/kg	106	80.0	120	----
manganese	7439-96-5	E440	1	mg/kg	25 mg/kg	101	80.0	120	----
molybdenum	7439-98-7	E440	0.1	mg/kg	25 mg/kg	103	80.0	120	----
nickel	7440-02-0	E440	0.5	mg/kg	50 mg/kg	99.1	80.0	120	----
phosphorus	7723-14-0	E440	50	mg/kg	1000 mg/kg	103	80.0	120	----
potassium	7440-09-7	E440	100	mg/kg	5000 mg/kg	97.6	80.0	120	----
selenium	7782-49-2	E440	0.2	mg/kg	100 mg/kg	99.2	80.0	120	----



Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Metals (QCLot: 585436) - continued									
silver	7440-22-4	E440	0.1	mg/kg	10 mg/kg	91.9	80.0	120	----
sodium	7440-23-5	E440	50	mg/kg	5000 mg/kg	102	80.0	120	----
strontium	7440-24-6	E440	0.5	mg/kg	25 mg/kg	103	80.0	120	----
sulfur	7704-34-9	E440	1000	mg/kg	5000 mg/kg	104	80.0	120	----
thallium	7440-28-0	E440	0.05	mg/kg	100 mg/kg	96.2	80.0	120	----
tin	7440-31-5	E440	2	mg/kg	50 mg/kg	99.2	80.0	120	----
titanium	7440-32-6	E440	1	mg/kg	25 mg/kg	96.7	80.0	120	----
tungsten	7440-33-7	E440	0.5	mg/kg	10 mg/kg	94.7	80.0	120	----
uranium	7440-61-1	E440	0.05	mg/kg	0.5 mg/kg	99.1	80.0	120	----
vanadium	7440-62-2	E440	0.2	mg/kg	50 mg/kg	101	80.0	120	----
zinc	7440-66-6	E440	2	mg/kg	50 mg/kg	95.8	80.0	120	----
zirconium	7440-67-7	E440	1	mg/kg	10 mg/kg	105	80.0	120	----
Metals (QCLot: 585437)									
mercury	7439-97-6	E510	0.005	mg/kg	0.1 mg/kg	93.5	80.0	120	----
Metals (QCLot: 586363)									
aluminum	7429-90-5	E440	50	mg/kg	200 mg/kg	106	80.0	120	----
antimony	7440-36-0	E440	0.1	mg/kg	100 mg/kg	95.4	80.0	120	----
arsenic	7440-38-2	E440	0.1	mg/kg	100 mg/kg	101	80.0	120	----
barium	7440-39-3	E440	0.5	mg/kg	25 mg/kg	101	80.0	120	----
beryllium	7440-41-7	E440	0.1	mg/kg	10 mg/kg	97.9	80.0	120	----
bismuth	7440-69-9	E440	0.2	mg/kg	100 mg/kg	96.6	80.0	120	----
boron	7440-42-8	E440	5	mg/kg	100 mg/kg	89.8	80.0	120	----
cadmium	7440-43-9	E440	0.02	mg/kg	10 mg/kg	96.5	80.0	120	----
calcium	7440-70-2	E440	50	mg/kg	5000 mg/kg	96.6	80.0	120	----
chromium	7440-47-3	E440	0.5	mg/kg	25 mg/kg	101	80.0	120	----
cobalt	7440-48-4	E440	0.1	mg/kg	25 mg/kg	102	80.0	120	----
copper	7440-50-8	E440	0.5	mg/kg	25 mg/kg	98.3	80.0	120	----
iron	7439-89-6	E440	50	mg/kg	100 mg/kg	115	80.0	120	----
lead	7439-92-1	E440	0.5	mg/kg	50 mg/kg	104	80.0	120	----
lithium	7439-93-2	E440	2	mg/kg	25 mg/kg	96.2	80.0	120	----
magnesium	7439-95-4	E440	20	mg/kg	5000 mg/kg	104	80.0	120	----
manganese	7439-96-5	E440	1	mg/kg	25 mg/kg	101	80.0	120	----
molybdenum	7439-98-7	E440	0.1	mg/kg	25 mg/kg	96.5	80.0	120	----
nickel	7440-02-0	E440	0.5	mg/kg	50 mg/kg	100	80.0	120	----
phosphorus	7723-14-0	E440	50	mg/kg	1000 mg/kg	110	80.0	120	----
potassium	7440-09-7	E440	100	mg/kg	5000 mg/kg	108	80.0	120	----
selenium	7782-49-2	E440	0.2	mg/kg	100 mg/kg	96.7	80.0	120	----



Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Metals (QCLot: 586363) - continued									
silver	7440-22-4	E440	0.1	mg/kg	10 mg/kg	84.1	80.0	120	----
sodium	7440-23-5	E440	50	mg/kg	5000 mg/kg	105	80.0	120	----
strontium	7440-24-6	E440	0.5	mg/kg	25 mg/kg	92.4	80.0	120	----
sulfur	7704-34-9	E440	1000	mg/kg	5000 mg/kg	100	80.0	120	----
thallium	7440-28-0	E440	0.05	mg/kg	100 mg/kg	101	80.0	120	----
tin	7440-31-5	E440	2	mg/kg	50 mg/kg	97.2	80.0	120	----
titanium	7440-32-6	E440	1	mg/kg	25 mg/kg	101	80.0	120	----
tungsten	7440-33-7	E440	0.5	mg/kg	10 mg/kg	98.2	80.0	120	----
uranium	7440-61-1	E440	0.05	mg/kg	0.5 mg/kg	101	80.0	120	----
vanadium	7440-62-2	E440	0.2	mg/kg	50 mg/kg	102	80.0	120	----
zinc	7440-66-6	E440	2	mg/kg	50 mg/kg	99.1	80.0	120	----
zirconium	7440-67-7	E440	1	mg/kg	10 mg/kg	91.1	80.0	120	----
Metals (QCLot: 586364)									
mercury	7439-97-6	E510	0.005	mg/kg	0.1 mg/kg	97.0	80.0	120	----



Reference Material (RM) Report

A Reference Material (RM) is a homogenous material with known and well-established analyte concentrations. RMs are processed in an identical manner to test samples, and are used to monitor and control the accuracy and precision of a test method for a typical sample matrix. RM results are expressed as percent recovery of the target analyte concentration. RM targets may be certified target concentrations provided by the RM supplier, or may be ALS long-term mean values (for empirical test methods).

Sub-Matrix:

Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Reference Material (RM) Report				
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%)		Qualifier
							Low	High	
Physical Tests (QCLot: 584000)									
	RM	pH (1:2 soil:water)	----	E108	8.13 pH units	100	96.0	104	----
Organic / Inorganic Carbon (QCLot: 585602)									
	RM	carbon, inorganic [IC]	----	E354	0.383 %	93.8	80.0	120	----
Organic / Inorganic Carbon (QCLot: 587079)									
	RM	carbon, total [TC]	----	E351	1.4 %	113	80.0	120	----
Organic / Inorganic Carbon (QCLot: 588669)									
	RM	carbon, total [TC]	----	E351	1.4 %	97.8	80.0	120	----
Metals (QCLot: 585436)									
	RM	aluminum	7429-90-5	E440	9817 mg/kg	96.8	70.0	130	----
	RM	antimony	7440-36-0	E440	3.99 mg/kg	89.7	70.0	130	----
	RM	arsenic	7440-38-2	E440	3.73 mg/kg	105	70.0	130	----
	RM	barium	7440-39-3	E440	105 mg/kg	113	70.0	130	----
	RM	beryllium	7440-41-7	E440	0.349 mg/kg	101	70.0	130	----
	RM	boron	7440-42-8	E440	8.5 mg/kg	98.9	40.0	160	----
	RM	cadmium	7440-43-9	E440	0.91 mg/kg	96.2	70.0	130	----
	RM	calcium	7440-70-2	E440	31082 mg/kg	98.8	70.0	130	----
	RM	chromium	7440-47-3	E440	101 mg/kg	87.9	70.0	130	----
	RM	cobalt	7440-48-4	E440	6.9 mg/kg	96.6	70.0	130	----
	RM	copper	7440-50-8	E440	123 mg/kg	97.8	70.0	130	----
	RM	iron	7439-89-6	E440	23558 mg/kg	94.2	70.0	130	----
	RM	lead	7439-92-1	E440	267 mg/kg	94.0	70.0	130	----
	RM	lithium	7439-93-2	E440	9.5 mg/kg	111	70.0	130	----
	RM	magnesium	7439-95-4	E440	5509 mg/kg	99.1	70.0	130	----
	RM	manganese	7439-96-5	E440	269 mg/kg	94.3	70.0	130	----
	RM	molybdenum	7439-98-7	E440	1.03 mg/kg	118	70.0	130	----
	RM	nickel	7440-02-0	E440	26.7 mg/kg	98.5	70.0	130	----
	RM	phosphorus	7723-14-0	E440	752 mg/kg	105	70.0	130	----
	RM	potassium	7440-09-7	E440	1587 mg/kg	94.7	70.0	130	----
	RM	silver	7440-22-4	E440	4.06 mg/kg	93.2	70.0	130	----



Sub-Matrix:

Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Reference Material (RM) Report				
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%)		Qualifier
							Low	High	
Metals (QCLot: 585436) - continued									
	RM	sodium	7440-23-5	E440	797 mg/kg	105	70.0	130	----
	RM	strontium	7440-24-6	E440	86.1 mg/kg	96.8	70.0	130	----
	RM	thallium	7440-28-0	E440	0.0786 mg/kg	123	40.0	160	----
	RM	tin	7440-31-5	E440	10.6 mg/kg	89.0	70.0	130	----
	RM	titanium	7440-32-6	E440	839 mg/kg	85.4	70.0	130	----
	RM	uranium	7440-61-1	E440	0.52 mg/kg	90.2	70.0	130	----
	RM	vanadium	7440-62-2	E440	32.7 mg/kg	92.3	70.0	130	----
	RM	zinc	7440-66-6	E440	297 mg/kg	94.4	70.0	130	----
	RM	zirconium	7440-67-7	E440	5.73 mg/kg	97.9	70.0	130	----
Metals (QCLot: 585437)									
	RM	mercury	7439-97-6	E510	0.059 mg/kg	93.1	70.0	130	----
Metals (QCLot: 586363)									
	RM	aluminum	7429-90-5	E440	9817 mg/kg	94.3	70.0	130	----
	RM	antimony	7440-36-0	E440	3.99 mg/kg	93.3	70.0	130	----
	RM	arsenic	7440-38-2	E440	3.73 mg/kg	99.4	70.0	130	----
	RM	barium	7440-39-3	E440	105 mg/kg	99.0	70.0	130	----
	RM	beryllium	7440-41-7	E440	0.349 mg/kg	96.0	70.0	130	----
	RM	boron	7440-42-8	E440	8.5 mg/kg	95.6	40.0	160	----
	RM	cadmium	7440-43-9	E440	0.91 mg/kg	101	70.0	130	----
	RM	calcium	7440-70-2	E440	31082 mg/kg	93.3	70.0	130	----
	RM	chromium	7440-47-3	E440	101 mg/kg	91.2	70.0	130	----
	RM	cobalt	7440-48-4	E440	6.9 mg/kg	103	70.0	130	----
	RM	copper	7440-50-8	E440	123 mg/kg	104	70.0	130	----
	RM	iron	7439-89-6	E440	23558 mg/kg	99.0	70.0	130	----
	RM	lead	7439-92-1	E440	267 mg/kg	103	70.0	130	----
	RM	lithium	7439-93-2	E440	9.5 mg/kg	102	70.0	130	----
	RM	magnesium	7439-95-4	E440	5509 mg/kg	101	70.0	130	----
	RM	manganese	7439-96-5	E440	269 mg/kg	95.6	70.0	130	----
	RM	molybdenum	7439-98-7	E440	1.03 mg/kg	104	70.0	130	----
	RM	nickel	7440-02-0	E440	26.7 mg/kg	102	70.0	130	----
	RM	phosphorus	7723-14-0	E440	752 mg/kg	107	70.0	130	----
	RM	potassium	7440-09-7	E440	1587 mg/kg	100	70.0	130	----
	RM	silver	7440-22-4	E440	4.06 mg/kg	86.9	70.0	130	----



Sub-Matrix:

Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Reference Material (RM) Report				
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%)		Qualifier
							Low	High	
Metals (QCLot: 586363) - continued									
	RM	sodium	7440-23-5	E440	797 mg/kg	101	70.0	130	----
	RM	strontium	7440-24-6	E440	86.1 mg/kg	91.4	70.0	130	----
	RM	thallium	7440-28-0	E440	0.0786 mg/kg	91.6	40.0	160	----
	RM	tin	7440-31-5	E440	10.6 mg/kg	91.2	70.0	130	----
	RM	titanium	7440-32-6	E440	839 mg/kg	90.6	70.0	130	----
	RM	uranium	7440-61-1	E440	0.52 mg/kg	99.0	70.0	130	----
	RM	vanadium	7440-62-2	E440	32.7 mg/kg	96.5	70.0	130	----
	RM	zinc	7440-66-6	E440	297 mg/kg	101	70.0	130	----
	RM	zirconium	7440-67-7	E440	5.73 mg/kg	92.6	70.0	130	----
Metals (QCLot: 586364)									
	RM	mercury	7439-97-6	E510	0.059 mg/kg	98.6	70.0	130	----

COC ID:

July EVO LAEMP 2022

TURNAROUND TIME:

RUSH

Facility Name / Job#	REP	Lab Name	ALS Calgary	Excel	PDF	EDD	
Project Manager	Mike Pope	Lab Contact	Lyudmyla Shvets				
Email	mike.pope@teck.com	Email	lyudmyla.shvets@alsglobal.com				
Address	421 Pine Avenue	Address	2559 29 Street NE				
City	Sparwood	Province	BC	City	Calgary	Province	AB
Postal Code	V0B 2G0	Country	Canada	Postal Code	T1Y 7B5	Country	Canada
Phone Number	250-425-8202	Phone Number	1 403 407 1794				

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	C-TOC-SK	MET-CCME-FULL-CL	MOISTURE-CL - % Moisture	PSA-PIPET-DETAIL-SK Particle Size	ANALYSIS REQUESTED			
RG_ERCK_SE-1_LAEMP_EVO_2022-07-27_N	RG_ERCK	SE	N	7/27/2022	10:00	G	1	X	X	X	X				
RG_ERCKUC_SE-1_LAEMP_EVO_2022-07-27_N	RG_ERCKUC	SE	N	7/27/2022	8:30	G	1	X	X	X	X				
RG_ERCKUC_SE-2_LAEMP_EVO_2022-07-27_N	RG_ERCKUC	SE	N	7/27/2022	8:35	G	1	X	X	X	X				
RG_ERCKUC_SE-3_LAEMP_EVO_2022-07-27_N	RG_ERCKUC	SE	N	7/27/2022	8:40	G	1	X	X	X	X				
RG_ERCKUC_BRYOSE-1_LAEMP_EVO_2022-07-27_N	RG_ERCKUC	SE	N	7/27/2022	8:30	G	1	X	X	X	X				
RG_ERCKUC_BRYOSE-2_LAEMP_EVO_2022-07-27_N	RG_ERCKUC	SE	N	7/27/2022	8:35	G	1	X	X	X	X				
RG_ERCKUC_BRYOSE-3_LAEMP_EVO_2022-07-27_N	RG_ERCKUC	SE	N	7/27/2022	8:40	G	1	X	X	X	X				
RG_GATEDP_SE-1_LAEMP_EVO_2022-07-25_N	RG_GATEDP	SE	N	7/25/2022	12:30	G	1	X	X	X	X				

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
VPO00847030	Brianna Barnhart/Minnow Env.	July 28, 2022	<i>[Signature]</i>

NO OF BOTTLES RETURNED/DESCRIPTION	Sampler's Name	Mobile #
Regular (default)	Brianna Barnhart	519-731-3821
Priority (2-3 business days) - 50% surcharge <input checked="" type="checkbox"/>	Sampler's Signature	Date/Time
Emergency (1 Business Day) - 100% surcharge		July 28, 2022
For Emergency <1 Day, ASAP, or Weekend - Contact ALS		

Environmental Division
Calgary
Work Order Reference
CG2209989



Telephone : +1 403 407 1800



CERTIFICATE OF ANALYSIS

<p>Work Order : CG2213420</p> <p>Client : Teck Coal Limited</p> <p>Contact : Mike Pope</p> <p>Address : RR#1 HWY#3 Sparwood BC Canada V0B 2G1</p> <p>Telephone : ----</p> <p>Project : REGIONAL EFFECTS PROGRAM</p> <p>PO : VPO00816101</p> <p>C-O-C number : REP_LAEMP_EVO_2022-09_ALS</p> <p>Sampler : Jennifer Ings</p> <p>Site : ----</p> <p>Quote number : Teck Coal Master Quote</p> <p>No. of samples received : 27</p> <p>No. of samples analysed : 27</p>	<p>Page : 1 of 26</p> <p>Laboratory : Calgary - Environmental</p> <p>Account Manager : Lyudmyla Shvets</p> <p>Address : 2559 29th Street NE Calgary AB Canada T1Y 7B5</p> <p>Telephone : +1 403 407 1800</p> <p>Date Samples Received : 27-Sep-2022 13:00</p> <p>Date Analysis Commenced : 30-Sep-2022</p> <p>Issue Date : 19-Oct-2022 17:50</p>
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This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Anthony Calero	Supervisor - Inorganic	Metals, Calgary, Alberta
Colby Bingham	Quality Systems Coordinator	Inorganics, Saskatoon, Saskatchewan
Colby Bingham	Quality Systems Coordinator	Metals, Saskatoon, Saskatchewan
Harpreet Chawla	Team Leader - Inorganics	Metals, Calgary, Alberta
Hedy Lai	Team Leader - Inorganics	Inorganics, Saskatoon, Saskatchewan
Hedy Lai	Team Leader - Inorganics	Sask Soils, Saskatoon, Saskatchewan
Jeanie Mark	Laboratory Analyst	Organics, Calgary, Alberta
Kimberly Hanson	Laboratory Analyst	Metals, Saskatoon, Saskatchewan
Kuljeet Chawla		Inorganics, Calgary, Alberta
Maqsood UlHassan	Laboratory Analyst	Organics, Calgary, Alberta
Rosalie Van Deelen	Laboratory Assistant	Organics, Calgary, Alberta
Sorina Motea	Laboratory Analyst	Organics, Calgary, Alberta



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

<i>Unit</i>	<i>Description</i>
-	No Unit
%	percent
mg/kg	milligrams per kilogram
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Workorder Comments

DID NOT RECEIVE JARS FOR RG_BOCKRD SAMPLES (-17 to -19) - PAH CANCELLED

Qualifiers

<i>Qualifier</i>	<i>Description</i>
DLHM	Detection Limit Adjusted: Sample has high moisture content.
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).



Analytical Results

Sub-Matrix: Sediment

Client sample ID

(Matrix: Soil/Solid)

					RG_ERCKUT_S E-1_LAEMP_EV O_2022-09-16_ N	RG_ERCKUT_S E-2_LAEMP_EV O_2022-09-16_ N	RG_ERCKUT_S E-3_LAEMP_EV O_2022-09-16_ N	RG_ERCKUT_S E-4_LAEMP_EV O_2022-09-16_ N	RG_ERCKUT_S E-5_LAEMP_EV O_2022-09-16_ N
Client sampling date / time					16-Sep-2022 11:30	16-Sep-2022 11:40	16-Sep-2022 11:50	16-Sep-2022 12:00	16-Sep-2022 12:10
Analyte	CAS Number	Method	LOR	Unit	CG2213420-001	CG2213420-002	CG2213420-003	CG2213420-004	CG2213420-005
					Result	Result	Result	Result	Result
Physical Tests									
moisture	----	E144	0.25	%	44.3	42.8	48.0	59.8	73.2
pH (1:2 soil:water)	----	E108	0.10	pH units	7.75	7.66	7.74	7.77	7.79
Particle Size									
grain size curve	----	E185A	-	-	See Attached	See Attached	See Attached	See Attached	See Attached
clay (<0.004mm)	----	EC184A	1.0	%	7.0	3.2	4.6	3.5	3.1
silt (0.063mm - 0.0312mm)	----	EC184A	1.0	%	10.5	8.2	17.3	10.8	25.4
silt (0.0312mm - 0.004mm)	----	EC184A	1.0	%	14.2	7.8	19.6	13.4	27.4
sand (0.125mm - 0.063mm)	----	EC184A	1.0	%	13.7	16.4	16.2	11.9	22.8
sand (0.25mm - 0.125mm)	----	EC184A	1.0	%	24.7	38.6	17.2	23.0	16.2
sand (0.5mm - 0.25mm)	----	EC184A	1.0	%	20.0	19.4	10.2	17.2	3.1
sand (1.0mm - 0.50mm)	----	EC184A	1.0	%	5.3	4.0	4.7	7.3	1.3
sand (2.0mm - 1.0mm)	----	EC184A	1.0	%	1.7	1.3	3.0	3.8	<1.0
gravel (>2mm)	----	EC184A	1.0	%	2.9	1.1	7.2	9.1	<1.0
Organic / Inorganic Carbon									
carbon, total [TC]	----	E351	0.050	%	8.24	6.96	9.39	12.1	14.8
carbon, inorganic [IC]	----	E354	0.050	%	0.547	0.577	0.675	0.864	1.23
carbon, inorganic [IC], (as CaCO3 equivalent)	----	E354	0.40	%	4.56	4.81	5.63	7.20	10.2
carbon, total organic [TOC]	----	EC356	0.050	%	7.69	6.38	8.72	11.2	13.6
Metals									
aluminum	7429-90-5	E440	50	mg/kg	7520	6100	5520	4340	4540
antimony	7440-36-0	E440	0.10	mg/kg	0.72	0.95	0.73	0.79	0.74
arsenic	7440-38-2	E440	0.10	mg/kg	5.36	6.91	5.55	6.08	10.6
barium	7440-39-3	E440	0.50	mg/kg	178	188	149	154	493
beryllium	7440-41-7	E440	0.10	mg/kg	0.71	0.71	0.65	0.65	0.52
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20
boron	7440-42-8	E440	5.0	mg/kg	6.7	<5.0	<5.0	5.0	5.3
cadmium	7440-43-9	E440	0.020	mg/kg	1.05	1.16	1.20	1.21	1.54



Analytical Results

Sub-Matrix: Sediment

(Matrix: Soil/Solid)

Client sample ID

					RG_ERCKUT_S E-1_LAEMP_EV O_2022-09-16_ N	RG_ERCKUT_S E-2_LAEMP_EV O_2022-09-16_ N	RG_ERCKUT_S E-3_LAEMP_EV O_2022-09-16_ N	RG_ERCKUT_S E-4_LAEMP_EV O_2022-09-16_ N	RG_ERCKUT_S E-5_LAEMP_EV O_2022-09-16_ N
Client sampling date / time					16-Sep-2022 11:30	16-Sep-2022 11:40	16-Sep-2022 11:50	16-Sep-2022 12:00	16-Sep-2022 12:10
Analyte	CAS Number	Method	LOR	Unit	CG2213420-001	CG2213420-002	CG2213420-003	CG2213420-004	CG2213420-005
					Result	Result	Result	Result	Result
Metals									
calcium	7440-70-2	E440	50	mg/kg	18800	24700	23300	25600	40100
chromium	7440-47-3	E440	0.50	mg/kg	12.0	10.7	10.2	8.72	10.2
cobalt	7440-48-4	E440	0.10	mg/kg	6.56	6.43	5.25	4.93	3.65
copper	7440-50-8	E440	0.50	mg/kg	15.2	14.5	15.5	14.6	14.5
iron	7439-89-6	E440	50	mg/kg	10500	16100	11900	13000	28500
lead	7439-92-1	E440	0.50	mg/kg	10.1	10.6	8.98	8.68	6.95
lithium	7439-93-2	E440	2.0	mg/kg	8.7	7.3	7.1	5.4	5.4
magnesium	7439-95-4	E440	20	mg/kg	2750	4480	4370	3210	5710
manganese	7439-96-5	E440	1.0	mg/kg	132	245	139	147	270
mercury	7439-97-6	E510	0.0050	mg/kg	0.0493	0.0363	0.0540	0.0457	0.0523
molybdenum	7439-98-7	E440	0.10	mg/kg	0.91	1.40	1.15	1.19	1.09
nickel	7440-02-0	E440	0.50	mg/kg	17.8	20.7	19.3	19.7	16.2
phosphorus	7723-14-0	E440	50	mg/kg	962	1140	997	1030	2090
potassium	7440-09-7	E440	100	mg/kg	1850	1470	1250	1320	1100
selenium	7782-49-2	E440	0.20	mg/kg	2.25	4.42	3.49	25.3	44.8
silver	7440-22-4	E440	0.10	mg/kg	0.25	0.18	0.25	0.20	0.24
sodium	7440-23-5	E440	50	mg/kg	52	<50	53	50	61
strontium	7440-24-6	E440	0.50	mg/kg	48.5	54.4	46.9	44.7	57.0
sulfur	7704-34-9	E440	1000	mg/kg	<1000	<1000	<1000	<1000	<1000
thallium	7440-28-0	E440	0.050	mg/kg	0.223	0.213	0.190	0.156	0.169
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
titanium	7440-32-6	E440	1.0	mg/kg	9.1	9.2	10.1	7.3	12.5
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
uranium	7440-61-1	E440	0.050	mg/kg	1.12	1.15	1.14	1.27	1.26
vanadium	7440-62-2	E440	0.20	mg/kg	30.5	29.3	25.9	23.8	22.8
zinc	7440-66-6	E440	2.0	mg/kg	95.6	110	96.9	98.1	80.9
zirconium	7440-67-7	E440	1.0	mg/kg	<1.0	<1.0	<1.0	<1.0	1.0

Polycyclic Aromatic Hydrocarbons



Analytical Results

Sub-Matrix: Sediment

Client sample ID

(Matrix: Soil/Solid)

					RG_ERCKUT_S E-1_LAEMP_EV O_2022-09-16_ N	RG_ERCKUT_S E-2_LAEMP_EV O_2022-09-16_ N	RG_ERCKUT_S E-3_LAEMP_EV O_2022-09-16_ N	RG_ERCKUT_S E-4_LAEMP_EV O_2022-09-16_ N	RG_ERCKUT_S E-5_LAEMP_EV O_2022-09-16_ N
Client sampling date / time					16-Sep-2022 11:30	16-Sep-2022 11:40	16-Sep-2022 11:50	16-Sep-2022 12:00	16-Sep-2022 12:10
Analyte	CAS Number	Method	LOR	Unit	CG2213420-001	CG2213420-002	CG2213420-003	CG2213420-004	CG2213420-005
					Result	Result	Result	Result	Result
Polycyclic Aromatic Hydrocarbons									
acenaphthene	83-32-9	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
acenaphthylene	208-96-8	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
acridine	260-94-6	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	0.051	0.053
anthracene	120-12-7	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
benz(a)anthracene	56-55-3	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
benzo(a)pyrene	50-32-8	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
benzo(b+j)fluoranthene	n/a	E641A	0.050	mg/kg	0.128	0.068	0.064	0.151	0.151
benzo(b+j+k)fluoranthene	n/a	E641A	0.075	mg/kg	0.128	<0.075	<0.075	0.151	0.151
benzo(g,h,i)perylene	191-24-2	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
benzo(k)fluoranthene	207-08-9	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
chrysene	218-01-9	E641A	0.050	mg/kg	0.254	0.137	0.131	0.303	0.306
dibenz(a,h)anthracene	53-70-3	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
fluoranthene	206-44-0	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	0.061	0.072
fluorene	86-73-7	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	0.067	0.095
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
methylnaphthalene, 1-	90-12-0	E641A	0.030	mg/kg	0.216	0.160	0.193	0.396	0.434
methylnaphthalene, 1+2-	----	E641A	0.050	mg/kg	0.556	0.410	0.494	1.01	1.11
methylnaphthalene, 2-	91-57-6	E641A	0.030	mg/kg	0.340	0.250	0.301	0.615	0.678
naphthalene	91-20-3	E641A	0.010	mg/kg	0.178	0.147	0.159	0.296	0.287
phenanthrene	85-01-8	E641A	0.050	mg/kg	0.549	0.386	0.504	0.963	0.937
pyrene	129-00-0	E641A	0.050	mg/kg	0.050	<0.050	<0.050	0.077	0.093
quinoline	91-22-5	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
B(a)P total potency equivalents [B(a)P TPE]	----	E641A	0.065	mg/kg	0.073	0.066	0.065	0.076	0.076
IACR (CCME)	----	E641A	0.60	-	1.34	0.91	0.88	1.51	1.51
IACR AB (coarse)	----	E641A	0.10	-	<0.10	<0.10	<0.10	<0.10	<0.10
IACR AB (fine)	----	E641A	0.10	-	0.10	<0.10	<0.10	0.11	0.11
PAHs, total (BC Sched 3.4)	n/a	E641A	0.20	mg/kg	1.37	0.92	1.10	2.38	2.47
PAHs, total (EPA 16)	n/a	E641A	0.20	mg/kg	1.16	0.74	0.86	1.92	1.94



Analytical Results

Sub-Matrix: Sediment

(Matrix: Soil/Solid)

Client sample ID

					RG_ERCKUT_S E-1_LAEMP_EV O_2022-09-16_ N	RG_ERCKUT_S E-2_LAEMP_EV O_2022-09-16_ N	RG_ERCKUT_S E-3_LAEMP_EV O_2022-09-16_ N	RG_ERCKUT_S E-4_LAEMP_EV O_2022-09-16_ N	RG_ERCKUT_S E-5_LAEMP_EV O_2022-09-16_ N
Client sampling date / time					16-Sep-2022 11:30	16-Sep-2022 11:40	16-Sep-2022 11:50	16-Sep-2022 12:00	16-Sep-2022 12:10
Analyte	CAS Number	Method	LOR	Unit	CG2213420-001	CG2213420-002	CG2213420-003	CG2213420-004	CG2213420-005
					Result	Result	Result	Result	Result
Polycyclic Aromatic Hydrocarbons Surrogates									
acridine-d9	34749-75-2	E641A	0.1	%	108	103	103	96.1	111
chrysene-d12	1719-03-5	E641A	0.1	%	128	124	116	117	124
naphthalene-d8	1146-65-2	E641A	0.1	%	122	115	112	111	124
phenanthrene-d10	1517-22-2	E641A	0.1	%	124	116	120	109	125

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Sediment

Client sample ID

(Matrix: Soil/Solid)

					RG_RIVER_SE-5 _LAEMP_EVO_ 2022-09-16_N	RG_ALUSM_SE- 1_LAEMP_EVO 2022-09-18_N	RG_ALUSM_SE- 2_LAEMP_EVO 2022-09-18_N	RG_ALUSM_SE- 3_LAEMP_EVO 2022-09-18_N	RG_RIVER_SE-2 _LAEMP_EVO_ 2022-09-18_N
Client sampling date / time					16-Sep-2022 12:10	18-Sep-2022 14:00	18-Sep-2022 14:10	18-Sep-2022 14:20	18-Sep-2022 14:10
Analyte	CAS Number	Method	LOR	Unit	CG2213420-006	CG2213420-007	CG2213420-008	CG2213420-009	CG2213420-010
					Result	Result	Result	Result	Result
Physical Tests									
moisture	----	E144	0.25	%	74.3	44.1	43.7	48.1	42.2
pH (1:2 soil:water)	----	E108	0.10	pH units	7.74	7.80	7.67	7.83	7.97
Particle Size									
grain size curve	----	E185A	-	-	See Attached	See Attached	See Attached	See Attached	See Attached
clay (<0.004mm)	----	EC184A	1.0	%	3.2	4.0	3.5	3.6	3.6
silt (0.063mm - 0.0312mm)	----	EC184A	1.0	%	24.3	11.3	11.5	13.8	12.5
silt (0.0312mm - 0.004mm)	----	EC184A	1.0	%	26.9	11.3	11.6	12.9	12.2
sand (0.125mm - 0.063mm)	----	EC184A	1.0	%	22.2	20.9	20.1	25.1	20.4
sand (0.25mm - 0.125mm)	----	EC184A	1.0	%	18.0	28.1	30.5	31.8	29.8
sand (0.5mm - 0.25mm)	----	EC184A	1.0	%	3.3	13.4	19.8	9.2	19.0
sand (1.0mm - 0.50mm)	----	EC184A	1.0	%	1.2	6.2	2.7	1.5	2.1
sand (2.0mm - 1.0mm)	----	EC184A	1.0	%	<1.0	3.9	<1.0	<1.0	<1.0
gravel (>2mm)	----	EC184A	1.0	%	<1.0	<1.0	<1.0	1.5	<1.0
Organic / Inorganic Carbon									
carbon, total [TC]	----	E351	0.050	%	14.1	4.16	4.04	3.94	3.92
carbon, inorganic [IC]	----	E354	0.050	%	1.22	0.982	0.946	0.971	0.925
carbon, inorganic [IC], (as CaCO3 equivalent)	----	E354	0.40	%	10.2	8.18	7.88	8.09	7.70
carbon, total organic [TOC]	----	EC356	0.050	%	12.9	3.18	3.09	2.97	3.00
Metals									
aluminum	7429-90-5	E440	50	mg/kg	4030	7740	6830	7920	7780
antimony	7440-36-0	E440	0.10	mg/kg	0.73	0.41	0.37	0.42	0.44
arsenic	7440-38-2	E440	0.10	mg/kg	9.84	5.98	5.37	5.89	5.39
barium	7440-39-3	E440	0.50	mg/kg	455	163	152	161	155
beryllium	7440-41-7	E440	0.10	mg/kg	0.45	0.58	0.55	0.61	0.60
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20
boron	7440-42-8	E440	5.0	mg/kg	<5.0	6.8	5.8	6.4	6.9
cadmium	7440-43-9	E440	0.020	mg/kg	1.58	0.573	0.537	0.610	0.564
calcium	7440-70-2	E440	50	mg/kg	39500	32600	29800	34100	31700



Analytical Results

Sub-Matrix: Sediment

Client sample ID

(Matrix: Soil/Solid)

					RG_RIVER_SE-5 _LAEMP_EVO_ 2022-09-16_N	RG_ALUSM_SE- 1_LAEMP_EVO 2022-09-18_N	RG_ALUSM_SE- 2_LAEMP_EVO 2022-09-18_N	RG_ALUSM_SE- 3_LAEMP_EVO 2022-09-18_N	RG_RIVER_SE-2 _LAEMP_EVO_ 2022-09-18_N
Client sampling date / time					16-Sep-2022 12:10	18-Sep-2022 14:00	18-Sep-2022 14:10	18-Sep-2022 14:20	18-Sep-2022 14:10
Analyte	CAS Number	Method	LOR	Unit	CG2213420-006	CG2213420-007	CG2213420-008	CG2213420-009	CG2213420-010
					Result	Result	Result	Result	Result
Metals									
chromium	7440-47-3	E440	0.50	mg/kg	9.24	11.6	10.4	12.3	11.5
cobalt	7440-48-4	E440	0.10	mg/kg	3.56	4.91	4.24	5.17	4.82
copper	7440-50-8	E440	0.50	mg/kg	13.9	13.7	11.9	13.9	13.1
iron	7439-89-6	E440	50	mg/kg	26600	16100	13700	15800	14600
lead	7439-92-1	E440	0.50	mg/kg	6.69	10.2	8.91	10.2	10.4
lithium	7439-93-2	E440	2.0	mg/kg	4.5	13.9	11.8	13.8	12.7
magnesium	7439-95-4	E440	20	mg/kg	5670	8600	9420	9450	8320
manganese	7439-96-5	E440	1.0	mg/kg	266	139	178	152	137
mercury	7439-97-6	E510	0.0050	mg/kg	0.0510	0.0278	0.0258	0.0279	0.0279
molybdenum	7439-98-7	E440	0.10	mg/kg	1.03	1.25	1.05	1.18	1.06
nickel	7440-02-0	E440	0.50	mg/kg	15.6	15.8	13.6	16.6	15.3
phosphorus	7723-14-0	E440	50	mg/kg	1870	978	939	974	1130
potassium	7440-09-7	E440	100	mg/kg	950	1560	1360	1550	1520
selenium	7782-49-2	E440	0.20	mg/kg	44.4	0.91	0.68	1.00	0.86
silver	7440-22-4	E440	0.10	mg/kg	0.24	0.10	0.10	0.12	0.11
sodium	7440-23-5	E440	50	mg/kg	61	82	78	72	73
strontium	7440-24-6	E440	0.50	mg/kg	51.5	51.6	43.9	51.2	49.4
sulfur	7704-34-9	E440	1000	mg/kg	<1000	<1000	<1000	<1000	<1000
thallium	7440-28-0	E440	0.050	mg/kg	0.150	0.205	0.176	0.213	0.237
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
titanium	7440-32-6	E440	1.0	mg/kg	9.8	6.8	7.9	7.6	5.6
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
uranium	7440-61-1	E440	0.050	mg/kg	1.22	0.664	0.587	0.697	0.692
vanadium	7440-62-2	E440	0.20	mg/kg	20.8	20.8	18.2	20.9	19.8
zinc	7440-66-6	E440	2.0	mg/kg	79.2	90.9	83.6	92.8	88.3
zirconium	7440-67-7	E440	1.0	mg/kg	1.1	<1.0	<1.0	<1.0	<1.0
Polycyclic Aromatic Hydrocarbons									
acenaphthene	83-32-9	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
acenaphthylene	208-96-8	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050



Analytical Results

Sub-Matrix: Sediment

Client sample ID

(Matrix: Soil/Solid)

					RG_RIVER_SE-5 _LAEMP_EVO_ 2022-09-16_N	RG_ALUSM_SE- 1_LAEMP_EVO 2022-09-18_N	RG_ALUSM_SE- 2_LAEMP_EVO 2022-09-18_N	RG_ALUSM_SE- 3_LAEMP_EVO 2022-09-18_N	RG_RIVER_SE-2 _LAEMP_EVO_ 2022-09-18_N
Client sampling date / time					16-Sep-2022 12:10	18-Sep-2022 14:00	18-Sep-2022 14:10	18-Sep-2022 14:20	18-Sep-2022 14:10
Analyte	CAS Number	Method	LOR	Unit	CG2213420-006	CG2213420-007	CG2213420-008	CG2213420-009	CG2213420-010
					Result	Result	Result	Result	Result
Polycyclic Aromatic Hydrocarbons									
acridine	260-94-6	E641A	0.050	mg/kg	0.050	<0.050	<0.050	<0.050	<0.050
anthracene	120-12-7	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
benzo(a)anthracene	56-55-3	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
benzo(a)pyrene	50-32-8	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
benzo(b+j)fluoranthene	n/a	E641A	0.050	mg/kg	0.122	<0.050	<0.050	<0.050	<0.050
benzo(b+j+k)fluoranthene	n/a	E641A	0.075	mg/kg	0.122	<0.075	<0.075	<0.075	<0.075
benzo(g,h,i)perylene	191-24-2	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
benzo(k)fluoranthene	207-08-9	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
chrysene	218-01-9	E641A	0.050	mg/kg	0.269	0.054	<0.050	<0.050	0.066
dibenz(a,h)anthracene	53-70-3	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
fluoranthene	206-44-0	E641A	0.050	mg/kg	0.054	<0.050	<0.050	<0.050	<0.050
fluorene	86-73-7	E641A	0.050	mg/kg	0.086	<0.050	<0.050	<0.050	<0.050
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
methylnaphthalene, 1-	90-12-0	E641A	0.030	mg/kg	0.407	0.033	0.033	<0.030	0.045
methylnaphthalene, 1+2-	----	E641A	0.050	mg/kg	1.05	0.086	0.089	<0.050	0.120
methylnaphthalene, 2-	91-57-6	E641A	0.030	mg/kg	0.647	0.053	0.056	0.048	0.075
naphthalene	91-20-3	E641A	0.010	mg/kg	0.273	0.045	0.042	0.039	0.058
phenanthrene	85-01-8	E641A	0.050	mg/kg	0.869	0.094	0.084	0.078	0.118
pyrene	129-00-0	E641A	0.050	mg/kg	0.080	<0.050	<0.050	<0.050	<0.050
quinoline	91-22-5	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
B(a)P total potency equivalents [B(a)P TPE]	----	E641A	0.065	mg/kg	0.073	<0.065	<0.065	<0.065	<0.065
IACR (CCME)	----	E641A	0.60	-	1.31	0.60	<0.60	<0.60	0.61
IACR AB (coarse)	----	E641A	0.10	-	<0.10	<0.10	<0.10	<0.10	<0.10
IACR AB (fine)	----	E641A	0.10	-	0.10	<0.10	<0.10	<0.10	<0.10
PAHs, total (BC Sched 3.4)	n/a	E641A	0.20	mg/kg	2.28	0.25	<0.20	<0.20	0.32
PAHs, total (EPA 16)	n/a	E641A	0.20	mg/kg	1.75	<0.20	<0.20	<0.20	0.24
Polycyclic Aromatic Hydrocarbons Surrogates									
acridine-d9	34749-75-2	E641A	0.1	%	101	96.2	87.4	90.8	91.2
chrysene-d12	1719-03-5	E641A	0.1	%	120	115	105	108	112



Analytical Results

Sub-Matrix: Sediment

(Matrix: Soil/Solid)

					Client sample ID	RG_RIVER_SE-5 _LAEMP_EVO_ 2022-09-16_N	RG_ALUSM_SE- 1_LAEMP_EVO _2022-09-18_N	RG_ALUSM_SE- 2_LAEMP_EVO _2022-09-18_N	RG_ALUSM_SE- 3_LAEMP_EVO _2022-09-18_N	RG_RIVER_SE-2 _LAEMP_EVO_ 2022-09-18_N
					Client sampling date / time	16-Sep-2022 12:10	18-Sep-2022 14:00	18-Sep-2022 14:10	18-Sep-2022 14:20	18-Sep-2022 14:10
Analyte	CAS Number	Method	LOR	Unit	CG2213420-006	CG2213420-007	CG2213420-008	CG2213420-009	CG2213420-010	
					Result	Result	Result	Result	Result	
Polycyclic Aromatic Hydrocarbons Surrogates										
naphthalene-d8	1146-65-2	E641A	0.1	%	110	112	104	109	112	
phenanthrene-d10	1517-22-2	E641A	0.1	%	112	104	95.4	97.2	101	

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Sediment
 (Matrix: Soil/Solid)

Client sample ID

					RG_RIVER_SE-5 _LAEMP_EVO_ 2022-09-18_N	RG_MICOMP_S E-1_LAEMP_EV O_2022-09-18_ N	RG_MICOMP_S E-2_LAEMP_EV O_2022-09-18_ N	RG_MICOMP_S E-3_LAEMP_EV O_2022-09-18_ N	RG_MICOMP_S E-4_LAEMP_EV O_2022-09-18_ N
Client sampling date / time					18-Sep-2022 12:00	18-Sep-2022 13:00	18-Sep-2022 14:45	18-Sep-2022 14:15	18-Sep-2022 11:00
Analyte	CAS Number	Method	LOR	Unit	CG2213420-011	CG2213420-012	CG2213420-013	CG2213420-014	CG2213420-015
					Result	Result	Result	Result	Result
Physical Tests									
moisture	----	E144	0.25	%	44.4	39.3	38.4	58.3	57.2
pH (1:2 soil:water)	----	E108	0.10	pH units	7.79	8.21	8.07	7.87	8.01
Particle Size									
grain size curve	----	E185A	-	-	See Attached	See Attached	See Attached	See Attached	See Attached
clay (<0.004mm)	----	EC184A	1.0	%	2.6	2.9	2.4	3.8	2.9
silt (0.063mm - 0.0312mm)	----	EC184A	1.0	%	14.9	9.5	8.9	15.5	11.8
silt (0.0312mm - 0.004mm)	----	EC184A	1.0	%	13.3	8.9	8.4	16.1	11.3
sand (0.125mm - 0.063mm)	----	EC184A	1.0	%	23.0	17.5	15.0	7.3	16.1
sand (0.25mm - 0.125mm)	----	EC184A	1.0	%	27.5	30.1	22.1	13.9	25.0
sand (0.5mm - 0.25mm)	----	EC184A	1.0	%	15.3	20.0	26.0	28.4	18.4
sand (1.0mm - 0.50mm)	----	EC184A	1.0	%	2.5	5.4	11.0	12.1	8.3
sand (2.0mm - 1.0mm)	----	EC184A	1.0	%	<1.0	2.0	5.0	2.8	4.5
gravel (>2mm)	----	EC184A	1.0	%	<1.0	3.7	1.2	<1.0	1.7
Organic / Inorganic Carbon									
carbon, total [TC]	----	E351	0.050	%	5.38	3.87	4.86	6.58	4.76
carbon, inorganic [IC]	----	E354	0.050	%	0.813	0.907	1.07	1.92	1.47
carbon, inorganic [IC], (as CaCO3 equivalent)	----	E354	0.40	%	6.77	7.56	8.94	16.0	12.3
carbon, total organic [TOC]	----	EC356	0.050	%	4.57	2.96	3.79	4.66	3.29
Metals									
aluminum	7429-90-5	E440	50	mg/kg	5810	5260	5350	4110	4810
antimony	7440-36-0	E440	0.10	mg/kg	0.80	0.80	0.81	0.72	0.68
arsenic	7440-38-2	E440	0.10	mg/kg	5.54	5.90	6.40	6.15	5.65
barium	7440-39-3	E440	0.50	mg/kg	190	210	196	190	236
beryllium	7440-41-7	E440	0.10	mg/kg	0.55	0.49	0.49	0.42	0.44
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20
boron	7440-42-8	E440	5.0	mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0
cadmium	7440-43-9	E440	0.020	mg/kg	1.18	1.07	1.24	0.928	1.12



Analytical Results

Sub-Matrix: Sediment

(Matrix: Soil/Solid)

Client sample ID

					RG_RIVER_SE-5 _LAEMP_EVO_ 2022-09-18_N	RG_MICOMP_S E-1_LAEMP_EV O_2022-09-18_ N	RG_MICOMP_S E-2_LAEMP_EV O_2022-09-18_ N	RG_MICOMP_S E-3_LAEMP_EV O_2022-09-18_ N	RG_MICOMP_S E-4_LAEMP_EV O_2022-09-18_ N
Client sampling date / time					18-Sep-2022 12:00	18-Sep-2022 13:00	18-Sep-2022 14:45	18-Sep-2022 14:15	18-Sep-2022 11:00
Analyte	CAS Number	Method	LOR	Unit	CG2213420-011	CG2213420-012	CG2213420-013	CG2213420-014	CG2213420-015
					Result	Result	Result	Result	Result
Metals									
calcium	7440-70-2	E440	50	mg/kg	28000	31400	34100	58400	50900
chromium	7440-47-3	E440	0.50	mg/kg	11.2	10.0	10.2	8.79	10.1
cobalt	7440-48-4	E440	0.10	mg/kg	4.60	4.65	4.41	3.81	4.35
copper	7440-50-8	E440	0.50	mg/kg	13.1	12.3	11.9	11.1	11.0
iron	7439-89-6	E440	50	mg/kg	12200	17600	12000	12200	12100
lead	7439-92-1	E440	0.50	mg/kg	8.67	8.54	8.71	8.19	8.12
lithium	7439-93-2	E440	2.0	mg/kg	8.0	6.9	6.9	5.2	6.6
magnesium	7439-95-4	E440	20	mg/kg	5850	5150	5410	5600	5860
manganese	7439-96-5	E440	1.0	mg/kg	135	228	204	199	169
mercury	7439-97-6	E510	0.0050	mg/kg	0.0394	0.0449	0.0301	0.0239	0.0308
molybdenum	7439-98-7	E440	0.10	mg/kg	1.37	1.39	1.49	1.47	1.27
nickel	7440-02-0	E440	0.50	mg/kg	20.8	18.7	18.3	18.3	20.3
phosphorus	7723-14-0	E440	50	mg/kg	1200	1190	1160	1100	1220
potassium	7440-09-7	E440	100	mg/kg	1060	1030	1060	800	840
selenium	7782-49-2	E440	0.20	mg/kg	2.49	2.32	1.11	1.91	3.09
silver	7440-22-4	E440	0.10	mg/kg	0.18	0.15	0.16	0.13	0.15
sodium	7440-23-5	E440	50	mg/kg	56	59	59	61	64
strontium	7440-24-6	E440	0.50	mg/kg	58.4	60.1	61.5	92.0	75.4
sulfur	7704-34-9	E440	1000	mg/kg	<1000	<1000	<1000	<1000	<1000
thallium	7440-28-0	E440	0.050	mg/kg	0.213	0.175	0.189	0.156	0.167
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
titanium	7440-32-6	E440	1.0	mg/kg	17.2	19.7	20.3	13.5	18.7
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
uranium	7440-61-1	E440	0.050	mg/kg	1.05	0.979	1.56	1.10	1.02
vanadium	7440-62-2	E440	0.20	mg/kg	30.8	29.1	28.9	25.2	28.6
zinc	7440-66-6	E440	2.0	mg/kg	92.6	93.1	85.1	82.2	89.7
zirconium	7440-67-7	E440	1.0	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0

Polycyclic Aromatic Hydrocarbons



Analytical Results

Sub-Matrix: Sediment
 (Matrix: Soil/Solid)

Client sample ID

					RG_RIVER_SE-5 _LAEMP_EVO_ 2022-09-18_N	RG_MICOMP_S E-1_LAEMP_EV O_2022-09-18_ N	RG_MICOMP_S E-2_LAEMP_EV O_2022-09-18_ N	RG_MICOMP_S E-3_LAEMP_EV O_2022-09-18_ N	RG_MICOMP_S E-4_LAEMP_EV O_2022-09-18_ N
Client sampling date / time					18-Sep-2022 12:00	18-Sep-2022 13:00	18-Sep-2022 14:45	18-Sep-2022 14:15	18-Sep-2022 11:00
Analyte	CAS Number	Method	LOR	Unit	CG2213420-011	CG2213420-012	CG2213420-013	CG2213420-014	CG2213420-015
					Result	Result	Result	Result	Result
Polycyclic Aromatic Hydrocarbons									
acenaphthene	83-32-9	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
acenaphthylene	208-96-8	E641A	0.050	mg/kg	0.073	0.093	<0.050	<0.050	<0.050
acridine	260-94-6	E641A	0.050	mg/kg	0.055	<0.050	<0.050	<0.050	<0.050
anthracene	120-12-7	E641A	0.050	mg/kg	0.112	0.114	<0.050	<0.050	<0.050
benz(a)anthracene	56-55-3	E641A	0.050	mg/kg	0.374	0.246	<0.050	<0.050	<0.050
benzo(a)pyrene	50-32-8	E641A	0.050	mg/kg	0.359	0.316	<0.050	<0.050	<0.050
benzo(b+j)fluoranthene	n/a	E641A	0.050	mg/kg	0.625	0.536	<0.050	0.068	<0.050
benzo(b+j+k)fluoranthene	n/a	E641A	0.075	mg/kg	0.821	0.702	<0.075	<0.075	<0.075
benzo(g,h,i)perylene	191-24-2	E641A	0.050	mg/kg	0.226	0.206	<0.050	<0.050	<0.050
benzo(k)fluoranthene	207-08-9	E641A	0.050	mg/kg	0.196	0.166	<0.050	<0.050	<0.050
chrysene	218-01-9	E641A	0.050	mg/kg	0.530	0.341	0.069	0.066	<0.050
dibenz(a,h)anthracene	53-70-3	E641A	0.050	mg/kg	0.069	0.061	<0.050	<0.050	<0.050
fluoranthene	206-44-0	E641A	0.050	mg/kg	0.502	0.308	<0.050	<0.050	<0.050
fluorene	86-73-7	E641A	0.050	mg/kg	0.084	0.106	<0.050	<0.050	<0.050
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.050	mg/kg	0.255	0.251	<0.050	<0.050	<0.050
methylnaphthalene, 1-	90-12-0	E641A	0.030	mg/kg	0.293	0.229	0.140	0.099	0.085
methylnaphthalene, 1+2-	----	E641A	0.050	mg/kg	0.731	0.655	0.318	0.239	0.203
methylnaphthalene, 2-	91-57-6	E641A	0.030	mg/kg	0.438	0.426	0.178	0.140	0.118
naphthalene	91-20-3	E641A	0.010	mg/kg	0.567	0.606	0.105	0.098	0.059
phenanthrene	85-01-8	E641A	0.050	mg/kg	0.519	0.404	0.206	0.150	0.117
pyrene	129-00-0	E641A	0.050	mg/kg	0.342	0.223	<0.050	<0.050	<0.050
quinoline	91-22-5	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
B(a)P total potency equivalents [B(a)P TPE]	----	E641A	0.065	mg/kg	0.580	0.502	<0.065	0.065	<0.065
IACR (CCME)	----	E641A	0.60	-	7.91	6.54	0.61	0.88	<0.60
IACR AB (coarse)	----	E641A	0.10	-	0.35	0.29	<0.10	<0.10	<0.10
IACR AB (fine)	----	E641A	0.10	-	0.66	0.55	<0.10	<0.10	<0.10
PAHs, total (BC Sched 3.4)	n/a	E641A	0.20	mg/kg	3.97	3.24	0.56	0.45	0.29
PAHs, total (EPA 16)	n/a	E641A	0.20	mg/kg	4.83	3.98	0.38	0.38	<0.20



Analytical Results

Sub-Matrix: Sediment
 (Matrix: Soil/Solid)

					Client sample ID	RG_RIVER_SE-5 _LAEMP_EVO_ 2022-09-18_N	RG_MICOMP_S E-1_LAEMP_EV O_2022-09-18_ N	RG_MICOMP_S E-2_LAEMP_EV O_2022-09-18_ N	RG_MICOMP_S E-3_LAEMP_EV O_2022-09-18_ N	RG_MICOMP_S E-4_LAEMP_EV O_2022-09-18_ N
					Client sampling date / time	18-Sep-2022 12:00	18-Sep-2022 13:00	18-Sep-2022 14:45	18-Sep-2022 14:15	18-Sep-2022 11:00
Analyte	CAS Number	Method	LOR	Unit	CG2213420-011	CG2213420-012	CG2213420-013	CG2213420-014	CG2213420-015	
					Result	Result	Result	Result	Result	
Polycyclic Aromatic Hydrocarbons Surrogates										
acridine-d9	34749-75-2	E641A	0.1	%	90.8	93.8	89.4	98.2	90.6	
chrysene-d12	1719-03-5	E641A	0.1	%	107	111	106	118	110	
naphthalene-d8	1146-65-2	E641A	0.1	%	104	111	107	115	105	
phenanthrene-d10	1517-22-2	E641A	0.1	%	99.0	102	96.2	107	101	

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Sediment

(Matrix: Soil/Solid)

Client sample ID

					RG_MICOMP_S E-5_LAEMP_EV O_2022-09-18_ N	RG_BOCKRD_S E-1_LAEMP_EV O_2022-09-20	RG_BOCKRD_S E-2_LAEMP_EV O_2022-09-20	RG_BOCKRD_S E-3_LAEMP_EV O_2022-09-20	RG_ERCKDT_S E-1_LAEMP_EV O_2022-09-19_ N
Client sampling date / time					18-Sep-2022 12:00	20-Sep-2022 14:30	20-Sep-2022 14:40	20-Sep-2022 14:50	19-Sep-2022 13:00
Analyte	CAS Number	Method	LOR	Unit	CG2213420-016	CG2213420-017	CG2213420-018	CG2213420-019	CG2213420-020
					Result	Result	Result	Result	Result
Physical Tests									
moisture	----	E144	0.25	%	34.5	----	----	----	71.8
pH (1:2 soil:water)	----	E108	0.10	pH units	7.92	7.92	7.95	8.00	8.14
Particle Size									
grain size curve	----	E185A	-	-	See Attached	See Attached	See Attached	See Attached	See Attached
clay (<0.004mm)	----	EC184A	1.0	%	2.5	9.1	7.7	8.5	8.1
silt (0.063mm - 0.0312mm)	----	EC184A	1.0	%	15.1	24.3	22.8	20.0	17.8
silt (0.0312mm - 0.004mm)	----	EC184A	1.0	%	13.2	41.3	35.5	35.3	26.1
sand (0.125mm - 0.063mm)	----	EC184A	1.0	%	23.2	11.8	14.4	13.1	8.3
sand (0.25mm - 0.125mm)	----	EC184A	1.0	%	26.0	7.9	9.6	8.9	10.1
sand (0.5mm - 0.25mm)	----	EC184A	1.0	%	16.3	3.7	6.1	6.4	15.8
sand (1.0mm - 0.50mm)	----	EC184A	1.0	%	3.1	1.4	3.0	3.1	10.5
sand (2.0mm - 1.0mm)	----	EC184A	1.0	%	<1.0	<1.0	<1.0	1.2	2.5
gravel (>2mm)	----	EC184A	1.0	%	<1.0	<1.0	<1.0	3.5	<1.0
Organic / Inorganic Carbon									
carbon, total [TC]	----	E351	0.050	%	4.64	15.5	14.9	18.1	12.0
carbon, inorganic [IC]	----	E354	0.050	%	0.760	6.28	7.24	6.87	2.99
carbon, inorganic [IC], (as CaCO3 equivalent)	----	E354	0.40	%	6.33	52.3	60.4	57.3	24.9
carbon, total organic [TOC]	----	EC356	0.050	%	3.88	9.22	7.66	11.2	9.01
Metals									
aluminum	7429-90-5	E440	50	mg/kg	5330	2870	2850	2730	3860
antimony	7440-36-0	E440	0.10	mg/kg	0.79	0.74	0.66	0.61	1.07
arsenic	7440-38-2	E440	0.10	mg/kg	6.02	2.96	2.55	2.50	14.0
barium	7440-39-3	E440	0.50	mg/kg	184	3980	3950	4560	202
beryllium	7440-41-7	E440	0.10	mg/kg	0.49	0.23	0.24	0.25	0.59
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.28 ^{DLM}	<0.28 ^{DLM}	<0.29 ^{DLM}	<0.20
boron	7440-42-8	E440	5.0	mg/kg	<5.0	7.8	<6.9 ^{DLM}	<7.2 ^{DLM}	6.4
cadmium	7440-43-9	E440	0.020	mg/kg	1.10	7.50	7.84	7.49	4.54



Analytical Results

Sub-Matrix: Sediment

(Matrix: Soil/Solid)

Client sample ID

					RG_MICOMP_S E-5_LAEMP_EV O_2022-09-18_ N	RG_BOCKRD_S E-1_LAEMP_EV O_2022-09-20	RG_BOCKRD_S E-2_LAEMP_EV O_2022-09-20	RG_BOCKRD_S E-3_LAEMP_EV O_2022-09-20	RG_ERCKDT_S E-1_LAEMP_EV O_2022-09-19_ N
Client sampling date / time					18-Sep-2022 12:00	20-Sep-2022 14:30	20-Sep-2022 14:40	20-Sep-2022 14:50	19-Sep-2022 13:00
Analyte	CAS Number	Method	LOR	Unit	CG2213420-016	CG2213420-017	CG2213420-018	CG2213420-019	CG2213420-020
					Result	Result	Result	Result	Result
Metals									
calcium	7440-70-2	E440	50	mg/kg	28200	248000	262000	221000	95300
chromium	7440-47-3	E440	0.50	mg/kg	10.4	6.22	5.74	11.5	8.78
cobalt	7440-48-4	E440	0.10	mg/kg	4.41	5.62	4.84	4.94	124
copper	7440-50-8	E440	0.50	mg/kg	12.3	13.4	12.4	12.2	14.7
iron	7439-89-6	E440	50	mg/kg	12800	5500	4870	4950	22300
lead	7439-92-1	E440	0.50	mg/kg	9.29	6.19	5.73	5.87	9.15
lithium	7439-93-2	E440	2.0	mg/kg	6.8	5.9	5.8	5.2	5.0
magnesium	7439-95-4	E440	20	mg/kg	5610	6710	6780	5820	6660
manganese	7439-96-5	E440	1.0	mg/kg	140	183	154	166	2670
mercury	7439-97-6	E510	0.0050	mg/kg	0.0360	0.0305	0.0258	0.0266	0.0422
molybdenum	7439-98-7	E440	0.10	mg/kg	1.43	1.34	1.31	1.86	2.33
nickel	7440-02-0	E440	0.50	mg/kg	19.8	116	115	102	72.9
phosphorus	7723-14-0	E440	50	mg/kg	1160	586	551	512	1540
potassium	7440-09-7	E440	100	mg/kg	940	1000	920	880	1080
selenium	7782-49-2	E440	0.20	mg/kg	2.08	16.6	16.8	17.7	22.3
silver	7440-22-4	E440	0.10	mg/kg	0.17	0.14	<0.14 ^{DLM}	<0.14 ^{DLM}	0.19
sodium	7440-23-5	E440	50	mg/kg	52	170	163	138	81
strontium	7440-24-6	E440	0.50	mg/kg	53.7	513	502	476	82.7
sulfur	7704-34-9	E440	1000	mg/kg	<1000	5500	5500	5000	<1000
thallium	7440-28-0	E440	0.050	mg/kg	0.192	0.231	0.234	0.228	0.273
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.8 ^{DLM}	<2.8 ^{DLM}	<2.9 ^{DLM}	<2.0
titanium	7440-32-6	E440	1.0	mg/kg	17.9	38.1	34.8	35.5	8.7
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	1.27	1.20	0.94	<0.50
uranium	7440-61-1	E440	0.050	mg/kg	1.03	3.12	3.64	2.84	1.77
vanadium	7440-62-2	E440	0.20	mg/kg	30.0	14.1	13.2	13.0	22.6
zinc	7440-66-6	E440	2.0	mg/kg	90.2	487	514	493	208
zirconium	7440-67-7	E440	1.0	mg/kg	<1.0	1.6	1.4	<1.4 ^{DLM}	<1.0

Polycyclic Aromatic Hydrocarbons



Analytical Results

Sub-Matrix: Sediment
 (Matrix: Soil/Solid)

Client sample ID

					RG_MICOMP_S E-5_LAEMP_EV O_2022-09-18_ N	RG_BOCKRD_S E-1_LAEMP_EV O_2022-09-20	RG_BOCKRD_S E-2_LAEMP_EV O_2022-09-20	RG_BOCKRD_S E-3_LAEMP_EV O_2022-09-20	RG_ERCKDT_S E-1_LAEMP_EV O_2022-09-19_ N
Client sampling date / time					18-Sep-2022 12:00	20-Sep-2022 14:30	20-Sep-2022 14:40	20-Sep-2022 14:50	19-Sep-2022 13:00
Analyte	CAS Number	Method	LOR	Unit	CG2213420-016	CG2213420-017	CG2213420-018	CG2213420-019	CG2213420-020
					Result	Result	Result	Result	Result
Polycyclic Aromatic Hydrocarbons									
acenaphthene	83-32-9	E641A	0.050	mg/kg	<0.050	----	----	----	<0.050
acenaphthylene	208-96-8	E641A	0.050	mg/kg	<0.050	----	----	----	<0.050
acridine	260-94-6	E641A	0.050	mg/kg	<0.050	----	----	----	0.097
anthracene	120-12-7	E641A	0.050	mg/kg	0.055	----	----	----	<0.050
benz(a)anthracene	56-55-3	E641A	0.050	mg/kg	0.122	----	----	----	<0.050
benzo(a)pyrene	50-32-8	E641A	0.050	mg/kg	0.153	----	----	----	<0.050
benzo(b+j)fluoranthene	n/a	E641A	0.050	mg/kg	0.270	----	----	----	0.082
benzo(b+j+k)fluoranthene	n/a	E641A	0.075	mg/kg	0.346	----	----	----	0.082
benzo(g,h,i)perylene	191-24-2	E641A	0.050	mg/kg	0.096	----	----	----	<0.050
benzo(k)fluoranthene	207-08-9	E641A	0.050	mg/kg	0.076	----	----	----	<0.050
chrysene	218-01-9	E641A	0.050	mg/kg	0.225	----	----	----	0.159
dibenz(a,h)anthracene	53-70-3	E641A	0.050	mg/kg	<0.050	----	----	----	<0.050
fluoranthene	206-44-0	E641A	0.050	mg/kg	0.183	----	----	----	<0.050
fluorene	86-73-7	E641A	0.050	mg/kg	0.050	----	----	----	0.144
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.050	mg/kg	0.111	----	----	----	<0.050
methylnaphthalene, 1-	90-12-0	E641A	0.030	mg/kg	0.234	----	----	----	0.482
methylnaphthalene, 1+2-	----	E641A	0.050	mg/kg	0.555	----	----	----	1.34
methylnaphthalene, 2-	91-57-6	E641A	0.030	mg/kg	0.321	----	----	----	0.862
naphthalene	91-20-3	E641A	0.010	mg/kg	0.295	----	----	----	0.234
phenanthrene	85-01-8	E641A	0.050	mg/kg	0.364	----	----	----	0.591
pyrene	129-00-0	E641A	0.050	mg/kg	0.140	----	----	----	0.052
quinoline	91-22-5	E641A	0.050	mg/kg	<0.050	----	----	----	<0.050
B(a)P total potency equivalents [B(a)P TPE]	----	E641A	0.065	mg/kg	0.239	----	----	----	0.068
IACR (CCME)	----	E641A	0.60	-	3.22	----	----	----	1.01
IACR AB (coarse)	----	E641A	0.10	-	0.14	----	----	----	<0.10
IACR AB (fine)	----	E641A	0.10	-	0.26	----	----	----	<0.10
PAHs, total (BC Sched 3.4)	n/a	E641A	0.20	mg/kg	1.91	----	----	----	2.04
PAHs, total (EPA 16)	n/a	E641A	0.20	mg/kg	2.14	----	----	----	1.26



Analytical Results

Sub-Matrix: Sediment

(Matrix: Soil/Solid)

					Client sample ID	RG_MICOMP_S E-5_LAEMP_EV O_2022-09-18_ N	RG_BOCKRD_S E-1_LAEMP_EV O_2022-09-20	RG_BOCKRD_S E-2_LAEMP_EV O_2022-09-20	RG_BOCKRD_S E-3_LAEMP_EV O_2022-09-20	RG_ERCKDT_S E-1_LAEMP_EV O_2022-09-19_ N
					Client sampling date / time	18-Sep-2022 12:00	20-Sep-2022 14:30	20-Sep-2022 14:40	20-Sep-2022 14:50	19-Sep-2022 13:00
Analyte	CAS Number	Method	LOR	Unit	CG2213420-016	CG2213420-017	CG2213420-018	CG2213420-019	CG2213420-020	
					Result	Result	Result	Result	Result	
Polycyclic Aromatic Hydrocarbons Surrogates										
acridine-d9	34749-75-2	E641A	0.1	%	89.6	----	----	----	----	109
chrysene-d12	1719-03-5	E641A	0.1	%	104	----	----	----	----	114
naphthalene-d8	1146-65-2	E641A	0.1	%	105	----	----	----	----	117
phenanthrene-d10	1517-22-2	E641A	0.1	%	96.0	----	----	----	----	120

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Sediment

Client sample ID

(Matrix: Soil/Solid)

					RG_ERCKDT_S E-2_LAEMP_EV O_2022-09-19_ N	RG_ERCKDT_S E-3_LAEMP_EV O_2022-09-19_ N	RG_ERCKDT_S E-4_LAEMP_EV O_2022-09-18_ N	RG_ERCKDT_S E-5_LAEMP_EV O_2022-09-18_ N	RG_ERCKDT_S E-6_LAEMP_EV O_2022-09-18_ N
Client sampling date / time					19-Sep-2022 13:10	19-Sep-2022 13:20	19-Sep-2022 13:30	19-Sep-2022 13:40	19-Sep-2022 13:50
Analyte	CAS Number	Method	LOR	Unit	CG2213420-021	CG2213420-022	CG2213420-023	CG2213420-024	CG2213420-025
					Result	Result	Result	Result	Result
Physical Tests									
moisture	----	E144	0.25	%	79.7	61.1	83.0	75.0	79.0
pH (1:2 soil:water)	----	E108	0.10	pH units	8.03	7.92	8.05	8.19	8.05
Particle Size									
grain size curve	----	E185A	-	-	See Attached	See Attached	See Attached	See Attached	See Attached
clay (<0.004mm)	----	EC184A	1.0	%	7.7	4.2	11.0	13.6	7.2
silt (0.063mm - 0.0312mm)	----	EC184A	1.0	%	29.9	19.5	33.0	31.5	34.9
silt (0.0312mm - 0.004mm)	----	EC184A	1.0	%	39.7	24.1	46.5	52.8	47.5
sand (0.125mm - 0.063mm)	----	EC184A	1.0	%	2.8	4.8	2.1	<1.0	3.8
sand (0.25mm - 0.125mm)	----	EC184A	1.0	%	5.5	13.5	2.9	1.1	4.0
sand (0.5mm - 0.25mm)	----	EC184A	1.0	%	4.6	17.2	1.2	<1.0	1.9
sand (1.0mm - 0.50mm)	----	EC184A	1.0	%	4.6	6.3	<1.0	<1.0	<1.0
sand (2.0mm - 1.0mm)	----	EC184A	1.0	%	3.1	3.8	<1.0	<1.0	<1.0
gravel (>2mm)	----	EC184A	1.0	%	2.1	6.6	2.6	<1.0	<1.0
Organic / Inorganic Carbon									
carbon, total [TC]	----	E351	0.050	%	15.3	11.4	15.5	12.7	14.6
carbon, inorganic [IC]	----	E354	0.050	%	2.58	1.28	2.86	2.79	2.54
carbon, inorganic [IC], (as CaCO3 equivalent)	----	E354	0.40	%	21.5	10.6	23.8	23.2	21.1
carbon, total organic [TOC]	----	EC356	0.050	%	12.7	10.1	12.6	9.91	12.1
Metals									
aluminum	7429-90-5	E440	50	mg/kg	3180	4410	3120	4050	3670
antimony	7440-36-0	E440	0.10	mg/kg	0.88	0.91	0.96	0.87	0.76
arsenic	7440-38-2	E440	0.10	mg/kg	9.06	7.67	14.0	14.5	10.1
barium	7440-39-3	E440	0.50	mg/kg	172	152	194	202	201
beryllium	7440-41-7	E440	0.10	mg/kg	0.43	0.54	0.48	0.55	0.51
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20
boron	7440-42-8	E440	5.0	mg/kg	7.3	<5.0	7.5	6.7	5.7
cadmium	7440-43-9	E440	0.020	mg/kg	3.75	2.32	4.93	6.37	4.09



Analytical Results

Sub-Matrix: Sediment

Client sample ID

(Matrix: Soil/Solid)

					RG_ERCKDT_S E-2_LAEMP_EV O_2022-09-19_ N	RG_ERCKDT_S E-3_LAEMP_EV O_2022-09-19_ N	RG_ERCKDT_S E-4_LAEMP_EV O_2022-09-18_ N	RG_ERCKDT_S E-5_LAEMP_EV O_2022-09-18_ N	RG_ERCKDT_S E-6_LAEMP_EV O_2022-09-18_ N
Client sampling date / time					19-Sep-2022 13:10	19-Sep-2022 13:20	19-Sep-2022 13:30	19-Sep-2022 13:40	19-Sep-2022 13:50
Analyte	CAS Number	Method	LOR	Unit	CG2213420-021	CG2213420-022	CG2213420-023	CG2213420-024	CG2213420-025
					Result	Result	Result	Result	Result
Metals									
calcium	7440-70-2	E440	50	mg/kg	81900	40500	85200	87400	80300
chromium	7440-47-3	E440	0.50	mg/kg	7.28	8.50	7.18	8.60	7.74
cobalt	7440-48-4	E440	0.10	mg/kg	103	46.5	157	92.0	35.8
copper	7440-50-8	E440	0.50	mg/kg	13.1	15.1	14.2	15.4	15.3
iron	7439-89-6	E440	50	mg/kg	15700	15000	22600	24100	18000
lead	7439-92-1	E440	0.50	mg/kg	7.04	9.01	8.04	9.32	7.74
lithium	7439-93-2	E440	2.0	mg/kg	4.4	4.7	4.6	6.2	4.6
magnesium	7439-95-4	E440	20	mg/kg	7460	4940	8490	10800	6520
manganese	7439-96-5	E440	1.0	mg/kg	2410	1040	3580	1840	444
mercury	7439-97-6	E510	0.0050	mg/kg	0.0404	0.0431	0.0390	0.0427	0.0492
molybdenum	7439-98-7	E440	0.10	mg/kg	2.21	1.98	2.26	1.91	1.23
nickel	7440-02-0	E440	0.50	mg/kg	80.7	52.7	98.1	84.2	47.7
phosphorus	7723-14-0	E440	50	mg/kg	1450	1150	1550	1480	1460
potassium	7440-09-7	E440	100	mg/kg	1020	1100	1020	1130	910
selenium	7782-49-2	E440	0.20	mg/kg	22.5	19.9	22.4	24.1	19.0
silver	7440-22-4	E440	0.10	mg/kg	0.18	0.18	0.18	0.22	0.21
sodium	7440-23-5	E440	50	mg/kg	79	55	89	84	76
strontium	7440-24-6	E440	0.50	mg/kg	73.0	57.1	76.4	88.4	78.2
sulfur	7704-34-9	E440	1000	mg/kg	1100	<1000	1100	1000	<1000
thallium	7440-28-0	E440	0.050	mg/kg	0.234	0.229	0.259	0.343	0.224
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
titanium	7440-32-6	E440	1.0	mg/kg	7.1	8.8	6.2	5.0	7.6
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
uranium	7440-61-1	E440	0.050	mg/kg	1.75	1.82	1.75	1.60	1.17
vanadium	7440-62-2	E440	0.20	mg/kg	17.3	23.9	18.1	20.2	18.3
zinc	7440-66-6	E440	2.0	mg/kg	163	136	208	246	155
zirconium	7440-67-7	E440	1.0	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0

Polycyclic Aromatic Hydrocarbons



Analytical Results

Sub-Matrix: Sediment

Client sample ID

(Matrix: Soil/Solid)

					RG_ERCKDT_S E-2_LAEMP_EV O_2022-09-19_ N	RG_ERCKDT_S E-3_LAEMP_EV O_2022-09-19_ N	RG_ERCKDT_S E-4_LAEMP_EV O_2022-09-18_ N	RG_ERCKDT_S E-5_LAEMP_EV O_2022-09-18_ N	RG_ERCKDT_S E-6_LAEMP_EV O_2022-09-18_ N
Client sampling date / time					19-Sep-2022 13:10	19-Sep-2022 13:20	19-Sep-2022 13:30	19-Sep-2022 13:40	19-Sep-2022 13:50
Analyte	CAS Number	Method	LOR	Unit	CG2213420-021	CG2213420-022	CG2213420-023	CG2213420-024	CG2213420-025
					Result	Result	Result	Result	Result
Polycyclic Aromatic Hydrocarbons									
acenaphthene	83-32-9	E641A	0.050	mg/kg	<0.050	<0.050	<0.748 ^{DLHM}	0.089	0.066
acenaphthylene	208-96-8	E641A	0.050	mg/kg	<0.050	<0.050	<0.748 ^{DLHM}	<0.050	<0.050
acridine	260-94-6	E641A	0.050	mg/kg	0.098	<0.050	<0.748 ^{DLHM}	0.153	0.108
anthracene	120-12-7	E641A	0.050	mg/kg	<0.050	<0.050	<0.748 ^{DLHM}	<0.050	<0.050
benz(a)anthracene	56-55-3	E641A	0.050	mg/kg	<0.050	<0.050	<0.748 ^{DLHM}	0.052	<0.050
benzo(a)pyrene	50-32-8	E641A	0.050	mg/kg	<0.050	<0.050	<0.748 ^{DLHM}	<0.050	<0.050
benzo(b+j)fluoranthene	n/a	E641A	0.050	mg/kg	0.108	<0.050	<0.748 ^{DLHM}	0.135	0.142
benzo(b+j+k)fluoranthene	n/a	E641A	0.075	mg/kg	0.108	<0.075	<1.06 ^{DLHM}	0.135	0.142
benzo(g,h,i)perylene	191-24-2	E641A	0.050	mg/kg	<0.050	<0.050	<0.748 ^{DLHM}	0.051	<0.050
benzo(k)fluoranthene	207-08-9	E641A	0.050	mg/kg	<0.050	<0.050	<0.748 ^{DLHM}	<0.050	<0.050
chrysene	218-01-9	E641A	0.050	mg/kg	0.212	0.092	<0.748 ^{DLHM}	0.297	0.307
dibenz(a,h)anthracene	53-70-3	E641A	0.050	mg/kg	<0.050	<0.050	<0.748 ^{DLHM}	<0.050	<0.050
fluoranthene	206-44-0	E641A	0.050	mg/kg	<0.050	<0.050	<0.748 ^{DLHM}	0.063	0.061
fluorene	86-73-7	E641A	0.050	mg/kg	0.133	<0.050	<0.748 ^{DLHM}	0.272	0.190
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.050	mg/kg	<0.050	<0.050	<0.748 ^{DLHM}	<0.050	<0.050
methylnaphthalene, 1-	90-12-0	E641A	0.030	mg/kg	0.453	0.206	1.19	0.850	0.689
methylnaphthalene, 1+2-	----	E641A	0.050	mg/kg	1.26	0.530	3.01	2.50	1.93
methylnaphthalene, 2-	91-57-6	E641A	0.030	mg/kg	0.804	0.324	1.82	1.65	1.24
naphthalene	91-20-3	E641A	0.010	mg/kg	0.218	0.094	0.574	0.507	0.421
phenanthrene	85-01-8	E641A	0.050	mg/kg	0.616	0.276	1.06	0.978	0.970
pyrene	129-00-0	E641A	0.050	mg/kg	0.070	<0.050	<0.748 ^{DLHM}	0.092	0.087
quinoline	91-22-5	E641A	0.050	mg/kg	<0.050	<0.050	<0.748 ^{DLHM}	<0.050	<0.050
B(a)P total potency equivalents [B(a)P TPE]	----	E641A	0.065	mg/kg	0.071	<0.065	0.905	0.077	0.075
IACR (CCME)	----	E641A	0.60	-	1.20	0.62	8.82	1.49	1.45
IACR AB (coarse)	----	E641A	0.10	-	<0.10	<0.10	0.49	<0.10	<0.10
IACR AB (fine)	----	E641A	0.10	-	<0.10	<0.10	0.92	0.11	0.11
PAHs, total (BC Sched 3.4)	n/a	E641A	0.20	mg/kg	2.05	0.79	3.45	4.00	3.34
PAHs, total (EPA 16)	n/a	E641A	0.20	mg/kg	1.36	0.46	<2.90	2.54	2.24



Analytical Results

Sub-Matrix: Sediment

(Matrix: Soil/Solid)

Client sample ID

					RG_ERCKDT_S E-2_LAEMP_EV O_2022-09-19_ N	RG_ERCKDT_S E-3_LAEMP_EV O_2022-09-19_ N	RG_ERCKDT_S E-4_LAEMP_EV O_2022-09-18_ N	RG_ERCKDT_S E-5_LAEMP_EV O_2022-09-18_ N	RG_ERCKDT_S E-6_LAEMP_EV O_2022-09-18_ N
Client sampling date / time					19-Sep-2022 13:10	19-Sep-2022 13:20	19-Sep-2022 13:30	19-Sep-2022 13:40	19-Sep-2022 13:50
Analyte	CAS Number	Method	LOR	Unit	CG2213420-021	CG2213420-022	CG2213420-023	CG2213420-024	CG2213420-025
					Result	Result	Result	Result	Result
Polycyclic Aromatic Hydrocarbons Surrogates									
acridine-d9	34749-75-2	E641A	0.1	%	115	117	105	86.3	103
chrysene-d12	1719-03-5	E641A	0.1	%	121	125	121	126	122
naphthalene-d8	1146-65-2	E641A	0.1	%	117	116	117	112	124
phenanthrene-d10	1517-22-2	E641A	0.1	%	126	125	119	123	120

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Sediment

Client sample ID

					RG_ERCKDT_S E-7_LAEMP_EV O_2022-09-18_ N	RG_RIVER_SE-6 _LAEMP_EVO_ 2022-09-19_N	----	----	----
Client sampling date / time					19-Sep-2022 14:00	19-Sep-2022 13:50	----	----	----
Analyte	CAS Number	Method	LOR	Unit	CG2213420-026	CG2213420-027	-----	-----	-----
					Result	Result	----	----	----
Physical Tests									
moisture	----	E144	0.25	%	83.1	74.0	----	----	----
pH (1:2 soil:water)	----	E108	0.10	pH units	7.95	8.06	----	----	----
Particle Size									
grain size curve	----	E185A	-	-	See Attached	See Attached	----	----	----
clay (<0.004mm)	----	EC184A	1.0	%	11.0	7.7	----	----	----
silt (0.063mm - 0.0312mm)	----	EC184A	1.0	%	32.8	34.5	----	----	----
silt (0.0312mm - 0.004mm)	----	EC184A	1.0	%	53.9	48.1	----	----	----
sand (0.125mm - 0.063mm)	----	EC184A	1.0	%	1.1	3.7	----	----	----
sand (0.25mm - 0.125mm)	----	EC184A	1.0	%	<1.0	3.4	----	----	----
sand (0.5mm - 0.25mm)	----	EC184A	1.0	%	<1.0	1.8	----	----	----
sand (1.0mm - 0.50mm)	----	EC184A	1.0	%	<1.0	<1.0	----	----	----
sand (2.0mm - 1.0mm)	----	EC184A	1.0	%	<1.0	<1.0	----	----	----
gravel (>2mm)	----	EC184A	1.0	%	<1.0	<1.0	----	----	----
Organic / Inorganic Carbon									
carbon, total [TC]	----	E351	0.050	%	15.1	13.7	----	----	----
carbon, inorganic [IC]	----	E354	0.050	%	2.76	2.54	----	----	----
carbon, inorganic [IC], (as CaCO3 equivalent)	----	E354	0.40	%	23.0	21.2	----	----	----
carbon, total organic [TOC]	----	EC356	0.050	%	12.3	11.2	----	----	----
Metals									
aluminum	7429-90-5	E440	50	mg/kg	2610	2790	----	----	----
antimony	7440-36-0	E440	0.10	mg/kg	0.87	0.59	----	----	----
arsenic	7440-38-2	E440	0.10	mg/kg	18.7	8.26	----	----	----
barium	7440-39-3	E440	0.50	mg/kg	178	164	----	----	----
beryllium	7440-41-7	E440	0.10	mg/kg	0.44	0.38	----	----	----
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	----	----	----
boron	7440-42-8	E440	5.0	mg/kg	5.8	<5.0	----	----	----
cadmium	7440-43-9	E440	0.020	mg/kg	6.98	3.34	----	----	----



Analytical Results

Sub-Matrix: Sediment
 (Matrix: Soil/Solid)

Client sample ID

					RG_ERCKDT_S E-7_LAEMP_EV O_2022-09-18_ N	RG_RIVER_SE-6 _LAEMP_EVO_ 2022-09-19_N	----	----	----
Client sampling date / time					19-Sep-2022 14:00	19-Sep-2022 13:50	----	----	----
Analyte	CAS Number	Method	LOR	Unit	CG2213420-026	CG2213420-027	-----	-----	-----
					Result	Result	---	---	---
Metals									
calcium	7440-70-2	E440	50	mg/kg	66100	63200	----	----	----
chromium	7440-47-3	E440	0.50	mg/kg	6.33	6.27	----	----	----
cobalt	7440-48-4	E440	0.10	mg/kg	102	29.6	----	----	----
copper	7440-50-8	E440	0.50	mg/kg	12.9	12.9	----	----	----
iron	7439-89-6	E440	50	mg/kg	30200	15000	----	----	----
lead	7439-92-1	E440	0.50	mg/kg	8.80	5.92	----	----	----
lithium	7439-93-2	E440	2.0	mg/kg	3.7	3.5	----	----	----
magnesium	7439-95-4	E440	20	mg/kg	6680	5420	----	----	----
manganese	7439-96-5	E440	1.0	mg/kg	1180	400	----	----	----
mercury	7439-97-6	E510	0.0050	mg/kg	0.0390	0.0364	----	----	----
molybdenum	7439-98-7	E440	0.10	mg/kg	1.33	0.97	----	----	----
nickel	7440-02-0	E440	0.50	mg/kg	86.8	39.9	----	----	----
phosphorus	7723-14-0	E440	50	mg/kg	1400	1180	----	----	----
potassium	7440-09-7	E440	100	mg/kg	700	690	----	----	----
selenium	7782-49-2	E440	0.20	mg/kg	27.2	14.7	----	----	----
silver	7440-22-4	E440	0.10	mg/kg	0.18	0.17	----	----	----
sodium	7440-23-5	E440	50	mg/kg	68	62	----	----	----
strontium	7440-24-6	E440	0.50	mg/kg	73.9	62.0	----	----	----
sulfur	7704-34-9	E440	1000	mg/kg	<1000	<1000	----	----	----
thallium	7440-28-0	E440	0.050	mg/kg	0.321	0.160	----	----	----
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	----	----	----
titanium	7440-32-6	E440	1.0	mg/kg	7.3	9.9	----	----	----
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	----	----	----
uranium	7440-61-1	E440	0.050	mg/kg	1.16	0.890	----	----	----
vanadium	7440-62-2	E440	0.20	mg/kg	15.6	14.2	----	----	----
zinc	7440-66-6	E440	2.0	mg/kg	273	132	----	----	----
zirconium	7440-67-7	E440	1.0	mg/kg	<1.0	<1.0	----	----	----

Polycyclic Aromatic Hydrocarbons



Analytical Results

Sub-Matrix: Sediment
 (Matrix: Soil/Solid)

Client sample ID

					RG_ERCKDT_S E-7_LAEMP_EV O_2022-09-18_ N	RG_RIVER_SE-6 _LAEMP_EVO_ 2022-09-19_N	----	----	----
Client sampling date / time					19-Sep-2022 14:00	19-Sep-2022 13:50	----	----	----
Analyte	CAS Number	Method	LOR	Unit	CG2213420-026	CG2213420-027	-----	-----	-----
					Result	Result	----	----	----
Polycyclic Aromatic Hydrocarbons									
acenaphthene	83-32-9	E641A	0.050	mg/kg	0.086	0.052	----	----	----
acenaphthylene	208-96-8	E641A	0.050	mg/kg	<0.073 ^{DLHM}	<0.050	----	----	----
acridine	260-94-6	E641A	0.050	mg/kg	0.177	0.106	----	----	----
anthracene	120-12-7	E641A	0.050	mg/kg	<0.073 ^{DLHM}	<0.050	----	----	----
benzo(a)anthracene	56-55-3	E641A	0.050	mg/kg	<0.073 ^{DLHM}	<0.050	----	----	----
benzo(a)pyrene	50-32-8	E641A	0.050	mg/kg	<0.073 ^{DLHM}	<0.050	----	----	----
benzo(b+j)fluoranthene	n/a	E641A	0.050	mg/kg	0.138	0.098	----	----	----
benzo(b+j+k)fluoranthene	n/a	E641A	0.075	mg/kg	0.138	0.098	----	----	----
benzo(g,h,i)perylene	191-24-2	E641A	0.050	mg/kg	<0.073 ^{DLHM}	<0.050	----	----	----
benzo(k)fluoranthene	207-08-9	E641A	0.050	mg/kg	<0.073 ^{DLHM}	<0.050	----	----	----
chrysene	218-01-9	E641A	0.050	mg/kg	0.308	0.227	----	----	----
dibenz(a,h)anthracene	53-70-3	E641A	0.050	mg/kg	<0.073 ^{DLHM}	<0.050	----	----	----
fluoranthene	206-44-0	E641A	0.050	mg/kg	<0.073 ^{DLHM}	<0.050	----	----	----
fluorene	86-73-7	E641A	0.050	mg/kg	0.293	0.142	----	----	----
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.050	mg/kg	<0.073 ^{DLHM}	<0.050	----	----	----
methylnaphthalene, 1-	90-12-0	E641A	0.030	mg/kg	0.907	0.540	----	----	----
methylnaphthalene, 1+2-	----	E641A	0.050	mg/kg	2.67	1.54	----	----	----
methylnaphthalene, 2-	91-57-6	E641A	0.030	mg/kg	1.76	0.995	----	----	----
naphthalene	91-20-3	E641A	0.010	mg/kg	0.537	0.270	----	----	----
phenanthrene	85-01-8	E641A	0.050	mg/kg	1.02	0.731	----	----	----
pyrene	129-00-0	E641A	0.050	mg/kg	0.090	0.066	----	----	----
quinoline	91-22-5	E641A	0.050	mg/kg	<0.073 ^{DLHM}	<0.050	----	----	----
B(a)P total potency equivalents [B(a)P TPE]	----	E641A	0.065	mg/kg	0.101	0.070	----	----	----
IACR (CCME)	----	E641A	0.60	-	1.62	1.14	----	----	----
IACR AB (coarse)	----	E641A	0.10	-	<0.10	<0.10	----	----	----
IACR AB (fine)	----	E641A	0.10	-	0.13	<0.10	----	----	----
PAHs, total (BC Sched 3.4)	n/a	E641A	0.20	mg/kg	4.09	2.48	----	----	----
PAHs, total (EPA 16)	n/a	E641A	0.20	mg/kg	2.47	1.59	----	----	----



Analytical Results

Sub-Matrix: Sediment
 (Matrix: Soil/Solid)

					Client sample ID	RG_ERCKDT_S E-7_LAEMP_EV O_2022-09-18_ N	RG_RIVER_SE-6 _LAEMP_EVO_ 2022-09-19_N	----	----	----
					Client sampling date / time	19-Sep-2022 14:00	19-Sep-2022 13:50	----	----	----
Analyte	CAS Number	Method	LOR	Unit	CG2213420-026	CG2213420-027	-----	-----	-----	
					Result	Result	----	----	----	
Polycyclic Aromatic Hydrocarbons Surrogates										
acridine-d9	34749-75-2	E641A	0.1	%	95.9	121	----	----	----	
chrysene-d12	1719-03-5	E641A	0.1	%	116	118	----	----	----	
naphthalene-d8	1146-65-2	E641A	0.1	%	106	122	----	----	----	
phenanthrene-d10	1517-22-2	E641A	0.1	%	105	121	----	----	----	

Please refer to the General Comments section for an explanation of any qualifiers detected.



QUALITY CONTROL INTERPRETIVE REPORT

<p>Work Order : CG2213420</p> <p>Client : Teck Coal Limited</p> <p>Contact : Mike Pope</p> <p>Address : RR#1 HWY#3 Sparwood BC Canada V0B 2G1</p> <p>Telephone : ----</p> <p>Project : REGIONAL EFFECTS PROGRAM</p> <p>PO : VPO00816101</p> <p>C-O-C number : REP_LAEMP_EVO_2022-09_ALS</p> <p>Sampler : Jennifer Ings</p> <p>Site : ----</p> <p>Quote number : Teck Coal Master Quote</p> <p>No. of samples received : 27</p> <p>No. of samples analysed : 27</p>	<p>Page : 1 of 29</p> <p>Laboratory : Calgary - Environmental</p> <p>Account Manager : Lyudmyla Shvets</p> <p>Address : 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5</p> <p>Telephone : +1 403 407 1800</p> <p>Date Samples Received : 27-Sep-2022 13:00</p> <p>Issue Date : 19-Oct-2022 17:51</p>
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This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

- Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
- CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
- DQO: Data Quality Objective.
- LOR: Limit of Reporting (detection limit).
- RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: Soil/Solid

Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-1_LAEMP_EVO_2022-09-19_N	E510	19-Sep-2022	09-Oct-2022	----	----		10-Oct-2022	28 days	21 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-2_LAEMP_EVO_2022-09-19_N	E510	19-Sep-2022	09-Oct-2022	----	----		10-Oct-2022	28 days	21 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-3_LAEMP_EVO_2022-09-19_N	E510	19-Sep-2022	09-Oct-2022	----	----		10-Oct-2022	28 days	21 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-4_LAEMP_EVO_2022-09-18_N	E510	19-Sep-2022	09-Oct-2022	----	----		10-Oct-2022	28 days	21 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-5_LAEMP_EVO_2022-09-18_N	E510	19-Sep-2022	09-Oct-2022	----	----		10-Oct-2022	28 days	21 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-6_LAEMP_EVO_2022-09-18_N	E510	19-Sep-2022	09-Oct-2022	----	----		10-Oct-2022	28 days	21 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-7_LAEMP_EVO_2022-09-18_N	E510	19-Sep-2022	09-Oct-2022	----	----		10-Oct-2022	28 days	21 days	✓	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap RG_RIVER_SE-6_LAEMP_EVO_2022-09-19_N	E510	19-Sep-2022	09-Oct-2022	----	----		10-Oct-2022	28 days	21 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap RG_ALUSM_SE-1_LAEMP_EVO_2022-09-18_N	E510	18-Sep-2022	09-Oct-2022	----	----		10-Oct-2022	28 days	22 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
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Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_BOCKRD_SE-1_LAEMP_EVO_2022-09-20	E510	20-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	28 days	22 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_BOCKRD_SE-2_LAEMP_EVO_2022-09-20	E510	20-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	28 days	22 days	✔	
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Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

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Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap RG_MICOMP_SE-4_LAEMP_EVO_2022-09-18_N	E510	18-Sep-2022	09-Oct-2022	----	----		10-Oct-2022	28 days	22 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap RG_MICOMP_SE-5_LAEMP_EVO_2022-09-18_N	E510	18-Sep-2022	09-Oct-2022	----	----		10-Oct-2022	28 days	22 days	✔	
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Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-1_LAEMP_EVO_2022-09-16_N	E510	16-Sep-2022	09-Oct-2022	----	----		10-Oct-2022	28 days	24 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-2_LAEMP_EVO_2022-09-16_N	E510	16-Sep-2022	09-Oct-2022	----	----		10-Oct-2022	28 days	24 days	✔	
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Matrix: Soil/Solid

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			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
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Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-1_LAEMP_EVO_2022-09-19_N	E440	19-Sep-2022	09-Oct-2022	----	----		10-Oct-2022	180 days	21 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-2_LAEMP_EVO_2022-09-19_N	E440	19-Sep-2022	09-Oct-2022	----	----		10-Oct-2022	180 days	21 days	✔	
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LDPE bag RG_BOCKRD_SE-1_LAEMP_EVO_2022-09-20	E440	20-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	22 days	✔	
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Metals : Metals in Soil/Solid by CRC ICPSMS											
Glass soil jar/Teflon lined cap RG_MICOMP_SE-1_LAEMP_EVO_2022-09-18_N	E440	18-Sep-2022	09-Oct-2022	----	----		10-Oct-2022	180 days	22 days	✔	
Metals : Metals in Soil/Solid by CRC ICPSMS											
Glass soil jar/Teflon lined cap RG_MICOMP_SE-2_LAEMP_EVO_2022-09-18_N	E440	18-Sep-2022	09-Oct-2022	----	----		10-Oct-2022	180 days	22 days	✔	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

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			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap RG_MICOMP_SE-3_LAEMP_EVO_2022-09-18_N	E440	18-Sep-2022	09-Oct-2022	----	----		10-Oct-2022	180 days	22 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap RG_MICOMP_SE-4_LAEMP_EVO_2022-09-18_N	E440	18-Sep-2022	09-Oct-2022	----	----		10-Oct-2022	180 days	22 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap RG_MICOMP_SE-5_LAEMP_EVO_2022-09-18_N	E440	18-Sep-2022	09-Oct-2022	----	----		10-Oct-2022	180 days	22 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap RG_RIVER_SE-2_LAEMP_EVO_2022-09-18_N	E440	18-Sep-2022	09-Oct-2022	----	----		10-Oct-2022	180 days	22 days	✔	
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Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-1_LAEMP_EVO_2022-09-16_N	E440	16-Sep-2022	09-Oct-2022	----	----		10-Oct-2022	180 days	24 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-2_LAEMP_EVO_2022-09-16_N	E440	16-Sep-2022	09-Oct-2022	----	----		10-Oct-2022	180 days	24 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-3_LAEMP_EVO_2022-09-16_N	E440	16-Sep-2022	09-Oct-2022	----	----		10-Oct-2022	180 days	24 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-4_LAEMP_EVO_2022-09-16_N	E440	16-Sep-2022	09-Oct-2022	----	----		10-Oct-2022	180 days	24 days	✔	



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			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-5_LAEMP_EVO_2022-09-16_N	E440	16-Sep-2022	09-Oct-2022	----	----		10-Oct-2022	180 days	24 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap RG_RIVER_SE-5_LAEMP_EVO_2022-09-16_N	E440	16-Sep-2022	09-Oct-2022	----	----		10-Oct-2022	180 days	24 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ALUSM_SE-1_LAEMP_EVO_2022-09-18_N	E351	18-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ALUSM_SE-2_LAEMP_EVO_2022-09-18_N	E351	18-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ALUSM_SE-3_LAEMP_EVO_2022-09-18_N	E351	18-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_BOCKRD_SE-1_LAEMP_EVO_2022-09-20	E351	20-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_BOCKRD_SE-2_LAEMP_EVO_2022-09-20	E351	20-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_BOCKRD_SE-3_LAEMP_EVO_2022-09-20	E351	20-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKDT_SE-1_LAEMP_EVO_2022-09-19_N	E351	19-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	0 days	✔	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKDT_SE-2_LAEMP_EVO_2022-09-19_N	E351	19-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKDT_SE-3_LAEMP_EVO_2022-09-19_N	E351	19-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKDT_SE-4_LAEMP_EVO_2022-09-18_N	E351	19-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKDT_SE-5_LAEMP_EVO_2022-09-18_N	E351	19-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKDT_SE-6_LAEMP_EVO_2022-09-18_N	E351	19-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKDT_SE-7_LAEMP_EVO_2022-09-18_N	E351	19-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKUT_SE-1_LAEMP_EVO_2022-09-16_N	E351	16-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKUT_SE-2_LAEMP_EVO_2022-09-16_N	E351	16-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKUT_SE-3_LAEMP_EVO_2022-09-16_N	E351	16-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	0 days	✔	



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Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKUT_SE-4_LAEMP_EVO_2022-09-16_N	E351	16-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKUT_SE-5_LAEMP_EVO_2022-09-16_N	E351	16-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_MICOMP_SE-1_LAEMP_EVO_2022-09-18_N	E351	18-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_MICOMP_SE-2_LAEMP_EVO_2022-09-18_N	E351	18-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_MICOMP_SE-3_LAEMP_EVO_2022-09-18_N	E351	18-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_MICOMP_SE-4_LAEMP_EVO_2022-09-18_N	E351	18-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_MICOMP_SE-5_LAEMP_EVO_2022-09-18_N	E351	18-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_RIVER_SE-2_LAEMP_EVO_2022-09-18_N	E351	18-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_RIVER_SE-5_LAEMP_EVO_2022-09-16_N	E351	16-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	0 days	✔	



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Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_RIVER_SE-5_LAEMP_EVO_2022-09-18_N	E351	18-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	0 days		✔
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_RIVER_SE-6_LAEMP_EVO_2022-09-19_N	E351	19-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	0 days		✔
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve											
LDPE bag RG_ALUSM_SE-1_LAEMP_EVO_2022-09-18_N	E354	18-Sep-2022	----	----	----		11-Oct-2022	----	----		
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve											
LDPE bag RG_ALUSM_SE-2_LAEMP_EVO_2022-09-18_N	E354	18-Sep-2022	----	----	----		11-Oct-2022	----	----		
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve											
LDPE bag RG_ALUSM_SE-3_LAEMP_EVO_2022-09-18_N	E354	18-Sep-2022	----	----	----		11-Oct-2022	----	----		
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve											
LDPE bag RG_BOCKRD_SE-1_LAEMP_EVO_2022-09-20	E354	20-Sep-2022	----	----	----		11-Oct-2022	----	----		
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve											
LDPE bag RG_BOCKRD_SE-2_LAEMP_EVO_2022-09-20	E354	20-Sep-2022	----	----	----		11-Oct-2022	----	----		
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve											
LDPE bag RG_BOCKRD_SE-3_LAEMP_EVO_2022-09-20	E354	20-Sep-2022	----	----	----		11-Oct-2022	----	----		
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve											
LDPE bag RG_ERCKDT_SE-1_LAEMP_EVO_2022-09-19_N	E354	19-Sep-2022	----	----	----		11-Oct-2022	----	----		



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKDT_SE-2_LAEMP_EVO_2022-09-19_N	E354	19-Sep-2022	----	----	----		12-Oct-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKDT_SE-3_LAEMP_EVO_2022-09-19_N	E354	19-Sep-2022	----	----	----		12-Oct-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKDT_SE-4_LAEMP_EVO_2022-09-18_N	E354	19-Sep-2022	----	----	----		12-Oct-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKDT_SE-5_LAEMP_EVO_2022-09-18_N	E354	19-Sep-2022	----	----	----		12-Oct-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKDT_SE-6_LAEMP_EVO_2022-09-18_N	E354	19-Sep-2022	----	----	----		12-Oct-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKDT_SE-7_LAEMP_EVO_2022-09-18_N	E354	19-Sep-2022	----	----	----		12-Oct-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKUT_SE-1_LAEMP_EVO_2022-09-16_N	E354	16-Sep-2022	----	----	----		11-Oct-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKUT_SE-2_LAEMP_EVO_2022-09-16_N	E354	16-Sep-2022	----	----	----		11-Oct-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKUT_SE-3_LAEMP_EVO_2022-09-16_N	E354	16-Sep-2022	----	----	----		11-Oct-2022	----	----	



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Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKUT_SE-4_LAEMP_EVO_2022-09-16_N	E354	16-Sep-2022	----	----	----		11-Oct-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKUT_SE-5_LAEMP_EVO_2022-09-16_N	E354	16-Sep-2022	----	----	----		11-Oct-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_MICOMP_SE-1_LAEMP_EVO_2022-09-18_N	E354	18-Sep-2022	----	----	----		11-Oct-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_MICOMP_SE-2_LAEMP_EVO_2022-09-18_N	E354	18-Sep-2022	----	----	----		11-Oct-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_MICOMP_SE-3_LAEMP_EVO_2022-09-18_N	E354	18-Sep-2022	----	----	----		11-Oct-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_MICOMP_SE-4_LAEMP_EVO_2022-09-18_N	E354	18-Sep-2022	----	----	----		11-Oct-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_MICOMP_SE-5_LAEMP_EVO_2022-09-18_N	E354	18-Sep-2022	----	----	----		11-Oct-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_RIVER_SE-2_LAEMP_EVO_2022-09-18_N	E354	18-Sep-2022	----	----	----		11-Oct-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_RIVER_SE-5_LAEMP_EVO_2022-09-16_N	E354	16-Sep-2022	----	----	----		11-Oct-2022	----	----	



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Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_RIVER_SE-5_LAEMP_EVO_2022-09-18_N	E354	18-Sep-2022	----	----	----		11-Oct-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_RIVER_SE-6_LAEMP_EVO_2022-09-19_N	E354	19-Sep-2022	----	----	----		12-Oct-2022	----	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ALUSM_SE-1_LAEMP_EVO_2022-09-18_N	E185A	18-Sep-2022	----	----	----		18-Oct-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ALUSM_SE-2_LAEMP_EVO_2022-09-18_N	E185A	18-Sep-2022	----	----	----		18-Oct-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ALUSM_SE-3_LAEMP_EVO_2022-09-18_N	E185A	18-Sep-2022	----	----	----		18-Oct-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_BOCKRD_SE-1_LAEMP_EVO_2022-09-20	E185A	20-Sep-2022	----	----	----		18-Oct-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_BOCKRD_SE-2_LAEMP_EVO_2022-09-20	E185A	20-Sep-2022	----	----	----		18-Oct-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_BOCKRD_SE-3_LAEMP_EVO_2022-09-20	E185A	20-Sep-2022	----	----	----		18-Oct-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKDT_SE-1_LAEMP_EVO_2022-09-19_N	E185A	19-Sep-2022	----	----	----		18-Oct-2022	365 days	----	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method											
LDPE bag RG_ERCKDT_SE-2_LAEMP_EVO_2022-09-19_N	E185A	19-Sep-2022	----	----	----		13-Oct-2022	365 days	----		
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method											
LDPE bag RG_ERCKDT_SE-3_LAEMP_EVO_2022-09-19_N	E185A	19-Sep-2022	----	----	----		13-Oct-2022	365 days	----		
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method											
LDPE bag RG_ERCKDT_SE-4_LAEMP_EVO_2022-09-18_N	E185A	19-Sep-2022	----	----	----		13-Oct-2022	365 days	----		
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method											
LDPE bag RG_ERCKDT_SE-5_LAEMP_EVO_2022-09-18_N	E185A	19-Sep-2022	----	----	----		13-Oct-2022	365 days	----		
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method											
LDPE bag RG_ERCKDT_SE-6_LAEMP_EVO_2022-09-18_N	E185A	19-Sep-2022	----	----	----		13-Oct-2022	365 days	----		
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method											
LDPE bag RG_ERCKDT_SE-7_LAEMP_EVO_2022-09-18_N	E185A	19-Sep-2022	----	----	----		13-Oct-2022	365 days	----		
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method											
LDPE bag RG_ERCKUT_SE-1_LAEMP_EVO_2022-09-16_N	E185A	16-Sep-2022	----	----	----		18-Oct-2022	365 days	----		
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method											
LDPE bag RG_ERCKUT_SE-2_LAEMP_EVO_2022-09-16_N	E185A	16-Sep-2022	----	----	----		18-Oct-2022	365 days	----		
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method											
LDPE bag RG_ERCKUT_SE-3_LAEMP_EVO_2022-09-16_N	E185A	16-Sep-2022	----	----	----		18-Oct-2022	365 days	----		



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			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKUT_SE-4_LAEMP_EVO_2022-09-16_N	E185A	16-Sep-2022	----	----	----		18-Oct-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKUT_SE-5_LAEMP_EVO_2022-09-16_N	E185A	16-Sep-2022	----	----	----		18-Oct-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_MICOMP_SE-1_LAEMP_EVO_2022-09-18_N	E185A	18-Sep-2022	----	----	----		18-Oct-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_MICOMP_SE-2_LAEMP_EVO_2022-09-18_N	E185A	18-Sep-2022	----	----	----		18-Oct-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_MICOMP_SE-3_LAEMP_EVO_2022-09-18_N	E185A	18-Sep-2022	----	----	----		18-Oct-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_MICOMP_SE-4_LAEMP_EVO_2022-09-18_N	E185A	18-Sep-2022	----	----	----		18-Oct-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_MICOMP_SE-5_LAEMP_EVO_2022-09-18_N	E185A	18-Sep-2022	----	----	----		18-Oct-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_RIVER_SE-2_LAEMP_EVO_2022-09-18_N	E185A	18-Sep-2022	----	----	----		18-Oct-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_RIVER_SE-5_LAEMP_EVO_2022-09-16_N	E185A	16-Sep-2022	----	----	----		18-Oct-2022	365 days	----	



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_RIVER_SE-5_LAEMP_EVO_2022-09-18_N	E185A	18-Sep-2022	----	----	----		18-Oct-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_RIVER_SE-6_LAEMP_EVO_2022-09-19_N	E185A	19-Sep-2022	----	----	----		13-Oct-2022	365 days	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap RG_ALUSM_SE-1_LAEMP_EVO_2022-09-18_N	E144	18-Sep-2022	----	----	----		06-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap RG_ALUSM_SE-2_LAEMP_EVO_2022-09-18_N	E144	18-Sep-2022	----	----	----		06-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap RG_ALUSM_SE-3_LAEMP_EVO_2022-09-18_N	E144	18-Sep-2022	----	----	----		06-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-1_LAEMP_EVO_2022-09-19_N	E144	19-Sep-2022	----	----	----		03-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-2_LAEMP_EVO_2022-09-19_N	E144	19-Sep-2022	----	----	----		03-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-3_LAEMP_EVO_2022-09-19_N	E144	19-Sep-2022	----	----	----		03-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-4_LAEMP_EVO_2022-09-18_N	E144	19-Sep-2022	----	----	----		06-Oct-2022	----	----	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		
				Rec	Actual			Rec	Actual	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-5_LAEMP_EVO_2022-09-18_N	E144	19-Sep-2022	----	----	----		06-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-6_LAEMP_EVO_2022-09-18_N	E144	19-Sep-2022	----	----	----		06-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-7_LAEMP_EVO_2022-09-18_N	E144	19-Sep-2022	----	----	----		06-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-1_LAEMP_EVO_2022-09-16_N	E144	16-Sep-2022	----	----	----		30-Sep-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-2_LAEMP_EVO_2022-09-16_N	E144	16-Sep-2022	----	----	----		30-Sep-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-3_LAEMP_EVO_2022-09-16_N	E144	16-Sep-2022	----	----	----		30-Sep-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-4_LAEMP_EVO_2022-09-16_N	E144	16-Sep-2022	----	----	----		30-Sep-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-5_LAEMP_EVO_2022-09-16_N	E144	16-Sep-2022	----	----	----		30-Sep-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap RG_MICOMP_SE-1_LAEMP_EVO_2022-09-18_N	E144	18-Sep-2022	----	----	----		06-Oct-2022	----	----	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap RG_MICOMP_SE-2_LAEMP_EVO_2022-09-18_N	E144	18-Sep-2022	----	----	----		06-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap RG_MICOMP_SE-3_LAEMP_EVO_2022-09-18_N	E144	18-Sep-2022	----	----	----		06-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap RG_MICOMP_SE-4_LAEMP_EVO_2022-09-18_N	E144	18-Sep-2022	----	----	----		06-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap RG_MICOMP_SE-5_LAEMP_EVO_2022-09-18_N	E144	18-Sep-2022	----	----	----		06-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap RG_RIVER_SE-2_LAEMP_EVO_2022-09-18_N	E144	18-Sep-2022	----	----	----		06-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap RG_RIVER_SE-5_LAEMP_EVO_2022-09-16_N	E144	16-Sep-2022	----	----	----		30-Sep-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap RG_RIVER_SE-5_LAEMP_EVO_2022-09-18_N	E144	18-Sep-2022	----	----	----		06-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap RG_RIVER_SE-6_LAEMP_EVO_2022-09-19_N	E144	19-Sep-2022	----	----	----		03-Oct-2022	----	----	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag RG_BOCKRD_SE-1_LAEMP_EVO_2022-09-20	E108	20-Sep-2022	08-Oct-2022	----	----		08-Oct-2022	30 days	18 days	✔



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_BOCKRD_SE-2_LAEMP_EVO_2022-09-20	E108	20-Sep-2022	08-Oct-2022	----	----		08-Oct-2022	30 days	18 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_BOCKRD_SE-3_LAEMP_EVO_2022-09-20	E108	20-Sep-2022	08-Oct-2022	----	----		08-Oct-2022	30 days	18 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-1_LAEMP_EVO_2022-09-19_N	E108	19-Sep-2022	10-Oct-2022	----	----		10-Oct-2022	30 days	21 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-2_LAEMP_EVO_2022-09-19_N	E108	19-Sep-2022	10-Oct-2022	----	----		10-Oct-2022	30 days	21 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-3_LAEMP_EVO_2022-09-19_N	E108	19-Sep-2022	10-Oct-2022	----	----		10-Oct-2022	30 days	21 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-4_LAEMP_EVO_2022-09-18_N	E108	19-Sep-2022	10-Oct-2022	----	----		10-Oct-2022	30 days	21 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-5_LAEMP_EVO_2022-09-18_N	E108	19-Sep-2022	10-Oct-2022	----	----		10-Oct-2022	30 days	21 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-6_LAEMP_EVO_2022-09-18_N	E108	19-Sep-2022	10-Oct-2022	----	----		10-Oct-2022	30 days	21 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-7_LAEMP_EVO_2022-09-18_N	E108	19-Sep-2022	10-Oct-2022	----	----		10-Oct-2022	30 days	21 days	✔	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap RG_RIVER_SE-6_LAEMP_EVO_2022-09-19_N	E108	19-Sep-2022	10-Oct-2022	----	----		10-Oct-2022	30 days	21 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap RG_ALUSM_SE-1_LAEMP_EVO_2022-09-18_N	E108	18-Sep-2022	10-Oct-2022	----	----		10-Oct-2022	30 days	22 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap RG_ALUSM_SE-2_LAEMP_EVO_2022-09-18_N	E108	18-Sep-2022	10-Oct-2022	----	----		10-Oct-2022	30 days	22 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap RG_ALUSM_SE-3_LAEMP_EVO_2022-09-18_N	E108	18-Sep-2022	10-Oct-2022	----	----		10-Oct-2022	30 days	22 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap RG_MICOMP_SE-1_LAEMP_EVO_2022-09-18_N	E108	18-Sep-2022	10-Oct-2022	----	----		10-Oct-2022	30 days	22 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap RG_MICOMP_SE-2_LAEMP_EVO_2022-09-18_N	E108	18-Sep-2022	10-Oct-2022	----	----		10-Oct-2022	30 days	22 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap RG_MICOMP_SE-3_LAEMP_EVO_2022-09-18_N	E108	18-Sep-2022	10-Oct-2022	----	----		10-Oct-2022	30 days	22 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap RG_MICOMP_SE-4_LAEMP_EVO_2022-09-18_N	E108	18-Sep-2022	10-Oct-2022	----	----		10-Oct-2022	30 days	22 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap RG_MICOMP_SE-5_LAEMP_EVO_2022-09-18_N	E108	18-Sep-2022	10-Oct-2022	----	----		10-Oct-2022	30 days	22 days	✔	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
Glass soil jar/Teflon lined cap RG_RIVER_SE-2_LAEMP_EVO_2022-09-18_N	E108	18-Sep-2022	10-Oct-2022	----	----		10-Oct-2022	30 days	22 days	✔
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
Glass soil jar/Teflon lined cap RG_RIVER_SE-5_LAEMP_EVO_2022-09-18_N	E108	18-Sep-2022	10-Oct-2022	----	----		10-Oct-2022	30 days	22 days	✔
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-1_LAEMP_EVO_2022-09-16_N	E108	16-Sep-2022	10-Oct-2022	----	----		10-Oct-2022	30 days	24 days	✔
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-2_LAEMP_EVO_2022-09-16_N	E108	16-Sep-2022	10-Oct-2022	----	----		10-Oct-2022	30 days	24 days	✔
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-3_LAEMP_EVO_2022-09-16_N	E108	16-Sep-2022	10-Oct-2022	----	----		10-Oct-2022	30 days	24 days	✔
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-4_LAEMP_EVO_2022-09-16_N	E108	16-Sep-2022	10-Oct-2022	----	----		10-Oct-2022	30 days	24 days	✔
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-5_LAEMP_EVO_2022-09-16_N	E108	16-Sep-2022	10-Oct-2022	----	----		10-Oct-2022	30 days	24 days	✔
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
Glass soil jar/Teflon lined cap RG_RIVER_SE-5_LAEMP_EVO_2022-09-16_N	E108	16-Sep-2022	10-Oct-2022	----	----		10-Oct-2022	30 days	24 days	✔
Polycyclic Aromatic Hydrocarbons : PAHs by Hex: Ace GC-MS										
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-1_LAEMP_EVO_2022-09-19_N	E641A	19-Sep-2022	03-Oct-2022	14 days	14 days	✔	04-Oct-2022	40 days	1 days	✔



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-2_LAEMP_EVO_2022-09-19_N	E641A	19-Sep-2022	03-Oct-2022	14 days	14 days	✔	04-Oct-2022	40 days	1 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-3_LAEMP_EVO_2022-09-19_N	E641A	19-Sep-2022	03-Oct-2022	14 days	14 days	✔	04-Oct-2022	40 days	1 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-1_LAEMP_EVO_2022-09-16_N	E641A	16-Sep-2022	30-Sep-2022	14 days	14 days	✔	01-Oct-2022	40 days	1 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-2_LAEMP_EVO_2022-09-16_N	E641A	16-Sep-2022	30-Sep-2022	14 days	14 days	✔	01-Oct-2022	40 days	1 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-3_LAEMP_EVO_2022-09-16_N	E641A	16-Sep-2022	30-Sep-2022	14 days	14 days	✔	01-Oct-2022	40 days	1 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-4_LAEMP_EVO_2022-09-16_N	E641A	16-Sep-2022	30-Sep-2022	14 days	14 days	✔	01-Oct-2022	40 days	1 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap RG_ERCKUT_SE-5_LAEMP_EVO_2022-09-16_N	E641A	16-Sep-2022	30-Sep-2022	14 days	14 days	✔	01-Oct-2022	40 days	1 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap RG_RIVER_SE-5_LAEMP_EVO_2022-09-16_N	E641A	16-Sep-2022	30-Sep-2022	14 days	14 days	✔	01-Oct-2022	40 days	1 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap RG_RIVER_SE-6_LAEMP_EVO_2022-09-19_N	E641A	19-Sep-2022	03-Oct-2022	14 days	14 days	✔	04-Oct-2022	40 days	1 days	✔	



Matrix: Soil/Solid

Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-4_LAEMP_EVO_2022-09-18_N	E641A	19-Sep-2022	06-Oct-2022	14 days	17 days	* EHT	07-Oct-2022	40 days	1 days	✓	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-5_LAEMP_EVO_2022-09-18_N	E641A	19-Sep-2022	06-Oct-2022	14 days	17 days	* EHT	07-Oct-2022	40 days	1 days	✓	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-6_LAEMP_EVO_2022-09-18_N	E641A	19-Sep-2022	06-Oct-2022	14 days	17 days	* EHT	07-Oct-2022	40 days	1 days	✓	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap RG_ERCKDT_SE-7_LAEMP_EVO_2022-09-18_N	E641A	19-Sep-2022	06-Oct-2022	14 days	17 days	* EHT	07-Oct-2022	40 days	1 days	✓	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap RG_ALUSM_SE-1_LAEMP_EVO_2022-09-18_N	E641A	18-Sep-2022	06-Oct-2022	14 days	18 days	* EHT	07-Oct-2022	40 days	1 days	✓	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap RG_ALUSM_SE-2_LAEMP_EVO_2022-09-18_N	E641A	18-Sep-2022	06-Oct-2022	14 days	18 days	* EHT	07-Oct-2022	40 days	1 days	✓	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap RG_ALUSM_SE-3_LAEMP_EVO_2022-09-18_N	E641A	18-Sep-2022	06-Oct-2022	14 days	18 days	* EHT	07-Oct-2022	40 days	1 days	✓	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap RG_MICOMP_SE-1_LAEMP_EVO_2022-09-18_N	E641A	18-Sep-2022	06-Oct-2022	14 days	18 days	* EHT	07-Oct-2022	40 days	1 days	✓	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap RG_MICOMP_SE-2_LAEMP_EVO_2022-09-18_N	E641A	18-Sep-2022	06-Oct-2022	14 days	18 days	* EHT	07-Oct-2022	40 days	1 days	✓	



Matrix: Soil/Solid

Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap RG_MICOMP_SE-3_LAEMP_EVO_2022-09-18_N	E641A	18-Sep-2022	06-Oct-2022	14 days	18 days	* EHT	07-Oct-2022	40 days	1 days	✓	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap RG_MICOMP_SE-4_LAEMP_EVO_2022-09-18_N	E641A	18-Sep-2022	06-Oct-2022	14 days	18 days	* EHT	07-Oct-2022	40 days	1 days	✓	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap RG_MICOMP_SE-5_LAEMP_EVO_2022-09-18_N	E641A	18-Sep-2022	06-Oct-2022	14 days	18 days	* EHT	07-Oct-2022	40 days	1 days	✓	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap RG_RIVER_SE-2_LAEMP_EVO_2022-09-18_N	E641A	18-Sep-2022	06-Oct-2022	14 days	18 days	* EHT	07-Oct-2022	40 days	1 days	✓	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap RG_RIVER_SE-5_LAEMP_EVO_2022-09-18_N	E641A	18-Sep-2022	06-Oct-2022	14 days	18 days	* EHT	07-Oct-2022	40 days	1 days	✓	

Legend & Qualifier Definitions

EHT: Exceeded ALS recommended hold time prior to analysis.

Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Soil/Solid**

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
Analytical Methods							
Laboratory Duplicates (DUP)							
Mercury in Soil/Solid by CVAAS	E510	688150	2	40	5.0	5.0	✔
Metals in Soil/Solid by CRC ICPMS	E440	688151	2	40	5.0	5.0	✔
Moisture Content by Gravimetry	E144	675169	4	50	8.0	5.0	✔
PAHs by Hex:Ace GC-MS	E641A	675139	4	46	8.7	5.0	✔
pH by Meter (1:2 Soil:Water Extraction)	E108	684160	1	20	5.0	5.0	✔
Total Carbon by Combustion	E351	681726	2	38	5.2	5.0	✔
Total Inorganic Carbon by Acetic Acid pH Standard Curve	E354	690264	2	37	5.4	5.0	✔
Laboratory Control Samples (LCS)							
Mercury in Soil/Solid by CVAAS	E510	688150	4	40	10.0	10.0	✔
Metals in Soil/Solid by CRC ICPMS	E440	688151	4	40	10.0	10.0	✔
Moisture Content by Gravimetry	E144	675169	4	50	8.0	5.0	✔
PAHs by Hex:Ace GC-MS	E641A	675139	4	46	8.7	5.0	✔
pH by Meter (1:2 Soil:Water Extraction)	E108	684160	2	20	10.0	10.0	✔
Total Carbon by Combustion	E351	681726	4	38	10.5	10.0	✔
Total Inorganic Carbon by Acetic Acid pH Standard Curve	E354	690264	4	37	10.8	10.0	✔
Method Blanks (MB)							
Mercury in Soil/Solid by CVAAS	E510	688150	2	40	5.0	5.0	✔
Metals in Soil/Solid by CRC ICPMS	E440	688151	2	40	5.0	5.0	✔
Moisture Content by Gravimetry	E144	675169	4	50	8.0	5.0	✔
PAHs by Hex:Ace GC-MS	E641A	675139	4	46	8.7	5.0	✔
Total Carbon by Combustion	E351	681726	2	38	5.2	5.0	✔
Total Inorganic Carbon by Acetic Acid pH Standard Curve	E354	690264	2	37	5.4	5.0	✔
Matrix Spikes (MS)							
PAHs by Hex:Ace GC-MS	E641A	675139	4	46	8.7	5.0	✔



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
pH by Meter (1:2 Soil:Water Extraction)	E108 Calgary - Environmental	Soil/Solid	BC Lab Manual	pH is determined by potentiometric measurement with a pH electrode at ambient laboratory temperature (normally $20 \pm 5^\circ\text{C}$), and is carried out in accordance with procedures described in the BC Lab Manual (prescriptive method). The procedure involves mixing the dried (at $<60^\circ\text{C}$) and sieved (10mesh/2mm) sample with ultra pure water at a 1:2 ratio of sediment to water. The pH is then measured by a standard pH probe.
Moisture Content by Gravimetry	E144 Calgary - Environmental	Soil/Solid	CCME PHC in Soil - Tier 1	Moisture is measured gravimetrically by drying the sample at 105°C . Moisture content is calculated as the weight loss (due to water) divided by the wet weight of the sample, expressed as a percentage.
Grain Size Report (Attachment) Pipet/Sieve Method	E185A Saskatoon - Environmental	Soil/Solid	SSIR-51 Method 3.2.1	A grain size curve is a graphical representation of the particle sizing of a sample representing the percent passing against the effective particle size.
Total Carbon by Combustion	E351 Saskatoon - Environmental	Soil/Solid	CSSS (2008) 21.2 (mod)	Total Carbon is determined by the high temperature combustion method with measurement by an infrared detector.
Total Inorganic Carbon by Acetic Acid pH Standard Curve	E354 Saskatoon - Environmental	Soil/Solid	CSSS (2008) 20.2	Total Inorganic Carbon is determined by acetic acid pH standard curve, where a known quantity of acetic acid is consumed by reaction with carbonates in the soil. The pH of the resulting solution is measured and compared against a standard curve relating pH to weight of carbonate.
Metals in Soil/Solid by CRC ICPMS	E440 Calgary - Environmental	Soil/Solid	EPA 6020B (mod)	This method is intended to liberate metals that may be environmentally available. Samples are dried, then sieved through a 2 mm sieve, and digested with HNO_3 and HCl . Dependent on sample matrix, some metals may be only partially recovered, including Al, Ba, Be, Cr, Sr, Ti, Tl, V, W, and Zr. Silicate minerals are not solubilized. Volatile forms of sulfur (including sulfide) may not be captured, as they may be lost during sampling, storage, or digestion. This method does not adequately recover elemental sulfur, and is unsuitable for assessment of elemental sulfur standards or guidelines. Analysis is by Collision/Reaction Cell ICPMS.
Mercury in Soil/Solid by CVAAS	E510 Saskatoon - Environmental	Soil/Solid	EPA 200.2/1631 Appendix (mod)	Samples are dried, then sieved through a 2 mm sieve, and digested with HNO_3 and HCl , followed by CVAAS analysis.
PAHs by Hex:Ace GC-MS	E641A Calgary - Environmental	Soil/Solid	EPA 8270E (mod)	Polycyclic Aromatic Hydrocarbons (PAHs) are extracted with hexane/acetone and analyzed by GC-MS. If reported, IACR (index of additive cancer risk, unitless) and B(a)P toxic potency equivalent (in soil concentration units) are calculated as per CCME PAH Soil Quality Guidelines fact sheet (2010) or ABT1.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Particle Size Analysis (Pipette) - Wentworth Classification	EC184A Saskatoon - Environmental	Soil/Solid	Modified Wentworth	The particle size determination is performed by various methods to generate a Grain Size curve. The data from the curve is then used to produce particle size ranges based on the Modified Wentworth Classification system.
Total Organic Carbon (Calculated) in soil	EC356 Saskatoon - Environmental	Soil/Solid	CSSS (2008) 21.2	Total Organic Carbon (TOC) is calculated by the difference between total carbon (TC) and total inorganic carbon (TIC).

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Leach 1:2 Soil:Water for pH/EC	EP108 Calgary - Environmental	Soil/Solid	BC WLAP METHOD: PH, ELECTROMETRIC, SOIL	The procedure involves mixing the dried (at <60°C) and sieved (No. 10 / 2mm) sample with deionized/distilled water at a 1:2 ratio of sediment to water.
Digestion for Metals and Mercury	EP440 Calgary - Environmental	Soil/Solid	EPA 200.2 (mod)	Samples are dried, then sieved through a 2 mm sieve, and digested with HNO ₃ and HCl. This method is intended to liberate metals that may be environmentally available.
PHCs and PAHs Hexane-Acetone Tumbler Extraction	EP601 Calgary - Environmental	Soil/Solid	CCME PHC in Soil - Tier 1 (mod)	Samples are subsampled and Petroleum Hydrocarbons (PHC) and PAHs are extracted with 1:1 hexane:acetone using a rotary extractor.
Dry and Grind in Soil/Solid <60°C	EPP442 Calgary - Environmental	Soil/Solid	Soil Sampling and Methods of Analysis, Carter 2008	After removal of any coarse fragments and reservation of wet subsamples a portion of homogenized sample is set in a tray and dried at less than 60°C until dry. The sample is then particle size reduced with an automated crusher or mortar and pestle, typically to <2 mm. Further size reduction may be needed for particular tests.

QUALITY CONTROL REPORT

<p>Work Order : CG2213420</p> <p>Client : Teck Coal Limited</p> <p>Contact : Mike Pope</p> <p>Address : RR#1 HWY#3 Sparwood BC Canada V0B 2G1</p> <p>Telephone :</p> <p>Project : REGIONAL EFFECTS PROGRAM</p> <p>PO : VPO00816101</p> <p>C-O-C number : REP_LAEMP_EVO_2022-09_ALS</p> <p>Sampler : Jennifer Ings ____</p> <p>Site : ----</p> <p>Quote number : Teck Coal Master Quote</p> <p>No. of samples received : 27</p> <p>No. of samples analysed : 27</p>	<p>Page : 1 of 30</p> <p>Laboratory : Calgary - Environmental</p> <p>Account Manager : Lyudmyla Shvets</p> <p>Address : 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5</p> <p>Telephone : +1 403 407 1800</p> <p>Date Samples Received : 27-Sep-2022 13:00</p> <p>Date Analysis Commenced : 30-Sep-2022</p> <p>Issue Date : 19-Oct-2022 17:51</p>
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This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Reference Material (RM) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
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Page : 2 of 30
Work Order : CG2213420
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Soil/Solid

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 675169)											
CG2212653-005	Anonymous	moisture	----	E144	0.25	%	9.17	9.50	3.49%	20%	----
Physical Tests (QC Lot: 675175)											
CG2213420-003	RG_ERCKUT_SE-3_LAEM P_EVO_2022-09-16_N	moisture	----	E144	0.25	%	48.0	51.0	6.19%	20%	----
Physical Tests (QC Lot: 678141)											
CG2213420-020	RG_ERCKDT_SE-1_LAEM P_EVO_2022-09-19_N	moisture	----	E144	0.25	%	71.8	72.8	1.34%	20%	----
Physical Tests (QC Lot: 683512)											
CG2213420-007	RG_ALUSM_SE-1_LAEMP _EVO_2022-09-18_N	moisture	----	E144	0.25	%	44.1	46.0	4.17%	20%	----
Physical Tests (QC Lot: 684160)											
CG2213420-019	RG_BOCKRD_SE-3_LAE MP_EVO_2022-09-20	pH (1:2 soil:water)	----	E108	0.10	pH units	8.00	8.00	0.00%	10%	----
Physical Tests (QC Lot: 688905)											
CG2213410-001	Anonymous	pH (1:2 soil:water)	----	E108	0.10	pH units	8.26	8.41	1.80%	5%	----
Physical Tests (QC Lot: 688906)											
CG2213420-010	RG_RIVER_SE-2_LAEMP _EVO_2022-09-18_N	pH (1:2 soil:water)	----	E108	0.10	pH units	7.97	8.03	0.750%	5%	----
Organic / Inorganic Carbon (QC Lot: 681726)											
CG2213420-001	RG_ERCKUT_SE-1_LAEM P_EVO_2022-09-16_N	carbon, total [TC]	----	E351	0.050	%	8.24	8.16	0.944%	20%	----
Organic / Inorganic Carbon (QC Lot: 687933)											
CG2213383-026	Anonymous	carbon, total [TC]	----	E351	0.050	%	4.36	4.36	0.115%	20%	----
Organic / Inorganic Carbon (QC Lot: 690264)											
CG2213420-001	RG_ERCKUT_SE-1_LAEM P_EVO_2022-09-16_N	carbon, inorganic [IC]	----	E354	0.050	%	0.547	0.550	0.554%	20%	----
Organic / Inorganic Carbon (QC Lot: 691424)											
CG2212761-010	Anonymous	carbon, inorganic [IC]	----	E354	0.050	%	0.703	0.703	0.0552%	20%	----
Metals (QC Lot: 688150)											
CG2213410-001	Anonymous	mercury	7439-97-6	E510	0.0050	mg/kg	0.0339	0.0301	11.8%	40%	----
Metals (QC Lot: 688151)											
CG2213410-001	Anonymous	aluminum	7429-90-5	E440	50	mg/kg	5200	4970	4.62%	40%	----
		antimony	7440-36-0	E440	0.10	mg/kg	0.59	0.64	0.05	Diff <2x LOR	----
		arsenic	7440-38-2	E440	0.10	mg/kg	4.62	4.50	2.76%	30%	----



Sub-Matrix: Soil/Solid

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Metals (QC Lot: 688151) - continued											
CG2213410-001	Anonymous	barium	7440-39-3	E440	0.50	mg/kg	210	221	5.18%	40%	----
		beryllium	7440-41-7	E440	0.10	mg/kg	0.50	0.54	0.04	Diff <2x LOR	----
		bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	0	Diff <2x LOR	----
		boron	7440-42-8	E440	5.0	mg/kg	5.2	5.4	0.2	Diff <2x LOR	----
		cadmium	7440-43-9	E440	0.020	mg/kg	1.99	1.85	7.30%	30%	----
		calcium	7440-70-2	E440	50	mg/kg	72600	72000	0.828%	30%	----
		chromium	7440-47-3	E440	0.50	mg/kg	9.75	9.10	6.87%	30%	----
		cobalt	7440-48-4	E440	0.10	mg/kg	6.65	6.15	7.86%	30%	----
		copper	7440-50-8	E440	0.50	mg/kg	12.5	11.9	4.55%	30%	----
		iron	7439-89-6	E440	50	mg/kg	13700	12800	6.80%	30%	----
		lead	7439-92-1	E440	0.50	mg/kg	7.15	7.16	0.0930%	40%	----
		lithium	7439-93-2	E440	2.0	mg/kg	8.3	7.9	0.4	Diff <2x LOR	----
		magnesium	7439-95-4	E440	20	mg/kg	10600	10200	3.62%	30%	----
		manganese	7439-96-5	E440	1.0	mg/kg	459	438	4.68%	30%	----
		molybdenum	7439-98-7	E440	0.10	mg/kg	1.46	1.52	4.06%	40%	----
		nickel	7440-02-0	E440	0.50	mg/kg	47.1	44.3	6.15%	30%	----
		phosphorus	7723-14-0	E440	50	mg/kg	1050	1250	16.9%	30%	----
		potassium	7440-09-7	E440	100	mg/kg	1310	1280	2.25%	40%	----
		selenium	7782-49-2	E440	0.20	mg/kg	1.87	1.73	7.53%	30%	----
		silver	7440-22-4	E440	0.10	mg/kg	0.15	0.14	0.01	Diff <2x LOR	----
		sodium	7440-23-5	E440	50	mg/kg	71	71	0.5	Diff <2x LOR	----
		strontium	7440-24-6	E440	0.50	mg/kg	79.9	81.1	1.49%	40%	----
		sulfur	7704-34-9	E440	1000	mg/kg	<1000	<1000	0	Diff <2x LOR	----
		thallium	7440-28-0	E440	0.050	mg/kg	0.224	0.257	0.033	Diff <2x LOR	----
		tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	0	Diff <2x LOR	----
		titanium	7440-32-6	E440	1.0	mg/kg	7.9	6.9	13.7%	40%	----
		tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	0	Diff <2x LOR	----
		uranium	7440-61-1	E440	0.050	mg/kg	1.07	1.06	0.600%	30%	----
		vanadium	7440-62-2	E440	0.20	mg/kg	26.3	25.8	1.74%	30%	----
		zinc	7440-66-6	E440	2.0	mg/kg	149	143	4.30%	30%	----
		zirconium	7440-67-7	E440	1.0	mg/kg	<1.0	<1.0	0	Diff <2x LOR	----
Metals (QC Lot: 688152)											
CG2213420-010	RG_RIVER_SE-2_LAEMP _EVO_2022-09-18_N	aluminum	7429-90-5	E440	50	mg/kg	7780	7510	3.47%	40%	----
		antimony	7440-36-0	E440	0.10	mg/kg	0.44	0.41	0.02	Diff <2x LOR	----



Sub-Matrix: Soil/Solid

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Metals (QC Lot: 688152) - continued											
CG2213420-010	RG_RIVER_SE-2_LAEMP _EVO_2022-09-18_N	arsenic	7440-38-2	E440	0.10	mg/kg	5.39	5.52	2.47%	30%	----
		barium	7440-39-3	E440	0.50	mg/kg	155	156	0.956%	40%	----
		beryllium	7440-41-7	E440	0.10	mg/kg	0.60	0.60	0.004	Diff <2x LOR	----
		bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	0	Diff <2x LOR	----
		boron	7440-42-8	E440	5.0	mg/kg	6.9	6.0	1.0	Diff <2x LOR	----
		cadmium	7440-43-9	E440	0.020	mg/kg	0.564	0.606	7.06%	30%	----
		calcium	7440-70-2	E440	50	mg/kg	31700	34000	7.16%	30%	----
		chromium	7440-47-3	E440	0.50	mg/kg	11.5	11.0	4.32%	30%	----
		cobalt	7440-48-4	E440	0.10	mg/kg	4.82	5.13	6.33%	30%	----
		copper	7440-50-8	E440	0.50	mg/kg	13.1	13.6	3.34%	30%	----
		iron	7439-89-6	E440	50	mg/kg	14600	15300	4.35%	30%	----
		lead	7439-92-1	E440	0.50	mg/kg	10.4	9.78	6.33%	40%	----
		lithium	7439-93-2	E440	2.0	mg/kg	12.7	12.8	0.1	Diff <2x LOR	----
		magnesium	7439-95-4	E440	20	mg/kg	8320	8730	4.80%	30%	----
		manganese	7439-96-5	E440	1.0	mg/kg	137	147	6.82%	30%	----
		molybdenum	7439-98-7	E440	0.10	mg/kg	1.06	1.06	0.447%	40%	----
		nickel	7440-02-0	E440	0.50	mg/kg	15.3	15.5	1.02%	30%	----
		phosphorus	7723-14-0	E440	50	mg/kg	1130	1070	5.21%	30%	----
		potassium	7440-09-7	E440	100	mg/kg	1520	1410	7.40%	40%	----
		selenium	7782-49-2	E440	0.20	mg/kg	0.86	0.84	0.02	Diff <2x LOR	----
		silver	7440-22-4	E440	0.10	mg/kg	0.11	0.11	0.005	Diff <2x LOR	----
		sodium	7440-23-5	E440	50	mg/kg	73	74	0.8	Diff <2x LOR	----
		strontium	7440-24-6	E440	0.50	mg/kg	49.4	48.9	1.00%	40%	----
		sulfur	7704-34-9	E440	1000	mg/kg	<1000	<1000	0	Diff <2x LOR	----
		thallium	7440-28-0	E440	0.050	mg/kg	0.237	0.214	0.022	Diff <2x LOR	----
		tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	0	Diff <2x LOR	----
		titanium	7440-32-6	E440	1.0	mg/kg	5.6	5.1	9.52%	40%	----
		tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	0	Diff <2x LOR	----
uranium	7440-61-1	E440	0.050	mg/kg	0.692	0.652	5.95%	30%	----		
vanadium	7440-62-2	E440	0.20	mg/kg	19.8	19.4	2.20%	30%	----		
zinc	7440-66-6	E440	2.0	mg/kg	88.3	91.7	3.82%	30%	----		
zirconium	7440-67-7	E440	1.0	mg/kg	<1.0	<1.0	0	Diff <2x LOR	----		

Metals (QC Lot: 688153)



Sub-Matrix: Soil/Solid					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Metals (QC Lot: 688153) - continued											
CG2213420-010	RG_RIVER_SE-2_LAEMP_EVO_2022-09-18_N	mercury	7439-97-6	E510	0.0050	mg/kg	0.0279	0.0270	3.25%	40%	----
Metals (QC Lot: 691345)											
CG2213420-017	RG_BOCKRD_SE-1_LAE_MP_EVO_2022-09-20	mercury	7439-97-6	E510	0.0074	mg/kg	0.0305	0.0350	0.0044	Diff <2x LOR	----
Metals (QC Lot: 691346)											
CG2213420-017	RG_BOCKRD_SE-1_LAE_MP_EVO_2022-09-20	aluminum	7429-90-5	E440	74	mg/kg	2870	3010	4.93%	40%	----
		antimony	7440-36-0	E440	0.15	mg/kg	0.74	0.77	0.03	Diff <2x LOR	----
		arsenic	7440-38-2	E440	0.15	mg/kg	2.96	3.02	1.94%	30%	----
		barium	7440-39-3	E440	3.68	mg/kg	3980	4740	17.4%	40%	----
		beryllium	7440-41-7	E440	0.15	mg/kg	0.23	0.28	0.05	Diff <2x LOR	----
		bismuth	7440-69-9	E440	0.29	mg/kg	<0.28	<0.29	0.010	Diff <2x LOR	----
		boron	7440-42-8	E440	7.4	mg/kg	7.8	7.9	0.2	Diff <2x LOR	----
		cadmium	7440-43-9	E440	0.029	mg/kg	7.50	7.78	3.58%	30%	----
		calcium	7440-70-2	E440	74	mg/kg	248000	257000	3.37%	30%	----
		chromium	7440-47-3	E440	0.74	mg/kg	6.22	6.68	7.22%	30%	----
		cobalt	7440-48-4	E440	0.15	mg/kg	5.62	5.89	4.61%	30%	----
		copper	7440-50-8	E440	0.74	mg/kg	13.4	13.8	2.92%	30%	----
		iron	7439-89-6	E440	74	mg/kg	5500	5820	5.56%	30%	----
		lead	7439-92-1	E440	0.74	mg/kg	6.19	6.51	5.08%	40%	----
		lithium	7439-93-2	E440	2.9	mg/kg	5.9	6.3	0.4	Diff <2x LOR	----
		magnesium	7439-95-4	E440	29	mg/kg	6710	6580	1.96%	30%	----
		manganese	7439-96-5	E440	1.5	mg/kg	183	189	3.12%	30%	----
		molybdenum	7439-98-7	E440	0.15	mg/kg	1.34	1.39	3.98%	40%	----
		nickel	7440-02-0	E440	0.74	mg/kg	116	124	6.27%	30%	----
		phosphorus	7723-14-0	E440	74	mg/kg	586	556	5.26%	30%	----
		potassium	7440-09-7	E440	150	mg/kg	1000	1010	1.12%	40%	----
		selenium	7782-49-2	E440	0.29	mg/kg	16.6	19.3	15.0%	30%	----
		silver	7440-22-4	E440	0.15	mg/kg	0.14	<0.15	0.14	Diff <2x LOR	----
		sodium	7440-23-5	E440	74	mg/kg	170	161	8	Diff <2x LOR	----
		strontium	7440-24-6	E440	0.74	mg/kg	513	555	7.86%	40%	----
		sulfur	7704-34-9	E440	1500	mg/kg	5500	6300	700	Diff <2x LOR	----
		thallium	7440-28-0	E440	0.074	mg/kg	0.231	0.256	0.025	Diff <2x LOR	----
		tin	7440-31-5	E440	2.9	mg/kg	<2.8	<2.9	0.10	Diff <2x LOR	----
		titanium	7440-32-6	E440	1.5	mg/kg	38.1	30.5	22.2%	40%	----



Sub-Matrix: Soil/Solid					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Metals (QC Lot: 691346) - continued											
CG2213420-017	RG_BOCKRD_SE-1_LAE MP_EVO_2022-09-20	tungsten	7440-33-7	E440	0.74	mg/kg	1.27	1.36	0.09	Diff <2x LOR	----
		uranium	7440-61-1	E440	0.074	mg/kg	3.12	3.49	11.3%	30%	----
		vanadium	7440-62-2	E440	0.29	mg/kg	14.1	15.0	6.41%	30%	----
		zinc	7440-66-6	E440	2.9	mg/kg	487	508	4.22%	30%	----
		zirconium	7440-67-7	E440	1.5	mg/kg	1.6	<1.5	1.6	Diff <2x LOR	----
Polycyclic Aromatic Hydrocarbons (QC Lot: 675139)											
CG2213410-001	Anonymous	acenaphthene	83-32-9	E641A	0.050	mg/kg	0.070	0.073	0.003	Diff <2x LOR	----
		acenaphthylene	208-96-8	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		acridine	260-94-6	E641A	0.050	mg/kg	0.125	0.115	0.010	Diff <2x LOR	----
		anthracene	120-12-7	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		benz(a)anthracene	56-55-3	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		benzo(a)pyrene	50-32-8	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		benzo(b+j)fluoranthene	n/a	E641A	0.050	mg/kg	0.083	0.064	0.019	Diff <2x LOR	----
		benzo(g,h,i)perylene	191-24-2	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		benzo(k)fluoranthene	207-08-9	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		chrysene	218-01-9	E641A	0.050	mg/kg	0.198	0.177	0.020	Diff <2x LOR	----
		dibenz(a,h)anthracene	53-70-3	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		fluoranthene	206-44-0	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		fluorene	86-73-7	E641A	0.050	mg/kg	0.181	0.187	0.006	Diff <2x LOR	----
		indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		methylnaphthalene, 1-	90-12-0	E641A	0.030	mg/kg	0.833	0.872	4.59%	50%	----
		methylnaphthalene, 2-	91-57-6	E641A	0.030	mg/kg	1.37	1.47	7.04%	50%	----
		naphthalene	91-20-3	E641A	0.010	mg/kg	0.446	0.497	10.8%	50%	----
phenanthrene	85-01-8	E641A	0.050	mg/kg	0.707	0.742	4.81%	50%	----		
pyrene	129-00-0	E641A	0.050	mg/kg	0.058	0.052	0.005	Diff <2x LOR	----		
quinoline	91-22-5	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----		
Polycyclic Aromatic Hydrocarbons (QC Lot: 675140)											
CG2213420-003	RG_ERCKUT_SE-3_LAEM P_EVO_2022-09-16_N	acenaphthene	83-32-9	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		acenaphthylene	208-96-8	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		acridine	260-94-6	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		anthracene	120-12-7	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		benz(a)anthracene	56-55-3	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		benzo(a)pyrene	50-32-8	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----



Sub-Matrix: Soil/Solid

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Polycyclic Aromatic Hydrocarbons (QC Lot: 675140) - continued											
CG2213420-003	RG_ERCKUT_SE-3_LAEM P_EVO_2022-09-16_N	benzo(b+j)fluoranthene	n/a	E641A	0.050	mg/kg	0.064	0.103	0.038	Diff <2x LOR	----
		benzo(g,h,i)perylene	191-24-2	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		benzo(k)fluoranthene	207-08-9	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		chrysene	218-01-9	E641A	0.050	mg/kg	0.131	0.207	0.076	Diff <2x LOR	----
		dibenz(a,h)anthracene	53-70-3	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		fluoranthene	206-44-0	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		fluorene	86-73-7	E641A	0.050	mg/kg	<0.050	0.050	0.0003	Diff <2x LOR	----
		indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		methylnaphthalene, 1-	90-12-0	E641A	0.030	mg/kg	0.193	0.289	39.7%	50%	----
		methylnaphthalene, 2-	91-57-6	E641A	0.030	mg/kg	0.301	0.415	31.8%	50%	----
		naphthalene	91-20-3	E641A	0.010	mg/kg	0.159	0.202	23.6%	50%	----
		phenanthrene	85-01-8	E641A	0.050	mg/kg	0.504	0.703	33.0%	50%	----
		pyrene	129-00-0	E641A	0.050	mg/kg	<0.050	0.064	0.014	Diff <2x LOR	----
quinoline	91-22-5	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----		
Polycyclic Aromatic Hydrocarbons (QC Lot: 678138)											
CG2213420-020	RG_ERCKDT_SE-1_LAEM P_EVO_2022-09-19_N	acenaphthene	83-32-9	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		acenaphthylene	208-96-8	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		acridine	260-94-6	E641A	0.050	mg/kg	0.097	0.089	0.008	Diff <2x LOR	----
		anthracene	120-12-7	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		benz(a)anthracene	56-55-3	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		benzo(a)pyrene	50-32-8	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		benzo(b+j)fluoranthene	n/a	E641A	0.050	mg/kg	0.082	0.070	0.012	Diff <2x LOR	----
		benzo(g,h,i)perylene	191-24-2	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		benzo(k)fluoranthene	207-08-9	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		chrysene	218-01-9	E641A	0.050	mg/kg	0.159	0.155	0.004	Diff <2x LOR	----
		dibenz(a,h)anthracene	53-70-3	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		fluoranthene	206-44-0	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		fluorene	86-73-7	E641A	0.050	mg/kg	0.144	0.131	0.014	Diff <2x LOR	----
		indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		methylnaphthalene, 1-	90-12-0	E641A	0.030	mg/kg	0.482	0.414	15.2%	50%	----
		methylnaphthalene, 2-	91-57-6	E641A	0.030	mg/kg	0.862	0.768	11.6%	50%	----
naphthalene	91-20-3	E641A	0.010	mg/kg	0.234	0.208	11.8%	50%	----		
phenanthrene	85-01-8	E641A	0.050	mg/kg	0.591	0.511	14.6%	50%	----		



Sub-Matrix: Soil/Solid					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Polycyclic Aromatic Hydrocarbons (QC Lot: 678138) - continued											
CG2213420-020	RG_ERCKDT_SE-1_LAEM P_EVO_2022-09-19_N	pyrene	129-00-0	E641A	0.050	mg/kg	0.052	<0.050	0.002	Diff <2x LOR	----
		quinoline	91-22-5	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
Polycyclic Aromatic Hydrocarbons (QC Lot: 683511)											
CG2213420-007	RG_ALUSM_SE-1_LAEMP _EVO_2022-09-18_N	acenaphthene	83-32-9	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		acenaphthylene	208-96-8	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		acridine	260-94-6	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		anthracene	120-12-7	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		benz(a)anthracene	56-55-3	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		benzo(a)pyrene	50-32-8	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		benzo(b+j)fluoranthene	n/a	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		benzo(g,h,i)perylene	191-24-2	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		benzo(k)fluoranthene	207-08-9	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		chrysene	218-01-9	E641A	0.050	mg/kg	0.054	0.055	0.001	Diff <2x LOR	----
		dibenz(a,h)anthracene	53-70-3	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		fluoranthene	206-44-0	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		fluorene	86-73-7	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		methylnaphthalene, 1-	90-12-0	E641A	0.030	mg/kg	0.033	0.032	0.001	Diff <2x LOR	----
		methylnaphthalene, 2-	91-57-6	E641A	0.030	mg/kg	0.053	0.057	0.004	Diff <2x LOR	----
		naphthalene	91-20-3	E641A	0.010	mg/kg	0.045	0.045	0.314%	50%	----
		phenanthrene	85-01-8	E641A	0.050	mg/kg	0.094	0.096	0.002	Diff <2x LOR	----
pyrene	129-00-0	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----		
quinoline	91-22-5	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----		



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 675169)						
moisture	---	E144	0.25	%	<0.25	---
Physical Tests (QCLot: 675175)						
moisture	---	E144	0.25	%	<0.25	---
Physical Tests (QCLot: 678141)						
moisture	---	E144	0.25	%	<0.25	---
Physical Tests (QCLot: 683512)						
moisture	---	E144	0.25	%	<0.25	---
Organic / Inorganic Carbon (QCLot: 681726)						
carbon, total [TC]	---	E351	0.05	%	<0.050	---
Organic / Inorganic Carbon (QCLot: 687933)						
carbon, total [TC]	---	E351	0.05	%	<0.050	---
Organic / Inorganic Carbon (QCLot: 690264)						
carbon, inorganic [IC]	---	E354	0.05	%	<0.050	---
Organic / Inorganic Carbon (QCLot: 691424)						
carbon, inorganic [IC]	---	E354	0.05	%	<0.050	---
Metals (QCLot: 688150)						
mercury	7439-97-6	E510	0.005	mg/kg	<0.0050	---
Metals (QCLot: 688151)						
aluminum	7429-90-5	E440	50	mg/kg	<50	---
antimony	7440-36-0	E440	0.1	mg/kg	<0.10	---
arsenic	7440-38-2	E440	0.1	mg/kg	<0.10	---
barium	7440-39-3	E440	0.5	mg/kg	<0.50	---
beryllium	7440-41-7	E440	0.1	mg/kg	<0.10	---
bismuth	7440-69-9	E440	0.2	mg/kg	<0.20	---
boron	7440-42-8	E440	5	mg/kg	<5.0	---
cadmium	7440-43-9	E440	0.02	mg/kg	<0.020	---
calcium	7440-70-2	E440	50	mg/kg	<50	---
chromium	7440-47-3	E440	0.5	mg/kg	<0.50	---
cobalt	7440-48-4	E440	0.1	mg/kg	<0.10	---
copper	7440-50-8	E440	0.5	mg/kg	<0.50	---
iron	7439-89-6	E440	50	mg/kg	<50	---
lead	7439-92-1	E440	0.5	mg/kg	<0.50	---



Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Metals (QCLot: 688151) - continued						
lithium	7439-93-2	E440	2	mg/kg	<2.0	----
magnesium	7439-95-4	E440	20	mg/kg	<20	----
manganese	7439-96-5	E440	1	mg/kg	<1.0	----
molybdenum	7439-98-7	E440	0.1	mg/kg	<0.10	----
nickel	7440-02-0	E440	0.5	mg/kg	<0.50	----
phosphorus	7723-14-0	E440	50	mg/kg	<50	----
potassium	7440-09-7	E440	100	mg/kg	<100	----
selenium	7782-49-2	E440	0.2	mg/kg	<0.20	----
silver	7440-22-4	E440	0.1	mg/kg	<0.10	----
sodium	7440-23-5	E440	50	mg/kg	<50	----
strontium	7440-24-6	E440	0.5	mg/kg	<0.50	----
sulfur	7704-34-9	E440	1000	mg/kg	<1000	----
thallium	7440-28-0	E440	0.05	mg/kg	<0.050	----
tin	7440-31-5	E440	2	mg/kg	<2.0	----
titanium	7440-32-6	E440	1	mg/kg	<1.0	----
tungsten	7440-33-7	E440	0.5	mg/kg	<0.50	----
uranium	7440-61-1	E440	0.05	mg/kg	<0.050	----
vanadium	7440-62-2	E440	0.2	mg/kg	<0.20	----
zinc	7440-66-6	E440	2	mg/kg	<2.0	----
zirconium	7440-67-7	E440	1	mg/kg	<1.0	----
Metals (QCLot: 688152)						
aluminum	7429-90-5	E440	50	mg/kg	<50	----
antimony	7440-36-0	E440	0.1	mg/kg	<0.10	----
arsenic	7440-38-2	E440	0.1	mg/kg	<0.10	----
barium	7440-39-3	E440	0.5	mg/kg	<0.50	----
beryllium	7440-41-7	E440	0.1	mg/kg	<0.10	----
bismuth	7440-69-9	E440	0.2	mg/kg	<0.20	----
boron	7440-42-8	E440	5	mg/kg	<5.0	----
cadmium	7440-43-9	E440	0.02	mg/kg	<0.020	----
calcium	7440-70-2	E440	50	mg/kg	<50	----
chromium	7440-47-3	E440	0.5	mg/kg	<0.50	----
cobalt	7440-48-4	E440	0.1	mg/kg	<0.10	----
copper	7440-50-8	E440	0.5	mg/kg	<0.50	----
iron	7439-89-6	E440	50	mg/kg	<50	----
lead	7439-92-1	E440	0.5	mg/kg	<0.50	----



Sub-Matrix: **Soil/Solid**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Metals (QCLot: 688152) - continued						
lithium	7439-93-2	E440	2	mg/kg	<2.0	----
magnesium	7439-95-4	E440	20	mg/kg	<20	----
manganese	7439-96-5	E440	1	mg/kg	<1.0	----
molybdenum	7439-98-7	E440	0.1	mg/kg	<0.10	----
nickel	7440-02-0	E440	0.5	mg/kg	<0.50	----
phosphorus	7723-14-0	E440	50	mg/kg	<50	----
potassium	7440-09-7	E440	100	mg/kg	<100	----
selenium	7782-49-2	E440	0.2	mg/kg	<0.20	----
silver	7440-22-4	E440	0.1	mg/kg	<0.10	----
sodium	7440-23-5	E440	50	mg/kg	<50	----
strontium	7440-24-6	E440	0.5	mg/kg	<0.50	----
sulfur	7704-34-9	E440	1000	mg/kg	<1000	----
thallium	7440-28-0	E440	0.05	mg/kg	<0.050	----
tin	7440-31-5	E440	2	mg/kg	<2.0	----
titanium	7440-32-6	E440	1	mg/kg	<1.0	----
tungsten	7440-33-7	E440	0.5	mg/kg	<0.50	----
uranium	7440-61-1	E440	0.05	mg/kg	<0.050	----
vanadium	7440-62-2	E440	0.2	mg/kg	<0.20	----
zinc	7440-66-6	E440	2	mg/kg	<2.0	----
zirconium	7440-67-7	E440	1	mg/kg	<1.0	----
Metals (QCLot: 688153)						
mercury	7439-97-6	E510	0.005	mg/kg	<0.0050	----
Metals (QCLot: 691345)						
mercury	7439-97-6	E510	0.005	mg/kg	<0.0050	----
Metals (QCLot: 691346)						
aluminum	7429-90-5	E440	50	mg/kg	<50	----
antimony	7440-36-0	E440	0.1	mg/kg	<0.10	----
arsenic	7440-38-2	E440	0.1	mg/kg	<0.10	----
barium	7440-39-3	E440	0.5	mg/kg	<0.50	----
beryllium	7440-41-7	E440	0.1	mg/kg	<0.10	----
bismuth	7440-69-9	E440	0.2	mg/kg	<0.20	----
boron	7440-42-8	E440	5	mg/kg	<5.0	----
cadmium	7440-43-9	E440	0.02	mg/kg	<0.020	----
calcium	7440-70-2	E440	50	mg/kg	<50	----
chromium	7440-47-3	E440	0.5	mg/kg	<0.50	----



Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Metals (QCLot: 691346) - continued						
cobalt	7440-48-4	E440	0.1	mg/kg	<0.10	----
copper	7440-50-8	E440	0.5	mg/kg	<0.50	----
iron	7439-89-6	E440	50	mg/kg	<50	----
lead	7439-92-1	E440	0.5	mg/kg	<0.50	----
lithium	7439-93-2	E440	2	mg/kg	<2.0	----
magnesium	7439-95-4	E440	20	mg/kg	<20	----
manganese	7439-96-5	E440	1	mg/kg	<1.0	----
molybdenum	7439-98-7	E440	0.1	mg/kg	<0.10	----
nickel	7440-02-0	E440	0.5	mg/kg	<0.50	----
phosphorus	7723-14-0	E440	50	mg/kg	<50	----
potassium	7440-09-7	E440	100	mg/kg	<100	----
selenium	7782-49-2	E440	0.2	mg/kg	<0.20	----
silver	7440-22-4	E440	0.1	mg/kg	<0.10	----
sodium	7440-23-5	E440	50	mg/kg	<50	----
strontium	7440-24-6	E440	0.5	mg/kg	<0.50	----
sulfur	7704-34-9	E440	1000	mg/kg	<1000	----
thallium	7440-28-0	E440	0.05	mg/kg	<0.050	----
tin	7440-31-5	E440	2	mg/kg	<2.0	----
titanium	7440-32-6	E440	1	mg/kg	<1.0	----
tungsten	7440-33-7	E440	0.5	mg/kg	<0.50	----
uranium	7440-61-1	E440	0.05	mg/kg	<0.050	----
vanadium	7440-62-2	E440	0.2	mg/kg	<0.20	----
zinc	7440-66-6	E440	2	mg/kg	<2.0	----
zirconium	7440-67-7	E440	1	mg/kg	<1.0	----
Polycyclic Aromatic Hydrocarbons (QCLot: 675139)						
acenaphthene	83-32-9	E641A	0.05	mg/kg	<0.050	----
acenaphthylene	208-96-8	E641A	0.05	mg/kg	<0.050	----
acridine	260-94-6	E641A	0.05	mg/kg	<0.050	----
anthracene	120-12-7	E641A	0.05	mg/kg	<0.050	----
benz(a)anthracene	56-55-3	E641A	0.05	mg/kg	<0.050	----
benzo(a)pyrene	50-32-8	E641A	0.05	mg/kg	<0.050	----
benzo(b+j)fluoranthene	n/a	E641A	0.05	mg/kg	<0.050	----
benzo(g,h,i)perylene	191-24-2	E641A	0.05	mg/kg	<0.050	----
benzo(k)fluoranthene	207-08-9	E641A	0.05	mg/kg	<0.050	----
chrysene	218-01-9	E641A	0.05	mg/kg	<0.050	----



Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Polycyclic Aromatic Hydrocarbons (QCLot: 675139) - continued						
dibenz(a,h)anthracene	53-70-3	E641A	0.05	mg/kg	<0.050	----
fluoranthene	206-44-0	E641A	0.05	mg/kg	<0.050	----
fluorene	86-73-7	E641A	0.05	mg/kg	<0.050	----
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.05	mg/kg	<0.050	----
methylnaphthalene, 1-	90-12-0	E641A	0.03	mg/kg	<0.030	----
methylnaphthalene, 2-	91-57-6	E641A	0.03	mg/kg	<0.030	----
naphthalene	91-20-3	E641A	0.01	mg/kg	<0.010	----
phenanthrene	85-01-8	E641A	0.05	mg/kg	<0.050	----
pyrene	129-00-0	E641A	0.05	mg/kg	<0.050	----
quinoline	91-22-5	E641A	0.05	mg/kg	<0.050	----
Polycyclic Aromatic Hydrocarbons (QCLot: 675140)						
acenaphthene	83-32-9	E641A	0.05	mg/kg	<0.050	----
acenaphthylene	208-96-8	E641A	0.05	mg/kg	<0.050	----
acridine	260-94-6	E641A	0.05	mg/kg	<0.050	----
anthracene	120-12-7	E641A	0.05	mg/kg	<0.050	----
benz(a)anthracene	56-55-3	E641A	0.05	mg/kg	<0.050	----
benzo(a)pyrene	50-32-8	E641A	0.05	mg/kg	<0.050	----
benzo(b+j)fluoranthene	n/a	E641A	0.05	mg/kg	<0.050	----
benzo(g,h,i)perylene	191-24-2	E641A	0.05	mg/kg	<0.050	----
benzo(k)fluoranthene	207-08-9	E641A	0.05	mg/kg	<0.050	----
chrysene	218-01-9	E641A	0.05	mg/kg	<0.050	----
dibenz(a,h)anthracene	53-70-3	E641A	0.05	mg/kg	<0.050	----
fluoranthene	206-44-0	E641A	0.05	mg/kg	<0.050	----
fluorene	86-73-7	E641A	0.05	mg/kg	<0.050	----
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.05	mg/kg	<0.050	----
methylnaphthalene, 1-	90-12-0	E641A	0.03	mg/kg	<0.030	----
methylnaphthalene, 2-	91-57-6	E641A	0.03	mg/kg	<0.030	----
naphthalene	91-20-3	E641A	0.01	mg/kg	<0.010	----
phenanthrene	85-01-8	E641A	0.05	mg/kg	<0.050	----
pyrene	129-00-0	E641A	0.05	mg/kg	<0.050	----
quinoline	91-22-5	E641A	0.05	mg/kg	<0.050	----
Polycyclic Aromatic Hydrocarbons (QCLot: 678138)						
acenaphthene	83-32-9	E641A	0.05	mg/kg	<0.050	----
acenaphthylene	208-96-8	E641A	0.05	mg/kg	<0.050	----
acridine	260-94-6	E641A	0.05	mg/kg	<0.050	----



Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Polycyclic Aromatic Hydrocarbons (QCLot: 678138) - continued						
anthracene	120-12-7	E641A	0.05	mg/kg	<0.050	----
benz(a)anthracene	56-55-3	E641A	0.05	mg/kg	<0.050	----
benzo(a)pyrene	50-32-8	E641A	0.05	mg/kg	<0.050	----
benzo(b+j)fluoranthene	n/a	E641A	0.05	mg/kg	<0.050	----
benzo(g,h,i)perylene	191-24-2	E641A	0.05	mg/kg	<0.050	----
benzo(k)fluoranthene	207-08-9	E641A	0.05	mg/kg	<0.050	----
chrysene	218-01-9	E641A	0.05	mg/kg	<0.050	----
dibenz(a,h)anthracene	53-70-3	E641A	0.05	mg/kg	<0.050	----
fluoranthene	206-44-0	E641A	0.05	mg/kg	<0.050	----
fluorene	86-73-7	E641A	0.05	mg/kg	<0.050	----
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.05	mg/kg	<0.050	----
methylnaphthalene, 1-	90-12-0	E641A	0.03	mg/kg	<0.030	----
methylnaphthalene, 2-	91-57-6	E641A	0.03	mg/kg	<0.030	----
naphthalene	91-20-3	E641A	0.01	mg/kg	<0.010	----
phenanthrene	85-01-8	E641A	0.05	mg/kg	<0.050	----
pyrene	129-00-0	E641A	0.05	mg/kg	<0.050	----
quinoline	91-22-5	E641A	0.05	mg/kg	<0.050	----
Polycyclic Aromatic Hydrocarbons (QCLot: 683511)						
acenaphthene	83-32-9	E641A	0.05	mg/kg	<0.050	----
acenaphthylene	208-96-8	E641A	0.05	mg/kg	<0.050	----
acridine	260-94-6	E641A	0.05	mg/kg	<0.050	----
anthracene	120-12-7	E641A	0.05	mg/kg	<0.050	----
benz(a)anthracene	56-55-3	E641A	0.05	mg/kg	<0.050	----
benzo(a)pyrene	50-32-8	E641A	0.05	mg/kg	<0.050	----
benzo(b+j)fluoranthene	n/a	E641A	0.05	mg/kg	<0.050	----
benzo(g,h,i)perylene	191-24-2	E641A	0.05	mg/kg	<0.050	----
benzo(k)fluoranthene	207-08-9	E641A	0.05	mg/kg	<0.050	----
chrysene	218-01-9	E641A	0.05	mg/kg	<0.050	----
dibenz(a,h)anthracene	53-70-3	E641A	0.05	mg/kg	<0.050	----
fluoranthene	206-44-0	E641A	0.05	mg/kg	<0.050	----
fluorene	86-73-7	E641A	0.05	mg/kg	<0.050	----
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.05	mg/kg	<0.050	----
methylnaphthalene, 1-	90-12-0	E641A	0.03	mg/kg	<0.030	----
methylnaphthalene, 2-	91-57-6	E641A	0.03	mg/kg	<0.030	----
naphthalene	91-20-3	E641A	0.01	mg/kg	<0.010	----

Page : 16 of 30
Work Order : CG2213420
Client : Teck Coal Limited
Project : REGIONAL EFFECTS PROGRAM



Sub-Matrix: **Soil/Solid**

<i>Analyte</i>	<i>CAS Number</i>	<i>Method</i>	<i>LOR</i>	<i>Unit</i>	<i>Result</i>	<i>Qualifier</i>
Polycyclic Aromatic Hydrocarbons (QCLot: 683511) - continued						
phenanthrene	85-01-8	E641A	0.05	mg/kg	<0.050	----
pyrene	129-00-0	E641A	0.05	mg/kg	<0.050	----
quinoline	91-22-5	E641A	0.05	mg/kg	<0.050	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Soil/Solid

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 675169)									
moisture	----	E144	0.25	%	50 %	99.1	90.0	110	----
Physical Tests (QCLot: 675175)									
moisture	----	E144	0.25	%	50 %	96.9	90.0	110	----
Physical Tests (QCLot: 678141)									
moisture	----	E144	0.25	%	50 %	91.6	90.0	110	----
Physical Tests (QCLot: 683512)									
moisture	----	E144	0.25	%	50 %	95.8	90.0	110	----
Physical Tests (QCLot: 684160)									
pH (1:2 soil:water)	----	E108	----	pH units	7 pH units	101	97.0	103	----
Physical Tests (QCLot: 688905)									
pH (1:2 soil:water)	----	E108	----	pH units	7 pH units	100	97.0	103	----
Physical Tests (QCLot: 688906)									
pH (1:2 soil:water)	----	E108	----	pH units	7 pH units	101	97.0	103	----
Organic / Inorganic Carbon (QCLot: 681726)									
carbon, total [TC]	----	E351	0.05	%	48 %	101	90.0	110	----
Organic / Inorganic Carbon (QCLot: 687933)									
carbon, total [TC]	----	E351	0.05	%	48 %	101	90.0	110	----
Organic / Inorganic Carbon (QCLot: 690264)									
carbon, inorganic [IC]	----	E354	0.05	%	0.5 %	93.8	90.0	110	----
Organic / Inorganic Carbon (QCLot: 691424)									
carbon, inorganic [IC]	----	E354	0.05	%	0.5 %	93.4	90.0	110	----
Metals (QCLot: 688150)									
mercury	7439-97-6	E510	0.005	mg/kg	0.1 mg/kg	98.2	80.0	120	----
Metals (QCLot: 688151)									
aluminum	7429-90-5	E440	50	mg/kg	200 mg/kg	101	80.0	120	----
antimony	7440-36-0	E440	0.1	mg/kg	100 mg/kg	95.4	80.0	120	----
arsenic	7440-38-2	E440	0.1	mg/kg	100 mg/kg	101	80.0	120	----
barium	7440-39-3	E440	0.5	mg/kg	25 mg/kg	97.7	80.0	120	----
beryllium	7440-41-7	E440	0.1	mg/kg	10 mg/kg	104	80.0	120	----
bismuth	7440-69-9	E440	0.2	mg/kg	100 mg/kg	97.8	80.0	120	----



Sub-Matrix: Soil/Solid

Laboratory Control Sample (LCS) Report

Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Metals (QCLot: 688151) - continued									
boron	7440-42-8	E440	5	mg/kg	100 mg/kg	99.9	80.0	120	----
cadmium	7440-43-9	E440	0.02	mg/kg	10 mg/kg	99.0	80.0	120	----
calcium	7440-70-2	E440	50	mg/kg	5000 mg/kg	99.8	80.0	120	----
chromium	7440-47-3	E440	0.5	mg/kg	25 mg/kg	97.0	80.0	120	----
cobalt	7440-48-4	E440	0.1	mg/kg	25 mg/kg	93.6	80.0	120	----
copper	7440-50-8	E440	0.5	mg/kg	25 mg/kg	99.7	80.0	120	----
iron	7439-89-6	E440	50	mg/kg	100 mg/kg	113	80.0	120	----
lead	7439-92-1	E440	0.5	mg/kg	50 mg/kg	97.6	80.0	120	----
lithium	7439-93-2	E440	2	mg/kg	25 mg/kg	102	80.0	120	----
magnesium	7439-95-4	E440	20	mg/kg	5000 mg/kg	96.2	80.0	120	----
manganese	7439-96-5	E440	1	mg/kg	25 mg/kg	95.0	80.0	120	----
molybdenum	7439-98-7	E440	0.1	mg/kg	25 mg/kg	98.9	80.0	120	----
nickel	7440-02-0	E440	0.5	mg/kg	50 mg/kg	93.5	80.0	120	----
phosphorus	7723-14-0	E440	50	mg/kg	1000 mg/kg	96.1	80.0	120	----
potassium	7440-09-7	E440	100	mg/kg	5000 mg/kg	97.5	80.0	120	----
selenium	7782-49-2	E440	0.2	mg/kg	100 mg/kg	99.1	80.0	120	----
silver	7440-22-4	E440	0.1	mg/kg	10 mg/kg	88.0	80.0	120	----
sodium	7440-23-5	E440	50	mg/kg	5000 mg/kg	101	80.0	120	----
strontium	7440-24-6	E440	0.5	mg/kg	25 mg/kg	100	80.0	120	----
sulfur	7704-34-9	E440	1000	mg/kg	5000 mg/kg	97.9	80.0	120	----
thallium	7440-28-0	E440	0.05	mg/kg	100 mg/kg	97.6	80.0	120	----
tin	7440-31-5	E440	2	mg/kg	50 mg/kg	97.6	80.0	120	----
titanium	7440-32-6	E440	1	mg/kg	25 mg/kg	101	80.0	120	----
tungsten	7440-33-7	E440	0.5	mg/kg	10 mg/kg	101	80.0	120	----
uranium	7440-61-1	E440	0.05	mg/kg	0.5 mg/kg	96.9	80.0	120	----
vanadium	7440-62-2	E440	0.2	mg/kg	50 mg/kg	101	80.0	120	----
zinc	7440-66-6	E440	2	mg/kg	50 mg/kg	96.2	80.0	120	----
zirconium	7440-67-7	E440	1	mg/kg	10 mg/kg	100	80.0	120	----
Metals (QCLot: 688152)									
aluminum	7429-90-5	E440	50	mg/kg	200 mg/kg	110	80.0	120	----
antimony	7440-36-0	E440	0.1	mg/kg	100 mg/kg	102	80.0	120	----
arsenic	7440-38-2	E440	0.1	mg/kg	100 mg/kg	104	80.0	120	----
barium	7440-39-3	E440	0.5	mg/kg	25 mg/kg	98.8	80.0	120	----
beryllium	7440-41-7	E440	0.1	mg/kg	10 mg/kg	101	80.0	120	----
bismuth	7440-69-9	E440	0.2	mg/kg	100 mg/kg	103	80.0	120	----
boron	7440-42-8	E440	5	mg/kg	100 mg/kg	99.9	80.0	120	----



Sub-Matrix: Soil/Solid

Laboratory Control Sample (LCS) Report

Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Metals (QCLot: 688152) - continued									
cadmium	7440-43-9	E440	0.02	mg/kg	10 mg/kg	103	80.0	120	----
calcium	7440-70-2	E440	50	mg/kg	5000 mg/kg	104	80.0	120	----
chromium	7440-47-3	E440	0.5	mg/kg	25 mg/kg	101	80.0	120	----
cobalt	7440-48-4	E440	0.1	mg/kg	25 mg/kg	93.3	80.0	120	----
copper	7440-50-8	E440	0.5	mg/kg	25 mg/kg	104	80.0	120	----
iron	7439-89-6	E440	50	mg/kg	100 mg/kg	119	80.0	120	----
lead	7439-92-1	E440	0.5	mg/kg	50 mg/kg	103	80.0	120	----
lithium	7439-93-2	E440	2	mg/kg	25 mg/kg	97.6	80.0	120	----
magnesium	7439-95-4	E440	20	mg/kg	5000 mg/kg	101	80.0	120	----
manganese	7439-96-5	E440	1	mg/kg	25 mg/kg	92.5	80.0	120	----
molybdenum	7439-98-7	E440	0.1	mg/kg	25 mg/kg	103	80.0	120	----
nickel	7440-02-0	E440	0.5	mg/kg	50 mg/kg	92.5	80.0	120	----
phosphorus	7723-14-0	E440	50	mg/kg	1000 mg/kg	95.6	80.0	120	----
potassium	7440-09-7	E440	100	mg/kg	5000 mg/kg	104	80.0	120	----
selenium	7782-49-2	E440	0.2	mg/kg	100 mg/kg	104	80.0	120	----
silver	7440-22-4	E440	0.1	mg/kg	10 mg/kg	94.7	80.0	120	----
sodium	7440-23-5	E440	50	mg/kg	5000 mg/kg	107	80.0	120	----
strontium	7440-24-6	E440	0.5	mg/kg	25 mg/kg	112	80.0	120	----
sulfur	7704-34-9	E440	1000	mg/kg	5000 mg/kg	94.9	80.0	120	----
thallium	7440-28-0	E440	0.05	mg/kg	100 mg/kg	102	80.0	120	----
tin	7440-31-5	E440	2	mg/kg	50 mg/kg	99.7	80.0	120	----
titanium	7440-32-6	E440	1	mg/kg	25 mg/kg	98.0	80.0	120	----
tungsten	7440-33-7	E440	0.5	mg/kg	10 mg/kg	107	80.0	120	----
uranium	7440-61-1	E440	0.05	mg/kg	0.5 mg/kg	103	80.0	120	----
vanadium	7440-62-2	E440	0.2	mg/kg	50 mg/kg	105	80.0	120	----
zinc	7440-66-6	E440	2	mg/kg	50 mg/kg	104	80.0	120	----
zirconium	7440-67-7	E440	1	mg/kg	10 mg/kg	102	80.0	120	----
Metals (QCLot: 688153)									
mercury	7439-97-6	E510	0.005	mg/kg	0.1 mg/kg	91.0	80.0	120	----
Metals (QCLot: 691345)									
mercury	7439-97-6	E510	0.005	mg/kg	0.1 mg/kg	95.6	80.0	120	----
Metals (QCLot: 691346)									
aluminum	7429-90-5	E440	50	mg/kg	200 mg/kg	94.0	80.0	120	----
antimony	7440-36-0	E440	0.1	mg/kg	100 mg/kg	96.6	80.0	120	----
arsenic	7440-38-2	E440	0.1	mg/kg	100 mg/kg	94.7	80.0	120	----
barium	7440-39-3	E440	0.5	mg/kg	25 mg/kg	97.7	80.0	120	----



Sub-Matrix: Soil/Solid

Laboratory Control Sample (LCS) Report

Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Metals (QCLot: 691346) - continued									
beryllium	7440-41-7	E440	0.1	mg/kg	10 mg/kg	94.2	80.0	120	----
bismuth	7440-69-9	E440	0.2	mg/kg	100 mg/kg	95.1	80.0	120	----
boron	7440-42-8	E440	5	mg/kg	100 mg/kg	96.2	80.0	120	----
cadmium	7440-43-9	E440	0.02	mg/kg	10 mg/kg	95.7	80.0	120	----
calcium	7440-70-2	E440	50	mg/kg	5000 mg/kg	100	80.0	120	----
chromium	7440-47-3	E440	0.5	mg/kg	25 mg/kg	96.2	80.0	120	----
cobalt	7440-48-4	E440	0.1	mg/kg	25 mg/kg	94.1	80.0	120	----
copper	7440-50-8	E440	0.5	mg/kg	25 mg/kg	95.2	80.0	120	----
iron	7439-89-6	E440	50	mg/kg	100 mg/kg	97.6	80.0	120	----
lead	7439-92-1	E440	0.5	mg/kg	50 mg/kg	94.2	80.0	120	----
lithium	7439-93-2	E440	2	mg/kg	25 mg/kg	89.5	80.0	120	----
magnesium	7439-95-4	E440	20	mg/kg	5000 mg/kg	95.9	80.0	120	----
manganese	7439-96-5	E440	1	mg/kg	25 mg/kg	96.9	80.0	120	----
molybdenum	7439-98-7	E440	0.1	mg/kg	25 mg/kg	94.6	80.0	120	----
nickel	7440-02-0	E440	0.5	mg/kg	50 mg/kg	93.6	80.0	120	----
phosphorus	7723-14-0	E440	50	mg/kg	1000 mg/kg	100	80.0	120	----
potassium	7440-09-7	E440	100	mg/kg	5000 mg/kg	94.2	80.0	120	----
selenium	7782-49-2	E440	0.2	mg/kg	100 mg/kg	94.7	80.0	120	----
silver	7440-22-4	E440	0.1	mg/kg	10 mg/kg	86.5	80.0	120	----
sodium	7440-23-5	E440	50	mg/kg	5000 mg/kg	96.9	80.0	120	----
strontium	7440-24-6	E440	0.5	mg/kg	25 mg/kg	100	80.0	120	----
sulfur	7704-34-9	E440	1000	mg/kg	5000 mg/kg	97.0	80.0	120	----
thallium	7440-28-0	E440	0.05	mg/kg	100 mg/kg	95.0	80.0	120	----
tin	7440-31-5	E440	2	mg/kg	50 mg/kg	95.1	80.0	120	----
titanium	7440-32-6	E440	1	mg/kg	25 mg/kg	91.0	80.0	120	----
tungsten	7440-33-7	E440	0.5	mg/kg	10 mg/kg	92.0	80.0	120	----
uranium	7440-61-1	E440	0.05	mg/kg	0.5 mg/kg	92.6	80.0	120	----
vanadium	7440-62-2	E440	0.2	mg/kg	50 mg/kg	95.9	80.0	120	----
zinc	7440-66-6	E440	2	mg/kg	50 mg/kg	93.3	80.0	120	----
zirconium	7440-67-7	E440	1	mg/kg	10 mg/kg	93.9	80.0	120	----
Polycyclic Aromatic Hydrocarbons (QCLot: 675139)									
acenaphthene	83-32-9	E641A	0.05	mg/kg	0.5 mg/kg	93.3	60.0	130	----
acenaphthylene	208-96-8	E641A	0.05	mg/kg	0.5 mg/kg	84.5	60.0	130	----
acridine	260-94-6	E641A	0.05	mg/kg	0.5 mg/kg	69.3	60.0	130	----
anthracene	120-12-7	E641A	0.05	mg/kg	0.5 mg/kg	79.1	60.0	130	----



Sub-Matrix: Soil/Solid

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Polycyclic Aromatic Hydrocarbons (QCLot: 675139) - continued									
benz(a)anthracene	56-55-3	E641A	0.05	mg/kg	0.5 mg/kg	82.6	60.0	130	----
benzo(a)pyrene	50-32-8	E641A	0.05	mg/kg	0.5 mg/kg	72.5	60.0	130	----
benzo(b+j)fluoranthene	n/a	E641A	0.05	mg/kg	0.5 mg/kg	85.3	60.0	130	----
benzo(g,h,i)perylene	191-24-2	E641A	0.05	mg/kg	0.5 mg/kg	79.8	60.0	130	----
benzo(k)fluoranthene	207-08-9	E641A	0.05	mg/kg	0.5 mg/kg	85.8	60.0	130	----
chrysene	218-01-9	E641A	0.05	mg/kg	0.5 mg/kg	82.4	60.0	130	----
dibenz(a,h)anthracene	53-70-3	E641A	0.05	mg/kg	0.5 mg/kg	77.0	60.0	130	----
fluoranthene	206-44-0	E641A	0.05	mg/kg	0.5 mg/kg	87.4	60.0	130	----
fluorene	86-73-7	E641A	0.05	mg/kg	0.5 mg/kg	81.2	60.0	130	----
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.05	mg/kg	0.5 mg/kg	97.7	60.0	130	----
methylnaphthalene, 1-	90-12-0	E641A	0.03	mg/kg	0.5 mg/kg	96.4	60.0	130	----
methylnaphthalene, 2-	91-57-6	E641A	0.03	mg/kg	0.5 mg/kg	90.0	60.0	130	----
naphthalene	91-20-3	E641A	0.01	mg/kg	0.5 mg/kg	97.4	50.0	130	----
phenanthrene	85-01-8	E641A	0.05	mg/kg	0.5 mg/kg	88.4	60.0	130	----
pyrene	129-00-0	E641A	0.05	mg/kg	0.5 mg/kg	89.0	60.0	130	----
quinoline	91-22-5	E641A	0.05	mg/kg	0.5 mg/kg	87.0	60.0	130	----
Polycyclic Aromatic Hydrocarbons (QCLot: 675140)									
acenaphthene	83-32-9	E641A	0.05	mg/kg	0.5 mg/kg	90.2	60.0	130	----
acenaphthylene	208-96-8	E641A	0.05	mg/kg	0.5 mg/kg	82.4	60.0	130	----
acridine	260-94-6	E641A	0.05	mg/kg	0.5 mg/kg	72.3	60.0	130	----
anthracene	120-12-7	E641A	0.05	mg/kg	0.5 mg/kg	76.5	60.0	130	----
benz(a)anthracene	56-55-3	E641A	0.05	mg/kg	0.5 mg/kg	76.5	60.0	130	----
benzo(a)pyrene	50-32-8	E641A	0.05	mg/kg	0.5 mg/kg	80.0	60.0	130	----
benzo(b+j)fluoranthene	n/a	E641A	0.05	mg/kg	0.5 mg/kg	81.1	60.0	130	----
benzo(g,h,i)perylene	191-24-2	E641A	0.05	mg/kg	0.5 mg/kg	80.2	60.0	130	----
benzo(k)fluoranthene	207-08-9	E641A	0.05	mg/kg	0.5 mg/kg	84.6	60.0	130	----
chrysene	218-01-9	E641A	0.05	mg/kg	0.5 mg/kg	82.6	60.0	130	----
dibenz(a,h)anthracene	53-70-3	E641A	0.05	mg/kg	0.5 mg/kg	75.3	60.0	130	----
fluoranthene	206-44-0	E641A	0.05	mg/kg	0.5 mg/kg	87.1	60.0	130	----
fluorene	86-73-7	E641A	0.05	mg/kg	0.5 mg/kg	81.9	60.0	130	----
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.05	mg/kg	0.5 mg/kg	91.9	60.0	130	----
methylnaphthalene, 1-	90-12-0	E641A	0.03	mg/kg	0.5 mg/kg	95.9	60.0	130	----
methylnaphthalene, 2-	91-57-6	E641A	0.03	mg/kg	0.5 mg/kg	84.2	60.0	130	----
naphthalene	91-20-3	E641A	0.01	mg/kg	0.5 mg/kg	94.2	50.0	130	----
phenanthrene	85-01-8	E641A	0.05	mg/kg	0.5 mg/kg	87.3	60.0	130	----
pyrene	129-00-0	E641A	0.05	mg/kg	0.5 mg/kg	89.5	60.0	130	----



Sub-Matrix: Soil/Solid

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Polycyclic Aromatic Hydrocarbons (QCLot: 675140) - continued									
quinoline	91-22-5	E641A	0.05	mg/kg	0.5 mg/kg	83.9	60.0	130	----
Polycyclic Aromatic Hydrocarbons (QCLot: 678138)									
acenaphthene	83-32-9	E641A	0.05	mg/kg	0.5 mg/kg	80.9	60.0	130	----
acenaphthylene	208-96-8	E641A	0.05	mg/kg	0.5 mg/kg	77.7	60.0	130	----
acridine	260-94-6	E641A	0.05	mg/kg	0.5 mg/kg	74.7	60.0	130	----
anthracene	120-12-7	E641A	0.05	mg/kg	0.5 mg/kg	72.4	60.0	130	----
benz(a)anthracene	56-55-3	E641A	0.05	mg/kg	0.5 mg/kg	84.3	60.0	130	----
benzo(a)pyrene	50-32-8	E641A	0.05	mg/kg	0.5 mg/kg	80.1	60.0	130	----
benzo(b+j)fluoranthene	n/a	E641A	0.05	mg/kg	0.5 mg/kg	82.1	60.0	130	----
benzo(g,h,i)perylene	191-24-2	E641A	0.05	mg/kg	0.5 mg/kg	79.8	60.0	130	----
benzo(k)fluoranthene	207-08-9	E641A	0.05	mg/kg	0.5 mg/kg	77.2	60.0	130	----
chrysene	218-01-9	E641A	0.05	mg/kg	0.5 mg/kg	79.7	60.0	130	----
dibenz(a,h)anthracene	53-70-3	E641A	0.05	mg/kg	0.5 mg/kg	82.9	60.0	130	----
fluoranthene	206-44-0	E641A	0.05	mg/kg	0.5 mg/kg	80.5	60.0	130	----
fluorene	86-73-7	E641A	0.05	mg/kg	0.5 mg/kg	77.9	60.0	130	----
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.05	mg/kg	0.5 mg/kg	78.8	60.0	130	----
methylnaphthalene, 1-	90-12-0	E641A	0.03	mg/kg	0.5 mg/kg	82.2	60.0	130	----
methylnaphthalene, 2-	91-57-6	E641A	0.03	mg/kg	0.5 mg/kg	79.1	60.0	130	----
naphthalene	91-20-3	E641A	0.01	mg/kg	0.5 mg/kg	78.8	50.0	130	----
phenanthrene	85-01-8	E641A	0.05	mg/kg	0.5 mg/kg	76.9	60.0	130	----
pyrene	129-00-0	E641A	0.05	mg/kg	0.5 mg/kg	78.4	60.0	130	----
quinoline	91-22-5	E641A	0.05	mg/kg	0.5 mg/kg	86.7	60.0	130	----
Polycyclic Aromatic Hydrocarbons (QCLot: 683511)									
acenaphthene	83-32-9	E641A	0.05	mg/kg	0.5 mg/kg	93.8	60.0	130	----
acenaphthylene	208-96-8	E641A	0.05	mg/kg	0.5 mg/kg	91.3	60.0	130	----
acridine	260-94-6	E641A	0.05	mg/kg	0.5 mg/kg	72.9	60.0	130	----
anthracene	120-12-7	E641A	0.05	mg/kg	0.5 mg/kg	87.2	60.0	130	----
benz(a)anthracene	56-55-3	E641A	0.05	mg/kg	0.5 mg/kg	83.0	60.0	130	----
benzo(a)pyrene	50-32-8	E641A	0.05	mg/kg	0.5 mg/kg	80.3	60.0	130	----
benzo(b+j)fluoranthene	n/a	E641A	0.05	mg/kg	0.5 mg/kg	88.7	60.0	130	----
benzo(g,h,i)perylene	191-24-2	E641A	0.05	mg/kg	0.5 mg/kg	78.5	60.0	130	----
benzo(k)fluoranthene	207-08-9	E641A	0.05	mg/kg	0.5 mg/kg	84.6	60.0	130	----
chrysene	218-01-9	E641A	0.05	mg/kg	0.5 mg/kg	87.7	60.0	130	----
dibenz(a,h)anthracene	53-70-3	E641A	0.05	mg/kg	0.5 mg/kg	75.2	60.0	130	----
fluoranthene	206-44-0	E641A	0.05	mg/kg	0.5 mg/kg	88.4	60.0	130	----
fluorene	86-73-7	E641A	0.05	mg/kg	0.5 mg/kg	87.8	60.0	130	----



Sub-Matrix: Soil/Solid

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Polycyclic Aromatic Hydrocarbons (QCLot: 683511) - continued									
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.05	mg/kg	0.5 mg/kg	88.6	60.0	130	----
methylnaphthalene, 1-	90-12-0	E641A	0.03	mg/kg	0.5 mg/kg	98.8	60.0	130	----
methylnaphthalene, 2-	91-57-6	E641A	0.03	mg/kg	0.5 mg/kg	92.7	60.0	130	----
naphthalene	91-20-3	E641A	0.01	mg/kg	0.5 mg/kg	117	50.0	130	----
phenanthrene	85-01-8	E641A	0.05	mg/kg	0.5 mg/kg	89.4	60.0	130	----
pyrene	129-00-0	E641A	0.05	mg/kg	0.5 mg/kg	91.4	60.0	130	----
quinoline	91-22-5	E641A	0.05	mg/kg	0.5 mg/kg	91.0	60.0	130	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: Soil/Solid

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Polycyclic Aromatic Hydrocarbons (QCLot: 675139)										
CG2213410-001	Anonymous	acenaphthene	83-32-9	E641A	0.351 mg/kg	0.5 mg/kg	93.2	50.0	140	----
		acenaphthylene	208-96-8	E641A	0.327 mg/kg	0.5 mg/kg	86.8	50.0	140	----
		acridine	260-94-6	E641A	0.308 mg/kg	0.5 mg/kg	81.8	50.0	140	----
		anthracene	120-12-7	E641A	0.317 mg/kg	0.5 mg/kg	84.3	50.0	140	----
		benz(a)anthracene	56-55-3	E641A	0.330 mg/kg	0.5 mg/kg	87.7	50.0	140	----
		benzo(a)pyrene	50-32-8	E641A	0.284 mg/kg	0.5 mg/kg	75.4	50.0	140	----
		benzo(b+j)fluoranthene	n/a	E641A	0.320 mg/kg	0.5 mg/kg	85.0	50.0	140	----
		benzo(g,h,i)perylene	191-24-2	E641A	0.292 mg/kg	0.5 mg/kg	77.6	50.0	140	----
		benzo(k)fluoranthene	207-08-9	E641A	0.331 mg/kg	0.5 mg/kg	88.0	50.0	140	----
		chrysene	218-01-9	E641A	0.301 mg/kg	0.5 mg/kg	79.9	50.0	140	----
		dibenz(a,h)anthracene	53-70-3	E641A	0.294 mg/kg	0.5 mg/kg	78.2	50.0	140	----
		fluoranthene	206-44-0	E641A	0.346 mg/kg	0.5 mg/kg	92.0	50.0	140	----
		fluorene	86-73-7	E641A	0.309 mg/kg	0.5 mg/kg	82.0	50.0	140	----
		indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.406 mg/kg	0.5 mg/kg	108	50.0	140	----
		methylnaphthalene, 1-	90-12-0	E641A	ND mg/kg	0.5 mg/kg	ND	50.0	140	----
		methylnaphthalene, 2-	91-57-6	E641A	ND mg/kg	0.5 mg/kg	ND	50.0	140	----
		naphthalene	91-20-3	E641A	0.346 mg/kg	0.5 mg/kg	91.9	50.0	140	----
		phenanthrene	85-01-8	E641A	0.292 mg/kg	0.5 mg/kg	77.5	50.0	140	----
		pyrene	129-00-0	E641A	0.353 mg/kg	0.5 mg/kg	93.8	50.0	140	----
		quinoline	91-22-5	E641A	0.321 mg/kg	0.5 mg/kg	85.3	50.0	140	----
Polycyclic Aromatic Hydrocarbons (QCLot: 675140)										
CG2213420-003	RG_ERCKUT_SE-3_LAEMP_EVO_2022-09-16_N	acenaphthene	83-32-9	E641A	0.362 mg/kg	0.5 mg/kg	92.8	50.0	140	----
		acenaphthylene	208-96-8	E641A	0.330 mg/kg	0.5 mg/kg	84.4	50.0	140	----
		acridine	260-94-6	E641A	0.300 mg/kg	0.5 mg/kg	76.8	50.0	140	----
		anthracene	120-12-7	E641A	0.315 mg/kg	0.5 mg/kg	80.7	50.0	140	----
		benz(a)anthracene	56-55-3	E641A	0.334 mg/kg	0.5 mg/kg	85.7	50.0	140	----
		benzo(a)pyrene	50-32-8	E641A	0.286 mg/kg	0.5 mg/kg	73.3	50.0	140	----
		benzo(b+j)fluoranthene	n/a	E641A	0.325 mg/kg	0.5 mg/kg	83.4	50.0	140	----
		benzo(g,h,i)perylene	191-24-2	E641A	0.312 mg/kg	0.5 mg/kg	80.0	50.0	140	----
		benzo(k)fluoranthene	207-08-9	E641A	0.336 mg/kg	0.5 mg/kg	86.1	50.0	140	----
		chrysene	218-01-9	E641A	0.325 mg/kg	0.5 mg/kg	83.2	50.0	140	----



Sub-Matrix: Soil/Solid

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		Qualifier
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	
Polycyclic Aromatic Hydrocarbons (QCLot: 675140) - continued										
CG2213420-003	RG_ERCKUT_SE-3_LAEMP_EVO_2022-09-16_N	dibenz(a,h)anthracene	53-70-3	E641A	0.301 mg/kg	0.5 mg/kg	77.1	50.0	140	----
		fluoranthene	206-44-0	E641A	0.348 mg/kg	0.5 mg/kg	89.3	50.0	140	----
		fluorene	86-73-7	E641A	0.326 mg/kg	0.5 mg/kg	83.6	50.0	140	----
		indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.371 mg/kg	0.5 mg/kg	95.2	50.0	140	----
		methylnaphthalene, 1-	90-12-0	E641A	0.378 mg/kg	0.5 mg/kg	96.8	50.0	140	----
		methylnaphthalene, 2-	91-57-6	E641A	0.379 mg/kg	0.5 mg/kg	97.2	50.0	140	----
		naphthalene	91-20-3	E641A	0.399 mg/kg	0.5 mg/kg	102	50.0	140	----
		phenanthrene	85-01-8	E641A	0.368 mg/kg	0.5 mg/kg	94.3	50.0	140	----
		pyrene	129-00-0	E641A	0.357 mg/kg	0.5 mg/kg	91.6	50.0	140	----
		quinoline	91-22-5	E641A	0.338 mg/kg	0.5 mg/kg	86.7	50.0	140	----
Polycyclic Aromatic Hydrocarbons (QCLot: 678138)										
CG2213420-020	RG_ERCKDT_SE-1_LAEMP_EVO_2022-09-19_N	acenaphthene	83-32-9	E641A	0.354 mg/kg	0.5 mg/kg	92.9	50.0	140	----
		acenaphthylene	208-96-8	E641A	0.326 mg/kg	0.5 mg/kg	85.4	50.0	140	----
		acridine	260-94-6	E641A	0.302 mg/kg	0.5 mg/kg	79.1	50.0	140	----
		anthracene	120-12-7	E641A	0.328 mg/kg	0.5 mg/kg	86.0	50.0	140	----
		benz(a)anthracene	56-55-3	E641A	0.348 mg/kg	0.5 mg/kg	91.3	50.0	140	----
		benzo(a)pyrene	50-32-8	E641A	0.313 mg/kg	0.5 mg/kg	82.2	50.0	140	----
		benzo(b+j)fluoranthene	n/a	E641A	0.356 mg/kg	0.5 mg/kg	93.4	50.0	140	----
		benzo(g,h,i)perylene	191-24-2	E641A	0.294 mg/kg	0.5 mg/kg	77.1	50.0	140	----
		benzo(k)fluoranthene	207-08-9	E641A	0.354 mg/kg	0.5 mg/kg	92.7	50.0	140	----
		chrysene	218-01-9	E641A	0.339 mg/kg	0.5 mg/kg	88.8	50.0	140	----
		dibenz(a,h)anthracene	53-70-3	E641A	0.335 mg/kg	0.5 mg/kg	87.9	50.0	140	----
		fluoranthene	206-44-0	E641A	0.340 mg/kg	0.5 mg/kg	89.0	50.0	140	----
		fluorene	86-73-7	E641A	0.320 mg/kg	0.5 mg/kg	83.8	50.0	140	----
		indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.381 mg/kg	0.5 mg/kg	99.8	50.0	140	----
		methylnaphthalene, 1-	90-12-0	E641A	0.341 mg/kg	0.5 mg/kg	89.3	50.0	140	----
		methylnaphthalene, 2-	91-57-6	E641A	0.322 mg/kg	0.5 mg/kg	84.4	50.0	140	----
		naphthalene	91-20-3	E641A	0.367 mg/kg	0.5 mg/kg	96.1	50.0	140	----
		phenanthrene	85-01-8	E641A	0.335 mg/kg	0.5 mg/kg	87.8	50.0	140	----
		pyrene	129-00-0	E641A	0.350 mg/kg	0.5 mg/kg	91.8	50.0	140	----
		quinoline	91-22-5	E641A	0.321 mg/kg	0.5 mg/kg	84.3	50.0	140	----
Polycyclic Aromatic Hydrocarbons (QCLot: 683511)										
CG2213420-007	RG_ALUSM_SE-1_LAEMP_EVO_2022-09-18_N	acenaphthene	83-32-9	E641A	0.376 mg/kg	0.5 mg/kg	94.6	50.0	140	----
		acenaphthylene	208-96-8	E641A	0.367 mg/kg	0.5 mg/kg	92.4	50.0	140	----
		acridine	260-94-6	E641A	0.328 mg/kg	0.5 mg/kg	82.5	50.0	140	----



Sub-Matrix: Soil/Solid

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Polycyclic Aromatic Hydrocarbons (QCLot: 683511) - continued										
CG2213420-007	RG_ALUSM_SE-1_LAEMP_EVO_2022-09-18_N	anthracene	120-12-7	E641A	0.352 mg/kg	0.5 mg/kg	88.7	50.0	140	----
		benz(a)anthracene	56-55-3	E641A	0.364 mg/kg	0.5 mg/kg	91.7	50.0	140	----
		benzo(a)pyrene	50-32-8	E641A	0.330 mg/kg	0.5 mg/kg	83.2	50.0	140	----
		benzo(b+j)fluoranthene	n/a	E641A	0.350 mg/kg	0.5 mg/kg	88.3	50.0	140	----
		benzo(g,h,i)perylene	191-24-2	E641A	0.319 mg/kg	0.5 mg/kg	80.3	50.0	140	----
		benzo(k)fluoranthene	207-08-9	E641A	0.354 mg/kg	0.5 mg/kg	89.1	50.0	140	----
		chrysene	218-01-9	E641A	0.354 mg/kg	0.5 mg/kg	89.1	50.0	140	----
		dibenz(a,h)anthracene	53-70-3	E641A	0.302 mg/kg	0.5 mg/kg	76.0	50.0	140	----
		fluoranthene	206-44-0	E641A	0.362 mg/kg	0.5 mg/kg	91.2	50.0	140	----
		fluorene	86-73-7	E641A	0.351 mg/kg	0.5 mg/kg	88.4	50.0	140	----
		indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.372 mg/kg	0.5 mg/kg	93.6	50.0	140	----
		methylnaphthalene, 1-	90-12-0	E641A	0.385 mg/kg	0.5 mg/kg	97.1	50.0	140	----
		methylnaphthalene, 2-	91-57-6	E641A	0.392 mg/kg	0.5 mg/kg	98.7	50.0	140	----
		naphthalene	91-20-3	E641A	0.459 mg/kg	0.5 mg/kg	116	50.0	140	----
		phenanthrene	85-01-8	E641A	0.356 mg/kg	0.5 mg/kg	89.9	50.0	140	----
		pyrene	129-00-0	E641A	0.372 mg/kg	0.5 mg/kg	93.8	50.0	140	----
		quinoline	91-22-5	E641A	0.415 mg/kg	0.5 mg/kg	105	50.0	140	----



Reference Material (RM) Report

A Reference Material (RM) is a homogenous material with known and well-established analyte concentrations. RMs are processed in an identical manner to test samples, and are used to monitor and control the accuracy and precision of a test method for a typical sample matrix. RM results are expressed as percent recovery of the target analyte concentration. RM targets may be certified target concentrations provided by the RM supplier, or may be ALS long-term mean values (for empirical test methods).

Sub-Matrix:

Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Reference Material (RM) Report				
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%)		Qualifier
							Low	High	
Physical Tests (QCLot: 684160)									
	RM	pH (1:2 soil:water)	----	E108	8.13 pH units	100	96.0	104	----
Physical Tests (QCLot: 688905)									
	RM	pH (1:2 soil:water)	----	E108	8.06 pH units	100	96.0	104	----
Physical Tests (QCLot: 688906)									
	RM	pH (1:2 soil:water)	----	E108	8.06 pH units	100	96.0	104	----
Organic / Inorganic Carbon (QCLot: 681726)									
	RM	carbon, total [TC]	----	E351	1.4 %	103	80.0	120	----
Organic / Inorganic Carbon (QCLot: 687933)									
	RM	carbon, total [TC]	----	E351	1.4 %	93.7	80.0	120	----
Organic / Inorganic Carbon (QCLot: 690264)									
	RM	carbon, inorganic [IC]	----	E354	0.383 %	96.9	80.0	120	----
Organic / Inorganic Carbon (QCLot: 691424)									
	RM	carbon, inorganic [IC]	----	E354	0.383 %	99.0	80.0	120	----
Metals (QCLot: 688150)									
	RM	mercury	7439-97-6	E510	0.062 mg/kg	86.7	70.0	130	----
Metals (QCLot: 688151)									
	RM	aluminum	7429-90-5	E440	9817 mg/kg	96.6	70.0	130	----
	RM	antimony	7440-36-0	E440	3.99 mg/kg	106	70.0	130	----
	RM	arsenic	7440-38-2	E440	3.73 mg/kg	110	70.0	130	----
	RM	barium	7440-39-3	E440	105 mg/kg	104	70.0	130	----
	RM	beryllium	7440-41-7	E440	0.349 mg/kg	111	70.0	130	----
	RM	boron	7440-42-8	E440	8.5 mg/kg	106	40.0	160	----
	RM	cadmium	7440-43-9	E440	0.91 mg/kg	96.8	70.0	130	----
	RM	calcium	7440-70-2	E440	31082 mg/kg	101	70.0	130	----
	RM	chromium	7440-47-3	E440	101 mg/kg	102	70.0	130	----
	RM	cobalt	7440-48-4	E440	6.9 mg/kg	97.9	70.0	130	----
	RM	copper	7440-50-8	E440	123 mg/kg	98.8	70.0	130	----
	RM	iron	7439-89-6	E440	23558 mg/kg	96.7	70.0	130	----



Sub-Matrix:

Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Reference Material (RM) Report				
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%)		Qualifier
							Low	High	
Metals (QCLot: 688151) - continued									
	RM	lead	7439-92-1	E440	267 mg/kg	102	70.0	130	----
	RM	lithium	7439-93-2	E440	9.5 mg/kg	103	70.0	130	----
	RM	magnesium	7439-95-4	E440	5509 mg/kg	99.3	70.0	130	----
	RM	manganese	7439-96-5	E440	269 mg/kg	97.3	70.0	130	----
	RM	molybdenum	7439-98-7	E440	1.03 mg/kg	102	70.0	130	----
	RM	nickel	7440-02-0	E440	26.7 mg/kg	97.1	70.0	130	----
	RM	phosphorus	7723-14-0	E440	752 mg/kg	93.4	70.0	130	----
	RM	potassium	7440-09-7	E440	1587 mg/kg	104	70.0	130	----
	RM	silver	7440-22-4	E440	4.06 mg/kg	91.2	70.0	130	----
	RM	sodium	7440-23-5	E440	797 mg/kg	96.7	70.0	130	----
	RM	strontium	7440-24-6	E440	86.1 mg/kg	103	70.0	130	----
	RM	thallium	7440-28-0	E440	0.0786 mg/kg	102	40.0	160	----
	RM	tin	7440-31-5	E440	10.6 mg/kg	95.8	70.0	130	----
	RM	titanium	7440-32-6	E440	839 mg/kg	109	70.0	130	----
	RM	uranium	7440-61-1	E440	0.52 mg/kg	102	70.0	130	----
	RM	vanadium	7440-62-2	E440	32.7 mg/kg	104	70.0	130	----
	RM	zinc	7440-66-6	E440	297 mg/kg	96.3	70.0	130	----
	RM	zirconium	7440-67-7	E440	5.73 mg/kg	103	70.0	130	----
Metals (QCLot: 688152)									
	RM	aluminum	7429-90-5	E440	9817 mg/kg	105	70.0	130	----
	RM	antimony	7440-36-0	E440	3.99 mg/kg	83.7	70.0	130	----
	RM	arsenic	7440-38-2	E440	3.73 mg/kg	112	70.0	130	----
	RM	barium	7440-39-3	E440	105 mg/kg	104	70.0	130	----
	RM	beryllium	7440-41-7	E440	0.349 mg/kg	88.4	70.0	130	----
	RM	boron	7440-42-8	E440	8.5 mg/kg	87.6	40.0	160	----
	RM	cadmium	7440-43-9	E440	0.91 mg/kg	103	70.0	130	----
	RM	calcium	7440-70-2	E440	31082 mg/kg	84.5	70.0	130	----
	RM	chromium	7440-47-3	E440	101 mg/kg	106	70.0	130	----
	RM	cobalt	7440-48-4	E440	6.9 mg/kg	99.6	70.0	130	----
	RM	copper	7440-50-8	E440	123 mg/kg	110	70.0	130	----
	RM	iron	7439-89-6	E440	23558 mg/kg	97.1	70.0	130	----



Sub-Matrix:

Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Reference Material (RM) Report				
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%)		Qualifier
							Low	High	
Metals (QCLot: 688152) - continued									
	RM	lead	7439-92-1	E440	267 mg/kg	79.9	70.0	130	----
	RM	lithium	7439-93-2	E440	9.5 mg/kg	86.7	70.0	130	----
	RM	magnesium	7439-95-4	E440	5509 mg/kg	105	70.0	130	----
	RM	manganese	7439-96-5	E440	269 mg/kg	96.5	70.0	130	----
	RM	molybdenum	7439-98-7	E440	1.03 mg/kg	86.0	70.0	130	----
	RM	nickel	7440-02-0	E440	26.7 mg/kg	97.4	70.0	130	----
	RM	phosphorus	7723-14-0	E440	752 mg/kg	111	70.0	130	----
	RM	potassium	7440-09-7	E440	1587 mg/kg	108	70.0	130	----
	RM	silver	7440-22-4	E440	4.06 mg/kg	92.3	70.0	130	----
	RM	sodium	7440-23-5	E440	797 mg/kg	103	70.0	130	----
	RM	strontium	7440-24-6	E440	86.1 mg/kg	86.4	70.0	130	----
	RM	thallium	7440-28-0	E440	0.0786 mg/kg	84.1	40.0	160	----
	RM	tin	7440-31-5	E440	10.6 mg/kg	82.1	70.0	130	----
	RM	titanium	7440-32-6	E440	839 mg/kg	99.3	70.0	130	----
	RM	uranium	7440-61-1	E440	0.52 mg/kg	85.5	70.0	130	----
	RM	vanadium	7440-62-2	E440	32.7 mg/kg	109	70.0	130	----
	RM	zinc	7440-66-6	E440	297 mg/kg	108	70.0	130	----
	RM	zirconium	7440-67-7	E440	5.73 mg/kg	78.4	70.0	130	----
Metals (QCLot: 688153)									
	RM	mercury	7439-97-6	E510	0.062 mg/kg	90.8	70.0	130	----
Metals (QCLot: 691345)									
	RM	mercury	7439-97-6	E510	0.059 mg/kg	97.6	70.0	130	----
Metals (QCLot: 691346)									
	RM	aluminum	7429-90-5	E440	9817 mg/kg	91.1	70.0	130	----
	RM	antimony	7440-36-0	E440	3.99 mg/kg	96.2	70.0	130	----
	RM	arsenic	7440-38-2	E440	3.73 mg/kg	98.8	70.0	130	----
	RM	barium	7440-39-3	E440	105 mg/kg	104	70.0	130	----
	RM	beryllium	7440-41-7	E440	0.349 mg/kg	92.7	70.0	130	----
	RM	boron	7440-42-8	E440	8.5 mg/kg	96.5	40.0	160	----
	RM	cadmium	7440-43-9	E440	0.91 mg/kg	94.1	70.0	130	----
	RM	calcium	7440-70-2	E440	31082 mg/kg	95.5	70.0	130	----



Sub-Matrix:

Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Reference Material (RM) Report				
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%)		Qualifier
							Low	High	
Metals (QCLot: 691346) - continued									
RM		chromium	7440-47-3	E440	101 mg/kg	89.0	70.0	130	----
RM		cobalt	7440-48-4	E440	6.9 mg/kg	95.7	70.0	130	----
RM		copper	7440-50-8	E440	123 mg/kg	94.5	70.0	130	----
RM		iron	7439-89-6	E440	23558 mg/kg	89.3	70.0	130	----
RM		lead	7439-92-1	E440	267 mg/kg	98.8	70.0	130	----
RM		lithium	7439-93-2	E440	9.5 mg/kg	98.8	70.0	130	----
RM		magnesium	7439-95-4	E440	5509 mg/kg	91.4	70.0	130	----
RM		manganese	7439-96-5	E440	269 mg/kg	89.5	70.0	130	----
RM		molybdenum	7439-98-7	E440	1.03 mg/kg	118	70.0	130	----
RM		nickel	7440-02-0	E440	26.7 mg/kg	95.2	70.0	130	----
RM		phosphorus	7723-14-0	E440	752 mg/kg	97.4	70.0	130	----
RM		potassium	7440-09-7	E440	1587 mg/kg	99.8	70.0	130	----
RM		silver	7440-22-4	E440	4.06 mg/kg	89.8	70.0	130	----
RM		sodium	7440-23-5	E440	797 mg/kg	116	70.0	130	----
RM		strontium	7440-24-6	E440	86.1 mg/kg	98.6	70.0	130	----
RM		thallium	7440-28-0	E440	0.0786 mg/kg	90.7	40.0	160	----
RM		tin	7440-31-5	E440	10.6 mg/kg	105	70.0	130	----
RM		titanium	7440-32-6	E440	839 mg/kg	83.1	70.0	130	----
RM		uranium	7440-61-1	E440	0.52 mg/kg	86.6	70.0	130	----
RM		vanadium	7440-62-2	E440	32.7 mg/kg	90.0	70.0	130	----
RM		zinc	7440-66-6	E440	297 mg/kg	92.0	70.0	130	----
RM		zirconium	7440-67-7	E440	5.73 mg/kg	102	70.0	130	----

COC ID: **REP_LAEMP_EVO_2022-09 ALS**

TURNAROUND TIME: 2-3 Business Days

RUSH Priority

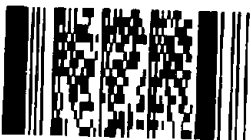
PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name / Job# Regional Effects Program				Lab Name ALS				Report Format / Distribution			
Project Manager Mike Pope				Lab Contact Justine Buma-a				Email 1: AquaSciLab@Teck.com	Excel	PDF	EDD
Email Mike.Pope@Teck.com				Email Justine.bumaa@alsglobal.com				Email 2: teckcoal@equisonline.com			
Address 421 Pine Ave				Address 2559 29 Street NE				Email 3: Teck.Lab.Results@teck.com	X	X	X
City Sparwood Province BC				City Calgary Province AB				Email 4: Lisa.Bowron@minnow.ca	X	X	X
Postal Code V0B 2G1 Country Canada				Postal Code T1Y 7B5 Country Canada				Email 5: Tyler.Mehler@minnow.ca	X	X	X
Phone Number 250-425-8247				Phone Number 1-403-407-1781				Email 6: Jessica.Ritz@Teck.com	X	X	X
								PO number	VPO00816101		

SAMPLE DETAILS

ANALYSIS REQUESTED

Filtered - F: Field, L: Lab, FL: Field & Lab, N: N/A

Environmental Division
Calgary
Work Order Reference
CG2213420



Telephone: +1 403 407 1800

Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com p	# Of Cont.	ANALYSIS REQUESTED					PRESERV.	FIL.
							C-TOC-SK	MET-CCME+FULL-CL	MOISTURE-CL - % Moisture	PSA-PIPET-DETAIL-SK Particle Size	PAH-TMB-D/A-MS-CL PAHs		
RG_ERCKUT_SE-1_LAEMP_EVO_2022-09-16 N	RG_ERCKUT SE		16-Sep-22	11:30	G	2	1	1	1	1	1	NONE	N
RG_ERCKUT_SE-2_LAEMP_EVO_2022-09-16 N	RG_ERCKUT SE		16-Sep-22	11:40	G	2	1	1	1	1	1	NONE	N
RG_ERCKUT_SE-3_LAEMP_EVO_2022-09-16 N	RG_ERCKUT SE		16-Sep-22	11:50	G	2	1	1	1	1	1	NONE	N
RG_ERCKUT_SE-4_LAEMP_EVO_2022-09-16 N	RG_ERCKUT SE		16-Sep-22	12:00	G	2	1	1	1	1	1	NONE	N
RG_ERCKUT_SE-5_LAEMP_EVO_2022-09-16 N	RG_ERCKUT SE		16-Sep-22	12:10	G	2	1	1	1	1	1	NONE	N
RG_RIVER_SE-5_LAEMP_EVO_2022-09-16 N	RG_RIVER SE		16-Sep-22	12:10	G	2	1	1	1	1	1	NONE	N
RG_ALUSM_SE-1_LAEMP_EVO_2022-09-18 N	RG_ALUSM SE		18-Sep-22	14:00	G	2	1	1	1	1	1	NONE	N
RG_ALUSM_SE-2_LAEMP_EVO_2022-09-18 N	RG_ALUSM SE		18-Sep-22	14:10	G	2	1	1	1	1	1	NONE	N
RG_ALUSM_SE-3_LAEMP_EVO_2022-09-18 N	RG_ALUSM SE		18-Sep-22	14:20	G	2	1	1	1	1	1	NONE	N
RG_RIVER_SE-2_LAEMP_EVO_2022-09-18 N	RG_RIVER SE		18-Sep-22	11:00	G	2	1	1	1	1	1	NONE	N
RG_RIVER_SE-5_LAEMP_EVO_2022-09-18 N	RG_RIVER SE		18-Sep-22	12:00	G	2	1	1	1	1	1	NONE	N

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
	Jennifer Ings	September 22, 2022		
			<i>WJ</i>	09/27 1:30 PM
SERVICE REQUEST (rush - subject to availability)				
Regular (default)	Sampler's Name	Jennifer Ings	Mobile #	5195003444
Priority (2-3 business days) - 50% surcharge X	Sampler's Signature	<i>Jennifer Ings</i>	Date/Time	
Emergency (1 Business Day) - 100% surcharge				
For Emergency <1 Day, ASAP of Weekend - Contact ALS				

Environmental Division
Calgary
Work Order Reference
CG2213420

COC ID: REF_LAEMP_EVO_2022-09-ALS		TURNAROUND TIME: 2-3 Business Days			RUSH: Priority				
PROJECT/CLIENT INFO				LABORATORY			OTHER INFO		
Facility Name / Job# Regional Effects Program				Lab Name ALS			Report Format / Distribution		
Project Manager Mike Pope				Lab Contact Justine Buma-a			Email 1: AquaSciLab@Teck.com X X X		
Email Mike.Pope@Teck.com				Email justine.bumaa@alsglobal.com			Email 2: teckcoal@egisonline.com X X X		
Address 421 Pine Ave				Address 2559 29 Street NE			Email 3: Teck.Lab.Results@teck.com X X X		
City Sparwood Province BC				City Calgary Province AB			Email 4: Lisa.Bowron@minnow.ca X X X		
Postal Code V0B 2G1 Country Canada				Postal Code T1Y 7B5 Country Canada			Email 5: Tyler.Mehler@minnow.ca X X X		
Phone Number 250-425-8247				Phone Number 1-403-407-1781			PO number VPO00816101		

SAMPLE DETAILS								ANALYSIS REQUESTED												
Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com p	# Of Cont.	Filter	Preserv.	C-TOC-SK	MET-CCME+FULL-CL	MOISTURE-CL - % Moisture	PSA-PIPET-DETAIL-SK Particle Size	PAH-TMB-D/A-MS-CL- PAHs						
RG_MICOMP_SE-1_LAEMP_EVO_2022-09-18_N	RG_MICOMP	SE		18-Sep-22	13:00	G	2	N	NONE	1	1	1	1	1						
RG_MICOMP_SE-2_LAEMP_EVO_2022-09-18_N	RG_MICOMP	SE		18-Sep-22	14:45	G	2	N	NONE	1	1	1	1	1						
RG_MICOMP_SE-3_LAEMP_EVO_2022-09-18_N	RG_MICOMP	SE		18-Sep-22	14:15	G	2	N	NONE	1	1	1	1	1						
RG_MICOMP_SE-4_LAEMP_EVO_2022-09-18_N	RG_MICOMP	SE		18-Sep-22	11:00	G	2	N	NONE	1	1	1	1	1						
RG_MICOMP_SE-5_LAEMP_EVO_2022-09-18_N	RG_MICOMP	SE		18-Sep-22	12:00	G	2	N	NONE	1	1	1	1	1						
RG_BOCK_SE-1_LAEMP_EVO_2022-09-20_N	RG_BOCK	SE		20-Sep-22	14:30	G	1	N	NONE	1	1	1	1	1						
RG_BOCK_SE-2_LAEMP_EVO_2022-09-20_N	RG_BOCK	SE		20-Sep-22	14:40	G	1	N	NONE	1	1	1	1	1						
RG_BOCK_SE-3_LAEMP_EVO_2022-09-20_N	RG_BOCK	SE		20-Sep-22	14:50	G	1	N	NONE	1	1	1	1	1						

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS		RELINQUISHED BY/AFFILIATION		DATE/TIME		ACCEPTED BY/AFFILIATION		DATE/TIME	
		Jennifer Ings		September 22, 2022					
SERVICE REQUEST (rush - subject to availability)		Regular (default)		Priority (2-3 business days) - 50% surcharge X		Emergency (1 Business Day) - 100% surcharge		For Emergency <1 Day, ASAP or Weekend - Contact ALS	
Sampler's Name		Jennifer Ings		Mobile #		5195003444			
Sampler's Signature		<i>Jennifer Ings</i>		Date/Time		September 22, 2022			

COC ID: REF_LAEMP_EVO_2022-00_ALS		TURNAROUND TIME: 2-3 Business Days			RUSH: Priority				
PROJECT/CLIENT INFO				LABORATORY			OTHER INFO		
Facility Name / Job# Regional Effects Program				Lab Name ALS			Report Format / Distribution		
Project Manager Mike Pope				Lab Contact Justine Buma-a			Email 1: AquaScilab@Teck.com X X X		
Email Mike.Pope@Teck.com				Email justine.bumaa@alsglobal.com			Email 2: teckcoal@equisonline.com X X X		
Address 421 Pine Ave				Address 2559 29 Street NE			Email 3: Teck.Lab.Results@teck.com X X X		
City Sparwood Province BC				City Calgary Province AB			Email 4: Lisa.Bowron@minnow.ca X X X		
Postal Code V0B 2G1 Country Canada				Postal Code T1Y 7B5 Country Canada			Email 5: Tyler.Mehler@minnow.ca X X X		
Phone Number 250-425-8247				Phone Number 1-403-407-1781			PO number VPO00816101		

SAMPLE DETAILS								ANALYSIS REQUESTED												
Sample ID	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com p	# Of Cont.	PH	N	N	N	N	N							
									NONE	NONE	NONE	NONE	NONE							
									C-TOC-SK	MET-CCME+FULL-CL	MOISTURE-CL - % Moisture	PSA-PIPE-DETAIL-SK Particle Size	PAH-TMB-D/A-MS-CL- PAHs							
RG_ERCKDT_SE-1_LAEMP_EVO_2022-09-19 N	RG_ERCKDT	SE		19-Sep-22	13:00	G	2		1	1	1	1	1							
RG_ERCKDT_SE-2_LAEMP_EVO_2022-09-19 N	RG_ERCKDT	SE		19-Sep-22	13:10	G	2		1	1	1	1	1							
RG_ERCKDT_SE-3_LAEMP_EVO_2022-09-19 N	RG_ERCKDT	SE		19-Sep-22	13:20	G	2		1	1	1	1	1							
RG_ERCKDT_SE-4_LAEMP_EVO_2022-09-18 N	RG_ERCKDT	SE		18-Sep-22	13:30	G	2		1	1	1	1	1							
RG_ERCKDT_SE-5_LAEMP_EVO_2022-09-18 N	RG_ERCKDT	SE		18-Sep-22	13:40	G	2		1	1	1	1	1							
RG_ERCKDT_SE-6_LAEMP_EVO_2022-09-18 N	RG_ERCKDT	SE		18-Sep-22	13:50	G	2		1	1	1	1	1							
RG_ERCKDT_SE-7_LAEMP_EVO_2022-09-18 N	RG_ERCKDT	SE		18-Sep-22	14:00	G	2		1	1	1	1	1							
RG_RIVER_SE-6_LAEMP_EVO_2022-09-19 N	RG_RIVER	SE		19-Sep-22	13:00	G	2		1	1	1	1	1							

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS		RELINQUISHED BY/AFFILIATION		DATE/TIME		ACCEPTED BY/AFFILIATION		DATE/TIME	
		Jennifer Ings		September 22, 2022					
SERVICE REQUEST (rush - subject to availability)		Sampler's Name		Jennifer Ings		Mobile #		5195003444	
Regular (default)		Sampler's Signature		<i>Jennifer Ings</i>		Date/Time		September 22, 2022	
Priority (2-3 business days) - 50% surcharge X									
Emergency (1 Business Day) - 100% surcharge									
For Emergency <1 Day, ASAP or Weekend - Contact ALS									



CERTIFICATE OF ANALYSIS

Work Order : **CG2212743**
Client : **Teck Coal Limited**
Contact : Mike Pope
Address : 421 Pine Avenue
Sparwood BC Canada V0B2G0
Telephone : ----
Project : Regional Effects Program
PO : VPO00816101
C-O-C number : REP_LAEMP_EVO_2022-09_ALS
Sampler : Jennifer Ings
Site : ----
Quote number : Teck Coal Master Quote
No. of samples received : 11
No. of samples analysed : 11

Page : 1 of 12
Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
Calgary AB Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 15-Sep-2022 08:50
Date Analysis Commenced : 20-Sep-2022
Issue Date : 27-Sep-2022 18:00

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Amber Sheikh	Laboratory Assistant	Organics, Calgary, Alberta
Anthony Calero	Supervisor - Inorganic	Metals, Calgary, Alberta
Colby Bingham	Quality Systems Coordinator	Inorganics, Saskatoon, Saskatchewan
Hedy Lai	Team Leader - Inorganics	Inorganics, Saskatoon, Saskatchewan
Hedy Lai	Team Leader - Inorganics	Sask Soils, Saskatoon, Saskatchewan
Sara Niroomand		Metals, Calgary, Alberta
Sorina Motea	Laboratory Analyst	Organics, Calgary, Alberta
Vishnu Patel		Inorganics, Calgary, Alberta



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
 LOR: Limit of Reporting (detection limit).

Unit	Description
-	No Unit
%	percent
mg/kg	milligrams per kilogram
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Sample Comments

Sample	Client Id	Comment
CG2212743-001	RG_MIDER_SE-1_2022-09-12_N	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2212743-008	RG_MI3_SE-2_2022-09-12_N	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.

Qualifiers

Qualifier	Description
DLHM	Detection Limit Adjusted: Sample has high moisture content.
FR4	As per applicable reference method(s), soil:water ratio for Fixed Ratio Leach was modified to 1:4 due to high soil organic content.



Analytical Results

Sub-Matrix: Sediment

Client sample ID

(Matrix: Soil/Solid)

					RG_MIDER_SE-1_2022-09-12_N	RG_MIDER_SE-2_2022-09-12_N	RG_MIDER_SE-3_2022-09-12_N	RG_MIDER_SE-4_2022-09-12_N	RG_MIDER_SE-5_2022-09-12_N
Client sampling date / time					12-Sep-2022 13:00	12-Sep-2022 15:43	12-Sep-2022 15:00	12-Sep-2022 14:00	12-Sep-2022 14:15
Analyte	CAS Number	Method	LOR	Unit	CG2212743-001	CG2212743-002	CG2212743-003	CG2212743-004	CG2212743-005
					Result	Result	Result	Result	Result
Physical Tests									
moisture	----	E144	0.25	%	92.6	44.3	50.9	69.2	88.3
pH (1:2 soil:water)	----	E108	0.10	pH units	7.70	7.99	7.76	7.81	7.46
Particle Size									
grain size curve	----	E185A	-	-	See Attached	See Attached	See Attached	See Attached	See Attached
clay (<0.004mm)	----	EC184A	1.0	%	7.8	2.8	5.5	6.3	3.0
silt (0.063mm - 0.0312mm)	----	EC184A	1.0	%	32.8	12.9	20.8	22.5	7.7
silt (0.0312mm - 0.004mm)	----	EC184A	1.0	%	36.2	9.7	22.2	26.3	8.7
sand (0.125mm - 0.063mm)	----	EC184A	1.0	%	13.5	28.4	21.1	8.7	5.2
sand (0.25mm - 0.125mm)	----	EC184A	1.0	%	7.1	33.4	15.9	8.3	23.1
sand (0.5mm - 0.25mm)	----	EC184A	1.0	%	1.2	9.4	7.5	10.1	34.7
sand (1.0mm - 0.50mm)	----	EC184A	1.0	%	1.0	2.1	3.9	8.4	3.8
sand (2.0mm - 1.0mm)	----	EC184A	1.0	%	<1.0	1.1	1.8	6.8	1.0
gravel (>2mm)	----	EC184A	1.0	%	<1.0	<1.0	1.3	2.6	12.8
Organic / Inorganic Carbon									
carbon, total [TC]	----	E351	0.050	%	11.6	3.22	7.59	7.09	5.43
carbon, inorganic [IC]	----	E354	0.050	%	2.24	0.677	0.970	1.69	1.50
carbon, inorganic [IC], (as CaCO3 equivalent)	----	E354	0.40	%	18.7	5.64	8.08	14.1	12.5
carbon, total organic [TOC]	----	EC356	0.050	%	9.36	2.54	6.62	5.40	3.93
Metals									
aluminum	7429-90-5	E440	50	mg/kg	5710	6280	7280	5530	4700
antimony	7440-36-0	E440	0.10	mg/kg	0.46	0.81	0.87	0.62	0.44
arsenic	7440-38-2	E440	0.10	mg/kg	4.05	5.39	5.50	4.79	4.09
barium	7440-39-3	E440	0.50	mg/kg	185	192	200	180	129
beryllium	7440-41-7	E440	0.10	mg/kg	0.44	0.52	0.63	0.50	0.41
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20
boron	7440-42-8	E440	5.0	mg/kg	9.1	<5.0	5.8	6.5	6.1
cadmium	7440-43-9	E440	0.020	mg/kg	1.05	1.04	1.65	1.13	0.760
calcium	7440-70-2	E440	50	mg/kg	82600	22300	31100	51300	66700
chromium	7440-47-3	E440	0.50	mg/kg	9.14	10.1	12.0	9.45	7.40



Analytical Results

Sub-Matrix: Sediment

(Matrix: Soil/Solid)

Client sample ID

					RG_MIDER_SE-1_2022-09-12_N	RG_MIDER_SE-2_2022-09-12_N	RG_MIDER_SE-3_2022-09-12_N	RG_MIDER_SE-4_2022-09-12_N	RG_MIDER_SE-5_2022-09-12_N
Client sampling date / time					12-Sep-2022 13:00	12-Sep-2022 15:43	12-Sep-2022 15:00	12-Sep-2022 14:00	12-Sep-2022 14:15
Analyte	CAS Number	Method	LOR	Unit	CG2212743-001	CG2212743-002	CG2212743-003	CG2212743-004	CG2212743-005
					Result	Result	Result	Result	Result
Metals									
cobalt	7440-48-4	E440	0.10	mg/kg	4.31	4.80	5.80	4.30	3.93
copper	7440-50-8	E440	0.50	mg/kg	10.2	10.3	14.4	9.63	8.12
iron	7439-89-6	E440	50	mg/kg	9750	11500	12200	13000	10100
lead	7439-92-1	E440	0.50	mg/kg	7.20	7.72	8.97	7.77	6.53
lithium	7439-93-2	E440	2.0	mg/kg	9.3	8.6	10.0	8.2	8.0
magnesium	7439-95-4	E440	20	mg/kg	6560	4550	5280	5910	5340
manganese	7439-96-5	E440	1.0	mg/kg	135	175	174	191	182
mercury	7439-97-6	E510	0.0050	mg/kg	0.0293	0.0335	0.0542	0.0317	0.0233
molybdenum	7439-98-7	E440	0.10	mg/kg	1.12	1.32	1.44	1.13	1.11
nickel	7440-02-0	E440	0.50	mg/kg	23.3	18.9	24.1	21.9	17.5
phosphorus	7723-14-0	E440	50	mg/kg	1170	1040	1080	1100	1010
potassium	7440-09-7	E440	100	mg/kg	1130	1070	1250	1050	950
selenium	7782-49-2	E440	0.20	mg/kg	11.5	1.03	4.99	1.77	6.73
silver	7440-22-4	E440	0.10	mg/kg	0.14	0.15	0.28	0.13	0.10
sodium	7440-23-5	E440	50	mg/kg	94	55	54	81	75
strontium	7440-24-6	E440	0.50	mg/kg	87.9	49.5	58.8	74.8	72.3
sulfur	7704-34-9	E440	1000	mg/kg	3200	<1000	<1000	<1000	1200
thallium	7440-28-0	E440	0.050	mg/kg	0.183	0.189	0.247	0.168	0.142
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
titanium	7440-32-6	E440	1.0	mg/kg	17.8	30.4	25.8	20.9	12.2
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
uranium	7440-61-1	E440	0.050	mg/kg	1.10	0.973	1.26	0.914	0.932
vanadium	7440-62-2	E440	0.20	mg/kg	18.6	28.9	32.2	24.0	17.4
zinc	7440-66-6	E440	2.0	mg/kg	84.0	78.3	88.3	81.4	71.2
zirconium	7440-67-7	E440	1.0	mg/kg	1.5	<1.0	1.4	<1.0	1.1
Polycyclic Aromatic Hydrocarbons									
acenaphthene	83-32-9	E641A	0.050	mg/kg	<0.139	<0.050	<0.050	<0.050	<0.072 ^{DLHM}
acenaphthylene	208-96-8	E641A	0.050	mg/kg	<0.139	<0.050	<0.050	<0.050	<0.072 ^{DLHM}
acridine	260-94-6	E641A	0.050	mg/kg	<0.139	<0.050	<0.050	<0.050	<0.072 ^{DLHM}
anthracene	120-12-7	E641A	0.050	mg/kg	<0.139	<0.050	<0.050	<0.050	<0.072 ^{DLHM}



Analytical Results

Sub-Matrix: Sediment

(Matrix: Soil/Solid)

Client sample ID

					RG_MIDER_SE-1_2022-09-12_N	RG_MIDER_SE-2_2022-09-12_N	RG_MIDER_SE-3_2022-09-12_N	RG_MIDER_SE-4_2022-09-12_N	RG_MIDER_SE-5_2022-09-12_N
Client sampling date / time					12-Sep-2022 13:00	12-Sep-2022 15:43	12-Sep-2022 15:00	12-Sep-2022 14:00	12-Sep-2022 14:15
Analyte	CAS Number	Method	LOR	Unit	CG2212743-001	CG2212743-002	CG2212743-003	CG2212743-004	CG2212743-005
					Result	Result	Result	Result	Result
Polycyclic Aromatic Hydrocarbons									
benzo(a)anthracene	56-55-3	E641A	0.050	mg/kg	<0.139	<0.050	<0.050	<0.050	<0.072 ^{DLHM}
benzo(a)pyrene	50-32-8	E641A	0.050	mg/kg	<0.139	<0.050	<0.050	<0.050	<0.072 ^{DLHM}
benzo(b+j)fluoranthene	n/a	E641A	0.050	mg/kg	0.162	<0.050	<0.050	<0.050	<0.072 ^{DLHM}
benzo(b+j+k)fluoranthene	n/a	E641A	0.075	mg/kg	<0.196	<0.075	<0.075	<0.075	<0.102 ^{DLHM}
benzo(g,h,i)perylene	191-24-2	E641A	0.050	mg/kg	<0.139	<0.050	<0.050	<0.050	<0.072 ^{DLHM}
benzo(k)fluoranthene	207-08-9	E641A	0.050	mg/kg	<0.139	<0.050	<0.050	<0.050	<0.072 ^{DLHM}
chrysene	218-01-9	E641A	0.050	mg/kg	0.196	0.078	0.062	<0.050	<0.072 ^{DLHM}
dibenz(a,h)anthracene	53-70-3	E641A	0.050	mg/kg	<0.139	<0.050	<0.050	<0.050	<0.072 ^{DLHM}
fluoranthene	206-44-0	E641A	0.050	mg/kg	0.140	<0.050	<0.050	<0.050	<0.072 ^{DLHM}
fluorene	86-73-7	E641A	0.050	mg/kg	<0.139	<0.050	<0.050	<0.050	<0.072 ^{DLHM}
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.050	mg/kg	<0.139	<0.050	<0.050	<0.050	<0.072 ^{DLHM}
methylnaphthalene, 1-	90-12-0	E641A	0.030	mg/kg	0.189	0.120	0.098	0.052	0.072
methylnaphthalene, 1+2-	----	E641A	0.050	mg/kg	0.422	0.266	0.219	0.123	0.163
methylnaphthalene, 2-	91-57-6	E641A	0.030	mg/kg	0.233	0.146	0.121	0.071	0.091
naphthalene	91-20-3	E641A	0.010	mg/kg	0.230	0.078	0.057	0.033	0.078
phenanthrene	85-01-8	E641A	0.050	mg/kg	0.300	0.186	0.147	0.093	0.143
pyrene	129-00-0	E641A	0.050	mg/kg	<0.139	<0.050	<0.050	<0.050	<0.072 ^{DLHM}
quinoline	91-22-5	E641A	0.050	mg/kg	<0.139	<0.050	<0.050	<0.050	<0.072 ^{DLHM}
B(a)P total potency equivalents [B(a)P TPE]	----	E641A	0.065	mg/kg	0.179	<0.065	<0.065	<0.065	0.087
IACR (CCME)	----	E641A	0.60	-	2.28	0.61	0.61	<0.60	0.85
IACR AB (coarse)	----	E641A	0.10	-	<0.14	<0.10	<0.10	<0.10	<0.10
IACR AB (fine)	----	E641A	0.10	-	0.20	<0.10	<0.10	<0.10	<0.10
PAHs, total (BC Sched 3.4)	n/a	E641A	0.20	mg/kg	1.10	0.49	0.39	<0.20	0.31
PAHs, total (EPA 16)	n/a	E641A	0.20	mg/kg	1.03	0.34	0.27	<0.20	<0.28
Polycyclic Aromatic Hydrocarbons Surrogates									
acridine-d9	34749-75-2	E641A	0.1	%	98.3	88.4	76.2	77.5	81.6
chrysene-d12	1719-03-5	E641A	0.1	%	114	99.6	90.3	91.5	97.2
naphthalene-d8	1146-65-2	E641A	0.1	%	86.0	86.5	81.4	77.2	79.8
phenanthrene-d10	1517-22-2	E641A	0.1	%	101	92.5	82.2	82.5	86.7



Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Sediment

Client sample ID

(Matrix: Soil/Solid)

					RG_RIVER_SE-2 _2022-09-12_N	RG_MI3_SE-1_2 022-09-12_N	RG_MI3_SE-2_2 022-09-12_N	RG_MI3_SE-3_2 022-09-12_N	RG_MI3_SE-4_2 022-09-12_N
Client sampling date / time					12-Sep-2022 15:43	12-Sep-2022 08:00	12-Sep-2022 09:00	12-Sep-2022 10:00	12-Sep-2022 11:00
Analyte	CAS Number	Method	LOR	Unit	CG2212743-006	CG2212743-007	CG2212743-008	CG2212743-009	CG2212743-010
					Result	Result	Result	Result	Result
Physical Tests									
moisture	----	E144	0.25	%	41.0	95.7	86.7	79.3	48.9
pH (1:2 soil:water)	----	E108	0.10	pH units	7.93	6.92 ^{FR4}	7.46	7.56	7.87
Particle Size									
grain size curve	----	E185A	-	-	See Attached	See Attached	See Attached	See Attached	See Attached
clay (<0.004mm)	----	EC184A	1.0	%	2.7	4.7	7.2	7.5	3.4
silt (0.063mm - 0.0312mm)	----	EC184A	1.0	%	14.2	19.5	28.4	29.2	14.1
silt (0.0312mm - 0.004mm)	----	EC184A	1.0	%	11.1	22.1	32.0	34.7	14.8
sand (0.125mm - 0.063mm)	----	EC184A	1.0	%	27.1	6.3	9.4	10.1	12.0
sand (0.25mm - 0.125mm)	----	EC184A	1.0	%	25.8	6.7	5.4	2.9	18.8
sand (0.5mm - 0.25mm)	----	EC184A	1.0	%	9.7	9.1	2.0	<1.0	30.7
sand (1.0mm - 0.50mm)	----	EC184A	1.0	%	6.5	7.7	1.0	1.3	5.5
sand (2.0mm - 1.0mm)	----	EC184A	1.0	%	2.6	7.9	<1.0	2.5	<1.0
gravel (>2mm)	----	EC184A	1.0	%	<1.0	16.0	14.3	11.0	<1.0
Organic / Inorganic Carbon									
carbon, total [TC]	----	E351	0.050	%	3.55	7.26	8.21	7.87	4.28
carbon, inorganic [IC]	----	E354	0.050	%	0.707	1.67	1.76	1.62	1.31
carbon, inorganic [IC], (as CaCO3 equivalent)	----	E354	0.40	%	5.89	13.9	14.6	13.5	10.9
carbon, total organic [TOC]	----	EC356	0.050	%	2.84	5.59	6.45	6.25	2.97
Metals									
aluminum	7429-90-5	E440	50	mg/kg	6480	5540	6210	6720	7620
antimony	7440-36-0	E440	0.10	mg/kg	0.84	0.33	0.36	0.41	0.62
arsenic	7440-38-2	E440	0.10	mg/kg	5.50	3.52	4.31	4.66	6.09
barium	7440-39-3	E440	0.50	mg/kg	191	179	184	183	167
beryllium	7440-41-7	E440	0.10	mg/kg	0.53	0.41	0.48	0.54	0.61
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20
boron	7440-42-8	E440	5.0	mg/kg	<5.0	9.3	9.3	8.5	6.7
cadmium	7440-43-9	E440	0.020	mg/kg	1.02	0.938	1.00	1.01	0.945
calcium	7440-70-2	E440	50	mg/kg	22400	63900	63000	56800	47200
chromium	7440-47-3	E440	0.50	mg/kg	10.4	8.80	10.1	10.3	11.4
cobalt	7440-48-4	E440	0.10	mg/kg	4.80	3.44	4.77	4.96	4.59



Analytical Results

Sub-Matrix: Sediment

Client sample ID

(Matrix: Soil/Solid)

					RG_RIVER_SE-2 _2022-09-12_N	RG_MI3_SE-1_2 022-09-12_N	RG_MI3_SE-2_2 022-09-12_N	RG_MI3_SE-3_2 022-09-12_N	RG_MI3_SE-4_2 022-09-12_N
Client sampling date / time					12-Sep-2022 15:43	12-Sep-2022 08:00	12-Sep-2022 09:00	12-Sep-2022 10:00	12-Sep-2022 11:00
Analyte	CAS Number	Method	LOR	Unit	CG2212743-006	CG2212743-007	CG2212743-008	CG2212743-009	CG2212743-010
					Result	Result	Result	Result	Result
Metals									
copper	7440-50-8	E440	0.50	mg/kg	10.3	8.91	10.4	11.4	12.1
iron	7439-89-6	E440	50	mg/kg	11700	9700	12500	13200	15000
lead	7439-92-1	E440	0.50	mg/kg	7.86	7.00	8.85	9.14	9.56
lithium	7439-93-2	E440	2.0	mg/kg	8.8	9.3	11.4	11.2	11.6
magnesium	7439-95-4	E440	20	mg/kg	4520	6400	8410	8650	7780
manganese	7439-96-5	E440	1.0	mg/kg	175	180	292	257	200
mercury	7439-97-6	E510	0.0050	mg/kg	0.0429	0.0309	0.0318	0.0361	0.0275
molybdenum	7439-98-7	E440	0.10	mg/kg	1.34	0.90	1.15	1.22	1.66
nickel	7440-02-0	E440	0.50	mg/kg	19.1	16.2	18.9	20.1	18.2
phosphorus	7723-14-0	E440	50	mg/kg	1100	1140	1270	1210	1330
potassium	7440-09-7	E440	100	mg/kg	1110	1340	1150	1270	1440
selenium	7782-49-2	E440	0.20	mg/kg	0.94	2.54	2.50	2.06	1.12
silver	7440-22-4	E440	0.10	mg/kg	0.15	0.10	0.13	0.15	0.14
sodium	7440-23-5	E440	50	mg/kg	54	133	139	110	71
strontium	7440-24-6	E440	0.50	mg/kg	52.3	76.6	78.5	83.0	81.2
sulfur	7704-34-9	E440	1000	mg/kg	<1000	1800	1200	<1000	<1000
thallium	7440-28-0	E440	0.050	mg/kg	0.202	0.183	0.188	0.199	0.228
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
titanium	7440-32-6	E440	1.0	mg/kg	29.4	11.2	19.2	16.4	23.2
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
uranium	7440-61-1	E440	0.050	mg/kg	1.01	0.736	0.777	0.886	0.954
vanadium	7440-62-2	E440	0.20	mg/kg	29.7	16.1	16.0	18.1	24.4
zinc	7440-66-6	E440	2.0	mg/kg	78.1	76.6	93.8	98.6	86.8
zirconium	7440-67-7	E440	1.0	mg/kg	1.1	1.4	1.2	1.1	1.4
Polycyclic Aromatic Hydrocarbons									
acenaphthene	83-32-9	E641A	0.050	mg/kg	<0.050	<0.740 ^{DLHM}	<0.072 ^{DLHM}	<0.050	<0.050
acenaphthylene	208-96-8	E641A	0.050	mg/kg	<0.050	<0.740 ^{DLHM}	<0.072 ^{DLHM}	<0.050	<0.050
acridine	260-94-6	E641A	0.050	mg/kg	<0.050	<0.740 ^{DLHM}	<0.072 ^{DLHM}	<0.050	<0.050
anthracene	120-12-7	E641A	0.050	mg/kg	<0.050	<0.740 ^{DLHM}	<0.072 ^{DLHM}	<0.050	<0.050
benz(a)anthracene	56-55-3	E641A	0.050	mg/kg	<0.050	<0.740 ^{DLHM}	<0.072 ^{DLHM}	<0.050	<0.050
benzo(a)pyrene	50-32-8	E641A	0.050	mg/kg	<0.050	<0.740 ^{DLHM}	<0.072 ^{DLHM}	<0.050	<0.050



Analytical Results

Sub-Matrix: Sediment

Client sample ID

(Matrix: Soil/Solid)

					RG_RIVER_SE-2 _2022-09-12_N	RG_MI3_SE-1_2 022-09-12_N	RG_MI3_SE-2_2 022-09-12_N	RG_MI3_SE-3_2 022-09-12_N	RG_MI3_SE-4_2 022-09-12_N
Client sampling date / time					12-Sep-2022 15:43	12-Sep-2022 08:00	12-Sep-2022 09:00	12-Sep-2022 10:00	12-Sep-2022 11:00
Analyte	CAS Number	Method	LOR	Unit	CG2212743-006	CG2212743-007	CG2212743-008	CG2212743-009	CG2212743-010
					Result	Result	Result	Result	Result
Polycyclic Aromatic Hydrocarbons									
benzo(b+j)fluoranthene	n/a	E641A	0.050	mg/kg	<0.050	<0.740 ^{DLHM}	<0.072 ^{DLHM}	<0.050	<0.050
benzo(b+j+k)fluoranthene	n/a	E641A	0.075	mg/kg	<0.075	<1.05 ^{DLHM}	<0.102 ^{DLHM}	<0.075	<0.075
benzo(g,h,i)perylene	191-24-2	E641A	0.050	mg/kg	<0.050	<0.740 ^{DLHM}	<0.072 ^{DLHM}	<0.050	<0.050
benzo(k)fluoranthene	207-08-9	E641A	0.050	mg/kg	<0.050	<0.740 ^{DLHM}	<0.072 ^{DLHM}	<0.050	<0.050
chrysene	218-01-9	E641A	0.050	mg/kg	0.065	<0.740 ^{DLHM}	<0.072 ^{DLHM}	0.072	<0.050
dibenz(a,h)anthracene	53-70-3	E641A	0.050	mg/kg	<0.050	<0.740 ^{DLHM}	<0.072 ^{DLHM}	<0.050	<0.050
fluoranthene	206-44-0	E641A	0.050	mg/kg	<0.050	<0.740 ^{DLHM}	<0.072 ^{DLHM}	<0.050	<0.050
fluorene	86-73-7	E641A	0.050	mg/kg	<0.050	<0.740 ^{DLHM}	<0.072 ^{DLHM}	<0.050	<0.050
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.050	mg/kg	<0.050	<0.740 ^{DLHM}	<0.072 ^{DLHM}	<0.050	<0.050
methylnaphthalene, 1-	90-12-0	E641A	0.030	mg/kg	0.129	0.189	0.075	0.070	<0.030
methylnaphthalene, 1+2-	----	E641A	0.050	mg/kg	0.292	0.398	0.198	0.182	<0.050
methylnaphthalene, 2-	91-57-6	E641A	0.030	mg/kg	0.163	0.209	0.123	0.112	0.037
naphthalene	91-20-3	E641A	0.010	mg/kg	0.088	<0.148 ^{DLHM}	0.064	0.054	0.018
phenanthrene	85-01-8	E641A	0.050	mg/kg	0.194	<0.740 ^{DLHM}	0.161	0.156	0.054
pyrene	129-00-0	E641A	0.050	mg/kg	<0.050	<0.740 ^{DLHM}	<0.072 ^{DLHM}	<0.050	<0.050
quinoline	91-22-5	E641A	0.050	mg/kg	<0.050	<0.740 ^{DLHM}	<0.072 ^{DLHM}	<0.050	<0.050
B(a)P total potency equivalents [B(a)P TPE]	----	E641A	0.065	mg/kg	<0.065	0.895	0.087	<0.065	<0.065
IACR (CCME)	----	E641A	0.60	-	0.61	8.72	0.85	0.61	<0.60
IACR AB (coarse)	----	E641A	0.10	-	<0.10	<0.74	<0.10	<0.10	<0.10
IACR AB (fine)	----	E641A	0.10	-	<0.10	0.92	<0.10	<0.10	<0.10
PAHs, total (BC Sched 3.4)	n/a	E641A	0.20	mg/kg	0.51	<2.46	0.35	0.39	<0.20
PAHs, total (EPA 16)	n/a	E641A	0.20	mg/kg	0.35	<2.87	<0.28	0.28	<0.20
Polycyclic Aromatic Hydrocarbons Surrogates									
acridine-d9	34749-75-2	E641A	0.1	%	66.4	84.4	77.7	71.7	74.2
chrysene-d12	1719-03-5	E641A	0.1	%	80.2	114	90.7	84.9	70.6
naphthalene-d8	1146-65-2	E641A	0.1	%	69.8	92.6	76.0	67.6	68.1
phenanthrene-d10	1517-22-2	E641A	0.1	%	73.3	103	82.8	76.4	64.0

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Sediment

Client sample ID

RG_MI3_SE-5_2
022-09-12_N

(Matrix: Soil/Solid)

Client sampling date / time

12-Sep-2022
12:00

Analyte	CAS Number	Method	LOR	Unit	CG2212743-011	Result	---	---	---	---
Physical Tests										
moisture	---	E144	0.25	%	82.1	---	---	---	---	---
pH (1:2 soil:water)	---	E108	0.10	pH units	7.51	---	---	---	---	---
Particle Size										
grain size curve	---	E185A	-	-	See Attached	---	---	---	---	---
clay (<0.004mm)	---	EC184A	1.0	%	8.2	---	---	---	---	---
silt (0.063mm - 0.0312mm)	---	EC184A	1.0	%	21.9	---	---	---	---	---
silt (0.0312mm - 0.004mm)	---	EC184A	1.0	%	28.4	---	---	---	---	---
sand (0.125mm - 0.063mm)	---	EC184A	1.0	%	7.4	---	---	---	---	---
sand (0.25mm - 0.125mm)	---	EC184A	1.0	%	5.3	---	---	---	---	---
sand (0.5mm - 0.25mm)	---	EC184A	1.0	%	4.9	---	---	---	---	---
sand (1.0mm - 0.50mm)	---	EC184A	1.0	%	3.5	---	---	---	---	---
sand (2.0mm - 1.0mm)	---	EC184A	1.0	%	3.1	---	---	---	---	---
gravel (>2mm)	---	EC184A	1.0	%	17.3	---	---	---	---	---
Organic / Inorganic Carbon										
carbon, total [TC]	---	E351	0.050	%	6.67	---	---	---	---	---
carbon, inorganic [IC]	---	E354	0.050	%	3.23	---	---	---	---	---
carbon, inorganic [IC], (as CaCO3 equivalent)	---	E354	0.40	%	27.0	---	---	---	---	---
carbon, total organic [TOC]	---	EC356	0.050	%	3.44	---	---	---	---	---
Metals										
aluminum	7429-90-5	E440	50	mg/kg	4520	---	---	---	---	---
antimony	7440-36-0	E440	0.10	mg/kg	0.40	---	---	---	---	---
arsenic	7440-38-2	E440	0.10	mg/kg	4.58	---	---	---	---	---
barium	7440-39-3	E440	0.50	mg/kg	136	---	---	---	---	---
beryllium	7440-41-7	E440	0.10	mg/kg	0.45	---	---	---	---	---
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	---	---	---	---	---
boron	7440-42-8	E440	5.0	mg/kg	6.3	---	---	---	---	---
cadmium	7440-43-9	E440	0.020	mg/kg	1.06	---	---	---	---	---
calcium	7440-70-2	E440	50	mg/kg	45400	---	---	---	---	---
chromium	7440-47-3	E440	0.50	mg/kg	8.04	---	---	---	---	---
cobalt	7440-48-4	E440	0.10	mg/kg	3.46	---	---	---	---	---



Analytical Results

Sub-Matrix: Sediment

Client sample ID

RG_MI3_SE-5_2
022-09-12_N

(Matrix: Soil/Solid)

Client sampling date / time

12-Sep-2022
12:00

Analyte	CAS Number	Method	LOR	Unit	CG2212743-011	Result				
Metals										
copper	7440-50-8	E440	0.50	mg/kg	8.29	---	---	---	---	---
iron	7439-89-6	E440	50	mg/kg	15800	---	---	---	---	---
lead	7439-92-1	E440	0.50	mg/kg	6.43	---	---	---	---	---
lithium	7439-93-2	E440	2.0	mg/kg	7.0	---	---	---	---	---
magnesium	7439-95-4	E440	20	mg/kg	5030	---	---	---	---	---
manganese	7439-96-5	E440	1.0	mg/kg	220	---	---	---	---	---
mercury	7439-97-6	E510	0.0050	mg/kg	0.0203	---	---	---	---	---
molybdenum	7439-98-7	E440	0.10	mg/kg	1.23	---	---	---	---	---
nickel	7440-02-0	E440	0.50	mg/kg	15.6	---	---	---	---	---
phosphorus	7723-14-0	E440	50	mg/kg	1080	---	---	---	---	---
potassium	7440-09-7	E440	100	mg/kg	880	---	---	---	---	---
selenium	7782-49-2	E440	0.20	mg/kg	1.28	---	---	---	---	---
silver	7440-22-4	E440	0.10	mg/kg	0.10	---	---	---	---	---
sodium	7440-23-5	E440	50	mg/kg	65	---	---	---	---	---
strontium	7440-24-6	E440	0.50	mg/kg	61.7	---	---	---	---	---
sulfur	7704-34-9	E440	1000	mg/kg	<1000	---	---	---	---	---
thallium	7440-28-0	E440	0.050	mg/kg	0.145	---	---	---	---	---
tin	7440-31-5	E440	2.0	mg/kg	<2.0	---	---	---	---	---
titanium	7440-32-6	E440	1.0	mg/kg	13.5	---	---	---	---	---
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	---	---	---	---	---
uranium	7440-61-1	E440	0.050	mg/kg	0.798	---	---	---	---	---
vanadium	7440-62-2	E440	0.20	mg/kg	18.7	---	---	---	---	---
zinc	7440-66-6	E440	2.0	mg/kg	73.6	---	---	---	---	---
zirconium	7440-67-7	E440	1.0	mg/kg	<1.0	---	---	---	---	---
Polycyclic Aromatic Hydrocarbons										
acenaphthene	83-32-9	E641A	0.050	mg/kg	<0.074 ^{DLHM}	---	---	---	---	---
acenaphthylene	208-96-8	E641A	0.050	mg/kg	<0.074 ^{DLHM}	---	---	---	---	---
acridine	260-94-6	E641A	0.050	mg/kg	<0.074 ^{DLHM}	---	---	---	---	---
anthracene	120-12-7	E641A	0.050	mg/kg	<0.074 ^{DLHM}	---	---	---	---	---
benz(a)anthracene	56-55-3	E641A	0.050	mg/kg	<0.074 ^{DLHM}	---	---	---	---	---
benzo(a)pyrene	50-32-8	E641A	0.050	mg/kg	<0.074 ^{DLHM}	---	---	---	---	---



Analytical Results

Sub-Matrix: Sediment

Client sample ID

RG_MI3_SE-5_2
022-09-12_N

(Matrix: Soil/Solid)

Client sampling date / time

12-Sep-2022
12:00

Analyte	CAS Number	Method	LOR	Unit	CG2212743-011	Result				
Polycyclic Aromatic Hydrocarbons										
benzo(b+j)fluoranthene	n/a	E641A	0.050	mg/kg	<0.074 ^{DLHM}	---	---	---	---	---
benzo(b+j+k)fluoranthene	n/a	E641A	0.075	mg/kg	<0.105 ^{DLHM}	---	---	---	---	---
benzo(g,h,i)perylene	191-24-2	E641A	0.050	mg/kg	<0.074 ^{DLHM}	---	---	---	---	---
benzo(k)fluoranthene	207-08-9	E641A	0.050	mg/kg	<0.074 ^{DLHM}	---	---	---	---	---
chrysene	218-01-9	E641A	0.050	mg/kg	<0.074 ^{DLHM}	---	---	---	---	---
dibenz(a,h)anthracene	53-70-3	E641A	0.050	mg/kg	<0.074 ^{DLHM}	---	---	---	---	---
fluoranthene	206-44-0	E641A	0.050	mg/kg	<0.074 ^{DLHM}	---	---	---	---	---
fluorene	86-73-7	E641A	0.050	mg/kg	<0.074 ^{DLHM}	---	---	---	---	---
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.050	mg/kg	<0.074 ^{DLHM}	---	---	---	---	---
methylnaphthalene, 1-	90-12-0	E641A	0.030	mg/kg	0.048	---	---	---	---	---
methylnaphthalene, 1+2-	---	E641A	0.050	mg/kg	0.129	---	---	---	---	---
methylnaphthalene, 2-	91-57-6	E641A	0.030	mg/kg	0.081	---	---	---	---	---
naphthalene	91-20-3	E641A	0.010	mg/kg	0.058	---	---	---	---	---
phenanthrene	85-01-8	E641A	0.050	mg/kg	0.100	---	---	---	---	---
pyrene	129-00-0	E641A	0.050	mg/kg	<0.074 ^{DLHM}	---	---	---	---	---
quinoline	91-22-5	E641A	0.050	mg/kg	<0.074 ^{DLHM}	---	---	---	---	---
B(a)P total potency equivalents [B(a)P TPE]	---	E641A	0.065	mg/kg	0.090	---	---	---	---	---
IACR (CCME)	---	E641A	0.60	-	0.87	---	---	---	---	---
IACR AB (coarse)	---	E641A	0.10	-	<0.10	---	---	---	---	---
IACR AB (fine)	---	E641A	0.10	-	<0.10	---	---	---	---	---
PAHs, total (BC Sched 3.4)	n/a	E641A	0.20	mg/kg	<0.25	---	---	---	---	---
PAHs, total (EPA 16)	n/a	E641A	0.20	mg/kg	<0.29	---	---	---	---	---
Polycyclic Aromatic Hydrocarbons Surrogates										
acridine-d9	34749-75-2	E641A	0.1	%	79.8	---	---	---	---	---
chrysene-d12	1719-03-5	E641A	0.1	%	93.4	---	---	---	---	---
naphthalene-d8	1146-65-2	E641A	0.1	%	84.3	---	---	---	---	---
phenanthrene-d10	1517-22-2	E641A	0.1	%	84.7	---	---	---	---	---

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: CG2212743	Page	: 1 of 15
Client	: Teck Coal Limited	Laboratory	: Calgary - Environmental
Contact	: Mike Pope	Account Manager	: Lyudmyla Shvets
Address	: 421 Pine Avenue Sparwood BC Canada V0B2G0	Address	: 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5
Telephone	: ----	Telephone	: +1 403 407 1800
Project	: Regional Effects Program	Date Samples Received	: 15-Sep-2022 08:50
PO	: VPO00816101	Issue Date	: 27-Sep-2022 18:01
C-O-C number	: REP_LAEMP_EVO_2022-09_ALS		
Sampler	: Jennifer Ings		
Site	: ----		
Quote number	: Teck Coal Master Quote		
No. of samples received	: 11		
No. of samples analysed	: 11		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Soil/Solid**

Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Metals : Mercury in Soil/Solid by CVAAS										
Glass soil jar/Teflon lined cap RG_MI3_SE-1_2022-09-12_N	E510	12-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	28 days	9 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
Glass soil jar/Teflon lined cap RG_MI3_SE-2_2022-09-12_N	E510	12-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	28 days	9 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
Glass soil jar/Teflon lined cap RG_MI3_SE-3_2022-09-12_N	E510	12-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	28 days	9 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
Glass soil jar/Teflon lined cap RG_MI3_SE-4_2022-09-12_N	E510	12-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	28 days	9 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
Glass soil jar/Teflon lined cap RG_MI3_SE-5_2022-09-12_N	E510	12-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	28 days	9 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
Glass soil jar/Teflon lined cap RG_MIDER_SE-1_2022-09-12_N	E510	12-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	28 days	9 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
Glass soil jar/Teflon lined cap RG_MIDER_SE-2_2022-09-12_N	E510	12-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	28 days	9 days	✓



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap RG_MIDER_SE-3_2022-09-12_N	E510	12-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	28 days	9 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap RG_MIDER_SE-4_2022-09-12_N	E510	12-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	28 days	9 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap RG_MIDER_SE-5_2022-09-12_N	E510	12-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	28 days	9 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap RG_RIVER_SE-2_2022-09-12_N	E510	12-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	28 days	9 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap RG_MI3_SE-1_2022-09-12_N	E440	12-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	180 days	9 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap RG_MI3_SE-2_2022-09-12_N	E440	12-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	180 days	9 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap RG_MI3_SE-3_2022-09-12_N	E440	12-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	180 days	9 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap RG_MI3_SE-4_2022-09-12_N	E440	12-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	180 days	9 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap RG_MI3_SE-5_2022-09-12_N	E440	12-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	180 days	9 days	✔	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap RG_MIDER_SE-1_2022-09-12_N	E440	12-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	180 days	9 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap RG_MIDER_SE-2_2022-09-12_N	E440	12-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	180 days	9 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap RG_MIDER_SE-3_2022-09-12_N	E440	12-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	180 days	9 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap RG_MIDER_SE-4_2022-09-12_N	E440	12-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	180 days	9 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap RG_MIDER_SE-5_2022-09-12_N	E440	12-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	180 days	9 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap RG_RIVER_SE-2_2022-09-12_N	E440	12-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	180 days	9 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_MI3_SE-1_2022-09-12_N	E351	12-Sep-2022	24-Sep-2022	----	----		24-Sep-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_MI3_SE-2_2022-09-12_N	E351	12-Sep-2022	24-Sep-2022	----	----		24-Sep-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_MI3_SE-3_2022-09-12_N	E351	12-Sep-2022	24-Sep-2022	----	----		24-Sep-2022	180 days	0 days	✔	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_MI3_SE-4_2022-09-12_N	E351	12-Sep-2022	24-Sep-2022	----	----		24-Sep-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_MI3_SE-5_2022-09-12_N	E351	12-Sep-2022	24-Sep-2022	----	----		24-Sep-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_MIDER_SE-1_2022-09-12_N	E351	12-Sep-2022	24-Sep-2022	----	----		24-Sep-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_MIDER_SE-2_2022-09-12_N	E351	12-Sep-2022	24-Sep-2022	----	----		24-Sep-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_MIDER_SE-3_2022-09-12_N	E351	12-Sep-2022	24-Sep-2022	----	----		24-Sep-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_MIDER_SE-4_2022-09-12_N	E351	12-Sep-2022	24-Sep-2022	----	----		24-Sep-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_MIDER_SE-5_2022-09-12_N	E351	12-Sep-2022	24-Sep-2022	----	----		24-Sep-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_RIVER_SE-2_2022-09-12_N	E351	12-Sep-2022	24-Sep-2022	----	----		24-Sep-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve											
LDPE bag RG_MI3_SE-1_2022-09-12_N	E354	12-Sep-2022	----	----	----		26-Sep-2022	----	----		



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_MI3_SE-2_2022-09-12_N	E354	12-Sep-2022	----	----	----		26-Sep-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_MI3_SE-3_2022-09-12_N	E354	12-Sep-2022	----	----	----		26-Sep-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_MI3_SE-4_2022-09-12_N	E354	12-Sep-2022	----	----	----		26-Sep-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_MI3_SE-5_2022-09-12_N	E354	12-Sep-2022	----	----	----		26-Sep-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_MIDER_SE-1_2022-09-12_N	E354	12-Sep-2022	----	----	----		26-Sep-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_MIDER_SE-2_2022-09-12_N	E354	12-Sep-2022	----	----	----		26-Sep-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_MIDER_SE-3_2022-09-12_N	E354	12-Sep-2022	----	----	----		26-Sep-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_MIDER_SE-4_2022-09-12_N	E354	12-Sep-2022	----	----	----		26-Sep-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_MIDER_SE-5_2022-09-12_N	E354	12-Sep-2022	----	----	----		26-Sep-2022	----	----	



Matrix: **Soil/Solid**

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_RIVER_SE-2_2022-09-12_N	E354	12-Sep-2022	----	----	----		26-Sep-2022	----	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_MI3_SE-1_2022-09-12_N	E185A	12-Sep-2022	----	----	----		27-Sep-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_MI3_SE-2_2022-09-12_N	E185A	12-Sep-2022	----	----	----		27-Sep-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_MI3_SE-3_2022-09-12_N	E185A	12-Sep-2022	----	----	----		27-Sep-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_MI3_SE-4_2022-09-12_N	E185A	12-Sep-2022	----	----	----		27-Sep-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_MI3_SE-5_2022-09-12_N	E185A	12-Sep-2022	----	----	----		27-Sep-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_MIDER_SE-1_2022-09-12_N	E185A	12-Sep-2022	----	----	----		27-Sep-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_MIDER_SE-2_2022-09-12_N	E185A	12-Sep-2022	----	----	----		27-Sep-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_MIDER_SE-3_2022-09-12_N	E185A	12-Sep-2022	----	----	----		27-Sep-2022	365 days	----	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method											
LDPE bag RG_MIDER_SE-4_2022-09-12_N	E185A	12-Sep-2022	----	----	----		27-Sep-2022	365 days	----		
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method											
LDPE bag RG_MIDER_SE-5_2022-09-12_N	E185A	12-Sep-2022	----	----	----		27-Sep-2022	365 days	----		
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method											
LDPE bag RG_RIVER_SE-2_2022-09-12_N	E185A	12-Sep-2022	----	----	----		27-Sep-2022	365 days	----		
Physical Tests : Moisture Content by Gravimetry											
Glass soil jar/Teflon lined cap RG_MI3_SE-1_2022-09-12_N	E144	12-Sep-2022	----	----	----		20-Sep-2022	----	----		
Physical Tests : Moisture Content by Gravimetry											
Glass soil jar/Teflon lined cap RG_MI3_SE-2_2022-09-12_N	E144	12-Sep-2022	----	----	----		20-Sep-2022	----	----		
Physical Tests : Moisture Content by Gravimetry											
Glass soil jar/Teflon lined cap RG_MI3_SE-3_2022-09-12_N	E144	12-Sep-2022	----	----	----		20-Sep-2022	----	----		
Physical Tests : Moisture Content by Gravimetry											
Glass soil jar/Teflon lined cap RG_MI3_SE-4_2022-09-12_N	E144	12-Sep-2022	----	----	----		20-Sep-2022	----	----		
Physical Tests : Moisture Content by Gravimetry											
Glass soil jar/Teflon lined cap RG_MI3_SE-5_2022-09-12_N	E144	12-Sep-2022	----	----	----		20-Sep-2022	----	----		
Physical Tests : Moisture Content by Gravimetry											
Glass soil jar/Teflon lined cap RG_MIDER_SE-1_2022-09-12_N	E144	12-Sep-2022	----	----	----		20-Sep-2022	----	----		



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap RG_MIDER_SE-2_2022-09-12_N	E144	12-Sep-2022	----	----	----		20-Sep-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap RG_MIDER_SE-3_2022-09-12_N	E144	12-Sep-2022	----	----	----		20-Sep-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap RG_MIDER_SE-4_2022-09-12_N	E144	12-Sep-2022	----	----	----		20-Sep-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap RG_MIDER_SE-5_2022-09-12_N	E144	12-Sep-2022	----	----	----		20-Sep-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap RG_RIVER_SE-2_2022-09-12_N	E144	12-Sep-2022	----	----	----		20-Sep-2022	----	----	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
Glass soil jar/Teflon lined cap RG_MI3_SE-1_2022-09-12_N	E108	12-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	30 days	9 days	✔
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
Glass soil jar/Teflon lined cap RG_MI3_SE-2_2022-09-12_N	E108	12-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	30 days	9 days	✔
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
Glass soil jar/Teflon lined cap RG_MI3_SE-3_2022-09-12_N	E108	12-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	30 days	9 days	✔
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
Glass soil jar/Teflon lined cap RG_MI3_SE-4_2022-09-12_N	E108	12-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	30 days	9 days	✔



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap RG_MI3_SE-5_2022-09-12_N	E108	12-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	30 days	9 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap RG_MIDER_SE-1_2022-09-12_N	E108	12-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	30 days	9 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap RG_MIDER_SE-2_2022-09-12_N	E108	12-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	30 days	9 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap RG_MIDER_SE-3_2022-09-12_N	E108	12-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	30 days	9 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap RG_MIDER_SE-4_2022-09-12_N	E108	12-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	30 days	9 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap RG_MIDER_SE-5_2022-09-12_N	E108	12-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	30 days	9 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap RG_RIVER_SE-2_2022-09-12_N	E108	12-Sep-2022	21-Sep-2022	----	----		21-Sep-2022	30 days	9 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap RG_MIDER_SE-1_2022-09-12_N	E641A	12-Sep-2022	20-Sep-2022	14 days	8 days	✔	20-Sep-2022	40 days	0 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap RG_MIDER_SE-2_2022-09-12_N	E641A	12-Sep-2022	20-Sep-2022	14 days	8 days	✔	20-Sep-2022	40 days	0 days	✔	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap RG_MI3_SE-1_2022-09-12_N	E641A	12-Sep-2022	20-Sep-2022	14 days	8 days	✔	21-Sep-2022	40 days	1 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap RG_MI3_SE-2_2022-09-12_N	E641A	12-Sep-2022	20-Sep-2022	14 days	8 days	✔	21-Sep-2022	40 days	1 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap RG_MI3_SE-3_2022-09-12_N	E641A	12-Sep-2022	20-Sep-2022	14 days	8 days	✔	21-Sep-2022	40 days	1 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap RG_MI3_SE-4_2022-09-12_N	E641A	12-Sep-2022	20-Sep-2022	14 days	8 days	✔	21-Sep-2022	40 days	1 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap RG_MI3_SE-5_2022-09-12_N	E641A	12-Sep-2022	20-Sep-2022	14 days	8 days	✔	21-Sep-2022	40 days	1 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap RG_MIDER_SE-3_2022-09-12_N	E641A	12-Sep-2022	20-Sep-2022	14 days	8 days	✔	21-Sep-2022	40 days	1 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap RG_MIDER_SE-4_2022-09-12_N	E641A	12-Sep-2022	20-Sep-2022	14 days	8 days	✔	21-Sep-2022	40 days	1 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap RG_MIDER_SE-5_2022-09-12_N	E641A	12-Sep-2022	20-Sep-2022	14 days	8 days	✔	21-Sep-2022	40 days	1 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap RG_RIVER_SE-2_2022-09-12_N	E641A	12-Sep-2022	20-Sep-2022	14 days	8 days	✔	21-Sep-2022	40 days	1 days	✔	

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Soil/Solid**

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
Analytical Methods							
Laboratory Duplicates (DUP)							
Mercury in Soil/Solid by CVAAS	E510	657176	1	20	5.0	5.0	✔
Metals in Soil/Solid by CRC ICPMS	E440	657175	1	20	5.0	5.0	✔
Moisture Content by Gravimetry	E144	655679	2	40	5.0	5.0	✔
PAHs by Hex:Ace GC-MS	E641A	655146	2	40	5.0	5.0	✔
pH by Meter (1:2 Soil:Water Extraction)	E108	658395	2	29	6.9	5.0	✔
Total Carbon by Combustion	E351	658717	2	40	5.0	5.0	✔
Total Inorganic Carbon by Acetic Acid pH Standard Curve	E354	665981	2	38	5.2	5.0	✔
Laboratory Control Samples (LCS)							
Mercury in Soil/Solid by CVAAS	E510	657176	2	20	10.0	10.0	✔
Metals in Soil/Solid by CRC ICPMS	E440	657175	2	20	10.0	10.0	✔
Moisture Content by Gravimetry	E144	655679	2	40	5.0	5.0	✔
PAHs by Hex:Ace GC-MS	E641A	655146	2	40	5.0	5.0	✔
pH by Meter (1:2 Soil:Water Extraction)	E108	658395	4	29	13.7	10.0	✔
Total Carbon by Combustion	E351	658717	4	40	10.0	10.0	✔
Total Inorganic Carbon by Acetic Acid pH Standard Curve	E354	665981	4	38	10.5	10.0	✔
Method Blanks (MB)							
Mercury in Soil/Solid by CVAAS	E510	657176	1	20	5.0	5.0	✔
Metals in Soil/Solid by CRC ICPMS	E440	657175	1	20	5.0	5.0	✔
Moisture Content by Gravimetry	E144	655679	2	40	5.0	5.0	✔
PAHs by Hex:Ace GC-MS	E641A	655146	2	40	5.0	5.0	✔
Total Carbon by Combustion	E351	658717	2	40	5.0	5.0	✔
Total Inorganic Carbon by Acetic Acid pH Standard Curve	E354	665981	2	38	5.2	5.0	✔
Matrix Spikes (MS)							
PAHs by Hex:Ace GC-MS	E641A	655678	2	40	5.0	5.0	✔



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
pH by Meter (1:2 Soil:Water Extraction)	E108 Calgary - Environmental	Soil/Solid	BC Lab Manual	pH is determined by potentiometric measurement with a pH electrode at ambient laboratory temperature (normally $20 \pm 5^\circ\text{C}$), and is carried out in accordance with procedures described in the BC Lab Manual (prescriptive method). The procedure involves mixing the dried (at $<60^\circ\text{C}$) and sieved (10mesh/2mm) sample with ultra pure water at a 1:2 ratio of sediment to water. The pH is then measured by a standard pH probe.
Moisture Content by Gravimetry	E144 Calgary - Environmental	Soil/Solid	CCME PHC in Soil - Tier 1	Moisture is measured gravimetrically by drying the sample at 105°C . Moisture content is calculated as the weight loss (due to water) divided by the wet weight of the sample, expressed as a percentage.
Grain Size Report (Attachment) Pipet/Sieve Method	E185A Saskatoon - Environmental	Soil/Solid	SSIR-51 Method 3.2.1	A grain size curve is a graphical representation of the particle sizing of a sample representing the percent passing against the effective particle size.
Total Carbon by Combustion	E351 Saskatoon - Environmental	Soil/Solid	CSSS (2008) 21.2 (mod)	Total Carbon is determined by the high temperature combustion method with measurement by an infrared detector.
Total Inorganic Carbon by Acetic Acid pH Standard Curve	E354 Saskatoon - Environmental	Soil/Solid	CSSS (2008) 20.2	Total Inorganic Carbon is determined by acetic acid pH standard curve, where a known quantity of acetic acid is consumed by reaction with carbonates in the soil. The pH of the resulting solution is measured and compared against a standard curve relating pH to weight of carbonate.
Metals in Soil/Solid by CRC ICPMS	E440 Calgary - Environmental	Soil/Solid	EPA 6020B (mod)	This method is intended to liberate metals that may be environmentally available. Samples are dried, then sieved through a 2 mm sieve, and digested with HNO_3 and HCl . Dependent on sample matrix, some metals may be only partially recovered, including Al, Ba, Be, Cr, Sr, Ti, Tl, V, W, and Zr. Silicate minerals are not solubilized. Volatile forms of sulfur (including sulfide) may not be captured, as they may be lost during sampling, storage, or digestion. This method does not adequately recover elemental sulfur, and is unsuitable for assessment of elemental sulfur standards or guidelines. Analysis is by Collision/Reaction Cell ICPMS.
Mercury in Soil/Solid by CVAAS	E510 Calgary - Environmental	Soil/Solid	EPA 200.2/1631 Appendix (mod)	Samples are dried, then sieved through a 2 mm sieve, and digested with HNO_3 and HCl , followed by CVAAS analysis.
PAHs by Hex:Ace GC-MS	E641A Calgary - Environmental	Soil/Solid	EPA 8270E (mod)	Polycyclic Aromatic Hydrocarbons (PAHs) are extracted with hexane/acetone and analyzed by GC-MS. If reported, IACR (index of additive cancer risk, unitless) and B(a)P toxic potency equivalent (in soil concentration units) are calculated as per CCME PAH Soil Quality Guidelines fact sheet (2010) or ABT1.



<i>Analytical Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
Particle Size Analysis (Pipette) - Wentworth Classification	EC184A Saskatoon - Environmental	Soil/Solid	Modified Wentworth	The particle size determination is performed by various methods to generate a Grain Size curve. The data from the curve is then used to produce particle size ranges based on the Modified Wentworth Classification system.
Total Organic Carbon (Calculated) in soil	EC356 Saskatoon - Environmental	Soil/Solid	CSSS (2008) 21.2	Total Organic Carbon (TOC) is calculated by the difference between total carbon (TC) and total inorganic carbon (TIC).
<i>Preparation Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
Leach 1:2 Soil:Water for pH/EC	EP108 Calgary - Environmental	Soil/Solid	BC WLAP METHOD: PH, ELECTROMETRIC, SOIL	The procedure involves mixing the dried (at <60°C) and sieved (No. 10 / 2mm) sample with deionized/distilled water at a 1:2 ratio of sediment to water.
Digestion for Metals and Mercury	EP440 Calgary - Environmental	Soil/Solid	EPA 200.2 (mod)	Samples are dried, then sieved through a 2 mm sieve, and digested with HNO ₃ and HCl. This method is intended to liberate metals that may be environmentally available.
PHCs and PAHs Hexane-Acetone Tumbler Extraction	EP601 Calgary - Environmental	Soil/Solid	CCME PHC in Soil - Tier 1 (mod)	Samples are subsampled and Petroleum Hydrocarbons (PHC) and PAHs are extracted with 1:1 hexane:acetone using a rotary extractor.
Dry and Grind	EPP442 Calgary - Environmental	Soil/Solid	Soil Sampling and Methods of Analysis, Carter 2008	After removal of any coarse fragments and reservation of wet subsamples a portion of homogenized sample is set in a tray and dried at less than 60°C until dry. The sample is then particle size reduced with an automated crusher or mortar and pestle, typically to <2 mm. Further size reduction may be needed for particular tests.



QUALITY CONTROL REPORT

Work Order : CG2212743
Client : Teck Coal Limited
Contact : Mike Pope
Address : 421 Pine Avenue
Sparwood BC Canada V0B2G0
Telephone : ---
Project : Regional Effects Program
PO : VPO00816101
C-O-C number : REP_LAEMP_EVO_2022-09_ALS
Sampler : Jennifer Ings
Site : ---
Quote number : Teck Coal Master Quote
No. of samples received : 11
No. of samples analysed : 11

Page : 1 of 15
Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
Calgary, Alberta Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 15-Sep-2022 08:50
Date Analysis Commenced : 20-Sep-2022
Issue Date : 27-Sep-2022 18:00

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
Matrix Spike (MS) Report; Recovery and Data Quality Objectives
Reference Material (RM) Report; Recovery and Data Quality Objectives
Method Blank (MB) Report; Recovery and Data Quality Objectives
Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Table with 3 columns: Signatories, Position, Laboratory Department. Rows include Amber Sheikh, Anthony Calero, Colby Bingham, Hedy Lai, Sara Niroomand, Sorina Motea, and Vishnu Patel.

Page : 2 of 15
Work Order : CG2212743
Client : Teck Coal Limited
Project : Regional Effects Program



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: **Soil/Solid**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 655147)											
CG2212740-001	Anonymous	moisture	----	E144	0.25	%	66.5	58.7	12.4%	20%	----
Physical Tests (QC Lot: 655679)											
CG2212743-003	RG_MIDER_SE-3_2022-09-12_N	moisture	----	E144	0.25	%	50.9	56.4	10.1%	20%	----
Physical Tests (QC Lot: 658394)											
CG2212740-001	Anonymous	pH (1:2 soil:water)	----	E108	0.10	pH units	7.68	7.70	0.260%	5%	----
Physical Tests (QC Lot: 658395)											
CG2212743-003	RG_MIDER_SE-3_2022-09-12_N	pH (1:2 soil:water)	----	E108	0.10	pH units	7.76	7.79	0.386%	5%	----
Organic / Inorganic Carbon (QC Lot: 658685)											
CG2212740-008	Anonymous	carbon, total [TC]	----	E351	0.050	%	6.86	6.80	0.835%	20%	----
Organic / Inorganic Carbon (QC Lot: 658717)											
CG2212744-001	Anonymous	carbon, total [TC]	----	E351	0.050	%	8.42	8.64	2.64%	20%	----
Organic / Inorganic Carbon (QC Lot: 665718)											
CG2212743-001	RG_MIDER_SE-1_2022-09-12_N	carbon, inorganic [IC]	----	E354	0.050	%	2.24	2.26	0.524%	20%	----
Organic / Inorganic Carbon (QC Lot: 665981)											
CG2212743-008	RG_MI3_SE-2_2022-09-12_N	carbon, inorganic [IC]	----	E354	0.050	%	1.76	1.77	1.08%	20%	----
Metals (QC Lot: 657175)											
CG2212740-018	Anonymous	aluminum	7429-90-5	E440	50	mg/kg	11400	10000	13.3%	40%	----
		antimony	7440-36-0	E440	0.10	mg/kg	0.28	0.29	0.006	Diff <2x LOR	----
		arsenic	7440-38-2	E440	0.10	mg/kg	6.44	6.53	1.28%	30%	----
		barium	7440-39-3	E440	0.50	mg/kg	110	126	13.8%	40%	----
		beryllium	7440-41-7	E440	0.10	mg/kg	0.71	0.71	0.221%	30%	----
		bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	0	Diff <2x LOR	----
		boron	7440-42-8	E440	5.0	mg/kg	9.9	10.3	0.4	Diff <2x LOR	----
		cadmium	7440-43-9	E440	0.020	mg/kg	1.27	1.52	18.2%	30%	----
		calcium	7440-70-2	E440	50	mg/kg	46400	62100	29.0%	30%	----
		chromium	7440-47-3	E440	0.50	mg/kg	13.3	12.9	3.01%	30%	----
		cobalt	7440-48-4	E440	0.10	mg/kg	48.8	61.3	22.7%	30%	----
		copper	7440-50-8	E440	0.50	mg/kg	16.4	16.5	0.573%	30%	----
		iron	7439-89-6	E440	50	mg/kg	21200	18600	13.0%	30%	----
		lead	7439-92-1	E440	0.50	mg/kg	10.1	10.0	1.11%	40%	----



Sub-Matrix: **Soil/Solid**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Metals (QC Lot: 657175) - continued											
CG2212740-018	Anonymous	lithium	7439-93-2	E440	2.0	mg/kg	21.6	17.9	18.8%	30%	----
		magnesium	7439-95-4	E440	20	mg/kg	7570	9880	26.5%	30%	----
		manganese	7439-96-5	E440	1.0	mg/kg	605	639	5.44%	30%	----
		molybdenum	7439-98-7	E440	0.10	mg/kg	1.36	1.55	12.8%	40%	----
		nickel	7440-02-0	E440	0.50	mg/kg	89.4	108	18.8%	30%	----
		phosphorus	7723-14-0	E440	50	mg/kg	1220	1070	13.2%	30%	----
		potassium	7440-09-7	E440	100	mg/kg	1920	1910	0.948%	40%	----
		selenium	7782-49-2	E440	0.20	mg/kg	2.25	2.74	19.6%	30%	----
		silver	7440-22-4	E440	0.10	mg/kg	<0.10	<0.10	0	Diff <2x LOR	----
		sodium	7440-23-5	E440	50	mg/kg	151	157	6	Diff <2x LOR	----
		strontium	7440-24-6	E440	0.50	mg/kg	91.9	105	13.6%	40%	----
		sulfur	7704-34-9	E440	1000	mg/kg	<1000	<1000	0	Diff <2x LOR	----
		thallium	7440-28-0	E440	0.050	mg/kg	0.284	0.273	0.011	Diff <2x LOR	----
		tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	0	Diff <2x LOR	----
		titanium	7440-32-6	E440	1.0	mg/kg	26.9	26.6	1.10%	40%	----
		tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	0	Diff <2x LOR	----
		uranium	7440-61-1	E440	0.050	mg/kg	0.692	0.838	19.1%	30%	----
		vanadium	7440-62-2	E440	0.20	mg/kg	20.5	19.6	4.65%	30%	----
zinc	7440-66-6	E440	2.0	mg/kg	128	144	11.8%	30%	----		
zirconium	7440-67-7	E440	1.0	mg/kg	1.2	1.2	0.07	Diff <2x LOR	----		
Metals (QC Lot: 657176)											
CG2212740-018	Anonymous	mercury	7439-97-6	E510	0.0050	mg/kg	0.0233	0.0259	0.0026	Diff <2x LOR	----
Polycyclic Aromatic Hydrocarbons (QC Lot: 655146)											
CG2212740-001	Anonymous	acenaphthene	83-32-9	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		acenaphthylene	208-96-8	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		acridine	260-94-6	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		anthracene	120-12-7	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		benz(a)anthracene	56-55-3	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		benzo(a)pyrene	50-32-8	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		benzo(b+j)fluoranthene	n/a	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		benzo(g,h,i)perylene	191-24-2	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		benzo(k)fluoranthene	207-08-9	E641A	0.050	mg/kg	<0.050	0.052	0.002	Diff <2x LOR	----
		chrysene	218-01-9	E641A	0.050	mg/kg	0.073	0.106	0.033	Diff <2x LOR	----
		dibenz(a,h)anthracene	53-70-3	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		fluoranthene	206-44-0	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----



Sub-Matrix: Soil/Solid

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Polycyclic Aromatic Hydrocarbons (QC Lot: 655146) - continued											
CG2212740-001	Anonymous	fluorene	86-73-7	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		methylnaphthalene, 1-	90-12-0	E641A	0.030	mg/kg	0.118	0.132	11.4%	50%	----
		methylnaphthalene, 2-	91-57-6	E641A	0.030	mg/kg	0.145	0.162	11.0%	50%	----
		naphthalene	91-20-3	E641A	0.010	mg/kg	0.073	0.077	5.04%	50%	----
		phenanthrene	85-01-8	E641A	0.050	mg/kg	0.172	0.212	0.040	Diff <2x LOR	----
		pyrene	129-00-0	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		quinoline	91-22-5	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
Polycyclic Aromatic Hydrocarbons (QC Lot: 655678)											
CG2212743-003	RG_MIDER_SE-3_2022-09-12_N	acenaphthene	83-32-9	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		acenaphthylene	208-96-8	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		acridine	260-94-6	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		anthracene	120-12-7	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		benz(a)anthracene	56-55-3	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		benzo(a)pyrene	50-32-8	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		benzo(b+j)fluoranthene	n/a	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		benzo(g,h,i)perylene	191-24-2	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		benzo(k)fluoranthene	207-08-9	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		chrysene	218-01-9	E641A	0.050	mg/kg	0.062	0.071	0.009	Diff <2x LOR	----
		dibenz(a,h)anthracene	53-70-3	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		fluoranthene	206-44-0	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		fluorene	86-73-7	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		methylnaphthalene, 1-	90-12-0	E641A	0.030	mg/kg	0.098	0.134	0.036	Diff <2x LOR	----
		methylnaphthalene, 2-	91-57-6	E641A	0.030	mg/kg	0.121	0.166	31.8%	50%	----
		naphthalene	91-20-3	E641A	0.010	mg/kg	0.057	0.086	40.2%	50%	----
		phenanthrene	85-01-8	E641A	0.050	mg/kg	0.147	0.191	0.044	Diff <2x LOR	----
		pyrene	129-00-0	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		quinoline	91-22-5	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 655147)						
moisture	----	E144	0.25	%	<0.25	----
Physical Tests (QCLot: 655679)						
moisture	----	E144	0.25	%	<0.25	----
Organic / Inorganic Carbon (QCLot: 658685)						
carbon, total [TC]	----	E351	0.05	%	<0.050	----
Organic / Inorganic Carbon (QCLot: 658717)						
carbon, total [TC]	----	E351	0.05	%	<0.050	----
Organic / Inorganic Carbon (QCLot: 665718)						
carbon, inorganic [IC]	----	E354	0.05	%	<0.050	----
Organic / Inorganic Carbon (QCLot: 665981)						
carbon, inorganic [IC]	----	E354	0.05	%	<0.050	----
Metals (QCLot: 657175)						
aluminum	7429-90-5	E440	50	mg/kg	<50	----
antimony	7440-36-0	E440	0.1	mg/kg	<0.10	----
arsenic	7440-38-2	E440	0.1	mg/kg	<0.10	----
barium	7440-39-3	E440	0.5	mg/kg	<0.50	----
beryllium	7440-41-7	E440	0.1	mg/kg	<0.10	----
bismuth	7440-69-9	E440	0.2	mg/kg	<0.20	----
boron	7440-42-8	E440	5	mg/kg	<5.0	----
cadmium	7440-43-9	E440	0.02	mg/kg	<0.020	----
calcium	7440-70-2	E440	50	mg/kg	<50	----
chromium	7440-47-3	E440	0.5	mg/kg	<0.50	----
cobalt	7440-48-4	E440	0.1	mg/kg	<0.10	----
copper	7440-50-8	E440	0.5	mg/kg	<0.50	----
iron	7439-89-6	E440	50	mg/kg	<50	----
lead	7439-92-1	E440	0.5	mg/kg	<0.50	----
lithium	7439-93-2	E440	2	mg/kg	<2.0	----
magnesium	7439-95-4	E440	20	mg/kg	<20	----
manganese	7439-96-5	E440	1	mg/kg	<1.0	----
molybdenum	7439-98-7	E440	0.1	mg/kg	<0.10	----
nickel	7440-02-0	E440	0.5	mg/kg	<0.50	----
phosphorus	7723-14-0	E440	50	mg/kg	<50	----
potassium	7440-09-7	E440	100	mg/kg	<100	----



Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Metals (QCLot: 657175) - continued						
selenium	7782-49-2	E440	0.2	mg/kg	<0.20	---
silver	7440-22-4	E440	0.1	mg/kg	<0.10	---
sodium	7440-23-5	E440	50	mg/kg	<50	---
strontium	7440-24-6	E440	0.5	mg/kg	<0.50	---
sulfur	7704-34-9	E440	1000	mg/kg	<1000	---
thallium	7440-28-0	E440	0.05	mg/kg	<0.050	---
tin	7440-31-5	E440	2	mg/kg	<2.0	---
titanium	7440-32-6	E440	1	mg/kg	<1.0	---
tungsten	7440-33-7	E440	0.5	mg/kg	<0.50	---
uranium	7440-61-1	E440	0.05	mg/kg	<0.050	---
vanadium	7440-62-2	E440	0.2	mg/kg	<0.20	---
zinc	7440-66-6	E440	2	mg/kg	<2.0	---
zirconium	7440-67-7	E440	1	mg/kg	<1.0	---
Metals (QCLot: 657176)						
mercury	7439-97-6	E510	0.005	mg/kg	<0.0050	---
Polycyclic Aromatic Hydrocarbons (QCLot: 655146)						
acenaphthene	83-32-9	E641A	0.05	mg/kg	<0.050	---
acenaphthylene	208-96-8	E641A	0.05	mg/kg	<0.050	---
acridine	260-94-6	E641A	0.05	mg/kg	<0.050	---
anthracene	120-12-7	E641A	0.05	mg/kg	<0.050	---
benz(a)anthracene	56-55-3	E641A	0.05	mg/kg	<0.050	---
benzo(a)pyrene	50-32-8	E641A	0.05	mg/kg	<0.050	---
benzo(b+j)fluoranthene	n/a	E641A	0.05	mg/kg	<0.050	---
benzo(g,h,i)perylene	191-24-2	E641A	0.05	mg/kg	<0.050	---
benzo(k)fluoranthene	207-08-9	E641A	0.05	mg/kg	<0.050	---
chrysene	218-01-9	E641A	0.05	mg/kg	<0.050	---
dibenz(a,h)anthracene	53-70-3	E641A	0.05	mg/kg	<0.050	---
fluoranthene	206-44-0	E641A	0.05	mg/kg	<0.050	---
fluorene	86-73-7	E641A	0.05	mg/kg	<0.050	---
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.05	mg/kg	<0.050	---
methylnaphthalene, 1-	90-12-0	E641A	0.03	mg/kg	<0.030	---
methylnaphthalene, 2-	91-57-6	E641A	0.03	mg/kg	<0.030	---
naphthalene	91-20-3	E641A	0.01	mg/kg	<0.010	---
phenanthrene	85-01-8	E641A	0.05	mg/kg	<0.050	---
pyrene	129-00-0	E641A	0.05	mg/kg	<0.050	---
quinoline	91-22-5	E641A	0.05	mg/kg	<0.050	---



Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Polycyclic Aromatic Hydrocarbons (QCLot: 655678)						
acenaphthene	83-32-9	E641A	0.05	mg/kg	<0.050	----
acenaphthylene	208-96-8	E641A	0.05	mg/kg	<0.050	----
acridine	260-94-6	E641A	0.05	mg/kg	<0.050	----
anthracene	120-12-7	E641A	0.05	mg/kg	<0.050	----
benz(a)anthracene	56-55-3	E641A	0.05	mg/kg	<0.050	----
benzo(a)pyrene	50-32-8	E641A	0.05	mg/kg	<0.050	----
benzo(b+j)fluoranthene	n/a	E641A	0.05	mg/kg	<0.050	----
benzo(g,h,i)perylene	191-24-2	E641A	0.05	mg/kg	<0.050	----
benzo(k)fluoranthene	207-08-9	E641A	0.05	mg/kg	<0.050	----
chrysene	218-01-9	E641A	0.05	mg/kg	<0.050	----
dibenz(a,h)anthracene	53-70-3	E641A	0.05	mg/kg	<0.050	----
fluoranthene	206-44-0	E641A	0.05	mg/kg	<0.050	----
fluorene	86-73-7	E641A	0.05	mg/kg	<0.050	----
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.05	mg/kg	<0.050	----
methylnaphthalene, 1-	90-12-0	E641A	0.03	mg/kg	<0.030	----
methylnaphthalene, 2-	91-57-6	E641A	0.03	mg/kg	<0.030	----
naphthalene	91-20-3	E641A	0.01	mg/kg	<0.010	----
phenanthrene	85-01-8	E641A	0.05	mg/kg	<0.050	----
pyrene	129-00-0	E641A	0.05	mg/kg	<0.050	----
quinoline	91-22-5	E641A	0.05	mg/kg	<0.050	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Soil/Solid

					Laboratory Control Sample (LCS) Report				
Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Physical Tests (QCLot: 655147)									
moisture	---	E144	0.25	%	50 %	99.1	90.0	110	---
Physical Tests (QCLot: 655679)									
moisture	---	E144	0.25	%	50 %	102	90.0	110	---
Physical Tests (QCLot: 658394)									
pH (1:2 soil:water)	---	E108	---	pH units	7 pH units	100	97.0	103	---
Physical Tests (QCLot: 658395)									
pH (1:2 soil:water)	---	E108	---	pH units	7 pH units	100	97.0	103	---
Organic / Inorganic Carbon (QCLot: 658685)									
carbon, total [TC]	---	E351	0.05	%	48 %	99.2	90.0	110	---
Organic / Inorganic Carbon (QCLot: 658717)									
carbon, total [TC]	---	E351	0.05	%	48 %	99.5	90.0	110	---
Organic / Inorganic Carbon (QCLot: 665718)									
carbon, inorganic [IC]	---	E354	0.05	%	0.5 %	94.8	90.0	110	---
Organic / Inorganic Carbon (QCLot: 665981)									
carbon, inorganic [IC]	---	E354	0.05	%	0.5 %	95.6	90.0	110	---
Metals (QCLot: 657175)									
aluminum	7429-90-5	E440	50	mg/kg	200 mg/kg	116	80.0	120	---
antimony	7440-36-0	E440	0.1	mg/kg	100 mg/kg	109	80.0	120	---
arsenic	7440-38-2	E440	0.1	mg/kg	100 mg/kg	110	80.0	120	---
barium	7440-39-3	E440	0.5	mg/kg	25 mg/kg	117	80.0	120	---
beryllium	7440-41-7	E440	0.1	mg/kg	10 mg/kg	112	80.0	120	---
bismuth	7440-69-9	E440	0.2	mg/kg	100 mg/kg	110	80.0	120	---
boron	7440-42-8	E440	5	mg/kg	100 mg/kg	110	80.0	120	---
cadmium	7440-43-9	E440	0.02	mg/kg	10 mg/kg	109	80.0	120	---
calcium	7440-70-2	E440	50	mg/kg	5000 mg/kg	112	80.0	120	---
chromium	7440-47-3	E440	0.5	mg/kg	25 mg/kg	111	80.0	120	---
cobalt	7440-48-4	E440	0.1	mg/kg	25 mg/kg	112	80.0	120	---
copper	7440-50-8	E440	0.5	mg/kg	25 mg/kg	110	80.0	120	---
iron	7439-89-6	E440	50	mg/kg	100 mg/kg	119	80.0	120	---
lead	7439-92-1	E440	0.5	mg/kg	50 mg/kg	110	80.0	120	---
lithium	7439-93-2	E440	2	mg/kg	25 mg/kg	113	80.0	120	---
magnesium	7439-95-4	E440	20	mg/kg	5000 mg/kg	117	80.0	120	---



Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Metals (QCLot: 657175) - continued									
manganese	7439-96-5	E440	1	mg/kg	25 mg/kg	109	80.0	120	----
molybdenum	7439-98-7	E440	0.1	mg/kg	25 mg/kg	109	80.0	120	----
nickel	7440-02-0	E440	0.5	mg/kg	50 mg/kg	111	80.0	120	----
phosphorus	7723-14-0	E440	50	mg/kg	1000 mg/kg	111	80.0	120	----
potassium	7440-09-7	E440	100	mg/kg	5000 mg/kg	114	80.0	120	----
selenium	7782-49-2	E440	0.2	mg/kg	100 mg/kg	105	80.0	120	----
silver	7440-22-4	E440	0.1	mg/kg	10 mg/kg	96.1	80.0	120	----
sodium	7440-23-5	E440	50	mg/kg	5000 mg/kg	115	80.0	120	----
strontium	7440-24-6	E440	0.5	mg/kg	25 mg/kg	111	80.0	120	----
sulfur	7704-34-9	E440	1000	mg/kg	5000 mg/kg	97.9	80.0	120	----
thallium	7440-28-0	E440	0.05	mg/kg	100 mg/kg	109	80.0	120	----
tin	7440-31-5	E440	2	mg/kg	50 mg/kg	109	80.0	120	----
titanium	7440-32-6	E440	1	mg/kg	25 mg/kg	119	80.0	120	----
tungsten	7440-33-7	E440	0.5	mg/kg	10 mg/kg	105	80.0	120	----
uranium	7440-61-1	E440	0.05	mg/kg	0.5 mg/kg	103	80.0	120	----
vanadium	7440-62-2	E440	0.2	mg/kg	50 mg/kg	119	80.0	120	----
zinc	7440-66-6	E440	2	mg/kg	50 mg/kg	108	80.0	120	----
zirconium	7440-67-7	E440	1	mg/kg	10 mg/kg	106	80.0	120	----
Metals (QCLot: 657176)									
mercury	7439-97-6	E510	0.005	mg/kg	0.1 mg/kg	91.5	80.0	120	----
Polycyclic Aromatic Hydrocarbons (QCLot: 655146)									
acenaphthene	83-32-9	E641A	0.05	mg/kg	0.5 mg/kg	112	60.0	130	----
acenaphthylene	208-96-8	E641A	0.05	mg/kg	0.5 mg/kg	100	60.0	130	----
acridine	260-94-6	E641A	0.05	mg/kg	0.5 mg/kg	104	60.0	130	----
anthracene	120-12-7	E641A	0.05	mg/kg	0.5 mg/kg	100	60.0	130	----
benz(a)anthracene	56-55-3	E641A	0.05	mg/kg	0.5 mg/kg	105	60.0	130	----
benzo(a)pyrene	50-32-8	E641A	0.05	mg/kg	0.5 mg/kg	87.6	60.0	130	----
benzo(b+j)fluoranthene	n/a	E641A	0.05	mg/kg	0.5 mg/kg	109	60.0	130	----
benzo(g,h,i)perylene	191-24-2	E641A	0.05	mg/kg	0.5 mg/kg	90.9	60.0	130	----
benzo(k)fluoranthene	207-08-9	E641A	0.05	mg/kg	0.5 mg/kg	108	60.0	130	----
chrysene	218-01-9	E641A	0.05	mg/kg	0.5 mg/kg	106	60.0	130	----
dibenz(a,h)anthracene	53-70-3	E641A	0.05	mg/kg	0.5 mg/kg	94.2	60.0	130	----
fluoranthene	206-44-0	E641A	0.05	mg/kg	0.5 mg/kg	94.3	60.0	130	----
fluorene	86-73-7	E641A	0.05	mg/kg	0.5 mg/kg	104	60.0	130	----
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.05	mg/kg	0.5 mg/kg	99.4	60.0	130	----
methylnaphthalene, 1-	90-12-0	E641A	0.03	mg/kg	0.5 mg/kg	109	60.0	130	----



Sub-Matrix: Soil/Solid

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Polycyclic Aromatic Hydrocarbons (QCLot: 655146) - continued									
methylnaphthalene, 2-	91-57-6	E641A	0.03	mg/kg	0.5 mg/kg	105	60.0	130	----
naphthalene	91-20-3	E641A	0.01	mg/kg	0.5 mg/kg	116	50.0	130	----
phenanthrene	85-01-8	E641A	0.05	mg/kg	0.5 mg/kg	112	60.0	130	----
pyrene	129-00-0	E641A	0.05	mg/kg	0.5 mg/kg	89.8	60.0	130	----
quinoline	91-22-5	E641A	0.05	mg/kg	0.5 mg/kg	98.6	60.0	130	----
Polycyclic Aromatic Hydrocarbons (QCLot: 655678)									
acenaphthene	83-32-9	E641A	0.05	mg/kg	0.5 mg/kg	107	60.0	130	----
acenaphthylene	208-96-8	E641A	0.05	mg/kg	0.5 mg/kg	98.6	60.0	130	----
acridine	260-94-6	E641A	0.05	mg/kg	0.5 mg/kg	89.5	60.0	130	----
anthracene	120-12-7	E641A	0.05	mg/kg	0.5 mg/kg	91.0	60.0	130	----
benz(a)anthracene	56-55-3	E641A	0.05	mg/kg	0.5 mg/kg	97.1	60.0	130	----
benzo(a)pyrene	50-32-8	E641A	0.05	mg/kg	0.5 mg/kg	85.0	60.0	130	----
benzo(b+j)fluoranthene	n/a	E641A	0.05	mg/kg	0.5 mg/kg	95.2	60.0	130	----
benzo(g,h,i)perylene	191-24-2	E641A	0.05	mg/kg	0.5 mg/kg	98.5	60.0	130	----
benzo(k)fluoranthene	207-08-9	E641A	0.05	mg/kg	0.5 mg/kg	102	60.0	130	----
chrysene	218-01-9	E641A	0.05	mg/kg	0.5 mg/kg	98.1	60.0	130	----
dibenz(a,h)anthracene	53-70-3	E641A	0.05	mg/kg	0.5 mg/kg	90.1	60.0	130	----
fluoranthene	206-44-0	E641A	0.05	mg/kg	0.5 mg/kg	101	60.0	130	----
fluorene	86-73-7	E641A	0.05	mg/kg	0.5 mg/kg	97.9	60.0	130	----
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.05	mg/kg	0.5 mg/kg	107	60.0	130	----
methylnaphthalene, 1-	90-12-0	E641A	0.03	mg/kg	0.5 mg/kg	111	60.0	130	----
methylnaphthalene, 2-	91-57-6	E641A	0.03	mg/kg	0.5 mg/kg	105	60.0	130	----
naphthalene	91-20-3	E641A	0.01	mg/kg	0.5 mg/kg	110	50.0	130	----
phenanthrene	85-01-8	E641A	0.05	mg/kg	0.5 mg/kg	104	60.0	130	----
pyrene	129-00-0	E641A	0.05	mg/kg	0.5 mg/kg	104	60.0	130	----
quinoline	91-22-5	E641A	0.05	mg/kg	0.5 mg/kg	89.7	60.0	130	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level $\geq 1 \times$ spike level.

Sub-Matrix: Soil/Solid

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	Target	MS	Low	High	
Polycyclic Aromatic Hydrocarbons (QCLot: 655146)										
CG2212740-001	Anonymous	acenaphthene	83-32-9	E641A	0.424 mg/kg	0.5 mg/kg	113	50.0	140	----
		acenaphthylene	208-96-8	E641A	0.388 mg/kg	0.5 mg/kg	103	50.0	140	----
		acridine	260-94-6	E641A	0.421 mg/kg	0.5 mg/kg	112	50.0	140	----
		anthracene	120-12-7	E641A	0.399 mg/kg	0.5 mg/kg	106	50.0	140	----
		benz(a)anthracene	56-55-3	E641A	0.416 mg/kg	0.5 mg/kg	111	50.0	140	----
		benzo(a)pyrene	50-32-8	E641A	0.370 mg/kg	0.5 mg/kg	98.5	50.0	140	----
		benzo(b+j)fluoranthene	n/a	E641A	0.379 mg/kg	0.5 mg/kg	101	50.0	140	----
		benzo(g,h,i)perylene	191-24-2	E641A	0.367 mg/kg	0.5 mg/kg	97.8	50.0	140	----
		benzo(k)fluoranthene	207-08-9	E641A	0.405 mg/kg	0.5 mg/kg	108	50.0	140	----
		chrysene	218-01-9	E641A	0.382 mg/kg	0.5 mg/kg	102	50.0	140	----
		dibenz(a,h)anthracene	53-70-3	E641A	0.388 mg/kg	0.5 mg/kg	104	50.0	140	----
		fluoranthene	206-44-0	E641A	0.427 mg/kg	0.5 mg/kg	114	50.0	140	----
		fluorene	86-73-7	E641A	0.406 mg/kg	0.5 mg/kg	108	50.0	140	----
		indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.365 mg/kg	0.5 mg/kg	97.2	50.0	140	----
		methylnaphthalene, 1-	90-12-0	E641A	0.424 mg/kg	0.5 mg/kg	113	50.0	140	----
		methylnaphthalene, 2-	91-57-6	E641A	0.422 mg/kg	0.5 mg/kg	112	50.0	140	----
		naphthalene	91-20-3	E641A	0.408 mg/kg	0.5 mg/kg	109	50.0	140	----
		phenanthrene	85-01-8	E641A	0.415 mg/kg	0.5 mg/kg	110	50.0	140	----
		pyrene	129-00-0	E641A	0.441 mg/kg	0.5 mg/kg	118	50.0	140	----
		quinoline	91-22-5	E641A	0.400 mg/kg	0.5 mg/kg	107	50.0	140	----
Polycyclic Aromatic Hydrocarbons (QCLot: 655678)										
CG2212743-003	RG_MIDER_SE-3_2022-09-12_N	acenaphthene	83-32-9	E641A	0.432 mg/kg	0.5 mg/kg	111	50.0	140	----
		acenaphthylene	208-96-8	E641A	0.398 mg/kg	0.5 mg/kg	102	50.0	140	----
		acridine	260-94-6	E641A	0.371 mg/kg	0.5 mg/kg	94.9	50.0	140	----
		anthracene	120-12-7	E641A	0.378 mg/kg	0.5 mg/kg	96.7	50.0	140	----
		benz(a)anthracene	56-55-3	E641A	0.427 mg/kg	0.5 mg/kg	109	50.0	140	----
		benzo(a)pyrene	50-32-8	E641A	0.374 mg/kg	0.5 mg/kg	95.6	50.0	140	----
		benzo(b+j)fluoranthene	n/a	E641A	0.415 mg/kg	0.5 mg/kg	106	50.0	140	----
		benzo(g,h,i)perylene	191-24-2	E641A	0.385 mg/kg	0.5 mg/kg	98.5	50.0	140	----
		benzo(k)fluoranthene	207-08-9	E641A	0.418 mg/kg	0.5 mg/kg	107	50.0	140	----
		chrysene	218-01-9	E641A	0.408 mg/kg	0.5 mg/kg	104	50.0	140	----
		dibenz(a,h)anthracene	53-70-3	E641A	0.367 mg/kg	0.5 mg/kg	94.0	50.0	140	----

Page : 13 of 15
 Work Order : CG2212743
 Client : Teck Coal Limited
 Project : Regional Effects Program



Sub-Matrix: **Soil/Solid**

					<i>Matrix Spike (MS) Report</i>					
					<i>Spike</i>		<i>Recovery (%)</i>	<i>Recovery Limits (%)</i>		
<i>Laboratory sample ID</i>	<i>Client sample ID</i>	<i>Analyte</i>	<i>CAS Number</i>	<i>Method</i>	<i>Concentration</i>	<i>Target</i>	<i>MS</i>	<i>Low</i>	<i>High</i>	<i>Qualifier</i>
Polycyclic Aromatic Hydrocarbons (QCLot: 655678) - continued										
CG2212743-003	RG_MIDER_SE-3_2022-09-12_N	fluoranthene	206-44-0	E641A	0.432 mg/kg	0.5 mg/kg	110	50.0	140	----
		fluorene	86-73-7	E641A	0.392 mg/kg	0.5 mg/kg	100	50.0	140	----
		indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.456 mg/kg	0.5 mg/kg	117	50.0	140	----
		methylnaphthalene, 1-	90-12-0	E641A	0.443 mg/kg	0.5 mg/kg	113	50.0	140	----
		methylnaphthalene, 2-	91-57-6	E641A	0.384 mg/kg	0.5 mg/kg	98.2	50.0	140	----
		naphthalene	91-20-3	E641A	0.425 mg/kg	0.5 mg/kg	109	50.0	140	----
		phenanthrene	85-01-8	E641A	0.456 mg/kg	0.5 mg/kg	116	50.0	140	----
		pyrene	129-00-0	E641A	0.438 mg/kg	0.5 mg/kg	112	50.0	140	----
		quinoline	91-22-5	E641A	0.368 mg/kg	0.5 mg/kg	94.2	50.0	140	----



Reference Material (RM) Report

A Reference Material (RM) is a homogenous material with known and well-established analyte concentrations. RMs are processed in an identical manner to test samples, and are used to monitor and control the accuracy and precision of a test method for a typical sample matrix. RM results are expressed as percent recovery of the target analyte concentration. RM targets may be certified target concentrations provided by the RM supplier, or may be ALS long-term mean values (for empirical test methods).

Sub-Matrix:

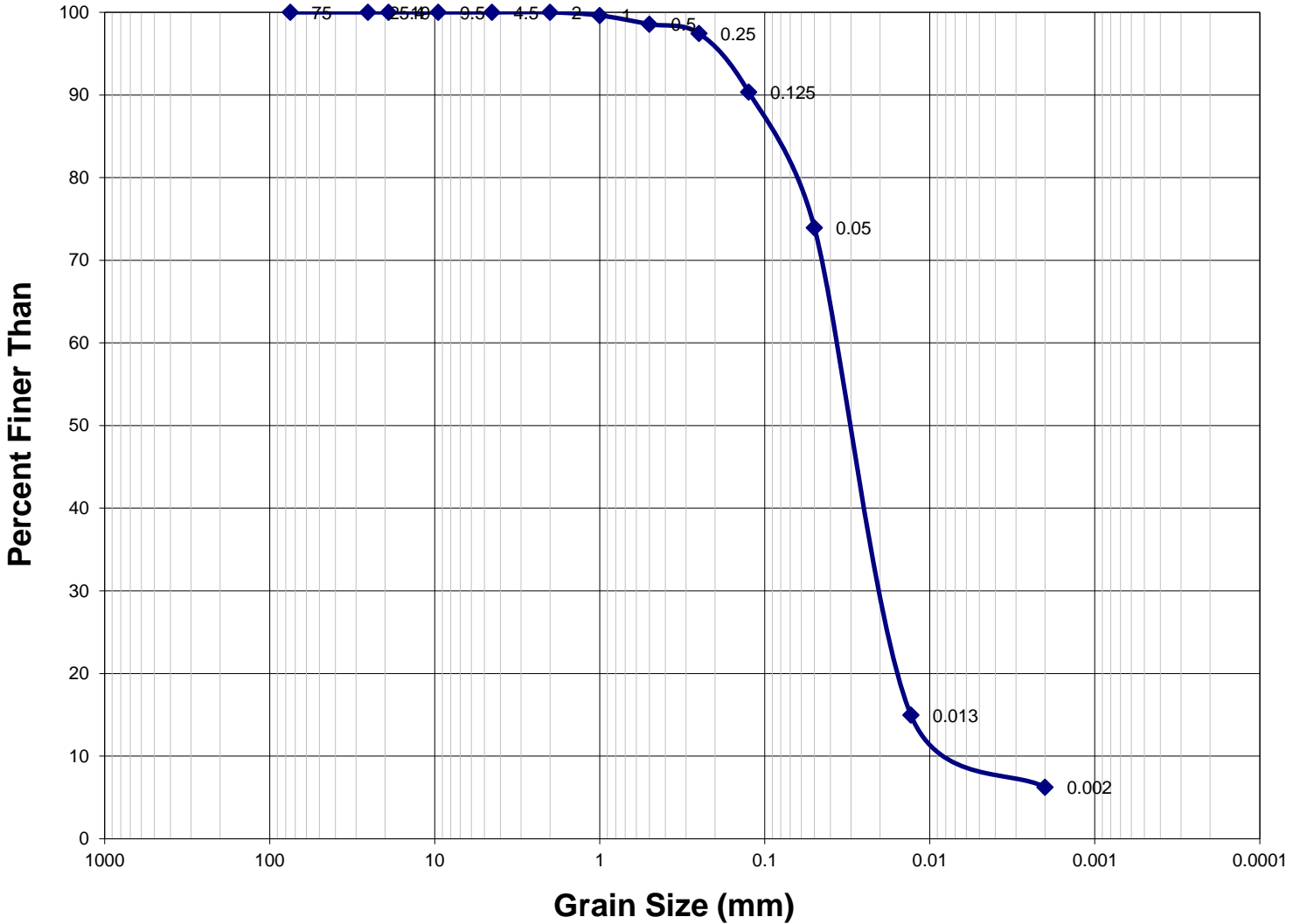
Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Reference Material (RM) Report				
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%)		Qualifier
							Low	High	
Physical Tests (QCLot: 658394)									
	RM	pH (1:2 soil:water)	----	E108	8.06 pH units	99.4	96.0	104	----
Physical Tests (QCLot: 658395)									
	RM	pH (1:2 soil:water)	----	E108	8.06 pH units	99.1	96.0	104	----
Organic / Inorganic Carbon (QCLot: 658685)									
	RM	carbon, total [TC]	----	E351	1.4 %	97.6	80.0	120	----
Organic / Inorganic Carbon (QCLot: 658717)									
	RM	carbon, total [TC]	----	E351	1.4 %	103	80.0	120	----
Organic / Inorganic Carbon (QCLot: 665718)									
	RM	carbon, inorganic [IC]	----	E354	0.383 %	98.2	80.0	120	----
Organic / Inorganic Carbon (QCLot: 665981)									
	RM	carbon, inorganic [IC]	----	E354	0.383 %	100	80.0	120	----
Metals (QCLot: 657175)									
	RM	aluminum	7429-90-5	E440	9817 mg/kg	121	70.0	130	----
	RM	antimony	7440-36-0	E440	3.99 mg/kg	110	70.0	130	----
	RM	arsenic	7440-38-2	E440	3.73 mg/kg	102	70.0	130	----
	RM	barium	7440-39-3	E440	105 mg/kg	117	70.0	130	----
	RM	beryllium	7440-41-7	E440	0.349 mg/kg	117	70.0	130	----
	RM	boron	7440-42-8	E440	8.5 mg/kg	140	40.0	160	----
	RM	cadmium	7440-43-9	E440	0.91 mg/kg	104	70.0	130	----
	RM	calcium	7440-70-2	E440	31082 mg/kg	111	70.0	130	----
	RM	chromium	7440-47-3	E440	101 mg/kg	114	70.0	130	----
	RM	cobalt	7440-48-4	E440	6.9 mg/kg	115	70.0	130	----
	RM	copper	7440-50-8	E440	123 mg/kg	113	70.0	130	----
	RM	iron	7439-89-6	E440	23558 mg/kg	111	70.0	130	----
	RM	lead	7439-92-1	E440	267 mg/kg	108	70.0	130	----
	RM	lithium	7439-93-2	E440	9.5 mg/kg	120	70.0	130	----
	RM	magnesium	7439-95-4	E440	5509 mg/kg	115	70.0	130	----
	RM	manganese	7439-96-5	E440	269 mg/kg	121	70.0	130	----
	RM	molybdenum	7439-98-7	E440	1.03 mg/kg	120	70.0	130	----



Sub-Matrix:

Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Reference Material (RM) Report				
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%)		Qualifier
							Low	High	
Metals (QCLot: 657175) - continued									
	RM	nickel	7440-02-0	E440	26.7 mg/kg	114	70.0	130	----
	RM	phosphorus	7723-14-0	E440	752 mg/kg	108	70.0	130	----
	RM	potassium	7440-09-7	E440	1587 mg/kg	93.7	70.0	130	----
	RM	silver	7440-22-4	E440	4.06 mg/kg	115	70.0	130	----
	RM	sodium	7440-23-5	E440	797 mg/kg	96.6	70.0	130	----
	RM	strontium	7440-24-6	E440	86.1 mg/kg	114	70.0	130	----
	RM	thallium	7440-28-0	E440	0.0786 mg/kg	135	40.0	160	----
	RM	tin	7440-31-5	E440	10.6 mg/kg	113	70.0	130	----
	RM	titanium	7440-32-6	E440	839 mg/kg	130	70.0	130	----
	RM	uranium	7440-61-1	E440	0.52 mg/kg	107	70.0	130	----
	RM	vanadium	7440-62-2	E440	32.7 mg/kg	119	70.0	130	----
	RM	zinc	7440-66-6	E440	297 mg/kg	108	70.0	130	----
	RM	zirconium	7440-67-7	E440	5.73 mg/kg	123	70.0	130	----
Metals (QCLot: 657176)									
	RM	mercury	7439-97-6	E510	0.062 mg/kg	100	70.0	130	----

Particle Size Distribution Curve



Summary of Results

Unified Soil Classification System (USCS)

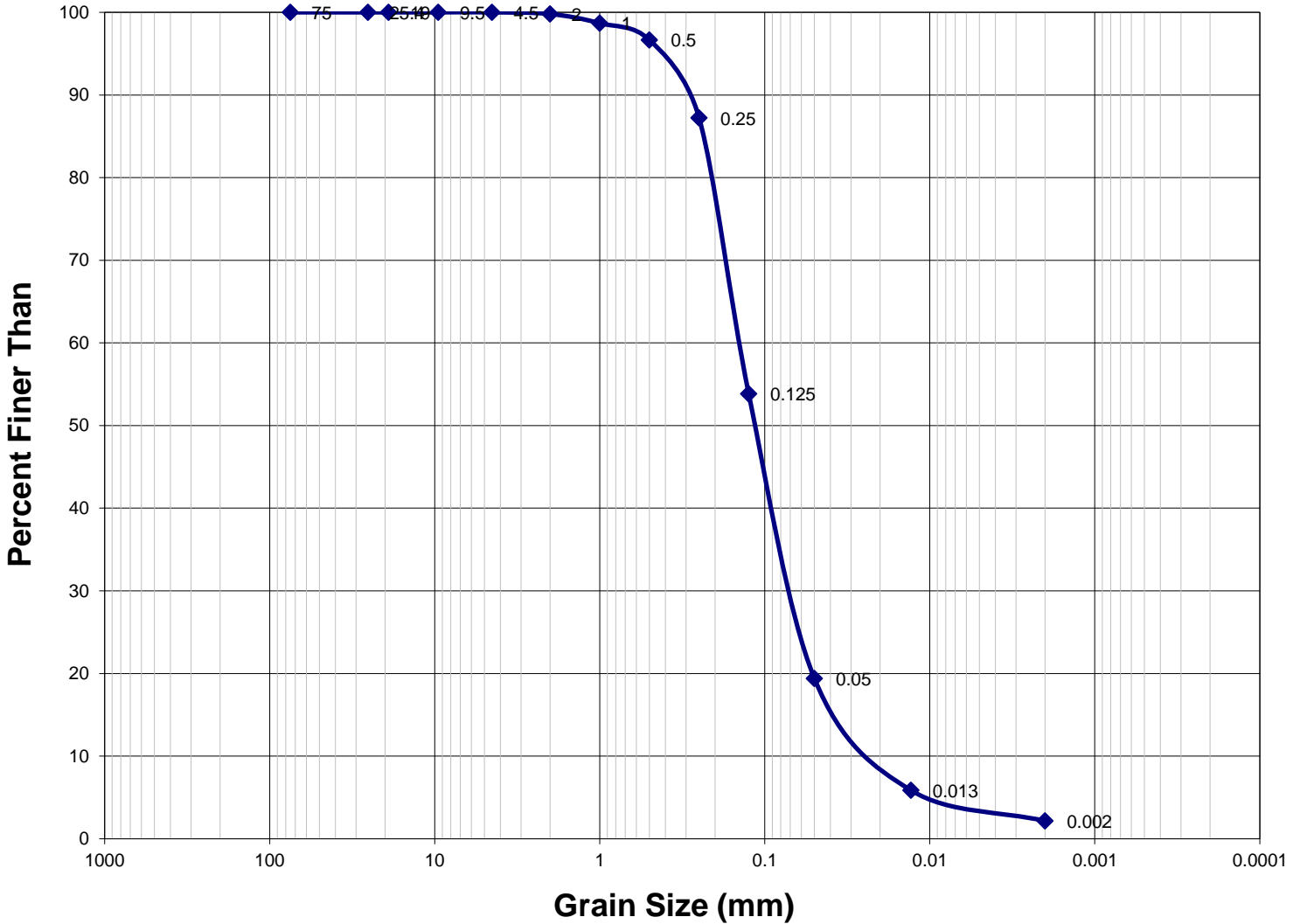
Size Class	Size Range	Wt. (%)
Cobbles	> 3"	0
Gravel	4.75mm - 3"	0
Coarse Sand	2.0mm - 4.75mm	0
Medium Sand	0.425mm - 2.0mm	1
Fine Sand	0.075mm - 0.425mm	19
Fines	< 0.075mm	79

Canadian Soil Survey Committee (CSSC)

Size Class	Size Range	Wt. (%)
Cobbles	> 3"	0
Gravel	2mm - 3"	0
Sand	0.05mm - 2mm	26
Silt	0.002mm - 0.05mm	68
Clay	< 0.002mm	6

Texture: Silt loam

Particle Size Distribution Curve



Summary of Results

Unified Soil Classification System (USCS)

Size Class	Size Range	Wt. (%)
Cobbles	> 3"	0
Gravel	4.75mm - 3"	0
Coarse Sand	2.0mm - 4.75mm	0
Medium Sand	0.425mm - 2.0mm	3
Fine Sand	0.075mm - 0.425mm	66
Fines	< 0.075mm	31

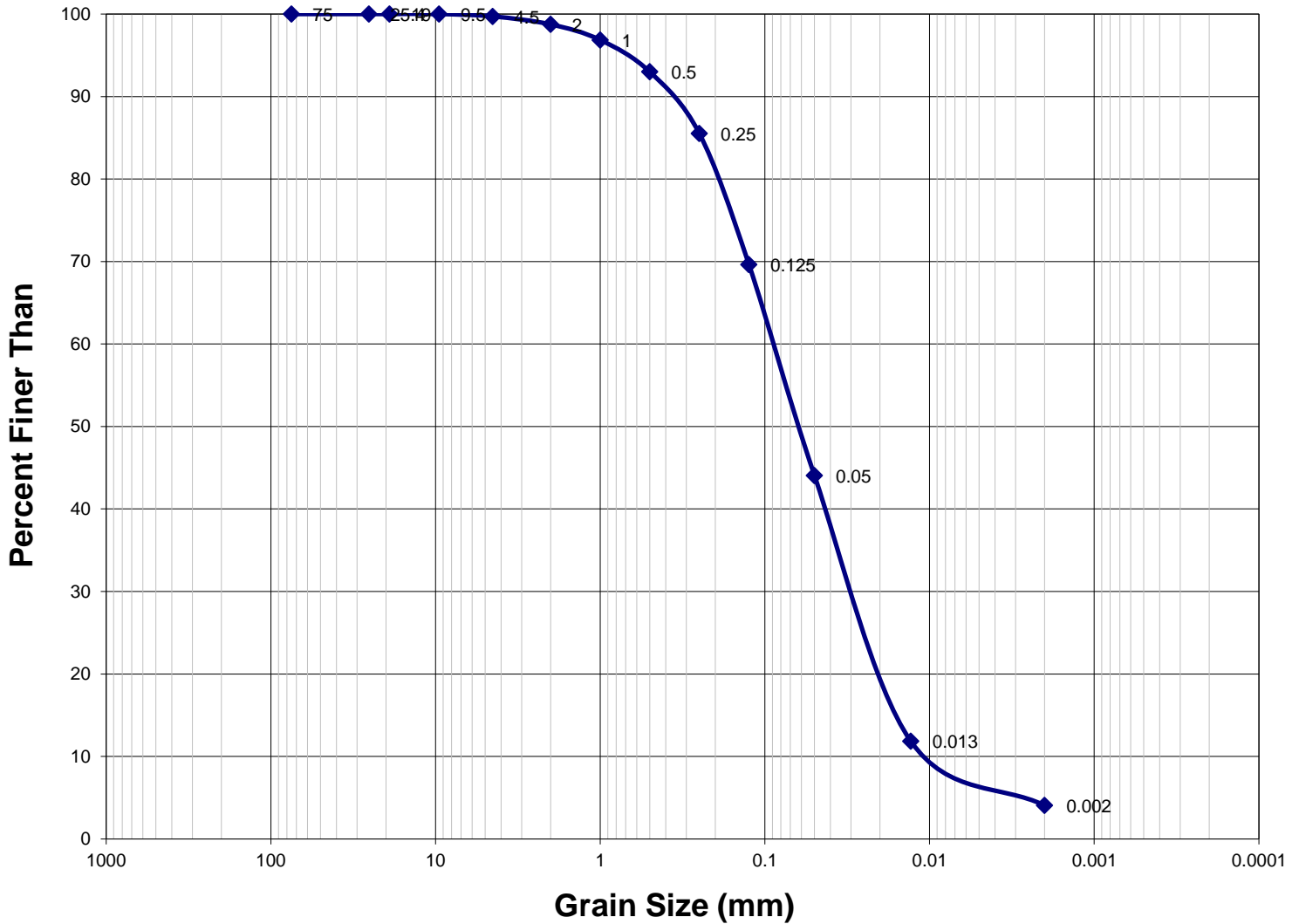
Canadian Soil Survey Committee (CSCS)

Size Class	Size Range	Wt. (%)
Cobbles	> 3"	0
Gravel	2mm - 3"	0
Sand	0.05mm - 2mm	80
Silt	0.002mm - 0.05mm	17
Clay	< 0.002mm	2

Texture: Loamy sand



Particle Size Distribution Curve



Summary of Results

Unified Soil Classification System (USCS)

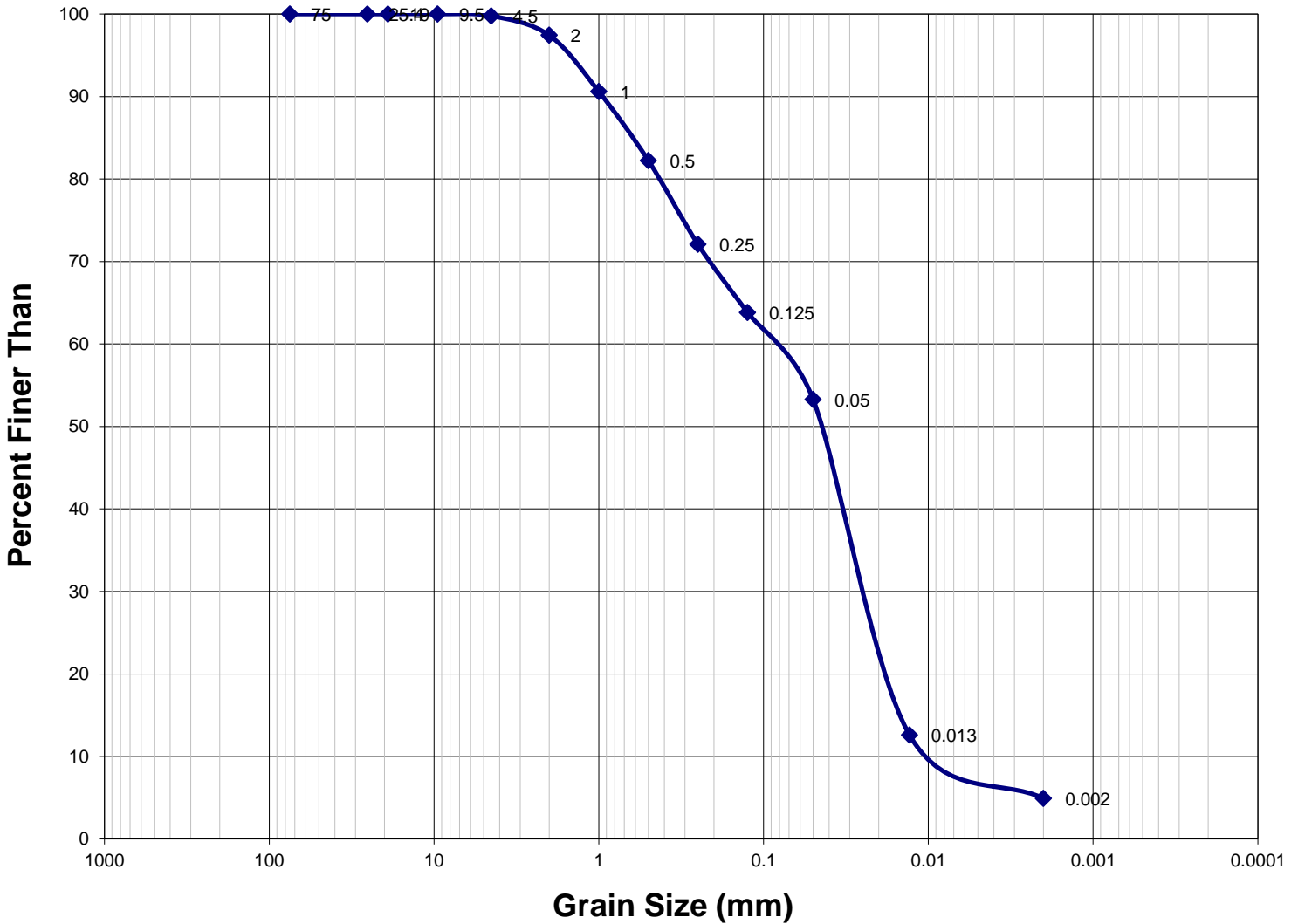
Size Class	Size Range	Wt. (%)
Cobbles	> 3"	0
Gravel	4.75mm - 3"	0
Coarse Sand	2.0mm - 4.75mm	1
Medium Sand	0.425mm - 2.0mm	6
Fine Sand	0.075mm - 0.425mm	40
Fines	< 0.075mm	53

Canadian Soil Survey Committee (CSSC)

Size Class	Size Range	Wt. (%)
Cobbles	> 3"	0
Gravel	2mm - 3"	1
Sand	0.05mm - 2mm	55
Silt	0.002mm - 0.05mm	40
Clay	< 0.002mm	4

Texture Sample contains material greater than 4.75mm. T

Particle Size Distribution Curve



Summary of Results

Unified Soil Classification System (USCS)

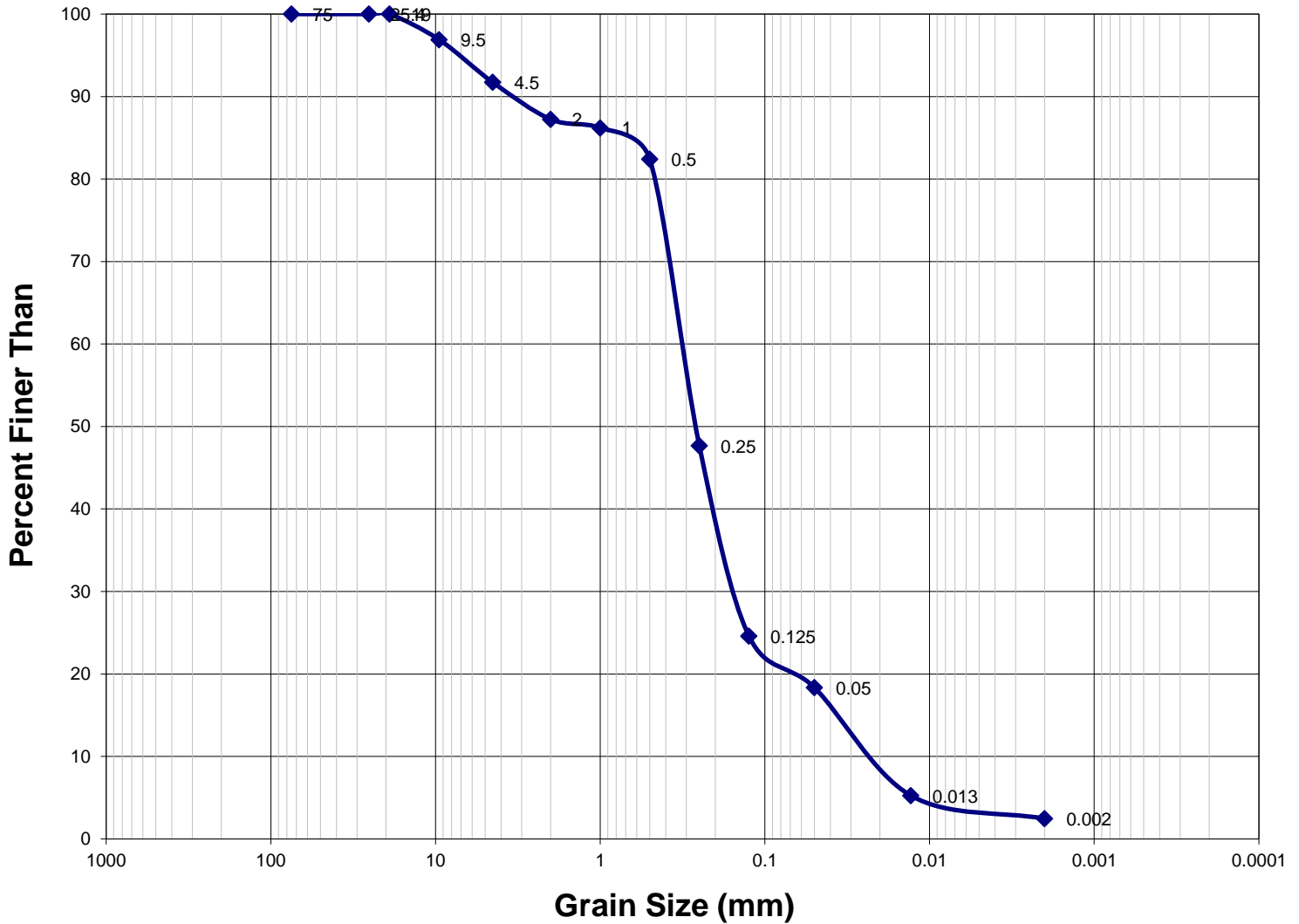
Size Class	Size Range	Wt. (%)
Cobbles	> 3"	0
Gravel	4.75mm - 3"	0
Coarse Sand	2.0mm - 4.75mm	2
Medium Sand	0.425mm - 2.0mm	15
Fine Sand	0.075mm - 0.425mm	25
Fines	< 0.075mm	57

Canadian Soil Survey Committee (CSSC)

Size Class	Size Range	Wt. (%)
Cobbles	> 3"	0
Gravel	2mm - 3"	3
Sand	0.05mm - 2mm	44
Silt	0.002mm - 0.05mm	48
Clay	< 0.002mm	5

Texture Sample contains material greater than 4.75mm. T

Particle Size Distribution Curve



Summary of Results

Unified Soil Classification System (USCS)

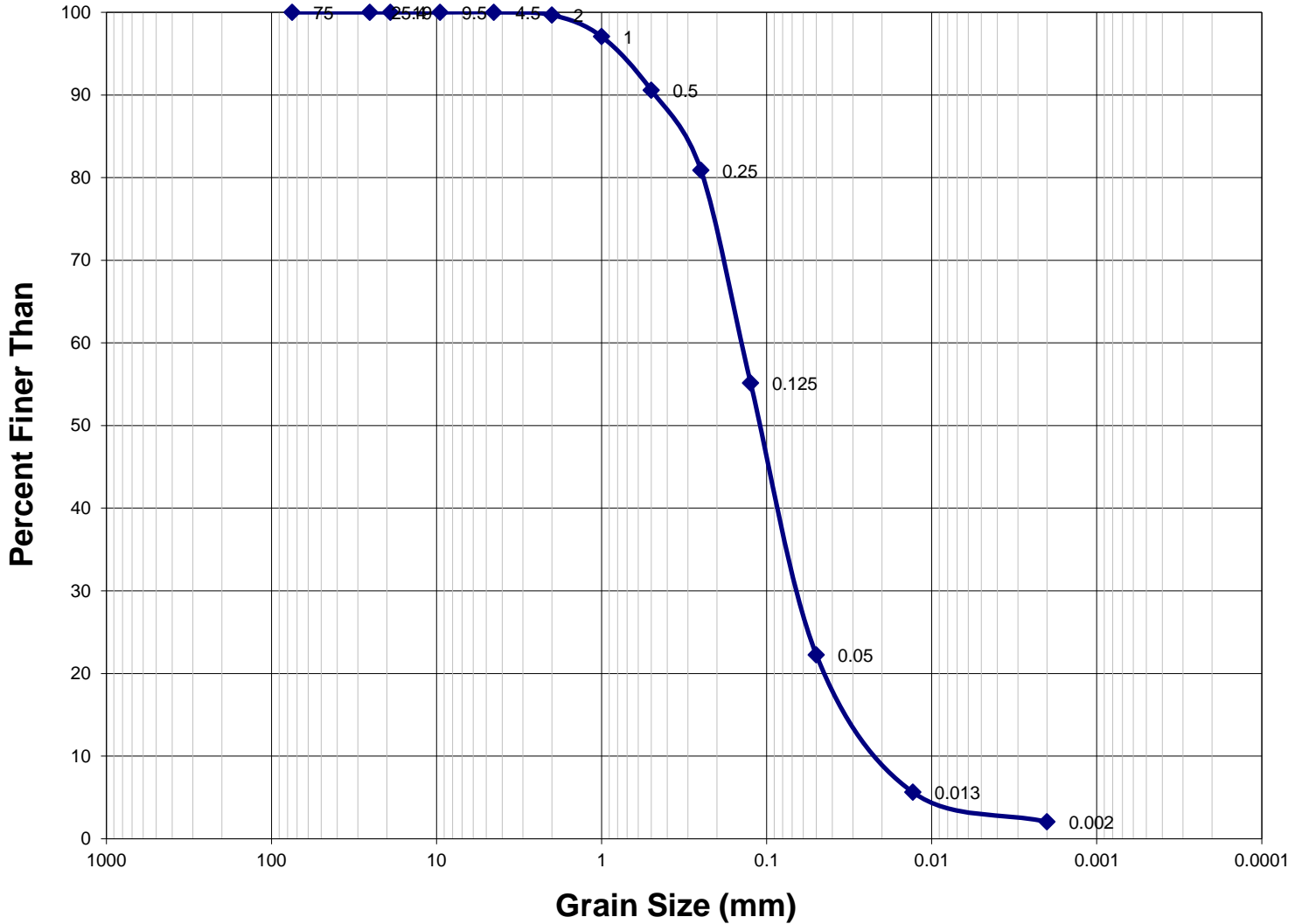
Size Class	Size Range	Wt. (%)
Cobbles	> 3"	0
Gravel	4.75mm - 3"	8
Coarse Sand	2.0mm - 4.75mm	5
Medium Sand	0.425mm - 2.0mm	5
Fine Sand	0.075mm - 0.425mm	62
Fines	< 0.075mm	20

Canadian Soil Survey Committee (CSSC)

Size Class	Size Range	Wt. (%)
Cobbles	> 3"	0
Gravel	2mm - 3"	13
Sand	0.05mm - 2mm	69
Silt	0.002mm - 0.05mm	16
Clay	< 0.002mm	2

Texture Sample contains material greater than 4.75mm. T

Particle Size Distribution Curve



Summary of Results

Unified Soil Classification System (USCS)

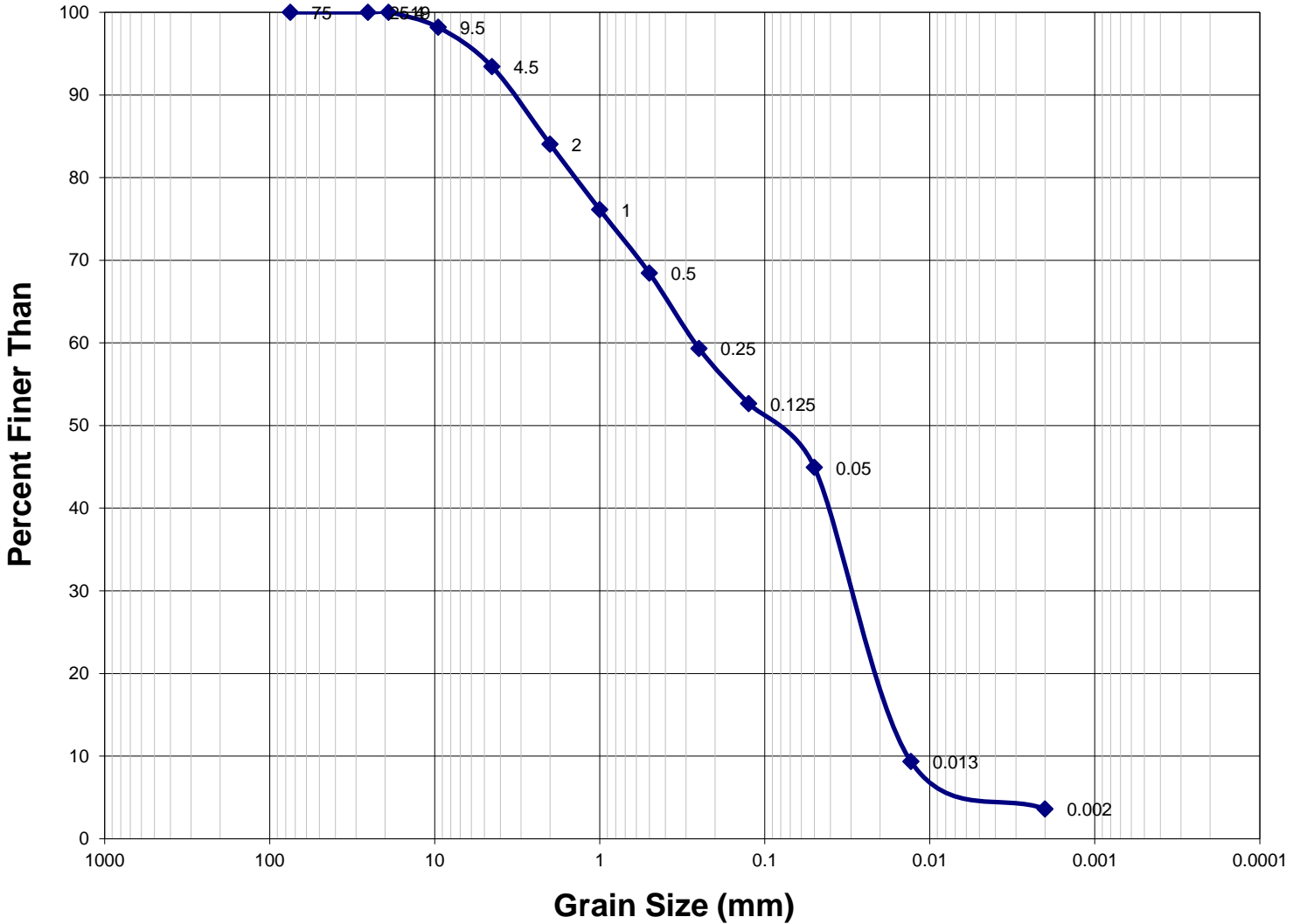
Size Class	Size Range	Wt. (%)
Cobbles	> 3"	0
Gravel	4.75mm - 3"	0
Coarse Sand	2.0mm - 4.75mm	0
Medium Sand	0.425mm - 2.0mm	9
Fine Sand	0.075mm - 0.425mm	57
Fines	< 0.075mm	33

Canadian Soil Survey Committee (CSSC)

Size Class	Size Range	Wt. (%)
Cobbles	> 3"	0
Gravel	2mm - 3"	0
Sand	0.05mm - 2mm	77
Silt	0.002mm - 0.05mm	20
Clay	< 0.002mm	2

Texture: Loamy sand

Particle Size Distribution Curve



Summary of Results

Unified Soil Classification System (USCS)

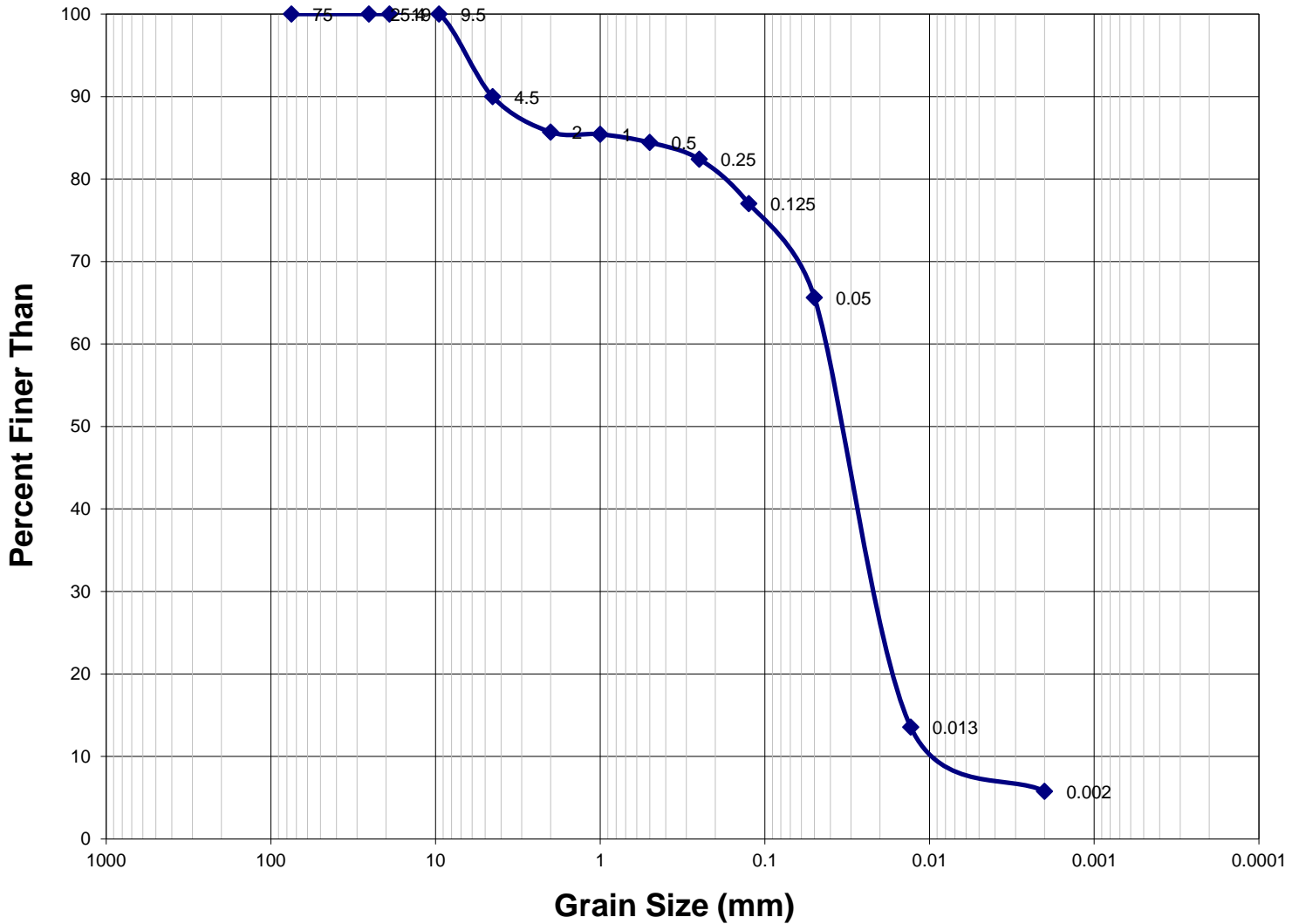
Size Class	Size Range	Wt. (%)
Cobbles	> 3"	0
Gravel	4.75mm - 3"	6
Coarse Sand	2.0mm - 4.75mm	10
Medium Sand	0.425mm - 2.0mm	16
Fine Sand	0.075mm - 0.425mm	21
Fines	< 0.075mm	48

Canadian Soil Survey Committee (CSSC)

Size Class	Size Range	Wt. (%)
Cobbles	> 3"	0
Gravel	2mm - 3"	16
Sand	0.05mm - 2mm	39
Silt	0.002mm - 0.05mm	41
Clay	< 0.002mm	4

Texture Sample contains material greater than 4.75mm. T

Particle Size Distribution Curve



Summary of Results

Unified Soil Classification System (USCS)

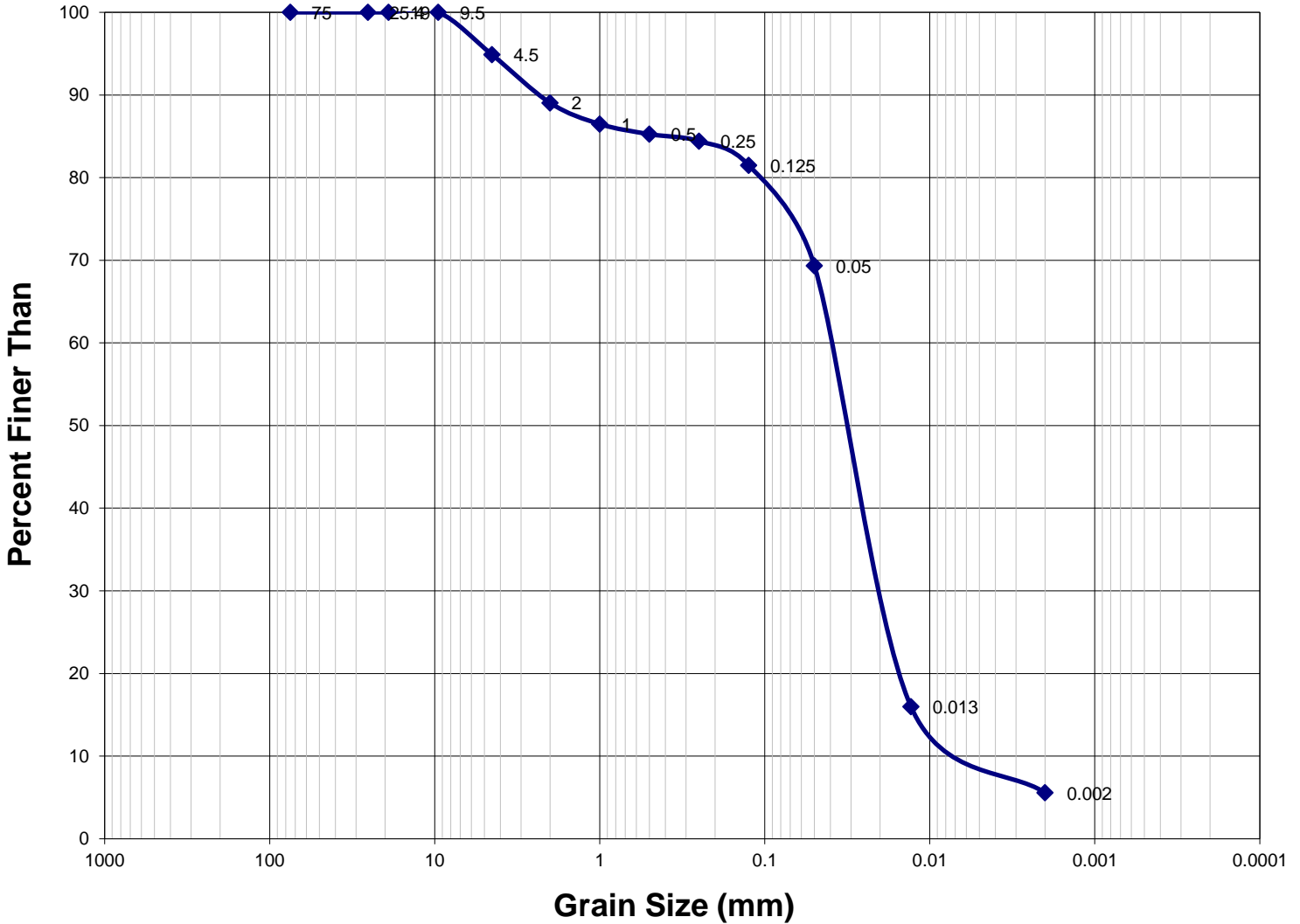
Size Class	Size Range	Wt. (%)
Cobbles	> 3"	0
Gravel	4.75mm - 3"	10
Coarse Sand	2.0mm - 4.75mm	5
Medium Sand	0.425mm - 2.0mm	1
Fine Sand	0.075mm - 0.425mm	15
Fines	< 0.075mm	69

Canadian Soil Survey Committee (CSCC)

Size Class	Size Range	Wt. (%)
Cobbles	> 3"	0
Gravel	2mm - 3"	14
Sand	0.05mm - 2mm	20
Silt	0.002mm - 0.05mm	60
Clay	< 0.002mm	6

Texture Sample contains material greater than 4.75mm. T

Particle Size Distribution Curve



Summary of Results

Unified Soil Classification System (USCS)

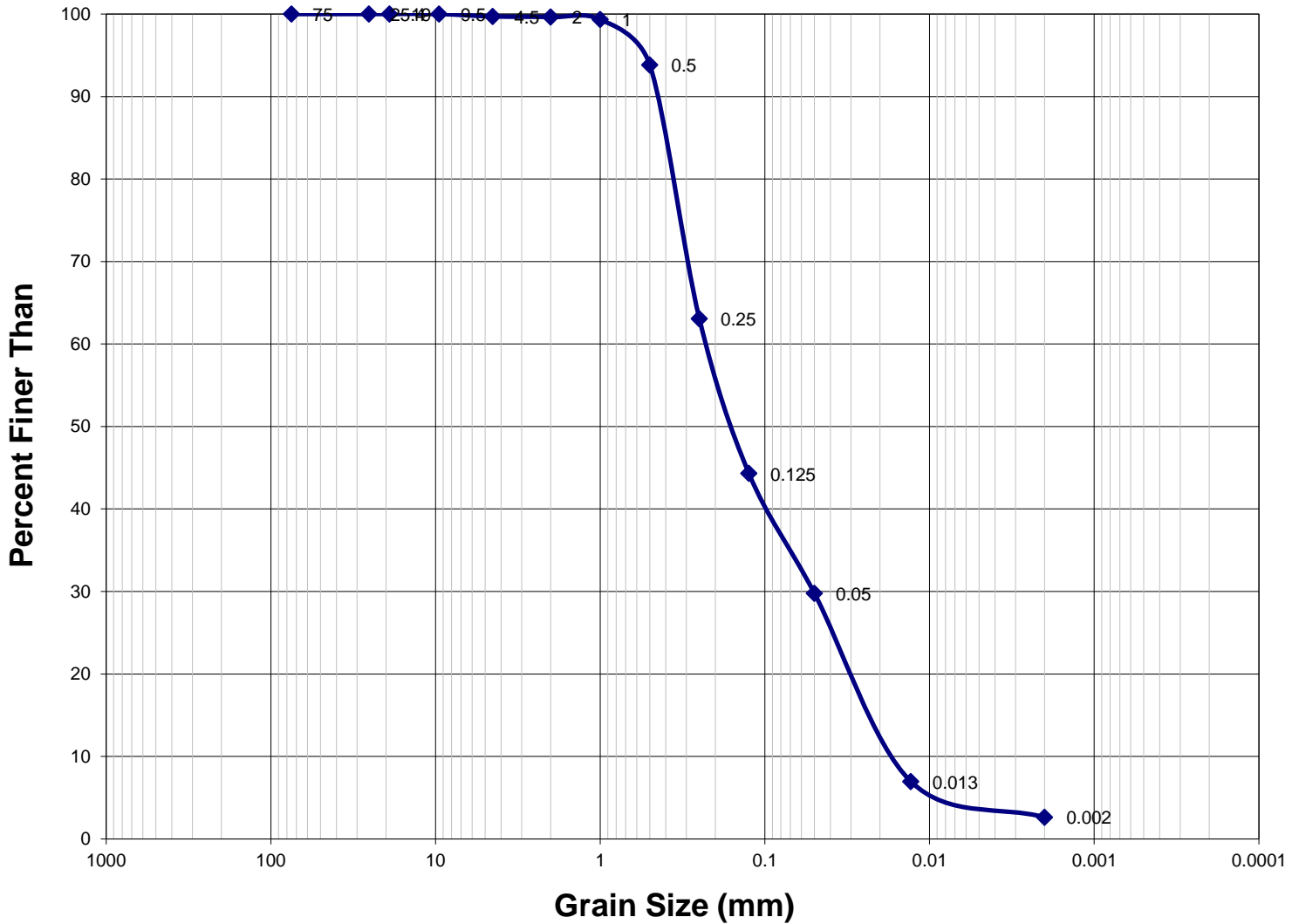
Size Class	Size Range	Wt. (%)
Cobbles	> 3"	0
Gravel	4.75mm - 3"	5
Coarse Sand	2.0mm - 4.75mm	6
Medium Sand	0.425mm - 2.0mm	4
Fine Sand	0.075mm - 0.425mm	12
Fines	< 0.075mm	73

Canadian Soil Survey Committee (CSSC)

Size Class	Size Range	Wt. (%)
Cobbles	> 3"	0
Gravel	2mm - 3"	11
Sand	0.05mm - 2mm	20
Silt	0.002mm - 0.05mm	64
Clay	< 0.002mm	6

Texture Sample contains material greater than 4.75mm. T

Particle Size Distribution Curve



Summary of Results

Unified Soil Classification System (USCS)

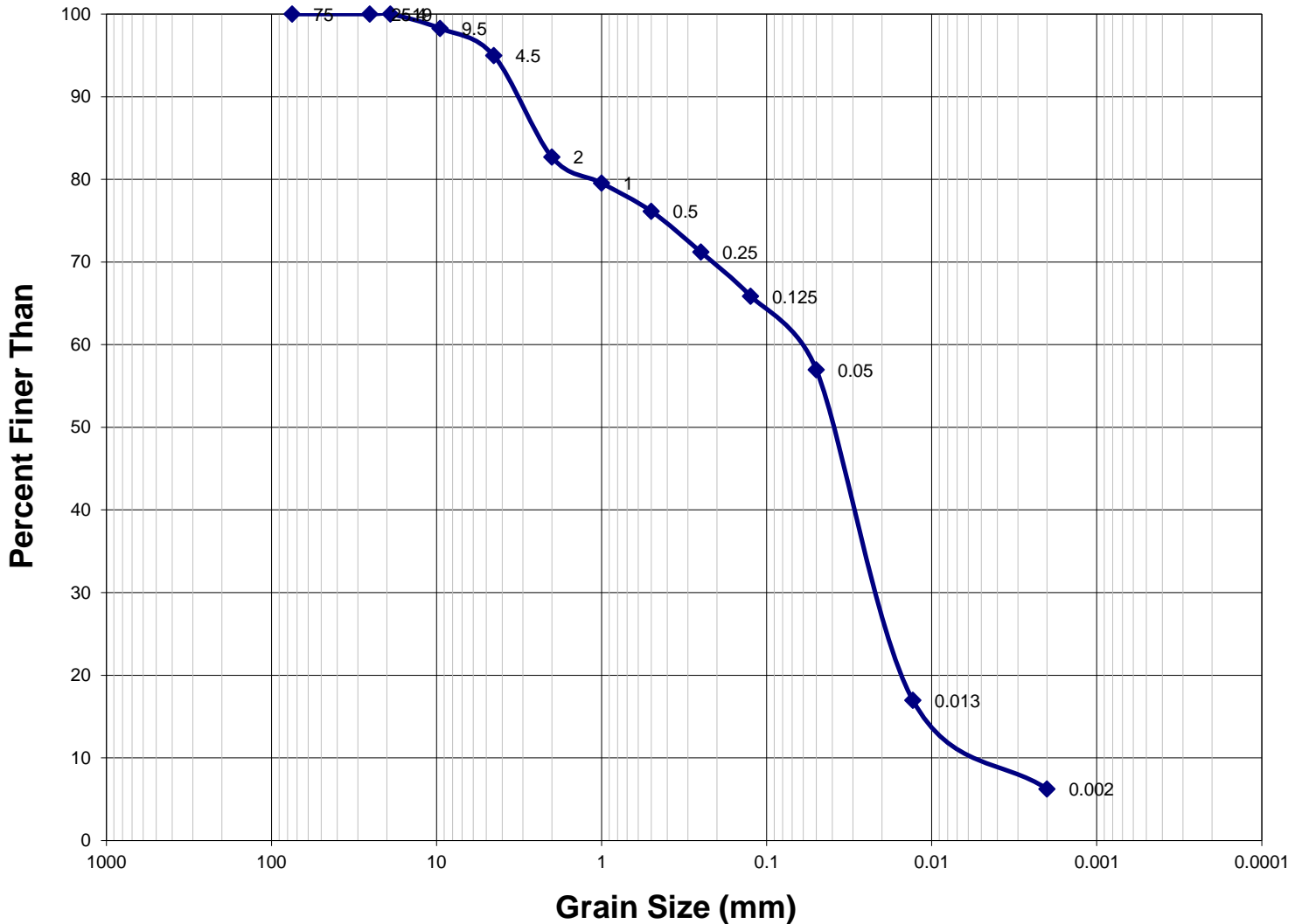
Size Class	Size Range	Wt. (%)
Cobbles	> 3"	0
Gravel	4.75mm - 3"	0
Coarse Sand	2.0mm - 4.75mm	0
Medium Sand	0.425mm - 2.0mm	6
Fine Sand	0.075mm - 0.425mm	59
Fines	< 0.075mm	35

Canadian Soil Survey Committee (CSSC)

Size Class	Size Range	Wt. (%)
Cobbles	> 3"	0
Gravel	2mm - 3"	0
Sand	0.05mm - 2mm	70
Silt	0.002mm - 0.05mm	27
Clay	< 0.002mm	3

Texture Sample contains material greater than 4.75mm. T

Particle Size Distribution Curve



Summary of Results

Unified Soil Classification System (USCS)

Size Class	Size Range	Wt. (%)
Cobbles	> 3"	0
Gravel	4.75mm - 3"	5
Coarse Sand	2.0mm - 4.75mm	12
Medium Sand	0.425mm - 2.0mm	7
Fine Sand	0.075mm - 0.425mm	16
Fines	< 0.075mm	60

Canadian Soil Survey Committee (CSSC)

Size Class	Size Range	Wt. (%)
Cobbles	> 3"	0
Gravel	2mm - 3"	17
Sand	0.05mm - 2mm	26
Silt	0.002mm - 0.05mm	51
Clay	< 0.002mm	6

Texture Sample contains material greater than 4.75mm. T

COC ID: REP_LALMP_EVO_2022-00_ALS		TURNAROUND TIME: 2-3 Business Days			RUSH Priority		
PROJECT/CLIENT INFO				LABORATORY		OTHER INFO	
Facility Name / Job# Regional Effects Program				Lab Name ALS		Report Format / Distribution	
Project Manager Mike Pope				Lab Contact Justine Buma-a		Excel	PDF
Email Mike.Pope@Teck.com				Email justine.bumaa@alsglobal.com		EDD	
Address 421 Pine Ave				Address 2559 29 Street NE			
City Sparwood Province BC				City Calgary Province AB			
Postal Code V0B 2G1 Country Canada				Postal Code T1Y 7B5 Country Canada			
Phone Number 250-425-8247				Phone Number 1-403-407-1781		PO number	VPO00816101

SAMPLE DETAILS								ANALYSIS REQUESTED					OTHER INFO				
Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com p	# Of Cont.	FILE PRESERV.	ANALYSIS	Excel	PDF	EDD	Filter	Field	Lab	Field & Lab	N
RG_MIDER_SE-1_2022-09-12_N	RG_MIDER	SE		2022/09/12	13:00	G	2	NONE	C-TOC-SK MET-CCME+FULL-CL MOISTURE-CL-% Moisture PSA-PIPET-DEF-ALL-SK Particle Size PAH-TMB-D/A-MS-CL PAHs	X	X	X					
RG_MIDER_SE-2_2022-09-12_N	RG_MIDER	SE		2022/09/12	15:43	G	2	NONE		X	X	X					
RG_MIDER_SE-3_2022-09-12_N	RG_MIDER	SE		2022/09/12	15:00	G	2	NONE		X	X	X					
RG_MIDER_SE-4_2022-09-12_N	RG_MIDER	SE		2022/09/12	14:00	G	2	NONE		X	X	X					
RG_MIDER_SE-5_2022-09-12_N	RG_MIDER	SE		2022/09/12	14:15	G	2	NONE		X	X	X					
RG_RIVER_SE-2_2022-09-12_N	RG_RIVER	SE		2022/09/12	15:43	G	2	NONE		X	X	X					
RG_M13_SE-1_2022-09-12_N	RG_M13	SE		2022/09/12	8:00	G	2	NONE		X	X	X					
RG_M13_SE-2_2022-09-12_N	RG_M13	SE		2022/09/12	9:00	G	2	NONE		X	X	X					
RG_M13_SE-3_2022-09-12_N	RG_M13	SE		2022/09/12	10:00	G	2	NONE		X	X	X					
RG_M13_SE-4_2022-09-12_N	RG_M13	SE		2022/09/12	11:00	G	2	NONE		X	X	X					
RG_M13_SE-5_2022-09-12_N	RG_M13	SE		2022/09/12	12:00	G	2	NONE		X	X	X					

Environmental Division
Calgary
Work Order Reference
CG2212743



Telephone : +1 403 407 1800

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS		RELINQUISHED BY/AFFILIATION		DATE/TIME		ACCEPTED BY/AFFILIATION		DATE/TIME	
		Jennifer Ings		#####					
SERVICE REQUEST (rush - subject to availability)		Sampler's Name		Jennifer Ings		Mobile #		5195003444	
Regular (default)		Sampler's Signature		<i>Jennifer Ings</i>		Date/Time		September 14, 2022	
Priority (2-3 business days) - 50% surcharge X									
Emergency (1 Business Day) - 100% surcharge									
For Emergency <1 Day, ASAP or Weekend - Contact ALS									

90C 9/15/2022 8:50am

Environmental Division
Calgary
Work Order Reference
CG2212743

CERTIFICATE OF ANALYSIS

Work Order : **CG2213414**
Client : **Teck Coal Limited**
Contact : Mike Pope
Address : RR#1 HWY#3
 Sparwood BC Canada V0B 2G1
Telephone : ----
Project : Regional Effects Program
PO : VPO00816101
C-O-C number : REP_LAEMP_EVO_2022-09_ALS
Sampler : JENNIFER INGS
Site : ----
Quote number : Teck Coal Master Quote
No. of samples received : 6
No. of samples analysed : 6

Page : 1 of 8
Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
 Calgary AB Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 17-Sep-2022 11:38
Date Analysis Commenced : 30-Sep-2022
Issue Date : 13-Oct-2022 20:07

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Anthony Calero	Supervisor - Inorganic	Metals, Calgary, Alberta
Hedy Lai	Team Leader - Inorganics	Inorganics, Saskatoon, Saskatchewan
Hedy Lai	Team Leader - Inorganics	Sask Soils, Saskatoon, Saskatchewan
Kuljeet Chawla		Inorganics, Calgary, Alberta
Maqsood UHassan	Laboratory Analyst	Organics, Calgary, Alberta
Sara Niroomand		Metals, Calgary, Alberta



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

<i>Unit</i>	<i>Description</i>
-	No Unit
%	percent
mg/kg	milligrams per kilogram
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.



Analytical Results

Sub-Matrix: Sediment

Client sample ID

(Matrix: Soil/Solid)

					RG_ERCK_SE-1 _2022-09-14_N	RG_ERCK_SE-2 _2022-09-14_N	RG_ERCK_SE-3 _2022-09-14_N	RG_ERCK_SE-4 _2022-09-14_N	RG_ERCK_SE-5 _2022-09-14_N
Client sampling date / time					14-Sep-2022 10:30	14-Sep-2022 10:45	14-Sep-2022 10:55	14-Sep-2022 11:05	14-Sep-2022 11:15
Analyte	CAS Number	Method	LOR	Unit	CG2213414-001 Result	CG2213414-002 Result	CG2213414-003 Result	CG2213414-004 Result	CG2213414-005 Result
Physical Tests									
moisture	----	E144	0.25	%	65.3	47.4	45.7	50.7	49.5
pH (1:2 soil:water)	----	E108	0.10	pH units	7.40	7.82	8.20	7.97	8.10
Particle Size									
grain size curve	----	E185A	-	-	See Attached	See Attached	See Attached	See Attached	See Attached
clay (<0.004mm)	----	EC184A	1.0	%	1.6	2.8	2.4	2.3	1.8
silt (0.063mm - 0.0312mm)	----	EC184A	1.0	%	7.5	11.7	9.1	7.7	6.5
silt (0.0312mm - 0.004mm)	----	EC184A	1.0	%	6.6	10.8	9.1	7.6	5.5
sand (0.125mm - 0.063mm)	----	EC184A	1.0	%	12.2	19.2	13.9	13.1	12.0
sand (0.25mm - 0.125mm)	----	EC184A	1.0	%	25.5	33.3	27.1	24.5	24.4
sand (0.5mm - 0.25mm)	----	EC184A	1.0	%	19.8	15.8	22.2	18.6	19.5
sand (1.0mm - 0.50mm)	----	EC184A	1.0	%	10.7	4.0	10.3	12.7	11.5
sand (2.0mm - 1.0mm)	----	EC184A	1.0	%	6.2	2.3	5.8	13.5	8.4
gravel (>2mm)	----	EC184A	1.0	%	9.9	<1.0	<1.0	<1.0	10.4
Organic / Inorganic Carbon									
carbon, total [TC]	----	E351	0.050	%	10.2	6.23	10.0	10.2	10.5
carbon, inorganic [IC]	----	E354	0.050	%	5.13	3.45	5.78	5.37	5.08
carbon, inorganic [IC], (as CaCO3 equivalent)	----	E354	0.40	%	42.8	28.7	48.2	44.7	42.4
carbon, total organic [TOC]	----	EC356	0.050	%	5.07	2.78	4.22	4.83	5.42
Metals									
aluminum	7429-90-5	E440	50	mg/kg	1610	4710	1390	2190	2260
antimony	7440-36-0	E440	0.10	mg/kg	0.20	0.69	0.19	0.26	0.29
arsenic	7440-38-2	E440	0.10	mg/kg	1.58	4.91	1.39	1.95	2.37
barium	7440-39-3	E440	0.50	mg/kg	101	132	99.1	112	107
beryllium	7440-41-7	E440	0.10	mg/kg	0.12	0.41	0.12	0.16	0.17
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20
boron	7440-42-8	E440	5.0	mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0
cadmium	7440-43-9	E440	0.020	mg/kg	0.397	0.830	0.378	0.412	0.390
calcium	7440-70-2	E440	50	mg/kg	200000	93600	201000	184000	190000
chromium	7440-47-3	E440	0.50	mg/kg	2.76	8.74	2.44	4.19	4.08



Analytical Results

Sub-Matrix: Sediment

Client sample ID

(Matrix: Soil/Solid)

					RG_ERCK_SE-1 _2022-09-14_N	RG_ERCK_SE-2 _2022-09-14_N	RG_ERCK_SE-3 _2022-09-14_N	RG_ERCK_SE-4 _2022-09-14_N	RG_ERCK_SE-5 _2022-09-14_N
Client sampling date / time					14-Sep-2022 10:30	14-Sep-2022 10:45	14-Sep-2022 10:55	14-Sep-2022 11:05	14-Sep-2022 11:15
Analyte	CAS Number	Method	LOR	Unit	CG2213414-001	CG2213414-002	CG2213414-003	CG2213414-004	CG2213414-005
					Result	Result	Result	Result	Result
Metals									
cobalt	7440-48-4	E440	0.10	mg/kg	27.8	19.4	42.3	41.7	34.1
copper	7440-50-8	E440	0.50	mg/kg	3.01	9.24	2.70	3.63	3.54
iron	7439-89-6	E440	50	mg/kg	3410	9860	2870	3990	4280
lead	7439-92-1	E440	0.50	mg/kg	2.24	6.09	1.79	2.47	2.55
lithium	7439-93-2	E440	2.0	mg/kg	3.7	6.9	3.0	3.8	4.0
magnesium	7439-95-4	E440	20	mg/kg	4050	4810	3850	4110	4220
manganese	7439-96-5	E440	1.0	mg/kg	505	494	939	864	716
mercury	7439-97-6	E510	0.0050	mg/kg	0.0089	0.0356	0.0068	0.0118	0.0257
molybdenum	7439-98-7	E440	0.10	mg/kg	0.51	1.32	0.59	0.75	0.70
nickel	7440-02-0	E440	0.50	mg/kg	37.6	37.4	55.6	60.4	49.4
phosphorus	7723-14-0	E440	50	mg/kg	418	947	324	343	434
potassium	7440-09-7	E440	100	mg/kg	460	940	370	560	590
selenium	7782-49-2	E440	0.20	mg/kg	4.39	1.80	1.49	1.80	1.83
silver	7440-22-4	E440	0.10	mg/kg	<0.10	0.13	<0.10	<0.10	<0.10
sodium	7440-23-5	E440	50	mg/kg	85	60	69	72	76
strontium	7440-24-6	E440	0.50	mg/kg	115	73.3	113	103	106
sulfur	7704-34-9	E440	1000	mg/kg	4400	1800	3900	3400	3500
thallium	7440-28-0	E440	0.050	mg/kg	0.083	0.171	0.105	0.150	0.116
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
titanium	7440-32-6	E440	1.0	mg/kg	12.1	19.4	7.8	13.2	13.8
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
uranium	7440-61-1	E440	0.050	mg/kg	1.33	1.34	1.12	1.22	1.25
vanadium	7440-62-2	E440	0.20	mg/kg	7.20	23.8	6.49	10.0	10.7
zinc	7440-66-6	E440	2.0	mg/kg	26.2	67.6	22.5	29.3	31.4
zirconium	7440-67-7	E440	1.0	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
Polycyclic Aromatic Hydrocarbons									
acenaphthene	83-32-9	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
acenaphthylene	208-96-8	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
acridine	260-94-6	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
anthracene	120-12-7	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
benz(a)anthracene	56-55-3	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050



Analytical Results

Sub-Matrix: Sediment

Client sample ID

(Matrix: Soil/Solid)

					RG_ERCK_SE-1 _2022-09-14_N	RG_ERCK_SE-2 _2022-09-14_N	RG_ERCK_SE-3 _2022-09-14_N	RG_ERCK_SE-4 _2022-09-14_N	RG_ERCK_SE-5 _2022-09-14_N
Client sampling date / time					14-Sep-2022 10:30	14-Sep-2022 10:45	14-Sep-2022 10:55	14-Sep-2022 11:05	14-Sep-2022 11:15
Analyte	CAS Number	Method	LOR	Unit	CG2213414-001	CG2213414-002	CG2213414-003	CG2213414-004	CG2213414-005
					Result	Result	Result	Result	Result
Polycyclic Aromatic Hydrocarbons									
benzo(a)pyrene	50-32-8	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
benzo(b+j)fluoranthene	n/a	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
benzo(b+j+k)fluoranthene	n/a	E641A	0.075	mg/kg	<0.075	<0.075	<0.075	<0.075	<0.075
benzo(g,h,i)perylene	191-24-2	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
benzo(k)fluoranthene	207-08-9	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
chrysene	218-01-9	E641A	0.050	mg/kg	<0.050	0.050	<0.050	<0.050	<0.050
dibenz(a,h)anthracene	53-70-3	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
fluoranthene	206-44-0	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
fluorene	86-73-7	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
methylnaphthalene, 1-	90-12-0	E641A	0.030	mg/kg	0.056	0.098	0.052	0.073	0.054
methylnaphthalene, 1+2-	----	E641A	0.050	mg/kg	0.123	0.217	0.113	0.160	0.118
methylnaphthalene, 2-	91-57-6	E641A	0.030	mg/kg	0.067	0.119	0.061	0.087	0.064
naphthalene	91-20-3	E641A	0.010	mg/kg	0.053	0.063	0.036	0.050	0.034
phenanthrene	85-01-8	E641A	0.050	mg/kg	0.097	0.150	0.093	0.129	0.101
pyrene	129-00-0	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
quinoline	91-22-5	E641A	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050
B(a)P total potency equivalents [B(a)P TPE]	----	E641A	0.065	mg/kg	<0.065	<0.065	<0.065	<0.065	<0.065
IACR (CCME)	----	E641A	0.60	-	<0.60	0.60	<0.60	<0.60	<0.60
IACR AB (coarse)	----	E641A	0.10	-	<0.10	<0.10	<0.10	<0.10	<0.10
IACR AB (fine)	----	E641A	0.10	-	<0.10	<0.10	<0.10	<0.10	<0.10
PAHs, total (BC Sched 3.4)	n/a	E641A	0.20	mg/kg	0.22	0.38	<0.20	0.27	<0.20
PAHs, total (EPA 16)	n/a	E641A	0.20	mg/kg	<0.20	0.26	<0.20	<0.20	<0.20
Polycyclic Aromatic Hydrocarbons Surrogates									
acridine-d9	34749-75-2	E641A	0.1	%	117	118	117	113	101
chrysene-d12	1719-03-5	E641A	0.1	%	129	127	126	121	120
naphthalene-d8	1146-65-2	E641A	0.1	%	121	121	125	124	106
phenanthrene-d10	1517-22-2	E641A	0.1	%	127	128	126	121	110

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Sediment

Client sample ID

RG_RIVER_SE-1
_2022-09-14_N

(Matrix: Soil/Solid)

Client sampling date / time

14-Sep-2022
10:30

Analyte	CAS Number	Method	LOR	Unit	CG2213414-006	Result				
Physical Tests										
moisture	---	E144	0.25	%	62.4	---	---	---	---	---
pH (1:2 soil:water)	---	E108	0.10	pH units	7.65	---	---	---	---	---
Particle Size										
grain size curve	---	E185A	-	-	See Attached	---	---	---	---	---
clay (<0.004mm)	---	EC184A	1.0	%	1.8	---	---	---	---	---
silt (0.063mm - 0.0312mm)	---	EC184A	1.0	%	7.5	---	---	---	---	---
silt (0.0312mm - 0.004mm)	---	EC184A	1.0	%	5.9	---	---	---	---	---
sand (0.125mm - 0.063mm)	---	EC184A	1.0	%	12.6	---	---	---	---	---
sand (0.25mm - 0.125mm)	---	EC184A	1.0	%	25.7	---	---	---	---	---
sand (0.5mm - 0.25mm)	---	EC184A	1.0	%	19.4	---	---	---	---	---
sand (1.0mm - 0.50mm)	---	EC184A	1.0	%	12.1	---	---	---	---	---
sand (2.0mm - 1.0mm)	---	EC184A	1.0	%	8.2	---	---	---	---	---
gravel (>2mm)	---	EC184A	1.0	%	6.8	---	---	---	---	---
Organic / Inorganic Carbon										
carbon, total [TC]	---	E351	0.050	%	10.6	---	---	---	---	---
carbon, inorganic [IC]	---	E354	0.050	%	6.03	---	---	---	---	---
carbon, inorganic [IC], (as CaCO3 equivalent)	---	E354	0.40	%	50.3	---	---	---	---	---
carbon, total organic [TOC]	---	EC356	0.050	%	4.57	---	---	---	---	---
Metals										
aluminum	7429-90-5	E440	50	mg/kg	1460	---	---	---	---	---
antimony	7440-36-0	E440	0.10	mg/kg	0.21	---	---	---	---	---
arsenic	7440-38-2	E440	0.10	mg/kg	1.58	---	---	---	---	---
barium	7440-39-3	E440	0.50	mg/kg	97.7	---	---	---	---	---
beryllium	7440-41-7	E440	0.10	mg/kg	0.12	---	---	---	---	---
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	---	---	---	---	---
boron	7440-42-8	E440	5.0	mg/kg	<5.0	---	---	---	---	---
cadmium	7440-43-9	E440	0.020	mg/kg	0.363	---	---	---	---	---
calcium	7440-70-2	E440	50	mg/kg	194000	---	---	---	---	---
chromium	7440-47-3	E440	0.50	mg/kg	2.74	---	---	---	---	---
cobalt	7440-48-4	E440	0.10	mg/kg	27.5	---	---	---	---	---



Analytical Results

Sub-Matrix: Sediment

Client sample ID

RG_RIVER_SE-1
_2022-09-14_N

(Matrix: Soil/Solid)

Client sampling date / time

14-Sep-2022
10:30

Analyte CAS Number Method LOR Unit

CG2213414-006

Result

Metals

copper	7440-50-8	E440	0.50	mg/kg	2.72	----	----	----	----
iron	7439-89-6	E440	50	mg/kg	2970	----	----	----	----
lead	7439-92-1	E440	0.50	mg/kg	2.02	----	----	----	----
lithium	7439-93-2	E440	2.0	mg/kg	3.0	----	----	----	----
magnesium	7439-95-4	E440	20	mg/kg	3890	----	----	----	----
manganese	7439-96-5	E440	1.0	mg/kg	488	----	----	----	----
mercury	7439-97-6	E510	0.0050	mg/kg	0.0076	----	----	----	----
molybdenum	7439-98-7	E440	0.10	mg/kg	0.52	----	----	----	----
nickel	7440-02-0	E440	0.50	mg/kg	35.0	----	----	----	----
phosphorus	7723-14-0	E440	50	mg/kg	336	----	----	----	----
potassium	7440-09-7	E440	100	mg/kg	460	----	----	----	----
selenium	7782-49-2	E440	0.20	mg/kg	4.26	----	----	----	----
silver	7440-22-4	E440	0.10	mg/kg	<0.10	----	----	----	----
sodium	7440-23-5	E440	50	mg/kg	79	----	----	----	----
strontium	7440-24-6	E440	0.50	mg/kg	109	----	----	----	----
sulfur	7704-34-9	E440	1000	mg/kg	4000	----	----	----	----
thallium	7440-28-0	E440	0.050	mg/kg	0.079	----	----	----	----
tin	7440-31-5	E440	2.0	mg/kg	<2.0	----	----	----	----
titanium	7440-32-6	E440	1.0	mg/kg	10.9	----	----	----	----
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	----	----	----	----
uranium	7440-61-1	E440	0.050	mg/kg	1.32	----	----	----	----
vanadium	7440-62-2	E440	0.20	mg/kg	7.31	----	----	----	----
zinc	7440-66-6	E440	2.0	mg/kg	23.5	----	----	----	----
zirconium	7440-67-7	E440	1.0	mg/kg	<1.0	----	----	----	----

Polycyclic Aromatic Hydrocarbons

acenaphthene	83-32-9	E641A	0.050	mg/kg	<0.050	----	----	----	----
acenaphthylene	208-96-8	E641A	0.050	mg/kg	<0.050	----	----	----	----
acridine	260-94-6	E641A	0.050	mg/kg	<0.050	----	----	----	----
anthracene	120-12-7	E641A	0.050	mg/kg	<0.050	----	----	----	----
benz(a)anthracene	56-55-3	E641A	0.050	mg/kg	<0.050	----	----	----	----
benzo(a)pyrene	50-32-8	E641A	0.050	mg/kg	<0.050	----	----	----	----



Analytical Results

Sub-Matrix: Sediment

Client sample ID

(Matrix: Soil/Solid)

					RG_RIVER_SE-1 _2022-09-14_N	----	----	----	----	
					Client sampling date / time	14-Sep-2022 10:30	----	----	----	----
Analyte	CAS Number	Method	LOR	Unit	CG2213414-006	-----	-----	-----	-----	
					Result	---	---	---	---	
Polycyclic Aromatic Hydrocarbons										
benzo(b+j)fluoranthene	n/a	E641A	0.050	mg/kg	<0.050	----	----	----	----	
benzo(b+j+k)fluoranthene	n/a	E641A	0.075	mg/kg	<0.075	----	----	----	----	
benzo(g,h,i)perylene	191-24-2	E641A	0.050	mg/kg	<0.050	----	----	----	----	
benzo(k)fluoranthene	207-08-9	E641A	0.050	mg/kg	<0.050	----	----	----	----	
chrysene	218-01-9	E641A	0.050	mg/kg	<0.050	----	----	----	----	
dibenz(a,h)anthracene	53-70-3	E641A	0.050	mg/kg	<0.050	----	----	----	----	
fluoranthene	206-44-0	E641A	0.050	mg/kg	<0.050	----	----	----	----	
fluorene	86-73-7	E641A	0.050	mg/kg	<0.050	----	----	----	----	
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.050	mg/kg	<0.050	----	----	----	----	
methylnaphthalene, 1-	90-12-0	E641A	0.030	mg/kg	0.057	----	----	----	----	
methylnaphthalene, 1+2-	----	E641A	0.050	mg/kg	0.128	----	----	----	----	
methylnaphthalene, 2-	91-57-6	E641A	0.030	mg/kg	0.071	----	----	----	----	
naphthalene	91-20-3	E641A	0.010	mg/kg	0.060	----	----	----	----	
phenanthrene	85-01-8	E641A	0.050	mg/kg	0.110	----	----	----	----	
pyrene	129-00-0	E641A	0.050	mg/kg	<0.050	----	----	----	----	
quinoline	91-22-5	E641A	0.050	mg/kg	<0.050	----	----	----	----	
B(a)P total potency equivalents [B(a)P TPE]	----	E641A	0.065	mg/kg	<0.065	----	----	----	----	
IACR (CCME)	----	E641A	0.60	-	<0.60	----	----	----	----	
IACR AB (coarse)	----	E641A	0.10	-	<0.10	----	----	----	----	
IACR AB (fine)	----	E641A	0.10	-	<0.10	----	----	----	----	
PAHs, total (BC Sched 3.4)	n/a	E641A	0.20	mg/kg	0.24	----	----	----	----	
PAHs, total (EPA 16)	n/a	E641A	0.20	mg/kg	<0.20	----	----	----	----	
Polycyclic Aromatic Hydrocarbons Surrogates										
acridine-d9	34749-75-2	E641A	0.1	%	120	----	----	----	----	
chrysene-d12	1719-03-5	E641A	0.1	%	125	----	----	----	----	
naphthalene-d8	1146-65-2	E641A	0.1	%	118	----	----	----	----	
phenanthrene-d10	1517-22-2	E641A	0.1	%	121	----	----	----	----	

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: CG2213414	Page	: 1 of 11
Client	: Teck Coal Limited	Laboratory	: Calgary - Environmental
Contact	: Mike Pope	Account Manager	: Lyudmyla Shvets
Address	: RR#1 HWY#3 Sparwood BC Canada V0B 2G1	Address	: 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5
Telephone	: ----	Telephone	: +1 403 407 1800
Project	: Regional Effects Program	Date Samples Received	: 17-Sep-2022 11:38
PO	: VPO00816101	Issue Date	: 13-Oct-2022 20:08
C-O-C number	: REP_LAEMP_EVO_2022-09_ALS		
Sampler	: JENNIFER INGS		
Site	: ----		
Quote number	: Teck Coal Master Quote		
No. of samples received	: 6		
No. of samples analysed	: 6		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Soil/Solid**

Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap RG_ERCK_SE-1_2022-09-14_N	E510	14-Sep-2022	07-Oct-2022	----	----		07-Oct-2022	28 days	23 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap RG_ERCK_SE-2_2022-09-14_N	E510	14-Sep-2022	07-Oct-2022	----	----		07-Oct-2022	28 days	23 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap RG_ERCK_SE-3_2022-09-14_N	E510	14-Sep-2022	07-Oct-2022	----	----		07-Oct-2022	28 days	23 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap RG_ERCK_SE-4_2022-09-14_N	E510	14-Sep-2022	07-Oct-2022	----	----		07-Oct-2022	28 days	23 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap RG_ERCK_SE-5_2022-09-14_N	E510	14-Sep-2022	07-Oct-2022	----	----		07-Oct-2022	28 days	23 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap RG_RIVER_SE-1_2022-09-14_N	E510	14-Sep-2022	07-Oct-2022	----	----		07-Oct-2022	28 days	23 days	✓	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap RG_ERCK_SE-1_2022-09-14_N	E440	14-Sep-2022	07-Oct-2022	----	----		07-Oct-2022	180 days	23 days	✓	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap RG_ERCK_SE-2_2022-09-14_N	E440	14-Sep-2022	07-Oct-2022	----	----		07-Oct-2022	180 days	23 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap RG_ERCK_SE-3_2022-09-14_N	E440	14-Sep-2022	07-Oct-2022	----	----		07-Oct-2022	180 days	23 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap RG_ERCK_SE-4_2022-09-14_N	E440	14-Sep-2022	07-Oct-2022	----	----		07-Oct-2022	180 days	23 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap RG_ERCK_SE-5_2022-09-14_N	E440	14-Sep-2022	07-Oct-2022	----	----		07-Oct-2022	180 days	23 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap RG_RIVER_SE-1_2022-09-14_N	E440	14-Sep-2022	07-Oct-2022	----	----		07-Oct-2022	180 days	23 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCK_SE-1_2022-09-14_N	E351	14-Sep-2022	07-Oct-2022	----	----		07-Oct-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCK_SE-2_2022-09-14_N	E351	14-Sep-2022	07-Oct-2022	----	----		07-Oct-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCK_SE-3_2022-09-14_N	E351	14-Sep-2022	07-Oct-2022	----	----		07-Oct-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCK_SE-4_2022-09-14_N	E351	14-Sep-2022	07-Oct-2022	----	----		07-Oct-2022	180 days	0 days	✔	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCK_SE-5_2022-09-14_N	E351	14-Sep-2022	07-Oct-2022	----	----		07-Oct-2022	180 days	0 days		✔
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_RIVER_SE-1_2022-09-14_N	E351	14-Sep-2022	07-Oct-2022	----	----		07-Oct-2022	180 days	0 days		✔
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve											
LDPE bag RG_ERCK_SE-1_2022-09-14_N	E354	14-Sep-2022	----	----	----		07-Oct-2022	----	----		
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve											
LDPE bag RG_ERCK_SE-2_2022-09-14_N	E354	14-Sep-2022	----	----	----		07-Oct-2022	----	----		
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve											
LDPE bag RG_ERCK_SE-3_2022-09-14_N	E354	14-Sep-2022	----	----	----		07-Oct-2022	----	----		
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve											
LDPE bag RG_ERCK_SE-4_2022-09-14_N	E354	14-Sep-2022	----	----	----		07-Oct-2022	----	----		
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve											
LDPE bag RG_ERCK_SE-5_2022-09-14_N	E354	14-Sep-2022	----	----	----		07-Oct-2022	----	----		
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve											
LDPE bag RG_RIVER_SE-1_2022-09-14_N	E354	14-Sep-2022	----	----	----		07-Oct-2022	----	----		
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method											
LDPE bag RG_ERCK_SE-1_2022-09-14_N	E185A	14-Sep-2022	----	----	----		13-Oct-2022	365 days	----		



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCK_SE-2_2022-09-14_N	E185A	14-Sep-2022	----	----	----		13-Oct-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCK_SE-3_2022-09-14_N	E185A	14-Sep-2022	----	----	----		13-Oct-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCK_SE-4_2022-09-14_N	E185A	14-Sep-2022	----	----	----		13-Oct-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCK_SE-5_2022-09-14_N	E185A	14-Sep-2022	----	----	----		13-Oct-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_RIVER_SE-1_2022-09-14_N	E185A	14-Sep-2022	----	----	----		13-Oct-2022	365 days	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap RG_ERCK_SE-1_2022-09-14_N	E144	14-Sep-2022	----	----	----		30-Sep-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap RG_ERCK_SE-2_2022-09-14_N	E144	14-Sep-2022	----	----	----		30-Sep-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap RG_ERCK_SE-3_2022-09-14_N	E144	14-Sep-2022	----	----	----		30-Sep-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap RG_ERCK_SE-4_2022-09-14_N	E144	14-Sep-2022	----	----	----		30-Sep-2022	----	----	



Matrix: Soil/Solid

Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap RG_ERCK_SE-5_2022-09-14_N	E144	14-Sep-2022	----	----	----		30-Sep-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap RG_RIVER_SE-1_2022-09-14_N	E144	14-Sep-2022	----	----	----		30-Sep-2022	----	----	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
Glass soil jar/Teflon lined cap RG_ERCK_SE-1_2022-09-14_N	E108	14-Sep-2022	07-Oct-2022	----	----		07-Oct-2022	30 days	23 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
Glass soil jar/Teflon lined cap RG_ERCK_SE-2_2022-09-14_N	E108	14-Sep-2022	07-Oct-2022	----	----		07-Oct-2022	30 days	23 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
Glass soil jar/Teflon lined cap RG_ERCK_SE-3_2022-09-14_N	E108	14-Sep-2022	07-Oct-2022	----	----		07-Oct-2022	30 days	23 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
Glass soil jar/Teflon lined cap RG_ERCK_SE-4_2022-09-14_N	E108	14-Sep-2022	07-Oct-2022	----	----		07-Oct-2022	30 days	23 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
Glass soil jar/Teflon lined cap RG_ERCK_SE-5_2022-09-14_N	E108	14-Sep-2022	07-Oct-2022	----	----		07-Oct-2022	30 days	23 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
Glass soil jar/Teflon lined cap RG_RIVER_SE-1_2022-09-14_N	E108	14-Sep-2022	07-Oct-2022	----	----		07-Oct-2022	30 days	23 days	✓
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS										
Glass soil jar/Teflon lined cap RG_ERCK_SE-1_2022-09-14_N	E641A	14-Sep-2022	30-Sep-2022	14 days	16 days	* EHT	01-Oct-2022	40 days	1 days	✓



Matrix: **Soil/Solid**

Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap RG_ERCK_SE-2_2022-09-14_N	E641A	14-Sep-2022	30-Sep-2022	14 days	16 days	* EHT	01-Oct-2022	40 days	1 days	✓	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap RG_ERCK_SE-3_2022-09-14_N	E641A	14-Sep-2022	30-Sep-2022	14 days	16 days	* EHT	01-Oct-2022	40 days	1 days	✓	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap RG_ERCK_SE-4_2022-09-14_N	E641A	14-Sep-2022	30-Sep-2022	14 days	16 days	* EHT	01-Oct-2022	40 days	1 days	✓	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap RG_ERCK_SE-5_2022-09-14_N	E641A	14-Sep-2022	30-Sep-2022	14 days	16 days	* EHT	01-Oct-2022	40 days	1 days	✓	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap RG_RIVER_SE-1_2022-09-14_N	E641A	14-Sep-2022	30-Sep-2022	14 days	16 days	* EHT	01-Oct-2022	40 days	1 days	✓	

Legend & Qualifier Definitions

EHT: Exceeded ALS recommended hold time prior to analysis.

Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Soil/Solid**

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
Analytical Methods							
Laboratory Duplicates (DUP)							
Mercury in Soil/Solid by CVAAS	E510	685263	1	20	5.0	5.0	✔
Metals in Soil/Solid by CRC ICPMS	E440	685262	1	20	5.0	5.0	✔
Moisture Content by Gravimetry	E144	675169	1	19	5.2	5.0	✔
PAHs by Hex:Ace GC-MS	E641A	675139	1	17	5.8	5.0	✔
pH by Meter (1:2 Soil:Water Extraction)	E108	685787	1	20	5.0	5.0	✔
Total Carbon by Combustion	E351	686556	1	18	5.5	5.0	✔
Total Inorganic Carbon by Acetic Acid pH Standard Curve	E354	686106	2	29	6.9	5.0	✔
Laboratory Control Samples (LCS)							
Mercury in Soil/Solid by CVAAS	E510	685263	2	20	10.0	10.0	✔
Metals in Soil/Solid by CRC ICPMS	E440	685262	2	20	10.0	10.0	✔
Moisture Content by Gravimetry	E144	675169	1	19	5.2	5.0	✔
PAHs by Hex:Ace GC-MS	E641A	675139	1	17	5.8	5.0	✔
pH by Meter (1:2 Soil:Water Extraction)	E108	685787	2	20	10.0	10.0	✔
Total Carbon by Combustion	E351	686556	2	18	11.1	10.0	✔
Total Inorganic Carbon by Acetic Acid pH Standard Curve	E354	686106	4	29	13.7	10.0	✔
Method Blanks (MB)							
Mercury in Soil/Solid by CVAAS	E510	685263	1	20	5.0	5.0	✔
Metals in Soil/Solid by CRC ICPMS	E440	685262	1	20	5.0	5.0	✔
Moisture Content by Gravimetry	E144	675169	1	19	5.2	5.0	✔
PAHs by Hex:Ace GC-MS	E641A	675139	1	17	5.8	5.0	✔
Total Carbon by Combustion	E351	686556	1	18	5.5	5.0	✔
Total Inorganic Carbon by Acetic Acid pH Standard Curve	E354	686106	2	29	6.9	5.0	✔
Matrix Spikes (MS)							
PAHs by Hex:Ace GC-MS	E641A	675139	1	17	5.8	5.0	✔



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
pH by Meter (1:2 Soil:Water Extraction)	E108 Calgary - Environmental	Soil/Solid	BC Lab Manual	pH is determined by potentiometric measurement with a pH electrode at ambient laboratory temperature (normally $20 \pm 5^\circ\text{C}$), and is carried out in accordance with procedures described in the BC Lab Manual (prescriptive method). The procedure involves mixing the dried (at $<60^\circ\text{C}$) and sieved (10mesh/2mm) sample with ultra pure water at a 1:2 ratio of sediment to water. The pH is then measured by a standard pH probe.
Moisture Content by Gravimetry	E144 Calgary - Environmental	Soil/Solid	CCME PHC in Soil - Tier 1	Moisture is measured gravimetrically by drying the sample at 105°C . Moisture content is calculated as the weight loss (due to water) divided by the wet weight of the sample, expressed as a percentage.
Grain Size Report (Attachment) Pipet/Sieve Method	E185A Saskatoon - Environmental	Soil/Solid	SSIR-51 Method 3.2.1	A grain size curve is a graphical representation of the particle sizing of a sample representing the percent passing against the effective particle size.
Total Carbon by Combustion	E351 Saskatoon - Environmental	Soil/Solid	CSSS (2008) 21.2 (mod)	Total Carbon is determined by the high temperature combustion method with measurement by an infrared detector.
Total Inorganic Carbon by Acetic Acid pH Standard Curve	E354 Saskatoon - Environmental	Soil/Solid	CSSS (2008) 20.2	Total Inorganic Carbon is determined by acetic acid pH standard curve, where a known quantity of acetic acid is consumed by reaction with carbonates in the soil. The pH of the resulting solution is measured and compared against a standard curve relating pH to weight of carbonate.
Metals in Soil/Solid by CRC ICPMS	E440 Calgary - Environmental	Soil/Solid	EPA 6020B (mod)	This method is intended to liberate metals that may be environmentally available. Samples are dried, then sieved through a 2 mm sieve, and digested with HNO_3 and HCl . Dependent on sample matrix, some metals may be only partially recovered, including Al, Ba, Be, Cr, Sr, Ti, Tl, V, W, and Zr. Silicate minerals are not solubilized. Volatile forms of sulfur (including sulfide) may not be captured, as they may be lost during sampling, storage, or digestion. This method does not adequately recover elemental sulfur, and is unsuitable for assessment of elemental sulfur standards or guidelines. Analysis is by Collision/Reaction Cell ICPMS.
Mercury in Soil/Solid by CVAAS	E510 Calgary - Environmental	Soil/Solid	EPA 200.2/1631 Appendix (mod)	Samples are dried, then sieved through a 2 mm sieve, and digested with HNO_3 and HCl , followed by CVAAS analysis.
PAHs by Hex:Ace GC-MS	E641A Calgary - Environmental	Soil/Solid	EPA 8270E (mod)	Polycyclic Aromatic Hydrocarbons (PAHs) are extracted with hexane/acetone and analyzed by GC-MS. If reported, IACR (index of additive cancer risk, unitless) and B(a)P toxic potency equivalent (in soil concentration units) are calculated as per CCME PAH Soil Quality Guidelines fact sheet (2010) or ABT1.



<i>Analytical Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
Particle Size Analysis (Pipette) - Wentworth Classification	EC184A Saskatoon - Environmental	Soil/Solid	Modified Wentworth	The particle size determination is performed by various methods to generate a Grain Size curve. The data from the curve is then used to produce particle size ranges based on the Modified Wentworth Classification system.
Total Organic Carbon (Calculated) in soil	EC356 Saskatoon - Environmental	Soil/Solid	CSSS (2008) 21.2	Total Organic Carbon (TOC) is calculated by the difference between total carbon (TC) and total inorganic carbon (TIC).

<i>Preparation Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
Leach 1:2 Soil:Water for pH/EC	EP108 Calgary - Environmental	Soil/Solid	BC WLAP METHOD: PH, ELECTROMETRIC, SOIL	The procedure involves mixing the dried (at <60°C) and sieved (No. 10 / 2mm) sample with deionized/distilled water at a 1:2 ratio of sediment to water.
Digestion for Metals and Mercury	EP440 Calgary - Environmental	Soil/Solid	EPA 200.2 (mod)	Samples are dried, then sieved through a 2 mm sieve, and digested with HNO ₃ and HCl. This method is intended to liberate metals that may be environmentally available.
PHCs and PAHs Hexane-Acetone Tumbler Extraction	EP601 Calgary - Environmental	Soil/Solid	CCME PHC in Soil - Tier 1 (mod)	Samples are subsampled and Petroleum Hydrocarbons (PHC) and PAHs are extracted with 1:1 hexane:acetone using a rotary extractor.
Dry and Grind in Soil/Solid <60°C	EPP442 Calgary - Environmental	Soil/Solid	Soil Sampling and Methods of Analysis, Carter 2008	After removal of any coarse fragments and reservation of wet subsamples a portion of homogenized sample is set in a tray and dried at less than 60°C until dry. The sample is then particle size reduced with an automated crusher or mortar and pestle, typically to <2 mm. Further size reduction may be needed for particular tests.



QUALITY CONTROL REPORT

Work Order : CG2213414
Client : Teck Coal Limited
Contact : Mike Pope
Address : RR#1 HWY#3
Sparwood BC Canada V0B 2G1
Telephone : ----
Project : Regional Effects Program
PO : VPO00816101
C-O-C number : REP_LAEMP_EVO_2022-09_ALS
Sampler : JENNIFER INGS
Site : ----
Quote number : Teck Coal Master Quote
No. of samples received : 6
No. of samples analysed : 6

Page : 1 of 12
Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
Calgary, Alberta Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 17-Sep-2022 11:38
Date Analysis Commenced : 30-Sep-2022
Issue Date : 13-Oct-2022 20:08

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
Matrix Spike (MS) Report; Recovery and Data Quality Objectives
Reference Material (RM) Report; Recovery and Data Quality Objectives
Method Blank (MB) Report; Recovery and Data Quality Objectives
Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Table with 3 columns: Signatories, Position, Laboratory Department. Rows include Anthony Calero, Hedy Lai, and Maqsood UlHassan.

Page : 2 of 12
Work Order : CG2213414
Client : Teck Coal Limited
Project : Regional Effects Program



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: **Soil/Solid**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 675169)											
CG2212653-005	Anonymous	moisture	----	E144	0.25	%	9.17	9.50	3.49%	20%	----
Physical Tests (QC Lot: 685787)											
CG2213414-001	RG_ERCK_SE-1_2022-09-14_N	pH (1:2 soil:water)	----	E108	0.10	pH units	7.40	7.45	0.673%	5%	----
Organic / Inorganic Carbon (QC Lot: 685917)											
CG2213501-006	Anonymous	carbon, inorganic [IC]	----	E354	0.050	%	1.78	1.81	1.68%	20%	----
Organic / Inorganic Carbon (QC Lot: 686106)											
CG2213414-004	RG_ERCK_SE-4_2022-09-14_N	carbon, inorganic [IC]	----	E354	0.050	%	5.37	6.13	13.3%	20%	----
Organic / Inorganic Carbon (QC Lot: 686556)											
CG2213414-004	RG_ERCK_SE-4_2022-09-14_N	carbon, total [TC]	----	E351	0.050	%	10.2	10.1	1.38%	20%	----
Metals (QC Lot: 685262)											
CG2213414-001	RG_ERCK_SE-1_2022-09-14_N	aluminum	7429-90-5	E440	50	mg/kg	1610	1590	1.40%	40%	----
		antimony	7440-36-0	E440	0.10	mg/kg	0.20	0.24	0.04	Diff <2x LOR	----
		arsenic	7440-38-2	E440	0.10	mg/kg	1.58	1.85	16.1%	30%	----
		barium	7440-39-3	E440	0.50	mg/kg	101	104	3.02%	40%	----
		beryllium	7440-41-7	E440	0.10	mg/kg	0.12	0.13	0.01	Diff <2x LOR	----
		bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	0	Diff <2x LOR	----
		boron	7440-42-8	E440	5.0	mg/kg	<5.0	<5.0	0	Diff <2x LOR	----
		cadmium	7440-43-9	E440	0.020	mg/kg	0.397	0.420	5.61%	30%	----
		calcium	7440-70-2	E440	50	mg/kg	200000	210000	4.67%	30%	----
		chromium	7440-47-3	E440	0.50	mg/kg	2.76	3.00	0.24	Diff <2x LOR	----
		cobalt	7440-48-4	E440	0.10	mg/kg	27.8	29.7	6.73%	30%	----
		copper	7440-50-8	E440	0.50	mg/kg	3.01	3.22	0.21	Diff <2x LOR	----
		iron	7439-89-6	E440	50	mg/kg	3410	3560	4.36%	30%	----
		lead	7439-92-1	E440	0.50	mg/kg	2.24	2.37	0.13	Diff <2x LOR	----
		lithium	7439-93-2	E440	2.0	mg/kg	3.7	3.4	0.3	Diff <2x LOR	----
		magnesium	7439-95-4	E440	20	mg/kg	4050	4380	7.82%	30%	----
manganese	7439-96-5	E440	1.0	mg/kg	505	536	5.83%	30%	----		
molybdenum	7439-98-7	E440	0.10	mg/kg	0.51	0.58	12.2%	40%	----		
nickel	7440-02-0	E440	0.50	mg/kg	37.6	39.6	5.25%	30%	----		
phosphorus	7723-14-0	E440	50	mg/kg	418	436	4.37%	30%	----		



Sub-Matrix: Soil/Solid

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Metals (QC Lot: 685262) - continued											
CG2213414-001	RG_ERCK_SE-1_2022-09-14_N	potassium	7440-09-7	E440	100	mg/kg	460	460	4	Diff <2x LOR	----
		selenium	7782-49-2	E440	0.20	mg/kg	4.39	4.31	1.78%	30%	----
		silver	7440-22-4	E440	0.10	mg/kg	<0.10	<0.10	0	Diff <2x LOR	----
		sodium	7440-23-5	E440	50	mg/kg	85	91	6	Diff <2x LOR	----
		strontium	7440-24-6	E440	0.50	mg/kg	115	119	3.31%	40%	----
		sulfur	7704-34-9	E440	1000	mg/kg	4400	4500	100	Diff <2x LOR	----
		thallium	7440-28-0	E440	0.050	mg/kg	0.083	0.083	0.0004	Diff <2x LOR	----
		tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	0	Diff <2x LOR	----
		titanium	7440-32-6	E440	1.0	mg/kg	12.1	10.6	13.0%	40%	----
		tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	0	Diff <2x LOR	----
		uranium	7440-61-1	E440	0.050	mg/kg	1.33	1.41	5.84%	30%	----
		vanadium	7440-62-2	E440	0.20	mg/kg	7.20	7.61	5.55%	30%	----
		zinc	7440-66-6	E440	2.0	mg/kg	26.2	29.5	11.9%	30%	----
		zirconium	7440-67-7	E440	1.0	mg/kg	<1.0	<1.0	0	Diff <2x LOR	----
Metals (QC Lot: 685263)											
CG2213414-001	RG_ERCK_SE-1_2022-09-14_N	mercury	7439-97-6	E510	0.0050	mg/kg	0.0089	0.0074	0.0015	Diff <2x LOR	----
Polycyclic Aromatic Hydrocarbons (QC Lot: 675139)											
CG2213410-001	Anonymous	acenaphthene	83-32-9	E641A	0.050	mg/kg	0.070	0.073	0.003	Diff <2x LOR	----
		acenaphthylene	208-96-8	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		acridine	260-94-6	E641A	0.050	mg/kg	0.125	0.115	0.010	Diff <2x LOR	----
		anthracene	120-12-7	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		benz(a)anthracene	56-55-3	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		benzo(a)pyrene	50-32-8	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		benzo(b+j)fluoranthene	n/a	E641A	0.050	mg/kg	0.083	0.064	0.019	Diff <2x LOR	----
		benzo(g,h,i)perylene	191-24-2	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		benzo(k)fluoranthene	207-08-9	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		chrysene	218-01-9	E641A	0.050	mg/kg	0.198	0.177	0.020	Diff <2x LOR	----
		dibenz(a,h)anthracene	53-70-3	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		fluoranthene	206-44-0	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		fluorene	86-73-7	E641A	0.050	mg/kg	0.181	0.187	0.006	Diff <2x LOR	----
		indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		methylnaphthalene, 1-	90-12-0	E641A	0.030	mg/kg	0.833	0.872	4.59%	50%	----
		methylnaphthalene, 2-	91-57-6	E641A	0.030	mg/kg	1.37	1.47	7.04%	50%	----
		naphthalene	91-20-3	E641A	0.010	mg/kg	0.446	0.497	10.8%	50%	----

Page : 5 of 12
 Work Order : CG2213414
 Client : Teck Coal Limited
 Project : Regional Effects Program



Sub-Matrix: **Soil/Solid**

Laboratory Duplicate (DUP) Report

<i>Laboratory sample ID</i>	<i>Client sample ID</i>	<i>Analyte</i>	<i>CAS Number</i>	<i>Method</i>	<i>LOR</i>	<i>Unit</i>	<i>Original Result</i>	<i>Duplicate Result</i>	<i>RPD(%) or Difference</i>	<i>Duplicate Limits</i>	<i>Qualifier</i>
Polycyclic Aromatic Hydrocarbons (QC Lot: 675139) - continued											
CG2213410-001	Anonymous	phenanthrene	85-01-8	E641A	0.050	mg/kg	0.707	0.742	4.81%	50%	----
		pyrene	129-00-0	E641A	0.050	mg/kg	0.058	0.052	0.005	Diff <2x LOR	----
		quinoline	91-22-5	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 675169)						
moisture	----	E144	0.25	%	<0.25	----
Organic / Inorganic Carbon (QCLot: 685917)						
carbon, inorganic [IC]	----	E354	0.05	%	<0.050	----
Organic / Inorganic Carbon (QCLot: 686106)						
carbon, inorganic [IC]	----	E354	0.05	%	<0.050	----
Organic / Inorganic Carbon (QCLot: 686556)						
carbon, total [TC]	----	E351	0.05	%	<0.050	----
Metals (QCLot: 685262)						
aluminum	7429-90-5	E440	50	mg/kg	<50	----
antimony	7440-36-0	E440	0.1	mg/kg	<0.10	----
arsenic	7440-38-2	E440	0.1	mg/kg	<0.10	----
barium	7440-39-3	E440	0.5	mg/kg	<0.50	----
beryllium	7440-41-7	E440	0.1	mg/kg	<0.10	----
bismuth	7440-69-9	E440	0.2	mg/kg	<0.20	----
boron	7440-42-8	E440	5	mg/kg	<5.0	----
cadmium	7440-43-9	E440	0.02	mg/kg	<0.020	----
calcium	7440-70-2	E440	50	mg/kg	<50	----
chromium	7440-47-3	E440	0.5	mg/kg	<0.50	----
cobalt	7440-48-4	E440	0.1	mg/kg	<0.10	----
copper	7440-50-8	E440	0.5	mg/kg	<0.50	----
iron	7439-89-6	E440	50	mg/kg	<50	----
lead	7439-92-1	E440	0.5	mg/kg	<0.50	----
lithium	7439-93-2	E440	2	mg/kg	<2.0	----
magnesium	7439-95-4	E440	20	mg/kg	<20	----
manganese	7439-96-5	E440	1	mg/kg	<1.0	----
molybdenum	7439-98-7	E440	0.1	mg/kg	<0.10	----
nickel	7440-02-0	E440	0.5	mg/kg	<0.50	----
phosphorus	7723-14-0	E440	50	mg/kg	<50	----
potassium	7440-09-7	E440	100	mg/kg	<100	----
selenium	7782-49-2	E440	0.2	mg/kg	<0.20	----
silver	7440-22-4	E440	0.1	mg/kg	<0.10	----
sodium	7440-23-5	E440	50	mg/kg	<50	----
strontium	7440-24-6	E440	0.5	mg/kg	<0.50	----



Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Metals (QCLot: 685262) - continued						
sulfur	7704-34-9	E440	1000	mg/kg	<1000	----
thallium	7440-28-0	E440	0.05	mg/kg	<0.050	----
tin	7440-31-5	E440	2	mg/kg	<2.0	----
titanium	7440-32-6	E440	1	mg/kg	<1.0	----
tungsten	7440-33-7	E440	0.5	mg/kg	<0.50	----
uranium	7440-61-1	E440	0.05	mg/kg	<0.050	----
vanadium	7440-62-2	E440	0.2	mg/kg	<0.20	----
zinc	7440-66-6	E440	2	mg/kg	<2.0	----
zirconium	7440-67-7	E440	1	mg/kg	<1.0	----
Metals (QCLot: 685263)						
mercury	7439-97-6	E510	0.005	mg/kg	<0.0050	----
Polycyclic Aromatic Hydrocarbons (QCLot: 675139)						
acenaphthene	83-32-9	E641A	0.05	mg/kg	<0.050	----
acenaphthylene	208-96-8	E641A	0.05	mg/kg	<0.050	----
acridine	260-94-6	E641A	0.05	mg/kg	<0.050	----
anthracene	120-12-7	E641A	0.05	mg/kg	<0.050	----
benz(a)anthracene	56-55-3	E641A	0.05	mg/kg	<0.050	----
benzo(a)pyrene	50-32-8	E641A	0.05	mg/kg	<0.050	----
benzo(b+j)fluoranthene	n/a	E641A	0.05	mg/kg	<0.050	----
benzo(g,h,i)perylene	191-24-2	E641A	0.05	mg/kg	<0.050	----
benzo(k)fluoranthene	207-08-9	E641A	0.05	mg/kg	<0.050	----
chrysene	218-01-9	E641A	0.05	mg/kg	<0.050	----
dibenz(a,h)anthracene	53-70-3	E641A	0.05	mg/kg	<0.050	----
fluoranthene	206-44-0	E641A	0.05	mg/kg	<0.050	----
fluorene	86-73-7	E641A	0.05	mg/kg	<0.050	----
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.05	mg/kg	<0.050	----
methylnaphthalene, 1-	90-12-0	E641A	0.03	mg/kg	<0.030	----
methylnaphthalene, 2-	91-57-6	E641A	0.03	mg/kg	<0.030	----
naphthalene	91-20-3	E641A	0.01	mg/kg	<0.010	----
phenanthrene	85-01-8	E641A	0.05	mg/kg	<0.050	----
pyrene	129-00-0	E641A	0.05	mg/kg	<0.050	----
quinoline	91-22-5	E641A	0.05	mg/kg	<0.050	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Soil/Solid

					Laboratory Control Sample (LCS) Report				
Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Physical Tests (QCLot: 675169)									
moisture	---	E144	0.25	%	50 %	99.1	90.0	110	---
Physical Tests (QCLot: 685787)									
pH (1:2 soil:water)	---	E108	---	pH units	7 pH units	100	97.0	103	---
Organic / Inorganic Carbon (QCLot: 685917)									
carbon, inorganic [IC]	---	E354	0.05	%	0.5 %	105	90.0	110	---
Organic / Inorganic Carbon (QCLot: 686106)									
carbon, inorganic [IC]	---	E354	0.05	%	0.5 %	110	90.0	110	---
Organic / Inorganic Carbon (QCLot: 686556)									
carbon, total [TC]	---	E351	0.05	%	48 %	99.7	90.0	110	---
Metals (QCLot: 685262)									
aluminum	7429-90-5	E440	50	mg/kg	200 mg/kg	101	80.0	120	---
antimony	7440-36-0	E440	0.1	mg/kg	100 mg/kg	107	80.0	120	---
arsenic	7440-38-2	E440	0.1	mg/kg	100 mg/kg	97.4	80.0	120	---
barium	7440-39-3	E440	0.5	mg/kg	25 mg/kg	98.4	80.0	120	---
beryllium	7440-41-7	E440	0.1	mg/kg	10 mg/kg	97.5	80.0	120	---
bismuth	7440-69-9	E440	0.2	mg/kg	100 mg/kg	102	80.0	120	---
boron	7440-42-8	E440	5	mg/kg	100 mg/kg	94.9	80.0	120	---
cadmium	7440-43-9	E440	0.02	mg/kg	10 mg/kg	99.1	80.0	120	---
calcium	7440-70-2	E440	50	mg/kg	5000 mg/kg	97.8	80.0	120	---
chromium	7440-47-3	E440	0.5	mg/kg	25 mg/kg	98.0	80.0	120	---
cobalt	7440-48-4	E440	0.1	mg/kg	25 mg/kg	99.1	80.0	120	---
copper	7440-50-8	E440	0.5	mg/kg	25 mg/kg	96.0	80.0	120	---
iron	7439-89-6	E440	50	mg/kg	100 mg/kg	115	80.0	120	---
lead	7439-92-1	E440	0.5	mg/kg	50 mg/kg	101	80.0	120	---
lithium	7439-93-2	E440	2	mg/kg	25 mg/kg	96.5	80.0	120	---
magnesium	7439-95-4	E440	20	mg/kg	5000 mg/kg	92.2	80.0	120	---
manganese	7439-96-5	E440	1	mg/kg	25 mg/kg	102	80.0	120	---
molybdenum	7439-98-7	E440	0.1	mg/kg	25 mg/kg	102	80.0	120	---
nickel	7440-02-0	E440	0.5	mg/kg	50 mg/kg	95.5	80.0	120	---
phosphorus	7723-14-0	E440	50	mg/kg	1000 mg/kg	98.0	80.0	120	---
potassium	7440-09-7	E440	100	mg/kg	5000 mg/kg	97.2	80.0	120	---
selenium	7782-49-2	E440	0.2	mg/kg	100 mg/kg	97.5	80.0	120	---



Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Metals (QCLot: 685262) - continued									
silver	7440-22-4	E440	0.1	mg/kg	10 mg/kg	94.1	80.0	120	----
sodium	7440-23-5	E440	50	mg/kg	5000 mg/kg	99.5	80.0	120	----
strontium	7440-24-6	E440	0.5	mg/kg	25 mg/kg	98.6	80.0	120	----
sulfur	7704-34-9	E440	1000	mg/kg	5000 mg/kg	93.0	80.0	120	----
thallium	7440-28-0	E440	0.05	mg/kg	100 mg/kg	101	80.0	120	----
tin	7440-31-5	E440	2	mg/kg	50 mg/kg	100	80.0	120	----
titanium	7440-32-6	E440	1	mg/kg	25 mg/kg	88.9	80.0	120	----
tungsten	7440-33-7	E440	0.5	mg/kg	10 mg/kg	99.8	80.0	120	----
uranium	7440-61-1	E440	0.05	mg/kg	0.5 mg/kg	97.3	80.0	120	----
vanadium	7440-62-2	E440	0.2	mg/kg	50 mg/kg	99.8	80.0	120	----
zinc	7440-66-6	E440	2	mg/kg	50 mg/kg	102	80.0	120	----
zirconium	7440-67-7	E440	1	mg/kg	10 mg/kg	102	80.0	120	----
Metals (QCLot: 685263)									
mercury	7439-97-6	E510	0.005	mg/kg	0.1 mg/kg	106	80.0	120	----
Polycyclic Aromatic Hydrocarbons (QCLot: 675139)									
acenaphthene	83-32-9	E641A	0.05	mg/kg	0.5 mg/kg	93.3	60.0	130	----
acenaphthylene	208-96-8	E641A	0.05	mg/kg	0.5 mg/kg	84.5	60.0	130	----
acridine	260-94-6	E641A	0.05	mg/kg	0.5 mg/kg	69.3	60.0	130	----
anthracene	120-12-7	E641A	0.05	mg/kg	0.5 mg/kg	79.1	60.0	130	----
benz(a)anthracene	56-55-3	E641A	0.05	mg/kg	0.5 mg/kg	82.6	60.0	130	----
benzo(a)pyrene	50-32-8	E641A	0.05	mg/kg	0.5 mg/kg	72.5	60.0	130	----
benzo(b+j)fluoranthene	n/a	E641A	0.05	mg/kg	0.5 mg/kg	85.3	60.0	130	----
benzo(g,h,i)perylene	191-24-2	E641A	0.05	mg/kg	0.5 mg/kg	79.8	60.0	130	----
benzo(k)fluoranthene	207-08-9	E641A	0.05	mg/kg	0.5 mg/kg	85.8	60.0	130	----
chrysene	218-01-9	E641A	0.05	mg/kg	0.5 mg/kg	82.4	60.0	130	----
dibenz(a,h)anthracene	53-70-3	E641A	0.05	mg/kg	0.5 mg/kg	77.0	60.0	130	----
fluoranthene	206-44-0	E641A	0.05	mg/kg	0.5 mg/kg	87.4	60.0	130	----
fluorene	86-73-7	E641A	0.05	mg/kg	0.5 mg/kg	81.2	60.0	130	----
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.05	mg/kg	0.5 mg/kg	97.7	60.0	130	----
methylnaphthalene, 1-	90-12-0	E641A	0.03	mg/kg	0.5 mg/kg	96.4	60.0	130	----
methylnaphthalene, 2-	91-57-6	E641A	0.03	mg/kg	0.5 mg/kg	90.0	60.0	130	----
naphthalene	91-20-3	E641A	0.01	mg/kg	0.5 mg/kg	97.4	50.0	130	----
phenanthrene	85-01-8	E641A	0.05	mg/kg	0.5 mg/kg	88.4	60.0	130	----
pyrene	129-00-0	E641A	0.05	mg/kg	0.5 mg/kg	89.0	60.0	130	----
quinoline	91-22-5	E641A	0.05	mg/kg	0.5 mg/kg	87.0	60.0	130	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level $\geq 1 \times$ spike level.

Sub-Matrix: **Soil/Solid**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Polycyclic Aromatic Hydrocarbons (QCLot: 675139)										
CG2213410-001	Anonymous	acenaphthene	83-32-9	E641A	0.351 mg/kg	0.5 mg/kg	93.2	50.0	140	----
		acenaphthylene	208-96-8	E641A	0.327 mg/kg	0.5 mg/kg	86.8	50.0	140	----
		acridine	260-94-6	E641A	0.308 mg/kg	0.5 mg/kg	81.8	50.0	140	----
		anthracene	120-12-7	E641A	0.317 mg/kg	0.5 mg/kg	84.3	50.0	140	----
		benz(a)anthracene	56-55-3	E641A	0.330 mg/kg	0.5 mg/kg	87.7	50.0	140	----
		benzo(a)pyrene	50-32-8	E641A	0.284 mg/kg	0.5 mg/kg	75.4	50.0	140	----
		benzo(b+j)fluoranthene	n/a	E641A	0.320 mg/kg	0.5 mg/kg	85.0	50.0	140	----
		benzo(g,h,i)perylene	191-24-2	E641A	0.292 mg/kg	0.5 mg/kg	77.6	50.0	140	----
		benzo(k)fluoranthene	207-08-9	E641A	0.331 mg/kg	0.5 mg/kg	88.0	50.0	140	----
		chrysene	218-01-9	E641A	0.301 mg/kg	0.5 mg/kg	79.9	50.0	140	----
		dibenz(a,h)anthracene	53-70-3	E641A	0.294 mg/kg	0.5 mg/kg	78.2	50.0	140	----
		fluoranthene	206-44-0	E641A	0.346 mg/kg	0.5 mg/kg	92.0	50.0	140	----
		fluorene	86-73-7	E641A	0.309 mg/kg	0.5 mg/kg	82.0	50.0	140	----
		indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.406 mg/kg	0.5 mg/kg	108	50.0	140	----
		methylnaphthalene, 1-	90-12-0	E641A	ND mg/kg	0.5 mg/kg	ND	50.0	140	----
		methylnaphthalene, 2-	91-57-6	E641A	ND mg/kg	0.5 mg/kg	ND	50.0	140	----
		naphthalene	91-20-3	E641A	0.346 mg/kg	0.5 mg/kg	91.9	50.0	140	----
		phenanthrene	85-01-8	E641A	0.292 mg/kg	0.5 mg/kg	77.5	50.0	140	----
		pyrene	129-00-0	E641A	0.353 mg/kg	0.5 mg/kg	93.8	50.0	140	----
		quinoline	91-22-5	E641A	0.321 mg/kg	0.5 mg/kg	85.3	50.0	140	----



Reference Material (RM) Report

A Reference Material (RM) is a homogenous material with known and well-established analyte concentrations. RMs are processed in an identical manner to test samples, and are used to monitor and control the accuracy and precision of a test method for a typical sample matrix. RM results are expressed as percent recovery of the target analyte concentration. RM targets may be certified target concentrations provided by the RM supplier, or may be ALS long-term mean values (for empirical test methods).

Sub-Matrix:

Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Reference Material (RM) Report				
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%)		Qualifier
							Low	High	
Physical Tests (QCLot: 685787)									
	RM	pH (1:2 soil:water)	----	E108	8.06 pH units	97.9	96.0	104	----
Organic / Inorganic Carbon (QCLot: 685917)									
	RM	carbon, inorganic [IC]	----	E354	0.383 %	109	80.0	120	----
Organic / Inorganic Carbon (QCLot: 686106)									
	RM	carbon, inorganic [IC]	----	E354	0.383 %	111	80.0	120	----
Organic / Inorganic Carbon (QCLot: 686556)									
	RM	carbon, total [TC]	----	E351	1.4 %	98.9	80.0	120	----
Metals (QCLot: 685262)									
	RM	aluminum	7429-90-5	E440	9817 mg/kg	108	70.0	130	----
	RM	antimony	7440-36-0	E440	3.99 mg/kg	107	70.0	130	----
	RM	arsenic	7440-38-2	E440	3.73 mg/kg	108	70.0	130	----
	RM	barium	7440-39-3	E440	105 mg/kg	103	70.0	130	----
	RM	beryllium	7440-41-7	E440	0.349 mg/kg	112	70.0	130	----
	RM	boron	7440-42-8	E440	8.5 mg/kg	124	40.0	160	----
	RM	cadmium	7440-43-9	E440	0.91 mg/kg	101	70.0	130	----
	RM	calcium	7440-70-2	E440	31082 mg/kg	97.2	70.0	130	----
	RM	chromium	7440-47-3	E440	101 mg/kg	107	70.0	130	----
	RM	cobalt	7440-48-4	E440	6.9 mg/kg	106	70.0	130	----
	RM	copper	7440-50-8	E440	123 mg/kg	104	70.0	130	----
	RM	iron	7439-89-6	E440	23558 mg/kg	103	70.0	130	----
	RM	lead	7439-92-1	E440	267 mg/kg	104	70.0	130	----
	RM	lithium	7439-93-2	E440	9.5 mg/kg	113	70.0	130	----
	RM	magnesium	7439-95-4	E440	5509 mg/kg	98.1	70.0	130	----
	RM	manganese	7439-96-5	E440	269 mg/kg	111	70.0	130	----
	RM	molybdenum	7439-98-7	E440	1.03 mg/kg	108	70.0	130	----
	RM	nickel	7440-02-0	E440	26.7 mg/kg	102	70.0	130	----
	RM	phosphorus	7723-14-0	E440	752 mg/kg	106	70.0	130	----
	RM	potassium	7440-09-7	E440	1587 mg/kg	113	70.0	130	----
	RM	silver	7440-22-4	E440	4.06 mg/kg	89.0	70.0	130	----



Sub-Matrix:

Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Reference Material (RM) Report				
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%)		Qualifier
							Low	High	
Metals (QCLot: 685262) - continued									
	RM	sodium	7440-23-5	E440	797 mg/kg	110	70.0	130	----
	RM	strontium	7440-24-6	E440	86.1 mg/kg	104	70.0	130	----
	RM	thallium	7440-28-0	E440	0.0786 mg/kg	101	40.0	160	----
	RM	tin	7440-31-5	E440	10.6 mg/kg	104	70.0	130	----
	RM	titanium	7440-32-6	E440	839 mg/kg	109	70.0	130	----
	RM	uranium	7440-61-1	E440	0.52 mg/kg	106	70.0	130	----
	RM	vanadium	7440-62-2	E440	32.7 mg/kg	106	70.0	130	----
	RM	zinc	7440-66-6	E440	297 mg/kg	106	70.0	130	----
	RM	zirconium	7440-67-7	E440	5.73 mg/kg	117	70.0	130	----
Metals (QCLot: 685263)									
	RM	mercury	7439-97-6	E510	0.062 mg/kg	116	70.0	130	----

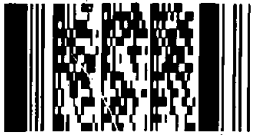
COC ID: **REP_LAEMP_EVO_2022-00 ALS**

TURNAROUND TIME: **2-3 Business Days**

RUSH: **Priority**

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO		
Facility Name / Job#	Regional Effects Program			Lab Name	ALS			Report Format / Distribution		
Project Manager	Mike Pope			Lab Contact	Justine Buma-a			Excel	PDF	EDD
Email	Mike.Pope@Teck.com			Email	justine.bumaa@alsglobal.com			Email 1:	AquaSciLab@Teck.com	X
Address	421 Pine Ave			Address	2559 29 Street NE			Email 2:	teckcoal@equisonline.com	X
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 3:	Teck.Lab.Results@teck.com	X
Postal Code	VOB 2G1	Country	Canada	Postal Code	T1Y 7B5	Country	Canada	Email 4:	Lisa.Bowron@minnow.ca	X
Phone Number	250-425-8247			Phone Number	1-403-407-1781			Email 5:	Tyler.Mehler@minnow.ca	X
								Email 6:	Jessica.Ritz@Teck.com	X
								PO number	VPO00816101	

Environmental Division
Calgary
Work Order Reference
CG2213414



Telephone : +1 403 407 1800

DETAILS ANALYSIS REQUESTED Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com p	# Of Cont.	ANALYSIS	RESERV.	PH.
RG_ERCK_SE-1_2022-09-14_N	RG_ERCK	SE		2022/09/14	10:30	G	2	C-TOC-SK	NONE	N
RG_ERCK_SE-2_2022-09-14_N	RG_ERCK	SE		2022/09/14	10:45	G	2	MET-CCME+FULL-CL	NONE	N
RG_ERCK_SE-3_2022-09-14_N	RG_ERCK	SE		2022/09/14	10:55	G	2	MOISTURE-CL - % Moisture	NONE	N
RG_ERCK_SE-4_2022-09-14_N	RG_ERCK	SE		2022/09/14	11:05	G	2	PSA-PIPET-DETAIL-SK Particle Size	NONE	N
RG_ERCK_SE-5_2022-09-14_N	RG_ERCK	SE		2022/09/14	11:15	G	2	PAH-TMB-D/A-MS-CL- PAHS	NONE	N
RG_RIVER_SE-1_2022-09-14_N	RG_RIVER	SE		2022/09/14	10:30	G	2			

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
	Jennifer Ings	#####	<i>Seema</i>	09-17 11:38am

SERVICE REQUEST (rush - subject to availability)	Sampler's Name	Mobile #	Date/Time
Regular (default) Priority (2-3 business days) - 50% surcharge <input checked="" type="checkbox"/> Emergency (1 Business Day) - 100% surcharge For Emergency <1 Day, ASAP or Weekend - Contact ALS	Jennifer Ings	5195003444	September 16, 2022

30



CERTIFICATE OF ANALYSIS

Work Order : **CG2213498**
Client : **Teck Coal Limited**
Contact : Mike Pope
Address : RR#1 HWY#3
 Sparwood BC Canada V0B 2G1
Telephone : ----
Project : Regional Effects Program
PO : VPO00847030
C-O-C number : REP_RAEMP-LAEMP_PandC_2022-09_
Sampler : JENNIFER INGS
Site : ----
Quote number : Teck Coal Master Quote
No. of samples received : 55
No. of samples analysed : 55

Page : 1 of 26
Laboratory : Calgary - Environmental
Account Manager : Lyudmyla Shvets
Address : 2559 29th Street NE
 Calgary AB Canada T1Y 7B5
Telephone : +1 403 407 1800
Date Samples Received : 23-Sep-2022 09:30
Date Analysis Commenced : 05-Oct-2022
Issue Date : 19-Oct-2022 17:42

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Colby Bingham	Quality Systems Coordinator	Inorganics, Saskatoon, Saskatchewan
Colby Bingham	Quality Systems Coordinator	Metals, Saskatoon, Saskatchewan
Hedy Lai	Team Leader - Inorganics	Inorganics, Saskatoon, Saskatchewan
Hedy Lai	Team Leader - Inorganics	Sask Soils, Saskatoon, Saskatchewan
Justin Kuzek	Team Leader - Organics	Organics, Saskatoon, Saskatchewan
Jwan Abdalla	Laboratory Analyst	Metals, Saskatoon, Saskatchewan
Kimberly Hanson	Laboratory Analyst	Metals, Saskatoon, Saskatchewan
Xihua Yao	Laboratory Analyst	Inorganics, Saskatoon, Saskatchewan
Xihua Yao	Laboratory Analyst	Sask Soils, Saskatoon, Saskatchewan



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
 LOR: Limit of Reporting (detection limit).

Unit	Description
-	No Unit
%	percent
mg/kg	milligrams per kilogram
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Workorder Comments

CG2213498-001 to -008 are insufficient samples for pH.

Sample Comments

Sample	Client Id	Comment
CG2213498-002	RG_LILC3_SE-2_2022-09-12_N	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2213498-003	RG_LILC3_SE-3_2022-09-12_N	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2213498-004	RG_LILC3_SE-4_2022-09-12_N	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2213498-005	RG_LILC3_SE-5_2022-09-12_N	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.



Page : 3 of 26
Work Order : CG2213498
Client : Teck Coal Limited
Project : Regional Effects Program

CG2213498-006	RG_LCUT_SE-1_2022-09-15_ N	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2213498-007	RG_LCUT_SE-2_2022-09-15_ N	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2213498-008	RG_LCUT_SE-3_2022-09-15_ N	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2213498-025	RG_ERCKUC_SE-1_2022-09- 14_N	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2213498-045	RG_MIDBO_SE-2_2022-09-13 _N	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.

Qualifiers

Qualifier	Description
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
FR5	As per applicable reference method(s), soil:water ratio for Fixed Ratio Leach was modified to 1:5 due to high soil organic content



Analytical Results

Sub-Matrix: Sediment

Client sample ID

(Matrix: Soil/Solid)

					RG_LILC3_SE-1 _2022-09-12_N	RG_LILC3_SE-2 _2022-09-12_N	RG_LILC3_SE-3 _2022-09-12_N	RG_LILC3_SE-4 _2022-09-12_N	RG_LILC3_SE-5 _2022-09-12_N
Client sampling date / time					12-Sep-2022 12:45	12-Sep-2022 13:00	12-Sep-2022 13:25	12-Sep-2022 13:50	12-Sep-2022 14:14
Analyte	CAS Number	Method	LOR	Unit	CG2213498-001	CG2213498-002	CG2213498-003	CG2213498-004	CG2213498-005
					Result	Result	Result	Result	Result
Physical Tests									
moisture	----	E144	0.25	%	----	98.5	92.6	94.2	88.3
Particle Size									
grain size curve	----	E185A	-	-	----	See Attached	See Attached	See Attached	See Attached
clay (<0.004mm)	----	EC184A	1.0	%	----	7.2	7.0	5.3	2.6
silt (0.063mm - 0.0312mm)	----	EC184A	1.0	%	----	20.7	21.6	16.4	8.1
silt (0.0312mm - 0.004mm)	----	EC184A	1.0	%	----	24.2	25.4	20.0	9.4
sand (0.125mm - 0.063mm)	----	EC184A	1.0	%	----	8.5	6.4	7.5	6.3
sand (0.25mm - 0.125mm)	----	EC184A	1.0	%	----	11.7	9.0	10.7	10.5
sand (0.5mm - 0.25mm)	----	EC184A	1.0	%	----	9.8	6.2	11.9	12.3
sand (1.0mm - 0.50mm)	----	EC184A	1.0	%	----	6.4	5.6	13.2	11.1
sand (2.0mm - 1.0mm)	----	EC184A	1.0	%	----	5.5	5.7	6.7	7.7
gravel (>2mm)	----	EC184A	1.0	%	----	6.0	13.1	8.3	32.0
Organic / Inorganic Carbon									
carbon, total [TC]	----	E351	0.050	%	13.9	16.6	17.3	11.6	9.77
carbon, inorganic [IC]	----	E354	0.050	%	4.48	3.60	3.91	2.77	3.11
carbon, inorganic [IC], (as CaCO3 equivalent)	----	E354	0.40	%	37.4	30.0	32.6	23.1	25.9
carbon, total organic [TOC]	----	EC356	0.050	%	9.42	13.0	13.4	8.83	6.66
Metals									
aluminum	7429-90-5	E440	50	mg/kg	2430	2110	1810	2630	2720
antimony	7440-36-0	E440	0.10	mg/kg	0.73	0.61	0.49	0.50	0.52
arsenic	7440-38-2	E440	0.10	mg/kg	7.28	4.92	3.61	4.45	4.77
barium	7440-39-3	E440	0.50	mg/kg	169	219	195	160	146
beryllium	7440-41-7	E440	0.10	mg/kg	0.28	0.30	0.24	0.35	0.38
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20
boron	7440-42-8	E440	5.0	mg/kg	6.2	7.6	7.5	6.5	<5.0
cadmium	7440-43-9	E440	0.020	mg/kg	13.5	17.6	15.9	10.7	11.3
calcium	7440-70-2	E440	50	mg/kg	124000	119000	127000	93400	111000
chromium	7440-47-3	E440	0.50	mg/kg	7.42	5.89	5.14	6.89	6.24



Analytical Results

Sub-Matrix: Sediment

Client sample ID

(Matrix: Soil/Solid)

					RG_LILC3_SE-1 _2022-09-12_N	RG_LILC3_SE-2 _2022-09-12_N	RG_LILC3_SE-3 _2022-09-12_N	RG_LILC3_SE-4 _2022-09-12_N	RG_LILC3_SE-5 _2022-09-12_N
Client sampling date / time					12-Sep-2022 12:45	12-Sep-2022 13:00	12-Sep-2022 13:25	12-Sep-2022 13:50	12-Sep-2022 14:14
Analyte	CAS Number	Method	LOR	Unit	CG2213498-001	CG2213498-002	CG2213498-003	CG2213498-004	CG2213498-005
					Result	Result	Result	Result	Result
Metals									
cobalt	7440-48-4	E440	0.10	mg/kg	24.1	30.4	28.1	23.6	26.6
copper	7440-50-8	E440	0.50	mg/kg	22.6	31.2	24.7	27.1	25.5
iron	7439-89-6	E440	50	mg/kg	10800	12400	10600	12600	13000
lead	7439-92-1	E440	0.50	mg/kg	13.9	8.70	5.35	7.48	7.24
lithium	7439-93-2	E440	2.0	mg/kg	4.0	3.9	3.7	5.0	5.4
magnesium	7439-95-4	E440	20	mg/kg	7940	6400	6660	8940	9650
manganese	7439-96-5	E440	1.0	mg/kg	1460	2090	1860	1230	1270
mercury	7439-97-6	E510	0.0050	mg/kg	0.0394	0.0431	0.0337	0.0377	0.0356
molybdenum	7439-98-7	E440	0.10	mg/kg	1.42	1.85	1.53	1.46	1.69
nickel	7440-02-0	E440	0.50	mg/kg	127	161	146	130	118
phosphorus	7723-14-0	E440	50	mg/kg	1150	1290	1250	1350	1150
potassium	7440-09-7	E440	100	mg/kg	970	1080	1050	860	780
selenium	7782-49-2	E440	0.20	mg/kg	5.45	12.5	8.71	5.92	5.17
silver	7440-22-4	E440	0.10	mg/kg	0.35	0.19	<0.10	0.13	0.13
sodium	7440-23-5	E440	50	mg/kg	243	247	239	185	133
strontium	7440-24-6	E440	0.50	mg/kg	110	98.6	109	93.9	102
sulfur	7704-34-9	E440	1000	mg/kg	2200	2600	2600	1700	1200
thallium	7440-28-0	E440	0.050	mg/kg	0.205	0.167	0.138	0.189	0.198
tin	7440-31-5	E440	2.0	mg/kg	<2.0	2.1	<2.0	<2.0	<2.0
titanium	7440-32-6	E440	1.0	mg/kg	12.2	11.8	10.1	<20.0 ^{DLM}	9.8
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
uranium	7440-61-1	E440	0.050	mg/kg	1.25	1.62	1.41	1.27	1.20
vanadium	7440-62-2	E440	0.20	mg/kg	13.6	14.8	12.6	14.7	14.7
zinc	7440-66-6	E440	2.0	mg/kg	465	530	543	405	382
zirconium	7440-67-7	E440	1.0	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Sediment

Client sample ID

(Matrix: Soil/Solid)

					RG_LCUT_SE-1 _2022-09-15_N	RG_LCUT_SE-2 _2022-09-15_N	RG_LCUT_SE-3 _2022-09-15_N	RG_MP1_SE-1_ 2022-09-12_N	RG_MP1_SE-2_ 2022-09-12_N
Client sampling date / time					15-Sep-2022 12:00	15-Sep-2022 13:00	15-Sep-2022 14:00	12-Sep-2022 10:00	12-Sep-2022 10:30
Analyte	CAS Number	Method	LOR	Unit	CG2213498-006	CG2213498-007	CG2213498-008	CG2213498-009	CG2213498-010
					Result	Result	Result	Result	Result
Physical Tests									
moisture	----	E144	0.25	%	98.0	97.4	97.4	41.4	42.5
pH (1:2 soil:water)	----	E108	0.10	pH units	----	----	----	8.03	7.99
Particle Size									
grain size curve	----	E185A	-	-	See Attached	See Attached	See Attached	See Attached	See Attached
clay (<0.004mm)	----	EC184A	1.0	%	14.4	12.3	8.4	5.6	4.7
silt (0.063mm - 0.0312mm)	----	EC184A	1.0	%	28.2	27.8	23.0	10.0	14.4
silt (0.0312mm - 0.004mm)	----	EC184A	1.0	%	36.5	39.1	29.6	14.4	16.9
sand (0.125mm - 0.063mm)	----	EC184A	1.0	%	6.8	7.7	7.5	9.3	13.6
sand (0.25mm - 0.125mm)	----	EC184A	1.0	%	5.8	6.8	9.5	18.2	21.1
sand (0.5mm - 0.25mm)	----	EC184A	1.0	%	3.5	2.7	6.6	32.1	17.3
sand (1.0mm - 0.50mm)	----	EC184A	1.0	%	1.4	<1.0	3.6	9.3	8.7
sand (2.0mm - 1.0mm)	----	EC184A	1.0	%	1.3	1.3	2.6	<1.0	2.3
gravel (>2mm)	----	EC184A	1.0	%	2.1	1.4	9.2	<1.0	1.0
Organic / Inorganic Carbon									
carbon, total [TC]	----	E351	0.050	%	20.3	19.0	21.3	10.9	10.8
carbon, inorganic [IC]	----	E354	0.050	%	3.11	2.38	1.48	1.64	1.92
carbon, inorganic [IC], (as CaCO3 equivalent)	----	E354	0.40	%	25.9	19.9	12.4	13.7	16.0
carbon, total organic [TOC]	----	EC356	0.050	%	17.2	16.6	19.8	9.26	8.88
Metals									
aluminum	7429-90-5	E440	50	mg/kg	1810	3160	4590	4820	4560
antimony	7440-36-0	E440	0.10	mg/kg	0.45	0.57	0.81	0.74	0.62
arsenic	7440-38-2	E440	0.10	mg/kg	2.67	3.51	4.06	5.27	4.96
barium	7440-39-3	E440	0.50	mg/kg	176	218	262	184	171
beryllium	7440-41-7	E440	0.10	mg/kg	0.27	0.38	0.58	0.53	0.48
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20
boron	7440-42-8	E440	5.0	mg/kg	15.6	11.6	10.1	<5.0	<5.0
cadmium	7440-43-9	E440	0.020	mg/kg	11.0	9.06	6.50	1.38	1.50
calcium	7440-70-2	E440	50	mg/kg	101000	75800	48200	45100	48300
chromium	7440-47-3	E440	0.50	mg/kg	4.31	6.22	9.40	16.6	29.8



Analytical Results

Sub-Matrix: Sediment

Client sample ID

(Matrix: Soil/Solid)

					RG_LCUT_SE-1 _2022-09-15_N	RG_LCUT_SE-2 _2022-09-15_N	RG_LCUT_SE-3 _2022-09-15_N	RG_MP1_SE-1_ 2022-09-12_N	RG_MP1_SE-2_ 2022-09-12_N
Client sampling date / time					15-Sep-2022 12:00	15-Sep-2022 13:00	15-Sep-2022 14:00	12-Sep-2022 10:00	12-Sep-2022 10:30
Analyte	CAS Number	Method	LOR	Unit	CG2213498-006	CG2213498-007	CG2213498-008	CG2213498-009	CG2213498-010
					Result	Result	Result	Result	Result
Metals									
cobalt	7440-48-4	E440	0.10	mg/kg	8.64	11.0	16.7	6.23	6.03
copper	7440-50-8	E440	0.50	mg/kg	30.8	34.3	53.6	14.0	14.0
iron	7439-89-6	E440	50	mg/kg	4250	6460	8400	13400	12500
lead	7439-92-1	E440	0.50	mg/kg	5.08	7.30	10.3	7.88	7.51
lithium	7439-93-2	E440	2.0	mg/kg	3.4	4.7	5.7	6.9	7.0
magnesium	7439-95-4	E440	20	mg/kg	4980	5670	6030	10400	11000
manganese	7439-96-5	E440	1.0	mg/kg	117	139	156	395	436
mercury	7439-97-6	E510	0.0050	mg/kg	0.0391	0.0530	0.0773	0.0413	0.0391
molybdenum	7439-98-7	E440	0.10	mg/kg	1.06	1.51	2.09	2.59	3.84
nickel	7440-02-0	E440	0.50	mg/kg	66.3	74.2	118	42.2	55.0
phosphorus	7723-14-0	E440	50	mg/kg	1520	1260	1260	1190	1290
potassium	7440-09-7	E440	100	mg/kg	1340	1410	1430	1220	1120
selenium	7782-49-2	E440	0.20	mg/kg	7.61	9.79	13.5	2.34	1.90
silver	7440-22-4	E440	0.10	mg/kg	0.12	0.16	0.22	0.16	0.16
sodium	7440-23-5	E440	50	mg/kg	365	238	155	66	74
strontium	7440-24-6	E440	0.50	mg/kg	87.5	81.0	70.0	69.5	69.2
sulfur	7704-34-9	E440	1000	mg/kg	3300	2700	1800	<1000	<1000
thallium	7440-28-0	E440	0.050	mg/kg	0.146	0.212	0.346	0.158	0.156
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
titanium	7440-32-6	E440	1.0	mg/kg	<20.0 ^{DLM}	16.8	28.9	20.5	22.6
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
uranium	7440-61-1	E440	0.050	mg/kg	1.27	1.84	2.82	0.951	0.955
vanadium	7440-62-2	E440	0.20	mg/kg	9.41	15.0	21.7	25.3	23.7
zinc	7440-66-6	E440	2.0	mg/kg	368	338	298	130	132
zirconium	7440-67-7	E440	1.0	mg/kg	<1.0	1.3	1.7	<1.0	1.1

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Sediment

(Matrix: Soil/Solid)

Client sample ID

					RG_MP1_SE-3_2022-09-12_N	RG_FOUNGD_S E-1_2022-09-15_N	RG_FOUNGD_S E-2_2022-09-15_N	RG_FOUNGD_S E-3_2022-09-15_N	RG_FOUCL_SE-1_2022-09-16_N
Client sampling date / time					12-Sep-2022 11:00	15-Sep-2022 09:00	15-Sep-2022 09:30	15-Sep-2022 09:45	16-Sep-2022 09:00
Analyte	CAS Number	Method	LOR	Unit	CG2213498-011	CG2213498-012	CG2213498-013	CG2213498-014	CG2213498-015
					Result	Result	Result	Result	Result
Physical Tests									
moisture	----	E144	0.25	%	31.8	36.1	36.7	37.4	29.7
pH (1:2 soil:water)	----	E108	0.10	pH units	8.02	8.12	8.05	7.99	8.00
Particle Size									
grain size curve	----	E185A	-	-	See Attached	See Attached	See Attached	See Attached	See Attached
clay (<0.004mm)	----	EC184A	1.0	%	4.4	2.7	3.1	3.9	3.9
silt (0.063mm - 0.0312mm)	----	EC184A	1.0	%	10.1	12.9	9.2	14.0	15.4
silt (0.0312mm - 0.004mm)	----	EC184A	1.0	%	13.3	9.0	9.5	13.3	17.3
sand (0.125mm - 0.063mm)	----	EC184A	1.0	%	10.6	29.0	14.2	23.1	15.6
sand (0.25mm - 0.125mm)	----	EC184A	1.0	%	16.1	36.8	27.1	33.2	17.8
sand (0.5mm - 0.25mm)	----	EC184A	1.0	%	23.3	8.2	30.5	11.3	17.7
sand (1.0mm - 0.50mm)	----	EC184A	1.0	%	15.8	1.0	5.0	<1.0	7.2
sand (2.0mm - 1.0mm)	----	EC184A	1.0	%	4.1	<1.0	<1.0	<1.0	3.1
gravel (>2mm)	----	EC184A	1.0	%	2.3	<1.0	<1.0	<1.0	2.0
Organic / Inorganic Carbon									
carbon, total [TC]	----	E351	0.050	%	8.59	4.99	5.28	5.66	9.90
carbon, inorganic [IC]	----	E354	0.050	%	1.69	2.02	1.94	2.16	1.94
carbon, inorganic [IC], (as CaCO3 equivalent)	----	E354	0.40	%	14.1	16.8	16.2	18.0	16.2
carbon, total organic [TOC]	----	EC356	0.050	%	6.90	2.97	3.34	3.50	7.96
Metals									
aluminum	7429-90-5	E440	50	mg/kg	4690	4540	4260	4370	4760
antimony	7440-36-0	E440	0.10	mg/kg	0.73	0.55	0.60	0.53	0.66
arsenic	7440-38-2	E440	0.10	mg/kg	5.56	4.65	4.94	4.41	5.06
barium	7440-39-3	E440	0.50	mg/kg	164	110	113	110	189
beryllium	7440-41-7	E440	0.10	mg/kg	0.54	0.44	0.45	0.43	0.52
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20
boron	7440-42-8	E440	5.0	mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0
cadmium	7440-43-9	E440	0.020	mg/kg	1.41	1.03	1.02	0.917	1.05
calcium	7440-70-2	E440	50	mg/kg	48800	52400	55000	56700	53100



Analytical Results

Sub-Matrix: Sediment
 (Matrix: Soil/Solid)

Client sample ID

					RG_MP1_SE-3_2022-09-12_N	RG_FOUNGD_S E-1_2022-09-15_N	RG_FOUNGD_S E-2_2022-09-15_N	RG_FOUNGD_S E-3_2022-09-15_N	RG_FOUCL_SE-1_2022-09-16_N
Client sampling date / time					12-Sep-2022 11:00	15-Sep-2022 09:00	15-Sep-2022 09:30	15-Sep-2022 09:45	16-Sep-2022 09:00
Analyte	CAS Number	Method	LOR	Unit	CG2213498-011	CG2213498-012	CG2213498-013	CG2213498-014	CG2213498-015
					Result	Result	Result	Result	Result
Metals									
chromium	7440-47-3	E440	0.50	mg/kg	29.3	11.4	9.90	9.34	14.8
cobalt	7440-48-4	E440	0.10	mg/kg	6.97	5.02	5.20	4.79	5.33
copper	7440-50-8	E440	0.50	mg/kg	14.4	9.99	11.0	10.4	13.5
iron	7439-89-6	E440	50	mg/kg	14400	11900	13500	11700	13000
lead	7439-92-1	E440	0.50	mg/kg	7.76	7.03	7.42	6.90	7.93
lithium	7439-93-2	E440	2.0	mg/kg	7.3	8.2	7.2	7.7	7.7
magnesium	7439-95-4	E440	20	mg/kg	10100	17600	13600	17200	12900
manganese	7439-96-5	E440	1.0	mg/kg	425	362	366	404	452
mercury	7439-97-6	E510	0.0050	mg/kg	0.0358	0.0314	0.0299	0.0358	0.0426
molybdenum	7439-98-7	E440	0.10	mg/kg	3.91	1.49	1.39	1.20	1.97
nickel	7440-02-0	E440	0.50	mg/kg	55.9	33.1	27.2	24.7	25.4
phosphorus	7723-14-0	E440	50	mg/kg	1320	1390	1310	1310	1280
potassium	7440-09-7	E440	100	mg/kg	1130	1020	980	920	1090
selenium	7782-49-2	E440	0.20	mg/kg	1.84	1.08	1.31	1.41	1.61
silver	7440-22-4	E440	0.10	mg/kg	0.15	0.14	0.14	0.14	0.17
sodium	7440-23-5	E440	50	mg/kg	68	82	80	86	71
strontium	7440-24-6	E440	0.50	mg/kg	61.3	50.8	55.1	51.8	76.8
sulfur	7704-34-9	E440	1000	mg/kg	<1000	<1000	<1000	<1000	<1000
thallium	7440-28-0	E440	0.050	mg/kg	0.172	0.156	0.146	0.140	0.166
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
titanium	7440-32-6	E440	1.0	mg/kg	19.9	17.6	15.9	19.1	21.5
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
uranium	7440-61-1	E440	0.050	mg/kg	1.02	0.885	0.951	0.838	0.995
vanadium	7440-62-2	E440	0.20	mg/kg	25.3	21.8	22.0	20.2	23.8
zinc	7440-66-6	E440	2.0	mg/kg	135	103	106	96.4	98.6
zirconium	7440-67-7	E440	1.0	mg/kg	1.1	1.2	<1.0	1.2	1.3

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Sediment

(Matrix: Soil/Solid)

Client sample ID

					RG_FOUCL_SE-2_2022-09-16_N	RG_FOUCL_SE-3_2022-09-16_N	RG_FOUCL_SE-4_2022-09-16_N	RG_FOUCL_SE-5_2022-09-16_N	RG_GRASSY_S E-1_2022-09-16_N
Client sampling date / time					16-Sep-2022 09:30	16-Sep-2022 10:00	16-Sep-2022 10:30	16-Sep-2022 11:00	16-Sep-2022 09:00
Analyte	CAS Number	Method	LOR	Unit	CG2213498-016	CG2213498-017	CG2213498-018	CG2213498-019	CG2213498-020
					Result	Result	Result	Result	Result
Physical Tests									
moisture	----	E144	0.25	%	39.9	36.1	41.1	31.9	38.6
pH (1:2 soil:water)	----	E108	0.10	pH units	7.98	8.03	8.04	8.12	8.08
Particle Size									
grain size curve	----	E185A	-	-	See Attached	See Attached	See Attached	See Attached	See Attached
clay (<0.004mm)	----	EC184A	1.0	%	4.2	3.1	4.4	3.8	3.7
silt (0.063mm - 0.0312mm)	----	EC184A	1.0	%	15.4	7.9	19.6	14.8	12.8
silt (0.0312mm - 0.004mm)	----	EC184A	1.0	%	15.6	8.7	22.3	14.0	11.4
sand (0.125mm - 0.063mm)	----	EC184A	1.0	%	20.9	10.7	15.4	23.9	23.0
sand (0.25mm - 0.125mm)	----	EC184A	1.0	%	22.5	28.6	18.1	30.6	35.8
sand (0.5mm - 0.25mm)	----	EC184A	1.0	%	16.8	31.3	10.9	11.1	11.6
sand (1.0mm - 0.50mm)	----	EC184A	1.0	%	4.2	7.1	3.8	1.3	1.3
sand (2.0mm - 1.0mm)	----	EC184A	1.0	%	<1.0	1.9	2.8	<1.0	<1.0
gravel (>2mm)	----	EC184A	1.0	%	<1.0	<1.0	2.7	<1.0	<1.0
Organic / Inorganic Carbon									
carbon, total [TC]	----	E351	0.050	%	8.13	6.51	9.00	7.58	7.36
carbon, inorganic [IC]	----	E354	0.050	%	1.89	1.73	2.26	2.01	1.71
carbon, inorganic [IC], (as CaCO3 equivalent)	----	E354	0.40	%	15.8	14.4	18.9	16.7	14.2
carbon, total organic [TOC]	----	EC356	0.050	%	6.24	4.78	6.74	5.57	5.65
Metals									
aluminum	7429-90-5	E440	50	mg/kg	4980	4530	5000	4560	4360
antimony	7440-36-0	E440	0.10	mg/kg	0.62	0.60	0.60	0.56	0.59
arsenic	7440-38-2	E440	0.10	mg/kg	4.75	5.30	4.54	4.62	4.77
barium	7440-39-3	E440	0.50	mg/kg	170	155	135	123	102
beryllium	7440-41-7	E440	0.10	mg/kg	0.51	0.50	0.47	0.44	0.45
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20
boron	7440-42-8	E440	5.0	mg/kg	<5.0	<5.0	5.2	<5.0	<5.0
cadmium	7440-43-9	E440	0.020	mg/kg	1.04	1.06	1.03	0.914	1.05
calcium	7440-70-2	E440	50	mg/kg	55000	48800	63300	55300	58000



Analytical Results

Sub-Matrix: Sediment

(Matrix: Soil/Solid)

Client sample ID

					RG_FOUCL_SE-2_2022-09-16_N	RG_FOUCL_SE-3_2022-09-16_N	RG_FOUCL_SE-4_2022-09-16_N	RG_FOUCL_SE-5_2022-09-16_N	RG_GRASSY_S E-1_2022-09-16_N
Client sampling date / time					16-Sep-2022 09:30	16-Sep-2022 10:00	16-Sep-2022 10:30	16-Sep-2022 11:00	16-Sep-2022 09:00
Analyte	CAS Number	Method	LOR	Unit	CG2213498-016	CG2213498-017	CG2213498-018	CG2213498-019	CG2213498-020
					Result	Result	Result	Result	Result
Metals									
chromium	7440-47-3	E440	0.50	mg/kg	12.5	10.1	13.4	10.6	9.96
cobalt	7440-48-4	E440	0.10	mg/kg	5.42	5.66	5.27	4.93	5.08
copper	7440-50-8	E440	0.50	mg/kg	13.2	13.0	11.8	11.1	11.2
iron	7439-89-6	E440	50	mg/kg	12600	14200	12000	12000	12300
lead	7439-92-1	E440	0.50	mg/kg	7.85	8.24	7.35	7.19	7.33
lithium	7439-93-2	E440	2.0	mg/kg	7.9	6.7	8.6	7.6	8.1
magnesium	7439-95-4	E440	20	mg/kg	14500	11200	16200	15800	14900
manganese	7439-96-5	E440	1.0	mg/kg	525	462	388	385	404
mercury	7439-97-6	E510	0.0050	mg/kg	0.0409	0.0446	0.0403	0.0337	0.0342
molybdenum	7439-98-7	E440	0.10	mg/kg	1.58	1.43	1.62	1.38	1.33
nickel	7440-02-0	E440	0.50	mg/kg	24.0	29.4	28.6	26.7	31.3
phosphorus	7723-14-0	E440	50	mg/kg	1340	1340	1280	1250	1290
potassium	7440-09-7	E440	100	mg/kg	1130	1040	1160	1020	1000
selenium	7782-49-2	E440	0.20	mg/kg	2.13	1.04	1.83	1.10	1.73
silver	7440-22-4	E440	0.10	mg/kg	0.19	0.15	0.18	0.16	0.15
sodium	7440-23-5	E440	50	mg/kg	87	82	80	73	90
strontium	7440-24-6	E440	0.50	mg/kg	66.6	57.8	59.4	54.0	56.4
sulfur	7704-34-9	E440	1000	mg/kg	<1000	<1000	<1000	<1000	<1000
thallium	7440-28-0	E440	0.050	mg/kg	0.176	0.162	0.153	0.157	0.151
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
titanium	7440-32-6	E440	1.0	mg/kg	20.7	14.9	18.7	20.1	19.6
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
uranium	7440-61-1	E440	0.050	mg/kg	0.990	0.931	0.878	0.841	0.920
vanadium	7440-62-2	E440	0.20	mg/kg	23.2	22.6	22.7	21.3	21.3
zinc	7440-66-6	E440	2.0	mg/kg	98.0	110	104	94.6	102
zirconium	7440-67-7	E440	1.0	mg/kg	1.3	<1.0	<1.0	<1.0	1.0

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Sediment

Client sample ID

(Matrix: Soil/Solid)

					RG_GRASSY_S E-2_2022-09-16 _N	RG_GRASSY_S E-3_2022-09-16 _N	RG_GRASSY_S E-4_2022-09-16 _N	RG_GRASSY_S E-5_2022-09-16 _N	RG_ERCKUC_S E-1_2022-09-14 _N
Client sampling date / time					16-Sep-2022 09:30	16-Sep-2022 10:00	16-Sep-2022 10:30	16-Sep-2022 11:00	14-Sep-2022 13:00
Analyte	CAS Number	Method	LOR	Unit	CG2213498-021	CG2213498-022	CG2213498-023	CG2213498-024	CG2213498-025
					Result	Result	Result	Result	Result
Physical Tests									
moisture	----	E144	0.25	%	40.9	39.4	40.2	27.5	75.9
pH (1:2 soil:water)	----	E108	0.10	pH units	7.99	8.11	7.96	8.23	7.91 ^{FRS}
Particle Size									
grain size curve	----	E185A	-	-	See Attached	See Attached	See Attached	See Attached	See Attached
clay (<0.004mm)	----	EC184A	1.0	%	4.1	3.3	4.4	2.2	6.8
silt (0.063mm - 0.0312mm)	----	EC184A	1.0	%	19.2	10.9	24.5	7.5	19.7
silt (0.0312mm - 0.004mm)	----	EC184A	1.0	%	20.6	11.8	24.7	7.7	27.9
sand (0.125mm - 0.063mm)	----	EC184A	1.0	%	17.2	10.8	19.8	8.0	3.8
sand (0.25mm - 0.125mm)	----	EC184A	1.0	%	24.1	24.1	19.1	17.3	9.0
sand (0.5mm - 0.25mm)	----	EC184A	1.0	%	9.1	30.7	6.1	29.6	14.1
sand (1.0mm - 0.50mm)	----	EC184A	1.0	%	2.7	7.6	<1.0	17.5	11.7
sand (2.0mm - 1.0mm)	----	EC184A	1.0	%	1.2	<1.0	<1.0	5.3	6.4
gravel (>2mm)	----	EC184A	1.0	%	1.8	<1.0	<1.0	4.9	<1.0
Organic / Inorganic Carbon									
carbon, total [TC]	----	E351	0.050	%	11.6	6.08	9.17	4.47	24.6
carbon, inorganic [IC]	----	E354	0.050	%	1.21	1.82	1.71	1.35	3.98
carbon, inorganic [IC], (as CaCO3 equivalent)	----	E354	0.40	%	10.1	15.2	14.3	11.3	33.1
carbon, total organic [TOC]	----	EC356	0.050	%	10.4	4.26	7.46	3.12	20.6
Metals									
aluminum	7429-90-5	E440	50	mg/kg	4640	4770	4410	4680	1760
antimony	7440-36-0	E440	0.10	mg/kg	0.65	0.65	0.57	0.80	0.78
arsenic	7440-38-2	E440	0.10	mg/kg	4.86	5.40	4.61	5.79	2.56
barium	7440-39-3	E440	0.50	mg/kg	99.0	128	106	128	152
beryllium	7440-41-7	E440	0.10	mg/kg	0.48	0.53	0.44	0.53	0.27
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.29 ^{DLM}
boron	7440-42-8	E440	5.0	mg/kg	<5.0	<5.0	<5.0	<5.0	15.5
cadmium	7440-43-9	E440	0.020	mg/kg	0.995	1.20	1.12	1.07	2.37
calcium	7440-70-2	E440	50	mg/kg	44400	56300	56300	44200	124000



Analytical Results

Sub-Matrix: Sediment

(Matrix: Soil/Solid)

Client sample ID

					RG_GRASSY_S E-2_2022-09-16 _N	RG_GRASSY_S E-3_2022-09-16 _N	RG_GRASSY_S E-4_2022-09-16 _N	RG_GRASSY_S E-5_2022-09-16 _N	RG_ERCKUC_S E-1_2022-09-14 _N
Client sampling date / time					16-Sep-2022 09:30	16-Sep-2022 10:00	16-Sep-2022 10:30	16-Sep-2022 11:00	14-Sep-2022 13:00
Analyte	CAS Number	Method	LOR	Unit	CG2213498-021	CG2213498-022	CG2213498-023	CG2213498-024	CG2213498-025
					Result	Result	Result	Result	Result
Metals									
chromium	7440-47-3	E440	0.50	mg/kg	10.9	11.7	10.4	47.5	8.28
cobalt	7440-48-4	E440	0.10	mg/kg	5.03	5.81	5.18	6.20	16.3
copper	7440-50-8	E440	0.50	mg/kg	12.4	12.8	12.2	13.0	14.4
iron	7439-89-6	E440	50	mg/kg	13000	14500	11600	17200	4230
lead	7439-92-1	E440	0.50	mg/kg	8.08	8.08	7.64	7.88	6.41
lithium	7439-93-2	E440	2.0	mg/kg	9.0	8.5	8.1	7.4	<2.9 ^{DLM}
magnesium	7439-95-4	E440	20	mg/kg	13800	10200	15700	9610	5600
manganese	7439-96-5	E440	1.0	mg/kg	349	456	396	500	355
mercury	7439-97-6	E510	0.0050	mg/kg	0.0376	0.0294	0.0399	0.0288	0.0685
molybdenum	7439-98-7	E440	0.10	mg/kg	1.55	1.56	1.44	6.07	3.06
nickel	7440-02-0	E440	0.50	mg/kg	42.8	37.5	37.2	62.6	77.7
phosphorus	7723-14-0	E440	50	mg/kg	1330	1300	1260	1310	961
potassium	7440-09-7	E440	100	mg/kg	1010	1130	1010	1140	680
selenium	7782-49-2	E440	0.20	mg/kg	3.54	1.73	2.73	1.66	32.7
silver	7440-22-4	E440	0.10	mg/kg	0.17	0.14	0.18	0.13	0.17
sodium	7440-23-5	E440	50	mg/kg	82	80	90	70	<73 ^{DLM}
strontium	7440-24-6	E440	0.50	mg/kg	52.4	67.1	56.2	62.6	82.9
sulfur	7704-34-9	E440	1000	mg/kg	<1000	<1000	<1000	<1000	3100
thallium	7440-28-0	E440	0.050	mg/kg	0.160	0.166	0.154	0.170	0.184
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.9 ^{DLM}
titanium	7440-32-6	E440	1.0	mg/kg	17.0	13.0	16.2	13.5	18.8
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.73 ^{DLM}
uranium	7440-61-1	E440	0.050	mg/kg	1.12	0.964	1.06	0.983	3.97
vanadium	7440-62-2	E440	0.20	mg/kg	22.2	24.5	20.7	27.6	14.7
zinc	7440-66-6	E440	2.0	mg/kg	105	118	104	125	86.2
zirconium	7440-67-7	E440	1.0	mg/kg	1.3	<1.0	1.1	<1.0	1.8

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Sediment

(Matrix: Soil/Solid)

Client sample ID

					RG_ERCKUC_S E-2_2022-09-14 _N	RG_ERCKUC_S E-3_2022-09-14 _N	RG_BOCK_SE-1 _2022-09-15_N	RG_BOCK_SE-2 _2022-09-15_N	RG_BOCK_SE-3 _2022-09-15_N
Client sampling date / time					14-Sep-2022 14:00	14-Sep-2022 15:00	15-Sep-2022 13:00	15-Sep-2022 14:00	15-Sep-2022 15:00
Analyte	CAS Number	Method	LOR	Unit	CG2213498-026	CG2213498-027	CG2213498-028	CG2213498-029	CG2213498-030
					Result	Result	Result	Result	Result
Physical Tests									
moisture	----	E144	0.25	%	75.1	72.6	42.9	50.5	44.2
pH (1:2 soil:water)	----	E108	0.10	pH units	7.97 ^{FR5}	7.91 ^{FR5}	8.09	8.05	8.23
Particle Size									
grain size curve	----	E185A	-	-	See Attached	See Attached	See Attached	See Attached	See Attached
clay (<0.004mm)	----	EC184A	1.0	%	8.4	8.5	4.4	4.4	4.1
silt (0.063mm - 0.0312mm)	----	EC184A	1.0	%	24.9	24.6	13.4	13.1	11.9
silt (0.0312mm - 0.004mm)	----	EC184A	1.0	%	37.9	37.5	16.9	16.4	14.7
sand (0.125mm - 0.063mm)	----	EC184A	1.0	%	4.6	5.7	16.5	13.8	16.9
sand (0.25mm - 0.125mm)	----	EC184A	1.0	%	6.0	7.8	20.5	20.7	22.3
sand (0.5mm - 0.25mm)	----	EC184A	1.0	%	6.5	8.1	16.1	19.7	16.7
sand (1.0mm - 0.50mm)	----	EC184A	1.0	%	6.3	4.9	5.9	9.4	6.5
sand (2.0mm - 1.0mm)	----	EC184A	1.0	%	4.6	2.7	2.1	2.2	2.8
gravel (>2mm)	----	EC184A	1.0	%	<1.0	<1.0	4.2	<1.0	4.1
Organic / Inorganic Carbon									
carbon, total [TC]	----	E351	0.050	%	23.8	22.3	13.5	16.0	13.8
carbon, inorganic [IC]	----	E354	0.050	%	1.92	1.75	7.00	6.99	6.57
carbon, inorganic [IC], (as CaCO3 equivalent)	----	E354	0.40	%	16.0	14.6	58.4	58.3	54.8
carbon, total organic [TOC]	----	EC356	0.050	%	21.9	20.6	6.50	9.01	7.23
Metals									
aluminum	7429-90-5	E440	50	mg/kg	2580	2450	1210	1940	1460
antimony	7440-36-0	E440	0.10	mg/kg	0.71	0.71	0.45	0.50	0.37
arsenic	7440-38-2	E440	0.10	mg/kg	2.99	3.15	3.26	2.07	2.59
barium	7440-39-3	E440	0.50	mg/kg	136	132	1870	2550	2680
beryllium	7440-41-7	E440	0.10	mg/kg	0.32	0.31	<0.14 ^{DLM}	0.15	<0.15 ^{DLM}
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	<0.28 ^{DLM}	<0.30 ^{DLM}	<0.30 ^{DLM}
boron	7440-42-8	E440	5.0	mg/kg	10.2	12.1	<7.0 ^{DLM}	8.0	<7.4 ^{DLM}
cadmium	7440-43-9	E440	0.020	mg/kg	1.55	2.54	9.11	12.0	9.49
calcium	7440-70-2	E440	50	mg/kg	59900	68800	231000	275000	270000



Analytical Results

Sub-Matrix: Sediment

(Matrix: Soil/Solid)

Client sample ID

					RG_ERCKUC_S E-2_2022-09-14 _N	RG_ERCKUC_S E-3_2022-09-14 _N	RG_BOCK_SE-1 _2022-09-15_N	RG_BOCK_SE-2 _2022-09-15_N	RG_BOCK_SE-3 _2022-09-15_N
Client sampling date / time					14-Sep-2022 14:00	14-Sep-2022 15:00	15-Sep-2022 13:00	15-Sep-2022 14:00	15-Sep-2022 15:00
Analyte	CAS Number	Method	LOR	Unit	CG2213498-026	CG2213498-027	CG2213498-028	CG2213498-029	CG2213498-030
					Result	Result	Result	Result	Result
Metals									
chromium	7440-47-3	E440	0.50	mg/kg	8.06	8.45	5.89	4.38	7.11
cobalt	7440-48-4	E440	0.10	mg/kg	15.4	9.58	5.84	6.94	5.35
copper	7440-50-8	E440	0.50	mg/kg	13.8	14.1	6.85	9.11	6.51
iron	7439-89-6	E440	50	mg/kg	6750	6160	6690	3540	4910
lead	7439-92-1	E440	0.50	mg/kg	7.50	9.43	2.30	2.58	2.31
lithium	7439-93-2	E440	2.0	mg/kg	3.0	2.7	<2.8 ^{DLM}	3.8	3.2
magnesium	7439-95-4	E440	20	mg/kg	6100	5780	5000	5620	5420
manganese	7439-96-5	E440	1.0	mg/kg	302	193	228	374	183
mercury	7439-97-6	E510	0.0050	mg/kg	0.0636	0.0755	0.0197	0.0232	0.0168
molybdenum	7439-98-7	E440	0.10	mg/kg	1.84	2.17	1.19	1.24	1.20
nickel	7440-02-0	E440	0.50	mg/kg	80.0	62.9	63.6	103	55.6
phosphorus	7723-14-0	E440	50	mg/kg	867	871	371	448	375
potassium	7440-09-7	E440	100	mg/kg	620	670	570	740	600
selenium	7782-49-2	E440	0.20	mg/kg	45.4	25.5	3.91	5.21	2.91
silver	7440-22-4	E440	0.10	mg/kg	0.20	0.20	<0.14 ^{DLM}	<0.15 ^{DLM}	<0.15 ^{DLM}
sodium	7440-23-5	E440	50	mg/kg	53	58	109	152	123
strontium	7440-24-6	E440	0.50	mg/kg	55.4	59.2	1150	430	786
sulfur	7704-34-9	E440	1000	mg/kg	2500	2700	7100	7100	7400
thallium	7440-28-0	E440	0.050	mg/kg	0.234	0.206	0.157	0.201	0.132
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	<2.8 ^{DLM}	<3.0 ^{DLM}	<3.0 ^{DLM}
titanium	7440-32-6	E440	1.0	mg/kg	10.9	11.9	12.1	26.6	21.7
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	<0.70 ^{DLM}	<0.74 ^{DLM}	<0.74 ^{DLM}
uranium	7440-61-1	E440	0.050	mg/kg	3.84	3.77	1.69	2.28	1.66
vanadium	7440-62-2	E440	0.20	mg/kg	16.2	16.2	7.39	9.65	7.90
zinc	7440-66-6	E440	2.0	mg/kg	75.6	107	488	703	517
zirconium	7440-67-7	E440	1.0	mg/kg	1.7	1.6	<1.4 ^{DLM}	<1.5 ^{DLM}	<1.5 ^{DLM}

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Sediment

Client sample ID

(Matrix: Soil/Solid)

					RG_UFR1_SE-1 _2022-09-14_N	RG_UFR1_SE-2 _2022-09-14_N	RG_UFR1_SE-3 _2022-09-14_N	RG_UFR1_SE-4 _2022-09-14_N	RG_UFR1_SE-5 _2022-09-14_N
Client sampling date / time					14-Sep-2022 09:00	14-Sep-2022 09:10	14-Sep-2022 09:20	14-Sep-2022 09:30	14-Sep-2022 09:40
Analyte	CAS Number	Method	LOR	Unit	CG2213498-031	CG2213498-032	CG2213498-033	CG2213498-034	CG2213498-035
					Result	Result	Result	Result	Result
Physical Tests									
moisture	----	E144	0.25	%	30.5	33.2	41.8	33.5	39.7
pH (1:2 soil:water)	----	E108	0.10	pH units	8.24	8.02	8.23	8.13	7.95
Particle Size									
grain size curve	----	E185A	-	-	See Attached	See Attached	See Attached	See Attached	See Attached
clay (<0.004mm)	----	EC184A	1.0	%	3.5	4.0	4.6	3.7	3.3
silt (0.063mm - 0.0312mm)	----	EC184A	1.0	%	5.9	14.7	18.3	9.1	7.8
silt (0.0312mm - 0.004mm)	----	EC184A	1.0	%	7.9	16.2	21.3	9.4	9.8
sand (0.125mm - 0.063mm)	----	EC184A	1.0	%	6.1	10.9	13.8	11.1	8.0
sand (0.25mm - 0.125mm)	----	EC184A	1.0	%	10.2	13.8	15.6	24.9	14.6
sand (0.5mm - 0.25mm)	----	EC184A	1.0	%	18.4	12.8	11.5	28.0	25.4
sand (1.0mm - 0.50mm)	----	EC184A	1.0	%	33.9	12.0	7.7	12.3	19.9
sand (2.0mm - 1.0mm)	----	EC184A	1.0	%	12.5	9.0	5.4	1.3	5.5
gravel (>2mm)	----	EC184A	1.0	%	1.6	6.6	1.8	<1.0	5.7
Organic / Inorganic Carbon									
carbon, total [TC]	----	E351	0.050	%	4.73	6.50	7.50	4.73	7.19
carbon, inorganic [IC]	----	E354	0.050	%	0.807	1.07	1.22	0.618	0.921
carbon, inorganic [IC], (as CaCO3 equivalent)	----	E354	0.40	%	6.72	8.89	10.2	5.15	7.68
carbon, total organic [TOC]	----	EC356	0.050	%	3.92	5.43	6.28	4.11	6.27
Metals									
aluminum	7429-90-5	E440	50	mg/kg	5420	5410	5260	5500	5830
antimony	7440-36-0	E440	0.10	mg/kg	0.77	0.78	0.83	0.77	0.82
arsenic	7440-38-2	E440	0.10	mg/kg	5.85	5.52	6.93	5.96	5.68
barium	7440-39-3	E440	0.50	mg/kg	184	208	189	187	454
beryllium	7440-41-7	E440	0.10	mg/kg	0.64	0.58	0.55	0.63	0.72
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20
boron	7440-42-8	E440	5.0	mg/kg	<5.0	6.6	5.3	<5.0	5.3
cadmium	7440-43-9	E440	0.020	mg/kg	0.968	1.14	1.51	1.09	1.03
calcium	7440-70-2	E440	50	mg/kg	29100	35400	39400	20700	29500
chromium	7440-47-3	E440	0.50	mg/kg	14.2	14.3	15.0	13.2	15.2



Analytical Results

Sub-Matrix: Sediment

Client sample ID

(Matrix: Soil/Solid)

					RG_UFR1_SE-1 _2022-09-14_N	RG_UFR1_SE-2 _2022-09-14_N	RG_UFR1_SE-3 _2022-09-14_N	RG_UFR1_SE-4 _2022-09-14_N	RG_UFR1_SE-5 _2022-09-14_N
Client sampling date / time					14-Sep-2022 09:00	14-Sep-2022 09:10	14-Sep-2022 09:20	14-Sep-2022 09:30	14-Sep-2022 09:40
Analyte	CAS Number	Method	LOR	Unit	CG2213498-031	CG2213498-032	CG2213498-033	CG2213498-034	CG2213498-035
					Result	Result	Result	Result	Result
Metals									
cobalt	7440-48-4	E440	0.10	mg/kg	5.90	6.03	6.28	6.57	5.95
copper	7440-50-8	E440	0.50	mg/kg	15.2	15.3	16.0	15.4	15.6
iron	7439-89-6	E440	50	mg/kg	16200	15000	14200	16500	17800
lead	7439-92-1	E440	0.50	mg/kg	8.87	9.22	9.24	9.70	8.83
lithium	7439-93-2	E440	2.0	mg/kg	8.4	8.3	8.0	8.0	8.1
magnesium	7439-95-4	E440	20	mg/kg	5720	8340	8340	5480	6160
manganese	7439-96-5	E440	1.0	mg/kg	502	507	487	588	437
mercury	7439-97-6	E510	0.0050	mg/kg	0.0423	0.0501	0.0719	0.0395	0.0381
molybdenum	7439-98-7	E440	0.10	mg/kg	2.07	2.08	1.96	1.92	2.06
nickel	7440-02-0	E440	0.50	mg/kg	25.0	25.7	27.8	25.8	26.0
phosphorus	7723-14-0	E440	50	mg/kg	1340	1410	1460	1490	1700
potassium	7440-09-7	E440	100	mg/kg	1250	1240	1110	1150	1300
selenium	7782-49-2	E440	0.20	mg/kg	0.75	1.29	1.12	0.72	0.78
silver	7440-22-4	E440	0.10	mg/kg	0.16	0.21	0.25	0.17	0.17
sodium	7440-23-5	E440	50	mg/kg	59	73	66	54	61
strontium	7440-24-6	E440	0.50	mg/kg	65.4	64.0	61.6	51.8	198
sulfur	7704-34-9	E440	1000	mg/kg	<1000	<1000	<1000	<1000	<1000
thallium	7440-28-0	E440	0.050	mg/kg	0.206	0.203	0.284	0.181	0.181
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
titanium	7440-32-6	E440	1.0	mg/kg	16.6	19.0	24.5	18.8	18.9
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
uranium	7440-61-1	E440	0.050	mg/kg	0.901	0.996	0.898	0.889	1.01
vanadium	7440-62-2	E440	0.20	mg/kg	27.8	25.8	29.0	27.7	30.0
zinc	7440-66-6	E440	2.0	mg/kg	109	108	114	114	108
zirconium	7440-67-7	E440	1.0	mg/kg	1.0	1.2	1.4	1.1	1.2

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Sediment

(Matrix: Soil/Solid)

Client sample ID

					RG_FRDSCC1_ SE-1_2022-09-14_N	RG_FRDSCC1_ SE-2_2022-09-14_N	RG_FRDSCC1_ SE-3_2022-09-14_N	RG_FRDSCC1_ SE-4_2022-09-14_N	RG_FRDSCC1_ SE-5_2022-09-14_N
Client sampling date / time					14-Sep-2022 09:50	14-Sep-2022 10:00	14-Sep-2022 10:10	14-Sep-2022 10:20	14-Sep-2022 10:30
Analyte	CAS Number	Method	LOR	Unit	CG2213498-036	CG2213498-037	CG2213498-038	CG2213498-039	CG2213498-040
					Result	Result	Result	Result	Result
Physical Tests									
moisture	----	E144	0.25	%	31.3	26.7	25.2	30.9	25.8
pH (1:2 soil:water)	----	E108	0.10	pH units	8.26	8.38	8.39	8.24	8.35
Particle Size									
grain size curve	----	E185A	-	-	See Attached	See Attached	See Attached	See Attached	See Attached
clay (<0.004mm)	----	EC184A	1.0	%	2.0	2.5	1.9	2.0	2.2
silt (0.063mm - 0.0312mm)	----	EC184A	1.0	%	5.8	3.9	4.2	9.3	4.5
silt (0.0312mm - 0.004mm)	----	EC184A	1.0	%	7.2	5.2	5.1	9.2	5.4
sand (0.125mm - 0.063mm)	----	EC184A	1.0	%	4.7	4.4	4.5	10.6	4.3
sand (0.25mm - 0.125mm)	----	EC184A	1.0	%	9.2	10.5	20.7	30.4	11.8
sand (0.5mm - 0.25mm)	----	EC184A	1.0	%	31.2	32.7	55.2	32.5	39.4
sand (1.0mm - 0.50mm)	----	EC184A	1.0	%	35.0	34.7	7.8	4.3	25.2
sand (2.0mm - 1.0mm)	----	EC184A	1.0	%	4.5	4.4	<1.0	<1.0	6.5
gravel (>2mm)	----	EC184A	1.0	%	<1.0	1.7	<1.0	1.3	<1.0
Organic / Inorganic Carbon									
carbon, total [TC]	----	E351	0.050	%	4.30	4.07	3.68	5.68	4.30
carbon, inorganic [IC]	----	E354	0.050	%	1.35	1.43	1.74	1.79	1.82
carbon, inorganic [IC], (as CaCO3 equivalent)	----	E354	0.40	%	11.2	12.0	14.5	14.9	15.2
carbon, total organic [TOC]	----	EC356	0.050	%	2.95	2.64	1.94	3.89	2.48
Metals									
aluminum	7429-90-5	E440	50	mg/kg	5040	4960	4950	4610	4470
antimony	7440-36-0	E440	0.10	mg/kg	0.71	0.76	0.78	0.67	0.84
arsenic	7440-38-2	E440	0.10	mg/kg	5.65	6.14	6.02	5.22	5.89
barium	7440-39-3	E440	0.50	mg/kg	160	182	142	141	132
beryllium	7440-41-7	E440	0.10	mg/kg	0.55	0.58	0.54	0.52	0.51
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20
boron	7440-42-8	E440	5.0	mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0
cadmium	7440-43-9	E440	0.020	mg/kg	1.40	1.20	1.20	1.09	1.23
calcium	7440-70-2	E440	50	mg/kg	36400	42900	42900	46500	46000



Analytical Results

Sub-Matrix: Sediment

(Matrix: Soil/Solid)

Client sample ID

					RG_FRDSCC1_ SE-1_2022-09-14_N	RG_FRDSCC1_ SE-2_2022-09-14_N	RG_FRDSCC1_ SE-3_2022-09-14_N	RG_FRDSCC1_ SE-4_2022-09-14_N	RG_FRDSCC1_ SE-5_2022-09-14_N
Client sampling date / time					14-Sep-2022 09:50	14-Sep-2022 10:00	14-Sep-2022 10:10	14-Sep-2022 10:20	14-Sep-2022 10:30
Analyte	CAS Number	Method	LOR	Unit	CG2213498-036	CG2213498-037	CG2213498-038	CG2213498-039	CG2213498-040
					Result	Result	Result	Result	Result
Metals									
chromium	7440-47-3	E440	0.50	mg/kg	10.1	10.1	9.81	9.04	9.44
cobalt	7440-48-4	E440	0.10	mg/kg	6.08	6.02	6.00	5.62	5.90
copper	7440-50-8	E440	0.50	mg/kg	12.9	12.9	12.3	12.3	12.5
iron	7439-89-6	E440	50	mg/kg	16500	17100	17000	14000	16200
lead	7439-92-1	E440	0.50	mg/kg	8.13	8.30	7.99	8.07	8.09
lithium	7439-93-2	E440	2.0	mg/kg	7.8	7.8	6.9	7.6	7.0
magnesium	7439-95-4	E440	20	mg/kg	8040	7380	8480	10600	9610
manganese	7439-96-5	E440	1.0	mg/kg	513	467	464	458	473
mercury	7439-97-6	E510	0.0050	mg/kg	0.0326	0.0275	0.0289	0.0313	0.0291
molybdenum	7439-98-7	E440	0.10	mg/kg	1.43	1.50	1.44	1.37	1.42
nickel	7440-02-0	E440	0.50	mg/kg	42.7	34.2	37.7	31.2	36.9
phosphorus	7723-14-0	E440	50	mg/kg	1370	1390	1430	1330	1460
potassium	7440-09-7	E440	100	mg/kg	1170	1160	1210	1050	1030
selenium	7782-49-2	E440	0.20	mg/kg	0.90	0.84	0.72	1.01	0.98
silver	7440-22-4	E440	0.10	mg/kg	0.13	0.13	0.12	0.14	0.12
sodium	7440-23-5	E440	50	mg/kg	63	67	66	69	84
strontium	7440-24-6	E440	0.50	mg/kg	64.1	68.8	66.3	62.9	56.6
sulfur	7704-34-9	E440	1000	mg/kg	<1000	<1000	<1000	<1000	<1000
thallium	7440-28-0	E440	0.050	mg/kg	0.187	0.184	0.172	0.171	0.177
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
titanium	7440-32-6	E440	1.0	mg/kg	15.9	13.8	12.6	14.7	13.6
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
uranium	7440-61-1	E440	0.050	mg/kg	0.991	0.946	0.907	0.884	0.936
vanadium	7440-62-2	E440	0.20	mg/kg	27.4	27.7	27.6	23.5	25.7
zinc	7440-66-6	E440	2.0	mg/kg	138	127	133	110	129
zirconium	7440-67-7	E440	1.0	mg/kg	<1.0	1.0	<1.0	1.0	<1.0

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Sediment

Client sample ID

(Matrix: Soil/Solid)

					RG_MIDGA_SE-1_2022-09-18_N	RG_MIDGA_SE-2_2022-09-18_N	RG_MIDGA_SE-3_2022-09-18_N	RG_MIDBO_SE-1_2022-09-13_N	RG_MIDBO_SE-2_2022-09-13_N
Client sampling date / time					18-Sep-2022 10:00	18-Sep-2022 09:00	18-Sep-2022 08:00	13-Sep-2022 13:45	13-Sep-2022 14:45
Analyte	CAS Number	Method	LOR	Unit	CG2213498-041	CG2213498-042	CG2213498-043	CG2213498-044	CG2213498-045
					Result	Result	Result	Result	Result
Physical Tests									
moisture	----	E144	0.25	%	35.0	50.8	66.5	73.8	87.6
pH (1:2 soil:water)	----	E108	0.10	pH units	7.93	7.83	7.48	7.24	7.29 ^{FR5}
Particle Size									
grain size curve	----	E185A	-	-	See Attached	See Attached	See Attached	See Attached	See Attached
clay (<0.004mm)	----	EC184A	1.0	%	3.6	4.8	7.0	5.1	7.1
silt (0.063mm - 0.0312mm)	----	EC184A	1.0	%	20.4	21.3	29.2	22.7	36.7
silt (0.0312mm - 0.004mm)	----	EC184A	1.0	%	19.8	25.1	35.7	25.2	44.5
sand (0.125mm - 0.063mm)	----	EC184A	1.0	%	27.9	15.7	10.7	6.0	6.8
sand (0.25mm - 0.125mm)	----	EC184A	1.0	%	17.4	14.3	5.1	5.2	2.0
sand (0.5mm - 0.25mm)	----	EC184A	1.0	%	4.8	7.2	2.2	8.1	1.5
sand (1.0mm - 0.50mm)	----	EC184A	1.0	%	<1.0	2.1	1.3	9.8	1.0
sand (2.0mm - 1.0mm)	----	EC184A	1.0	%	<1.0	2.0	1.2	7.2	<1.0
gravel (>2mm)	----	EC184A	1.0	%	5.4	7.5	7.6	10.7	<1.0
Organic / Inorganic Carbon									
carbon, total [TC]	----	E351	0.050	%	6.77	8.07	11.5	9.15	13.5
carbon, inorganic [IC]	----	E354	0.050	%	2.54	3.10	4.43	2.31	3.25
carbon, inorganic [IC], (as CaCO3 equivalent)	----	E354	0.40	%	21.1	25.9	37.0	19.2	27.1
carbon, total organic [TOC]	----	EC356	0.050	%	4.23	4.97	7.07	6.84	10.2
Metals									
aluminum	7429-90-5	E440	50	mg/kg	2770	3250	2580	2550	3180
antimony	7440-36-0	E440	0.10	mg/kg	0.50	0.42	0.32	0.52	0.38
arsenic	7440-38-2	E440	0.10	mg/kg	3.98	3.97	3.32	4.28	3.18
barium	7440-39-3	E440	0.50	mg/kg	1280	1310	1470	395	588
beryllium	7440-41-7	E440	0.10	mg/kg	0.29	0.35	0.26	0.29	0.29
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20
boron	7440-42-8	E440	5.0	mg/kg	<5.0	<5.0	5.9	<5.0	9.6
cadmium	7440-43-9	E440	0.020	mg/kg	1.82	1.84	2.24	1.21	1.42
calcium	7440-70-2	E440	50	mg/kg	86900	104000	141000	73100	101000



Analytical Results

Sub-Matrix: Sediment

(Matrix: Soil/Solid)

Client sample ID

					RG_MIDGA_SE-1_2022-09-18_N	RG_MIDGA_SE-2_2022-09-18_N	RG_MIDGA_SE-3_2022-09-18_N	RG_MIDBO_SE-1_2022-09-13_N	RG_MIDBO_SE-2_2022-09-13_N
Client sampling date / time					18-Sep-2022 10:00	18-Sep-2022 09:00	18-Sep-2022 08:00	13-Sep-2022 13:45	13-Sep-2022 14:45
Analyte	CAS Number	Method	LOR	Unit	CG2213498-041	CG2213498-042	CG2213498-043	CG2213498-044	CG2213498-045
					Result	Result	Result	Result	Result
Metals									
chromium	7440-47-3	E440	0.50	mg/kg	5.64	17.1	11.8	32.0	11.9
cobalt	7440-48-4	E440	0.10	mg/kg	4.10	4.37	3.58	3.38	3.43
copper	7440-50-8	E440	0.50	mg/kg	9.32	10.4	8.87	9.64	9.22
iron	7439-89-6	E440	50	mg/kg	9040	10900	9400	13000	8630
lead	7439-92-1	E440	0.50	mg/kg	6.60	9.59	5.14	5.68	5.80
lithium	7439-93-2	E440	2.0	mg/kg	4.0	5.2	5.0	3.8	4.7
magnesium	7439-95-4	E440	20	mg/kg	5280	6210	6530	5330	5440
manganese	7439-96-5	E440	1.0	mg/kg	150	186	197	189	148
mercury	7439-97-6	E510	0.0050	mg/kg	0.0278	0.0353	0.0264	0.0273	0.0297
molybdenum	7439-98-7	E440	0.10	mg/kg	1.14	2.26	1.71	4.28	1.69
nickel	7440-02-0	E440	0.50	mg/kg	33.1	40.2	41.4	38.5	33.1
phosphorus	7723-14-0	E440	50	mg/kg	1050	1140	897	1050	1000
potassium	7440-09-7	E440	100	mg/kg	530	660	560	520	780
selenium	7782-49-2	E440	0.20	mg/kg	5.36	6.27	9.82	6.82	10.2
silver	7440-22-4	E440	0.10	mg/kg	0.13	0.15	0.12	0.14	0.12
sodium	7440-23-5	E440	50	mg/kg	80	107	133	87	140
strontium	7440-24-6	E440	0.50	mg/kg	149	164	198	94.0	126
sulfur	7704-34-9	E440	1000	mg/kg	2400	2300	3200	2000	3900
thallium	7440-28-0	E440	0.050	mg/kg	0.117	0.133	0.116	0.107	0.135
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
titanium	7440-32-6	E440	1.0	mg/kg	18.9	18.4	16.0	15.1	17.0
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
uranium	7440-61-1	E440	0.050	mg/kg	1.23	1.28	1.11	0.916	0.974
vanadium	7440-62-2	E440	0.20	mg/kg	15.6	16.2	13.0	15.3	14.0
zinc	7440-66-6	E440	2.0	mg/kg	119	127	140	87.6	104
zirconium	7440-67-7	E440	1.0	mg/kg	<1.0	1.1	<1.0	1.0	1.2

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Sediment

(Matrix: Soil/Solid)

Client sample ID

					RG_MIDBO_SE-3_2022-09-13_N	RG_GATE_SE-1_2022-09-15_N	RG_GATE_SE-2_2022-09-15_N	RG_GATE_SE-3_2022-09-15_N	RG_ERCKMD_S E-1_2022-09-20_N
Client sampling date / time					13-Sep-2022 15:15	15-Sep-2022 10:00	15-Sep-2022 11:00	15-Sep-2022 12:00	20-Sep-2022 11:00
Analyte	CAS Number	Method	LOR	Unit	CG2213498-046	CG2213498-047	CG2213498-048	CG2213498-049	CG2213498-050
					Result	Result	Result	Result	Result
Physical Tests									
moisture	----	E144	0.25	%	59.5	52.5	47.9	61.6	81.5
pH (1:2 soil:water)	----	E108	0.10	pH units	7.65	8.20 ^{FR5}	7.92	8.04	7.84 ^{FR5}
Particle Size									
grain size curve	----	E185A	-	-	See Attached	See Attached	See Attached	See Attached	See Attached
clay (<0.004mm)	----	EC184A	1.0	%	3.1	19.9	17.6	14.6	8.2
silt (0.063mm - 0.0312mm)	----	EC184A	1.0	%	10.3	20.4	20.6	11.2	35.9
silt (0.0312mm - 0.004mm)	----	EC184A	1.0	%	11.7	46.1	41.2	35.1	37.0
sand (0.125mm - 0.063mm)	----	EC184A	1.0	%	9.3	10.3	13.1	15.2	8.8
sand (0.25mm - 0.125mm)	----	EC184A	1.0	%	30.2	2.3	5.2	9.6	4.4
sand (0.5mm - 0.25mm)	----	EC184A	1.0	%	28.5	<1.0	1.7	6.7	2.2
sand (1.0mm - 0.50mm)	----	EC184A	1.0	%	2.9	<1.0	<1.0	5.0	2.3
sand (2.0mm - 1.0mm)	----	EC184A	1.0	%	1.0	<1.0	<1.0	2.4	<1.0
gravel (>2mm)	----	EC184A	1.0	%	3.0	<1.0	<1.0	<1.0	<1.0
Organic / Inorganic Carbon									
carbon, total [TC]	----	E351	0.050	%	4.83	23.7	21.6	19.0	15.0
carbon, inorganic [IC]	----	E354	0.050	%	1.49	4.13	3.97	4.55	3.07
carbon, inorganic [IC], (as CaCO3 equivalent)	----	E354	0.40	%	12.4	34.4	33.1	37.9	25.6
carbon, total organic [TOC]	----	EC356	0.050	%	3.34	19.6	17.6	14.4	11.9
Metals									
aluminum	7429-90-5	E440	50	mg/kg	4380	4180	3810	3670	3100
antimony	7440-36-0	E440	0.10	mg/kg	0.78	0.88	0.80	0.67	0.90
arsenic	7440-38-2	E440	0.10	mg/kg	5.87	4.45	4.36	4.08	16.4
barium	7440-39-3	E440	0.50	mg/kg	286	899	749	617	371
beryllium	7440-41-7	E440	0.10	mg/kg	0.44	0.46	0.43	0.40	0.56
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20
boron	7440-42-8	E440	5.0	mg/kg	<5.0	5.8	5.7	5.6	7.2
cadmium	7440-43-9	E440	0.020	mg/kg	1.80	5.24	5.53	6.45	7.60
calcium	7440-70-2	E440	50	mg/kg	42700	127000	123000	153000	99100



Analytical Results

Sub-Matrix: Sediment
 (Matrix: Soil/Solid)

Client sample ID

					RG_MIDBO_SE-3_2022-09-13_N	RG_GATE_SE-1_2022-09-15_N	RG_GATE_SE-2_2022-09-15_N	RG_GATE_SE-3_2022-09-15_N	RG_ERCKMD_S E-1_2022-09-20_N
Client sampling date / time					13-Sep-2022 15:15	15-Sep-2022 10:00	15-Sep-2022 11:00	15-Sep-2022 12:00	20-Sep-2022 11:00
Analyte	CAS Number	Method	LOR	Unit	CG2213498-046	CG2213498-047	CG2213498-048	CG2213498-049	CG2213498-050
					Result	Result	Result	Result	Result
Metals									
chromium	7440-47-3	E440	0.50	mg/kg	13.5	8.17	7.73	7.61	7.56
cobalt	7440-48-4	E440	0.10	mg/kg	4.68	8.70	7.89	5.96	249
copper	7440-50-8	E440	0.50	mg/kg	11.2	19.4	17.4	15.4	16.9
iron	7439-89-6	E440	50	mg/kg	14500	8730	8980	9640	32500
lead	7439-92-1	E440	0.50	mg/kg	7.36	8.68	7.35	6.62	10.2
lithium	7439-93-2	E440	2.0	mg/kg	5.8	4.8	5.1	5.7	4.5
magnesium	7439-95-4	E440	20	mg/kg	4860	5740	5940	6580	7050
manganese	7439-96-5	E440	1.0	mg/kg	250	201	204	188	6850
mercury	7439-97-6	E510	0.0050	mg/kg	0.0309	0.0579	0.0503	0.0422	0.0605
molybdenum	7439-98-7	E440	0.10	mg/kg	2.07	1.96	1.78	1.60	1.83
nickel	7440-02-0	E440	0.50	mg/kg	26.5	62.4	59.4	58.8	147
phosphorus	7723-14-0	E440	50	mg/kg	1210	809	844	902	1880
potassium	7440-09-7	E440	100	mg/kg	870	1280	1140	1060	800
selenium	7782-49-2	E440	0.20	mg/kg	3.13	14.4	13.3	11.7	28.8
silver	7440-22-4	E440	0.10	mg/kg	0.15	0.29	0.27	0.21	0.24
sodium	7440-23-5	E440	50	mg/kg	68	104	99	115	99
strontium	7440-24-6	E440	0.50	mg/kg	74.9	498	566	580	82.7
sulfur	7704-34-9	E440	1000	mg/kg	<1000	4200	4200	4400	2800
thallium	7440-28-0	E440	0.050	mg/kg	0.150	0.168	0.172	0.208	0.407
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
titanium	7440-32-6	E440	1.0	mg/kg	25.0	21.6	17.4	21.0	18.7
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	<0.50	0.50	<0.50
uranium	7440-61-1	E440	0.050	mg/kg	0.906	1.66	1.48	1.65	1.74
vanadium	7440-62-2	E440	0.20	mg/kg	26.6	24.8	22.6	19.9	19.6
zinc	7440-66-6	E440	2.0	mg/kg	99.1	308	335	391	354
zirconium	7440-67-7	E440	1.0	mg/kg	1.2	<1.0	<1.0	<1.0	1.4

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Sediment

Client sample ID

(Matrix: Soil/Solid)

					RG_ERCKMD_S E-2_2022-09-20 _N	RG_ERCKMD_S E-3_2022-09-20 _N	RG_ERCKMD_S E-4_2022-09-20 _N	RG_ERCKMD_S E-5_2022-09-20 _N	RG_GATEDP_S E-1_2022-09-15 _N
Client sampling date / time					20-Sep-2022 11:10	20-Sep-2022 11:20	20-Sep-2022 11:30	20-Sep-2022 11:40	15-Sep-2022 12:45
Analyte	CAS Number	Method	LOR	Unit	CG2213498-051	CG2213498-052	CG2213498-053	CG2213498-054	CG2213498-055
					Result	Result	Result	Result	Result
Physical Tests									
moisture	----	E144	0.25	%	75.3	63.6	83.3	87.3	49.4
pH (1:2 soil:water)	----	E108	0.10	pH units	7.81	7.82	7.82	7.79	8.31
Particle Size									
grain size curve	----	E185A	-	-	See Attached	See Attached	See Attached	See Attached	See Attached
clay (<0.004mm)	----	EC184A	1.0	%	7.5	7.8	9.3	11.5	5.9
silt (0.063mm - 0.0312mm)	----	EC184A	1.0	%	9.7	28.9	11.5	31.4	15.4
silt (0.0312mm - 0.004mm)	----	EC184A	1.0	%	23.5	34.7	27.4	43.7	22.7
sand (0.125mm - 0.063mm)	----	EC184A	1.0	%	10.1	9.2	5.2	5.4	16.4
sand (0.25mm - 0.125mm)	----	EC184A	1.0	%	13.3	7.5	10.9	3.2	14.2
sand (0.5mm - 0.25mm)	----	EC184A	1.0	%	15.5	6.1	22.7	3.1	8.9
sand (1.0mm - 0.50mm)	----	EC184A	1.0	%	12.9	3.4	10.9	1.4	4.1
sand (2.0mm - 1.0mm)	----	EC184A	1.0	%	7.5	1.2	2.0	<1.0	2.5
gravel (>2mm)	----	EC184A	1.0	%	<1.0	1.2	<1.0	<1.0	9.9
Organic / Inorganic Carbon									
carbon, total [TC]	----	E351	0.050	%	11.6	15.1	9.26	15.8	10.8
carbon, inorganic [IC]	----	E354	0.050	%	4.42	2.53	2.00	3.41	6.21
carbon, inorganic [IC], (as CaCO3 equivalent)	----	E354	0.40	%	36.8	21.1	16.7	28.4	51.8
carbon, total organic [TOC]	----	EC356	0.050	%	7.18	12.6	7.26	12.4	4.59
Metals									
aluminum	7429-90-5	E440	50	mg/kg	2840	3520	7460	2710	1830
antimony	7440-36-0	E440	0.10	mg/kg	0.71	0.99	2.08	1.28	0.58
arsenic	7440-38-2	E440	0.10	mg/kg	7.42	7.13	28.4	28.0	7.27
barium	7440-39-3	E440	0.50	mg/kg	220	206	498	317	129
beryllium	7440-41-7	E440	0.10	mg/kg	0.41	0.54	1.22	0.62	0.28
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	<0.29 ^{DLM}	<0.20	<0.20
boron	7440-42-8	E440	5.0	mg/kg	5.5	8.4	12.6	9.3	<5.0
cadmium	7440-43-9	E440	0.020	mg/kg	4.60	6.29	11.3	11.8	2.91
calcium	7440-70-2	E440	50	mg/kg	135000	89800	124000	107000	30500



Analytical Results

Sub-Matrix: Sediment

(Matrix: Soil/Solid)

Client sample ID

					RG_ERCKMD_S E-2_2022-09-20 _N	RG_ERCKMD_S E-3_2022-09-20 _N	RG_ERCKMD_S E-4_2022-09-20 _N	RG_ERCKMD_S E-5_2022-09-20 _N	RG_GATEDP_S E-1_2022-09-15 _N
Client sampling date / time					20-Sep-2022 11:10	20-Sep-2022 11:20	20-Sep-2022 11:30	20-Sep-2022 11:40	15-Sep-2022 12:45
Analyte	CAS Number	Method	LOR	Unit	CG2213498-051	CG2213498-052	CG2213498-053	CG2213498-054	CG2213498-055
					Result	Result	Result	Result	Result
Metals									
chromium	7440-47-3	E440	0.50	mg/kg	18.1	10.1	17.3	7.90	4.37
cobalt	7440-48-4	E440	0.10	mg/kg	96.8	266	363	367	95.2
copper	7440-50-8	E440	0.50	mg/kg	12.0	17.8	31.8	18.0	7.91
iron	7439-89-6	E440	50	mg/kg	15500	15300	58100	49300	14500
lead	7439-92-1	E440	0.50	mg/kg	7.18	8.42	21.9	12.9	5.21
lithium	7439-93-2	E440	2.0	mg/kg	3.7	4.5	10.4	3.9	2.3
magnesium	7439-95-4	E440	20	mg/kg	5750	7340	10400	7910	2660
manganese	7439-96-5	E440	1.0	mg/kg	3030	6730	11000	11900	2840
mercury	7439-97-6	E510	0.0050	mg/kg	0.0394	0.0715	0.0976	0.0604	0.0235
molybdenum	7439-98-7	E440	0.10	mg/kg	2.99	3.06	4.26	2.71	1.07
nickel	7440-02-0	E440	0.50	mg/kg	84.4	331	206	223	52.4
phosphorus	7723-14-0	E440	50	mg/kg	1320	1400	3220	2160	836
potassium	7440-09-7	E440	100	mg/kg	780	860	1900	810	530
selenium	7782-49-2	E440	0.20	mg/kg	19.7	17.6	30.6	48.2	8.29
silver	7440-22-4	E440	0.10	mg/kg	0.16	0.26	0.36	0.24	<0.10
sodium	7440-23-5	E440	50	mg/kg	83	70	143	106	<50
strontium	7440-24-6	E440	0.50	mg/kg	83.4	76.2	126	89.0	33.4
sulfur	7704-34-9	E440	1000	mg/kg	3300	2400	3500	3900	<1000
thallium	7440-28-0	E440	0.050	mg/kg	0.230	0.339	0.688	0.623	0.188
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	<2.9 ^{DLM}	<2.0	<2.0
titanium	7440-32-6	E440	1.0	mg/kg	20.0	19.0	27.2	14.2	9.3
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	<0.72 ^{DLM}	<0.50	<0.50
uranium	7440-61-1	E440	0.050	mg/kg	1.90	1.62	2.91	2.21	0.724
vanadium	7440-62-2	E440	0.20	mg/kg	16.4	18.4	47.8	22.2	12.1
zinc	7440-66-6	E440	2.0	mg/kg	195	329	548	562	140
zirconium	7440-67-7	E440	1.0	mg/kg	<1.0	1.8	1.8	<1.0	<1.0

Please refer to the General Comments section for an explanation of any qualifiers detected.





QUALITY CONTROL INTERPRETIVE REPORT

<p>Work Order : CG2213498</p> <p>Client : Teck Coal Limited</p> <p>Contact : Mike Pope</p> <p>Address : RR#1 HWY#3 Sparwood BC Canada V0B 2G1</p> <p>Telephone : ----</p> <p>Project : Regional Effects Program</p> <p>PO : VPO00847030</p> <p>C-O-C number : REP_RAEMP-LAEMP_PandC_2022-09_</p> <p>Sampler : JENNIFER INGS</p> <p>Site : ----</p> <p>Quote number : Teck Coal Master Quote</p> <p>No. of samples received : 55</p> <p>No. of samples analysed : 55</p>	<p>Page : 1 of 47</p> <p>Laboratory : Calgary - Environmental</p> <p>Account Manager : Lyudmyla Shvets</p> <p>Address : 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5</p> <p>Telephone : +1 403 407 1800</p> <p>Date Samples Received : 23-Sep-2022 09:30</p> <p>Issue Date : 19-Oct-2022 17:43</p>
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This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

- Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
- CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
- DQO: Data Quality Objective.
- LOR: Limit of Reporting (detection limit).
- RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: Soil/Solid

Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag RG_ERCKMD_SE-1_2022-09-20_N	E510	20-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	28 days	22 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag RG_ERCKMD_SE-2_2022-09-20_N	E510	20-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	28 days	22 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag RG_ERCKMD_SE-3_2022-09-20_N	E510	20-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	28 days	22 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag RG_ERCKMD_SE-4_2022-09-20_N	E510	20-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	28 days	22 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag RG_ERCKMD_SE-5_2022-09-20_N	E510	20-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	28 days	22 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag RG_MIDGA_SE-1_2022-09-18_N	E510	18-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	28 days	24 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag RG_MIDGA_SE-2_2022-09-18_N	E510	18-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	28 days	24 days	✓



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_MIDGA_SE-3_2022-09-18_N	E510	18-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	28 days	24 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_FOUCL_SE-1_2022-09-16_N	E510	16-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	28 days	26 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_FOUCL_SE-2_2022-09-16_N	E510	16-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	28 days	26 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_FOUCL_SE-3_2022-09-16_N	E510	16-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	28 days	26 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_FOUCL_SE-4_2022-09-16_N	E510	16-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	28 days	26 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_FOUCL_SE-5_2022-09-16_N	E510	16-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	28 days	26 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_GRASSY_SE-1_2022-09-16_N	E510	16-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	28 days	26 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_GRASSY_SE-2_2022-09-16_N	E510	16-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	28 days	26 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_GRASSY_SE-3_2022-09-16_N	E510	16-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	28 days	26 days	✔	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_GRASSY_SE-4_2022-09-16_N	E510	16-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	28 days	26 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_GRASSY_SE-5_2022-09-16_N	E510	16-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	28 days	26 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_BOCK_SE-1_2022-09-15_N	E510	15-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	28 days	27 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_BOCK_SE-2_2022-09-15_N	E510	15-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	28 days	27 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_BOCK_SE-3_2022-09-15_N	E510	15-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	28 days	27 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_FOUNGD_SE-1_2022-09-15_N	E510	15-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	28 days	27 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_FOUNGD_SE-2_2022-09-15_N	E510	15-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	28 days	27 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_FOUNGD_SE-3_2022-09-15_N	E510	15-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	28 days	27 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_GATE_SE-1_2022-09-15_N	E510	15-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	28 days	27 days	✔	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_GATE_SE-2_2022-09-15_N	E510	15-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	28 days	27 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_GATE_SE-3_2022-09-15_N	E510	15-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	28 days	27 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_GATEDP_SE-1_2022-09-15_N	E510	15-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	28 days	27 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKUC_SE-1_2022-09-14_N	E510	14-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	28 days	28 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKUC_SE-2_2022-09-14_N	E510	14-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	28 days	28 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKUC_SE-3_2022-09-14_N	E510	14-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	28 days	28 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_FRDSCC1_SE-1_2022-09-14_N	E510	14-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	28 days	28 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_FRDSCC1_SE-2_2022-09-14_N	E510	14-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	28 days	28 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_FRDSCC1_SE-3_2022-09-14_N	E510	14-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	28 days	28 days	✔	



Matrix: Soil/Solid

Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_FRDSCC1_SE-4_2022-09-14_N	E510	14-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	28 days	28 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_FRDSCC1_SE-5_2022-09-14_N	E510	14-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	28 days	28 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_UFR1_SE-1_2022-09-14_N	E510	14-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	28 days	28 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_UFR1_SE-2_2022-09-14_N	E510	14-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	28 days	28 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_UFR1_SE-3_2022-09-14_N	E510	14-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	28 days	28 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_UFR1_SE-4_2022-09-14_N	E510	14-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	28 days	28 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_UFR1_SE-5_2022-09-14_N	E510	14-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	28 days	28 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_LCUT_SE-1_2022-09-15_N	E510	15-Sep-2022	14-Oct-2022	----	----		14-Oct-2022	28 days	29 days	* EHT	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_LCUT_SE-2_2022-09-15_N	E510	15-Sep-2022	14-Oct-2022	----	----		14-Oct-2022	28 days	29 days	* EHT	



Matrix: Soil/Solid

Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_LCUT_SE-3_2022-09-15_N	E510	15-Sep-2022	14-Oct-2022	----	----		14-Oct-2022	28 days	29 days	*	EHT
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_MIDBO_SE-1_2022-09-13_N	E510	13-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	28 days	29 days	*	EHT
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_MIDBO_SE-2_2022-09-13_N	E510	13-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	28 days	29 days	*	EHT
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_MIDBO_SE-3_2022-09-13_N	E510	13-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	28 days	29 days	*	EHT
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_MP1_SE-1_2022-09-12_N	E510	12-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	28 days	30 days	*	EHT
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_MP1_SE-2_2022-09-12_N	E510	12-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	28 days	30 days	*	EHT
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_MP1_SE-3_2022-09-12_N	E510	12-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	28 days	30 days	*	EHT
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_LILC3_SE-1_2022-09-12_N	E510	12-Sep-2022	14-Oct-2022	----	----		14-Oct-2022	28 days	32 days	*	EHT
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_LILC3_SE-2_2022-09-12_N	E510	12-Sep-2022	14-Oct-2022	----	----		14-Oct-2022	28 days	32 days	*	EHT



Matrix: Soil/Solid

Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_LILC3_SE-3_2022-09-12_N	E510	12-Sep-2022	14-Oct-2022	----	----		14-Oct-2022	28 days	32 days	*	EHT
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_LILC3_SE-4_2022-09-12_N	E510	12-Sep-2022	14-Oct-2022	----	----		14-Oct-2022	28 days	32 days	*	EHT
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_LILC3_SE-5_2022-09-12_N	E510	12-Sep-2022	14-Oct-2022	----	----		14-Oct-2022	28 days	32 days	*	EHT
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_ERCKMD_SE-1_2022-09-20_N	E440	20-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	22 days	✓	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_ERCKMD_SE-2_2022-09-20_N	E440	20-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	22 days	✓	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_ERCKMD_SE-3_2022-09-20_N	E440	20-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	22 days	✓	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_ERCKMD_SE-4_2022-09-20_N	E440	20-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	22 days	✓	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_ERCKMD_SE-5_2022-09-20_N	E440	20-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	22 days	✓	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_MIDGA_SE-1_2022-09-18_N	E440	18-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	24 days	✓	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_MIDGA_SE-2_2022-09-18_N	E440	18-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	24 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_MIDGA_SE-3_2022-09-18_N	E440	18-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	24 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_FOUCL_SE-1_2022-09-16_N	E440	16-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	26 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_FOUCL_SE-2_2022-09-16_N	E440	16-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	26 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_FOUCL_SE-3_2022-09-16_N	E440	16-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	26 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_FOUCL_SE-4_2022-09-16_N	E440	16-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	26 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_FOUCL_SE-5_2022-09-16_N	E440	16-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	26 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_GRASSY_SE-1_2022-09-16_N	E440	16-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	26 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_GRASSY_SE-2_2022-09-16_N	E440	16-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	26 days	✔	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_GRASSY_SE-3_2022-09-16_N	E440	16-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	26 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_GRASSY_SE-4_2022-09-16_N	E440	16-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	26 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_GRASSY_SE-5_2022-09-16_N	E440	16-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	26 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_BOCK_SE-1_2022-09-15_N	E440	15-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	27 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_BOCK_SE-2_2022-09-15_N	E440	15-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	27 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_BOCK_SE-3_2022-09-15_N	E440	15-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	27 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_FOUNGD_SE-1_2022-09-15_N	E440	15-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	27 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_FOUNGD_SE-2_2022-09-15_N	E440	15-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	27 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_FOUNGD_SE-3_2022-09-15_N	E440	15-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	27 days	✔	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_GATE_SE-1_2022-09-15_N	E440	15-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	27 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_GATE_SE-2_2022-09-15_N	E440	15-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	27 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_GATE_SE-3_2022-09-15_N	E440	15-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	27 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_GATEDP_SE-1_2022-09-15_N	E440	15-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	27 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_ERCKUC_SE-1_2022-09-14_N	E440	14-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	28 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_ERCKUC_SE-2_2022-09-14_N	E440	14-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	28 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_ERCKUC_SE-3_2022-09-14_N	E440	14-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	28 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_FRDSCC1_SE-1_2022-09-14_N	E440	14-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	28 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_FRDSCC1_SE-2_2022-09-14_N	E440	14-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	28 days	✔	



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			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_FRDSCC1_SE-3_2022-09-14_N	E440	14-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	28 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_FRDSCC1_SE-4_2022-09-14_N	E440	14-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	28 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_FRDSCC1_SE-5_2022-09-14_N	E440	14-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	28 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_UFR1_SE-1_2022-09-14_N	E440	14-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	28 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_UFR1_SE-2_2022-09-14_N	E440	14-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	28 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_UFR1_SE-3_2022-09-14_N	E440	14-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	28 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_UFR1_SE-4_2022-09-14_N	E440	14-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	28 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_UFR1_SE-5_2022-09-14_N	E440	14-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	28 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_LCUT_SE-1_2022-09-15_N	E440	15-Sep-2022	14-Oct-2022	----	----		14-Oct-2022	180 days	29 days	✔	



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_LCUT_SE-2_2022-09-15_N	E440	15-Sep-2022	14-Oct-2022	----	----		14-Oct-2022	180 days	29 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_LCUT_SE-3_2022-09-15_N	E440	15-Sep-2022	14-Oct-2022	----	----		14-Oct-2022	180 days	29 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_MIDBO_SE-1_2022-09-13_N	E440	13-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	29 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_MIDBO_SE-2_2022-09-13_N	E440	13-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	29 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_MIDBO_SE-3_2022-09-13_N	E440	13-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	29 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_MP1_SE-1_2022-09-12_N	E440	12-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	30 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_MP1_SE-2_2022-09-12_N	E440	12-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	30 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_MP1_SE-3_2022-09-12_N	E440	12-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	30 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_LILC3_SE-1_2022-09-12_N	E440	12-Sep-2022	14-Oct-2022	----	----		14-Oct-2022	180 days	32 days	✔	



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Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_LILC3_SE-2_2022-09-12_N	E440	12-Sep-2022	14-Oct-2022	----	----		14-Oct-2022	180 days	32 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_LILC3_SE-3_2022-09-12_N	E440	12-Sep-2022	14-Oct-2022	----	----		14-Oct-2022	180 days	32 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_LILC3_SE-4_2022-09-12_N	E440	12-Sep-2022	14-Oct-2022	----	----		14-Oct-2022	180 days	32 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_LILC3_SE-5_2022-09-12_N	E440	12-Sep-2022	14-Oct-2022	----	----		14-Oct-2022	180 days	32 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_BOCK_SE-1_2022-09-15_N	E351	15-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_BOCK_SE-2_2022-09-15_N	E351	15-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_BOCK_SE-3_2022-09-15_N	E351	15-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKMD_SE-1_2022-09-20_N	E351	20-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKMD_SE-2_2022-09-20_N	E351	20-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	0 days	✔	



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKMD_SE-3_2022-09-20_N	E351	20-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKMD_SE-4_2022-09-20_N	E351	20-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKMD_SE-5_2022-09-20_N	E351	20-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKUC_SE-1_2022-09-14_N	E351	14-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKUC_SE-2_2022-09-14_N	E351	14-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKUC_SE-3_2022-09-14_N	E351	14-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_FOUCL_SE-1_2022-09-16_N	E351	16-Sep-2022	15-Oct-2022	----	----		15-Oct-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_FOUCL_SE-2_2022-09-16_N	E351	16-Sep-2022	15-Oct-2022	----	----		15-Oct-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_FOUCL_SE-3_2022-09-16_N	E351	16-Sep-2022	15-Oct-2022	----	----		15-Oct-2022	180 days	0 days	✔	



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			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_FOUCL_SE-4_2022-09-16_N	E351	16-Sep-2022	15-Oct-2022	----	----		15-Oct-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_FOUCL_SE-5_2022-09-16_N	E351	16-Sep-2022	15-Oct-2022	----	----		15-Oct-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_FOUNGD_SE-1_2022-09-15_N	E351	15-Sep-2022	15-Oct-2022	----	----		15-Oct-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_FOUNGD_SE-2_2022-09-15_N	E351	15-Sep-2022	15-Oct-2022	----	----		15-Oct-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_FOUNGD_SE-3_2022-09-15_N	E351	15-Sep-2022	15-Oct-2022	----	----		15-Oct-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_FRDSCC1_SE-1_2022-09-14_N	E351	14-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_FRDSCC1_SE-2_2022-09-14_N	E351	14-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	0 days	✔	
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LDPE bag RG_FRDSCC1_SE-3_2022-09-14_N	E351	14-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	0 days	✔	
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LDPE bag RG_FRDSCC1_SE-4_2022-09-14_N	E351	14-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	0 days	✔	



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			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_FRDSCC1_SE-5_2022-09-14_N	E351	14-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_GATE_SE-1_2022-09-15_N	E351	15-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	0 days	✔	
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LDPE bag RG_GATE_SE-2_2022-09-15_N	E351	15-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	0 days	✔	
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Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_GATEDP_SE-1_2022-09-15_N	E351	15-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_GRASSY_SE-1_2022-09-16_N	E351	16-Sep-2022	15-Oct-2022	----	----		15-Oct-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_GRASSY_SE-2_2022-09-16_N	E351	16-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	0 days	✔	
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				Rec	Actual			Rec	Actual		
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_GRASSY_SE-5_2022-09-16_N	E351	16-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_LCUT_SE-1_2022-09-15_N	E351	15-Sep-2022	15-Oct-2022	----	----		15-Oct-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_LCUT_SE-2_2022-09-15_N	E351	15-Sep-2022	15-Oct-2022	----	----		15-Oct-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_LCUT_SE-3_2022-09-15_N	E351	15-Sep-2022	15-Oct-2022	----	----		15-Oct-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_LILC3_SE-1_2022-09-12_N	E351	12-Sep-2022	15-Oct-2022	----	----		15-Oct-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_LILC3_SE-2_2022-09-12_N	E351	12-Sep-2022	15-Oct-2022	----	----		15-Oct-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_LILC3_SE-3_2022-09-12_N	E351	12-Sep-2022	15-Oct-2022	----	----		15-Oct-2022	180 days	0 days	✔	
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LDPE bag RG_LILC3_SE-4_2022-09-12_N	E351	12-Sep-2022	15-Oct-2022	----	----		15-Oct-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_LILC3_SE-5_2022-09-12_N	E351	12-Sep-2022	15-Oct-2022	----	----		15-Oct-2022	180 days	0 days	✔	



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				Rec	Actual			Rec	Actual		
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_MIDBO_SE-1_2022-09-13_N	E351	13-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_MIDBO_SE-2_2022-09-13_N	E351	13-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_MIDBO_SE-3_2022-09-13_N	E351	13-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_MIDGA_SE-1_2022-09-18_N	E351	18-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_MIDGA_SE-2_2022-09-18_N	E351	18-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	0 days	✔	
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LDPE bag RG_MIDGA_SE-3_2022-09-18_N	E351	18-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_MP1_SE-1_2022-09-12_N	E351	12-Sep-2022	15-Oct-2022	----	----		15-Oct-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_MP1_SE-2_2022-09-12_N	E351	12-Sep-2022	15-Oct-2022	----	----		15-Oct-2022	180 days	0 days	✔	
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Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_UFR1_SE-1_2022-09-14_N	E351	14-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_UFR1_SE-2_2022-09-14_N	E351	14-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_UFR1_SE-3_2022-09-14_N	E351	14-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_UFR1_SE-4_2022-09-14_N	E351	14-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_UFR1_SE-5_2022-09-14_N	E351	14-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve											
LDPE bag RG_BOCK_SE-1_2022-09-15_N	E354	15-Sep-2022	----	----	----		11-Oct-2022	----	----		
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve											
LDPE bag RG_BOCK_SE-2_2022-09-15_N	E354	15-Sep-2022	----	----	----		12-Oct-2022	----	----		
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve											
LDPE bag RG_BOCK_SE-3_2022-09-15_N	E354	15-Sep-2022	----	----	----		12-Oct-2022	----	----		
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve											
LDPE bag RG_ERCKMD_SE-1_2022-09-20_N	E354	20-Sep-2022	----	----	----		12-Oct-2022	----	----		



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKMD_SE-2_2022-09-20_N	E354	20-Sep-2022	----	----	----		12-Oct-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKMD_SE-3_2022-09-20_N	E354	20-Sep-2022	----	----	----		12-Oct-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKMD_SE-4_2022-09-20_N	E354	20-Sep-2022	----	----	----		12-Oct-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKMD_SE-5_2022-09-20_N	E354	20-Sep-2022	----	----	----		12-Oct-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKUC_SE-1_2022-09-14_N	E354	14-Sep-2022	----	----	----		11-Oct-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKUC_SE-2_2022-09-14_N	E354	14-Sep-2022	----	----	----		11-Oct-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKUC_SE-3_2022-09-14_N	E354	14-Sep-2022	----	----	----		11-Oct-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_FOUCL_SE-1_2022-09-16_N	E354	16-Sep-2022	----	----	----		11-Oct-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_FOUCL_SE-2_2022-09-16_N	E354	16-Sep-2022	----	----	----		11-Oct-2022	----	----	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_FOUCL_SE-3_2022-09-16_N	E354	16-Sep-2022	----	----	----		11-Oct-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_FOUCL_SE-4_2022-09-16_N	E354	16-Sep-2022	----	----	----		11-Oct-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_FOUCL_SE-5_2022-09-16_N	E354	16-Sep-2022	----	----	----		11-Oct-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_FOUNGD_SE-1_2022-09-15_N	E354	15-Sep-2022	----	----	----		11-Oct-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_FOUNGD_SE-2_2022-09-15_N	E354	15-Sep-2022	----	----	----		11-Oct-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_FOUNGD_SE-3_2022-09-15_N	E354	15-Sep-2022	----	----	----		11-Oct-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_FRDSCC1_SE-1_2022-09-14_N	E354	14-Sep-2022	----	----	----		12-Oct-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_FRDSCC1_SE-2_2022-09-14_N	E354	14-Sep-2022	----	----	----		12-Oct-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_FRDSCC1_SE-3_2022-09-14_N	E354	14-Sep-2022	----	----	----		12-Oct-2022	----	----	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_FRDSCC1_SE-4_2022-09-14_N	E354	14-Sep-2022	----	----	----		12-Oct-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_FRDSCC1_SE-5_2022-09-14_N	E354	14-Sep-2022	----	----	----		12-Oct-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_GATE_SE-1_2022-09-15_N	E354	15-Sep-2022	----	----	----		12-Oct-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_GATE_SE-2_2022-09-15_N	E354	15-Sep-2022	----	----	----		12-Oct-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_GATE_SE-3_2022-09-15_N	E354	15-Sep-2022	----	----	----		12-Oct-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_GATEDP_SE-1_2022-09-15_N	E354	15-Sep-2022	----	----	----		12-Oct-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_GRASSY_SE-1_2022-09-16_N	E354	16-Sep-2022	----	----	----		11-Oct-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_GRASSY_SE-2_2022-09-16_N	E354	16-Sep-2022	----	----	----		11-Oct-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_GRASSY_SE-3_2022-09-16_N	E354	16-Sep-2022	----	----	----		11-Oct-2022	----	----	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_GRASSY_SE-4_2022-09-16_N	E354	16-Sep-2022	----	----	----		11-Oct-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_GRASSY_SE-5_2022-09-16_N	E354	16-Sep-2022	----	----	----		11-Oct-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_LCUT_SE-1_2022-09-15_N	E354	15-Sep-2022	----	----	----		18-Oct-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_LCUT_SE-2_2022-09-15_N	E354	15-Sep-2022	----	----	----		18-Oct-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_LCUT_SE-3_2022-09-15_N	E354	15-Sep-2022	----	----	----		18-Oct-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_LILC3_SE-1_2022-09-12_N	E354	12-Sep-2022	----	----	----		18-Oct-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_LILC3_SE-2_2022-09-12_N	E354	12-Sep-2022	----	----	----		18-Oct-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_LILC3_SE-3_2022-09-12_N	E354	12-Sep-2022	----	----	----		18-Oct-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_LILC3_SE-4_2022-09-12_N	E354	12-Sep-2022	----	----	----		18-Oct-2022	----	----	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_LILC3_SE-5_2022-09-12_N	E354	12-Sep-2022	----	----	----		18-Oct-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_MIDBO_SE-1_2022-09-13_N	E354	13-Sep-2022	----	----	----		12-Oct-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_MIDBO_SE-2_2022-09-13_N	E354	13-Sep-2022	----	----	----		12-Oct-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_MIDBO_SE-3_2022-09-13_N	E354	13-Sep-2022	----	----	----		12-Oct-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_MIDGA_SE-1_2022-09-18_N	E354	18-Sep-2022	----	----	----		12-Oct-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_MIDGA_SE-2_2022-09-18_N	E354	18-Sep-2022	----	----	----		12-Oct-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_MIDGA_SE-3_2022-09-18_N	E354	18-Sep-2022	----	----	----		12-Oct-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_MP1_SE-1_2022-09-12_N	E354	12-Sep-2022	----	----	----		11-Oct-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_MP1_SE-2_2022-09-12_N	E354	12-Sep-2022	----	----	----		11-Oct-2022	----	----	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_MP1_SE-3_2022-09-12_N	E354	12-Sep-2022	----	----	----		11-Oct-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_UFR1_SE-1_2022-09-14_N	E354	14-Sep-2022	----	----	----		12-Oct-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_UFR1_SE-2_2022-09-14_N	E354	14-Sep-2022	----	----	----		12-Oct-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_UFR1_SE-3_2022-09-14_N	E354	14-Sep-2022	----	----	----		12-Oct-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_UFR1_SE-4_2022-09-14_N	E354	14-Sep-2022	----	----	----		12-Oct-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_UFR1_SE-5_2022-09-14_N	E354	14-Sep-2022	----	----	----		12-Oct-2022	----	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_BOCK_SE-1_2022-09-15_N	E185A	15-Sep-2022	----	----	----		18-Oct-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_BOCK_SE-2_2022-09-15_N	E185A	15-Sep-2022	----	----	----		18-Oct-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_BOCK_SE-3_2022-09-15_N	E185A	15-Sep-2022	----	----	----		18-Oct-2022	365 days	----	



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Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKMD_SE-1_2022-09-20_N	E185A	20-Sep-2022	----	----	----		19-Oct-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKMD_SE-2_2022-09-20_N	E185A	20-Sep-2022	----	----	----		19-Oct-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKMD_SE-3_2022-09-20_N	E185A	20-Sep-2022	----	----	----		19-Oct-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKMD_SE-4_2022-09-20_N	E185A	20-Sep-2022	----	----	----		19-Oct-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKMD_SE-5_2022-09-20_N	E185A	20-Sep-2022	----	----	----		19-Oct-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKUC_SE-1_2022-09-14_N	E185A	14-Sep-2022	----	----	----		18-Oct-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKUC_SE-2_2022-09-14_N	E185A	14-Sep-2022	----	----	----		18-Oct-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKUC_SE-3_2022-09-14_N	E185A	14-Sep-2022	----	----	----		18-Oct-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_FOUCL_SE-1_2022-09-16_N	E185A	16-Sep-2022	----	----	----		18-Oct-2022	365 days	----	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_FOUCL_SE-2_2022-09-16_N	E185A	16-Sep-2022	----	----	----		18-Oct-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_FOUCL_SE-3_2022-09-16_N	E185A	16-Sep-2022	----	----	----		18-Oct-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_FOUCL_SE-4_2022-09-16_N	E185A	16-Sep-2022	----	----	----		18-Oct-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_FOUCL_SE-5_2022-09-16_N	E185A	16-Sep-2022	----	----	----		18-Oct-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_FOUNGD_SE-1_2022-09-15_N	E185A	15-Sep-2022	----	----	----		18-Oct-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_FOUNGD_SE-2_2022-09-15_N	E185A	15-Sep-2022	----	----	----		18-Oct-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_FOUNGD_SE-3_2022-09-15_N	E185A	15-Sep-2022	----	----	----		18-Oct-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_FRDSCC1_SE-1_2022-09-14_N	E185A	14-Sep-2022	----	----	----		18-Oct-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_FRDSCC1_SE-2_2022-09-14_N	E185A	14-Sep-2022	----	----	----		18-Oct-2022	365 days	----	



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Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_FRDSCC1_SE-3_2022-09-14_N	E185A	14-Sep-2022	----	----	----		18-Oct-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_FRDSCC1_SE-4_2022-09-14_N	E185A	14-Sep-2022	----	----	----		18-Oct-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_FRDSCC1_SE-5_2022-09-14_N	E185A	14-Sep-2022	----	----	----		18-Oct-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_GATE_SE-1_2022-09-15_N	E185A	15-Sep-2022	----	----	----		19-Oct-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_GATE_SE-2_2022-09-15_N	E185A	15-Sep-2022	----	----	----		19-Oct-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_GATE_SE-3_2022-09-15_N	E185A	15-Sep-2022	----	----	----		19-Oct-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_GATEDP_SE-1_2022-09-15_N	E185A	15-Sep-2022	----	----	----		19-Oct-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_GRASSY_SE-1_2022-09-16_N	E185A	16-Sep-2022	----	----	----		18-Oct-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_GRASSY_SE-2_2022-09-16_N	E185A	16-Sep-2022	----	----	----		18-Oct-2022	365 days	----	



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		
				Rec	Actual			Rec	Actual	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_GRASSY_SE-3_2022-09-16_N	E185A	16-Sep-2022	----	----	----		18-Oct-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_GRASSY_SE-4_2022-09-16_N	E185A	16-Sep-2022	----	----	----		18-Oct-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_GRASSY_SE-5_2022-09-16_N	E185A	16-Sep-2022	----	----	----		18-Oct-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_LCUT_SE-1_2022-09-15_N	E185A	15-Sep-2022	----	----	----		18-Oct-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_LCUT_SE-2_2022-09-15_N	E185A	15-Sep-2022	----	----	----		18-Oct-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_LCUT_SE-3_2022-09-15_N	E185A	15-Sep-2022	----	----	----		18-Oct-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_LILC3_SE-2_2022-09-12_N	E185A	12-Sep-2022	----	----	----		18-Oct-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_LILC3_SE-3_2022-09-12_N	E185A	12-Sep-2022	----	----	----		18-Oct-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_LILC3_SE-4_2022-09-12_N	E185A	12-Sep-2022	----	----	----		18-Oct-2022	365 days	----	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_LILC3_SE-5_2022-09-12_N	E185A	12-Sep-2022	----	----	----		18-Oct-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_MIDBO_SE-1_2022-09-13_N	E185A	13-Sep-2022	----	----	----		19-Oct-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_MIDBO_SE-2_2022-09-13_N	E185A	13-Sep-2022	----	----	----		19-Oct-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_MIDBO_SE-3_2022-09-13_N	E185A	13-Sep-2022	----	----	----		19-Oct-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_MIDGA_SE-1_2022-09-18_N	E185A	18-Sep-2022	----	----	----		19-Oct-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_MIDGA_SE-2_2022-09-18_N	E185A	18-Sep-2022	----	----	----		19-Oct-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_MIDGA_SE-3_2022-09-18_N	E185A	18-Sep-2022	----	----	----		19-Oct-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_MP1_SE-1_2022-09-12_N	E185A	12-Sep-2022	----	----	----		18-Oct-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_MP1_SE-2_2022-09-12_N	E185A	12-Sep-2022	----	----	----		18-Oct-2022	365 days	----	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_MP1_SE-3_2022-09-12_N	E185A	12-Sep-2022	----	----	----		18-Oct-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_UFR1_SE-1_2022-09-14_N	E185A	14-Sep-2022	----	----	----		18-Oct-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_UFR1_SE-2_2022-09-14_N	E185A	14-Sep-2022	----	----	----		18-Oct-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_UFR1_SE-3_2022-09-14_N	E185A	14-Sep-2022	----	----	----		18-Oct-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_UFR1_SE-4_2022-09-14_N	E185A	14-Sep-2022	----	----	----		18-Oct-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_UFR1_SE-5_2022-09-14_N	E185A	14-Sep-2022	----	----	----		18-Oct-2022	365 days	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_BOCK_SE-1_2022-09-15_N	E144	15-Sep-2022	----	----	----		06-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_BOCK_SE-2_2022-09-15_N	E144	15-Sep-2022	----	----	----		06-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_BOCK_SE-3_2022-09-15_N	E144	15-Sep-2022	----	----	----		06-Oct-2022	----	----	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKMD_SE-1_2022-09-20_N	E144	20-Sep-2022	----	----	----		12-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKMD_SE-2_2022-09-20_N	E144	20-Sep-2022	----	----	----		12-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKMD_SE-3_2022-09-20_N	E144	20-Sep-2022	----	----	----		12-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKMD_SE-4_2022-09-20_N	E144	20-Sep-2022	----	----	----		12-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKMD_SE-5_2022-09-20_N	E144	20-Sep-2022	----	----	----		12-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKUC_SE-1_2022-09-14_N	E144	14-Sep-2022	----	----	----		06-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKUC_SE-2_2022-09-14_N	E144	14-Sep-2022	----	----	----		06-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKUC_SE-3_2022-09-14_N	E144	14-Sep-2022	----	----	----		06-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_FOUCL_SE-1_2022-09-16_N	E144	16-Sep-2022	----	----	----		11-Oct-2022	----	----	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_FOUCL_SE-2_2022-09-16_N	E144	16-Sep-2022	----	----	----		11-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_FOUCL_SE-3_2022-09-16_N	E144	16-Sep-2022	----	----	----		11-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_FOUCL_SE-4_2022-09-16_N	E144	16-Sep-2022	----	----	----		11-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_FOUCL_SE-5_2022-09-16_N	E144	16-Sep-2022	----	----	----		11-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_FOUNGD_SE-1_2022-09-15_N	E144	15-Sep-2022	----	----	----		11-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_FOUNGD_SE-2_2022-09-15_N	E144	15-Sep-2022	----	----	----		11-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_FOUNGD_SE-3_2022-09-15_N	E144	15-Sep-2022	----	----	----		11-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_FRDSCC1_SE-1_2022-09-14_N	E144	14-Sep-2022	----	----	----		06-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_FRDSCC1_SE-2_2022-09-14_N	E144	14-Sep-2022	----	----	----		06-Oct-2022	----	----	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_FRDSCC1_SE-3_2022-09-14_N	E144	14-Sep-2022	----	----	----		06-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_FRDSCC1_SE-4_2022-09-14_N	E144	14-Sep-2022	----	----	----		06-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_FRDSCC1_SE-5_2022-09-14_N	E144	14-Sep-2022	----	----	----		06-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_GATE_SE-1_2022-09-15_N	E144	15-Sep-2022	----	----	----		11-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_GATE_SE-2_2022-09-15_N	E144	15-Sep-2022	----	----	----		11-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_GATE_SE-3_2022-09-15_N	E144	15-Sep-2022	----	----	----		12-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_GATEDP_SE-1_2022-09-15_N	E144	15-Sep-2022	----	----	----		12-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_GRASSY_SE-1_2022-09-16_N	E144	16-Sep-2022	----	----	----		11-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_GRASSY_SE-2_2022-09-16_N	E144	16-Sep-2022	----	----	----		06-Oct-2022	----	----	



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Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_GRASSY_SE-3_2022-09-16_N	E144	16-Sep-2022	----	----	----		06-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_GRASSY_SE-4_2022-09-16_N	E144	16-Sep-2022	----	----	----		06-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_GRASSY_SE-5_2022-09-16_N	E144	16-Sep-2022	----	----	----		06-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_LCUT_SE-1_2022-09-15_N	E144	15-Sep-2022	----	----	----		12-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_LCUT_SE-2_2022-09-15_N	E144	15-Sep-2022	----	----	----		12-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_LCUT_SE-3_2022-09-15_N	E144	15-Sep-2022	----	----	----		12-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_LILC3_SE-2_2022-09-12_N	E144	12-Sep-2022	----	----	----		12-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_LILC3_SE-3_2022-09-12_N	E144	12-Sep-2022	----	----	----		12-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_LILC3_SE-4_2022-09-12_N	E144	12-Sep-2022	----	----	----		12-Oct-2022	----	----	



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Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_LILC3_SE-5_2022-09-12_N	E144	12-Sep-2022	----	----	----		12-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_MIDBO_SE-1_2022-09-13_N	E144	13-Sep-2022	----	----	----		11-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_MIDBO_SE-2_2022-09-13_N	E144	13-Sep-2022	----	----	----		11-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_MIDBO_SE-3_2022-09-13_N	E144	13-Sep-2022	----	----	----		11-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_MIDGA_SE-1_2022-09-18_N	E144	18-Sep-2022	----	----	----		11-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_MIDGA_SE-2_2022-09-18_N	E144	18-Sep-2022	----	----	----		11-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_MIDGA_SE-3_2022-09-18_N	E144	18-Sep-2022	----	----	----		11-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_MP1_SE-1_2022-09-12_N	E144	12-Sep-2022	----	----	----		11-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_MP1_SE-2_2022-09-12_N	E144	12-Sep-2022	----	----	----		11-Oct-2022	----	----	



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Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_MP1_SE-3_2022-09-12_N	E144	12-Sep-2022	----	----	----		11-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_UFR1_SE-1_2022-09-14_N	E144	14-Sep-2022	----	----	----		06-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_UFR1_SE-2_2022-09-14_N	E144	14-Sep-2022	----	----	----		06-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_UFR1_SE-3_2022-09-14_N	E144	14-Sep-2022	----	----	----		06-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_UFR1_SE-4_2022-09-14_N	E144	14-Sep-2022	----	----	----		06-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_UFR1_SE-5_2022-09-14_N	E144	14-Sep-2022	----	----	----		06-Oct-2022	----	----	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag RG_ERCKMD_SE-1_2022-09-20_N	E108	20-Sep-2022	08-Oct-2022	----	----		08-Oct-2022	30 days	18 days	✔
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag RG_ERCKMD_SE-2_2022-09-20_N	E108	20-Sep-2022	08-Oct-2022	----	----		08-Oct-2022	30 days	18 days	✔
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag RG_MIDGA_SE-1_2022-09-18_N	E108	18-Sep-2022	08-Oct-2022	----	----		08-Oct-2022	30 days	20 days	✔



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Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_MIDGA_SE-2_2022-09-18_N	E108	18-Sep-2022	08-Oct-2022	----	----		08-Oct-2022	30 days	20 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_MIDGA_SE-3_2022-09-18_N	E108	18-Sep-2022	08-Oct-2022	----	----		08-Oct-2022	30 days	20 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKMD_SE-3_2022-09-20_N	E108	20-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	30 days	22 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKMD_SE-4_2022-09-20_N	E108	20-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	30 days	22 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKMD_SE-5_2022-09-20_N	E108	20-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	30 days	22 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_FOUCL_SE-1_2022-09-16_N	E108	16-Sep-2022	08-Oct-2022	----	----		08-Oct-2022	30 days	22 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_FOUCL_SE-2_2022-09-16_N	E108	16-Sep-2022	08-Oct-2022	----	----		08-Oct-2022	30 days	22 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_FOUCL_SE-3_2022-09-16_N	E108	16-Sep-2022	08-Oct-2022	----	----		08-Oct-2022	30 days	22 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_FOUCL_SE-4_2022-09-16_N	E108	16-Sep-2022	08-Oct-2022	----	----		08-Oct-2022	30 days	22 days	✔	



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_FOUCL_SE-5_2022-09-16_N	E108	16-Sep-2022	08-Oct-2022	----	----		08-Oct-2022	30 days	22 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_GRASSY_SE-1_2022-09-16_N	E108	16-Sep-2022	08-Oct-2022	----	----		08-Oct-2022	30 days	22 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_GRASSY_SE-2_2022-09-16_N	E108	16-Sep-2022	08-Oct-2022	----	----		08-Oct-2022	30 days	22 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_GRASSY_SE-3_2022-09-16_N	E108	16-Sep-2022	08-Oct-2022	----	----		08-Oct-2022	30 days	22 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_GRASSY_SE-4_2022-09-16_N	E108	16-Sep-2022	08-Oct-2022	----	----		08-Oct-2022	30 days	22 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_GRASSY_SE-5_2022-09-16_N	E108	16-Sep-2022	08-Oct-2022	----	----		08-Oct-2022	30 days	22 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_BOCK_SE-1_2022-09-15_N	E108	15-Sep-2022	08-Oct-2022	----	----		08-Oct-2022	30 days	23 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_BOCK_SE-2_2022-09-15_N	E108	15-Sep-2022	08-Oct-2022	----	----		08-Oct-2022	30 days	23 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_BOCK_SE-3_2022-09-15_N	E108	15-Sep-2022	08-Oct-2022	----	----		08-Oct-2022	30 days	23 days	✔	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_FOUNGD_SE-1_2022-09-15_N	E108	15-Sep-2022	08-Oct-2022	----	----		08-Oct-2022	30 days	23 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_FOUNGD_SE-2_2022-09-15_N	E108	15-Sep-2022	08-Oct-2022	----	----		08-Oct-2022	30 days	23 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_FOUNGD_SE-3_2022-09-15_N	E108	15-Sep-2022	08-Oct-2022	----	----		08-Oct-2022	30 days	23 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_GATE_SE-1_2022-09-15_N	E108	15-Sep-2022	08-Oct-2022	----	----		08-Oct-2022	30 days	23 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_GATE_SE-2_2022-09-15_N	E108	15-Sep-2022	08-Oct-2022	----	----		08-Oct-2022	30 days	23 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_GATE_SE-3_2022-09-15_N	E108	15-Sep-2022	08-Oct-2022	----	----		08-Oct-2022	30 days	23 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKUC_SE-1_2022-09-14_N	E108	14-Sep-2022	08-Oct-2022	----	----		08-Oct-2022	30 days	24 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKUC_SE-2_2022-09-14_N	E108	14-Sep-2022	08-Oct-2022	----	----		08-Oct-2022	30 days	24 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKUC_SE-3_2022-09-14_N	E108	14-Sep-2022	08-Oct-2022	----	----		08-Oct-2022	30 days	24 days	✔	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_FRDSCC1_SE-1_2022-09-14_N	E108	14-Sep-2022	08-Oct-2022	----	----		08-Oct-2022	30 days	24 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_FRDSCC1_SE-2_2022-09-14_N	E108	14-Sep-2022	08-Oct-2022	----	----		08-Oct-2022	30 days	24 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_FRDSCC1_SE-3_2022-09-14_N	E108	14-Sep-2022	08-Oct-2022	----	----		08-Oct-2022	30 days	24 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_FRDSCC1_SE-4_2022-09-14_N	E108	14-Sep-2022	08-Oct-2022	----	----		08-Oct-2022	30 days	24 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_FRDSCC1_SE-5_2022-09-14_N	E108	14-Sep-2022	08-Oct-2022	----	----		08-Oct-2022	30 days	24 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_UFR1_SE-1_2022-09-14_N	E108	14-Sep-2022	08-Oct-2022	----	----		08-Oct-2022	30 days	24 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_UFR1_SE-2_2022-09-14_N	E108	14-Sep-2022	08-Oct-2022	----	----		08-Oct-2022	30 days	24 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_UFR1_SE-3_2022-09-14_N	E108	14-Sep-2022	08-Oct-2022	----	----		08-Oct-2022	30 days	24 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_UFR1_SE-4_2022-09-14_N	E108	14-Sep-2022	08-Oct-2022	----	----		08-Oct-2022	30 days	24 days	✔	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag RG_UFR1_SE-5_2022-09-14_N	E108	14-Sep-2022	08-Oct-2022	----	----		08-Oct-2022	30 days	24 days	✔
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag RG_MIDBO_SE-1_2022-09-13_N	E108	13-Sep-2022	08-Oct-2022	----	----		08-Oct-2022	30 days	25 days	✔
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag RG_MIDBO_SE-2_2022-09-13_N	E108	13-Sep-2022	08-Oct-2022	----	----		08-Oct-2022	30 days	25 days	✔
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag RG_MIDBO_SE-3_2022-09-13_N	E108	13-Sep-2022	08-Oct-2022	----	----		08-Oct-2022	30 days	25 days	✔
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag RG_MP1_SE-1_2022-09-12_N	E108	12-Sep-2022	08-Oct-2022	----	----		08-Oct-2022	30 days	26 days	✔
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag RG_MP1_SE-2_2022-09-12_N	E108	12-Sep-2022	08-Oct-2022	----	----		08-Oct-2022	30 days	26 days	✔
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag RG_MP1_SE-3_2022-09-12_N	E108	12-Sep-2022	08-Oct-2022	----	----		08-Oct-2022	30 days	26 days	✔
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag RG_GATEDP_SE-1_2022-09-15_N	E108	15-Sep-2022	12-Oct-2022	----	----		12-Oct-2022	30 days	27 days	✔

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Soil/Solid**

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
Analytical Methods							
Laboratory Duplicates (DUP)							
Mercury in Soil/Solid by CVAAS	E510	690325	4	68	5.8	5.0	✔
Metals in Soil/Solid by CRC ICPMS	E440	690324	4	78	5.1	5.0	✔
Moisture Content by Gravimetry	E144	683451	3	60	5.0	5.0	✔
pH by Meter (1:2 Soil:Water Extraction)	E108	682985	4	63	6.3	5.0	✔
Total Carbon by Combustion	E351	681654	3	55	5.4	5.0	✔
Total Inorganic Carbon by Acetic Acid pH Standard Curve	E354	689838	4	71	5.6	5.0	✔
Laboratory Control Samples (LCS)							
Mercury in Soil/Solid by CVAAS	E510	690325	8	68	11.7	10.0	✔
Metals in Soil/Solid by CRC ICPMS	E440	690324	8	78	10.2	10.0	✔
Moisture Content by Gravimetry	E144	683451	3	60	5.0	5.0	✔
pH by Meter (1:2 Soil:Water Extraction)	E108	682985	8	63	12.7	10.0	✔
Total Carbon by Combustion	E351	681654	6	55	10.9	10.0	✔
Total Inorganic Carbon by Acetic Acid pH Standard Curve	E354	689838	8	71	11.2	10.0	✔
Method Blanks (MB)							
Mercury in Soil/Solid by CVAAS	E510	690325	4	68	5.8	5.0	✔
Metals in Soil/Solid by CRC ICPMS	E440	690324	4	78	5.1	5.0	✔
Moisture Content by Gravimetry	E144	683451	3	60	5.0	5.0	✔
Total Carbon by Combustion	E351	681654	3	55	5.4	5.0	✔
Total Inorganic Carbon by Acetic Acid pH Standard Curve	E354	689838	4	71	5.6	5.0	✔



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
pH by Meter (1:2 Soil:Water Extraction)	E108 Saskatoon - Environmental	Soil/Solid	BC Lab Manual	pH is determined by potentiometric measurement with a pH electrode at ambient laboratory temperature (normally $20 \pm 5^\circ\text{C}$), and is carried out in accordance with procedures described in the BC Lab Manual (prescriptive method). The procedure involves mixing the dried (at $<60^\circ\text{C}$) and sieved (10mesh/2mm) sample with ultra pure water at a 1:2 ratio of sediment to water. The pH is then measured by a standard pH probe.
Moisture Content by Gravimetry	E144 Saskatoon - Environmental	Soil/Solid	CCME PHC in Soil - Tier 1	Moisture is measured gravimetrically by drying the sample at 105°C . Moisture content is calculated as the weight loss (due to water) divided by the wet weight of the sample, expressed as a percentage.
Grain Size Report (Attachment) Pipet/Sieve Method	E185A Saskatoon - Environmental	Soil/Solid	SSIR-51 Method 3.2.1	A grain size curve is a graphical representation of the particle sizing of a sample representing the percent passing against the effective particle size.
Total Carbon by Combustion	E351 Saskatoon - Environmental	Soil/Solid	CSSS (2008) 21.2 (mod)	Total Carbon is determined by the high temperature combustion method with measurement by an infrared detector.
Total Inorganic Carbon by Acetic Acid pH Standard Curve	E354 Saskatoon - Environmental	Soil/Solid	CSSS (2008) 20.2	Total Inorganic Carbon is determined by acetic acid pH standard curve, where a known quantity of acetic acid is consumed by reaction with carbonates in the soil. The pH of the resulting solution is measured and compared against a standard curve relating pH to weight of carbonate.
Metals in Soil/Solid by CRC ICPMS	E440 Saskatoon - Environmental	Soil/Solid	EPA 6020B (mod)	This method is intended to liberate metals that may be environmentally available. Samples are dried, then sieved through a 2 mm sieve, and digested with HNO_3 and HCl . Dependent on sample matrix, some metals may be only partially recovered, including Al, Ba, Be, Cr, Sr, Ti, Tl, V, W, and Zr. Silicate minerals are not solubilized. Volatile forms of sulfur (including sulfide) may not be captured, as they may be lost during sampling, storage, or digestion. This method does not adequately recover elemental sulfur, and is unsuitable for assessment of elemental sulfur standards or guidelines. Analysis is by Collision/Reaction Cell ICPMS.
Mercury in Soil/Solid by CVAAS	E510 Saskatoon - Environmental	Soil/Solid	EPA 200.2/1631 Appendix (mod)	Samples are dried, then sieved through a 2 mm sieve, and digested with HNO_3 and HCl , followed by CVAAS analysis.
Particle Size Analysis (Pipette) - Wentworth Classification	EC184A Saskatoon - Environmental	Soil/Solid	Modified Wentworth	The particle size determination is performed by various methods to generate a Grain Size curve. The data from the curve is then used to produce particle size ranges based on the Modified Wentworth Classification system.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Total Organic Carbon (Calculated) in soil	EC356 Saskatoon - Environmental	Soil/Solid	CSSS (2008) 21.2	Total Organic Carbon (TOC) is calculated by the difference between total carbon (TC) and total inorganic carbon (TIC).

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Leach 1:2 Soil:Water for pH/EC	EP108 Saskatoon - Environmental	Soil/Solid	BC WLAP METHOD: PH, ELECTROMETRIC, SOIL	The procedure involves mixing the dried (at <60°C) and sieved (No. 10 / 2mm) sample with deionized/distilled water at a 1:2 ratio of sediment to water.
Digestion for Metals and Mercury	EP440 Saskatoon - Environmental	Soil/Solid	EPA 200.2 (mod)	Samples are dried, then sieved through a 2 mm sieve, and digested with HNO ₃ and HCl. This method is intended to liberate metals that may be environmentally available.
Dry and Grind in Soil/Solid <60°C	EPP442 Saskatoon - Environmental	Soil/Solid	Soil Sampling and Methods of Analysis, Carter 2008	After removal of any coarse fragments and reservation of wet subsamples a portion of homogenized sample is set in a tray and dried at less than 60°C until dry. The sample is then particle size reduced with an automated crusher or mortar and pestle, typically to <2 mm. Further size reduction may be needed for particular tests.

QUALITY CONTROL REPORT

<p>Work Order : CG2213498</p> <p>Client : Teck Coal Limited</p> <p>Contact : Mike Pope</p> <p>Address : RR#1 HWY#3 Sparwood BC Canada V0B 2G1</p> <p>Telephone :</p> <p>Project : Regional Effects Program</p> <p>PO : VPO00847030</p> <p>C-O-C number : REP_RAEMP-LAEMP_PandC_2022-09_</p> <p>Sampler : JENNIFER INGS</p> <p>Site : ---</p> <p>Quote number : Teck Coal Master Quote</p> <p>No. of samples received : 55</p> <p>No. of samples analysed : 55</p>	<p>Page : 1 of 25</p> <p>Laboratory : Calgary - Environmental</p> <p>Account Manager : Lyudmyla Shvets</p> <p>Address : 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5</p> <p>Telephone : +1 403 407 1800</p> <p>Date Samples Received : 23-Sep-2022 09:30</p> <p>Date Analysis Commenced : 05-Oct-2022</p> <p>Issue Date : 19-Oct-2022 17:43</p>
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This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Reference Material (RM) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Colby Bingham	Quality Systems Coordinator	Saskatoon Inorganics, Saskatoon, Saskatchewan
Colby Bingham	Quality Systems Coordinator	Saskatoon Metals, Saskatoon, Saskatchewan
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Page : 2 of 25
Work Order : CG2213498
Client : Teck Coal Limited
Project : Regional Effects Program



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Soil/Solid

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 682985)											
CG2213498-019	RG_FOUCL_SE-5_2022-09-16_N	pH (1:2 soil:water)	----	E108	0.10	pH units	8.12	8.13	0.123%	10%	----
Physical Tests (QC Lot: 682987)											
CG2213498-025	RG_ERCKUC_SE-1_2022-09-14_N	pH (1:2 soil:water)	----	E108	0.10	pH units	7.91	7.90	0.126%	10%	----
Physical Tests (QC Lot: 683451)											
CG2213498-021	RG_GRASSY_SE-2_2022-09-16_N	moisture	----	E144	0.25	%	40.9	41.8	2.24%	20%	----
Physical Tests (QC Lot: 684160)											
CG2213420-019	Anonymous	pH (1:2 soil:water)	----	E108	0.10	pH units	8.00	8.00	0.00%	10%	----
Physical Tests (QC Lot: 690478)											
CG2213498-052	RG_ERCKMD_SE-3_2022-09-20_N	pH (1:2 soil:water)	----	E108	0.10	pH units	7.82	7.80	0.256%	10%	----
Physical Tests (QC Lot: 690526)											
CG2213498-009	RG_MP1_SE-1_2022-09-12_N	moisture	----	E144	0.25	%	41.4	39.9	3.88%	20%	----
Physical Tests (QC Lot: 691651)											
RG2201450-001	Anonymous	moisture	----	E144	0.25	%	23.7	23.6	0.0423%	20%	----
Organic / Inorganic Carbon (QC Lot: 681654)											
CG2213498-002	RG_LILC3_SE-2_2022-09-12_N	carbon, total [TC]	----	E351	0.050	%	16.6	16.7	0.932%	20%	----
Organic / Inorganic Carbon (QC Lot: 681656)											
CG2213498-027	RG_ERCKUC_SE-3_2022-09-14_N	carbon, total [TC]	----	E351	0.050	%	22.3	23.6	5.56%	20%	----
Organic / Inorganic Carbon (QC Lot: 688021)											
CG2213498-047	RG_GATE_SE-1_2022-09-15_N	carbon, total [TC]	----	E351	0.050	%	23.7	24.3	2.54%	20%	----
Organic / Inorganic Carbon (QC Lot: 689838)											
CG2213498-009	RG_MP1_SE-1_2022-09-12_N	carbon, inorganic [IC]	----	E354	0.050	%	1.64	1.64	0.159%	20%	----
Organic / Inorganic Carbon (QC Lot: 691429)											
CG2213498-029	RG_BOCK_SE-2_2022-09-15_N	carbon, inorganic [IC]	----	E354	0.050	%	6.99	7.18	2.58%	20%	----
Organic / Inorganic Carbon (QC Lot: 691923)											
CG2213498-049	RG_GATE_SE-3_2022-09-15_N	carbon, inorganic [IC]	----	E354	0.050	%	4.55	4.67	2.62%	20%	----



Sub-Matrix: Soil/Solid					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Organic / Inorganic Carbon (QC Lot: 701038)											
CG2213498-002	RG_LILC3_SE-2_2022-09-12_N	carbon, inorganic [IC]	----	E354	0.050	%	3.60	3.61	0.507%	20%	----
Metals (QC Lot: 690324)											
CG2213498-009	RG_MP1_SE-1_2022-09-12_N	aluminum	7429-90-5	E440	50	mg/kg	4820	4350	10.2%	40%	----
		antimony	7440-36-0	E440	0.10	mg/kg	0.74	0.65	12.2%	30%	----
		arsenic	7440-38-2	E440	0.10	mg/kg	5.27	4.75	10.5%	30%	----
		barium	7440-39-3	E440	0.50	mg/kg	184	163	12.5%	40%	----
		beryllium	7440-41-7	E440	0.10	mg/kg	0.53	0.51	0.02	Diff <2x LOR	----
		bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	0	Diff <2x LOR	----
		boron	7440-42-8	E440	5.0	mg/kg	<5.0	<5.0	0	Diff <2x LOR	----
		cadmium	7440-43-9	E440	0.020	mg/kg	1.38	1.39	0.269%	30%	----
		calcium	7440-70-2	E440	50	mg/kg	45100	49000	8.32%	30%	----
		chromium	7440-47-3	E440	0.50	mg/kg	16.6	15.9	4.28%	30%	----
		cobalt	7440-48-4	E440	0.10	mg/kg	6.23	5.97	4.26%	30%	----
		copper	7440-50-8	E440	0.50	mg/kg	14.0	13.9	1.04%	30%	----
		iron	7439-89-6	E440	50	mg/kg	13400	12600	6.50%	30%	----
		lead	7439-92-1	E440	0.50	mg/kg	7.88	8.14	3.14%	40%	----
		lithium	7439-93-2	E440	2.0	mg/kg	6.9	6.7	0.2	Diff <2x LOR	----
		magnesium	7439-95-4	E440	20	mg/kg	10400	10100	2.60%	30%	----
		manganese	7439-96-5	E440	1.0	mg/kg	395	398	0.648%	30%	----
		molybdenum	7439-98-7	E440	0.10	mg/kg	2.59	2.52	3.01%	40%	----
		nickel	7440-02-0	E440	0.50	mg/kg	42.2	41.3	2.09%	30%	----
		phosphorus	7723-14-0	E440	50	mg/kg	1190	1210	1.82%	30%	----
		potassium	7440-09-7	E440	100	mg/kg	1220	1090	11.1%	40%	----
selenium	7782-49-2	E440	0.20	mg/kg	2.34	2.46	5.02%	30%	----		
silver	7440-22-4	E440	0.10	mg/kg	0.16	0.16	0.00002	Diff <2x LOR	----		
sodium	7440-23-5	E440	50	mg/kg	66	63	3	Diff <2x LOR	----		
strontium	7440-24-6	E440	0.50	mg/kg	69.5	63.6	8.84%	40%	----		
sulfur	7704-34-9	E440	1000	mg/kg	<1000	<1000	0	Diff <2x LOR	----		
thallium	7440-28-0	E440	0.050	mg/kg	0.158	0.148	0.010	Diff <2x LOR	----		
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	0	Diff <2x LOR	----		
titanium	7440-32-6	E440	1.0	mg/kg	20.5	18.2	11.6%	40%	----		
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	0	Diff <2x LOR	----		
uranium	7440-61-1	E440	0.050	mg/kg	0.951	0.974	2.46%	30%	----		



Sub-Matrix: Soil/Solid					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Metals (QC Lot: 690324) - continued											
CG2213498-009	RG_MP1_SE-1_2022-09-1 2_N	vanadium	7440-62-2	E440	0.20	mg/kg	25.3	23.2	8.93%	30%	----
		zinc	7440-66-6	E440	2.0	mg/kg	130	126	2.56%	30%	----
		zirconium	7440-67-7	E440	1.0	mg/kg	<1.0	1.2	0.2	Diff <2x LOR	----
Metals (QC Lot: 690325)											
CG2213498-009	RG_MP1_SE-1_2022-09-1 2_N	mercury	7439-97-6	E510	0.0050	mg/kg	0.0413	0.0377	9.15%	40%	----
Metals (QC Lot: 690330)											
CG2213498-029	RG_BOCK_SE-2_2022-09-15_N	aluminum	7429-90-5	E440	73	mg/kg	1940	1690	13.9%	40%	----
		antimony	7440-36-0	E440	0.14	mg/kg	0.50	0.44	0.05	Diff <2x LOR	----
		arsenic	7440-38-2	E440	0.14	mg/kg	2.07	1.94	6.46%	30%	----
		barium	7440-39-3	E440	3.64	mg/kg	2550	2640	3.70%	40%	----
		beryllium	7440-41-7	E440	0.14	mg/kg	0.15	0.16	0.003	Diff <2x LOR	----
		bismuth	7440-69-9	E440	0.29	mg/kg	<0.30	<0.29	0.29	Diff <2x LOR	----
		boron	7440-42-8	E440	7.3	mg/kg	8.0	<7.3	8.0	Diff <2x LOR	----
		cadmium	7440-43-9	E440	0.029	mg/kg	12.0	12.5	3.84%	30%	----
		calcium	7440-70-2	E440	73	mg/kg	275000	287000	4.39%	30%	----
		chromium	7440-47-3	E440	0.73	mg/kg	4.38	4.17	0.22	Diff <2x LOR	----
		cobalt	7440-48-4	E440	0.14	mg/kg	6.94	6.88	0.899%	30%	----
		copper	7440-50-8	E440	0.73	mg/kg	9.11	9.27	1.81%	30%	----
		iron	7439-89-6	E440	73	mg/kg	3540	3450	2.65%	30%	----
		lead	7439-92-1	E440	0.73	mg/kg	2.58	2.66	0.08	Diff <2x LOR	----
		lithium	7439-93-2	E440	2.9	mg/kg	3.8	4.1	0.3	Diff <2x LOR	----
		magnesium	7439-95-4	E440	29	mg/kg	5620	5950	5.78%	30%	----
		manganese	7439-96-5	E440	1.4	mg/kg	374	369	1.28%	30%	----
		molybdenum	7439-98-7	E440	0.14	mg/kg	1.24	1.35	8.50%	40%	----
		nickel	7440-02-0	E440	0.73	mg/kg	103	106	2.66%	30%	----
		phosphorus	7723-14-0	E440	73	mg/kg	448	469	21	Diff <2x LOR	----
		potassium	7440-09-7	E440	140	mg/kg	740	640	90	Diff <2x LOR	----
selenium	7782-49-2	E440	0.29	mg/kg	5.21	5.43	4.09%	30%	----		
silver	7440-22-4	E440	0.14	mg/kg	<0.15	<0.14	0.14	Diff <2x LOR	----		
sodium	7440-23-5	E440	73	mg/kg	152	155	3	Diff <2x LOR	----		
strontium	7440-24-6	E440	0.73	mg/kg	430	438	1.88%	40%	----		
sulfur	7704-34-9	E440	1400	mg/kg	7100	7300	200	Diff <2x LOR	----		
thallium	7440-28-0	E440	0.073	mg/kg	0.201	0.191	0.010	Diff <2x LOR	----		



Sub-Matrix: Soil/Solid					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Metals (QC Lot: 690330) - continued											
CG2213498-029	RG_BOCK_SE-2_2022-09-15_N	tin	7440-31-5	E440	2.9	mg/kg	<3.0	<2.9	2.9	Diff <2x LOR	----
		titanium	7440-32-6	E440	1.4	mg/kg	26.6	30.4	13.1%	40%	----
		tungsten	7440-33-7	E440	0.73	mg/kg	<0.74	<0.73	0	Diff <2x LOR	----
		uranium	7440-61-1	E440	0.073	mg/kg	2.28	2.54	10.9%	30%	----
		vanadium	7440-62-2	E440	0.29	mg/kg	9.65	8.27	15.5%	30%	----
		zinc	7440-66-6	E440	2.9	mg/kg	703	728	3.57%	30%	----
		zirconium	7440-67-7	E440	1.4	mg/kg	<1.5	<1.4	1.4	Diff <2x LOR	----
Metals (QC Lot: 690331)											
CG2213498-029	RG_BOCK_SE-2_2022-09-15_N	mercury	7439-97-6	E510	0.0073	mg/kg	0.0232	0.0223	0.0009	Diff <2x LOR	----
Metals (QC Lot: 691345)											
CG2213420-017	Anonymous	mercury	7439-97-6	E510	0.0074	mg/kg	0.0305	0.0350	0.0044	Diff <2x LOR	----
Metals (QC Lot: 691346)											
CG2213420-017	Anonymous	aluminum	7429-90-5	E440	74	mg/kg	2870	3010	4.93%	40%	----
		antimony	7440-36-0	E440	0.15	mg/kg	0.74	0.77	0.03	Diff <2x LOR	----
		arsenic	7440-38-2	E440	0.15	mg/kg	2.96	3.02	1.94%	30%	----
		barium	7440-39-3	E440	3.68	mg/kg	3980	4740	17.4%	40%	----
		beryllium	7440-41-7	E440	0.15	mg/kg	0.23	0.28	0.05	Diff <2x LOR	----
		bismuth	7440-69-9	E440	0.29	mg/kg	<0.28	<0.29	0.010	Diff <2x LOR	----
		boron	7440-42-8	E440	7.4	mg/kg	7.8	7.9	0.2	Diff <2x LOR	----
		cadmium	7440-43-9	E440	0.029	mg/kg	7.50	7.78	3.58%	30%	----
		calcium	7440-70-2	E440	74	mg/kg	248000	257000	3.37%	30%	----
		chromium	7440-47-3	E440	0.74	mg/kg	6.22	6.68	7.22%	30%	----
		cobalt	7440-48-4	E440	0.15	mg/kg	5.62	5.89	4.61%	30%	----
		copper	7440-50-8	E440	0.74	mg/kg	13.4	13.8	2.92%	30%	----
		iron	7439-89-6	E440	74	mg/kg	5500	5820	5.56%	30%	----
		lead	7439-92-1	E440	0.74	mg/kg	6.19	6.51	5.08%	40%	----
		lithium	7439-93-2	E440	2.9	mg/kg	5.9	6.3	0.4	Diff <2x LOR	----
		magnesium	7439-95-4	E440	29	mg/kg	6710	6580	1.96%	30%	----
		manganese	7439-96-5	E440	1.5	mg/kg	183	189	3.12%	30%	----
		molybdenum	7439-98-7	E440	0.15	mg/kg	1.34	1.39	3.98%	40%	----
		nickel	7440-02-0	E440	0.74	mg/kg	116	124	6.27%	30%	----
		phosphorus	7723-14-0	E440	74	mg/kg	586	556	5.26%	30%	----
potassium	7440-09-7	E440	150	mg/kg	1000	1010	1.12%	40%	----		



Sub-Matrix: Soil/Solid					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Metals (QC Lot: 691346) - continued											
CG2213420-017	Anonymous	selenium	7782-49-2	E440	0.29	mg/kg	16.6	19.3	15.0%	30%	----
		silver	7440-22-4	E440	0.15	mg/kg	0.14	<0.15	0.14	Diff <2x LOR	----
		sodium	7440-23-5	E440	74	mg/kg	170	161	8	Diff <2x LOR	----
		strontium	7440-24-6	E440	0.74	mg/kg	513	555	7.86%	40%	----
		sulfur	7704-34-9	E440	1500	mg/kg	5500	6300	700	Diff <2x LOR	----
		thallium	7440-28-0	E440	0.074	mg/kg	0.231	0.256	0.025	Diff <2x LOR	----
		tin	7440-31-5	E440	2.9	mg/kg	<2.8	<2.9	0.10	Diff <2x LOR	----
		titanium	7440-32-6	E440	1.5	mg/kg	38.1	30.5	22.2%	40%	----
		tungsten	7440-33-7	E440	0.74	mg/kg	1.27	1.36	0.09	Diff <2x LOR	----
		uranium	7440-61-1	E440	0.074	mg/kg	3.12	3.49	11.3%	30%	----
		vanadium	7440-62-2	E440	0.29	mg/kg	14.1	15.0	6.41%	30%	----
		zinc	7440-66-6	E440	2.9	mg/kg	487	508	4.22%	30%	----
		zirconium	7440-67-7	E440	1.5	mg/kg	1.6	<1.5	1.6	Diff <2x LOR	----
Metals (QC Lot: 694670)											
CG2213498-001	RG_LILC3_SE-1_2022-09-12_N	mercury	7439-97-6	E510	0.0050	mg/kg	0.0394	0.0503	24.4%	40%	----
Metals (QC Lot: 694671)											
CG2213498-001	RG_LILC3_SE-1_2022-09-12_N	aluminum	7429-90-5	E440	50	mg/kg	2430	2560	5.22%	40%	----
		antimony	7440-36-0	E440	0.10	mg/kg	0.73	0.87	16.8%	30%	----
		arsenic	7440-38-2	E440	0.10	mg/kg	7.28	9.26	23.9%	30%	----
		barium	7440-39-3	E440	0.50	mg/kg	169	183	8.43%	40%	----
		beryllium	7440-41-7	E440	0.10	mg/kg	0.28	0.32	0.04	Diff <2x LOR	----
		bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	0	Diff <2x LOR	----
		boron	7440-42-8	E440	5.0	mg/kg	6.2	6.3	0.1	Diff <2x LOR	----
		cadmium	7440-43-9	E440	0.020	mg/kg	13.5	13.2	2.23%	30%	----
		calcium	7440-70-2	E440	50	mg/kg	124000	126000	1.55%	30%	----
		chromium	7440-47-3	E440	0.50	mg/kg	7.42	7.42	0.000398%	30%	----
		cobalt	7440-48-4	E440	0.10	mg/kg	24.1	22.6	6.40%	30%	----
		copper	7440-50-8	E440	0.50	mg/kg	22.6	22.3	1.37%	30%	----
		iron	7439-89-6	E440	50	mg/kg	10800	13400	22.1%	30%	----
		lead	7439-92-1	E440	0.50	mg/kg	13.9	15.6	11.7%	40%	----
		lithium	7439-93-2	E440	2.0	mg/kg	4.0	5.1	1.1	Diff <2x LOR	----
		magnesium	7439-95-4	E440	20	mg/kg	7940	8980	12.3%	30%	----
		manganese	7439-96-5	E440	1.0	mg/kg	1460	1430	2.16%	30%	----



Sub-Matrix: Soil/Solid					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Metals (QC Lot: 694671) - continued											
CG2213498-001	RG_LILC3_SE-1_2022-09-12_N	molybdenum	7439-98-7	E440	0.10	mg/kg	1.42	1.40	1.32%	40%	----
		nickel	7440-02-0	E440	0.50	mg/kg	127	115	10.3%	30%	----
		phosphorus	7723-14-0	E440	50	mg/kg	1150	1180	2.12%	30%	----
		potassium	7440-09-7	E440	100	mg/kg	970	950	1.98%	40%	----
		selenium	7782-49-2	E440	0.20	mg/kg	5.45	4.91	10.4%	30%	----
		silver	7440-22-4	E440	0.10	mg/kg	0.35	0.39	0.04	Diff <2x LOR	----
		sodium	7440-23-5	E440	50	mg/kg	243	225	18	Diff <2x LOR	----
		strontium	7440-24-6	E440	0.50	mg/kg	110	110	0.354%	40%	----
		sulfur	7704-34-9	E440	1000	mg/kg	2200	2400	200	Diff <2x LOR	----
		thallium	7440-28-0	E440	0.050	mg/kg	0.205	0.295	0.090	Diff <2x LOR	----
		tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	0	Diff <2x LOR	----
		titanium	7440-32-6	E440	1.0	mg/kg	12.2	12.2	0.310%	40%	----
		tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	0	Diff <2x LOR	----
		uranium	7440-61-1	E440	0.050	mg/kg	1.25	1.18	5.70%	30%	----
		vanadium	7440-62-2	E440	0.20	mg/kg	13.6	15.9	15.9%	30%	----
zinc	7440-66-6	E440	2.0	mg/kg	465	451	3.09%	30%	----		
zirconium	7440-67-7	E440	1.0	mg/kg	<1.0	<1.0	0	Diff <2x LOR	----		



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 683451)						
moisture	---	E144	0.25	%	<0.25	---
Physical Tests (QCLot: 690526)						
moisture	---	E144	0.25	%	<0.25	---
Physical Tests (QCLot: 691651)						
moisture	---	E144	0.25	%	<0.25	---
Organic / Inorganic Carbon (QCLot: 681654)						
carbon, total [TC]	---	E351	0.05	%	<0.050	---
Organic / Inorganic Carbon (QCLot: 681656)						
carbon, total [TC]	---	E351	0.05	%	<0.050	---
Organic / Inorganic Carbon (QCLot: 688021)						
carbon, total [TC]	---	E351	0.05	%	<0.050	---
Organic / Inorganic Carbon (QCLot: 689838)						
carbon, inorganic [IC]	---	E354	0.05	%	<0.050	---
Organic / Inorganic Carbon (QCLot: 691429)						
carbon, inorganic [IC]	---	E354	0.05	%	<0.050	---
Organic / Inorganic Carbon (QCLot: 691923)						
carbon, inorganic [IC]	---	E354	0.05	%	<0.050	---
Organic / Inorganic Carbon (QCLot: 701038)						
carbon, inorganic [IC]	---	E354	0.05	%	<0.050	---
Metals (QCLot: 690324)						
aluminum	7429-90-5	E440	50	mg/kg	<50	---
antimony	7440-36-0	E440	0.1	mg/kg	<0.10	---
arsenic	7440-38-2	E440	0.1	mg/kg	<0.10	---
barium	7440-39-3	E440	0.5	mg/kg	<0.50	---
beryllium	7440-41-7	E440	0.1	mg/kg	<0.10	---
bismuth	7440-69-9	E440	0.2	mg/kg	<0.20	---
boron	7440-42-8	E440	5	mg/kg	<5.0	---
cadmium	7440-43-9	E440	0.02	mg/kg	<0.020	---
calcium	7440-70-2	E440	50	mg/kg	<50	---
chromium	7440-47-3	E440	0.5	mg/kg	<0.50	---
cobalt	7440-48-4	E440	0.1	mg/kg	<0.10	---
copper	7440-50-8	E440	0.5	mg/kg	<0.50	---



Sub-Matrix: **Soil/Solid**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Metals (QCLot: 690324) - continued						
iron	7439-89-6	E440	50	mg/kg	<50	----
lead	7439-92-1	E440	0.5	mg/kg	<0.50	----
lithium	7439-93-2	E440	2	mg/kg	<2.0	----
magnesium	7439-95-4	E440	20	mg/kg	<20	----
manganese	7439-96-5	E440	1	mg/kg	<1.0	----
molybdenum	7439-98-7	E440	0.1	mg/kg	<0.10	----
nickel	7440-02-0	E440	0.5	mg/kg	<0.50	----
phosphorus	7723-14-0	E440	50	mg/kg	<50	----
potassium	7440-09-7	E440	100	mg/kg	<100	----
selenium	7782-49-2	E440	0.2	mg/kg	<0.20	----
silver	7440-22-4	E440	0.1	mg/kg	<0.10	----
sodium	7440-23-5	E440	50	mg/kg	<50	----
strontium	7440-24-6	E440	0.5	mg/kg	<0.50	----
sulfur	7704-34-9	E440	1000	mg/kg	<1000	----
thallium	7440-28-0	E440	0.05	mg/kg	<0.050	----
tin	7440-31-5	E440	2	mg/kg	<2.0	----
titanium	7440-32-6	E440	1	mg/kg	<1.0	----
tungsten	7440-33-7	E440	0.5	mg/kg	<0.50	----
uranium	7440-61-1	E440	0.05	mg/kg	<0.050	----
vanadium	7440-62-2	E440	0.2	mg/kg	<0.20	----
zinc	7440-66-6	E440	2	mg/kg	<2.0	----
zirconium	7440-67-7	E440	1	mg/kg	<1.0	----
Metals (QCLot: 690325)						
mercury	7439-97-6	E510	0.005	mg/kg	<0.0050	----
Metals (QCLot: 690330)						
aluminum	7429-90-5	E440	50	mg/kg	<50	----
antimony	7440-36-0	E440	0.1	mg/kg	<0.10	----
arsenic	7440-38-2	E440	0.1	mg/kg	<0.10	----
barium	7440-39-3	E440	0.5	mg/kg	<0.50	----
beryllium	7440-41-7	E440	0.1	mg/kg	<0.10	----
bismuth	7440-69-9	E440	0.2	mg/kg	<0.20	----
boron	7440-42-8	E440	5	mg/kg	<5.0	----
cadmium	7440-43-9	E440	0.02	mg/kg	<0.020	----
calcium	7440-70-2	E440	50	mg/kg	<50	----
chromium	7440-47-3	E440	0.5	mg/kg	<0.50	----



Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Metals (QCLot: 690330) - continued						
cobalt	7440-48-4	E440	0.1	mg/kg	<0.10	----
copper	7440-50-8	E440	0.5	mg/kg	<0.50	----
iron	7439-89-6	E440	50	mg/kg	<50	----
lead	7439-92-1	E440	0.5	mg/kg	<0.50	----
lithium	7439-93-2	E440	2	mg/kg	<2.0	----
magnesium	7439-95-4	E440	20	mg/kg	<20	----
manganese	7439-96-5	E440	1	mg/kg	<1.0	----
molybdenum	7439-98-7	E440	0.1	mg/kg	<0.10	----
nickel	7440-02-0	E440	0.5	mg/kg	<0.50	----
phosphorus	7723-14-0	E440	50	mg/kg	<50	----
potassium	7440-09-7	E440	100	mg/kg	<100	----
selenium	7782-49-2	E440	0.2	mg/kg	<0.20	----
silver	7440-22-4	E440	0.1	mg/kg	<0.10	----
sodium	7440-23-5	E440	50	mg/kg	<50	----
strontium	7440-24-6	E440	0.5	mg/kg	<0.50	----
sulfur	7704-34-9	E440	1000	mg/kg	<1000	----
thallium	7440-28-0	E440	0.05	mg/kg	<0.050	----
tin	7440-31-5	E440	2	mg/kg	<2.0	----
titanium	7440-32-6	E440	1	mg/kg	<1.0	----
tungsten	7440-33-7	E440	0.5	mg/kg	<0.50	----
uranium	7440-61-1	E440	0.05	mg/kg	<0.050	----
vanadium	7440-62-2	E440	0.2	mg/kg	<0.20	----
zinc	7440-66-6	E440	2	mg/kg	<2.0	----
zirconium	7440-67-7	E440	1	mg/kg	<1.0	----
Metals (QCLot: 690331)						
mercury	7439-97-6	E510	0.005	mg/kg	<0.0050	----
Metals (QCLot: 691345)						
mercury	7439-97-6	E510	0.005	mg/kg	<0.0050	----
Metals (QCLot: 691346)						
aluminum	7429-90-5	E440	50	mg/kg	<50	----
antimony	7440-36-0	E440	0.1	mg/kg	<0.10	----
arsenic	7440-38-2	E440	0.1	mg/kg	<0.10	----
barium	7440-39-3	E440	0.5	mg/kg	<0.50	----
beryllium	7440-41-7	E440	0.1	mg/kg	<0.10	----
bismuth	7440-69-9	E440	0.2	mg/kg	<0.20	----



Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Metals (QCLot: 691346) - continued						
boron	7440-42-8	E440	5	mg/kg	<5.0	----
cadmium	7440-43-9	E440	0.02	mg/kg	<0.020	----
calcium	7440-70-2	E440	50	mg/kg	<50	----
chromium	7440-47-3	E440	0.5	mg/kg	<0.50	----
cobalt	7440-48-4	E440	0.1	mg/kg	<0.10	----
copper	7440-50-8	E440	0.5	mg/kg	<0.50	----
iron	7439-89-6	E440	50	mg/kg	<50	----
lead	7439-92-1	E440	0.5	mg/kg	<0.50	----
lithium	7439-93-2	E440	2	mg/kg	<2.0	----
magnesium	7439-95-4	E440	20	mg/kg	<20	----
manganese	7439-96-5	E440	1	mg/kg	<1.0	----
molybdenum	7439-98-7	E440	0.1	mg/kg	<0.10	----
nickel	7440-02-0	E440	0.5	mg/kg	<0.50	----
phosphorus	7723-14-0	E440	50	mg/kg	<50	----
potassium	7440-09-7	E440	100	mg/kg	<100	----
selenium	7782-49-2	E440	0.2	mg/kg	<0.20	----
silver	7440-22-4	E440	0.1	mg/kg	<0.10	----
sodium	7440-23-5	E440	50	mg/kg	<50	----
strontium	7440-24-6	E440	0.5	mg/kg	<0.50	----
sulfur	7704-34-9	E440	1000	mg/kg	<1000	----
thallium	7440-28-0	E440	0.05	mg/kg	<0.050	----
tin	7440-31-5	E440	2	mg/kg	<2.0	----
titanium	7440-32-6	E440	1	mg/kg	<1.0	----
tungsten	7440-33-7	E440	0.5	mg/kg	<0.50	----
uranium	7440-61-1	E440	0.05	mg/kg	<0.050	----
vanadium	7440-62-2	E440	0.2	mg/kg	<0.20	----
zinc	7440-66-6	E440	2	mg/kg	<2.0	----
zirconium	7440-67-7	E440	1	mg/kg	<1.0	----
Metals (QCLot: 694670)						
mercury	7439-97-6	E510	0.005	mg/kg	<0.0050	----
Metals (QCLot: 694671)						
aluminum	7429-90-5	E440	50	mg/kg	<50	----
antimony	7440-36-0	E440	0.1	mg/kg	<0.10	----
arsenic	7440-38-2	E440	0.1	mg/kg	<0.10	----
barium	7440-39-3	E440	0.5	mg/kg	<0.50	----



Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Metals (QCLot: 694671) - continued						
beryllium	7440-41-7	E440	0.1	mg/kg	<0.10	----
bismuth	7440-69-9	E440	0.2	mg/kg	<0.20	----
boron	7440-42-8	E440	5	mg/kg	<5.0	----
cadmium	7440-43-9	E440	0.02	mg/kg	<0.020	----
calcium	7440-70-2	E440	50	mg/kg	<50	----
chromium	7440-47-3	E440	0.5	mg/kg	<0.50	----
cobalt	7440-48-4	E440	0.1	mg/kg	<0.10	----
copper	7440-50-8	E440	0.5	mg/kg	<0.50	----
iron	7439-89-6	E440	50	mg/kg	<50	----
lead	7439-92-1	E440	0.5	mg/kg	<0.50	----
lithium	7439-93-2	E440	2	mg/kg	<2.0	----
magnesium	7439-95-4	E440	20	mg/kg	<20	----
manganese	7439-96-5	E440	1	mg/kg	<1.0	----
molybdenum	7439-98-7	E440	0.1	mg/kg	<0.10	----
nickel	7440-02-0	E440	0.5	mg/kg	<0.50	----
phosphorus	7723-14-0	E440	50	mg/kg	<50	----
potassium	7440-09-7	E440	100	mg/kg	<100	----
selenium	7782-49-2	E440	0.2	mg/kg	<0.20	----
silver	7440-22-4	E440	0.1	mg/kg	<0.10	----
sodium	7440-23-5	E440	50	mg/kg	<50	----
strontium	7440-24-6	E440	0.5	mg/kg	<0.50	----
sulfur	7704-34-9	E440	1000	mg/kg	<1000	----
thallium	7440-28-0	E440	0.05	mg/kg	<0.050	----
tin	7440-31-5	E440	2	mg/kg	<2.0	----
titanium	7440-32-6	E440	1	mg/kg	<1.0	----
tungsten	7440-33-7	E440	0.5	mg/kg	<0.50	----
uranium	7440-61-1	E440	0.05	mg/kg	<0.050	----
vanadium	7440-62-2	E440	0.2	mg/kg	<0.20	----
zinc	7440-66-6	E440	2	mg/kg	<2.0	----
zirconium	7440-67-7	E440	1	mg/kg	<1.0	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Soil/Solid

					Laboratory Control Sample (LCS) Report				
Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Physical Tests (QCLot: 682985)									
pH (1:2 soil:water)	----	E108	----	pH units	7 pH units	101	97.0	103	----
Physical Tests (QCLot: 682987)									
pH (1:2 soil:water)	----	E108	----	pH units	7 pH units	101	97.0	103	----
Physical Tests (QCLot: 683451)									
moisture	----	E144	0.25	%	50 %	99.7	90.0	110	----
Physical Tests (QCLot: 684160)									
pH (1:2 soil:water)	----	E108	----	pH units	7 pH units	101	97.0	103	----
Physical Tests (QCLot: 690478)									
pH (1:2 soil:water)	----	E108	----	pH units	7 pH units	101	97.0	103	----
Physical Tests (QCLot: 690526)									
moisture	----	E144	0.25	%	50 %	99.3	90.0	110	----
Physical Tests (QCLot: 691651)									
moisture	----	E144	0.25	%	50 %	98.8	90.0	110	----
Organic / Inorganic Carbon (QCLot: 681654)									
carbon, total [TC]	----	E351	0.05	%	48 %	97.5	90.0	110	----
Organic / Inorganic Carbon (QCLot: 681656)									
carbon, total [TC]	----	E351	0.05	%	48 %	101	90.0	110	----
Organic / Inorganic Carbon (QCLot: 688021)									
carbon, total [TC]	----	E351	0.05	%	48 %	101	90.0	110	----
Organic / Inorganic Carbon (QCLot: 689838)									
carbon, inorganic [IC]	----	E354	0.05	%	0.5 %	93.6	90.0	110	----
Organic / Inorganic Carbon (QCLot: 691429)									
carbon, inorganic [IC]	----	E354	0.05	%	0.5 %	93.4	90.0	110	----
Organic / Inorganic Carbon (QCLot: 691923)									
carbon, inorganic [IC]	----	E354	0.05	%	0.5 %	93.8	90.0	110	----
Organic / Inorganic Carbon (QCLot: 701038)									
carbon, inorganic [IC]	----	E354	0.05	%	0.5 %	93.6	90.0	110	----
Metals (QCLot: 690324)									
aluminum	7429-90-5	E440	50	mg/kg	200 mg/kg	94.0	80.0	120	----
antimony	7440-36-0	E440	0.1	mg/kg	100 mg/kg	96.0	80.0	120	----



Sub-Matrix: Soil/Solid

Laboratory Control Sample (LCS) Report

Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Metals (QCLot: 690324) - continued									
arsenic	7440-38-2	E440	0.1	mg/kg	100 mg/kg	97.5	80.0	120	----
barium	7440-39-3	E440	0.5	mg/kg	25 mg/kg	99.0	80.0	120	----
beryllium	7440-41-7	E440	0.1	mg/kg	10 mg/kg	95.7	80.0	120	----
bismuth	7440-69-9	E440	0.2	mg/kg	100 mg/kg	98.5	80.0	120	----
boron	7440-42-8	E440	5	mg/kg	100 mg/kg	99.4	80.0	120	----
cadmium	7440-43-9	E440	0.02	mg/kg	10 mg/kg	96.0	80.0	120	----
calcium	7440-70-2	E440	50	mg/kg	5000 mg/kg	99.3	80.0	120	----
chromium	7440-47-3	E440	0.5	mg/kg	25 mg/kg	97.6	80.0	120	----
cobalt	7440-48-4	E440	0.1	mg/kg	25 mg/kg	96.8	80.0	120	----
copper	7440-50-8	E440	0.5	mg/kg	25 mg/kg	96.8	80.0	120	----
iron	7439-89-6	E440	50	mg/kg	100 mg/kg	99.6	80.0	120	----
lead	7439-92-1	E440	0.5	mg/kg	50 mg/kg	96.5	80.0	120	----
lithium	7439-93-2	E440	2	mg/kg	25 mg/kg	86.5	80.0	120	----
magnesium	7439-95-4	E440	20	mg/kg	5000 mg/kg	97.6	80.0	120	----
manganese	7439-96-5	E440	1	mg/kg	25 mg/kg	98.7	80.0	120	----
molybdenum	7439-98-7	E440	0.1	mg/kg	25 mg/kg	95.8	80.0	120	----
nickel	7440-02-0	E440	0.5	mg/kg	50 mg/kg	96.0	80.0	120	----
phosphorus	7723-14-0	E440	50	mg/kg	1000 mg/kg	109	80.0	120	----
potassium	7440-09-7	E440	100	mg/kg	5000 mg/kg	95.8	80.0	120	----
selenium	7782-49-2	E440	0.2	mg/kg	100 mg/kg	97.6	80.0	120	----
silver	7440-22-4	E440	0.1	mg/kg	10 mg/kg	88.8	80.0	120	----
sodium	7440-23-5	E440	50	mg/kg	5000 mg/kg	97.4	80.0	120	----
strontium	7440-24-6	E440	0.5	mg/kg	25 mg/kg	97.0	80.0	120	----
sulfur	7704-34-9	E440	1000	mg/kg	5000 mg/kg	103	80.0	120	----
thallium	7440-28-0	E440	0.05	mg/kg	100 mg/kg	96.6	80.0	120	----
tin	7440-31-5	E440	2	mg/kg	50 mg/kg	95.0	80.0	120	----
titanium	7440-32-6	E440	1	mg/kg	25 mg/kg	93.9	80.0	120	----
tungsten	7440-33-7	E440	0.5	mg/kg	10 mg/kg	94.2	80.0	120	----
uranium	7440-61-1	E440	0.05	mg/kg	0.5 mg/kg	96.2	80.0	120	----
vanadium	7440-62-2	E440	0.2	mg/kg	50 mg/kg	98.5	80.0	120	----
zinc	7440-66-6	E440	2	mg/kg	50 mg/kg	96.7	80.0	120	----
zirconium	7440-67-7	E440	1	mg/kg	10 mg/kg	94.6	80.0	120	----
Metals (QCLot: 690325)									
mercury	7439-97-6	E510	0.005	mg/kg	0.1 mg/kg	92.3	80.0	120	----
Metals (QCLot: 690330)									
aluminum	7429-90-5	E440	50	mg/kg	200 mg/kg	95.2	80.0	120	----



Sub-Matrix: Soil/Solid

Laboratory Control Sample (LCS) Report

Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Metals (QCLot: 690330) - continued									
antimony	7440-36-0	E440	0.1	mg/kg	100 mg/kg	103	80.0	120	----
arsenic	7440-38-2	E440	0.1	mg/kg	100 mg/kg	98.2	80.0	120	----
barium	7440-39-3	E440	0.5	mg/kg	25 mg/kg	95.8	80.0	120	----
beryllium	7440-41-7	E440	0.1	mg/kg	10 mg/kg	95.2	80.0	120	----
bismuth	7440-69-9	E440	0.2	mg/kg	100 mg/kg	96.9	80.0	120	----
boron	7440-42-8	E440	5	mg/kg	100 mg/kg	99.6	80.0	120	----
cadmium	7440-43-9	E440	0.02	mg/kg	10 mg/kg	96.1	80.0	120	----
calcium	7440-70-2	E440	50	mg/kg	5000 mg/kg	98.8	80.0	120	----
chromium	7440-47-3	E440	0.5	mg/kg	25 mg/kg	96.1	80.0	120	----
cobalt	7440-48-4	E440	0.1	mg/kg	25 mg/kg	95.4	80.0	120	----
copper	7440-50-8	E440	0.5	mg/kg	25 mg/kg	96.5	80.0	120	----
iron	7439-89-6	E440	50	mg/kg	100 mg/kg	99.2	80.0	120	----
lead	7439-92-1	E440	0.5	mg/kg	50 mg/kg	94.8	80.0	120	----
lithium	7439-93-2	E440	2	mg/kg	25 mg/kg	90.8	80.0	120	----
magnesium	7439-95-4	E440	20	mg/kg	5000 mg/kg	94.5	80.0	120	----
manganese	7439-96-5	E440	1	mg/kg	25 mg/kg	95.5	80.0	120	----
molybdenum	7439-98-7	E440	0.1	mg/kg	25 mg/kg	102	80.0	120	----
nickel	7440-02-0	E440	0.5	mg/kg	50 mg/kg	98.6	80.0	120	----
phosphorus	7723-14-0	E440	50	mg/kg	1000 mg/kg	104	80.0	120	----
potassium	7440-09-7	E440	100	mg/kg	5000 mg/kg	96.8	80.0	120	----
selenium	7782-49-2	E440	0.2	mg/kg	100 mg/kg	97.1	80.0	120	----
silver	7440-22-4	E440	0.1	mg/kg	10 mg/kg	92.1	80.0	120	----
sodium	7440-23-5	E440	50	mg/kg	5000 mg/kg	96.7	80.0	120	----
strontium	7440-24-6	E440	0.5	mg/kg	25 mg/kg	104	80.0	120	----
sulfur	7704-34-9	E440	1000	mg/kg	5000 mg/kg	100.0	80.0	120	----
thallium	7440-28-0	E440	0.05	mg/kg	100 mg/kg	96.5	80.0	120	----
tin	7440-31-5	E440	2	mg/kg	50 mg/kg	98.8	80.0	120	----
titanium	7440-32-6	E440	1	mg/kg	25 mg/kg	91.5	80.0	120	----
tungsten	7440-33-7	E440	0.5	mg/kg	10 mg/kg	91.6	80.0	120	----
uranium	7440-61-1	E440	0.05	mg/kg	0.5 mg/kg	90.9	80.0	120	----
vanadium	7440-62-2	E440	0.2	mg/kg	50 mg/kg	97.9	80.0	120	----
zinc	7440-66-6	E440	2	mg/kg	50 mg/kg	96.2	80.0	120	----
zirconium	7440-67-7	E440	1	mg/kg	10 mg/kg	98.3	80.0	120	----
Metals (QCLot: 690331)									
mercury	7439-97-6	E510	0.005	mg/kg	0.1 mg/kg	96.6	80.0	120	----
Metals (QCLot: 691345)									



Sub-Matrix: Soil/Solid

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Metals (QCLot: 691345) - continued									
mercury	7439-97-6	E510	0.005	mg/kg	0.1 mg/kg	95.6	80.0	120	----
Metals (QCLot: 691346)									
aluminum	7429-90-5	E440	50	mg/kg	200 mg/kg	94.0	80.0	120	----
antimony	7440-36-0	E440	0.1	mg/kg	100 mg/kg	96.6	80.0	120	----
arsenic	7440-38-2	E440	0.1	mg/kg	100 mg/kg	94.7	80.0	120	----
barium	7440-39-3	E440	0.5	mg/kg	25 mg/kg	97.7	80.0	120	----
beryllium	7440-41-7	E440	0.1	mg/kg	10 mg/kg	94.2	80.0	120	----
bismuth	7440-69-9	E440	0.2	mg/kg	100 mg/kg	95.1	80.0	120	----
boron	7440-42-8	E440	5	mg/kg	100 mg/kg	96.2	80.0	120	----
cadmium	7440-43-9	E440	0.02	mg/kg	10 mg/kg	95.7	80.0	120	----
calcium	7440-70-2	E440	50	mg/kg	5000 mg/kg	100	80.0	120	----
chromium	7440-47-3	E440	0.5	mg/kg	25 mg/kg	96.2	80.0	120	----
cobalt	7440-48-4	E440	0.1	mg/kg	25 mg/kg	94.1	80.0	120	----
copper	7440-50-8	E440	0.5	mg/kg	25 mg/kg	95.2	80.0	120	----
iron	7439-89-6	E440	50	mg/kg	100 mg/kg	97.6	80.0	120	----
lead	7439-92-1	E440	0.5	mg/kg	50 mg/kg	94.2	80.0	120	----
lithium	7439-93-2	E440	2	mg/kg	25 mg/kg	89.5	80.0	120	----
magnesium	7439-95-4	E440	20	mg/kg	5000 mg/kg	95.9	80.0	120	----
manganese	7439-96-5	E440	1	mg/kg	25 mg/kg	96.9	80.0	120	----
molybdenum	7439-98-7	E440	0.1	mg/kg	25 mg/kg	94.6	80.0	120	----
nickel	7440-02-0	E440	0.5	mg/kg	50 mg/kg	93.6	80.0	120	----
phosphorus	7723-14-0	E440	50	mg/kg	1000 mg/kg	100	80.0	120	----
potassium	7440-09-7	E440	100	mg/kg	5000 mg/kg	94.2	80.0	120	----
selenium	7782-49-2	E440	0.2	mg/kg	100 mg/kg	94.7	80.0	120	----
silver	7440-22-4	E440	0.1	mg/kg	10 mg/kg	86.5	80.0	120	----
sodium	7440-23-5	E440	50	mg/kg	5000 mg/kg	96.9	80.0	120	----
strontium	7440-24-6	E440	0.5	mg/kg	25 mg/kg	100	80.0	120	----
sulfur	7704-34-9	E440	1000	mg/kg	5000 mg/kg	97.0	80.0	120	----
thallium	7440-28-0	E440	0.05	mg/kg	100 mg/kg	95.0	80.0	120	----
tin	7440-31-5	E440	2	mg/kg	50 mg/kg	95.1	80.0	120	----
titanium	7440-32-6	E440	1	mg/kg	25 mg/kg	91.0	80.0	120	----
tungsten	7440-33-7	E440	0.5	mg/kg	10 mg/kg	92.0	80.0	120	----
uranium	7440-61-1	E440	0.05	mg/kg	0.5 mg/kg	92.6	80.0	120	----
vanadium	7440-62-2	E440	0.2	mg/kg	50 mg/kg	95.9	80.0	120	----
zinc	7440-66-6	E440	2	mg/kg	50 mg/kg	93.3	80.0	120	----
zirconium	7440-67-7	E440	1	mg/kg	10 mg/kg	93.9	80.0	120	----



Sub-Matrix: Soil/Solid

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Metals (QCLot: 694670)									
mercury	7439-97-6	E510	0.005	mg/kg	0.1 mg/kg	90.1	80.0	120	----
Metals (QCLot: 694671)									
aluminum	7429-90-5	E440	50	mg/kg	200 mg/kg	95.4	80.0	120	----
antimony	7440-36-0	E440	0.1	mg/kg	100 mg/kg	93.5	80.0	120	----
arsenic	7440-38-2	E440	0.1	mg/kg	100 mg/kg	93.0	80.0	120	----
barium	7440-39-3	E440	0.5	mg/kg	25 mg/kg	93.7	80.0	120	----
beryllium	7440-41-7	E440	0.1	mg/kg	10 mg/kg	89.8	80.0	120	----
bismuth	7440-69-9	E440	0.2	mg/kg	100 mg/kg	92.2	80.0	120	----
boron	7440-42-8	E440	5	mg/kg	100 mg/kg	90.4	80.0	120	----
cadmium	7440-43-9	E440	0.02	mg/kg	10 mg/kg	94.4	80.0	120	----
calcium	7440-70-2	E440	50	mg/kg	5000 mg/kg	88.4	80.0	120	----
chromium	7440-47-3	E440	0.5	mg/kg	25 mg/kg	94.4	80.0	120	----
cobalt	7440-48-4	E440	0.1	mg/kg	25 mg/kg	95.6	80.0	120	----
copper	7440-50-8	E440	0.5	mg/kg	25 mg/kg	95.6	80.0	120	----
iron	7439-89-6	E440	50	mg/kg	100 mg/kg	94.0	80.0	120	----
lead	7439-92-1	E440	0.5	mg/kg	50 mg/kg	98.0	80.0	120	----
lithium	7439-93-2	E440	2	mg/kg	25 mg/kg	87.9	80.0	120	----
magnesium	7439-95-4	E440	20	mg/kg	5000 mg/kg	95.4	80.0	120	----
manganese	7439-96-5	E440	1	mg/kg	25 mg/kg	93.1	80.0	120	----
molybdenum	7439-98-7	E440	0.1	mg/kg	25 mg/kg	90.0	80.0	120	----
nickel	7440-02-0	E440	0.5	mg/kg	50 mg/kg	95.1	80.0	120	----
phosphorus	7723-14-0	E440	50	mg/kg	1000 mg/kg	93.8	80.0	120	----
potassium	7440-09-7	E440	100	mg/kg	5000 mg/kg	96.8	80.0	120	----
selenium	7782-49-2	E440	0.2	mg/kg	100 mg/kg	94.1	80.0	120	----
silver	7440-22-4	E440	0.1	mg/kg	10 mg/kg	81.6	80.0	120	----
sodium	7440-23-5	E440	50	mg/kg	5000 mg/kg	91.5	80.0	120	----
strontium	7440-24-6	E440	0.5	mg/kg	25 mg/kg	90.6	80.0	120	----
sulfur	7704-34-9	E440	1000	mg/kg	5000 mg/kg	97.8	80.0	120	----
thallium	7440-28-0	E440	0.05	mg/kg	100 mg/kg	96.4	80.0	120	----
tin	7440-31-5	E440	2	mg/kg	50 mg/kg	91.0	80.0	120	----
titanium	7440-32-6	E440	1	mg/kg	25 mg/kg	94.4	80.0	120	----
tungsten	7440-33-7	E440	0.5	mg/kg	10 mg/kg	97.2	80.0	120	----
uranium	7440-61-1	E440	0.05	mg/kg	0.5 mg/kg	97.1	80.0	120	----
vanadium	7440-62-2	E440	0.2	mg/kg	50 mg/kg	96.2	80.0	120	----
zinc	7440-66-6	E440	2	mg/kg	50 mg/kg	98.6	80.0	120	----
zirconium	7440-67-7	E440	1	mg/kg	10 mg/kg	86.8	80.0	120	----



Reference Material (RM) Report

A Reference Material (RM) is a homogenous material with known and well-established analyte concentrations. RMs are processed in an identical manner to test samples, and are used to monitor and control the accuracy and precision of a test method for a typical sample matrix. RM results are expressed as percent recovery of the target analyte concentration. RM targets may be certified target concentrations provided by the RM supplier, or may be ALS long-term mean values (for empirical test methods).

Sub-Matrix:

Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Reference Material (RM) Report				
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%)		Qualifier
							Low	High	
Physical Tests (QCLot: 682985)									
	RM	pH (1:2 soil:water)	----	E108	8.13 pH units	101	96.0	104	----
Physical Tests (QCLot: 682987)									
	RM	pH (1:2 soil:water)	----	E108	8.13 pH units	101	96.0	104	----
Physical Tests (QCLot: 684160)									
	RM	pH (1:2 soil:water)	----	E108	8.13 pH units	100	96.0	104	----
Physical Tests (QCLot: 690478)									
	RM	pH (1:2 soil:water)	----	E108	8.13 pH units	100	96.0	104	----
Organic / Inorganic Carbon (QCLot: 681654)									
	RM	carbon, total [TC]	----	E351	1.4 %	98.8	80.0	120	----
Organic / Inorganic Carbon (QCLot: 681656)									
	RM	carbon, total [TC]	----	E351	1.4 %	99.7	80.0	120	----
Organic / Inorganic Carbon (QCLot: 688021)									
	RM	carbon, total [TC]	----	E351	1.4 %	101	80.0	120	----
Organic / Inorganic Carbon (QCLot: 689838)									
	RM	carbon, inorganic [IC]	----	E354	0.383 %	99.6	80.0	120	----
Organic / Inorganic Carbon (QCLot: 691429)									
	RM	carbon, inorganic [IC]	----	E354	0.383 %	95.2	80.0	120	----
Organic / Inorganic Carbon (QCLot: 691923)									
	RM	carbon, inorganic [IC]	----	E354	0.383 %	101	80.0	120	----
Organic / Inorganic Carbon (QCLot: 701038)									
	RM	carbon, inorganic [IC]	----	E354	0.383 %	96.8	80.0	120	----
Metals (QCLot: 690324)									
	RM	aluminum	7429-90-5	E440	9817 mg/kg	91.5	70.0	130	----
	RM	antimony	7440-36-0	E440	3.99 mg/kg	93.1	70.0	130	----
	RM	arsenic	7440-38-2	E440	3.73 mg/kg	97.5	70.0	130	----
	RM	barium	7440-39-3	E440	105 mg/kg	100	70.0	130	----
	RM	beryllium	7440-41-7	E440	0.349 mg/kg	100	70.0	130	----
	RM	boron	7440-42-8	E440	8.5 mg/kg	94.5	40.0	160	----



Sub-Matrix:

Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Reference Material (RM) Report				
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%)		Qualifier
							Low	High	
Metals (QCLot: 690324) - continued									
	RM	cadmium	7440-43-9	E440	0.91 mg/kg	93.6	70.0	130	----
	RM	calcium	7440-70-2	E440	31082 mg/kg	98.3	70.0	130	----
	RM	chromium	7440-47-3	E440	101 mg/kg	90.8	70.0	130	----
	RM	cobalt	7440-48-4	E440	6.9 mg/kg	95.6	70.0	130	----
	RM	copper	7440-50-8	E440	123 mg/kg	96.3	70.0	130	----
	RM	iron	7439-89-6	E440	23558 mg/kg	91.9	70.0	130	----
	RM	lead	7439-92-1	E440	267 mg/kg	97.7	70.0	130	----
	RM	lithium	7439-93-2	E440	9.5 mg/kg	98.2	70.0	130	----
	RM	magnesium	7439-95-4	E440	5509 mg/kg	92.6	70.0	130	----
	RM	manganese	7439-96-5	E440	269 mg/kg	93.1	70.0	130	----
	RM	molybdenum	7439-98-7	E440	1.03 mg/kg	113	70.0	130	----
	RM	nickel	7440-02-0	E440	26.7 mg/kg	97.3	70.0	130	----
	RM	phosphorus	7723-14-0	E440	752 mg/kg	99.1	70.0	130	----
	RM	potassium	7440-09-7	E440	1587 mg/kg	95.2	70.0	130	----
	RM	silver	7440-22-4	E440	4.06 mg/kg	103	70.0	130	----
	RM	sodium	7440-23-5	E440	797 mg/kg	100	70.0	130	----
	RM	strontium	7440-24-6	E440	86.1 mg/kg	97.7	70.0	130	----
	RM	thallium	7440-28-0	E440	0.0786 mg/kg	90.5	40.0	160	----
	RM	tin	7440-31-5	E440	10.6 mg/kg	96.5	70.0	130	----
	RM	titanium	7440-32-6	E440	839 mg/kg	83.6	70.0	130	----
	RM	uranium	7440-61-1	E440	0.52 mg/kg	91.1	70.0	130	----
	RM	vanadium	7440-62-2	E440	32.7 mg/kg	92.5	70.0	130	----
	RM	zinc	7440-66-6	E440	297 mg/kg	94.2	70.0	130	----
	RM	zirconium	7440-67-7	E440	5.73 mg/kg	98.7	70.0	130	----
Metals (QCLot: 690325)									
	RM	mercury	7439-97-6	E510	0.059 mg/kg	94.0	70.0	130	----
Metals (QCLot: 690330)									
	RM	aluminum	7429-90-5	E440	9817 mg/kg	90.3	70.0	130	----
	RM	antimony	7440-36-0	E440	3.99 mg/kg	118	70.0	130	----
	RM	arsenic	7440-38-2	E440	3.73 mg/kg	97.6	70.0	130	----
	RM	barium	7440-39-3	E440	105 mg/kg	95.1	70.0	130	----



Sub-Matrix:

Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Reference Material (RM) Report				
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%)		Qualifier
							Low	High	
Metals (QCLot: 690330) - continued									
	RM	beryllium	7440-41-7	E440	0.349 mg/kg	92.3	70.0	130	----
	RM	boron	7440-42-8	E440	8.5 mg/kg	104	40.0	160	----
	RM	cadmium	7440-43-9	E440	0.91 mg/kg	96.6	70.0	130	----
	RM	calcium	7440-70-2	E440	31082 mg/kg	95.3	70.0	130	----
	RM	chromium	7440-47-3	E440	101 mg/kg	88.2	70.0	130	----
	RM	cobalt	7440-48-4	E440	6.9 mg/kg	93.7	70.0	130	----
	RM	copper	7440-50-8	E440	123 mg/kg	92.8	70.0	130	----
	RM	iron	7439-89-6	E440	23558 mg/kg	93.2	70.0	130	----
	RM	lead	7439-92-1	E440	267 mg/kg	101	70.0	130	----
	RM	lithium	7439-93-2	E440	9.5 mg/kg	99.3	70.0	130	----
	RM	magnesium	7439-95-4	E440	5509 mg/kg	92.1	70.0	130	----
	RM	manganese	7439-96-5	E440	269 mg/kg	91.0	70.0	130	----
	RM	molybdenum	7439-98-7	E440	1.03 mg/kg	114	70.0	130	----
	RM	nickel	7440-02-0	E440	26.7 mg/kg	101	70.0	130	----
	RM	phosphorus	7723-14-0	E440	752 mg/kg	101	70.0	130	----
	RM	potassium	7440-09-7	E440	1587 mg/kg	92.7	70.0	130	----
	RM	silver	7440-22-4	E440	4.06 mg/kg	107	70.0	130	----
	RM	sodium	7440-23-5	E440	797 mg/kg	97.0	70.0	130	----
	RM	strontium	7440-24-6	E440	86.1 mg/kg	97.7	70.0	130	----
	RM	thallium	7440-28-0	E440	0.0786 mg/kg	89.9	40.0	160	----
	RM	tin	7440-31-5	E440	10.6 mg/kg	105	70.0	130	----
	RM	titanium	7440-32-6	E440	839 mg/kg	81.5	70.0	130	----
	RM	uranium	7440-61-1	E440	0.52 mg/kg	87.9	70.0	130	----
	RM	vanadium	7440-62-2	E440	32.7 mg/kg	90.8	70.0	130	----
	RM	zinc	7440-66-6	E440	297 mg/kg	96.3	70.0	130	----
	RM	zirconium	7440-67-7	E440	5.73 mg/kg	99.9	70.0	130	----
Metals (QCLot: 690331)									
	RM	mercury	7439-97-6	E510	0.059 mg/kg	97.8	70.0	130	----
Metals (QCLot: 691345)									
	RM	mercury	7439-97-6	E510	0.059 mg/kg	97.6	70.0	130	----
Metals (QCLot: 691346)									



Sub-Matrix:

Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Reference Material (RM) Report				
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%)		Qualifier
							Low	High	
Metals (QCLot: 691346) - continued									
	RM	aluminum	7429-90-5	E440	9817 mg/kg	91.1	70.0	130	----
	RM	antimony	7440-36-0	E440	3.99 mg/kg	96.2	70.0	130	----
	RM	arsenic	7440-38-2	E440	3.73 mg/kg	98.8	70.0	130	----
	RM	barium	7440-39-3	E440	105 mg/kg	104	70.0	130	----
	RM	beryllium	7440-41-7	E440	0.349 mg/kg	92.7	70.0	130	----
	RM	boron	7440-42-8	E440	8.5 mg/kg	96.5	40.0	160	----
	RM	cadmium	7440-43-9	E440	0.91 mg/kg	94.1	70.0	130	----
	RM	calcium	7440-70-2	E440	31082 mg/kg	95.5	70.0	130	----
	RM	chromium	7440-47-3	E440	101 mg/kg	89.0	70.0	130	----
	RM	cobalt	7440-48-4	E440	6.9 mg/kg	95.7	70.0	130	----
	RM	copper	7440-50-8	E440	123 mg/kg	94.5	70.0	130	----
	RM	iron	7439-89-6	E440	23558 mg/kg	89.3	70.0	130	----
	RM	lead	7439-92-1	E440	267 mg/kg	98.8	70.0	130	----
	RM	lithium	7439-93-2	E440	9.5 mg/kg	98.8	70.0	130	----
	RM	magnesium	7439-95-4	E440	5509 mg/kg	91.4	70.0	130	----
	RM	manganese	7439-96-5	E440	269 mg/kg	89.5	70.0	130	----
	RM	molybdenum	7439-98-7	E440	1.03 mg/kg	118	70.0	130	----
	RM	nickel	7440-02-0	E440	26.7 mg/kg	95.2	70.0	130	----
	RM	phosphorus	7723-14-0	E440	752 mg/kg	97.4	70.0	130	----
	RM	potassium	7440-09-7	E440	1587 mg/kg	99.8	70.0	130	----
	RM	silver	7440-22-4	E440	4.06 mg/kg	89.8	70.0	130	----
	RM	sodium	7440-23-5	E440	797 mg/kg	116	70.0	130	----
	RM	strontium	7440-24-6	E440	86.1 mg/kg	98.6	70.0	130	----
	RM	thallium	7440-28-0	E440	0.0786 mg/kg	90.7	40.0	160	----
	RM	tin	7440-31-5	E440	10.6 mg/kg	105	70.0	130	----
	RM	titanium	7440-32-6	E440	839 mg/kg	83.1	70.0	130	----
	RM	uranium	7440-61-1	E440	0.52 mg/kg	86.6	70.0	130	----
	RM	vanadium	7440-62-2	E440	32.7 mg/kg	90.0	70.0	130	----
	RM	zinc	7440-66-6	E440	297 mg/kg	92.0	70.0	130	----
	RM	zirconium	7440-67-7	E440	5.73 mg/kg	102	70.0	130	----
Metals (QCLot: 694670)									



Sub-Matrix:

Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Reference Material (RM) Report				
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%)		Qualifier
							Low	High	
Metals (QCLot: 694670) - continued									
	RM	mercury	7439-97-6	E510	0.059 mg/kg	93.4	70.0	130	----
Metals (QCLot: 694671)									
	RM	aluminum	7429-90-5	E440	9817 mg/kg	94.5	70.0	130	----
	RM	antimony	7440-36-0	E440	3.99 mg/kg	90.6	70.0	130	----
	RM	arsenic	7440-38-2	E440	3.73 mg/kg	97.8	70.0	130	----
	RM	barium	7440-39-3	E440	105 mg/kg	97.2	70.0	130	----
	RM	beryllium	7440-41-7	E440	0.349 mg/kg	98.4	70.0	130	----
	RM	boron	7440-42-8	E440	8.5 mg/kg	102	40.0	160	----
	RM	cadmium	7440-43-9	E440	0.91 mg/kg	97.6	70.0	130	----
	RM	calcium	7440-70-2	E440	31082 mg/kg	90.5	70.0	130	----
	RM	chromium	7440-47-3	E440	101 mg/kg	90.0	70.0	130	----
	RM	cobalt	7440-48-4	E440	6.9 mg/kg	99.0	70.0	130	----
	RM	copper	7440-50-8	E440	123 mg/kg	98.4	70.0	130	----
	RM	iron	7439-89-6	E440	23558 mg/kg	94.7	70.0	130	----
	RM	lead	7439-92-1	E440	267 mg/kg	97.6	70.0	130	----
	RM	lithium	7439-93-2	E440	9.5 mg/kg	92.8	70.0	130	----
	RM	magnesium	7439-95-4	E440	5509 mg/kg	97.4	70.0	130	----
	RM	manganese	7439-96-5	E440	269 mg/kg	93.0	70.0	130	----
	RM	molybdenum	7439-98-7	E440	1.03 mg/kg	112	70.0	130	----
	RM	nickel	7440-02-0	E440	26.7 mg/kg	103	70.0	130	----
	RM	phosphorus	7723-14-0	E440	752 mg/kg	95.7	70.0	130	----
	RM	potassium	7440-09-7	E440	1587 mg/kg	99.4	70.0	130	----
	RM	silver	7440-22-4	E440	4.06 mg/kg	78.2	70.0	130	----
	RM	sodium	7440-23-5	E440	797 mg/kg	105	70.0	130	----
	RM	strontium	7440-24-6	E440	86.1 mg/kg	92.4	70.0	130	----
	RM	thallium	7440-28-0	E440	0.0786 mg/kg	92.2	40.0	160	----
	RM	tin	7440-31-5	E440	10.6 mg/kg	94.3	70.0	130	----
	RM	titanium	7440-32-6	E440	839 mg/kg	90.1	70.0	130	----
	RM	uranium	7440-61-1	E440	0.52 mg/kg	92.9	70.0	130	----
	RM	vanadium	7440-62-2	E440	32.7 mg/kg	94.6	70.0	130	----
	RM	zinc	7440-66-6	E440	297 mg/kg	101	70.0	130	----

Page : 25 of 25
 Work Order : CG2213498
 Client : Teck Coal Limited
 Project : Regional Effects Program



Sub-Matrix:


Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Reference Material (RM) Report				
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%)		Qualifier
							Low	High	
Metals (QCLot: 694671) - continued									
	RM	zirconium	7440-67-7	E440	5.73 mg/kg	91.4	70.0	130	----

COC ID:	REP_RAEMP-LAEMP_PandC_2022-09_ALS	TURNAROUND TIME:	2-3 Business Days	RUSH:	Priority
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PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name / Job#	Regional Effects Program			Lab Name	ALS Calgary			Report Format / Distribution	Excel	PDF	EDD	
Project Manager	Mike Pope			Lab Contact	Lyudmyla Shvets			Email 1:	AguaSciLab@Teck.com	X	X	X
Email	mike.pope@teck.com			Email	Lyudmyla.Shvets@ALSGlobal.com			Email 2:	teckcoal@eguisonline.com			X
Address	421 Pine Avenue			Address	2559 29 Street NE			Email 3:	Teck.Lab.Results@teck.com	X	X	X
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 4:	Lisa.Bowron@minnow.ca	X	X	X
Postal Code	V0B 2G0	Country	Canada	Postal Code	T1Y 7B5	Country	Canada	Email 5:	Tyler.Mehler@minnow.ca	X	X	X
Phone Number	1-250-425-8247			Phone Number	403 407 1794			PO number	VPO00847030			

Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com p	# Of Cont.	ANALYSIS REQUESTED				PRESERV.					
								C-TOC-SK	MET-COMET-FULL-CL + pH & Tg	MOISTURE-CL - % Moisture	PSA-PIPET-DETAIL-SK Particle Size	NONE	NONE	NONE	NONE		
RG_LILC3_SE-1_2022-09-12_N	RG_LILC3	SE		12-Sep-22	12:45	G	1	1	1	1	1						
RG_LILC3_SE-2_2022-09-12_N	RG_LILC3	SE		12-Sep-22	13:00	G	1	1	1	1	1						
RG_LILC3_SE-3_2022-09-12_N	RG_LILC3	SE		12-Sep-22	13:25	G	1	1	1	1	1						
RG_LILC3_SE-4_2022-09-12_N	RG_LILC3	SE		12-Sep-22	13:50	G	1	1	1	1	1						
RG_LILC3_SE-5_2022-09-12_N	RG_LILC3	SE		12-Sep-22	14:14	G	1	1	1	1	1						
RG_LCUT_SE-1_2022-09-15_N	RG_LCUT	SE		15-Sep-22	12:00	G	1	1	1	1	1						
RG_LCUT_SE-2_2022-09-15_N	RG_LCUT	SE		15-Sep-22	13:00	G	1	1	1	1	1						
RG_LCUT_SE-3_2022-09-15_N	RG_LCUT	SE		15-Sep-22	14:00	G	1	1	1	1	1						
RG_MP1_SE-1_2022-09-12_N	RG_MP1	SE		12-Sep-22	10:00	G	1	1	1	1	1						
RG_MP1_SE-2_2022-09-12_N	RG_MP1	SE		12-Sep-22	10:30	G	1	1	1	1	1						

Environmental Division
Calgary
Work Order Reference
CG2213498



Telephone : +1 403 407 1800

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
Samples under this COC should be considered Privileged and Confidential.	Jennifer Ings	#####	<i>[Signature]</i>	9/23/22

SERVICE REQUEST (rush - subject to availability)	Regular (default)	Priority (2-3 business days) - 50% surcharge	Emergency (1 Business Day) - 100% surcharge	For Emergency <1 Day, ASAP or Weekend - Contact ALS
Sampler's Name	Jennifer Ings	Mobile #	5195003444	
Sampler's Signature	<i>[Signature]</i>	Date/Time	September 16, 2022	

COC ID:

**REP_RAEMP-
LAEMP_PandC_2022-09_ALS**

TURNAROUND TIME:

2-3 Business Days

RUSH: Priority

PROJECT/CLIENT INFO

LABORATORY

OTHER INFO

Facility Name / Job#	Regional Effects Program			Lab Name	ALS Calgary		Report Format / Distribution	Excel	PDF	EDD	
Project Manager	Mike Pope			Lab Contact	Lyudmyla Shvels		Email 1:	AquaSciLab@Teck.com	X	X	X
Email	mike.pope@teck.com			Email	Lyudmyla.Shvels@ALSGlobal.com		Email 2:	teckcoal@ecuisonline.com			X
Address	421 Pine Avenue			Address	2559 29 Street NE		Email 3:	Teck Lab Results@teck.com	X	X	X
City	Sparwood		Province	BC		City	Calgary		Province	AB	
Postal Code	V0B 2G0		Country	Canada		Postal Code	T1Y 7B5		Country	Canada	
Phone Number	1-250-425-8247			Phone Number	403 407.1794		PO number	VPO00847030			

SAMPLE DETAILS

ANALYSIS REQUESTED

Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com p	# Of Cont.	ANALYSIS REQUESTED											
								C-TOC-SK	MET-CCME+FULL-CL	MOISTURE-CL - % Moisture	PSA-PIPET-DETAIL-SK Particle Size								
RG_MPI_SE-3_2022-09-12_N	RG_MPI	SE		12-Sep-22	11:00	G	1	1	1	1	1								
RG_FOUNGD_SE-1_2022-09-15_N	RG_FOUNGD	SE		15-Sep-22	9:00	G	1	1	1	1	1								
RG_FOUNGD_SF-2_2022-09-15_N	RG_FOUNGD	SE		15-Sep-22	9:30	G	1	1	1	1	1								
RG_FOUNGD_SE-3_2022-09-15_N	RG_FOUNGD	SE		15-Sep-22	9:45	G	1	1	1	1	1								
RG_FOUCI_SE-1_2022-09-16_N	RG_FOUCI	SE		16-Sep-22	9:00	G	2	1	1	1	1								
RG_FOUCI_SE-2_2022-09-16_N	RG_FOUCI	SE		16-Sep-22	9:30	G	2	1	1	1	1								
RG_FOUCI_SE-3_2022-09-16_N	RG_FOUCI	SE		16-Sep-22	10:00	G	2	1	1	1	1								
RG_FOUCI_SE-4_2022-09-16_N	RG_FOUCI	SE		16-Sep-22	10:30	G	2	1	1	1	1								
RG_FOUCI_SE-5_2022-09-16_N	RG_FOUCI	SE		16-Sep-22	11:00	G	2	1	1	1	1								
RG_GRASSY_SE-1_2022-09-16_N	RG_GRASSY	SE		16-Sep-22	9:00	G	2	1	1	1	1								

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS

RELINQUISHED BY/AFFILIATION

DATE/TIME

ACCEPTED BY/AFFILIATION

DATE/TIME

Samples under this COC should be considered Privileged and Confidential

Jennifer Ings

#####

SERVICE REQUEST (rush - subject to availability)

Regular (default)

Priority (2-3 business days) - 50% surcharge

Emergency (1 Business Day) - 100% surcharge

For Emergency <1 Day, ASAP or Weekend - Contact ALS

Sampler's Name

Jennifer Ings

Mobile #

5195003444

Sampler's Signature

Jennifer Ings

Date/Time

September 16, 2022

Teck

COC ID:	REP_RAEMP-LAEMP_PandC_2022-09_ALS	TURNAROUND TIME:	2-3 Business Days	RUSH:	Priority
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PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name / Job#	Regional Effects Program			Lab Name	ALS Calgary			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Mike Pope			Lab Contact	Lyudmyla Shvets			Email 1:	AquaSciLab@Teck.com	X	X	X
Email	mike.pope@teck.com			Email	Lyudmyla.Shvets@ALSGlobal.com			Email 2:	teckcoal@tequisonline.com			X
Address	421 Pine Avenue			Address	2559 29 Street NE			Email 3:	Teck.Lab.Results@teck.com	X	X	X
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 4:	Lisa.Bowron@minnow.ca	X	X	X
Postal Code	V0B 2G0	Country	Canada	Postal Code	T1Y 7B5	Country	Canada	Email 5:	Tyler.Mehler@minnow.ca	X	X	X
Phone Number	1-250-425-8247			Phone Number	403 407 1794			Email 6:	Jessica.Ritz@Teck.com	X	X	X
								PO number	VPO00847030			

SAMPLE DETAILS								ANALYSIS REQUESTED					Filtered - F: Field, L: Lab, FL: Field & Lab, N: None																										
Sample ID	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com p	# Of Cont.	FILE	N	N	N	N	N																										
								ANALYSIS	C-TOC-SK	MET-CCME+FULL-CL	MOISTURE-CL - % Moisture	PSA-PIPET-DETAIL-SK Particle Size																											
RG_GRASSY_SE-2_2022-09-16_N 21	RG_GRASSY	SE		16-Sep-22	9:30	G	2		1	1	1	1																											
RG_GRASSY_SE-3_2022-09-16_N 22	RG_GRASSY	SE		16-Sep-22	10:00	G	2		1	1	1	1																											
RG_GRASSY_SE-4_2022-09-16_N 23	RG_GRASSY	SE		16-Sep-22	10:30	G	2		1	1	1	1																											
RG_GRASSY_SE-5_2022-09-16_N 24	RG_GRASSY	SE		16-Sep-22	11:00	G	2		1	1	1	1																											
RG_ERCKUC_SE-1_2022-09-14_N 25	RG_ERCKUC	SE		14-Sep-22	13:00	G	2		1	1	1	1																											
RG_ERCKUC_SE-2_2022-09-14_N 26	RG_ERCKUC	SE		14-Sep-22	14:00	G	2		1	1	1	1																											
RG_ERCKUC_SE-3_2022-09-14_N 27	RG_ERCKUC	SE		14-Sep-22	15:00	G	2		1	1	1	1																											
RG_BOCK_SE-1_2022-09-15_N 28	RG_BOCK	SE		15-Sep-22	13:00	G	2		1	1	1	1																											
RG_BOCK_SE-2_2022-09-15_N 29	RG_BOCK	SE		15-Sep-22	14:00	G	2		1	1	1	1																											
RG_BOCK_SE-3_2022-09-15_N 30	RG_BOCK	SE		15-Sep-22	15:00	G	2		1	1	1	1																											

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS		RELINQUISHED BY/AFFILIATION		DATE/TIME		ACCEPTED BY/AFFILIATION		DATE/TIME	
Samples under this COC should be considered Privileged and Confidential		Jennifer Ings		#####					
SERVICE REQUEST (rush - subject to availability)									
Regular (default)		Sampler's Name		Jennifer Ings		Mobile #		5195003444	
Priority (2-3 business days) - 50% surcharge <input checked="" type="checkbox"/>		Sampler's Signature		<i>Jennifer Ings</i>		Date/Time		September 16, 2022	
Emergency (1 Business Day) - 100% surcharge									
For Emergency <1 Day, ASAP or Weekend - Contact ALS									

COC ID:	REP_RAEMP- LAEMP_PandC_2022-09_ALS	TURNAROUND TIME:	2-3 Business Days	RUSH:	Priority
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PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name / Job#	Regional Effects Program			Lab Name	ALS Calgary			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Mike Pope			Lab Contact	Lyudmyla Shvets			Email 1:	AquaSciLab@Teck.com	X	X	X
Email	mike.pope@teck.com			Email	Lyudmyla.Shvets@ALSGlobal.com			Email 2:	teckcoal@equisonline.com			X
Address	421 Pine Avenue			Address	2559 29 Street NE			Email 3:	Teck.Lab.Results@teck.com	X	X	X
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 4:	Lisa.Bowron@minnow.ca	X	X	X
Postal Code	V0B 2G0	Country	Canada	Postal Code	T1Y 7B5	Country	Canada	Email 5:	Tyler.Mehler@minnow.ca	X	X	X
Phone Number	1-250-425-8247			Phone Number	403-407-1794			PO number	VPO00847030			

SAMPLE DETAILS								ANALYSIS REQUESTED														
Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com p	# Of Cont.	Filtered - F: Field, L: Lab, FL: Field & Lab, N: None														
								PH	N	N	N	N	N									
								PRESERV.														
								ANALYSIS														
								C-TOC-SK	MET-CCME+FULL-CL	MOISTURE-CL - % Moisture	PSA-PIPET-DETAIL-SK Particle Size											
RG_UFR1_SE-1_2022-09-14_N 31	RG_UFR1	SE		14-Sep-22	9:00	G	2	1	1	1	1											
RG_UFR1_SE-2_2022-09-14_N 32	RG_UFR1	SE		14-Sep-22	9:10	G	2	1	1	1	1											
RG_UFR1_SE-3_2022-09-14_N 33	RG_UFR1	SE		14-Sep-22	9:20	G	2	1	1	1	1											
RG_UFR1_SE-4_2022-09-14_N 34	RG_UFR1	SE		14-Sep-22	9:30	G	2	1	1	1	1											
RG_UFR1_SE-5_2022-09-14_N 35	RG_UFR1	SE		14-Sep-22	9:40	G	2	1	1	1	1											
RG_FRDSCCI_SE-1_2022-09-14_N 36	RG_FRDSCCI	SE		14-Sep-22	9:50	G	2	1	1	1	1											
RG_FRDSCCI_SE-2_2022-09-14_N 37	RG_FRDSCCI	SE		14-Sep-22	10:00	G	2	1	1	1	1											
RG_FRDSCCI_SE-3_2022-09-14_N 38	RG_FRDSCCI	SE		14-Sep-22	10:10	G	2	1	1	1	1											
RG_FRDSCCI_SE-4_2022-09-14_N 39	RG_FRDSCCI	SE		14-Sep-22	10:20	G	2	1	1	1	1											
RG_FRDSCCI_SE-5_2022-09-14_N 40	RG_FRDSCCI	SE		14-Sep-22	10:30	G	2	1	1	1	1											

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
Samples under this COC should be considered Privileged and Confidential	Jennifer Ings	#####		

SERVICE REQUEST (rush - subject to availability)					
Regular (default)		Sampler's Name	Jennifer Ings	Mobile #	5195003444
Priority (2-3 business days) - 50% surcharge	X	Sampler's Signature	<i>Jennifer Ings</i>	Date/Time	September 16, 2022
Emergency (1 Business Day) - 100% surcharge					
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

COC ID:	REP_RAEMP-LAEMP_PandC_2022-09_ALS	TURNAROUND TIME:	2-3 Business Days	RUSH:	Priority
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PROJECT/CLIENT INFO			LABORATORY				OTHER INFO					
Facility Name / Job#	Regional Effects Program		Lab Name	ALS Calgary		Report Format / Distribution	Excel	PDF	EDD			
Project Manager	Mike Pope		Lab Contact	Lyudmyla Shvets		Email 1:	AquaSci_Lab@Teck.com	X	X	X		
Email	mike.pope@teck.com		Email	Lyudmyla.Shvets@ALSGlobal.com		Email 2:	teckcoal@equisonline.com			X		
Address	421 Pine Avenue		Address	2559 29 Street NE		Email 3:	Teck.Lab.Results@teck.com	X	X	X		
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 4:	Lisa.Bowron@minnow.ca	X	X	X
Postal Code	VOB 2G0	Country	Canada	Postal Code	T1Y 7B5	Country	Canada	Email 5:	Tyler.Mehler@minnow.ca	X	X	X
Phone Number	1-250-425-8247		Phone Number	403.407.1794		PO number	VPO00847030					

SAMPLE DETAILS								ANALYSIS REQUESTED																
Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	FILL	PRESERV.	ANALYSIS	C-TOC-SK	MET-CCME+FULL-CL	MOISTURE-CL - % Moisture	PSA-PIPET-DETAIL-SK Particle Size	F1	F2	F3	F4	F5	F6	F7	F8		
																							N	N
RG_MIDGA_SE-1_2022-09-18_N 41	RG_MIDGA	SE		18-Sep-22	10:00	G	2		NONE		1	1	1	1										
RG_MIDGA_SE-2_2022-09-18_N 42	RG_MIDGA	SE		18-Sep-22	9:00	G	2		NONE		1	1	1	1										
RG_MIDGA_SE-3_2022-09-18_N 43	RG_MIDGA	SE		18-Sep-22	8:00	G	2		NONE		1	1	1	1										
RG_MIDBO_SE-1_2022-09-13_N 44	RG_MIDBO	SE		13-Sep-22	13:45	G	2		NONE		1	1	1	1										
RG_MIDBO_SE-2_2022-09-13_N 45	RG_MIDBO	SE		13-Sep-22	14:45	G	2		NONE		1	1	1	1										
RG_MIDBO_SE-3_2022-09-13_N 46	RG_MIDBO	SE		13-Sep-22	15:15	G	2		NONE		1	1	1	1										
RG_GATE_SE-1_2022-09-15_N 47	RG_GATE	SE		15-Sep-22	10:00	G	2		NONE		1	1	1	1										
RG_GATE_SE-2_2022-09-15_N 48	RG_GATE	SE		15-Sep-22	11:00	G	2		NONE		1	1	1	1										
RG_GATE_SE-3_2022-09-15_N 49	RG_GATE	SE		15-Sep-22	12:00	G	2		NONE		1	1	1	1										

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
Samples under this COC should be considered Privileged and Confidential	Jennifer Ings	#####		

SERVICE REQUEST (rush - subject to availability)	<input type="checkbox"/> Regular (default)	<input checked="" type="checkbox"/> Priority (2-3 business days) - 50% surcharge	<input type="checkbox"/> Emergency (1 Business Day) - 100% surcharge	<input type="checkbox"/> For Emergency <1 Day, ASAP or Weekend - Contact ALS
Sampler's Name	Jennifer Ings		Mobile #	5195003444
Sampler's Signature	<i>Jennifer Ings</i>		Date/Time	September 16, 2022

COC ID:	REP_RAEMP-LAEMP_PandC_2022-09_ALS	TURNAROUND TIME:	2-3 Business Days	RUSH:	Priority
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PROJECT/CLIENT INFO				LABORATORY				OTHER INFO					
Facility Name / Job#	Regional Effects Program			Lab Name	ALS Calgary			Report Format / Distribution		Excel	PDF	EDD	
Project Manager	Mike Pope			Lab Contact	Lyudmyla Shvets			Email 1:	AguaSciLab@Teck.com	X	X	X	
Email	mike.pope@teck.com			Email	Lyudmyla.Shvets@ALSGlobal.com			Email 2:	teckcoal@equisonline.com			X	
Address	421 Pine Avenue			Address	2559 29 Street NE			Email 3:	Teck.Lab.Results@teck.com	X	X	X	
City	Sparwood	Province	BC	City	Calgary	Province	AB	Email 4:	Lisa.Bowron@minnow.ca	X	X	X	
Postal Code	V0B 2G0	Country	Canada	Postal Code	T1Y 7B5	Country	Canada	Email 5:	Tyler.Mehler@minnow.ca	X	X	X	
Phone Number	1-250-425-8247			Phone Number	403 407 1794			PO number	VPO00847030				

SAMPLE DETAILS								ANALYSIS REQUESTED											
Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com p	# Of Cont.	PRESEV.	N	N	N	N	N						
									C-TOC-SK	MET-CCME+FULL-CL	MOISTURE-CL - % Moisture	PSA-PIPET-DETAIL-SK Particle Size							
RG_ERCKMD_SE-1_2022-09-20_N	50 RG_ERCKMD	SE		20-Sep-22	11:00	G	2		1	1	1	1							
RG_ERCKMD_SE-2_2022-09-20_N	42 RG_ERCKMD	SE		20-Sep-22	11:10	G	2		1	1	1	1							
RG_ERCKMD_SE-3_2022-09-20_N	42 RG_ERCKMD	SE		20-Sep-22	11:20	G	2		1	1	1	1							
RG_ERCKMD_SE-4_2022-09-20_N	43 RG_ERCKMD	SE		20-Sep-22	11:30	G	2		1	1	1	1							
RG_ERCKMD_SE-5_2022-09-20_N	45 RG_ERCKMD	SE		20-Sep-22	11:40	G	2		1	1	1	1							
RG_GATEDP_SE-1_2022-09-15_N	40 RG_ERCKMD	SE		15-Sep-22	9:00	G	2		1	1	1	1							

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
Samples under this COC should be considered Privileged and Confidential	Jennifer Ings	#####		

SERVICE REQUEST (rush - subject to availability)			
Regular (default)	Sampler's Name	Jennifer Ings	Mobile #
Priority (2-3 business days) - 50% surcharge X			5195003444
Emergency (1 Business Day) - 100% surcharge	Sampler's Signature	Jennifer Ings	Date/Time
For Emergency <1 Day, ASAP or Weekend - Contact ALS			September 16, 2022



CERTIFICATE OF ANALYSIS

<p>Work Order : CG2215424</p> <p>Client : Teck Coal Limited</p> <p>Contact : Mike Pope</p> <p>Address : RR#1 HWY#3 Sparwood BC Canada V0B 2G1</p> <p>Telephone : ----</p> <p>Project : Regional Effects Program</p> <p>PO : VPO00847032</p> <p>C-O-C number : EVO LAEMP NOV 2022</p> <p>Sampler : ----</p> <p>Site : ----</p> <p>Quote number : Teck Coal Master Quote</p> <p>No. of samples received : 30</p> <p>No. of samples analysed : 30</p>	<p>Page : 1 of 19</p> <p>Laboratory : Calgary - Environmental</p> <p>Account Manager : Lyudmyla Shvets</p> <p>Address : 2559 29th Street NE Calgary AB Canada T1Y 7B5</p> <p>Telephone : +1 403 407 1800</p> <p>Date Samples Received : 04-Nov-2022 09:25</p> <p>Date Analysis Commenced : 05-Nov-2022</p> <p>Issue Date : 14-Nov-2022 14:27</p>
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This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Colby Bingham	Quality Systems Coordinator	Inorganics, Saskatoon, Saskatchewan
Colby Bingham	Quality Systems Coordinator	Metals, Saskatoon, Saskatchewan
Collin Vinish	Laboratory Assistant	Organics, Saskatoon, Saskatchewan
Hedy Lai	Team Leader - Inorganics	Inorganics, Saskatoon, Saskatchewan
Hedy Lai	Team Leader - Inorganics	Sask Soils, Saskatoon, Saskatchewan
Nancy Cruse	Laboratory Assistant	Inorganics, Saskatoon, Saskatchewan
Xihua Yao	Laboratory Analyst	Inorganics, Saskatoon, Saskatchewan
Xihua Yao	Laboratory Analyst	Sask Soils, Saskatoon, Saskatchewan



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
 LOR: Limit of Reporting (detection limit).

Unit	Description
-	no unit
%	percent
mg/kg	milligrams per kilogram
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Sample Comments

Sample	Client Id	Comment
CG2215424-008	RG_ERCKUT_BRYOSE-3_LA EMP_EVO_2022-11_N	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2215424-012	RG_ERCKDT_SE-4_LAEMP_E VO_2022-10_N	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2215424-013	RG_ERCKDT_SE-5_LAEMP_E VO_2022-10_N	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2215424-014	RG_ERCKDT_SE-6_LAEMP_E VO_2022-10_N	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2215424-018	RG_ERCKDT_BRYOSE-3_LA EMP_EVO_2022-10_N	Sample(s) XXX: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2215424-021	RG_ERCKMD_SE-3_LAEMP_E VO_2022-10_N	Sample(s) F21,26: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2215424-026	RG_MI3_SE-2_LAEMP_EVO_ 2022-11_N	Sample(s) F21,26: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.



Qualifiers

<i>Qualifier</i>	<i>Description</i>
<i>DLM</i>	<i>Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).</i>
<i>FR5</i>	<i>As per applicable reference method(s), soil:water ratio for Fixed Ratio Leach was modified to 1:5 due to high soil organic content</i>



Analytical Results

Sub-Matrix: Sediment

Client sample ID

(Matrix: Soil/Solid)

					RG_ERCKUT_S E-1_LAEMP_EV O_2022-10_N	RG_ERCKUT_S E-2_LAEMP_EV O_2022-10_N	RG_ERCKUT_S E-3_LAEMP_EV O_2022-11_N	RG_ERCKUT_S E-4_LAEMP_EV O_2022-11_N	RG_ERCKUT_S E-5_LAEMP_EV O_2022-11_N
Client sampling date / time					31-Oct-2022 14:30	31-Oct-2022 14:35	01-Nov-2022 09:00	01-Nov-2022 09:05	01-Nov-2022 09:10
Analyte	CAS Number	Method	LOR	Unit	CG2215424-001	CG2215424-002	CG2215424-003	CG2215424-004	CG2215424-005
					Result	Result	Result	Result	Result
Physical Tests									
moisture	----	E144	0.25	%	73.1	66.6	59.7	46.8	43.8
pH (1:2 soil:water)	----	E108	0.10	pH units	7.71 ^{FRS}	7.65	7.77 ^{FRS}	7.66	7.63
Particle Size									
grain size curve	----	E185A	-	-	See Attached	See Attached	See Attached	See Attached	See Attached
clay (<0.004mm)	----	EC184A	1.0	%	3.9	2.5	2.6	2.6	4.2
silt (0.063mm - 0.0312mm)	----	EC184A	1.0	%	30.7	26.3	16.8	14.8	18.6
silt (0.0312mm - 0.004mm)	----	EC184A	1.0	%	32.1	24.2	16.0	14.8	20.1
sand (0.125mm - 0.063mm)	----	EC184A	1.0	%	15.9	21.7	15.8	14.4	14.9
sand (0.25mm - 0.125mm)	----	EC184A	1.0	%	12.5	17.8	22.8	19.7	18.8
sand (0.5mm - 0.25mm)	----	EC184A	1.0	%	3.6	5.0	13.5	16.7	13.6
sand (1.0mm - 0.50mm)	----	EC184A	1.0	%	1.1	1.5	5.5	5.2	6.0
sand (2.0mm - 1.0mm)	----	EC184A	1.0	%	<1.0	<1.0	3.3	2.1	2.0
gravel (>2mm)	----	EC184A	1.0	%	<1.0	<1.0	3.7	9.7	1.8
Organic / Inorganic Carbon									
carbon, total [TC]	----	E351	0.050	%	13.6	14.4	9.85	8.33	7.18
carbon, inorganic [IC]	----	E354	0.050	%	1.60	4.29	1.47	0.432	0.631
carbon, inorganic [IC], (as CaCO3 equivalent)	----	E354	0.40	%	13.4	35.7	12.2	3.60	5.26
carbon, total organic [TOC]	----	EC356	0.050	%	12.0	10.1	8.38	7.90	6.55
Metals									
aluminum	7429-90-5	E440	50	mg/kg	4780	2730	3830	5040	5220
antimony	7440-36-0	E440	0.10	mg/kg	1.12	0.62	0.97	0.79	0.94
arsenic	7440-38-2	E440	0.10	mg/kg	4.21	3.65	5.04	6.32	7.31
barium	7440-39-3	E440	0.50	mg/kg	210	206	166	226	162
beryllium	7440-41-7	E440	0.10	mg/kg	0.46	0.33	0.43	0.57	0.61
bismuth	7440-69-9	E440	0.20	mg/kg	<0.74 ^{DLM}	<0.29 ^{DLM}	<0.68 ^{DLM}	<0.70 ^{DLM}	<0.74 ^{DLM}
boron	7440-42-8	E440	5.0	mg/kg	<18.4 ^{DLM}	8.3	<17.1 ^{DLM}	<17.5 ^{DLM}	<18.4 ^{DLM}
cadmium	7440-43-9	E440	0.020	mg/kg	1.59	1.67	1.42	1.40	1.39



Analytical Results

Sub-Matrix: Sediment

Client sample ID

(Matrix: Soil/Solid)

					RG_ERCKUT_S E-1_LAEMP_EV O_2022-10_N	RG_ERCKUT_S E-2_LAEMP_EV O_2022-10_N	RG_ERCKUT_S E-3_LAEMP_EV O_2022-11_N	RG_ERCKUT_S E-4_LAEMP_EV O_2022-11_N	RG_ERCKUT_S E-5_LAEMP_EV O_2022-11_N
Client sampling date / time					31-Oct-2022 14:30	31-Oct-2022 14:35	01-Nov-2022 09:00	01-Nov-2022 09:05	01-Nov-2022 09:10
Analyte	CAS Number	Method	LOR	Unit	CG2215424-001	CG2215424-002	CG2215424-003	CG2215424-004	CG2215424-005
					Result	Result	Result	Result	Result
Metals									
calcium	7440-70-2	E440	50	mg/kg	56300	140000	57000	17500	25300
chromium	7440-47-3	E440	0.50	mg/kg	10.7	7.78	8.89	9.22	10.3
cobalt	7440-48-4	E440	0.10	mg/kg	3.90	3.22	5.58	6.51	6.48
copper	7440-50-8	E440	0.50	mg/kg	15.1	11.1	15.2	17.7	18.3
iron	7439-89-6	E440	50	mg/kg	12100	8220	12600	16100	15900
lead	7439-92-1	E440	0.50	mg/kg	7.20	5.67	8.53	9.93	9.73
lithium	7439-93-2	E440	2.0	mg/kg	<7.4 ^{DLM}	3.2	<6.8 ^{DLM}	<7.0 ^{DLM}	<7.4 ^{DLM}
magnesium	7439-95-4	E440	20	mg/kg	5920	4870	5160	2920	4820
manganese	7439-96-5	E440	1.0	mg/kg	152	127	202	216	181
mercury	7439-97-6	E510	0.0050	mg/kg	0.0571	0.0402	0.0447	0.0715	0.0641
molybdenum	7439-98-7	E440	0.10	mg/kg	1.12	1.00	1.22	1.23	1.28
nickel	7440-02-0	E440	0.50	mg/kg	21.7	16.4	21.7	23.6	24.2
phosphorus	7723-14-0	E440	50	mg/kg	1390	1020	1110	1060	1080
potassium	7440-09-7	E440	100	mg/kg	1480	970	1220	1360	1380
selenium	7782-49-2	E440	0.20	mg/kg	40.6	9.76	11.6	3.73	6.84
silver	7440-22-4	E440	0.10	mg/kg	<0.37 ^{DLM}	0.16	<0.34 ^{DLM}	<0.35 ^{DLM}	<0.37 ^{DLM}
sodium	7440-23-5	E440	50	mg/kg	<184 ^{DLM}	100	<171 ^{DLM}	<175 ^{DLM}	<184 ^{DLM}
strontium	7440-24-6	E440	0.50	mg/kg	49.4	82.0	58.6	39.0	35.4
sulfur	7704-34-9	E440	1000	mg/kg	<3700 ^{DLM}	3000	<3400 ^{DLM}	<3500 ^{DLM}	<3700 ^{DLM}
thallium	7440-28-0	E440	0.050	mg/kg	0.192	0.127	0.186	0.220	0.224
tin	7440-31-5	E440	2.0	mg/kg	<7.4 ^{DLM}	<2.9 ^{DLM}	<6.8 ^{DLM}	<7.0 ^{DLM}	<7.4 ^{DLM}
titanium	7440-32-6	E440	1.0	mg/kg	41.9	19.0	36.3	40.8	38.7
tungsten	7440-33-7	E440	0.50	mg/kg	<1.84 ^{DLM}	<0.73 ^{DLM}	<1.71 ^{DLM}	<1.75 ^{DLM}	<1.84 ^{DLM}
uranium	7440-61-1	E440	0.050	mg/kg	1.41	1.58	1.26	1.02	1.21
vanadium	7440-62-2	E440	0.20	mg/kg	21.1	13.7	20.4	25.1	24.7
zinc	7440-66-6	E440	2.0	mg/kg	92.7	67.2	89.0	107	112
zirconium	7440-67-7	E440	1.0	mg/kg	4.3	1.6	<3.4 ^{DLM}	<3.5 ^{DLM}	<3.7 ^{DLM}

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Sediment

Client sample ID

(Matrix: Soil/Solid)

					RG_ERCKUT_B RYOSE-1_LAEM P_EVO_2022-1 0_N	RG_ERCKUT_B RYOSE-2_LAEM P_EVO_2022-1 1_N	RG_ERCKUT_B RYOSE-3_LAEM P_EVO_2022-1 1_N	RG_ERCKDT_S E-1_LAEMP_EV O_2022-10_N	RG_ERCKDT_S E-2_LAEMP_EV O_2022-10_N
Client sampling date / time					31-Oct-2022 14:40	01-Nov-2022 09:20	01-Nov-2022 09:30	31-Oct-2022 12:30	31-Oct-2022 12:35
Analyte	CAS Number	Method	LOR	Unit	CG2215424-006	CG2215424-007	CG2215424-008	CG2215424-009	CG2215424-010
					Result	Result	Result	Result	Result
Physical Tests									
moisture	----	E144	0.25	%	34.7	32.0	93.4	71.6	73.1
pH (1:2 soil:water)	----	E108	0.10	pH units	7.84	7.85	7.91 ^{FR5}	7.83	7.98 ^{FR5}
Particle Size									
grain size curve	----	E185A	-	-	See Attached	See Attached	See Attached	See Attached	See Attached
clay (<0.004mm)	----	EC184A	1.0	%	1.5	1.7	4.4	12.4	12.6
silt (0.063mm - 0.0312mm)	----	EC184A	1.0	%	4.5	4.6	26.5	28.2	28.8
silt (0.0312mm - 0.004mm)	----	EC184A	1.0	%	4.9	4.9	27.2	47.3	45.8
sand (0.125mm - 0.063mm)	----	EC184A	1.0	%	6.0	6.1	14.7	7.6	8.6
sand (0.25mm - 0.125mm)	----	EC184A	1.0	%	15.3	17.5	17.2	3.2	3.3
sand (0.5mm - 0.25mm)	----	EC184A	1.0	%	25.2	33.3	5.7	<1.0	<1.0
sand (1.0mm - 0.50mm)	----	EC184A	1.0	%	25.2	17.5	2.1	<1.0	<1.0
sand (2.0mm - 1.0mm)	----	EC184A	1.0	%	13.5	7.3	1.3	<1.0	<1.0
gravel (>2mm)	----	EC184A	1.0	%	3.9	7.1	<1.0	<1.0	<1.0
Organic / Inorganic Carbon									
carbon, total [TC]	----	E351	0.050	%	4.69	3.76	12.9	12.3	12.7
carbon, inorganic [IC]	----	E354	0.050	%	0.930	0.935	1.83	2.79	2.83
carbon, inorganic [IC], (as CaCO3 equivalent)	----	E354	0.40	%	7.75	7.79	15.3	23.3	23.6
carbon, total organic [TOC]	----	EC356	0.050	%	3.76	2.82	11.1	9.51	9.87
Metals									
aluminum	7429-90-5	E440	50	mg/kg	4340	4450	3520	4180	3970
antimony	7440-36-0	E440	0.10	mg/kg	1.08	1.13	1.86	1.03	1.01
arsenic	7440-38-2	E440	0.10	mg/kg	7.67	7.78	4.43	17.7	16.2
barium	7440-39-3	E440	0.50	mg/kg	148	162	194	232	235
beryllium	7440-41-7	E440	0.10	mg/kg	0.61	0.60	0.44	0.57	0.55
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	<0.60 ^{DLM}	<0.20	<0.20
boron	7440-42-8	E440	5.0	mg/kg	<5.0	<5.0	<15.1 ^{DLM}	8.3	8.7
cadmium	7440-43-9	E440	0.020	mg/kg	1.44	1.26	1.67	6.74	6.73



Analytical Results

Sub-Matrix: Sediment

(Matrix: Soil/Solid)

Client sample ID

					RG_ERCKUT_B RYOSE-1_LAEM P_EVO_2022-1 0_N	RG_ERCKUT_B RYOSE-2_LAEM P_EVO_2022-1 1_N	RG_ERCKUT_B RYOSE-3_LAEM P_EVO_2022-1 1_N	RG_ERCKDT_S E-1_LAEMP_EV O_2022-10_N	RG_ERCKDT_S E-2_LAEMP_EV O_2022-10_N
Client sampling date / time					31-Oct-2022 14:40	01-Nov-2022 09:20	01-Nov-2022 09:30	31-Oct-2022 12:30	31-Oct-2022 12:35
Analyte	CAS Number	Method	LOR	Unit	CG2215424-006	CG2215424-007	CG2215424-008	CG2215424-009	CG2215424-010
					Result	Result	Result	Result	Result
Metals									
calcium	7440-70-2	E440	50	mg/kg	29900	33600	63100	85500	89700
chromium	7440-47-3	E440	0.50	mg/kg	8.94	8.65	8.33	9.63	8.91
cobalt	7440-48-4	E440	0.10	mg/kg	7.36	6.68	4.30	93.6	118
copper	7440-50-8	E440	0.50	mg/kg	15.6	15.2	17.3	17.8	17.8
iron	7439-89-6	E440	50	mg/kg	19800	18800	9920	30600	29400
lead	7439-92-1	E440	0.50	mg/kg	9.92	9.72	6.95	10.6	9.93
lithium	7439-93-2	E440	2.0	mg/kg	5.6	5.8	<6.0 ^{DLM}	7.0	6.7
magnesium	7439-95-4	E440	20	mg/kg	3760	4610	7130	12300	12000
manganese	7439-96-5	E440	1.0	mg/kg	325	306	180	1920	2300
mercury	7439-97-6	E510	0.0050	mg/kg	0.0331	0.0381	0.0467	0.0477	0.0483
molybdenum	7439-98-7	E440	0.10	mg/kg	1.55	1.52	1.32	2.06	2.16
nickel	7440-02-0	E440	0.50	mg/kg	26.5	24.0	20.6	96.2	112
phosphorus	7723-14-0	E440	50	mg/kg	1380	1290	1320	1950	1920
potassium	7440-09-7	E440	100	mg/kg	990	1060	1530	1170	1110
selenium	7782-49-2	E440	0.20	mg/kg	1.98	2.46	12.3	26.3	28.0
silver	7440-22-4	E440	0.10	mg/kg	0.14	0.13	<0.30 ^{DLM}	0.24	0.23
sodium	7440-23-5	E440	50	mg/kg	<50	55	<151 ^{DLM}	122	122
strontium	7440-24-6	E440	0.50	mg/kg	45.0	49.6	53.8	86.9	87.1
sulfur	7704-34-9	E440	1000	mg/kg	<1000	<1000	<3000 ^{DLM}	2400	2200
thallium	7440-28-0	E440	0.050	mg/kg	0.172	0.171	0.179	0.348	0.334
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	<6.0 ^{DLM}	<2.0	<2.0
titanium	7440-32-6	E440	1.0	mg/kg	12.7	12.9	25.8	14.4	13.9
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	<1.51 ^{DLM}	<0.50	<0.50
uranium	7440-61-1	E440	0.050	mg/kg	1.00	0.996	1.73	1.63	1.74
vanadium	7440-62-2	E440	0.20	mg/kg	27.1	25.4	20.3	20.9	19.5
zinc	7440-66-6	E440	2.0	mg/kg	131	114	82.1	278	263
zirconium	7440-67-7	E440	1.0	mg/kg	<1.0	<1.0	<3.0 ^{DLM}	<1.0	<1.0



Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Sediment

Client sample ID

(Matrix: Soil/Solid)

					RG_ERCKDT_S E-3_LAEMP_EV O_2022-10_N	RG_ERCKDT_S E-4_LAEMP_EV O_2022-10_N	RG_ERCKDT_S E-5_LAEMP_EV O_2022-10_N	RG_ERCKDT_S E-6_LAEMP_EV O_2022-10_N	RG_ERCKDT_S E-7_LAEMP_EV O_2022-10_N
Client sampling date / time					31-Oct-2022 12:40	31-Oct-2022 12:45	31-Oct-2022 12:50	31-Oct-2022 12:55	31-Oct-2022 13:00
Analyte	CAS Number	Method	LOR	Unit	CG2215424-011	CG2215424-012	CG2215424-013	CG2215424-014	CG2215424-015
					Result	Result	Result	Result	Result
Physical Tests									
moisture	----	E144	0.25	%	72.6	78.7	78.7	70.5	76.0
pH (1:2 soil:water)	----	E108	0.10	pH units	7.80 ^{FRS}	7.77 ^{FRS}	7.77 ^{FRS}	7.79 ^{FRS}	8.06 ^{FRS}
Particle Size									
grain size curve	----	E185A	-	-	See Attached	See Attached	See Attached	See Attached	See Attached
clay (<0.004mm)	----	EC184A	1.0	%	6.6	5.9	5.8	5.9	5.8
silt (0.063mm - 0.0312mm)	----	EC184A	1.0	%	30.6	27.2	27.0	26.9	27.0
silt (0.0312mm - 0.004mm)	----	EC184A	1.0	%	39.2	35.3	34.6	34.5	34.0
sand (0.125mm - 0.063mm)	----	EC184A	1.0	%	12.4	13.3	13.5	12.5	11.5
sand (0.25mm - 0.125mm)	----	EC184A	1.0	%	8.1	11.6	12.1	12.8	12.5
sand (0.5mm - 0.25mm)	----	EC184A	1.0	%	2.4	4.7	5.1	5.7	6.4
sand (1.0mm - 0.50mm)	----	EC184A	1.0	%	<1.0	1.5	1.4	1.3	1.8
sand (2.0mm - 1.0mm)	----	EC184A	1.0	%	<1.0	<1.0	<1.0	<1.0	<1.0
gravel (>2mm)	----	EC184A	1.0	%	<1.0	<1.0	<1.0	<1.0	<1.0
Organic / Inorganic Carbon									
carbon, total [TC]	----	E351	0.050	%	14.8	15.4	14.6	15.7	14.0
carbon, inorganic [IC]	----	E354	0.050	%	2.86	2.42	2.46	2.59	2.53
carbon, inorganic [IC], (as CaCO3 equivalent)	----	E354	0.40	%	23.8	20.2	20.5	21.6	21.1
carbon, total organic [TOC]	----	EC356	0.050	%	11.9	13.0	12.1	13.1	11.5
Metals									
aluminum	7429-90-5	E440	50	mg/kg	3780	3540	3780	3410	3240
antimony	7440-36-0	E440	0.10	mg/kg	0.83	0.79	0.81	0.76	0.76
arsenic	7440-38-2	E440	0.10	mg/kg	8.17	7.80	8.39	7.59	7.48
barium	7440-39-3	E440	0.50	mg/kg	228	226	220	223	206
beryllium	7440-41-7	E440	0.10	mg/kg	0.48	0.49	0.52	0.49	0.50
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20
boron	7440-42-8	E440	5.0	mg/kg	6.8	6.0	6.4	5.9	5.6
cadmium	7440-43-9	E440	0.020	mg/kg	4.49	4.12	4.27	3.71	3.44
calcium	7440-70-2	E440	50	mg/kg	96900	79900	82600	87400	77700



Analytical Results

Sub-Matrix: Sediment
 (Matrix: Soil/Solid)

Client sample ID

					RG_ERCKDT_S E-3_LAEMP_EV O_2022-10_N	RG_ERCKDT_S E-4_LAEMP_EV O_2022-10_N	RG_ERCKDT_S E-5_LAEMP_EV O_2022-10_N	RG_ERCKDT_S E-6_LAEMP_EV O_2022-10_N	RG_ERCKDT_S E-7_LAEMP_EV O_2022-10_N
Client sampling date / time					31-Oct-2022 12:40	31-Oct-2022 12:45	31-Oct-2022 12:50	31-Oct-2022 12:55	31-Oct-2022 13:00
Analyte	CAS Number	Method	LOR	Unit	CG2215424-011	CG2215424-012	CG2215424-013	CG2215424-014	CG2215424-015
					Result	Result	Result	Result	Result
Metals									
chromium	7440-47-3	E440	0.50	mg/kg	9.29	8.03	8.35	7.59	7.55
cobalt	7440-48-4	E440	0.10	mg/kg	27.5	32.2	36.8	30.1	29.1
copper	7440-50-8	E440	0.50	mg/kg	17.6	17.1	17.6	16.6	16.1
iron	7439-89-6	E440	50	mg/kg	15800	16300	16900	15700	15600
lead	7439-92-1	E440	0.50	mg/kg	8.21	8.40	8.40	7.80	7.68
lithium	7439-93-2	E440	2.0	mg/kg	5.2	4.5	4.8	4.6	4.3
magnesium	7439-95-4	E440	20	mg/kg	8630	6560	6920	6680	6230
manganese	7439-96-5	E440	1.0	mg/kg	509	494	584	586	531
mercury	7439-97-6	E510	0.0050	mg/kg	0.0528	0.0542	0.0514	0.0515	0.0474
molybdenum	7439-98-7	E440	0.10	mg/kg	1.46	1.26	1.28	1.20	1.23
nickel	7440-02-0	E440	0.50	mg/kg	46.5	45.9	48.3	44.0	42.1
phosphorus	7723-14-0	E440	50	mg/kg	1420	1410	1490	1380	1340
potassium	7440-09-7	E440	100	mg/kg	940	860	940	820	790
selenium	7782-49-2	E440	0.20	mg/kg	18.9	20.2	21.0	14.2	14.1
silver	7440-22-4	E440	0.10	mg/kg	0.23	0.22	0.21	0.21	0.21
sodium	7440-23-5	E440	50	mg/kg	113	85	89	99	82
strontium	7440-24-6	E440	0.50	mg/kg	80.4	72.6	71.6	71.2	68.7
sulfur	7704-34-9	E440	1000	mg/kg	2000	1800	1800	1500	1600
thallium	7440-28-0	E440	0.050	mg/kg	0.215	0.197	0.204	0.180	0.179
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
titanium	7440-32-6	E440	1.0	mg/kg	15.4	13.1	16.7	13.1	13.0
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
uranium	7440-61-1	E440	0.050	mg/kg	1.44	1.35	1.33	1.21	1.22
vanadium	7440-62-2	E440	0.20	mg/kg	18.9	18.2	18.9	17.1	16.9
zinc	7440-66-6	E440	2.0	mg/kg	170	150	157	144	134
zirconium	7440-67-7	E440	1.0	mg/kg	1.3	1.2	1.3	1.3	1.3

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Sediment

Client sample ID

(Matrix: Soil/Solid)

					RG_ERCKDT_B RYOSE-1_LAEM P_EVO_2022-1 0_N	RG_ERCKDT_B RYOSE-2_LAEM P_EVO_2022-1 0_N	RG_ERCKDT_B RYOSE-3_LAEM P_EVO_2022-1 0_N	RG_ERCKMD_S E-1_LAEMP_EV O_2022-10_N	RG_ERCKMD_S E-2_LAEMP_EV O_2022-10_N
Client sampling date / time					31-Oct-2022 13:05	31-Oct-2022 13:10	31-Oct-2022 13:15	31-Oct-2022 12:30	31-Oct-2022 12:35
Analyte	CAS Number	Method	LOR	Unit	CG2215424-016	CG2215424-017	CG2215424-018	CG2215424-019	CG2215424-020
					Result	Result	Result	Result	Result
Physical Tests									
moisture	----	E144	0.25	%	82.5	80.0	94.4	76.3	80.9
pH (1:2 soil:water)	----	E108	0.10	pH units	8.10 ^{FR5}	7.90 ^{FR5}	----	7.87	7.92
Particle Size									
grain size curve	----	E185A	-	-	See Attached	See Attached	----	See Attached	See Attached
clay (<0.004mm)	----	EC184A	1.0	%	10.6	8.3	----	9.4	10.6
silt (0.063mm - 0.0312mm)	----	EC184A	1.0	%	32.7	28.3	----	30.1	31.6
silt (0.0312mm - 0.004mm)	----	EC184A	1.0	%	44.6	35.3	----	39.5	40.8
sand (0.125mm - 0.063mm)	----	EC184A	1.0	%	8.5	13.8	----	9.7	6.9
sand (0.25mm - 0.125mm)	----	EC184A	1.0	%	2.4	9.4	----	5.8	5.3
sand (0.5mm - 0.25mm)	----	EC184A	1.0	%	<1.0	3.5	----	2.0	2.2
sand (1.0mm - 0.50mm)	----	EC184A	1.0	%	<1.0	1.1	----	1.8	1.0
sand (2.0mm - 1.0mm)	----	EC184A	1.0	%	<1.0	<1.0	----	1.5	<1.0
gravel (>2mm)	----	EC184A	1.0	%	<1.0	<1.0	----	<1.0	1.0
Organic / Inorganic Carbon									
carbon, total [TC]	----	E351	0.050	%	14.1	12.6	17.2	13.8	15.3
carbon, inorganic [IC]	----	E354	0.050	%	3.00	2.98	2.78	3.28	3.16
carbon, inorganic [IC], (as CaCO3 equivalent)	----	E354	0.40	%	25.0	24.8	23.2	27.3	26.3
carbon, total organic [TOC]	----	EC356	0.050	%	11.1	9.62	14.4	10.5	12.1
Metals									
aluminum	7429-90-5	E440	50	mg/kg	2510	3220	2610	3290	3110
antimony	7440-36-0	E440	0.10	mg/kg	1.02	1.05	1.04	0.97	1.23
arsenic	7440-38-2	E440	0.10	mg/kg	18.0	12.6	10.7	16.6	22.4
barium	7440-39-3	E440	0.50	mg/kg	215	221	198	300	334
beryllium	7440-41-7	E440	0.10	mg/kg	0.50	0.47	0.42	0.53	0.62
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20
boron	7440-42-8	E440	5.0	mg/kg	6.8	8.2	11.4	8.3	10.2
cadmium	7440-43-9	E440	0.020	mg/kg	7.19	4.76	5.33	7.94	10.2



Analytical Results

Sub-Matrix: Sediment

Client sample ID

(Matrix: Soil/Solid)

					RG_ERCKDT_B RYOSE-1_LAEM P_EVO_2022-1 0_N	RG_ERCKDT_B RYOSE-2_LAEM P_EVO_2022-1 0_N	RG_ERCKDT_B RYOSE-3_LAEM P_EVO_2022-1 0_N	RG_ERCKMD_S E-1_LAEMP_EV O_2022-10_N	RG_ERCKMD_S E-2_LAEMP_EV O_2022-10_N
Client sampling date / time					31-Oct-2022 13:05	31-Oct-2022 13:10	31-Oct-2022 13:15	31-Oct-2022 12:30	31-Oct-2022 12:35
Analyte	CAS Number	Method	LOR	Unit	CG2215424-016	CG2215424-017	CG2215424-018	CG2215424-019	CG2215424-020
					Result	Result	Result	Result	Result
Metals									
calcium	7440-70-2	E440	50	mg/kg	87500	101000	86600	107000	108000
chromium	7440-47-3	E440	0.50	mg/kg	6.17	7.55	6.84	7.03	7.43
cobalt	7440-48-4	E440	0.10	mg/kg	196	198	214	251	361
copper	7440-50-8	E440	0.50	mg/kg	15.9	15.6	17.2	17.2	19.0
iron	7439-89-6	E440	50	mg/kg	33000	22200	20600	31600	40300
lead	7439-92-1	E440	0.50	mg/kg	10.8	8.42	6.96	9.92	11.8
lithium	7439-93-2	E440	2.0	mg/kg	4.4	5.3	5.0	4.9	5.2
magnesium	7439-95-4	E440	20	mg/kg	9220	9600	9090	7780	8980
manganese	7439-96-5	E440	1.0	mg/kg	4690	4810	5640	8020	11200
mercury	7439-97-6	E510	0.0050	mg/kg	0.0418	0.0437	0.0428	0.0614	0.0681
molybdenum	7439-98-7	E440	0.10	mg/kg	2.45	2.99	2.91	1.89	3.14
nickel	7440-02-0	E440	0.50	mg/kg	131	120	145	146	198
phosphorus	7723-14-0	E440	50	mg/kg	1860	1870	2670	1960	2180
potassium	7440-09-7	E440	100	mg/kg	810	1160	2180	900	900
selenium	7782-49-2	E440	0.20	mg/kg	29.1	15.6	14.8	31.3	29.9
silver	7440-22-4	E440	0.10	mg/kg	0.21	0.19	0.19	0.24	0.25
sodium	7440-23-5	E440	50	mg/kg	129	140	319	118	147
strontium	7440-24-6	E440	0.50	mg/kg	77.8	82.5	76.2	84.4	89.7
sulfur	7704-34-9	E440	1000	mg/kg	2600	3100	4700	3400	3900
thallium	7440-28-0	E440	0.050	mg/kg	0.340	0.305	0.527	0.413	0.518
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
titanium	7440-32-6	E440	1.0	mg/kg	10.3	13.8	12.5	15.8	13.8
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
uranium	7440-61-1	E440	0.050	mg/kg	1.82	1.91	1.64	1.72	2.07
vanadium	7440-62-2	E440	0.20	mg/kg	15.5	18.0	14.6	21.1	24.4
zinc	7440-66-6	E440	2.0	mg/kg	286	208	253	350	433
zirconium	7440-67-7	E440	1.0	mg/kg	<1.0	<1.0	<1.0	1.0	<1.0



Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Sediment

(Matrix: Soil/Solid)

Client sample ID

					RG_ERCKMD_S E-3_LAEMP_EV O_2022-10_N	RG_ERCKMD_B RYOSE-1_LAEM P_EVO_2022-1 O_N	RG_ERCKMD_B RYOSE-2_LAEM P_EVO_2022-1 O_N	RG_ERCKMD_B RYOSE-3_LAEM P_EVO_2022-1 O_N	RG_MI3_SE-1_L AEMP_EVO_20 22-11_N
Client sampling date / time					31-Oct-2022 12:40	31-Oct-2022 13:05	31-Oct-2022 13:10	31-Oct-2022 13:15	02-Nov-2022 09:05
Analyte	CAS Number	Method	LOR	Unit	CG2215424-021	CG2215424-022	CG2215424-023	CG2215424-024	CG2215424-025
					Result	Result	Result	Result	Result
Physical Tests									
moisture	----	E144	0.25	%	86.7	81.3	60.3	79.9	84.1
pH (1:2 soil:water)	----	E108	0.10	pH units	7.95 ^{FR5}	7.89	8.05	8.05	7.64
Particle Size									
grain size curve	----	E185A	-	-	See Attached	See Attached	See Attached	See Attached	See Attached
clay (<0.004mm)	----	EC184A	1.0	%	11.1	5.2	3.5	2.6	6.0
silt (0.063mm - 0.0312mm)	----	EC184A	1.0	%	34.4	13.2	5.5	6.0	29.6
silt (0.0312mm - 0.004mm)	----	EC184A	1.0	%	46.7	17.3	9.1	8.0	34.4
sand (0.125mm - 0.063mm)	----	EC184A	1.0	%	5.4	7.5	3.1	5.3	9.2
sand (0.25mm - 0.125mm)	----	EC184A	1.0	%	1.8	16.8	8.8	18.2	3.3
sand (0.5mm - 0.25mm)	----	EC184A	1.0	%	<1.0	19.0	24.6	30.4	1.2
sand (1.0mm - 0.50mm)	----	EC184A	1.0	%	<1.0	18.3	30.4	17.7	1.3
sand (2.0mm - 1.0mm)	----	EC184A	1.0	%	<1.0	2.4	14.0	8.4	2.7
gravel (>2mm)	----	EC184A	1.0	%	<1.0	<1.0	1.0	3.4	12.3
Organic / Inorganic Carbon									
carbon, total [TC]	----	E351	0.050	%	15.3	13.5	9.41	10.2	8.33
carbon, inorganic [IC]	----	E354	0.050	%	2.93	6.66	5.26	5.16	1.82
carbon, inorganic [IC], (as CaCO3 equivalent)	----	E354	0.40	%	24.4	55.5	43.9	43.0	15.2
carbon, total organic [TOC]	----	EC356	0.050	%	12.4	6.84	4.15	5.04	6.51
Metals									
aluminum	7429-90-5	E440	50	mg/kg	3080	1840	2620	2760	6550
antimony	7440-36-0	E440	0.10	mg/kg	1.21	0.69	0.65	0.62	0.37
arsenic	7440-38-2	E440	0.10	mg/kg	23.2	9.29	8.10	7.26	5.13
barium	7440-39-3	E440	0.50	mg/kg	347	264	236	223	216
beryllium	7440-41-7	E440	0.10	mg/kg	0.62	<0.36 ^{DLM}	0.41	0.40	0.48
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.72 ^{DLM}	<0.20	<0.20	<0.20
boron	7440-42-8	E440	5.0	mg/kg	9.9	<18.0 ^{DLM}	<5.0	<5.0	9.8
cadmium	7440-43-9	E440	0.020	mg/kg	9.78	7.51	5.46	4.93	1.23



Analytical Results

Sub-Matrix: Sediment

(Matrix: Soil/Solid)

Client sample ID

					RG_ERCKMD_S E-3_LAEMP_EV O_2022-10_N	RG_ERCKMD_B RYOSE-1_LAEM P_EVO_2022-1 O_N	RG_ERCKMD_B RYOSE-2_LAEM P_EVO_2022-1 O_N	RG_ERCKMD_B RYOSE-3_LAEM P_EVO_2022-1 O_N	RG_MI3_SE-1_L AEMP_EVO_20 22-11_N
Client sampling date / time					31-Oct-2022 12:40	31-Oct-2022 13:05	31-Oct-2022 13:10	31-Oct-2022 13:15	02-Nov-2022 09:05
Analyte	CAS Number	Method	LOR	Unit	CG2215424-021	CG2215424-022	CG2215424-023	CG2215424-024	CG2215424-025
					Result	Result	Result	Result	Result
Metals									
calcium	7440-70-2	E440	50	mg/kg	92600	241000	171000	168000	59600
chromium	7440-47-3	E440	0.50	mg/kg	7.58	4.62	5.68	5.75	11.6
cobalt	7440-48-4	E440	0.10	mg/kg	387	171	119	106	5.62
copper	7440-50-8	E440	0.50	mg/kg	19.9	9.33	10.8	9.89	11.9
iron	7439-89-6	E440	50	mg/kg	45000	17500	18000	14900	14300
lead	7439-92-1	E440	0.50	mg/kg	12.6	5.30	6.88	6.24	9.23
lithium	7439-93-2	E440	2.0	mg/kg	5.2	<7.2 ^{DLM}	4.3	4.4	10.5
magnesium	7439-95-4	E440	20	mg/kg	9100	6660	6190	5160	9430
manganese	7439-96-5	E440	1.0	mg/kg	12000	5480	4000	3240	305
mercury	7439-97-6	E510	0.0050	mg/kg	0.0626	0.0366	0.0278	0.0265	0.0416
molybdenum	7439-98-7	E440	0.10	mg/kg	2.84	1.34	1.33	1.37	1.09
nickel	7440-02-0	E440	0.50	mg/kg	185	99.4	83.5	76.8	21.0
phosphorus	7723-14-0	E440	50	mg/kg	2300	1120	1210	1090	1690
potassium	7440-09-7	E440	100	mg/kg	910	730	790	760	1400
selenium	7782-49-2	E440	0.20	mg/kg	31.8	20.9	6.36	5.90	2.09
silver	7440-22-4	E440	0.10	mg/kg	0.25	<0.36 ^{DLM}	0.11	0.11	0.15
sodium	7440-23-5	E440	50	mg/kg	162	<180 ^{DLM}	120	102	166
strontium	7440-24-6	E440	0.50	mg/kg	89.0	119	86.3	87.6	76.6
sulfur	7704-34-9	E440	1000	mg/kg	3700	5600	4300	3500	1200
thallium	7440-28-0	E440	0.050	mg/kg	0.537	0.312	0.280	0.226	0.205
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<7.2 ^{DLM}	<2.0	<2.0	<2.0
titanium	7440-32-6	E440	1.0	mg/kg	12.5	16.7	10.5	10.4	16.1
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<1.80 ^{DLM}	<0.50	<0.50	<0.50
uranium	7440-61-1	E440	0.050	mg/kg	2.04	2.63	2.01	1.84	0.867
vanadium	7440-62-2	E440	0.20	mg/kg	24.8	12.6	17.1	15.4	19.8
zinc	7440-66-6	E440	2.0	mg/kg	416	292	220	198	99.1
zirconium	7440-67-7	E440	1.0	mg/kg	<1.0	<3.6 ^{DLM}	<1.0	<1.0	1.0



Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Sediment

(Matrix: Soil/Solid)

Client sample ID

					RG_MI3_SE-2_L AEMP_EVO_20 22-11_N	RG_BOCK_SE-1 _LAEMP_EVO_ 2022-11_N	RG_BOCK_SE-2 _LAEMP_EVO_ 2022-11_N	RG_BOCK_SE-3 _LAEMP_EVO_ 2022-11_N	RG_BOCKRD_S E-1_LAEMP_EV O_2022-11_N
Client sampling date / time					02-Nov-2022 09:10	03-Nov-2022 09:20	03-Nov-2022 09:25	03-Nov-2022 09:30	03-Nov-2022 09:35
Analyte	CAS Number	Method	LOR	Unit	CG2215424-026	CG2215424-027	CG2215424-028	CG2215424-029	CG2215424-030
					Result	Result	Result	Result	Result
Physical Tests									
moisture	----	E144	0.25	%	90.0	57.1	61.6	56.8	69.3
pH (1:2 soil:water)	----	E108	0.10	pH units	7.56	7.92	7.95	7.99	7.96
Particle Size									
grain size curve	----	E185A	-	-	See Attached	See Attached	See Attached	See Attached	See Attached
clay (<0.004mm)	----	EC184A	1.0	%	5.6	9.2	9.7	9.5	8.6
silt (0.063mm - 0.0312mm)	----	EC184A	1.0	%	25.8	22.7	18.3	17.0	25.0
silt (0.0312mm - 0.004mm)	----	EC184A	1.0	%	29.4	35.4	32.7	31.6	40.3
sand (0.125mm - 0.063mm)	----	EC184A	1.0	%	9.6	13.9	11.2	11.8	13.4
sand (0.25mm - 0.125mm)	----	EC184A	1.0	%	7.3	8.0	8.0	7.8	7.3
sand (0.5mm - 0.25mm)	----	EC184A	1.0	%	7.9	3.3	6.9	7.0	3.0
sand (1.0mm - 0.50mm)	----	EC184A	1.0	%	5.2	3.1	6.9	7.4	2.0
sand (2.0mm - 1.0mm)	----	EC184A	1.0	%	5.7	2.2	5.3	7.6	<1.0
gravel (>2mm)	----	EC184A	1.0	%	3.5	2.2	1.0	<1.0	<1.0
Organic / Inorganic Carbon									
carbon, total [TC]	----	E351	0.050	%	7.96	15.4	14.2	14.1	15.0
carbon, inorganic [IC]	----	E354	0.050	%	1.96	6.45	5.99	6.10	5.92
carbon, inorganic [IC], (as CaCO3 equivalent)	----	E354	0.40	%	16.3	53.8	49.9	50.8	49.4
carbon, total organic [TOC]	----	EC356	0.050	%	6.00	8.95	8.21	8.00	9.08
Metals									
aluminum	7429-90-5	E440	50	mg/kg	4760	3050	2930	3220	1580
antimony	7440-36-0	E440	0.10	mg/kg	0.41	0.75	0.72	0.73	0.68
arsenic	7440-38-2	E440	0.10	mg/kg	4.68	2.72	2.71	2.93	5.30
barium	7440-39-3	E440	0.50	mg/kg	218	5530	5690	5040	10500
beryllium	7440-41-7	E440	0.10	mg/kg	0.39	<0.37 ^{DLM}	<0.36 ^{DLM}	<0.36 ^{DLM}	<0.38 ^{DLM}
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.75 ^{DLM}	<0.73 ^{DLM}	<0.72 ^{DLM}	<0.76 ^{DLM}
boron	7440-42-8	E440	5.0	mg/kg	7.6	<18.7 ^{DLM}	<18.2 ^{DLM}	<18.0 ^{DLM}	<18.9 ^{DLM}
cadmium	7440-43-9	E440	0.020	mg/kg	1.17	7.61	8.18	8.95	9.35
calcium	7440-70-2	E440	50	mg/kg	70600	267000	266000	261000	208000



Analytical Results

Sub-Matrix: Sediment

Client sample ID

(Matrix: Soil/Solid)

					RG_MI3_SE-2_L AEMP_EVO_20 22-11_N	RG_BOCK_SE-1 _LAEMP_EVO_ 2022-11_N	RG_BOCK_SE-2 _LAEMP_EVO_ 2022-11_N	RG_BOCK_SE-3 _LAEMP_EVO_ 2022-11_N	RG_BOCKRD_S E-1_LAEMP_EV O_2022-11_N
Client sampling date / time					02-Nov-2022 09:10	03-Nov-2022 09:20	03-Nov-2022 09:25	03-Nov-2022 09:30	03-Nov-2022 09:35
Analyte	CAS Number	Method	LOR	Unit	CG2215424-026	CG2215424-027	CG2215424-028	CG2215424-029	CG2215424-030
					Result	Result	Result	Result	Result
Metals									
chromium	7440-47-3	E440	0.50	mg/kg	9.27	5.87	6.02	6.76	3.04
cobalt	7440-48-4	E440	0.10	mg/kg	5.36	5.77	6.80	7.86	4.88
copper	7440-50-8	E440	0.50	mg/kg	11.5	15.4	13.5	15.1	9.92
iron	7439-89-6	E440	50	mg/kg	13300	5690	5580	5510	12500
lead	7439-92-1	E440	0.50	mg/kg	8.01	7.27	6.81	6.69	3.40
lithium	7439-93-2	E440	2.0	mg/kg	7.7	<7.5 ^{DLM}	<7.3 ^{DLM}	<7.2 ^{DLM}	<7.6 ^{DLM}
magnesium	7439-95-4	E440	20	mg/kg	7690	7190	7130	6900	4920
manganese	7439-96-5	E440	1.0	mg/kg	447	168	201	207	146
mercury	7439-97-6	E510	0.0050	mg/kg	0.0313	0.0338	0.0337	0.0341	0.0337
molybdenum	7439-98-7	E440	0.10	mg/kg	1.17	1.45	1.17	1.13	1.02
nickel	7440-02-0	E440	0.50	mg/kg	21.8	138	118	127	58.8
phosphorus	7723-14-0	E440	50	mg/kg	1280	518	370	483	531
potassium	7440-09-7	E440	100	mg/kg	1020	1160	1100	1200	860
selenium	7782-49-2	E440	0.20	mg/kg	1.97	19.3	15.8	20.2	23.6
silver	7440-22-4	E440	0.10	mg/kg	0.14	<0.37 ^{DLM}	<0.36 ^{DLM}	<0.36 ^{DLM}	<0.38 ^{DLM}
sodium	7440-23-5	E440	50	mg/kg	467	<187 ^{DLM}	<182 ^{DLM}	<180 ^{DLM}	<189 ^{DLM}
strontium	7440-24-6	E440	0.50	mg/kg	88.1	482	493	452	1280
sulfur	7704-34-9	E440	1000	mg/kg	1400	6300	5400	5000	10100
thallium	7440-28-0	E440	0.050	mg/kg	0.178	0.325	0.313	0.331	<0.189 ^{DLM}
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<7.5 ^{DLM}	<7.3 ^{DLM}	<7.2 ^{DLM}	<7.6 ^{DLM}
titanium	7440-32-6	E440	1.0	mg/kg	12.0	22.4	28.2	23.9	16.5
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	2.23	2.41	2.20	<1.89 ^{DLM}
uranium	7440-61-1	E440	0.050	mg/kg	0.814	3.64	3.17	3.21	1.79
vanadium	7440-62-2	E440	0.20	mg/kg	17.1	15.4	14.7	15.4	10.4
zinc	7440-66-6	E440	2.0	mg/kg	95.5	500	518	559	514
zirconium	7440-67-7	E440	1.0	mg/kg	<1.0	<3.7 ^{DLM}	<3.6 ^{DLM}	<3.6 ^{DLM}	<3.8 ^{DLM}

Please refer to the General Comments section for an explanation of any qualifiers detected.





QUALITY CONTROL INTERPRETIVE REPORT

<p>Work Order : CG2215424</p> <p>Client : Teck Coal Limited</p> <p>Contact : Mike Pope</p> <p>Address : RR#1 HWY#3 Sparwood BC Canada V0B 2G1</p> <p>Telephone : ----</p> <p>Project : Regional Effects Program</p> <p>PO : VPO00847032</p> <p>C-O-C number : EVO LAEMP NOV 2022</p> <p>Sampler : ----</p> <p>Site : ----</p> <p>Quote number : Teck Coal Master Quote</p> <p>No. of samples received : 30</p> <p>No. of samples analysed : 30</p>	<p>Page : 1 of 29</p> <p>Laboratory : Calgary - Environmental</p> <p>Account Manager : Lyudmyla Shvets</p> <p>Address : 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5</p> <p>Telephone : +1 403 407 1800</p> <p>Date Samples Received : 04-Nov-2022 09:25</p> <p>Issue Date : 14-Nov-2022 14:28</p>
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This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

- Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
- CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
- DQO: Data Quality Objective.
- LOR: Limit of Reporting (detection limit).
- RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: Soil/Solid

Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag RG_BOCK_SE-1_LAEMP_EVO_2022-11_N	E510	03-Nov-2022	07-Nov-2022	----	----		08-Nov-2022	28 days	5 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag RG_BOCK_SE-2_LAEMP_EVO_2022-11_N	E510	03-Nov-2022	07-Nov-2022	----	----		08-Nov-2022	28 days	5 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag RG_BOCK_SE-3_LAEMP_EVO_2022-11_N	E510	03-Nov-2022	07-Nov-2022	----	----		08-Nov-2022	28 days	5 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag RG_BOCKRD_SE-1_LAEMP_EVO_2022-11_N	E510	03-Nov-2022	07-Nov-2022	----	----		08-Nov-2022	28 days	5 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag RG_MI3_SE-1_LAEMP_EVO_2022-11_N	E510	02-Nov-2022	07-Nov-2022	----	----		08-Nov-2022	28 days	6 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag RG_MI3_SE-2_LAEMP_EVO_2022-11_N	E510	02-Nov-2022	07-Nov-2022	----	----		08-Nov-2022	28 days	6 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag RG_ERCKUT_BRYOSE-2_LAEMP_EVO_2022-11_N	E510	01-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	28 days	7 days	✓



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKUT_BRYOSE-3_LAEMP_EVO_2022-11_N	E510	01-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	28 days	7 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKUT_SE-3_LAEMP_EVO_2022-11_N	E510	01-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	28 days	7 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKUT_SE-4_LAEMP_EVO_2022-11_N	E510	01-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	28 days	7 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKUT_SE-5_LAEMP_EVO_2022-11_N	E510	01-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	28 days	7 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKDT_BRYOSE-1_LAEMP_EVO_2022-10_N	E510	31-Oct-2022	07-Nov-2022	----	----		08-Nov-2022	28 days	8 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKDT_BRYOSE-2_LAEMP_EVO_2022-10_N	E510	31-Oct-2022	07-Nov-2022	----	----		08-Nov-2022	28 days	8 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKDT_BRYOSE-3_LAEMP_EVO_2022-10_N	E510	31-Oct-2022	07-Nov-2022	----	----		08-Nov-2022	28 days	8 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKDT_SE-1_LAEMP_EVO_2022-10_N	E510	31-Oct-2022	08-Nov-2022	----	----		08-Nov-2022	28 days	8 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKDT_SE-2_LAEMP_EVO_2022-10_N	E510	31-Oct-2022	08-Nov-2022	----	----		08-Nov-2022	28 days	8 days	✔	



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			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKDT_SE-3_LAEMP_EVO_2022-10_N	E510	31-Oct-2022	07-Nov-2022	----	----		08-Nov-2022	28 days	8 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKDT_SE-4_LAEMP_EVO_2022-10_N	E510	31-Oct-2022	07-Nov-2022	----	----		08-Nov-2022	28 days	8 days	✔	
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LDPE bag RG_ERCKDT_SE-5_LAEMP_EVO_2022-10_N	E510	31-Oct-2022	07-Nov-2022	----	----		08-Nov-2022	28 days	8 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKDT_SE-6_LAEMP_EVO_2022-10_N	E510	31-Oct-2022	07-Nov-2022	----	----		08-Nov-2022	28 days	8 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKDT_SE-7_LAEMP_EVO_2022-10_N	E510	31-Oct-2022	07-Nov-2022	----	----		08-Nov-2022	28 days	8 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKMD_BRYOSE-1_LAEMP_EVO_2022-10_N	E510	31-Oct-2022	07-Nov-2022	----	----		08-Nov-2022	28 days	8 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKMD_BRYOSE-2_LAEMP_EVO_2022-10_N	E510	31-Oct-2022	07-Nov-2022	----	----		08-Nov-2022	28 days	8 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKMD_BRYOSE-3_LAEMP_EVO_2022-10_N	E510	31-Oct-2022	07-Nov-2022	----	----		08-Nov-2022	28 days	8 days	✔	
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LDPE bag RG_ERCKMD_SE-1_LAEMP_EVO_2022-10_N	E510	31-Oct-2022	07-Nov-2022	----	----		08-Nov-2022	28 days	8 days	✔	



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				Rec	Actual			Rec	Actual		
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LDPE bag RG_ERCKMD_SE-2_LAEMP_EVO_2022-10_N	E510	31-Oct-2022	07-Nov-2022	----	----		08-Nov-2022	28 days	8 days	✔	
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Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKUT_SE-2_LAEMP_EVO_2022-10_N	E510	31-Oct-2022	08-Nov-2022	----	----		08-Nov-2022	28 days	8 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_BOCK_SE-1_LAEMP_EVO_2022-11_N	E440	03-Nov-2022	07-Nov-2022	----	----		08-Nov-2022	180 days	5 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_BOCK_SE-2_LAEMP_EVO_2022-11_N	E440	03-Nov-2022	07-Nov-2022	----	----		08-Nov-2022	180 days	5 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_BOCK_SE-3_LAEMP_EVO_2022-11_N	E440	03-Nov-2022	07-Nov-2022	----	----		08-Nov-2022	180 days	5 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag RG_BOCKRD_SE-1_LAEMP_EVO_2022-11_N	E440	03-Nov-2022	07-Nov-2022	----	----		08-Nov-2022	180 days	5 days	✔	



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Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_MI3_SE-1_LAEMP_EVO_2022-11_N	E440	02-Nov-2022	07-Nov-2022	----	----		08-Nov-2022	180 days	6 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_MI3_SE-2_LAEMP_EVO_2022-11_N	E440	02-Nov-2022	07-Nov-2022	----	----		08-Nov-2022	180 days	6 days	✔	
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LDPE bag RG_ERCKUT_BRYOSE-2_LAEMP_EVO_2022-11_N	E440	01-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	180 days	7 days	✔	
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LDPE bag RG_ERCKUT_BRYOSE-3_LAEMP_EVO_2022-11_N	E440	01-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	180 days	7 days	✔	
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LDPE bag RG_ERCKUT_SE-3_LAEMP_EVO_2022-11_N	E440	01-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	180 days	7 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_ERCKUT_SE-4_LAEMP_EVO_2022-11_N	E440	01-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	180 days	7 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_ERCKUT_SE-5_LAEMP_EVO_2022-11_N	E440	01-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	180 days	7 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_ERCKDT_BRYOSE-1_LAEMP_EVO_2022-10_N	E440	31-Oct-2022	07-Nov-2022	----	----		08-Nov-2022	180 days	8 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_ERCKDT_BRYOSE-2_LAEMP_EVO_2022-10_N	E440	31-Oct-2022	07-Nov-2022	----	----		08-Nov-2022	180 days	8 days	✔	



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LDPE bag RG_ERCKDT_SE-5_LAEMP_EVO_2022-10_N	E440	31-Oct-2022	07-Nov-2022	----	----		08-Nov-2022	180 days	8 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_ERCKDT_SE-6_LAEMP_EVO_2022-10_N	E440	31-Oct-2022	07-Nov-2022	----	----		08-Nov-2022	180 days	8 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_ERCKDT_SE-7_LAEMP_EVO_2022-10_N	E440	31-Oct-2022	07-Nov-2022	----	----		08-Nov-2022	180 days	8 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_ERCKMD_BRYOSE-1_LAEMP_EVO_2022-10_N	E440	31-Oct-2022	07-Nov-2022	----	----		08-Nov-2022	180 days	8 days	✔	



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			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Metals in Soil/Solid by CRC ICPCS											
LDPE bag RG_ERCKMD_BRYOSE-2_LAEMP_EVO_2022-10_N	E440	31-Oct-2022	07-Nov-2022	----	----		08-Nov-2022	180 days	8 days	✔	
Metals : Metals in Soil/Solid by CRC ICPCS											
LDPE bag RG_ERCKMD_BRYOSE-3_LAEMP_EVO_2022-10_N	E440	31-Oct-2022	07-Nov-2022	----	----		08-Nov-2022	180 days	8 days	✔	
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LDPE bag RG_ERCKMD_SE-2_LAEMP_EVO_2022-10_N	E440	31-Oct-2022	07-Nov-2022	----	----		08-Nov-2022	180 days	8 days	✔	
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LDPE bag RG_ERCKMD_SE-3_LAEMP_EVO_2022-10_N	E440	31-Oct-2022	07-Nov-2022	----	----		08-Nov-2022	180 days	8 days	✔	
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LDPE bag RG_ERCKUT_BRYOSE-1_LAEMP_EVO_2022-10_N	E440	31-Oct-2022	08-Nov-2022	----	----		08-Nov-2022	180 days	8 days	✔	
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Metals : Metals in Soil/Solid by CRC ICPCS											
LDPE bag RG_ERCKUT_SE-2_LAEMP_EVO_2022-10_N	E440	31-Oct-2022	08-Nov-2022	----	----		08-Nov-2022	180 days	8 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_BOCK_SE-1_LAEMP_EVO_2022-11_N	E351	03-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	180 days	0 days	✔	



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			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_BOCK_SE-2_LAEMP_EVO_2022-11_N	E351	03-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_BOCK_SE-3_LAEMP_EVO_2022-11_N	E351	03-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_BOCKRD_SE-1_LAEMP_EVO_2022-11_N	E351	03-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKDT_BRYOSE-1_LAEMP_EVO_2022-10_N	E351	31-Oct-2022	09-Nov-2022	----	----		09-Nov-2022	180 days	0 days	✔	
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LDPE bag RG_ERCKDT_BRYOSE-3_LAEMP_EVO_2022-10_N	E351	31-Oct-2022	11-Nov-2022	----	----		11-Nov-2022	180 days	0 days	✔	
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LDPE bag RG_ERCKDT_SE-1_LAEMP_EVO_2022-10_N	E351	31-Oct-2022	09-Nov-2022	----	----		09-Nov-2022	180 days	0 days	✔	
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LDPE bag RG_ERCKDT_SE-4_LAEMP_EVO_2022-10_N	E351	31-Oct-2022	09-Nov-2022	----	----		09-Nov-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKDT_SE-5_LAEMP_EVO_2022-10_N	E351	31-Oct-2022	09-Nov-2022	----	----		09-Nov-2022	180 days	0 days	✔	
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LDPE bag RG_ERCKDT_SE-7_LAEMP_EVO_2022-10_N	E351	31-Oct-2022	09-Nov-2022	----	----		09-Nov-2022	180 days	0 days	✔	
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LDPE bag RG_ERCKMD_BRYOSE-1_LAEMP_EVO_2022-10_N	E351	31-Oct-2022	08-Nov-2022	----	----		08-Nov-2022	180 days	0 days	✔	
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LDPE bag RG_ERCKUT_BRYOSE-1_LAEMP_EVO_2022-10_N	E351	31-Oct-2022	09-Nov-2022	----	----		09-Nov-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKUT_BRYOSE-2_LAEMP_EVO_2022-11_N	E351	01-Nov-2022	09-Nov-2022	----	----		09-Nov-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKUT_BRYOSE-3_LAEMP_EVO_2022-11_N	E351	01-Nov-2022	09-Nov-2022	----	----		09-Nov-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKUT_SE-1_LAEMP_EVO_2022-10_N	E351	31-Oct-2022	09-Nov-2022	----	----		09-Nov-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKUT_SE-2_LAEMP_EVO_2022-10_N	E351	31-Oct-2022	09-Nov-2022	----	----		09-Nov-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKUT_SE-3_LAEMP_EVO_2022-11_N	E351	01-Nov-2022	09-Nov-2022	----	----		09-Nov-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKUT_SE-4_LAEMP_EVO_2022-11_N	E351	01-Nov-2022	09-Nov-2022	----	----		09-Nov-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKUT_SE-5_LAEMP_EVO_2022-11_N	E351	01-Nov-2022	09-Nov-2022	----	----		09-Nov-2022	180 days	0 days	✔	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Total Carbon by Combustion										
LDPE bag RG_MI3_SE-1_LAEMP_EVO_2022-11_N	E351	02-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	180 days	0 days	✔
Organic / Inorganic Carbon : Total Carbon by Combustion										
LDPE bag RG_MI3_SE-2_LAEMP_EVO_2022-11_N	E351	02-Nov-2022	08-Nov-2022	----	----		08-Nov-2022	180 days	0 days	✔
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_BOCK_SE-1_LAEMP_EVO_2022-11_N	E354	03-Nov-2022	----	----	----		09-Nov-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_BOCK_SE-2_LAEMP_EVO_2022-11_N	E354	03-Nov-2022	----	----	----		09-Nov-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_BOCK_SE-3_LAEMP_EVO_2022-11_N	E354	03-Nov-2022	----	----	----		09-Nov-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_BOCKRD_SE-1_LAEMP_EVO_2022-11_N	E354	03-Nov-2022	----	----	----		09-Nov-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKDT_BRYOSE-1_LAEMP_EVO_2022-10_N	E354	31-Oct-2022	----	----	----		08-Nov-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKDT_BRYOSE-2_LAEMP_EVO_2022-10_N	E354	31-Oct-2022	----	----	----		08-Nov-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKDT_BRYOSE-3_LAEMP_EVO_2022-10_N	E354	31-Oct-2022	----	----	----		10-Nov-2022	----	----	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKDT_SE-1_LAEMP_EVO_2022-10_N	E354	31-Oct-2022	----	----	----		08-Nov-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKDT_SE-2_LAEMP_EVO_2022-10_N	E354	31-Oct-2022	----	----	----		08-Nov-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKDT_SE-3_LAEMP_EVO_2022-10_N	E354	31-Oct-2022	----	----	----		08-Nov-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKDT_SE-4_LAEMP_EVO_2022-10_N	E354	31-Oct-2022	----	----	----		08-Nov-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKDT_SE-5_LAEMP_EVO_2022-10_N	E354	31-Oct-2022	----	----	----		08-Nov-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKDT_SE-6_LAEMP_EVO_2022-10_N	E354	31-Oct-2022	----	----	----		08-Nov-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKDT_SE-7_LAEMP_EVO_2022-10_N	E354	31-Oct-2022	----	----	----		08-Nov-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKMD_BRYOSE-1_LAEMP_EVO_2022-10_N	E354	31-Oct-2022	----	----	----		09-Nov-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKMD_BRYOSE-2_LAEMP_EVO_2022-10_N	E354	31-Oct-2022	----	----	----		09-Nov-2022	----	----	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKMD_BRYOSE-3_LAEMP_EVO_2022-10_N	E354	31-Oct-2022	----	----	----		09-Nov-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKMD_SE-1_LAEMP_EVO_2022-10_N	E354	31-Oct-2022	----	----	----		08-Nov-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKMD_SE-2_LAEMP_EVO_2022-10_N	E354	31-Oct-2022	----	----	----		08-Nov-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKMD_SE-3_LAEMP_EVO_2022-10_N	E354	31-Oct-2022	----	----	----		08-Nov-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKUT_BRYOSE-1_LAEMP_EVO_2022-10_N	E354	31-Oct-2022	----	----	----		08-Nov-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKUT_BRYOSE-2_LAEMP_EVO_2022-11_N	E354	01-Nov-2022	----	----	----		08-Nov-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKUT_BRYOSE-3_LAEMP_EVO_2022-11_N	E354	01-Nov-2022	----	----	----		08-Nov-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKUT_SE-1_LAEMP_EVO_2022-10_N	E354	31-Oct-2022	----	----	----		08-Nov-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKUT_SE-2_LAEMP_EVO_2022-10_N	E354	31-Oct-2022	----	----	----		08-Nov-2022	----	----	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKUT_SE-3_LAEMP_EVO_2022-11_N	E354	01-Nov-2022	----	----	----		08-Nov-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKUT_SE-4_LAEMP_EVO_2022-11_N	E354	01-Nov-2022	----	----	----		08-Nov-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKUT_SE-5_LAEMP_EVO_2022-11_N	E354	01-Nov-2022	----	----	----		08-Nov-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_MI3_SE-1_LAEMP_EVO_2022-11_N	E354	02-Nov-2022	----	----	----		09-Nov-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_MI3_SE-2_LAEMP_EVO_2022-11_N	E354	02-Nov-2022	----	----	----		09-Nov-2022	----	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_BOCK_SE-1_LAEMP_EVO_2022-11_N	E185A	03-Nov-2022	----	----	----		10-Nov-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_BOCK_SE-2_LAEMP_EVO_2022-11_N	E185A	03-Nov-2022	----	----	----		10-Nov-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_BOCK_SE-3_LAEMP_EVO_2022-11_N	E185A	03-Nov-2022	----	----	----		10-Nov-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_BOCKRD_SE-1_LAEMP_EVO_2022-11_N	E185A	03-Nov-2022	----	----	----		10-Nov-2022	365 days	----	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKDT_BRYOSE-1_LAEMP_EVO_2022-10_N	E185A	31-Oct-2022	----	----	----		10-Nov-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKDT_BRYOSE-2_LAEMP_EVO_2022-10_N	E185A	31-Oct-2022	----	----	----		10-Nov-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKDT_SE-1_LAEMP_EVO_2022-10_N	E185A	31-Oct-2022	----	----	----		10-Nov-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKDT_SE-2_LAEMP_EVO_2022-10_N	E185A	31-Oct-2022	----	----	----		10-Nov-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKDT_SE-3_LAEMP_EVO_2022-10_N	E185A	31-Oct-2022	----	----	----		10-Nov-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKDT_SE-4_LAEMP_EVO_2022-10_N	E185A	31-Oct-2022	----	----	----		10-Nov-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKDT_SE-5_LAEMP_EVO_2022-10_N	E185A	31-Oct-2022	----	----	----		10-Nov-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKDT_SE-6_LAEMP_EVO_2022-10_N	E185A	31-Oct-2022	----	----	----		10-Nov-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKDT_SE-7_LAEMP_EVO_2022-10_N	E185A	31-Oct-2022	----	----	----		10-Nov-2022	365 days	----	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKMD_BRYOSE-1_LAEMP_EVO_2022-10_N	E185A	31-Oct-2022	----	----	----		10-Nov-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKMD_BRYOSE-2_LAEMP_EVO_2022-10_N	E185A	31-Oct-2022	----	----	----		10-Nov-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKMD_BRYOSE-3_LAEMP_EVO_2022-10_N	E185A	31-Oct-2022	----	----	----		10-Nov-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKMD_SE-1_LAEMP_EVO_2022-10_N	E185A	31-Oct-2022	----	----	----		10-Nov-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKMD_SE-2_LAEMP_EVO_2022-10_N	E185A	31-Oct-2022	----	----	----		10-Nov-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKMD_SE-3_LAEMP_EVO_2022-10_N	E185A	31-Oct-2022	----	----	----		10-Nov-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKUT_BRYOSE-1_LAEMP_EVO_2022-10_N	E185A	31-Oct-2022	----	----	----		10-Nov-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKUT_BRYOSE-2_LAEMP_EVO_2022-11_N	E185A	01-Nov-2022	----	----	----		10-Nov-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKUT_BRYOSE-3_LAEMP_EVO_2022-11_N	E185A	01-Nov-2022	----	----	----		10-Nov-2022	365 days	----	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKUT_SE-1_LAEMP_EVO_2022-10_N	E185A	31-Oct-2022	----	----	----		10-Nov-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKUT_SE-2_LAEMP_EVO_2022-10_N	E185A	31-Oct-2022	----	----	----		10-Nov-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKUT_SE-3_LAEMP_EVO_2022-11_N	E185A	01-Nov-2022	----	----	----		10-Nov-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKUT_SE-4_LAEMP_EVO_2022-11_N	E185A	01-Nov-2022	----	----	----		10-Nov-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKUT_SE-5_LAEMP_EVO_2022-11_N	E185A	01-Nov-2022	----	----	----		10-Nov-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_MI3_SE-1_LAEMP_EVO_2022-11_N	E185A	02-Nov-2022	----	----	----		10-Nov-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_MI3_SE-2_LAEMP_EVO_2022-11_N	E185A	02-Nov-2022	----	----	----		10-Nov-2022	365 days	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_BOCK_SE-1_LAEMP_EVO_2022-11_N	E144	03-Nov-2022	----	----	----		09-Nov-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_BOCK_SE-2_LAEMP_EVO_2022-11_N	E144	03-Nov-2022	----	----	----		09-Nov-2022	----	----	



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_BOCK_SE-3_LAEMP_EVO_2022-11_N	E144	03-Nov-2022	----	----	----		09-Nov-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_BOCKRD_SE-1_LAEMP_EVO_2022-11_N	E144	03-Nov-2022	----	----	----		09-Nov-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKDT_BRYOSE-1_LAEMP_EVO_2022-10_N	E144	31-Oct-2022	----	----	----		09-Nov-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKDT_BRYOSE-2_LAEMP_EVO_2022-10_N	E144	31-Oct-2022	----	----	----		09-Nov-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKDT_BRYOSE-3_LAEMP_EVO_2022-10_N	E144	31-Oct-2022	----	----	----		09-Nov-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKDT_SE-1_LAEMP_EVO_2022-10_N	E144	31-Oct-2022	----	----	----		09-Nov-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKDT_SE-2_LAEMP_EVO_2022-10_N	E144	31-Oct-2022	----	----	----		09-Nov-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKDT_SE-3_LAEMP_EVO_2022-10_N	E144	31-Oct-2022	----	----	----		09-Nov-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKDT_SE-4_LAEMP_EVO_2022-10_N	E144	31-Oct-2022	----	----	----		09-Nov-2022	----	----	



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKDT_SE-5_LAEMP_EVO_2022-10_N	E144	31-Oct-2022	----	----	----		09-Nov-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKDT_SE-6_LAEMP_EVO_2022-10_N	E144	31-Oct-2022	----	----	----		09-Nov-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKDT_SE-7_LAEMP_EVO_2022-10_N	E144	31-Oct-2022	----	----	----		09-Nov-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKMD_BRYOSE-1_LAEMP_EVO_2022-10_N	E144	31-Oct-2022	----	----	----		09-Nov-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKMD_BRYOSE-2_LAEMP_EVO_2022-10_N	E144	31-Oct-2022	----	----	----		09-Nov-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKMD_BRYOSE-3_LAEMP_EVO_2022-10_N	E144	31-Oct-2022	----	----	----		09-Nov-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKMD_SE-1_LAEMP_EVO_2022-10_N	E144	31-Oct-2022	----	----	----		09-Nov-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKMD_SE-2_LAEMP_EVO_2022-10_N	E144	31-Oct-2022	----	----	----		09-Nov-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKMD_SE-3_LAEMP_EVO_2022-10_N	E144	31-Oct-2022	----	----	----		09-Nov-2022	----	----	



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		
				Rec	Actual			Rec	Actual	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKUT_BRYOSE-1_LAEMP_EVO_2022-10_N	E144	31-Oct-2022	----	----	----		09-Nov-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKUT_BRYOSE-2_LAEMP_EVO_2022-11_N	E144	01-Nov-2022	----	----	----		09-Nov-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKUT_BRYOSE-3_LAEMP_EVO_2022-11_N	E144	01-Nov-2022	----	----	----		09-Nov-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKUT_SE-1_LAEMP_EVO_2022-10_N	E144	31-Oct-2022	----	----	----		09-Nov-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKUT_SE-2_LAEMP_EVO_2022-10_N	E144	31-Oct-2022	----	----	----		09-Nov-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKUT_SE-3_LAEMP_EVO_2022-11_N	E144	01-Nov-2022	----	----	----		09-Nov-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKUT_SE-4_LAEMP_EVO_2022-11_N	E144	01-Nov-2022	----	----	----		09-Nov-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKUT_SE-5_LAEMP_EVO_2022-11_N	E144	01-Nov-2022	----	----	----		09-Nov-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_MI3_SE-1_LAEMP_EVO_2022-11_N	E144	02-Nov-2022	----	----	----		09-Nov-2022	----	----	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Moisture Content by Gravimetry											
LDPE bag RG_MI3_SE-2_LAEMP_EVO_2022-11_N	E144	02-Nov-2022	----	----	----		09-Nov-2022	----	----		
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_BOCK_SE-1_LAEMP_EVO_2022-11_N	E108	03-Nov-2022	09-Nov-2022	----	----		09-Nov-2022	30 days	6 days		✔
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_BOCK_SE-2_LAEMP_EVO_2022-11_N	E108	03-Nov-2022	09-Nov-2022	----	----		09-Nov-2022	30 days	6 days		✔
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_BOCK_SE-3_LAEMP_EVO_2022-11_N	E108	03-Nov-2022	09-Nov-2022	----	----		09-Nov-2022	30 days	6 days		✔
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_BOCKRD_SE-1_LAEMP_EVO_2022-11_N	E108	03-Nov-2022	09-Nov-2022	----	----		09-Nov-2022	30 days	6 days		✔
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKUT_BRYOSE-2_LAEMP_EVO_2022-11_N	E108	01-Nov-2022	07-Nov-2022	----	----		07-Nov-2022	30 days	6 days		✔
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKUT_BRYOSE-3_LAEMP_EVO_2022-11_N	E108	01-Nov-2022	07-Nov-2022	----	----		07-Nov-2022	30 days	6 days		✔
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKUT_SE-3_LAEMP_EVO_2022-11_N	E108	01-Nov-2022	07-Nov-2022	----	----		07-Nov-2022	30 days	6 days		✔
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKUT_SE-4_LAEMP_EVO_2022-11_N	E108	01-Nov-2022	07-Nov-2022	----	----		07-Nov-2022	30 days	6 days		✔



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKUT_SE-5_LAEMP_EVO_2022-11_N	E108	01-Nov-2022	07-Nov-2022	----	----		07-Nov-2022	30 days	6 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKDT_BRYOSE-1_LAEMP_EVO_2022-10_N	E108	31-Oct-2022	07-Nov-2022	----	----		07-Nov-2022	30 days	7 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKDT_BRYOSE-2_LAEMP_EVO_2022-10_N	E108	31-Oct-2022	07-Nov-2022	----	----		07-Nov-2022	30 days	7 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKDT_SE-1_LAEMP_EVO_2022-10_N	E108	31-Oct-2022	07-Nov-2022	----	----		07-Nov-2022	30 days	7 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKDT_SE-2_LAEMP_EVO_2022-10_N	E108	31-Oct-2022	07-Nov-2022	----	----		07-Nov-2022	30 days	7 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKDT_SE-3_LAEMP_EVO_2022-10_N	E108	31-Oct-2022	07-Nov-2022	----	----		07-Nov-2022	30 days	7 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKDT_SE-4_LAEMP_EVO_2022-10_N	E108	31-Oct-2022	07-Nov-2022	----	----		07-Nov-2022	30 days	7 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKDT_SE-5_LAEMP_EVO_2022-10_N	E108	31-Oct-2022	07-Nov-2022	----	----		07-Nov-2022	30 days	7 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKDT_SE-6_LAEMP_EVO_2022-10_N	E108	31-Oct-2022	07-Nov-2022	----	----		07-Nov-2022	30 days	7 days	✔	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKDT_SE-7_LAEMP_EVO_2022-10_N	E108	31-Oct-2022	07-Nov-2022	----	----		07-Nov-2022	30 days	7 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKUT_BRYOSE-1_LAEMP_EVO_2022-10_N	E108	31-Oct-2022	07-Nov-2022	----	----		07-Nov-2022	30 days	7 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKUT_SE-1_LAEMP_EVO_2022-10_N	E108	31-Oct-2022	07-Nov-2022	----	----		07-Nov-2022	30 days	7 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKUT_SE-2_LAEMP_EVO_2022-10_N	E108	31-Oct-2022	07-Nov-2022	----	----		07-Nov-2022	30 days	7 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_MI3_SE-1_LAEMP_EVO_2022-11_N	E108	02-Nov-2022	09-Nov-2022	----	----		09-Nov-2022	30 days	7 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_MI3_SE-2_LAEMP_EVO_2022-11_N	E108	02-Nov-2022	09-Nov-2022	----	----		09-Nov-2022	30 days	7 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKMD_BRYOSE-1_LAEMP_EVO_2022-10_N	E108	31-Oct-2022	09-Nov-2022	----	----		09-Nov-2022	30 days	9 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKMD_BRYOSE-2_LAEMP_EVO_2022-10_N	E108	31-Oct-2022	09-Nov-2022	----	----		09-Nov-2022	30 days	9 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKMD_BRYOSE-3_LAEMP_EVO_2022-10_N	E108	31-Oct-2022	09-Nov-2022	----	----		09-Nov-2022	30 days	9 days	✔	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag RG_ERCKMD_SE-1_LAEMP_EVO_2022-10_N	E108	31-Oct-2022	09-Nov-2022	----	----		09-Nov-2022	30 days	9 days	✔
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag RG_ERCKMD_SE-2_LAEMP_EVO_2022-10_N	E108	31-Oct-2022	09-Nov-2022	----	----		09-Nov-2022	30 days	9 days	✔
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag RG_ERCKMD_SE-3_LAEMP_EVO_2022-10_N	E108	31-Oct-2022	09-Nov-2022	----	----		09-Nov-2022	30 days	9 days	✔

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Soil/Solid**

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
Analytical Methods							
Laboratory Duplicates (DUP)							
Mercury in Soil/Solid by CVAAS	E510	733125	2	36	5.5	5.0	✔
Metals in Soil/Solid by CRC ICPMS	E440	733124	2	40	5.0	5.0	✔
Moisture Content by Gravimetry	E144	737757	2	30	6.6	5.0	✔
pH by Meter (1:2 Soil:Water Extraction)	E108	733243	2	31	6.4	5.0	✔
Total Carbon by Combustion	E351	734816	3	41	7.3	5.0	✔
Total Inorganic Carbon by Acetic Acid pH Standard Curve	E354	734958	3	42	7.1	5.0	✔
Laboratory Control Samples (LCS)							
Mercury in Soil/Solid by CVAAS	E510	733125	4	36	11.1	10.0	✔
Metals in Soil/Solid by CRC ICPMS	E440	733124	4	40	10.0	10.0	✔
Moisture Content by Gravimetry	E144	737757	2	30	6.6	5.0	✔
pH by Meter (1:2 Soil:Water Extraction)	E108	733243	4	31	12.9	10.0	✔
Total Carbon by Combustion	E351	734816	6	41	14.6	10.0	✔
Total Inorganic Carbon by Acetic Acid pH Standard Curve	E354	734958	6	42	14.2	10.0	✔
Method Blanks (MB)							
Mercury in Soil/Solid by CVAAS	E510	733125	2	36	5.5	5.0	✔
Metals in Soil/Solid by CRC ICPMS	E440	733124	2	40	5.0	5.0	✔
Moisture Content by Gravimetry	E144	737757	2	30	6.6	5.0	✔
Total Carbon by Combustion	E351	734816	3	41	7.3	5.0	✔
Total Inorganic Carbon by Acetic Acid pH Standard Curve	E354	734958	3	42	7.1	5.0	✔



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
pH by Meter (1:2 Soil:Water Extraction)	E108 Saskatoon - Environmental	Soil/Solid	BC Lab Manual	pH is determined by potentiometric measurement with a pH electrode at ambient laboratory temperature (normally $20 \pm 5^\circ\text{C}$), and is carried out in accordance with procedures described in the BC Lab Manual (prescriptive method). The procedure involves mixing the dried (at $<60^\circ\text{C}$) and sieved (10mesh/2mm) sample with ultra pure water at a 1:2 ratio of sediment to water. The pH is then measured by a standard pH probe.
Moisture Content by Gravimetry	E144 Saskatoon - Environmental	Soil/Solid	CCME PHC in Soil - Tier 1	Moisture is measured gravimetrically by drying the sample at 105°C . Moisture content is calculated as the weight loss (due to water) divided by the wet weight of the sample, expressed as a percentage.
Grain Size Report (Attachment) Pipet/Sieve Method	E185A Saskatoon - Environmental	Soil/Solid	SSIR-51 Method 3.2.1	A grain size curve is a graphical representation of the particle sizing of a sample representing the percent passing against the effective particle size.
Total Carbon by Combustion	E351 Saskatoon - Environmental	Soil/Solid	CSSS (2008) 21.2 (mod)	Total Carbon is determined by the high temperature combustion method with measurement by an infrared detector.
Total Inorganic Carbon by Acetic Acid pH Standard Curve	E354 Saskatoon - Environmental	Soil/Solid	CSSS (2008) 20.2	Total Inorganic Carbon is determined by acetic acid pH standard curve, where a known quantity of acetic acid is consumed by reaction with carbonates in the soil. The pH of the resulting solution is measured and compared against a standard curve relating pH to weight of carbonate.
Metals in Soil/Solid by CRC ICPMS	E440 Saskatoon - Environmental	Soil/Solid	EPA 6020B (mod)	This method is intended to liberate metals that may be environmentally available. Samples are dried, then sieved through a 2 mm sieve, and digested with HNO_3 and HCl . Dependent on sample matrix, some metals may be only partially recovered, including Al, Ba, Be, Cr, Sr, Ti, Tl, V, W, and Zr. Silicate minerals are not solubilized. Volatile forms of sulfur (including sulfide) may not be captured, as they may be lost during sampling, storage, or digestion. This method does not adequately recover elemental sulfur, and is unsuitable for assessment of elemental sulfur standards or guidelines. Analysis is by Collision/Reaction Cell ICPMS.
Mercury in Soil/Solid by CVAAS	E510 Saskatoon - Environmental	Soil/Solid	EPA 200.2/1631 Appendix (mod)	Samples are dried, then sieved through a 2 mm sieve, and digested with HNO_3 and HCl , followed by CVAAS analysis.
Particle Size Analysis (Pipette) - Wentworth Classification	EC184A Saskatoon - Environmental	Soil/Solid	Modified Wentworth	The particle size determination is performed by various methods to generate a Grain Size curve. The data from the curve is then used to produce particle size ranges based on the Modified Wentworth Classification system.



<i>Analytical Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
Total Organic Carbon (Calculated) in soil	EC356 Saskatoon - Environmental	Soil/Solid	CSSS (2008) 21.2	Total Organic Carbon (TOC) is calculated by the difference between total carbon (TC) and total inorganic carbon (TIC).
<i>Preparation Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
Leach 1:2 Soil:Water for pH/EC	EP108 Saskatoon - Environmental	Soil/Solid	BC WLAP METHOD: PH, ELECTROMETRIC, SOIL	The procedure involves mixing the dried (at <60°C) and sieved (No. 10 / 2mm) sample with deionized/distilled water at a 1:2 ratio of sediment to water.
Digestion for Metals and Mercury	EP440 Saskatoon - Environmental	Soil/Solid	EPA 200.2 (mod)	Samples are dried, then sieved through a 2 mm sieve, and digested with HNO ₃ and HCl. This method is intended to liberate metals that may be environmentally available.
Dry and Grind in Soil/Solid <60°C	EPP442 Saskatoon - Environmental	Soil/Solid	Soil Sampling and Methods of Analysis, Carter 2008	After removal of any coarse fragments and reservation of wet subsamples a portion of homogenized sample is set in a tray and dried at less than 60°C until dry. The sample is then particle size reduced with an automated crusher or mortar and pestle, typically to <2 mm. Further size reduction may be needed for particular tests.

QUALITY CONTROL REPORT

<p>Work Order : CG2215424</p> <p>Client : Teck Coal Limited</p> <p>Contact : Mike Pope</p> <p>Address : RR#1 HWY#3 Sparwood BC Canada V0B 2G1</p> <p>Telephone :</p> <p>Project : Regional Effects Program</p> <p>PO : VPO00847032</p> <p>C-O-C number : EVO LAEMP NOV 2022</p> <p>Sampler : ---- ----</p> <p>Site : ----</p> <p>Quote number : Teck Coal Master Quote</p> <p>No. of samples received : 30</p> <p>No. of samples analysed : 30</p>	<p>Page : 1 of 15</p> <p>Laboratory : Calgary - Environmental</p> <p>Account Manager : Lyudmyla Shvets</p> <p>Address : 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5</p> <p>Telephone : +1 403 407 1800</p> <p>Date Samples Received : 04-Nov-2022 09:25</p> <p>Date Analysis Commenced : 05-Nov-2022</p> <p>Issue Date : 14-Nov-2022 14:28</p>
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This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Reference Material (RM) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Colby Bingham	Quality Systems Coordinator	Saskatoon Inorganics, Saskatoon, Saskatchewan
Colby Bingham	Quality Systems Coordinator	Saskatoon Metals, Saskatoon, Saskatchewan
Collin Vinish	Laboratory Assistant	Saskatoon Organics, Saskatoon, Saskatchewan
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Page : 2 of 15
Work Order : CG2215424
Client : Teck Coal Limited
Project : Regional Effects Program



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

- Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
- CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
- DQO = Data Quality Objective.
- LOR = Limit of Reporting (detection limit).
- RPD = Relative Percent Difference
- # = Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Soil/Solid					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 733243)											
CG2215424-007	RG_ERCKUT_BRYOSE-2 _LAEMP_EVO_2022-11_N	pH (1:2 soil:water)	----	E108	0.10	pH units	7.85	7.83	0.255%	10%	----
Physical Tests (QC Lot: 736550)											
CG2215424-019	RG_ERCKMD_SE-1_LAE MP_EVO_2022-10_N	pH (1:2 soil:water)	----	E108	0.10	pH units	7.87	7.86	0.127%	10%	----
Physical Tests (QC Lot: 737757)											
CG2215424-001	RG_ERCKUT_SE-1_LAEM P_EVO_2022-10_N	moisture	----	E144	0.25	%	73.1	73.5	0.544%	20%	----
Physical Tests (QC Lot: 737758)											
CG2215424-021	RG_ERCKMD_SE-3_LAE MP_EVO_2022-10_N	moisture	----	E144	0.25	%	86.7	85.7	1.17%	20%	----
Organic / Inorganic Carbon (QC Lot: 734816)											
CG2215424-001	RG_ERCKUT_SE-1_LAEM P_EVO_2022-10_N	carbon, total [TC]	----	E351	0.050	%	13.6	13.4	1.53%	20%	----
Organic / Inorganic Carbon (QC Lot: 734958)											
CG2215424-001	RG_ERCKUT_SE-1_LAEM P_EVO_2022-10_N	carbon, inorganic [IC]	----	E354	0.050	%	1.60	1.63	1.29%	20%	----
Organic / Inorganic Carbon (QC Lot: 735504)											
CG2215424-022	RG_ERCKMD_BRYOSE-1 _LAEMP_EVO_2022-10_N	carbon, total [TC]	----	E351	0.050	%	13.5	13.1	2.61%	20%	----
Organic / Inorganic Carbon (QC Lot: 736704)											
CG2215424-022	RG_ERCKMD_BRYOSE-1 _LAEMP_EVO_2022-10_N	carbon, inorganic [IC]	----	E354	0.050	%	6.66	6.30	5.53%	20%	----
Organic / Inorganic Carbon (QC Lot: 738617)											
EO2209707-001	Anonymous	carbon, total [TC]	----	E351	0.050	%	0.496	0.544	9.11%	20%	----
Organic / Inorganic Carbon (QC Lot: 738619)											
EO2209707-001	Anonymous	carbon, inorganic [IC]	----	E354	0.050	%	0.223	0.185	0.038	Diff <2x LOR	----
Metals (QC Lot: 733124)											
CG2215424-011	RG_ERCKDT_SE-3_LAEM P_EVO_2022-10_N	aluminum	7429-90-5	E440	50	mg/kg	3780	3840	1.68%	40%	----
		antimony	7440-36-0	E440	0.10	mg/kg	0.83	0.83	0.700%	30%	----
		arsenic	7440-38-2	E440	0.10	mg/kg	8.17	8.00	2.03%	30%	----
		barium	7440-39-3	E440	0.50	mg/kg	228	227	0.211%	40%	----
		beryllium	7440-41-7	E440	0.10	mg/kg	0.48	0.49	0.01	Diff <2x LOR	----
		bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	0	Diff <2x LOR	----



Sub-Matrix: Soil/Solid					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Metals (QC Lot: 733124) - continued											
CG2215424-011	RG_ERCKDT_SE-3_LAEM P_EVO_2022-10_N	boron	7440-42-8	E440	5.0	mg/kg	6.8	7.2	0.4	Diff <2x LOR	----
		cadmium	7440-43-9	E440	0.020	mg/kg	4.49	4.50	0.202%	30%	----
		calcium	7440-70-2	E440	50	mg/kg	96900	95000	1.93%	30%	----
		chromium	7440-47-3	E440	0.50	mg/kg	9.29	9.15	1.52%	30%	----
		cobalt	7440-48-4	E440	0.10	mg/kg	27.5	28.4	3.10%	30%	----
		copper	7440-50-8	E440	0.50	mg/kg	17.6	17.6	0.332%	30%	----
		iron	7439-89-6	E440	50	mg/kg	15800	16200	2.87%	30%	----
		lead	7439-92-1	E440	0.50	mg/kg	8.21	8.33	1.50%	40%	----
		lithium	7439-93-2	E440	2.0	mg/kg	5.2	5.1	0.09	Diff <2x LOR	----
		magnesium	7439-95-4	E440	20	mg/kg	8630	8680	0.597%	30%	----
		manganese	7439-96-5	E440	1.0	mg/kg	509	534	4.76%	30%	----
		molybdenum	7439-98-7	E440	0.10	mg/kg	1.46	1.37	6.33%	40%	----
		nickel	7440-02-0	E440	0.50	mg/kg	46.5	47.1	1.28%	30%	----
		phosphorus	7723-14-0	E440	50	mg/kg	1420	1490	4.66%	30%	----
		potassium	7440-09-7	E440	100	mg/kg	940	940	0.215%	40%	----
		selenium	7782-49-2	E440	0.20	mg/kg	18.9	18.3	3.36%	30%	----
		silver	7440-22-4	E440	0.10	mg/kg	0.23	0.22	0.004	Diff <2x LOR	----
		sodium	7440-23-5	E440	50	mg/kg	113	111	2	Diff <2x LOR	----
		strontium	7440-24-6	E440	0.50	mg/kg	80.4	79.3	1.31%	40%	----
		sulfur	7704-34-9	E440	1000	mg/kg	2000	1900	100	Diff <2x LOR	----
		thallium	7440-28-0	E440	0.050	mg/kg	0.215	0.221	0.006	Diff <2x LOR	----
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	0	Diff <2x LOR	----		
titanium	7440-32-6	E440	1.0	mg/kg	15.4	15.0	2.63%	40%	----		
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	0	Diff <2x LOR	----		
uranium	7440-61-1	E440	0.050	mg/kg	1.44	1.45	0.613%	30%	----		
vanadium	7440-62-2	E440	0.20	mg/kg	18.9	19.1	1.35%	30%	----		
zinc	7440-66-6	E440	2.0	mg/kg	170	171	1.08%	30%	----		
zirconium	7440-67-7	E440	1.0	mg/kg	1.3	1.4	0.02	Diff <2x LOR	----		
Metals (QC Lot: 733125)											
CG2215424-011	RG_ERCKDT_SE-3_LAEM P_EVO_2022-10_N	mercury	7439-97-6	E510	0.0050	mg/kg	0.0528	0.0524	0.846%	40%	----
Metals (QC Lot: 733942)											
CG2215424-001	RG_ERCKUT_SE-1_LAEM P_EVO_2022-10_N	mercury	7439-97-6	E510	0.0180	mg/kg	0.0571	0.0595	0.0024	Diff <2x LOR	----
Metals (QC Lot: 733943)											



Sub-Matrix: Soil/Solid

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Metals (QC Lot: 733943) - continued											
CG2215424-001	RG_ERCKUT_SE-1_LAEM P_EVO_2022-10_N	aluminum	7429-90-5	E440	180	mg/kg	4780	4540	5.09%	40%	----
		antimony	7440-36-0	E440	0.36	mg/kg	1.12	1.14	0.03	Diff <2x LOR	----
		arsenic	7440-38-2	E440	0.36	mg/kg	4.21	4.42	4.92%	30%	----
		barium	7440-39-3	E440	1.80	mg/kg	210	227	7.80%	40%	----
		beryllium	7440-41-7	E440	0.36	mg/kg	0.46	0.46	0.004	Diff <2x LOR	----
		bismuth	7440-69-9	E440	0.72	mg/kg	<0.74	<0.72	0	Diff <2x LOR	----
		boron	7440-42-8	E440	18.0	mg/kg	<18.4	<18.0	18.4	Diff <2x LOR	----
		cadmium	7440-43-9	E440	0.072	mg/kg	1.59	1.80	12.6%	30%	----
		calcium	7440-70-2	E440	180	mg/kg	56300	61300	8.46%	30%	----
		chromium	7440-47-3	E440	1.80	mg/kg	10.7	10.9	0.26	Diff <2x LOR	----
		cobalt	7440-48-4	E440	0.36	mg/kg	3.90	4.05	3.79%	30%	----
		copper	7440-50-8	E440	1.80	mg/kg	15.1	16.0	6.06%	30%	----
		iron	7439-89-6	E440	180	mg/kg	12100	11000	9.80%	30%	----
		lead	7439-92-1	E440	1.80	mg/kg	7.20	7.44	0.23	Diff <2x LOR	----
		lithium	7439-93-2	E440	7.2	mg/kg	<7.4	<7.2	0	Diff <2x LOR	----
		magnesium	7439-95-4	E440	72	mg/kg	5920	6290	6.10%	30%	----
		manganese	7439-96-5	E440	3.6	mg/kg	152	175	14.5%	30%	----
		molybdenum	7439-98-7	E440	0.36	mg/kg	1.12	1.26	0.13	Diff <2x LOR	----
		nickel	7440-02-0	E440	1.80	mg/kg	21.7	22.4	3.01%	30%	----
		phosphorus	7723-14-0	E440	180	mg/kg	1390	1350	3.08%	30%	----
		potassium	7440-09-7	E440	360	mg/kg	1480	1450	20	Diff <2x LOR	----
		selenium	7782-49-2	E440	0.72	mg/kg	40.6	44.8	9.94%	30%	----
		silver	7440-22-4	E440	0.36	mg/kg	<0.37	<0.36	0	Diff <2x LOR	----
		sodium	7440-23-5	E440	180	mg/kg	<184	<180	184	Diff <2x LOR	----
		strontium	7440-24-6	E440	1.80	mg/kg	49.4	52.4	5.79%	40%	----
		sulfur	7704-34-9	E440	3600	mg/kg	<3700	<3600	0	Diff <2x LOR	----
		thallium	7440-28-0	E440	0.180	mg/kg	0.192	0.201	0.009	Diff <2x LOR	----
		tin	7440-31-5	E440	7.2	mg/kg	<7.4	<7.2	0	Diff <2x LOR	----
		titanium	7440-32-6	E440	3.6	mg/kg	41.9	44.0	5.03%	40%	----
		tungsten	7440-33-7	E440	1.80	mg/kg	<1.84	<1.80	1.84	Diff <2x LOR	----
		uranium	7440-61-1	E440	0.180	mg/kg	1.41	1.50	6.34%	30%	----
		vanadium	7440-62-2	E440	0.72	mg/kg	21.1	20.4	3.32%	30%	----
		zinc	7440-66-6	E440	7.2	mg/kg	92.7	88.0	5.26%	30%	----
		zirconium	7440-67-7	E440	3.6	mg/kg	4.3	<3.6	4.3	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 737757)						
moisture	---	E144	0.25	%	<0.25	---
Physical Tests (QCLot: 737758)						
moisture	---	E144	0.25	%	<0.25	---
Organic / Inorganic Carbon (QCLot: 734816)						
carbon, total [TC]	---	E351	0.05	%	<0.050	---
Organic / Inorganic Carbon (QCLot: 734958)						
carbon, inorganic [IC]	---	E354	0.05	%	<0.050	---
Organic / Inorganic Carbon (QCLot: 735504)						
carbon, total [TC]	---	E351	0.05	%	<0.050	---
Organic / Inorganic Carbon (QCLot: 736704)						
carbon, inorganic [IC]	---	E354	0.05	%	<0.050	---
Organic / Inorganic Carbon (QCLot: 738617)						
carbon, total [TC]	---	E351	0.05	%	<0.050	---
Organic / Inorganic Carbon (QCLot: 738619)						
carbon, inorganic [IC]	---	E354	0.05	%	<0.050	---
Metals (QCLot: 733124)						
aluminum	7429-90-5	E440	50	mg/kg	<50	---
antimony	7440-36-0	E440	0.1	mg/kg	<0.10	---
arsenic	7440-38-2	E440	0.1	mg/kg	<0.10	---
barium	7440-39-3	E440	0.5	mg/kg	<0.50	---
beryllium	7440-41-7	E440	0.1	mg/kg	<0.10	---
bismuth	7440-69-9	E440	0.2	mg/kg	<0.20	---
boron	7440-42-8	E440	5	mg/kg	<5.0	---
cadmium	7440-43-9	E440	0.02	mg/kg	<0.020	---
calcium	7440-70-2	E440	50	mg/kg	<50	---
chromium	7440-47-3	E440	0.5	mg/kg	<0.50	---
cobalt	7440-48-4	E440	0.1	mg/kg	<0.10	---
copper	7440-50-8	E440	0.5	mg/kg	<0.50	---
iron	7439-89-6	E440	50	mg/kg	<50	---
lead	7439-92-1	E440	0.5	mg/kg	<0.50	---
lithium	7439-93-2	E440	2	mg/kg	<2.0	---



Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Metals (QCLot: 733124) - continued						
magnesium	7439-95-4	E440	20	mg/kg	<20	----
manganese	7439-96-5	E440	1	mg/kg	<1.0	----
molybdenum	7439-98-7	E440	0.1	mg/kg	<0.10	----
nickel	7440-02-0	E440	0.5	mg/kg	<0.50	----
phosphorus	7723-14-0	E440	50	mg/kg	<50	----
potassium	7440-09-7	E440	100	mg/kg	<100	----
selenium	7782-49-2	E440	0.2	mg/kg	<0.20	----
silver	7440-22-4	E440	0.1	mg/kg	<0.10	----
sodium	7440-23-5	E440	50	mg/kg	<50	----
strontium	7440-24-6	E440	0.5	mg/kg	<0.50	----
sulfur	7704-34-9	E440	1000	mg/kg	<1000	----
thallium	7440-28-0	E440	0.05	mg/kg	<0.050	----
tin	7440-31-5	E440	2	mg/kg	<2.0	----
titanium	7440-32-6	E440	1	mg/kg	<1.0	----
tungsten	7440-33-7	E440	0.5	mg/kg	<0.50	----
uranium	7440-61-1	E440	0.05	mg/kg	<0.050	----
vanadium	7440-62-2	E440	0.2	mg/kg	<0.20	----
zinc	7440-66-6	E440	2	mg/kg	<2.0	----
zirconium	7440-67-7	E440	1	mg/kg	<1.0	----
Metals (QCLot: 733125)						
mercury	7439-97-6	E510	0.005	mg/kg	<0.0050	----
Metals (QCLot: 733942)						
mercury	7439-97-6	E510	0.005	mg/kg	<0.0050	----
Metals (QCLot: 733943)						
aluminum	7429-90-5	E440	50	mg/kg	<50	----
antimony	7440-36-0	E440	0.1	mg/kg	<0.10	----
arsenic	7440-38-2	E440	0.1	mg/kg	<0.10	----
barium	7440-39-3	E440	0.5	mg/kg	<0.50	----
beryllium	7440-41-7	E440	0.1	mg/kg	<0.10	----
bismuth	7440-69-9	E440	0.2	mg/kg	<0.20	----
boron	7440-42-8	E440	5	mg/kg	<5.0	----
cadmium	7440-43-9	E440	0.02	mg/kg	<0.020	----
calcium	7440-70-2	E440	50	mg/kg	<50	----
chromium	7440-47-3	E440	0.5	mg/kg	<0.50	----
cobalt	7440-48-4	E440	0.1	mg/kg	<0.10	----



Sub-Matrix: **Soil/Solid**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Metals (QCLot: 733943) - continued						
copper	7440-50-8	E440	0.5	mg/kg	<0.50	----
iron	7439-89-6	E440	50	mg/kg	<50	----
lead	7439-92-1	E440	0.5	mg/kg	<0.50	----
lithium	7439-93-2	E440	2	mg/kg	<2.0	----
magnesium	7439-95-4	E440	20	mg/kg	<20	----
manganese	7439-96-5	E440	1	mg/kg	<1.0	----
molybdenum	7439-98-7	E440	0.1	mg/kg	<0.10	----
nickel	7440-02-0	E440	0.5	mg/kg	<0.50	----
phosphorus	7723-14-0	E440	50	mg/kg	<50	----
potassium	7440-09-7	E440	100	mg/kg	<100	----
selenium	7782-49-2	E440	0.2	mg/kg	<0.20	----
silver	7440-22-4	E440	0.1	mg/kg	<0.10	----
sodium	7440-23-5	E440	50	mg/kg	<50	----
strontium	7440-24-6	E440	0.5	mg/kg	<0.50	----
sulfur	7704-34-9	E440	1000	mg/kg	<1000	----
thallium	7440-28-0	E440	0.05	mg/kg	<0.050	----
tin	7440-31-5	E440	2	mg/kg	<2.0	----
titanium	7440-32-6	E440	1	mg/kg	<1.0	----
tungsten	7440-33-7	E440	0.5	mg/kg	<0.50	----
uranium	7440-61-1	E440	0.05	mg/kg	<0.050	----
vanadium	7440-62-2	E440	0.2	mg/kg	<0.20	----
zinc	7440-66-6	E440	2	mg/kg	<2.0	----
zirconium	7440-67-7	E440	1	mg/kg	<1.0	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Soil/Solid

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 733243)									
pH (1:2 soil:water)	----	E108	----	pH units	7 pH units	101	97.0	103	----
Physical Tests (QCLot: 736550)									
pH (1:2 soil:water)	----	E108	----	pH units	7 pH units	101	97.0	103	----
Physical Tests (QCLot: 737757)									
moisture	----	E144	0.25	%	50 %	97.4	90.0	110	----
Physical Tests (QCLot: 737758)									
moisture	----	E144	0.25	%	50 %	97.9	90.0	110	----
Organic / Inorganic Carbon (QCLot: 734816)									
carbon, total [TC]	----	E351	0.05	%	48 %	102	90.0	110	----
Organic / Inorganic Carbon (QCLot: 734958)									
carbon, inorganic [IC]	----	E354	0.05	%	0.5 %	94.8	90.0	110	----
Organic / Inorganic Carbon (QCLot: 735504)									
carbon, total [TC]	----	E351	0.05	%	48 %	104	90.0	110	----
Organic / Inorganic Carbon (QCLot: 736704)									
carbon, inorganic [IC]	----	E354	0.05	%	0.5 %	93.4	90.0	110	----
Organic / Inorganic Carbon (QCLot: 738617)									
carbon, total [TC]	----	E351	0.05	%	48 %	101	90.0	110	----
Organic / Inorganic Carbon (QCLot: 738619)									
carbon, inorganic [IC]	----	E354	0.05	%	0.5 %	99.2	90.0	110	----
Metals (QCLot: 733124)									
aluminum	7429-90-5	E440	50	mg/kg	200 mg/kg	103	80.0	120	----
antimony	7440-36-0	E440	0.1	mg/kg	100 mg/kg	99.3	80.0	120	----
arsenic	7440-38-2	E440	0.1	mg/kg	100 mg/kg	98.8	80.0	120	----
barium	7440-39-3	E440	0.5	mg/kg	25 mg/kg	101	80.0	120	----
beryllium	7440-41-7	E440	0.1	mg/kg	10 mg/kg	95.3	80.0	120	----
bismuth	7440-69-9	E440	0.2	mg/kg	100 mg/kg	95.8	80.0	120	----
boron	7440-42-8	E440	5	mg/kg	100 mg/kg	94.7	80.0	120	----
cadmium	7440-43-9	E440	0.02	mg/kg	10 mg/kg	101	80.0	120	----
calcium	7440-70-2	E440	50	mg/kg	5000 mg/kg	96.3	80.0	120	----
chromium	7440-47-3	E440	0.5	mg/kg	25 mg/kg	99.9	80.0	120	----



Sub-Matrix: Soil/Solid

Laboratory Control Sample (LCS) Report

Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Metals (QCLot: 733124) - continued									
cobalt	7440-48-4	E440	0.1	mg/kg	25 mg/kg	99.1	80.0	120	----
copper	7440-50-8	E440	0.5	mg/kg	25 mg/kg	99.3	80.0	120	----
iron	7439-89-6	E440	50	mg/kg	100 mg/kg	102	80.0	120	----
lead	7439-92-1	E440	0.5	mg/kg	50 mg/kg	95.4	80.0	120	----
lithium	7439-93-2	E440	2	mg/kg	25 mg/kg	101	80.0	120	----
magnesium	7439-95-4	E440	20	mg/kg	5000 mg/kg	102	80.0	120	----
manganese	7439-96-5	E440	1	mg/kg	25 mg/kg	102	80.0	120	----
molybdenum	7439-98-7	E440	0.1	mg/kg	25 mg/kg	100	80.0	120	----
nickel	7440-02-0	E440	0.5	mg/kg	50 mg/kg	99.4	80.0	120	----
phosphorus	7723-14-0	E440	50	mg/kg	1000 mg/kg	110	80.0	120	----
potassium	7440-09-7	E440	100	mg/kg	5000 mg/kg	108	80.0	120	----
selenium	7782-49-2	E440	0.2	mg/kg	100 mg/kg	99.3	80.0	120	----
silver	7440-22-4	E440	0.1	mg/kg	10 mg/kg	90.4	80.0	120	----
sodium	7440-23-5	E440	50	mg/kg	5000 mg/kg	104	80.0	120	----
strontium	7440-24-6	E440	0.5	mg/kg	25 mg/kg	96.9	80.0	120	----
sulfur	7704-34-9	E440	1000	mg/kg	5000 mg/kg	104	80.0	120	----
thallium	7440-28-0	E440	0.05	mg/kg	100 mg/kg	95.4	80.0	120	----
tin	7440-31-5	E440	2	mg/kg	50 mg/kg	101	80.0	120	----
titanium	7440-32-6	E440	1	mg/kg	25 mg/kg	99.2	80.0	120	----
tungsten	7440-33-7	E440	0.5	mg/kg	10 mg/kg	95.5	80.0	120	----
uranium	7440-61-1	E440	0.05	mg/kg	0.5 mg/kg	94.4	80.0	120	----
vanadium	7440-62-2	E440	0.2	mg/kg	50 mg/kg	100	80.0	120	----
zinc	7440-66-6	E440	2	mg/kg	50 mg/kg	97.6	80.0	120	----
zirconium	7440-67-7	E440	1	mg/kg	10 mg/kg	98.1	80.0	120	----
Metals (QCLot: 733125)									
mercury	7439-97-6	E510	0.005	mg/kg	0.1 mg/kg	101	80.0	120	----
Metals (QCLot: 733942)									
mercury	7439-97-6	E510	0.005	mg/kg	0.1 mg/kg	92.2	80.0	120	----
Metals (QCLot: 733943)									
aluminum	7429-90-5	E440	50	mg/kg	200 mg/kg	100	80.0	120	----
antimony	7440-36-0	E440	0.1	mg/kg	100 mg/kg	101	80.0	120	----
arsenic	7440-38-2	E440	0.1	mg/kg	100 mg/kg	96.2	80.0	120	----
barium	7440-39-3	E440	0.5	mg/kg	25 mg/kg	96.5	80.0	120	----
beryllium	7440-41-7	E440	0.1	mg/kg	10 mg/kg	95.3	80.0	120	----
bismuth	7440-69-9	E440	0.2	mg/kg	100 mg/kg	92.1	80.0	120	----
boron	7440-42-8	E440	5	mg/kg	100 mg/kg	92.7	80.0	120	----



Sub-Matrix: Soil/Solid

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Metals (QCLot: 733943) - continued									
cadmium	7440-43-9	E440	0.02	mg/kg	10 mg/kg	96.5	80.0	120	----
calcium	7440-70-2	E440	50	mg/kg	5000 mg/kg	94.6	80.0	120	----
chromium	7440-47-3	E440	0.5	mg/kg	25 mg/kg	99.0	80.0	120	----
cobalt	7440-48-4	E440	0.1	mg/kg	25 mg/kg	96.2	80.0	120	----
copper	7440-50-8	E440	0.5	mg/kg	25 mg/kg	96.8	80.0	120	----
iron	7439-89-6	E440	50	mg/kg	100 mg/kg	101	80.0	120	----
lead	7439-92-1	E440	0.5	mg/kg	50 mg/kg	93.2	80.0	120	----
lithium	7439-93-2	E440	2	mg/kg	25 mg/kg	94.1	80.0	120	----
magnesium	7439-95-4	E440	20	mg/kg	5000 mg/kg	96.2	80.0	120	----
manganese	7439-96-5	E440	1	mg/kg	25 mg/kg	97.2	80.0	120	----
molybdenum	7439-98-7	E440	0.1	mg/kg	25 mg/kg	97.7	80.0	120	----
nickel	7440-02-0	E440	0.5	mg/kg	50 mg/kg	96.8	80.0	120	----
phosphorus	7723-14-0	E440	50	mg/kg	1000 mg/kg	102	80.0	120	----
potassium	7440-09-7	E440	100	mg/kg	5000 mg/kg	102	80.0	120	----
selenium	7782-49-2	E440	0.2	mg/kg	100 mg/kg	97.2	80.0	120	----
silver	7440-22-4	E440	0.1	mg/kg	10 mg/kg	89.9	80.0	120	----
sodium	7440-23-5	E440	50	mg/kg	5000 mg/kg	97.0	80.0	120	----
strontium	7440-24-6	E440	0.5	mg/kg	25 mg/kg	95.8	80.0	120	----
sulfur	7704-34-9	E440	1000	mg/kg	5000 mg/kg	94.6	80.0	120	----
thallium	7440-28-0	E440	0.05	mg/kg	100 mg/kg	93.0	80.0	120	----
tin	7440-31-5	E440	2	mg/kg	50 mg/kg	95.7	80.0	120	----
titanium	7440-32-6	E440	1	mg/kg	25 mg/kg	91.2	80.0	120	----
tungsten	7440-33-7	E440	0.5	mg/kg	10 mg/kg	91.2	80.0	120	----
uranium	7440-61-1	E440	0.05	mg/kg	0.5 mg/kg	90.6	80.0	120	----
vanadium	7440-62-2	E440	0.2	mg/kg	50 mg/kg	97.4	80.0	120	----
zinc	7440-66-6	E440	2	mg/kg	50 mg/kg	94.5	80.0	120	----
zirconium	7440-67-7	E440	1	mg/kg	10 mg/kg	96.5	80.0	120	----





Reference Material (RM) Report

A Reference Material (RM) is a homogenous material with known and well-established analyte concentrations. RMs are processed in an identical manner to test samples, and are used to monitor and control the accuracy and precision of a test method for a typical sample matrix. RM results are expressed as percent recovery of the target analyte concentration. RM targets may be certified target concentrations provided by the RM supplier, or may be ALS long-term mean values (for empirical test methods).

Sub-Matrix:

Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Reference Material (RM) Report				
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%)		Qualifier
							Low	High	
Physical Tests (QCLot: 733243)									
	RM	pH (1:2 soil:water)	----	E108	8.13 pH units	98.0	96.0	104	----
Physical Tests (QCLot: 736550)									
	RM	pH (1:2 soil:water)	----	E108	8.13 pH units	101	96.0	104	----
Organic / Inorganic Carbon (QCLot: 734816)									
	RM	carbon, total [TC]	----	E351	1.4 %	101	80.0	120	----
Organic / Inorganic Carbon (QCLot: 734958)									
	RM	carbon, inorganic [IC]	----	E354	0.383 %	103	80.0	120	----
Organic / Inorganic Carbon (QCLot: 735504)									
	RM	carbon, total [TC]	----	E351	1.4 %	101	80.0	120	----
Organic / Inorganic Carbon (QCLot: 736704)									
	RM	carbon, inorganic [IC]	----	E354	0.383 %	97.8	80.0	120	----
Organic / Inorganic Carbon (QCLot: 738617)									
	RM	carbon, total [TC]	----	E351	1.4 %	96.4	80.0	120	----
Organic / Inorganic Carbon (QCLot: 738619)									
	RM	carbon, inorganic [IC]	----	E354	0.383 %	97.9	80.0	120	----
Metals (QCLot: 733124)									
	RM	aluminum	7429-90-5	E440	9817 mg/kg	97.2	70.0	130	----
	RM	antimony	7440-36-0	E440	3.99 mg/kg	91.2	70.0	130	----
	RM	arsenic	7440-38-2	E440	3.73 mg/kg	96.9	70.0	130	----
	RM	barium	7440-39-3	E440	105 mg/kg	100	70.0	130	----
	RM	beryllium	7440-41-7	E440	0.349 mg/kg	95.1	70.0	130	----
	RM	boron	7440-42-8	E440	8.5 mg/kg	93.8	40.0	160	----
	RM	cadmium	7440-43-9	E440	0.91 mg/kg	96.7	70.0	130	----
	RM	calcium	7440-70-2	E440	31082 mg/kg	95.1	70.0	130	----
	RM	chromium	7440-47-3	E440	101 mg/kg	92.8	70.0	130	----
	RM	cobalt	7440-48-4	E440	6.9 mg/kg	101	70.0	130	----
	RM	copper	7440-50-8	E440	123 mg/kg	106	70.0	130	----
	RM	iron	7439-89-6	E440	23558 mg/kg	99.8	70.0	130	----



Sub-Matrix:

Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Reference Material (RM) Report				
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%)		Qualifier
							Low	High	
Metals (QCLot: 733124) - continued									
	RM	lead	7439-92-1	E440	267 mg/kg	96.1	70.0	130	----
	RM	lithium	7439-93-2	E440	9.5 mg/kg	100	70.0	130	----
	RM	magnesium	7439-95-4	E440	5509 mg/kg	99.5	70.0	130	----
	RM	manganese	7439-96-5	E440	269 mg/kg	99.1	70.0	130	----
	RM	molybdenum	7439-98-7	E440	1.03 mg/kg	101	70.0	130	----
	RM	nickel	7440-02-0	E440	26.7 mg/kg	103	70.0	130	----
	RM	phosphorus	7723-14-0	E440	752 mg/kg	111	70.0	130	----
	RM	potassium	7440-09-7	E440	1587 mg/kg	99.0	70.0	130	----
	RM	silver	7440-22-4	E440	4.06 mg/kg	87.0	70.0	130	----
	RM	sodium	7440-23-5	E440	797 mg/kg	99.8	70.0	130	----
	RM	strontium	7440-24-6	E440	86.1 mg/kg	92.4	70.0	130	----
	RM	thallium	7440-28-0	E440	0.0786 mg/kg	89.8	40.0	160	----
	RM	tin	7440-31-5	E440	10.6 mg/kg	95.1	70.0	130	----
	RM	titanium	7440-32-6	E440	839 mg/kg	91.2	70.0	130	----
	RM	uranium	7440-61-1	E440	0.52 mg/kg	90.0	70.0	130	----
	RM	vanadium	7440-62-2	E440	32.7 mg/kg	96.4	70.0	130	----
	RM	zinc	7440-66-6	E440	297 mg/kg	99.8	70.0	130	----
	RM	zirconium	7440-67-7	E440	5.73 mg/kg	96.0	70.0	130	----
Metals (QCLot: 733125)									
	RM	mercury	7439-97-6	E510	0.059 mg/kg	97.1	70.0	130	----
Metals (QCLot: 733942)									
	RM	mercury	7439-97-6	E510	0.059 mg/kg	96.7	70.0	130	----
Metals (QCLot: 733943)									
	RM	aluminum	7429-90-5	E440	9817 mg/kg	98.7	70.0	130	----
	RM	antimony	7440-36-0	E440	3.99 mg/kg	94.0	70.0	130	----
	RM	arsenic	7440-38-2	E440	3.73 mg/kg	101	70.0	130	----
	RM	barium	7440-39-3	E440	105 mg/kg	106	70.0	130	----
	RM	beryllium	7440-41-7	E440	0.349 mg/kg	97.5	70.0	130	----
	RM	boron	7440-42-8	E440	8.5 mg/kg	126	40.0	160	----
	RM	cadmium	7440-43-9	E440	0.91 mg/kg	96.7	70.0	130	----
	RM	calcium	7440-70-2	E440	31082 mg/kg	96.4	70.0	130	----



Sub-Matrix:

Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Reference Material (RM) Report				
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%)		Qualifier
							Low	High	
Metals (QCLot: 733943) - continued									
RM		chromium	7440-47-3	E440	101 mg/kg	92.9	70.0	130	----
RM		cobalt	7440-48-4	E440	6.9 mg/kg	97.3	70.0	130	----
RM		copper	7440-50-8	E440	123 mg/kg	104	70.0	130	----
RM		iron	7439-89-6	E440	23558 mg/kg	102	70.0	130	----
RM		lead	7439-92-1	E440	267 mg/kg	99.4	70.0	130	----
RM		lithium	7439-93-2	E440	9.5 mg/kg	104	70.0	130	----
RM		magnesium	7439-95-4	E440	5509 mg/kg	96.9	70.0	130	----
RM		manganese	7439-96-5	E440	269 mg/kg	95.9	70.0	130	----
RM		molybdenum	7439-98-7	E440	1.03 mg/kg	96.7	70.0	130	----
RM		nickel	7440-02-0	E440	26.7 mg/kg	101	70.0	130	----
RM		phosphorus	7723-14-0	E440	752 mg/kg	96.6	70.0	130	----
RM		potassium	7440-09-7	E440	1587 mg/kg	101	70.0	130	----
RM		silver	7440-22-4	E440	4.06 mg/kg	104	70.0	130	----
RM		sodium	7440-23-5	E440	797 mg/kg	100	70.0	130	----
RM		strontium	7440-24-6	E440	86.1 mg/kg	93.2	70.0	130	----
RM		thallium	7440-28-0	E440	0.0786 mg/kg	88.8	40.0	160	----
RM		tin	7440-31-5	E440	10.6 mg/kg	97.8	70.0	130	----
RM		titanium	7440-32-6	E440	839 mg/kg	85.9	70.0	130	----
RM		uranium	7440-61-1	E440	0.52 mg/kg	95.0	70.0	130	----
RM		vanadium	7440-62-2	E440	32.7 mg/kg	93.8	70.0	130	----
RM		zinc	7440-66-6	E440	297 mg/kg	98.9	70.0	130	----
RM		zirconium	7440-67-7	E440	5.73 mg/kg	98.7	70.0	130	----

COC ID: EVO LAEMP NOV 2022		TURNAROUND TIME:		RUSH:					
PROJECT/CLIENT INFO				LABORATORY					
Facility Name / Job#: Regional Effects Program		Lab Name: ALS Calgary		Excel		PDF		EDD	
Project Manager: Mike Pope		Lab Contact: Lyudmyla Shvets		mike.pope@teck.com		x		x	
Email: mike.pope@teck.com		Email: lyudmyla.shvets@alsglobal.com		teckcoal@equisonline.com		x		x	
Address: 421 Pine Avenue		Address: 2559 29 Street NE		lbowron@minnow.ca		x		x	
City: Sparwood		City: Calgary		jessica.ritz@teck.com		x		x	
Province: BC		Province: AB		rblowron@teck.com		x		x	
Postal Code: V0B 2G0		Postal Code: T1Y 7B5		shvets@teck.com		x		x	
Country: Canada		Country: Canada		shvets@teck.com		x		x	
Phone Number: 250-425-8202		Phone Number: 1 403 407 1794							

SAMPLE DETAILS								ANALYSIS REQUESTED						
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	PH	N	N	N	N	N	N
								PRESERV.	NONE	NONE	NONE	NONE		
								ANALYSIS	C-TOC-SK	MET-COME-FULL-CL	MOISTURE-CL - % Moisture	PSA-PIPEIT-DETAIL-SK Particle Size		
RG_ERCKUT_SE-1_LAEMP_EVO_2022-10_N	RG_ERCKUT	SE	N	10/31/2022	14:30	G	1	X	X	X	X			
RG_ERCKUT_SE-2_LAEMP_EVO_2022-10_N	RG_ERCKUT	SE	N	10/31/2022	14:35	G	1	X	X	X	X			
RG_ERCKUT_SE-3_LAEMP_EVO_2022-11_N	RG_ERCKUT	SE	N	11/1/2022	9:00	G	1	X	X	X	X			
RG_ERCKUT_SE-4_LAEMP_EVO_2022-11_N	RG_ERCKUT	SE	N	11/1/2022	9:05	G	1	X	X	X	X			
RG_ERCKUT_SE-5_LAEMP_EVO_2022-11_N	RG_ERCKUT	SE	N	11/1/2022	9:10	G	1	X	X	X	X			
RG_ERCKUT_BRYOSE-1_LAEMP_EVO_2022-10_N	RG_ERCKUT	SE	N	10/31/2022	14:40	G	1	X	X	X	X			
RG_ERCKUT_BRYOSE-2_LAEMP_EVO_2022-11_N	RG_ERCKUT	SE	N	11/1/2022	9:20	G	1	X	X	X	X			
RG_ERCKUT_BRYOSE-3_LAEMP_EVO_2022-11_N	RG_ERCKUT	SE	N	11/1/2022	9:30	G	1	X	X	X	X			

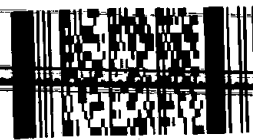
ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS VPO00847032	RELINQUISHED BY/AFFILIATION Robin Valleau/Minnow	DATE/TIME November 2, 2022	ACCEPTED BY/AFFILIATION <i>[Signature]</i>
			11/15/22 <i>[Signature]</i>

NB OF BOTTLES RETURNED/DESCRIPTION Regular (default) Priority (2-3 business days) - 50% surcharge X Emergency (1 Business Day) - 100% surcharge For Emergency <1 Day, ASAP or Weekend - Contact ALS	Sampler's Name Robin Valleau	Mobile # 416-970-7535
	Sampler's Signature	Date/Time November 2, 2022

Environmental Division
Calgary
Work Order Reference
CG2215424


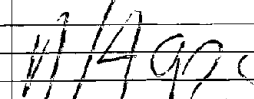
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COC ID:		EVO LAEMP NOV 2022				TURNAROUND TIME:		RUSH		
PROJECT/CLIENT INFO						LABORATORY				
Facility Name / Job#		Regional effects program				Lab Name		ALS Calgary		
Project Manager		Mike Pope				Lab Contact		Lyudmyla Shvets		
Email		mike.pope@teck.com				Email		lyudmyla.shvets@alsglobal.com		
Address		421 Pine Avenue				Address		2559 29 Street NE		
City		Sparwood		Province	BC	City		Calgary	Province	AB
Postal Code		V0B 2G0		Country	Canada	Postal Code		T1Y 7B5	Country	Canada
Phone Number		250-425-8202				Phone Number		1 403 407 1794		

SAMPLE DETAILS									ANALYSIS REQUESTED						
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	PK	N	N	N	N	N	N	
									PRESERV.						
									ANALYSIS	C-TOC-SK	MET-COME-FULL-CL	MOISTURE-CL - % Moisture	PSA-PIPEI-DETAIL-SK Particle Size		
RG_ERCKDT_SE-1_LAEMP_EVO_2022-10_N	RG_ERCKDT	SE	N	10/31/2022	12:30	G	1								
RG_ERCKDT_SE-2_LAEMP_EVO_2022-10_N	RG_ERCKDT	SE	N	10/31/2022	12:35	G	1								
RG_ERCKDT_SE-3_LAEMP_EVO_2022-10_N	RG_ERCKDT	SE	N	10/31/2022	12:40	G	1								
RG_ERCKDT_SE-4_LAEMP_EVO_2022-10_N	RG_ERCKDT	SE	N	10/31/2022	12:45	G	1								
RG_ERCKDT_SE-5_LAEMP_EVO_2022-10_N	RG_ERCKDT	SE	N	10/31/2022	12:50	G	1								
RG_ERCKDT_SE-6_LAEMP_EVO_2022-10_N	RG_ERCKDT	SE	N	10/31/2022	12:55	G	1								
RG_ERCKDT_SE-7_LAEMP_EVO_2022-10_N	RG_ERCKDT	SE	N	10/31/2022	13:00	G	1								
RG_ERCKDT_BRYOSE-1_LAEMP_EVO_2022-10_N	RG_ERCKDT	SE	N	10/31/2022	13:05	G	1								
RG_ERCKDT_BRYOSE-2_LAEMP_EVO_2022-10_N	RG_ERCKDT	SE	N	10/31/2022	13:10	G	1								
RG_ERCKDT_BRYOSE-3_LAEMP_EVO_2022-10_N	RG_ERCKDT	SE	N	10/31/2022	13:15	G	1								

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS		RELINQUISHED BY/AFFILIATION		DATE/TIME		ACCEPTED BY/AFFILIATION	
VP000847032		Robin Valleau/Minnow		November 2, 2022		 	

NB OF BOTTLES RETURNED/DESCRIPTION		Sampler's Name		Mobile #	
Regular (default)		Robin Valleau		416-970-7535	
Priority (2-3 business days) - 50% surcharge X		Sampler's Signature		Date/Time	
Emergency (1 Business Day) - 100% surcharge				November 2, 2022	
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

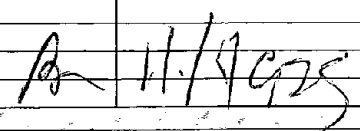
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COC ID:		EVO LAEMP NOV 2022				TURNAROUND TIME:		RUSH		
PROJECT/CLIENT INFO						LABORATORY				
Facility Name / Job#		Regional effects program				Lab Name		ALS Calgary		
Project Manager		Mike Pope				Lab Contact		Lyudmyla Shvets		
Email		mike.pope@teck.com				Email		lyudmyla.shvets@alsglobal.com		
Address		421 Pine Avenue				Address		2559 29 Street NE		
City		Sparwood		Province	BC	City		Calgary	Province	AB
Postal Code		V0B 2G0		Country	Canada	Postal Code		T1Y 7B5	Country	Canada
Phone Number		250-425-8202				Phone Number		1 403 407 1794		

SAMPLE DETAILS									ANALYSIS REQUESTED					
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G-Grab C=Comp	# Of Cont.		BIL	N	N	N	N	N
									PRESERV.	NONE	NONE	NONE	NONE	
									ANALYSIS	C-TOC-SK	MET-COME+FULL-CL	MOISTURE-CL - % Moisture	PSA-PIPET-DETAIL-SK Particle Size	
1 RG_ERCKMD_SE-1_LAEMP_EVO_2022-10_N	RG_ERCKMD	SE	N	10/31/2022	12:30	G	1			X	X	X	X	
2 RG_ERCKMD_SE-2_LAEMP_EVO_2022-10_N	RG_ERCKMD	SE	N	10/31/2022	12:35	G	1			X	X	X	X	
21 RG_ERCKMD_SE-3_LAEMP_EVO_2022-10_N	RG_ERCKMD	SE	N	10/31/2022	12:40	G	1			X	X	X	X	
2 RG_ERCKMD_BRYOSE-1_LAEMP_EVO_2022-10_N	RG_ERCKMD	SE	N	10/31/2022	13:05	G	1			X	X	X	X	
3 RG_ERCKMD_BRYOSE-2_LAEMP_EVO_2022-10_N	RG_ERCKMD	SE	N	10/31/2022	13:10	G	1			X	X	X	X	
21 RG_ERCKMD_BRYOSE-3_LAEMP_EVO_2022-10_N	RG_ERCKMD	SE	N	10/31/2022	13:15	G	1			X	X	X	X	

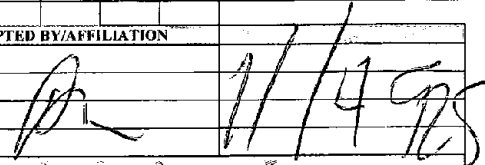
ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS		RELINQUISHED BY/AFFILIATION		DATE/TIME		ACCEPTED BY/AFFILIATION	
VPO00847032		Robin Valteau/Minnow		November 2, 2022			
NB OF BOTTLES RETURNED/DESCRIPTION		Sampler's Name		Mobile #		Date/Time	
Regular (default)		Robin Valteau		416-970-7535		November 2, 2022	
Priority (2-3 business days) - 50% surcharge X		Sampler's Signature					
Emergency (1 Business Day) - 100% surcharge							
For Emergency <1 Day, ASAP or Weekend - Contact ALS							

3

4

COC ID:		EVO LAEMP NOV 2022				TURNAROUND TIME:		RUSH		
PROJECT/CLIENT INFO						LABORATORY				
Facility Name / Job#		Regional effects program				Lab Name		ALS Calgary		
Project Manager		Mike Pope				Lab Contact		Lyudmyla Shvets		
Email		mike.pope@teck.com				Email		lyudmyla.shvets@alsglobal.com		
Address		421 Pine Avenue				Address		2559 29 Street NE		
City		Sparwood		Province	BC	City		Calgary	Province	AB
Postal Code		V0B 2G0		Country	Canada	Postal Code		T1Y 7B5	Country	Canada
Phone Number		250-425-8202				Phone Number		1 403 407 1794		

SAMPLE DETAILS								ANALYSIS REQUESTED					
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	TH	N	N	N	N	N
								RESERV.	NONE	NONE	NONE	NONE	
								ANALYSIS	C-TOC-SK	MET-CCMB+FULL-CL	MOISTURE-CL - % Moisture	PSA-PIPET-DETAIL-SK Particle Size	
25 RG_MI3_SE-1_LAEMP_EVO_2022-11_N	RG_MI3	SE	N	11/2/2022	9:05	G	1	X	X	X	X		
26 RG_MI3_SE-2_LAEMP_EVO_2022-11_N	RG_MI3	SE	N	11/2/2022	9:10	G	1	X	X	X	X		
27 RG_BOCK_SE-1_LAEMP_EVO_2022-11_N	RG_BOCK	SE	N	11/3/2022	9:20	G	1	X	X	X	X		
28 RG_BOCK_SE-1_LAEMP_EVO_2022-11_N	RG_BOCK	SE	N	11/3/2022	9:25	G	1	X	X	X	X		
29 RG_BOCK_SE-1_LAEMP_EVO_2022-11_N	RG_BOCK	SE	N	11/3/2022	9:30	G	1	X	X	X	X		
30 RG_BOCKRD_SE-1_LAEMP_EVO_2022-11_N	RG_BOCKRD	SE	N	11/3/2022	9:35	G	1	X	X	X	X		

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS		RELINQUISHED BY/AFFILIATION		DATE/TIME		ACCEPTED BY/AFFILIATION	
VPO00847032		Robin Valteau/Minnow		November 2, 2022			

NB OF BOTTLES RETURNED/DESCRIPTION		Sampler's Name		Mobile #	
Regular (default)		Robin Valteau		416-970-7535	
Priority (2-3 business days) - 50% surcharge X		Sampler's Signature		Date/Time	
Emergency (1 Business Day) - 100% surcharge				November 2, 2022	
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

4

5



CERTIFICATE OF ANALYSIS

<p>Work Order : CG2216716</p> <p>Client : Teck Coal Limited</p> <p>Contact : Mike Pope</p> <p>Address : RR#1 HWY#3 Sparwood BC Canada V0B 2G1</p> <p>Telephone : ----</p> <p>Project : REGIONAL EFFECTS PROGRAM</p> <p>PO : VPO00847030</p> <p>C-O-C number : EVO LAEMP DEC 2022</p> <p>Sampler : Robin Valleau</p> <p>Site : ----</p> <p>Quote number : Teck Coal Master Quote</p> <p>No. of samples received : 25</p> <p>No. of samples analysed : 25</p>	<p>Page : 1 of 15</p> <p>Laboratory : Calgary - Environmental</p> <p>Account Manager : Lyudmyla Shvets</p> <p>Address : 2559 29th Street NE Calgary AB Canada T1Y 7B5</p> <p>Telephone : +1 403 407 1800</p> <p>Date Samples Received : 02-Dec-2022 08:50</p> <p>Date Analysis Commenced : 03-Dec-2022</p> <p>Issue Date : 07-Dec-2022 17:44</p>
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This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Colby Bingham	Quality Systems Coordinator	Metals, Saskatoon, Saskatchewan
Hedy Lai	Team Leader - Inorganics	Inorganics, Saskatoon, Saskatchewan
Hedy Lai	Team Leader - Inorganics	Sask Soils, Saskatoon, Saskatchewan
Justin Kuzek	Team Leader - Organics	Organics, Saskatoon, Saskatchewan
Maria Painchaud	Laboratory Assistant	Inorganics, Saskatoon, Saskatchewan



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
 LOR: Limit of Reporting (detection limit).

Unit	Description
-	no units
%	percent
mg/kg	milligrams per kilogram
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Sample Comments

Sample	Client Id	Comment
CG2216716-009	RG_ERCKDT_SE-1_LAEMP_E VO_2022-12_N	Sample(s) 009, 011, 012: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2216716-011	RG_ERCKDT_SE-3_LAEMP_E VO_2022-12_N	Sample(s) 009, 011, 012: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2216716-012	RG_ERCKDT_SE-4_LAEMP_E VO_2022-12_N	Sample(s) 009, 011, 012: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
CG2216716-024	RG_ERCKMD_BRYOSE-3_LA EMP_EVO_2022-12_N	Sample(s) -024: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.

Qualifiers

Qualifier	Description
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).



Analytical Results

Sub-Matrix: Sediment
 (Matrix: Soil/Solid)

Client sample ID

					RG_ERCKUT_S E-1_LAEMP_EV O_2022-12_N	RG_ERCKUT_S E-2_LAEMP_EV O_2022-12_N	RG_ERCKUT_S E-3_LAEMP_EV O_2022-12_N	RG_ERCKUT_S E-4_LAEMP_EV O_2022-12_N	RG_ERCKUT_S E-5_LAEMP_EV O_2022-12_N
Client sampling date / time					29-Nov-2022 09:00	29-Nov-2022 09:05	29-Nov-2022 09:10	29-Nov-2022 09:15	29-Nov-2022 09:20
Analyte	CAS Number	Method	LOR	Unit	CG2216716-001	CG2216716-002	CG2216716-003	CG2216716-004	CG2216716-005
					Result	Result	Result	Result	Result
Physical Tests									
moisture	----	E144	0.25	%	68.8	79.5	52.0	46.1	56.5
pH (1:2 soil:water)	----	E108	0.10	pH units	7.55	7.48	7.59	7.59	7.46
Particle Size									
grain size curve	----	E185A	-	-	See Attached	See Attached	See Attached	See Attached	See Attached
clay (<0.004mm)	----	EC184A	1.0	%	2.8	3.7	3.2	2.9	3.1
silt (0.063mm - 0.0312mm)	----	EC184A	1.0	%	15.4	15.4	10.0	12.5	16.2
silt (0.0312mm - 0.004mm)	----	EC184A	1.0	%	14.9	15.4	11.1	13.7	17.7
sand (0.125mm - 0.063mm)	----	EC184A	1.0	%	14.0	14.5	11.5	10.7	10.9
sand (0.25mm - 0.125mm)	----	EC184A	1.0	%	28.9	27.0	25.2	23.6	22.9
sand (0.5mm - 0.25mm)	----	EC184A	1.0	%	16.2	18.1	20.1	20.4	16.3
sand (1.0mm - 0.50mm)	----	EC184A	1.0	%	4.0	4.5	8.7	8.8	7.6
sand (2.0mm - 1.0mm)	----	EC184A	1.0	%	2.6	1.1	5.3	3.2	3.3
gravel (>2mm)	----	EC184A	1.0	%	1.2	<1.0	4.9	4.2	2.0
Organic / Inorganic Carbon									
carbon, total [TC]	----	E351	0.050	%	13.0	10.0	7.58	7.87	17.6
carbon, inorganic [IC]	----	E354	0.050	%	2.58	1.90	1.23	1.28	0.783
carbon, inorganic [IC], (as CaCO3 equivalent)	----	E354	0.40	%	21.5	15.8	10.2	10.7	6.52
carbon, total organic [TOC]	----	EC356	0.050	%	10.4	8.10	6.35	6.59	16.8
Metals									
aluminum	7429-90-5	E440	50	mg/kg	3160	3600	4370	3750	3350
antimony	7440-36-0	E440	0.10	mg/kg	0.90	0.81	0.84	0.90	0.78
arsenic	7440-38-2	E440	0.10	mg/kg	4.23	5.41	5.68	5.40	4.45
barium	7440-39-3	E440	0.50	mg/kg	159	166	222	153	474
beryllium	7440-41-7	E440	0.10	mg/kg	0.43	0.50	0.54	0.52	0.54
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20
boron	7440-42-8	E440	5.0	mg/kg	6.1	<5.0	<5.0	<5.0	<5.0
cadmium	7440-43-9	E440	0.020	mg/kg	1.37	1.31	1.24	1.26	1.55



Analytical Results

Sub-Matrix: Sediment

Client sample ID

(Matrix: Soil/Solid)

					RG_ERCKUT_S E-1_LAEMP_EV O_2022-12_N	RG_ERCKUT_S E-2_LAEMP_EV O_2022-12_N	RG_ERCKUT_S E-3_LAEMP_EV O_2022-12_N	RG_ERCKUT_S E-4_LAEMP_EV O_2022-12_N	RG_ERCKUT_S E-5_LAEMP_EV O_2022-12_N
Client sampling date / time					29-Nov-2022 09:00	29-Nov-2022 09:05	29-Nov-2022 09:10	29-Nov-2022 09:15	29-Nov-2022 09:20
Analyte	CAS Number	Method	LOR	Unit	CG2216716-001	CG2216716-002	CG2216716-003	CG2216716-004	CG2216716-005
					Result	Result	Result	Result	Result
Metals									
calcium	7440-70-2	E440	50	mg/kg	81400	61200	38600	45100	25300
chromium	7440-47-3	E440	0.50	mg/kg	9.97	8.68	8.46	8.85	7.64
cobalt	7440-48-4	E440	0.10	mg/kg	4.33	4.73	5.97	5.42	5.42
copper	7440-50-8	E440	0.50	mg/kg	12.0	12.7	14.2	13.9	16.9
iron	7439-89-6	E440	50	mg/kg	9410	11500	13200	12100	10100
lead	7439-92-1	E440	0.50	mg/kg	6.55	7.36	8.78	8.41	8.66
lithium	7439-93-2	E440	2.0	mg/kg	4.1	4.6	5.2	4.6	3.6
magnesium	7439-95-4	E440	20	mg/kg	5980	4360	3860	4260	2400
manganese	7439-96-5	E440	1.0	mg/kg	189	185	252	218	198
mercury	7439-97-6	E510	0.0050	mg/kg	0.0380	0.0335	0.0426	0.0415	0.0524
molybdenum	7439-98-7	E440	0.10	mg/kg	1.24	1.26	1.16	1.16	1.19
nickel	7440-02-0	E440	0.50	mg/kg	18.9	19.7	21.9	20.1	20.2
phosphorus	7723-14-0	E440	50	mg/kg	1100	1200	1210	1210	969
potassium	7440-09-7	E440	100	mg/kg	880	1040	1000	940	780
selenium	7782-49-2	E440	0.20	mg/kg	11.4	6.31	3.70	6.51	5.62
silver	7440-22-4	E440	0.10	mg/kg	0.14	0.19	0.18	0.17	0.22
sodium	7440-23-5	E440	50	mg/kg	90	79	54	58	70
strontium	7440-24-6	E440	0.50	mg/kg	55.4	50.9	60.3	45.1	47.7
sulfur	7704-34-9	E440	1000	mg/kg	1800	1500	<1000	<1000	<1000
thallium	7440-28-0	E440	0.050	mg/kg	0.126	0.131	0.160	0.151	0.123
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
titanium	7440-32-6	E440	1.0	mg/kg	14.6	<13.0 ^{DLM}	13.5	13.0	14.0
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
uranium	7440-61-1	E440	0.050	mg/kg	1.41	1.27	1.10	1.22	1.23
vanadium	7440-62-2	E440	0.20	mg/kg	16.9	18.0	21.4	20.3	20.2
zinc	7440-66-6	E440	2.0	mg/kg	74.6	80.3	93.4	87.3	81.1
zirconium	7440-67-7	E440	1.0	mg/kg	1.1	1.1	<1.0	<1.0	1.2

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Sediment

Client sample ID

(Matrix: Soil/Solid)

					RG_ERCKUT_B RYOSE-1_LAEM P_EVO_2022-1 2_N	RG_ERCKUT_B RYOSE-2_LAEM P_EVO_2022-1 2_N	RG_ERCKUT_B RYOSE-3_LAEM P_EVO_2022-1 2_N	RG_ERCKDT_S E-1_LAEMP_EV O_2022-12_N	RG_ERCKDT_S E-2_LAEMP_EV O_2022-12_N
Client sampling date / time					29-Nov-2022 09:25	29-Nov-2022 09:30	29-Nov-2022 09:35	28-Nov-2022 13:00	28-Nov-2022 13:05
Analyte	CAS Number	Method	LOR	Unit	CG2216716-006	CG2216716-007	CG2216716-008	CG2216716-009	CG2216716-010
					Result	Result	Result	Result	Result
Physical Tests									
moisture	----	E144	0.25	%	26.7	82.4	28.9	91.2	86.6
pH (1:2 soil:water)	----	E108	0.10	pH units	7.85	7.53	7.78	7.63	7.78
Particle Size									
grain size curve	----	E185A	-	-	See Attached	See Attached	See Attached	See Attached	See Attached
clay (<0.004mm)	----	EC184A	1.0	%	1.8	2.5	1.3	8.9	12.2
silt (0.063mm - 0.0312mm)	----	EC184A	1.0	%	2.7	5.3	2.4	25.5	30.9
silt (0.0312mm - 0.004mm)	----	EC184A	1.0	%	3.3	6.7	2.9	34.7	48.8
sand (0.125mm - 0.063mm)	----	EC184A	1.0	%	3.6	4.2	2.9	7.9	4.5
sand (0.25mm - 0.125mm)	----	EC184A	1.0	%	13.2	17.7	11.4	11.6	2.2
sand (0.5mm - 0.25mm)	----	EC184A	1.0	%	24.8	24.2	21.5	6.7	<1.0
sand (1.0mm - 0.50mm)	----	EC184A	1.0	%	24.8	18.3	20.0	2.2	<1.0
sand (2.0mm - 1.0mm)	----	EC184A	1.0	%	14.6	14.8	17.7	1.0	<1.0
gravel (>2mm)	----	EC184A	1.0	%	11.2	6.3	19.9	1.5	<1.0
Organic / Inorganic Carbon									
carbon, total [TC]	----	E351	0.050	%	6.34	14.7	4.31	13.9	12.2
carbon, inorganic [IC]	----	E354	0.050	%	0.878	1.73	1.08	3.15	2.85
carbon, inorganic [IC], (as CaCO3 equivalent)	----	E354	0.40	%	7.32	14.4	9.02	26.2	23.8
carbon, total organic [TOC]	----	EC356	0.050	%	5.46	13.0	3.23	10.8	9.35
Metals									
aluminum	7429-90-5	E440	50	mg/kg	3740	3840	3810	3160	4430
antimony	7440-36-0	E440	0.10	mg/kg	0.95	1.09	1.02	1.02	0.91
arsenic	7440-38-2	E440	0.10	mg/kg	5.95	5.36	6.65	9.40	15.4
barium	7440-39-3	E440	0.50	mg/kg	153	193	136	188	227
beryllium	7440-41-7	E440	0.10	mg/kg	0.53	0.52	0.56	0.44	0.52
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20
boron	7440-42-8	E440	5.0	mg/kg	<5.0	5.3	<5.0	8.3	8.4
cadmium	7440-43-9	E440	0.020	mg/kg	1.14	1.29	1.16	4.01	5.51



Analytical Results

Sub-Matrix: Sediment
 (Matrix: Soil/Solid)

Client sample ID

					RG_ERCKUT_B RYOSE-1_LAEM P_EVO_2022-1 2_N	RG_ERCKUT_B RYOSE-2_LAEM P_EVO_2022-1 2_N	RG_ERCKUT_B RYOSE-3_LAEM P_EVO_2022-1 2_N	RG_ERCKDT_S E-1_LAEMP_EV O_2022-12_N	RG_ERCKDT_S E-2_LAEMP_EV O_2022-12_N
Client sampling date / time					29-Nov-2022 09:25	29-Nov-2022 09:30	29-Nov-2022 09:35	28-Nov-2022 13:00	28-Nov-2022 13:05
Analyte	CAS Number	Method	LOR	Unit	CG2216716-006	CG2216716-007	CG2216716-008	CG2216716-009	CG2216716-010
					Result	Result	Result	Result	Result
Metals									
calcium	7440-70-2	E440	50	mg/kg	30600	46700	41800	97700	80900
chromium	7440-47-3	E440	0.50	mg/kg	8.13	8.22	8.15	7.78	10.2
cobalt	7440-48-4	E440	0.10	mg/kg	6.42	5.50	6.18	152	92.4
copper	7440-50-8	E440	0.50	mg/kg	14.0	14.4	14.5	15.8	16.1
iron	7439-89-6	E440	50	mg/kg	14700	12800	16200	18700	28200
lead	7439-92-1	E440	0.50	mg/kg	8.74	7.97	8.94	7.90	9.59
lithium	7439-93-2	E440	2.0	mg/kg	4.6	4.2	4.2	4.5	6.5
magnesium	7439-95-4	E440	20	mg/kg	3610	4410	4110	8880	11400
manganese	7439-96-5	E440	1.0	mg/kg	260	223	259	3770	2030
mercury	7439-97-6	E510	0.0050	mg/kg	0.0336	0.0373	0.0309	0.0503	0.0494
molybdenum	7439-98-7	E440	0.10	mg/kg	1.29	1.46	1.45	2.84	2.09
nickel	7440-02-0	E440	0.50	mg/kg	21.6	21.2	23.1	120	91.4
phosphorus	7723-14-0	E440	50	mg/kg	1120	1170	1140	1700	1660
potassium	7440-09-7	E440	100	mg/kg	950	940	950	1030	1210
selenium	7782-49-2	E440	0.20	mg/kg	2.75	12.7	1.68	17.3	23.2
silver	7440-22-4	E440	0.10	mg/kg	0.13	0.16	0.12	0.20	0.21
sodium	7440-23-5	E440	50	mg/kg	50	65	<50	116	112
strontium	7440-24-6	E440	0.50	mg/kg	50.7	55.9	56.3	76.0	79.6
sulfur	7704-34-9	E440	1000	mg/kg	<1000	1300	<1000	3000	2400
thallium	7440-28-0	E440	0.050	mg/kg	0.161	0.162	0.170	0.290	0.329
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
titanium	7440-32-6	E440	1.0	mg/kg	11.7	12.6	9.5	16.5	14.0
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
uranium	7440-61-1	E440	0.050	mg/kg	0.952	1.71	1.06	1.85	1.50
vanadium	7440-62-2	E440	0.20	mg/kg	21.9	22.1	24.2	17.1	21.2
zinc	7440-66-6	E440	2.0	mg/kg	100	90.8	108	180	237
zirconium	7440-67-7	E440	1.0	mg/kg	<1.0	<1.0	<1.0	1.1	<1.0



Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Sediment

Client sample ID

(Matrix: Soil/Solid)

					RG_ERCKDT_S E-3_LAEMP_EV O_2022-12_N	RG_ERCKDT_S E-4_LAEMP_EV O_2022-12_N	RG_ERCKDT_S E-5_LAEMP_EV O_2022-12_N	RG_ERCKDT_S E-6_LAEMP_EV O_2022-12_N	RG_ERCKDT_S E-7_LAEMP_EV O_2022-12_N
Client sampling date / time					28-Nov-2022 13:10	28-Nov-2022 13:15	28-Nov-2022 13:20	28-Nov-2022 13:25	28-Nov-2022 13:30
Analyte	CAS Number	Method	LOR	Unit	CG2216716-011	CG2216716-012	CG2216716-013	CG2216716-014	CG2216716-015
					Result	Result	Result	Result	Result
Physical Tests									
moisture	----	E144	0.25	%	74.3	91.6	83.7	78.3	83.8
pH (1:2 soil:water)	----	E108	0.10	pH units	7.65	7.70	7.61	7.61	7.59
Particle Size									
grain size curve	----	E185A	-	-	See Attached	See Attached	See Attached	See Attached	See Attached
clay (<0.004mm)	----	EC184A	1.0	%	6.8	8.2	8.6	8.6	7.4
silt (0.063mm - 0.0312mm)	----	EC184A	1.0	%	15.2	21.0	23.1	31.8	29.1
silt (0.0312mm - 0.004mm)	----	EC184A	1.0	%	22.9	30.5	32.7	43.4	41.0
sand (0.125mm - 0.063mm)	----	EC184A	1.0	%	7.5	8.5	10.6	9.0	6.5
sand (0.25mm - 0.125mm)	----	EC184A	1.0	%	11.8	11.1	15.6	6.3	7.9
sand (0.5mm - 0.25mm)	----	EC184A	1.0	%	15.7	7.5	7.0	<1.0	5.1
sand (1.0mm - 0.50mm)	----	EC184A	1.0	%	15.0	5.6	1.7	<1.0	2.2
sand (2.0mm - 1.0mm)	----	EC184A	1.0	%	3.3	4.1	<1.0	<1.0	<1.0
gravel (>2mm)	----	EC184A	1.0	%	1.8	3.5	<1.0	<1.0	<1.0
Organic / Inorganic Carbon									
carbon, total [TC]	----	E351	0.050	%	11.6	11.4	12.0	13.4	15.4
carbon, inorganic [IC]	----	E354	0.050	%	2.48	2.66	2.95	3.18	2.69
carbon, inorganic [IC], (as CaCO3 equivalent)	----	E354	0.40	%	20.7	22.2	24.6	26.5	22.4
carbon, total organic [TOC]	----	EC356	0.050	%	9.12	8.74	9.05	10.2	12.7
Metals									
aluminum	7429-90-5	E440	50	mg/kg	3170	2990	2610	2690	3110
antimony	7440-36-0	E440	0.10	mg/kg	1.03	0.89	0.88	0.81	0.72
arsenic	7440-38-2	E440	0.10	mg/kg	8.97	10.3	8.71	14.6	9.23
barium	7440-39-3	E440	0.50	mg/kg	193	191	168	231	217
beryllium	7440-41-7	E440	0.10	mg/kg	0.48	0.49	0.42	0.47	0.49
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20
boron	7440-42-8	E440	5.0	mg/kg	6.7	6.3	5.2	5.3	<5.0
cadmium	7440-43-9	E440	0.020	mg/kg	3.36	3.85	4.28	5.49	4.08
calcium	7440-70-2	E440	50	mg/kg	79400	85600	90300	97700	83000



Analytical Results

Sub-Matrix: Sediment
 (Matrix: Soil/Solid)

Client sample ID

					RG_ERCKDT_S E-3_LAEMP_EV O_2022-12_N	RG_ERCKDT_S E-4_LAEMP_EV O_2022-12_N	RG_ERCKDT_S E-5_LAEMP_EV O_2022-12_N	RG_ERCKDT_S E-6_LAEMP_EV O_2022-12_N	RG_ERCKDT_S E-7_LAEMP_EV O_2022-12_N
Client sampling date / time					28-Nov-2022 13:10	28-Nov-2022 13:15	28-Nov-2022 13:20	28-Nov-2022 13:25	28-Nov-2022 13:30
Analyte	CAS Number	Method	LOR	Unit	CG2216716-011	CG2216716-012	CG2216716-013	CG2216716-014	CG2216716-015
					Result	Result	Result	Result	Result
Metals									
chromium	7440-47-3	E440	0.50	mg/kg	7.22	7.04	6.05	6.72	7.17
cobalt	7440-48-4	E440	0.10	mg/kg	122	107	118	99.8	57.6
copper	7440-50-8	E440	0.50	mg/kg	15.0	15.5	13.9	15.0	16.5
iron	7439-89-6	E440	50	mg/kg	18600	21300	16900	30600	20700
lead	7439-92-1	E440	0.50	mg/kg	7.95	8.16	7.85	7.96	8.12
lithium	7439-93-2	E440	2.0	mg/kg	4.4	4.5	3.6	4.1	3.9
magnesium	7439-95-4	E440	20	mg/kg	6850	8780	8260	8560	6440
manganese	7439-96-5	E440	1.0	mg/kg	2800	2510	2820	1600	881
mercury	7439-97-6	E510	0.0050	mg/kg	0.0404	0.0401	0.0356	0.0428	0.0580
molybdenum	7439-98-7	E440	0.10	mg/kg	2.72	2.24	1.82	1.52	1.25
nickel	7440-02-0	E440	0.50	mg/kg	83.0	104	87.9	88.4	62.7
phosphorus	7723-14-0	E440	50	mg/kg	1580	1520	1610	1780	1500
potassium	7440-09-7	E440	100	mg/kg	980	890	870	790	770
selenium	7782-49-2	E440	0.20	mg/kg	12.7	19.6	13.5	17.9	15.1
silver	7440-22-4	E440	0.10	mg/kg	0.18	0.19	0.18	0.19	0.22
sodium	7440-23-5	E440	50	mg/kg	97	111	114	90	86
strontium	7440-24-6	E440	0.50	mg/kg	64.1	72.2	68.2	78.0	69.5
sulfur	7704-34-9	E440	1000	mg/kg	2200	2800	2600	2200	1600
thallium	7440-28-0	E440	0.050	mg/kg	0.223	0.268	0.218	0.256	0.188
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
titanium	7440-32-6	E440	1.0	mg/kg	11.8	12.6	9.7	11.8	13.7
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
uranium	7440-61-1	E440	0.050	mg/kg	1.71	1.62	1.58	1.40	1.13
vanadium	7440-62-2	E440	0.20	mg/kg	18.2	16.8	14.0	14.5	16.2
zinc	7440-66-6	E440	2.0	mg/kg	167	196	170	205	153
zirconium	7440-67-7	E440	1.0	mg/kg	<1.0	<1.0	<1.0	<1.0	1.2

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Sediment

Client sample ID

(Matrix: Soil/Solid)

					RG_ERCKDT_B RYOSE-1_LAEM P_EVO_2022-1 2_N	RG_ERCKDT_B RYOSE-2_LAEM P_EVO_2022-1 2_N	RG_ERCKDT_B RYOSE-3_LAEM P_EVO_2022-1 2_N	RG_ERCKMD_S E-1_LAEMP_EV O_2022-12_N	RG_ERCKMD_S E-2_LAEMP_EV O_2022-12_N
Client sampling date / time					28-Nov-2022 13:35	28-Nov-2022 13:40	28-Nov-2022 13:45	28-Nov-2022 09:30	28-Nov-2022 09:35
Analyte	CAS Number	Method	LOR	Unit	CG2216716-016	CG2216716-017	CG2216716-018	CG2216716-019	CG2216716-020
					Result	Result	Result	Result	Result
Physical Tests									
moisture	----	E144	0.25	%	67.3	77.4	64.4	89.9	83.6
pH (1:2 soil:water)	----	E108	0.10	pH units	7.80	7.94	7.83	7.72	7.83
Particle Size									
grain size curve	----	E185A	-	-	See Attached	See Attached	See Attached	See Attached	See Attached
clay (<0.004mm)	----	EC184A	1.0	%	4.7	12.2	5.3	9.2	8.6
silt (0.063mm - 0.0312mm)	----	EC184A	1.0	%	11.1	22.0	8.5	19.9	21.9
silt (0.0312mm - 0.004mm)	----	EC184A	1.0	%	14.8	34.8	14.2	30.5	30.6
sand (0.125mm - 0.063mm)	----	EC184A	1.0	%	7.3	8.8	6.4	6.4	6.9
sand (0.25mm - 0.125mm)	----	EC184A	1.0	%	21.3	12.4	12.7	8.4	12.0
sand (0.5mm - 0.25mm)	----	EC184A	1.0	%	24.3	5.7	19.2	9.5	13.4
sand (1.0mm - 0.50mm)	----	EC184A	1.0	%	9.9	2.4	22.8	10.8	5.6
sand (2.0mm - 1.0mm)	----	EC184A	1.0	%	2.1	<1.0	5.9	4.8	<1.0
gravel (>2mm)	----	EC184A	1.0	%	4.5	<1.0	5.0	<1.0	<1.0
Organic / Inorganic Carbon									
carbon, total [TC]	----	E351	0.050	%	9.51	12.3	7.30	13.9	13.9
carbon, inorganic [IC]	----	E354	0.050	%	2.83	3.14	1.79	4.04	3.71
carbon, inorganic [IC], (as CaCO3 equivalent)	----	E354	0.40	%	23.6	26.2	14.9	33.7	30.9
carbon, total organic [TOC]	----	EC356	0.050	%	6.68	9.16	5.51	9.86	10.2
Metals									
aluminum	7429-90-5	E440	50	mg/kg	3110	3040	3950	2750	2700
antimony	7440-36-0	E440	0.10	mg/kg	1.06	0.90	0.96	0.86	0.94
arsenic	7440-38-2	E440	0.10	mg/kg	9.65	14.7	8.50	13.6	12.6
barium	7440-39-3	E440	0.50	mg/kg	194	196	184	256	214
beryllium	7440-41-7	E440	0.10	mg/kg	0.49	0.50	0.60	0.49	0.53
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20
boron	7440-42-8	E440	5.0	mg/kg	5.3	6.0	<5.0	6.2	7.2
cadmium	7440-43-9	E440	0.020	mg/kg	4.10	4.38	2.59	6.53	5.62



Analytical Results

Sub-Matrix: Sediment
 (Matrix: Soil/Solid)

Client sample ID

					RG_ERCKDT_B RYOSE-1_LAEM P_EVO_2022-1 2_N	RG_ERCKDT_B RYOSE-2_LAEM P_EVO_2022-1 2_N	RG_ERCKDT_B RYOSE-3_LAEM P_EVO_2022-1 2_N	RG_ERCKMD_S E-1_LAEMP_EV O_2022-12_N	RG_ERCKMD_S E-2_LAEMP_EV O_2022-12_N
Client sampling date / time					28-Nov-2022 13:35	28-Nov-2022 13:40	28-Nov-2022 13:45	28-Nov-2022 09:30	28-Nov-2022 09:35
Analyte	CAS Number	Method	LOR	Unit	CG2216716-016	CG2216716-017	CG2216716-018	CG2216716-019	CG2216716-020
					Result	Result	Result	Result	Result
Metals									
calcium	7440-70-2	E440	50	mg/kg	85100	94500	53300	121000	119000
chromium	7440-47-3	E440	0.50	mg/kg	6.96	10.4	58.6	10.7	8.33
cobalt	7440-48-4	E440	0.10	mg/kg	257	139	85.2	207	154
copper	7440-50-8	E440	0.50	mg/kg	14.0	14.9	15.6	14.4	15.4
iron	7439-89-6	E440	50	mg/kg	18100	26600	18900	28000	24000
lead	7439-92-1	E440	0.50	mg/kg	8.54	8.21	8.30	8.32	8.06
lithium	7439-93-2	E440	2.0	mg/kg	4.2	4.4	4.5	3.8	4.5
magnesium	7439-95-4	E440	20	mg/kg	6370	8910	4400	6980	7120
manganese	7439-96-5	E440	1.0	mg/kg	6200	2880	2030	5350	4550
mercury	7439-97-6	E510	0.0050	mg/kg	0.0347	0.0424	0.0353	0.0489	0.0510
molybdenum	7439-98-7	E440	0.10	mg/kg	3.50	2.88	7.80	2.21	1.92
nickel	7440-02-0	E440	0.50	mg/kg	145	112	97.6	132	141
phosphorus	7723-14-0	E440	50	mg/kg	1420	1530	1480	1600	1430
potassium	7440-09-7	E440	100	mg/kg	930	840	1160	740	720
selenium	7782-49-2	E440	0.20	mg/kg	7.92	29.3	5.88	25.7	30.5
silver	7440-22-4	E440	0.10	mg/kg	0.15	0.18	0.14	0.20	0.18
sodium	7440-23-5	E440	50	mg/kg	85	103	72	109	107
strontium	7440-24-6	E440	0.50	mg/kg	71.6	77.8	59.3	79.5	78.5
sulfur	7704-34-9	E440	1000	mg/kg	2000	2300	1000	3700	3500
thallium	7440-28-0	E440	0.050	mg/kg	0.324	0.290	0.227	0.337	0.346
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
titanium	7440-32-6	E440	1.0	mg/kg	12.0	14.0	11.5	14.8	15.6
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
uranium	7440-61-1	E440	0.050	mg/kg	1.54	1.84	1.26	1.70	1.68
vanadium	7440-62-2	E440	0.20	mg/kg	18.4	17.1	24.6	18.2	16.7
zinc	7440-66-6	E440	2.0	mg/kg	205	237	163	312	304
zirconium	7440-67-7	E440	1.0	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0



Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Sediment

Client sample ID

(Matrix: Soil/Solid)

					RG_ERCKMD_S E-3_LAEMP_EV O_2022-12_N	RG_ERCKMD_B RYOSE-1_LAEM P_EVO_2022-1 2_N	RG_ERCKMD_B RYOSE-2_LAEM P_EVO_2022-1 2_N	RG_ERCKMD_B RYOSE-3_LAEM P_EVO_2022-1 2_N	RG_BOCKRD_S E-1_LAEMP_EV O_2022-12_N
Client sampling date / time					28-Nov-2022 09:40	28-Nov-2022 09:45	28-Nov-2022 09:50	28-Nov-2022 09:55	29-Nov-2022 12:20
Analyte	CAS Number	Method	LOR	Unit	CG2216716-021	CG2216716-022	CG2216716-023	CG2216716-024	CG2216716-025
					Result	Result	Result	Result	Result
Physical Tests									
moisture	----	E144	0.25	%	80.5	60.7	91.7	95.0	67.9
pH (1:2 soil:water)	----	E108	0.10	pH units	7.83	8.06	7.95	7.97	7.99
Particle Size									
grain size curve	----	E185A	-	-	See Attached	See Attached	See Attached	See Attached	See Attached
clay (<0.004mm)	----	EC184A	1.0	%	7.0	3.4	7.5	5.8	6.6
silt (0.063mm - 0.0312mm)	----	EC184A	1.0	%	21.8	9.2	14.2	10.2	22.5
silt (0.0312mm - 0.004mm)	----	EC184A	1.0	%	26.0	11.6	20.3	14.6	30.6
sand (0.125mm - 0.063mm)	----	EC184A	1.0	%	13.4	6.3	8.8	7.7	15.4
sand (0.25mm - 0.125mm)	----	EC184A	1.0	%	16.0	12.7	19.0	16.0	17.1
sand (0.5mm - 0.25mm)	----	EC184A	1.0	%	11.2	18.5	20.8	27.4	6.4
sand (1.0mm - 0.50mm)	----	EC184A	1.0	%	3.9	21.8	8.5	15.5	1.1
sand (2.0mm - 1.0mm)	----	EC184A	1.0	%	<1.0	11.3	<1.0	2.8	<1.0
gravel (>2mm)	----	EC184A	1.0	%	<1.0	5.2	<1.0	<1.0	<1.0
Organic / Inorganic Carbon									
carbon, total [TC]	----	E351	0.050	%	13.9	11.7	12.7	11.4	13.1
carbon, inorganic [IC]	----	E354	0.050	%	4.12	6.28	5.70	5.65	6.88
carbon, inorganic [IC], (as CaCO3 equivalent)	----	E354	0.40	%	34.3	52.4	47.5	47.1	57.3
carbon, total organic [TOC]	----	EC356	0.050	%	9.78	5.42	7.00	5.75	6.22
Metals									
aluminum	7429-90-5	E440	50	mg/kg	2910	2380	2280	2020	662
antimony	7440-36-0	E440	0.10	mg/kg	1.08	0.75	0.96	0.82	0.42
arsenic	7440-38-2	E440	0.10	mg/kg	11.5	7.91	14.0	10.8	4.71
barium	7440-39-3	E440	0.50	mg/kg	229	219	286	346	1370
beryllium	7440-41-7	E440	0.10	mg/kg	0.51	0.41	0.41	0.39	<0.15 ^{DLM}
bismuth	7440-69-9	E440	0.20	mg/kg	<0.30 ^{DLM}	<0.30 ^{DLM}	<0.30 ^{DLM}	<0.30 ^{DLM}	<0.30 ^{DLM}
boron	7440-42-8	E440	5.0	mg/kg	10.4	<7.5 ^{DLM}	7.9	<7.4 ^{DLM}	<7.4 ^{DLM}
cadmium	7440-43-9	E440	0.020	mg/kg	5.06	5.00	8.30	6.35	8.82



Analytical Results

Sub-Matrix: Sediment

(Matrix: Soil/Solid)

Client sample ID

					RG_ERCKMD_S E-3_LAEMP_EV O_2022-12_N	RG_ERCKMD_B RYOSE-1_LAEM P_EVO_2022-1 2_N	RG_ERCKMD_B RYOSE-2_LAEM P_EVO_2022-1 2_N	RG_ERCKMD_B RYOSE-3_LAEM P_EVO_2022-1 2_N	RG_BOCKRD_S E-1_LAEMP_EV O_2022-12_N
Client sampling date / time					28-Nov-2022 09:40	28-Nov-2022 09:45	28-Nov-2022 09:50	28-Nov-2022 09:55	29-Nov-2022 12:20
Analyte	CAS Number	Method	LOR	Unit	CG2216716-021	CG2216716-022	CG2216716-023	CG2216716-024	CG2216716-025
					Result	Result	Result	Result	Result
Metals									
calcium	7440-70-2	E440	50	mg/kg	127000	163000	170000	174000	239000
chromium	7440-47-3	E440	0.50	mg/kg	11.6	29.3	8.12	8.38	2.22
cobalt	7440-48-4	E440	0.10	mg/kg	150	104	300	199	4.57
copper	7440-50-8	E440	0.50	mg/kg	15.4	11.3	13.0	11.4	6.08
iron	7439-89-6	E440	50	mg/kg	21700	16800	25200	21800	11000
lead	7439-92-1	E440	0.50	mg/kg	7.94	6.16	7.78	6.96	1.41
lithium	7439-93-2	E440	2.0	mg/kg	4.4	<3.0 ^{DLM}	3.2	<3.0 ^{DLM}	<3.0 ^{DLM}
magnesium	7439-95-4	E440	20	mg/kg	7160	4820	6880	6470	4140
manganese	7439-96-5	E440	1.0	mg/kg	4500	3330	9100	6820	188
mercury	7439-97-6	E510	0.0050	mg/kg	0.0544	0.0296	0.0461	0.0352	0.0145
molybdenum	7439-98-7	E440	0.10	mg/kg	2.49	4.17	2.59	2.27	0.77
nickel	7440-02-0	E440	0.50	mg/kg	132	105	185	121	54.2
phosphorus	7723-14-0	E440	50	mg/kg	1360	998	1460	1300	382
potassium	7440-09-7	E440	100	mg/kg	880	820	830	780	550
selenium	7782-49-2	E440	0.20	mg/kg	24.0	10.6	14.3	10.8	8.54
silver	7440-22-4	E440	0.10	mg/kg	0.20	<0.15 ^{DLM}	0.15	<0.15 ^{DLM}	<0.15 ^{DLM}
sodium	7440-23-5	E440	50	mg/kg	102	92	112	124	123
strontium	7440-24-6	E440	0.50	mg/kg	82.2	79.4	95.9	94.5	1340
sulfur	7704-34-9	E440	1000	mg/kg	3100	3500	4400	4900	7800
thallium	7440-28-0	E440	0.050	mg/kg	0.378	0.277	0.479	0.347	0.124
tin	7440-31-5	E440	2.0	mg/kg	<3.0 ^{DLM}	<3.0 ^{DLM}	<3.0 ^{DLM}	<3.0 ^{DLM}	<3.0 ^{DLM}
titanium	7440-32-6	E440	1.0	mg/kg	18.4	14.3	15.8	14.1	9.9
tungsten	7440-33-7	E440	0.50	mg/kg	<0.74 ^{DLM}	<0.75 ^{DLM}	<0.75 ^{DLM}	<0.74 ^{DLM}	<0.74 ^{DLM}
uranium	7440-61-1	E440	0.050	mg/kg	1.83	1.88	2.12	2.11	1.65
vanadium	7440-62-2	E440	0.20	mg/kg	18.7	18.5	16.5	14.7	5.87
zinc	7440-66-6	E440	2.0	mg/kg	247	238	370	286	471
zirconium	7440-67-7	E440	1.0	mg/kg	<1.5 ^{DLM}	<1.5 ^{DLM}	<1.5 ^{DLM}	<1.5 ^{DLM}	<1.5 ^{DLM}



Please refer to the General Comments section for an explanation of any qualifiers detected.



QUALITY CONTROL INTERPRETIVE REPORT

<p>Work Order : CG2216716</p> <p>Client : Teck Coal Limited</p> <p>Contact : Mike Pope</p> <p>Address : RR#1 HWY#3 Sparwood BC Canada V0B 2G1</p> <p>Telephone : ----</p> <p>Project : REGIONAL EFFECTS PROGRAM</p> <p>PO : VPO00847030</p> <p>C-O-C number : EVO LAEMP DEC 2022</p> <p>Sampler : Robin Valteau</p> <p>Site : ----</p> <p>Quote number : Teck Coal Master Quote</p> <p>No. of samples received : 25</p> <p>No. of samples analysed : 25</p>	<p>Page : 1 of 25</p> <p>Laboratory : Calgary - Environmental</p> <p>Account Manager : Lyudmyla Shvets</p> <p>Address : 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5</p> <p>Telephone : +1 403 407 1800</p> <p>Date Samples Received : 02-Dec-2022 08:50</p> <p>Issue Date : 07-Dec-2022 17:45</p>
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This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

- Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
- CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
- DQO: Data Quality Objective.
- LOR: Limit of Reporting (detection limit).
- RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: Soil/Solid

Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_BOCKRD_SE-1_LAEMP_EVO_2022-12_N	E510	29-Nov-2022	05-Dec-2022	----	----		05-Dec-2022	28 days	6 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKUT_BRYOSE-1_LAEMP_EVO_2022-12_N	E510	29-Nov-2022	05-Dec-2022	----	----		05-Dec-2022	28 days	6 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKUT_BRYOSE-2_LAEMP_EVO_2022-12_N	E510	29-Nov-2022	05-Dec-2022	----	----		05-Dec-2022	28 days	6 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKUT_BRYOSE-3_LAEMP_EVO_2022-12_N	E510	29-Nov-2022	05-Dec-2022	----	----		05-Dec-2022	28 days	6 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKUT_SE-1_LAEMP_EVO_2022-12_N	E510	29-Nov-2022	05-Dec-2022	----	----		05-Dec-2022	28 days	6 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKUT_SE-2_LAEMP_EVO_2022-12_N	E510	29-Nov-2022	05-Dec-2022	----	----		05-Dec-2022	28 days	6 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKUT_SE-3_LAEMP_EVO_2022-12_N	E510	29-Nov-2022	05-Dec-2022	----	----		05-Dec-2022	28 days	6 days	✓	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKUT_SE-4_LAEMP_EVO_2022-12_N	E510	29-Nov-2022	05-Dec-2022	----	----		05-Dec-2022	28 days	6 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKUT_SE-5_LAEMP_EVO_2022-12_N	E510	29-Nov-2022	05-Dec-2022	----	----		05-Dec-2022	28 days	6 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKDT_BRYOSE-1_LAEMP_EVO_2022-12_N	E510	28-Nov-2022	05-Dec-2022	----	----		05-Dec-2022	28 days	7 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKDT_BRYOSE-2_LAEMP_EVO_2022-12_N	E510	28-Nov-2022	05-Dec-2022	----	----		05-Dec-2022	28 days	7 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKDT_BRYOSE-3_LAEMP_EVO_2022-12_N	E510	28-Nov-2022	05-Dec-2022	----	----		05-Dec-2022	28 days	7 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKDT_SE-1_LAEMP_EVO_2022-12_N	E510	28-Nov-2022	05-Dec-2022	----	----		05-Dec-2022	28 days	7 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKDT_SE-2_LAEMP_EVO_2022-12_N	E510	28-Nov-2022	05-Dec-2022	----	----		05-Dec-2022	28 days	7 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKDT_SE-3_LAEMP_EVO_2022-12_N	E510	28-Nov-2022	05-Dec-2022	----	----		05-Dec-2022	28 days	7 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKDT_SE-4_LAEMP_EVO_2022-12_N	E510	28-Nov-2022	05-Dec-2022	----	----		05-Dec-2022	28 days	7 days	✔	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKDT_SE-5_LAEMP_EVO_2022-12_N	E510	28-Nov-2022	05-Dec-2022	----	----		05-Dec-2022	28 days	7 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKDT_SE-6_LAEMP_EVO_2022-12_N	E510	28-Nov-2022	05-Dec-2022	----	----		05-Dec-2022	28 days	7 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKDT_SE-7_LAEMP_EVO_2022-12_N	E510	28-Nov-2022	05-Dec-2022	----	----		05-Dec-2022	28 days	7 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKMD_BRYOSE-1_LAEMP_EVO_2022-12_N	E510	28-Nov-2022	05-Dec-2022	----	----		05-Dec-2022	28 days	7 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKMD_BRYOSE-2_LAEMP_EVO_2022-12_N	E510	28-Nov-2022	05-Dec-2022	----	----		05-Dec-2022	28 days	7 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKMD_BRYOSE-3_LAEMP_EVO_2022-12_N	E510	28-Nov-2022	05-Dec-2022	----	----		05-Dec-2022	28 days	7 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKMD_SE-1_LAEMP_EVO_2022-12_N	E510	28-Nov-2022	05-Dec-2022	----	----		05-Dec-2022	28 days	7 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKMD_SE-2_LAEMP_EVO_2022-12_N	E510	28-Nov-2022	05-Dec-2022	----	----		05-Dec-2022	28 days	7 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag RG_ERCKMD_SE-3_LAEMP_EVO_2022-12_N	E510	28-Nov-2022	05-Dec-2022	----	----		05-Dec-2022	28 days	7 days	✔	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_BOCKRD_SE-1_LAEMP_EVO_2022-12_N	E440	29-Nov-2022	05-Dec-2022	----	----		05-Dec-2022	180 days	6 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_ERCKUT_BRYOSE-1_LAEMP_EVO_2022-12_N	E440	29-Nov-2022	05-Dec-2022	----	----		05-Dec-2022	180 days	6 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_ERCKUT_BRYOSE-2_LAEMP_EVO_2022-12_N	E440	29-Nov-2022	05-Dec-2022	----	----		05-Dec-2022	180 days	6 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_ERCKUT_BRYOSE-3_LAEMP_EVO_2022-12_N	E440	29-Nov-2022	05-Dec-2022	----	----		05-Dec-2022	180 days	6 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_ERCKUT_SE-1_LAEMP_EVO_2022-12_N	E440	29-Nov-2022	05-Dec-2022	----	----		05-Dec-2022	180 days	6 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_ERCKUT_SE-2_LAEMP_EVO_2022-12_N	E440	29-Nov-2022	05-Dec-2022	----	----		05-Dec-2022	180 days	6 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_ERCKUT_SE-3_LAEMP_EVO_2022-12_N	E440	29-Nov-2022	05-Dec-2022	----	----		05-Dec-2022	180 days	6 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_ERCKUT_SE-4_LAEMP_EVO_2022-12_N	E440	29-Nov-2022	05-Dec-2022	----	----		05-Dec-2022	180 days	6 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_ERCKUT_SE-5_LAEMP_EVO_2022-12_N	E440	29-Nov-2022	05-Dec-2022	----	----		05-Dec-2022	180 days	6 days	✔	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_ERCKDT_BRYOSE-1_LAEMP_EVO_2022-12_N	E440	28-Nov-2022	05-Dec-2022	----	----		05-Dec-2022	180 days	7 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_ERCKDT_BRYOSE-2_LAEMP_EVO_2022-12_N	E440	28-Nov-2022	05-Dec-2022	----	----		05-Dec-2022	180 days	7 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_ERCKDT_BRYOSE-3_LAEMP_EVO_2022-12_N	E440	28-Nov-2022	05-Dec-2022	----	----		05-Dec-2022	180 days	7 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_ERCKDT_SE-1_LAEMP_EVO_2022-12_N	E440	28-Nov-2022	05-Dec-2022	----	----		05-Dec-2022	180 days	7 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_ERCKDT_SE-2_LAEMP_EVO_2022-12_N	E440	28-Nov-2022	05-Dec-2022	----	----		05-Dec-2022	180 days	7 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_ERCKDT_SE-3_LAEMP_EVO_2022-12_N	E440	28-Nov-2022	05-Dec-2022	----	----		05-Dec-2022	180 days	7 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_ERCKDT_SE-4_LAEMP_EVO_2022-12_N	E440	28-Nov-2022	05-Dec-2022	----	----		05-Dec-2022	180 days	7 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_ERCKDT_SE-5_LAEMP_EVO_2022-12_N	E440	28-Nov-2022	05-Dec-2022	----	----		05-Dec-2022	180 days	7 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_ERCKDT_SE-6_LAEMP_EVO_2022-12_N	E440	28-Nov-2022	05-Dec-2022	----	----		05-Dec-2022	180 days	7 days	✔	



Matrix: Soil/Solid

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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_ERCKDT_SE-7_LAEMP_EVO_2022-12_N	E440	28-Nov-2022	05-Dec-2022	----	----		05-Dec-2022	180 days	7 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_ERCKMD_BRYOSE-1_LAEMP_EVO_2022-12_N	E440	28-Nov-2022	05-Dec-2022	----	----		05-Dec-2022	180 days	7 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_ERCKMD_BRYOSE-2_LAEMP_EVO_2022-12_N	E440	28-Nov-2022	05-Dec-2022	----	----		05-Dec-2022	180 days	7 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_ERCKMD_BRYOSE-3_LAEMP_EVO_2022-12_N	E440	28-Nov-2022	05-Dec-2022	----	----		05-Dec-2022	180 days	7 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_ERCKMD_SE-1_LAEMP_EVO_2022-12_N	E440	28-Nov-2022	05-Dec-2022	----	----		05-Dec-2022	180 days	7 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_ERCKMD_SE-2_LAEMP_EVO_2022-12_N	E440	28-Nov-2022	05-Dec-2022	----	----		05-Dec-2022	180 days	7 days	✔	
Metals : Metals in Soil/Solid by CRC ICMS											
LDPE bag RG_ERCKMD_SE-3_LAEMP_EVO_2022-12_N	E440	28-Nov-2022	05-Dec-2022	----	----		05-Dec-2022	180 days	7 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_BOCKRD_SE-1_LAEMP_EVO_2022-12_N	E351	29-Nov-2022	06-Dec-2022	----	----		06-Dec-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKDT_BRYOSE-1_LAEMP_EVO_2022-12_N	E351	28-Nov-2022	06-Dec-2022	----	----		06-Dec-2022	180 days	0 days	✔	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKDT_BRYOSE-2_LAEMP_EVO_2022-12_N	E351	28-Nov-2022	06-Dec-2022	----	----		06-Dec-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKDT_BRYOSE-3_LAEMP_EVO_2022-12_N	E351	28-Nov-2022	06-Dec-2022	----	----		06-Dec-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKDT_SE-1_LAEMP_EVO_2022-12_N	E351	28-Nov-2022	06-Dec-2022	----	----		06-Dec-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKDT_SE-2_LAEMP_EVO_2022-12_N	E351	28-Nov-2022	06-Dec-2022	----	----		06-Dec-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKDT_SE-3_LAEMP_EVO_2022-12_N	E351	28-Nov-2022	06-Dec-2022	----	----		06-Dec-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKDT_SE-4_LAEMP_EVO_2022-12_N	E351	28-Nov-2022	06-Dec-2022	----	----		06-Dec-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKDT_SE-5_LAEMP_EVO_2022-12_N	E351	28-Nov-2022	06-Dec-2022	----	----		06-Dec-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKDT_SE-6_LAEMP_EVO_2022-12_N	E351	28-Nov-2022	06-Dec-2022	----	----		06-Dec-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKDT_SE-7_LAEMP_EVO_2022-12_N	E351	28-Nov-2022	06-Dec-2022	----	----		06-Dec-2022	180 days	0 days	✔	



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Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKMD_BRYOSE-1_LAEMP_EVO_2022-12_N	E351	28-Nov-2022	06-Dec-2022	----	----		06-Dec-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKMD_BRYOSE-2_LAEMP_EVO_2022-12_N	E351	28-Nov-2022	06-Dec-2022	----	----		06-Dec-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKMD_BRYOSE-3_LAEMP_EVO_2022-12_N	E351	28-Nov-2022	06-Dec-2022	----	----		06-Dec-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKMD_SE-1_LAEMP_EVO_2022-12_N	E351	28-Nov-2022	06-Dec-2022	----	----		06-Dec-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKMD_SE-2_LAEMP_EVO_2022-12_N	E351	28-Nov-2022	06-Dec-2022	----	----		06-Dec-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKMD_SE-3_LAEMP_EVO_2022-12_N	E351	28-Nov-2022	06-Dec-2022	----	----		06-Dec-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKUT_BRYOSE-1_LAEMP_EVO_2022-12_N	E351	29-Nov-2022	06-Dec-2022	----	----		06-Dec-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKUT_BRYOSE-2_LAEMP_EVO_2022-12_N	E351	29-Nov-2022	06-Dec-2022	----	----		06-Dec-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKUT_BRYOSE-3_LAEMP_EVO_2022-12_N	E351	29-Nov-2022	06-Dec-2022	----	----		06-Dec-2022	180 days	0 days	✔	



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKUT_SE-1_LAEMP_EVO_2022-12_N	E351	29-Nov-2022	06-Dec-2022	----	----		06-Dec-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKUT_SE-2_LAEMP_EVO_2022-12_N	E351	29-Nov-2022	06-Dec-2022	----	----		06-Dec-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKUT_SE-3_LAEMP_EVO_2022-12_N	E351	29-Nov-2022	06-Dec-2022	----	----		06-Dec-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKUT_SE-4_LAEMP_EVO_2022-12_N	E351	29-Nov-2022	06-Dec-2022	----	----		06-Dec-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Carbon by Combustion											
LDPE bag RG_ERCKUT_SE-5_LAEMP_EVO_2022-12_N	E351	29-Nov-2022	06-Dec-2022	----	----		06-Dec-2022	180 days	0 days	✔	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve											
LDPE bag RG_BOCKRD_SE-1_LAEMP_EVO_2022-12_N	E354	29-Nov-2022	----	----	----		05-Dec-2022	----	----		
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve											
LDPE bag RG_ERCKDT_BRYOSE-1_LAEMP_EVO_2022-12_N	E354	28-Nov-2022	----	----	----		05-Dec-2022	----	----		
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve											
LDPE bag RG_ERCKDT_BRYOSE-2_LAEMP_EVO_2022-12_N	E354	28-Nov-2022	----	----	----		05-Dec-2022	----	----		
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve											
LDPE bag RG_ERCKDT_BRYOSE-3_LAEMP_EVO_2022-12_N	E354	28-Nov-2022	----	----	----		05-Dec-2022	----	----		



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Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKDT_SE-1_LAEMP_EVO_2022-12_N	E354	28-Nov-2022	----	----	----		05-Dec-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKDT_SE-2_LAEMP_EVO_2022-12_N	E354	28-Nov-2022	----	----	----		05-Dec-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKDT_SE-3_LAEMP_EVO_2022-12_N	E354	28-Nov-2022	----	----	----		05-Dec-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKDT_SE-4_LAEMP_EVO_2022-12_N	E354	28-Nov-2022	----	----	----		05-Dec-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKDT_SE-5_LAEMP_EVO_2022-12_N	E354	28-Nov-2022	----	----	----		05-Dec-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKDT_SE-6_LAEMP_EVO_2022-12_N	E354	28-Nov-2022	----	----	----		05-Dec-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKDT_SE-7_LAEMP_EVO_2022-12_N	E354	28-Nov-2022	----	----	----		05-Dec-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKMD_BRYOSE-1_LAEMP_EVO_2022-12_N	E354	28-Nov-2022	----	----	----		05-Dec-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKMD_BRYOSE-2_LAEMP_EVO_2022-12_N	E354	28-Nov-2022	----	----	----		05-Dec-2022	----	----	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKMD_BRYOSE-3_LAEMP_EVO_2022-12_N	E354	28-Nov-2022	----	----	----		05-Dec-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKMD_SE-1_LAEMP_EVO_2022-12_N	E354	28-Nov-2022	----	----	----		05-Dec-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKMD_SE-2_LAEMP_EVO_2022-12_N	E354	28-Nov-2022	----	----	----		05-Dec-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKMD_SE-3_LAEMP_EVO_2022-12_N	E354	28-Nov-2022	----	----	----		05-Dec-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKUT_BRYOSE-1_LAEMP_EVO_2022-12_N	E354	29-Nov-2022	----	----	----		05-Dec-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKUT_BRYOSE-2_LAEMP_EVO_2022-12_N	E354	29-Nov-2022	----	----	----		05-Dec-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKUT_BRYOSE-3_LAEMP_EVO_2022-12_N	E354	29-Nov-2022	----	----	----		05-Dec-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKUT_SE-1_LAEMP_EVO_2022-12_N	E354	29-Nov-2022	----	----	----		05-Dec-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKUT_SE-2_LAEMP_EVO_2022-12_N	E354	29-Nov-2022	----	----	----		05-Dec-2022	----	----	



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKUT_SE-3_LAEMP_EVO_2022-12_N	E354	29-Nov-2022	----	----	----		05-Dec-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKUT_SE-4_LAEMP_EVO_2022-12_N	E354	29-Nov-2022	----	----	----		05-Dec-2022	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
LDPE bag RG_ERCKUT_SE-5_LAEMP_EVO_2022-12_N	E354	29-Nov-2022	----	----	----		05-Dec-2022	----	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_BOCKRD_SE-1_LAEMP_EVO_2022-12_N	E185A	29-Nov-2022	----	----	----		06-Dec-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKDT_BRYOSE-1_LAEMP_EVO_2022-12_N	E185A	28-Nov-2022	----	----	----		06-Dec-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKDT_BRYOSE-2_LAEMP_EVO_2022-12_N	E185A	28-Nov-2022	----	----	----		06-Dec-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKDT_BRYOSE-3_LAEMP_EVO_2022-12_N	E185A	28-Nov-2022	----	----	----		06-Dec-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKDT_SE-1_LAEMP_EVO_2022-12_N	E185A	28-Nov-2022	----	----	----		06-Dec-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKDT_SE-2_LAEMP_EVO_2022-12_N	E185A	28-Nov-2022	----	----	----		06-Dec-2022	365 days	----	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKDT_SE-3_LAEMP_EVO_2022-12_N	E185A	28-Nov-2022	----	----	----		06-Dec-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKDT_SE-4_LAEMP_EVO_2022-12_N	E185A	28-Nov-2022	----	----	----		06-Dec-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKDT_SE-5_LAEMP_EVO_2022-12_N	E185A	28-Nov-2022	----	----	----		06-Dec-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKDT_SE-6_LAEMP_EVO_2022-12_N	E185A	28-Nov-2022	----	----	----		06-Dec-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKDT_SE-7_LAEMP_EVO_2022-12_N	E185A	28-Nov-2022	----	----	----		06-Dec-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKMD_BRYOSE-1_LAEMP_EVO_2022-12_N	E185A	28-Nov-2022	----	----	----		06-Dec-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKMD_BRYOSE-2_LAEMP_EVO_2022-12_N	E185A	28-Nov-2022	----	----	----		06-Dec-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKMD_BRYOSE-3_LAEMP_EVO_2022-12_N	E185A	28-Nov-2022	----	----	----		06-Dec-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKMD_SE-1_LAEMP_EVO_2022-12_N	E185A	28-Nov-2022	----	----	----		06-Dec-2022	365 days	----	



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKMD_SE-2_LAEMP_EVO_2022-12_N	E185A	28-Nov-2022	----	----	----		06-Dec-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKMD_SE-3_LAEMP_EVO_2022-12_N	E185A	28-Nov-2022	----	----	----		06-Dec-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKUT_BRYOSE-1_LAEMP_EVO_2022-12_N	E185A	29-Nov-2022	----	----	----		06-Dec-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKUT_BRYOSE-2_LAEMP_EVO_2022-12_N	E185A	29-Nov-2022	----	----	----		06-Dec-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKUT_BRYOSE-3_LAEMP_EVO_2022-12_N	E185A	29-Nov-2022	----	----	----		06-Dec-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKUT_SE-1_LAEMP_EVO_2022-12_N	E185A	29-Nov-2022	----	----	----		06-Dec-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKUT_SE-2_LAEMP_EVO_2022-12_N	E185A	29-Nov-2022	----	----	----		06-Dec-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKUT_SE-3_LAEMP_EVO_2022-12_N	E185A	29-Nov-2022	----	----	----		06-Dec-2022	365 days	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKUT_SE-4_LAEMP_EVO_2022-12_N	E185A	29-Nov-2022	----	----	----		06-Dec-2022	365 days	----	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag RG_ERCKUT_SE-5_LAEMP_EVO_2022-12_N	E185A	29-Nov-2022	----	----	----		06-Dec-2022	365 days	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_BOCKRD_SE-1_LAEMP_EVO_2022-12_N	E144	29-Nov-2022	----	----	----		06-Dec-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKDT_BRYOSE-1_LAEMP_EVO_2022-12_N	E144	28-Nov-2022	----	----	----		05-Dec-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKDT_BRYOSE-2_LAEMP_EVO_2022-12_N	E144	28-Nov-2022	----	----	----		05-Dec-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKDT_BRYOSE-3_LAEMP_EVO_2022-12_N	E144	28-Nov-2022	----	----	----		05-Dec-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKDT_SE-1_LAEMP_EVO_2022-12_N	E144	28-Nov-2022	----	----	----		05-Dec-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKDT_SE-2_LAEMP_EVO_2022-12_N	E144	28-Nov-2022	----	----	----		05-Dec-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKDT_SE-3_LAEMP_EVO_2022-12_N	E144	28-Nov-2022	----	----	----		05-Dec-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKDT_SE-4_LAEMP_EVO_2022-12_N	E144	28-Nov-2022	----	----	----		05-Dec-2022	----	----	



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Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKDT_SE-5_LAEMP_EVO_2022-12_N	E144	28-Nov-2022	----	----	----		05-Dec-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKDT_SE-6_LAEMP_EVO_2022-12_N	E144	28-Nov-2022	----	----	----		05-Dec-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKDT_SE-7_LAEMP_EVO_2022-12_N	E144	28-Nov-2022	----	----	----		05-Dec-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKMD_BRYOSE-1_LAEMP_EVO_2022-12_N	E144	28-Nov-2022	----	----	----		06-Dec-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKMD_BRYOSE-2_LAEMP_EVO_2022-12_N	E144	28-Nov-2022	----	----	----		06-Dec-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKMD_BRYOSE-3_LAEMP_EVO_2022-12_N	E144	28-Nov-2022	----	----	----		06-Dec-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKMD_SE-1_LAEMP_EVO_2022-12_N	E144	28-Nov-2022	----	----	----		05-Dec-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKMD_SE-2_LAEMP_EVO_2022-12_N	E144	28-Nov-2022	----	----	----		05-Dec-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKMD_SE-3_LAEMP_EVO_2022-12_N	E144	28-Nov-2022	----	----	----		06-Dec-2022	----	----	



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKUT_BRYOSE-1_LAEMP_EVO_2022-12_N	E144	29-Nov-2022	----	----	----		05-Dec-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKUT_BRYOSE-2_LAEMP_EVO_2022-12_N	E144	29-Nov-2022	----	----	----		05-Dec-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKUT_BRYOSE-3_LAEMP_EVO_2022-12_N	E144	29-Nov-2022	----	----	----		05-Dec-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKUT_SE-1_LAEMP_EVO_2022-12_N	E144	29-Nov-2022	----	----	----		05-Dec-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKUT_SE-2_LAEMP_EVO_2022-12_N	E144	29-Nov-2022	----	----	----		05-Dec-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKUT_SE-3_LAEMP_EVO_2022-12_N	E144	29-Nov-2022	----	----	----		05-Dec-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKUT_SE-4_LAEMP_EVO_2022-12_N	E144	29-Nov-2022	----	----	----		05-Dec-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag RG_ERCKUT_SE-5_LAEMP_EVO_2022-12_N	E144	29-Nov-2022	----	----	----		05-Dec-2022	----	----	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag RG_BOCKRD_SE-1_LAEMP_EVO_2022-12_N	E108	29-Nov-2022	06-Dec-2022	----	----		06-Dec-2022	30 days	7 days	✔



Matrix: Soil/Solid

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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKUT_BRYOSE-1_LAEMP_EVO_2022-12_N	E108	29-Nov-2022	06-Dec-2022	----	----		06-Dec-2022	30 days	7 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKUT_BRYOSE-2_LAEMP_EVO_2022-12_N	E108	29-Nov-2022	06-Dec-2022	----	----		06-Dec-2022	30 days	7 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKUT_BRYOSE-3_LAEMP_EVO_2022-12_N	E108	29-Nov-2022	06-Dec-2022	----	----		06-Dec-2022	30 days	7 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKUT_SE-1_LAEMP_EVO_2022-12_N	E108	29-Nov-2022	06-Dec-2022	----	----		06-Dec-2022	30 days	7 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKUT_SE-2_LAEMP_EVO_2022-12_N	E108	29-Nov-2022	06-Dec-2022	----	----		06-Dec-2022	30 days	7 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKUT_SE-3_LAEMP_EVO_2022-12_N	E108	29-Nov-2022	06-Dec-2022	----	----		06-Dec-2022	30 days	7 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKUT_SE-4_LAEMP_EVO_2022-12_N	E108	29-Nov-2022	06-Dec-2022	----	----		06-Dec-2022	30 days	7 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKUT_SE-5_LAEMP_EVO_2022-12_N	E108	29-Nov-2022	06-Dec-2022	----	----		06-Dec-2022	30 days	7 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKDT_BRYOSE-1_LAEMP_EVO_2022-12_N	E108	28-Nov-2022	06-Dec-2022	----	----		06-Dec-2022	30 days	8 days	✔	



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKDT_BRYOSE-2_LAEMP_EVO_2022-12_N	E108	28-Nov-2022	06-Dec-2022	----	----		06-Dec-2022	30 days	8 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKDT_BRYOSE-3_LAEMP_EVO_2022-12_N	E108	28-Nov-2022	06-Dec-2022	----	----		06-Dec-2022	30 days	8 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKDT_SE-1_LAEMP_EVO_2022-12_N	E108	28-Nov-2022	06-Dec-2022	----	----		06-Dec-2022	30 days	8 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKDT_SE-2_LAEMP_EVO_2022-12_N	E108	28-Nov-2022	06-Dec-2022	----	----		06-Dec-2022	30 days	8 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKDT_SE-3_LAEMP_EVO_2022-12_N	E108	28-Nov-2022	06-Dec-2022	----	----		06-Dec-2022	30 days	8 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKDT_SE-4_LAEMP_EVO_2022-12_N	E108	28-Nov-2022	06-Dec-2022	----	----		06-Dec-2022	30 days	8 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKDT_SE-5_LAEMP_EVO_2022-12_N	E108	28-Nov-2022	06-Dec-2022	----	----		06-Dec-2022	30 days	8 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKDT_SE-6_LAEMP_EVO_2022-12_N	E108	28-Nov-2022	06-Dec-2022	----	----		06-Dec-2022	30 days	8 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKDT_SE-7_LAEMP_EVO_2022-12_N	E108	28-Nov-2022	06-Dec-2022	----	----		06-Dec-2022	30 days	8 days	✔	



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			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKMD_BRYOSE-1_LAEMP_EVO_2022-12_N	E108	28-Nov-2022	06-Dec-2022	----	----		06-Dec-2022	30 days	8 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKMD_BRYOSE-2_LAEMP_EVO_2022-12_N	E108	28-Nov-2022	06-Dec-2022	----	----		06-Dec-2022	30 days	8 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKMD_BRYOSE-3_LAEMP_EVO_2022-12_N	E108	28-Nov-2022	06-Dec-2022	----	----		06-Dec-2022	30 days	8 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKMD_SE-1_LAEMP_EVO_2022-12_N	E108	28-Nov-2022	06-Dec-2022	----	----		06-Dec-2022	30 days	8 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKMD_SE-2_LAEMP_EVO_2022-12_N	E108	28-Nov-2022	06-Dec-2022	----	----		06-Dec-2022	30 days	8 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag RG_ERCKMD_SE-3_LAEMP_EVO_2022-12_N	E108	28-Nov-2022	06-Dec-2022	----	----		06-Dec-2022	30 days	8 days	✔	

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Soil/Solid**

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
Analytical Methods							
Laboratory Duplicates (DUP)							
Mercury in Soil/Solid by CVAAS	E510	767370	2	28	7.1	5.0	✔
Metals in Soil/Solid by CRC ICPMS	E440	767369	2	28	7.1	5.0	✔
Moisture Content by Gravimetry	E144	769389	2	27	7.4	5.0	✔
pH by Meter (1:2 Soil:Water Extraction)	E108	767324	2	34	5.8	5.0	✔
Total Carbon by Combustion	E351	766554	2	27	7.4	5.0	✔
Total Inorganic Carbon by Acetic Acid pH Standard Curve	E354	767445	2	27	7.4	5.0	✔
Laboratory Control Samples (LCS)							
Mercury in Soil/Solid by CVAAS	E510	767370	4	28	14.2	10.0	✔
Metals in Soil/Solid by CRC ICPMS	E440	767369	4	28	14.2	10.0	✔
Moisture Content by Gravimetry	E144	769389	2	27	7.4	5.0	✔
pH by Meter (1:2 Soil:Water Extraction)	E108	767324	4	34	11.7	10.0	✔
Total Carbon by Combustion	E351	766554	4	27	14.8	10.0	✔
Total Inorganic Carbon by Acetic Acid pH Standard Curve	E354	767445	4	27	14.8	10.0	✔
Method Blanks (MB)							
Mercury in Soil/Solid by CVAAS	E510	767370	2	28	7.1	5.0	✔
Metals in Soil/Solid by CRC ICPMS	E440	767369	2	28	7.1	5.0	✔
Moisture Content by Gravimetry	E144	769389	2	27	7.4	5.0	✔
Total Carbon by Combustion	E351	766554	2	27	7.4	5.0	✔
Total Inorganic Carbon by Acetic Acid pH Standard Curve	E354	767445	2	27	7.4	5.0	✔



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
pH by Meter (1:2 Soil:Water Extraction)	E108 Saskatoon - Environmental	Soil/Solid	BC Lab Manual	pH is determined by potentiometric measurement with a pH electrode at ambient laboratory temperature (normally $20 \pm 5^\circ\text{C}$), and is carried out in accordance with procedures described in the BC Lab Manual (prescriptive method). The procedure involves mixing the dried (at $<60^\circ\text{C}$) and sieved (10mesh/2mm) sample with ultra pure water at a 1:2 ratio of sediment to water. The pH is then measured by a standard pH probe.
Moisture Content by Gravimetry	E144 Saskatoon - Environmental	Soil/Solid	CCME PHC in Soil - Tier 1	Moisture is measured gravimetrically by drying the sample at 105°C . Moisture content is calculated as the weight loss (due to water) divided by the wet weight of the sample, expressed as a percentage.
Grain Size Report (Attachment) Pipet/Sieve Method	E185A Saskatoon - Environmental	Soil/Solid	SSIR-51 Method 3.2.1	A grain size curve is a graphical representation of the particle sizing of a sample representing the percent passing against the effective particle size.
Total Carbon by Combustion	E351 Saskatoon - Environmental	Soil/Solid	CSSS (2008) 21.2 (mod)	Total Carbon is determined by the high temperature combustion method with measurement by an infrared detector.
Total Inorganic Carbon by Acetic Acid pH Standard Curve	E354 Saskatoon - Environmental	Soil/Solid	CSSS (2008) 20.2	Total Inorganic Carbon is determined by acetic acid pH standard curve, where a known quantity of acetic acid is consumed by reaction with carbonates in the soil. The pH of the resulting solution is measured and compared against a standard curve relating pH to weight of carbonate.
Metals in Soil/Solid by CRC ICPMS	E440 Saskatoon - Environmental	Soil/Solid	EPA 6020B (mod)	This method is intended to liberate metals that may be environmentally available. Samples are dried, then sieved through a 2 mm sieve, and digested with HNO_3 and HCl . Dependent on sample matrix, some metals may be only partially recovered, including Al, Ba, Be, Cr, Sr, Ti, Tl, V, W, and Zr. Silicate minerals are not solubilized. Volatile forms of sulfur (including sulfide) may not be captured, as they may be lost during sampling, storage, or digestion. This method does not adequately recover elemental sulfur, and is unsuitable for assessment of elemental sulfur standards or guidelines. Analysis is by Collision/Reaction Cell ICPMS.
Mercury in Soil/Solid by CVAAS	E510 Saskatoon - Environmental	Soil/Solid	EPA 200.2/1631 Appendix (mod)	Samples are dried, then sieved through a 2 mm sieve, and digested with HNO_3 and HCl , followed by CVAAS analysis.
Particle Size Analysis (Pipette) - Wentworth Classification	EC184A Saskatoon - Environmental	Soil/Solid	Modified Wentworth	The particle size determination is performed by various methods to generate a Grain Size curve. The data from the curve is then used to produce particle size ranges based on the Modified Wentworth Classification system.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Total Organic Carbon (Calculated) in soil	EC356 Saskatoon - Environmental	Soil/Solid	CSSS (2008) 21.2	Total Organic Carbon (TOC) is calculated by the difference between total carbon (TC) and total inorganic carbon (TIC).

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Leach 1:2 Soil:Water for pH/EC	EP108 Saskatoon - Environmental	Soil/Solid	BC WLAP METHOD: PH, ELECTROMETRIC, SOIL	The procedure involves mixing the dried (at <60°C) and sieved (No. 10 / 2mm) sample with deionized/distilled water at a 1:2 ratio of sediment to water.
Digestion for Metals and Mercury	EP440 Saskatoon - Environmental	Soil/Solid	EPA 200.2 (mod)	Samples are dried, then sieved through a 2 mm sieve, and digested with HNO ₃ and HCl. This method is intended to liberate metals that may be environmentally available.
Dry and Grind in Soil/Solid <60°C	EPP442 Saskatoon - Environmental	Soil/Solid	Soil Sampling and Methods of Analysis, Carter 2008	After removal of any coarse fragments and reservation of wet subsamples a portion of homogenized sample is set in a tray and dried at less than 60°C until dry. The sample is then particle size reduced with an automated crusher or mortar and pestle, typically to <2 mm. Further size reduction may be needed for particular tests.

QUALITY CONTROL REPORT

<p>Work Order : CG2216716</p> <p>Client : Teck Coal Limited</p> <p>Contact : Mike Pope</p> <p>Address : RR#1 HWY#3 Sparwood BC Canada V0B 2G1</p> <p>Telephone :</p> <p>Project : REGIONAL EFFECTS PROGRAM</p> <p>PO : VPO00847030</p> <p>C-O-C number : EVO LAEMP DEC 2022</p> <p>Sampler : Robin Valleau___</p> <p>Site : ---</p> <p>Quote number : Teck Coal Master Quote</p> <p>No. of samples received : 25</p> <p>No. of samples analysed : 25</p>	<p>Page : 1 of 14</p> <p>Laboratory : Calgary - Environmental</p> <p>Account Manager : Lyudmyla Shvets</p> <p>Address : 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5</p> <p>Telephone : +1 403 407 1800</p> <p>Date Samples Received : 02-Dec-2022 08:50</p> <p>Date Analysis Commenced : 03-Dec-2022</p> <p>Issue Date : 07-Dec-2022 17:44</p>
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This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Reference Material (RM) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Colby Bingham	Quality Systems Coordinator	Saskatoon Metals, Saskatoon, Saskatchewan
Hedy Lai	Team Leader - Inorganics	Saskatoon Inorganics, Saskatoon, Saskatchewan
Hedy Lai	Team Leader - Inorganics	Saskatoon Sask Soils, Saskatoon, Saskatchewan
Justin Kuzek	Team Leader - Organics	Saskatoon Organics, Saskatoon, Saskatchewan
Maria Painchaud	Laboratory Assistant	Saskatoon Inorganics, Saskatoon, Saskatchewan



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Soil/Solid					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 767323)											
CG2216716-007	RG_ERCKUT_BRYOSE-2 _LAEMP_EVO_2022-12_N	pH (1:2 soil:water)	----	E108	0.10	pH units	7.53	7.52	0.133%	10%	----
Physical Tests (QC Lot: 767324)											
CG2216716-021	RG_ERCKMD_SE-3_LAE MP_EVO_2022-12_N	pH (1:2 soil:water)	----	E108	0.10	pH units	7.83	7.87	0.510%	10%	----
Physical Tests (QC Lot: 767494)											
CG2216716-004	RG_ERCKUT_SE-4_LAEM P_EVO_2022-12_N	moisture	----	E144	0.25	%	46.1	45.5	1.22%	20%	----
Physical Tests (QC Lot: 769389)											
CG2216716-021	RG_ERCKMD_SE-3_LAE MP_EVO_2022-12_N	moisture	----	E144	0.25	%	80.5	80.1	0.491%	20%	----
Organic / Inorganic Carbon (QC Lot: 766554)											
CG2216716-003	RG_ERCKUT_SE-3_LAEM P_EVO_2022-12_N	carbon, total [TC]	----	E351	0.050	%	7.58	7.51	0.943%	20%	----
Organic / Inorganic Carbon (QC Lot: 766562)											
CG2216716-021	RG_ERCKMD_SE-3_LAE MP_EVO_2022-12_N	carbon, total [TC]	----	E351	0.050	%	13.9	13.9	0.163%	20%	----
Organic / Inorganic Carbon (QC Lot: 767444)											
CG2216716-001	RG_ERCKUT_SE-1_LAEM P_EVO_2022-12_N	carbon, inorganic [IC]	----	E354	0.050	%	2.58	2.59	0.242%	20%	----
Organic / Inorganic Carbon (QC Lot: 767445)											
CG2216716-021	RG_ERCKMD_SE-3_LAE MP_EVO_2022-12_N	carbon, inorganic [IC]	----	E354	0.050	%	4.12	4.17	1.25%	20%	----
Metals (QC Lot: 767367)											
CG2216716-001	RG_ERCKUT_SE-1_LAEM P_EVO_2022-12_N	mercury	7439-97-6	E510	0.0050	mg/kg	0.0380	0.0371	2.34%	40%	----
Metals (QC Lot: 767368)											
CG2216716-001	RG_ERCKUT_SE-1_LAEM P_EVO_2022-12_N	aluminum	7429-90-5	E440	50	mg/kg	3160	2950	6.96%	40%	----
		antimony	7440-36-0	E440	0.10	mg/kg	0.90	0.86	3.72%	30%	----
		arsenic	7440-38-2	E440	0.10	mg/kg	4.23	4.30	1.47%	30%	----
		barium	7440-39-3	E440	0.50	mg/kg	159	161	1.06%	40%	----
		beryllium	7440-41-7	E440	0.10	mg/kg	0.43	0.39	0.03	Diff <2x LOR	----
		bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	0	Diff <2x LOR	----
		boron	7440-42-8	E440	5.0	mg/kg	6.1	<5.0	1.1	Diff <2x LOR	----
		cadmium	7440-43-9	E440	0.020	mg/kg	1.37	1.43	4.03%	30%	----



Sub-Matrix: Soil/Solid					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Metals (QC Lot: 767368) - continued											
CG2216716-001	RG_ERCKUT_SE-1_LAEM P_EVO_2022-12_N	calcium	7440-70-2	E440	50	mg/kg	81400	70900	13.8%	30%	----
		chromium	7440-47-3	E440	0.50	mg/kg	9.97	10.5	4.90%	30%	----
		cobalt	7440-48-4	E440	0.10	mg/kg	4.33	4.32	0.397%	30%	----
		copper	7440-50-8	E440	0.50	mg/kg	12.0	12.0	0.145%	30%	----
		iron	7439-89-6	E440	50	mg/kg	9410	9260	1.60%	30%	----
		lead	7439-92-1	E440	0.50	mg/kg	6.55	6.29	4.06%	40%	----
		lithium	7439-93-2	E440	2.0	mg/kg	4.1	3.5	0.6	Diff <2x LOR	----
		magnesium	7439-95-4	E440	20	mg/kg	5980	5560	7.30%	30%	----
		manganese	7439-96-5	E440	1.0	mg/kg	189	195	2.76%	30%	----
		molybdenum	7439-98-7	E440	0.10	mg/kg	1.24	1.30	4.23%	40%	----
		nickel	7440-02-0	E440	0.50	mg/kg	18.9	19.3	1.90%	30%	----
		phosphorus	7723-14-0	E440	50	mg/kg	1100	1060	4.08%	30%	----
		potassium	7440-09-7	E440	100	mg/kg	880	800	9.98%	40%	----
		selenium	7782-49-2	E440	0.20	mg/kg	11.4	11.4	0.372%	30%	----
		silver	7440-22-4	E440	0.10	mg/kg	0.14	0.14	0.003	Diff <2x LOR	----
		sodium	7440-23-5	E440	50	mg/kg	90	88	2	Diff <2x LOR	----
		strontium	7440-24-6	E440	0.50	mg/kg	55.4	49.1	12.1%	40%	----
		sulfur	7704-34-9	E440	1000	mg/kg	1800	1700	80	Diff <2x LOR	----
		thallium	7440-28-0	E440	0.050	mg/kg	0.126	0.113	0.013	Diff <2x LOR	----
		tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	0	Diff <2x LOR	----
titanium	7440-32-6	E440	1.0	mg/kg	14.6	15.0	3.17%	40%	----		
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	0	Diff <2x LOR	----		
uranium	7440-61-1	E440	0.050	mg/kg	1.41	1.30	7.68%	30%	----		
vanadium	7440-62-2	E440	0.20	mg/kg	16.9	16.2	4.36%	30%	----		
zinc	7440-66-6	E440	2.0	mg/kg	74.6	72.1	3.39%	30%	----		
zirconium	7440-67-7	E440	1.0	mg/kg	1.1	1.0	0.04	Diff <2x LOR	----		
Metals (QC Lot: 767369)											
CG2216716-021	RG_ERCKMD_SE-3_LAE MP_EVO_2022-12_N	aluminum	7429-90-5	E440	74	mg/kg	2910	2890	0.642%	40%	----
		antimony	7440-36-0	E440	0.15	mg/kg	1.08	0.99	8.87%	30%	----
		arsenic	7440-38-2	E440	0.15	mg/kg	11.5	11.6	0.812%	30%	----
		barium	7440-39-3	E440	0.74	mg/kg	229	242	5.82%	40%	----
		beryllium	7440-41-7	E440	0.15	mg/kg	0.51	0.45	0.06	Diff <2x LOR	----
		bismuth	7440-69-9	E440	0.30	mg/kg	<0.30	<0.30	0	Diff <2x LOR	----



Sub-Matrix: Soil/Solid					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Metals (QC Lot: 767369) - continued											
CG2216716-021	RG_ERCKMD_SE-3_LAE MP_EVO_2022-12_N	boron	7440-42-8	E440	7.4	mg/kg	10.4	9.4	1.0	Diff <2x LOR	----
		cadmium	7440-43-9	E440	0.030	mg/kg	5.06	5.56	9.29%	30%	----
		calcium	7440-70-2	E440	74	mg/kg	127000	131000	2.95%	30%	----
		chromium	7440-47-3	E440	0.74	mg/kg	11.6	10.9	5.90%	30%	----
		cobalt	7440-48-4	E440	0.15	mg/kg	150	152	1.61%	30%	----
		copper	7440-50-8	E440	0.74	mg/kg	15.4	15.3	1.00%	30%	----
		iron	7439-89-6	E440	74	mg/kg	21700	20200	6.85%	30%	----
		lead	7439-92-1	E440	0.74	mg/kg	7.94	7.86	1.03%	40%	----
		lithium	7439-93-2	E440	3.0	mg/kg	4.4	3.6	0.8	Diff <2x LOR	----
		magnesium	7439-95-4	E440	30	mg/kg	7160	7200	0.534%	30%	----
		manganese	7439-96-5	E440	1.5	mg/kg	4500	4560	1.29%	30%	----
		molybdenum	7439-98-7	E440	0.15	mg/kg	2.49	2.27	9.17%	40%	----
		nickel	7440-02-0	E440	0.74	mg/kg	132	136	2.52%	30%	----
		phosphorus	7723-14-0	E440	74	mg/kg	1360	1280	6.13%	30%	----
		potassium	7440-09-7	E440	150	mg/kg	880	860	3.06%	40%	----
		selenium	7782-49-2	E440	0.30	mg/kg	24.0	24.9	3.37%	30%	----
		silver	7440-22-4	E440	0.15	mg/kg	0.20	0.18	0.01	Diff <2x LOR	----
		sodium	7440-23-5	E440	74	mg/kg	102	106	4	Diff <2x LOR	----
		strontium	7440-24-6	E440	0.74	mg/kg	82.2	81.4	0.899%	40%	----
		sulfur	7704-34-9	E440	1500	mg/kg	3100	3200	100	Diff <2x LOR	----
thallium	7440-28-0	E440	0.074	mg/kg	0.378	0.369	0.009	Diff <2x LOR	----		
tin	7440-31-5	E440	3.0	mg/kg	<3.0	<3.0	0	Diff <2x LOR	----		
titanium	7440-32-6	E440	1.5	mg/kg	18.4	20.4	10.6%	40%	----		
tungsten	7440-33-7	E440	0.74	mg/kg	<0.74	<0.74	0.0009	Diff <2x LOR	----		
uranium	7440-61-1	E440	0.074	mg/kg	1.83	1.89	3.45%	30%	----		
vanadium	7440-62-2	E440	0.30	mg/kg	18.7	18.6	0.970%	30%	----		
zinc	7440-66-6	E440	3.0	mg/kg	247	252	2.05%	30%	----		
zirconium	7440-67-7	E440	1.5	mg/kg	<1.5	<1.5	0	Diff <2x LOR	----		
Metals (QC Lot: 767370)											
CG2216716-021	RG_ERCKMD_SE-3_LAE MP_EVO_2022-12_N	mercury	7439-97-6	E510	0.0074	mg/kg	0.0544	0.0515	5.48%	40%	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 767494)						
moisture	---	E144	0.25	%	<0.25	---
Physical Tests (QCLot: 769389)						
moisture	---	E144	0.25	%	<0.25	---
Organic / Inorganic Carbon (QCLot: 766554)						
carbon, total [TC]	---	E351	0.05	%	<0.050	---
Organic / Inorganic Carbon (QCLot: 766562)						
carbon, total [TC]	---	E351	0.05	%	<0.050	---
Organic / Inorganic Carbon (QCLot: 767444)						
carbon, inorganic [IC]	---	E354	0.05	%	<0.050	---
Organic / Inorganic Carbon (QCLot: 767445)						
carbon, inorganic [IC]	---	E354	0.05	%	<0.050	---
Metals (QCLot: 767367)						
mercury	7439-97-6	E510	0.005	mg/kg	<0.0050	---
Metals (QCLot: 767368)						
aluminum	7429-90-5	E440	50	mg/kg	<50	---
antimony	7440-36-0	E440	0.1	mg/kg	<0.10	---
arsenic	7440-38-2	E440	0.1	mg/kg	<0.10	---
barium	7440-39-3	E440	0.5	mg/kg	<0.50	---
beryllium	7440-41-7	E440	0.1	mg/kg	<0.10	---
bismuth	7440-69-9	E440	0.2	mg/kg	<0.20	---
boron	7440-42-8	E440	5	mg/kg	<5.0	---
cadmium	7440-43-9	E440	0.02	mg/kg	<0.020	---
calcium	7440-70-2	E440	50	mg/kg	<50	---
chromium	7440-47-3	E440	0.5	mg/kg	<0.50	---
cobalt	7440-48-4	E440	0.1	mg/kg	<0.10	---
copper	7440-50-8	E440	0.5	mg/kg	<0.50	---
iron	7439-89-6	E440	50	mg/kg	<50	---
lead	7439-92-1	E440	0.5	mg/kg	<0.50	---
lithium	7439-93-2	E440	2	mg/kg	<2.0	---
magnesium	7439-95-4	E440	20	mg/kg	<20	---
manganese	7439-96-5	E440	1	mg/kg	<1.0	---



Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Metals (QCLot: 767368) - continued						
molybdenum	7439-98-7	E440	0.1	mg/kg	<0.10	----
nickel	7440-02-0	E440	0.5	mg/kg	<0.50	----
phosphorus	7723-14-0	E440	50	mg/kg	<50	----
potassium	7440-09-7	E440	100	mg/kg	<100	----
selenium	7782-49-2	E440	0.2	mg/kg	<0.20	----
silver	7440-22-4	E440	0.1	mg/kg	<0.10	----
sodium	7440-23-5	E440	50	mg/kg	<50	----
strontium	7440-24-6	E440	0.5	mg/kg	<0.50	----
sulfur	7704-34-9	E440	1000	mg/kg	<1000	----
thallium	7440-28-0	E440	0.05	mg/kg	<0.050	----
tin	7440-31-5	E440	2	mg/kg	<2.0	----
titanium	7440-32-6	E440	1	mg/kg	<1.0	----
tungsten	7440-33-7	E440	0.5	mg/kg	<0.50	----
uranium	7440-61-1	E440	0.05	mg/kg	<0.050	----
vanadium	7440-62-2	E440	0.2	mg/kg	<0.20	----
zinc	7440-66-6	E440	2	mg/kg	<2.0	----
zirconium	7440-67-7	E440	1	mg/kg	<1.0	----
Metals (QCLot: 767369)						
aluminum	7429-90-5	E440	50	mg/kg	<50	----
antimony	7440-36-0	E440	0.1	mg/kg	<0.10	----
arsenic	7440-38-2	E440	0.1	mg/kg	<0.10	----
barium	7440-39-3	E440	0.5	mg/kg	<0.50	----
beryllium	7440-41-7	E440	0.1	mg/kg	<0.10	----
bismuth	7440-69-9	E440	0.2	mg/kg	<0.20	----
boron	7440-42-8	E440	5	mg/kg	<5.0	----
cadmium	7440-43-9	E440	0.02	mg/kg	<0.020	----
calcium	7440-70-2	E440	50	mg/kg	<50	----
chromium	7440-47-3	E440	0.5	mg/kg	<0.50	----
cobalt	7440-48-4	E440	0.1	mg/kg	<0.10	----
copper	7440-50-8	E440	0.5	mg/kg	<0.50	----
iron	7439-89-6	E440	50	mg/kg	<50	----
lead	7439-92-1	E440	0.5	mg/kg	<0.50	----
lithium	7439-93-2	E440	2	mg/kg	<2.0	----
magnesium	7439-95-4	E440	20	mg/kg	<20	----
manganese	7439-96-5	E440	1	mg/kg	<1.0	----



Sub-Matrix: **Soil/Solid**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Metals (QCLot: 767369) - continued						
molybdenum	7439-98-7	E440	0.1	mg/kg	<0.10	----
nickel	7440-02-0	E440	0.5	mg/kg	<0.50	----
phosphorus	7723-14-0	E440	50	mg/kg	<50	----
potassium	7440-09-7	E440	100	mg/kg	<100	----
selenium	7782-49-2	E440	0.2	mg/kg	<0.20	----
silver	7440-22-4	E440	0.1	mg/kg	<0.10	----
sodium	7440-23-5	E440	50	mg/kg	<50	----
strontium	7440-24-6	E440	0.5	mg/kg	<0.50	----
sulfur	7704-34-9	E440	1000	mg/kg	<1000	----
thallium	7440-28-0	E440	0.05	mg/kg	<0.050	----
tin	7440-31-5	E440	2	mg/kg	<2.0	----
titanium	7440-32-6	E440	1	mg/kg	<1.0	----
tungsten	7440-33-7	E440	0.5	mg/kg	<0.50	----
uranium	7440-61-1	E440	0.05	mg/kg	<0.050	----
vanadium	7440-62-2	E440	0.2	mg/kg	<0.20	----
zinc	7440-66-6	E440	2	mg/kg	<2.0	----
zirconium	7440-67-7	E440	1	mg/kg	<1.0	----
Metals (QCLot: 767370)						
mercury	7439-97-6	E510	0.005	mg/kg	<0.0050	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Soil/Solid

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 767323)									
pH (1:2 soil:water)	----	E108	----	pH units	7 pH units	100	97.0	103	----
Physical Tests (QCLot: 767324)									
pH (1:2 soil:water)	----	E108	----	pH units	7 pH units	100	97.0	103	----
Physical Tests (QCLot: 767494)									
moisture	----	E144	0.25	%	50 %	99.5	90.0	110	----
Physical Tests (QCLot: 769389)									
moisture	----	E144	0.25	%	50 %	99.8	90.0	110	----
Organic / Inorganic Carbon (QCLot: 766554)									
carbon, total [TC]	----	E351	0.05	%	48 %	100	90.0	110	----
Organic / Inorganic Carbon (QCLot: 766562)									
carbon, total [TC]	----	E351	0.05	%	48 %	104	90.0	110	----
Organic / Inorganic Carbon (QCLot: 767444)									
carbon, inorganic [IC]	----	E354	0.05	%	0.5 %	97.0	90.0	110	----
Organic / Inorganic Carbon (QCLot: 767445)									
carbon, inorganic [IC]	----	E354	0.05	%	0.5 %	95.2	90.0	110	----
Metals (QCLot: 767367)									
mercury	7439-97-6	E510	0.005	mg/kg	0.1 mg/kg	95.3	80.0	120	----
Metals (QCLot: 767368)									
aluminum	7429-90-5	E440	50	mg/kg	200 mg/kg	92.5	80.0	120	----
antimony	7440-36-0	E440	0.1	mg/kg	100 mg/kg	96.8	80.0	120	----
arsenic	7440-38-2	E440	0.1	mg/kg	100 mg/kg	96.4	80.0	120	----
barium	7440-39-3	E440	0.5	mg/kg	25 mg/kg	96.5	80.0	120	----
beryllium	7440-41-7	E440	0.1	mg/kg	10 mg/kg	89.2	80.0	120	----
bismuth	7440-69-9	E440	0.2	mg/kg	100 mg/kg	92.8	80.0	120	----
boron	7440-42-8	E440	5	mg/kg	100 mg/kg	83.0	80.0	120	----
cadmium	7440-43-9	E440	0.02	mg/kg	10 mg/kg	92.2	80.0	120	----
calcium	7440-70-2	E440	50	mg/kg	5000 mg/kg	90.3	80.0	120	----
chromium	7440-47-3	E440	0.5	mg/kg	25 mg/kg	96.0	80.0	120	----
cobalt	7440-48-4	E440	0.1	mg/kg	25 mg/kg	95.2	80.0	120	----
copper	7440-50-8	E440	0.5	mg/kg	25 mg/kg	94.6	80.0	120	----



Sub-Matrix: Soil/Solid

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Metals (QCLot: 767368) - continued									
iron	7439-89-6	E440	50	mg/kg	100 mg/kg	94.1	80.0	120	----
lead	7439-92-1	E440	0.5	mg/kg	50 mg/kg	96.5	80.0	120	----
lithium	7439-93-2	E440	2	mg/kg	25 mg/kg	83.5	80.0	120	----
magnesium	7439-95-4	E440	20	mg/kg	5000 mg/kg	95.4	80.0	120	----
manganese	7439-96-5	E440	1	mg/kg	25 mg/kg	96.4	80.0	120	----
molybdenum	7439-98-7	E440	0.1	mg/kg	25 mg/kg	96.3	80.0	120	----
nickel	7440-02-0	E440	0.5	mg/kg	50 mg/kg	93.6	80.0	120	----
phosphorus	7723-14-0	E440	50	mg/kg	1000 mg/kg	104	80.0	120	----
potassium	7440-09-7	E440	100	mg/kg	5000 mg/kg	90.8	80.0	120	----
selenium	7782-49-2	E440	0.2	mg/kg	100 mg/kg	93.0	80.0	120	----
silver	7440-22-4	E440	0.1	mg/kg	10 mg/kg	89.0	80.0	120	----
sodium	7440-23-5	E440	50	mg/kg	5000 mg/kg	97.9	80.0	120	----
strontium	7440-24-6	E440	0.5	mg/kg	25 mg/kg	92.1	80.0	120	----
sulfur	7704-34-9	E440	1000	mg/kg	5000 mg/kg	95.4	80.0	120	----
thallium	7440-28-0	E440	0.05	mg/kg	100 mg/kg	96.5	80.0	120	----
tin	7440-31-5	E440	2	mg/kg	50 mg/kg	95.1	80.0	120	----
titanium	7440-32-6	E440	1	mg/kg	25 mg/kg	94.8	80.0	120	----
tungsten	7440-33-7	E440	0.5	mg/kg	10 mg/kg	96.8	80.0	120	----
uranium	7440-61-1	E440	0.05	mg/kg	0.5 mg/kg	93.1	80.0	120	----
vanadium	7440-62-2	E440	0.2	mg/kg	50 mg/kg	96.0	80.0	120	----
zinc	7440-66-6	E440	2	mg/kg	50 mg/kg	93.5	80.0	120	----
zirconium	7440-67-7	E440	1	mg/kg	10 mg/kg	91.8	80.0	120	----
Metals (QCLot: 767369)									
aluminum	7429-90-5	E440	50	mg/kg	200 mg/kg	96.8	80.0	120	----
antimony	7440-36-0	E440	0.1	mg/kg	100 mg/kg	92.7	80.0	120	----
arsenic	7440-38-2	E440	0.1	mg/kg	100 mg/kg	99.6	80.0	120	----
barium	7440-39-3	E440	0.5	mg/kg	25 mg/kg	98.2	80.0	120	----
beryllium	7440-41-7	E440	0.1	mg/kg	10 mg/kg	92.9	80.0	120	----
bismuth	7440-69-9	E440	0.2	mg/kg	100 mg/kg	95.0	80.0	120	----
boron	7440-42-8	E440	5	mg/kg	100 mg/kg	84.8	80.0	120	----
cadmium	7440-43-9	E440	0.02	mg/kg	10 mg/kg	92.6	80.0	120	----
calcium	7440-70-2	E440	50	mg/kg	5000 mg/kg	98.4	80.0	120	----
chromium	7440-47-3	E440	0.5	mg/kg	25 mg/kg	99.2	80.0	120	----
cobalt	7440-48-4	E440	0.1	mg/kg	25 mg/kg	99.1	80.0	120	----
copper	7440-50-8	E440	0.5	mg/kg	25 mg/kg	97.0	80.0	120	----
iron	7439-89-6	E440	50	mg/kg	100 mg/kg	96.6	80.0	120	----



Sub-Matrix: Soil/Solid

Laboratory Control Sample (LCS) Report

Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Metals (QCLot: 767369) - continued									
lead	7439-92-1	E440	0.5	mg/kg	50 mg/kg	98.9	80.0	120	----
lithium	7439-93-2	E440	2	mg/kg	25 mg/kg	86.5	80.0	120	----
magnesium	7439-95-4	E440	20	mg/kg	5000 mg/kg	97.8	80.0	120	----
manganese	7439-96-5	E440	1	mg/kg	25 mg/kg	99.7	80.0	120	----
molybdenum	7439-98-7	E440	0.1	mg/kg	25 mg/kg	93.5	80.0	120	----
nickel	7440-02-0	E440	0.5	mg/kg	50 mg/kg	95.3	80.0	120	----
phosphorus	7723-14-0	E440	50	mg/kg	1000 mg/kg	101	80.0	120	----
potassium	7440-09-7	E440	100	mg/kg	5000 mg/kg	99.0	80.0	120	----
selenium	7782-49-2	E440	0.2	mg/kg	100 mg/kg	95.2	80.0	120	----
silver	7440-22-4	E440	0.1	mg/kg	10 mg/kg	85.3	80.0	120	----
sodium	7440-23-5	E440	50	mg/kg	5000 mg/kg	101	80.0	120	----
strontium	7440-24-6	E440	0.5	mg/kg	25 mg/kg	89.8	80.0	120	----
sulfur	7704-34-9	E440	1000	mg/kg	5000 mg/kg	96.2	80.0	120	----
thallium	7440-28-0	E440	0.05	mg/kg	100 mg/kg	98.6	80.0	120	----
tin	7440-31-5	E440	2	mg/kg	50 mg/kg	96.0	80.0	120	----
titanium	7440-32-6	E440	1	mg/kg	25 mg/kg	97.5	80.0	120	----
tungsten	7440-33-7	E440	0.5	mg/kg	10 mg/kg	100	80.0	120	----
uranium	7440-61-1	E440	0.05	mg/kg	0.5 mg/kg	94.7	80.0	120	----
vanadium	7440-62-2	E440	0.2	mg/kg	50 mg/kg	99.6	80.0	120	----
zinc	7440-66-6	E440	2	mg/kg	50 mg/kg	95.2	80.0	120	----
zirconium	7440-67-7	E440	1	mg/kg	10 mg/kg	89.4	80.0	120	----
Metals (QCLot: 767370)									
mercury	7439-97-6	E510	0.005	mg/kg	0.1 mg/kg	95.8	80.0	120	----



Reference Material (RM) Report

A Reference Material (RM) is a homogenous material with known and well-established analyte concentrations. RMs are processed in an identical manner to test samples, and are used to monitor and control the accuracy and precision of a test method for a typical sample matrix. RM results are expressed as percent recovery of the target analyte concentration. RM targets may be certified target concentrations provided by the RM supplier, or may be ALS long-term mean values (for empirical test methods).

Sub-Matrix:

Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Reference Material (RM) Report				
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%)		Qualifier
							Low	High	
Physical Tests (QCLot: 767323)									
	RM	pH (1:2 soil:water)	----	E108	8.13 pH units	101	96.0	104	----
Physical Tests (QCLot: 767324)									
	RM	pH (1:2 soil:water)	----	E108	8.13 pH units	99.3	96.0	104	----
Organic / Inorganic Carbon (QCLot: 766554)									
	RM	carbon, total [TC]	----	E351	1.4 %	104	80.0	120	----
Organic / Inorganic Carbon (QCLot: 766562)									
	RM	carbon, total [TC]	----	E351	1.4 %	99.4	80.0	120	----
Organic / Inorganic Carbon (QCLot: 767444)									
	RM	carbon, inorganic [IC]	----	E354	0.383 %	95.0	80.0	120	----
Organic / Inorganic Carbon (QCLot: 767445)									
	RM	carbon, inorganic [IC]	----	E354	0.383 %	94.4	80.0	120	----
Metals (QCLot: 767367)									
	RM	mercury	7439-97-6	E510	0.059 mg/kg	96.3	70.0	130	----
Metals (QCLot: 767368)									
	RM	aluminum	7429-90-5	E440	9817 mg/kg	89.9	70.0	130	----
	RM	antimony	7440-36-0	E440	3.99 mg/kg	90.3	70.0	130	----
	RM	arsenic	7440-38-2	E440	3.73 mg/kg	99.5	70.0	130	----
	RM	barium	7440-39-3	E440	105 mg/kg	96.3	70.0	130	----
	RM	beryllium	7440-41-7	E440	0.349 mg/kg	94.6	70.0	130	----
	RM	boron	7440-42-8	E440	8.5 mg/kg	87.8	40.0	160	----
	RM	cadmium	7440-43-9	E440	0.91 mg/kg	95.0	70.0	130	----
	RM	calcium	7440-70-2	E440	31082 mg/kg	93.6	70.0	130	----
	RM	chromium	7440-47-3	E440	101 mg/kg	89.2	70.0	130	----
	RM	cobalt	7440-48-4	E440	6.9 mg/kg	96.1	70.0	130	----
	RM	copper	7440-50-8	E440	123 mg/kg	96.8	70.0	130	----
	RM	iron	7439-89-6	E440	23558 mg/kg	93.6	70.0	130	----
	RM	lead	7439-92-1	E440	267 mg/kg	97.8	70.0	130	----
	RM	lithium	7439-93-2	E440	9.5 mg/kg	89.5	70.0	130	----



Sub-Matrix:

Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Reference Material (RM) Report				
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%)		Qualifier
							Low	High	
Metals (QCLot: 767368) - continued									
	RM	magnesium	7439-95-4	E440	5509 mg/kg	96.3	70.0	130	----
	RM	manganese	7439-96-5	E440	269 mg/kg	93.5	70.0	130	----
	RM	molybdenum	7439-98-7	E440	1.03 mg/kg	95.8	70.0	130	----
	RM	nickel	7440-02-0	E440	26.7 mg/kg	97.8	70.0	130	----
	RM	phosphorus	7723-14-0	E440	752 mg/kg	98.0	70.0	130	----
	RM	potassium	7440-09-7	E440	1587 mg/kg	88.3	70.0	130	----
	RM	silver	7440-22-4	E440	4.06 mg/kg	99.3	70.0	130	----
	RM	sodium	7440-23-5	E440	797 mg/kg	94.0	70.0	130	----
	RM	strontium	7440-24-6	E440	86.1 mg/kg	93.4	70.0	130	----
	RM	thallium	7440-28-0	E440	0.0786 mg/kg	124	40.0	160	----
	RM	tin	7440-31-5	E440	10.6 mg/kg	93.9	70.0	130	----
	RM	titanium	7440-32-6	E440	839 mg/kg	85.3	70.0	130	----
	RM	uranium	7440-61-1	E440	0.52 mg/kg	101	70.0	130	----
	RM	vanadium	7440-62-2	E440	32.7 mg/kg	89.9	70.0	130	----
	RM	zinc	7440-66-6	E440	297 mg/kg	95.6	70.0	130	----
	RM	zirconium	7440-67-7	E440	5.73 mg/kg	92.1	70.0	130	----
Metals (QCLot: 767369)									
	RM	aluminum	7429-90-5	E440	9817 mg/kg	89.3	70.0	130	----
	RM	antimony	7440-36-0	E440	3.99 mg/kg	88.2	70.0	130	----
	RM	arsenic	7440-38-2	E440	3.73 mg/kg	95.1	70.0	130	----
	RM	barium	7440-39-3	E440	105 mg/kg	102	70.0	130	----
	RM	beryllium	7440-41-7	E440	0.349 mg/kg	95.3	70.0	130	----
	RM	boron	7440-42-8	E440	8.5 mg/kg	90.8	40.0	160	----
	RM	cadmium	7440-43-9	E440	0.91 mg/kg	91.6	70.0	130	----
	RM	calcium	7440-70-2	E440	31082 mg/kg	99.6	70.0	130	----
	RM	chromium	7440-47-3	E440	101 mg/kg	91.2	70.0	130	----
	RM	cobalt	7440-48-4	E440	6.9 mg/kg	96.8	70.0	130	----
	RM	copper	7440-50-8	E440	123 mg/kg	95.4	70.0	130	----
	RM	iron	7439-89-6	E440	23558 mg/kg	96.5	70.0	130	----
	RM	lead	7439-92-1	E440	267 mg/kg	97.9	70.0	130	----
	RM	lithium	7439-93-2	E440	9.5 mg/kg	96.8	70.0	130	----



Sub-Matrix:

Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Reference Material (RM) Report				
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%)		Qualifier
							Low	High	
Metals (QCLot: 767369) - continued									
	RM	magnesium	7439-95-4	E440	5509 mg/kg	94.3	70.0	130	----
	RM	manganese	7439-96-5	E440	269 mg/kg	94.4	70.0	130	----
	RM	molybdenum	7439-98-7	E440	1.03 mg/kg	94.5	70.0	130	----
	RM	nickel	7440-02-0	E440	26.7 mg/kg	96.3	70.0	130	----
	RM	phosphorus	7723-14-0	E440	752 mg/kg	101	70.0	130	----
	RM	potassium	7440-09-7	E440	1587 mg/kg	90.2	70.0	130	----
	RM	silver	7440-22-4	E440	4.06 mg/kg	74.5	70.0	130	----
	RM	sodium	7440-23-5	E440	797 mg/kg	94.2	70.0	130	----
	RM	strontium	7440-24-6	E440	86.1 mg/kg	94.0	70.0	130	----
	RM	thallium	7440-28-0	E440	0.0786 mg/kg	91.2	40.0	160	----
	RM	tin	7440-31-5	E440	10.6 mg/kg	93.4	70.0	130	----
	RM	titanium	7440-32-6	E440	839 mg/kg	84.6	70.0	130	----
	RM	uranium	7440-61-1	E440	0.52 mg/kg	87.6	70.0	130	----
	RM	vanadium	7440-62-2	E440	32.7 mg/kg	91.8	70.0	130	----
	RM	zinc	7440-66-6	E440	297 mg/kg	95.4	70.0	130	----
	RM	zirconium	7440-67-7	E440	5.73 mg/kg	92.6	70.0	130	----
Metals (QCLot: 767370)									
	RM	mercury	7439-97-6	E510	0.059 mg/kg	94.7	70.0	130	----

COC ID:		EVO LAEMP DEC 2022			TURNAROUND TIME:		RUSH:			
PROJECT/CLIENT INFO					LABORATORY					
Facility Name / Job#		Regional Effects Program			Lab Name		ALS Calgary			
Project Manager		Mike Pope			Lab Contact		Lyudmyla Shvets			
Email		mike.pope@teck.com			Email		lyudmyla.shvets@alsglobal.com			
Address		421 Pine Avenue			Address		2559 29 Street NE			
City		Sparwood		Province	BC	City		Calgary	Province	AB
Postal Code		V0B 2G0		Country	Canada	Postal Code		T1Y 7B5	Country	Canada
Phone Number		250-425-8202			Phone Number		1 403 407 1794			

SAMPLE DETAILS								ANALYSIS REQUESTED									
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	PH	N	N	N	N	N				
								PRESENT	NONE	NONE	NONE	NONE					
								ANALYSIS	C-TOC-SK	MET-COME+FULL-CL	MOISTURE-CL - % Moisture	PSA-PIPE-T-DETAIL-SK Particle Size					
RG_ERCKUT_SE-1_LAEMP_EVO_2022-12_N	RG_ERCKUT	SE	N	11/29/2022	9:00	G	1		X	X	X	X					
RG_ERCKUT_SE-2_LAEMP_EVO_2022-12_N	RG_ERCKUT	SE	N	11/29/2022	9:05	G	1		X	X	X	X					
RG_ERCKUT_SE-3_LAEMP_EVO_2022-12_N	RG_ERCKUT	SE	N	11/29/2022	9:10	G	1		X	X	X	X					
RG_ERCKUT_SE-4_LAEMP_EVO_2022-12_N	RG_ERCKUT	SE	N	11/29/2022	9:15	G	1		X	X	X	X					
RG_ERCKUT_SE-5_LAEMP_EVO_2022-12_N	RG_ERCKUT	SE	N	11/29/2022	9:20	G	1		X	X	X	X					
RG_ERCKUT_BRYOSE-1_LAEMP_EVO_2022-12_N	RG_ERCKUT	SE	N	11/29/2022	9:25	G	1		X	X	X	X					
RG_ERCKUT_BRYOSE-2_LAEMP_EVO_2022-12_N	RG_ERCKUT	SE	N	11/29/2022	9:30	G	1		X	X	X	X					
RG_ERCKUT_BRYOSE-3_LAEMP_EVO_2022-12_N	RG_ERCKUT	SE	N	11/29/2022	9:35	G	1		X	X	X	X					

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
VPO00847030	Robin Valteau/Minnow	December 1, 2022	<i>RL</i> 12/2/2022

NB OF BOTTLES RETURNED/DESCRIPTION			
Regular (default)	Sampler's Name	Robin Valteau	Mobile #
Priority (2-3 business days) - 50% surcharge X	Sampler's Signature		416-970-7535
Emergency (1 Business Day) - 100% surcharge			Date/Time
For Emergency <1 Day, ASAP or Weekend - Contact ALS			December 1, 2022


Environmental Division
 Calgary
 Work Order Reference
CG2216716



2

COC ID:		EVO LAEMP DEC 2022				TURNAROUND TIME:		RUSH		
PROJECT/CLIENT INFO						LABORATORY				
Facility Name / Job#		Regional effects program				Lab Name		ALS Calgary		
Project Manager		Mike Pope				Lab Contact		Lyudmyla Shvets		
Email		mike.pope@teck.com				Email		lyudmyla.shvets@alsglobal.com		
Address		421 Pine Avenue				Address		2559 29 Street NE		
City		Sparwood		Province	BC	City		Calgary	Province	AB
Postal Code		V0B 2G0		Country	Canada	Postal Code		T1Y 7B5	Country	Canada
Phone Number		250-425-8202				Phone Number		1 403 407 1794		

SAMPLE DETAILS								ANALYSIS REQUESTED					Filtered - F: Field, L: Lab, FL: Field & Lab, N: None								
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	PH	N	N	N	N	N								
								PRESERV	NONE	NONE	NONE	NONE									
								ANALYSIS	C-TOC-SK	MET-CCME+FULL-CL	MOISTURE-CL - % Moisture	PSA-PIPE-DETAIL-SK Particle Size									
RG_ERCKDT_SE-1_LAEMP_EVO_2022-12_N	RG_ERCKDT	SE	N	11/28/2022	13:00	G	1	X	X	X	X										
RG_ERCKDT_SE-2_LAEMP_EVO_2022-12_N	RG_ERCKDT	SE	N	11/28/2022	13:05	G	1	X	X	X	X										
RG_ERCKDT_SE-3_LAEMP_EVO_2022-12_N	RG_ERCKDT	SE	N	11/28/2022	13:10	G	1	X	X	X	X										
RG_ERCKDT_SE-4_LAEMP_EVO_2022-12_N	RG_ERCKDT	SE	N	11/28/2022	13:15	G	1	X	X	X	X										
RG_ERCKDT_SE-5_LAEMP_EVO_2022-12_N	RG_ERCKDT	SE	N	11/28/2022	13:20	G	1	X	X	X	X										
RG_ERCKDT_SE-6_LAEMP_EVO_2022-12_N	RG_ERCKDT	SE	N	11/28/2022	13:25	G	1	X	X	X	X										
RG_ERCKDT_SE-7_LAEMP_EVO_2022-12_N	RG_ERCKDT	SE	N	11/28/2022	13:30	G	1	X	X	X	X										
RG_ERCKDT_BRYOSE-1_LAEMP_EVO_2022-12_N	RG_ERCKDT	SE	N	11/28/2022	13:35	G	1	X	X	X	X										
RG_ERCKDT_BRYOSE-2_LAEMP_EVO_2022-12_N	RG_ERCKDT	SE	N	11/28/2022	13:40	G	1	X	X	X	X										
RG_ERCKDT_BRYOSE-3_LAEMP_EVO_2022-12_N	RG_ERCKDT	SE	N	11/28/2022	13:45	G	1	X	X	X	X										

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS		RELINQUISHED BY/AFFILIATION		DATE/TIME		ACCEPTED BY/AFFILIATION	
VPO00847030		Robin Valteau/Minnow		December 1, 2022		 12/2/2022	

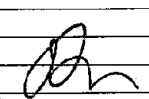
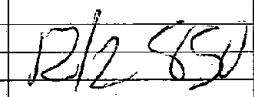
NB OF BOTTLES RETURNED/DESCRIPTION		SAMPLER'S INFORMATION	
Regular (default)		Sampler's Name	Robin Valteau
Priority (2-3 business days) - 50% surcharge	X	Sampler's Signature	
Emergency (1 Business Day) - 100% surcharge		Date/Time	December 1, 2022
For Emergency <1 Day, ASAP or Weekend - Contact ALS		Mobile #	416-970-7535

2

2

COC ID:		EVO LAEMP DEC 2022				TURNAROUND TIME:		RUSH		
PROJECT/CLIENT INFO						LABORATORY				
Facility Name / Job#		Regional effects program				Lab Name		ALS Calgary		
Project Manager		Mike Pope				Lab Contact		Lyudmyla Shvets		
Email		mike.pope@teck.com				Email		lyudmyla.shvets@alsglobal.com		
Address		421 Pine Avenue				Address		2559 29 Street NE		
City		Sparwood		Province	BC	City		Calgary	Province	AB
Postal Code		V0B 2G0		Country	Canada	Postal Code		T1Y 7B5	Country	Canada
Phone Number		250-425-8202				Phone Number		1 403 407 1794		

SAMPLE DETAILS									ANALYSIS REQUESTED									
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	PHL	N	N	N	N	N					
19 RG_ERCKMD_SE-1_LAEMP_EVO_2022-12_N	RG_ERCKMD	SE	N	11/28/2022	9:30	G	1		X	X	X	X						
20 RG_ERCKMD_SE-2_LAEMP_EVO_2022-12_N	RG_ERCKMD	SE	N	11/28/2022	9:35	G	1		X	X	X	X						
21 RG_ERCKMD_SE-3_LAEMP_EVO_2022-12_N	RG_ERCKMD	SE	N	11/28/2022	9:40	G	1		X	X	X	X						
22 RG_ERCKMD_BRYOSE-1_LAEMP_EVO_2022-12_N	RG_ERCKMD	SE	N	11/28/2022	9:45	G	1		X	X	X	X						
23 RG_ERCKMD_BRYOSE-2_LAEMP_EVO_2022-12_N	RG_ERCKMD	SE	N	11/28/2022	9:50	G	1		X	X	X	X						
24 RG_ERCKMD_BRYOSE-3_LAEMP_EVO_2022-12_N	RG_ERCKMD	SE	N	11/28/2022	9:55	G	1		X	X	X	X						
25 RG_BOCKRD_SE-1_LAEMP_EVO_2022-12_N	RG_BOCKRD	SE	N	11/29/2022	12:20	G	1		X	X	X	X						

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS		RELINQUISHED BY/AFFILIATION		DATE/TIME		ACCEPTED BY/AFFILIATION	
VPO00847030		Robin Valteau/Minnow		December 1, 2022		 	

NB OF BOTTLES RETURNED/DESCRIPTION				Sampler's Name		Date/Time	
Regular (default)				Robin Valteau		December 1, 2022	
Priority (2-3 business days) - 50% surcharge X				Sampler's Signature		Mobile #	
Emergency (1 Business Day) - 100% surcharge						416-970-7535	
For Emergency <1 Day, ASAP or Weekend - Contact ALS						Date/Time	
						December 1, 2022	

3

2

SELENIUM SPECIATION

BAL Final Reports



18804 North Creek Parkway, Ste 100, Bothell, WA 98011 • USA • T: 206 632 6206 F: 206 632 6017 • info@brooksapplied.com

March 30, 2022

Teck Resources Limited - Vancouver
 Mike Pope
 421 Pine Avenue
 Sparwood, B.C. CANADA V0B2G0
mike.pope@teck.com

Re: Regional Effects Program

Dear Mike Pope,

On March 10, 2022, Brooks Applied Labs (BAL) received twelve (12) aqueous samples. The samples were logged-in for total recoverable selenium [Se], dissolved Se [Se], and Se speciation analyses, according to the chain-of-custody (COC) form.

The **Sampling Time** value listed on the chain-of-custody (COC) form did not exactly match the corresponding **Sampling Time** term listed on container label for 2203150-06. The disagreement between the two is described in the table below.

Laboratory ID	Sample ID (From COC)	Sampling Time (From COC)	Sampling Time (From Container Label)
2203150-06	RG_ERCKUT_WS_LAEMP_EVO_2022-03_NP-NAL	13:00	12:00

2203150-06 was logged and reported in using the **Sampling Time** value listed on the COC form (03/02/2022 13:00).

The sample fractions logged in for Se speciation and dissolved Se had been field-filtered prior to receipt at BAL; sample fractions for total recoverable and dissolved Se had also been preserved by the client prior to receipt. All samples were stored according to BAL SOPs.

Total Recoverable and Dissolved Se

Each aqueous sample fraction for total recoverable or dissolved Se was digested in a closed vessel (bomb) with nitric and hydrochloric acids. The resulting digests were analyzed for Se content via inductively coupled plasma triple quadrupole mass spectrometry (ICP-QQQ-MS). The ICP-QQQ-MS instrumentation uses advanced interference removal techniques to ensure accuracy of the sample results. For more information, please visit the *Interference Reduction Technology* section on our website, brooksapplied.com.

Selenium Speciation

Each aqueous sample was analyzed for selenium speciation using ion chromatography inductively coupled plasma collision reaction cell mass spectrometry (IC-ICP-CRC-MS). Selenium species are chromatographically separated on an ion exchange column and then quantified using inductively coupled plasma collision reaction cell mass spectrometry (ICP-CRC-MS); for more information on this determinative technique, please visit the *Interference Reduction Technology* section on our website. The chromatographic method applied for the analyses provides greater retention of methylseleninic acid and selenomethionine, allowing for more definitive quantitation of these species.

In accordance with the quotation issued for this project, selenium speciation was defined as dissolved selenite [Se(IV)], selenate [Se(VI)], selenocyanate [SeCN], methylseleninic acid [MeSe(IV)], methaneselenonic acid [MeSe(VI)], selenomethionine [SeMet], selenosulfate [SeSO₃], and dimethylselenoxide [DMSeO]. Unknown Se species was defined as the total concentration of all unknown Se species observed during the analysis. This item is identified on the report as [Unk Se Sp].

DMSeO elutes early in the chromatographic run due to the nature of the molecule and the applied chromatographic separation method. Since this species elutes near the dead volume, additional selenium species may coelute. Alternate methods can be applied, upon client request, to increase the separation of DMSeO from potentially co-eluting selenium species.

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

In instances where a matrix spike/matrix spike duplicate (MS/MSD) set was spiked at a level less than the native sample concentration, the recoveries, and the relative percent difference (RPD) values are not considered valid indicators of data quality. In such instances, the recoveries of the laboratory fortified blanks (BS) and/or standard reference materials (SRM) demonstrate the accuracy of the applied methods. When the spiking level was less than 25% of the native sample concentration, the spike recovery was not reported (NR) and the relative percent difference (RPD) of the MS/MSD set was not calculated (N/C).

Except for concentration qualifiers, all data were reported without qualification. All associated quality control sample results met the acceptance criteria.

BAL, an accredited laboratory, certifies that the reported results of all analyses for which BAL is NELAP accredited meet all NELAP requirements. For more information, please see the *Report Information* page.

Please feel free to contact us if you have any questions regarding this report.

Sincerely,

A handwritten signature in black ink, appearing to read 'Jeremy Maute', written over a thin horizontal line.

Jeremy Maute
Senior Project Manager
Jeremy@brooksapplied.com



Report Information

Laboratory Accreditation

BAL is accredited by the *National Environmental Laboratory Accreditation Program* (NELAP) through the State of Florida Department of Health, Bureau of Laboratories (E87982) and is certified to perform many environmental analyses. BAL is also certified by many other states to perform environmental analyses. For a current list of our accreditations/certifications, please visit our website at <http://www.brooksapplied.com/resources/certificates-permits/> or review Tables 1 and 2 in our Accreditation Information. Results reported relate only to the samples listed in the report.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

AR	as received	MS	matrix spike
BAL	Brooks Applied Labs	MSD	matrix spike duplicate
BLK	method blank	ND	non-detect
BS	blank spike	NR	non-reportable
CAL	calibration standard	N/C	not calculated
CCB	continuing calibration blank	PS	post preparation spike
CCV	continuing calibration verification	REC	percent recovery
COC	chain of custody record	RPD	relative percent difference
D	dissolved fraction	SCV	secondary calibration verification
DUP	duplicate	SOP	standard operating procedure
IBL	instrument blank	SRM	reference material
ICV	initial calibration verification	T	total fraction
MDL	method detection limit	TR	total recoverable fraction
MRL	method reporting limit		

Definition of Data Qualifiers

(Effective 3/23/2020)

E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Please see narrative for explanation.
J	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1	Estimated value. A full explanation is presented in the narrative.
M	Duplicate precision (RPD) was not within acceptance criteria. Please see narrative for explanation.
N	Spike recovery was not within acceptance criteria. Please see narrative for explanation.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.
Z	Holding time and/or preservation requirements not established for this method; however, BAL recommendations for holding time were not followed. Please see narrative for explanation.

These qualifiers are based on those previously utilized by Brooks Applied Labs, those found in the EPA SOW ILM03.0, Exhibit B, Section III, pg. B-18, and the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review; USEPA; January 2010. These supersede all previous qualifiers ever employed by BAL.



Accreditation Information

Table 1. Accredited method/matrix/analytes for TNI
Issued by: State of Florida Dept. of Health (The NELAC Institute 2016 Standard)
Issued on: July 1, 2021; Valid to: June 30, 2022
Certificate Number: E87982-37

Method	Matrix	TNI Accredited Analyte(s)
EPA 1638	Non-Potable Waters	Ag, Cd, Cu, Ni, Pb, Sb, Se, Ti, Zn
EPA 200.8	Non-Potable Waters	Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Sb, Se, Ti, U, V, Zn
EPA 6020	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Ti, U, V, Zn
	Solids/Chemicals & Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Ti, V, Zn
BAL-5000	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, U, V, Zn, Hardness
	Solids/Chemicals	Ag, As, B, Be, Cd, Co, Cr, Cu, Pb, Mo, Ni, Sb, Se, Sn, Sr, Ti, V, Zn
	Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Ti, V, Zn
EPA 1640	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn
EPA 1631E	Non-Potable Waters, Solids/Chemicals & Biological	Total Mercury
EPA 1630	Non-Potable Waters	Methyl Mercury
BAL-3200	Solids/Chemicals & Biological	Methyl Mercury
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
BAL-4201	Non-Potable Waters	Se(IV), Se(VI)
BAL-4300	Non-Potable Waters Solid/Chemicals	Cr(VI)
SM2340B	Non-Potable Waters	Hardness



Accreditation Information

**Table 2. Accredited method/matrix/analytes for ISO (1),
 Non-Governmental TNI (2)
 Issued by: ANAB
 Issued on: September 21, 2021; Valid to: March 30, 2024**

Method	Matrix	ISO and Non-Gov. TNI Accredited Analyte(s)
EPA 1638 Mod EPA 200.8 Mod EPA 6020 Mod	Non-Potable Waters	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, U, V, Zn
BAL-5000	Solids/Chemicals & Biological	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, V, Zn Hg (Biological Only)
EPA 1640 Mod	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn Ag, As, Cr, Co, Se, Ti, V (ISO Only)
EPA 1631E Mod BAL-3100	Non-Potable Waters, Solids/Chemicals & Biological/Food	Total Mercury
EPA 1630 Mod BAL-3200	Non-Potable Waters, Solids/Chemicals Biological	Methyl Mercury
EPA 1632A Mod BAL-3300	Non-Potable Waters Biological/Food Solids/Chemicals	Inorganic Arsenic (ISO Only) Inorganic Arsenic (ISO Only)
AOAC 2015.01 Mod BAL-5000	Food	As, Cd, Hg, Pb
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
	Biological by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4101	Food by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4201	Non-Potable Waters	Se(IV), Se(VI), SeCN, SeMet
BAL-4300	Non-Potable Waters, Solid/Chemicals	Cr(VI)
SM 3500-Fe BAL-4500	Non-Potable Waters	Fe, Fe(II) (ISO Only)
SM2340B	Non-Potable Waters	Hardness
SM 2540G BAL-0501	Solids/Chemicals & Biological	% Dry Weight



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
RG_ERCKMD_WS_LAEMP_EVO_2 022-03_NP	2203150-01	WS	Sample	03/02/2022	03/10/2022
RG_ERCKMD_WS_LAEMP_EVO_2 022-03_NP-NAL	2203150-02	WS	Sample	03/02/2022	03/10/2022
RG_ERCKMD_WS_LAEMP_EVO_2 022-03_NP-NAL	2203150-03	WS	Sample	03/02/2022	03/10/2022
RG_ERCKUT_WS_LAEMP_EVO_20 22-03_NP	2203150-04	WS	Sample	03/02/2022	03/10/2022
RG_ERCKUT_WS_LAEMP_EVO_20 22-03_NP-NAL	2203150-05	WS	Sample	03/02/2022	03/10/2022
RG_ERCKUT_WS_LAEMP_EVO_20 22-03_NP-NAL	2203150-06	WS	Sample	03/02/2022	03/10/2022
RG_ERCK_WS_LAEMP_EVO_2022- 03_NP	2203150-07	WS	Sample	03/02/2022	03/10/2022
RG_ERCK_WS_LAEMP_EVO_2022- 03_NP-NAL	2203150-08	WS	Sample	03/02/2022	03/10/2022
RG_ERCK_WS_LAEMP_EVO_2022- 03_NP-NAL	2203150-09	WS	Sample	03/02/2022	03/10/2022
RG_ERCKDT_WS_LAEMP_EVO_20 22-03_NP	2203150-10	WS	Sample	03/02/2022	03/10/2022
RG_ERCKDT_WS_LAEMP_EVO_20 22-03_NP-NAL	2203150-11	WS	Sample	03/02/2022	03/10/2022
RG_ERCKDT_WS_LAEMP_EVO_20 22-03_NP-NAL	2203150-12	WS	Sample	03/02/2022	03/10/2022
RG_MIDER_WS_LAEMP_EVO_202 2-03_NP	2203150-13	WS	Sample	03/02/2022	03/10/2022
RG_MIDER_WS_LAEMP_EVO_202 2-03_NP-NAL	2203150-14	WS	Sample	03/02/2022	03/10/2022
RG_MIDER_WS_LAEMP_EVO_202 2-03_NP-NAL	2203150-15	WS	Sample	03/02/2022	03/10/2022
RG_RIVER_WS_LAEMP_EVO_2022 -03_NP	2203150-16	WS	Sample	03/02/2022	03/10/2022
RG_RIVER_WS_LAEMP_EVO_2022 -03_NP-NAL	2203150-17	WS	Sample	03/02/2022	03/10/2022
RG_RIVER_WS_LAEMP_EVO_2022 -03_NP-NAL	2203150-18	WS	Sample	03/02/2022	03/10/2022



Batch Summary

Analyte	Lab Matrix	Method	Prepared	Analyzed	Batch	Sequence
DMS ₂ SeO	Water	SOP BAL-4201	03/17/2022	03/19/2022	B220592	S220323
MeSe(IV)	Water	SOP BAL-4201	03/17/2022	03/19/2022	B220592	S220323
MeSe(VI)	Water	SOP BAL-4201	03/17/2022	03/19/2022	B220592	S220323
Se	Water	EPA 1638 Mod	03/14/2022	03/16/2022	B220573	S220322
Se(IV)	Water	SOP BAL-4201	03/17/2022	03/19/2022	B220592	S220323
Se(VI)	Water	SOP BAL-4201	03/17/2022	03/19/2022	B220592	S220323
SeCN	Water	SOP BAL-4201	03/17/2022	03/19/2022	B220592	S220323
SeMet	Water	SOP BAL-4201	03/17/2022	03/19/2022	B220592	S220323
SeSO ₃	Water	SOP BAL-4201	03/17/2022	03/19/2022	B220592	S220323
Unk Se Sp	Water	SOP BAL-4201	03/17/2022	03/19/2022	B220592	S220323



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP										
2203150-01	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B220592	S220323
2203150-01	MeSe(IV)	WS	D	0.017	J	0.010	0.025	µg/L	B220592	S220323
2203150-01	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B220592	S220323
2203150-01	Se(IV)	WS	D	1.18		0.010	0.075	µg/L	B220592	S220323
2203150-01	Se(VI)	WS	D	19.4		0.010	0.055	µg/L	B220592	S220323
2203150-01	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B220592	S220323
2203150-01	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B220592	S220323
2203150-01	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B220592	S220323
2203150-01	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B220592	S220323
RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP-NAL										
2203150-02	Se	WS	D	24.6		0.165	0.528	µg/L	B220573	S220322
RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP-NAL										
2203150-03	Se	WS	TR	24.9		0.165	0.528	µg/L	B220573	S220322
RG_ERCKUT_WS_LAEMP_EVO_2022-03_NP										
2203150-04	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B220592	S220323
2203150-04	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B220592	S220323
2203150-04	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B220592	S220323
2203150-04	Se(IV)	WS	D	0.031	J	0.010	0.075	µg/L	B220592	S220323
2203150-04	Se(VI)	WS	D	152		0.010	0.055	µg/L	B220592	S220323
2203150-04	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B220592	S220323
2203150-04	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B220592	S220323
2203150-04	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B220592	S220323
2203150-04	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B220592	S220323
RG_ERCKUT_WS_LAEMP_EVO_2022-03_NP-NAL										
2203150-05	Se	WS	D	162		0.165	0.528	µg/L	B220573	S220322
RG_ERCKUT_WS_LAEMP_EVO_2022-03_NP-NAL										
2203150-06	Se	WS	TR	157		0.165	0.528	µg/L	B220573	S220322



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCK_WS_LAEMP_EVO_2022-03_NP										
2203150-07	DMS ₂ O	WS	D	0.011	J	0.010	0.025	µg/L	B220592	S220323
2203150-07	MeSe(IV)	WS	D	0.012	J	0.010	0.025	µg/L	B220592	S220323
2203150-07	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B220592	S220323
2203150-07	Se(IV)	WS	D	0.929		0.010	0.075	µg/L	B220592	S220323
2203150-07	Se(VI)	WS	D	23.0		0.010	0.055	µg/L	B220592	S220323
2203150-07	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B220592	S220323
2203150-07	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B220592	S220323
2203150-07	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B220592	S220323
2203150-07	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B220592	S220323
RG_ERCK_WS_LAEMP_EVO_2022-03_NP-NAL										
2203150-08	Se	WS	D	27.2		0.165	0.528	µg/L	B220573	S220322
RG_ERCK_WS_LAEMP_EVO_2022-03_NP-NAL										
2203150-09	Se	WS	TR	28.2		0.165	0.528	µg/L	B220573	S220322
RG_ERCKDT_WS_LAEMP_EVO_2022-03_NP										
2203150-10	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B220592	S220323
2203150-10	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B220592	S220323
2203150-10	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B220592	S220323
2203150-10	Se(IV)	WS	D	1.51		0.010	0.075	µg/L	B220592	S220323
2203150-10	Se(VI)	WS	D	12.3		0.010	0.055	µg/L	B220592	S220323
2203150-10	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B220592	S220323
2203150-10	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B220592	S220323
2203150-10	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B220592	S220323
2203150-10	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B220592	S220323
RG_ERCKDT_WS_LAEMP_EVO_2022-03_NP-NAL										
2203150-11	Se	WS	D	16.8		0.165	0.528	µg/L	B220573	S220322
RG_ERCKDT_WS_LAEMP_EVO_2022-03_NP-NAL										
2203150-12	Se	WS	TR	15.9		0.165	0.528	µg/L	B220573	S220322



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_MIDER_WS_LAEMP_EVO_2022-03_NP										
2203150-13	DMSeO	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B220592	S220323
2203150-13	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B220592	S220323
2203150-13	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B220592	S220323
2203150-13	Se(IV)	WS	D	0.014	J	0.010	0.075	µg/L	B220592	S220323
2203150-13	Se(VI)	WS	D	1.75		0.010	0.055	µg/L	B220592	S220323
2203150-13	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B220592	S220323
2203150-13	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B220592	S220323
2203150-13	SeSO3	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B220592	S220323
2203150-13	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B220592	S220323
RG_MIDER_WS_LAEMP_EVO_2022-03_NP-NAL										
2203150-14	Se	WS	D	1.95		0.165	0.528	µg/L	B220573	S220322
RG_MIDER_WS_LAEMP_EVO_2022-03_NP-NAL										
2203150-15	Se	WS	TR	2.07		0.165	0.528	µg/L	B220573	S220322
RG_RIVER_WS_LAEMP_EVO_2022-03_NP										
2203150-16	DMSeO	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B220592	S220323
2203150-16	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B220592	S220323
2203150-16	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B220592	S220323
2203150-16	Se(IV)	WS	D	0.019	J	0.010	0.075	µg/L	B220592	S220323
2203150-16	Se(VI)	WS	D	1.56		0.010	0.055	µg/L	B220592	S220323
2203150-16	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B220592	S220323
2203150-16	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B220592	S220323
2203150-16	SeSO3	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B220592	S220323
2203150-16	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B220592	S220323
RG_RIVER_WS_LAEMP_EVO_2022-03_NP-NAL										
2203150-17	Se	WS	D	1.95		0.165	0.528	µg/L	B220573	S220322
RG_RIVER_WS_LAEMP_EVO_2022-03_NP-NAL										
2203150-18	Se	WS	TR	2.05		0.165	0.528	µg/L	B220573	S220322



Accuracy & Precision Summary

Batch: B220573
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B220573-BS1	Blank Spike, (2128022) Se		200.0	195.2	µg/L	98% 75-125	
B220573-BS2	Blank Spike, (2128022) Se		200.0	195.0	µg/L	98% 75-125	
B220573-SRM1	Reference Material (2145006, TMDA 51.5 Reference Standard - Bottle 5 - SRM) Se		14.30	14.37	µg/L	101% 75-125	
B220573-SRM2	Reference Material (2145006, TMDA 51.5 Reference Standard - Bottle 5 - SRM) Se		14.30	13.96	µg/L	98% 75-125	
B220573-DUP2	Duplicate, (2203149-03) Se	6.883		7.433	µg/L		8% 20
B220573-MS2	Matrix Spike, (2203149-03) Se	6.883	220.0	222.2	µg/L	98% 75-125	
B220573-MSD2	Matrix Spike Duplicate, (2203149-03) Se	6.883	220.0	214.7	µg/L	94% 75-125	3% 20
B220573-DUP3	Duplicate, (2203150-12) Se	15.91		15.98	µg/L		0.4% 20
B220573-MS3	Matrix Spike, (2203150-12) Se	15.91	220.0	228.5	µg/L	97% 75-125	
B220573-MSD3	Matrix Spike Duplicate, (2203150-12) Se	15.91	220.0	221.6	µg/L	93% 75-125	3% 20



Accuracy & Precision Summary

Batch: B220592
Lab Matrix: Water
Method: SOP BAL-4201

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B220592-BS1	Blank Spike, (2124033)						
	MeSe(IV)		5.095	5.443	µg/L	107% 75-125	
	Se(IV)		5.000	4.900	µg/L	98% 75-125	
	Se(VI)		5.000	4.722	µg/L	94% 75-125	
	SeCN		5.015	4.820	µg/L	96% 75-125	
	SeMet		4.932	5.093	µg/L	103% 75-125	
B220592-DUP2	Duplicate, (2203150-10)						
	DMSeO	ND		ND	µg/L		N/C 25
	MeSe(IV)	ND		ND	µg/L		N/C 25
	MeSe(VI)	ND		ND	µg/L		N/C 25
	Se(IV)	1.511		1.513	µg/L		0.1% 25
	Se(VI)	12.29		12.29	µg/L		0.04% 25
	SeCN	ND		ND	µg/L		N/C 25
	SeMet	ND		ND	µg/L		N/C 25
	SeSO3	ND		ND	µg/L		N/C 25
Unk Se Sp	ND		ND	µg/L		N/C 25	
B220592-MS2	Matrix Spike, (2203150-10)						
	Se(IV)	1.511	4.900	6.415	µg/L	100% 75-125	
	Se(VI)	12.29	5.100	16.99	µg/L	92% 75-125	
	SeCN	ND	1.962	1.916	µg/L	98% 75-125	
	SeMet	ND	1.977	1.999	µg/L	101% 75-125	
B220592-MSD2	Matrix Spike Duplicate, (2203150-10)						
	Se(IV)	1.511	4.900	6.545	µg/L	103% 75-125	2% 25
	Se(VI)	12.29	5.100	17.18	µg/L	96% 75-125	1% 25
	SeCN	ND	1.962	1.913	µg/L	98% 75-125	0.1% 25
	SeMet	ND	1.977	2.004	µg/L	101% 75-125	0.2% 25



Method Blanks & Reporting Limits

Batch: B220573
Matrix: Water
Method: EPA 1638 Mod
Analyte: Se

Sample	Result	Units
B220573-BLK1	0.453	µg/L
B220573-BLK2	0.347	µg/L
B220573-BLK3	0.327	µg/L
B220573-BLK4	0.445	µg/L

Average: 0.393
Limit: 0.480

MDL: 0.150
MRL: 0.480



Method Blanks & Reporting Limits

Batch: B220592
Matrix: Water
Method: SOP BAL-4201
Analyte: DMSeO

Sample	Result	Units	
B220592-BLK1	0.00	µg/L	
B220592-BLK2	0.00	µg/L	
B220592-BLK3	0.00	µg/L	
B220592-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005

Analyte: MeSe(IV)

Sample	Result	Units	
B220592-BLK1	0.00	µg/L	
B220592-BLK2	0.00	µg/L	
B220592-BLK3	0.00	µg/L	
B220592-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005

Analyte: MeSe(VI)

Sample	Result	Units	
B220592-BLK1	0.00	µg/L	
B220592-BLK2	0.00	µg/L	
B220592-BLK3	0.00	µg/L	
B220592-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005



Method Blanks & Reporting Limits

Analyte: Se(IV)

Sample	Result	Units	
B220592-BLK1	0.00	µg/L	
B220592-BLK2	0.00	µg/L	
B220592-BLK3	0.00	µg/L	
B220592-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.015			MRL: 0.015

Analyte: Se(VI)

Sample	Result	Units	
B220592-BLK1	0.00	µg/L	
B220592-BLK2	0.00	µg/L	
B220592-BLK3	0.00	µg/L	
B220592-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.011			MRL: 0.011

Analyte: SeCN

Sample	Result	Units	
B220592-BLK1	0.00	µg/L	
B220592-BLK2	0.00	µg/L	
B220592-BLK3	0.00	µg/L	
B220592-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.010			MRL: 0.010

Analyte: SeMet

Sample	Result	Units	
B220592-BLK1	0.00	µg/L	
B220592-BLK2	0.00	µg/L	
B220592-BLK3	0.00	µg/L	
B220592-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005



Method Blanks & Reporting Limits

Analyte: SeSO3

Sample	Result	Units	
B220592-BLK1	0.00	µg/L	
B220592-BLK2	0.00	µg/L	
B220592-BLK3	0.00	µg/L	
B220592-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.011		MRL: 0.011

Analyte: Unk Se Sp

Sample	Result	Units	
B220592-BLK1	0.00	µg/L	
B220592-BLK2	0.00	µg/L	
B220592-BLK3	0.00	µg/L	
B220592-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.015		MRL: 0.015



Sample Containers

Lab ID: 2203150-01

Report Matrix: WS

Collected: 03/02/2022

Sample:

Sample Type: Sample + Sum

Received: 03/10/2022

RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2203150
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2203150
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 1 - 2203150

Lab ID: 2203150-02

Report Matrix: WS

Collected: 03/02/2022

Sample:

Sample Type: Sample + Sum

Received: 03/10/2022

RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP-NA

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2142029	<2	Cooler 1 - 2203150

Lab ID: 2203150-03

Report Matrix: WS

Collected: 03/02/2022

Sample:

Sample Type: Sample + Sum

Received: 03/10/2022

RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP-NA
L

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2142029	<2	Cooler 1 - 2203150

Lab ID: 2203150-04

Report Matrix: WS

Collected: 03/02/2022

Sample:

Sample Type: Sample + Sum

Received: 03/10/2022

RG_ERCKUT_WS_LAEMP_EVO_2022-03_NP

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2203150
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2203150
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 1 - 2203150



Sample Containers

Lab ID: 2203150-05
Sample: RG_ERCKUT_WS_LAEMP_EVO_2022-03_NP-NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 03/02/2022
Received: 03/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2142029	<2	Cooler 1 - 2203150

Lab ID: 2203150-06
Sample: RG_ERCKUT_WS_LAEMP_EVO_2022-03_NP-NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 03/02/2022
Received: 03/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2142029	<2	Cooler 1 - 2203150

Lab ID: 2203150-07
Sample: RG_ERCK_WS_LAEMP_EVO_2022-03_NP
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 03/02/2022
Received: 03/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2203150
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2203150
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 1 - 2203150

Lab ID: 2203150-08
Sample: RG_ERCK_WS_LAEMP_EVO_2022-03_NP-NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 03/02/2022
Received: 03/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2142029	<2	Cooler 1 - 2203150

Lab ID: 2203150-09
Sample: RG_ERCK_WS_LAEMP_EVO_2022-03_NP-NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 03/02/2022
Received: 03/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2142029	<2	Cooler 1 - 2203150



Sample Containers

Lab ID: 2203150-10

Report Matrix: WS

Collected: 03/02/2022

Sample:

Sample Type: Sample + Sum

Received: 03/10/2022

RG_ERCKDT_WS_LAEMP_EVO_2022-03_NP

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2203150
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2203150
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 1 - 2203150

Lab ID: 2203150-11

Report Matrix: WS

Collected: 03/02/2022

Sample:

Sample Type: Sample + Sum

Received: 03/10/2022

RG_ERCKDT_WS_LAEMP_EVO_2022-03_NP-NAL

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2142029	<2	Cooler 1 - 2203150

Lab ID: 2203150-12

Report Matrix: WS

Collected: 03/02/2022

Sample:

Sample Type: Sample + Sum

Received: 03/10/2022

RG_ERCKDT_WS_LAEMP_EVO_2022-03_NP-NAL

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2142029	<2	Cooler 1 - 2203150

Lab ID: 2203150-13

Report Matrix: WS

Collected: 03/02/2022

Sample:

Sample Type: Sample + Sum

Received: 03/10/2022

RG_MIDER_WS_LAEMP_EVO_2022-03_NP

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2203150
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2203150
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 1 - 2203150



Sample Containers

Lab ID: 2203150-14 **Report Matrix:** WS **Collected:** 03/02/2022
Sample: RG_MIDER_WS_LAEMP_EVO_2022-03_NP-NAL **Sample Type:** Sample + Sum **Received:** 03/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2142029	<2	Cooler 1 - 2203150

Lab ID: 2203150-15 **Report Matrix:** WS **Collected:** 03/02/2022
Sample: RG_MIDER_WS_LAEMP_EVO_2022-03_NP-NAL **Sample Type:** Sample + Sum **Received:** 03/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2142029	<2	Cooler 1 - 2203150

Lab ID: 2203150-16 **Report Matrix:** WS **Collected:** 03/02/2022
Sample: RG_RIVER_WS_LAEMP_EVO_2022-03_NP **Sample Type:** Sample + Sum **Received:** 03/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2203150
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2203150
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 1 - 2203150

Lab ID: 2203150-17 **Report Matrix:** WS **Collected:** 03/02/2022
Sample: RG_RIVER_WS_LAEMP_EVO_2022-03_NP-NAL **Sample Type:** Sample + Sum **Received:** 03/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2142029	<2	Cooler 1 - 2203150

Lab ID: 2203150-18 **Report Matrix:** WS **Collected:** 03/02/2022
Sample: RG_RIVER_WS_LAEMP_EVO_2022-03_NP-NAL **Sample Type:** Sample + Sum **Received:** 03/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2142029	<2	Cooler 1 - 2203150



Shipping Containers

Cooler 1 - 2203150

Received: March 10, 2022 7:00
Tracking No: PAPS#RWHV89789 via Courier
Coolant Type: Blue Ice
Temperature: 1.6 °C

Description: Cooler 1
Damaged in transit? No
Returned to client? No
Comments: IR #31

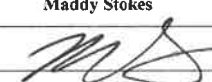
Custody seals present? No
Custody seals intact? No
COC present? Yes

COC ID: REP_EVO LAEMP_2022_MAR_Brooks TURNAROUND TIME: RUSH:

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name / Job# Regional Effects Program				Lab Name Brooks Applied Labs				Report Format / Distribution			
Project Manager Mike Pope				Lab Contact Ben Wozniak				Email 1: <input checked="" type="checkbox"/> Excel <input checked="" type="checkbox"/> PDF <input checked="" type="checkbox"/> EDD			
Email mike.pope@teck.com				Email Ben@brooksapplied.com				Email 2: <input checked="" type="checkbox"/> teckconf@coquitlam.ca <input checked="" type="checkbox"/> tecklab@coquitlam.ca <input checked="" type="checkbox"/> tecklabresults@teck.com <input checked="" type="checkbox"/> tecklab@teck.com <input checked="" type="checkbox"/> tecklab@teck.com			
Address 421 Pine Ave				Address 18804 North Creek Parkway				Email 3: <input checked="" type="checkbox"/> tecklabresults@teck.com <input checked="" type="checkbox"/> tecklab@teck.com <input checked="" type="checkbox"/> tecklab@teck.com			
City Sparwood Province BC				City Bothell Province WA				Email 4: <input checked="" type="checkbox"/> tecklab@teck.com <input checked="" type="checkbox"/> tecklab@teck.com <input checked="" type="checkbox"/> tecklab@teck.com			
Postal Code V0B 2G0 Country Canada				Postal Code 98011 Country United States				Email 5: <input checked="" type="checkbox"/> tecklab@teck.com <input checked="" type="checkbox"/> tecklab@teck.com <input checked="" type="checkbox"/> tecklab@teck.com			
Phone Number 250-425-8202				Phone Number (206) 753-6158				PO number 748540			

SAMPLE DETAILS								ANALYSIS REQUESTED												
Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	Brooks_Se_Speciation	Brooks_Se_D	Brooks_Se_T										
RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP	RG_ERCKMD	WS	No	2-Mar-22	13:30	G	1	1												
RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP-NAL	RG_ERCKMD	WS	No	2-Mar-22	13:30	G	2		1	1										
RG_ERCKUT_WS_LAEMP_EVO_2022-03_NP	RG_ERCKUT	WS	No	2-Mar-22	13:00	G	1	1												
RG_ERCKUT_WS_LAEMP_EVO_2022-03_NP-NAL	RG_ERCKUT	WS	No	2-Mar-22	13:00	G	2		1	1										
RG_ERCK_WS_LAEMP_EVO_2022-03_NP	RG_ERCK	WS	No	2-Mar-22	10:30	G	1	1												
RG_ERCK_WS_LAEMP_EVO_2022-03_NP-NAL	RG_ERCK	WS	No	2-Mar-22	10:30	G	2		1	1										
RG_ERCKDT_WS_LAEMP_EVO_2022-03_NP	RG_ERCKDT	WS	No	2-Mar-22	14:30	G	1	1												
RG_ERCKDT_WS_LAEMP_EVO_2022-03_NP-NAL	RG_ERCKDT	WS	No	2-Mar-22	14:30	G	2		1	1										
RG_MIDER_WS_LAEMP_EVO_2022-03_NP	RG_MIDER	WS	No	2-Mar-22	16:00	G	1	1												
RG_MIDER_WS_LAEMP_EVO_2022-03_NP-NAL	RG_MIDER	WS	No	2-Mar-22	16:00	G	2		1	1										

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
	Maddy Stokes - Minnow	March 8, 2022	ASG/BAL	3/10/22 7:00

SERVICE REQUEST (rush - subject to availability)	Sampler's Name	Mobile #
Regular (default) <input checked="" type="checkbox"/>	Maddy Stokes	647-522-0672
Priority (2-3 business days) - 50% surcharge		
Emergency (1 Business Day) - 100% surcharge		
For Emergency <1 Day, ASAP or Weekend - Contact ALS	Sampler's Signature	Date/Time
		March 8, 2022

COC ID:		REP_EVO LAEMP_2022_MAR_Brooks				TURNAROUND TIME:				RUSH:					
PROJECT/CLIENT INFO						LABORATORY				OTHER INFO					
Facility Name / Job# Regional Effects Program						Lab Name Brooks Applied Labs				Report Format / Distribution			Excel	PDF	EDD
Project Manager Mike Pope						Lab Contact Ben Wozniak				Email 1:			X	X	X
Email Mike.Pope@teck.com						Email Ben@brooksupplied.com				Email 2:			teckcoal@equisonline.com		X
Address 421 Pine Ave						Address 18804 North Creek Parkway				Email 3:			Teck Lab Results@teck.com	X	X
						Suite 100				Email 4:			AquaSciLab@teck.com	X	X
City Sparwood		Province BC				City Bothell		Province WA		Email 5:			tbowron@mlnnow.ca	X	X
Postal Code V0B 2G0		Country Canada				Postal Code 98011		Country United		Email 6:			mlnnow@teck.com	X	X
Phone Number 250-425-8202						Phone Number (206) 753-6158				PO number			748540		
SAMPLE DETAILS						ANALYSIS REQUESTED									
Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com p	# Of Cont.	Brooks_Se_Speciation	Brooks_Se_D	Brooks_Se_T					
RG_RIVER_WS_LAEMP_EVO_2022-03_NP	RG_RIVER	WS	No	2-Mar-22	16:00	G	1	1							
RG_RIVER_WS_LAEMP_EVO_2022-03_NP-NAL	RG_RIVER	WS	No	2-Mar-22	16:00	G	2		1	1					
ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS						RELINQUISHED BY/AFFILIATION			DATE/TIME		ACCEPTED BY/AFFILIATION		DATE/TIME		
											ASGIBAL		3/10/22 7:00		
SERVICE REQUEST (rush - subject to availability)															
Regular (default) X Priority (2-3 business days) - 50% surcharge Emergency (1 Business Day) - 100% surcharge For Emergency <1 Day, ASAP or Weekend - Contact ALS						Sampler's Name			MADDY STOKES		Mobile #		647 5220672		
						Sampler's Signature					Date/Time		8-MARCH-2022		

RW HOT SHOT SERVICE INC.

250-425-7447
24 Hour Hot Shot Service

No. 89789

STRAIGHT BILL OF LADING
NOT NEGOTIABLE

Sparwood, BC
Terrace, BC
Red Deer, AB

Vancouver, BC
Calgary, AB
Montreal, QC

Prince George, BC
Edmonton, AB
Spokane, WA

Elkford, BC
Ft. McMurray, AB
Shelby, MT

Tumbler Ridge, BC
Hinton, AB
Gillette, WY

DATE: Mar 9 22

INVOICE TO		PURCHASE ORDER NUMBER	
BILL OF LADING #		CONSIGNEE (TO)	
SHIPPER (FROM)		STREET	
STREET		CITY/PROVINCE	
CITY/PROVINCE		POSTAL CODE	
SPECIAL INSTRUCTIONS			
PACKAGES	DESCRIPTION OF ARTICLES AND SPECIAL MARKS	WEIGHT (Subject to Correction)	
DECLARED VALUATION: Maximum liability of carrier is \$2.00 per lb. (\$4.41 per kilogram) unless declared valuation states otherwise.		\$	
UNIT #	DRIVER'S SIGNATURE - DELIVERY BY	FINISH TIME	
174			
DRIVER'S SIGNATURE - PICK UP BY	PICK UP TIME		
	5:20pm		
<small>NOTICE OF CLAIM: (a) No carrier is liable for loss, damage or delay of any goods under the Bill of Lading unless notice, therefor setting out particulars of the origin, destination and date of shipment of the goods and the estimated amount claimed in respect of such loss, damage or delay is given in writing to the originating carrier or the delivering carrier within 90 days after the delivery of the goods, or the date of failure to make delivery within nine (9) months from the date of shipment. (b) The final statement of the claim must be filed within nine (9) months from the date of shipment. (c) The carrier agrees to carry and to deliver to the consignee at the destination, subject to the rates and classification in effect on the date of shipment, as indicated below, which the carrier agrees to carry and to deliver to the consignee at the destination, subject to the rates and classification in effect on the date of shipment. It is mutually agreed, as to each carrier of all or any of the goods over all or any portion of the route to destination, and as to each party of any time interested in all or any of the goods, that every service to be performed hereunder shall be subject to the conditions standard Bill of Lading, in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. The Contract for the carriage of the goods listed in the Bill of Lading is governed by regulation in force in the jurisdiction at the time and place of shipment and is subject to the conditions set out in such regulation.</small>			
SHIPPER PRINT	CONSIGNEE PRINT		
SHIPPER SIGN	CONSIGNEE SIGN		
WHITE: Office YELLOW: Carrier PINK: Consignee		GOLDENROAD: Shipper	
		GST # R64540398RT0001	

PAPS# RWHIV89789

FREIGHT CHARGES SHIPPER TO CHECK

PREPAID COLLECT

If not indicated, shipping will automatically move on

FEE _____

WAITING _____

XPU _____

CHARGES _____

FSC _____

US _____

SUB TOTAL _____

GST _____

TOTAL \$ _____

IF AT OWNER'S RISK, WRITE ORU HER.

DATE _____

TIME _____

NUMBER OF PIECES RECEIVED _____

AMGOS PRINTING

Cooler 1 (VIV) temperature: -1.6 IR: 31

Coolant Type: Ice Blue Ice Ambient

Notes:

Sampling Locations:	RG	F2	EV
Sample Types:	T/D 40ml glass	SP 125ml plastic	T/D 40ml glass
Container Types:	40ml glass	125ml plastic	40ml glass

Opened By: ASG Date: 3/10/22

COPY



2203150

From: [Tyler Mehler](#)
To: [Ethan Upp](#); mike.pope@teck.com; jess.ritz@teck.com; aquascilab@teck.com; [Lisa Bowron](#)
Cc: [Mariyeh Moradnzhad](#); [Jeremy Maute](#); [Anais Gentilhomme](#)
Subject: RE: Brooks Samples Received - WO (2203150) REP - Privileged and Confidential
Date: Friday, March 11, 2022 7:53:03 PM

Hi Ethan – please use 13:00. Thanks.

From: Ethan Upp <ethan@brooksapplied.com>
Sent: Friday, March 11, 2022 1:44 PM
To: mike.pope@teck.com; jess.ritz@teck.com; aquascilab@teck.com; [Lisa Bowron](#) <LBowron@minnow.ca>; [Tyler Mehler](mailto:tyler.mehler@minnow.ca) <tyler.mehler@minnow.ca>
Cc: [Mariyeh Moradnzhad](mailto:mariyeh@brooksapplied.com) <mariyeh@brooksapplied.com>; [Jeremy Maute](mailto:Jeremy@brooksapplied.com) <Jeremy@brooksapplied.com>; [Anais Gentilhomme](mailto:Anais@brooksapplied.com) <Anais@brooksapplied.com>
Subject: Brooks Samples Received - WO (2203150) REP - Privileged and Confidential

Good morning!

This is confirmation that samples from the REP project were received at Brooks Applied Labs on March 10, 2022. The samples were logged in for the following turnaround times (TATs):

WO#2203150 – (5-9 business day) TAT

The **Sample Time** value listed on the chain-of-custody (COC) form did not exactly match the corresponding **Sample Time** terms listed on container labels for samples in WO 2203150. The discrepancies are described in the table below.

Laboratory ID	Sample ID (From COC)	Sample Time (From	Sample Time (From	Analytical Parameter
---------------	-------------------------	----------------------	----------------------	----------------------

		<i>Container Label)</i>	<i>COC)</i>	
2203150-06	RG_ERCKUT_WS_LAEMP_EVO_2022-03_NP-NAL	12:00	13:00	Total Recoverable Se

The samples described the table above were logged in using the **Sample Time** terms listed on the COC form. Please let us know if you would have us report any of these samples in a different manner.

I've attached copies of the COC forms. If you have any questions, please contact the project manager, Jeremy Maute.

Best,

Ethan

Ethan Upp

Senior Laboratory Technician

email: ethan@brooksapplied.com

BROOKS APPLIED LABS

Meaningful Metals Data and Advanced Speciation Solutions

18804 North Creek Parkway, Suite 100, Bothell, WA 98011, USA

I acknowledge the Coast Salish people - past, present, and future - whose traditional lands and waters I live and work on.

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18804 North Creek Parkway, Ste 100, Bothell, WA 98011 • USA • T: 206 632 6206 F: 206 632 6017 • info@brooksapplied.com

March 30, 2022

Teck Resources Limited - Vancouver
Mike Pope
421 Pine Avenue
Sparwood, B.C. CANADA V0B2G0
mike.pope@teck.com

Re: Elkview Operations

Dear Mike Pope,

On March 10, 2022, Brooks Applied Labs (BAL) received two (2) aqueous samples. The samples were logged-in for total recoverable selenium [Se], dissolved Se [Se], and Se speciation analyses, according to the chain-of-custody (COC) form.

The sample fractions logged in for Se speciation and dissolved Se had been field-filtered prior to receipt at BAL; sample fractions for total recoverable and dissolved Se had also been preserved by the client prior to receipt. All samples were stored according to BAL SOPs.

Total Recoverable and Dissolved Se

Each aqueous sample fraction for total recoverable or dissolved Se was digested in a closed vessel (bomb) with nitric and hydrochloric acids. The resulting digests were analyzed for Se content via inductively coupled plasma triple quadrupole mass spectrometry (ICP-QQQ-MS). The ICP-QQQ-MS instrumentation uses advanced interference removal techniques to ensure accuracy of the sample results. For more information, please visit the *Interference Reduction Technology* section on our website, brooksapplied.com.

Selenium Speciation

Each aqueous sample was analyzed for selenium speciation using ion chromatography inductively coupled plasma collision reaction cell mass spectrometry (IC-ICP-CRC-MS). Selenium species are chromatographically separated on an ion exchange column and then quantified using inductively coupled plasma collision reaction cell mass spectrometry (ICP-CRC-MS); for more information on this determinative technique, please visit the *Interference Reduction Technology* section on our website. The chromatographic method applied for the analyses provides greater retention of methylseleninic acid and selenomethionine, allowing for more definitive quantitation of these species.

In accordance with the quotation issued for this project, selenium speciation was defined as dissolved selenite [Se(IV)], selenate [Se(VI)], selenocyanate [SeCN], methylseleninic acid [MeSe(IV)], methaneselenonic acid [MeSe(VI)], selenomethionine [SeMet], selenosulfate [SeSO₃], and dimethylselenoxide [DMSeO]. Unknown Se species was defined as the total concentration of

all unknown Se species observed during the analysis. This item is identified on the report as [*Unk Se Sp*].

DMS₂SeO elutes early in the chromatographic run due to the nature of the molecule and the applied chromatographic separation method. Since this species elutes near the dead volume, additional selenium species may coelute. Alternate methods can be applied, upon client request, to increase the separation of DMS₂SeO from potentially co-eluting selenium species.

Chromatographic interference, as indicated by an elevated baseline, or co-eluting peak, was observed for selenosulfate in 2203148-01. Due to potential bias, the affected result has been qualified as estimated (**J-1**). Upon client request, Brooks Applied Labs can apply a higher dilution to this sample to potentially mitigate the chromatographic interferences, but a higher dilution would elevate the detection limit for SeMet above the client's requested limit of 0.010 µg/L.

Poor mass balance was observed in *EV_EC_BRIDGE_WS_LAEMP_EVO_2022-03_NP* when the Se speciation results (2203148-01) were compared to corresponding dissolved Se result (2203148-03). It should be noted that the Se speciation results (2203148-01) were in good agreement with the corresponding total recoverable Se result (2203148-02). Container labels were checked and there was no indication of samples mis-labeled. Re-analyses confirmed the results. Consequently, no additional corrective actions are necessary. Results for these samples are reported from initial injections, and the reported results are deemed representative of the submitted containers.

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

In instances where a matrix spike/matrix spike duplicate (MS/MSD) set was spiked at a level less than the native sample concentration, the recoveries, and the relative percent difference (RPD) values are not considered valid indicators of data quality. In such instances, the recoveries of the laboratory fortified blanks (BS) and/or standard reference materials (SRM) demonstrate the accuracy of the applied methods. When the spiking level was less than 25% of the native sample concentration, the spike recovery was not reported (NR) and the relative percent difference (RPD) of the MS/MSD set was not calculated (N/C).

Except for concentration qualifiers and any items noted above, all data were reported without qualification. All associated quality control sample results met the acceptance criteria.

BAL, an accredited laboratory, certifies that the reported results of all analyses for which BAL is NELAP accredited meet all NELAP requirements. For more information, please see the *Report Information* page.

Please feel free to contact us if you have any questions regarding this report.

Sincerely,

A handwritten signature in black ink, appearing to read 'Jeremy Maute', written over a thin horizontal line.

Jeremy Maute
Senior Project Manager
Jeremy@brooksapplied.com



Report Information

Laboratory Accreditation

BAL is accredited by the *National Environmental Laboratory Accreditation Program* (NELAP) through the State of Florida Department of Health, Bureau of Laboratories (E87982) and is certified to perform many environmental analyses. BAL is also certified by many other states to perform environmental analyses. For a current list of our accreditations/certifications, please visit our website at <http://www.brooksapplied.com/resources/certificates-permits/> or review Tables 1 and 2 in our Accreditation Information. Results reported relate only to the samples listed in the report.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

AR	as received	MS	matrix spike
BAL	Brooks Applied Labs	MSD	matrix spike duplicate
BLK	method blank	ND	non-detect
BS	blank spike	NR	non-reportable
CAL	calibration standard	N/C	not calculated
CCB	continuing calibration blank	PS	post preparation spike
CCV	continuing calibration verification	REC	percent recovery
COC	chain of custody record	RPD	relative percent difference
D	dissolved fraction	SCV	secondary calibration verification
DUP	duplicate	SOP	standard operating procedure
IBL	instrument blank	SRM	reference material
ICV	initial calibration verification	T	total fraction
MDL	method detection limit	TR	total recoverable fraction
MRL	method reporting limit		

Definition of Data Qualifiers

(Effective 3/23/2020)

E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Please see narrative for explanation.
J	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1	Estimated value. A full explanation is presented in the narrative.
M	Duplicate precision (RPD) was not within acceptance criteria. Please see narrative for explanation.
N	Spike recovery was not within acceptance criteria. Please see narrative for explanation.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.
Z	Holding time and/or preservation requirements not established for this method; however, BAL recommendations for holding time were not followed. Please see narrative for explanation.

These qualifiers are based on those previously utilized by Brooks Applied Labs, those found in the EPA SOW ILM03.0, Exhibit B, Section III, pg. B-18, and the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review; USEPA; January 2010. These supersede all previous qualifiers ever employed by BAL.



Accreditation Information

Table 1. Accredited method/matrix/analytes for TNI
Issued by: State of Florida Dept. of Health (The NELAC Institute 2016 Standard)
Issued on: July 1, 2021; Valid to: June 30, 2022
Certificate Number: E87982-37

Method	Matrix	TNI Accredited Analyte(s)
EPA 1638	Non-Potable Waters	Ag, Cd, Cu, Ni, Pb, Sb, Se, Ti, Zn
EPA 200.8	Non-Potable Waters	Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Sb, Se, Ti, U, V, Zn
EPA 6020	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Ti, U, V, Zn
	Solids/Chemicals & Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Ti, V, Zn
BAL-5000	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, U, V, Zn, Hardness
	Solids/Chemicals	Ag, As, B, Be, Cd, Co, Cr, Cu, Pb, Mo, Ni, Sb, Se, Sn, Sr, Ti, V, Zn
	Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Ti, V, Zn
EPA 1640	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn
EPA 1631E	Non-Potable Waters, Solids/Chemicals & Biological	Total Mercury
EPA 1630	Non-Potable Waters	Methyl Mercury
BAL-3200	Solids/Chemicals & Biological	Methyl Mercury
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
BAL-4201	Non-Potable Waters	Se(IV), Se(VI)
BAL-4300	Non-Potable Waters Solid/Chemicals	Cr(VI)
SM2340B	Non-Potable Waters	Hardness



Accreditation Information

**Table 2. Accredited method/matrix/analytes for ISO (1),
 Non-Governmental TNI (2)**

Issued by: ANAB

Issued on: September 21, 2021; Valid to: March 30, 2024

Method	Matrix	ISO and Non-Gov. TNI Accredited Analyte(s)
EPA 1638 Mod EPA 200.8 Mod EPA 6020 Mod	Non-Potable Waters	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, U, V, Zn
BAL-5000	Solids/Chemicals & Biological	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, V, Zn Hg (Biological Only)
EPA 1640 Mod	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn Ag, As, Cr, Co, Se, Ti, V (ISO Only)
EPA 1631E Mod BAL-3100	Non-Potable Waters, Solids/Chemicals & Biological/Food	Total Mercury
EPA 1630 Mod BAL-3200	Non-Potable Waters, Solids/Chemicals Biological	Methyl Mercury
EPA 1632A Mod BAL-3300	Non-Potable Waters Biological/Food Solids/Chemicals	Inorganic Arsenic (ISO Only) Inorganic Arsenic (ISO Only)
AOAC 2015.01 Mod BAL-5000	Food	As, Cd, Hg, Pb
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
	Biological by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4101	Food by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4201	Non-Potable Waters	Se(IV), Se(VI), SeCN, SeMet
BAL-4300	Non-Potable Waters, Solid/Chemicals	Cr(VI)
SM 3500-Fe BAL-4500	Non-Potable Waters	Fe, Fe(II) (ISO Only)
SM2340B	Non-Potable Waters	Hardness
SM 2540G BAL-0501	Solids/Chemicals & Biological	% Dry Weight



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
EV_EC_BRIDGE_WS_LAEMP_EVO_2022-03_NP	2203148-01	WS	Sample	03/02/2022	03/10/2022
EV_EC_BRIDGE_WS_LAEMP_EVO_2022-03_NP-NAL	2203148-02	WS	Sample	03/02/2022	03/10/2022
EV_EC_BRIDGE_WS_LAEMP_EVO_2022-03_NP-NAL	2203148-03	WS	Sample	03/02/2022	03/10/2022

Batch Summary

Analyte	Lab Matrix	Method	Prepared	Analyzed	Batch	Sequence
DMSeO	Water	SOP BAL-4201	03/16/2022	03/16/2022	B220559	S220319
MeSe(IV)	Water	SOP BAL-4201	03/16/2022	03/16/2022	B220559	S220319
MeSe(VI)	Water	SOP BAL-4201	03/16/2022	03/16/2022	B220559	S220319
Se	Water	EPA 1638 Mod	03/14/2022	03/16/2022	B220573	S220322
Se(IV)	Water	SOP BAL-4201	03/16/2022	03/16/2022	B220559	S220319
Se(VI)	Water	SOP BAL-4201	03/16/2022	03/16/2022	B220559	S220319
SeCN	Water	SOP BAL-4201	03/16/2022	03/16/2022	B220559	S220319
SeMet	Water	SOP BAL-4201	03/16/2022	03/16/2022	B220559	S220319
SeSO3	Water	SOP BAL-4201	03/16/2022	03/16/2022	B220559	S220319
Unk Se Sp	Water	SOP BAL-4201	03/16/2022	03/16/2022	B220559	S220319



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>EV_EC_BRIDGE_WS_LAEMP_EVO_2022-03_NP</i>										
2203148-01	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B220559	S220319
2203148-01	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B220559	S220319
2203148-01	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B220559	S220319
2203148-01	Se(IV)	WS	D	0.046	J	0.010	0.075	µg/L	B220559	S220319
2203148-01	Se(VI)	WS	D	146		0.010	0.055	µg/L	B220559	S220319
2203148-01	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B220559	S220319
2203148-01	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B220559	S220319
2203148-01	SeSO ₃	WS	D	≤ 0.010	J-1 U	0.010	0.055	µg/L	B220559	S220319
2203148-01	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B220559	S220319
<i>EV_EC_BRIDGE_WS_LAEMP_EVO_2022-03_NP-NAL</i>										
2203148-02	Se	WS	TR	157		0.165	0.528	µg/L	B220573	S220322
<i>EV_EC_BRIDGE_WS_LAEMP_EVO_2022-03_NP-NAL</i>										
2203148-03	Se	WS	D	6.70		0.165	0.528	µg/L	B220573	S220322



Accuracy & Precision Summary

Batch: B220559
Lab Matrix: Water
Method: SOP BAL-4201

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B220559-BS1	Blank Spike, (2124033)						
	MeSe(IV)		5.095	5.190	µg/L	102% 75-125	
	Se(IV)		5.000	4.732	µg/L	95% 75-125	
	Se(VI)		5.000	4.507	µg/L	90% 75-125	
	SeCN		5.015	4.668	µg/L	93% 75-125	
	SeMet		4.932	4.727	µg/L	96% 75-125	
B220559-DUP3	Duplicate, (2203148-01)						
	DMSeO	ND		ND	µg/L		N/C 25
	MeSe(IV)	ND		ND	µg/L		N/C 25
	MeSe(VI)	ND		ND	µg/L		N/C 25
	Se(IV)	0.046		0.047	µg/L		2% 25
	Se(VI)	146.4		150.1	µg/L		2% 25
	SeCN	ND		ND	µg/L		N/C 25
	SeMet	ND		ND	µg/L		N/C 25
	SeSO3	ND		ND	µg/L		N/C 25
	Unk Se Sp	ND		ND	µg/L		N/C 25
B220559-MS3	Matrix Spike, (2203148-01)						
	Se(IV)	0.046	4.900	4.678	µg/L	95% 75-125	
	Se(VI)	146.4	5.100	152.6	µg/L	NR 75-125	
	SeCN	ND	1.962	1.709	µg/L	87% 75-125	
	SeMet	ND	1.977	1.792	µg/L	91% 75-125	
B220559-MSD3	Matrix Spike Duplicate, (2203148-01)						
	Se(IV)	0.046	4.900	4.702	µg/L	95% 75-125	0.5% 25
	Se(VI)	146.4	5.100	152.6	µg/L	NR 75-125	N/C 25
	SeCN	ND	1.962	1.753	µg/L	89% 75-125	3% 25
	SeMet	ND	1.977	1.831	µg/L	93% 75-125	2% 25



Accuracy & Precision Summary

Batch: B220573
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B220573-BS1	Blank Spike, (2128022) Se		200.0	195.2	µg/L	98% 75-125	
B220573-BS2	Blank Spike, (2128022) Se		200.0	195.0	µg/L	98% 75-125	
B220573-SRM1	Reference Material (2145006, TMDA 51.5 Reference Standard - Bottle 5 - SRM) Se		14.30	14.37	µg/L	101% 75-125	
B220573-SRM2	Reference Material (2145006, TMDA 51.5 Reference Standard - Bottle 5 - SRM) Se		14.30	13.96	µg/L	98% 75-125	
B220573-DUP1	Duplicate, (2203148-02) Se	157.0		159.1	µg/L		1% 20
B220573-MS1	Matrix Spike, (2203148-02) Se	157.0	220.0	363.6	µg/L	94% 75-125	
B220573-MSD1	Matrix Spike Duplicate, (2203148-02) Se	157.0	220.0	365.1	µg/L	95% 75-125	0.4% 20



Method Blanks & Reporting Limits

Batch: B220559
Matrix: Water
Method: SOP BAL-4201
Analyte: DMSeO

Sample	Result	Units	
B220559-BLK1	0.00	µg/L	
B220559-BLK2	0.00	µg/L	
B220559-BLK3	0.00	µg/L	
B220559-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.005		MRL: 0.005

Analyte: MeSe(IV)

Sample	Result	Units	
B220559-BLK1	0.00	µg/L	
B220559-BLK2	0.00	µg/L	
B220559-BLK3	0.00	µg/L	
B220559-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.005		MRL: 0.005

Analyte: MeSe(VI)

Sample	Result	Units	
B220559-BLK1	0.00	µg/L	
B220559-BLK2	0.00	µg/L	
B220559-BLK3	0.00	µg/L	
B220559-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.005		MRL: 0.005



Method Blanks & Reporting Limits

Analyte: Se(IV)

Sample	Result	Units	
B220559-BLK1	0.00	µg/L	
B220559-BLK2	0.00	µg/L	
B220559-BLK3	0.00	µg/L	
B220559-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.015		MRL: 0.015

Analyte: Se(VI)

Sample	Result	Units	
B220559-BLK1	0.00	µg/L	
B220559-BLK2	0.00	µg/L	
B220559-BLK3	0.00	µg/L	
B220559-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.011		MRL: 0.011

Analyte: SeCN

Sample	Result	Units	
B220559-BLK1	0.00	µg/L	
B220559-BLK2	0.00	µg/L	
B220559-BLK3	0.00	µg/L	
B220559-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.010		MRL: 0.010

Analyte: SeMet

Sample	Result	Units	
B220559-BLK1	0.00	µg/L	
B220559-BLK2	0.00	µg/L	
B220559-BLK3	0.00	µg/L	
B220559-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.005		MRL: 0.005



Method Blanks & Reporting Limits

Analyte: SeSO3

Sample	Result	Units	
B220559-BLK1	0.00	µg/L	
B220559-BLK2	0.00	µg/L	
B220559-BLK3	0.00	µg/L	
B220559-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.011		MRL: 0.011

Analyte: Unk Se Sp

Sample	Result	Units	
B220559-BLK1	0.00	µg/L	
B220559-BLK2	0.00	µg/L	
B220559-BLK3	0.00	µg/L	
B220559-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.015		MRL: 0.015



Method Blanks & Reporting Limits

Batch: B220573
Matrix: Water
Method: EPA 1638 Mod
Analyte: Se

Sample	Result	Units	
B220573-BLK1	0.453	µg/L	
B220573-BLK2	0.347	µg/L	
B220573-BLK3	0.327	µg/L	
B220573-BLK4	0.445	µg/L	
Average:	0.393		MDL: 0.150
Limit:	0.480		MRL: 0.480



Sample Containers

Lab ID: 2203148-01

Report Matrix: WS

Collected: 03/02/2022

Sample:

Sample Type: Sample + Sum

Received: 03/10/2022

EV_EC_BRIDGE_WS_LAEMP_EVO_2022-03_NP

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2203148
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2203148
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 1 - 2203148

Lab ID: 2203148-02

Report Matrix: WS

Collected: 03/02/2022

Sample:

Sample Type: Sample + Sum

Received: 03/10/2022

EV_EC_BRIDGE_WS_LAEMP_EVO_2022-03_NP-NAL

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2142029	<2	Cooler 1 - 2203148

Lab ID: 2203148-03

Report Matrix: WS

Collected: 03/02/2022

Sample:

Sample Type: Sample + Sum

Received: 03/10/2022

EV_EC_BRIDGE_WS_LAEMP_EVO_2022-03_NP-NAL

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2142029	<2	Cooler 1 - 2203148

Shipping Containers

Cooler 1 - 2203148

Received: March 10, 2022 7:00

Tracking No: PAPS#RWHV89789 via Courier

Coolant Type: Blue Ice

Temperature: 1.6 °C

Description: Styrofoam Cooler

Damaged in transit? No

Returned to client? No

Comments: IR 31

Custody seals present? No

Custody seals intact? No

COC present? Yes



COC ID:		EV_EVO LAEMP_2022_MAR_Brooks				TURNAROUND TIME:				RUSH:						
PROJECT/CLIENT INFO								LABORATORY				OTHER INFO				
Facility Name / Job# Elkview Operations								Lab Name Brooks Applied Labs				Report Format / Distribution				
Project Manager Mike Pope								Lab Contact Ben Wozniak				Email 1: <input type="checkbox"/> Excel <input type="checkbox"/> PDF <input type="checkbox"/> EDD				
Email mcp@teck.com								Email Ben@brooksapplied.com				Email 2: <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>				
Address 421 Pine Ave								Address 18804 North Creek Parkway				Email 3: <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>				
City Sparwood Province BC								Suite 100				Email 4: <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>				
Postal Code V0B 2G0 Country Canada								City Bothell Province WA				Email 5: <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>				
Phone Number 250-425-8202								Postal Code 98011 Country United States				Email 6: <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>				
								Phone Number (206) 753-6158				PO number 748540				
SAMPLE DETAILS								ANALYSIS REQUESTED								
Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com p	# Of Cont.	Brooks_Se_Speciation	Brooks_Se_D	Brooks_Se_T						
EV_EC_BRIDGE_WS_LAEMP_EVO_2022-03_NP	EV_EC_BRIDGE	WS	No	2-Mar-22	13:30	G	1	1								
EV_EC_BRIDGE_WS_LAEMP_EVO_2022-03_NP-NAL	EV_EC_BRIDGE	WS	NO	2-Mar-22	13:30	G	2		1	1						
ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS								RELINQUISHED BY/AFFILIATION		DATE/TIME		ACCEPTED BY/AFFILIATION		DATE/TIME		
								Maddy Stokes - Minnow		March 8, 2022		ASG/BAL		3/10/22 7:00		
SERVICE REQUEST (rush - subject to availability)								Sampler's Name		Mobile #		Sampler's Signature		Date/Time		
Regular (default) <input checked="" type="checkbox"/>								Maddy Stokes		647-522-0672				March 8, 2022		
Priority (2-3 business days) - 50% surcharge																
Emergency (1 Business Day) - 100% surcharge																
For Emergency <1 Day, ASAP or Weekend - Contact ALS																

RW HOT SHOT SERVICE INC.

250-425-7447
24 Hour Hot Shot Service

No. 89789

STRAIGHT BILL OF LADING
NOT NEGOTIABLE

Sparwood, BC
Terrace, BC
Red Deer, AB

Vancouver, BC
Calgary, AB
Montreal, QC

Prince George, BC
Edmonton, AB
Spokane, WA

Elkford, BC
Ft. McMurray, AB
Shelby, MT

Tumbler Ridge, BC
Hinton, AB
Gillette, WY

INVOICE TO		PURCHASE ORDER NUMBER	
BILL OF LADING #		CONSIGNEE (TO)	
SHIPPER (FROM)		STREET	
STREET		CITY/PROVINCE	
CITY/PROVINCE		POSTAL CODE	POSTAL CODE
SPECIAL INSTRUCTIONS			
PACKAGES	DESCRIPTION OF ARTICLES AND SPECIAL MARKS	WEIGHT (Subject to Correction)	FREIGHT CHARGES SHIPPER TO CHECK
			<input type="checkbox"/> PREPAID <input type="checkbox"/> COLLECT
			If not indicated, shipping will automatically move out
			FEE
			WAITING
			XPU
			CHARGES
			FSC
			US
			SUB TOTAL
			GST
			TOTAL \$
			IF AT OWNER'S RISK, WRITE ORU HER.
UNIT #	DECLARED VALUATION: Maximum liability of carrier is \$2.00 per lb. (\$4.41 per kilogram) unless declared valuation states otherwise.	DRIVER'S SIGNATURE - DELIVERY BY	FINISH TIME
174			
DRIVER'S SIGNATURE - PICK UP BY	PICK UP TIME	NOTICE OF CLAIM: (a) No carrier is liable for loss, damage or delay of any goods under the Bill of Lading unless notice, together setting out particulars of the origin, destination and date of shipment of the goods and the estimated amount claimed in respect of such loss, damage or delay is given in writing to the originating carrier or the delivering carrier within 90 days after the delivery of the goods, or in the case of failure to make delivery within nine (9) months from the date of shipment. (b) The final statement of the claim must be filed within nine (9) months from the date of shipment. (c) The carrier shall not be liable for loss, damage or delay of any goods unless the goods are properly marked, consigned and RECEIVED at the point of origin on the date specified from the consignor mentioned herein and the proper person described in the consignment order except as noted (contents and condition of contents of packages unknown) marked, consigned and destined as indicated below, which the carrier agrees to carry and to deliver to the consignee at the said destination, subject to the rates and classification in effect on the date of shipment. It is mutually agreed, as to each carrier of all or any of the goods over all or any portion of the route to destination, and as to each party at any time interested in all or any of the goods, that every service to be performed hereunder shall be subject to the conditions standard Bill of Lading, in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. The Contract for the carriage of the goods listed in the Bill of Lading is governed by regulation in force in the jurisdiction at the time and place of shipment and is subject to the conditions set out in such conditions.	
	5:20pm		
SHIPPER PRINT	CONSIGNEE PRINT	DATE	
		2-10-12	
SHIPPER SIGN	CONSIGNEE SIGN	TIME	
		3:00	
WHITE: Office YELLOW: Carrier PINK: Consignee		NUMBER OF PIECES RECEIVED	
		4	
		GOLDENROAD: Shipper	
		GST # 854540398RT0001	

PAPS# RWHV89789

AMIGOS PRINTING
Cooler 1

Coolant Type: Ice Blue Ice Ambient

Notes:

Sampling Locations:

Sample Types:

Container Types:

Opened By: ASG

PG	F2	EV					
T/D	SP	T/D	SP	T/D	SP	T/D	SP
40ml glass	125ml plastic	40ml glass	40ml plastic	40ml glass	125ml plastic		
	40ml plastic						

Date: 3/10/12



2203148

Effective 7/29/20



18804 North Creek Parkway, Ste 100, Bothell, WA 98011 • USA • T: 206 632 6206 F: 206 632 6017 • info@brooksapplied.com

March 31, 2022

Teck Resources Limited - Vancouver
 Mike Pope
 421 Pine Avenue
 Sparwood, B.C. CANADA V0B2G0
mike.pope@teck.com

Re: F2 SRF

Revision 1:

The client made a request to amend the **Sample ID** and **Sample Location (sys_loc_code)** values for samples 2203149-01, 2203149-02, and 2203149-03. In this revised report, the **Sample ID** and **Sample Location (sys_loc_code)** values for 2203149-01, 2203149-02, and 2203149-03 were amended for reporting, according to the table provided below. No other changes were made, with respect to the original report issued on March 30, 2022.

Dear Mike Pope,

On March 10, 2022, Brooks Applied Labs (BAL) received two (2) aqueous samples. The samples were logged-in for total recoverable selenium [Se], dissolved Se [Se], and Se speciation analyses, according to the chain-of-custody (COC) form.

The client made a request to amend the **Sample ID** and **Sample Location (sys_loc_code)** values for samples 2203149-01, 2203149-02, and 2203149-03. **Sample ID** and **Sample Location (sys_loc_code)** values undergoing these changes are described in the table below.

Laboratory ID	Sample ID (<i>listed on COC form</i>)	Sample ID (<i>used for reporting</i>)	Sample Location (sys_loc_code) (<i>used for reporting</i>)
2203149-01	F2_OUT_WS_LAEMP_EVO_2 022-03_NP	F2_OUTF_WS_LAEMP_EVO_2 022-03_NP	F2_OUTF
2203149-02	F2_OUT_WS_LAEMP_EVO_2 022-03_NP-NAL	F2_OUTF_WS_LAEMP_EVO_2 022-03_NP-NAL	F2_OUTF
2203149-03	F2_OUT_WS_LAEMP_EVO_2 022-03_NP-NAL	F2_OUTF_WS_LAEMP_EVO_2 022-03_NP-NAL	F2_OUTF

Sample ID and **Sample Location (sys_loc_code)** values for 2203149-01, 2203149-02, and 2203149-03 were amended for reporting, according to the table provided above.

The sample fractions logged in for Se speciation and dissolved Se had been field-filtered prior to receipt at BAL; sample fractions for total recoverable and dissolved Se had also been preserved by the client prior to receipt. All samples were stored according to BAL SOPs.

Total Recoverable and Dissolved Se

Each aqueous sample fraction for total recoverable or dissolved Se was digested in a closed vessel (bomb) with nitric and hydrochloric acids. The resulting digests were analyzed for Se content via inductively coupled plasma triple quadrupole mass spectrometry (ICP-QQQ-MS). The ICP-QQQ-MS instrumentation uses advanced interference removal techniques to ensure accuracy of the sample results. For more information, please visit the *Interference Reduction Technology* section on our website, brooksapplied.com.

Selenium Speciation

Each aqueous sample was analyzed for selenium speciation using ion chromatography inductively coupled plasma collision reaction cell mass spectrometry (IC-ICP-CRC-MS). Selenium species are chromatographically separated on an ion exchange column and then quantified using inductively coupled plasma collision reaction cell mass spectrometry (ICP-CRC-MS); for more information on this determinative technique, please visit the *Interference Reduction Technology* section on our website. The chromatographic method applied for the analyses provides greater retention of methylseleninic acid and selenomethionine, allowing for more definitive quantitation of these species.

In accordance with the quotation issued for this project, selenium speciation was defined as dissolved selenite [Se(IV)], selenate [Se(VI)], selenocyanate [SeCM], methylseleninic acid [MeSe(IV)], methaneselenonic acid [MeSe(VI)], selenomethionine [SeMet], selenosulfate [SeSO₃], and dimethylselenoxide [DMSeO]. Unknown Se species was defined as the total concentration of all unknown Se species observed during the analysis. This item is identified on the report as [Unk Se Sp].

DMSeO elutes early in the chromatographic run due to the nature of the molecule and the applied chromatographic separation method. Since this species elutes near the dead volume, additional selenium species may coelute. Alternate methods can be applied, upon client request, to increase the separation of DMSeO from potentially co-eluting selenium species.

Poor mass balance was observed in *F2_OUT_WS_LAEMP_EVO_2022-03_NP* when the Se speciation results (2203149-01) were compared to corresponding dissolved Se result (2203149-02). It should be noted that the Se speciation results (2203149-01) showed better agreement with the corresponding total recoverable Se result (2203149-03). Container labels were checked and there was no indication of samples mis-labeled. Re-analyses confirmed the results. Consequently, no additional corrective actions are necessary. Results for these samples are reported from initial injections, and the reported results are deemed representative of the submitted containers.

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

In instances where a matrix spike/matrix spike duplicate (MS/MSD) set was spiked at a level less than the native sample concentration, the recoveries, and the relative percent difference (RPD) values are not considered valid indicators of data quality. In such instances, the recoveries of the

laboratory fortified blanks (BS) and/or standard reference materials (SRM) demonstrate the accuracy of the applied methods. When the spiking level was less than 25% of the native sample concentration, the spike recovery was not reported (NR) and the relative percent difference (RPD) of the MS/MSD set was not calculated (N/C).

Except for concentration qualifiers, all data were reported without qualification. All associated quality control sample results met the acceptance criteria.

BAL, an accredited laboratory, certifies that the reported results of all analyses for which BAL is NELAP accredited meet all NELAP requirements. For more information, please see the *Report Information* page.

Please feel free to contact us if you have any questions regarding this report.

Sincerely,

A handwritten signature in black ink, appearing to read 'Jeremy Maute', is positioned above the typed name.

Jeremy Maute
Senior Project Manager
Jeremy@brooksapplied.com



Report Information

Laboratory Accreditation

BAL is accredited by the *National Environmental Laboratory Accreditation Program* (NELAP) through the State of Florida Department of Health, Bureau of Laboratories (E87982) and is certified to perform many environmental analyses. BAL is also certified by many other states to perform environmental analyses. For a current list of our accreditations/certifications, please visit our website at <http://www.brooksapplied.com/resources/certificates-permits/> or review Tables 1 and 2 in our Accreditation Information. Results reported relate only to the samples listed in the report.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

AR	as received	MS	matrix spike
BAL	Brooks Applied Labs	MSD	matrix spike duplicate
BLK	method blank	ND	non-detect
BS	blank spike	NR	non-reportable
CAL	calibration standard	N/C	not calculated
CCB	continuing calibration blank	PS	post preparation spike
CCV	continuing calibration verification	REC	percent recovery
COC	chain of custody record	RPD	relative percent difference
D	dissolved fraction	SCV	secondary calibration verification
DUP	duplicate	SOP	standard operating procedure
IBL	instrument blank	SRM	reference material
ICV	initial calibration verification	T	total fraction
MDL	method detection limit	TR	total recoverable fraction
MRL	method reporting limit		

Definition of Data Qualifiers

(Effective 3/23/2020)

E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Please see narrative for explanation.
J	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1	Estimated value. A full explanation is presented in the narrative.
M	Duplicate precision (RPD) was not within acceptance criteria. Please see narrative for explanation.
N	Spike recovery was not within acceptance criteria. Please see narrative for explanation.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.
Z	Holding time and/or preservation requirements not established for this method; however, BAL recommendations for holding time were not followed. Please see narrative for explanation.

These qualifiers are based on those previously utilized by Brooks Applied Labs, those found in the EPA SOW ILM03.0, Exhibit B, Section III, pg. B-18, and the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review; USEPA; January 2010. These supersede all previous qualifiers ever employed by BAL.



Accreditation Information

Table 1. Accredited method/matrix/analytes for TNI
Issued by: State of Florida Dept. of Health (The NELAC Institute 2016 Standard)
Issued on: July 1, 2021; Valid to: June 30, 2022
Certificate Number: E87982-37

Method	Matrix	TNI Accredited Analyte(s)
EPA 1638	Non-Potable Waters	Ag, Cd, Cu, Ni, Pb, Sb, Se, Ti, Zn
EPA 200.8	Non-Potable Waters	Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Sb, Se, Ti, U, V, Zn
EPA 6020	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Ti, U, V, Zn
	Solids/Chemicals & Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Ti, V, Zn
BAL-5000	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, U, V, Zn, Hardness
	Solids/Chemicals	Ag, As, B, Be, Cd, Co, Cr, Cu, Pb, Mo, Ni, Sb, Se, Sn, Sr, Ti, V, Zn
	Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Ti, V, Zn
EPA 1640	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn
EPA 1631E	Non-Potable Waters, Solids/Chemicals & Biological	Total Mercury
EPA 1630	Non-Potable Waters	Methyl Mercury
BAL-3200	Solids/Chemicals & Biological	Methyl Mercury
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
BAL-4201	Non-Potable Waters	Se(IV), Se(VI)
BAL-4300	Non-Potable Waters Solid/Chemicals	Cr(VI)
SM2340B	Non-Potable Waters	Hardness



Accreditation Information

**Table 2. Accredited method/matrix/analytes for ISO (1),
 Non-Governmental TNI (2)**

Issued by: ANAB

Issued on: September 21, 2021; Valid to: March 30, 2024

Method	Matrix	ISO and Non-Gov. TNI Accredited Analyte(s)
EPA 1638 Mod EPA 200.8 Mod EPA 6020 Mod	Non-Potable Waters	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, U, V, Zn
BAL-5000	Solids/Chemicals & Biological	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, V, Zn Hg (Biological Only)
EPA 1640 Mod	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn Ag, As, Cr, Co, Se, Ti, V (ISO Only)
EPA 1631E Mod BAL-3100	Non-Potable Waters, Solids/Chemicals & Biological/Food	Total Mercury
EPA 1630 Mod BAL-3200	Non-Potable Waters, Solids/Chemicals Biological	Methyl Mercury
EPA 1632A Mod BAL-3300	Non-Potable Waters Biological/Food Solids/Chemicals	Inorganic Arsenic (ISO Only) Inorganic Arsenic (ISO Only)
AOAC 2015.01 Mod BAL-5000	Food	As, Cd, Hg, Pb
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
	Biological by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4101	Food by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4201	Non-Potable Waters	Se(IV), Se(VI), SeCN, SeMet
BAL-4300	Non-Potable Waters, Solid/Chemicals	Cr(VI)
SM 3500-Fe BAL-4500	Non-Potable Waters	Fe, Fe(II) (ISO Only)
SM2340B	Non-Potable Waters	Hardness
SM 2540G BAL-0501	Solids/Chemicals & Biological	% Dry Weight



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
F2_OUTF_WS_LAEMP_EVO_2022-03_NP	2203149-01	WS	Sample	03/02/2022	03/10/2022
F2_OUTF_WS_LAEMP_EVO_2022-03_NP-NAL	2203149-02	WS	Sample	03/02/2022	03/10/2022
F2_OUTF_WS_LAEMP_EVO_2022-03_NP-NAL	2203149-03	WS	Sample	03/02/2022	03/10/2022

Batch Summary

Analyte	Lab Matrix	Method	Prepared	Analyzed	Batch	Sequence
DMS ₂ SeO	Water	SOP BAL-4201	03/17/2022	03/19/2022	B220592	S220323
MeSe(IV)	Water	SOP BAL-4201	03/17/2022	03/19/2022	B220592	S220323
MeSe(VI)	Water	SOP BAL-4201	03/17/2022	03/19/2022	B220592	S220323
Se	Water	EPA 1638 Mod	03/14/2022	03/16/2022	B220573	S220322
Se(IV)	Water	SOP BAL-4201	03/17/2022	03/19/2022	B220592	S220323
Se(VI)	Water	SOP BAL-4201	03/17/2022	03/19/2022	B220592	S220323
SeCN	Water	SOP BAL-4201	03/17/2022	03/19/2022	B220592	S220323
SeMet	Water	SOP BAL-4201	03/17/2022	03/19/2022	B220592	S220323
SeSO ₃	Water	SOP BAL-4201	03/17/2022	03/19/2022	B220592	S220323
Unk Se Sp	Water	SOP BAL-4201	03/17/2022	03/19/2022	B220592	S220323



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
F2_OUTF_WS_LAEMP_EVO_2022-03_NP										
2203149-01	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B220592	S220323
2203149-01	MeSe(IV)	WS	D	0.011	J	0.010	0.025	µg/L	B220592	S220323
2203149-01	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B220592	S220323
2203149-01	Se(IV)	WS	D	1.35		0.010	0.075	µg/L	B220592	S220323
2203149-01	Se(VI)	WS	D	3.41		0.010	0.055	µg/L	B220592	S220323
2203149-01	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B220592	S220323
2203149-01	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B220592	S220323
2203149-01	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B220592	S220323
2203149-01	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B220592	S220323
F2_OUTF_WS_LAEMP_EVO_2022-03_NP-NAL										
2203149-02	Se	WS	D	154		0.165	0.528	µg/L	B220573	S220322
F2_OUTF_WS_LAEMP_EVO_2022-03_NP-NAL										
2203149-03	Se	WS	TR	6.88		0.165	0.528	µg/L	B220573	S220322



Accuracy & Precision Summary

Batch: B220573
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B220573-BS1	Blank Spike, (2128022) Se		200.0	195.2	µg/L	98% 75-125	
B220573-BS2	Blank Spike, (2128022) Se		200.0	195.0	µg/L	98% 75-125	
B220573-SRM1	Reference Material (2145006, TMDA 51.5 Reference Standard - Bottle 5 - SRM) Se		14.30	14.37	µg/L	101% 75-125	
B220573-SRM2	Reference Material (2145006, TMDA 51.5 Reference Standard - Bottle 5 - SRM) Se		14.30	13.96	µg/L	98% 75-125	
B220573-DUP2	Duplicate, (2203149-03) Se	6.883		7.433	µg/L		8% 20
B220573-MS2	Matrix Spike, (2203149-03) Se	6.883	220.0	222.2	µg/L	98% 75-125	
B220573-MSD2	Matrix Spike Duplicate, (2203149-03) Se	6.883	220.0	214.7	µg/L	94% 75-125	3% 20



Accuracy & Precision Summary

Batch: B220592
Lab Matrix: Water
Method: SOP BAL-4201

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B220592-BS1	Blank Spike, (2124033)						
	MeSe(IV)		5.095	5.443	µg/L	107% 75-125	
	Se(IV)		5.000	4.900	µg/L	98% 75-125	
	Se(VI)		5.000	4.722	µg/L	94% 75-125	
	SeCN		5.015	4.820	µg/L	96% 75-125	
	SeMet		4.932	5.093	µg/L	103% 75-125	
B220592-DUP1	Duplicate, (2203146-14)						
	DMSeO	ND		ND	µg/L		N/C 25
	MeSe(IV)	ND		ND	µg/L		N/C 25
	MeSe(VI)	ND		ND	µg/L		N/C 25
	Se(IV)	1.385		1.406	µg/L		2% 25
	Se(VI)	3.841		3.923	µg/L		2% 25
	SeCN	0.028		0.018	µg/L		43% 25
	SeMet	ND		ND	µg/L		N/C 25
	SeSO3	ND		ND	µg/L		N/C 25
	Unk Se Sp	ND		ND	µg/L		N/C 25
B220592-MS1	Matrix Spike, (2203146-14)						
	Se(IV)	1.385	4.900	6.126	µg/L	97% 75-125	
	Se(VI)	3.841	5.100	8.658	µg/L	94% 75-125	
	SeCN	0.028	1.962	1.810	µg/L	91% 75-125	
	SeMet	ND	1.977	1.895	µg/L	96% 75-125	
B220592-MSD1	Matrix Spike Duplicate, (2203146-14)						
	Se(IV)	1.385	4.900	6.153	µg/L	97% 75-125	0.4% 25
	Se(VI)	3.841	5.100	8.576	µg/L	93% 75-125	0.9% 25
	SeCN	0.028	1.962	1.786	µg/L	90% 75-125	1% 25
	SeMet	ND	1.977	1.875	µg/L	95% 75-125	1% 25



Method Blanks & Reporting Limits

Batch: B220573
Matrix: Water
Method: EPA 1638 Mod
Analyte: Se

Sample	Result	Units	
B220573-BLK1	0.453	µg/L	
B220573-BLK2	0.347	µg/L	
B220573-BLK3	0.327	µg/L	
B220573-BLK4	0.445	µg/L	
Average:	0.393		MDL: 0.150
Limit:	0.480		MRL: 0.480



Method Blanks & Reporting Limits

Batch: B220592
Matrix: Water
Method: SOP BAL-4201
Analyte: DMSeO

Sample	Result	Units	
B220592-BLK1	0.00	µg/L	
B220592-BLK2	0.00	µg/L	
B220592-BLK3	0.00	µg/L	
B220592-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005

Analyte: MeSe(IV)

Sample	Result	Units	
B220592-BLK1	0.00	µg/L	
B220592-BLK2	0.00	µg/L	
B220592-BLK3	0.00	µg/L	
B220592-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005

Analyte: MeSe(VI)

Sample	Result	Units	
B220592-BLK1	0.00	µg/L	
B220592-BLK2	0.00	µg/L	
B220592-BLK3	0.00	µg/L	
B220592-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005



Method Blanks & Reporting Limits

Analyte: Se(IV)

Sample	Result	Units	
B220592-BLK1	0.00	µg/L	
B220592-BLK2	0.00	µg/L	
B220592-BLK3	0.00	µg/L	
B220592-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.015		MRL: 0.015

Analyte: Se(VI)

Sample	Result	Units	
B220592-BLK1	0.00	µg/L	
B220592-BLK2	0.00	µg/L	
B220592-BLK3	0.00	µg/L	
B220592-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.011		MRL: 0.011

Analyte: SeCN

Sample	Result	Units	
B220592-BLK1	0.00	µg/L	
B220592-BLK2	0.00	µg/L	
B220592-BLK3	0.00	µg/L	
B220592-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.010		MRL: 0.010

Analyte: SeMet

Sample	Result	Units	
B220592-BLK1	0.00	µg/L	
B220592-BLK2	0.00	µg/L	
B220592-BLK3	0.00	µg/L	
B220592-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.005		MRL: 0.005



Method Blanks & Reporting Limits

Analyte: SeSO3

Sample	Result	Units	
B220592-BLK1	0.00	µg/L	
B220592-BLK2	0.00	µg/L	
B220592-BLK3	0.00	µg/L	
B220592-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.011		MRL: 0.011

Analyte: Unk Se Sp

Sample	Result	Units	
B220592-BLK1	0.00	µg/L	
B220592-BLK2	0.00	µg/L	
B220592-BLK3	0.00	µg/L	
B220592-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.015		MRL: 0.015



Sample Containers

Lab ID: 2203149-01				Report Matrix: WS			Collected: 03/02/2022	
Sample: F2_OUTF_WS_LAEMP_EVO_2022-03_NP				Sample Type: Sample + Sum			Received: 03/10/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2203149	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2203149	
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 1 - 2203149	

Lab ID: 2203149-02				Report Matrix: WS			Collected: 03/02/2022	
Sample: F2_OUTF_WS_LAEMP_EVO_2022-03_NP-NAL				Sample Type: Sample + Sum			Received: 03/10/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2142029	<2	Cooler 1 - 2203149	

Lab ID: 2203149-03				Report Matrix: WS			Collected: 03/02/2022	
Sample: F2_OUTF_WS_LAEMP_EVO_2022-03_NP-NAL				Sample Type: Sample + Sum			Received: 03/10/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2142029	<2	Cooler 1 - 2203149	

Shipping Containers

Cooler 1 - 2203149

Received: March 10, 2022 7:00
Tracking No: PAPS#RWHV89789 via Courier
Coolant Type: Blue Ice
Temperature: 1.6 °C

Description: Cooler 1
Damaged in transit? No
Returned to client? No
Comments: IR #31

Custody seals present? No
Custody seals intact? No
COC present? Yes



COC ID: **F2_EVO LAEMP_2022_MAR_Brooks** TURNAROUND TIME: RUSH:

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name / Job#	F2 SRF			Lab Name	Brooks Applied Labs			Report Format / Distribution	Excel	PDF	EDD
Project Manager	Mike Pope			Lab Contact	Ben Wozniak			Email 1:	X	X	X
Email	m.pope@teck.com			Email	Ben@brooksapplied.com			Email 2:	teckcoal@brooksapplied.com		
Address	421 Pine Ave			Address	18804 North Creek Parkway			Email 3:	Teck.Lab.Results@teck.com	X	X
					Suite 100			Email 4:	AquaSci.Lab@teck.com	X	X
City	Sparwood	Province	BC	City	Bothell	Province	WA	Email 5:	brooks@minnow.ca	X	X
Postal Code	V0B 2G0	Country	Canada	Postal Code	98011	Country	United States	Email 6:		X	X
Phone Number	587-215-8447			Phone Number	(206) 753-6158			PO number	748540		

SAMPLE DETAILS								ANALYSIS REQUESTED						
Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com p	# Of Cont.	Brooks_Se_Speciation	Brooks_Se_D	Brooks_Se_T				
F2_OUT_WS_LAEMP_EVO_2022-03_NP	F2_OUT	WS	No	2-Mar-22	13:45	G	1	1						
F2_OUT_WS_LAEMP_EVO_2022-03_NP-NAL	F2_OUT	WS	No	2-Mar-22	13:45	G	2		1	1				

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
	Maddy Stokes - Minnow	March 8, 2022	ASG/BAL	3/10/22 7:00

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	Maddy Stokes	Mobile #	647-522-0672
Priority (2-3 business days) - 50% surcharge		Sampler's Signature		Date/Time	March 8, 2022
Emergency (1 Business Day) - 100% surcharge					
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

RW HOT SHOT SERVICE INC.

250-425-7447
24 Hour Hot Shot Service

No. 89789

STRAIGHT BILL OF LADING
NOT NEGOTIABLE

Sparwood, BC
Terrace, BC
Red Deer, AB

Vancouver, BC
Calgary, AB
Montreal, QC

Prince George, BC
Edmonton, AB
Spokane, WA

Elkford, BC
Ft. McMurray, AB
Shelby, MT

Tumbler Ridge, BC
Hinton, AB
Gillette, WY

DATE: 3/10/12

INVOICE TO		PURCHASE ORDER NUMBER	
BILL OF LADING #		CONSIGNEE (TO)	
SHIPPER (FROM)		STREET	
STREET		CITY/PROVINCE	
CITY/PROVINCE		POSTAL CODE	
SPECIAL INSTRUCTIONS		WEIGHT (Subject to Correction)	
PACKAGES	DESCRIPTION OF ARTICLES AND SPECIAL MARKS		FREIGHT CHARGES SHIPPER TO CHECK
			<input type="checkbox"/> PREPAID <input type="checkbox"/> COLLECT
			If not indicated, shipping will automatically move on
			FEE
			WAITING
			XPU
			CHARGES
			FSC
			US
			SUB TOTAL
			GST
UNIT #	DECLARED VALUATION: Maximum liability of carriers \$2.00 per lb. (\$4.41 per kilogram) unless declared valuation states otherwise.		TOTAL \$
174	\$		IF AT OWNER'S RISK, WRITE ORU HER.
DRIVER'S SIGNATURE - PICK UP BY	PICK UP TIME	DRIVER'S SIGNATURE - DELIVERY BY	FINISH TIME
<i>[Signature]</i>	5:20pm	<i>[Signature]</i>	
<p><small>NOTICE OF CLAIM: (a) No carrier is liable for loss, damage or delay of any goods under the Bill of Lading unless notice, transfer setting out particulars of the origin, destination and date of shipment of the goods and the estimated amount claimed, is given in writing to the originating carrier or the delivering carrier within nine (9) days after the delivery of the goods, or in the case of failure to make delivery within nine (9) months from the date of shipment. (b) The final statement of claim must be filed within nine (9) months from the date of shipment. (c) The consignor must file a copy of the paid freight bill with the carrier. (d) The carrier shall not be liable for loss, damage or delay of any goods under the Bill of Lading unless notice, transfer setting out particulars of the origin, destination and date of shipment of the goods and the estimated amount claimed, is given in writing to the originating carrier or the delivering carrier within nine (9) days after the delivery of the goods, or in the case of failure to make delivery within nine (9) months from the date of shipment. (e) The final statement of claim must be filed within nine (9) months from the date of shipment. (f) The consignor must file a copy of the paid freight bill with the carrier. (g) The carrier shall not be liable for loss, damage or delay of any goods under the Bill of Lading unless notice, transfer setting out particulars of the origin, destination and date of shipment of the goods and the estimated amount claimed, is given in writing to the originating carrier or the delivering carrier within nine (9) days after the delivery of the goods, or in the case of failure to make delivery within nine (9) months from the date of shipment. (h) The consignor must file a copy of the paid freight bill with the carrier. (i) The carrier shall not be liable for loss, damage or delay of any goods under the Bill of Lading unless notice, transfer setting out particulars of the origin, destination and date of shipment of the goods and the estimated amount claimed, is given in writing to the originating carrier or the delivering carrier within nine (9) days after the delivery of the goods, or in the case of failure to make delivery within nine (9) months from the date of shipment. (j) The consignor must file a copy of the paid freight bill with the carrier.</small></p>			
SHIPPER PRINT	CONSIGNEE PRINT		DATE
SHIPPER SIGN	CONSIGNEE SIGN		TIME
WHITE: Office		YELLOW: Carrier	
PINK: Consignee		GOLDENROAD: Shipper	
AMGOS PRINTING		GST # 864540398RT0001	
Cooler 1		IR: 31	

Temperature: -1.6

Coolant Type: Ice Blue Ice Ambient

Notes:

Sampling Locations: PG F2 EV

Sample Types:	T/D	SP	T/D	SP	T/D	SP	T/D	SP	T/D	SP
Container Types:	40ml glass	125ml Plastic	40ml glass	Cond Plastic	40ml glass	125ml plastic				

Opened By: ASG Date: 3/10/12

From: [Ethan Upp](#)
To: [Jeremy Maute](#)
Subject: Fwd: Brooks Samples Received - WO (2203150) REP - Privileged and Confidential
Date: Monday, March 14, 2022 3:52:30 PM

From: Tyler Mehler <tyler.mehler@minnow.ca>
Sent: Monday, March 14, 2022, 2:51 PM
To: Ethan Upp <ethan@brooksapplied.com>
Cc: Jessica Ritz <Jessica.Ritz@teck.com>
Subject: RE: Brooks Samples Received - WO (2203150) REP - Privileged and Confidential

Hi Ethan-

We realized we have an error in our sampling name and are hoping you can fix this on your end prior to issuing the results?

In work order: 2203149 please change F2_OUT to F2_OUTF

Sorry for the mix-up!

Tyler

From: Ethan Upp <ethan@brooksapplied.com>
Sent: Friday, March 11, 2022 1:44 PM
To: mike.pope@teck.com; jess.ritz@teck.com; aquascalab@teck.com; Lisa Bowron <LBowron@minnow.ca>; Tyler Mehler <tyler.mehler@minnow.ca>
Cc: Mariyeh Moradnzhad <mariyeh@brooksapplied.com>; Jeremy Maute <Jeremy@brooksapplied.com>; Anaïs Gentilhomme <Anais@brooksapplied.com>
Subject: Brooks Samples Received - WO (2203150) REP - Privileged and Confidential

Good morning!

This is confirmation that samples from the REP project were received at Brooks Applied Labs on March 10, 2022. The samples were logged in for the following turnaround times (TATs):

WO#2203150 – (5-9 business day) TAT

The **Sample Time** value listed on the chain-of-custody (COC) form did not exactly match the corresponding **Sample Time** terms listed on container labels for samples in WO 2203150. The discrepancies are described in the table below.

Laboratory ID	Sample ID (From COC)	Sample Time (From Container Label)	Sample Time (From COC)	Analytical Parameter
2203150-06	RG_ERCKUT_WS_LAEMP_EVO_2022-03_NP-NAL	12:00	13:00	Total Recoverable Se

The samples described the table above were logged in using the **Sample Time** terms listed on the COC form. Please let us know if you would have us report any of these samples in a different manner.

I've attached copies of the COC forms. If you have any questions, please contact the project manager, Jeremy Maute.

Best,

Ethan

Ethan Upp

Senior Laboratory Technician

email: ethan@brooksapplied.com

BROOKS APPLIED LABS

Meaningful Metals Data and Advanced Speciation Solutions

18804 North Creek Parkway, Suite 100, Bothell, WA 98011, USA

I acknowledge the Coast Salish people - past, present, and future - whose traditional lands and waters I live and work on.

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18804 North Creek Parkway, Ste 100, Bothell, WA 98011 • USA • T: 206 632 6206 F: 206 632 6017 • info@brooksapplied.com

March 28, 2022

Teck Resources Limited - Vancouver
 Mike Pope
 421 Pine Avenue
 Sparwood, B.C. CANADA V0B2G0
mike.pope@teck.com

Re: Regional Effects Program

Dear Mike Pope,

On March 17, 2022, Brooks Applied Labs (BAL) received six (6) aqueous samples. The samples were logged-in for the analysis of volatile selenium (Se) speciation, in accordance with the chain-of-custody (COC) form.

The volatile selenium fraction container for 2203248-01 arrived at BAL with two distinct labels. One label listed a **Sample ID** of *RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP* and the other label detailed a **Sample ID** of *EV_FRCKMO_WS_2022-03_NP*. Both labels listed a **Date/Time Collected** value of (03/02/2022 13:30). At the request of the client, the field ID *RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP* was used for reporting.

The **Sample Location (sys_loc_code)** value listed on the chain-of-custody (COC) form did not exactly match the corresponding **Sample Location (sys_loc_code)** term in the field ID for 2203248-01. The discrepancy is described in the table below.

Laboratory ID	Sample ID (on COC form)	Sample Location (sys_loc_code) (on COC form)	Sample Location (sys_loc_code) (Used for Reporting)
2203248-01	RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP	RG_RIVER	RG_ERCKMD

For reporting, *RG_ERCKMD* was used as the **Sample Location (sys_loc_code)** value since this value matches the corresponding term in the **Sample ID**.

Each sample requesting volatile Se speciation had been field-filtered into bottles containing isopropanol preservative (provided by BAL). All sample fractions were stored according to BAL SOPs and EPA methodology.

Volatile Selenium Speciation

Each aqueous sample was analyzed for volatile selenium speciation using high performance liquid chromatography inductively coupled plasma collision reaction cell mass spectrometry (HPLC-ICP-CRC-MS). Volatile selenium species are chromatographically separated on a reversed phase column and then quantified using inductively coupled plasma collision reaction cell mass spectrometry (ICP-CRC-MS); for more information on this determinative technique, please visit the *Interference Reduction Technology* section on our website.

In accordance with the quotation issued for this project, volatile selenium species were defined as dissolved dimethylselenide [DMeSe] and dimethyldiselenide [DMDSe].

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

In instances where a matrix spike/matrix spike duplicate (MS/MSD) set was spiked at a level less than the native sample concentration, the recoveries and the relative percent difference (RPD) values are not considered valid indicators of data quality. In such instances, the recoveries of the laboratory fortified blank (BS) demonstrates the accuracy of the applied methods. When the spiking level was less than 25% of the native sample concentration, the spike recovery was not reported (**NR**) and the relative percent difference (RPD) of the MS/MSD set was not calculated (**N/C**).

Except for concentration qualifiers, all data were reported without qualification. All associated quality control sample results met the acceptance criteria.

BAL, an accredited laboratory, certifies that the reported results of all analyses for which BAL is NELAP accredited meet all NELAP requirements. For more information, please see the *Report Information* page.

Please feel free to contact us if you have any questions regarding this report.

Sincerely,



Jeremy Maute

Senior Project Manager

Jeremy@brooksapplied.com



Report Information

Laboratory Accreditation

BAL is accredited by the *National Environmental Laboratory Accreditation Program* (NELAP) through the State of Florida Department of Health, Bureau of Laboratories (E87982) and is certified to perform many environmental analyses. BAL is also certified by many other states to perform environmental analyses. For a current list of our accreditations/certifications, please visit our website at <http://www.brooksapplied.com/resources/certificates-permits/> or review Tables 1 and 2 in our Accreditation Information. Results reported relate only to the samples listed in the report.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

AR	as received	MS	matrix spike
BAL	Brooks Applied Labs	MSD	matrix spike duplicate
BLK	method blank	ND	non-detect
BS	blank spike	NR	non-reportable
CAL	calibration standard	N/C	not calculated
CCB	continuing calibration blank	PS	post preparation spike
CCV	continuing calibration verification	REC	percent recovery
COC	chain of custody record	RPD	relative percent difference
D	dissolved fraction	SCV	secondary calibration verification
DUP	duplicate	SOP	standard operating procedure
IBL	instrument blank	SRM	reference material
ICV	initial calibration verification	T	total fraction
MDL	method detection limit	TR	total recoverable fraction
MRL	method reporting limit		

Definition of Data Qualifiers

(Effective 3/23/2020)

E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Please see narrative for explanation.
J	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1	Estimated value. A full explanation is presented in the narrative.
M	Duplicate precision (RPD) was not within acceptance criteria. Please see narrative for explanation.
N	Spike recovery was not within acceptance criteria. Please see narrative for explanation.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.
Z	Holding time and/or preservation requirements not established for this method; however, BAL recommendations for holding time were not followed. Please see narrative for explanation.

These qualifiers are based on those previously utilized by Brooks Applied Labs, those found in the EPA SOW ILM03.0, Exhibit B, Section III, pg. B-18, and the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review; USEPA; January 2010. These supersede all previous qualifiers ever employed by BAL.



Accreditation Information

Table 1. Accredited method/matrix/analytes for TNI
Issued by: State of Florida Dept. of Health (The NELAC Institute 2016 Standard)
Issued on: July 1, 2021; Valid to: June 30, 2022
Certificate Number: E87982-37

Method	Matrix	TNI Accredited Analyte(s)
EPA 1638	Non-Potable Waters	Ag, Cd, Cu, Ni, Pb, Sb, Se, Ti, Zn
EPA 200.8	Non-Potable Waters	Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Sb, Se, Ti, U, V, Zn
EPA 6020	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Ti, U, V, Zn
	Solids/Chemicals & Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Ti, V, Zn
BAL-5000	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, U, V, Zn, Hardness
	Solids/Chemicals	Ag, As, B, Be, Cd, Co, Cr, Cu, Pb, Mo, Ni, Sb, Se, Sn, Sr, Ti, V, Zn
	Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Ti, V, Zn
EPA 1640	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn
EPA 1631E	Non-Potable Waters, Solids/Chemicals & Biological	Total Mercury
EPA 1630	Non-Potable Waters	Methyl Mercury
BAL-3200	Solids/Chemicals & Biological	Methyl Mercury
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
BAL-4201	Non-Potable Waters	Se(IV), Se(VI)
BAL-4300	Non-Potable Waters Solid/Chemicals	Cr(VI)
SM2340B	Non-Potable Waters	Hardness



Accreditation Information

**Table 2. Accredited method/matrix/analytes for ISO (1),
 Non-Governmental TNI (2)
 Issued by: ANAB
 Issued on: September 21, 2021; Valid to: March 30, 2024**

Method	Matrix	ISO and Non-Gov. TNI Accredited Analyte(s)
EPA 1638 Mod EPA 200.8 Mod EPA 6020 Mod	Non-Potable Waters	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, U, V, Zn
BAL-5000	Solids/Chemicals & Biological	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, V, Zn Hg (Biological Only)
EPA 1640 Mod	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn Ag, As, Cr, Co, Se, Ti, V (ISO Only)
EPA 1631E Mod BAL-3100	Non-Potable Waters, Solids/Chemicals & Biological/Food	Total Mercury
EPA 1630 Mod BAL-3200	Non-Potable Waters, Solids/Chemicals Biological	Methyl Mercury
EPA 1632A Mod BAL-3300	Non-Potable Waters Biological/Food Solids/Chemicals	Inorganic Arsenic (ISO Only) Inorganic Arsenic (ISO Only)
AOAC 2015.01 Mod BAL-5000	Food	As, Cd, Hg, Pb
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
	Biological by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4101	Food by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4201	Non-Potable Waters	Se(IV), Se(VI), SeCN, SeMet
BAL-4300	Non-Potable Waters, Solid/Chemicals	Cr(VI)
SM 3500-Fe BAL-4500	Non-Potable Waters	Fe, Fe(II) (ISO Only)
SM2340B	Non-Potable Waters	Hardness
SM 2540G BAL-0501	Solids/Chemicals & Biological	% Dry Weight



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP	2203248-01	WS	Sample	03/02/2022	03/17/2022
RG_RIVER_WS_LAEMP_EVO_2022-03_NP	2203248-02	WS	Sample	03/02/2022	03/17/2022
RG_ERCKUT_WS_LAEMP_EVO_2022-03_NP	2203248-03	WS	Sample	03/02/2022	03/17/2022
RG_ERCK_WS_LAEMP_EVO_2022-03_NP	2203248-04	WS	Sample	03/02/2022	03/17/2022
RG_ERCKDT_WS_LAEMP_EVO_2022-03_NP	2203248-05	WS	Sample	03/02/2022	03/17/2022
RG_MIDER_WS_LAEMP_EVO_2022-03_NP	2203248-06	WS	Sample	03/02/2022	03/17/2022

Batch Summary

Analyte	Lab Matrix	Method	Prepared	Analyzed	Batch	Sequence
DMDSe	Water	HPLC-ICP-MS	03/24/2022	03/24/2022	B220608	S220354
DMeSe	Water	HPLC-ICP-MS	03/24/2022	03/24/2022	B220608	S220354



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP</i>										
2203248-01	DMDSe	WS	D	≤ 0.022	U	0.022	0.222	µg/L	B220608	S220354
2203248-01	DMeSe	WS	D	≤ 0.022	U	0.022	0.222	µg/L	B220608	S220354
<i>RG_RIVER_WS_LAEMP_EVO_2022-03_NP</i>										
2203248-02	DMDSe	WS	D	≤ 0.022	U	0.022	0.222	µg/L	B220608	S220354
2203248-02	DMeSe	WS	D	≤ 0.022	U	0.022	0.222	µg/L	B220608	S220354
<i>RG_ERCKUT_WS_LAEMP_EVO_2022-03_NP</i>										
2203248-03	DMDSe	WS	D	≤ 0.022	U	0.022	0.222	µg/L	B220608	S220354
2203248-03	DMeSe	WS	D	≤ 0.022	U	0.022	0.222	µg/L	B220608	S220354
<i>RG_ERCK_WS_LAEMP_EVO_2022-03_NP</i>										
2203248-04	DMDSe	WS	D	≤ 0.022	U	0.022	0.222	µg/L	B220608	S220354
2203248-04	DMeSe	WS	D	≤ 0.022	U	0.022	0.222	µg/L	B220608	S220354
<i>RG_ERCKDT_WS_LAEMP_EVO_2022-03_NP</i>										
2203248-05	DMDSe	WS	D	≤ 0.022	U	0.022	0.222	µg/L	B220608	S220354
2203248-05	DMeSe	WS	D	≤ 0.022	U	0.022	0.222	µg/L	B220608	S220354
<i>RG_MIDER_WS_LAEMP_EVO_2022-03_NP</i>										
2203248-06	DMDSe	WS	D	≤ 0.022	U	0.022	0.222	µg/L	B220608	S220354
2203248-06	DMeSe	WS	D	≤ 0.022	U	0.022	0.222	µg/L	B220608	S220354



Accuracy & Precision Summary

Batch: B220608
Lab Matrix: Water
Method: HPLC-ICP-MS

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B220608-BS1	Blank Spike, (2210011)						
	DMDSe		4.991	4.623	µg/L	93% 80-120	
	DMeSe		5.005	5.377	µg/L	107% 80-120	
B220608-DUP1	Duplicate, (2203248-01)						
	DMDSe	ND		ND	µg/L		N/C 25
	DMeSe	ND		ND	µg/L		N/C 25
B220608-MS1	Matrix Spike, (2203248-01)						
	DMDSe	ND	5.547	5.395	µg/L	97% 75-125	
	DMeSe	ND	5.542	5.543	µg/L	100% 75-125	
B220608-MSD1	Matrix Spike Duplicate, (2203248-01)						
	DMDSe	ND	5.547	5.470	µg/L	99% 75-125	1% 25
	DMeSe	ND	5.542	5.587	µg/L	101% 75-125	0.8% 25



Method Blanks & Reporting Limits

Batch: B220608
Matrix: Water
Method: HPLC-ICP-MS
Analyte: DMDSe

Sample	Result	Units	
B220608-BLK1	0.00	µg/L	
B220608-BLK2	0.00	µg/L	
B220608-BLK3	0.00	µg/L	
B220608-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.010
Limit: 0.100			MRL: 0.100

Analyte: DMeSe

Sample	Result	Units	
B220608-BLK1	0.00	µg/L	
B220608-BLK2	0.00	µg/L	
B220608-BLK3	0.00	µg/L	
B220608-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.010
Limit: 0.100			MRL: 0.100



Sample Containers

Lab ID: 2203248-01	Report Matrix: WS	Collected: 03/02/2022					
Sample: RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP	Sample Type: Sample + Sum	Received: 03/17/2022					
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% Isopropanol (PP)		<2	Cooler 2 - 2203248
Lab ID: 2203248-02	Report Matrix: WS	Collected: 03/02/2022					
Sample: RG_RIVER_WS_LAEMP_EVO_2022-03_NP	Sample Type: Sample + Sum	Received: 03/17/2022					
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% Isopropanol (PP)		<2	Cooler 2 - 2203248
Lab ID: 2203248-03	Report Matrix: WS	Collected: 03/02/2022					
Sample: RG_ERCKUT_WS_LAEMP_EVO_2022-03_NP	Sample Type: Sample + Sum	Received: 03/17/2022					
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% Isopropanol (PP)		<2	Cooler 2 - 2203248
Lab ID: 2203248-04	Report Matrix: WS	Collected: 03/02/2022					
Sample: RG_ERCK_WS_LAEMP_EVO_2022-03_NP	Sample Type: Sample + Sum	Received: 03/17/2022					
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% Isopropanol (PP)		<2	Cooler 2 - 2203248
Lab ID: 2203248-05	Report Matrix: WS	Collected: 03/02/2022					
Sample: RG_ERCKDT_WS_LAEMP_EVO_2022-03_NP	Sample Type: Sample + Sum	Received: 03/17/2022					
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% Isopropanol (PP)		<2	Cooler 2 - 2203248



Sample Containers

Lab ID: 2203248-06

Report Matrix: WS

Collected: 03/02/2022

Sample:

Sample Type: Sample + Sum

Received: 03/17/2022

RG_MIDER_WS_LAEMP_EVO_2022-03_NP

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% Isopropanol (PP)		<2	Cooler 2 - 2203248

Shipping Containers

Cooler 2 - 2203248

Received: March 17, 2022 7:00

Tracking No: PAPS#RWHV89969 via Courier

Coolant Type: Ice

Temperature: 3.5 °C

Description: Cooler 2

Damaged in transit? No

Returned to client? No

Comments: IR #33

Custody seals present? No

Custody seals intact? No

COC present? Yes



COC ID:		REP_EVO LAEMP_2022_MAR_Brooks		TURNAROUND TIME:		RUSH:	
PROJECT/CLIENT INFO				LABORATORY		OTHER INFO	
Facility Name / Job#		Regional Effects Program		Lab Name		Report Format / Distribution	
Project Manager		Mike Pope		Lab Contact		Email 1:	
Email		mike.pope@teck.com		Ben Wozniak		Excel PDF EDD	
Address		421 Pine Ave		Email		teckcost@equisonline.com	
				Ben@brooksupplied.com			
City		Sparwood		Address		Teck Lab Results@teck.com	
Postal Code		V0B 2G0		18804 North Creek Parkway		Email 3:	
Phone Number		250-425-8202		Suite 100		AguaSci@teck.com	
		Province BC		City		Email 4:	
		Country Canada		Bothell		thowron@minnow.ca	
				Postal Code		Email 6:	
				98011		www.teck.com	
				Phone Number		PO number	
				(206) 753-6158		748544	

SAMPLE DETAILS								ANALYSIS REQUESTED												
Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com p	# Of Cont.	As	F											
RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP	RG_RIVER	WS	No	2-Mar-22	13:30	G	1		F											
RG_RIVER_WS_LAEMP_EVO_2022-03_NP	RG_RIVER	WS	No	2-Mar-22	16:00	G	1		F											
RG_ERCKUT_WS_LAEMP_EVO_2022-03_NP	RG_ERCKUT	WS	No	2-Mar-22	13:00	G	1													
RG_ERCK_WS_LAEMP_EVO_2022-03_NP	RG_ERCK	WS	No	2-Mar-22	10:30	G	1													
RG_ERCKDT_WS_LAEMP_EVO_2022-03_NP	RG_ERCKDT	WS	No	2-Mar-22	14:30	G	1													
RG_MIDER_WS_LAEMP_EVO_2022-03_NP	RG_MIDER	WS	No	2-Mar-22	16:00	G	1													

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS		RELINQUISHED BY/AFFILIATION		DATE/TIME		ACCEPTED BY/AFFILIATION		DATE/TIME	
All samples field filtered and preserved		Maddy Stokes - Minnow		March 8, 2022		ASG (BAL)		3/17/22 7:00	

SERVICE REQUEST (rush - subject to availability)			
Regular (default) <input checked="" type="checkbox"/>	Priority (2-3 business days) - 50% surcharge	Emergency (1 Business Day) - 100% surcharge	For Emergency <1 Day, ASAP or Weekend - Contact ALS
Sampler's Name	Maddy Stokes	Mobile #	647-522-0672
Sampler's Signature		Date/Time	March 8, 2022

STRAIGHT BILL OF LADING
NOT NEGOTIABLE

RW HOT SHOT SERVICE INC.

250-425-7447
24 Hour Hot Shot Service

No. 89969

Sparwood, BC
Terrace, BC
Red Deer, AB

Vancouver, BC
Calgary, AB
Montreal, QC

Prince George, BC
Edmonton, AB
Spokane, WA

Elkford, BC
Ft. McMurray, AB
Shelby, MT

Tumbler Ridge, BC
Hinton, AB
Gillette, WY

INVOICE TO		DATE	
BILL OF LADING #		PURCHASE ORDER NUMBER	
SHIPPER (FROM)		CONSIGNEE (TO)	
STREET		STREET	
CITY/PROVINCE		CITY/PROVINCE	
POSTAL CODE		POSTAL CODE	
SPECIAL INSTRUCTIONS		FREIGHT CHARGES SHIPPER TO CHECK	
PACKAGES	DESCRIPTION OF ARTICLES AND SPECIAL MARKS	WEIGHT (Subject to Correction)	<input type="checkbox"/> PREPAID <input type="checkbox"/> COLLECT If not indicated, shipping will automatically move collect.
			FEE
			WAITING
			XPU
			CHARGES
			FSC
			US
			SUB TOTAL
			GST
UNIT #	DECLARED VALUATION: Maximum liability of carrier is \$2.00 per lb. (\$4.41 per kilogram) unless declared valuation states otherwise.		TOTAL \$
DRIVER'S SIGNATURE - PICK UP BY	PICK UP TIME	DRIVER'S SIGNATURE - DELIVERY BY	FINISH TIME
<small>NOTICE OF CLAIM: (a) No carrier is liable for loss, damage or delay of any goods under the Bill of Lading unless notice in writing setting out particulars of the claim, description and date of shipment of the goods and the estimated amount claimed, is received by the carrier or the delivering carrier within sixty (60) days after the delivery of the goods, on the case of failure to make delivery within nine (9) months from the date of shipment. (b) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. (c) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. RECEIVED at the point of origin on the date specified from the consignor mentioned herein, the property herein described, in apparent good order, except as noted (contents and condition of contents of package unknown) marked, consigned and destined as indicated below, which the carrier agrees to carry and to deliver to the consignee at the said destination, subject to the rates and classification in effect on the date of shipment. It is mutually agreed, as to each carrier of all or any of the goods over all or any portion of the route to destination, and as to each party of any line interested in all or any of the goods, that every service to be performed hereunder shall be subject to all the conditions standard Bill of Lading in power at the date of issuing, which are hereto agreed by the consignor and accepted for himself and his assigns. Printed or white, including conditions set aside by the standard Bill of Lading, in power at the date of issuing, which are hereto agreed by the consignor and accepted for himself and his assigns. The contract for the carriage of the goods listed in the Bill of Lading is governed by regulation in force in the jurisdiction at the time and place of shipment and is subject to the conditions set out in such conditions.</small>			
SHIPPER PRINT	CONSIGNEE PRINT	DATE	
SHIPPER SIGN	CONSIGNEE SIGN	TIME	
WHITE: Office ~ YELLOW: Carrier PINK: Consignee GOLDENROAD: Shipper		GST # 864540398RT0001	
		NUMBER OF PIECES RECEIVED ▲	

Cooler ID: Cooler 2

COC (Y/N)

Temperature: 3.5

IR: 33

Coolant Type: Ice Blue Ice Ambient

Notes:

Sampling Locations:

Sample Types:

Container Types:

Opened By: ASG

Date: 3/17/22

	T/D	SP	T/D	SP	T/D	SP	T/D	SP
Locations	<u>GH</u>	<u>EV</u>	<u>BG</u>	<u>F2</u>				
Types	<u>40ml glass</u>	<u>40ml glass</u>	<u>40ml glass</u>	<u>40ml glass</u>				

COPY



From: [Tyler Mehler](#)
To: [Ethan Upp](#); mike.pope@teck.com; jess.ritz@teck.com; AquaSciLab@Teck.com; [Lisa Bowron](#)
Cc: [Jeremy Maute](#); [Mariyeh Moradnzhad](#); [Anais Gentilhomme](#)
Subject: RE: Brooks Samples Received - WO (2203248) REP - Privileged and Confidential
Date: Friday, March 18, 2022 8:13:56 AM

Thanks Ethan – your assumption regarding the name is correct.

Thank you.

Tyler

From: Ethan Upp <ethan@brooksapplied.com>
Sent: Friday, March 18, 2022 8:06 AM
To: mike.pope@teck.com; jess.ritz@teck.com; AquaSciLab@Teck.com; [Lisa Bowron](#) <LBowron@minnow.ca>; [Tyler Mehler](mailto:tyler.mehler@minnow.ca) <tyler.mehler@minnow.ca>
Cc: [Jeremy Maute](mailto:Jeremy@brooksapplied.com) <Jeremy@brooksapplied.com>; [Mariyeh Moradnzhad](mailto:mariyeh@brooksapplied.com) <mariyeh@brooksapplied.com>; [Anais Gentilhomme](mailto:Anais@brooksapplied.com) <Anais@brooksapplied.com>
Subject: Brooks Samples Received - WO (2203248) REP - Privileged and Confidential

Good morning!

This is confirmation that samples from the REP project were received at Brooks Applied Labs on March 17, 2022. The samples were logged in for the following turnaround times (TATs):

WO#2203248 – (5-9 business day) TAT

Sample 01, "RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP" arrived with 2 labels, both with the date/time of 3/02/22 13:30. One was named:

RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP

while the other was named:

EV_FRCKMO_WS_2022-03_NP

The COC present in its cooler had listed only RG labels so we chose to use the former, "RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP," when labeling this sample. Please let us know if you would have us report this sample in a different manner.

I've attached copies of the COC forms. If you have any questions, please contact the project manager, Jeremy Maute.

Best,

Ethan

Ethan Upp

Senior Laboratory Technician

email: ethan@brooksapplied.com

BROOKS APPLIED LABS

Meaningful Metals Data and Advanced Speciation Solutions

18804 North Creek Parkway, Suite 100, Bothell, WA 98011, USA

I acknowledge the Coast Salish people - past, present, and future - whose traditional lands and waters I live and work on.

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18804 North Creek Parkway, Ste 100, Bothell, WA 98011 • USA • T: 206 632 6206 F: 206 632 6017 • info@brooksapplied.com

March 31, 2022

Teck Resources Limited - Vancouver
Mike Pope
421 Pine Avenue
Sparwood, B.C. CANADA V0B2G0
mike.pope@teck.com

Re: Elkview Operations

Dear Mike Pope,

On March 17, 2022, Brooks Applied Labs (BAL) received one (1) aqueous sample. The sample was logged-in for the analysis of volatile selenium (Se) speciation analysis.

A chain-of-custody (COC) form was not received with the sample shipment. An electronic version of the COC form was provided via email following receipt of the samples. This version of the COC form was included as the COC form in the report.

Each sample requesting volatile Se speciation had been field-filtered into bottles containing isopropanol preservative (provided by BAL). All sample fractions were stored according to BAL SOPs and EPA methodology.

Volatile Selenium Speciation

Each aqueous sample was analyzed for volatile selenium speciation using high performance liquid chromatography inductively coupled plasma collision reaction cell mass spectrometry (HPLC-ICP-CRC-MS). Volatile selenium species are chromatographically separated on a reversed phase column and then quantified using inductively coupled plasma collision reaction cell mass spectrometry (ICP-CRC-MS); for more information on this determinative technique, please visit the *Interference Reduction Technology* section on our website.

In accordance with the quotation issued for this project, volatile selenium species were defined as dissolved dimethylselenide [DMeSe] and dimethyldiselenide [DMDSe].

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

In instances where a matrix spike/matrix spike duplicate (MS/MSD) set was spiked at a level less than the native sample concentration, the recoveries and the relative percent difference (RPD) values are not considered valid indicators of data quality. In such instances, the recoveries of the laboratory fortified blank (BS) demonstrates the accuracy of the applied methods. When the spiking level was less than 25% of the native sample concentration, the spike recovery was not reported (**NR**) and the relative percent difference (RPD) of the MS/MSD set was not calculated (**NC**).

Except for concentration qualifiers, all data were reported without qualification. All associated quality control sample results met the acceptance criteria.

BAL, an accredited laboratory, certifies that the reported results of all analyses for which BAL is NELAP accredited meet all NELAP requirements. For more information, please see the *Report Information* page.

Please feel free to contact us if you have any questions regarding this report.

Sincerely,

A handwritten signature in black ink, appearing to read 'Jeremy Maute', written over a faint horizontal line.

Jeremy Maute

Senior Project Manager

Jeremy@brooksapplied.com



Report Information

Laboratory Accreditation

BAL is accredited by the *National Environmental Laboratory Accreditation Program* (NELAP) through the State of Florida Department of Health, Bureau of Laboratories (E87982) and is certified to perform many environmental analyses. BAL is also certified by many other states to perform environmental analyses. For a current list of our accreditations/certifications, please visit our website at <http://www.brooksapplied.com/resources/certificates-permits/> or review Tables 1 and 2 in our Accreditation Information. Results reported relate only to the samples listed in the report.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

AR	as received	MS	matrix spike
BAL	Brooks Applied Labs	MSD	matrix spike duplicate
BLK	method blank	ND	non-detect
BS	blank spike	NR	non-reportable
CAL	calibration standard	N/C	not calculated
CCB	continuing calibration blank	PS	post preparation spike
CCV	continuing calibration verification	REC	percent recovery
COC	chain of custody record	RPD	relative percent difference
D	dissolved fraction	SCV	secondary calibration verification
DUP	duplicate	SOP	standard operating procedure
IBL	instrument blank	SRM	reference material
ICV	initial calibration verification	T	total fraction
MDL	method detection limit	TR	total recoverable fraction
MRL	method reporting limit		

Definition of Data Qualifiers

(Effective 3/23/2020)

E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Please see narrative for explanation.
J	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1	Estimated value. A full explanation is presented in the narrative.
M	Duplicate precision (RPD) was not within acceptance criteria. Please see narrative for explanation.
N	Spike recovery was not within acceptance criteria. Please see narrative for explanation.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.
Z	Holding time and/or preservation requirements not established for this method; however, BAL recommendations for holding time were not followed. Please see narrative for explanation.

These qualifiers are based on those previously utilized by Brooks Applied Labs, those found in the EPA SOW ILM03.0, Exhibit B, Section III, pg. B-18, and the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review; USEPA; January 2010. These supersede all previous qualifiers ever employed by BAL.



Accreditation Information

Table 1. Accredited method/matrix/analytes for TNI
Issued by: State of Florida Dept. of Health (The NELAC Institute 2016 Standard)
Issued on: July 1, 2021; Valid to: June 30, 2022
Certificate Number: E87982-37

Method	Matrix	TNI Accredited Analyte(s)
EPA 1638	Non-Potable Waters	Ag, Cd, Cu, Ni, Pb, Sb, Se, Tl, Zn
EPA 200.8	Non-Potable Waters	Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Sb, Se, Tl, U, V, Zn
EPA 6020	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Tl, U, V, Zn
	Solids/Chemicals & Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Tl, V, Zn
BAL-5000	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Tl, U, V, Zn, Hardness
	Solids/Chemicals	Ag, As, B, Be, Cd, Co, Cr, Cu, Pb, Mo, Ni, Sb, Se, Sn, Sr, Tl, V, Zn
	Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Tl, V, Zn
EPA 1640	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn
EPA 1631E	Non-Potable Waters, Solids/Chemicals & Biological	Total Mercury
EPA 1630	Non-Potable Waters	Methyl Mercury
BAL-3200	Solids/Chemicals & Biological	Methyl Mercury
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
BAL-4201	Non-Potable Waters	Se(IV), Se(VI)
BAL-4300	Non-Potable Waters Solid/Chemicals	Cr(VI)
SM2340B	Non-Potable Waters	Hardness



Accreditation Information

**Table 2. Accredited method/matrix/analytes for ISO (1),
Non-Governmental TNI (2)
Issued by: ANAB
Issued on: September 21, 2021; Valid to: March 30, 2024**

Method	Matrix	ISO and Non-Gov. TNI Accredited Analyte(s)
EPA 1638 Mod EPA 200.8 Mod EPA 6020 Mod	Non-Potable Waters	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, U, V, Zn
BAL-5000	Solids/Chemicals & Biological	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, V, Zn Hg (Biological Only)
EPA 1640 Mod	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn Ag, As, Cr, Co, Se, Ti, V (ISO Only)
EPA 1631E Mod BAL-3100	Non-Potable Waters, Solids/Chemicals & Biological/Food	Total Mercury
EPA 1630 Mod BAL-3200	Non-Potable Waters, Solids/Chemicals Biological	Methyl Mercury
EPA 1632A Mod BAL-3300	Non-Potable Waters Biological/Food Solids/Chemicals	Inorganic Arsenic (ISO Only) Inorganic Arsenic (ISO Only)
AOAC 2015.01 Mod BAL-5000	Food	As, Cd, Hg, Pb
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
	Biological by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4101	Food by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4201	Non-Potable Waters	Se(IV), Se(VI), SeCN, SeMet
BAL-4300	Non-Potable Waters, Solid/Chemicals	Cr(VI)
SM 3500-Fe BAL-4500	Non-Potable Waters	Fe, Fe(II) (ISO Only)
SM2340B	Non-Potable Waters	Hardness
SM 2540G BAL-0501	Solids/Chemicals & Biological	% Dry Weight



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
<i>EV_EC_BRIDGE_WS_LAEMP_EVO_2022-03_NP</i>	2203250-01	WS	Sample	03/02/2022	03/17/2022

Batch Summary

Analyte	Lab Matrix	Method	Prepared	Analyzed	Batch	Sequence
DMDSe	Water	HPLC-ICP-MS	03/24/2022	03/24/2022	B220608	S220354
DMeSe	Water	HPLC-ICP-MS	03/24/2022	03/24/2022	B220608	S220354

Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>EV_EC_BRIDGE_WS_LAEMP_EVO_2022-03_NP</i>										
2203250-01	DMDSe	WS	D	≤ 0.022	U	0.022	0.222	µg/L	B220608	S220354
2203250-01	DMeSe	WS	D	≤ 0.022	U	0.022	0.222	µg/L	B220608	S220354



Accuracy & Precision Summary

Batch: B220608
Lab Matrix: Water
Method: HPLC-ICP-MS

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B220608-BS1	Blank Spike, (2210011)						
	DMDSe		4.991	4.623	µg/L	93% 80-120	
	DMeSe		5.005	5.377	µg/L	107% 80-120	
B220608-DUP2	Duplicate, (2203250-01)						
	DMDSe	ND		ND	µg/L		N/C 25
	DMeSe	ND		ND	µg/L		N/C 25
B220608-MS2	Matrix Spike, (2203250-01)						
	DMDSe	ND	5.547	5.421	µg/L	98% 75-125	
	DMeSe	ND	5.542	5.561	µg/L	100% 75-125	
B220608-MSD2	Matrix Spike Duplicate, (2203250-01)						
	DMDSe	ND	5.547	5.508	µg/L	99% 75-125	2% 25
	DMeSe	ND	5.542	5.606	µg/L	101% 75-125	0.8% 25



Method Blanks & Reporting Limits

Batch: B220608
Matrix: Water
Method: HPLC-ICP-MS
Analyte: DMDSe

Sample	Result	Units	
B220608-BLK1	0.00	µg/L	
B220608-BLK2	0.00	µg/L	
B220608-BLK3	0.00	µg/L	
B220608-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.010
Limit: 0.100			MRL: 0.100

Analyte: DMeSe

Sample	Result	Units	
B220608-BLK1	0.00	µg/L	
B220608-BLK2	0.00	µg/L	
B220608-BLK3	0.00	µg/L	
B220608-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.010
Limit: 0.100			MRL: 0.100



Sample Containers

Lab ID: 2203250-01

Report Matrix: WS

Collected: 03/02/2022

Sample:

Sample Type: Sample

Received: 03/17/2022

EV_EC_BRIDGE_WS_LAEMP_EVO_2022-03_NP

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40mL	n/a	10% Isopropanol (PP)	1828013	n/a	Cooler 2 - 2203250

Shipping Containers

Cooler 2 - 2203250

Received: March 17, 2022 7:00

Tracking No: PAPS#RWHV89969 via

Coolant Type: Ice

Temperature: 3.5 °C

Description: Default Cooler

Damaged in transit? No


Returned to client? No

Comments: IR# 33

Custody seals present? No

Custody seals intact? No

COC present? No

		Page 1 of 1										Print COC Ver 6.4.0.1							
		COC ID: EV_EVO LAEMP_2022_MAR_Brooks				TURNAROUND TIME:						RUSH:							
PROJECT/CLIENT INFO							LABORATORY				OTHER INFO								
Facility Name / Job# Elkview Operations							Lab Name Brooks Applied Labs				Report Format / Distribution			Excel	PDF	EDD			
Project Manager Mike Pope							Lab Contact Ben Wozniak				Email 1: ben.wozniak@teck.com			X	X	X			
Email mike.pope@teck.com							Email Ben@brooksapplied.com				Email 2: teckcoal@equisonline.com					X			
Address 421 Pine Ave							Address 18804 North Creek Parkway				Email 3: Teck.Lab.Results@teck.com			X	X	X			
							Suite 100				Email 4: AcquaSciLab@teck.com			X	X	X			
City Sparwood			Province BC				City Bothell		Province WA	Email 5: lbrown@minnow.ca			X	X	X				
Postal Code V0B 2G0			Country Canada				Postal Code 98011		Country United S	Email 6: ben.wozniak@teck.com			X	X	X				
Phone Number 250-425-8202							Phone Number (206) 753-6158				PO number 748540								
SAMPLE DETAILS							ANALYSIS REQUESTED <small>Filtered - F: Field, L: Lab, FL: Field & Lab, N: None</small>												
Sample ID		Sample Location (sys_loc_code)		Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS									
EV_EC_BRIDGE_WS_LAEMP_EVO_2022-03_NP		EV_EC_BRIDGE		WS	No	2-Mar-22	13:30	G	1	Volatile Selenium	1								
ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS												RELINQUISHED BY/AFFILIATION		DATE/TIME		ACCEPTED BY/AFFILIATION		DATE/TIME	
All samples field filtered and preserved												Alex McClymont		March 9, 2022					
SERVICE REQUEST (rush - subject to availability)																			
Regular (default) X												Sampler's Name		Alex McClymont		Mobile #		780-293-6750	
Priority (2-3 business days) - 50% surcharge												Sampler's Signature				Date/Time		March 9, 2022	
Emergency (1 Business Day) - 100% surcharge																			
For Emergency <1 Day, ASAP or Weekend - Contact ALS																			

STRAIGHT BILL OF LADING
NOT NEGOTIABLE

RW HOT SHOT SERVICE INC.

250-425-7447
24 Hour Hot Shot Service

No. 89969

Sparwood, BC
Terrace, BC
Red Deer, AB

Vancouver, BC
Calgary, AB
Montreal, QC

Prince George, BC
Edmonton, AB
Spokane, WA

Elkford, BC
Ft. McMurray, AB
Shelby, MT

Tumbler Ridge, BC
Hinton, AB
Gillette, WY

INVOICE TO		DATE	
BILL OF LADING #		PURCHASE ORDER NUMBER	
SHIPPER (FROM)		CONSIGNEE (TO)	
STREET		STREET	
CITY/PROVINCE		CITY/PROVINCE	
POSTAL CODE		POSTAL CODE	
SPECIAL INSTRUCTIONS		FREIGHT CHARGES SHIPPER TO CHECK	
PACKAGES	DESCRIPTION OF ARTICLES AND SPECIAL MARKS	WEIGHT (Subject to Correction)	<input type="checkbox"/> PREPAID <input type="checkbox"/> COLLECT If not indicated, shipping will automatically move collect.
			FEE
			WAITING
			XPU
			CHARGES
			FSC
			US
			SUB TOTAL
			GST
UNIT #	DECLARED VALUATION: Maximum liability of carrier is \$2.00 per lb. (\$4.41 per kilogram) unless declared valuation states otherwise.		TOTAL \$
DRIVER'S SIGNATURE - PICK UP BY	PICK UP TIME	DRIVER'S SIGNATURE - DELIVERY BY	FINISH TIME
<small>NOTICE OF CLAIM: (a) No carrier is liable for loss, damage or delay of any goods under the Bill of Lading unless notice in writing setting out particulars of the claim, destination and date of shipment of the goods and the estimated amount claimed, is received by the carrier or the delivering carrier within sixty (60) days after the delivery of the goods, or the date of failure to make delivery, within nine (9) months from the date of shipment. (b) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. (c) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. RECEIVED at the point of origin on the date specified from the consignor mentioned herein, the property herein described, in apparent good order, except as noted (contents and condition of contents of package unknown) marked, consigned and destined as indicated below, which the carrier agrees to carry and to deliver to the consignee at the said destination, subject to the rates and classification in effect on the date of shipment. It is mutually agreed, as to each carrier of all or any of the goods over all or any portion of the route to destination, and as to each party of any line interested in all or any of the goods, that every service to be performed hereunder shall be subject to all the conditions standard Bill of Lading in power at the date of issuing, which are hereto agreed by the consignor and accepted for himself and his assigns. Printed or white, including conditions set aside by the standard Bill of Lading, in power at the date of issuing, which are hereto agreed by the consignor and accepted for himself and his assigns. The contract for the carriage of the goods listed in the Bill of Lading is governed by regulation in force in the jurisdiction at the time and place of shipment and is subject to the conditions set out in such conditions.</small>			
SHIPPER PRINT	CONSIGNEE PRINT	DATE	
SHIPPER SIGN	CONSIGNEE SIGN	TIME	
WHITE: Office ~ YELLOW: Carrier PINK: Consignee GOLDENROAD: Shipper		GST # 864540398RT0001	
		NUMBER OF PIECES RECEIVED ▲	

Cooler ID: Cooler 2

COC (Y/N)

Temperature: 3.5

IR: 33

Coolant Type: Ice Blue Ice Ambient

Notes:

Sampling Locations:

Sample Types:

Container Types:

Opened By: ASG

Date: 3/17/22

	GH	EV	BG	F2
T/D				
SP	40ml volatiles glass	40ml volatiles glass	40ml volatiles glass	40ml volatiles glass

COPY



Effective 7/29/20

Revision 004

From: [Tyler Mehler](#)
To: [Jessica Ritz](#); [Mariyeh Moradnzhad](#); [Mike Pope](#)
Cc: [Jeremy Maute](#)
Subject: RE: Samples Received with No COC Form
Date: Monday, March 21, 2022 9:19:04 AM
Attachments: [CONFIDENTIAL_F2_EVO LAEMP VolatileSe 2022 MAR Brooks 2022-03-021.xlsm](#)
[CONFIDENTIAL_EV_EVO LAEMP VolatileSe 2022 MAR Brooks 2022-03-02.xlsm](#)

Thanks Jess for looping me in. Please find the digital COCs attached.

As Jess noted in her email below – the sample ID should be F2_OUTF_WS_LAEMP_EVO_2022-03_NP.

Have a good day all,
Tyler

From: Jessica Ritz <Jessica.Ritz@teck.com>
Sent: Monday, March 21, 2022 6:50 AM
To: Mariyeh Moradnzhad <mariyeh@brooksapplied.com>; Mike Pope <Mike.Pope@teck.com>; Tyler Mehler <tyler.mehler@minnow.ca>
Cc: Jeremy Maute <Jeremy@brooksapplied.com>
Subject: RE: Samples Received with No COC Form

Hi Mariyeh,

Thanks for bringing these samples to our attention! These samples are anticipated and part of our sampling program.

Tyler Mehler will send you the digital COCs for these samples.

If it's possible, could you please separate these two WO# into a separate work order each? They will need to be in separate EZEDDs in order for our database to accept the data.

Please note an error in the below sys_sample_ID and change TO: F2_OUTF_WS_LAEMP_EVO_2022-03_NP.

Take care,
Jess

Jessica Ritz B.Sc., P.Biol., R.P.Bio. (She/Her)
Environmental Technician
Aquatic Sciences, Teck Coal Limited
Direct Phone: 250.425.9086
Alt Phone: 250.423.9613
Jessica.Ritz@Teck.com

 Please consider the environment before printing this email.

From: Mariyeh Moradnazhad <mariyeh@brooksapplied.com>
Sent: Friday, March 18, 2022 3:55 PM
To: Mike Pope <mike.pope@teck.com>; Jessica Ritz <Jessica.Ritz@teck.com>
Cc: Jeremy Maute <Jeremy@brooksapplied.com>
Subject: Samples Received with No COC Form

[External email]

Hi Jessica & Mike,

I wanted to let you know that we have received two samples here at Brooks Applied Labs for **volatile Se** speciation on March 17th with no COC form. We have not received any electronic COCs for these samples either. The sample IDs are:

F2_OUT_WS_LAEMP_EVO_2022-03_NP
&
EV_EC_BRIDGE_WS_LAEMP_EVO_2022-03_NP

I have attached pictures of these samples to this email. These samples are currently logged under BAL WOs 2203249 and 2203250. Could you please let me know if you are aware of these? if so, could you please provide COC forms for these two samples?

Please feel free to reach out to me with any question you may have.

Thank you,
Mariyeh

Mariyeh Moradnazhad
Project Manager
206-632-6206, ext. 104
mariyeh@brooksapplied.com

BROOKS APPLIED LABS

Meaningful Metals Data and Advanced Speciation Solutions

P: 206-632-6206 | F: 206-632-6017 | **18804 North Creek Parkway, Suite 100, Bothell, WA 98011, USA**

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March 31, 2022

Teck Resources Limited - Vancouver
 Mike Pope
 421 Pine Avenue
 Sparwood, B.C. CANADA V0B2G0
mike.pope@teck.com

Re: F2 SRF

Dear Mike Pope,

On March 17, 2022, Brooks Applied Labs (BAL) received one (1) aqueous sample. The sample was logged-in for the analysis of volatile selenium (Se) speciation.

A chain-of-custody (COC) form was not received with the sample shipment. An electronic version of the COC form was provided via email following receipt of the samples. This version of the COC form was included as the COC form in the report.

The client made a request to amend the **Sample Location (sys_loc_code)** value for sample 2203249-01. The **Sample Location (sys_loc_code)** value undergoing this change is described in the table below.

Laboratory ID	Sample ID (<i>listed on COC form</i>)	Sample Location (sys_loc_code) (<i>listed on COC form</i>)	Sample Location (sys_loc_code) (<i>used for reporting</i>)
2203249-01	F2_OUTF_WS_LAEMP_EVO_2022-03_NP	F2_OUT	F2_OUTF

The **Sample Location (sys_loc_code)** value for 2203249-01 was amended for reporting, according to the table provided above.

Each sample requesting volatile Se speciation had been field-filtered into bottles containing isopropanol preservative (provided by BAL). All sample fractions were stored according to BAL SOPs and EPA methodology.

Volatile Selenium Speciation

Each aqueous sample was analyzed for volatile selenium speciation using high performance liquid chromatography inductively coupled plasma collision reaction cell mass spectrometry (HPLC-ICP-CRC-MS). Volatile selenium species are chromatographically separated on a reversed phase column and then quantified using inductively coupled plasma collision reaction cell mass spectrometry (ICP-CRC-MS); for more information on this determinative technique, please visit the *Interference Reduction Technology* section on our website.

In accordance with the quotation issued for this project, volatile selenium species were defined as dissolved dimethylselenide [DMeSe] and dimethyldiselenide [DMDSe].

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

In instances where a matrix spike/matrix spike duplicate (MS/MSD) set was spiked at a level less than the native sample concentration, the recoveries and the relative percent difference (RPD) values are not considered valid indicators of data quality. In such instances, the recoveries of the laboratory fortified blank (BS) demonstrates the accuracy of the applied methods. When the spiking level was less than 25% of the native sample concentration, the spike recovery was not reported (**NR**) and the relative percent difference (RPD) of the MS/MSD set was not calculated (**NC**).

Except for concentration qualifiers, all data were reported without qualification. All associated quality control sample results met the acceptance criteria.

BAL, an accredited laboratory, certifies that the reported results of all analyses for which BAL is NELAP accredited meet all NELAP requirements. For more information, please see the *Report Information* page.

Please feel free to contact us if you have any questions regarding this report.

Sincerely,



Jeremy Maute

Senior Project Manager

Jeremy@brooksapplied.com



Report Information

Laboratory Accreditation

BAL is accredited by the *National Environmental Laboratory Accreditation Program* (NELAP) through the State of Florida Department of Health, Bureau of Laboratories (E87982) and is certified to perform many environmental analyses. BAL is also certified by many other states to perform environmental analyses. For a current list of our accreditations/certifications, please visit our website at <http://www.brooksapplied.com/resources/certificates-permits/> or review Tables 1 and 2 in our Accreditation Information. Results reported relate only to the samples listed in the report.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

AR	as received	MS	matrix spike
BAL	Brooks Applied Labs	MSD	matrix spike duplicate
BLK	method blank	ND	non-detect
BS	blank spike	NR	non-reportable
CAL	calibration standard	N/C	not calculated
CCB	continuing calibration blank	PS	post preparation spike
CCV	continuing calibration verification	REC	percent recovery
COC	chain of custody record	RPD	relative percent difference
D	dissolved fraction	SCV	secondary calibration verification
DUP	duplicate	SOP	standard operating procedure
IBL	instrument blank	SRM	reference material
ICV	initial calibration verification	T	total fraction
MDL	method detection limit	TR	total recoverable fraction
MRL	method reporting limit		

Definition of Data Qualifiers

(Effective 3/23/2020)

E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Please see narrative for explanation.
J	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1	Estimated value. A full explanation is presented in the narrative.
M	Duplicate precision (RPD) was not within acceptance criteria. Please see narrative for explanation.
N	Spike recovery was not within acceptance criteria. Please see narrative for explanation.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.
Z	Holding time and/or preservation requirements not established for this method; however, BAL recommendations for holding time were not followed. Please see narrative for explanation.

These qualifiers are based on those previously utilized by Brooks Applied Labs, those found in the EPA SOW ILM03.0, Exhibit B, Section III, pg. B-18, and the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review; USEPA; January 2010. These supersede all previous qualifiers ever employed by BAL.



Accreditation Information

Table 1. Accredited method/matrix/analytes for TNI
Issued by: State of Florida Dept. of Health (The NELAC Institute 2016 Standard)
Issued on: July 1, 2021; Valid to: June 30, 2022
Certificate Number: E87982-37

Method	Matrix	TNI Accredited Analyte(s)
EPA 1638	Non-Potable Waters	Ag, Cd, Cu, Ni, Pb, Sb, Se, Tl, Zn
EPA 200.8	Non-Potable Waters	Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Sb, Se, Tl, U, V, Zn
EPA 6020	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Tl, U, V, Zn
	Solids/Chemicals & Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Tl, V, Zn
BAL-5000	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Tl, U, V, Zn, Hardness
	Solids/Chemicals	Ag, As, B, Be, Cd, Co, Cr, Cu, Pb, Mo, Ni, Sb, Se, Sn, Sr, Tl, V, Zn
	Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Tl, V, Zn
EPA 1640	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn
EPA 1631E	Non-Potable Waters, Solids/Chemicals & Biological	Total Mercury
EPA 1630	Non-Potable Waters	Methyl Mercury
BAL-3200	Solids/Chemicals & Biological	Methyl Mercury
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
BAL-4201	Non-Potable Waters	Se(IV), Se(VI)
BAL-4300	Non-Potable Waters Solid/Chemicals	Cr(VI)
SM2340B	Non-Potable Waters	Hardness



Accreditation Information

**Table 2. Accredited method/matrix/analytes for ISO (1),
 Non-Governmental TNI (2)**

Issued by: ANAB

Issued on: September 21, 2021; Valid to: March 30, 2024

Method	Matrix	ISO and Non-Gov. TNI Accredited Analyte(s)
EPA 1638 Mod EPA 200.8 Mod EPA 6020 Mod	Non-Potable Waters	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, U, V, Zn
BAL-5000	Solids/Chemicals & Biological	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, V, Zn Hg (Biological Only)
EPA 1640 Mod	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn Ag, As, Cr, Co, Se, Ti, V (ISO Only)
EPA 1631E Mod BAL-3100	Non-Potable Waters, Solids/Chemicals & Biological/Food	Total Mercury
EPA 1630 Mod BAL-3200	Non-Potable Waters, Solids/Chemicals Biological	Methyl Mercury
EPA 1632A Mod BAL-3300	Non-Potable Waters Biological/Food Solids/Chemicals	Inorganic Arsenic (ISO Only) Inorganic Arsenic (ISO Only)
AOAC 2015.01 Mod BAL-5000	Food	As, Cd, Hg, Pb
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
	Biological by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4101	Food by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4201	Non-Potable Waters	Se(IV), Se(VI), SeCN, SeMet
BAL-4300	Non-Potable Waters, Solid/Chemicals	Cr(VI)
SM 3500-Fe BAL-4500	Non-Potable Waters	Fe, Fe(II) (ISO Only)
SM2340B	Non-Potable Waters	Hardness
SM 2540G BAL-0501	Solids/Chemicals & Biological	% Dry Weight



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
F2_OUTF_WS_LAEMP_EVO_2022-03_NP	2203249-01	WS	Sample	03/02/2022	03/17/2022

Batch Summary

Analyte	Lab Matrix	Method	Prepared	Analyzed	Batch	Sequence
DMDSe	Water	HPLC-ICP-MS	03/24/2022	03/24/2022	B220608	S220354
DMeSe	Water	HPLC-ICP-MS	03/24/2022	03/24/2022	B220608	S220354

Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
F2_OUTF_WS_LAEMP_EVO_2022-03_NP										
2203249-01	DMDSe	WS	D	≤ 0.022	U	0.022	0.222	µg/L	B220608	S220354
2203249-01	DMeSe	WS	D	≤ 0.022	U	0.022	0.222	µg/L	B220608	S220354



Accuracy & Precision Summary

Batch: B220608
Lab Matrix: Water
Method: HPLC-ICP-MS

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B220608-BS1	Blank Spike, (2210011)						
	DMDSe		4.991	4.623	µg/L	93% 80-120	
	DMeSe		5.005	5.377	µg/L	107% 80-120	
B220608-DUP1	Duplicate, (2203248-01)						
	DMDSe	ND		ND	µg/L		N/C 25
	DMeSe	ND		ND	µg/L		N/C 25
B220608-MS1	Matrix Spike, (2203248-01)						
	DMDSe	ND	5.547	5.395	µg/L	97% 75-125	
	DMeSe	ND	5.542	5.543	µg/L	100% 75-125	
B220608-MSD1	Matrix Spike Duplicate, (2203248-01)						
	DMDSe	ND	5.547	5.470	µg/L	99% 75-125	1% 25
	DMeSe	ND	5.542	5.587	µg/L	101% 75-125	0.8% 25



Method Blanks & Reporting Limits

Batch: B220608
Matrix: Water
Method: HPLC-ICP-MS
Analyte: DMDSe

Sample	Result	Units	
B220608-BLK1	0.00	µg/L	
B220608-BLK2	0.00	µg/L	
B220608-BLK3	0.00	µg/L	
B220608-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.010
Limit: 0.100			MRL: 0.100

Analyte: DMeSe

Sample	Result	Units	
B220608-BLK1	0.00	µg/L	
B220608-BLK2	0.00	µg/L	
B220608-BLK3	0.00	µg/L	
B220608-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.010
Limit: 0.100			MRL: 0.100



Sample Containers

Lab ID: 2203249-01			Report Matrix: WS			Collected: 03/02/2022		
Sample: F2_OUTF_WS_LAEMP_EVO_2022-03_NP			Sample Type: Sample			Received: 03/17/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided - TM	40mL	n/a	10% Isopropanol (PP)	1828013	n/a	Cooler 2 - 2203249	


Shipping Containers

Cooler 2 - 2203249

Received: March 17, 2022 7:00
Tracking No: PAPS#RWHV89969 via
Coolant Type: Ice
Temperature: 3.5 °C

Description: Cooler 2
Damaged in transit? No
Returned to client? No
Comments: IR# 33

Custody seals present? No
Custody seals intact? No
COC present? No

		Page 1 of 1										Print COC Ver 6.4.0.1								
		COC ID: F2_EVO LAEMP_2022_MAR_Brooks				TURNAROUND TIME:						RUSH:								
PROJECT/CLIENT INFO								LABORATORY				OTHER INFO								
Facility Name / Job# F2 SRF								Lab Name Brooks Applied Labs				Report Format / Distribution								
Project Manager Mike Pope								Lab Contact Ben Wozniak				Email 1: ben.wozniak@teck.com								
Email mike.pope@teck.com								Email Ben@brooksupplied.com				Email 2: teckcoal@equisonline.com								
Address 421 Pine Ave								Address 18804 North Creek Parkway				Email 3: Teck.Lab.Results@teck.com								
City Sparwood Province BC								Suite 100				Email 4: AguaSciLab@teck.com								
Postal Code V0B 2G0 Country Canada								City Bothell Province WA				Email 5: lbrown@minnow.ca								
Phone Number 250-425-8202								Postal Code 98011 Country United S				Email 6: ben.wozniak@teck.com								
								Phone Number (206) 753-6158				PO number 748540								
SAMPLE DETAILS								ANALYSIS REQUESTED <small>Filtered - F: Field, L: Lab, FL: Field & Lab, N: None</small>												
Sample ID		Sample Location (sys_loc_code)		Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	FIL	PRESERV.	ANALYSIS								
F2_OUTF_WS_LAEMP_EVO_2022-03_NP		F2_OUT		WS	No	2-Mar-22	13:45	G	1	F	F	Volatile Selenium								
ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS								RELINQUISHED BY/AFFILIATION		DATE/TIME		ACCEPTED BY/AFFILIATION		DATE/TIME						
All samples field filtered and preserved								Alex McClymont		March 9, 2022										
SERVICE REQUEST (rush - subject to availability)								Sampler's Name		Alex McClymont		Mobile #		780-293-6750						
Regular (default) X Priority (2-3 business days) - 50% surcharge Emergency (1 Business Day) - 100% surcharge For Emergency <1 Day, ASAP or Weekend - Contact ALS								Sampler's Signature				Date/Time		March 9, 2022						

STRAIGHT BILL OF LADING
NOT NEGOTIABLE

RW HOT SHOT SERVICE INC.

250-425-7447
24 Hour Hot Shot Service

No. 89969

Sparwood, BC
Terrace, BC
Red Deer, AB

Vancouver, BC
Calgary, AB
Montreal, QC

Prince George, BC
Edmonton, AB
Spokane, WA

Elkford, BC
Ft. McMurray, AB
Shelby, MT

Tumbler Ridge, BC
Hinton, AB
Gillette, WY

INVOICE TO		DATE	
BILL OF LADING #		PURCHASE ORDER NUMBER	
SHIPPER (FROM)		CONSIGNEE (TO)	
STREET		STREET	
CITY/PROVINCE		CITY/PROVINCE	
POSTAL CODE		POSTAL CODE	
SPECIAL INSTRUCTIONS		FREIGHT CHARGES SHIPPER TO CHECK	
PACKAGES	DESCRIPTION OF ARTICLES AND SPECIAL MARKS	WEIGHT (Subject to Correction)	<input type="checkbox"/> PREPAID <input type="checkbox"/> COLLECT If not indicated, shipping will automatically move collect.
			FEE
			WAITING
			XPU
			CHARGES
			FSC
			US
			SUB TOTAL
			GST
UNIT #	DECLARED VALUATION: Maximum liability of carrier is \$2.00 per lb. (\$4.41 per kilogram) unless declared valuation states otherwise.		TOTAL \$
DRIVER'S SIGNATURE - PICK UP BY	PICK UP TIME	DRIVER'S SIGNATURE - DELIVERY BY	FINISH TIME
<small>NOTICE OF CLAIM: (a) No carrier is liable for loss, damage or delay of any goods under the Bill of Lading unless notice in writing setting out particulars of the claim, destination and date of shipment of the goods and the estimated amount claimed, is received by the carrier within ninety (90) days after the delivery of the goods, or in the case of failure to make delivery within nine (9) months from the date of shipment. (b) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. (c) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. RECEIVED at the point of origin on the date specified from the consignor mentioned herein, the property herein described, in apparent good order, except as noted (contents and condition of contents of package unknown) marked, consigned and destined as indicated below, which the carrier agrees to carry and to deliver to the consignee at the said destination, subject to the rates and classification in effect on the date of shipment. It is mutually agreed, as to each carrier of all or any of the goods over all or any portion of the route to destination, and as to each party of any line interested in all or any of the goods, that every service to be performed hereunder shall be subject to all the conditions standard Bill of Lading in power at the date of issuing, which are hereto agreed by the consignor and accepted for himself and his assigns. Printed or white, including conditions set aside by the standard Bill of Lading, in power at the date of issuing, which are hereto agreed by the consignor and accepted for himself and his assigns. The contract for the carriage of the goods listed in the Bill of Lading is governed by regulation in force in the jurisdiction at the time and place of shipment and is subject to the conditions set out in such conditions.</small>			
SHIPPER PRINT	CONSIGNEE PRINT	DATE	
SHIPPER SIGN	CONSIGNEE SIGN	TIME	
WHITE: Office ~ YELLOW: Carrier PINK: Consignee GOLDENROAD: Shipper		GST # 864540398RT0001	
		NUMBER OF PIECES RECEIVED ▲	

Cooler ID: Cooler 2

COC (Y/N)

Temperature: 3.5

IR: 33

Coolant Type: Ice Blue Ice Ambient

Notes:

Sampling Locations:

Sample Types:

Container Types:

Opened By: ASG

Date: 3/17/22

	GH	EV	BG	F2
T/D				
SP	40ml volatile glass	40ml volatile glass	40ml volatile glass	40ml volatile glass

COPY



From: [Tyler Mehler](#)
To: [Jessica Ritz](#); [Mariyeh Moradnazard](#); [Mike Pope](#)
Cc: [Jeremy Maute](#)
Subject: RE: Samples Received with No COC Form
Date: Monday, March 21, 2022 9:19:04 AM
Attachments: [CONFIDENTIAL_F2_EVO LAEMP VolatileSe 2022 MAR Brooks 2022-03-021.xlsm](#)
[CONFIDENTIAL_EV_EVO LAEMP VolatileSe 2022 MAR Brooks 2022-03-02.xlsm](#)

Thanks Jess for looping me in. Please find the digital COCs attached.

As Jess noted in her email below – the sample ID should be F2_OUTF_WS_LAEMP_EVO_2022-03_NP.

Have a good day all,
Tyler

From: Jessica Ritz <Jessica.Ritz@teck.com>
Sent: Monday, March 21, 2022 6:50 AM
To: Mariyeh Moradnazard <mariyeh@brooksapplied.com>; Mike Pope <Mike.Pope@teck.com>; Tyler Mehler <tyler.mehler@minnow.ca>
Cc: Jeremy Maute <Jeremy@brooksapplied.com>
Subject: RE: Samples Received with No COC Form

Hi Mariyeh,

Thanks for bringing these samples to our attention! These samples are anticipated and part of our sampling program.

Tyler Mehler will send you the digital COCs for these samples.

If it's possible, could you please separate these two WO# into a separate work order each? They will need to be in separate EZEDDs in order for our database to accept the data.

Please note an error in the below sys_sample_ID and change TO: F2_OUTF_WS_LAEMP_EVO_2022-03_NP.

Take care,
Jess

Jessica Ritz B.Sc., P.Biol., R.P.Bio. (She/Her)
Environmental Technician
Aquatic Sciences, Teck Coal Limited
Direct Phone: 250.425.9086
Alt Phone: 250.423.9613
Jessica.Ritz@Teck.com

 Please consider the environment before printing this email.

From: Mariyeh Moradnazhad <mariyeh@brooksapplied.com>
Sent: Friday, March 18, 2022 3:55 PM
To: Mike Pope <mike.pope@teck.com>; Jessica Ritz <Jessica.Ritz@teck.com>
Cc: Jeremy Maute <Jeremy@brooksapplied.com>
Subject: Samples Received with No COC Form

[External email]

Hi Jessica & Mike,

I wanted to let you know that we have received two samples here at Brooks Applied Labs for **volatile Se** speciation on March 17th with no COC form. We have not received any electronic COCs for these samples either. The sample IDs are:

F2_OUT_WS_LAEMP_EVO_2022-03_NP
&
EV_EC_BRIDGE_WS_LAEMP_EVO_2022-03_NP

I have attached pictures of these samples to this email. These samples are currently logged under BAL WOs 2203249 and 2203250. Could you please let me know if you are aware of these? if so, could you please provide COC forms for these two samples?

Please feel free to reach out to me with any question you may have.

Thank you,
Mariyeh

Mariyeh Moradnazhad
Project Manager
206-632-6206, ext. 104
mariyeh@brooksapplied.com

BROOKS APPLIED LABS

Meaningful Metals Data and Advanced Speciation Solutions

P: 206-632-6206 | F: 206-632-6017 | **18804 North Creek Parkway, Suite 100, Bothell, WA 98011, USA**

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18804 North Creek Parkway, Ste 100, Bothell, WA 98011 • USA • T: 206 632 6206 F: 206 632 6017 • info@brooksapplied.com

June 10, 2022

Teck Resources Limited - Vancouver
 Mike Pope
 421 Pine Avenue
 Sparwood, B.C. CANADA V0B2G0
mike.pope@teck.com

Revision 1:

Per client request, **Sample IDs** were changed for reporting in this revised report. A table describing the changes in field IDs is provided below. Since the field IDs listed on the COC form are not used for reporting, please refer to the *Sample ID Cross Reference Table* for identification.

No other changes were made in this revised report, with respect to the initial report issued on February 2, 2022.

Re: Elkview Operations

Dear Mike Pope,

On April 28, 2022, Brooks Applied Labs (BAL) received two (2) aqueous samples. The samples were logged-in for total recoverable selenium [Se], dissolved Se [Se], and Se speciation analyses, according to the chain-of-custody (COC) form.

Per client request, **Sample IDs** were changed for reporting. The changes are described in the table below.

Sample ID Cross Reference Table

Laboratory ID	Sample ID (on COC form)	Corresponding Sample ID Used for Reporting (per client request)
2204344-01	EV_BRD_LOT3_WS_LAEMP_EVO_2022-04-21_NP	RG_BOCKRD_WS_LAEMP_EVO_2022-04-21_NP
2204344-02	EV_BRD_LOT3_WS_LAEMP_EVO_2022-04-21_NP_NAL	RG_BOCKRD_WS_LAEMP_EVO_2022-04-21_NP-NAL
2204344-03	EV_BRD_LOT3_WS_LAEMP_EVO_2022-04-21_NP_NAL	RG_BOCKRD_WS_LAEMP_EVO_2022-04-21_NP-NAL

Per client request, the field IDs were amended for reporting. The Sample ID changes are described in the table.

The **Sample ID** values described in *column 3* in the table above are used for reporting. Since the **field IDs** listed on the COC forms are not used for reporting for these samples, please refer to the *Sample ID Cross Reference Table* for identification.

Additionally, the **Sample Location (sys_loc_code)** values have been amended for reporting. The COC form indicates the **Sample Location (sys_loc_code)** value for each sample fraction should be "EV_BRD_LOT3". Per client request, the **Sample Location (sys_loc_code)** value "RG_BOCKRD_WS" is used for reporting. **Sample Location (sys_loc_code)** values are included in the corresponding EDD for this report.

The sample fractions for total recoverable Se and dissolved Se were not preserved in the field. The samples were preserved (pH < 2) upon receipt at BAL. All sample fractions for total recoverable Se and dissolved Se were preserved within the (14 calendar day) preservation holding time.

The sample fractions logged in for Se speciation and dissolved Se had been field-filtered prior to receipt at BAL. All samples were stored according to BAL SOPs.

Total Recoverable Se and Dissolved Se

Each aqueous sample fraction for dissolved Se was digested in a closed vessel (bomb) with nitric and hydrochloric acids. The resulting digests were analyzed for Se content via inductively coupled plasma triple quadrupole mass spectrometry (ICP-QQQ-MS). The ICP-QQQ-MS instrumentation uses advanced interference removal techniques to ensure accuracy of the sample results. For more information, please visit the *Interference Reduction Technology* section on our website, brooksapplied.com.

Selenium Speciation

Each aqueous sample was analyzed for selenium speciation using ion chromatography inductively coupled plasma collision reaction cell mass spectrometry (IC-ICP-CRC-MS). Selenium species are chromatographically separated on an ion exchange column and then quantified using inductively coupled plasma collision reaction cell mass spectrometry (ICP-CRC-MS); for more information on this determinative technique, please visit the *Interference Reduction Technology* section on our website. The chromatographic method applied for the analyses provides greater retention of methylseleninic acid and selenomethionine, allowing for more definitive quantitation of these species.

In accordance with the quotation issued for this project, selenium speciation was defined as dissolved selenite [Se(IV)], selenate [Se(VI)], selenocyanate [SeCN], methylseleninic acid [MeSe(IV)], methaneselenonic acid [MeSe(VI)], selenomethionine [SeMef], selenosulfate [SeSO₃], and dimethylselenoxide [DMSeO]. Unknown Se species was defined as the total concentration of all unknown Se species observed during the analysis. This item is identified on the report as [Unk Se Sp].

DMSeO elutes early in the chromatographic run due to the nature of the molecule and the applied chromatographic separation method. Since this species elutes near the dead volume, additional selenium species may coelute. Alternate methods can be applied, upon client request, to increase the separation of DMSeO from potentially co-eluting selenium species.

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

In instances where a matrix spike/matrix spike duplicate (MS/MSD) set was spiked at a level less than the native sample concentration, the recoveries and the relative percent difference (RPD) are not considered valid indicators of data quality. In such instances, the recoveries of the laboratory fortified blanks (BS) and/or standard reference materials (SRM) demonstrate the accuracy of the applied methods. When the spiking level was less than 25% of the native sample concentration, the spike recovery was not reported (**NR**) and the relative percent difference (RPD) of the MS/MSD set was not calculated (**N/C**).

In cases when either the native sample concentration was non-detectable (reported as less than or equal to the MDL) and/or the corresponding DUP result was also non-detectable, the RPD between the two values was not calculated (**N/C**).

Except for concentration qualifiers, all data were reported without qualification. All associated quality control sample results met the acceptance criteria.

BAL, an accredited laboratory, certifies that the reported results of all analyses for which BAL is NELAP accredited meet all NELAP requirements. For more information, please see the *Report Information* page.

Please feel free to contact us if you have any questions regarding this report.

Sincerely,

A handwritten signature in black ink, appearing to read 'Jeremy Maute', written over a faint, illegible background.

Jeremy Maute

Senior Project Manager

Jeremy@brooksapplied.com



Report Information

Laboratory Accreditation

BAL is accredited by the *National Environmental Laboratory Accreditation Program* (NELAP) through the State of Florida Department of Health, Bureau of Laboratories (E87982) and is certified to perform many environmental analyses. BAL is also certified by many other states to perform environmental analyses. For a current list of our accreditations/certifications, please visit our website at <http://www.brooksapplied.com/resources/certificates-permits/> or review Tables 1 and 2 in our Accreditation Information. Results reported relate only to the samples listed in the report.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

AR	as received	MS	matrix spike
BAL	Brooks Applied Labs	MSD	matrix spike duplicate
BLK	method blank	ND	non-detect
BS	blank spike	NR	non-reportable
CAL	calibration standard	N/C	not calculated
CCB	continuing calibration blank	PS	post preparation spike
CCV	continuing calibration verification	REC	percent recovery
COC	chain of custody record	RPD	relative percent difference
D	dissolved fraction	SCV	secondary calibration verification
DUP	duplicate	SOP	standard operating procedure
IBL	instrument blank	SRM	reference material
ICV	initial calibration verification	T	total fraction
MDL	method detection limit	TR	total recoverable fraction
MRL	method reporting limit		

Definition of Data Qualifiers

(Effective 3/23/2020)

E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Please see narrative for explanation.
J	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1	Estimated value. A full explanation is presented in the narrative.
M	Duplicate precision (RPD) was not within acceptance criteria. Please see narrative for explanation.
N	Spike recovery was not within acceptance criteria. Please see narrative for explanation.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.
Z	Holding time and/or preservation requirements not established for this method; however, BAL recommendations for holding time were not followed. Please see narrative for explanation.

These qualifiers are based on those previously utilized by Brooks Applied Labs, those found in the EPA SOW ILM03.0, Exhibit B, Section III, pg. B-18, and the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review; USEPA; January 2010. These supersede all previous qualifiers ever employed by BAL.



Accreditation Information

Table 1. Accredited method/matrix/analytes for TNI
Issued by: State of Florida Dept. of Health (The NELAC Institute 2016 Standard)
Issued on: July 1, 2021; Valid to: June 30, 2022
Certificate Number: E87982-37

Method	Matrix	TNI Accredited Analyte(s)
EPA 1638	Non-Potable Waters	Ag, Cd, Cu, Ni, Pb, Sb, Se, Tl, Zn
EPA 200.8	Non-Potable Waters	Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Sb, Se, Tl, U, V, Zn
EPA 6020	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Tl, U, V, Zn
	Solids/Chemicals & Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Tl, V, Zn
BAL-5000	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Tl, U, V, Zn, Hardness
	Solids/Chemicals	Ag, As, B, Be, Cd, Co, Cr, Cu, Pb, Mo, Ni, Sb, Se, Sn, Sr, Tl, V, Zn
	Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Tl, V, Zn
EPA 1640	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn
EPA 1631E	Non-Potable Waters, Solids/Chemicals & Biological	Total Mercury
EPA 1630	Non-Potable Waters	Methyl Mercury
BAL-3200	Solids/Chemicals & Biological	Methyl Mercury
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
BAL-4201	Non-Potable Waters	Se(IV), Se(VI)
BAL-4300	Non-Potable Waters Solid/Chemicals	Cr(VI)
SM2340B	Non-Potable Waters	Hardness



Accreditation Information

**Table 2. Accredited method/matrix/analytes for ISO (1),
Non-Governmental TNI (2)
Issued by: ANAB
Issued on: September 21, 2021; Valid to: March 30, 2024**

Method	Matrix	ISO and Non-Gov. TNI Accredited Analyte(s)
EPA 1638 Mod EPA 200.8 Mod EPA 6020 Mod	Non-Potable Waters	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, U, V, Zn
BAL-5000	Solids/Chemicals & Biological	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, V, Zn Hg (Biological Only)
EPA 1640 Mod	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn Ag, As, Cr, Co, Se, Ti, V (ISO Only)
EPA 1631E Mod BAL-3100	Non-Potable Waters, Solids/Chemicals & Biological/Food	Total Mercury
EPA 1630 Mod BAL-3200	Non-Potable Waters, Solids/Chemicals Biological	Methyl Mercury
EPA 1632A Mod BAL-3300	Non-Potable Waters Biological/Food Solids/Chemicals	Inorganic Arsenic (ISO Only) Inorganic Arsenic (ISO Only)
AOAC 2015.01 Mod BAL-5000	Food	As, Cd, Hg, Pb
BAL-4100	Non-Potable Waters Biological by BAL-4117	As(III), As(V), DMAs, MMAs Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4101	Food by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4201	Non-Potable Waters	Se(IV), Se(VI), SeCN, SeMet
BAL-4300	Non-Potable Waters, Solid/Chemicals	Cr(VI)
SM 3500-Fe BAL-4500	Non-Potable Waters	Fe, Fe(II) (ISO Only)
SM2340B	Non-Potable Waters	Hardness
SM 2540G BAL-0501	Solids/Chemicals & Biological	% Dry Weight



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
RG_BOCKRD_WS_LAEMP_EVO_2 022-04-21_NP	2204344-01	WS	Sample	04/21/2022	04/28/2022
RG_BOCKRD_WS_LAEMP_EVO_2 022-04-21_NP_NAL	2204344-02	WS	Sample	04/21/2022	04/28/2022
RG_BOCKRD_WS_LAEMP_EVO_2 022-04-21_NP_NAL	2204344-03	WS	Sample	04/21/2022	04/28/2022

Batch Summary

Analyte	Lab Matrix	Method	Prepared	Analyzed	Batch	Sequence
DMS ₂ SeO	Water	SOP BAL-4201	04/28/2022	04/29/2022	B220947	S220491
MeSe(IV)	Water	SOP BAL-4201	04/28/2022	04/29/2022	B220947	S220491
MeSe(VI)	Water	SOP BAL-4201	04/28/2022	04/29/2022	B220947	S220491
Se	Water	EPA 1638 Mod	05/03/2022	05/04/2022	B220976	S220509
Se(IV)	Water	SOP BAL-4201	04/28/2022	04/29/2022	B220947	S220491
Se(VI)	Water	SOP BAL-4201	04/28/2022	04/29/2022	B220947	S220491
SeCN	Water	SOP BAL-4201	04/28/2022	04/29/2022	B220947	S220491
SeMet	Water	SOP BAL-4201	04/28/2022	04/29/2022	B220947	S220491
SeSO ₃	Water	SOP BAL-4201	04/28/2022	04/29/2022	B220947	S220491
Unk Se Sp	Water	SOP BAL-4201	04/28/2022	04/29/2022	B220947	S220491



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_BOCKRD_WS_LAEMP_EVO_2022-04-21_NP										
2204344-01	DMS ₂ O	WS	D	0.022	J	0.010	0.025	µg/L	B220947	S220491
2204344-01	MeSe(IV)	WS	D	0.038		0.010	0.025	µg/L	B220947	S220491
2204344-01	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B220947	S220491
2204344-01	Se(IV)	WS	D	0.759		0.010	0.075	µg/L	B220947	S220491
2204344-01	Se(VI)	WS	D	112		0.010	0.055	µg/L	B220947	S220491
2204344-01	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B220947	S220491
2204344-01	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B220947	S220491
2204344-01	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B220947	S220491
2204344-01	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B220947	S220491
RG_BOCKRD_WS_LAEMP_EVO_2022-04-21_NP-NAL										
2204344-02	Se	WS	D	162		0.165	0.528	µg/L	B220976	S220509
RG_BOCKRD_WS_LAEMP_EVO_2022-04-21_NP-NAL										
2204344-03	Se	WS	TR	164		0.165	0.528	µg/L	B220976	S220509



Accuracy & Precision Summary

Batch: B220947
Lab Matrix: Water
Method: SOP BAL-4201

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B220947-BS1	Blank Spike, (2124033)						
	MeSe(IV)		5.095	5.601	µg/L	110% 75-125	
	Se(IV)		5.000	4.853	µg/L	97% 75-125	
	Se(VI)		5.000	4.751	µg/L	95% 75-125	
	SeCN		5.015	4.893	µg/L	98% 75-125	
	SeMet		4.932	4.919	µg/L	100% 75-125	
B220947-DUP2	Duplicate, (2204328-13)						
	DMSeO	0.163		0.162	µg/L		0.8% 25
	MeSe(IV)	0.072		0.071	µg/L		2% 25
	MeSe(VI)	ND		ND	µg/L		N/C 25
	Se(IV)	6.882		6.910	µg/L		0.4% 25
	Se(VI)	0.243		0.237	µg/L		3% 25
	SeCN	8.560		8.667	µg/L		1% 25
	SeMet	ND		ND	µg/L		N/C 25
	SeSO3	0.074		0.076	µg/L		2% 25
	Unk Se Sp	0.187		0.207	µg/L		11% 25
B220947-MS2	Matrix Spike, (2204328-13)						
	Se(IV)	6.882	4.900	11.53	µg/L	95% 75-125	
	Se(VI)	0.243	5.100	5.371	µg/L	101% 75-125	
	SeCN	8.560	1.962	10.55	µg/L	NR 75-125	
	SeMet	ND	1.977	2.091	µg/L	106% 75-125	
B220947-MSD2	Matrix Spike Duplicate, (2204328-13)						
	Se(IV)	6.882	4.900	11.39	µg/L	92% 75-125	1% 25
	Se(VI)	0.243	5.100	5.290	µg/L	99% 75-125	2% 25
	SeCN	8.560	1.962	10.33	µg/L	NR 75-125	N/C 25
	SeMet	ND	1.977	2.014	µg/L	102% 75-125	4% 25



Accuracy & Precision Summary

Batch: B220976
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B220976-BS1	Blank Spike, (2128022) Se		200.0	193.7	µg/L	97% 75-125	
B220976-BS2	Blank Spike, (2128022) Se		200.0	194.3	µg/L	97% 75-125	
B220976-SRM1	Reference Material (2145010, TMDA 51.5 Reference Standard - Bottle 9 - SRM) Se		14.30	13.59	µg/L	95% 75-125	
B220976-SRM2	Reference Material (2145010, TMDA 51.5 Reference Standard - Bottle 9 - SRM) Se		14.30	14.01	µg/L	98% 75-125	
B220976-DUP1	Duplicate, (2204342-05) Se	5.737		6.131	µg/L		7% 20
B220976-MS1	Matrix Spike, (2204342-05) Se	5.737	220.0	221.4	µg/L	98% 75-125	
B220976-MSD1	Matrix Spike Duplicate, (2204342-05) Se	5.737	220.0	218.5	µg/L	97% 75-125	1% 20



Method Blanks & Reporting Limits

Batch: B220947
Matrix: Water
Method: SOP BAL-4201
Analyte: DMSeO

Sample	Result	Units	
B220947-BLK1	0.00	µg/L	
B220947-BLK2	0.00	µg/L	
B220947-BLK3	0.00	µg/L	
B220947-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005

Analyte: MeSe(IV)

Sample	Result	Units	
B220947-BLK1	0.00	µg/L	
B220947-BLK2	0.00	µg/L	
B220947-BLK3	0.00	µg/L	
B220947-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005

Analyte: MeSe(VI)

Sample	Result	Units	
B220947-BLK1	0.00	µg/L	
B220947-BLK2	0.00	µg/L	
B220947-BLK3	0.00	µg/L	
B220947-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005



Method Blanks & Reporting Limits

Analyte: Se(IV)

Sample	Result	Units	
B220947-BLK1	0.00	µg/L	
B220947-BLK2	0.00	µg/L	
B220947-BLK3	0.00	µg/L	
B220947-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.015		MRL: 0.015

Analyte: Se(VI)

Sample	Result	Units	
B220947-BLK1	0.00	µg/L	
B220947-BLK2	0.00	µg/L	
B220947-BLK3	0.00	µg/L	
B220947-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.011		MRL: 0.011

Analyte: SeCN

Sample	Result	Units	
B220947-BLK1	0.00	µg/L	
B220947-BLK2	0.00	µg/L	
B220947-BLK3	0.00	µg/L	
B220947-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.010		MRL: 0.010

Analyte: SeMet

Sample	Result	Units	
B220947-BLK1	0.00	µg/L	
B220947-BLK2	0.00	µg/L	
B220947-BLK3	0.00	µg/L	
B220947-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.005		MRL: 0.005



Method Blanks & Reporting Limits

Analyte: SeSO3

Sample	Result	Units	
B220947-BLK1	0.00	µg/L	
B220947-BLK2	0.00	µg/L	
B220947-BLK3	0.00	µg/L	
B220947-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.011		MRL: 0.011

Analyte: Unk Se Sp

Sample	Result	Units	
B220947-BLK1	0.00	µg/L	
B220947-BLK2	0.00	µg/L	
B220947-BLK3	0.00	µg/L	
B220947-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.015		MRL: 0.015



Method Blanks & Reporting Limits

Batch: B220976
Matrix: Water
Method: EPA 1638 Mod
Analyte: Se

Sample	Result	Units	
B220976-BLK1	0.036	µg/L	
B220976-BLK2	0.040	µg/L	
B220976-BLK3	0.039	µg/L	
B220976-BLK4	0.050	µg/L	
Average:	0.041		MDL: 0.150
Limit:	0.480		MRL: 0.480



Sample Containers

Lab ID: 2204344-01

Report Matrix: WS

Collected: 04/21/2022

Sample:

Sample Type: Sample + Sum

Received: 04/28/2022

RG_BOCKRD_WS_LAEMP_EVO_2022-04-21_NP

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2204344
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2204344
C	XTRA_VOL	60 mL	na	none	na	na	Cooler 4 - 2204344

Lab ID: 2204344-02

Report Matrix: WS

Collected: 04/21/2022

Sample:

Sample Type: Sample + Sum

Received: 04/28/2022

RG_BOCKRD_WS_LAEMP_EVO_2022-04-21_NP-NAL

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2152004	<2	Cooler 8 - 2204344

Lab ID: 2204344-03

Report Matrix: WS

Collected: 04/21/2022

Sample:

Sample Type: Sample + Sum

Received: 04/28/2022

RG_BOCKRD_WS_LAEMP_EVO_2022-04-21_NP-NAL

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2152004	<2	Cooler 8 - 2204344



Shipping Containers

Cooler 4 - 2204344

Received: April 28, 2022 7:00
Tracking No: PAPS#RWHV92132 via Courier
Coolant Type: None
Temperature: 1.8 °C

Description: Styrofoam Cooler
Damaged in transit? No
Returned to client? No
Comments: IR 33

Custody seals present? No
Custody seals intact? No
COC present? No

Cooler 8 - 2204344

Received: April 28, 2022 7:00
Tracking No: PAPS#RWHV92132 via Courier
Coolant Type: Blue Ice
Temperature: 9.4 °C

Description: Styrofoam Cooler
Damaged in transit? No
Returned to client? No
Comments: IR 33

Custody seals present? No
Custody seals intact? No
COC present? Yes



PROJECT/CLIENT INFO				LABORATORY				OTHER INFO		
COC ID: EV_EVO LAEMP_2022_APR21_Brooks				TURNAROUND TIME:				RUSH:		
Facility Name / Job# Elkview Operations				Lab Name Brooks Applied Labs				Report Format / Distribution		
Project Manager Mike Pope				Lab Contact Ben Wozniak				Email 1: <input type="checkbox"/> Excel <input type="checkbox"/> PDF <input type="checkbox"/> EDD		
Email Mike.Pope@teck.com				Email Ben@brooksupplied.com				Email 2: teckcoal@equisonline.com		
Address 421 Pine Ave				Address 18804 North Creek Parkway				Email 3: TeckLabResults@teck.com		
City Sparwood Province BC				City Bothell Province WA				Email 4: AquasoftLab@teck.com		
Postal Code V0B 2G0 Country Canada				Postal Code 98011 Country United States				Email 5: broun@minnow.ca		
Phone Number 250-425-8202				Phone Number (206) 753-6158				PO number 817033		
SAMPLE DETAILS								ANALYSIS REQUESTED		
Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com p	# Of Cont.	Brooks_Se_Speciation	Brooks_Se_D	Brooks_Se_T
EV_BRD_LOT3_WS_LAEMP_EVO_2022-04-21_NP	EV_BRD_LOT3	WS	No	21-Apr-22	12:30	G	1	1		
EV_BRD_LOT3_WS_LAEMP_EVO_2022-04-21_NP_NA	EV_BRD_LOT3	WS	No	21-Apr-22	12:30	G	2		1	1
ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS				RELINQUISHED BY/AFFILIATION		DATE/TIME		ACCEPTED BY/AFFILIATION		DATE/TIME
				Maddy Stokes - Minnow		April 26 2022		Maddy Stokes - Minnow		4/26/22 07:07
SERVICE REQUEST (rush - subject to availability)				Regular (default) <input checked="" type="checkbox"/>		Priority (2-3 business days) - 50% surcharge		Emergency (1 Business Day) - 100% surcharge		For Emergency <1 Day, ASAP or Weekend - Contact ALS
Sampler's Name				Maddy Stokes		Mobile #		647-522-0672		
Sampler's Signature				MS		Date/Time		April 26 2022		

STRAIGHT BILL OF LADING
NOT NEGOTIABLE

RW HOT SHOT SERVICE INC.

250-425-7447
24 Hour Hot Shot Service

No. 92133

Sparwood, BC
Terrace, BC
Red Deer, AB

Vancouver, BC
Calgary, AB
Montreal, QC

Prince George, BC
Edmonton, AB
Spokane, WA

Elkford, BC
Ft. McMurray, AB
Shelby, MT

Tumbler Ridge, BC
Hinton, AB
Gillette, WY

INVOICE TO		DATE	
BILL OF LADING #		PURCHASE ORDER NUMBER	
SHIPPER (FROM)		CONSIGNEE (TO)	
STREET		STREET	
CITY/PROVINCE		POSTAL CODE	CITY/PROVINCE
CITY/PROVINCE		POSTAL CODE	POSTAL CODE
SPECIAL INSTRUCTIONS		FREIGHT CHARGES	
PACKAGES	DESCRIPTION OF ARTICLES AND SPECIAL MARKS	WEIGHT (Subject to Correction)	SHIPPER TO CHECK
			<input type="checkbox"/> PREPAID <input type="checkbox"/> COLLECT
			If not indicated, shipping will automatically move collect.
			FREE
			WAITING
			XPU
			CHARGES
			FSC
			US
			SUB TOTAL
			GST
UNIT #	DECLARED VALUATION: Maximum liability of carrier is \$2.00 per lb. (\$4.41 per kilogram) unless declared valuation states otherwise.	\$	TOTAL \$
DRIVER'S SIGNATURE - PICK UP BY	PICK UP TIME	DRIVER'S SIGNATURE - DELIVERY BY	FINISH TIME
<small>NOTICE OF CLAIM: (a) No carrier is liable for loss, damage or delay of any goods under the Bill of Lading unless notice, therefore setting out particulars of the origin, destination and mode of shipment of the goods and the estimated amount claimed, is given in writing to the originating carrier or the delivering carrier within sixty (60) days after the delivery of the goods, or in the case of failure to make delivery within nine (9) months from the date of shipment, respect of such loss, damage or delay is given in writing to the originating carrier or the delivering carrier within six (6) months from the date of shipment together with a copy of the paid freight bill. (b) The final statement of the claim must be filed within nine (9) months from the date of shipment at the said destination, subject to the rates and classification in effect on the date of shipment, RECEIVED at the point of origin on the date specified from the consignor mentioned herein, the property herein described, in apparent good order, except as noted (contents and condition of contents of package unknown) marked, consigned and delivered as indicated below, which the carrier agrees to carry and to deliver to the consignee at the said destination, subject to the rates and classification in effect on the date of shipment, it is mutually agreed, as to each carrier of all or any of the goods over all or any portion of the route to destination, and as to each party of any time interested in all or any of the goods, that every service to be performed hereunder shall be subject to all the conditions standard Bill of Lading, in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. Printed or written, including conditions set aside by the standard Bill of Lading, in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. The Contract for the carriage of the goods listed in the Bill of Lading is governed by regulation in force in the jurisdiction at the time and place of shipment and is subject to the provisions set out in such conditions.</small>			
SHIPPER PRINT	CONSIGNEE PRINT	DATE	
SHIPPER SIGN	CONSIGNEE SIGN	TIME	
WHITE: Office		YELLOW: Carrier	
PINK: Consignee		GOLDENROAD: Shipper	
GST # 864540398RT0001		NUMBER OF PIECES RECEIVED ▲	

PAPS# RWHV92132

Cooler ID: Cooler 8 CQC (Y/N) Temperature: 9.4 IR: 33

Coolant Type: Ice Blue Ice Ambient

Notes:

Sampling Locations:	F2	EV									
Sample Types:	T/D	SP	T/D	SP	T/D	SP	T/D	SP	T/D	SP	SP
Container Types:	40 ml glass		40 ml glass								

Opened By: ASG Date: 4/28/22

COPY

From: [Jessica Ritz](#)
To: [Jeremy Maute](#)
Cc: [Mike Pope](#); [AquaSciLab](#); [Lisa Bowron](#); [Tyler Mehler](#); [Mariyeh Moradnzhad](#)
Subject: RE: Brooks Final Report/EDD, WO 2204344: Elkview Operations, EVO Project - Confidential
Date: Thursday, June 9, 2022 3:03:49 PM

Hi Jeremy,

That is correct – thank you for your prompt response.

Take care,
Jess

Jessica Ritz B.Sc., P.Biol., R.P.Bio. (She/Her)
Environmental Technician
Aquatic Sciences, Teck Coal Limited
Direct Phone: 250.425.9086
Alt Phone: 250.423.9613
Jessica.Ritz@Teck.com

 Please consider the environment before printing this email.

From: Jeremy Maute <Jeremy@brooksapplied.com>
Sent: Thursday, June 2, 2022 3:24 PM
To: Jessica Ritz <Jessica.Ritz@teck.com>
Cc: Mike Pope <Mike.Pope@teck.com>; AquaSciLab <AquaSciLab@teck.com>; Lisa Bowron <LBowron@minnow.ca>; Tyler Mehler <tyler.mehler@minnow.ca>; Mariyeh Moradnzhad <mariyeh@brooksapplied.com>
Subject: RE: Brooks Final Report/EDD, WO 2204344: Elkview Operations, EVO Project - Confidential

[External email]

Yes, we can do that. I'll get on this right away.

Just to be sure, here are the changes I am making for reporting.

- The **field ID** for total recoverable Se and dissolved Se fractions from (EV_BRD_LOT2_WS_LAEMP_EVO_2022-04-21_NP_NAL → RG_BOCKRD_WS_LAEMP_EVO_2022-04-21_NP-NAL).
- Additionally, *the field ID for* the Se speciation fraction will be amended from (EV_BRD_LOT2_WS_LAEMP_EVO_2022-04-21_NP → RG_BOCKRD_WS_LAEMP_EVO_2022-04-21_NP).
- **Sys_loc_code** values will be amended from (EV_BRD_LOT2 → RG_BOCKRD_WS).

Let me know if this is correct, and I can submit a revised report/EDD for this item.

Thanks everyone.

Regards,

Jeremy Maute
Senior Project Manager
206-753-6116
email: jeremy@brooksapplied.com

BROOKS APPLIED LABS

Meaningful Metals Data and Advanced Speciation Solutions

P: 206-632-6206 | F: 206-632-6017 | 18804 North Creek Parkway, Suite 100, Bothell, WA 98011, USA

Brooks Applied Labs is moving to a new facility! Starting June 20th, all sample shipments should be sent to the following address: 13751 Lake City Way NE, Suite 108, Seattle, WA 98125. Please contact your account representative if you have any questions on our upcoming move or brand new location!

This electronic message transmission (including any attachments) is intended only for use by the addressee(s) named herein; it contains legally privileged and confidential information. If you are not the intended recipient, you are hereby notified that any dissemination, distribution, printing, or copying is strictly prohibited. If you have received this e-mail in error, please notify the sender and permanently delete any copies thereof.

From: Jessica Ritz <Jessica.Ritz@teck.com>
Sent: Thursday, June 2, 2022 7:58 AM
To: Jeremy Maute <Jeremy@brooksapplied.com>
Cc: Mike Pope <Mike.Pope@teck.com>; AquaSciLab <AquaSciLab@teck.com>; Lisa Bowron <LBowron@minnow.ca>; Tyler Mehler <tyler.mehler@minnow.ca>; Mariyeh Moradnzhad <mariyeh@brooksapplied.com>
Subject: RE: Brooks Final Report/EDD, WO 2204344: Elkview Operations, EVO Project - Confidential

Hey Jeremy,

Is it possible to re-issue this EDD with this nomenclature instead:

- RG_BOCKRD_WS_LAEMP_EVO_2022-04-21_NP-NAL

Take care,
Jess

Jessica Ritz B.Sc., P.Biol., R.P.Bio. (She/Her)
Environmental Technician
Aquatic Sciences, Teck Coal Limited
Direct Phone: 250.425.9086
Alt Phone: 250.423.9613
Jessica.Ritz@Teck.com

 Please consider the environment before printing this email.

From: Jeremy Maute <Jeremy@brooksapplied.com>
Sent: Tuesday, May 31, 2022 7:09 PM
To: mike.pope@teck.com; jess.ritz@teck.com; AquaSciLab@Teck.com; Lisa Bowron <LBowron@minnow.ca>; Tyler Mehler <tyler.mehler@minnow.ca>
Cc: teck.lab.results@teck.com; Mariyeh Moradnzhad <mariyeh@brooksapplied.com>
Subject: RE: Brooks Final Report/EDD, WO 2204344: Elkview Operations, EVO Project - Confidential

Hi Everyone,

I wanted to address this item again. The **EDD** for work order 2204344 has yet to be successfully uploaded into the EQUIS database. Have you been able to take a look at this failed EDD submission?

Regards,

Jeremy Maute
Senior Project Manager
206-753-6116
email: jeremy@brooksapplied.com

BROOKS APPLIED LABS

Meaningful Metals Data and Advanced Speciation Solutions

P: 206-632-6206 | F: 206-632-6017 | 18804 North Creek Parkway, Suite 100, Bothell, WA 98011, USA

Brooks Applied Labs is moving to a new facility! Starting June 20th, all sample shipments should be sent to the following address: 13751 Lake City Way NE, Suite 108, Seattle, WA 98125. Please contact your account representative if you have any questions on our upcoming move or brand new location!

This electronic message transmission (including any attachments) is intended only for use by the addressee(s) named herein; it contains legally privileged and confidential information. If you are not the intended recipient, you are hereby notified that any dissemination, distribution, printing, or copying is strictly prohibited. If you have received this e-mail in error, please notify the sender and permanently delete any copies thereof.

From: Jeremy Maute

Sent: Thursday, May 12, 2022 12:46 PM

To: 'mike.pope@teck.com' <mike.pope@teck.com>; 'jess.ritz@teck.com' <jess.ritz@teck.com>; 'AquaSciLab@Teck.com' <aquascilab@teck.com>; 'lbowron@minnow.ca' <lbowron@minnow.ca>; 'tyler.mehler@minnow.ca' <tyler.mehler@minnow.ca>

Cc: 'teck.lab.results@teck.com' <teck.lab.results@teck.com>; Mariyeh Moradnzhad <mariyeh@brooksapplied.com>

Subject: RE: Brooks Final Report/EDD, WO 2204344: Elkview Operations, EVO Project - Confidential

Hello Teck Group,

The EDD associated with work order 2204344 was rejected during the EQUIS database submission attempt (see the error table below).

For the failed EDD submission, I checked and everything seems to match the associated COC form. The error log notes that the character values in the **Sys_Sample_Code** column for 2204344-02 and 2204344-03 exceed the field length designated for this item in the EDD. Could you look into this issue and let me know how we should proceed?

The error report for this EDD rejection is listed below.

Table	Line	Column	Value	Message	Type
Teck_EZEDD	11	Sys_Sample_Code	EV_BRD_LOT2_WS_LAEMP_EVO_2022-04-21_NP_NAL	Value exceeds field length	ERROR
Teck_EZEDD	12	Sys_Sample_Code	EV_BRD_LOT2_WS_LAEMP_EVO_2022-04-21_NP_NAL	Value exceeds field length	ERROR

As of now, the **EDD** for work order 2204344 has yet to be successfully uploaded into the EQUIS database. Please take a look and let me know what you find. Thanks everyone.

Regards,

Jeremy Maute
Senior Project Manager
206-753-6116
email: jeremy@brooksapplied.com

BROOKS APPLIED LABS

Meaningful Metals Data and Advanced Speciation Solutions

P: 206-632-6206 | F: 206-632-6017 | 18804 North Creek Parkway, Suite 100, Bothell, WA 98011, USA

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From: Jeremy Maute

Sent: Thursday, May 12, 2022 12:42 PM

To: mike.pope@teck.com; jess.ritz@teck.com; AquaSciLab@Teck.com; lbowron@minnow.ca; tyler.mehler@minnow.ca

Cc: teck.lab.results@teck.com; Mariyeh Moradnzhad <mariyeh@brooksapplied.com>

Subject: Brooks Final Report/EDD, WO 2204344: Elkview Operations, EVO Project - Confidential

Attached are the final report and EDD for COC ID **EV_EVO_LAEMP_2022_APR21_Brooks**, associated with the EVO Project.

The **Sample ID** values listed on the chain-of-custody (COC) form did not exactly match the corresponding **Sample ID** values on the container labels. The discrepancies are described in the table below.

Laboratory ID	Sample ID (on COC form)	Sample ID (on container label)
2204344-01	EV_BRD_LOT3_WS_LAEMP_EVO_2022-04-21_NP	EV_BRD_LOT2_WS_LAEMP_EVO_2022-04-21_NP
2204344-02	EV_BRD_LOT3_WS_LAEMP_EVO_2022-04-21_NP_NAL	EV_BRD_LOT2_WS_LAEMP_EVO_2022-04-21_NP_NAL
2204344-03	EV_BRD_LOT3_WS_LAEMP_EVO_2022-04-21_NP_NAL	EV_BRD_LOT2_WS_LAEMP_EVO_2022-04-21_NP_NAL

Per client request, the field IDs were amended for reporting. The Sample ID changes are described in the table.

Per client request, the term “**LOT2**” was used in the field IDs, instead of “**LOT3**”. The **Sample ID** values described on the container labels (column 3 in the table above) are used for reporting. Since the field IDs listed on the COC forms are not used for reporting for these samples, please refer to the Sample ID Cross Reference table for identification.

Additionally, the **Sample Location (sys_loc_code)** values have been amended for reporting. The COC form indicates the **Sample Location (sys_loc_code)** value for each sample fraction should be “**LOT3**”. Per client request, the **Sample Location (sys_loc_code)** value “**LOT2**” is used for reporting. **Sample Location (sys_loc_code)** values are included in the corresponding EDD for this report.

As always, please contact us if there are any questions about this data.

Regards,

Jeremy Maute
Senior Project Manager
206-753-6116
email: jeremy@brooksapplied.com

BROOKS APPLIED LABS

Meaningful Metals Data and Advanced Speciation Solutions

P: 206-632-6206 | F: 206-632-6017 | 18804 North Creek Parkway, Suite 100, Bothell, WA 98011, USA

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18804 North Creek Parkway, Ste 100, Bothell, WA 98011 • USA • T: 206 632 6206 F: 206 632 6017 • info@brooksapplied.com

May 12, 2022

Teck Resources Limited - Vancouver
 Mike Pope
 421 Pine Avenue
 Sparwood, B.C. CANADA V0B2G0
mike.pope@teck.com

Re: Elkview Operations

Dear Mike Pope,

On April 28, 2022, Brooks Applied Labs (BAL) received one (1) aqueous sample. The sample was logged-in for volatile selenium (Se) speciation analyses, in accordance with the chain-of-custody (COC) form.

The **Sample ID** value listed on the chain-of-custody (COC) form did not exactly match the corresponding **Sample ID** value on the container label. The discrepancy is described in the table below.

Laboratory ID	Sample ID (on COC form)	Sample ID (on container label)
2204345-01	EV_BRD_LOT3_WS_LAEMP_EVO_2022-04-21_NP	EV_BRD_LOT2_WS_LAEMP_EVO_2022-04-21_NP

Per client request, the field IDs were amended for reporting. The Sample ID changes are described in the table.

Per client request, the term "**LOT2**" was used in the field ID instead of "**LOT3**". The **Sample ID** value described on the container label (*column 3 in the table above*) is used for reporting. Since the field ID listed on the COC form is not used for reporting, please refer to the Sample ID Cross Reference table for identification.

Additionally, the **Sample Location (sys_loc_code)** value has been amended for reporting. The COC form indicates the **Sample Location (sys_loc_code)** value should be "**LOT3**". Per client request, the **Sample Location (sys_loc_code)** value "**LOT2**" is used for reporting. **Sample Location (sys_loc_code)** values are included in the corresponding EDD for this report.

Each sample requesting volatile Se speciation had been field-filtered into bottles containing isopropanol preservative (provided by BAL). All sample fractions were stored according to BAL SOPs and EPA methodology.

Volatile Selenium Speciation

Each aqueous sample was analyzed for volatile selenium speciation using high performance liquid chromatography inductively coupled plasma collision reaction cell mass spectrometry (HPLC-ICP-CRC-MS). Volatile selenium species are chromatographically separated on a reversed phase column and then quantified using inductively coupled plasma collision reaction cell mass spectrometry (ICP-CRC-MS); for more information on this determinative technique, please visit the *Interference Reduction Technology* section on our website.

In accordance with the quotation issued for this project, volatile selenium species were defined as dissolved dimethylselenide [DMeSe] and dimethyldiselenide [DMDSe].

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

In instances where a matrix spike/matrix spike duplicate (MS/MSD) set was spiked at a level less than the native sample concentration, the recoveries and the relative percent difference (RPD) values are not considered valid indicators of data quality. In such instances, the recoveries of the laboratory fortified blank (BS) demonstrates the accuracy of the applied methods. When the spiking level was less than 25% of the native sample concentration, the spike recovery was not reported (**NR**) and the relative percent difference (RPD) of the MS/MSD set was not calculated (**N/C**).

Except for concentration qualifiers, all data were reported without qualification. All associated quality control sample results met the acceptance criteria.

BAL, an accredited laboratory, certifies that the reported results of all analyses for which BAL is NELAP accredited meet all NELAP requirements. For more information, please see the *Report Information* page.

Please feel free to contact us if you have any questions regarding this report.

Sincerely,



Jeremy Maute

Senior Project Manager

Jeremy@brooksapplied.com



Report Information

Laboratory Accreditation

BAL is accredited by the *National Environmental Laboratory Accreditation Program* (NELAP) through the State of Florida Department of Health, Bureau of Laboratories (E87982) and is certified to perform many environmental analyses. BAL is also certified by many other states to perform environmental analyses. For a current list of our accreditations/certifications, please visit our website at <http://www.brooksapplied.com/resources/certificates-permits/> or review Tables 1 and 2 in our Accreditation Information. Results reported relate only to the samples listed in the report.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

AR	as received	MS	matrix spike
BAL	Brooks Applied Labs	MSD	matrix spike duplicate
BLK	method blank	ND	non-detect
BS	blank spike	NR	non-reportable
CAL	calibration standard	N/C	not calculated
CCB	continuing calibration blank	PS	post preparation spike
CCV	continuing calibration verification	REC	percent recovery
COC	chain of custody record	RPD	relative percent difference
D	dissolved fraction	SCV	secondary calibration verification
DUP	duplicate	SOP	standard operating procedure
IBL	instrument blank	SRM	reference material
ICV	initial calibration verification	T	total fraction
MDL	method detection limit	TR	total recoverable fraction
MRL	method reporting limit		

Definition of Data Qualifiers

(Effective 3/23/2020)

E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Please see narrative for explanation.
J	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1	Estimated value. A full explanation is presented in the narrative.
M	Duplicate precision (RPD) was not within acceptance criteria. Please see narrative for explanation.
N	Spike recovery was not within acceptance criteria. Please see narrative for explanation.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.
Z	Holding time and/or preservation requirements not established for this method; however, BAL recommendations for holding time were not followed. Please see narrative for explanation.

These qualifiers are based on those previously utilized by Brooks Applied Labs, those found in the EPA SOW ILM03.0, Exhibit B, Section III, pg. B-18, and the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review; USEPA; January 2010. These supersede all previous qualifiers ever employed by BAL.



Accreditation Information

Table 1. Accredited method/matrix/analytes for TNI
Issued by: State of Florida Dept. of Health (The NELAC Institute 2016 Standard)
Issued on: July 1, 2021; Valid to: June 30, 2022
Certificate Number: E87982-37

Method	Matrix	TNI Accredited Analyte(s)
EPA 1638	Non-Potable Waters	Ag, Cd, Cu, Ni, Pb, Sb, Se, Ti, Zn
EPA 200.8	Non-Potable Waters	Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Sb, Se, Ti, U, V, Zn
EPA 6020	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Ti, U, V, Zn
	Solids/Chemicals & Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Ti, V, Zn
BAL-5000	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, U, V, Zn, Hardness
	Solids/Chemicals	Ag, As, B, Be, Cd, Co, Cr, Cu, Pb, Mo, Ni, Sb, Se, Sn, Sr, Ti, V, Zn
	Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Ti, V, Zn
EPA 1640	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn
EPA 1631E	Non-Potable Waters, Solids/Chemicals & Biological	Total Mercury
EPA 1630	Non-Potable Waters	Methyl Mercury
BAL-3200	Solids/Chemicals & Biological	Methyl Mercury
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
BAL-4201	Non-Potable Waters	Se(IV), Se(VI)
BAL-4300	Non-Potable Waters Solid/Chemicals	Cr(VI)
SM2340B	Non-Potable Waters	Hardness



Accreditation Information

**Table 2. Accredited method/matrix/analytes for ISO (1),
 Non-Governmental TNI (2)
 Issued by: ANAB
 Issued on: September 21, 2021; Valid to: March 30, 2024**

Method	Matrix	ISO and Non-Gov. TNI Accredited Analyte(s)
EPA 1638 Mod EPA 200.8 Mod EPA 6020 Mod	Non-Potable Waters	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, U, V, Zn
BAL-5000	Solids/Chemicals & Biological	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, V, Zn Hg (Biological Only)
EPA 1640 Mod	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn Ag, As, Cr, Co, Se, Ti, V (ISO Only)
EPA 1631E Mod BAL-3100	Non-Potable Waters, Solids/Chemicals & Biological/Food	Total Mercury
EPA 1630 Mod BAL-3200	Non-Potable Waters, Solids/Chemicals Biological	Methyl Mercury
EPA 1632A Mod BAL-3300	Non-Potable Waters Biological/Food Solids/Chemicals	Inorganic Arsenic (ISO Only) Inorganic Arsenic (ISO Only)
AOAC 2015.01 Mod BAL-5000	Food	As, Cd, Hg, Pb
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
	Biological by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4101	Food by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4201	Non-Potable Waters	Se(IV), Se(VI), SeCN, SeMet
BAL-4300	Non-Potable Waters, Solid/Chemicals	Cr(VI)
SM 3500-Fe BAL-4500	Non-Potable Waters	Fe, Fe(II) (ISO Only)
SM2340B	Non-Potable Waters	Hardness
SM 2540G BAL-0501	Solids/Chemicals & Biological	% Dry Weight



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
<i>EV_BRD_LOT2_WS_LAEMP_EVO_2022-04-21_NP</i>	2204345-01	WS	Sample	04/21/2022	04/28/2022

Batch Summary

Analyte	Lab Matrix	Method	Prepared	Analyzed	Batch	Sequence
DMDSe	Water	HPLC-ICP-MS	05/06/2022	05/06/2022	B220974	S220519
DMeSe	Water	HPLC-ICP-MS	05/06/2022	05/06/2022	B220974	S220519

Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>EV_BRD_LOT2_WS_LAEMP_EVO_2022-04-21_NP</i>										
2204345-01	DMDSe	WS	D	≤ 0.022	U	0.022	0.222	µg/L	B220974	S220519
2204345-01	DMeSe	WS	D	≤ 0.022	U	0.022	0.222	µg/L	B220974	S220519



Accuracy & Precision Summary

Batch: B220974
Lab Matrix: Water
Method: HPLC-ICP-MS

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B220974-BS1	Blank Spike, (2210011)						
	DMDSe		4.991	4.204	µg/L	84% 80-120	
	DMeSe		5.005	4.864	µg/L	97% 80-120	
B220974-DUP1	Duplicate, (2204347-05)						
	DMDSe	ND		ND	µg/L		N/C 25
	DMeSe	ND		ND	µg/L		N/C 25
B220974-MS1	Matrix Spike, (2204347-05)						
	DMDSe	ND	5.547	5.041	µg/L	91% 75-125	
	DMeSe	ND	5.542	4.862	µg/L	88% 75-125	
B220974-MSD1	Matrix Spike Duplicate, (2204347-05)						
	DMDSe	ND	5.547	4.829	µg/L	87% 75-125	4% 25
	DMeSe	ND	5.542	4.776	µg/L	86% 75-125	2% 25



Method Blanks & Reporting Limits

Batch: B220974
Matrix: Water
Method: HPLC-ICP-MS
Analyte: DMDSe

Sample	Result	Units	
B220974-BLK1	0.00	µg/L	
B220974-BLK2	0.00	µg/L	
B220974-BLK3	0.00	µg/L	
B220974-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.010
Limit: 0.100			MRL: 0.100

Analyte: DMeSe

Sample	Result	Units	
B220974-BLK1	0.00	µg/L	
B220974-BLK2	0.00	µg/L	
B220974-BLK3	0.00	µg/L	
B220974-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.010
Limit: 0.100			MRL: 0.100



Sample Containers

Lab ID: 2204345-01

Report Matrix: WS

Collected: 04/21/2022

Sample:

Sample Type: Sample

Received: 04/28/2022

EV_BRD_LOT2_WS_LAEMP_EVO_2022-04-21_NP

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% Isopropanol (PP)		<2	Cooler 6 - 2204345

Shipping Containers

Cooler 6 - 2204345

Received: April 28, 2022 7:00

Tracking No: PAPS3RWHV92132 via Courier

Coolant Type: Ice

Temperature: 1.0 °C

Description: Styrofoam Cooler

Damaged in transit? No

Returned to client? No

Comments: IR 33

Custody seals present? No

Custody seals intact? No

COC present? Yes

COC ID:		EV_EVO LAEMP_2022_APR21_Brooks		TURNAROUND TIME:		RUSH:														
PROJECT/CLIENT INFO				LABORATORY				OTHER INFO												
Facility Name / Job# Elkview Operations				Lab Name Brooks Applied Labs				Report Format / Distribution												
Project Manager Mike Pope				Lab Contact Ben Wozniak				Email 1:												
Email mike.pope@teck.com				Email Ben@brooksapplied.com				Email 2:												
Address 421 Pine Ave				Address 18804 North Creek Parkway				Email 3:												
City Sparwood				City Bothell				Email 4:												
Province BC				Province WA				Email 5:												
Postal Code V0B 2G0				Postal Code 98011				Email 6:												
Country Canada				Country United States				PO number 817033												
Phone Number 250-425-8202				Phone Number (206) 753-6158																
SAMPLE DETAILS								ANALYSIS REQUESTED												
Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com p	# Of Cont.	Asbestos	Lead	Cadmium	Chromium	Copper	Iron	Manganese	Nickel	Selenium	Silver	Vanadium	Zinc	
EV_BRD_LOT3_WS_LAEMP_EVO_2022-04-21_NP	EV_BRD_LOT3	WS	No	21-Apr-22	12:30	G	1													
ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS				RELINQUISHED BY/AFFILIATION				DATE/TIME		ACCEPTED BY/AFFILIATION		DATE/TIME								
				Maddy Stokes - Minnow				April 26 2022		Maddy Stokes - Minnow		4/26/22 07:00								
SERVICE REQUEST (rush - subject to availability)				SAMPLER'S INFO				DATE/TIME		MOBILE #										
Regular (default) <input checked="" type="checkbox"/>				Sampler's Name				Maddy Stokes		Mobile #		647-522-0672								
Priority (2-3 business days) - 50% surcharge				Sampler's Signature				MS		Date/Time		April 26 2022								
Emergency (1 Business Day) - 100% surcharge																				
For Emergency <1 Day, ASAP or Weekend - Contact ALS																				

STRAIGHT BILL OF LADING
NOT NEGOTIABLE

RW HOT SHOT SERVICE INC.

250-425-7447
24 Hour Hot Shot Service

No. 92132

Sparwood, BC
Terrace, BC
Red Deer, AB

Vancouver, BC
Calgary, AB
Montreal, QC

Prince George, BC
Edmonton, AB
Spokane, WA

Elkford, BC
Ft. McMurray, AB
Shelby, MT

Tumbler Ridge, BC
Hinton, AB
Gillette, WY

INVOICE TO		DATE	
BILL OF LADING #		PURCHASE ORDER NUMBER	
SHIPPER (FROM)		CONSIGNEE (TO)	
STREET		STREET	
CITY/PROVINCE		POSTAL CODE	CITY/PROVINCE
SPECIAL INSTRUCTIONS		POSTAL CODE	
PACKAGES	DESCRIPTION OF ARTICLES AND SPECIAL MARKS	WEIGHT (Subject to Correction)	
<p>PAPS# RWHV92132</p>		<input type="checkbox"/> PREPAID <input type="checkbox"/> COLLECT <small>If not indicated, shipping will automatically move collect.</small>	
		FEE _____ WAITING _____ XPU _____ CHARGES _____ FSC _____ US _____ SUB TOTAL _____ GST _____ TOTAL \$ _____	
UNIT #	DECLARED VALUATION: Maximum liability of carrier is \$2.00 per lb. (\$4.41 per kilogram) unless declared valuation states otherwise. \$ _____		
DRIVER'S SIGNATURE - PICK UP BY	PICK UP TIME	DRIVER'S SIGNATURE - DELIVERY BY	FINISH TIME
<small>NOTICE OF CLAIM: (a) No carrier is liable for loss, damage or delay of any goods under the Bill of Lading unless notice, therefor setting out particulars of the origin, destination and date of shipment of the goods and the estimated amount claimed, is given in writing to the originating carrier or the delivering carrier within sixty (60) days after the delivery of the goods, or in the case of failure to make delivery within nine (9) months from the date of shipment. (b) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. RECEIVED at the point of origin on the date specified from the consignor mentioned herein, the property herein described in apparent good order, except as noted (contents and condition of contents of package unknown) marked, consigned and destined as indicated below, which the carrier agrees to carry and to deliver to the consignee at the said destination, subject to the rates and classification in effect on the date of shipment. It is mutually agreed, as to each carrier of all or any of the goods over all or any portion of the route to destination, and as to each party of any time interested in all or any of the goods, that every service to be performed hereunder shall be subject to all the conditions standard Bill of Lading, in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. Printed or written, including conditions set aside by the standard Bill of Lading, in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. The Contract for the carriage of the goods listed in the Bill of Lading is governed by regulation in force in the jurisdiction at the time of shipment and is subject to the conditions set out in such conditions.</small>			
SHIPPER PRINT	CONSIGNEE PRINT	DATE	
SHIPPER SIGN	CONSIGNEE SIGN	TIME	
WHITE: Office YELLOW: Carrier PINK: Consignee GOLDENROAD: Shipper		GST # 864540398RT0001	NUMBER OF PIECES RECEIVED ▲

Cooler ID: Cooler 6 CQC (Y/N) Temperature: 0.0/1.0c (M/C) IR: 33

Coolant Type: Ice Blue Ice Ambient

Notes:

Sampling Locations: EV RG LC Volatiles

Sample Types:	<u>T/D</u>	<u>SP</u>	<u>T/D</u>	<u>SP</u>	<u>T/D</u>	<u>SP</u>	<u>T/D</u>	<u>SP</u>	<u>T/D</u>	<u>SP</u>
Container Types:	<u>40ml amber glass</u>	<u>60ml HDPE</u>	<u>40ml glass</u>	<u>60ml HDPE</u>	<u>125ml HDPE</u>	<u>40ml glass</u>				

Opened By: Pan Date: 4/28/22 0700

CCPY
0 AS6 4/28/22



Effective 7/29/20

From: [Tyler Mehler](#)
 To: [Anaïs Gentilhomme](#); [Jeremy Maute](#)
 Cc: [Jessica Ritz](#); [Sarah Latimer](#)
 Subject: RE: Brooks Samples Received - WO (2204344, 2204345), EVO - Privileged and Confidential
 Date: Thursday, May 5, 2022 1:01:37 PM

Hi Jeremy and Anaïs,

Sorry for responding to this so late – it should be EV_BRD_LOT2.

Thanks,
 Tyler

From: Anaïs Gentilhomme <Anaïs@brooksapplied.com>
Sent: Friday, April 29, 2022 4:15 PM
To: Jessica.Ritz@teck.com; AquaSciLab@Teck.com; Lisa Bowron <LBowron@minnow.ca>; Tyler Mehler <tyler.mehler@minnow.ca>
Cc: Jeremy Maute <Jeremy@brooksapplied.com>; Mariyeh Moradnzhad <mariyeh@brooksapplied.com>; Ethan Upp <ethan@brooksapplied.com>
Subject: Brooks Samples Received - WO (2204344, 2204345), EVO - Privileged and Confidential

Good Afternoon,

This is confirmation that samples from the EVO project were received at Brooks Applied Labs on April 28th, 2022. The samples were logged in for the following turnaround times (TATs):

WO 2204344 – (5-9 business day) TAT

WO 2204345 – (5-9 business day) TAT

The **sample name** value listed on the chain-of-custody (COC) form did not exactly match the corresponding **sample name** terms listed on container labels for samples in WO 2204344 and 2204345. The discrepancies are described in the table below.

Laboratory ID	Sample Name (On COC)	Sample Name (on Sample)	Analysis
2204344-02	EV_BRD_LOT3_WS_LAEMP_EVO_2022-04-21_NP_NAL	EV_BRD_LOT2_WS_LAEMP_EVO_2022-04-21_NP_NAL	Dissolved Recoverable Se
2204344-03	EV_BRD_LOT3_WS_LAEMP_EVO_2022-04-21_NP_NAL	EV_BRD_LOT2_WS_LAEMP_EVO_2022-04-21_NP_NAL	Total Recoverable Se
2204345-01	EV_BRD_LOT3_WS_LAEMP_EVO_2022-04-21_NP	EV_BRD_LOT2_WS_LAEMP_EVO_2022-04-21_NP	Volatile Selenium

The samples described the table above were logged in using the **sample name** terms listed on the COC form. Please let us know if you would have us report any of these samples in a different manner.

The COC for WO 2204344 stated that the speciation and dissolved fractions in the table below had been filtered in the field, however the dissolved fractions received did NOT specifically state that they had been filtered on the label.

Laboratory ID	Sample Name (on COC)	Analysis
2204344-02	EV_BRD_LOT2_WS_LAEMP_EVO_2022-04-21_NP_NAL	Dissolved Recoverable Se

Upon inspection of the samples which had minimal to no particulates to the naked eye, we determined that the dissolved and speciated fractions had been filtered. We therefore went with what was written on the COC and no extra filtration was done upon receipt. Please let us know if you would have us do differently.

I've attached copies of the COC forms. If you have any questions, please contact the project manager, Jeremy Maute.

Thank You!

Anaïs Gentilhomme

Anaïs Gentilhomme

Senior Laboratory Technician

email: anais@brooksapplied.com

BROOKS APPLIED LABS

Meaningful Metals Data and Advanced Speciation Solutions

18804 North Creek Parkway, Suite 100, Bothell, WA 98011, USA

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May 16, 2022

Teck Resources Limited - Vancouver
 Mike Pope
 421 Pine Avenue
 Sparwood, B.C. CANADA V0B2G0
mike.pope@teck.com

Re: Elkview Operations

Dear Mike Pope,

On April 28, 2022, Brooks Applied Labs (BAL) received ten (10) aqueous samples. The samples were logged-in for total recoverable selenium [Se], dissolved Se [Se], and Se speciation analyses, according to the chain-of-custody (COC) form.

The **Sample ID** values listed on the chain-of-custody (COC) form for 2204346-11 and 2204346-12 did not conform to historical **Sample ID** value patterns. At the request of the client, the field IDs for 2204346-11 and 2204346-12 have been amended for reporting. The details are described in the table below.

Laboratory ID	Sample ID (on COC form)	Amended Sample ID (used for reporting)
2204346-11	RG_GATE_WS_LAEMP_EVO_2022-04_NP-21_NAL	RG_GATE_WS_LAEMP_EVO_2022-04-21_NP_NAL
2204346-12	RG_GATE_WS_LAEMP_EVO_2022-04_NP-21_NAL	RG_GATE_WS_LAEMP_EVO_2022-04-21_NP_NAL

Per client request, the field IDs were amended for reporting. The Sample ID changes are described in the table.

Per client request, the term “**-21_NP_NAL**” was used in the field IDs, instead of “**NP-21_NAL**”. The **Sample ID** values described on (column 3 in the table above) are used for reporting 2204346-11 and 2204346-12. Since the field IDs listed on the COC forms are not used for reporting for these samples, please refer to the **Sample ID** cross reference table for identification.

The sample fractions for total recoverable Se and dissolved Se were not preserved in the field. The samples were preserved (pH < 2) upon receipt at BAL. All sample fractions for total recoverable Se and dissolved Se were preserved within the (14 calendar day) preservation holding time.

The sample fractions logged in for Se speciation and dissolved Se had been field-filtered prior to receipt at BAL. All samples were stored according to BAL SOPs.

Total Recoverable Se and Dissolved Se

Each aqueous sample fraction for dissolved Se was digested in a closed vessel (bomb) with nitric and hydrochloric acids. The resulting digests were analyzed for Se content via inductively coupled plasma triple quadrupole mass spectrometry (ICP-QQQ-MS). The ICP-QQQ-MS instrumentation uses advanced interference removal techniques to ensure accuracy of the sample results. For more information, please visit the *Interference Reduction Technology* section on our website, brooksapplied.com.

Selenium Speciation

Each aqueous sample was analyzed for selenium speciation using ion chromatography inductively coupled plasma collision reaction cell mass spectrometry (IC-ICP-CRC-MS). Selenium species are chromatographically separated on an ion exchange column and then quantified using inductively coupled plasma collision reaction cell mass spectrometry (ICP-CRC-MS); for more information on this determinative technique, please visit the *Interference Reduction Technology* section on our website. The chromatographic method applied for the analyses provides greater retention of methylseleninic acid and selenomethionine, allowing for more definitive quantitation of these species.

In accordance with the quotation issued for this project, selenium speciation was defined as dissolved selenite [Se(IV)], selenate [Se(VI)], selenocyanate [SeCN], methylseleninic acid [MeSe(IV)], methaneselenonic acid [MeSe(VI)], selenomethionine [SeMet], selenosulfate [SeSO₃], and dimethylselenoxide [DMSeO]. Unknown Se species was defined as the total concentration of all unknown Se species observed during the analysis. This item is identified on the report as [Unk Se Sp].

DMSeO elutes early in the chromatographic run due to the nature of the molecule and the applied chromatographic separation method. Since this species elutes near the dead volume, additional selenium species may coelute. Alternate methods can be applied, upon client request, to increase the separation of DMSeO from potentially co-eluting selenium species.

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

In instances where a matrix spike/matrix spike duplicate (MS/MSD) set was spiked at a level less than the native sample concentration, the recoveries and the relative percent difference (RPD) are not considered valid indicators of data quality. In such instances, the recoveries of the laboratory fortified blanks (BS) and/or standard reference materials (SRM) demonstrate the accuracy of the applied methods. When the spiking level was less than 25% of the native sample concentration, the spike recovery was not reported (**NR**) and the relative percent difference (RPD) of the MS/MSD set was not calculated (**N/C**).

In cases when either the native sample concentration was non-detectable (reported as less than or equal to the MDL) and/or the corresponding DUP result was also non-detectable, the RPD between the two values was not calculated (**N/C**).

Except for concentration qualifiers, all data were reported without qualification. All associated quality control sample results met the acceptance criteria.

BAL, an accredited laboratory, certifies that the reported results of all analyses for which BAL is NELAP accredited meet all NELAP requirements. For more information, please see the *Report Information* page.

Please feel free to contact us if you have any questions regarding this report.

Sincerely,



Jeremy Maute
Senior Project Manager
Jeremy@brooksapplied.com



Report Information

Laboratory Accreditation

BAL is accredited by the *National Environmental Laboratory Accreditation Program* (NELAP) through the State of Florida Department of Health, Bureau of Laboratories (E87982) and is certified to perform many environmental analyses. BAL is also certified by many other states to perform environmental analyses. For a current list of our accreditations/certifications, please visit our website at <http://www.brooksapplied.com/resources/certificates-permits/> or review Tables 1 and 2 in our Accreditation Information. Results reported relate only to the samples listed in the report.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

AR	as received	MS	matrix spike
BAL	Brooks Applied Labs	MSD	matrix spike duplicate
BLK	method blank	ND	non-detect
BS	blank spike	NR	non-reportable
CAL	calibration standard	N/C	not calculated
CCB	continuing calibration blank	PS	post preparation spike
CCV	continuing calibration verification	REC	percent recovery
COC	chain of custody record	RPD	relative percent difference
D	dissolved fraction	SCV	secondary calibration verification
DUP	duplicate	SOP	standard operating procedure
IBL	instrument blank	SRM	reference material
ICV	initial calibration verification	T	total fraction
MDL	method detection limit	TR	total recoverable fraction
MRL	method reporting limit		

Definition of Data Qualifiers

(Effective 3/23/2020)

E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Please see narrative for explanation.
J	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1	Estimated value. A full explanation is presented in the narrative.
M	Duplicate precision (RPD) was not within acceptance criteria. Please see narrative for explanation.
N	Spike recovery was not within acceptance criteria. Please see narrative for explanation.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.
Z	Holding time and/or preservation requirements not established for this method; however, BAL recommendations for holding time were not followed. Please see narrative for explanation.

These qualifiers are based on those previously utilized by Brooks Applied Labs, those found in the EPA SOW ILM03.0, Exhibit B, Section III, pg. B-18, and the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review; USEPA; January 2010. These supersede all previous qualifiers ever employed by BAL.



Accreditation Information

Table 1. Accredited method/matrix/analytes for TNI
Issued by: State of Florida Dept. of Health (The NELAC Institute 2016 Standard)
Issued on: July 1, 2021; Valid to: June 30, 2022
Certificate Number: E87982-37

Method	Matrix	TNI Accredited Analyte(s)
EPA 1638	Non-Potable Waters	Ag, Cd, Cu, Ni, Pb, Sb, Se, Tl, Zn
EPA 200.8	Non-Potable Waters	Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Sb, Se, Tl, U, V, Zn
EPA 6020	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Tl, U, V, Zn
	Solids/Chemicals & Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Tl, V, Zn
BAL-5000	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Tl, U, V, Zn, Hardness
	Solids/Chemicals	Ag, As, B, Be, Cd, Co, Cr, Cu, Pb, Mo, Ni, Sb, Se, Sn, Sr, Tl, V, Zn
	Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Tl, V, Zn
EPA 1640	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn
EPA 1631E	Non-Potable Waters, Solids/Chemicals & Biological	Total Mercury
EPA 1630	Non-Potable Waters	Methyl Mercury
BAL-3200	Solids/Chemicals & Biological	Methyl Mercury
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
BAL-4201	Non-Potable Waters	Se(IV), Se(VI)
BAL-4300	Non-Potable Waters Solid/Chemicals	Cr(VI)
SM2340B	Non-Potable Waters	Hardness



Accreditation Information

**Table 2. Accredited method/matrix/analytes for ISO (1),
 Non-Governmental TNI (2)
 Issued by: ANAB
 Issued on: September 21, 2021; Valid to: March 30, 2024**

Method	Matrix	ISO and Non-Gov. TNI Accredited Analyte(s)
EPA 1638 Mod EPA 200.8 Mod EPA 6020 Mod	Non-Potable Waters	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, U, V, Zn
BAL-5000	Solids/Chemicals & Biological	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, V, Zn Hg (Biological Only)
EPA 1640 Mod	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn Ag, As, Cr, Co, Se, Ti, V (ISO Only)
EPA 1631E Mod BAL-3100	Non-Potable Waters, Solids/Chemicals & Biological/Food	Total Mercury
EPA 1630 Mod BAL-3200	Non-Potable Waters, Solids/Chemicals Biological	Methyl Mercury
EPA 1632A Mod BAL-3300	Non-Potable Waters Biological/Food Solids/Chemicals	Inorganic Arsenic (ISO Only) Inorganic Arsenic (ISO Only)
AOAC 2015.01 Mod BAL-5000	Food	As, Cd, Hg, Pb
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
	Biological by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4101	Food by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4201	Non-Potable Waters	Se(IV), Se(VI), SeCN, SeMet
BAL-4300	Non-Potable Waters, Solid/Chemicals	Cr(VI)
SM 3500-Fe BAL-4500	Non-Potable Waters	Fe, Fe(II) (ISO Only)
SM2340B	Non-Potable Waters	Hardness
SM 2540G BAL-0501	Solids/Chemicals & Biological	% Dry Weight



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
RG_GATEDP_WS_LAEMP_EVO_20 22-04-21_NP	2204346-01	WS	Sample	04/21/2022	04/28/2022
RG_GATEDP_WS_LAEMP_EVO_20 22-04-21_NP_NAL	2204346-02	WS	Sample	04/21/2022	04/28/2022
RG_GATEDP_WS_LAEMP_EVO_20 22-04-21_NP_NAL	2204346-03	WS	Sample	04/21/2022	04/28/2022
RG_RIVER_WS_LAEMP_EVO_2022 -04-21_NP	2204346-04	WS	Sample	04/21/2022	04/28/2022
RG_RIVER_WS_LAEMP_EVO_2022 -04-21_NP_NAL	2204346-05	WS	Sample	04/21/2022	04/28/2022
RG_RIVER_WS_LAEMP_EVO_2022 -04-21_NP_NAL	2204346-06	WS	Sample	04/21/2022	04/28/2022
RG_BOCK_WS_LAEMP_EVO_2022 -04-21_NP	2204346-07	WS	Sample	04/21/2022	04/28/2022
RG_BOCK_WS_LAEMP_EVO_2022 -04-21_NP_NAL	2204346-08	WS	Sample	04/21/2022	04/28/2022
RG_BOCK_WS_LAEMP_EVO_2022 -04-21_NP_NAL	2204346-09	WS	Sample	04/21/2022	04/28/2022
RG_GATE_WS_LAEMP_EVO_2022- 04-21_NP	2204346-10	WS	Sample	04/21/2022	04/28/2022
RG_GATE_WS_LAEMP_EVO_2022- 04-21_NP_NAL	2204346-11	WS	Sample	04/21/2022	04/28/2022
RG_GATE_WS_LAEMP_EVO_2022- 04-21_NP_NAL	2204346-12	WS	Sample	04/21/2022	04/28/2022
RG_FBLANK_WS_LAEMP_EVO_20 22-04-21_NP	2204346-13	Water-D	Sample	04/21/2022	04/28/2022
RG_FBLANK_WS_LAEMP_EVO_20 22-04-21_NP_NAL	2204346-14	WS	Sample	04/21/2022	04/28/2022
RG_FBLANK_WS_LAEMP_EVO_20 22-04-21_NP_NAL	2204346-15	WS	Sample	04/21/2022	04/28/2022



Batch Summary

Analyte	Lab Matrix	Method	Prepared	Analyzed	Batch	Sequence
DMS ₂ SeO	Water	SOP BAL-4201	04/28/2022	04/30/2022	B220947	S220491
MeSe(IV)	Water	SOP BAL-4201	04/28/2022	04/30/2022	B220947	S220491
MeSe(VI)	Water	SOP BAL-4201	04/28/2022	04/30/2022	B220947	S220491
Se	Water	EPA 1638 Mod	05/03/2022	05/04/2022	B220976	S220509
Se(IV)	Water	SOP BAL-4201	04/28/2022	04/30/2022	B220947	S220491
Se(VI)	Water	SOP BAL-4201	04/28/2022	04/30/2022	B220947	S220491
SeCN	Water	SOP BAL-4201	04/28/2022	04/30/2022	B220947	S220491
SeMet	Water	SOP BAL-4201	04/28/2022	04/30/2022	B220947	S220491
SeSO ₃	Water	SOP BAL-4201	04/28/2022	04/30/2022	B220947	S220491
Unk Se Sp	Water	SOP BAL-4201	04/28/2022	04/30/2022	B220947	S220491



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_GATEDP_WS_LAEMP_EVO_2022-04-21_NP										
2204346-01	DMS ₂ O	WS	D	0.019	J	0.010	0.025	µg/L	B220947	S220491
2204346-01	MeSe(IV)	WS	D	0.043		0.010	0.025	µg/L	B220947	S220491
2204346-01	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B220947	S220491
2204346-01	Se(IV)	WS	D	0.713		0.010	0.075	µg/L	B220947	S220491
2204346-01	Se(VI)	WS	D	113		0.010	0.055	µg/L	B220947	S220491
2204346-01	SeCN	WS	D	0.011	J	0.010	0.050	µg/L	B220947	S220491
2204346-01	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B220947	S220491
2204346-01	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B220947	S220491
2204346-01	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B220947	S220491
RG_GATEDP_WS_LAEMP_EVO_2022-04-21_NP_NAL										
2204346-02	Se	WS	D	109		0.165	0.528	µg/L	B220976	S220509
RG_GATEDP_WS_LAEMP_EVO_2022-04-21_NP_NAL										
2204346-03	Se	WS	TR	107		0.165	0.528	µg/L	B220976	S220509
RG_RIVER_WS_LAEMP_EVO_2022-04-21_NP										
2204346-04	DMS ₂ O	WS	D	0.016	J	0.010	0.025	µg/L	B220947	S220491
2204346-04	MeSe(IV)	WS	D	0.046		0.010	0.025	µg/L	B220947	S220491
2204346-04	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B220947	S220491
2204346-04	Se(IV)	WS	D	0.728		0.010	0.075	µg/L	B220947	S220491
2204346-04	Se(VI)	WS	D	115		0.010	0.055	µg/L	B220947	S220491
2204346-04	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B220947	S220491
2204346-04	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B220947	S220491
2204346-04	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B220947	S220491
2204346-04	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B220947	S220491
RG_RIVER_WS_LAEMP_EVO_2022-04-21_NP_NAL										
2204346-05	Se	WS	D	111		0.165	0.528	µg/L	B220976	S220509
RG_RIVER_WS_LAEMP_EVO_2022-04-21_NP_NAL										
2204346-06	Se	WS	TR	111		0.165	0.528	µg/L	B220976	S220509



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_BOCK_WS_LAEMP_EVO_2022-04-21_NP										
2204346-07	DMS ₂ O	WS	D	0.036		0.010	0.025	µg/L	B220947	S220491
2204346-07	MeSe(IV)	WS	D	0.075		0.010	0.025	µg/L	B220947	S220491
2204346-07	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B220947	S220491
2204346-07	Se(IV)	WS	D	0.788		0.010	0.075	µg/L	B220947	S220491
2204346-07	Se(VI)	WS	D	101		0.010	0.055	µg/L	B220947	S220491
2204346-07	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B220947	S220491
2204346-07	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B220947	S220491
2204346-07	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B220947	S220491
2204346-07	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B220947	S220491
RG_BOCK_WS_LAEMP_EVO_2022-04-21_NP_NAL										
2204346-08	Se	WS	D	97.0		0.165	0.528	µg/L	B220976	S220509
RG_BOCK_WS_LAEMP_EVO_2022-04-21_NP_NAL										
2204346-09	Se	WS	TR	104		0.165	0.528	µg/L	B220976	S220509
RG_GATE_WS_LAEMP_EVO_2022-04-21_NP										
2204346-10	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B220947	S220491
2204346-10	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B220947	S220491
2204346-10	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B220947	S220491
2204346-10	Se(IV)	WS	D	0.672		0.010	0.075	µg/L	B220947	S220491
2204346-10	Se(VI)	WS	D	175		0.010	0.055	µg/L	B220947	S220491
2204346-10	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B220947	S220491
2204346-10	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B220947	S220491
2204346-10	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B220947	S220491
2204346-10	Unk Se Sp	WS	D	0.034	J	0.010	0.075	µg/L	B220947	S220491
RG_GATE_WS_LAEMP_EVO_2022-04-21_NP_NAL										
2204346-11	Se	WS	D	195		0.165	0.528	µg/L	B220976	S220509
RG_GATE_WS_LAEMP_EVO_2022-04-21_NP_NAL										
2204346-12	Se	WS	TR	173		0.165	0.528	µg/L	B220976	S220509



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_FBLANK_WS_LAEMP_EVO_2022-04-21_NP										
2204346-13	DMS ₂ O	Water-D	D	≤ 0.010	U	0.010	0.025	µg/L	B220947	S220491
2204346-13	MeSe(IV)	Water-D	D	≤ 0.010	U	0.010	0.025	µg/L	B220947	S220491
2204346-13	MeSe(VI)	Water-D	D	≤ 0.010	U	0.010	0.025	µg/L	B220947	S220491
2204346-13	Se(IV)	Water-D	D	≤ 0.010	U	0.010	0.075	µg/L	B220947	S220491
2204346-13	Se(VI)	Water-D	D	0.025	J	0.010	0.055	µg/L	B220947	S220491
2204346-13	SeCN	Water-D	D	≤ 0.010	U	0.010	0.050	µg/L	B220947	S220491
2204346-13	SeMet	Water-D	D	≤ 0.010	U	0.010	0.025	µg/L	B220947	S220491
2204346-13	SeSO ₃	Water-D	D	≤ 0.010	U	0.010	0.055	µg/L	B220947	S220491
2204346-13	Unk Se Sp	Water-D	D	≤ 0.010	U	0.010	0.075	µg/L	B220947	S220491
RG_FBLANK_WS_LAEMP_EVO_2022-04-21_NP_NAL										
2204346-14	Se	WS	D	0.588		0.165	0.528	µg/L	B220976	S220509
RG_FBLANK_WS_LAEMP_EVO_2022-04-21_NP_NAL										
2204346-15	Se	WS	TR	0.453	J	0.165	0.528	µg/L	B220976	S220509



Accuracy & Precision Summary

Batch: B220947
Lab Matrix: Water
Method: SOP BAL-4201

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B220947-BS1	Blank Spike, (2124033)						
	MeSe(IV)		5.095	5.601	µg/L	110% 75-125	
	Se(IV)		5.000	4.853	µg/L	97% 75-125	
	Se(VI)		5.000	4.751	µg/L	95% 75-125	
	SeCN		5.015	4.893	µg/L	98% 75-125	
	SeMet		4.932	4.919	µg/L	100% 75-125	
B220947-DUP6	Duplicate, (2204336-09)						
	DMS ₂ SeO	ND		ND	µg/L		N/C 25
	MeSe(IV)	ND		ND	µg/L		N/C 25
	MeSe(VI)	ND		ND	µg/L		N/C 25
	Se(IV)	11.94		12.23	µg/L		2% 25
	Se(VI)	65.50		66.74	µg/L		2% 25
	SeCN	ND		ND	µg/L		N/C 25
	SeMet	ND		ND	µg/L		N/C 25
	SeSO ₃	ND		ND	µg/L		N/C 25
	Unk Se Sp	ND		ND	µg/L		N/C 25
B220947-MS6	Matrix Spike, (2204336-09)						
	Se(IV)	11.94	4.900	16.32	µg/L	89% 75-125	
	Se(VI)	65.50	5.100	70.32	µg/L	NR 75-125	
	SeCN	ND	1.962	1.835	µg/L	94% 75-125	
	SeMet	ND	1.977	1.945	µg/L	98% 75-125	
B220947-MSD6	Matrix Spike Duplicate, (2204336-09)						
	Se(IV)	11.94	4.900	16.45	µg/L	92% 75-125	0.8% 25
	Se(VI)	65.50	5.100	70.00	µg/L	NR 75-125	N/C 25
	SeCN	ND	1.962	1.836	µg/L	94% 75-125	0.08% 25
	SeMet	ND	1.977	1.932	µg/L	98% 75-125	0.7% 25



Accuracy & Precision Summary

Batch: B220947
Lab Matrix: Water
Method: SOP BAL-4201

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B220947-DUP5	Duplicate, (2204339-10)						
	DMS ₂ SeO	0.061		0.073	µg/L		18% 25
	MeSe(IV)	ND		ND	µg/L		N/C 25
	MeSe(VI)	ND		ND	µg/L		N/C 25
	Se(IV)	4.158		4.075	µg/L		2% 25
	Se(VI)	146.8		142.2	µg/L		3% 25
	SeCN	ND		ND	µg/L		N/C 25
	SeMet	ND		ND	µg/L		N/C 25
	SeSO ₃	ND		ND	µg/L		N/C 25
Unk Se Sp	ND		ND	µg/L		N/C 25	
B220947-MS5	Matrix Spike, (2204339-10)						
	Se(IV)	4.158	4.900	9.207	µg/L	103% 75-125	
	Se(VI)	146.8	5.100	147.9	µg/L	NR 75-125	
	SeCN	ND	1.962	1.828	µg/L	93% 75-125	
SeMet	ND	1.977	1.967	µg/L	99% 75-125		
B220947-MSD5	Matrix Spike Duplicate, (2204339-10)						
	Se(IV)	4.158	4.900	9.342	µg/L	106% 75-125	1% 25
	Se(VI)	146.8	5.100	150.1	µg/L	NR 75-125	N/C 25
	SeCN	ND	1.962	1.844	µg/L	94% 75-125	0.8% 25
SeMet	ND	1.977	1.982	µg/L	100% 75-125	0.8% 25	



Accuracy & Precision Summary

Batch: B220976
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B220976-BS1	Blank Spike, (2128022) Se		200.0	193.7	µg/L	97% 75-125	
B220976-BS2	Blank Spike, (2128022) Se		200.0	194.3	µg/L	97% 75-125	
B220976-SRM1	Reference Material (2145010, TMDA 51.5 Reference Standard - Bottle 9 - SRM) Se		14.30	13.59	µg/L	95% 75-125	
B220976-SRM2	Reference Material (2145010, TMDA 51.5 Reference Standard - Bottle 9 - SRM) Se		14.30	14.01	µg/L	98% 75-125	
B220976-DUP2	Duplicate, (2204346-09) Se	103.7		107.3	µg/L		3% 20
B220976-MS2	Matrix Spike, (2204346-09) Se	103.7	220.0	310.4	µg/L	94% 75-125	
B220976-MSD2	Matrix Spike Duplicate, (2204346-09) Se	103.7	220.0	312.3	µg/L	95% 75-125	0.6% 20



Method Blanks & Reporting Limits

Batch: B220947
Matrix: Water
Method: SOP BAL-4201
Analyte: DMSeO

Sample	Result	Units	
B220947-BLK1	0.00	µg/L	
B220947-BLK2	0.00	µg/L	
B220947-BLK3	0.00	µg/L	
B220947-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005

Analyte: MeSe(IV)

Sample	Result	Units	
B220947-BLK1	0.00	µg/L	
B220947-BLK2	0.00	µg/L	
B220947-BLK3	0.00	µg/L	
B220947-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005

Analyte: MeSe(VI)

Sample	Result	Units	
B220947-BLK1	0.00	µg/L	
B220947-BLK2	0.00	µg/L	
B220947-BLK3	0.00	µg/L	
B220947-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005



Method Blanks & Reporting Limits

Analyte: Se(IV)

Sample	Result	Units	
B220947-BLK1	0.00	µg/L	
B220947-BLK2	0.00	µg/L	
B220947-BLK3	0.00	µg/L	
B220947-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.015		MRL: 0.015

Analyte: Se(VI)

Sample	Result	Units	
B220947-BLK1	0.00	µg/L	
B220947-BLK2	0.00	µg/L	
B220947-BLK3	0.00	µg/L	
B220947-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.011		MRL: 0.011

Analyte: SeCN

Sample	Result	Units	
B220947-BLK1	0.00	µg/L	
B220947-BLK2	0.00	µg/L	
B220947-BLK3	0.00	µg/L	
B220947-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.010		MRL: 0.010

Analyte: SeMet

Sample	Result	Units	
B220947-BLK1	0.00	µg/L	
B220947-BLK2	0.00	µg/L	
B220947-BLK3	0.00	µg/L	
B220947-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.005		MRL: 0.005



Method Blanks & Reporting Limits

Analyte: SeSO3

Sample	Result	Units	
B220947-BLK1	0.00	µg/L	
B220947-BLK2	0.00	µg/L	
B220947-BLK3	0.00	µg/L	
B220947-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.011		MRL: 0.011

Analyte: Unk Se Sp

Sample	Result	Units	
B220947-BLK1	0.00	µg/L	
B220947-BLK2	0.00	µg/L	
B220947-BLK3	0.00	µg/L	
B220947-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.015		MRL: 0.015



Method Blanks & Reporting Limits

Batch: B220976
Matrix: Water
Method: EPA 1638 Mod
Analyte: Se

Sample	Result	Units
B220976-BLK1	0.036	µg/L
B220976-BLK2	0.040	µg/L
B220976-BLK3	0.039	µg/L
B220976-BLK4	0.050	µg/L

Average: 0.041
Limit: 0.480

MDL: 0.150
MRL: 0.480



Sample Containers

Lab ID: 2204346-01

Report Matrix: WS

Collected: 04/21/2022

Sample:

Sample Type: Sample + Sum

Received: 04/28/2022

RG_GATEDP_WS_LAEMP_EVO_2022-04-21_NP

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 6 - 2204346
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 6 - 2204346
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 6 - 2204346

Lab ID: 2204346-02

Report Matrix: WS

Collected: 04/21/2022

Sample:

Sample Type: Sample + Sum

Received: 04/28/2022

RG_GATEDP_WS_LAEMP_EVO_2022-04-21_NP_NAL

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2152004	<2	Cooler 6 - 2204346

Lab ID: 2204346-03

Report Matrix: WS

Collected: 04/21/2022

Sample:

Sample Type: Sample + Sum

Received: 04/28/2022

RG_GATEDP_WS_LAEMP_EVO_2022-04-21_NP_NAL

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2152004	<2	Cooler 6 - 2204346

Lab ID: 2204346-04

Report Matrix: WS

Collected: 04/21/2022

Sample:

Sample Type: Sample + Sum

Received: 04/28/2022

RG_RIVER_WS_LAEMP_EVO_2022-04-21_NP

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 6 - 2204346
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 6 - 2204346
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 6 - 2204346



Sample Containers

Lab ID: 2204346-05
Sample: RG_RIVER_WS_LAEMP_EVO_2022-04-21_NP_NA
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 04/21/2022
Received: 04/28/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2152004	<2	Cooler 6 - 2204346

Lab ID: 2204346-06
Sample: RG_RIVER_WS_LAEMP_EVO_2022-04-21_NP_NA
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 04/21/2022
Received: 04/28/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2152004	<2	Cooler 6 - 2204346

Lab ID: 2204346-07
Sample: RG_BOCK_WS_LAEMP_EVO_2022-04-21_NP
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 04/21/2022
Received: 04/28/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 6 - 2204346
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 6 - 2204346
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 6 - 2204346

Lab ID: 2204346-08
Sample: RG_BOCK_WS_LAEMP_EVO_2022-04-21_NP_NA
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 04/21/2022
Received: 04/28/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2152004	<2	Cooler 6 - 2204346



Sample Containers

Lab ID: 2204346-09

Sample:

RG_BOCK_WS_LAEMP_EVO_2022-04-21_NP_NA
 L

Report Matrix: WS

Sample Type: Sample + Sum

Collected: 04/21/2022

Received: 04/28/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3	2152004	<2	Cooler 6 - 2204346

Lab ID: 2204346-10

Sample:

RG_GATE_WS_LAEMP_EVO_2022-04-21_NP

Report Matrix: WS

Sample Type: Sample + Sum

Collected: 04/21/2022

Received: 04/28/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 6 - 2204346
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 6 - 2204346
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 6 - 2204346

Lab ID: 2204346-11

Sample:

RG_GATE_WS_LAEMP_EVO_2022-04-21_NP_NA
 L

Report Matrix: WS

Sample Type: Sample + Sum

Collected: 04/21/2022

Received: 04/28/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2152004	<2	Cooler 6 - 2204346

Lab ID: 2204346-12

Sample:

RG_GATE_WS_LAEMP_EVO_2022-04-21_NP_NA
 L

Report Matrix: WS

Sample Type: Sample + Sum

Collected: 04/21/2022

Received: 04/28/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2152004	<2	Cooler 6 - 2204346



Sample Containers

Lab ID: 2204346-13

Report Matrix: Water-D

Collected: 04/21/2022

Sample:

Sample Type: Sample + Sum

Received: 04/28/2022

RG_FBLANK_WS_LAEMP_EVO_2022-04-21_NP

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 6 - 2204346
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 6 - 2204346
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 6 - 2204346

Lab ID: 2204346-14

Report Matrix: WS

Collected: 04/21/2022

Sample:

Sample Type: Sample + Sum

Received: 04/28/2022

RG_FBLANK_WS_LAEMP_EVO_2022-04-21_NP_NAL

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2152004	<2	Cooler 6 - 2204346

Lab ID: 2204346-15

Report Matrix: WS

Collected: 04/21/2022

Sample:

Sample Type: Sample + Sum

Received: 04/28/2022

RG_FBLANK_WS_LAEMP_EVO_2022-04-21_NP_NAL

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2152004	<2	Cooler 6 - 2204346

Shipping Containers

Cooler 6 - 2204346

Received: April 28, 2022 7:00

Tracking No: PAPS#RWHV92132 via Courier

Coolant Type: Ice

Temperature: 1.0 °C

Description: Large Cooler

Damaged in transit? No

Returned to client? No

Comments: IR #33

Custody seals present? No

Custody seals intact? No

COC present? Yes

COC ID:		REP_EVO LAEMP_2022_APR_Brooks		TURNAROUND TIME:		RUSH:								
PROJECT/CLIENT INFO				LABORATORY				OTHER INFO						
Facility Name / Job#				Lab Name				Report Format / Distribution						
Project Manager				Lab Contact				Excel						
Email				Email				PDF						
Address				Address				EDD						
City		Province		City		Province		Email 1:		X				
Postal Code		Country		Postal Code		Country		Email 2:		X				
Phone Number				Phone Number				Email 3:		X				
								Email 4:		X				
								Email 5:		X				
								Email 6:		X				
								PO number		817033				
SAMPLE DETAILS								ANALYSIS REQUESTED						
Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com p	# Of Cont.	Brooks_Se_Speciation	Brooks_Se_D	Brooks_Se_T				
RG_GATEDP_WS_LAEMP_EVO_2022-04-21_NP	RG_GATEDP	WS	No	21-Apr-22	9:00	G	1	1						
RG_GATEDP_WS_LAEMP_EVO_2022-04-21_NP_NAL	RG_GATEDP	WS	No	21-Apr-22	9:00	G	2		1	1				
RG_RIVER_WS_LAEMP_EVO_2022-04-21_NP	RG_RIVER	WS	No	21-Apr-22	9:00	G	1	1						
RG_RIVER_WS_LAEMP_EVO_2022-04-21_NP_NAL	RG_RIVER	WS	No	21-Apr-22	9:00	G	2		1	1				
RG_BOCK_WS_LAEMP_EVO_2022-04-21_NP	RG_BOCK	WS	No	21-Apr-22	15:00	G	1	1						
RG_BOCK_WS_LAEMP_EVO_2022-04-21_NP_NAL	RG_BOCK	WS	No	21-Apr-22	15:00	G	2		1	1				
RG_GATE_WS_LAEMP_EVO_2022-04-21_NP	RG_GATE	WS	No	21-Apr-22	10:45	G	1	1						
RG_GATE_WS_LAEMP_EVO_2022-04-21_NP_NAL	RG_GATE	WS	No	21-Apr-22	10:45	G	2		1	1				
RG_FBLANK_WS_LAEMP_EVO_2022-04-21_NP	RG_FBLANK	WS	No	21-Apr-22	9:00	G	1	1						
RG_FBLANK_WS_LAEMP_EVO_2022-04-21_NP_NAL	RG_FBLANK	WS	No	21-Apr-22	9:00	G	2		1	1				
ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS			RELINQUISHED BY/AFFILIATION				DATE/TIME		ACCEPTED BY/AFFILIATION		DATE/TIME			
			Maddy Stokes - Minnow				April 26 2022		<i>Maddy Stokes</i> - BSL		4/28/22 0708			
SERVICE REQUEST (rush - subject to availability)			SAMPLER'S NAME				MOBILE #		DATE/TIME					
Regular (default) X			Maddy Stokes				647-522-0672							
Priority (2-3 business days) - 50% surcharge			MS <i>Maddy Stokes</i>				April 26 2022							
Emergency (1 Business Day) - 100% surcharge														
For Emergency <1 Day, ASAP or Weekend - Contact ALS														

RW HOT SHOT SERVICE INC.

250-425-7447
24 Hour Hot Shot Service

No. 92132

STRAIGHT BILL OF LADING
NOT NEGOTIABLE

Sparwood, BC
Terrace, BC
Red Deer, AB

Vancouver, BC
Calgary, AB
Montreal, QC

Prince George, BC
Edmonton, AB
Spokane, WA

Elkford, BC
Ft. McMurray, AB
Shelby, MT

Tumbler Ridge, BC
Hinton, AB
Gillette, WY

INVOICE TO		DATE	
BILL OF LADING #		PURCHASE ORDER NUMBER	
SHIPPER (FROM)		CONSIGNEE (TO)	
STREET		STREET	
CITY/PROVINCE		POSTAL CODE	CITY/PROVINCE
CITY/PROVINCE		POSTAL CODE	POSTAL CODE
SPECIAL INSTRUCTIONS		FREIGHT CHARGES SHIPPER TO CHECK <input type="checkbox"/> PREPAID <input type="checkbox"/> COLLECT <small>If not indicated, shipping will automatically move collect.</small> FEE _____ WAITING _____ XPU _____ CHARGES _____ FSC _____ US _____ SUB TOTAL _____ GST _____ TOTAL \$ _____ <small>IF AT OWNER'S RISK, WRITE ORD HERE.</small>	
PACKAGES	DESCRIPTION OF ARTICLES AND SPECIAL MARKS	WEIGHT (Subject to Correction)	
PAPS# RWHV92132			
UNIT #	DECLARED VALUATION: Maximum liability of carrier is \$2.00 per lb. (\$4.41 per kilogram) unless declared valuation states otherwise.		\$ _____
DRIVER'S SIGNATURE - PICK UP BY	PICK UP TIME	DRIVER'S SIGNATURE - DELIVERY BY	FINISH TIME
<small>NOTICE OF CLAIM: (a) No carrier is liable for loss, damage or delay of any goods under the Bill of Lading unless notice therefor setting out particulars of the origin, destination and date of shipment of the goods and the estimated amount claimed respect of such loss, damage or delay is given in writing to the originating carrier or the delivering carrier within 90 days after the delivery of the goods, on the case of failure to make delivery within nine (9) months from the date of shipment. (b) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill RECEIVED at the point of origin on the date specified from the consignor mentioned herein, the property herein described in apparent good order, except as noted (contents and condition of contents of package unknown) marked, consigned and destined as indicated below, which the carrier agrees to carry and to deliver to the consignee at the said destination, subject to the rates and classification in effect on the date of shipment. It is mutually agreed, as to each carrier of all or any of the goods over all or any portion of the route to destination, and as to each party of any time interested in all or any of the goods, that every service to be performed hereunder shall be subject to the conditions standard Bill of Lading, in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. Printed or written, including conditions set aside by the standard Bill of Lading, in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. The Contract for the carriage of the goods listed in the Bill of Lading is governed by regulation in force in the jurisdiction at the time of shipment and is subject to the conditions set out in such conditions.</small>			
SHIPPER PRINT	CONSIGNEE PRINT	DATE	
SHIPPER SIGN	CONSIGNEE SIGN	TIME	
WHITE: Office YELLOW: Carrier PINK: Consignee GOLDENROAD: Shipper		GST # 864540398RT0001 NUMBER OF PIECES RECEIVED ▲	

Cooler ID: Cooler 6 CQC (Y/N) Temperature: 0.0/1.0°C (u/lc) IR: 33

Coolant Type: Ice Blue Ice Ambient

Notes:

Sampling Locations:	EV	RG	LC	volante
Sample Types:	(T/D)	(SP)	(T/D)	(SP)
Container Types:	40ml amber glass	60 ml HDPE	40ml glass	125 ml HDPE

Opened By: PAN Date: 4/28/22 0700

COPY

0 AS6 4/28/22



From: [Tyler Mehler](#)
To: [Jeremy Maute](#)
Cc: [Jessica Ritz](#)
Subject: RE: Brooks Samples Received - WOs (2204346, 2204347) REP - Privileged and Confidential
Date: Tuesday, May 3, 2022 7:29:46 AM

Hi Jeremy – you are correct – NP-21_NAL is incorrect. Please use the -21_NP_NAL.

Thank you.

From: Jeremy Maute <Jeremy@brooksapplied.com>
Sent: Monday, May 2, 2022 4:43 PM
To: mike.pope@teck.com; Jess.Ritz@teck.com; aquascilab@teck.com; Lisa Bowron <LBowron@minnow.ca>; Tyler Mehler <tyler.mehler@minnow.ca>
Cc: Mariyeh Moradnzhad <mariyeh@brooksapplied.com>; Anaïs Gentilhomme <Anais@brooksapplied.com>; Ethan Upp <ethan@brooksapplied.com>
Subject: Brooks Samples Received - WOs (2204346, 2204347) REP - Privileged and Confidential
Importance: High

Good Afternoon,

This is confirmation that samples from the **REP** project were received at Brooks Applied Labs on April 28th, 2022. The samples were logged in for the following turnaround times (TATs):

WO 2204346 – (5-9 business day) TAT
 WO 2204347 – (5-9 business day) TAT

For samples associated with work order 2204346, I wanted you to look at the field IDs for samples 2204346-11 and 2204346-12. See attached COC form (for WO 2204346). The **Sample ID** values for 2204346-11 and 2204346-12 do not match the format used historically. The issue is described in the table below.

Laboratory ID	Sample ID (on COC)	Historical Sample ID ending term
2204346-11	RG_GATE_WS_LAEMP_EVO_2022-04_NP-21_NAL	-21_NP_NAL
2204346-12	RG_GATE_WS_LAEMP_EVO_2022-04_NP-21_NAL	-21_NP_NAL

Historically, we have seen “-21_NP_NAL” ending terms, not “NP-21_NAL”. We have logged in samples 2204346-11 and 2204346-12 according to the COC form (“-21_NP_NAL” ending terms). Let us know if this was a transcription error, and we should use the same field ID convention as the other T/D Se fractions in this work order (i.e., “NP-21_NAL” ending term in field ID).

I’ve attached copies of the COC forms. If you have any questions, please contact the project manager, Jeremy Maute.

Regards,

Jeremy Maute
Senior Project Manager
206-753-6116
email: jeremy@brooksapplied.com

BROOKS APPLIED LABS

Meaningful Metals Data and Advanced Speciation Solutions

P: 206-632-6206 | F: 206-632-6017 | **18804 North Creek Parkway, Suite 100, Bothell, WA 98011, USA**

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May 12, 2022

Teck Resources Limited - Vancouver
Mike Pope
421 Pine Avenue
Sparwood, B.C. CANADA V0B2G0
mike.pope@teck.com

Re: Regional Effects Program

Dear Mike Pope,

On April 28, 2022, Brooks Applied Labs (BAL) received five (5) aqueous samples. The samples were logged-in for volatile selenium (Se) speciation analyses, in accordance with the chain-of-custody (COC) form.

Each sample requesting volatile Se speciation had been field-filtered into bottles containing isopropanol preservative (provided by BAL). All sample fractions were stored according to BAL SOPs and EPA methodology.

Volatile Selenium Speciation

Each aqueous sample was analyzed for volatile selenium speciation using high performance liquid chromatography inductively coupled plasma collision reaction cell mass spectrometry (HPLC-ICP-CRC-MS). Volatile selenium species are chromatographically separated on a reversed phase column and then quantified using inductively coupled plasma collision reaction cell mass spectrometry (ICP-CRC-MS); for more information on this determinative technique, please visit the *Interference Reduction Technology* section on our website.

In accordance with the quotation issued for this project, volatile selenium species were defined as dissolved dimethylselenide [DMeSe] and dimethyldiselenide [DMDS₂].

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

In instances where a matrix spike/matrix spike duplicate (MS/MSD) set was spiked at a level less than the native sample concentration, the recoveries and the relative percent difference (RPD) values are not considered valid indicators of data quality. In such instances, the recoveries of the laboratory fortified blank (BS) demonstrates the accuracy of the applied methods. When the spiking level was less than 25% of the native sample concentration, the spike recovery was not reported (**NR**) and the relative percent difference (RPD) of the MS/MSD set was not calculated (**NC**).

Except for concentration qualifiers, all data were reported without qualification. All associated quality control sample results met the acceptance criteria.

BAL, an accredited laboratory, certifies that the reported results of all analyses for which BAL is NELAP accredited meet all NELAP requirements. For more information, please see the *Report Information* page.

Please feel free to contact us if you have any questions regarding this report.

Sincerely,

A handwritten signature in black ink, appearing to read 'Jeremy Maute', with a stylized flourish at the end.

Jeremy Maute
Senior Project Manager
Jeremy@brooksapplied.com



Report Information

Laboratory Accreditation

BAL is accredited by the *National Environmental Laboratory Accreditation Program* (NELAP) through the State of Florida Department of Health, Bureau of Laboratories (E87982) and is certified to perform many environmental analyses. BAL is also certified by many other states to perform environmental analyses. For a current list of our accreditations/certifications, please visit our website at <http://www.brooksapplied.com/resources/certificates-permits/> or review Tables 1 and 2 in our Accreditation Information. Results reported relate only to the samples listed in the report.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

AR	as received	MS	matrix spike
BAL	Brooks Applied Labs	MSD	matrix spike duplicate
BLK	method blank	ND	non-detect
BS	blank spike	NR	non-reportable
CAL	calibration standard	N/C	not calculated
CCB	continuing calibration blank	PS	post preparation spike
CCV	continuing calibration verification	REC	percent recovery
COC	chain of custody record	RPD	relative percent difference
D	dissolved fraction	SCV	secondary calibration verification
DUP	duplicate	SOP	standard operating procedure
IBL	instrument blank	SRM	reference material
ICV	initial calibration verification	T	total fraction
MDL	method detection limit	TR	total recoverable fraction
MRL	method reporting limit		

Definition of Data Qualifiers

(Effective 3/23/2020)

E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Please see narrative for explanation.
J	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1	Estimated value. A full explanation is presented in the narrative.
M	Duplicate precision (RPD) was not within acceptance criteria. Please see narrative for explanation.
N	Spike recovery was not within acceptance criteria. Please see narrative for explanation.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.
Z	Holding time and/or preservation requirements not established for this method; however, BAL recommendations for holding time were not followed. Please see narrative for explanation.

These qualifiers are based on those previously utilized by Brooks Applied Labs, those found in the EPA SOW ILM03.0, Exhibit B, Section III, pg. B-18, and the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review; USEPA; January 2010. These supersede all previous qualifiers ever employed by BAL.



Accreditation Information

Table 1. Accredited method/matrix/analytes for TNI
Issued by: State of Florida Dept. of Health (The NELAC Institute 2016 Standard)
Issued on: July 1, 2021; Valid to: June 30, 2022
Certificate Number: E87982-37

Method	Matrix	TNI Accredited Analyte(s)
EPA 1638	Non-Potable Waters	Ag, Cd, Cu, Ni, Pb, Sb, Se, Tl, Zn
EPA 200.8	Non-Potable Waters	Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Sb, Se, Tl, U, V, Zn
EPA 6020	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Tl, U, V, Zn
	Solids/Chemicals & Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Tl, V, Zn
BAL-5000	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Tl, U, V, Zn, Hardness
	Solids/Chemicals	Ag, As, B, Be, Cd, Co, Cr, Cu, Pb, Mo, Ni, Sb, Se, Sn, Sr, Tl, V, Zn
	Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Tl, V, Zn
EPA 1640	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn
EPA 1631E	Non-Potable Waters, Solids/Chemicals & Biological	Total Mercury
EPA 1630	Non-Potable Waters	Methyl Mercury
BAL-3200	Solids/Chemicals & Biological	Methyl Mercury
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
BAL-4201	Non-Potable Waters	Se(IV), Se(VI)
BAL-4300	Non-Potable Waters Solid/Chemicals	Cr(VI)
SM2340B	Non-Potable Waters	Hardness



Accreditation Information

**Table 2. Accredited method/matrix/analytes for ISO (1),
 Non-Governmental TNI (2)
 Issued by: ANAB
 Issued on: September 21, 2021; Valid to: March 30, 2024**

Method	Matrix	ISO and Non-Gov. TNI Accredited Analyte(s)
EPA 1638 Mod EPA 200.8 Mod EPA 6020 Mod	Non-Potable Waters	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, U, V, Zn
BAL-5000	Solids/Chemicals & Biological	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, V, Zn Hg (Biological Only)
EPA 1640 Mod	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn Ag, As, Cr, Co, Se, Ti, V (ISO Only)
EPA 1631E Mod BAL-3100	Non-Potable Waters, Solids/Chemicals & Biological/Food	Total Mercury
EPA 1630 Mod BAL-3200	Non-Potable Waters, Solids/Chemicals Biological	Methyl Mercury
EPA 1632A Mod BAL-3300	Non-Potable Waters Biological/Food Solids/Chemicals	Inorganic Arsenic (ISO Only) Inorganic Arsenic (ISO Only)
AOAC 2015.01 Mod BAL-5000	Food	As, Cd, Hg, Pb
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
	Biological by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4101	Food by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4201	Non-Potable Waters	Se(IV), Se(VI), SeCN, SeMet
BAL-4300	Non-Potable Waters, Solid/Chemicals	Cr(VI)
SM 3500-Fe BAL-4500	Non-Potable Waters	Fe, Fe(II) (ISO Only)
SM2340B	Non-Potable Waters	Hardness
SM 2540G BAL-0501	Solids/Chemicals & Biological	% Dry Weight



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
RG_GATEDP_WS_LAEMP_EVO_20 22-04-21_NP	2204347-01	WS	Sample	04/21/2022	04/28/2022
RG_GATE_WS_LAEMP_EVO_2022- 04-21_NP	2204347-02	WS	Sample	04/21/2022	04/28/2022
RG_FBLANK_WS_LAEMP_EVO_20 22-04-21_NP	2204347-03	WS	Sample	04/21/2022	04/28/2022
RG_BOCK_WS_LAEMP_EVO_2022 -04-21_NP	2204347-04	WS	Sample	04/21/2022	04/28/2022
RG_RIVER_WS_LAEMP_EVO_2022 -04-21_NP	2204347-05	WS	Sample	04/21/2022	04/28/2022

Batch Summary

Analyte	Lab Matrix	Method	Prepared	Analyzed	Batch	Sequence
DMDSe	Water	HPLC-ICP-MS	05/06/2022	05/06/2022	B220974	S220519
DMeSe	Water	HPLC-ICP-MS	05/06/2022	05/06/2022	B220974	S220519



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_GATEDP_WS_LAEMP_EVO_2022-04-21_NP										
2204347-01	DMDSe	WS	D	≤ 0.022	U	0.022	0.222	µg/L	B220974	S220519
2204347-01	DMeSe	WS	D	≤ 0.022	U	0.022	0.222	µg/L	B220974	S220519
RG_GATE_WS_LAEMP_EVO_2022-04-21_NP										
2204347-02	DMDSe	WS	D	≤ 0.022	U	0.022	0.222	µg/L	B220974	S220519
2204347-02	DMeSe	WS	D	≤ 0.022	U	0.022	0.222	µg/L	B220974	S220519
RG_FBLANK_WS_LAEMP_EVO_2022-04-21_NP										
2204347-03	DMDSe	WS	D	≤ 0.022	U	0.022	0.222	µg/L	B220974	S220519
2204347-03	DMeSe	WS	D	≤ 0.022	U	0.022	0.222	µg/L	B220974	S220519
RG_BOCK_WS_LAEMP_EVO_2022-04-21_NP										
2204347-04	DMDSe	WS	D	≤ 0.022	U	0.022	0.222	µg/L	B220974	S220519
2204347-04	DMeSe	WS	D	≤ 0.022	U	0.022	0.222	µg/L	B220974	S220519
RG_RIVER_WS_LAEMP_EVO_2022-04-21_NP										
2204347-05	DMDSe	WS	D	≤ 0.022	U	0.022	0.222	µg/L	B220974	S220519
2204347-05	DMeSe	WS	D	≤ 0.022	U	0.022	0.222	µg/L	B220974	S220519



Accuracy & Precision Summary

Batch: B220974
Lab Matrix: Water
Method: HPLC-ICP-MS

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B220974-BS1	Blank Spike, (2210011)						
	DMDSe		4.991	4.204	µg/L	84% 80-120	
	DMeSe		5.005	4.864	µg/L	97% 80-120	
B220974-DUP1	Duplicate, (2204347-05)						
	DMDSe	ND		ND	µg/L		N/C 25
	DMeSe	ND		ND	µg/L		N/C 25
B220974-MS1	Matrix Spike, (2204347-05)						
	DMDSe	ND	5.547	5.041	µg/L	91% 75-125	
	DMeSe	ND	5.542	4.862	µg/L	88% 75-125	
B220974-MSD1	Matrix Spike Duplicate, (2204347-05)						
	DMDSe	ND	5.547	4.829	µg/L	87% 75-125	4% 25
	DMeSe	ND	5.542	4.776	µg/L	86% 75-125	2% 25



Method Blanks & Reporting Limits

Batch: B220974
Matrix: Water
Method: HPLC-ICP-MS
Analyte: DMDSe

Sample	Result	Units	
B220974-BLK1	0.00	µg/L	
B220974-BLK2	0.00	µg/L	
B220974-BLK3	0.00	µg/L	
B220974-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.010
Limit: 0.100			MRL: 0.100

Analyte: DMeSe

Sample	Result	Units	
B220974-BLK1	0.00	µg/L	
B220974-BLK2	0.00	µg/L	
B220974-BLK3	0.00	µg/L	
B220974-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.010
Limit: 0.100			MRL: 0.100



Sample Containers

Lab ID: 2204347-01	Report Matrix: WS	Collected: 04/21/2022					
Sample: RG_GATEDP_WS_LAEMP_EVO_2022-04-21_NP	Sample Type: Sample + Sum	Received: 04/28/2022					
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% Isopropanol (PP)		<2	Cooler 6 - 2204347
Lab ID: 2204347-02	Report Matrix: WS	Collected: 04/21/2022					
Sample: RG_GATE_WS_LAEMP_EVO_2022-04-21_NP	Sample Type: Sample + Sum	Received: 04/28/2022					
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% Isopropanol (PP)		<2	Cooler 6 - 2204347
Lab ID: 2204347-03	Report Matrix: WS	Collected: 04/21/2022					
Sample: RG_FBLANK_WS_LAEMP_EVO_2022-04-21_NP	Sample Type: Sample + Sum	Received: 04/28/2022					
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% Isopropanol (PP)		<2	Cooler 6 - 2204347
Lab ID: 2204347-04	Report Matrix: WS	Collected: 04/21/2022					
Sample: RG_BOCK_WS_LAEMP_EVO_2022-04-21_NP	Sample Type: Sample + Sum	Received: 04/28/2022					
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% Isopropanol (PP)		<2	Cooler 6 - 2204347
Lab ID: 2204347-05	Report Matrix: WS	Collected: 04/21/2022					
Sample: RG_RIVER_WS_LAEMP_EVO_2022-04-21_NP	Sample Type: Sample + Sum	Received: 04/28/2022					
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% Isopropanol (PP)		<2	Cooler 6 - 2204347



Shipping Containers

Cooler 6 - 2204347

Received: April 28, 2022 7:00
Tracking No: PAPS#RWHV92132 via Courier
Coolant Type: Dry Ice
Temperature: 1.0 °C

Description: Large Cooler
Damaged in transit? No
Returned to client? No
Comments: IR #33

Custody seals present? No
Custody seals intact? No
COC present? Yes



COC ID:		REP_EVO LAEMP_2022_APR21_Brooks		TURNAROUND TIME:			RUSH:						
PROJECT/CLIENT INFO				LABORATORY			OTHER INFO						
Facility Name / Job#		Regional Effects Program		Lab Name		Brooks Applied Labs		Report Format / Distribution		Excel	PDF	EDD	
Project Manager		Mike Pope		Lab Contact		Ben Wozniak		Email 1:		X	X	X	
Email		[redacted]		Email		Ben@brooksapplied.com		Email 2:		teckcoal@equisonline.com		X	
Address		421 Pine Ave		Address		18804 North Creek Parkway		Email 3:		Teck Lab Results@teck.com	X	X	X
City		Sparwood		City		Suite 100		Email 4:		ApunSciLab@teck.com	X	X	X
Postal Code		V0B 2G0		Province		BC		Email 5:		brooks@minnow.ca	X	X	X
Country		Canada		Postal Code		98011		Email 6:		[redacted]	X	X	X
Phone Number		250-425-8202		Phone Number		(206) 753-6158		PO number		817033			

SAMPLE DETAILS								ANALYSIS REQUESTED					
Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com p	# Of Cont.	PHENOL	ANALYSIS	PERMETHYL	OTHER	OTHER	OTHER
RG_GATEDP_WS_LAEMP_EVO_2022-04-21_NP	RG_GATEDP	WS	No	21-Apr-22	9:00	G	1	F	Volatile Selenium				
RG_GATE_WS_LAEMP_EVO_2022-04-21_NP	RG_GATE	WS	No	21-Apr-22	10:45	G	1	F					
RG_FBLANK_WS_LAEMP_EVO_2022-04-21_NP	RG_FBLANK	WS	No	21-Apr-22	9:00	G	1						
RG_BOCK_WS_LAEMP_EVO_2022-04-21_NP	RG_BOCK	WS	No	21-Apr-22	15:00	G	1						
RG_RIVER_WS_LAEMP_EVO_2022-04-21_NP	RG_RIVER	WS	No	21-Apr-22	9:00	G	1						

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
	Maddy Stokes - Minnow	April 26 2022	<i>Maddy Stokes</i>	04/28/22 07:00

SERVICE REQUEST (rush - subject to availability)				
Regular (default) X	Sampler's Name	Maddy Stokes	Mobile #	647-522-0672
Priority (2-3 business days) - 50% surcharge	Sampler's Signature	MS <i>[Signature]</i>	Date/Time	April 26 2022
Emergency (1 Business Day) - 100% surcharge				
For Emergency <1 Day, ASAP or Weekend - Contact ALS				

STRAIGHT BILL OF LADING
NOT NEGOTIABLE

RW HOT SHOT SERVICE INC.

250-425-7447
24 Hour Hot Shot Service

No. 92132

Sparwood, BC
Terrace, BC
Red Deer, AB

Vancouver, BC
Calgary, AB
Montreal, QC

Prince George, BC
Edmonton, AB
Spokane, WA

Elkford, BC
Ft. McMurray, AB
Shelby, MT

Tumbler Ridge, BC
Hinton, AB
Gillette, WY

INVOICE TO		DATE	
BILL OF LADING #		PURCHASE ORDER NUMBER	
SHIPPER (FROM)		CONSIGNEE (TO)	
STREET		STREET	
CITY/PROVINCE	POSTAL CODE	CITY/PROVINCE	POSTAL CODE
SPECIAL INSTRUCTIONS		FREIGHT CHARGES SHIPPER TO CHECK <input type="checkbox"/> PREPAID <input type="checkbox"/> COLLECT <small>If not indicated, shipping will automatically move collect.</small> FEE _____ WAITING _____ XPU _____ CHARGES _____ FSC _____ US _____ SUB TOTAL _____ GST _____ TOTAL \$ _____ <small>IF AT OWNER'S RISK, WRITE ORD HERE</small>	
PACKAGES	DESCRIPTION OF ARTICLES AND SPECIAL MARKS	WEIGHT (Subject to Correction)	
PAPS# RWHV92132			
UNIT #	DECLARED VALUATION: Maximum liability of carrier is \$2.00 per lb. (\$4.41 per kilogram) unless declared valuation states otherwise.		
DRIVER'S SIGNATURE - PICK UP BY	PICK UP TIME	DRIVER'S SIGNATURE - DELIVERY BY	FINISH TIME
<small>NOTICE OF CLAIM: (a) No carrier is liable for loss, damage or delay of any goods under the Bill of Lading unless notice therefor setting out particulars of the origin, destination and date of shipment of the goods and the estimated amount claimed in respect of such loss, damage or delay is given in writing to the originating carrier or the delivering carrier within sixty (60) days after the delivery of the goods, or the date of shipment, together with a copy of the paid freight bill. (b) The final statement of the claim must be filed within nine (9) months from the date of shipment. RECEIVED at the point of origin on the date specified from the consignor mentioned herein, the property herein described in apparent good order, except as noted (contents and condition of contents of package unknown) marked, consigned and destined as indicated below, which the carrier agrees to carry and to deliver to the consignee at the said destination, subject to the rates and classification in effect on the date of shipment. It is mutually agreed, as to each carrier of all or any of the goods over all or any portion of the route to destination, and as to each party of any time interested in all or any of the goods, that every service to be performed hereunder shall be subject to all the conditions and terms of the standard Bill of Lading, in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. The date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. The Contract for the carriage of the goods listed in the Bill of Lading is governed by regulation in force in the jurisdiction at the time of shipment and is subject to the conditions set out in such conditions.</small>			
SHIPPER PRINT	CONSIGNEE PRINT	DATE	
SHIPPER SIGN	CONSIGNEE SIGN	TIME	
WHITE: Office YELLOW: Carrier PINK: Consignee GOLDENROAD: Shipper		GST # 864540398RT0001 NUMBER OF PIECES RECEIVED ▲	

Cooler ID: Cooler 6 CQC (Y/N) Temperature: 0.0/1.0c (mlc) IR: 33

Coolant Type: Ice Blue Ice Ambient

Notes:

Sampling Locations:	EV	RG	LC	volant
Sample Types:	(T/D)	(SP)	(T/D)	(SP)
Container Types:	40ml amber glass	60ml HDPE	40ml HDPE	125ml HDPE

Opened By: Pen Date: 4/28/22 0700

COPY

ASG 4/28/22



18804 North Creek Parkway, Ste 100, Bothell, WA 98011 • USA • T: 206 632 6206 F: 206 632 6017 • info@brooksapplied.com

May 20, 2022

Teck Resources Limited - Vancouver
Mike Pope
421 Pine Avenue
Sparwood, B.C. CANADA V0B2G0
mike.pope@teck.com

Re: Elkview Operations

Dear Mike Pope,

On May 5, 2022, Brooks Applied Labs (BAL) received two (2) aqueous samples. The samples were logged-in for total recoverable selenium [Se], dissolved Se [Se], and Se speciation analyses, according to the chain-of-custody (COC) form.

The sample fractions for total recoverable Se and dissolved Se were not preserved in the field. The samples were preserved (pH < 2) upon receipt at BAL. All sample fractions for total recoverable Se and dissolved Se were preserved within the (14 calendar day) preservation holding time.

The sample fractions logged in for Se speciation and dissolved Se had been field-filtered prior to receipt at BAL. All samples were stored according to BAL SOPs.

Total Recoverable Se and Dissolved Se

Each aqueous sample fraction for dissolved Se was digested in a closed vessel (bomb) with nitric and hydrochloric acids. The resulting digests were analyzed for Se content via inductively coupled plasma triple quadrupole mass spectrometry (ICP-QQQ-MS). The ICP-QQQ-MS instrumentation uses advanced interference removal techniques to ensure accuracy of the sample results. For more information, please visit the *Interference Reduction Technology* section on our website, brooksapplied.com.

Selenium Speciation

Each aqueous sample was analyzed for selenium speciation using ion chromatography inductively coupled plasma collision reaction cell mass spectrometry (IC-ICP-CRC-MS). Selenium species are chromatographically separated on an ion exchange column and then quantified using inductively coupled plasma collision reaction cell mass spectrometry (ICP-CRC-MS); for more information on this determinative technique, please visit the *Interference Reduction Technology* section on our website. The chromatographic method applied for the analyses provides greater retention of methylseleninic acid and selenomethionine, allowing for more definitive quantitation of these species.

In accordance with the quotation issued for this project, selenium speciation was defined as dissolved selenite [Se(IV)], selenate [Se(VI)], selenocyanate [SeCN], methylseleninic acid [MeSe(IV)], methaneselenonic acid [MeSe(VI)], selenomethionine [SeMef], selenosulfate [SeSO₃], and dimethylselenoxide [DMSeO]. Unknown Se species was defined as the total concentration of all unknown Se species observed during the analysis. This item is identified on the report as [Unk Se Sp].

DMSeO elutes early in the chromatographic run due to the nature of the molecule and the applied chromatographic separation method. Since this species elutes near the dead volume, additional selenium

species may coelute. Alternate methods can be applied, upon client request, to increase the separation of DMSeO from potentially co-eluting selenium species.

Poor mass balance was observed in *EV_EC_BRIDGE_WS_LAEMP_EVO_2022-04_NP* when the Se speciation results (2205070-01) were compared to corresponding dissolved Se result (2205070-02). Container labels were checked and there was no indication of samples mis-labeled. Re-analyses confirmed the results. Consequently, no additional corrective actions are necessary. Results for these samples are reported from initial injections, and the reported results are deemed representative of the submitted containers.

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

In instances where a matrix spike/matrix spike duplicate (MS/MSD) set was spiked at a level less than the native sample concentration, the recoveries and the relative percent difference (RPD) are not considered valid indicators of data quality. In such instances, the recoveries of the laboratory fortified blanks (BS) and/or standard reference materials (SRM) demonstrate the accuracy of the applied methods. When the spiking level was less than 25% of the native sample concentration, the spike recovery was not reported (**NR**) and the relative percent difference (RPD) of the MS/MSD set was not calculated (**N/C**).

In cases when either the native sample concentration was non-detectable (reported as less than or equal to the MDL) and/or the corresponding DUP result was also non-detectable, the RPD between the two values was not calculated (**N/C**).

Except for concentration qualifiers, all data were reported without qualification. All associated quality control sample results met the acceptance criteria.

BAL, an accredited laboratory, certifies that the reported results of all analyses for which BAL is NELAP accredited meet all NELAP requirements. For more information, please see the *Report Information* page.

Please feel free to contact us if you have any questions regarding this report.

Sincerely,



Jeremy Maute
Senior Project Manager
Jeremy@brooksapplied.com



Report Information

Laboratory Accreditation

BAL is accredited by the *National Environmental Laboratory Accreditation Program* (NELAP) through the State of Florida Department of Health, Bureau of Laboratories (E87982) and is certified to perform many environmental analyses. BAL is also certified by many other states to perform environmental analyses. For a current list of our accreditations/certifications, please visit our website at <http://www.brooksapplied.com/resources/certificates-permits/> or review Tables 1 and 2 in our Accreditation Information. Results reported relate only to the samples listed in the report.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

AR	as received	MS	matrix spike
BAL	Brooks Applied Labs	MSD	matrix spike duplicate
BLK	method blank	ND	non-detect
BS	blank spike	NR	non-reportable
CAL	calibration standard	N/C	not calculated
CCB	continuing calibration blank	PS	post preparation spike
CCV	continuing calibration verification	REC	percent recovery
COC	chain of custody record	RPD	relative percent difference
D	dissolved fraction	SCV	secondary calibration verification
DUP	duplicate	SOP	standard operating procedure
IBL	instrument blank	SRM	reference material
ICV	initial calibration verification	T	total fraction
MDL	method detection limit	TR	total recoverable fraction
MRL	method reporting limit		

Definition of Data Qualifiers

(Effective 3/23/2020)

E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Please see narrative for explanation.
J	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1	Estimated value. A full explanation is presented in the narrative.
M	Duplicate precision (RPD) was not within acceptance criteria. Please see narrative for explanation.
N	Spike recovery was not within acceptance criteria. Please see narrative for explanation.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.
Z	Holding time and/or preservation requirements not established for this method; however, BAL recommendations for holding time were not followed. Please see narrative for explanation.

These qualifiers are based on those previously utilized by Brooks Applied Labs, those found in the EPA SOW ILM03.0, Exhibit B, Section III, pg. B-18, and the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review; USEPA; January 2010. These supersede all previous qualifiers ever employed by BAL.



Accreditation Information

Table 1. Accredited method/matrix/analytes for TNI
Issued by: State of Florida Dept. of Health (The NELAC Institute 2016 Standard)
Issued on: July 1, 2021; Valid to: June 30, 2022
Certificate Number: E87982-37

Method	Matrix	TNI Accredited Analyte(s)
EPA 1638	Non-Potable Waters	Ag, Cd, Cu, Ni, Pb, Sb, Se, Ti, Zn
EPA 200.8	Non-Potable Waters	Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Sb, Se, Ti, U, V, Zn
EPA 6020	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Ti, U, V, Zn
	Solids/Chemicals & Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Ti, V, Zn
BAL-5000	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, U, V, Zn, Hardness
	Solids/Chemicals	Ag, As, B, Be, Cd, Co, Cr, Cu, Pb, Mo, Ni, Sb, Se, Sn, Sr, Ti, V, Zn
	Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Ti, V, Zn
EPA 1640	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn
EPA 1631E	Non-Potable Waters, Solids/Chemicals & Biological	Total Mercury
EPA 1630	Non-Potable Waters	Methyl Mercury
BAL-3200	Solids/Chemicals & Biological	Methyl Mercury
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
BAL-4201	Non-Potable Waters	Se(IV), Se(VI)
BAL-4300	Non-Potable Waters Solid/Chemicals	Cr(VI)
SM2340B	Non-Potable Waters	Hardness



Accreditation Information

**Table 2. Accredited method/matrix/analytes for ISO (1),
 Non-Governmental TNI (2)
 Issued by: ANAB
 Issued on: September 21, 2021; Valid to: March 30, 2024**

Method	Matrix	ISO and Non-Gov. TNI Accredited Analyte(s)
EPA 1638 Mod EPA 200.8 Mod EPA 6020 Mod	Non-Potable Waters	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, U, V, Zn
BAL-5000	Solids/Chemicals & Biological	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, V, Zn Hg (Biological Only)
EPA 1640 Mod	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn Ag, As, Cr, Co, Se, Ti, V (ISO Only)
EPA 1631E Mod BAL-3100	Non-Potable Waters, Solids/Chemicals & Biological/Food	Total Mercury
EPA 1630 Mod BAL-3200	Non-Potable Waters, Solids/Chemicals Biological	Methyl Mercury
EPA 1632A Mod BAL-3300	Non-Potable Waters Biological/Food Solids/Chemicals	Inorganic Arsenic (ISO Only) Inorganic Arsenic (ISO Only)
AOAC 2015.01 Mod BAL-5000	Food	As, Cd, Hg, Pb
BAL-4100	Non-Potable Waters Biological by BAL-4117	As(III), As(V), DMAs, MMAs Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4101	Food by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4201	Non-Potable Waters	Se(IV), Se(VI), SeCN, SeMet
BAL-4300	Non-Potable Waters, Solid/Chemicals	Cr(VI)
SM 3500-Fe BAL-4500	Non-Potable Waters	Fe, Fe(II) (ISO Only)
SM2340B	Non-Potable Waters	Hardness
SM 2540G BAL-0501	Solids/Chemicals & Biological	% Dry Weight



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
<i>EV_EC_BRIDGE_WS_LAEMP_EVO_2022-04_NP</i>	2205070-01	WS	Sample	04/26/2022	05/05/2022
<i>EV_EC_BRIDGE_WS_LAEMP_EVO_2022-04_NP-NAL</i>	2205070-02	WS	Sample	04/26/2022	05/05/2022
<i>EV_EC_BRIDGE_WS_LAEMP_EVO_2022-04_NP-NAL</i>	2205070-03	WS	Sample	04/26/2022	05/05/2022

Batch Summary

Analyte	Lab Matrix	Method	Prepared	Analyzed	Batch	Sequence
DMS ₂ SeO	Water	SOP BAL-4201	05/03/2022	05/07/2022	B221000	S220520
MeSe(IV)	Water	SOP BAL-4201	05/03/2022	05/07/2022	B221000	S220520
MeSe(VI)	Water	SOP BAL-4201	05/03/2022	05/07/2022	B221000	S220520
Se	Water	EPA 1638 Mod	05/10/2022	05/11/2022	B221020	S220535
Se(IV)	Water	SOP BAL-4201	05/03/2022	05/07/2022	B221000	S220520
Se(VI)	Water	SOP BAL-4201	05/03/2022	05/07/2022	B221000	S220520
SeCN	Water	SOP BAL-4201	05/03/2022	05/07/2022	B221000	S220520
SeMet	Water	SOP BAL-4201	05/03/2022	05/07/2022	B221000	S220520
SeSO ₃	Water	SOP BAL-4201	05/03/2022	05/07/2022	B221000	S220520
Unk Se Sp	Water	SOP BAL-4201	05/03/2022	05/07/2022	B221000	S220520



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>EV_EC_BRIDGE_WS_LAEMP_EVO_2022-04_NP</i>										
2205070-01	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221000	S220520
2205070-01	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221000	S220520
2205070-01	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221000	S220520
2205070-01	Se(IV)	WS	D	0.015	J	0.010	0.075	µg/L	B221000	S220520
2205070-01	Se(VI)	WS	D	55.8		0.010	0.055	µg/L	B221000	S220520
2205070-01	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221000	S220520
2205070-01	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221000	S220520
2205070-01	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221000	S220520
2205070-01	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221000	S220520
<i>EV_EC_BRIDGE_WS_LAEMP_EVO_2022-04_NP-NAL</i>										
2205070-02	Se	WS	D	158		0.165	0.528	µg/L	B221020	S220535
<i>EV_EC_BRIDGE_WS_LAEMP_EVO_2022-04_NP-NAL</i>										
2205070-03	Se	WS	TR	148		0.165	0.528	µg/L	B221020	S220535



Accuracy & Precision Summary

Batch: B221000
Lab Matrix: Water
Method: SOP BAL-4201

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221000-BS1	Blank Spike, (2124033)						
	MeSe(IV)		5.095	5.170	µg/L	101% 75-125	
	Se(IV)		5.000	4.923	µg/L	98% 75-125	
	Se(VI)		5.000	4.846	µg/L	97% 75-125	
	SeCN		5.015	4.718	µg/L	94% 75-125	
	SeMet		4.932	4.611	µg/L	93% 75-125	
B221000-DUP4	Duplicate, (2205078-10)						
	DMSeO	0.061		0.060	µg/L		2% 25
	MeSe(IV)	ND		ND	µg/L		N/C 25
	MeSe(VI)	ND		ND	µg/L		N/C 25
	Se(IV)	3.851		3.906	µg/L		1% 25
	Se(VI)	118.0		117.7	µg/L		0.3% 25
	SeCN	ND		ND	µg/L		N/C 25
	SeMet	ND		ND	µg/L		N/C 25
	SeSO3	ND		ND	µg/L		N/C 25
	Unk Se Sp	ND		ND	µg/L		N/C 25
B221000-MS4	Matrix Spike, (2205078-10)						
	Se(IV)	3.851	4.900	8.033	µg/L	85% 75-125	
	Se(VI)	118.0	5.100	120.5	µg/L	NR 75-125	
	SeCN	ND	1.962	1.626	µg/L	83% 75-125	
	SeMet	ND	1.977	1.675	µg/L	85% 75-125	
B221000-MSD4	Matrix Spike Duplicate, (2205078-10)						
	Se(IV)	3.851	4.900	8.005	µg/L	85% 75-125	0.4% 25
	Se(VI)	118.0	5.100	118.4	µg/L	NR 75-125	N/C 25
	SeCN	ND	1.962	1.576	µg/L	80% 75-125	3% 25
	SeMet	ND	1.977	1.631	µg/L	83% 75-125	3% 25



Accuracy & Precision Summary

Batch: B221020
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221020-BS1	Blank Spike, (2128022) Se		200.0	190.8	µg/L	95% 75-125	
B221020-BS2	Blank Spike, (2128022) Se		200.0	199.5	µg/L	100% 75-125	
B221020-BS3	Blank Spike, (2128022) Se		200.0	210.8	µg/L	105% 75-125	
B221020-BS4	Blank Spike, (2128022) Se		200.0	199.1	µg/L	100% 75-125	
B221020-SRM1	Reference Material (2145010, TMDA 51.5 Reference Standard - Bottle 9 - SRM) Se		14.30	15.56	µg/L	109% 75-125	
B221020-SRM2	Reference Material (2145010, TMDA 51.5 Reference Standard - Bottle 9 - SRM) Se		14.30	14.14	µg/L	99% 75-125	
B221020-SRM3	Reference Material (2145010, TMDA 51.5 Reference Standard - Bottle 9 - SRM) Se		14.30	14.39	µg/L	101% 75-125	
B221020-SRM4	Reference Material (2145010, TMDA 51.5 Reference Standard - Bottle 9 - SRM) Se		14.30	13.57	µg/L	95% 75-125	
B221020-DUP1	Duplicate, (2205070-03) Se	148.1		170.3	µg/L		14% 20
B221020-MS1	Matrix Spike, (2205070-03) Se	148.1	220.0	375.6	µg/L	103% 75-125	
B221020-MSD1	Matrix Spike Duplicate, (2205070-03) Se	148.1	220.0	373.2	µg/L	102% 75-125	0.7% 20



Accuracy & Precision Summary

Batch: B221020
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221020-DUP2	Duplicate, (2205072-09) Se	154.0		152.9	µg/L		0.7% 20
B221020-MS2	Matrix Spike, (2205072-09) Se	154.0	220.0	367.8	µg/L	97% 75-125	
B221020-MSD2	Matrix Spike Duplicate, (2205072-09) Se	154.0	220.0	421.1	µg/L	121% 75-125	14% 20



Method Blanks & Reporting Limits

Batch: B221000
Matrix: Water
Method: SOP BAL-4201
Analyte: DMSeO

Sample	Result	Units	
B221000-BLK1	0.00	µg/L	
B221000-BLK2	0.00	µg/L	
B221000-BLK3	0.00	µg/L	
B221000-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005

Analyte: MeSe(IV)

Sample	Result	Units	
B221000-BLK1	0.00	µg/L	
B221000-BLK2	0.00	µg/L	
B221000-BLK3	0.00	µg/L	
B221000-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005

Analyte: MeSe(VI)

Sample	Result	Units	
B221000-BLK1	0.00	µg/L	
B221000-BLK2	0.00	µg/L	
B221000-BLK3	0.00	µg/L	
B221000-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005



Method Blanks & Reporting Limits

Analyte: Se(IV)

Sample	Result	Units	
B221000-BLK1	0.004	µg/L	
B221000-BLK2	0.003	µg/L	
B221000-BLK3	0.003	µg/L	
B221000-BLK4	0.003	µg/L	
Average:	0.003		MDL: 0.002
Limit:	0.015		MRL: 0.015

Analyte: Se(VI)

Sample	Result	Units	
B221000-BLK1	0.00	µg/L	
B221000-BLK2	0.00	µg/L	
B221000-BLK3	0.00	µg/L	
B221000-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.011		MRL: 0.011

Analyte: SeCN

Sample	Result	Units	
B221000-BLK1	0.00	µg/L	
B221000-BLK2	0.00	µg/L	
B221000-BLK3	0.00	µg/L	
B221000-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.010		MRL: 0.010

Analyte: SeMet

Sample	Result	Units	
B221000-BLK1	0.00	µg/L	
B221000-BLK2	0.00	µg/L	
B221000-BLK3	0.00	µg/L	
B221000-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.005		MRL: 0.005



Method Blanks & Reporting Limits

Analyte: SeSO3

Sample	Result	Units	
B221000-BLK1	0.00	µg/L	
B221000-BLK2	0.00	µg/L	
B221000-BLK3	0.00	µg/L	
B221000-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.011		MRL: 0.011

Analyte: Unk Se Sp

Sample	Result	Units	
B221000-BLK1	0.00	µg/L	
B221000-BLK2	0.00	µg/L	
B221000-BLK3	0.00	µg/L	
B221000-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.015		MRL: 0.015



Method Blanks & Reporting Limits

Batch: B221020
Matrix: Water
Method: EPA 1638 Mod
Analyte: Se

Sample	Result	Units	
B221020-BLK1	0.245	µg/L	
B221020-BLK2	0.165	µg/L	
B221020-BLK3	0.156	µg/L	
B221020-BLK4	0.277	µg/L	
Average:	0.211		MDL: 0.150
Limit:	0.480		MRL: 0.480



Sample Containers

Lab ID: 2205070-01

Report Matrix: WS

Collected: 04/26/2022

Sample:

Sample Type: Sample + Sum

Received: 05/05/2022

EV_EC_BRIDGE_WS_LAEMP_EVO_2022-04_NP

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 7 - 2205070
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 7 - 2205070
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 7 - 2205070

Lab ID: 2205070-02

Report Matrix: WS

Collected: 04/26/2022

Sample:

Sample Type: Sample + Sum

Received: 05/05/2022

EV_EC_BRIDGE_WS_LAEMP_EVO_2022-04_NP-NAL

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2152004	<2	Cooler 6 - 2205070

Lab ID: 2205070-03

Report Matrix: WS

Collected: 04/26/2022

Sample:

Sample Type: Sample + Sum

Received: 05/05/2022

EV_EC_BRIDGE_WS_LAEMP_EVO_2022-04_NP-NAL

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2152004	<2	Cooler 6 - 2205070



Shipping Containers

Cooler 6 - 2205070

Received: May 5, 2022 7:00
Tracking No: PAPS#RWHV92236 via Courier
Coolant Type: Blue Ice
Temperature: 2.3 °C

Description: Styrofoam Cooler
Damaged in transit? No
Returned to client? No
Comments: IR 33

Custody seals present? No
Custody seals intact? No
COC present? Yes

Cooler 7 - 2205070

Received: May 5, 2022 7:00
Tracking No: PAPS#RWHV92236 via Courier
Coolant Type: Blue Ice
Temperature: 0.1 °C

Description: Styrofoam Cooler
Damaged in transit? No
Returned to client? No
Comments: IR 33

Custody seals present? No
Custody seals intact? No
COC present? Yes



COC ID:		EV_EVO LAEMP_2022_APR_Brooks				TURNAROUND TIME:				RUSH:						
PROJECT/CLIENT INFO						LABORATORY				OTHER INFO						
Facility Name / Job#		Elkview Operations				Lab Name		Brooks Applied Labs		Report Format / Distribution			Excel	PDF	EDD	
Project Manager		Mike Pope				Lab Contact		Ben Wozniak		Email 1:			X	X	X	
Email		MIC.2008@teck.com				Email		Ben@brooksupplied.com		Email 2:			teckcoal@equionline.com		X	
Address		421 Pine Ave				Address		18804 North Creek Parkway		Email 3:			TeckLab.Results@teck.com	X	X	
City		Sparwood		Province	BC	City		Bothell	Province	WA	Email 4:			AguaSciLab@teck.com	X	X
Postal Code		V0B 2G0		Country	Canada	Postal Code		98011	Country	United States	Email 5:			bcw@brooksupplied.com	X	X
Phone Number		250-425-8202				Phone Number		(206) 753-6158		PO number			748540			
SAMPLE DETAILS								ANALYSIS REQUESTED								
Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com p	# Of Cont.	Brooks_Se_Speciation	Brooks_Se_D	Brooks_Se_T						
EV_EC_BRIDGE_WS_LAEMP_EVO_2022-04_NP	EV_EC_BRIDGE	WS	No	26-Apr-22	15:45	G	1	1								
EV_EC_BRIDGE_WS_LAEMP_EVO_2022-04_NP-NAL	EV_EC_BRIDGE	WS	No	26-Apr-22	15:45	G	2		1	1						
ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS				RELINQUISHED BY/AFFILIATION				DATE/TIME		ACCEPTED BY/AFFILIATION		DATE/TIME				
				Alex McClymont				May 2, 2022		VW/BAL		5/5/22 1.00				
SERVICE REQUEST (rush - subject to availability)				SAMPLER'S NAME				MOBILE #		DATE/TIME						
Regular (default) <input checked="" type="checkbox"/>				Alex McClymont				780-293-6750								
Priority (2-3 business days) - 50% surcharge				SAMPLER'S SIGNATURE						May 2, 2022						
Emergency (1 Business Day) - 100% surcharge																
For Emergency <1 Day, ASAP or Weekend - Contact ALS																

STRAIGHT BILL OF LADING
NOT NEGOTIABLE

RW HOT SHOT SERVICE INC.

250-425-7447
24 Hour Hot Shot Service

No. 92236

Sparwood, BC
Terrace, BC
Red Deer, AB

Vancouver, BC
Calgary, AB
Montreal, QC

Prince George, BC
Edmonton, AB
Spokane, WA

Elkford, BC
Ft. McMurray, AB
Shelby, MT

Tumbler Ridge, BC
Hinton, AB
Gillette, WY

INVOICE TO		DATE	
BILL OF LADING #		PURCHASE ORDER NUMBER	
SHIPPER (FROM)		CONSIGNEE (TO)	
STREET		STREET	
CITY/PROVINCE		POSTAL CODE	CITY/PROVINCE
CITY/PROVINCE		POSTAL CODE	
SPECIAL INSTRUCTIONS			
PACKAGES	DESCRIPTION OF ARTICLES AND SPECIAL MARKS	WEIGHT (Subject to Correction)	
PAPS # RWHV92236			
UNIT #	DECLARED VALUATION: Maximum liability of carrier is \$2.00 per lb. (\$4.41 per kilogram) unless declared valuation states otherwise.		
DRIVER'S SIGNATURE - PICK UP BY	PICK UP TIME	DRIVER'S SIGNATURE - DELIVERY BY	FINISH TIME
<small>NOTICE OF CLAIM: (a) No carrier is liable for loss, damage or delay of any goods under the Bill of Lading unless notice, in detail setting out particulars of the origin, destination and date of shipment of the goods and the estimated amount claimed, is received by the carrier within nine (9) months from the date of shipment together with a copy of the paid freight bill. (b) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. (c) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. (d) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. (e) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill.</small>			
SHIPPER PRINT	CONSIGNEE PRINT	DATE	
SHIPPER SIGN	CONSIGNEE SIGN	TIME	
WHITE: Office		YELLOW: Carrier	
PINK: Consignee		GOLDENROAD: Shipper	
GST # 864540398RT0001		NUMBER OF PIECES RECEIVED	

FREIGHT CHARGES SHIPPER TO CHECK

PREPAID COLLECT
If not indicated, shipping will automatically move collect.

FEE _____

WAITING _____

XPU _____

CHARGES _____

FSC _____

US _____

SUB TOTAL _____

GST _____

TOTAL \$ _____

IF AT OWNER'S RISK, WRITE ORD HERE

Cooler ID: Cooler 7 GOC (Y/N) Temperature: 0.1 IR: 33

Coolant Type: Ice Blue Ice Ambient

Notes:

Sampling Locations:	WL	EV	RG	GH
Sample Types:	T/D 40ml glass	SP 125ml plastic	T/D 40ml glass	SP 125ml plastic
Container Types:				

Opened By: ASG

Date: 5/4/22



COPY

Effective 7/29/20

STRAIGHT BILL OF LADING
NOT NEGOTIABLE

RW HOT SHOT SERVICE INC.

250-425-7447
24 Hour Hot Shot Service

No. 92236

Sparwood, BC
Terrace, BC
Red Deer, AB

Vancouver, BC
Calgary, AB
Montreal, QC

Prince George, BC
Edmonton, AB
Spokane, WA

Elkford, BC
Ft. McMurray, AB
Shelby, MT

Tumbler Ridge, BC
Hinton, AB
Gillette, WY

INVOICE TO		DATE	
BILL OF LADING #		PURCHASE ORDER NUMBER	
SHIPPER (FROM)		CONSIGNEE (TO)	
STREET		STREET	
CITY/PROVINCE		CITY/PROVINCE	
POSTAL CODE		POSTAL CODE	
SPECIAL INSTRUCTIONS		FREIGHT CHARGES SHIPPER TO CHECK <input type="checkbox"/> PREPAID <input type="checkbox"/> COLLECT <small>If not indicated, shipping will automatically move collect.</small>	
PACKAGES	DESCRIPTION OF ARTICLES AND SPECIAL MARKS	WEIGHT (Subject to Correction)	FEE _____ WAITING _____ XPU _____ CHARGES _____ FSC _____ US _____ SUB TOTAL _____ GST _____ TOTAL \$ _____ <small>IF AT OWNER'S RISK, WRITE ORD HERE</small>
UNIT #		DECLARED VALUATION: Maximum liability of carrier is \$2.00 per lb. (\$4.41 per kilogram) unless declared valuation states otherwise.	
DRIVER'S SIGNATURE - PICK UP BY		PICK UP TIME	DRIVER'S SIGNATURE - DELIVERY BY
			FINISH TIME
<small>NOTICE OF CLAIM: (a) No carrier is liable for loss, damage or delay of any goods under the Bill of Lading unless notice, therefore setting out particulars of the origin, destination and date of shipment of the goods and the estimated amount claimed, is filed within nine (9) months from the date of shipment. (b) The final statement of the claim must be filed within nine (9) months from the date of shipment. (c) The carrier shall be liable for loss, damage or delay of any goods under the Bill of Lading unless notice, therefore setting out particulars of the origin, destination and date of shipment of the goods and the estimated amount claimed, is filed within nine (9) months from the date of shipment. (d) The final statement of the claim must be filed within nine (9) months from the date of shipment. (e) The carrier shall be liable for loss, damage or delay of any goods under the Bill of Lading unless notice, therefore setting out particulars of the origin, destination and date of shipment of the goods and the estimated amount claimed, is filed within nine (9) months from the date of shipment. (f) The final statement of the claim must be filed within nine (9) months from the date of shipment.</small>			
SHIPPER PRINT	SHIPPER SIGN	CONSIGNEE PRINT	CONSIGNEE SIGN
WHITE: Office YELLOW: Carrier PINK: Consignee GOLDENROAD: Shipper		GST # 8C4540398RT0001	
			NUMBER OF PIECES RECEIVED

PAPS # RWHV92236

Cooler ID: **Cooler 6**

COO(Y/N)

Temperature: **2.3**

IR: **33**

Coolant Type: Ice

Blue Ice Ambient

Notes:

Sampling Locations:

Sample Types:

Container Types:

Opened By: **WW**

T/D	SP	T/D	SP	T/D	SP	T/D	SP
40ml glass	60ml plastic	40ml glass		40ml glass		40ml glass	

Date: **5/5/22**



18804 North Creek Parkway, Ste 100, Bothell, WA 98011 • USA • T: 206 632 6206 F: 206 632 6017 • info@brooksapplied.com

May 16, 2022

Teck Resources Limited - Vancouver
Mike Pope
421 Pine Avenue
Sparwood, B.C. CANADA V0B2G0
mike.pope@teck.com

Re: Elkview Operations

Dear Mike Pope,

On May 5, 2022, Brooks Applied Labs (BAL) received one (1) aqueous sample. The sample was logged-in for volatile selenium (Se) speciation analyses, in accordance with the chain-of-custody (COC) form.

Each sample requesting volatile Se speciation had been field-filtered into bottles containing isopropanol preservative (provided by BAL). All sample fractions were stored according to BAL SOPs and EPA methodology.

Volatile Selenium Speciation

Each aqueous sample was analyzed for volatile selenium speciation using high performance liquid chromatography inductively coupled plasma collision reaction cell mass spectrometry (HPLC-ICP-CRC-MS). Volatile selenium species are chromatographically separated on a reversed phase column and then quantified using inductively coupled plasma collision reaction cell mass spectrometry (ICP-CRC-MS); for more information on this determinative technique, please visit the *Interference Reduction Technology* section on our website.

In accordance with the quotation issued for this project, volatile selenium species were defined as dissolved dimethylselenide [DMeSe] and dimethyldiselenide [DMDS₂].

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

In instances where a matrix spike/matrix spike duplicate (MS/MSD) set was spiked at a level less than the native sample concentration, the recoveries and the relative percent difference (RPD) values are not considered valid indicators of data quality. In such instances, the recoveries of the laboratory fortified blank (BS) demonstrates the accuracy of the applied methods. When the spiking level was less than 25% of the native sample concentration, the spike recovery was not reported (**NR**) and the relative percent difference (RPD) of the MS/MSD set was not calculated (**NC**).

Except for concentration qualifiers, all data were reported without qualification. All associated quality control sample results met the acceptance criteria.

BAL, an accredited laboratory, certifies that the reported results of all analyses for which BAL is NELAP accredited meet all NELAP requirements. For more information, please see the *Report Information* page.

Please feel free to contact us if you have any questions regarding this report.

Sincerely,

A handwritten signature in black ink, appearing to read 'Jeremy Maute', positioned above the printed name.

Jeremy Maute

Senior Project Manager

Jeremy@brooksapplied.com



Report Information

Laboratory Accreditation

BAL is accredited by the *National Environmental Laboratory Accreditation Program* (NELAP) through the State of Florida Department of Health, Bureau of Laboratories (E87982) and is certified to perform many environmental analyses. BAL is also certified by many other states to perform environmental analyses. For a current list of our accreditations/certifications, please visit our website at <http://www.brooksapplied.com/resources/certificates-permits/> or review Tables 1 and 2 in our Accreditation Information. Results reported relate only to the samples listed in the report.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

AR	as received	MS	matrix spike
BAL	Brooks Applied Labs	MSD	matrix spike duplicate
BLK	method blank	ND	non-detect
BS	blank spike	NR	non-reportable
CAL	calibration standard	N/C	not calculated
CCB	continuing calibration blank	PS	post preparation spike
CCV	continuing calibration verification	REC	percent recovery
COC	chain of custody record	RPD	relative percent difference
D	dissolved fraction	SCV	secondary calibration verification
DUP	duplicate	SOP	standard operating procedure
IBL	instrument blank	SRM	reference material
ICV	initial calibration verification	T	total fraction
MDL	method detection limit	TR	total recoverable fraction
MRL	method reporting limit		

Definition of Data Qualifiers

(Effective 3/23/2020)

E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Please see narrative for explanation.
J	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1	Estimated value. A full explanation is presented in the narrative.
M	Duplicate precision (RPD) was not within acceptance criteria. Please see narrative for explanation.
N	Spike recovery was not within acceptance criteria. Please see narrative for explanation.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.
Z	Holding time and/or preservation requirements not established for this method; however, BAL recommendations for holding time were not followed. Please see narrative for explanation.

These qualifiers are based on those previously utilized by Brooks Applied Labs, those found in the EPA SOW ILM03.0, Exhibit B, Section III, pg. B-18, and the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review; USEPA; January 2010. These supersede all previous qualifiers ever employed by BAL.



Accreditation Information

Table 1. Accredited method/matrix/analytes for TNI
Issued by: State of Florida Dept. of Health (The NELAC Institute 2016 Standard)
Issued on: July 1, 2021; Valid to: June 30, 2022
Certificate Number: E87982-37

Method	Matrix	TNI Accredited Analyte(s)
EPA 1638	Non-Potable Waters	Ag, Cd, Cu, Ni, Pb, Sb, Se, Ti, Zn
EPA 200.8	Non-Potable Waters	Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Sb, Se, Ti, U, V, Zn
EPA 6020	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Ti, U, V, Zn
	Solids/Chemicals & Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Ti, V, Zn
BAL-5000	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, U, V, Zn, Hardness
	Solids/Chemicals	Ag, As, B, Be, Cd, Co, Cr, Cu, Pb, Mo, Ni, Sb, Se, Sn, Sr, Ti, V, Zn
	Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Ti, V, Zn
EPA 1640	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn
EPA 1631E	Non-Potable Waters, Solids/Chemicals & Biological	Total Mercury
EPA 1630	Non-Potable Waters	Methyl Mercury
BAL-3200	Solids/Chemicals & Biological	Methyl Mercury
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
BAL-4201	Non-Potable Waters	Se(IV), Se(VI)
BAL-4300	Non-Potable Waters Solid/Chemicals	Cr(VI)
SM2340B	Non-Potable Waters	Hardness



Accreditation Information

**Table 2. Accredited method/matrix/analytes for ISO (1),
 Non-Governmental TNI (2)
 Issued by: ANAB
 Issued on: September 21, 2021; Valid to: March 30, 2024**

Method	Matrix	ISO and Non-Gov. TNI Accredited Analyte(s)
EPA 1638 Mod EPA 200.8 Mod EPA 6020 Mod	Non-Potable Waters	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, U, V, Zn
BAL-5000	Solids/Chemicals & Biological	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, V, Zn Hg (Biological Only)
EPA 1640 Mod	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn Ag, As, Cr, Co, Se, Ti, V (ISO Only)
EPA 1631E Mod BAL-3100	Non-Potable Waters, Solids/Chemicals & Biological/Food	Total Mercury
EPA 1630 Mod BAL-3200	Non-Potable Waters, Solids/Chemicals Biological	Methyl Mercury
EPA 1632A Mod BAL-3300	Non-Potable Waters Biological/Food Solids/Chemicals	Inorganic Arsenic (ISO Only) Inorganic Arsenic (ISO Only)
AOAC 2015.01 Mod BAL-5000	Food	As, Cd, Hg, Pb
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
	Biological by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4101	Food by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4201	Non-Potable Waters	Se(IV), Se(VI), SeCN, SeMet
BAL-4300	Non-Potable Waters, Solid/Chemicals	Cr(VI)
SM 3500-Fe BAL-4500	Non-Potable Waters	Fe, Fe(II) (ISO Only)
SM2340B	Non-Potable Waters	Hardness
SM 2540G BAL-0501	Solids/Chemicals & Biological	% Dry Weight



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
<i>EV_EC_BRIDGE_WS_LAEMP_EVO_2022-04_NP</i>	2205071-01	WS	Sample	04/26/2022	05/05/2022

Batch Summary

Analyte	Lab Matrix	Method	Prepared	Analyzed	Batch	Sequence
DMDSe	Water	HPLC-ICP-MS	05/06/2022	05/06/2022	B220974	S220519
DMeSe	Water	HPLC-ICP-MS	05/06/2022	05/06/2022	B220974	S220519

Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>EV_EC_BRIDGE_WS_LAEMP_EVO_2022-04_NP</i>										
2205071-01	DMDSe	WS	D	≤ 0.022	U	0.022	0.222	µg/L	B220974	S220519
2205071-01	DMeSe	WS	D	≤ 0.022	U	0.022	0.222	µg/L	B220974	S220519



Accuracy & Precision Summary

Batch: B220974
Lab Matrix: Water
Method: HPLC-ICP-MS

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B220974-BS1	Blank Spike, (2210011)						
	DMDSe		4.991	4.204	µg/L	84% 80-120	
	DMeSe		5.005	4.864	µg/L	97% 80-120	
B220974-DUP1	Duplicate, (2204347-05)						
	DMDSe	ND		ND	µg/L		N/C 25
	DMeSe	ND		ND	µg/L		N/C 25
B220974-MS1	Matrix Spike, (2204347-05)						
	DMDSe	ND	5.547	5.041	µg/L	91% 75-125	
	DMeSe	ND	5.542	4.862	µg/L	88% 75-125	
B220974-MSD1	Matrix Spike Duplicate, (2204347-05)						
	DMDSe	ND	5.547	4.829	µg/L	87% 75-125	4% 25
	DMeSe	ND	5.542	4.776	µg/L	86% 75-125	2% 25



Method Blanks & Reporting Limits

Batch: B220974
Matrix: Water
Method: HPLC-ICP-MS
Analyte: DMDSe

Sample	Result	Units	
B220974-BLK1	0.00	µg/L	
B220974-BLK2	0.00	µg/L	
B220974-BLK3	0.00	µg/L	
B220974-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.010
Limit: 0.100			MRL: 0.100

Analyte: DMeSe

Sample	Result	Units	
B220974-BLK1	0.00	µg/L	
B220974-BLK2	0.00	µg/L	
B220974-BLK3	0.00	µg/L	
B220974-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.010
Limit: 0.100			MRL: 0.100



Sample Containers

Lab ID: 2205071-01

Report Matrix: WS

Collected: 04/26/2022

Sample:

Sample Type: Sample + Sum

Received: 05/05/2022

EV_EC_BRIDGE_WS_LAEMP_EVO_2022-04_NP

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
C	Client-Provided	40 mL	na	10% Isopropanol	1828013	>2	Cooler 6 - 2205071

Shipping Containers

Cooler 6 - 2205071

Received: May 5, 2022 7:00

Tracking No: PAPS#RWHV92236 via Courier

Coolant Type: Blue Ice

Temperature: 2.3 °C

Description: Styrofoam Cooler

Damaged in transit? No

Returned to client? No

Comments: IR 33

Custody seals present? No

Custody seals intact? No

COC present? Yes

COC ID: EV_EVO LAEMP_2022_APR_Brooks		TURNAROUND TIME:			RUSH:				
PROJECT/CLIENT INFO				LABORATORY			OTHER INFO		
Facility Name / Job# Elkview Operations				Lab Name Brooks Applied Labs			Report Format / Distribution		
Project Manager Mike Pope				Lab Contact Ben Wozniak			Email 1: <input type="checkbox"/> Excel <input type="checkbox"/> PDF <input type="checkbox"/> EDD		
Email mike.pope@teck.com				Email Ben@brooksupplied.com			Email 2: teck.com@equisonline.com <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		
Address 421 Pine Ave				Address 18804 North Creek Parkway			Email 3: Teck.Lab.Results@teck.com <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		
City Sparwood Province BC				Suite 100			Email 4: AguaSci_labs@teck.com <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		
Postal Code V0B 2G0 Country Canada				City Bothell Province WA			Email 5: bowron@minnow.ca <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		
Phone Number 250-425-8202				Postal Code 98011 Country United States			Email 6: <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		
				Phone Number (206) 753-6158			PO number 748540		

SAMPLE DETAILS								ANALYSIS REQUESTED									
Sample ID	Sample Location (sys_loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com P	# Of Cont.	Isoprop anol	Volatile Selenium								
EV_EC_BRIDGE_WS_LAEMP_EVO_2022-04_NP	EV_EC_BRIDGE	WS	No	26-Apr-22	15:45	G	1	1									

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
	Alex McClymont	May 2, 2022	UW / BAL	MAY 2 7:00

SERVICE REQUEST (rush - subject to availability)				
Regular (default) <input checked="" type="checkbox"/>	Priority (2-3 business days) - 50% surcharge	Emergency (1 Business Day) - 100% surcharge	For Emergency <1 Day, ASAP or Weekend - Contact ALS	
Sampler's Name		Alex McClymont	Mobile #	780-293-6750
Sampler's Signature			Date/Time	May 2, 2022

STRAIGHT BILL OF LADING
NOT NEGOTIABLE

RW HOT SHOT SERVICE INC.

250-425-7447
24 Hour Hot Shot Service

No. 92236

Sparwood, BC
Terrace, BC
Red Deer, AB

Vancouver, BC
Calgary, AB
Montreal, QC

Prince George, BC
Edmonton, AB
Spokane, WA

Elkford, BC
Ft. McMurray, AB
Shelby, MT

Tumbler Ridge, BC
Hinton, AB
Gillette, WY

INVOICE TO			DATE:	
BILL OF LADING #		PURCHASE ORDER NUMBER		
SHIPPER (FROM)		CONSIGNEE (TO)		
STREET		STREET		
CITY/PROVINCE		POSTAL CODE	CITY/PROVINCE	POSTAL CODE
SPECIAL INSTRUCTIONS				
PACKAGES	DESCRIPTION OF ARTICLES AND SPECIAL MARKS		WEIGHT (Subject to Correction)	
<p style="font-size: 2em; text-align: center;">PAPS # RWHV92236</p>				
UNIT #		DECLARED VALUATION: Maximum liability of carrier is \$2.00 per lb. (\$4.41 per kilogram) unless declared valuation states otherwise.		
DRIVER'S SIGNATURE - PICK UP BY		PICK UP TIME	DRIVER'S SIGNATURE - DELIVERY BY	FINISH TIME
<small>NOTICE OF CLAIM: (a) No carrier is liable for loss, damage or delay of any goods under the Bill of Lading unless notice, therefore setting out particulars of the origin, destination and date of shipment of the goods and the estimated amount claimed in respect of such loss, damage or delay is given in writing to the originating carrier or the delivering carrier within sixty (60) days after the delivery of the goods, or in the case of failure to make delivery within nine (9) months from the date of shipment. (b) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill.</small>				
SHIPPER PRINT				DATE
SHIPPER SIGN				TIME
WHITE: Office YELLOW: Carrier PINK: Consignee GOLDENROAD: Shipper			GST # 8C4540398RT0001	
				NUMBER OF PIECES RECEIVED

FREIGHT CHARGES
SHIPPER TO CHECK

PREPAID COLLECT
If not indicated, shipping will automatically move collect.

FEE _____
WAITING _____
XPU _____
CHARGES _____
FSC _____
US _____
SUB TOTAL _____
GST _____
TOTAL \$ _____
IF AT OWNER'S RISK, WRITE ORD HERE

Cooler ID: Cooler 6

COD (Y/N) (Y)

Temperature: 2.3

IR: 33

Coolant Type: Ice Blue Ice Ambient

Notes:

Sampling Locations:

Sample Types:

Container Types:

Opened By: WVW

<u>RG</u>	<u>EV</u>	<u>RG</u>	<u>EV</u>				
T/D	SP	T/D	SP	SP	SP	T/D	SP
<u>40ml glass</u>	<u>60ml plastic</u>	<u>40ml glass</u>	<u>40ml glass</u>				

Date: 5/5/22



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May 20, 2022

Teck Resources Limited - Vancouver
 Mike Pope
 421 Pine Avenue
 Sparwood, B.C. CANADA V0B2G0
mike.pope@teck.com

Re: Regional Effects Program

Dear Mike Pope,

On May 5, 2022, Brooks Applied Labs (BAL) received twenty (20) aqueous samples. The samples were logged-in for total recoverable selenium [Se], dissolved Se [Se], and Se speciation analyses, according to the chain-of-custody (COC) forms.

The **Collection Dates** listed on the chain-of-custody (COC) forms did not match the corresponding **Collection Date** values provided on container labels for 2205072-14, 2205072-15, and 2205072-27. The discrepancies are described in the table below.

Laboratory ID	Sample ID	Collection Date (From COC)	Collection Date (From Container Label)
2205072-14	RG_MIDER_WS_LAEMP_EVO_2022-04_NP_NAL	04/25/22	04/26/22
2205072-15	RG_MIDER_WS_LAEMP_EVO_2022-04_NP_NAL	04/25/22	04/26/22
2205072-27	RG_ERCKBR_WS_LAEMP_EVO_2022-04_NP_NAL	04/28/22	04/27/22

2205072-14, 2205072-15, and 2205072-27 were logged and reported in using the **Collection Date** values listed on the COC forms (*column 3 in the table above*).

The sample fractions for total recoverable Se and dissolved Se were not preserved in the field. The samples were preserved (pH < 2) upon receipt at BAL. All sample fractions for total recoverable Se and dissolved Se were preserved within the (14 calendar day) preservation holding time.

The sample fractions logged in for Se speciation and dissolved Se had been field-filtered prior to receipt at BAL. All samples were stored according to BAL SOPs.

Total Recoverable Se and Dissolved Se

Each aqueous sample fraction for dissolved Se was digested in a closed vessel (bomb) with nitric and hydrochloric acids. The resulting digests were analyzed for Se content via inductively coupled plasma triple quadrupole mass spectrometry (ICP-QQQ-MS). The ICP-QQQ-MS instrumentation uses advanced interference removal techniques to ensure accuracy of the sample results. For more information, please visit the *Interference Reduction Technology* section on our website, brooksapplied.com.

Selenium Speciation

Each aqueous sample was analyzed for selenium speciation using ion chromatography inductively coupled plasma collision reaction cell mass spectrometry (IC-ICP-CRC-MS). Selenium species are chromatographically separated on an ion exchange column and then quantified using inductively coupled plasma collision reaction cell mass spectrometry (ICP-CRC-MS); for more information on this determinative technique, please visit the *Interference Reduction Technology* section on our website. The chromatographic method applied for the analyses provides greater retention of methylseleninic acid and selenomethionine, allowing for more definitive quantitation of these species.

In accordance with the quotation issued for this project, selenium speciation was defined as dissolved selenite [Se(IV)], selenate [Se(VI)], selenocyanate [SeCM], methylseleninic acid [MeSe(IV)], methaneselenonic acid [MeSe(VI)], selenomethionine [SeMet], selenosulfate [SeSO₃], and dimethylselenoxide [DMSeO]. Unknown Se species was defined as the total concentration of all unknown Se species observed during the analysis. This item is identified on the report as [Unk Se Sp].

DMSeO elutes early in the chromatographic run due to the nature of the molecule and the applied chromatographic separation method. Since this species elutes near the dead volume, additional selenium species may coelute. Alternate methods can be applied, upon client request, to increase the separation of DMSeO from potentially co-eluting selenium species.

Poor mass balance was observed for samples *RG_RIVER_WS_LAEMP_EVO_2022-04_NP* and *RG_ERCKBR_WS_LAEMP_EVO_2022-04_NP* when the Se speciation results (2205072-19 and 2205072-25, respectively) were compared to corresponding dissolved Se results (2205072-20 and 2205072-26, respectively). Container labels were checked and there was no indication of samples mis-labeled. Re-analyses confirmed the results for these samples, suggesting sampling heterogeneity. Consequently, no additional corrective actions are necessary. Results for these samples are reported from initial injections, and the reported results are deemed representative of the submitted containers.

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

In instances where a matrix spike/matrix spike duplicate (MS/MSD) set was spiked at a level less than the native sample concentration, the recoveries and the relative percent difference (RPD) are not considered valid indicators of data quality. In such instances, the recoveries of the laboratory fortified blanks (BS) and/or standard reference materials (SRM) demonstrate the accuracy of the applied methods. When the spiking level was less than 25% of the native sample concentration, the spike recovery was not reported (**NR**) and the relative percent difference (RPD) of the MS/MSD set was not calculated (**N/C**).

In cases when either the native sample concentration was non-detectable (reported as less than or equal to the MDL) and/or the corresponding DUP result was also non-detectable, the RPD between the two values was not calculated (**N/C**).

Except for concentration qualifiers, all data were reported without qualification. All associated quality control sample results met the acceptance criteria.

BAL, an accredited laboratory, certifies that the reported results of all analyses for which BAL is NELAP accredited meet all NELAP requirements. For more information, please see the *Report Information* page.

Please feel free to contact us if you have any questions regarding this report.

Sincerely,

A handwritten signature in black ink, appearing to read 'Jeremy Maute', written in a cursive style.

Jeremy Maute
Senior Project Manager
Jeremy@brooksapplied.com



Report Information

Laboratory Accreditation

BAL is accredited by the *National Environmental Laboratory Accreditation Program* (NELAP) through the State of Florida Department of Health, Bureau of Laboratories (E87982) and is certified to perform many environmental analyses. BAL is also certified by many other states to perform environmental analyses. For a current list of our accreditations/certifications, please visit our website at <http://www.brooksapplied.com/resources/certificates-permits/> or review Tables 1 and 2 in our Accreditation Information. Results reported relate only to the samples listed in the report.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

AR	as received	MS	matrix spike
BAL	Brooks Applied Labs	MSD	matrix spike duplicate
BLK	method blank	ND	non-detect
BS	blank spike	NR	non-reportable
CAL	calibration standard	N/C	not calculated
CCB	continuing calibration blank	PS	post preparation spike
CCV	continuing calibration verification	REC	percent recovery
COC	chain of custody record	RPD	relative percent difference
D	dissolved fraction	SCV	secondary calibration verification
DUP	duplicate	SOP	standard operating procedure
IBL	instrument blank	SRM	reference material
ICV	initial calibration verification	T	total fraction
MDL	method detection limit	TR	total recoverable fraction
MRL	method reporting limit		

Definition of Data Qualifiers

(Effective 3/23/2020)

E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Please see narrative for explanation.
J	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1	Estimated value. A full explanation is presented in the narrative.
M	Duplicate precision (RPD) was not within acceptance criteria. Please see narrative for explanation.
N	Spike recovery was not within acceptance criteria. Please see narrative for explanation.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.
Z	Holding time and/or preservation requirements not established for this method; however, BAL recommendations for holding time were not followed. Please see narrative for explanation.

These qualifiers are based on those previously utilized by Brooks Applied Labs, those found in the EPA SOW ILM03.0, Exhibit B, Section III, pg. B-18, and the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review; USEPA; January 2010. These supersede all previous qualifiers ever employed by BAL.



Accreditation Information

Table 1. Accredited method/matrix/analytes for TNI
Issued by: State of Florida Dept. of Health (The NELAC Institute 2016 Standard)
Issued on: July 1, 2021; Valid to: June 30, 2022
Certificate Number: E87982-37

Method	Matrix	TNI Accredited Analyte(s)
EPA 1638	Non-Potable Waters	Ag, Cd, Cu, Ni, Pb, Sb, Se, Ti, Zn
EPA 200.8	Non-Potable Waters	Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Sb, Se, Ti, U, V, Zn
EPA 6020	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Ti, U, V, Zn
	Solids/Chemicals & Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Ti, V, Zn
BAL-5000	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, U, V, Zn, Hardness
	Solids/Chemicals	Ag, As, B, Be, Cd, Co, Cr, Cu, Pb, Mo, Ni, Sb, Se, Sn, Sr, Ti, V, Zn
	Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Ti, V, Zn
EPA 1640	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn
EPA 1631E	Non-Potable Waters, Solids/Chemicals & Biological	Total Mercury
EPA 1630	Non-Potable Waters	Methyl Mercury
BAL-3200	Solids/Chemicals & Biological	Methyl Mercury
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
BAL-4201	Non-Potable Waters	Se(IV), Se(VI)
BAL-4300	Non-Potable Waters Solid/Chemicals	Cr(VI)
SM2340B	Non-Potable Waters	Hardness



Accreditation Information

**Table 2. Accredited method/matrix/analytes for ISO (1),
 Non-Governmental TNI (2)
 Issued by: ANAB
 Issued on: September 21, 2021; Valid to: March 30, 2024**

Method	Matrix	ISO and Non-Gov. TNI Accredited Analyte(s)
EPA 1638 Mod EPA 200.8 Mod EPA 6020 Mod	Non-Potable Waters	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, U, V, Zn
BAL-5000	Solids/Chemicals & Biological	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, V, Zn Hg (Biological Only)
EPA 1640 Mod	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn Ag, As, Cr, Co, Se, Ti, V (ISO Only)
EPA 1631E Mod BAL-3100	Non-Potable Waters, Solids/Chemicals & Biological/Food	Total Mercury
EPA 1630 Mod BAL-3200	Non-Potable Waters, Solids/Chemicals Biological	Methyl Mercury
EPA 1632A Mod BAL-3300	Non-Potable Waters Biological/Food Solids/Chemicals	Inorganic Arsenic (ISO Only) Inorganic Arsenic (ISO Only)
AOAC 2015.01 Mod BAL-5000	Food	As, Cd, Hg, Pb
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
	Biological by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4101	Food by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4201	Non-Potable Waters	Se(IV), Se(VI), SeCN, SeMet
BAL-4300	Non-Potable Waters, Solid/Chemicals	Cr(VI)
SM 3500-Fe BAL-4500	Non-Potable Waters	Fe, Fe(II) (ISO Only)
SM2340B	Non-Potable Waters	Hardness
SM 2540G BAL-0501	Solids/Chemicals & Biological	% Dry Weight



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
RG_ERCKMD_WS_LAEMP_EVO_2 022-03_NP	2205072-01	WS	Sample	04/26/2022	05/05/2022
RG_ERCKMD_WS_LAEMP_EVO_2 022-03_NP_NAL	2205072-02	WS	Sample	04/26/2022	05/05/2022
RG_ERCKMD_WS_LAEMP_EVO_2 022-03_NP_NAL	2205072-03	WS	Sample	04/26/2022	05/05/2022
RG_ERCKUT_WS_LAEMP_EVO_20 22-04_NP	2205072-04	WS	Sample	04/26/2022	05/05/2022
RG_ERCKUT_WS_LAEMP_EVO_20 22-04_NP_NAL	2205072-05	WS	Sample	04/26/2022	05/05/2022
RG_ERCKUT_WS_LAEMP_EVO_20 22-04_NP_NAL	2205072-06	WS	Sample	04/26/2022	05/05/2022
RG_ERCK_WS_LAEMP_EVO_2022- 04_NP	2205072-07	WS	Sample	04/22/2022	05/05/2022
RG_ERCK_WS_LAEMP_EVO_2022- 04_NP_NAL	2205072-08	WS	Sample	04/22/2022	05/05/2022
RG_ERCK_WS_LAEMP_EVO_2022- 04_NP_NAL	2205072-09	WS	Sample	04/22/2022	05/05/2022
RG_ERCKDT_WS_LAEMP_EVO_20 22-04_NP	2205072-10	WS	Sample	04/27/2022	05/05/2022
RG_ERCKDT_WS_LAEMP_EVO_20 22-04_NP_NAL	2205072-11	WS	Sample	04/27/2022	05/05/2022
RG_ERCKDT_WS_LAEMP_EVO_20 22-04_NP_NAL	2205072-12	WS	Sample	04/27/2022	05/05/2022
RG_MIDER_WS_LAEMP_EVO_202 2-04_NP	2205072-13	WS	Sample	04/25/2022	05/05/2022
RG_MIDER_WS_LAEMP_EVO_202 2-04_NP_NAL	2205072-14	WS	Sample	04/25/2022	05/05/2022
RG_MIDER_WS_LAEMP_EVO_202 2-04_NP_NAL	2205072-15	WS	Sample	04/25/2022	05/05/2022
RG_ERCKMD_WS_LAEMP_EVO_2 022-03_NP	2205072-16	WS	Sample	04/26/2022	05/05/2022
RG_ERCKMD_WS_LAEMP_EVO_2 022-03_NP_NAL	2205072-17	WS	Sample	04/26/2022	05/05/2022
RG_ERCKMD_WS_LAEMP_EVO_2 022-03_NP_NAL	2205072-18	WS	Sample	04/26/2022	05/05/2022
RG_RIVER_WS_LAEMP_EVO_2022 -04_NP	2205072-19	WS	Sample	04/28/2022	05/05/2022
RG_RIVER_WS_LAEMP_EVO_2022 -04_NP_NAL	2205072-20	WS	Sample	04/28/2022	05/05/2022
RG_RIVER_WS_LAEMP_EVO_2022 -04_NP_NAL	2205072-21	WS	Sample	04/28/2022	05/05/2022



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
RG_ALUSM_WS_LAEMP_EVO_202 2-04_NP	2205072-22	WS	Sample	04/28/2022	05/05/2022
RG_ALUSM_WS_LAEMP_EVO_202 2-04_NP_NAL	2205072-23	WS	Sample	04/28/2022	05/05/2022
RG_ALUSM_WS_LAEMP_EVO_202 2-04_NP_NAL	2205072-24	WS	Sample	04/28/2022	05/05/2022
RG_ERCKBR_WS_LAEMP_EVO_20 22-04_NP	2205072-25	WS	Sample	04/28/2022	05/05/2022
RG_ERCKBR_WS_LAEMP_EVO_20 22-04_NP_NAL	2205072-26	WS	Sample	04/28/2022	05/05/2022
RG_ERCKBR_WS_LAEMP_EVO_20 22-04_NP_NAL	2205072-27	WS	Sample	04/28/2022	05/05/2022
RG_ERCKUC_WS_LAEMP_EVO_20 22-04_NP	2205072-28	WS	Sample	04/28/2022	05/05/2022
RG_ERCKUC_WS_LAEMP_EVO_20 22-04_NP_NAL	2205072-29	WS	Sample	04/28/2022	05/05/2022
RG_ERCKUC_WS_LAEMP_EVO_20 22-04_NP_NAL	2205072-30	WS	Sample	04/28/2022	05/05/2022

Batch Summary

Analyte	Lab Matrix	Method	Prepared	Analyzed	Batch	Sequence
DMSeO	Water	SOP BAL-4201	05/03/2022	05/07/2022	B221000	S220520
MeSe(IV)	Water	SOP BAL-4201	05/03/2022	05/07/2022	B221000	S220520
MeSe(VI)	Water	SOP BAL-4201	05/03/2022	05/07/2022	B221000	S220520
Se	Water	EPA 1638 Mod	05/10/2022	05/11/2022	B221020	S220535
Se(IV)	Water	SOP BAL-4201	05/03/2022	05/07/2022	B221000	S220520
Se(VI)	Water	SOP BAL-4201	05/03/2022	05/07/2022	B221000	S220520
SeCN	Water	SOP BAL-4201	05/03/2022	05/07/2022	B221000	S220520
SeMet	Water	SOP BAL-4201	05/03/2022	05/07/2022	B221000	S220520
SeSO3	Water	SOP BAL-4201	05/03/2022	05/07/2022	B221000	S220520
Unk Se Sp	Water	SOP BAL-4201	05/03/2022	05/07/2022	B221000	S220520



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP										
2205072-01	DMSeO	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221000	S220520
2205072-01	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221000	S220520
2205072-01	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221000	S220520
2205072-01	Se(IV)	WS	D	0.083		0.010	0.075	µg/L	B221000	S220520
2205072-01	Se(VI)	WS	D	131		0.010	0.055	µg/L	B221000	S220520
2205072-01	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221000	S220520
2205072-01	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221000	S220520
2205072-01	SeSO3	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221000	S220520
2205072-01	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221000	S220520
RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP_NAL										
2205072-02	Se	WS	D	154		0.165	0.528	µg/L	B221020	S220535
RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP_NAL										
2205072-03	Se	WS	TR	151		0.165	0.528	µg/L	B221020	S220535
RG_ERCKUT_WS_LAEMP_EVO_2022-04_NP										
2205072-04	DMSeO	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221000	S220520
2205072-04	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221000	S220520
2205072-04	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221000	S220520
2205072-04	Se(IV)	WS	D	0.018	J	0.010	0.075	µg/L	B221000	S220520
2205072-04	Se(VI)	WS	D	140		0.010	0.055	µg/L	B221000	S220520
2205072-04	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221000	S220520
2205072-04	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221000	S220520
2205072-04	SeSO3	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221000	S220520
2205072-04	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221000	S220520
RG_ERCKUT_WS_LAEMP_EVO_2022-04_NP_NAL										
2205072-05	Se	WS	D	161		0.165	0.528	µg/L	B221020	S220535
RG_ERCKUT_WS_LAEMP_EVO_2022-04_NP_NAL										
2205072-06	Se	WS	TR	159		0.165	0.528	µg/L	B221020	S220535



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCK_WS_LAEMP_EVO_2022-04_NP										
2205072-07	DMSeO	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221000	S220520
2205072-07	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221000	S220520
2205072-07	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221000	S220520
2205072-07	Se(IV)	WS	D	0.175		0.010	0.075	µg/L	B221000	S220520
2205072-07	Se(VI)	WS	D	111		0.010	0.055	µg/L	B221000	S220520
2205072-07	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221000	S220520
2205072-07	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221000	S220520
2205072-07	SeSO3	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221000	S220520
2205072-07	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221000	S220520
RG_ERCK_WS_LAEMP_EVO_2022-04_NP_NAL										
2205072-08	Se	WS	D	152		0.165	0.528	µg/L	B221020	S220535
RG_ERCK_WS_LAEMP_EVO_2022-04_NP_NAL										
2205072-09	Se	WS	TR	154		0.165	0.528	µg/L	B221020	S220535
RG_ERCKDT_WS_LAEMP_EVO_2022-04_NP										
2205072-10	DMSeO	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221000	S220520
2205072-10	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221000	S220520
2205072-10	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221000	S220520
2205072-10	Se(IV)	WS	D	0.042	J	0.010	0.075	µg/L	B221000	S220520
2205072-10	Se(VI)	WS	D	136		0.010	0.055	µg/L	B221000	S220520
2205072-10	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221000	S220520
2205072-10	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221000	S220520
2205072-10	SeSO3	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221000	S220520
2205072-10	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221000	S220520
RG_ERCKDT_WS_LAEMP_EVO_2022-04_NP_NAL										
2205072-11	Se	WS	D	157		0.165	0.528	µg/L	B221020	S220535
RG_ERCKDT_WS_LAEMP_EVO_2022-04_NP_NAL										
2205072-12	Se	WS	TR	156		0.165	0.528	µg/L	B221020	S220535



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_MIDER_WS_LAEMP_EVO_2022-04_NP										
2205072-13	DMSeO	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221000	S220520
2205072-13	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221000	S220520
2205072-13	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221000	S220520
2205072-13	Se(IV)	WS	D	0.021	J	0.010	0.075	µg/L	B221000	S220520
2205072-13	Se(VI)	WS	D	1.34		0.010	0.055	µg/L	B221000	S220520
2205072-13	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221000	S220520
2205072-13	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221000	S220520
2205072-13	SeSO3	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221000	S220520
2205072-13	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221000	S220520
RG_MIDER_WS_LAEMP_EVO_2022-04_NP_NAL										
2205072-14	Se	WS	D	1.82		0.165	0.528	µg/L	B221020	S220535
RG_MIDER_WS_LAEMP_EVO_2022-04_NP_NAL										
2205072-15	Se	WS	TR	1.77		0.165	0.528	µg/L	B221020	S220535
RG_RIVER_WS_LAEMP_EVO_2022-04_NP										
2205072-19	DMSeO	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221000	S220520
2205072-19	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221000	S220520
2205072-19	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221000	S220520
2205072-19	Se(IV)	WS	D	0.021	J	0.010	0.075	µg/L	B221000	S220520
2205072-19	Se(VI)	WS	D	65.0		0.010	0.055	µg/L	B221000	S220520
2205072-19	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221000	S220520
2205072-19	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221000	S220520
2205072-19	SeSO3	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221000	S220520
2205072-19	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221000	S220520
RG_RIVER_WS_LAEMP_EVO_2022-04_NP_NAL										
2205072-20	Se	WS	D	151		0.165	0.528	µg/L	B221020	S220535
RG_RIVER_WS_LAEMP_EVO_2022-04_NP_NAL										
2205072-21	Se	WS	TR	153		0.165	0.528	µg/L	B221020	S220535



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ALUSM_WS_LAEMP_EVO_2022-04_NP										
2205072-22	DMSeO	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221000	S220520
2205072-22	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221000	S220520
2205072-22	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221000	S220520
2205072-22	Se(IV)	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221000	S220520
2205072-22	Se(VI)	WS	D	0.201		0.010	0.055	µg/L	B221000	S220520
2205072-22	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221000	S220520
2205072-22	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221000	S220520
2205072-22	SeSO3	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221000	S220520
2205072-22	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221000	S220520
RG_ALUSM_WS_LAEMP_EVO_2022-04_NP_NAL										
2205072-23	Se	WS	D	0.713		0.165	0.528	µg/L	B221020	S220535
RG_ALUSM_WS_LAEMP_EVO_2022-04_NP_NAL										
2205072-24	Se	WS	TR	0.992		0.165	0.528	µg/L	B221020	S220535
RG_ERCKBR_WS_LAEMP_EVO_2022-04_NP										
2205072-25	DMSeO	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221000	S220520
2205072-25	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221000	S220520
2205072-25	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221000	S220520
2205072-25	Se(IV)	WS	D	0.012	J	0.010	0.075	µg/L	B221000	S220520
2205072-25	Se(VI)	WS	D	65.4		0.010	0.055	µg/L	B221000	S220520
2205072-25	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221000	S220520
2205072-25	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221000	S220520
2205072-25	SeSO3	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221000	S220520
2205072-25	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221000	S220520
RG_ERCKBR_WS_LAEMP_EVO_2022-04_NP_NAL										
2205072-26	Se	WS	D	165		0.165	0.528	µg/L	B221020	S220535
RG_ERCKBR_WS_LAEMP_EVO_2022-04_NP_NAL										
2205072-27	Se	WS	TR	151		0.165	0.528	µg/L	B221020	S220535



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKUC_WS_LAEMP_EVO_2022-04_NP										
2205072-28	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221000	S220520
2205072-28	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221000	S220520
2205072-28	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221000	S220520
2205072-28	Se(IV)	WS	D	0.187		0.010	0.075	µg/L	B221000	S220520
2205072-28	Se(VI)	WS	D	135		0.010	0.055	µg/L	B221000	S220520
2205072-28	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221000	S220520
2205072-28	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221000	S220520
2205072-28	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221000	S220520
2205072-28	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221000	S220520
RG_ERCKUC_WS_LAEMP_EVO_2022-04_NP_NAL										
2205072-29	Se	WS	D	144		0.165	0.528	µg/L	B221020	S220535
RG_ERCKUC_WS_LAEMP_EVO_2022-04_NP_NAL										
2205072-30	Se	WS	TR	161		0.165	0.528	µg/L	B221020	S220535



Accuracy & Precision Summary

Batch: B221000
Lab Matrix: Water
Method: SOP BAL-4201

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221000-BS1	Blank Spike, (2124033)						
	MeSe(IV)		5.095	5.170	µg/L	101% 75-125	
	Se(IV)		5.000	4.923	µg/L	98% 75-125	
	Se(VI)		5.000	4.846	µg/L	97% 75-125	
	SeCN		5.015	4.718	µg/L	94% 75-125	
	SeMet		4.932	4.611	µg/L	93% 75-125	
B221000-DUP4	Duplicate, (2205078-10)						
	DMSeO	0.061		0.060	µg/L		2% 25
	MeSe(IV)	ND		ND	µg/L		N/C 25
	MeSe(VI)	ND		ND	µg/L		N/C 25
	Se(IV)	3.851		3.906	µg/L		1% 25
	Se(VI)	118.0		117.7	µg/L		0.3% 25
	SeCN	ND		ND	µg/L		N/C 25
	SeMet	ND		ND	µg/L		N/C 25
	SeSO3	ND		ND	µg/L		N/C 25
	Unk Se Sp	ND		ND	µg/L		N/C 25
B221000-MS4	Matrix Spike, (2205078-10)						
	Se(IV)	3.851	4.900	8.033	µg/L	85% 75-125	
	Se(VI)	118.0	5.100	120.5	µg/L	NR 75-125	
	SeCN	ND	1.962	1.626	µg/L	83% 75-125	
	SeMet	ND	1.977	1.675	µg/L	85% 75-125	
B221000-MSD4	Matrix Spike Duplicate, (2205078-10)						
	Se(IV)	3.851	4.900	8.005	µg/L	85% 75-125	0.4% 25
	Se(VI)	118.0	5.100	118.4	µg/L	NR 75-125	N/C 25
	SeCN	ND	1.962	1.576	µg/L	80% 75-125	3% 25
	SeMet	ND	1.977	1.631	µg/L	83% 75-125	3% 25



Accuracy & Precision Summary

Batch: B221020
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221020-BS1	Blank Spike, (2128022) Se		200.0	190.8	µg/L	95% 75-125	
B221020-BS2	Blank Spike, (2128022) Se		200.0	199.5	µg/L	100% 75-125	
B221020-BS3	Blank Spike, (2128022) Se		200.0	210.8	µg/L	105% 75-125	
B221020-BS4	Blank Spike, (2128022) Se		200.0	199.1	µg/L	100% 75-125	
B221020-SRM1	Reference Material (2145010, TMDA 51.5 Reference Standard - Bottle 9 - SRM) Se		14.30	15.56	µg/L	109% 75-125	
B221020-SRM2	Reference Material (2145010, TMDA 51.5 Reference Standard - Bottle 9 - SRM) Se		14.30	14.14	µg/L	99% 75-125	
B221020-SRM3	Reference Material (2145010, TMDA 51.5 Reference Standard - Bottle 9 - SRM) Se		14.30	14.39	µg/L	101% 75-125	
B221020-SRM4	Reference Material (2145010, TMDA 51.5 Reference Standard - Bottle 9 - SRM) Se		14.30	13.57	µg/L	95% 75-125	
B221020-DUP2	Duplicate, (2205072-09) Se	154.0		152.9	µg/L		0.7% 20
B221020-MS2	Matrix Spike, (2205072-09) Se	154.0	220.0	367.8	µg/L	97% 75-125	
B221020-MSD2	Matrix Spike Duplicate, (2205072-09) Se	154.0	220.0	421.1	µg/L	121% 75-125	14% 20



Accuracy & Precision Summary

Batch: B221020
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221020-DUP3	Duplicate, (2205073-03) Se	11.13		11.81	µg/L		6% 20
B221020-MS3	Matrix Spike, (2205073-03) Se	11.13	220.0	218.5	µg/L	94% 75-125	
B221020-MSD3	Matrix Spike Duplicate, (2205073-03) Se	11.13	220.0	212.1	µg/L	91% 75-125	3% 20



Method Blanks & Reporting Limits

Batch: B221000
Matrix: Water
Method: SOP BAL-4201
Analyte: DMSeO

Sample	Result	Units	
B221000-BLK1	0.00	µg/L	
B221000-BLK2	0.00	µg/L	
B221000-BLK3	0.00	µg/L	
B221000-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005

Analyte: MeSe(IV)

Sample	Result	Units	
B221000-BLK1	0.00	µg/L	
B221000-BLK2	0.00	µg/L	
B221000-BLK3	0.00	µg/L	
B221000-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005

Analyte: MeSe(VI)

Sample	Result	Units	
B221000-BLK1	0.00	µg/L	
B221000-BLK2	0.00	µg/L	
B221000-BLK3	0.00	µg/L	
B221000-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005



Method Blanks & Reporting Limits

Analyte: Se(IV)

Sample	Result	Units	
B221000-BLK1	0.004	µg/L	
B221000-BLK2	0.003	µg/L	
B221000-BLK3	0.003	µg/L	
B221000-BLK4	0.003	µg/L	
Average:	0.003		MDL: 0.002
Limit:	0.015		MRL: 0.015

Analyte: Se(VI)

Sample	Result	Units	
B221000-BLK1	0.00	µg/L	
B221000-BLK2	0.00	µg/L	
B221000-BLK3	0.00	µg/L	
B221000-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.011		MRL: 0.011

Analyte: SeCN

Sample	Result	Units	
B221000-BLK1	0.00	µg/L	
B221000-BLK2	0.00	µg/L	
B221000-BLK3	0.00	µg/L	
B221000-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.010		MRL: 0.010

Analyte: SeMet

Sample	Result	Units	
B221000-BLK1	0.00	µg/L	
B221000-BLK2	0.00	µg/L	
B221000-BLK3	0.00	µg/L	
B221000-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.005		MRL: 0.005



Method Blanks & Reporting Limits

Analyte: SeSO3

Sample	Result	Units	
B221000-BLK1	0.00	µg/L	
B221000-BLK2	0.00	µg/L	
B221000-BLK3	0.00	µg/L	
B221000-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.011		MRL: 0.011

Analyte: Unk Se Sp

Sample	Result	Units	
B221000-BLK1	0.00	µg/L	
B221000-BLK2	0.00	µg/L	
B221000-BLK3	0.00	µg/L	
B221000-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.015		MRL: 0.015



Method Blanks & Reporting Limits

Batch: B221020
Matrix: Water
Method: EPA 1638 Mod
Analyte: Se

Sample	Result	Units
B221020-BLK1	0.245	µg/L
B221020-BLK2	0.165	µg/L
B221020-BLK3	0.156	µg/L
B221020-BLK4	0.277	µg/L

Average: 0.211
Limit: 0.480

MDL: 0.150
MRL: 0.480



Sample Containers

Lab ID: 2205072-01

Report Matrix: WS

Collected: 04/26/2022

Sample:

Sample Type: Sample + Sum

Received: 05/05/2022

RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 6 - 2205072
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 6 - 2205072
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 6 - 2205072

Lab ID: 2205072-02

Report Matrix: WS

Collected: 04/26/2022

Sample:

Sample Type: Sample + Sum

Received: 05/05/2022

RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP_NA
L

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2152004	<2	Cooler 6 - 2205072

Lab ID: 2205072-03

Report Matrix: WS

Collected: 04/26/2022

Sample:

Sample Type: Sample + Sum

Received: 05/05/2022

RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP_NA
L

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2152004	<2	Cooler 6 - 2205072

Lab ID: 2205072-04

Report Matrix: WS

Collected: 04/26/2022

Sample:

Sample Type: Sample + Sum

Received: 05/05/2022

RG_ERCKUT_WS_LAEMP_EVO_2022-04_NP

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 6 - 2205072
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 6 - 2205072
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 6 - 2205072



Sample Containers

Lab ID: 2205072-05

Sample:

RG_ERCKUT_WS_LAEMP_EVO_2022-04_NP_NA
L

Report Matrix: WS

Sample Type: Sample + Sum

Collected: 04/26/2022

Received: 05/05/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2152004	<2	Cooler 6 - 2205072

Lab ID: 2205072-06

Sample:

RG_ERCKUT_WS_LAEMP_EVO_2022-04_NP_NA
L

Report Matrix: WS

Sample Type: Sample + Sum

Collected: 04/26/2022

Received: 05/05/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2152004	<2	Cooler 6 - 2205072

Lab ID: 2205072-07

Sample:

RG_ERCK_WS_LAEMP_EVO_2022-04_NP

Report Matrix: WS

Sample Type: Sample + Sum

Collected: 04/22/2022

Received: 05/05/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 6 - 2205072
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 6 - 2205072
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 6 - 2205072

Lab ID: 2205072-08

Sample:

RG_ERCK_WS_LAEMP_EVO_2022-04_NP_NAL

Report Matrix: WS

Sample Type: Sample + Sum

Collected: 04/22/2022

Received: 05/05/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2152004	<2	Cooler 6 - 2205072



Sample Containers

Lab ID: 2205072-09 **Report Matrix:** WS **Collected:** 04/22/2022
Sample: RG_ERCK_WS_LAEMP_EVO_2022-04_NP_NAL **Sample Type:** Sample + Sum **Received:** 05/05/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2152004	<2	Cooler 6 - 2205072

Lab ID: 2205072-10 **Report Matrix:** WS **Collected:** 04/27/2022
Sample: RG_ERCKDT_WS_LAEMP_EVO_2022-04_NP **Sample Type:** Sample + Sum **Received:** 05/05/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 6 - 2205072
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 6 - 2205072
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 6 - 2205072

Lab ID: 2205072-11 **Report Matrix:** WS **Collected:** 04/27/2022
Sample: RG_ERCKDT_WS_LAEMP_EVO_2022-04_NP_NA **Sample Type:** Sample + Sum **Received:** 05/05/2022
L

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2152004	<2	Cooler 6 - 2205072

Lab ID: 2205072-12 **Report Matrix:** WS **Collected:** 04/27/2022
Sample: RG_ERCKDT_WS_LAEMP_EVO_2022-04_NP_NA **Sample Type:** Sample + Sum **Received:** 05/05/2022
L

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2152004	<2	Cooler 6 - 2205072



Sample Containers

Lab ID: 2205072-13

Report Matrix: WS

Collected: 04/25/2022

Sample:

Sample Type: Sample + Sum

Received: 05/05/2022

RG_MIDER_WS_LAEMP_EVO_2022-04_NP

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 6 - 2205072
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 6 - 2205072
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 6 - 2205072

Lab ID: 2205072-14

Report Matrix: WS

Collected: 04/25/2022

Sample:

Sample Type: Sample + Sum

Received: 05/05/2022

RG_MIDER_WS_LAEMP_EVO_2022-04_NP_NAL

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2152004	<2	Cooler 6 - 2205072

Lab ID: 2205072-15

Report Matrix: WS

Collected: 04/25/2022

Sample:

Sample Type: Sample + Sum

Received: 05/05/2022

RG_MIDER_WS_LAEMP_EVO_2022-04_NP_NAL

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2152004	<2	Cooler 6 - 2205072

Lab ID: 2205072-16

Report Matrix: WS

Collected: 04/26/2022

Sample:

Sample Type: Sample + Sum

Received: 05/05/2022

RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 6 - 2205072
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 6 - 2205072
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 6 - 2205072



Sample Containers

Lab ID: 2205072-17

Sample:
 RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP_NA
 L

Report Matrix: WS
Sample Type: Sample + Sum

Collected: 04/26/2022
Received: 05/05/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2152004	<2	Cooler 6 - 2205072

Lab ID: 2205072-18

Sample:
 RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP_NA
 L

Report Matrix: WS
Sample Type: Sample + Sum

Collected: 04/26/2022
Received: 05/05/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2152004	<2	Cooler 6 - 2205072

Lab ID: 2205072-19

Sample:
 RG_RIVER_WS_LAEMP_EVO_2022-04_NP

Report Matrix: WS
Sample Type: Sample + Sum

Collected: 04/28/2022
Received: 05/05/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 6 - 2205072
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 6 - 2205072
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 6 - 2205072

Lab ID: 2205072-20

Sample:
 RG_RIVER_WS_LAEMP_EVO_2022-04_NP_NAL

Report Matrix: WS
Sample Type: Sample + Sum

Collected: 04/28/2022
Received: 05/05/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2152004	<2	Cooler 6 - 2205072



Sample Containers

Lab ID: 2205072-21 **Report Matrix:** WS **Collected:** 04/28/2022
Sample: RG_RIVER_WS_LAEMP_EVO_2022-04_NP_NAL **Sample Type:** Sample + Sum **Received:** 05/05/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2152004	<2	Cooler 6 - 2205072

Lab ID: 2205072-22 **Report Matrix:** WS **Collected:** 04/28/2022
Sample: RG_ALUSM_WS_LAEMP_EVO_2022-04_NP **Sample Type:** Sample + Sum **Received:** 05/05/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 6 - 2205072
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 6 - 2205072
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 6 - 2205072

Lab ID: 2205072-23 **Report Matrix:** WS **Collected:** 04/28/2022
Sample: RG_ALUSM_WS_LAEMP_EVO_2022-04_NP_NAL **Sample Type:** Sample + Sum **Received:** 05/05/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2152004	<2	Cooler 6 - 2205072

Lab ID: 2205072-24 **Report Matrix:** WS **Collected:** 04/28/2022
Sample: RG_ALUSM_WS_LAEMP_EVO_2022-04_NP_NAL **Sample Type:** Sample + Sum **Received:** 05/05/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2152004	<2	Cooler 6 - 2205072



Sample Containers

Lab ID: 2205072-25

Report Matrix: WS

Collected: 04/28/2022

Sample:

Sample Type: Sample + Sum

Received: 05/05/2022

RG_ERCKBR_WS_LAEMP_EVO_2022-04_NP

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 6 - 2205072
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 6 - 2205072
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 6 - 2205072

Lab ID: 2205072-26

Report Matrix: WS

Collected: 04/28/2022

Sample:

Sample Type: Sample + Sum

Received: 05/05/2022

RG_ERCKBR_WS_LAEMP_EVO_2022-04_NP_NA
L

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2152004	<2	Cooler 6 - 2205072

Lab ID: 2205072-27

Report Matrix: WS

Collected: 04/28/2022

Sample:

Sample Type: Sample + Sum

Received: 05/05/2022

RG_ERCKBR_WS_LAEMP_EVO_2022-04_NP_NA
L

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2152004	<2	Cooler 6 - 2205072

Lab ID: 2205072-28

Report Matrix: WS

Collected: 04/28/2022

Sample:

Sample Type: Sample + Sum

Received: 05/05/2022

RG_ERCKUC_WS_LAEMP_EVO_2022-04_NP

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 6 - 2205072
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 6 - 2205072
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 6 - 2205072



Sample Containers

Lab ID: 2205072-29

Sample:

RG_ERCKUC_WS_LAEMP_EVO_2022-04_NP_NA
L

Report Matrix: WS

Sample Type: Sample + Sum

Collected: 04/28/2022

Received: 05/05/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2152004	<2	Cooler 6 - 2205072

Lab ID: 2205072-30

Sample:

RG_ERCKUC_WS_LAEMP_EVO_2022-04_NP_NA
L

Report Matrix: WS

Sample Type: Sample + Sum

Collected: 04/28/2022

Received: 05/05/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2152004	<2	Cooler 6 - 2205072

Shipping Containers

Cooler 6 - 2205072

Received: May 5, 2022 7:00

Tracking No: PAPS#RWHV92236 via Courier

Coolant Type: Blue Ice

Temperature: 2.3 °C

Description: Styrofoam Cooler

Damaged in transit? No

Returned to client? No

Comments: IR 33

Custody seals present? No

Custody seals intact? No

COC present? Yes



PROJECT/CLIENT INFO				LABORATORY				OTHER INFO						
Facility Name / Job#	Regional Effects Program			Lab Name	Brooks Applied Labs			Report Format / Distribution	Excel	PDF	EDD			
Project Manager	Mike Pope			Lab Contact	Ben Wozniak			Email 1:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
Email	mike.pope@teck.com			Email	Ben@brooksapplied.com			Email 2:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
Address	421 Pine Ave			Address	18804 North Creek Parkway			Email 3:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
City	Sparwood	Province	BC	City	Bothell	Province	WA	Email 4:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
Postal Code	V0B 2G0	Country	Canada	Postal Code	98011	Country	United States	Email 5:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
Phone Number	250-425-8202			Phone Number	(206) 753-6158			PO number	748540					
SAMPLE DETAILS								ANALYSIS REQUESTED						
Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	Brooks_Se_Speciation	Brooks_Se_D	Brooks_Se_I	Filtered	P	F	N
RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP	RG_ERCKMD	WS	No	26-Apr-22	14:00	G	1	1						
RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP_NAL	RG_ERCKMD	WS	No	26-Apr-22	14:00	G	2		1	1				
RG_ERCKUT_WS_LAEMP_EVO_2022-04_NP	RG_ERCKUT	WS	No	26-Apr-22	11:00	G	1	1						
RG_ERCKUT_WS_LAEMP_EVO_2022-04_NP_NAL	RG_ERCKUT	WS	No	26-Apr-22	11:00	G	2		1	1				
RG_ERCK_WS_LAEMP_EVO_2022-04_NP	RG_ERCK	WS	No	22-Apr-22	8:50	G	1	1						
RG_ERCK_WS_LAEMP_EVO_2022-04_NP_NAL	RG_ERCK	WS	No	22-Apr-22	8:50	G	2		1	1				
RG_ERCKDT_WS_LAEMP_EVO_2022-04_NP	RG_ERCKDT	WS	No	27-Apr-22	11:15	G	1	1						
RG_ERCKDT_WS_LAEMP_EVO_2022-04_NP_NAL	RG_ERCKDT	WS	No	27-Apr-22	11:15	G	2		1	1				
RG_MIDER_WS_LAEMP_EVO_2022-04_NP	RG_MIDER	WS	No	25-Apr-22	11:00	G	1	1						
RG_MIDER_WS_LAEMP_EVO_2022-04_NP_NAL	RG_MIDER	WS	No	25-Apr-22	11:00	G	2		1	1				
ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS			RELINQUISHED BY/AFFILIATION				DATE/TIME	ACCEPTED BY/AFFILIATION		DATE/TIME				
Selenium speciation sample from RG_ERCKDT and RG_MICOMP were unfrozen and in the fridge for 5 days			Alex McClymont				May 2, 2022	Alex McClymont		5/5/22 7:00				
SERVICE REQUEST (rush - subject to availability)			SAMPLER'S INFO				MOBILE #		DATE/TIME					
Regular (default) <input checked="" type="checkbox"/>			Sampler's Name				Alex McClymont		Mobile #		780-293-6750			
Priority (2-3 business days) - 50% surcharge			Sampler's Signature						Date/Time		May 2, 2022			
Emergency (1 Business Day) - 100% surcharge														
For Emergency <1 Day, ASAP or Weekend - Contact ALS														



COC ID:		REP_EVO LAEMP_2022_APR_Brooks				TURNAROUND TIME:				RUSH:						
PROJECT/CLIENT INFO						LABORATORY				OTHER INFO						
Facility Name / Job# Regional Effects Program						Lab Name Brooks Applied Labs				Report Format / Distribution			Excel	PDF	EDD	
Project Manager Mike Pope						Lab Contact Ben Wozniak				Email 1:			X	X	X	
Email Mike@brooks.com						Email Ben@brooksapplied.com				Email 2:			brooks@equisonline.com		X	
Address 421 Pine Ave						Address 18804 North Creek Parkway				Email 3:			Teck Lab Results@teck.com	X	X	
City Sparwood						City Bothell				Email 4:			AguaSciLab@teck.com	X	X	
Postal Code V0B 2G0						Postal Code 98011				Email 5:			brooks@minnow.ca	X	X	
Province BC						Province WA				Email 6:			brooks@minnow.ca	X	X	
Country Canada						Country United States				PO number			748540			
Phone Number 250-425-8202						Phone Number (206) 753-6158										
SAMPLE DETAILS								ANALYSIS REQUESTED								
Sample ID	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	Brooks_Se_Speciation	Brooks_Se_D	Brooks_Se_I						
RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP	RG_ERCKMD	WS	No	26-Apr-22	14:00	G	1	1								
RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP_NAL	RG_ERCKMD	WS	No	26-Apr-22	14:00	G	2		1	1						
RG_RIVER_WS_LAEMP_EVO_2022-04_NP	RG_RIVER	WS	No	28-Apr-22	8:30	G	1	1								
RG_RIVER_WS_LAEMP_EVO_2022-04_NP_NAL	RG_RIVER	WS	No	28-Apr-22	8:30	G	2		1	1						
RG_ALUSM_WS_LAEMP_EVO_2022-04_NP	RG_ALUSM	WS	No	28-Apr-22	14:00	G	1	1								
RG_ALUSM_WS_LAEMP_EVO_2022-04_NP_NAL	RG_ALUSM	WS	No	28-Apr-22	14:00	G	2		1	1						
RG_ERCKBR_WS_LAEMP_EVO_2022-04_NP	RG_ERCKBR	WS	No	28-Apr-22	10:30	G	1	1								
RG_ERCKBR_WS_LAEMP_EVO_2022-04_NP_NAL	RG_ERCKBR	WS	No	28-Apr-22	10:30	G	2		1	1						
RG_ERCKUC_WS_LAEMP_EVO_2022-04_NP	RG_ERCKUC	WS	No	28-Apr-22	10:55	G	1	1								
RG_ERCKUC_WS_LAEMP_EVO_2022-04_NP_NAL	RG_ERCKUC	WS	No	28-Apr-22	10:55	G	2		1	1						
ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS			RELINQUISHED BY/AFFILIATION				DATE/TIME	ACCEPTED BY/AFFILIATION			DATE/TIME					
Selenium speciation sample from RG_ERCKDT and RG_MICOMP were unfrozen and in the fridge for 5 days			Alex McClymont				May 2, 2022	W/W/BAL			SIS/22 7:00					
SERVICE REQUEST (rush - subject to availability)																
Regular (default) X			Sampler's Name				Alex McClymont	Mobile #			780-293-6750					
Priority (2-3 business days) - 50% surcharge			Sampler's Signature					Date/Time			May 2, 2022					
Emergency (1 Business Day) - 100% surcharge																
For Emergency <1 Day, ASAP or Weekend - Contact ALS																

RW HOT SHOT SERVICE INC.

250-425-7447
24 Hour Hot Shot Service

No. 92236

STRAIGHT BILL OF LADING
NOT NEGOTIABLE

Sparwood, BC
Terrace, BC
Red Deer, AB

Vancouver, BC
Calgary, AB
Montreal, QC

Prince George, BC
Edmonton, AB
Spokane, WA

Elkford, BC
Ft. McMurray, AB
Shelby, MT

Tumbler Ridge, BC
Hinton, AB
Gillette, WY

INVOICE TO			DATE:		
BILL OF LADING #		PURCHASE ORDER NUMBER			
SHIPPER (FROM)		CONSIGNEE (TO)			
STREET		STREET			
CITY/PROVINCE		POSTAL CODE		CITY/PROVINCE	
CITY/PROVINCE		POSTAL CODE		POSTAL CODE	
SPECIAL INSTRUCTIONS					FREIGHT CHARGES SHIPPER TO CHECK <input type="checkbox"/> PREPAID <input type="checkbox"/> COLLECT <small>If not indicated, shipping will automatically move collect.</small>
PACKAGES	DESCRIPTION OF ARTICLES AND SPECIAL MARKS			WEIGHT (Subject to Correction)	
PAPS # RWHV92236					
UNIT #	DECLARED VALUATION: Maximum liability of carrier is \$2.00 per lb. (\$4.41 per kilogram) unless declared valuation states otherwise.			\$	
DRIVER'S SIGNATURE - PICK UP BY		PICK UP TIME	DRIVER'S SIGNATURE - DELIVERY BY		FINISH TIME
<small>NOTICE OF CLAIM: (a) No carrier is liable for loss, damage or delay of any goods under the Bill of Lading unless notice, therefor setting out particulars of the origin, destination and date of shipment of the goods and the estimated amount claimed in respect of such loss, damage or delay is given in writing to the originating carrier or the delivering carrier within sixty (60) days after the delivery of the goods, or in the case of failure to make delivery within nine (9) months from the date of shipment. (b) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid Freight Bill. (c) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid Freight Bill. (d) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid Freight Bill. (e) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid Freight Bill. (f) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid Freight Bill. (g) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid Freight Bill. (h) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid Freight Bill. (i) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid Freight Bill. (j) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid Freight Bill. (k) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid Freight Bill. (l) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid Freight Bill. (m) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid Freight Bill. (n) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid Freight Bill. (o) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid Freight Bill. (p) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid Freight Bill. (q) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid Freight Bill. (r) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid Freight Bill. (s) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid Freight Bill. (t) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid Freight Bill. (u) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid Freight Bill. (v) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid Freight Bill. (w) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid Freight Bill. (x) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid Freight Bill. (y) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid Freight Bill. (z) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid Freight Bill.</small>					
SHIPPER PRINT					CONSIGNEE PRINT
SHIPPER SIGN					CONSIGNEE SIGN
WHITE: Office YELLOW: Carrier PINK: Consignee GOLDENROAD: Shipper					GST # BC4540398RT0001
					NUMBER OF PIECES RECEIVED

Cooler ID: Cooler 6

COOL (Y/N)

Temperature: 2.3

IR: 33

Coolant Type: Ice Blue Ice Ambient

Notes:

Sampling Locations:

Sample Types:

Container Types:

Opened By: WW

<u>RG</u>	<u>EV</u>	<u>RG</u>	<u>EV</u>	<u>RG</u>	<u>EV</u>	<u>RG</u>	<u>EV</u>	<u>RG</u>	<u>EV</u>
<u>T/D</u>	<u>SP</u>	<u>T/D</u>	<u>SP</u>	<u>T/D</u>	<u>SP</u>	<u>T/D</u>	<u>SP</u>	<u>T/D</u>	<u>SP</u>
<u>40ml glass</u>	<u>60ml plastic</u>	<u>40ml glass</u>	<u>40ml glass</u>	<u>40ml glass</u>	<u>40ml glass</u>	<u>40ml glass</u>	<u>40ml glass</u>	<u>40ml glass</u>	<u>40ml glass</u>

Date: 5/5/22

From: [Tyler Mehler](#)
To: [Anais Gentilhomme](#)
Cc: [Jeremy Maute](#)
Subject: RE: Brooks Samples Received - WO (2205072, 2205073, 2205074, 2205075), REP - Privileged and Confidential
Date: Saturday, May 7, 2022 8:59:30 PM

Thank you Anais.

I have left comments below.

From: Anais Gentilhomme <Anais@brooksapplied.com>
Sent: Friday, May 6, 2022 5:03 PM
To: Jessica.Ritz@teck.com; AquaSciLab@Teck.com; Lisa Bowron <LBowron@minnow.ca>; Tyler Mehler <tyler.mehler@minnow.ca>
Cc: Jeremy Maute <Jeremy@brooksapplied.com>; Mariyeh Moradnzhad <mariyeh@brooksapplied.com>; Ethan Upp <ethan@brooksapplied.com>
Subject: Brooks Samples Received - WO (2205072, 2205073, 2205074, 2205075), REP - Privileged and Confidential

Good Morning,

This is confirmation that samples from the REP project were received at Brooks Applied Labs on May 5th, 2022. The samples were logged in for the following turnaround times (TATs):

WO 2205072 – (5-9 business day) TAT

WO 2205073 – (5-9 business day) TAT

WO 2205074 – (5-9 business day) TAT

WO 2205075 – (5-9 business day) TAT

The COC for WO 2205072 and WO 2205073 stated that the speciation fractions had been filtered in the field, however the speciation fractions received did not specifically state that they had been filtered on the label. Upon inspection of the samples which had minimal to no particulates to the naked eye, determined that the speciated fractions had been filtered. We therefore went with what was written on the COC and no extra filtration was done upon receipt. Please let us know if you would have us do differently.

All samples were filtered – and I will make sure our team knows to check this in the field.

The **sample date** value listed on the chain-of-custody (COC) form did not exactly match the corresponding **sample date** terms listed on container labels for samples in WO 2205072 and WO 2205074. The discrepancies are described in the table below.

Laboratory ID	Sample Name (on COC)	Sample Date (on COC)	Sample Date (on Sample)	Analysis
2205072-14	RG_MIDER_WS_LAEMP_EVO_2022-04_NP_NAL	04/25/22	04/26/22	Dissolved Recoverable Se
2205072-15	RG_MIDER_WS_LAEMP_EVO_2022-04_NP_NAL	04/25/22	04/26/22	Total Recoverable Se
2205072-27	RG_ERCKBR_WS_LAEMP_EVO_2022-04_NP_NAL	04/28/22	04/27/22	Total Recoverable Se
2205074-03	RG_ERCK_WS_LAEMP_EVO_2022-03_NP	04/28/22	04/27/22	Dissolved Recoverable Se

The samples described the table above were logged in using the **sample date** terms listed on the COC form. Please let us know if you would have us report any of these samples in a different manner.

Please use the sample date that I have highlighted.

A set of samples in WO 2205072 (described in the table below) are present twice on the COCs provided. We have received only one set of samples that matches their description and have logged them under this WO. Please let us know if you would have us do differently.

Laboratory - ID	Sample Name (on COC)	Analysis
2205072-01	RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP	Se Speciation
2205072-02	RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP_NAL	Dissolved Recoverable Se
2205072-03	RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP_NAL	Total Recoverable Se

Sorry – this was an accident and was repeated in the COC.

The **sample name** value listed on the chain-of-custody (COC) form did not exactly match the corresponding **sample name** terms listed on container labels for samples in WO 2205074. The discrepancies are described in the table below.

Laboratory ID	Sample Name (on COC)	Sample Name (on Sample)	Analysis
2205074-01	RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP	RG_ERCKMD_WS_LAEMP_EVO_2022-04_NP	Volatile Se

The samples described the table above were logged in using the **sample name** terms listed on the COC form. Please let us know if you would have us report any of these samples in a different manner.

Please use the sample date that I have highlighted.

Several samples in WO 2205074 and WO 2205075 (described in the table below) arrived wet and smelling strongly of alcohol. We observed no cracks in the vials, the caps were not loose, and the samples appeared to have been filled to the top.

Laboratory - ID	Sample Name (on COC)	Analysis
2205074-06	RG_RIVER_WS_LAEMP_EVO_2022-04_NP	Volatile Se
2205074-07	RG_ALUSM_WS_LAEMP_EVO_2022-04_NP	Volatile Se
2205074-08	RG_ERCKBR_WS_LAEMP_EVO_2022-04_NP	Volatile Se
2205075-01	RG_ERCKIG_WS_LAEMP_EVO_2022-04_NP	Volatile Se

Thank you for this observation. We are unaware of why this may have occurred. We will flag this when we analyze the results.

I've attached copies of the COC forms. If you have any questions, please contact the project manager, Jeremy Maute.

Thank You,
Anaïs Gentilhomme

Anaïs Gentilhomme

Senior Laboratory Technician

email: anais@brooksapplied.com

BROOKS APPLIED LABS
Meaningful Metals Data and Advanced Speciation Solutions

18804 North Creek Parkway, Suite 100, Bothell, WA 98011, USA

I acknowledge that I live and work in the ancestral land and water of the Coast Salish people.

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18804 North Creek Parkway, Ste 100, Bothell, WA 98011 • USA • T: 206 632 6206 F: 206 632 6017 • info@brooksapplied.com

May 24, 2022

Teck Resources Limited - Vancouver
Mike Pope
421 Pine Avenue
Sparwood, B.C. CANADA V0B2G0
mike.pope@teck.com

Re: Regional Effects Program

Dear Mike Pope,

On May 5, 2022, Brooks Applied Labs (BAL) received ten (10) aqueous samples. The samples were logged-in for total recoverable selenium [Se], dissolved Se [Se], and Se speciation analyses, according to the chain-of-custody (COC) form.

The sample fractions for total recoverable Se and dissolved Se were not preserved in the field. The samples were preserved (pH < 2) upon receipt at BAL. All sample fractions for total recoverable Se and dissolved Se were preserved within the (14 calendar day) preservation holding time.

The sample fractions logged in for Se speciation and dissolved Se had been field-filtered prior to receipt at BAL. All samples were stored according to BAL SOPs.

Total Recoverable Se and Dissolved Se

Each aqueous sample fraction for dissolved Se was digested in a closed vessel (bomb) with nitric and hydrochloric acids. The resulting digests were analyzed for Se content via inductively coupled plasma triple quadrupole mass spectrometry (ICP-QQQ-MS). The ICP-QQQ-MS instrumentation uses advanced interference removal techniques to ensure accuracy of the sample results. For more information, please visit the *Interference Reduction Technology* section on our website, brooksapplied.com.

Selenium Speciation

Each aqueous sample was analyzed for selenium speciation using ion chromatography inductively coupled plasma collision reaction cell mass spectrometry (IC-ICP-CRC-MS). Selenium species are chromatographically separated on an ion exchange column and then quantified using inductively coupled plasma collision reaction cell mass spectrometry (ICP-CRC-MS); for more information on this determinative technique, please visit the *Interference Reduction Technology* section on our website. The chromatographic method applied for the analyses provides greater retention of methylseleninic acid and selenomethionine, allowing for more definitive quantitation of these species.

In accordance with the quotation issued for this project, selenium speciation was defined as dissolved selenite [Se(IV)], selenate [Se(VI)], selenocyanate [SeCN], methylseleninic acid [MeSe(IV)], methaneselenonic acid [MeSe(VI)], selenomethionine [SeMef], selenosulfate [SeSO₃], and dimethylselenoxide [DMSeO]. Unknown Se species was defined as the total concentration of all unknown Se species observed during the analysis. This item is identified on the report as [Unk Se Sp].

DMSeO elutes early in the chromatographic run due to the nature of the molecule and the applied chromatographic separation method. Since this species elutes near the dead volume, additional selenium

species may coelute. Alternate methods can be applied, upon client request, to increase the separation of DMSeO from potentially co-eluting selenium species.

Poor mass balance was observed in *RG_ERCKIG_WS_LAEMP_EVO_2022-04_NP* when the Se speciation results (2205073-10) were compared to corresponding dissolved Se result (2205073-11). Container labels were checked and there was no indication of samples mis-labeled. Re-analyses confirmed the results. Consequently, no additional corrective actions are necessary. Results for these samples are reported from initial injections, and the reported results are deemed representative of the submitted containers.

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

In instances where a matrix spike/matrix spike duplicate (MS/MSD) set was spiked at a level less than the native sample concentration, the recoveries and the relative percent difference (RPD) are not considered valid indicators of data quality. In such instances, the recoveries of the laboratory fortified blanks (BS) and/or standard reference materials (SRM) demonstrate the accuracy of the applied methods. When the spiking level was less than 25% of the native sample concentration, the spike recovery was not reported (**NR**) and the relative percent difference (RPD) of the MS/MSD set was not calculated (**N/C**).

In cases when either the native sample concentration was non-detectable (reported as less than or equal to the MDL) and/or the corresponding DUP result was also non-detectable, the RPD between the two values was not calculated (**N/C**).

Except for concentration qualifiers, all data were reported without qualification. All associated quality control sample results met the acceptance criteria.

BAL, an accredited laboratory, certifies that the reported results of all analyses for which BAL is NELAP accredited meet all NELAP requirements. For more information, please see the *Report Information* page.

Please feel free to contact us if you have any questions regarding this report.

Sincerely,



Jeremy Maute
Senior Project Manager
Jeremy@brooksapplied.com



Report Information

Laboratory Accreditation

BAL is accredited by the *National Environmental Laboratory Accreditation Program* (NELAP) through the State of Florida Department of Health, Bureau of Laboratories (E87982) and is certified to perform many environmental analyses. BAL is also certified by many other states to perform environmental analyses. For a current list of our accreditations/certifications, please visit our website at <http://www.brooksapplied.com/resources/certificates-permits/> or review Tables 1 and 2 in our Accreditation Information. Results reported relate only to the samples listed in the report.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

AR	as received	MS	matrix spike
BAL	Brooks Applied Labs	MSD	matrix spike duplicate
BLK	method blank	ND	non-detect
BS	blank spike	NR	non-reportable
CAL	calibration standard	N/C	not calculated
CCB	continuing calibration blank	PS	post preparation spike
CCV	continuing calibration verification	REC	percent recovery
COC	chain of custody record	RPD	relative percent difference
D	dissolved fraction	SCV	secondary calibration verification
DUP	duplicate	SOP	standard operating procedure
IBL	instrument blank	SRM	reference material
ICV	initial calibration verification	T	total fraction
MDL	method detection limit	TR	total recoverable fraction
MRL	method reporting limit		

Definition of Data Qualifiers

(Effective 3/23/2020)

E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Please see narrative for explanation.
J	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1	Estimated value. A full explanation is presented in the narrative.
M	Duplicate precision (RPD) was not within acceptance criteria. Please see narrative for explanation.
N	Spike recovery was not within acceptance criteria. Please see narrative for explanation.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.
Z	Holding time and/or preservation requirements not established for this method; however, BAL recommendations for holding time were not followed. Please see narrative for explanation.

These qualifiers are based on those previously utilized by Brooks Applied Labs, those found in the EPA SOW ILM03.0, Exhibit B, Section III, pg. B-18, and the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review; USEPA; January 2010. These supersede all previous qualifiers ever employed by BAL.



Accreditation Information

Table 1. Accredited method/matrix/analytes for TNI
Issued by: State of Florida Dept. of Health (The NELAC Institute 2016 Standard)
Issued on: July 1, 2021; Valid to: June 30, 2022
Certificate Number: E87982-37

Method	Matrix	TNI Accredited Analyte(s)
EPA 1638	Non-Potable Waters	Ag, Cd, Cu, Ni, Pb, Sb, Se, Tl, Zn
EPA 200.8	Non-Potable Waters	Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Sb, Se, Tl, U, V, Zn
EPA 6020	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Tl, U, V, Zn
	Solids/Chemicals & Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Tl, V, Zn
BAL-5000	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Tl, U, V, Zn, Hardness
	Solids/Chemicals	Ag, As, B, Be, Cd, Co, Cr, Cu, Pb, Mo, Ni, Sb, Se, Sn, Sr, Tl, V, Zn
	Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Tl, V, Zn
EPA 1640	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn
EPA 1631E	Non-Potable Waters, Solids/Chemicals & Biological	Total Mercury
EPA 1630	Non-Potable Waters	Methyl Mercury
BAL-3200	Solids/Chemicals & Biological	Methyl Mercury
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
BAL-4201	Non-Potable Waters	Se(IV), Se(VI)
BAL-4300	Non-Potable Waters Solid/Chemicals	Cr(VI)
SM2340B	Non-Potable Waters	Hardness



Accreditation Information

**Table 2. Accredited method/matrix/analytes for ISO (1),
 Non-Governmental TNI (2)
 Issued by: ANAB
 Issued on: September 21, 2021; Valid to: March 30, 2024**

Method	Matrix	ISO and Non-Gov. TNI Accredited Analyte(s)
EPA 1638 Mod EPA 200.8 Mod EPA 6020 Mod	Non-Potable Waters	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, U, V, Zn
BAL-5000	Solids/Chemicals & Biological	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, V, Zn Hg (Biological Only)
EPA 1640 Mod	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn Ag, As, Cr, Co, Se, Ti, V (ISO Only)
EPA 1631E Mod BAL-3100	Non-Potable Waters, Solids/Chemicals & Biological/Food	Total Mercury
EPA 1630 Mod BAL-3200	Non-Potable Waters, Solids/Chemicals Biological	Methyl Mercury
EPA 1632A Mod BAL-3300	Non-Potable Waters Biological/Food Solids/Chemicals	Inorganic Arsenic (ISO Only) Inorganic Arsenic (ISO Only)
AOAC 2015.01 Mod BAL-5000	Food	As, Cd, Hg, Pb
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
	Biological by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4101	Food by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4201	Non-Potable Waters	Se(IV), Se(VI), SeCN, SeMet
BAL-4300	Non-Potable Waters, Solid/Chemicals	Cr(VI)
SM 3500-Fe BAL-4500	Non-Potable Waters	Fe, Fe(II) (ISO Only)
SM2340B	Non-Potable Waters	Hardness
SM 2540G BAL-0501	Solids/Chemicals & Biological	% Dry Weight



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
RG_MIDBO_WS_LAEMP_EVO_202 2-04_NP	2205073-01	WS	Sample	04/25/2022	05/05/2022
RG_MIDBO_WS_LAEMP_EVO_202 2-04_NP_NAL	2205073-02	WS	Sample	04/25/2022	05/05/2022
RG_MIDBO_WS_LAEMP_EVO_202 2-04_NP_NAL	2205073-03	WS	Sample	04/25/2022	05/05/2022
RG_MI3_WS_LAEMP_EVO_2022-04 _NP	2205073-04	WS	Sample	04/25/2022	05/05/2022
RG_MI3_WS_LAEMP_EVO_2022-04 _NP_NAL	2205073-05	WS	Sample	04/25/2022	05/05/2022
RG_MI3_WS_LAEMP_EVO_2022-04 _NP_NAL	2205073-06	WS	Sample	04/25/2022	05/05/2022
RG_MICOMP_WS_LAEMP_EVO_20 22-04_NP	2205073-07	WS	Sample	04/27/2022	05/05/2022
RG_MICOMP_WS_LAEMP_EVO_20 22-04_NP_NAL	2205073-08	WS	Sample	04/27/2022	05/05/2022
RG_MICOMP_WS_LAEMP_EVO_20 22-04_NP_NAL	2205073-09	WS	Sample	04/27/2022	05/05/2022
RG_ERCKIG_WS_LAEMP_EVO_20 22-04_NP	2205073-10	WS	Sample	04/28/2022	05/05/2022
RG_ERCKIG_WS_LAEMP_EVO_20 22-04_NP_NAL	2205073-11	WS	Sample	04/28/2022	05/05/2022
RG_ERCKIG_WS_LAEMP_EVO_20 22-04_NP_NAL	2205073-12	WS	Sample	04/28/2022	05/05/2022
RG_MIDGA_WS_LAEMP_EVO_202 2-04_NP	2205073-13	WS	Sample	04/25/2022	05/05/2022
RG_MIDGA_WS_LAEMP_EVO_202 2-04_NP_NAL	2205073-14	WS	Sample	04/25/2022	05/05/2022
RG_MIDGA_WS_LAEMP_EVO_202 2-04_NP_NAL	2205073-15	WS	Sample	04/25/2022	05/05/2022



Batch Summary

Analyte	Lab Matrix	Method	Prepared	Analyzed	Batch	Sequence
DMSeO	Water	SOP BAL-4201	05/03/2022	05/07/2022	B221000	S220520
DMSeO	Water	SOP BAL-4201	05/19/2022	05/21/2022	B221103	S220553
MeSe(IV)	Water	SOP BAL-4201	05/03/2022	05/07/2022	B221000	S220520
MeSe(IV)	Water	SOP BAL-4201	05/19/2022	05/21/2022	B221103	S220553
MeSe(VI)	Water	SOP BAL-4201	05/03/2022	05/07/2022	B221000	S220520
MeSe(VI)	Water	SOP BAL-4201	05/19/2022	05/21/2022	B221103	S220553
Se	Water	EPA 1638 Mod	05/10/2022	05/11/2022	B221020	S220535
Se(IV)	Water	SOP BAL-4201	05/03/2022	05/07/2022	B221000	S220520
Se(IV)	Water	SOP BAL-4201	05/19/2022	05/21/2022	B221103	S220553
Se(VI)	Water	SOP BAL-4201	05/03/2022	05/07/2022	B221000	S220520
Se(VI)	Water	SOP BAL-4201	05/19/2022	05/21/2022	B221103	S220553
SeCN	Water	SOP BAL-4201	05/03/2022	05/07/2022	B221000	S220520
SeCN	Water	SOP BAL-4201	05/19/2022	05/21/2022	B221103	S220553
SeMet	Water	SOP BAL-4201	05/03/2022	05/07/2022	B221000	S220520
SeMet	Water	SOP BAL-4201	05/19/2022	05/21/2022	B221103	S220553
SeSO3	Water	SOP BAL-4201	05/03/2022	05/07/2022	B221000	S220520
SeSO3	Water	SOP BAL-4201	05/19/2022	05/21/2022	B221103	S220553
Unk Se Sp	Water	SOP BAL-4201	05/03/2022	05/07/2022	B221000	S220520
Unk Se Sp	Water	SOP BAL-4201	05/19/2022	05/21/2022	B221103	S220553



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_MIDBO_WS_LAEMP_EVO_2022-04_NP										
2205073-01	DMS ₂ SeO	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221000	S220520
2205073-01	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221000	S220520
2205073-01	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221000	S220520
2205073-01	Se(IV)	WS	D	0.051	J	0.010	0.075	µg/L	B221000	S220520
2205073-01	Se(VI)	WS	D	11.6		0.010	0.055	µg/L	B221000	S220520
2205073-01	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221000	S220520
2205073-01	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221000	S220520
2205073-01	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221000	S220520
2205073-01	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221000	S220520
RG_MIDBO_WS_LAEMP_EVO_2022-04_NP_NAL										
2205073-02	Se	WS	D	11.1		0.165	0.528	µg/L	B221020	S220535
RG_MIDBO_WS_LAEMP_EVO_2022-04_NP_NAL										
2205073-03	Se	WS	TR	11.1		0.165	0.528	µg/L	B221020	S220535
RG_MI3_WS_LAEMP_EVO_2022-04_NP										
2205073-04	DMS ₂ SeO	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221000	S220520
2205073-04	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221000	S220520
2205073-04	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221000	S220520
2205073-04	Se(IV)	WS	D	0.015	J	0.010	0.075	µg/L	B221000	S220520
2205073-04	Se(VI)	WS	D	1.48		0.010	0.055	µg/L	B221000	S220520
2205073-04	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221000	S220520
2205073-04	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221000	S220520
2205073-04	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221000	S220520
2205073-04	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221000	S220520
RG_MI3_WS_LAEMP_EVO_2022-04_NP_NAL										
2205073-05	Se	WS	D	1.53		0.165	0.528	µg/L	B221020	S220535
RG_MI3_WS_LAEMP_EVO_2022-04_NP_NAL										
2205073-06	Se	WS	TR	1.55		0.165	0.528	µg/L	B221020	S220535



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_MICOMP_WS_LAEMP_EVO_2022-04_NP										
2205073-07	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221000	S220520
2205073-07	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221000	S220520
2205073-07	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221000	S220520
2205073-07	Se(IV)	WS	D	0.049	J	0.010	0.075	µg/L	B221000	S220520
2205073-07	Se(VI)	WS	D	7.80		0.010	0.055	µg/L	B221000	S220520
2205073-07	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221000	S220520
2205073-07	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221000	S220520
2205073-07	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221000	S220520
2205073-07	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221000	S220520
RG_MICOMP_WS_LAEMP_EVO_2022-04_NP_NAL										
2205073-08	Se	WS	D	8.14		0.165	0.528	µg/L	B221020	S220535
RG_MICOMP_WS_LAEMP_EVO_2022-04_NP_NAL										
2205073-09	Se	WS	TR	7.59		0.165	0.528	µg/L	B221020	S220535
RG_ERCKIG_WS_LAEMP_EVO_2022-04_NP										
2205073-10	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221000	S220520
2205073-10	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221000	S220520
2205073-10	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221000	S220520
2205073-10	Se(IV)	WS	D	0.019	J	0.010	0.075	µg/L	B221000	S220520
2205073-10	Se(VI)	WS	D	70.1		0.010	0.055	µg/L	B221000	S220520
2205073-10	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221000	S220520
2205073-10	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221000	S220520
2205073-10	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221000	S220520
2205073-10	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221000	S220520
RG_ERCKIG_WS_LAEMP_EVO_2022-04_NP_NAL										
2205073-11	Se	WS	D	156		0.165	0.528	µg/L	B221020	S220535
RG_ERCKIG_WS_LAEMP_EVO_2022-04_NP_NAL										
2205073-12	Se	WS	TR	146		0.165	0.528	µg/L	B221020	S220535



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_MIDGA_WS_LAEMP_EVO_2022-04_NP										
2205073-13	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221103	S220553
2205073-13	MeSe(IV)	WS	D	0.012	J	0.010	0.025	µg/L	B221103	S220553
2205073-13	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221103	S220553
2205073-13	Se(IV)	WS	D	0.161		0.010	0.075	µg/L	B221103	S220553
2205073-13	Se(VI)	WS	D	21.0		0.010	0.055	µg/L	B221103	S220553
2205073-13	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221103	S220553
2205073-13	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221103	S220553
2205073-13	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221103	S220553
2205073-13	Unk Se Sp	WS	D	0.028	J	0.010	0.075	µg/L	B221103	S220553
RG_MIDGA_WS_LAEMP_EVO_2022-04_NP_NAL										
2205073-14	Se	WS	D	20.7		0.165	0.528	µg/L	B221020	S220535
RG_MIDGA_WS_LAEMP_EVO_2022-04_NP_NAL										
2205073-15	Se	WS	TR	22.3		0.165	0.528	µg/L	B221020	S220535



Accuracy & Precision Summary

Batch: B221000
Lab Matrix: Water
Method: SOP BAL-4201

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221000-BS1	Blank Spike, (2124033)						
	MeSe(IV)		5.095	5.170	µg/L	101% 75-125	
	Se(IV)		5.000	4.923	µg/L	98% 75-125	
	Se(VI)		5.000	4.846	µg/L	97% 75-125	
	SeCN		5.015	4.718	µg/L	94% 75-125	
	SeMet		4.932	4.611	µg/L	93% 75-125	
B221000-DUP2	Duplicate, (2205066-21)						
	DMSeO	0.030		0.029	µg/L		6% 25
	MeSe(IV)	0.035		0.036	µg/L		3% 25
	MeSe(VI)	ND		ND	µg/L		N/C 25
	Se(IV)	2.139		2.109	µg/L		1% 25
	Se(VI)	0.155		0.151	µg/L		3% 25
	SeCN	ND		ND	µg/L		N/C 25
	SeMet	ND		ND	µg/L		N/C 25
	SeSO3	ND		ND	µg/L		N/C 25
Unk Se Sp	ND		ND	µg/L		N/C 25	
B221000-MS2	Matrix Spike, (2205066-21)						
	Se(IV)	2.139	4.900	6.794	µg/L	95% 75-125	
	Se(VI)	0.155	5.100	5.333	µg/L	102% 75-125	
	SeCN	ND	1.962	1.816	µg/L	93% 75-125	
	SeMet	ND	1.977	1.857	µg/L	94% 75-125	
B221000-MSD2	Matrix Spike Duplicate, (2205066-21)						
	Se(IV)	2.139	4.900	6.865	µg/L	96% 75-125	1% 25
	Se(VI)	0.155	5.100	5.429	µg/L	103% 75-125	2% 25
	SeCN	ND	1.962	1.882	µg/L	96% 75-125	4% 25
	SeMet	ND	1.977	1.920	µg/L	97% 75-125	3% 25



Accuracy & Precision Summary

Batch: B221020
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221020-BS1	Blank Spike, (2128022) Se		200.0	190.8	µg/L	95% 75-125	
B221020-BS2	Blank Spike, (2128022) Se		200.0	199.5	µg/L	100% 75-125	
B221020-BS3	Blank Spike, (2128022) Se		200.0	210.8	µg/L	105% 75-125	
B221020-BS4	Blank Spike, (2128022) Se		200.0	199.1	µg/L	100% 75-125	
B221020-SRM1	Reference Material (2145010, TMDA 51.5 Reference Standard - Bottle 9 - SRM) Se		14.30	15.56	µg/L	109% 75-125	
B221020-SRM2	Reference Material (2145010, TMDA 51.5 Reference Standard - Bottle 9 - SRM) Se		14.30	14.14	µg/L	99% 75-125	
B221020-SRM3	Reference Material (2145010, TMDA 51.5 Reference Standard - Bottle 9 - SRM) Se		14.30	14.39	µg/L	101% 75-125	
B221020-SRM4	Reference Material (2145010, TMDA 51.5 Reference Standard - Bottle 9 - SRM) Se		14.30	13.57	µg/L	95% 75-125	
B221020-DUP3	Duplicate, (2205073-03) Se	11.13		11.81	µg/L		6% 20
B221020-MS3	Matrix Spike, (2205073-03) Se	11.13	220.0	218.5	µg/L	94% 75-125	
B221020-MSD3	Matrix Spike Duplicate, (2205073-03) Se	11.13	220.0	212.1	µg/L	91% 75-125	3% 20



Accuracy & Precision Summary

Batch: B221103
Lab Matrix: Water
Method: SOP BAL-4201

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221103-BS1	Blank Spike, (2124033)						
	MeSe(IV)		5.095	5.515	µg/L	108% 75-125	
	Se(IV)		5.000	4.996	µg/L	100% 75-125	
	Se(VI)		5.000	4.875	µg/L	98% 75-125	
	SeCN		5.015	4.810	µg/L	96% 75-125	
	SeMet		4.932	4.935	µg/L	100% 75-125	
B221103-DUP8	Duplicate, (2205073-13)						
	DMSeO	ND		ND	µg/L		N/C 25
	MeSe(IV)	0.012		0.012	µg/L		2% 25
	MeSe(VI)	ND		ND	µg/L		N/C 25
	Se(IV)	0.161		0.143	µg/L		12% 25
	Se(VI)	20.97		21.15	µg/L		0.9% 25
	SeCN	ND		ND	µg/L		N/C 25
	SeMet	ND		ND	µg/L		N/C 25
	SeSO3	ND		ND	µg/L		N/C 25
	Unk Se Sp	0.028		0.026	µg/L		6% 25
B221103-MS8	Matrix Spike, (2205073-13)						
	Se(IV)	0.161	4.900	4.612	µg/L	91% 75-125	
	Se(VI)	20.97	5.100	25.29	µg/L	NR 75-125	
	SeCN	ND	1.962	1.658	µg/L	85% 75-125	
	SeMet	ND	1.977	1.758	µg/L	89% 75-125	
B221103-MSD8	Matrix Spike Duplicate, (2205073-13)						
	Se(IV)	0.161	4.900	4.633	µg/L	91% 75-125	0.4% 25
	Se(VI)	20.97	5.100	25.31	µg/L	NR 75-125	N/C 25
	SeCN	ND	1.962	1.666	µg/L	85% 75-125	0.4% 25
	SeMet	ND	1.977	1.710	µg/L	86% 75-125	3% 25



Method Blanks & Reporting Limits

Batch: B221000
Matrix: Water
Method: SOP BAL-4201
Analyte: DMSeO

Sample	Result	Units	
B221000-BLK1	0.00	µg/L	
B221000-BLK2	0.00	µg/L	
B221000-BLK3	0.00	µg/L	
B221000-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005

Analyte: MeSe(IV)

Sample	Result	Units	
B221000-BLK1	0.00	µg/L	
B221000-BLK2	0.00	µg/L	
B221000-BLK3	0.00	µg/L	
B221000-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005

Analyte: MeSe(VI)

Sample	Result	Units	
B221000-BLK1	0.00	µg/L	
B221000-BLK2	0.00	µg/L	
B221000-BLK3	0.00	µg/L	
B221000-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005



Method Blanks & Reporting Limits

Analyte: Se(IV)

Sample	Result	Units	
B221000-BLK1	0.004	µg/L	
B221000-BLK2	0.003	µg/L	
B221000-BLK3	0.003	µg/L	
B221000-BLK4	0.003	µg/L	
Average:	0.003		MDL: 0.002
Limit:	0.015		MRL: 0.015

Analyte: Se(VI)

Sample	Result	Units	
B221000-BLK1	0.00	µg/L	
B221000-BLK2	0.00	µg/L	
B221000-BLK3	0.00	µg/L	
B221000-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.011		MRL: 0.011

Analyte: SeCN

Sample	Result	Units	
B221000-BLK1	0.00	µg/L	
B221000-BLK2	0.00	µg/L	
B221000-BLK3	0.00	µg/L	
B221000-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.010		MRL: 0.010

Analyte: SeMet

Sample	Result	Units	
B221000-BLK1	0.00	µg/L	
B221000-BLK2	0.00	µg/L	
B221000-BLK3	0.00	µg/L	
B221000-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.005		MRL: 0.005



Method Blanks & Reporting Limits

Analyte: SeSO3

Sample	Result	Units	
B221000-BLK1	0.00	µg/L	
B221000-BLK2	0.00	µg/L	
B221000-BLK3	0.00	µg/L	
B221000-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.011		MRL: 0.011

Analyte: Unk Se Sp

Sample	Result	Units	
B221000-BLK1	0.00	µg/L	
B221000-BLK2	0.00	µg/L	
B221000-BLK3	0.00	µg/L	
B221000-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.015		MRL: 0.015



Method Blanks & Reporting Limits

Batch: B221020
Matrix: Water
Method: EPA 1638 Mod
Analyte: Se

Sample	Result	Units
B221020-BLK1	0.245	µg/L
B221020-BLK2	0.165	µg/L
B221020-BLK3	0.156	µg/L
B221020-BLK4	0.277	µg/L

Average: 0.211
Limit: 0.480

MDL: 0.150
MRL: 0.480



Method Blanks & Reporting Limits

Batch: B221103
Matrix: Water
Method: SOP BAL-4201
Analyte: DMSeO

Sample	Result	Units	
B221103-BLK1	0.00	µg/L	
B221103-BLK2	0.00	µg/L	
B221103-BLK3	0.00	µg/L	
B221103-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005

Analyte: MeSe(IV)

Sample	Result	Units	
B221103-BLK1	0.00	µg/L	
B221103-BLK2	0.00	µg/L	
B221103-BLK3	0.00	µg/L	
B221103-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005

Analyte: MeSe(VI)

Sample	Result	Units	
B221103-BLK1	0.00	µg/L	
B221103-BLK2	0.00	µg/L	
B221103-BLK3	0.00	µg/L	
B221103-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005



Method Blanks & Reporting Limits

Analyte: Se(IV)

Sample	Result	Units	
B221103-BLK1	0.00	µg/L	
B221103-BLK2	0.00	µg/L	
B221103-BLK3	0.00	µg/L	
B221103-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.015		MRL: 0.015

Analyte: Se(VI)

Sample	Result	Units	
B221103-BLK1	0.00	µg/L	
B221103-BLK2	0.00	µg/L	
B221103-BLK3	0.00	µg/L	
B221103-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.011		MRL: 0.011

Analyte: SeCN

Sample	Result	Units	
B221103-BLK1	0.00	µg/L	
B221103-BLK2	0.00	µg/L	
B221103-BLK3	0.00	µg/L	
B221103-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.010		MRL: 0.010

Analyte: SeMet

Sample	Result	Units	
B221103-BLK1	0.00	µg/L	
B221103-BLK2	0.00	µg/L	
B221103-BLK3	0.00	µg/L	
B221103-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.005		MRL: 0.005



Method Blanks & Reporting Limits

Analyte: SeSO3

Sample	Result	Units	
B221103-BLK1	0.00	µg/L	
B221103-BLK2	0.00	µg/L	
B221103-BLK3	0.00	µg/L	
B221103-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.011		MRL: 0.011

Analyte: Unk Se Sp

Sample	Result	Units	
B221103-BLK1	0.00	µg/L	
B221103-BLK2	0.00	µg/L	
B221103-BLK3	0.00	µg/L	
B221103-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.015		MRL: 0.015



Sample Containers

Lab ID: 2205073-01

Report Matrix: WS

Collected: 04/25/2022

Sample:

Sample Type: Sample + Sum

Received: 05/05/2022

RG_MIDBO_WS_LAEMP_EVO_2022-04_NP

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 6 - 2205073
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 6 - 2205073
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 6 - 2205073

Lab ID: 2205073-02

Report Matrix: WS

Collected: 04/25/2022

Sample:

Sample Type: Sample + Sum

Received: 05/05/2022

RG_MIDBO_WS_LAEMP_EVO_2022-04_NP_NAL

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2152004	<2	Cooler 6 - 2205073

Lab ID: 2205073-03

Report Matrix: WS

Collected: 04/25/2022

Sample:

Sample Type: Sample + Sum

Received: 05/05/2022

RG_MIDBO_WS_LAEMP_EVO_2022-04_NP_NAL

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2152004	<2	Cooler 6 - 2205073

Lab ID: 2205073-04

Report Matrix: WS

Collected: 04/25/2022

Sample: RG_MI3_WS_LAEMP_EVO_2022-04_NP

Sample Type: Sample + Sum

Received: 05/05/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 6 - 2205073
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 6 - 2205073
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 6 - 2205073



Sample Containers

Lab ID: 2205073-05			Report Matrix: WS			Collected: 04/25/2022	
Sample: RG_MI3_WS_LAEMP_EVO_2022-04_NP_NAL			Sample Type: Sample + Sum			Received: 05/05/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2152004	<2	Cooler 6 - 2205073
Lab ID: 2205073-06			Report Matrix: WS			Collected: 04/25/2022	
Sample: RG_MI3_WS_LAEMP_EVO_2022-04_NP_NAL			Sample Type: Sample + Sum			Received: 05/05/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2152004	<2	Cooler 6 - 2205073
Lab ID: 2205073-07			Report Matrix: WS			Collected: 04/27/2022	
Sample: RG_MICOMP_WS_LAEMP_EVO_2022-04_NP			Sample Type: Sample + Sum			Received: 05/05/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 6 - 2205073
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 6 - 2205073
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 6 - 2205073
Lab ID: 2205073-08			Report Matrix: WS			Collected: 04/27/2022	
Sample: RG_MICOMP_WS_LAEMP_EVO_2022-04_NP_NA L			Sample Type: Sample + Sum			Received: 05/05/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2152004	<2	Cooler 6 - 2205073



Sample Containers

Lab ID: 2205073-09

Report Matrix: WS

Collected: 04/27/2022

Sample:

Sample Type: Sample + Sum

Received: 05/05/2022

RG_MICOMP_WS_LAEMP_EVO_2022-04_NP_NAL

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2152004	<2	Cooler 6 - 2205073

Lab ID: 2205073-10

Report Matrix: WS

Collected: 04/28/2022

Sample:

Sample Type: Sample + Sum

Received: 05/05/2022

RG_ERCKIG_WS_LAEMP_EVO_2022-04_NP

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 6 - 2205073
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 6 - 2205073
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 6 - 2205073

Lab ID: 2205073-11

Report Matrix: WS

Collected: 04/28/2022

Sample:

Sample Type: Sample + Sum

Received: 05/05/2022

RG_ERCKIG_WS_LAEMP_EVO_2022-04_NP_NAL

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2152004	<2	Cooler 6 - 2205073

Lab ID: 2205073-12

Report Matrix: WS

Collected: 04/28/2022

Sample:

Sample Type: Sample + Sum

Received: 05/05/2022

RG_ERCKIG_WS_LAEMP_EVO_2022-04_NP_NAL

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2152004	<2	Cooler 6 - 2205073



Sample Containers

Lab ID: 2205073-13

Report Matrix: WS

Collected: 04/25/2022

Sample:

Sample Type: Sample + Sum

Received: 05/05/2022

RG_MIDGA_WS_LAEMP_EVO_2022-04_NP

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 6 - 2205073
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 6 - 2205073
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 6 - 2205073

Lab ID: 2205073-14

Report Matrix: WS

Collected: 04/25/2022

Sample:

Sample Type: Sample + Sum

Received: 05/05/2022

RG_MIDGA_WS_LAEMP_EVO_2022-04_NP_NAL

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2152004	<2	Cooler 6 - 2205073

Lab ID: 2205073-15

Report Matrix: WS

Collected: 04/25/2022

Sample:

Sample Type: Sample + Sum

Received: 05/05/2022

RG_MIDGA_WS_LAEMP_EVO_2022-04_NP_NAL

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2152004	<2	Cooler 6 - 2205073

Shipping Containers

Cooler 6 - 2205073

Received: May 5, 2022 7:00

Tracking No: PAPS#RWHV92236 via Courier

Coolant Type: Blue Ice

Temperature: 2.3 °C

Description: Styrofoam Cooler

Damaged in transit? No

Returned to client? No

Comments: IR 33

Custody seals present? No

Custody seals intact? No

COC present? Yes



PROJECT/CLIENT INFO		LABORATORY		OTHER INFO												
Facility Name / Job#	Regional Effects Program	Lab Name	Brooks Applied Labs	Report Format / Distribution	Excel	PDF	EDD									
Project Manager	Mike Pope	Lab Contact	Ben Wozniak	Email 1:	X	X	X									
Email	Mike.Pope@teck.com	Email	Ben@brooksapplied.com	Email 2:	teckcost@equisonline.com		X									
Address	421 Pine Ave	Address	18804 North Creek Parkway	Email 3:	Teck.Lab.Results@teck.com	X	X									
City	Sparwood	City	Bothell	Email 4:	AguaSoil.lab@teck.com	X	X									
Province	BC	Province	WA	Email 5:	bbowron@minnow.ca	X	X									
Postal Code	V0B 2G0	Postal Code	98011	Email 6:		X	X									
Country	Canada	Country	United States	PO number			748540									
Phone Number	250-425-8202	Phone Number	(206) 753-6158													
SAMPLE DETAILS				ANALYSIS REQUESTED												
Sample ID	Sample Location (sys_loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	Brooks_Se_Speciation	Brooks_Se_D	Brooks_Se_I						
RG MIDBO_WS_LAEMP_EVO_2022-04_NP	RG MIDBO	WS	No	25-Apr-22	14:00	G	1	1								
RG MIDBO_WS_LAEMP_EVO_2022-04_NP_NAL	RG MIDBO	WS	No	25-Apr-22	14:00	G	2		1	1						
RG_MI3_WS_LAEMP_EVO_2022-04_NP	RG MI3	WS	No	25-Apr-22	9:00	G	1	1								
RG_MI3_WS_LAEMP_EVO_2022-04_NP_NAL	RG MI3	WS	No	25-Apr-22	9:00	G	2		1	1						
RG_MICOMP_WS_LAEMP_EVO_2022-04_NP	RG_MICOMP	WS	No	27-Apr-22	15:15	G	1	1								
RG_MICOMP_WS_LAEMP_EVO_2022-04_NP_NAL	RG_MICOMP	WS	No	27-Apr-22	15:15	G	2		1	1						
RG_ERCKIG_WS_LAEMP_EVO_2022-04_NP	RG_ERCKIG	WS	No	28-Apr-22	8:30	G	1	1								
RG_ERCKIG_WS_LAEMP_EVO_2022-04_NP_NAL	RG_ERCKIG	WS	No	28-Apr-22	8:30	G	2		1	1						
RG_MIDGA_WS_LAEMP_EVO_2022-04_NP	RG_MIDGA	WS	No	25-Apr-22	11:00	G	1	1								
RG_MIDGA_WS_LAEMP_EVO_2022-04_NP_NAL	RG_MIDGA	WS	No	25-Apr-22	11:00	G	2		1	1						
ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS			RELINQUISHED BY/AFFILIATION				DATE/TIME	ACCEPTED BY/AFFILIATION		DATE/TIME						
Selenium speciation sample from RG_ERCKDT and RG_MICOMP were unfrozen and in the fridge for 5 days			Alex McClymont				May 2, 2022	WWT/BAL		5/5/22 7:00						
SERVICE REQUEST (rush - subject to availability)																
Regular (default) <input checked="" type="checkbox"/>			Sampler's Name				Alex McClymont	Mobile #		780-293-6750						
Priority (2-3 business days) - 50% surcharge			Sampler's Signature					Date/Time		May 2, 2022						
Emergency (1 Business Day) - 100% surcharge																
For Emergency <1 Day, ASAP or Weekend - Contact ALS																

STRAIGHT BILL OF LADING
NOT NEGOTIABLE

RW HOT SHOT SERVICE INC.

250-425-7447
24 Hour Hot Shot Service

No. 92236

Sparwood, BC
Terrace, BC
Red Deer, AB

Vancouver, BC
Calgary, AB
Montreal, QC

Prince George, BC
Edmonton, AB
Spokane, WA

Elkford, BC
Ft. McMurray, AB
Shelby, MT

Tumbler Ridge, BC
Hinton, AB
Gillette, WY

INVOICE TO		DATE	
BILL OF LADING #		PURCHASE ORDER NUMBER	
SHIPPER (FROM)		CONSIGNEE (TO)	
STREET		STREET	
CITY/PROVINCE	POSTAL CODE	CITY/PROVINCE	POSTAL CODE
SPECIAL INSTRUCTIONS		FREIGHT CHARGES SHIPPER TO CHECK <input type="checkbox"/> PREPAID <input type="checkbox"/> COLLECT <small>If not indicated, shipping will automatically move collect.</small>	
PACKAGES	DESCRIPTION OF ARTICLES AND SPECIAL MARKS	WEIGHT (Subject to Correction)	FEE
			WAITING
			XPU
PAPS # RWHV92236			CHARGES
			FSC
			US
			SUB TOTAL
			GST
UNIT #	DECLARED VALUATION: Maximum liability of carrier is \$2.00 per lb. (\$4.41 per kilogram) unless declared valuation states otherwise.		TOTAL \$
DRIVER'S SIGNATURE - PICK UP BY	PICK UP TIME	DRIVER'S SIGNATURE - DELIVERY BY	FINISH TIME
<small>NOTICE OF CLAIM: (a) No carrier is liable for loss, damage or delay of any goods under the Bill of Lading unless notice, therefore setting out particulars of the origin, destination and date of shipment of the goods and the estimated amount claimed, is received by the carrier or the delivering carrier within sixty (60) days after the delivery of the goods, or in the case of failure to make delivery within nine (9) months from the date of shipment. (b) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. (c) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. (d) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. (e) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. (f) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. (g) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. (h) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. (i) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. (j) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. (k) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. (l) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. (m) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. (n) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. (o) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. (p) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. (q) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. (r) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. (s) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. (t) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. (u) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. (v) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. (w) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. (x) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. (y) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. (z) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill.</small>			
SHIPPER PRINT	CONSIGNEE PRINT	DATE	TIME
SHIPPER SIGN	CONSIGNEE SIGN		
WHITE: Office YELLOW: Carrier PINK: Consignee GOLDENROAD: Shipper		GST # 864540398RT0001	NUMBER OF PIECES RECEIVED

Cooler ID: Cooler 6

COOL(Y/N)

Temperature: 2.3

IR: 33

Coolant Type: Ice Blue Ice Ambient

Notes:

Sampling Locations:

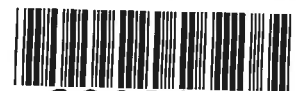
Sample Types:

Container Types:

Opened By: WVW

<u>RG</u>	<u>EV</u>	<u>RG</u>	<u>EV</u>	<u>RG</u>	<u>EV</u>
T/D	SP	T/D	SP	T/D	SP
40ml glass	60ml plastic	40ml glass	40ml glass	40ml plastic	40ml plastic

Date: 5/5/22



2205073

Effective 7/29/20

COPY



18804 North Creek Parkway, Ste 100, Bothell, WA 98011 • USA • T: 206 632 6206 F: 206 632 6017 • info@brooksapplied.com

May 16, 2022

Teck Resources Limited - Vancouver
 Mike Pope
 421 Pine Avenue
 Sparwood, B.C. CANADA V0B2G0
mike.pope@teck.com

Re: Regional Effects Program

Dear Mike Pope,

On May 5, 2022, Brooks Applied Labs (BAL) received ten (10) aqueous samples. The samples were logged-in for volatile selenium (Se) speciation analyses, in accordance with the chain-of-custody (COC) form.

The **Sample ID** value listed on the chain-of-custody (COC) form did not exactly match the corresponding **Sample ID** on the container label for 2205074-01. The discrepancy is described in the table below.

Laboratory ID	Sample ID (on COC form)	Sample ID (on container label)
2205074-01	RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP	RG_ERCKMD_WS_LAEMP_EVO_2022-04_NP

Per client request, the field ID amended for reporting. The Sample ID changes are described in the table.

Per client request, the **Sample ID** described on the container label (*column 3 in the table above*) has been used for reporting 2205074-01. Since the field IDs listed on the COC form is not used for reporting 2205074-01, please refer to the **Sample ID** cross reference table for identification.

The **Collection Date** value listed on the chain-of-custody (COC) form did not match the corresponding **Collection Date** provided on container label for 2205074-03. The discrepancy is described in the table below.

Laboratory ID	Sample ID	Collection Date (From COC)	Collection Date (From Container Label)
2205074-03	RG_ERCK_WS_LAEMP_EVO_2022-03_NP	04/28/22	04/27/22

Per request, 2205074-03 was logged and reported in using the **Collection Date** value listed on the COC form (04/28/2022).

Each sample requesting volatile Se speciation had been field-filtered into bottles containing isopropanol preservative (provided by BAL).

The containers for 2205074-06, 2205074-07, and 2205074-08 arrived wet and the laboratory staff at BAL reported the smell of alcohol for these fractions. The vials for 2205074-06, 2205074-07, and 2205074-08 were intact, the caps were on securely, and each container was filled with zero headspace. The containers did not appear to be compromised, but liquid was observed, and evidence of isopropanol preservative was

present. This information should be considered when reviewing volatile selenium (Se) speciation results for these samples.

All sample fractions were stored according to BAL SOPs and EPA methodology.

Volatile Selenium Speciation

Each aqueous sample was analyzed for volatile selenium speciation using high performance liquid chromatography inductively coupled plasma collision reaction cell mass spectrometry (HPLC-ICP-CRC-MS). Volatile selenium species are chromatographically separated on a reversed phase column and then quantified using inductively coupled plasma collision reaction cell mass spectrometry (ICP-CRC-MS); for more information on this determinative technique, please visit the *Interference Reduction Technology* section on our website.

In accordance with the quotation issued for this project, volatile selenium species were defined as dissolved dimethylselenide [DMeSe] and dimethyldiselenide [DMDS₂].

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

In instances where a matrix spike/matrix spike duplicate (MS/MSD) set was spiked at a level less than the native sample concentration, the recoveries and the relative percent difference (RPD) values are not considered valid indicators of data quality. In such instances, the recoveries of the laboratory fortified blank (BS) demonstrates the accuracy of the applied methods. When the spiking level was less than 25% of the native sample concentration, the spike recovery was not reported (**NR**) and the relative percent difference (RPD) of the MS/MSD set was not calculated (**NC**).

Except for concentration qualifiers, all data were reported without qualification. All associated quality control sample results met the acceptance criteria.

BAL, an accredited laboratory, certifies that the reported results of all analyses for which BAL is NELAP accredited meet all NELAP requirements. For more information, please see the *Report Information* page.

Please feel free to contact us if you have any questions regarding this report.

Sincerely,



Jeremy Maute

Senior Project Manager

Jeremy@brooksapplied.com



Report Information

Laboratory Accreditation

BAL is accredited by the *National Environmental Laboratory Accreditation Program* (NELAP) through the State of Florida Department of Health, Bureau of Laboratories (E87982) and is certified to perform many environmental analyses. BAL is also certified by many other states to perform environmental analyses. For a current list of our accreditations/certifications, please visit our website at <http://www.brooksapplied.com/resources/certificates-permits/> or review Tables 1 and 2 in our Accreditation Information. Results reported relate only to the samples listed in the report.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

AR	as received	MS	matrix spike
BAL	Brooks Applied Labs	MSD	matrix spike duplicate
BLK	method blank	ND	non-detect
BS	blank spike	NR	non-reportable
CAL	calibration standard	N/C	not calculated
CCB	continuing calibration blank	PS	post preparation spike
CCV	continuing calibration verification	REC	percent recovery
COC	chain of custody record	RPD	relative percent difference
D	dissolved fraction	SCV	secondary calibration verification
DUP	duplicate	SOP	standard operating procedure
IBL	instrument blank	SRM	reference material
ICV	initial calibration verification	T	total fraction
MDL	method detection limit	TR	total recoverable fraction
MRL	method reporting limit		

Definition of Data Qualifiers

(Effective 3/23/2020)

E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Please see narrative for explanation.
J	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1	Estimated value. A full explanation is presented in the narrative.
M	Duplicate precision (RPD) was not within acceptance criteria. Please see narrative for explanation.
N	Spike recovery was not within acceptance criteria. Please see narrative for explanation.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.
Z	Holding time and/or preservation requirements not established for this method; however, BAL recommendations for holding time were not followed. Please see narrative for explanation.

These qualifiers are based on those previously utilized by Brooks Applied Labs, those found in the EPA SOW ILM03.0, Exhibit B, Section III, pg. B-18, and the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review; USEPA; January 2010. These supersede all previous qualifiers ever employed by BAL.



Accreditation Information

Table 1. Accredited method/matrix/analytes for TNI
Issued by: State of Florida Dept. of Health (The NELAC Institute 2016 Standard)
Issued on: July 1, 2021; Valid to: June 30, 2022
Certificate Number: E87982-37

Method	Matrix	TNI Accredited Analyte(s)
EPA 1638	Non-Potable Waters	Ag, Cd, Cu, Ni, Pb, Sb, Se, Ti, Zn
EPA 200.8	Non-Potable Waters	Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Sb, Se, Ti, U, V, Zn
EPA 6020	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Ti, U, V, Zn
	Solids/Chemicals & Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Ti, V, Zn
BAL-5000	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, U, V, Zn, Hardness
	Solids/Chemicals	Ag, As, B, Be, Cd, Co, Cr, Cu, Pb, Mo, Ni, Sb, Se, Sn, Sr, Ti, V, Zn
	Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Ti, V, Zn
EPA 1640	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn
EPA 1631E	Non-Potable Waters, Solids/Chemicals & Biological	Total Mercury
EPA 1630	Non-Potable Waters	Methyl Mercury
BAL-3200	Solids/Chemicals & Biological	Methyl Mercury
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
BAL-4201	Non-Potable Waters	Se(IV), Se(VI)
BAL-4300	Non-Potable Waters Solid/Chemicals	Cr(VI)
SM2340B	Non-Potable Waters	Hardness



Accreditation Information

**Table 2. Accredited method/matrix/analytes for ISO (1),
Non-Governmental TNI (2)
Issued by: ANAB
Issued on: September 21, 2021; Valid to: March 30, 2024**

Method	Matrix	ISO and Non-Gov. TNI Accredited Analyte(s)
EPA 1638 Mod EPA 200.8 Mod EPA 6020 Mod	Non-Potable Waters	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, U, V, Zn
BAL-5000	Solids/Chemicals & Biological	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, V, Zn Hg (Biological Only)
EPA 1640 Mod	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn Ag, As, Cr, Co, Se, Ti, V (ISO Only)
EPA 1631E Mod BAL-3100	Non-Potable Waters, Solids/Chemicals & Biological/Food	Total Mercury
EPA 1630 Mod BAL-3200	Non-Potable Waters, Solids/Chemicals Biological	Methyl Mercury
EPA 1632A Mod BAL-3300	Non-Potable Waters Biological/Food Solids/Chemicals	Inorganic Arsenic (ISO Only) Inorganic Arsenic (ISO Only)
AOAC 2015.01 Mod BAL-5000	Food	As, Cd, Hg, Pb
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
	Biological by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4101	Food by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4201	Non-Potable Waters	Se(IV), Se(VI), SeCN, SeMet
BAL-4300	Non-Potable Waters, Solid/Chemicals	Cr(VI)
SM 3500-Fe BAL-4500	Non-Potable Waters	Fe, Fe(II) (ISO Only)
SM2340B	Non-Potable Waters	Hardness
SM 2540G BAL-0501	Solids/Chemicals & Biological	% Dry Weight



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
RG_ERCKMD_WS_LAEMP_EVO_2022-04_NP	2205074-01	WS	Sample	04/26/2022	05/05/2022
RG_ERCKUT_WS_LAEMP_EVO_2022-04_NP	2205074-02	WS	Sample	04/26/2022	05/05/2022
RG_ERCK_WS_LAEMP_EVO_2022-03_NP	2205074-03	WS	Sample	04/28/2022	05/05/2022
RG_ERCKDT_WS_LAEMP_EVO_2022-03_NP	2205074-04	WS	Sample	04/27/2022	05/05/2022
RG_MIDER_WS_LAEMP_EVO_2022-04_NP	2205074-05	WS	Sample	04/25/2022	05/05/2022
RG_RIVER_WS_LAEMP_EVO_2022-04_NP	2205074-06	WS	Sample	04/28/2022	05/05/2022
RG_ALUSM_WS_LAEMP_EVO_2022-04_NP	2205074-07	WS	Sample	04/28/2022	05/05/2022
RG_ERCKBR_WS_LAEMP_EVO_2022-04_NP	2205074-08	WS	Sample	04/28/2022	05/05/2022
RG_MI3_WS_LAEMP_EVO_2022-04_NP	2205074-09	WS	Sample	04/25/2022	05/05/2022
RG_MICOMP_WS_LAEMP_EVO_2022-04_NP	2205074-10	WS	Sample	04/27/2022	05/05/2022

Batch Summary

Analyte	Lab Matrix	Method	Prepared	Analyzed	Batch	Sequence
DMDSe	Water	HPLC-ICP-MS	05/06/2022	05/06/2022	B220974	S220519
DMeSe	Water	HPLC-ICP-MS	05/06/2022	05/06/2022	B220974	S220519



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKMD_WS_LAEMP_EVO_2022-04_NP										
2205074-01	DMDSe	WS	D	≤ 0.022	U	0.022	0.222	µg/L	B220974	S220519
2205074-01	DMeSe	WS	D	≤ 0.022	U	0.022	0.222	µg/L	B220974	S220519
RG_ERCKUT_WS_LAEMP_EVO_2022-04_NP										
2205074-02	DMDSe	WS	D	≤ 0.022	U	0.022	0.222	µg/L	B220974	S220519
2205074-02	DMeSe	WS	D	≤ 0.022	U	0.022	0.222	µg/L	B220974	S220519
RG_ERCK_WS_LAEMP_EVO_2022-03_NP										
2205074-03	DMDSe	WS	D	≤ 0.022	U	0.022	0.222	µg/L	B220974	S220519
2205074-03	DMeSe	WS	D	≤ 0.022	U	0.022	0.222	µg/L	B220974	S220519
RG_ERCKDT_WS_LAEMP_EVO_2022-03_NP										
2205074-04	DMDSe	WS	D	≤ 0.022	U	0.022	0.222	µg/L	B220974	S220519
2205074-04	DMeSe	WS	D	≤ 0.022	U	0.022	0.222	µg/L	B220974	S220519
RG_MIDER_WS_LAEMP_EVO_2022-04_NP										
2205074-05	DMDSe	WS	D	≤ 0.022	U	0.022	0.222	µg/L	B220974	S220519
2205074-05	DMeSe	WS	D	≤ 0.022	U	0.022	0.222	µg/L	B220974	S220519
RG_RIVER_WS_LAEMP_EVO_2022-04_NP										
2205074-06	DMDSe	WS	D	≤ 0.022	U	0.022	0.222	µg/L	B220974	S220519
2205074-06	DMeSe	WS	D	≤ 0.022	U	0.022	0.222	µg/L	B220974	S220519
RG_ALUSM_WS_LAEMP_EVO_2022-04_NP										
2205074-07	DMDSe	WS	D	≤ 0.022	U	0.022	0.222	µg/L	B220974	S220519
2205074-07	DMeSe	WS	D	≤ 0.022	U	0.022	0.222	µg/L	B220974	S220519
RG_ERCKBR_WS_LAEMP_EVO_2022-04_NP										
2205074-08	DMDSe	WS	D	≤ 0.022	U	0.022	0.222	µg/L	B220974	S220519
2205074-08	DMeSe	WS	D	≤ 0.022	U	0.022	0.222	µg/L	B220974	S220519
RG_MI3_WS_LAEMP_EVO_2022-04_NP										
2205074-09	DMDSe	WS	D	≤ 0.022	U	0.022	0.222	µg/L	B220974	S220519
2205074-09	DMeSe	WS	D	≤ 0.022	U	0.022	0.222	µg/L	B220974	S220519



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_MICOMP_WS_LAEMP_EVO_2022-04_NP</i>										
2205074-10	DMDSe	WS	D	≤ 0.022	U	0.022	0.222	µg/L	B220974	S220519
2205074-10	DMeSe	WS	D	≤ 0.022	U	0.022	0.222	µg/L	B220974	S220519



Accuracy & Precision Summary

Batch: B220974
Lab Matrix: Water
Method: HPLC-ICP-MS

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B220974-BS1	Blank Spike, (2210011)						
	DMDSe		4.991	4.204	µg/L	84% 80-120	
	DMeSe		5.005	4.864	µg/L	97% 80-120	
B220974-DUP2	Duplicate, (2205074-07)						
	DMDSe	ND		ND	µg/L		N/C 25
	DMeSe	ND		ND	µg/L		N/C 25
B220974-MS2	Matrix Spike, (2205074-07)						
	DMDSe	ND	5.547	5.194	µg/L	94% 75-125	
	DMeSe	ND	5.542	4.745	µg/L	86% 75-125	
B220974-MSD2	Matrix Spike Duplicate, (2205074-07)						
	DMDSe	ND	5.547	5.293	µg/L	95% 75-125	2% 25
	DMeSe	ND	5.542	4.858	µg/L	88% 75-125	2% 25
B220974-DUP3	Duplicate, (2205075-04)						
	DMDSe	ND		ND	µg/L		N/C 25
	DMeSe	ND		ND	µg/L		N/C 25
B220974-MS3	Matrix Spike, (2205075-04)						
	DMDSe	ND	5.547	5.013	µg/L	90% 75-125	
	DMeSe	ND	5.542	4.395	µg/L	79% 75-125	
B220974-MSD3	Matrix Spike Duplicate, (2205075-04)						
	DMDSe	ND	5.547	5.110	µg/L	92% 75-125	2% 25
	DMeSe	ND	5.542	4.451	µg/L	80% 75-125	1% 25



Method Blanks & Reporting Limits

Batch: B220974
Matrix: Water
Method: HPLC-ICP-MS
Analyte: DMDSe

Sample	Result	Units	
B220974-BLK1	0.00	µg/L	
B220974-BLK2	0.00	µg/L	
B220974-BLK3	0.00	µg/L	
B220974-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.010
Limit: 0.100			MRL: 0.100

Analyte: DMeSe

Sample	Result	Units	
B220974-BLK1	0.00	µg/L	
B220974-BLK2	0.00	µg/L	
B220974-BLK3	0.00	µg/L	
B220974-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.010
Limit: 0.100			MRL: 0.100



Sample Containers

Lab ID: 2205074-01			Report Matrix: WS			Collected: 04/26/2022	
Sample: RG_ERCKMD_WS_LAEMP_EVO_2022-04_NP			Sample Type: Sample + Sum			Received: 05/05/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	40 mL	n/a	10% isopropanol	1828013	<2	Cooler 6 - 2205074
Lab ID: 2205074-02			Report Matrix: WS			Collected: 04/26/2022	
Sample: RG_ERCKUT_WS_LAEMP_EVO_2022-04_NP			Sample Type: Sample + Sum			Received: 05/05/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	40 mL	n/a	10% isopropanol	1828013	<2	Cooler 6 - 2205074
Lab ID: 2205074-03			Report Matrix: WS			Collected: 04/28/2022	
Sample: RG_ERCK_WS_LAEMP_EVO_2022-03_NP			Sample Type: Sample + Sum			Received: 05/05/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	40 mL	n/a	10% isopropanol	1828013	<2	Cooler 6 - 2205074
Lab ID: 2205074-04			Report Matrix: WS			Collected: 04/27/2022	
Sample: RG_ERCKDT_WS_LAEMP_EVO_2022-03_NP			Sample Type: Sample + Sum			Received: 05/05/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	40 mL	n/a	10% isopropanol	1828013	<2	Cooler 6 - 2205074
Lab ID: 2205074-05			Report Matrix: WS			Collected: 04/25/2022	
Sample: RG_MIDER_WS_LAEMP_EVO_2022-04_NP			Sample Type: Sample + Sum			Received: 05/05/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	40 mL	n/a	10% isopropanol	1828013	<2	Cooler 6 - 2205074



Sample Containers

Lab ID: 2205074-06			Report Matrix: WS			Collected: 04/28/2022		
Sample: RG_RIVER_WS_LAEMP_EVO_2022-04_NP			Sample Type: Sample + Sum			Received: 05/05/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided	40 mL	n/a	10% isopropanol	1828013	<2	Cooler 6 - 2205074	
Lab ID: 2205074-07			Report Matrix: WS			Collected: 04/28/2022		
Sample: RG_ALUSM_WS_LAEMP_EVO_2022-04_NP			Sample Type: Sample + Sum			Received: 05/05/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided	40 mL	n/a	10% isopropanol	1828013	<2	Cooler 6 - 2205074	
Lab ID: 2205074-08			Report Matrix: WS			Collected: 04/28/2022		
Sample: RG_ERCKBR_WS_LAEMP_EVO_2022-04_NP			Sample Type: Sample + Sum			Received: 05/05/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided	40 mL	n/a	10% isopropanol	1828013	<2	Cooler 6 - 2205074	
Lab ID: 2205074-09			Report Matrix: WS			Collected: 04/25/2022		
Sample: RG_MI3_WS_LAEMP_EVO_2022-04_NP			Sample Type: Sample + Sum			Received: 05/05/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided	40 mL	n/a	10% isopropanol	1828013	<2	Cooler 6 - 2205074	
Lab ID: 2205074-10			Report Matrix: WS			Collected: 04/27/2022		
Sample: RG_MICOMP_WS_LAEMP_EVO_2022-04_NP			Sample Type: Sample + Sum			Received: 05/05/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided	40 mL	n/a	10% isopropanol	1828013	<2	Cooler 6 - 2205074	



Shipping Containers

Cooler 6 - 2205074

Received: May 5, 2022 7:00
Tracking No: PAPS#RWHV92236 via Courier
Coolant Type: Blue Ice
Temperature: 2.3 °C

Description: Styrofoam Cooler
Damaged in transit? No
Returned to client? No
Comments: IR 33

Custody seals present? No
Custody seals intact? No
COC present? Yes



COC ID:	REP_EVO LAEMP_2022_APR_Brooks			TURNAROUND TIME:		RUSH:			
PROJECT/CLIENT INFO				LABORATORY			OTHER INFO		
Facility Name / Job# Regional Effects Program				Lab Name Brooks Applied Labs			Report Format / Distribution		
Project Manager Mike Pope				Lab Contact Ben Wozniak			Excel PDF EDD		
Email mike.pope@teck.com				Email Ben@brooksapplied.com			Email 1: ben@brooksapplied.com X X X		
Address 421 Pine Ave				Address 18804 North Creek Parkway			Email 2: teckcoal@equisonline.com X X X		
City Sparwood Province BC				Suite 100			Email 3: TeckLab.Results@teck.com X X X		
Postal Code V0B 2G0 Country Canada				City Bothell Province WA			Email 4: AugSciLab@teck.com X X X		
Phone Number 250-425-8202				Postal Code 98011 Country United States			Email 5: bw@wronline.com X X X		
				Phone Number (206) 753-6158			Email 6: bw@wronline.com X X X		
				PO number			748540		

SAMPLE DETAILS								ANALYSIS REQUESTED														
Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com p	# Of Cont.	PH	F	As	As2	As3	As4	As5	As6	As7	As8	As9	As10	As11	As12	
RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP	RG_ERCKMD	WS	No	26-Apr-22	14:00	G	1															
RG_ERCKUT_WS_LAEMP_EVO_2022-04_NP	RG_ERCKUT	WS	No	26-Apr-22	11:00	G	1															
RG_ERCK_WS_LAEMP_EVO_2022-03_NP	RG_ERCK	WS	No	28-Apr-22	8:50	G	1															
RG_ERCKDT_WS_LAEMP_EVO_2022-03_NP	RG_ERCKDT	WS	No	27-Apr-22	11:15	G	1															
RG_MIDER_WS_LAEMP_EVO_2022-04_NP	RG_MIDER	WS	No	25-Apr-22	11:00	G	1															
RG_RIVER_WS_LAEMP_EVO_2022-04_NP	RG_RIVER	WS	No	28-Apr-22	8:30	G	1															
RG_ALUSM_WS_LAEMP_EVO_2022-04_NP	RG_ALUSM	WS	No	28-Apr-22	14:00	G	1															
RG_ERCKBR_WS_LAEMP_EVO_2022-04_NP	RG_ERCKBR	WS	No	28-Apr-22	10:30	G	1															
RG_MI3_WS_LAEMP_EVO_2022-04_NP	RG_MI3	WS	No	25-Apr-22	9:00	G	1															
RG_MICOMP_WS_LAEMP_EVO_2022-04_NP	RG_MICOMP	WS	No	27-Apr-22	15:15	G	1															

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
	Alex McClymont	May 2, 2022	UW/BAL	5/5/22 7:00

SERVICE REQUEST (rush - subject to availability)			
Regular (default) <input checked="" type="checkbox"/>	Sampler's Name	Alex McClymont	Mobile # 780-293-6750
Priority (2-3 business days) - 50% surcharge	Sampler's Signature		Date/Time May 2, 2022
Emergency (1 Business Day) - 100% surcharge			
For Emergency <1 Day, ASAP or Weekend - Contact ALS			

STRAIGHT BILL OF LADING
NOT NEGOTIABLE

RW HOT SHOT SERVICE INC.

250-425-7447
24 Hour Hot Shot Service

No. 92236

Sparwood, BC
Terrace, BC
Red Deer, AB

Vancouver, BC
Calgary, AB
Montreal, QC

Prince George, BC
Edmonton, AB
Spokane, WA

Elkford, BC
Ft. McMurray, AB
Shelby, MT

Tumbler Ridge, BC
Hinton, AB
Gillette, WY

INVOICE TO		DATE	
BILL OF LADING #		PURCHASE ORDER NUMBER	
SHIPPER (FROM)		CONSIGNEE (TO)	
STREET		STREET	
CITY/PROVINCE		POSTAL CODE	CITY/PROVINCE
CITY/PROVINCE		POSTAL CODE	POSTAL CODE
SPECIAL INSTRUCTIONS		FREIGHT CHARGES SHIPPER TO CHECK <input type="checkbox"/> PREPAID <input type="checkbox"/> COLLECT <small>If not indicated, shipping will automatically move collect.</small>	
PACKAGES	DESCRIPTION OF ARTICLES AND SPECIAL MARKS	WEIGHT (Subject to Correction)	
PAPS # RWHV92236			
UNIT #	DECLARED VALUATION: Maximum liability of carrier is \$2.00 per lb. (\$4.41 per kilogram) unless declared valuation states otherwise.		
DRIVER'S SIGNATURE - PICK UP BY	PICK UP TIME	DRIVER'S SIGNATURE - DELIVERY BY	FINISH TIME
<small>NOTICE OF CLAIM: (a) No carrier is liable for loss, damage or delay of any goods under the Bill of Lading unless notice, hereof setting out particulars of the origin, destination and date of shipment of the goods and the estimated amount claimed, respect of such loss, damage or delay is given in writing to the originating carrier or the delivering carrier within sixty (60) days after the delivery of the goods, or in the case of failure to make delivery within nine (9) months from the date of shipment. (b) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. (c) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. RECEIVED at the point of origin on the date specified from the consignor mentioned herein, the property herein described, in apparent good order, except as noted (contents and condition of contents of package unknown) marked, consigned and destined as indicated below, which the carrier agrees to carry and to deliver to the consignee at the said destination, subject to the rates and classification in effect on the date of shipment, it is mutually agreed, as to each carrier of all or any of the goods over all or any portion of the route to destination, and as to each party of any time interested in all or any of the goods, that every service to be performed hereunder shall be subject to the conditions standard Bill of Lading, in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. Printed or written special conditions set aside by the standard Bill of Lading, in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. The Contract for the carriage of the goods listed in the Bill of Lading is governed by regulation in force in the jurisdiction of the time and place of shipment and is subject to the conditions set out in such conditions.</small>			
SHIPPER PRINT	CONSIGNEE PRINT	DATE	
SHIPPER SIGN	CONSIGNEE SIGN	TIME	
WHITE: Office YELLOW: Carrier PINK: Consignee GOLDENROAD: Shipper		GST # 864540398RT0001	
AMIGOS PRINTING		NUMBER OF PIECES RECEIVED	

Cooler ID: Cooler 6

COOL(Y/N)

Temperature: 2.3

IR: 33

Coolant Type: Ice Blue Ice Ambient

Notes:

Sampling Locations:

Sample Types:

Container Types:

Opened By: WVW

<u>RG</u>	<u>EV</u>	<u>RG</u>	<u>EV</u>
<u>T/D</u>	<u>SP</u>	<u>T/D</u>	<u>SP</u>
<u>40 ml glass</u>	<u>60 ml plastic</u>	<u>40 ml glass</u>	<u>40 ml glass</u>
<u>40 ml glass</u>		<u>40 ml glass</u>	

Date: 5/5/22

From: [Tyler Mehler](#)
To: [Anais Gentilhomme](#)
Cc: [Jeremy Maute](#)
Subject: RE: Brooks Samples Received - WO (2205072, 2205073, 2205074, 2205075), REP - Privileged and Confidential
Date: Saturday, May 7, 2022 8:59:30 PM

Thank you Anais.

I have left comments below.

From: Anais Gentilhomme <Anais@brooksapplied.com>
Sent: Friday, May 6, 2022 5:03 PM
To: Jessica.Ritz@teck.com; AquaSciLab@Teck.com; Lisa Bowron <LBowron@minnow.ca>; Tyler Mehler <tyler.mehler@minnow.ca>
Cc: Jeremy Maute <Jeremy@brooksapplied.com>; Mariyeh Moradnazhad <mariyeh@brooksapplied.com>; Ethan Upp <ethan@brooksapplied.com>
Subject: Brooks Samples Received - WO (2205072, 2205073, 2205074, 2205075), REP - Privileged and Confidential

Good Morning,

This is confirmation that samples from the REP project were received at Brooks Applied Labs on May 5th, 2022. The samples were logged in for the following turnaround times (TATs):

WO 2205072 – (5-9 business day) TAT

WO 2205073 – (5-9 business day) TAT

WO 2205074 – (5-9 business day) TAT

WO 2205075 – (5-9 business day) TAT

The COC for WO 2205072 and WO 2205073 stated that the speciation fractions had been filtered in the field, however the speciation fractions received did not specifically state that they had been filtered on the label. Upon inspection of the samples which had minimal to no particulates to the naked eye, determined that the speciated fractions had been filtered. We therefore went with what was written on the COC and no extra filtration was done upon receipt. Please let us know if you would have us do differently.

All samples were filtered – and I will make sure our team knows to check this in the field.

The **sample date** value listed on the chain-of-custody (COC) form did not exactly match the corresponding **sample date** terms listed on container labels for samples in WO 2205072 and WO 2205074. The discrepancies are described in the table below.

Laboratory ID	Sample Name (on COC)	Sample Date (on COC)	Sample Date (on Sample)	Analysis
2205072-14	RG_MIDER_WS_LAEMP_EVO_2022-04_NP_NAL	04/25/22	04/26/22	Dissolved Recoverable Se
2205072-15	RG_MIDER_WS_LAEMP_EVO_2022-04_NP_NAL	04/25/22	04/26/22	Total Recoverable Se
2205072-27	RG_ERCKBR_WS_LAEMP_EVO_2022-04_NP_NAL	04/28/22	04/27/22	Total Recoverable Se
2205074-03	RG_ERCK_WS_LAEMP_EVO_2022-03_NP	04/28/22	04/27/22	Dissolved Recoverable Se

The samples described the table above were logged in using the **sample date** terms listed on the COC form. Please let us know if you would have us report any of these samples in a different manner.

Please use the sample date that I have highlighted.

A set of samples in WO 2205072 (described in the table below) are present twice on the COCs provided. We have received only one set of samples that matches their description and have logged them under this WO. Please let us know if you would have us do differently.

Laboratory - ID	Sample Name (on COC)	Analysis
2205072-01	RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP	Se Speciation
2205072-02	RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP_NAL	Dissolved Recoverable Se
2205072-03	RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP_NAL	Total Recoverable Se

Sorry – this was an accident and was repeated in the COC.

The **sample name** value listed on the chain-of-custody (COC) form did not exactly match the corresponding **sample name** terms listed on container labels for samples in WO 2205074. The discrepancies are described in the table below.

Laboratory ID	Sample Name (on COC)	Sample Name (on Sample)	Analysis
2205074-01	RG_ERCKMD_WS_LAEMP_EVO_2022-03_NP	RG_ERCKMD_WS_LAEMP_EVO_2022-04_NP	Volatile Se

The samples described the table above were logged in using the **sample name** terms listed on the COC form. Please let us know if you would have us report any of these samples in a different manner.

Please use the sample date that I have highlighted.

Several samples in WO 2205074 and WO 2205075 (described in the table below) arrived wet and smelling strongly of alcohol. We observed no cracks in the vials, the caps were not loose, and the samples appeared to have been filled to the top.

Laboratory - ID	Sample Name (on COC)	Analysis
2205074-06	RG_RIVER_WS_LAEMP_EVO_2022-04_NP	Volatile Se
2205074-07	RG_ALUSM_WS_LAEMP_EVO_2022-04_NP	Volatile Se
2205074-08	RG_ERCKBR_WS_LAEMP_EVO_2022-04_NP	Volatile Se
2205075-01	RG_ERCKIG_WS_LAEMP_EVO_2022-04_NP	Volatile Se

Thank you for this observation. We are unaware of why this may have occurred. We will flag this when we analyze the results.

I've attached copies of the COC forms. If you have any questions, please contact the project manager, Jeremy Maute.

Thank You,
Anaïs Gentilhomme

Anaïs Gentilhomme

Senior Laboratory Technician

email: anais@brooksapplied.com

BROOKS APPLIED LABS

Meaningful Metals Data and Advanced Speciation Solutions

18804 North Creek Parkway, Suite 100, Bothell, WA 98011, USA

I acknowledge that I live and work in the ancestral land and water of the Coast Salish people.

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18804 North Creek Parkway, Ste 100, Bothell, WA 98011 • USA • T: 206 632 6206 F: 206 632 6017 • info@brooksapplied.com

May 17, 2022

Teck Resources Limited - Vancouver
Mike Pope
421 Pine Avenue
Sparwood, B.C. CANADA V0B2G0
mike.pope@teck.com

Re: Regional Effects Program

Dear Mike Pope,

On May 5, 2022, Brooks Applied Labs (BAL) received four (4) aqueous samples. The samples were logged-in for volatile selenium (Se) speciation analyses, in accordance with the chain-of-custody (COC) form.

Each sample requesting volatile Se speciation had been field-filtered into bottles containing isopropanol preservative (provided by BAL).

The container for 2205075-01 arrived wet and the laboratory staff at BAL reported the smell of alcohol for this fraction. The vial for 2205075-01 was intact, the cap was on securely. The container for 2205075-01 was filled with nearly zero headspace. The container did not appear to be compromised, but liquid was observed on the outside of the container, and evidence of isopropanol preservative was present. This information should be considered when reviewing volatile selenium (Se) speciation results for this sample.

All sample fractions were stored according to BAL SOPs and EPA methodology.

Volatile Selenium Speciation

Each aqueous sample was analyzed for volatile selenium speciation using high performance liquid chromatography inductively coupled plasma collision reaction cell mass spectrometry (HPLC-ICP-CRC-MS). Volatile selenium species are chromatographically separated on a reversed phase column and then quantified using inductively coupled plasma collision reaction cell mass spectrometry (ICP-CRC-MS); for more information on this determinative technique, please visit the *Interference Reduction Technology* section on our website.

In accordance with the quotation issued for this project, volatile selenium species were defined as dissolved dimethylselenide [DMeSe] and dimethyldiselenide [DMDS₂].

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

In instances where a matrix spike/matrix spike duplicate (MS/MSD) set was spiked at a level less than the native sample concentration, the recoveries and the relative percent difference (RPD) values are not considered valid indicators of data quality. In such instances, the recoveries of the laboratory fortified blank (BS) demonstrates the accuracy of the applied methods. When the spiking level was less than 25% of the native sample concentration, the spike recovery was not reported (**NR**) and the relative percent difference (RPD) of the MS/MSD set was not calculated (**N/C**).

Except for concentration qualifiers, all data were reported without qualification. All associated quality control sample results met the acceptance criteria.

BAL, an accredited laboratory, certifies that the reported results of all analyses for which BAL is NELAP accredited meet all NELAP requirements. For more information, please see the *Report Information* page.

Please feel free to contact us if you have any questions regarding this report.

Sincerely,

A handwritten signature in black ink, appearing to read 'Jeremy Maute', with a stylized flourish at the end.

Jeremy Maute
Senior Project Manager
Jeremy@brooksapplied.com



Report Information

Laboratory Accreditation

BAL is accredited by the *National Environmental Laboratory Accreditation Program* (NELAP) through the State of Florida Department of Health, Bureau of Laboratories (E87982) and is certified to perform many environmental analyses. BAL is also certified by many other states to perform environmental analyses. For a current list of our accreditations/certifications, please visit our website at <<http://www.brooksapplied.com/resources/certificates-permits/>> or review Tables 1 and 2 in our Accreditation Information. Results reported relate only to the samples listed in the report.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

AR	as received	MS	matrix spike
BAL	Brooks Applied Labs	MSD	matrix spike duplicate
BLK	method blank	ND	non-detect
BS	blank spike	NR	non-reportable
CAL	calibration standard	N/C	not calculated
CCB	continuing calibration blank	PS	post preparation spike
CCV	continuing calibration verification	REC	percent recovery
COC	chain of custody record	RPD	relative percent difference
D	dissolved fraction	SCV	secondary calibration verification
DUP	duplicate	SOP	standard operating procedure
IBL	instrument blank	SRM	reference material
ICV	initial calibration verification	T	total fraction
MDL	method detection limit	TR	total recoverable fraction
MRL	method reporting limit		

Definition of Data Qualifiers

(Effective 3/23/2020)

E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Please see narrative for explanation.
J	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1	Estimated value. A full explanation is presented in the narrative.
M	Duplicate precision (RPD) was not within acceptance criteria. Please see narrative for explanation.
N	Spike recovery was not within acceptance criteria. Please see narrative for explanation.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.
Z	Holding time and/or preservation requirements not established for this method; however, BAL recommendations for holding time were not followed. Please see narrative for explanation.

These qualifiers are based on those previously utilized by Brooks Applied Labs, those found in the EPA SOW ILM03.0, Exhibit B, Section III, pg. B-18, and the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review; USEPA; January 2010. These supersede all previous qualifiers ever employed by BAL.



Accreditation Information

Table 1. Accredited method/matrix/analytes for TNI
Issued by: State of Florida Dept. of Health (The NELAC Institute 2016 Standard)
Issued on: July 1, 2021; Valid to: June 30, 2022
Certificate Number: E87982-37

Method	Matrix	TNI Accredited Analyte(s)
EPA 1638	Non-Potable Waters	Ag, Cd, Cu, Ni, Pb, Sb, Se, Ti, Zn
EPA 200.8	Non-Potable Waters	Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Sb, Se, Ti, U, V, Zn
EPA 6020	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Ti, U, V, Zn
	Solids/Chemicals & Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Ti, V, Zn
BAL-5000	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, U, V, Zn, Hardness
	Solids/Chemicals	Ag, As, B, Be, Cd, Co, Cr, Cu, Pb, Mo, Ni, Sb, Se, Sn, Sr, Ti, V, Zn
	Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Ti, V, Zn
EPA 1640	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn
EPA 1631E	Non-Potable Waters, Solids/Chemicals & Biological	Total Mercury
EPA 1630	Non-Potable Waters	Methyl Mercury
BAL-3200	Solids/Chemicals & Biological	Methyl Mercury
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
BAL-4201	Non-Potable Waters	Se(IV), Se(VI)
BAL-4300	Non-Potable Waters Solid/Chemicals	Cr(VI)
SM2340B	Non-Potable Waters	Hardness



Accreditation Information

**Table 2. Accredited method/matrix/analytes for ISO (1),
 Non-Governmental TNI (2)
 Issued by: ANAB
 Issued on: September 21, 2021; Valid to: March 30, 2024**

Method	Matrix	ISO and Non-Gov. TNI Accredited Analyte(s)
EPA 1638 Mod EPA 200.8 Mod EPA 6020 Mod	Non-Potable Waters	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, U, V, Zn
BAL-5000	Solids/Chemicals & Biological	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, V, Zn Hg (Biological Only)
EPA 1640 Mod	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn Ag, As, Cr, Co, Se, Ti, V (ISO Only)
EPA 1631E Mod BAL-3100	Non-Potable Waters, Solids/Chemicals & Biological/Food	Total Mercury
EPA 1630 Mod BAL-3200	Non-Potable Waters, Solids/Chemicals Biological	Methyl Mercury
EPA 1632A Mod BAL-3300	Non-Potable Waters Biological/Food Solids/Chemicals	Inorganic Arsenic (ISO Only) Inorganic Arsenic (ISO Only)
AOAC 2015.01 Mod BAL-5000	Food	As, Cd, Hg, Pb
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
	Biological by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4101	Food by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4201	Non-Potable Waters	Se(IV), Se(VI), SeCN, SeMet
BAL-4300	Non-Potable Waters, Solid/Chemicals	Cr(VI)
SM 3500-Fe BAL-4500	Non-Potable Waters	Fe, Fe(II) (ISO Only)
SM2340B	Non-Potable Waters	Hardness
SM 2540G BAL-0501	Solids/Chemicals & Biological	% Dry Weight



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
RG_ERCKIG_WS_LAEMP_EVO_20 22-04_NP	2205075-01	WS	Sample	04/28/2022	05/05/2022
RG_MIDGA_WS_LAEMP_EVO_202 2-04_NP	2205075-02	WS	Sample	04/25/2022	05/05/2022
RG_ERCKUC_WS_LAEMP_EVO_20 22-04_NP	2205075-03	WS	Sample	04/28/2022	05/05/2022
RG_MIDBO_WS_LAEMP_EVO_202 2-04_NP	2205075-04	WS	Sample	04/25/2022	05/05/2022

Batch Summary

Analyte	Lab Matrix	Method	Prepared	Analyzed	Batch	Sequence
DMDSe	Water	HPLC-ICP-MS	05/06/2022	05/06/2022	B220974	S220519
DMeSe	Water	HPLC-ICP-MS	05/06/2022	05/06/2022	B220974	S220519



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKIG_WS_LAEMP_EVO_2022-04_NP</i>										
2205075-01	DMDSe	WS	D	≤ 0.022	U	0.022	0.222	µg/L	B220974	S220519
2205075-01	DMeSe	WS	D	≤ 0.022	U	0.022	0.222	µg/L	B220974	S220519
<i>RG_MIDGA_WS_LAEMP_EVO_2022-04_NP</i>										
2205075-02	DMDSe	WS	D	≤ 0.022	U	0.022	0.222	µg/L	B220974	S220519
2205075-02	DMeSe	WS	D	≤ 0.022	U	0.022	0.222	µg/L	B220974	S220519
<i>RG_ERCKUC_WS_LAEMP_EVO_2022-04_NP</i>										
2205075-03	DMDSe	WS	D	≤ 0.022	U	0.022	0.222	µg/L	B220974	S220519
2205075-03	DMeSe	WS	D	≤ 0.022	U	0.022	0.222	µg/L	B220974	S220519
<i>RG_MIDBO_WS_LAEMP_EVO_2022-04_NP</i>										
2205075-04	DMDSe	WS	D	≤ 0.022	U	0.022	0.222	µg/L	B220974	S220519
2205075-04	DMeSe	WS	D	≤ 0.022	U	0.022	0.222	µg/L	B220974	S220519



Accuracy & Precision Summary

Batch: B220974
Lab Matrix: Water
Method: HPLC-ICP-MS

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B220974-BS1	Blank Spike, (2210011)						
	DMDSe		4.991	4.204	µg/L	84% 80-120	
	DMeSe		5.005	4.864	µg/L	97% 80-120	
B220974-DUP3	Duplicate, (2205075-04)						
	DMDSe	ND		ND	µg/L		N/C 25
	DMeSe	ND		ND	µg/L		N/C 25
B220974-MS3	Matrix Spike, (2205075-04)						
	DMDSe	ND	5.547	5.013	µg/L	90% 75-125	
	DMeSe	ND	5.542	4.395	µg/L	79% 75-125	
B220974-MSD3	Matrix Spike Duplicate, (2205075-04)						
	DMDSe	ND	5.547	5.110	µg/L	92% 75-125	2% 25
	DMeSe	ND	5.542	4.451	µg/L	80% 75-125	1% 25



Method Blanks & Reporting Limits

Batch: B220974
Matrix: Water
Method: HPLC-ICP-MS
Analyte: DMDSe

Sample	Result	Units	
B220974-BLK1	0.00	µg/L	
B220974-BLK2	0.00	µg/L	
B220974-BLK3	0.00	µg/L	
B220974-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.010
Limit: 0.100			MRL: 0.100

Analyte: DMeSe

Sample	Result	Units	
B220974-BLK1	0.00	µg/L	
B220974-BLK2	0.00	µg/L	
B220974-BLK3	0.00	µg/L	
B220974-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.010
Limit: 0.100			MRL: 0.100



Sample Containers

Lab ID: 2205075-01
Sample: RG_ERCKIG_WS_LAEMP_EVO_2022-04_NP
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 04/28/2022
Received: 05/05/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	40 mL	n/a	10% isopropanol	1828013	<2	Cooler 6 - 2205075

Lab ID: 2205075-02
Sample: RG_MIDGA_WS_LAEMP_EVO_2022-04_NP
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 04/25/2022
Received: 05/05/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	40 mL	n/a	10% isopropanol	1828013	<2	Cooler 6 - 2205075

Lab ID: 2205075-03
Sample: RG_ERCKUC_WS_LAEMP_EVO_2022-04_NP
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 04/28/2022
Received: 05/05/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	40 mL	n/a	10% isopropanol	1828013	<2	Cooler 6 - 2205075

Lab ID: 2205075-04
Sample: RG_MIDBO_WS_LAEMP_EVO_2022-04_NP
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 04/25/2022
Received: 05/05/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	40 mL	n/a	10% isopropanol	1828013	<2	Cooler 6 - 2205075

Shipping Containers

Cooler 6 - 2205075

Received: May 5, 2022 7:00
Tracking No: PAPS#RWHV92236 via Courier
Coolant Type: Blue Ice
Temperature: 2.3 °C

Description: Styrofoam Cooler
Damaged in transit? No
Returned to client? No
Comments: IR 33

Custody seals present? No
Custody seals intact? No
COC present? Yes

COC ID:		REP_EVO LAEMP_2022_MAR_Brooks				TURNAROUND TIME:				RUSH:				
PROJECT/CLIENT INFO						LABORATORY				OTHER INFO				
Facility Name / Job#	Regional Effects Program					Lab Name	Brooks Applied Labs			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Mike Pope					Lab Contact	Ben Wozniak			Email 1:		X	X	X
Email	Mike.Pope@teck.com					Email	Ben@brooksapplied.com			teck.coh/tequilasolinc.com				X
Address	421 Pine Ave					Address	18804 North Creek Parkway			Email 3:	Teck.Lab.Results@teck.com	X	X	X
							Suite 100			Email 4:	AquaSciLab@teck.com	X	X	X
City	Sparwood		Province	BC		City	Bothell	Province	WA	Email 5:	lbrown@minnow.ca	X	X	X
Postal Code	V0B 2G0		Country	Canada		Postal Code	98011	Country	United States	Email 6:		X	X	X
Phone Number	250-425-8202					Phone Number	(206) 753-6158			PO number	748540			
SAMPLE DETAILS						ANALYSIS REQUEST								
Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	PROPERTY	ANALYSIS					
RG_ERCKIG_WS_LAEMP_EVO_2022-04_NP	RG_ERCKIG	WS	No	28-Apr-22	8:30	G	1	F	Volatile Selenium					
RG_MIDGA_WS_LAEMP_EVO_2022-04_NP	RG_MIDGA	WS	No	25-Apr-22	11:00	G	1	F						
RG_ERCKUC_WS_LAEMP_EVO_2022-04_NP	RG_ERCKUC	WS	No	28-Apr-22	10:55	G	1							
RG_MIDBO_WS_LAEMP_EVO_2022-04_NP	RG_MIDBO	WS	No	25-Apr-22	14:00	G	1							
ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS						RELINQUISHED BY/AFFILIATION		DATE/TIME	ACCEPTED BY/AFFILIATION		DATE/TIME			
									ASG/BAL		5/5/22 7:00			
SERVICE REQUEST (rush - subject to availability)						Sampler's Name		Mobile #						
Regular (default) X														
Priority (2-3 business days) - 50% surcharge						Sampler's Signature		Date/Time						
Emergency (1 Business Day) - 100% surcharge														
For Emergency <1 Day, ASAP or Weekend - Contact ALS														

STRAIGHT BILL OF LADING
NOT NEGOTIABLE

RW HOT SHOT SERVICE INC.

250-425-7447
24 Hour Hot Shot Service

No. 92236

Sparwood, BC
Terrace, BC
Red Deer, AB

Vancouver, BC
Calgary, AB
Montreal, QC

Prince George, BC
Edmonton, AB
Spokane, WA

Elkford, BC
Ft. McMurray, AB
Shelby, MT

Tumbler Ridge, BC
Hinton, AB
Gillette, WY

INVOICE TO		DATE:	
BILL OF LADING #		PURCHASE ORDER NUMBER	
SHIPPER (FROM)		CONSIGNEE (TO)	
STREET		STREET	
CITY/PROVINCE		POSTAL CODE	CITY/PROVINCE
SPECIAL INSTRUCTIONS		FREIGHT CHARGES SHIPPER TO CHECK	
PACKAGES	DESCRIPTION OF ARTICLES AND SPECIAL MARKS	WEIGHT (Subject to Correction)	<input type="checkbox"/> PREPAID <input type="checkbox"/> COLLECT If not indicated, shipping will automatically collect.
			FEE
			WAITING
			XPU
			CHARGES
			FSC
			US
			SUB TOTAL
			GST
			TOTAL \$
			IF AT OWNER'S RISK, WRITE ORD HERE
UNIT #	DECLARED VALUATION: Maximum liability of carrier is \$2.00 per lb. (\$4.41 per kilogram) unless declared valuation states otherwise.		
DRIVER'S SIGNATURE - PICK UP BY	PICK UP TIME	DRIVER'S SIGNATURE - DELIVERY BY	FINISH TIME
<small>NOTICE OF CLAIM: (a) No carrier is liable for loss, damage or delay of any goods under the Bill of Lading unless notice, in respect of setting out particulars of the origin, destination and date of shipment of the goods and the estimated amount claimed, is given in writing to the originating carrier or the delivering carrier within sixty (60) days after the delivery of the goods, on the case of failure to make delivery within nine (9) months from the date of shipment. (b) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. (c) In the event of a claim, the property herein described, in apparent good order, except as noted (contents and condition of contents of package unknown) marked, consigned and RECEIVED at the point of origin on the date specified from the consignor mentioned herein, the property herein described, subject to the rates and classification in effect on the date of shipment, destined as indicated below, which the carrier agrees to carry and to deliver to the consignee at the said destination, subject to the rates and classification in effect on the date of shipment, it is mutually agreed, as to each carrier of all or any portion of the route to destination, and as to each party of any line interested in labor any of the goods, that every service to be performed hereunder shall be subject to the conditions of the Bill of Lading, in power at the date of issuing, which are hereto agreed by the consignor and accepted for himself and his assigns, printed or written, including conditions set aside by the standard Bill of Lading, in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. The Contract for the carriage of the goods listed in the Bill of Lading is governed by regulation in force in the jurisdiction at the time the place of shipment and is subject to the conditions set out in such conditions.</small>			
SHIPPER PRINT	CONSIGNEE PRINT	DATE	
SHIPPER SIGN	CONSIGNEE SIGN	TIME	
WHITE: Office	YELLOW: Carrier	PINK: Consignee	GOLDENROAD: Shipper
GST # 8E4540398RT0001			NUMBER OF PIECES RECEIVED

ALAMOS PRINTING

Cooler ID: Cooler 6 CAC(Y/N) Temperature: 2.3 IR: 33

Coolant Type: Ice Blue Ice Ambient

Notes:

Sampling Locations: RG EV RG EV

Sample Types: T/D SP T/D SP T/D SP T/D SP

Container Types: 40ml glass 40ml plastic 40ml glass 40ml glass

Opened By: *WVW* Date: 5/5/22

COPY



18804 North Creek Parkway, Ste 100, Bothell, WA 98011 • USA • T: 206 632 6206 F: 206 632 6017 • info@brooksapplied.com

June 3, 2022

Teck Resources Limited - Vancouver
 Mike Pope
 421 Pine Avenue
 Sparwood, B.C. CANADA V0B2G0
mike.pope@teck.com

Re: Regional Effects Program

Dear Mike Pope,

On May 19, 2022, Brooks Applied Labs (BAL) received ten (10) aqueous samples. The samples were logged-in for total recoverable selenium [Se], dissolved Se [Se], and Se speciation analyses, according to the chain-of-custody (COC) form.

The **Date Collected** value listed on the chain-of-custody (COC) form did not match the corresponding **Date Collected** value listed on container label for 2205249-04. The discrepancy is described in the table below.

Laboratory ID	Sample ID	Date Collected (on COC form)	Date Collected (on container label)
2205249-04	RG_ERCKUT_WS_LAEMP_EVO_2022-05_NP	5/12/2022 10:00	5/11/2022 10:00

2205249-04 was logged in using the **Date Collected** value listed on the COC form (*column 3 in the table above*).

The sample fractions for total recoverable Se and dissolved Se were not preserved in the field. The samples were preserved (pH < 2) upon receipt at BAL. All sample fractions for total recoverable Se and dissolved Se were preserved within the (14 calendar day) preservation holding time.

The sample fractions logged in for Se speciation and dissolved Se had been field-filtered prior to receipt at BAL. All samples were stored according to BAL SOPs.

Total Recoverable Se and Dissolved Se

Each aqueous sample fraction for dissolved Se was digested in a closed vessel (bomb) with nitric and hydrochloric acids. The resulting digests were analyzed for Se content via inductively coupled plasma triple quadrupole mass spectrometry (ICP-QQQ-MS). The ICP-QQQ-MS instrumentation uses advanced interference removal techniques to ensure accuracy of the sample results. For more information, please visit the *Interference Reduction Technology* section on our website, brooksapplied.com.

Selenium Speciation

Each aqueous sample was analyzed for selenium speciation using ion chromatography inductively coupled plasma collision reaction cell mass spectrometry (IC-ICP-CRC-MS). Selenium species are chromatographically separated on an ion exchange column and then quantified using inductively coupled plasma collision reaction cell mass spectrometry (ICP-CRC-MS); for more information on this determinative

technique, please visit the *Interference Reduction Technology* section on our website. The chromatographic method applied for the analyses provides greater retention of methylseleninic acid and selenomethionine, allowing for more definitive quantitation of these species.

In accordance with the quotation issued for this project, selenium speciation was defined as dissolved selenite [Se(IV)], selenate [Se(VI)], selenocyanate [SeCN], methylseleninic acid [MeSe(IV)], methaneselenonic acid [MeSe(VI)], selenomethionine [SeMet], selenosulfate [SeSO₃], and dimethylselenoxide [DMSeO]. Unknown Se species was defined as the total concentration of all unknown Se species observed during the analysis. This item is identified on the report as [Unk Se Sp].

DMSeO elutes early in the chromatographic run due to the nature of the molecule and the applied chromatographic separation method. Since this species elutes near the dead volume, additional selenium species may coelute. Alternate methods can be applied, upon client request, to increase the separation of DMSeO from potentially co-eluting selenium species.

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

In instances where a matrix spike/matrix spike duplicate (MS/MSD) set was spiked at a level less than the native sample concentration, the recoveries and the relative percent difference (RPD) are not considered valid indicators of data quality. In such instances, the recoveries of the laboratory fortified blanks (BS) and/or standard reference materials (SRM) demonstrate the accuracy of the applied methods. When the spiking level was less than 25% of the native sample concentration, the spike recovery was not reported (**NR**) and the relative percent difference (RPD) of the MS/MSD set was not calculated (**N/C**).

In cases when either the native sample concentration was non-detectable (reported as less than or equal to the MDL) and/or the corresponding DUP result was also non-detectable, the RPD between the two values was not calculated (**N/C**).

Except for concentration qualifiers, all data were reported without qualification. All associated quality control sample results met the acceptance criteria.

BAL, an accredited laboratory, certifies that the reported results of all analyses for which BAL is NELAP accredited meet all NELAP requirements. For more information, please see the *Report Information* page.

Please feel free to contact us if you have any questions regarding this report.

Sincerely,



Jeremy Maute
Senior Project Manager
Jeremy@brooksapplied.com



Report Information

Laboratory Accreditation

BAL is accredited by the *National Environmental Laboratory Accreditation Program* (NELAP) through the State of Florida Department of Health, Bureau of Laboratories (E87982) and is certified to perform many environmental analyses. BAL is also certified by many other states to perform environmental analyses. For a current list of our accreditations/certifications, please visit our website at <http://www.brooksapplied.com/resources/certificates-permits/> or review Tables 1 and 2 in our Accreditation Information. Results reported relate only to the samples listed in the report.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

AR	as received	MS	matrix spike
BAL	Brooks Applied Labs	MSD	matrix spike duplicate
BLK	method blank	ND	non-detect
BS	blank spike	NR	non-reportable
CAL	calibration standard	N/C	not calculated
CCB	continuing calibration blank	PS	post preparation spike
CCV	continuing calibration verification	REC	percent recovery
COC	chain of custody record	RPD	relative percent difference
D	dissolved fraction	SCV	secondary calibration verification
DUP	duplicate	SOP	standard operating procedure
IBL	instrument blank	SRM	reference material
ICV	initial calibration verification	T	total fraction
MDL	method detection limit	TR	total recoverable fraction
MRL	method reporting limit		

Definition of Data Qualifiers

(Effective 3/23/2020)

E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Please see narrative for explanation.
J	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1	Estimated value. A full explanation is presented in the narrative.
M	Duplicate precision (RPD) was not within acceptance criteria. Please see narrative for explanation.
N	Spike recovery was not within acceptance criteria. Please see narrative for explanation.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.
Z	Holding time and/or preservation requirements not established for this method; however, BAL recommendations for holding time were not followed. Please see narrative for explanation.

These qualifiers are based on those previously utilized by Brooks Applied Labs, those found in the EPA SOW ILM03.0, Exhibit B, Section III, pg. B-18, and the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review; USEPA; January 2010. These supersede all previous qualifiers ever employed by BAL.



Accreditation Information

Table 1. Accredited method/matrix/analytes for TNI
Issued by: State of Florida Dept. of Health (The NELAC Institute 2016 Standard)
Issued on: July 1, 2021; Valid to: June 30, 2022
Certificate Number: E87982-37

Method	Matrix	TNI Accredited Analyte(s)
EPA 1638	Non-Potable Waters	Ag, Cd, Cu, Ni, Pb, Sb, Se, Tl, Zn
EPA 200.8	Non-Potable Waters	Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Sb, Se, Tl, U, V, Zn
EPA 6020	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Tl, U, V, Zn
	Solids/Chemicals & Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Tl, V, Zn
BAL-5000	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Tl, U, V, Zn, Hardness
	Solids/Chemicals	Ag, As, B, Be, Cd, Co, Cr, Cu, Pb, Mo, Ni, Sb, Se, Sn, Sr, Tl, V, Zn
	Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Tl, V, Zn
EPA 1640	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn
EPA 1631E	Non-Potable Waters, Solids/Chemicals & Biological	Total Mercury
EPA 1630	Non-Potable Waters	Methyl Mercury
BAL-3200	Solids/Chemicals & Biological	Methyl Mercury
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
BAL-4201	Non-Potable Waters	Se(IV), Se(VI)
BAL-4300	Non-Potable Waters Solid/Chemicals	Cr(VI)
SM2340B	Non-Potable Waters	Hardness



Accreditation Information

**Table 2. Accredited method/matrix/analytes for ISO (1),
 Non-Governmental TNI (2)
 Issued by: ANAB
 Issued on: September 21, 2021; Valid to: March 30, 2024**

Method	Matrix	ISO and Non-Gov. TNI Accredited Analyte(s)
EPA 1638 Mod EPA 200.8 Mod EPA 6020 Mod	Non-Potable Waters	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, U, V, Zn
BAL-5000	Solids/Chemicals & Biological	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, V, Zn Hg (Biological Only)
EPA 1640 Mod	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn Ag, As, Cr, Co, Se, Ti, V (ISO Only)
EPA 1631E Mod BAL-3100	Non-Potable Waters, Solids/Chemicals & Biological/Food	Total Mercury
EPA 1630 Mod BAL-3200	Non-Potable Waters, Solids/Chemicals Biological	Methyl Mercury
EPA 1632A Mod BAL-3300	Non-Potable Waters Biological/Food Solids/Chemicals	Inorganic Arsenic (ISO Only) Inorganic Arsenic (ISO Only)
AOAC 2015.01 Mod BAL-5000	Food	As, Cd, Hg, Pb
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
	Biological by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4101	Food by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4201	Non-Potable Waters	Se(IV), Se(VI), SeCN, SeMet
BAL-4300	Non-Potable Waters, Solid/Chemicals	Cr(VI)
SM 3500-Fe BAL-4500	Non-Potable Waters	Fe, Fe(II) (ISO Only)
SM2340B	Non-Potable Waters	Hardness
SM 2540G BAL-0501	Solids/Chemicals & Biological	% Dry Weight



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
RG_ERCKDT_WS_LAEMP_EVO_20 22-05_NP	2205249-01	WS	Sample	05/12/2022	05/19/2022
RG_ERCKDT_WS_LAEMP_EVO_20 22-05_NP	2205249-02	WS	Sample	05/12/2022	05/19/2022
RG_ERCKDT_WS_LAEMP_EVO_20 22-05_NP	2205249-03	WS	Sample	05/12/2022	05/19/2022
RG_ERCKUT_WS_LAEMP_EVO_20 22-05_NP	2205249-04	WS	Sample	05/12/2022	05/19/2022
RG_ERCKUT_WS_LAEMP_EVO_20 22-05_NP	2205249-05	WS	Sample	05/12/2022	05/19/2022
RG_ERCKUT_WS_LAEMP_EVO_20 22-05_NP	2205249-06	WS	Sample	05/12/2022	05/19/2022
RG_RIVER_WS_LAEMP_EVO_2022 -05_NP	2205249-07	WS	Sample	05/13/2022	05/19/2022
RG_RIVER_WS_LAEMP_EVO_2022 -05_NP	2205249-08	WS	Sample	05/13/2022	05/19/2022
RG_RIVER_WS_LAEMP_EVO_2022 -05_NP	2205249-09	WS	Sample	05/13/2022	05/19/2022
RG_ERCKMD_WS_LAEMP_EVO_2 022-05_NP	2205249-10	WS	Sample	05/13/2022	05/19/2022
RG_ERCKMD_WS_LAEMP_EVO_2 022-05_NP	2205249-11	WS	Sample	05/13/2022	05/19/2022
RG_ERCKMD_WS_LAEMP_EVO_2 022-05_NP	2205249-12	WS	Sample	05/13/2022	05/19/2022
RG_ERCK_WS_LAEMP_EVO_2022- 05_NP	2205249-13	WS	Sample	05/13/2022	05/19/2022
RG_ERCK_WS_LAEMP_EVO_2022- 05_NP	2205249-14	WS	Sample	05/13/2022	05/19/2022
RG_ERCK_WS_LAEMP_EVO_2022- 05_NP	2205249-15	WS	Sample	05/13/2022	05/19/2022



Batch Summary

Analyte	Lab Matrix	Method	Prepared	Analyzed	Batch	Sequence
DMS ₂ SeO	Water	SOP BAL-4201	05/19/2022	05/21/2022	B221103	S220553
MeSe(IV)	Water	SOP BAL-4201	05/19/2022	05/21/2022	B221103	S220553
MeSe(VI)	Water	SOP BAL-4201	05/19/2022	05/21/2022	B221103	S220553
Se	Water	EPA 1638 Mod	05/20/2022	05/24/2022	B221118	S220564
Se(IV)	Water	SOP BAL-4201	05/19/2022	05/21/2022	B221103	S220553
Se(VI)	Water	SOP BAL-4201	05/19/2022	05/21/2022	B221103	S220553
SeCN	Water	SOP BAL-4201	05/19/2022	05/21/2022	B221103	S220553
SeMet	Water	SOP BAL-4201	05/19/2022	05/21/2022	B221103	S220553
SeSO ₃	Water	SOP BAL-4201	05/19/2022	05/21/2022	B221103	S220553
Unk Se Sp	Water	SOP BAL-4201	05/19/2022	05/21/2022	B221103	S220553



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKDT_WS_LAEMP_EVO_2022-05_NP										
2205249-01	DMSeO	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221103	S220553
2205249-01	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221103	S220553
2205249-01	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221103	S220553
2205249-01	Se(IV)	WS	D	0.063	J	0.010	0.075	µg/L	B221103	S220553
2205249-01	Se(VI)	WS	D	147		0.010	0.055	µg/L	B221103	S220553
2205249-01	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221103	S220553
2205249-01	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221103	S220553
2205249-01	SeSO3	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221103	S220553
2205249-01	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221103	S220553
RG_ERCKDT_WS_LAEMP_EVO_2022-05_NP										
2205249-02	Se	WS	D	152		0.165	0.528	µg/L	B221118	S220564
RG_ERCKDT_WS_LAEMP_EVO_2022-05_NP										
2205249-03	Se	WS	TR	155		0.165	0.528	µg/L	B221118	S220564
RG_ERCKUT_WS_LAEMP_EVO_2022-05_NP										
2205249-04	DMSeO	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221103	S220553
2205249-04	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221103	S220553
2205249-04	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221103	S220553
2205249-04	Se(IV)	WS	D	0.051	J	0.010	0.075	µg/L	B221103	S220553
2205249-04	Se(VI)	WS	D	143		0.010	0.055	µg/L	B221103	S220553
2205249-04	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221103	S220553
2205249-04	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221103	S220553
2205249-04	SeSO3	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221103	S220553
2205249-04	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221103	S220553
RG_ERCKUT_WS_LAEMP_EVO_2022-05_NP										
2205249-05	Se	WS	D	154		0.165	0.528	µg/L	B221118	S220564
RG_ERCKUT_WS_LAEMP_EVO_2022-05_NP										
2205249-06	Se	WS	TR	158		0.165	0.528	µg/L	B221118	S220564



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_RIVER_WS_LAEMP_EVO_2022-05_NP										
2205249-07	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221103	S220553
2205249-07	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221103	S220553
2205249-07	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221103	S220553
2205249-07	Se(IV)	WS	D	0.220		0.010	0.075	µg/L	B221103	S220553
2205249-07	Se(VI)	WS	D	139		0.010	0.055	µg/L	B221103	S220553
2205249-07	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221103	S220553
2205249-07	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221103	S220553
2205249-07	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221103	S220553
2205249-07	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221103	S220553
RG_RIVER_WS_LAEMP_EVO_2022-05_NP										
2205249-08	Se	WS	D	147		0.165	0.528	µg/L	B221118	S220564
RG_RIVER_WS_LAEMP_EVO_2022-05_NP										
2205249-09	Se	WS	TR	146		0.165	0.528	µg/L	B221118	S220564
RG_ERCKMD_WS_LAEMP_EVO_2022-05_NP										
2205249-10	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221103	S220553
2205249-10	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221103	S220553
2205249-10	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221103	S220553
2205249-10	Se(IV)	WS	D	0.129		0.010	0.075	µg/L	B221103	S220553
2205249-10	Se(VI)	WS	D	139		0.010	0.055	µg/L	B221103	S220553
2205249-10	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221103	S220553
2205249-10	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221103	S220553
2205249-10	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221103	S220553
2205249-10	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221103	S220553
RG_ERCKMD_WS_LAEMP_EVO_2022-05_NP										
2205249-11	Se	WS	D	150		0.165	0.528	µg/L	B221118	S220564
RG_ERCKMD_WS_LAEMP_EVO_2022-05_NP										
2205249-12	Se	WS	TR	144		0.165	0.528	µg/L	B221118	S220564



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCK_WS_LAEMP_EVO_2022-05_NP										
2205249-13	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221103	S220553
2205249-13	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221103	S220553
2205249-13	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221103	S220553
2205249-13	Se(IV)	WS	D	0.223		0.010	0.075	µg/L	B221103	S220553
2205249-13	Se(VI)	WS	D	141		0.010	0.055	µg/L	B221103	S220553
2205249-13	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221103	S220553
2205249-13	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221103	S220553
2205249-13	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221103	S220553
2205249-13	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221103	S220553
RG_ERCK_WS_LAEMP_EVO_2022-05_NP										
2205249-14	Se	WS	D	149		0.165	0.528	µg/L	B221118	S220564
RG_ERCK_WS_LAEMP_EVO_2022-05_NP										
2205249-15	Se	WS	TR	147		0.165	0.528	µg/L	B221118	S220564



Accuracy & Precision Summary

Batch: B221103
Lab Matrix: Water
Method: SOP BAL-4201

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221103-BS1	Blank Spike, (2124033)						
	MeSe(IV)		5.095	5.515	µg/L	108% 75-125	
	Se(IV)		5.000	4.996	µg/L	100% 75-125	
	Se(VI)		5.000	4.875	µg/L	98% 75-125	
	SeCN		5.015	4.810	µg/L	96% 75-125	
	SeMet		4.932	4.935	µg/L	100% 75-125	
B221103-DUP6	Duplicate, (2205244-09)						
	DMSeO	ND		ND	µg/L		N/C 25
	MeSe(IV)	0.123		0.120	µg/L		2% 25
	MeSe(VI)	0.097		0.095	µg/L		2% 25
	Se(IV)	0.500		0.508	µg/L		2% 25
	Se(VI)	14.08		13.93	µg/L		1% 25
	SeCN	0.015		ND	µg/L		N/C 25
	SeMet	ND		ND	µg/L		N/C 25
	SeSO3	0.123		0.122	µg/L		0.9% 25
Unk Se Sp	0.038		0.040	µg/L		5% 25	
B221103-MS6	Matrix Spike, (2205244-09)						
	Se(IV)	0.500	4.900	5.039	µg/L	93% 75-125	
	Se(VI)	14.08	5.100	18.38	µg/L	84% 75-125	
	SeCN	0.015	1.962	1.722	µg/L	87% 75-125	
	SeMet	ND	1.977	1.720	µg/L	87% 75-125	
B221103-MSD6	Matrix Spike Duplicate, (2205244-09)						
	Se(IV)	0.500	4.900	5.085	µg/L	94% 75-125	0.9% 25
	Se(VI)	14.08	5.100	18.75	µg/L	92% 75-125	2% 25
	SeCN	0.015	1.962	1.709	µg/L	86% 75-125	0.7% 25
	SeMet	ND	1.977	1.742	µg/L	88% 75-125	1% 25



Accuracy & Precision Summary

Batch: B221118
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221118-BS1	Blank Spike, (2128022) Se		200.0	195.1	µg/L	98% 75-125	
B221118-BS2	Blank Spike, (2128022) Se		200.0	195.9	µg/L	98% 75-125	
B221118-BS3	Blank Spike, (2128022) Se		200.0	197.9	µg/L	99% 75-125	
B221118-SRM1	Reference Material (2145011, TMDA 51.5 Reference Standard - Bottle 10 - SRM) Se		14.30	13.87	µg/L	97% 75-125	
B221118-SRM2	Reference Material (2145011, TMDA 51.5 Reference Standard - Bottle 10 - SRM) Se		14.30	14.08	µg/L	98% 75-125	
B221118-SRM3	Reference Material (2145011, TMDA 51.5 Reference Standard - Bottle 10 - SRM) Se		14.30	13.91	µg/L	97% 75-125	
B221118-DUP5	Duplicate, (2205249-12) Se	144.5		146.6	µg/L		1% 20
B221118-MS5	Matrix Spike, (2205249-12) Se	144.5	220.0	363.4	µg/L	100% 75-125	
B221118-MSD5	Matrix Spike Duplicate, (2205249-12) Se	144.5	220.0	383.9	µg/L	109% 75-125	5% 20



Method Blanks & Reporting Limits

Batch: B221103
Matrix: Water
Method: SOP BAL-4201
Analyte: DMSeO

Sample	Result	Units	
B221103-BLK1	0.00	µg/L	
B221103-BLK2	0.00	µg/L	
B221103-BLK3	0.00	µg/L	
B221103-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005

Analyte: MeSe(IV)

Sample	Result	Units	
B221103-BLK1	0.00	µg/L	
B221103-BLK2	0.00	µg/L	
B221103-BLK3	0.00	µg/L	
B221103-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005

Analyte: MeSe(VI)

Sample	Result	Units	
B221103-BLK1	0.00	µg/L	
B221103-BLK2	0.00	µg/L	
B221103-BLK3	0.00	µg/L	
B221103-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005



Method Blanks & Reporting Limits

Analyte: Se(IV)

Sample	Result	Units	
B221103-BLK1	0.00	µg/L	
B221103-BLK2	0.00	µg/L	
B221103-BLK3	0.00	µg/L	
B221103-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.015		MRL: 0.015

Analyte: Se(VI)

Sample	Result	Units	
B221103-BLK1	0.00	µg/L	
B221103-BLK2	0.00	µg/L	
B221103-BLK3	0.00	µg/L	
B221103-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.011		MRL: 0.011

Analyte: SeCN

Sample	Result	Units	
B221103-BLK1	0.00	µg/L	
B221103-BLK2	0.00	µg/L	
B221103-BLK3	0.00	µg/L	
B221103-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.010		MRL: 0.010

Analyte: SeMet

Sample	Result	Units	
B221103-BLK1	0.00	µg/L	
B221103-BLK2	0.00	µg/L	
B221103-BLK3	0.00	µg/L	
B221103-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.005		MRL: 0.005



Method Blanks & Reporting Limits

Analyte: SeSO3

Sample	Result	Units	
B221103-BLK1	0.00	µg/L	
B221103-BLK2	0.00	µg/L	
B221103-BLK3	0.00	µg/L	
B221103-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.011		MRL: 0.011

Analyte: Unk Se Sp

Sample	Result	Units	
B221103-BLK1	0.00	µg/L	
B221103-BLK2	0.00	µg/L	
B221103-BLK3	0.00	µg/L	
B221103-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.015		MRL: 0.015



Method Blanks & Reporting Limits

Batch: B221118
Matrix: Water
Method: EPA 1638 Mod
Analyte: Se

Sample	Result	Units
B221118-BLK1	0.097	µg/L
B221118-BLK2	0.071	µg/L
B221118-BLK3	0.083	µg/L
B221118-BLK4	0.028	µg/L

Average: 0.070
Limit: 0.480

MDL: 0.150
MRL: 0.480



Sample Containers

Lab ID: 2205249-01

Report Matrix: WS

Collected: 05/12/2022

Sample:

Sample Type: Sample + Sum

Received: 05/19/2022

RG_ERCKDT_WS_LAEMP_EVO_2022-05_NP

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2205249
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2205249
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 4 - 2205249

Lab ID: 2205249-02

Report Matrix: WS

Collected: 05/12/2022

Sample:

Sample Type: Sample + Sum

Received: 05/19/2022

RG_ERCKDT_WS_LAEMP_EVO_2022-05_NP

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2152004	<2	Cooler 4 - 2205249

Lab ID: 2205249-03

Report Matrix: WS

Collected: 05/12/2022

Sample:

Sample Type: Sample + Sum

Received: 05/19/2022

RG_ERCKDT_WS_LAEMP_EVO_2022-05_NP

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2152004	<2	Cooler 4 - 2205249

Lab ID: 2205249-04

Report Matrix: WS

Collected: 05/12/2022

Sample:

Sample Type: Sample + Sum

Received: 05/19/2022

RG_ERCKUT_WS_LAEMP_EVO_2022-05_NP

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2205249
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2205249
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 4 - 2205249



Sample Containers

Lab ID: 2205249-05
Sample: RG_ERCKUT_WS_LAEMP_EVO_2022-05_NP
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 05/12/2022
Received: 05/19/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2152004	<2	Cooler 4 - 2205249

Lab ID: 2205249-06
Sample: RG_ERCKUT_WS_LAEMP_EVO_2022-05_NP
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 05/12/2022
Received: 05/19/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2152004	<2	Cooler 4 - 2205249

Lab ID: 2205249-07
Sample: RG_RIVER_WS_LAEMP_EVO_2022-05_NP
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 05/13/2022
Received: 05/19/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2205249
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2205249
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 4 - 2205249

Lab ID: 2205249-08
Sample: RG_RIVER_WS_LAEMP_EVO_2022-05_NP
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 05/13/2022
Received: 05/19/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2152004	<2	Cooler 4 - 2205249

Lab ID: 2205249-09
Sample: RG_RIVER_WS_LAEMP_EVO_2022-05_NP
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 05/13/2022
Received: 05/19/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2152004	<2	Cooler 4 - 2205249



Sample Containers

Lab ID: 2205249-10

Report Matrix: WS

Collected: 05/13/2022

Sample:

Sample Type: Sample + Sum

Received: 05/19/2022

RG_ERCKMD_WS_LAEMP_EVO_2022-05_NP

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2205249
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2205249
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 4 - 2205249

Lab ID: 2205249-11

Report Matrix: WS

Collected: 05/13/2022

Sample:

Sample Type: Sample + Sum

Received: 05/19/2022

RG_ERCKMD_WS_LAEMP_EVO_2022-05_NP

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2152004	<2	Cooler 4 - 2205249

Lab ID: 2205249-12

Report Matrix: WS

Collected: 05/13/2022

Sample:

Sample Type: Sample + Sum

Received: 05/19/2022

RG_ERCKMD_WS_LAEMP_EVO_2022-05_NP

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2152004	<2	Cooler 4 - 2205249

Lab ID: 2205249-13

Report Matrix: WS

Collected: 05/13/2022

Sample:

Sample Type: Sample + Sum

Received: 05/19/2022

RG_ERCK_WS_LAEMP_EVO_2022-05_NP

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2205249
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2205249
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 4 - 2205249



Sample Containers

Lab ID: 2205249-14

Report Matrix: WS

Collected: 05/13/2022

Sample:

Sample Type: Sample + Sum

Received: 05/19/2022

RG_ERCK_WS_LAEMP_EVO_2022-05_NP

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2152004	<2	Cooler 4 - 2205249

Lab ID: 2205249-15

Report Matrix: WS

Collected: 05/13/2022

Sample:

Sample Type: Sample + Sum

Received: 05/19/2022

RG_ERCK_WS_LAEMP_EVO_2022-05_NP

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2152004	<2	Cooler 4 - 2205249

Shipping Containers

Cooler 4 - 2205249

Received: May 19, 2022 7:00

Tracking No: PAPS#RWHV99228 via Courier

Coolant Type: Ice

Temperature: 1.6 °C

Description: Large Cooler

Damaged in transit? No

Returned to client? No

Comments: IR#33

Custody seals present? No

Custody seals intact? No

COC present? No



COC ID:		REP_EVO LAEMP_2022_MAY_Brooks		TURNAROUND TIME:				RUSH:	
PROJECT/CLIENT INFO				LABORATORY				OTHER INFO	
Facility Name / Job#		Regional Effects Program		Lab Name		Brooks Applied Labs		Report Format / Distribution	
Project Manager		Mike Pope		Lab Contact		Ben Wozniak		Excel	PDF
Email		Mike.Pope@teck.com		Email		Ben@brooksapplied.com		Email 1:	X
Address		421 Pine Ave		Address		18804 North Creek Parkway		Email 2:	X
City		Sparwood		City		Suite 100		Email 3:	X
Postal Code		V0B 2G0		Postal Code		98011		Email 4:	X
Province		BC		Province		WA		Email 5:	X
Country		Canada		Country		United States		Email 6:	X
Phone Number		250-425-8202		Phone Number		(206) 753-6158		PO number	748540

SAMPLE DETAILS								ANALYSIS REQUESTED												
Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com p	# Of Cont.	PH	F	F	N									
RG_ERCKDT_WS_LAEMP_EVO_2022-05_NP	RG_ERCKDT	WS	No	12-May-22	14:30	G	1													
RG_ERCKDT_WS_LAEMP_EVO_2022-05_NP	RG_ERCKDT	WS	No	12-May-22	14:30	G	2													
RG_ERCKUT_WS_LAEMP_EVO_2022-05_NP	RG_ERCKUT	WS	No	12-May-22	10:00	G	1													
RG_ERCKUT_WS_LAEMP_EVO_2022-05_NP	RG_ERCKUT	WS	No	12-May-22	10:00	G	2													
RG_RIVER_WS_LAEMP_EVO_2022-05_NP	RG_RIVER	WS	No	13-May-22	13:00	G	1													
RG_RIVER_WS_LAEMP_EVO_2022-05_NP	RG_RIVER	WS	No	13-May-22	13:00	G	2													
RG_ERCKMD_WS_LAEMP_EVO_2022-05_NP	RG_ERCKMD	WS	No	13-May-22	9:30	G	1													
RG_ERCKMD_WS_LAEMP_EVO_2022-05_NP	RG_ERCKMD	WS	No	13-May-22	9:30	G	2													
RG_ERCK_WS_LAEMP_EVO_2022-05_NP	RG_ERCK	WS	No	13-May-22	13:00	G	1													
RG_ERCK_WS_LAEMP_EVO_2022-05_NP	RG_ERCK	WS	No	13-May-22	13:00	G	2													

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS		RELINQUISHED BY/AFFILIATION		DATE/TIME	ACCEPTED BY/AFFILIATION		DATE/TIME
		Valleau		May 13 2022	NW BAL		5/13/22 7:00
SERVICE REQUEST (rush - subject to availability)							
Regular (default) X		Sampler's Name		Robin Valleau		Mobile #	416-970-7535
Priority (2-3 business days) - 50% surcharge		Sampler's Signature		RV		Date/Time	May 13 2022
Emergency (1 Business Day) - 100% surcharge							
For Emergency <1 Day, ASAP or Weekend - Contact ALS							

STRAIGHT BILL OF LADING
NOT NEGOTIABLE

RW HOT SHOT SERVICE INC.

250-425-7447
24 Hour Hot Shot Service

No. 92280

Sparwood, BC
Terrace, BC
Red Deer, AB

Vancouver, BC
Calgary, AB
Montreal, QC

Prince George, BC
Edmonton, AB
Spokane, WA

Elkford, BC
Ft. McMurray, AB
Shelby, MT

Tumbler Ridge, BC
Hinton, AB
Gillette, WY

INVOICE TO		DATE	
BILL OF LADING #		PURCHASE ORDER NUMBER	
SHIPPER (FROM)		CONSIGNEE (TO)	
STREET		STREET	
CITY/PROVINCE		POSTAL CODE	CITY/PROVINCE
SPECIAL INSTRUCTIONS		FREIGHT CHARGES SHIPPER TO CHECK <input type="checkbox"/> PREPAID <input type="checkbox"/> COLLECT <small>If not indicated, shipping will automatically move collect.</small> FEE _____ WAITING _____ XPU _____ CHARGES _____ FSC _____ US _____ SUB TOTAL _____ GST _____ TOTAL \$ _____ <small>IF AT OWNER'S RISK, WRITE ORD HERE</small>	
PACKAGES	DESCRIPTION OF ARTICLE AND SPECIAL MARKS	WEIGHT (Subject to Correction)	
		52 lbs	
UNIT #	DECLARED VALUATION: Maximum liability of carrier is \$2.00 per lb. (\$4.41 per kilogram) unless declared valuation states otherwise.		\$
DRIVER'S SIGNATURE - PICK UP BY	PICK UP TIME	DRIVER'S SIGNATURE - DELIVERY BY	FINISH TIME
<small>NOTICE OF CLAIM: (a) No carrier is liable for loss, damage or delay of any goods under the Bill of Lading unless notice, therefore setting out particulars of the origin, destination and date of shipment of the goods and the estimated amount claimed, is received by the carrier or the delivering carrier within sixty (60) days after the delivery of the goods, on the case of failure to make delivery within nine (9) months from the date of shipment, respect of such loss, damage or delay is given in writing to the originating carrier or the delivering carrier within nine (9) months from the date of shipment together with a copy of the paid freight bill. (b) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. RECEIVED as the date specified from the consignor mentioned herein, the property herein described, in apparent good order, except as noted (contents and condition of package unknown) marked, consigned and destined as indicated below, which the carrier agrees to carry and to deliver to the consignee at the said destination, subject to the rates and classification in effect on the date of shipment. It is mutually agreed, as to each carrier of all or any of the goods over all or any portion of the route to destination, and as to each party of any time interested in all or any of the goods, that every service to be performed hereunder shall be subject to the conditions standard Bill of Lading, in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. Printed or written, including conditions set aside by the standard Bill of Lading, in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. The Contract for the carriage of the goods listed in the Bill of Lading is governed by regulation in force in the jurisdiction at the time and place of shipment and is subject to the conditions set out in such conditions.</small>			
SHIPPER PRINT	CONSIGNEE PRINT	DATE	
SHIPPER SIGN	CONSIGNEE SIGN	TIME	
WHITE: Office YELLOW: Carrier PINK: Consignee GOLDENROAD: Shipper		GST # 854540398RT0001 NUMBER OF PIECES RECEIVED	

AMGOS PRINTING

Cooler ID: Cooler 4 CAC (Y/N) Temperature: 1.0 IR: 33

Coolant Type: Ice Blue Ice Ambient

Notes:

Sampling Locations:

T/D	SP	T/D	SP	T/D	SP	T/D	SP	T/D	SP
40ml glass	125 Plastic	40ml glass	60ml Plastic						

Container Types:

Opened By: WW Date: 5/19/22

Effective 7/29/20

COPY



2205249

Revision 004



June 21, 2022

Teck Resources Limited - Vancouver
 Mike Pope
 421 Pine Avenue
 Sparwood, B.C. CANADA V0B2G0
mike.pope@teck.com

Re: Regional Effects Program

Dear Mike Pope,

On June 2, 2022, Brooks Applied Labs (BAL) received eight (8) aqueous samples. The samples were logged-in for total recoverable selenium [Se], dissolved Se [Se], and Se speciation analyses, according to the chain-of-custody (COC) form.

The **Date/Time Collected** value listed on the chain-of-custody (COC) form did not match the corresponding **Date/Time Collected** values listed on container labels for 2206045-05 and 2206045-06. The discrepancies are described in the table below.

Date/Time Collected Discrepancies

Laboratory ID	Sample ID	Date/Time Collected (on COC form)	Date/Time Collected (on container label)
2206045-05	RG_ERCKDT_WS_LAEMP_EVO_2022-05-20_NP_NAL	05/19/2022 08:30	05/19/2022 08:45
2206045-06	RG_ERCKDT_WS_LAEMP_EVO_2022-05-20_NP_NAL	05/19/2022 08:30	05/19/2022 08:45

2206045-05 and 2206045-06 were logged in using the **Date/Time Collected** value listed on the COC form (*column 3 in the table above*).

The sample fractions for total recoverable Se and dissolved Se were not preserved in the field. The samples were preserved (pH < 2) upon receipt at BAL. All sample fractions for total recoverable Se and dissolved Se were preserved within the (14 calendar day) preservation holding time.

The sample fractions logged in for Se speciation and dissolved Se had been field-filtered prior to receipt at BAL. All samples were stored according to BAL SOPs.

Total Recoverable Se and Dissolved Se

Each aqueous sample fraction for dissolved Se was digested in a closed vessel (bomb) with nitric and hydrochloric acids. The resulting digests were analyzed for Se content via inductively coupled plasma triple quadrupole mass spectrometry (ICP-QQQ-MS). The ICP-QQQ-MS instrumentation uses advanced interference removal techniques to ensure accuracy of the sample results. For more information, please visit the *Interference Reduction Technology* section on our website, brooksapplied.com.

Selenium Speciation

Each aqueous sample was analyzed for selenium speciation using ion chromatography inductively coupled plasma collision reaction cell mass spectrometry (IC-ICP-CRC-MS). Selenium species are chromatographically separated on an ion exchange column and then quantified using inductively coupled plasma collision reaction cell mass spectrometry (ICP-CRC-MS); for more information on this determinative technique, please visit the *Interference Reduction Technology* section on our website. The chromatographic method applied for the analyses provides greater retention of methylseleninic acid and selenomethionine, allowing for more definitive quantitation of these species.

In accordance with the quotation issued for this project, selenium speciation was defined as dissolved selenite [Se(IV)], selenate [Se(VI)], selenocyanate [SeCN], methylseleninic acid [MeSe(IV)], methaneselenonic acid [MeSe(VI)], selenomethionine [SeMet], selenosulfate [SeSO₃], and dimethylselenoxide [DMSeO]. Unknown Se species was defined as the total concentration of all unknown Se species observed during the analysis. This item is identified on the report as [Unk Se Sp].

DMSeO elutes early in the chromatographic run due to the nature of the molecule and the applied chromatographic separation method. Since this species elutes near the dead volume, additional selenium species may coelute. Alternate methods can be applied, upon client request, to increase the separation of DMSeO from potentially co-eluting selenium species.

Chromatographic interference, as indicated by an elevated baseline, or co-eluting peak, was observed for selenosulfate in sample 2206045-04. Due to potential bias, the affected result has been qualified as estimated (**J-1**). Upon client request, Brooks Applied Labs can apply a higher dilution to this sample to potentially mitigate the chromatographic interferences, but a higher dilution would elevate the detection limit for SeMet above the client's requested limit of 0.010µg/L.

Poor mass balance was observed in *RG_ERCKUT_WS_LAEMP_EVO_2022-05-20_NP* when the Se speciation results (2206045-01) were compared to corresponding dissolved Se result (2206045-02). Container labels were checked and there was no indication of samples mis-labeled. Re-analyses confirmed the original results for 2206045-01. Consequently, no additional corrective actions are necessary. Results for these samples are reported from initial injections, and the reported results are deemed representative of the submitted containers.

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

In instances where a matrix spike/matrix spike duplicate (MS/MSD) set was spiked at a level less than the native sample concentration, the recoveries and the relative percent difference (RPD) are not considered valid indicators of data quality. In such instances, the recoveries of the laboratory fortified blanks (BS) and/or standard reference materials (SRM) demonstrate the accuracy of the applied methods. When the spiking level was less than 25% of the native sample concentration, the spike recovery was not reported (**NR**) and the relative percent difference (RPD) of the MS/MSD set was not calculated (**N/C**).

In cases when either the native sample concentration was non-detectable (reported as less than or equal to the MDL) and/or the corresponding DUP result was also non-detectable, the RPD between the two values was not calculated (**N/C**).

Except for concentration qualifiers and the item noted above, all data were reported without qualification. All associated quality control sample results met the acceptance criteria.

BAL, an accredited laboratory, certifies that the reported results of all analyses for which BAL is NELAP accredited meet all NELAP requirements. For more information, please see the *Report Information* page.

Please feel free to contact us if you have any questions regarding this report.

Sincerely,

A handwritten signature in black ink, appearing to read 'Jeremy Maute', with a stylized flourish at the end.

Jeremy Maute
Senior Project Manager
Jeremy@brooksapplied.com



Report Information

Laboratory Accreditation

BAL is accredited by the *National Environmental Laboratory Accreditation Program* (NELAP) through the State of Florida Department of Health, Bureau of Laboratories (E87982) and is certified to perform many environmental analyses. BAL is also certified by many other states to perform environmental analyses. For a current list of our accreditations/certifications, please visit our website at <http://www.brooksapplied.com/resources/certificates-permits/> or review Tables 1 and 2 in our Accreditation Information. Results reported relate only to the samples listed in the report.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

AR	as received	MS	matrix spike
BAL	Brooks Applied Labs	MSD	matrix spike duplicate
BLK	method blank	ND	non-detect
BS	blank spike	NR	non-reportable
CAL	calibration standard	N/C	not calculated
CCB	continuing calibration blank	PS	post preparation spike
CCV	continuing calibration verification	REC	percent recovery
COC	chain of custody record	RPD	relative percent difference
D	dissolved fraction	SCV	secondary calibration verification
DUP	duplicate	SOP	standard operating procedure
IBL	instrument blank	SRM	reference material
ICV	initial calibration verification	T	total fraction
MDL	method detection limit	TR	total recoverable fraction
MRL	method reporting limit		

Definition of Data Qualifiers

(Effective 3/23/2020)

E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Please see narrative for explanation.
J	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1	Estimated value. A full explanation is presented in the narrative.
M	Duplicate precision (RPD) was not within acceptance criteria. Please see narrative for explanation.
N	Spike recovery was not within acceptance criteria. Please see narrative for explanation.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.
Z	Holding time and/or preservation requirements not established for this method; however, BAL recommendations for holding time were not followed. Please see narrative for explanation.

These qualifiers are based on those previously utilized by Brooks Applied Labs, those found in the EPA SOW ILM03.0, Exhibit B, Section III, pg. B-18, and the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review; USEPA; January 2010. These supersede all previous qualifiers ever employed by BAL.



Accreditation Information

Table 1. Accredited method/matrix/analytes for TNI
Issued by: State of Florida Dept. of Health (The NELAC Institute 2016 Standard)
Issued on: July 1, 2021; Valid to: June 30, 2022
Certificate Number: E87982-37

Method	Matrix	TNI Accredited Analyte(s)
EPA 1638	Non-Potable Waters	Ag, Cd, Cu, Ni, Pb, Sb, Se, Tl, Zn
EPA 200.8	Non-Potable Waters	Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Sb, Se, Tl, U, V, Zn
EPA 6020	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Tl, U, V, Zn
	Solids/Chemicals & Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Tl, V, Zn
BAL-5000	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Tl, U, V, Zn, Hardness
	Solids/Chemicals	Ag, As, B, Be, Cd, Co, Cr, Cu, Pb, Mo, Ni, Sb, Se, Sn, Sr, Tl, V, Zn
	Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Tl, V, Zn
EPA 1640	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn
EPA 1631E	Non-Potable Waters, Solids/Chemicals & Biological	Total Mercury
EPA 1630	Non-Potable Waters	Methyl Mercury
BAL-3200	Solids/Chemicals & Biological	Methyl Mercury
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
BAL-4201	Non-Potable Waters	Se(IV), Se(VI)
BAL-4300	Non-Potable Waters Solid/Chemicals	Cr(VI)
SM2340B	Non-Potable Waters	Hardness



Accreditation Information

**Table 2. Accredited method/matrix/analytes for ISO (1),
 Non-Governmental TNI (2)
 Issued by: ANAB
 Issued on: September 21, 2021; Valid to: March 30, 2024**

Method	Matrix	ISO and Non-Gov. TNI Accredited Analyte(s)
EPA 1638 Mod EPA 200.8 Mod EPA 6020 Mod	Non-Potable Waters	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, U, V, Zn
BAL-5000	Solids/Chemicals & Biological	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, V, Zn Hg (Biological Only)
EPA 1640 Mod	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn Ag, As, Cr, Co, Se, Ti, V (ISO Only)
EPA 1631E Mod BAL-3100	Non-Potable Waters, Solids/Chemicals & Biological/Food	Total Mercury
EPA 1630 Mod BAL-3200	Non-Potable Waters, Solids/Chemicals Biological	Methyl Mercury
EPA 1632A Mod BAL-3300	Non-Potable Waters Biological/Food Solids/Chemicals	Inorganic Arsenic (ISO Only) Inorganic Arsenic (ISO Only)
AOAC 2015.01 Mod BAL-5000	Food	As, Cd, Hg, Pb
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
	Biological by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4101	Food by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4201	Non-Potable Waters	Se(IV), Se(VI), SeCN, SeMet
BAL-4300	Non-Potable Waters, Solid/Chemicals	Cr(VI)
SM 3500-Fe BAL-4500	Non-Potable Waters	Fe, Fe(II) (ISO Only)
SM2340B	Non-Potable Waters	Hardness
SM 2540G BAL-0501	Solids/Chemicals & Biological	% Dry Weight



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
RG_ERCKUT_WS_LAEMP_EVO_20 22-05-20_NP	2206045-01	WS	Sample	05/20/2022	06/02/2022
RG_ERCKUT_WS_LAEMP_EVO_20 22-05-20_NP_NAL	2206045-02	WS	Sample	05/20/2022	06/02/2022
RG_ERCKUT_WS_LAEMP_EVO_20 22-05-20_NP_NAL	2206045-03	WS	Sample	05/20/2022	06/02/2022
RG_ERCKDT_WS_LAEMP_EVO_20 22-05-20_NP	2206045-04	WS	Sample	05/19/2022	06/02/2022
RG_ERCKDT_WS_LAEMP_EVO_20 22-05-20_NP_NAL	2206045-05	WS	Sample	05/19/2022	06/02/2022
RG_ERCKDT_WS_LAEMP_EVO_20 22-05-20_NP_NAL	2206045-06	WS	Sample	05/19/2022	06/02/2022
RG_FBLANK_WS_LAEMP_EVO_20 22-05-20_NP	2206045-07	WS	Sample	05/20/2022	06/02/2022
RG_FBLANK_WS_LAEMP_EVO_20 22-05-20_NP_NAL	2206045-08	WS	Sample	05/20/2022	06/02/2022
RG_FBLANK_WS_LAEMP_EVO_20 22-05-20_NP_NAL	2206045-09	WS	Sample	05/20/2022	06/02/2022
RG_RIVER_WS_LAEMP_EVO_2022 -05-20_NP	2206045-10	WS	Sample	05/20/2022	06/02/2022
RG_RIVER_WS_LAEMP_EVO_2022 -05-20_NP_NAL	2206045-11	WS	Sample	05/20/2022	06/02/2022
RG_RIVER_WS_LAEMP_EVO_2022 -05-20_NP_NAL	2206045-12	WS	Sample	05/20/2022	06/02/2022



Batch Summary

Analyte	Lab Matrix	Method	Prepared	Analyzed	Batch	Sequence
DMS ₂ SeO	Water	SOP BAL-4201	06/02/2022	06/04/2022	B221211	S220599
MeSe(IV)	Water	SOP BAL-4201	06/02/2022	06/04/2022	B221211	S220599
MeSe(VI)	Water	SOP BAL-4201	06/02/2022	06/04/2022	B221211	S220599
Se	Water	EPA 1638 Mod	06/08/2022	06/09/2022	B221275	S220621
Se(IV)	Water	SOP BAL-4201	06/02/2022	06/04/2022	B221211	S220599
Se(VI)	Water	SOP BAL-4201	06/02/2022	06/04/2022	B221211	S220599
SeCN	Water	SOP BAL-4201	06/02/2022	06/04/2022	B221211	S220599
SeMet	Water	SOP BAL-4201	06/02/2022	06/04/2022	B221211	S220599
SeSO ₃	Water	SOP BAL-4201	06/02/2022	06/04/2022	B221211	S220599
Unk Se Sp	Water	SOP BAL-4201	06/02/2022	06/04/2022	B221211	S220599



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKUT_WS_LAEMP_EVO_2022-05-20_NP										
2206045-01	DMSeO	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221211	S220599
2206045-01	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221211	S220599
2206045-01	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221211	S220599
2206045-01	Se(IV)	WS	D	0.014	J	0.010	0.075	µg/L	B221211	S220599
2206045-01	Se(VI)	WS	D	81.4		0.010	0.055	µg/L	B221211	S220599
2206045-01	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221211	S220599
2206045-01	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221211	S220599
2206045-01	SeSO3	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221211	S220599
2206045-01	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221211	S220599
RG_ERCKUT_WS_LAEMP_EVO_2022-05-20_NP_NAL										
2206045-02	Se	WS	D	149		0.165	0.528	µg/L	B221275	S220621
RG_ERCKUT_WS_LAEMP_EVO_2022-05-20_NP_NAL										
2206045-03	Se	WS	TR	154		0.165	0.528	µg/L	B221275	S220621
RG_ERCKDT_WS_LAEMP_EVO_2022-05-20_NP										
2206045-04	DMSeO	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221211	S220599
2206045-04	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221211	S220599
2206045-04	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221211	S220599
2206045-04	Se(IV)	WS	D	0.028	J	0.010	0.075	µg/L	B221211	S220599
2206045-04	Se(VI)	WS	D	137		0.010	0.055	µg/L	B221211	S220599
2206045-04	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221211	S220599
2206045-04	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221211	S220599
2206045-04	SeSO3	WS	D	≤ 0.010	J-1 U	0.010	0.055	µg/L	B221211	S220599
2206045-04	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221211	S220599
RG_ERCKDT_WS_LAEMP_EVO_2022-05-20_NP_NAL										
2206045-05	Se	WS	D	151		0.165	0.528	µg/L	B221275	S220621
RG_ERCKDT_WS_LAEMP_EVO_2022-05-20_NP_NAL										
2206045-06	Se	WS	TR	157		0.165	0.528	µg/L	B221275	S220621



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_FBLANK_WS_LAEMP_EVO_2022-05-20_NP										
2206045-07	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221211	S220599
2206045-07	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221211	S220599
2206045-07	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221211	S220599
2206045-07	Se(IV)	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221211	S220599
2206045-07	Se(VI)	WS	D	0.028	J	0.010	0.055	µg/L	B221211	S220599
2206045-07	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221211	S220599
2206045-07	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221211	S220599
2206045-07	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221211	S220599
2206045-07	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221211	S220599
RG_FBLANK_WS_LAEMP_EVO_2022-05-20_NP_NAL										
2206045-08	Se	WS	D	≤ 0.165	U	0.165	0.528	µg/L	B221275	S220621
RG_FBLANK_WS_LAEMP_EVO_2022-05-20_NP_NAL										
2206045-09	Se	WS	TR	≤ 0.165	U	0.165	0.528	µg/L	B221275	S220621
RG_RIVER_WS_LAEMP_EVO_2022-05-20_NP										
2206045-10	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221211	S220599
2206045-10	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221211	S220599
2206045-10	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221211	S220599
2206045-10	Se(IV)	WS	D	0.018	J	0.010	0.075	µg/L	B221211	S220599
2206045-10	Se(VI)	WS	D	144		0.010	0.055	µg/L	B221211	S220599
2206045-10	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221211	S220599
2206045-10	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221211	S220599
2206045-10	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221211	S220599
2206045-10	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221211	S220599
RG_RIVER_WS_LAEMP_EVO_2022-05-20_NP_NAL										
2206045-11	Se	WS	D	156		0.165	0.528	µg/L	B221275	S220621
RG_RIVER_WS_LAEMP_EVO_2022-05-20_NP_NAL										
2206045-12	Se	WS	TR	158		0.165	0.528	µg/L	B221275	S220621



Accuracy & Precision Summary

Batch: B221211
Lab Matrix: Water
Method: SOP BAL-4201

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221211-BS1	Blank Spike, (2124033)						
	MeSe(IV)		5.095	5.331	µg/L	105% 75-125	
	Se(IV)		5.000	4.947	µg/L	99% 75-125	
	Se(VI)		5.000	4.965	µg/L	99% 75-125	
	SeCN		5.015	4.712	µg/L	94% 75-125	
	SeMet		4.932	4.892	µg/L	99% 75-125	
B221211-DUP6	Duplicate, (2206045-10)						
	DMS ₂ SeO	ND		ND	µg/L		N/C 25
	MeSe(IV)	ND		ND	µg/L		N/C 25
	MeSe(VI)	ND		ND	µg/L		N/C 25
	Se(IV)	0.018		0.017	µg/L		5% 25
	Se(VI)	144.2		144.9	µg/L		0.5% 25
	SeCN	ND		ND	µg/L		N/C 25
	SeMet	ND		ND	µg/L		N/C 25
	SeSO ₃	ND		ND	µg/L		N/C 25
	Unk Se Sp	ND		ND	µg/L		N/C 25
B221211-MS6	Matrix Spike, (2206045-10)						
	Se(IV)	0.018	4.900	4.255	µg/L	86% 75-125	
	Se(VI)	144.2	5.100	145.6	µg/L	NR 75-125	
	SeCN	ND	1.962	1.618	µg/L	82% 75-125	
	SeMet	ND	1.977	1.684	µg/L	85% 75-125	
B221211-MSD6	Matrix Spike Duplicate, (2206045-10)						
	Se(IV)	0.018	4.900	4.441	µg/L	90% 75-125	4% 25
	Se(VI)	144.2	5.100	150.2	µg/L	NR 75-125	N/C 25
	SeCN	ND	1.962	1.689	µg/L	86% 75-125	4% 25
	SeMet	ND	1.977	1.741	µg/L	88% 75-125	3% 25



Accuracy & Precision Summary

Batch: B221275
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221275-BS1	Blank Spike, (2128022) Se		200.0	199.7	µg/L	100% 75-125	
B221275-BS2	Blank Spike, (2128022) Se		200.0	201.0	µg/L	101% 75-125	
B221275-SRM1	Reference Material (2145011, TMDA 51.5 Reference Standard - Bottle 10 - SRM) Se		14.30	13.93	µg/L	97% 75-125	
B221275-SRM2	Reference Material (2145011, TMDA 51.5 Reference Standard - Bottle 10 - SRM) Se		14.30	14.63	µg/L	102% 75-125	
B221275-DUP1	Duplicate, (2206043-13) Se	1.170		1.249	µg/L		7% 20
B221275-MS1	Matrix Spike, (2206043-13) Se	1.170	220.0	221.4	µg/L	100% 75-125	
B221275-MSD1	Matrix Spike Duplicate, (2206043-13) Se	1.170	220.0	217.4	µg/L	98% 75-125	2% 20



Method Blanks & Reporting Limits

Batch: B221211
Matrix: Water
Method: SOP BAL-4201
Analyte: DMSeO

Sample	Result	Units	
B221211-BLK1	0.00	µg/L	
B221211-BLK2	0.00	µg/L	
B221211-BLK3	0.00	µg/L	
B221211-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005

Analyte: MeSe(IV)

Sample	Result	Units	
B221211-BLK1	0.00	µg/L	
B221211-BLK2	0.00	µg/L	
B221211-BLK3	0.00	µg/L	
B221211-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005

Analyte: MeSe(VI)

Sample	Result	Units	
B221211-BLK1	0.00	µg/L	
B221211-BLK2	0.00	µg/L	
B221211-BLK3	0.00	µg/L	
B221211-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005



Method Blanks & Reporting Limits

Analyte: Se(IV)

Sample	Result	Units	
B221211-BLK1	0.00	µg/L	
B221211-BLK2	0.00	µg/L	
B221211-BLK3	0.00	µg/L	
B221211-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.015		MRL: 0.015

Analyte: Se(VI)

Sample	Result	Units	
B221211-BLK1	0.00	µg/L	
B221211-BLK2	0.00	µg/L	
B221211-BLK3	0.00	µg/L	
B221211-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.011		MRL: 0.011

Analyte: SeCN

Sample	Result	Units	
B221211-BLK1	0.00	µg/L	
B221211-BLK2	0.00	µg/L	
B221211-BLK3	0.00	µg/L	
B221211-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.010		MRL: 0.010

Analyte: SeMet

Sample	Result	Units	
B221211-BLK1	0.00	µg/L	
B221211-BLK2	0.00	µg/L	
B221211-BLK3	0.00	µg/L	
B221211-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.005		MRL: 0.005



Method Blanks & Reporting Limits

Analyte: SeSO3

Sample	Result	Units	
B221211-BLK1	0.00	µg/L	
B221211-BLK2	0.00	µg/L	
B221211-BLK3	0.00	µg/L	
B221211-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.011		MRL: 0.011

Analyte: Unk Se Sp

Sample	Result	Units	
B221211-BLK1	0.00	µg/L	
B221211-BLK2	0.00	µg/L	
B221211-BLK3	0.00	µg/L	
B221211-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.015		MRL: 0.015



Method Blanks & Reporting Limits

Batch: B221275
Matrix: Water
Method: EPA 1638 Mod
Analyte: Se

Sample	Result	Units
B221275-BLK1	0.095	µg/L
B221275-BLK2	0.080	µg/L
B221275-BLK3	0.051	µg/L
B221275-BLK4	0.060	µg/L

Average: 0.072
Limit: 0.480

MDL: 0.150
MRL: 0.480



Sample Containers

Lab ID: 2206045-01 **Report Matrix:** WS **Collected:** 05/20/2022
Sample: RG_ERCKUT_WS_LAEMP_EVO_2022-05-20_NP **Sample Type:** Sample + Sum **Received:** 06/02/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 5 - 2206045
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 5 - 2206045
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 5 - 2206045

Lab ID: 2206045-02 **Report Matrix:** WS **Collected:** 05/20/2022
Sample: RG_ERCKUT_WS_LAEMP_EVO_2022-05-20_NP_NAL **Sample Type:** Sample + Sum **Received:** 06/02/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 5 - 2206045

Lab ID: 2206045-03 **Report Matrix:** WS **Collected:** 05/20/2022
Sample: RG_ERCKUT_WS_LAEMP_EVO_2022-05-20_NP_NAL **Sample Type:** Sample + Sum **Received:** 06/02/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 5 - 2206045

Lab ID: 2206045-04 **Report Matrix:** WS **Collected:** 05/19/2022
Sample: RG_ERCKDT_WS_LAEMP_EVO_2022-05-20_NP **Sample Type:** Sample + Sum **Received:** 06/02/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 5 - 2206045
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 5 - 2206045
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 5 - 2206045



Sample Containers

Lab ID: 2206045-05			Report Matrix: WS			Collected: 05/19/2022	
Sample: RG_ERCKDT_WS_LAEMP_EVO_2022-05-20_NP_NAL			Sample Type: Sample + Sum			Received: 06/02/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 5 - 2206045
Lab ID: 2206045-06			Report Matrix: WS			Collected: 05/19/2022	
Sample: RG_ERCKDT_WS_LAEMP_EVO_2022-05-20_NP_NAL			Sample Type: Sample + Sum			Received: 06/02/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 5 - 2206045
Lab ID: 2206045-07			Report Matrix: WS			Collected: 05/20/2022	
Sample: RG_FBLANK_WS_LAEMP_EVO_2022-05-20_NP_NAL			Sample Type: Sample + Sum			Received: 06/02/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 5 - 2206045
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 5 - 2206045
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 5 - 2206045
Lab ID: 2206045-08			Report Matrix: WS			Collected: 05/20/2022	
Sample: RG_FBLANK_WS_LAEMP_EVO_2022-05-20_NP_NAL			Sample Type: Sample + Sum			Received: 06/02/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 5 - 2206045



Sample Containers

Lab ID: 2206045-09

Sample:

RG_FBLANK_WS_LAEMP_EVO_2022-05-20_NP_NAL

Report Matrix: WS

Sample Type: Sample + Sum

Collected: 05/20/2022

Received: 06/02/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 5 - 2206045

Lab ID: 2206045-10

Sample:

RG_RIVER_WS_LAEMP_EVO_2022-05-20_NP

Report Matrix: WS

Sample Type: Sample + Sum

Collected: 05/20/2022

Received: 06/02/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 5 - 2206045
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 5 - 2206045
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 5 - 2206045

Lab ID: 2206045-11

Sample:

RG_RIVER_WS_LAEMP_EVO_2022-05-20_NP_NAL

Report Matrix: WS

Sample Type: Sample + Sum

Collected: 05/20/2022

Received: 06/02/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 5 - 2206045

Lab ID: 2206045-12

Sample:

RG_RIVER_WS_LAEMP_EVO_2022-05-20_NP_NAL

Report Matrix: WS

Sample Type: Sample + Sum

Collected: 05/20/2022

Received: 06/02/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 5 - 2206045



Shipping Containers

Cooler 5 - 2206045

Received: June 2, 2022 7:00
Tracking No: PAPS#RWHV92287 via Courier
Coolant Type: Ice
Temperature: 0.6 °C

Description: Large Cooler
Damaged in transit? No
Returned to client? No
Comments: IR#33

Custody seals present? No
Custody seals intact? No
COC present? Yes

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO					
Facility Name / Job#	Regional Effects Program			Lab Name	Brooks Applied Labs			Report Format / Distribution		Excel	PDF	EDD	
Project Manager	Mike Pope			Lab Contact	Ben Wozniak			Email 1:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Email	mike.pope@teck.com			Email	Ben@brooksapplied.com			Email 2:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Address	421 Pine Ave			Address	18804 North Creek Parkway Suite 100			Email 3:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
City	Sparwood	Province	BC	City	Bothell	Province	WA	Email 4:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Postal Code	VOB 2G0	Country	Canada	Postal Code	98011	Country	United States	Email 5:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Phone Number	250-425-8202			Phone Number	(206) 753-6158			PO number	748510				
SAMPLE DETAILS								ANALYSIS REQUESTED					
Sample ID	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com p	# Of Cont.	Brooks_Se_Speciation	Brooks_Se_D	Brooks_Se_T			
RG_ERCKUT_WS_LAEMP_EVO_2022-05-20_NP	RG_ERCKUT	WS	No	20-May-22	10:30	G	1	1					
RG_ERCKUT_WS_LAEMP_EVO_2022-05-20_NP_NAL	RG_ERCKUT	WS	No	20-May-22	10:30	G	2		1	1			
RG_ERCKDT_WS_LAEMP_EVO_2022-05-20_NP	RG_ERCKDT	WS	No	19-May-22	8:30	G	1	1					
RG_ERCKDT_WS_LAEMP_EVO_2022-05-20_NP_NAL	RG_ERCKDT	WS	No	19-May-22	8:30	G	2		1	1			
RG_FBLANK_WS_LAEMP_EVO_2022-05-20_NP	RG_TRIP	WS	No	5/20/2022	10:30	G	1	1					
RG_FBLANK_WS_LAEMP_EVO_2022-05-20_NP_NAL	RG_TRIP	WS	No	5/20/2022	10:30	G	2		1	1			
RG_RIVER_WS_LAEMP_EVO_2022-05-20_NP	RG_RIVER	WS	No	5/20/2022	10:30	G	1	1					
RG_RIVER_WS_LAEMP_EVO_2022-05-20_NP_NAL	RG_RIVER	WS	No	5/20/2022	10:30	G	2		1	1			
ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS			RELINQUISHED BY/AFFILIATION			DATE/TIME	ACCEPTED BY/AFFILIATION		DATE/TIME				
			Alex McClymont			May 24, 2022			6/2/22 7:00				
SERVICE REQUEST (rush - subject to availability)			SAMPLER'S NAME			SAMPLER'S SIGNATURE		MOBILE #	DATE/TIME				
Regular (default) <input checked="" type="checkbox"/>			Alex McClymont					780-293-6750	May 24, 2022				
Priority (2-3 business days) - 50% surcharge													
Emergency (1 Business Day) - 100% surcharge													
For Emergency <1 Day, ASAP or Weekend - Contact ALS													

STRAIGHT BILL OF LADING
NOT NEGOTIABLE

RW HOT SHOT SERVICE INC.

250-425-7447
24 Hour Hot Shot Service

No. 92289

Sparwood, BC
Terrace, BC
Red Deer, AB

Vancouver, BC
Calgary, AB
Montreal, QC

Prince George, BC
Edmonton, AB
Spokane, WA

Elkford, BC
Ft. McMurray, AB
Shelby, MT

Tumbler Ridge, BC
Hinton, AB
Gillette, WY

INVOICE TO		DATE	
BILL OF LADING #		PURCHASE ORDER NUMBER	
SHIPPER (FROM)		CONSIGNEE (TO)	
STREET		STREET	
CITY/PROVINCE	POSTAL CODE	CITY/PROVINCE	POSTAL CODE
SPECIAL INSTRUCTIONS		FREIGHT CHARGES SHIPPER TO CHECK	
PACKAGES	DESCRIPTION OF ARTICLES AND SPECIAL MARKS	WEIGHT (Subject to Correction)	<input type="checkbox"/> PREPAID <input type="checkbox"/> COLLECT If not indicated, shipping will automatically move collect.
PAPS# RWHV92287			FEE
			WAITING
			XPU
			CHARGES
			FSC
UNIT #	DECLARED VALUATION: Maximum liability of carrier is \$2.00 per lb. (\$4.41 per kilogram) unless declared valuation states otherwise.		US
DRIVER'S SIGNATURE - PICK UP BY	PICK UP TIME	DRIVER'S SIGNATURE - DELIVERY BY	FINISH TIME
NOTICE OF CLAIM: (a) No carrier is liable for loss, damage or delay of any goods under the Bill of Lading unless noted therefor setting out particulars of the origin, destination and date of shipment of the goods and the estimated amount claimed respect of such loss, damage or delay is given in writing to the originating carrier or the delivering carrier within sixty (60) days after the delivery of the goods, on the case of failure to make delivery within nine (9) months from the date of shipment. (b) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. (c) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. RECEIVED at the port of origin on the date specified from the consignor mentioned herein, the property herein described, in apparent good order, except as noted (contents and condition of contents of package unknown) marked, consigned and destined as indicated below, which the carrier agrees to carry and to deliver to the consignee at the said destination, subject to the rates and classification in effect on the date of shipment. It is mutually agreed, as to each carrier of all or any of the goods over all or any portion of the route to destination, and as to each party or any line interested in all or any of the goods, that every service to be performed hereunder shall be subject to the conditions standard Bill of Lading, in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. Printed or written, including conditions set aside by the standard Bill of Lading, in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. The Contract for the carriage of the goods listed in the Bill of Lading is governed by regulation in force in the jurisdiction at the time of shipment and is subject to the conditions set out in such conditions.		TOTAL \$	
SHIPPER PRINT	CONSIGNEE PRINT	DATE	
SHIPPER SIGN	CONSIGNEE SIGN	TIME	
WHITE: Office YELLOW: Carrier PINK: Consignee GOLDENROAD: Shipper		GST # 864540398RT0001 NUMBER OF PIECES RECEIVED ▲	

Cooler ID: Cooler 5

CQC (Y/N)

Temperature: 0.6

IR: 33

Coolant Type: Ice Blue Ice Ambient

Notes:

Sampling Locations:

Sample Types:

Container Types:

Opened By: KMN 6/2/22

Date:

COPY

Effective 7/29/20

EE KMN 6/2/22

<u>WL</u>	<u>LCO</u>	<u>RG</u>	<u>EV</u>	<u>6H</u>
<u>T/D</u>	<u>SP</u>	<u>T/D</u>	<u>SP</u>	<u>T/D</u>
<u>40 mL glass</u>	<u>125 mL Plastic</u>	<u>40 mL glass</u>	<u>40 mL glass</u>	<u>40 mL glass</u>
		<u>60 mL HDPE</u>	<u>40 mL glass</u>	
		<u>40 mL glass</u>	<u>15 mL falcon</u>	
		<u>T/D</u>		
		<u>40 mL glass</u>		



RW HOT SHOT SERVICE INC.

250-425-7447
24 Hour Hot Shot Service

No. 92289

STRAIGHT BILL OF LADING
NOT NEGOTIABLE

Sparwood, BC
Terrace, BC
Red Deer, AB

Vancouver, BC
Calgary, AB
Montreal, QC

Prince George, BC
Edmonton, AB
Spokane, WA

Elkford, BC
Ft. McMurray, AB
Shelby, MT

Tumbler Ridge, BC
Hinton, AB
Gillette, WY

INVOICE TO		DATE	
BILL OF LADING #		PURCHASE ORDER NUMBER	
SHIPPER (FROM)		CONSIGNEE (TO)	
STREET		STREET	
CITY/PROVINCE		POSTAL CODE	CITY/PROVINCE
SPECIAL INSTRUCTIONS		FREIGHT CHARGES SHIPPER TO CHECK	
PACKAGES	DESCRIPTION OF ARTICLES AND SPECIAL MARKS	WEIGHT (Subject to Correction)	<input type="checkbox"/> PREPAID <input type="checkbox"/> COLLECT If not indicated, shipping will automatically move collect.
<p style="font-size: 2em; font-weight: bold; text-align: center;">PAPS # RWHV92287</p>			FEE
			WAITING
			XPU
			CHARGES
			FSC
UNIT #	DECLARED VALUATION: Maximum liability of carrier is \$2.00 per lb. (\$4.41 per kilogram) unless declared valuation states otherwise.		US
DRIVER'S SIGNATURE - PICK UP BY	PICK UP TIME	DRIVER'S SIGNATURE - DELIVERY BY	FINISH TIME
<small>NOTICE OF CLAIM: (a) No carrier is liable for loss, damage or delay of any goods under the Bill of Lading unless same is set out in writing... (b) The final statement of the claim must be filed within nine (9) months from the date of shipment... RECEIVED at the port of origin on the date specified from the consignor mentioned herein, the property herein described, in apparent good order, except as noted (contents and condition of contents of package unknown) marked, consigned and destined as indicated below, which the carrier agrees to carry and to deliver to the consignee at the said destination, subject to the rates and classification in effect on the date of shipment. It is mutually agreed, as to each carrier of all or any of the goods over all or any portion of the route to destination, and as to each party of any time interested in all or any of the goods, that every service to be performed hereunder shall be subject to all the conditions standard Bill of Lading, in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. Printed or written, including conditions set aside by the standard Bill of Lading, in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. The Contract for the carriage of the goods listed in the Bill of Lading is governed by regulation in force in the jurisdiction at the time and place of shipment and is subject to the conditions set out in such conditions.</small>			TOTAL \$
SHIPPER PRINT	CONSIGNEE PRINT	DATE	
SHIPPER SIGN	CONSIGNEE SIGN	TIME	
WHITE: Office	YELLOW: Carrier	PINK: Consignee	GOLDENROAD: Shipper
GST # 864540398RT0001			NUMBER OF PIECES RECEIVED

Cooler ID: cooler 6 CQC(Y/N) Temperature: 1.5 IR: 33
 Coolant Type: Ice Blue Ice Ambient
 Notes:
 Sampling Locations: LC R5 WOLNIVE EV GM WL
 Sample Types: T/D SP T/D SP T/D SP T/D SP
 Container Types: 125 ml plastic 125 ml plastic 60 ml dom plastic 40 ml glass 60 ml plastic 40 ml plastic Falcon tube 125 ml plastic
 Opened By: WU Date: 4/12/22

COPY



June 23, 2022

Teck Resources Limited - Vancouver
 Mike Pope
 421 Pine Avenue
 Sparwood, B.C. CANADA V0B2G0
mike.pope@teck.com

Re: Regional Effects Program

Dear Mike Pope,

On June 2, 2022, Brooks Applied Labs (BAL) received four (4) aqueous samples. The samples were logged-in for volatile selenium (Se) speciation analyses, in accordance with the chain-of-custody (COC) form.

The **Date/Time Collected** value listed on the chain-of-custody (COC) form did not match the corresponding **Date/Time Collected** value listed on container label for 2206048-01. The discrepancy is described in the table below.

Date/Time Collected Discrepancies

Laboratory ID	Sample ID	Date/Time Collected (on COC form)	Date/Time Collected (on container label)
2206048-01	RG_ERCKDT_WS_LAEMP_EVO_2022-05-19_NP	05/19/2022 08:30	05/19/2022 08:40

2206048-01 was logged in and reported using the **Date/Time Collected** value listed on the COC form (*column 3 in the table above*).

Each sample requesting volatile Se speciation had been field-filtered into bottles containing isopropanol preservative (provided by BAL). All sample fractions were stored according to BAL SOPs and EPA methodology.

Volatile Selenium Speciation

Each aqueous sample was analyzed for volatile selenium speciation using high performance liquid chromatography inductively coupled plasma collision reaction cell mass spectrometry (HPLC-ICP-CRC-MS). Volatile selenium species are chromatographically separated on a reversed phase column and then quantified using inductively coupled plasma collision reaction cell mass spectrometry (ICP-CRC-MS); for more information on this determinative technique, please visit the *Interference Reduction Technology* section on our website.

In accordance with the quotation issued for this project, volatile selenium species were defined as dissolved dimethylselenide [DMeSe] and dimethyldiselenide [DMDS₂].

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

In instances where a matrix spike/matrix spike duplicate (MS/MSD) set was spiked at a level less than the native sample concentration, the recoveries and the relative percent difference (RPD) values are not considered valid indicators of data quality. In such instances, the recoveries of the laboratory fortified blank (BS) demonstrates the accuracy of the applied methods. When the spiking level was less than 25% of the native sample concentration, the spike recovery was not reported (**NR**) and the relative percent difference (RPD) of the MS/MSD set was not calculated (**N/C**).

Except for concentration qualifiers, all data were reported without qualification. All associated quality control sample results met the acceptance criteria.

BAL, an accredited laboratory, certifies that the reported results of all analyses for which BAL is NELAP accredited meet all NELAP requirements. For more information, please see the *Report Information* page.

Please feel free to contact us if you have any questions regarding this report.

Sincerely,



Jeremy Maute

Senior Project Manager

Jeremy@brooksapplied.com



Report Information

Laboratory Accreditation

BAL is accredited by the *National Environmental Laboratory Accreditation Program* (NELAP) through the State of Florida Department of Health, Bureau of Laboratories (E87982) and is certified to perform many environmental analyses. BAL is also certified by many other states to perform environmental analyses. For a current list of our accreditations/certifications, please visit our website at <http://www.brooksapplied.com/resources/certificates-permits/> or review Tables 1 and 2 in our Accreditation Information. Results reported relate only to the samples listed in the report.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

AR	as received	MS	matrix spike
BAL	Brooks Applied Labs	MSD	matrix spike duplicate
BLK	method blank	ND	non-detect
BS	blank spike	NR	non-reportable
CAL	calibration standard	N/C	not calculated
CCB	continuing calibration blank	PS	post preparation spike
CCV	continuing calibration verification	REC	percent recovery
COC	chain of custody record	RPD	relative percent difference
D	dissolved fraction	SCV	secondary calibration verification
DUP	duplicate	SOP	standard operating procedure
IBL	instrument blank	SRM	reference material
ICV	initial calibration verification	T	total fraction
MDL	method detection limit	TR	total recoverable fraction
MRL	method reporting limit		

Definition of Data Qualifiers

(Effective 3/23/2020)

E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Please see narrative for explanation.
J	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1	Estimated value. A full explanation is presented in the narrative.
M	Duplicate precision (RPD) was not within acceptance criteria. Please see narrative for explanation.
N	Spike recovery was not within acceptance criteria. Please see narrative for explanation.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.
Z	Holding time and/or preservation requirements not established for this method; however, BAL recommendations for holding time were not followed. Please see narrative for explanation.

These qualifiers are based on those previously utilized by Brooks Applied Labs, those found in the EPA SOW ILM03.0, Exhibit B, Section III, pg. B-18, and the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review; USEPA; January 2010. These supersede all previous qualifiers ever employed by BAL.



Accreditation Information

Table 1. Accredited method/matrix/analytes for TNI
Issued by: State of Florida Dept. of Health (The NELAC Institute 2016 Standard)
Issued on: July 1, 2021; Valid to: June 30, 2022
Certificate Number: E87982-37

Method	Matrix	TNI Accredited Analyte(s)
EPA 1638	Non-Potable Waters	Ag, Cd, Cu, Ni, Pb, Sb, Se, Tl, Zn
EPA 200.8	Non-Potable Waters	Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Sb, Se, Tl, U, V, Zn
EPA 6020	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Tl, U, V, Zn
	Solids/Chemicals & Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Tl, V, Zn
BAL-5000	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Tl, U, V, Zn, Hardness
	Solids/Chemicals	Ag, As, B, Be, Cd, Co, Cr, Cu, Pb, Mo, Ni, Sb, Se, Sn, Sr, Tl, V, Zn
	Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Tl, V, Zn
EPA 1640	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn
EPA 1631E	Non-Potable Waters, Solids/Chemicals & Biological	Total Mercury
EPA 1630	Non-Potable Waters	Methyl Mercury
BAL-3200	Solids/Chemicals & Biological	Methyl Mercury
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
BAL-4201	Non-Potable Waters	Se(IV), Se(VI)
BAL-4300	Non-Potable Waters Solid/Chemicals	Cr(VI)
SM2340B	Non-Potable Waters	Hardness



Accreditation Information

**Table 2. Accredited method/matrix/analytes for ISO (1),
 Non-Governmental TNI (2)
 Issued by: ANAB
 Issued on: September 21, 2021; Valid to: March 30, 2024**

Method	Matrix	ISO and Non-Gov. TNI Accredited Analyte(s)
EPA 1638 Mod EPA 200.8 Mod EPA 6020 Mod	Non-Potable Waters	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, U, V, Zn
BAL-5000	Solids/Chemicals & Biological	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, V, Zn Hg (Biological Only)
EPA 1640 Mod	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn Ag, As, Cr, Co, Se, Ti, V (ISO Only)
EPA 1631E Mod BAL-3100	Non-Potable Waters, Solids/Chemicals & Biological/Food	Total Mercury
EPA 1630 Mod BAL-3200	Non-Potable Waters, Solids/Chemicals Biological	Methyl Mercury
EPA 1632A Mod BAL-3300	Non-Potable Waters Biological/Food Solids/Chemicals	Inorganic Arsenic (ISO Only) Inorganic Arsenic (ISO Only)
AOAC 2015.01 Mod BAL-5000	Food	As, Cd, Hg, Pb
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
	Biological by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4101	Food by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4201	Non-Potable Waters	Se(IV), Se(VI), SeCN, SeMet
BAL-4300	Non-Potable Waters, Solid/Chemicals	Cr(VI)
SM 3500-Fe BAL-4500	Non-Potable Waters	Fe, Fe(II) (ISO Only)
SM2340B	Non-Potable Waters	Hardness
SM 2540G BAL-0501	Solids/Chemicals & Biological	% Dry Weight



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
RG_ERCKDT_WS_LAEMP_EVO_20 22-05-19_NP	2206048-01	WS	Sample	05/19/2022	06/02/2022
RG_ERCKUT_WS_LAEMP_EVO_20 22-05-20_NP	2206048-02	WS	Sample	05/20/2022	06/02/2022
RG_RIVER_WS_LAEMP_EVO_2022 -05-20_NP	2206048-03	WS	Sample	05/20/2022	06/02/2022
RG_FBLANK_WS_LAEMP_EVO_20 22-05-20_NP	2206048-04	WS	Sample	05/20/2022	06/02/2022

Batch Summary

Analyte	Lab Matrix	Method	Prepared	Analyzed	Batch	Sequence
DMDSe	Water	HPLC-ICP-MS	06/07/2022	06/07/2022	B221169	S220607
DMeSe	Water	HPLC-ICP-MS	06/07/2022	06/07/2022	B221169	S220607



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKDT_WS_LAEMP_EVO_2022-05-19_NP										
2206048-01	DMDSe	WS	D	≤ 0.022	U	0.022	0.222	µg/L	B221169	S220607
2206048-01	DMeSe	WS	D	≤ 0.022	U	0.022	0.222	µg/L	B221169	S220607
RG_ERCKUT_WS_LAEMP_EVO_2022-05-20_NP										
2206048-02	DMDSe	WS	D	≤ 0.022	U	0.022	0.222	µg/L	B221169	S220607
2206048-02	DMeSe	WS	D	≤ 0.022	U	0.022	0.222	µg/L	B221169	S220607
RG_RIVER_WS_LAEMP_EVO_2022-05-20_NP										
2206048-03	DMDSe	WS	D	≤ 0.022	U	0.022	0.222	µg/L	B221169	S220607
2206048-03	DMeSe	WS	D	≤ 0.022	U	0.022	0.222	µg/L	B221169	S220607
RG_FBLANK_WS_LAEMP_EVO_2022-05-20_NP										
2206048-04	DMDSe	WS	D	≤ 0.022	U	0.022	0.222	µg/L	B221169	S220607
2206048-04	DMeSe	WS	D	≤ 0.022	U	0.022	0.222	µg/L	B221169	S220607



Accuracy & Precision Summary

Batch: B221169
Lab Matrix: Water
Method: HPLC-ICP-MS

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221169-BS1	Blank Spike, (2210011)						
	DMDSe		4.991	4.479	µg/L	90% 80-120	
	DMeSe		5.005	5.282	µg/L	106% 80-120	
B221169-DUP1	Duplicate, (2206049-03)						
	DMDSe	ND		ND	µg/L		N/C 25
	DMeSe	ND		ND	µg/L		N/C 25
B221169-MS1	Matrix Spike, (2206049-03)						
	DMDSe	ND	5.547	5.144	µg/L	93% 75-125	
	DMeSe	ND	5.542	4.936	µg/L	89% 75-125	
B221169-MSD1	Matrix Spike Duplicate, (2206049-03)						
	DMDSe	ND	5.547	5.305	µg/L	96% 75-125	3% 25
	DMeSe	ND	5.542	5.082	µg/L	92% 75-125	3% 25



Method Blanks & Reporting Limits

Batch: B221169
Matrix: Water
Method: HPLC-ICP-MS
Analyte: DMDSe

Sample	Result	Units	
B221169-BLK1	0.00	µg/L	
B221169-BLK2	0.00	µg/L	
B221169-BLK3	0.00	µg/L	
B221169-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.010
Limit: 0.100			MRL: 0.100

Analyte: DMeSe

Sample	Result	Units	
B221169-BLK1	0.00	µg/L	
B221169-BLK2	0.00	µg/L	
B221169-BLK3	0.00	µg/L	
B221169-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.010
Limit: 0.100			MRL: 0.100



Sample Containers

Lab ID: 2206048-01	Report Matrix: WS	Collected: 05/19/2022					
Sample: RG_ERCKDT_WS_LAEMP_EVO_2022-05-19_NP	Sample Type: Sample + Sum	Received: 06/02/2022					
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% Isopropanol (PP)	1828013	<2	Cooler 5 - 2206048
Lab ID: 2206048-02	Report Matrix: WS	Collected: 05/20/2022					
Sample: RG_ERCKUT_WS_LAEMP_EVO_2022-05-20_NP	Sample Type: Sample + Sum	Received: 06/02/2022					
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% Isopropanol (PP)	1828013	<2	Cooler 5 - 2206048
Lab ID: 2206048-03	Report Matrix: WS	Collected: 05/20/2022					
Sample: RG_RIVER_WS_LAEMP_EVO_2022-05-20_NP	Sample Type: Sample + Sum	Received: 06/02/2022					
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% Isopropanol (PP)	1828013	<2	Cooler 5 - 2206048
Lab ID: 2206048-04	Report Matrix: WS	Collected: 05/20/2022					
Sample: RG_FBLANK_WS_LAEMP_EVO_2022-05-20_NP	Sample Type: Sample + Sum	Received: 06/02/2022					
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% Isopropanol (PP)	1828013	<2	Cooler 5 - 2206048

Shipping Containers

Cooler 5 - 2206048

Received: June 2, 2022 7:00
Tracking No: PAPS#RWHV92287 via Courier
Coolant Type: Ice
Temperature: 0.6 °C

Description: Large Cooler
Damaged in transit? No
Returned to client? No
Comments: IR#33

Custody seals present? No
Custody seals intact? No
COC present? Yes

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO											
Facility Name / Job#	Regional Effects Program			Lab Name	Brooks Applied Labs			Report Format / Distribution	Excel	PDF	EDD								
Project Manager	Mike Pope			Lab Contact	Ben Wozniak			Email 1:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Email	mike.pope@teck.com			Email	Ben@brooksapplied.com			Email 2:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Address	421 Pine Ave			Address	18804 North Creek Parkway Suite 100			Email 3:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
City	Sparwood	Province	BC	City	Bothell	Province	WA	Email 4:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Postal Code	VOB 2G0	Country	Canada	Postal Code	98011	Country	United	Email 5:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
Phone Number	250-425-8202			Phone Number	(206) 753-6158			PO number	748540										
SAMPLE DETAILS				ANALYSIS REQUESTED															
Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com p	# Of Cont.	Volatile Selenium	Isoprop anol										
RG_ERCKDT_WS_LAEMP_EVO_2022-05-19_NP	RG_ERCKDT	WS	No	5/19/2022	8:30	G	1	1											
RG_ERCKUT_WS_LAEMP_EVO_2022-05-20_NP	RG_ERCKUT	WS	No	5/20/2022	10:30	G	1	1											
RG_RIVER_WS_LAEMP_EVO_2022-05-20_NP	RG_RIVER	WS	No	5/20/2022	10:30	G	1	1											
RG_FBLANK_WS_LAEMP_EVO_2022-05-20_NP	RG_FBLANK	WS	No	5/20/2022	10:30	G	1	1											
ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS				RELINQUISHED BY/AFFILIATION		DATE/TIME	ACCEPTED BY/AFFILIATION		DATE/TIME										
				Alex McClymont		May 24, 2022	[Signature] (BAL)		6/2/22 7:00										
SERVICE REQUEST (rush - subject to availability)				Sampler's Name		Sampler's Signature		Mobile #	Date/Time										
Regular (default) <input checked="" type="checkbox"/>				Alex McClymont		[Signature]		780-293-6750	May 24, 2022										
Priority (2-3 business days) - 50% surcharge																			
Emergency (1 Business Day) - 100% surcharge																			
For Emergency <1 Day, ASAP or Weekend - Contact ALS																			

RW HOT SHOT SERVICE INC.

250-425-7447
24 Hour Hot Shot Service

STRAIGHT BILL OF LADING
NOT NEGOTIABLE

No. 92289

Sparwood, BC
Terrace, BC
Red Deer, AB

Vancouver, BC
Calgary, AB
Montreal, QC

Prince George, BC
Edmonton, AB
Spokane, WA

Elkford, BC
Ft. McMurray, AB
Shelby, MT

Tumbler Ridge, BC
Hinton, AB
Gillette, WY

INVOICE TO		DATE	
BILL OF LADING #		PURCHASE ORDER NUMBER	
SHIPPER (FROM)		CONSIGNEE (TO)	
STREET		STREET	
CITY/PROVINCE		POSTAL CODE	CITY/PROVINCE
SPECIAL INSTRUCTIONS		FREIGHT CHARGES	
PACKAGES		DESCRIPTION OF ARTICLE AND SPECIAL MARKS	
		WEIGHT (Subject to Correction)	
PAPS # RWHV92287		SHIPPER TO CHECK	
		<input type="checkbox"/> PREPAID <input type="checkbox"/> COLLECT If not indicated, shipping will automatically move collect.	
UNIT #		DECLARED VALUATION: Maximum liability of carrier is \$2.00 per lb. (\$4.41 per kilogram) unless declared valuation states otherwise.	
DRIVER'S SIGNATURE - PICK UP BY		PICK UP TIME	DRIVER'S SIGNATURE - DELIVERY BY
			FINISH TIME
<small>NOTICE OF CLAIM: (a) No carrier is liable for loss, damage or delay of any goods under the Bill of Lading unless notice is set out in writing... (b) The final statement of the claim must be filed within nine (9) months from the date of shipment... RECEIVED at the point of origin on the date specified from the consignor mentioned herein... It is mutually agreed, as to each carrier of all or any of the goods over all or any portion of the route to destination, and as to each party of any time interested in all or any of the goods, that every service to be performed hereunder shall be subject to the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. Printed or written, including conditions set aside by the standard Bill of Lading, in power at all the conditions standard Bill of Lading, in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. The Contract for the carriage of the goods listed in the Bill of Lading is governed by regulation in force in the jurisdiction at the time and place of shipment and is subject to the conditions set out in such conditions.</small>			
SHIPPER PRINT		CONSIGNEE PRINT	
SHIPPER SIGN		CONSIGNEE SIGN	
WHITE: Office		YELLOW: Carrier	
PINK: Consignee		GOLDENROAD: Shipper	
GST # 864540398RT0001		NUMBER OF PIECES RECEIVED	

PAPS # RWHV92287

Cooler ID: Cooler 5

CQC (Y/N)

Temperature: 0.6

IR: 33

Coolant Type: Ice Blue Ice Ambient

Notes:

Sampling Locations:	WL	LCO	RG	EV	6H
Sample Types:	T/D	SP	T/D	SP	T/D
Container Types:	40ml glass	125ml Plastic	125ml Plastic	40ml glass	40ml glass

Opened By: KMN 6/2/22

Date:

COPY

Effective 7/29/20

① EE KMN 6/2/22





13751 Lake City Way NE, Ste 108, Seattle, WA 98125 • USA • T:206-632-6206 • info@brooksapplied.com

June 28, 2022

Teck Resources Limited - Vancouver
 Mike Pope
 421 Pine Avenue
 Sparwood, B.C. CANADA V0B2G0
mike.pope@teck.com

Re: Regional Effects Program

Dear Mike Pope,

On June 9, 2022, Brooks Applied Labs (BAL) received ten (10) aqueous samples. The samples were logged-in for total recoverable selenium [Se], dissolved Se [Se], and Se speciation analyses, according to the chain-of-custody (COC) form.

Date/Time Collected values listed on the chain-of-custody (COC) form did not match the corresponding **Date/Time Collected** values listed on container labels for several samples. The discrepancies are described in the table below.

Date/Time Collected Discrepancies

Laboratory ID	Sample ID	Date/Time Collected (on COC form)	Date/Time Collected (on container label)
2206145-04	RG_BOCKRD_WS_LAEMP_EVO_2022-06-03_NP	06/02/2022 08:56	06/03/2022 08:56
2206145-05	RG_BOCKRD_WS_LAEMP_EVO_2022-06-03_NP_NAL	06/02/2022 08:56	06/03/2022 08:56
2206145-06	RG_BOCKRD_WS_LAEMP_EVO_2022-06-03_NP_NAL	06/02/2022 08:56	06/03/2022 08:56
2206145-07	RG_BOCK_WS_LAEMP_EVO_2022-06-03_NP	06/02/2022 11:30	06/03/2022 11:30
2206145-08	RG_BOCK_WS_LAEMP_EVO_2022-06-03_NP_NAL	06/02/2022 11:30	06/03/2022 11:30
2206145-09	RG_BOCK_WS_LAEMP_EVO_2022-06-03_NP_NAL	06/02/2022 11:30	06/03/2022 11:30
2206145-10	RG_ALUSM_WS_LAEMP_EVO_2022-06-03_NP	06/02/2022 12:40	06/03/2022 12:40
2206145-11	RG_ALUSM_WS_LAEMP_EVO_2022-06-03_NP_NAL	06/02/2022 12:40	06/03/2022 12:40
2206145-12	RG_ALUSM_WS_LAEMP_EVO_2022-06-03_NP_NAL	06/02/2022 12:40	06/03/2022 12:40
2206145-13	RG_MI25_WS_LAEMP_EVO_2022-06-03_NP	06/02/2022 14:43	06/03/2022 14:43

Samples described in the table above were logged in and reported using the **Date/Time Collected** values listed on the COC form (*column 3 in the table above*).

The sample fractions for total recoverable Se and dissolved Se were not preserved in the field. The samples were preserved (pH < 2) upon receipt at BAL. All sample fractions for total recoverable Se and dissolved Se were preserved within the (14 calendar day) preservation holding time.

The sample fractions logged in for Se speciation and dissolved Se had been field-filtered prior to receipt at BAL. All samples were stored according to BAL SOPs.

Total Recoverable Se and Dissolved Se

Each aqueous sample fraction for dissolved Se was digested in a closed vessel (bomb) with nitric and hydrochloric acids. The resulting digests were analyzed for Se content via inductively coupled plasma triple quadrupole mass spectrometry (ICP-QQQ-MS). The ICP-QQQ-MS instrumentation uses advanced interference removal techniques to ensure accuracy of the sample results. For more information, please visit the *Interference Reduction Technology* section on our website, brooksupplied.com.

Selenium Speciation

Each aqueous sample was analyzed for selenium speciation using ion chromatography inductively coupled plasma collision reaction cell mass spectrometry (IC-ICP-CRC-MS). Selenium species are chromatographically separated on an ion exchange column and then quantified using inductively coupled plasma collision reaction cell mass spectrometry (ICP-CRC-MS); for more information on this determinative technique, please visit the *Interference Reduction Technology* section on our website. The chromatographic method applied for the analyses provides greater retention of methylseleninic acid and selenomethionine, allowing for more definitive quantitation of these species.

In accordance with the quotation issued for this project, selenium speciation was defined as dissolved selenite [Se(IV)], selenate [Se(VI)], selenocyanate [SeCN], methylseleninic acid [MeSe(IV)], methaneselenonic acid [MeSe(VI)], selenomethionine [SeMef], selenosulfate [SeSO₃], and dimethylselenoxide [DMSeO]. Unknown Se species was defined as the total concentration of all unknown Se species observed during the analysis. This item is identified on the report as [Unk Se Sp].

DMSeO elutes early in the chromatographic run due to the nature of the molecule and the applied chromatographic separation method. Since this species elutes near the dead volume, additional selenium species may coelute. Alternate methods can be applied, upon client request, to increase the separation of DMSeO from potentially co-eluting selenium species.

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

In instances where a matrix spike/matrix spike duplicate (MS/MSD) set was spiked at a level less than the native sample concentration, the recoveries and the relative percent difference (RPD) are not considered valid indicators of data quality. In such instances, the recoveries of the laboratory fortified blanks (BS) and/or standard reference materials (SRM) demonstrate the accuracy of the applied methods. When the spiking

level was less than 25% of the native sample concentration, the spike recovery was not reported (**NR**) and the relative percent difference (RPD) of the MS/MSD set was not calculated (**N/C**).

In cases when either the native sample concentration was non-detectable (reported as less than or equal to the MDL) and/or the corresponding DUP result was also non-detectable, the RPD between the two values was not calculated (**N/C**).

Except for concentration qualifiers, all data were reported without qualification. All associated quality control sample results met the acceptance criteria.

BAL, an accredited laboratory, certifies that the reported results of all analyses for which BAL is NELAP accredited meet all NELAP requirements. For more information, please see the *Report Information* page.

Please feel free to contact us if you have any questions regarding this report.

Sincerely,



Jeremy Maute
Senior Project Manager

Jeremy@brooksapplied.com



Report Information

Laboratory Accreditation

BAL is accredited by the *National Environmental Laboratory Accreditation Program* (NELAP) through the State of Florida Department of Health, Bureau of Laboratories (E87982) and is certified to perform many environmental analyses. BAL is also certified by many other states to perform environmental analyses. For a current list of our accreditations/certifications, please visit our website at <http://www.brooksapplied.com/resources/certificates-permits/> or review Tables 1 and 2 in our Accreditation Information. Results reported relate only to the samples listed in the report.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

AR	as received	MS	matrix spike
BAL	Brooks Applied Labs	MSD	matrix spike duplicate
BLK	method blank	ND	non-detect
BS	blank spike	NR	non-reportable
CAL	calibration standard	N/C	not calculated
CCB	continuing calibration blank	PS	post preparation spike
CCV	continuing calibration verification	REC	percent recovery
COC	chain of custody record	RPD	relative percent difference
D	dissolved fraction	SCV	secondary calibration verification
DUP	duplicate	SOP	standard operating procedure
IBL	instrument blank	SRM	reference material
ICV	initial calibration verification	T	total fraction
MDL	method detection limit	TR	total recoverable fraction
MRL	method reporting limit		

Definition of Data Qualifiers

(Effective 3/23/2020)

E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Please see narrative for explanation.
J	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1	Estimated value. A full explanation is presented in the narrative.
M	Duplicate precision (RPD) was not within acceptance criteria. Please see narrative for explanation.
N	Spike recovery was not within acceptance criteria. Please see narrative for explanation.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.
Z	Holding time and/or preservation requirements not established for this method; however, BAL recommendations for holding time were not followed. Please see narrative for explanation.

These qualifiers are based on those previously utilized by Brooks Applied Labs, those found in the EPA SOW ILM03.0, Exhibit B, Section III, pg. B-18, and the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review; USEPA; January 2010. These supersede all previous qualifiers ever employed by BAL.



Accreditation Information

Table 1. Accredited method/matrix/analytes for TNI
Issued by: State of Florida Dept. of Health (The NELAC Institute 2016 Standard)
Issued on: July 1, 2021; Valid to: June 30, 2022
Certificate Number: E87982-37

Method	Matrix	TNI Accredited Analyte(s)
EPA 1638	Non-Potable Waters	Ag, Cd, Cu, Ni, Pb, Sb, Se, Ti, Zn
EPA 200.8	Non-Potable Waters	Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Sb, Se, Ti, U, V, Zn
EPA 6020	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Ti, U, V, Zn
	Solids/Chemicals & Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Ti, V, Zn
BAL-5000	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, U, V, Zn, Hardness
	Solids/Chemicals	Ag, As, B, Be, Cd, Co, Cr, Cu, Pb, Mo, Ni, Sb, Se, Sn, Sr, Ti, V, Zn
	Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Ti, V, Zn
EPA 1640	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn
EPA 1631E	Non-Potable Waters, Solids/Chemicals & Biological	Total Mercury
EPA 1630	Non-Potable Waters	Methyl Mercury
BAL-3200	Solids/Chemicals & Biological	Methyl Mercury
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
BAL-4201	Non-Potable Waters	Se(IV), Se(VI)
BAL-4300	Non-Potable Waters Solid/Chemicals	Cr(VI)
SM2340B	Non-Potable Waters	Hardness



Accreditation Information

**Table 2. Accredited method/matrix/analytes for ISO (1),
 Non-Governmental TNI (2)
 Issued by: ANAB
 Issued on: September 21, 2021; Valid to: March 30, 2024**

Method	Matrix	ISO and Non-Gov. TNI Accredited Analyte(s)
EPA 1638 Mod EPA 200.8 Mod EPA 6020 Mod	Non-Potable Waters	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, U, V, Zn
BAL-5000	Solids/Chemicals & Biological	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, V, Zn Hg (Biological Only)
EPA 1640 Mod	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn Ag, As, Cr, Co, Se, Ti, V (ISO Only)
EPA 1631E Mod BAL-3100	Non-Potable Waters, Solids/Chemicals & Biological/Food	Total Mercury
EPA 1630 Mod BAL-3200	Non-Potable Waters, Solids/Chemicals Biological	Methyl Mercury
EPA 1632A Mod BAL-3300	Non-Potable Waters Biological/Food Solids/Chemicals	Inorganic Arsenic (ISO Only) Inorganic Arsenic (ISO Only)
AOAC 2015.01 Mod BAL-5000	Food	As, Cd, Hg, Pb
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
	Biological by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4101	Food by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4201	Non-Potable Waters	Se(IV), Se(VI), SeCN, SeMet
BAL-4300	Non-Potable Waters, Solid/Chemicals	Cr(VI)
SM 3500-Fe BAL-4500	Non-Potable Waters	Fe, Fe(II) (ISO Only)
SM2340B	Non-Potable Waters	Hardness
SM 2540G BAL-0501	Solids/Chemicals & Biological	% Dry Weight



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
RG_MICOMP_WS_LAEMP_EVO_20 22-06-02_NP	2206145-01	WS	Sample	06/02/2022	06/09/2022
RG_MICOMP_WS_LAEMP_EVO_20 22-06-02_NP_NAL	2206145-02	WS	Sample	06/02/2022	06/09/2022
RG_MICOMP_WS_LAEMP_EVO_20 22-06-02_NP_NAL	2206145-03	WS	Sample	06/02/2022	06/09/2022
RG_BOCKRD_WS_LAEMP_EVO_2 022-06-03_NP	2206145-04	WS	Sample	06/02/2022	06/09/2022
RG_BOCKRD_WS_LAEMP_EVO_2 022-06-03_NP_NAL	2206145-05	WS	Sample	06/02/2022	06/09/2022
RG_BOCKRD_WS_LAEMP_EVO_2 022-06-03_NP_NAL	2206145-06	WS	Sample	06/02/2022	06/09/2022
RG_BOCK_WS_LAEMP_EVO_2022 -06-03_NP	2206145-07	WS	Sample	06/02/2022	06/09/2022
RG_BOCK_WS_LAEMP_EVO_2022 -06-03_NP_NAL	2206145-08	WS	Sample	06/02/2022	06/09/2022
RG_BOCK_WS_LAEMP_EVO_2022 -06-03_NP_NAL	2206145-09	WS	Sample	06/02/2022	06/09/2022
RG_ALUSM_WS_LAEMP_EVO_202 2-06-03_NP	2206145-10	WS	Sample	06/02/2022	06/09/2022
RG_ALUSM_WS_LAEMP_EVO_202 2-06-03_NP_NAL	2206145-11	WS	Sample	06/02/2022	06/09/2022
RG_ALUSM_WS_LAEMP_EVO_202 2-06-03_NP_NAL	2206145-12	WS	Sample	06/02/2022	06/09/2022
RG_MI25_WS_LAEMP_EVO_2022-0 6-03_NP	2206145-13	WS	Sample	06/02/2022	06/09/2022
RG_MI25_WS_LAEMP_EVO_2022-0 6-03_NP_NAL	2206145-14	WS	Sample	06/02/2022	06/09/2022
RG_MI25_WS_LAEMP_EVO_2022-0 6-03_NP_NAL	2206145-15	WS	Sample	06/02/2022	06/09/2022



Batch Summary

Analyte	Lab Matrix	Method	Prepared	Analyzed	Batch	Sequence
DMS ₂ SeO	Water	SOP BAL-4201	06/15/2022	06/16/2022	B221293	S220634
MeSe(IV)	Water	SOP BAL-4201	06/15/2022	06/16/2022	B221293	S220634
MeSe(VI)	Water	SOP BAL-4201	06/15/2022	06/16/2022	B221293	S220634
Se	Water	EPA 1638 Mod	06/16/2022	06/17/2022	B221311	S220650
Se	Water	EPA 1638 Mod	06/17/2022	06/21/2022	B221325	S220647
Se(IV)	Water	SOP BAL-4201	06/15/2022	06/16/2022	B221293	S220634
Se(VI)	Water	SOP BAL-4201	06/15/2022	06/16/2022	B221293	S220634
SeCN	Water	SOP BAL-4201	06/15/2022	06/16/2022	B221293	S220634
SeMet	Water	SOP BAL-4201	06/15/2022	06/16/2022	B221293	S220634
SeSO ₃	Water	SOP BAL-4201	06/15/2022	06/16/2022	B221293	S220634
Unk Se Sp	Water	SOP BAL-4201	06/15/2022	06/16/2022	B221293	S220634



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_MICOMP_WS_LAEMP_EVO_2022-06-02_NP										
2206145-01	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206145-01	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206145-01	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206145-01	Se(IV)	WS	D	0.030	J	0.010	0.075	µg/L	B221293	S220634
2206145-01	Se(VI)	WS	D	3.07		0.010	0.055	µg/L	B221293	S220634
2206145-01	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221293	S220634
2206145-01	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206145-01	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221293	S220634
2206145-01	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221293	S220634
RG_MICOMP_WS_LAEMP_EVO_2022-06-02_NP_NAL										
2206145-02	Se	WS	D	3.38		0.165	0.528	µg/L	B221311	S220650
RG_MICOMP_WS_LAEMP_EVO_2022-06-02_NP_NAL										
2206145-03	Se	WS	TR	3.42		0.165	0.528	µg/L	B221311	S220650
RG_BOCKRD_WS_LAEMP_EVO_2022-06-03_NP										
2206145-04	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206145-04	MeSe(IV)	WS	D	0.018	J	0.010	0.025	µg/L	B221293	S220634
2206145-04	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206145-04	Se(IV)	WS	D	0.514		0.010	0.075	µg/L	B221293	S220634
2206145-04	Se(VI)	WS	D	59.5		0.010	0.055	µg/L	B221293	S220634
2206145-04	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221293	S220634
2206145-04	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206145-04	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221293	S220634
2206145-04	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221293	S220634
RG_BOCKRD_WS_LAEMP_EVO_2022-06-03_NP_NAL										
2206145-05	Se	WS	D	58.3		0.165	0.528	µg/L	B221311	S220650
RG_BOCKRD_WS_LAEMP_EVO_2022-06-03_NP_NAL										
2206145-06	Se	WS	TR	57.3		0.165	0.528	µg/L	B221325	S220647



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_BOCK_WS_LAEMP_EVO_2022-06-03_NP										
2206145-07	DMS ₂ O	WS	D	0.047		0.010	0.025	µg/L	B221293	S220634
2206145-07	MeSe(IV)	WS	D	0.050		0.010	0.025	µg/L	B221293	S220634
2206145-07	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206145-07	Se(IV)	WS	D	0.885		0.010	0.075	µg/L	B221293	S220634
2206145-07	Se(VI)	WS	D	90.1		0.010	0.055	µg/L	B221293	S220634
2206145-07	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221293	S220634
2206145-07	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206145-07	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221293	S220634
2206145-07	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221293	S220634
RG_BOCK_WS_LAEMP_EVO_2022-06-03_NP_NAL										
2206145-08	Se	WS	D	86.4		0.165	0.528	µg/L	B221325	S220647
RG_BOCK_WS_LAEMP_EVO_2022-06-03_NP_NAL										
2206145-09	Se	WS	TR	86.3		0.165	0.528	µg/L	B221325	S220647
RG_ALUSM_WS_LAEMP_EVO_2022-06-03_NP										
2206145-10	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206145-10	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206145-10	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206145-10	Se(IV)	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221293	S220634
2206145-10	Se(VI)	WS	D	0.323		0.010	0.055	µg/L	B221293	S220634
2206145-10	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221293	S220634
2206145-10	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206145-10	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221293	S220634
2206145-10	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221293	S220634
RG_ALUSM_WS_LAEMP_EVO_2022-06-03_NP_NAL										
2206145-11	Se	WS	D	0.521	J	0.165	0.528	µg/L	B221311	S220650
RG_ALUSM_WS_LAEMP_EVO_2022-06-03_NP_NAL										
2206145-12	Se	WS	TR	0.525	J	0.165	0.528	µg/L	B221311	S220650



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_MI25_WS_LAEMP_EVO_2022-06-03_NP										
2206145-13	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206145-13	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206145-13	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206145-13	Se(IV)	WS	D	0.011	J	0.010	0.075	µg/L	B221293	S220634
2206145-13	Se(VI)	WS	D	0.162		0.010	0.055	µg/L	B221293	S220634
2206145-13	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221293	S220634
2206145-13	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206145-13	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221293	S220634
2206145-13	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221293	S220634
RG_MI25_WS_LAEMP_EVO_2022-06-03_NP_NAL										
2206145-14	Se	WS	D	0.430	J	0.165	0.528	µg/L	B221311	S220650
RG_MI25_WS_LAEMP_EVO_2022-06-03_NP_NAL										
2206145-15	Se	WS	TR	0.422	J	0.165	0.528	µg/L	B221311	S220650



Accuracy & Precision Summary

Batch: B221293
Lab Matrix: Water
Method: SOP BAL-4201

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221293-BS1	Blank Spike, (2124033)						
	MeSe(IV)		5.095	5.519	µg/L	108% 75-125	
	Se(IV)		5.000	4.887	µg/L	98% 75-125	
	Se(VI)		5.000	4.730	µg/L	95% 75-125	
	SeCN		5.015	4.638	µg/L	92% 75-125	
	SeMet		4.932	4.613	µg/L	94% 75-125	
B221293-DUP1	Duplicate, (2206148-17)						
	DMSeO	0.015		0.014	µg/L		11% 25
	MeSe(IV)	0.572		0.461	µg/L		21% 25
	MeSe(VI)	ND		ND	µg/L		N/C 25
	Se(IV)	7.549		7.333	µg/L		3% 25
	Se(VI)	0.131		0.135	µg/L		3% 25
	SeCN	4.242		4.377	µg/L		3% 25
	SeMet	ND		ND	µg/L		N/C 25
	SeSO3	0.409		0.460	µg/L		12% 25
	Unk Se Sp	0.103		0.095	µg/L		9% 25
B221293-MS1	Matrix Spike, (2206148-17)						
	Se(IV)	7.549	4.900	12.06	µg/L	92% 75-125	
	Se(VI)	0.131	5.100	5.448	µg/L	104% 75-125	
	SeCN	4.242	1.962	6.419	µg/L	111% 75-125	
	SeMet	ND	1.977	1.979	µg/L	100% 75-125	
B221293-MSD1	Matrix Spike Duplicate, (2206148-17)						
	Se(IV)	7.549	4.900	11.95	µg/L	90% 75-125	0.9% 25
	Se(VI)	0.131	5.100	5.483	µg/L	105% 75-125	0.6% 25
	SeCN	4.242	1.962	6.298	µg/L	105% 75-125	2% 25
	SeMet	ND	1.977	1.972	µg/L	100% 75-125	0.4% 25



Accuracy & Precision Summary

Batch: B221311
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221311-BS1	Blank Spike, (2137005) Se		200.0	192.0	µg/L	96% 75-125	
B221311-BS2	Blank Spike, (2137005) Se		200.0	186.5	µg/L	93% 75-125	
B221311-BS3	Blank Spike, (2137005) Se		200.0	195.5	µg/L	98% 75-125	
B221311-BS4	Blank Spike, (2137005) Se		200.0	189.3	µg/L	95% 75-125	
B221311-SRM1	Reference Material (2214010, TMDA 51.5 Reference Standard - Bottle 2 - SRM) Se		14.30	13.56	µg/L	95% 75-125	
B221311-SRM2	Reference Material (2214010, TMDA 51.5 Reference Standard - Bottle 2 - SRM) Se		14.30	13.43	µg/L	94% 75-125	
B221311-SRM3	Reference Material (2214010, TMDA 51.5 Reference Standard - Bottle 2 - SRM) Se		14.30	14.77	µg/L	103% 75-125	
B221311-SRM4	Reference Material (2214010, TMDA 51.5 Reference Standard - Bottle 2 - SRM) Se		14.30	13.33	µg/L	93% 75-125	
B221311-DUP1	Duplicate, (2206145-12) Se	0.525		0.527	µg/L		0.4% 20
B221311-MS1	Matrix Spike, (2206145-12) Se	0.525	220.0	214.3	µg/L	97% 75-125	
B221311-MSD1	Matrix Spike Duplicate, (2206145-12) Se	0.525	220.0	207.6	µg/L	94% 75-125	3% 20



Accuracy & Precision Summary

Batch: B221325
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221325-BS1	Blank Spike, (2137005) Se		200.0	183.6	µg/L	92% 75-125	
B221325-BS2	Blank Spike, (2137005) Se		200.0	188.0	µg/L	94% 75-125	
B221325-BS3	Blank Spike, (2137005) Se		200.0	182.6	µg/L	91% 75-125	
B221325-SRM1	Reference Material (2214010, TMDA 51.5 Reference Standard - Bottle 2 - SRM) Se		14.30	12.97	µg/L	91% 75-125	
B221325-SRM2	Reference Material (2214010, TMDA 51.5 Reference Standard - Bottle 2 - SRM) Se		14.30	13.44	µg/L	94% 75-125	
B221325-SRM3	Reference Material (2214010, TMDA 51.5 Reference Standard - Bottle 2 - SRM) Se		14.30	13.09	µg/L	92% 75-125	
B221325-DUP1	Duplicate, (2206232-02) Se	11.86		11.63	µg/L		2% 20
B221325-MS1	Matrix Spike, (2206232-02) Se	11.86	220.0	218.0	µg/L	94% 75-125	
B221325-MSD1	Matrix Spike Duplicate, (2206232-02) Se	11.86	220.0	211.8	µg/L	91% 75-125	3% 20



Method Blanks & Reporting Limits

Batch: B221293
Matrix: Water
Method: SOP BAL-4201
Analyte: DMSeO

Sample	Result	Units	
B221293-BLK1	0.00	µg/L	
B221293-BLK2	0.00	µg/L	
B221293-BLK3	0.00	µg/L	
B221293-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.005		MRL: 0.005

Analyte: MeSe(IV)

Sample	Result	Units	
B221293-BLK1	0.00	µg/L	
B221293-BLK2	0.00	µg/L	
B221293-BLK3	0.00	µg/L	
B221293-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.005		MRL: 0.005

Analyte: MeSe(VI)

Sample	Result	Units	
B221293-BLK1	0.00	µg/L	
B221293-BLK2	0.00	µg/L	
B221293-BLK3	0.00	µg/L	
B221293-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.005		MRL: 0.005



Method Blanks & Reporting Limits

Analyte: Se(IV)

Sample	Result	Units	
B221293-BLK1	0.00	µg/L	
B221293-BLK2	0.00	µg/L	
B221293-BLK3	0.00	µg/L	
B221293-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.015		MRL: 0.015

Analyte: Se(VI)

Sample	Result	Units	
B221293-BLK1	0.00	µg/L	
B221293-BLK2	0.00	µg/L	
B221293-BLK3	0.00	µg/L	
B221293-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.011		MRL: 0.011

Analyte: SeCN

Sample	Result	Units	
B221293-BLK1	0.00	µg/L	
B221293-BLK2	0.00	µg/L	
B221293-BLK3	0.00	µg/L	
B221293-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.010		MRL: 0.010

Analyte: SeMet

Sample	Result	Units	
B221293-BLK1	0.00	µg/L	
B221293-BLK2	0.00	µg/L	
B221293-BLK3	0.00	µg/L	
B221293-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.005		MRL: 0.005



Method Blanks & Reporting Limits

Analyte: SeSO3

Sample	Result	Units	
B221293-BLK1	0.00	µg/L	
B221293-BLK2	0.00	µg/L	
B221293-BLK3	0.00	µg/L	
B221293-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.011		MRL: 0.011

Analyte: Unk Se Sp

Sample	Result	Units	
B221293-BLK1	0.00	µg/L	
B221293-BLK2	0.00	µg/L	
B221293-BLK3	0.00	µg/L	
B221293-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.015		MRL: 0.015



Method Blanks & Reporting Limits

Batch: B221311
Matrix: Water
Method: EPA 1638 Mod
Analyte: Se

Sample	Result	Units	
B221311-BLK1	0.096	µg/L	
B221311-BLK2	0.093	µg/L	
B221311-BLK3	0.127	µg/L	
B221311-BLK4	0.094	µg/L	
Average:	0.103		MDL: 0.150
Limit:	0.480		MRL: 0.480



Method Blanks & Reporting Limits

Batch: B221325
Matrix: Water
Method: EPA 1638 Mod
Analyte: Se

Sample	Result	Units	
B221325-BLK1	0.026	µg/L	
B221325-BLK2	0.004	µg/L	
B221325-BLK3	0.019	µg/L	
B221325-BLK4	0.013	µg/L	
Average:	0.016		MDL: 0.150
Limit:	0.480		MRL: 0.480



Sample Containers

Lab ID: 2206145-01

Report Matrix: WS

Collected: 06/02/2022

Sample:

Sample Type: Sample + Sum

Received: 06/09/2022

RG_MICOMP_WS_LAEMP_EVO_2022-06-02_NP

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2206145
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2206145
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 4 - 2206145

Lab ID: 2206145-02

Report Matrix: WS

Collected: 06/02/2022

Sample:

Sample Type: Sample + Sum

Received: 06/09/2022

RG_MICOMP_WS_LAEMP_EVO_2022-06-02_NP_NAL

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 7 - 2206145

Lab ID: 2206145-03

Report Matrix: WS

Collected: 06/02/2022

Sample:

Sample Type: Sample + Sum

Received: 06/09/2022

RG_MICOMP_WS_LAEMP_EVO_2022-06-02_NP_NAL

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 7 - 2206145

Lab ID: 2206145-04

Report Matrix: WS

Collected: 06/02/2022

Sample:

Sample Type: Sample + Sum

Received: 06/09/2022

RG_BOCKRD_WS_LAEMP_EVO_2022-06-03_NP

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2206145
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2206145
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 4 - 2206145



Sample Containers

Lab ID: 2206145-05

Sample:
 RG_BOCKRD_WS_LAEMP_EVO_2022-06-03_NP_NAL

Report Matrix: WS
Sample Type: Sample + Sum

Collected: 06/02/2022
Received: 06/09/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 7 - 2206145

Lab ID: 2206145-06

Sample:
 RG_BOCKRD_WS_LAEMP_EVO_2022-06-03_NP_NAL

Report Matrix: WS
Sample Type: Sample + Sum

Collected: 06/02/2022
Received: 06/09/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 7 - 2206145

Lab ID: 2206145-07

Sample:
 RG_BOCK_WS_LAEMP_EVO_2022-06-03_NP

Report Matrix: WS
Sample Type: Sample + Sum

Collected: 06/02/2022
Received: 06/09/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2206145
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2206145
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 4 - 2206145

Lab ID: 2206145-08

Sample:
 RG_BOCK_WS_LAEMP_EVO_2022-06-03_NP_NAL

Report Matrix: WS
Sample Type: Sample + Sum

Collected: 06/02/2022
Received: 06/09/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 7 - 2206145



Sample Containers

Lab ID: 2206145-09				Report Matrix: WS		Collected: 06/02/2022	
Sample: RG_BOCK_WS_LAEMP_EVO_2022-06-03_NP_NA L				Sample Type: Sample + Sum		Received: 06/09/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 7 - 2206145

Lab ID: 2206145-10				Report Matrix: WS		Collected: 06/02/2022	
Sample: RG_ALUSM_WS_LAEMP_EVO_2022-06-03_NP				Sample Type: Sample + Sum		Received: 06/09/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2206145
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2206145
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 4 - 2206145

Lab ID: 2206145-11				Report Matrix: WS		Collected: 06/02/2022	
Sample: RG_ALUSM_WS_LAEMP_EVO_2022-06-03_NP_N AL				Sample Type: Sample + Sum		Received: 06/09/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 7 - 2206145

Lab ID: 2206145-12				Report Matrix: WS		Collected: 06/02/2022	
Sample: RG_ALUSM_WS_LAEMP_EVO_2022-06-03_NP_N AL				Sample Type: Sample + Sum		Received: 06/09/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 7 - 2206145



Sample Containers

Lab ID: 2206145-13

Report Matrix: WS

Collected: 06/02/2022

Sample:

Sample Type: Sample + Sum

Received: 06/09/2022

RG_MI25_WS_LAEMP_EVO_2022-06-03_NP

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2206145
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2206145
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 4 - 2206145

Lab ID: 2206145-14

Report Matrix: WS

Collected: 06/02/2022

Sample:

Sample Type: Sample + Sum

Received: 06/09/2022

RG_MI25_WS_LAEMP_EVO_2022-06-03_NP_NAL

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 7 - 2206145

Lab ID: 2206145-15

Report Matrix: WS

Collected: 06/02/2022

Sample:

Sample Type: Sample + Sum

Received: 06/09/2022

RG_MI25_WS_LAEMP_EVO_2022-06-03_NP_NAL

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 7 - 2206145



Shipping Containers

Cooler 4 - 2206145

Received: June 9, 2022 7:15
Tracking No: PAPS#RWHV92292 via Courier
Coolant Type: Ice
Temperature: 2.3 °C

Description: Styrofoam Cooler
Damaged in transit? No
Returned to client? No
Comments: IR#: 33

Custody seals present? No
Custody seals intact? No
COC present? Yes

Cooler 7 - 2206145

Received: June 9, 2022 7:15
Tracking No: PAPS#RWHV92292 via Courier
Coolant Type: Blue Ice
Temperature: 8.0 °C

Description: Styrofoam Cooler
Damaged in transit? No
Returned to client? No
Comments: IR#: 33

Custody seals present? No
Custody seals intact? No
COC present? Yes

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO						
Facility Name / Job# Regional Effects Program				Lab Name Brooks Applied Labs				Report Format / Distribution						
Project Manager Mike Pope				Lab Contact Ben Wozniak				Email 1: <input type="checkbox"/> Excel <input checked="" type="checkbox"/> PDF <input checked="" type="checkbox"/> EDD						
Email <small>(ben.pope@teck.com)</small>				Email Ben@brooksupplied.com				Email 2: <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>						
Address 421 Pine Ave				Address 18804 North Creek Parkway				Email 3: <input checked="" type="checkbox"/> Teck Lab Results@teck.com <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>						
City Sparwood Province BC				City Bothell Province WA				Email 4: <input checked="" type="checkbox"/> brooks@teck.com <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>						
Postal Code V0B 2G0 Country Canada				Postal Code 98011 Country United States				Email 5: <input checked="" type="checkbox"/> brooks@teck.com <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>						
Phone Number 250-425-8202				Phone Number (206) 753-6158				PO number 817933						
SAMPLE DETAILS								ANALYSIS REQUESTED						
Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com p	# Of Cont.	Brooks_Se_Speciation	Brooks_Se_D	Brooks_Se_T				
RG_MICOMP_WS_LAEMP_EVO_2022-06-02_NP	RG_MICOMP	WS	No	2-Jun-22	14:50	G	1	1						
RG_MICOMP_WS_LAEMP_EVO_2022-06-02_NP_NAL	RG_MICOMP	WS	No	2-Jun-22	14:50	G	2		1	1				
RG_BOCKRD_WS_LAEMP_EVO_2022-06-03_NP	RG_BOCKRD	WS	No	2-Jun-22	8:56	G	1	1						
RG_BOCKRD_WS_LAEMP_EVO_2022-06-03_NP_NAL	RG_BOCKRD	WS	No	2-Jun-22	8:56	G	2		1	1				
RG_BOCK_WS_LAEMP_EVO_2022-06-03_NP	RG_BOCK	WS	No	2-Jun-22	11:30	G	1	1						
RG_BOCK_WS_LAEMP_EVO_2022-06-03_NP_NAL	RG_BOCK	WS	No	2-Jun-22	11:30	G	2		1	1				
RG_ALUSM_WS_LAEMP_EVO_2022-06-03_NP	RG_ALUSM	WS	No	2-Jun-22	12:40	G	1	1						
RG_ALUSM_WS_LAEMP_EVO_2022-06-03_NP_NAL	RG_ALUSM	WS	No	2-Jun-22	12:40	G	2		1	1				
RG_MI25_WS_LAEMP_EVO_2022-06-03_NP	RG_MI25	WS	No	2-Jun-22	14:43	G	1	1						
RG_MI25_WS_LAEMP_EVO_2022-06-03_NP_NAL	RG_MI25	WS	No	2-Jun-22	14:43	G	2		1	1				
ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS			RELINQUISHED BY/AFFILIATION				DATE/TIME	ACCEPTED BY/AFFILIATION		DATE/TIME				
			Robin Valteau				June 6, 2022	RWV/BAL		6/9/22 7:15				
SERVICE REQUEST (rush - subject to availability)														
Regular (default) <input checked="" type="checkbox"/>			Sampler's Name				Robin Valteau		Mobile #		780-293-6750			
Priority (2-3 business days) - 50% surcharge			Sampler's Signature						Date/Time		June 6, 2022			
Emergency (1 Business Day) - 100% surcharge														
For Emergency <1 Day, ASAP or Weekend - Contact ALS														

STRAIGHT BILL OF LADING
NOT NEGOTIABLE

RW HOT SHOT SERVICE INC.

250-425-7447
24 Hour Hot Shot Service

No. 92294

Sparwood, BC
Terrace, BC
Red Deer, AB

Vancouver, BC
Calgary, AB
Montreal, QC

Prince George, BC
Edmonton, AB
Spokane, WA

Elkford, BC
Ft. McMurray, AB
Shelby, MT

Tumbler Ridge, BC
Hinton, AB
Gillette, WY

INVOICE TO		DATE	
BILL OF LADING #		PURCHASE ORDER NUMBER	
SHIPPER (FROM)		CONSIGNEE (TO)	
STREET		STREET	
CITY/PROVINCE		POSTAL CODE	CITY/PROVINCE
POSTAL CODE		POSTAL CODE	
SPECIAL INSTRUCTIONS			FREIGHT CHARGES
PACKAGES	DESCRIPTION OF ARTICLES AND SPECIAL MARKS	WEIGHT (Subject to Correction)	SHIPPER TO CHECK
			<input type="checkbox"/> PREPAID <input type="checkbox"/> COLLECT
			If not indicated, shipping will automatically invoice collect.
			FEE _____
			WAITING _____
			XPU _____
			CHARGES _____
			FSC _____
			US _____
			SUB TOTAL _____
			GST _____
			TOTAL \$ _____
			IF AT OWNER'S RISK, WRITE ORD HERE
UNIT #	DECLARED VALUATION: Maximum liability of carrier is \$2.00 per lb. (\$4.41 per kilogram) unless declared valuation states otherwise.		\$ _____
DRIVER'S SIGNATURE - PICK UP BY	PICK UP TIME	DRIVER'S SIGNATURE - DELIVERY BY	FINISH TIME
<small>NOTICE OF CLAIM: (a) No carrier is liable for loss, damage or delay of any goods under the Bill of Lading unless written notice is given in writing to the originating carrier or the delivering carrier within sixty (60) days after the delivery of the goods, on the case of failure to make delivery within nine (9) months from the date of shipment. (b) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. (c) RECEIVED at the point of origin on the date specified from the consignor mentioned herein, the property herein described, in apparent good order, except as noted (contents and classification of contents of package unknown) marked, consigned and destined as indicated below, which the carrier agrees to carry and to deliver to the consignee at the said destination, subject to the rates and classification in effect on the date of shipment. It is mutually agreed, as to each carrier of all or any portion of the route to destination, and also each party of any time interested in all or any of the goods, that every service to be performed hereunder shall be subject to the conditions standard Bill of Lading, in power at the date of issuing, which are hereto agreed by the consignor and accepted for himself and his assigns. Printed or written, including conditions set aside by the standard Bill of Lading, in power at the date of issuing, which are hereto agreed by the consignor and accepted for himself and his assigns. The Contract for the carriage of the goods listed in the Bill of Lading is governed by regulation in force in the jurisdiction at the time and place of shipment and is subject to the conditions set out in such conditions.</small>			
SHIPPER PRINT	CONSIGNEE PRINT	DATE	
SHIPPER SIGN	CONSIGNEE SIGN	TIME	
WHITE: Office YELLOW: Carrier PINK: Consignee GOLDENROAD: Shipper		GST # 864540398RT0001	NUMBER OF PIECES RECEIVED ▲

PAPS# RWHV92292

Stove
R1000

Cooler ID: Cooler 7 CAC (Y/N) Temperature: 8.0 IR: 77

Coolant Type: Ice Blue Ice Ambient

Notes:

Sampling Locations: T/D SP T/D SP T/D SP T/D SP T/D SP

Sample Types:

Container Types:

Opened By: WNW

40 me glass
Date: 4/1/14
40 me glass

COPY

STRAIGHT BILL OF LADING
NOT NEGOTIABLE

RW HOT SHOT SERVICE INC.

250-425-7447
24 Hour Hot Shot Service

No. 92292

Sparwood, BC
Terrace, BC
Red Deer, AB

Vancouver, BC
Calgary, AB
Montreal, QC

Prince George, BC
Edmonton, AB
Spokane, WA

Elkford, BC
Ft. McMurray, AB
Shelby, MT

Tumbler Ridge, BC
Hinton, AB
Gillette, WY

INVOICE TO		DATE	
BILL OF LADING #		PURCHASE ORDER NUMBER	
SHIPPER (FROM)		CONSIGNEE (TO)	
STREET		STREET	
CITY/PROVINCE		POSTAL CODE	CITY/PROVINCE
CITY/PROVINCE		POSTAL CODE	POSTAL CODE
SPECIAL INSTRUCTIONS			FREIGHT CHARGES SHIPPER TO CHECK <input type="checkbox"/> PREPAID <input type="checkbox"/> COLLECT <small>If not indicated, shipping will automatically move collect.</small> FEE _____ WAITING _____ XPU _____ CHARGES _____ FSC _____ US _____ SUB TOTAL _____ GST _____ TOTAL \$ _____ <small>IF AT OWNER'S RISK, WRITE ORD HERE</small>
PACKAGES	DESCRIPTION OF ARTICLE AND SPECIAL MARKS	WEIGHT (Subject to Correction)	
PAPS# RWHV92292			
UNIT #	DECLARED VALUATION: Maximum liability of carrier is \$2.00 per lb. (\$4.41 per kilogram) unless declared valuation states otherwise.		
DRIVER'S SIGNATURE - PICK UP BY	PICK UP TIME	DRIVER'S SIGNATURE - DELIVERY BY	FINISH TIME
<small>NOTICE OF CLAIM: (a) No carrier is liable for loss, damage or delay of any goods under the Bill of Lading unless notice, therefore setting out particulars of the origin, destination and date of shipment of the goods and the estimated amount claimed respect of such loss, damage or delay is given in writing to the originating carrier or the delivering carrier within six (6) days after the delivery of the goods, on the case of failure to make delivery within nine (9) months from the date of shipment. (b) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. (c) RECEIVED at the point of origin on the date specified from the consignor mentioned herein, the property herein described, in apparent good order, except as noted (contents and condition) (contents of package unknown) marked, consigned and destined as indicated below, which the carrier agrees to carry and to deliver to the consignee at the said destination, subject to the rates and classification in effect on the date of shipment. It is mutually agreed, as to each carrier of all or any portion of the route to destination, and as to each party of any time interrelated in all or any of the goods, that every service to be performed hereunder shall be subject to the conditions standard Bill of Lading, in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. Printed or written, including conditions set aside by the standard Bill of Lading, in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. The Contract for the carriage of the goods listed in the Bill of Lading is governed by regulation in force in the jurisdiction at the time and place of shipment and is subject to the conditions set out in such conditions.</small>			
SHIPPER PRINT	CONSIGNEE PRINT	DATE	
SHIPPER SIGN	CONSIGNEE SIGN	TIME	
WHITE: Office	YELLOW: Carrier	PINK: Consignee	GOLDENROAD: Shipper
GST # 864540398RT0001			NUMBER OF PIECES RECEIVED ▲

Cooler ID: Cooler 4

CQC (Y/N)

Temperature: 2.3

IR: 33

Coolant Type: Ice Blue Ice Ambient

Notes:

Sampling Locations:

Sample Types:

Container Types:

Opened By: ASG

Date: 6/9/22

	RG	LC	EV	GH
T/D	SP	T/D	SP	T/D
	60ml plastic	125ml plastic	60ml plastic	60ml plastic

COPY



June 27, 2022

Teck Resources Limited - Vancouver
Mike Pope
421 Pine Avenue
Sparwood, B.C. CANADA V0B2G0
mike.pope@teck.com

Revision 1

Following the submission of the original report on June 27, 2022, it was determined that **Sample ID** and **Sample Location (sys_loc_code)** values included in the original report were incorrect for several samples. Specifically, for samples 2206149-31, 2206149-32, and 2206149-33, an "RG_M13" term was used for reporting in the initial report. In this revised report, an "RG_M13" term was used for the **Sample ID** and **Sample Location (sys_loc_code)** values instead, in accordance with the COC forms. No other changes were made, with respect to the original report issued on June 27, 2022.

Re: Regional Effects Program

Dear Mike Pope,

On June 9, 2022, Brooks Applied Labs (BAL) received thirty (30) aqueous samples. The samples were logged-in for total recoverable selenium [Se], dissolved Se [Se], and Se speciation analyses, according to the chain-of-custody (COC) form.

The sample fractions for total recoverable Se and dissolved Se were not preserved in the field. The samples were preserved (pH < 2) upon receipt at BAL. All sample fractions for total recoverable Se and dissolved Se were preserved within the (14 calendar day) preservation holding time.

The sample fractions logged in for Se speciation and dissolved Se had been field-filtered prior to receipt at BAL. All samples were stored according to BAL SOPs.

Total Recoverable Se and Dissolved Se

Each aqueous sample fraction for dissolved Se was digested in a closed vessel (bomb) with nitric and hydrochloric acids. The resulting digests were analyzed for Se content via inductively coupled plasma triple quadrupole mass spectrometry (ICP-QQQ-MS). The ICP-QQQ-MS instrumentation uses advanced interference removal techniques to ensure accuracy of the sample results. For more information, please visit the *Interference Reduction Technology* section on our website, brooksapplied.com.

Selenium Speciation

Each aqueous sample was analyzed for selenium speciation using ion chromatography inductively coupled plasma collision reaction cell mass spectrometry (IC-ICP-CRC-MS). Selenium species are chromatographically separated on an ion exchange column and then quantified using inductively coupled plasma collision reaction cell mass spectrometry (ICP-CRC-MS); for more information on this determinative technique, please visit the *Interference Reduction Technology* section on our website. The chromatographic

method applied for the analyses provides greater retention of methylseleninic acid and selenomethionine, allowing for more definitive quantitation of these species.

In accordance with the quotation issued for this project, selenium speciation was defined as dissolved selenite [Se(IV)], selenate [Se(VI)], selenocyanate [SeCN], methylseleninic acid [MeSe(IV)], methaneselenonic acid [MeSe(VI)], selenomethionine [SeMet], selenosulfate [SeSO₃], and dimethylselenoxide [DMSeO]. Unknown Se species was defined as the total concentration of all unknown Se species observed during the analysis. This item is identified on the report as [Unk Se Sp].

DMSeO elutes early in the chromatographic run due to the nature of the molecule and the applied chromatographic separation method. Since this species elutes near the dead volume, additional selenium species may coelute. Alternate methods can be applied, upon client request, to increase the separation of DMSeO from potentially co-eluting selenium species.

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

In instances where a matrix spike/matrix spike duplicate (MS/MSD) set was spiked at a level less than the native sample concentration, the recoveries and the relative percent difference (RPD) are not considered valid indicators of data quality. In such instances, the recoveries of the laboratory fortified blanks (BS) and/or standard reference materials (SRM) demonstrate the accuracy of the applied methods. When the spiking level was less than 25% of the native sample concentration, the spike recovery was not reported (**NR**) and the relative percent difference (RPD) of the MS/MSD set was not calculated (**N/C**).

In cases when either the native sample concentration was non-detectable (reported as less than or equal to the MDL) and/or the corresponding DUP result was also non-detectable, the RPD between the two values was not calculated (**N/C**).

Except for concentration qualifiers, all data were reported without qualification. All associated quality control sample results met the acceptance criteria.

BAL, an accredited laboratory, certifies that the reported results of all analyses for which BAL is NELAP accredited meet all NELAP requirements. For more information, please see the *Report Information* page.

Please feel free to contact us if you have any questions regarding this report.

Sincerely,



Jeremy Maute

Senior Project Manager

Jeremy@brooksapplied.com



Report Information

Laboratory Accreditation

BAL is accredited by the *National Environmental Laboratory Accreditation Program* (NELAP) through the State of Florida Department of Health, Bureau of Laboratories (E87982) and is certified to perform many environmental analyses. BAL is also certified by many other states to perform environmental analyses. For a current list of our accreditations/certifications, please visit our website at <http://www.brooksapplied.com/resources/certificates-permits/> or review Tables 1 and 2 in our Accreditation Information. Results reported relate only to the samples listed in the report.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

AR	as received	MS	matrix spike
BAL	Brooks Applied Labs	MSD	matrix spike duplicate
BLK	method blank	ND	non-detect
BS	blank spike	NR	non-reportable
CAL	calibration standard	N/C	not calculated
CCB	continuing calibration blank	PS	post preparation spike
CCV	continuing calibration verification	REC	percent recovery
COC	chain of custody record	RPD	relative percent difference
D	dissolved fraction	SCV	secondary calibration verification
DUP	duplicate	SOP	standard operating procedure
IBL	instrument blank	SRM	reference material
ICV	initial calibration verification	T	total fraction
MDL	method detection limit	TR	total recoverable fraction
MRL	method reporting limit		

Definition of Data Qualifiers

(Effective 3/23/2020)

E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Please see narrative for explanation.
J	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1	Estimated value. A full explanation is presented in the narrative.
M	Duplicate precision (RPD) was not within acceptance criteria. Please see narrative for explanation.
N	Spike recovery was not within acceptance criteria. Please see narrative for explanation.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.
Z	Holding time and/or preservation requirements not established for this method; however, BAL recommendations for holding time were not followed. Please see narrative for explanation.

These qualifiers are based on those previously utilized by Brooks Applied Labs, those found in the EPA SOW ILM03.0, Exhibit B, Section III, pg. B-18, and the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review; USEPA; January 2010. These supersede all previous qualifiers ever employed by BAL.



Accreditation Information

Table 1. Accredited method/matrix/analytes for TNI
Issued by: State of Florida Dept. of Health (The NELAC Institute 2016 Standard)
Issued on: July 1, 2021; Valid to: June 30, 2022
Certificate Number: E87982-37

Method	Matrix	TNI Accredited Analyte(s)
EPA 1638	Non-Potable Waters	Ag, Cd, Cu, Ni, Pb, Sb, Se, Ti, Zn
EPA 200.8	Non-Potable Waters	Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Sb, Se, Ti, U, V, Zn
EPA 6020	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Ti, U, V, Zn
	Solids/Chemicals & Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Ti, V, Zn
BAL-5000	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, U, V, Zn, Hardness
	Solids/Chemicals	Ag, As, B, Be, Cd, Co, Cr, Cu, Pb, Mo, Ni, Sb, Se, Sn, Sr, Ti, V, Zn
	Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Ti, V, Zn
EPA 1640	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn
EPA 1631E	Non-Potable Waters, Solids/Chemicals & Biological	Total Mercury
EPA 1630	Non-Potable Waters	Methyl Mercury
BAL-3200	Solids/Chemicals & Biological	Methyl Mercury
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
BAL-4201	Non-Potable Waters	Se(IV), Se(VI)
BAL-4300	Non-Potable Waters Solid/Chemicals	Cr(VI)
SM2340B	Non-Potable Waters	Hardness



Accreditation Information

**Table 2. Accredited method/matrix/analytes for ISO (1),
 Non-Governmental TNI (2)
 Issued by: ANAB
 Issued on: September 21, 2021; Valid to: March 30, 2024**

Method	Matrix	ISO and Non-Gov. TNI Accredited Analyte(s)
EPA 1638 Mod EPA 200.8 Mod EPA 6020 Mod	Non-Potable Waters	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, U, V, Zn
BAL-5000	Solids/Chemicals & Biological	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, V, Zn Hg (Biological Only)
EPA 1640 Mod	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn Ag, As, Cr, Co, Se, Ti, V (ISO Only)
EPA 1631E Mod BAL-3100	Non-Potable Waters, Solids/Chemicals & Biological/Food	Total Mercury
EPA 1630 Mod BAL-3200	Non-Potable Waters, Solids/Chemicals Biological	Methyl Mercury
EPA 1632A Mod BAL-3300	Non-Potable Waters Biological/Food Solids/Chemicals	Inorganic Arsenic (ISO Only) Inorganic Arsenic (ISO Only)
AOAC 2015.01 Mod BAL-5000	Food	As, Cd, Hg, Pb
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
	Biological by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4101	Food by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4201	Non-Potable Waters	Se(IV), Se(VI), SeCN, SeMet
BAL-4300	Non-Potable Waters, Solid/Chemicals	Cr(VI)
SM 3500-Fe BAL-4500	Non-Potable Waters	Fe, Fe(II) (ISO Only)
SM2340B	Non-Potable Waters	Hardness
SM 2540G BAL-0501	Solids/Chemicals & Biological	% Dry Weight



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
RG_ERCKUT_WS_LAEMP_EVO_20 22-05-31_NP	2206149-01	WS	Sample	05/31/2022	06/09/2022
RG_ERCKUT_WS_LAEMP_EVO_20 22-05-31_NP_NAL	2206149-02	WS	Sample	05/31/2022	06/09/2022
RG_ERCKUT_WS_LAEMP_EVO_20 22-05-31_NP_NAL	2206149-03	WS	Sample	05/31/2022	06/09/2022
RG_ERCKMD_WS_LAEMP_EVO_2 022-05-31_NP	2206149-04	WS	Sample	05/31/2022	06/09/2022
RG_ERCKMD_WS_LAEMP_EVO_2 022-05-31_NP_NAL	2206149-05	WS	Sample	05/31/2022	06/09/2022
RG_ERCKMD_WS_LAEMP_EVO_2 022-05-31_NP_NAL	2206149-06	WS	Sample	05/31/2022	06/09/2022
RG_MIDBO_WS_LAEMP_EVO_202 2-06-01_NP	2206149-07	WS	Sample	06/01/2022	06/09/2022
RG_MIDBO_WS_LAEMP_EVO_202 2-06-01_NP_NAL	2206149-08	WS	Sample	06/01/2022	06/09/2022
RG_MIDBO_WS_LAEMP_EVO_202 2-06-01_NP_NAL	2206149-09	WS	Sample	06/01/2022	06/09/2022
RG_RIVER_WS_LAEMP_EVO_2022 -06-01_NP	2206149-10	WS	Sample	06/01/2022	06/09/2022
RG_RIVER_WS_LAEMP_EVO_2022 -06-01_NP_NAL	2206149-11	WS	Sample	06/01/2022	06/09/2022
RG_RIVER_WS_LAEMP_EVO_2022 -06-01_NP_NAL	2206149-12	WS	Sample	06/01/2022	06/09/2022
RG_MIDGA_WS_LAEMP_EVO_202 2-06-01_NP	2206149-13	WS	Sample	06/01/2022	06/09/2022
RG_MIDGA_WS_LAEMP_EVO_202 2-06-01_NP_NAL	2206149-14	WS	Sample	06/01/2022	06/09/2022
RG_MIDGA_WS_LAEMP_EVO_202 2-06-01_NP_NAL	2206149-15	WS	Sample	06/01/2022	06/09/2022
RG_FBLANK_WS_LAEMP_EVO_20 22-06-01_NP	2206149-16	WS	Sample	06/01/2022	06/09/2022
RG_FBLANK_WS_LAEMP_EVO_20 22-06-01_NP_NAL	2206149-17	WS	Sample	06/01/2022	06/09/2022
RG_FBLANK_WS_LAEMP_EVO_20 22-06-01_NP_NAL	2206149-18	WS	Sample	06/01/2022	06/09/2022
RG_GATEDP_WS_LAEMP_EVO_20 22-06-01_NP	2206149-19	WS	Sample	06/01/2022	06/09/2022
RG_GATEDP_WS_LAEMP_EVO_20 22-06-01_NP_NAL	2206149-20	WS	Sample	06/01/2022	06/09/2022
RG_GATEDP_WS_LAEMP_EVO_20 22-06-01_NP_NAL	2206149-21	WS	Sample	06/01/2022	06/09/2022



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
RG_ERCKDT_WS_LAEMP_EVO_20 22-06-01_NP	2206149-22	WS	Sample	06/01/2022	06/09/2022
RG_ERCKDT_WS_LAEMP_EVO_20 22-06-01_NP_NAL	2206149-23	WS	Sample	06/01/2022	06/09/2022
RG_ERCKDT_WS_LAEMP_EVO_20 22-06-01_NP_NAL	2206149-24	WS	Sample	06/01/2022	06/09/2022
RG_ERCKUC_WS_LAEMP_EVO_20 22-06-02_NP	2206149-25	WS	Sample	06/02/2022	06/09/2022
RG_ERCKUC_WS_LAEMP_EVO_20 22-06-02_NP_NAL	2206149-26	WS	Sample	06/02/2022	06/09/2022
RG_ERCKUC_WS_LAEMP_EVO_20 22-06-02_NP_NAL	2206149-27	WS	Sample	06/02/2022	06/09/2022
RG_ERCK_WS_LAEMP_EVO_2022- 06-02_NP	2206149-28	WS	Sample	06/02/2022	06/09/2022
RG_ERCK_WS_LAEMP_EVO_2022- 06-02_NP_NAL	2206149-29	WS	Sample	06/02/2022	06/09/2022
RG_ERCK_WS_LAEMP_EVO_2022- 06-02_NP_NAL	2206149-30	WS	Sample	06/02/2022	06/09/2022
RG_MI3_WS_LAEMP_EVO_2022-0 6-02_NP	2206149-31	WS	Sample	06/02/2022	06/09/2022
RG_MI3_WS_LAEMP_EVO_2022-0 6-02_NP_NAL	2206149-32	WS	Sample	06/02/2022	06/09/2022
RG_MI3_WS_LAEMP_EVO_2022-0 6-02_NP_NAL	2206149-33	WS	Sample	06/02/2022	06/09/2022
RG_MIDER_WS_LAEMP_EVO_202 2-06-02_NP	2206149-34	WS	Sample	06/02/2022	06/09/2022
RG_MIDER_WS_LAEMP_EVO_202 2-06-02_NP_NAL	2206149-35	WS	Sample	06/02/2022	06/09/2022
RG_MIDER_WS_LAEMP_EVO_202 2-06-02_NP_NAL	2206149-36	WS	Sample	06/02/2022	06/09/2022
RG_GATE_WS_LAEMP_EVO_2022- 06-02_NP	2206149-37	WS	Sample	06/02/2022	06/09/2022
RG_GATE_WS_LAEMP_EVO_2022- 06-02_NP_NAL	2206149-38	WS	Sample	06/02/2022	06/09/2022
RG_GATE_WS_LAEMP_EVO_2022- 06-02_NP_NAL	2206149-39	WS	Sample	06/02/2022	06/09/2022
RG_FBLANK_WS_LAEMP_EVO_20 22-06-02_NP	2206149-40	WS	Sample	06/02/2022	06/09/2022
RG_FBLANK_WS_LAEMP_EVO_20 22-06-02_NP_NAL	2206149-41	WS	Sample	06/02/2022	06/09/2022
RG_FBLANK_WS_LAEMP_EVO_20 22-06-02_NP_NAL	2206149-42	WS	Sample	06/02/2022	06/09/2022



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
RG_RIVER_WS_LAEMP_EVO_2022 -06-02_NP_NAL	2206149-43	WS	Sample	06/02/2022	06/09/2022
RG_RIVER_WS_LAEMP_EVO_2022 -06-02_NP_NAL	2206149-44	WS	Sample	06/02/2022	06/09/2022
RG_RIVER_WS_LAEMP_EVO_2022 -06-02_NP_NAL	2206149-45	WS	Sample	06/02/2022	06/09/2022

Batch Summary

Analyte	Lab Matrix	Method	Prepared	Analyzed	Batch	Sequence
DMSeO	Water	SOP BAL-4201	06/15/2022	06/16/2022	B221293	S220634
MeSe(IV)	Water	SOP BAL-4201	06/15/2022	06/16/2022	B221293	S220634
MeSe(VI)	Water	SOP BAL-4201	06/15/2022	06/16/2022	B221293	S220634
Se	Water	EPA 1638 Mod	06/16/2022	06/17/2022	B221311	S220650
Se(IV)	Water	SOP BAL-4201	06/15/2022	06/16/2022	B221293	S220634
Se(VI)	Water	SOP BAL-4201	06/15/2022	06/16/2022	B221293	S220634
SeCN	Water	SOP BAL-4201	06/15/2022	06/16/2022	B221293	S220634
SeMet	Water	SOP BAL-4201	06/15/2022	06/16/2022	B221293	S220634
SeSO3	Water	SOP BAL-4201	06/15/2022	06/16/2022	B221293	S220634
Unk Se Sp	Water	SOP BAL-4201	06/15/2022	06/16/2022	B221293	S220634



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKUT_WS_LAEMP_EVO_2022-05-31_NP										
2206149-01	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206149-01	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206149-01	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206149-01	Se(IV)	WS	D	0.063	J	0.010	0.075	µg/L	B221293	S220634
2206149-01	Se(VI)	WS	D	164		0.010	0.055	µg/L	B221293	S220634
2206149-01	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221293	S220634
2206149-01	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206149-01	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221293	S220634
2206149-01	Unk Se Sp	WS	D	≤ 0.030	U	0.030	0.225	µg/L	B221293	S220634
RG_ERCKUT_WS_LAEMP_EVO_2022-05-31_NP_NAL										
2206149-02	Se	WS	TR	152		0.165	0.528	µg/L	B221311	S220650
RG_ERCKUT_WS_LAEMP_EVO_2022-05-31_NP_NAL										
2206149-03	Se	WS	D	150		0.165	0.528	µg/L	B221311	S220650
RG_ERCKMD_WS_LAEMP_EVO_2022-05-31_NP										
2206149-04	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206149-04	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206149-04	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206149-04	Se(IV)	WS	D	0.112		0.010	0.075	µg/L	B221293	S220634
2206149-04	Se(VI)	WS	D	159		0.010	0.055	µg/L	B221293	S220634
2206149-04	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221293	S220634
2206149-04	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206149-04	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221293	S220634
2206149-04	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221293	S220634
RG_ERCKMD_WS_LAEMP_EVO_2022-05-31_NP_NAL										
2206149-05	Se	WS	TR	149		0.165	0.528	µg/L	B221311	S220650
RG_ERCKMD_WS_LAEMP_EVO_2022-05-31_NP_NAL										
2206149-06	Se	WS	D	146		0.165	0.528	µg/L	B221311	S220650



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_MIDBO_WS_LAEMP_EVO_2022-06-01_NP										
2206149-07	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206149-07	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206149-07	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206149-07	Se(IV)	WS	D	0.064	J	0.010	0.075	µg/L	B221293	S220634
2206149-07	Se(VI)	WS	D	3.61		0.010	0.055	µg/L	B221293	S220634
2206149-07	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221293	S220634
2206149-07	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206149-07	SeSO ₃	WS	D	0.012	J	0.010	0.055	µg/L	B221293	S220634
2206149-07	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221293	S220634
RG_MIDBO_WS_LAEMP_EVO_2022-06-01_NP_NAL										
2206149-08	Se	WS	TR	3.57		0.165	0.528	µg/L	B221311	S220650
RG_MIDBO_WS_LAEMP_EVO_2022-06-01_NP_NAL										
2206149-09	Se	WS	D	3.58		0.165	0.528	µg/L	B221311	S220650
RG_RIVER_WS_LAEMP_EVO_2022-06-01_NP										
2206149-10	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206149-10	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206149-10	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206149-10	Se(IV)	WS	D	0.046	J	0.010	0.075	µg/L	B221293	S220634
2206149-10	Se(VI)	WS	D	3.29		0.010	0.055	µg/L	B221293	S220634
2206149-10	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221293	S220634
2206149-10	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206149-10	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221293	S220634
2206149-10	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221293	S220634
RG_RIVER_WS_LAEMP_EVO_2022-06-01_NP_NAL										
2206149-11	Se	WS	TR	3.50		0.165	0.528	µg/L	B221311	S220650
RG_RIVER_WS_LAEMP_EVO_2022-06-01_NP_NAL										
2206149-12	Se	WS	D	3.35		0.165	0.528	µg/L	B221311	S220650



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_MIDGA_WS_LAEMP_EVO_2022-06-01_NP										
2206149-13	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206149-13	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206149-13	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206149-13	Se(IV)	WS	D	0.073	J	0.010	0.075	µg/L	B221293	S220634
2206149-13	Se(VI)	WS	D	5.04		0.010	0.055	µg/L	B221293	S220634
2206149-13	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221293	S220634
2206149-13	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206149-13	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221293	S220634
2206149-13	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221293	S220634
RG_MIDGA_WS_LAEMP_EVO_2022-06-01_NP_NAL										
2206149-14	Se	WS	TR	5.10		0.165	0.528	µg/L	B221311	S220650
RG_MIDGA_WS_LAEMP_EVO_2022-06-01_NP_NAL										
2206149-15	Se	WS	D	5.46		0.165	0.528	µg/L	B221311	S220650
RG_FBLANK_WS_LAEMP_EVO_2022-06-01_NP										
2206149-16	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206149-16	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206149-16	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206149-16	Se(IV)	WS	D	0.018	J	0.010	0.075	µg/L	B221293	S220634
2206149-16	Se(VI)	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221293	S220634
2206149-16	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221293	S220634
2206149-16	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206149-16	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221293	S220634
2206149-16	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221293	S220634
RG_FBLANK_WS_LAEMP_EVO_2022-06-01_NP_NAL										
2206149-17	Se	WS	TR	0.261	J	0.165	0.528	µg/L	B221311	S220650
RG_FBLANK_WS_LAEMP_EVO_2022-06-01_NP_NAL										
2206149-18	Se	WS	D	0.280	J	0.165	0.528	µg/L	B221311	S220650



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_GATEDP_WS_LAEMP_EVO_2022-06-01_NP										
2206149-19	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206149-19	MeSe(IV)	WS	D	0.028		0.010	0.025	µg/L	B221293	S220634
2206149-19	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206149-19	Se(IV)	WS	D	0.541		0.010	0.075	µg/L	B221293	S220634
2206149-19	Se(VI)	WS	D	64.4		0.010	0.055	µg/L	B221293	S220634
2206149-19	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221293	S220634
2206149-19	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206149-19	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221293	S220634
2206149-19	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221293	S220634
RG_GATEDP_WS_LAEMP_EVO_2022-06-01_NP_NAL										
2206149-20	Se	WS	TR	63.8		0.165	0.528	µg/L	B221311	S220650
RG_GATEDP_WS_LAEMP_EVO_2022-06-01_NP_NAL										
2206149-21	Se	WS	D	62.6		0.165	0.528	µg/L	B221311	S220650
RG_ERCKDT_WS_LAEMP_EVO_2022-06-01_NP										
2206149-22	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206149-22	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206149-22	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206149-22	Se(IV)	WS	D	0.035	J	0.010	0.075	µg/L	B221293	S220634
2206149-22	Se(VI)	WS	D	151		0.010	0.055	µg/L	B221293	S220634
2206149-22	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221293	S220634
2206149-22	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206149-22	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221293	S220634
2206149-22	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221293	S220634
RG_ERCKDT_WS_LAEMP_EVO_2022-06-01_NP_NAL										
2206149-23	Se	WS	TR	147		0.165	0.528	µg/L	B221311	S220650
RG_ERCKDT_WS_LAEMP_EVO_2022-06-01_NP_NAL										
2206149-24	Se	WS	D	150		0.165	0.528	µg/L	B221311	S220650



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKUC_WS_LAEMP_EVO_2022-06-02_NP										
2206149-25	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206149-25	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206149-25	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206149-25	Se(IV)	WS	D	0.180		0.010	0.075	µg/L	B221293	S220634
2206149-25	Se(VI)	WS	D	148		0.010	0.055	µg/L	B221293	S220634
2206149-25	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221293	S220634
2206149-25	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206149-25	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221293	S220634
2206149-25	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221293	S220634
RG_ERCKUC_WS_LAEMP_EVO_2022-06-02_NP_NAL										
2206149-26	Se	WS	TR	145		0.165	0.528	µg/L	B221311	S220650
RG_ERCKUC_WS_LAEMP_EVO_2022-06-02_NP_NAL										
2206149-27	Se	WS	D	147		0.165	0.528	µg/L	B221311	S220650
RG_ERCK_WS_LAEMP_EVO_2022-06-02_NP										
2206149-28	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206149-28	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206149-28	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206149-28	Se(IV)	WS	D	0.177		0.010	0.075	µg/L	B221293	S220634
2206149-28	Se(VI)	WS	D	148		0.010	0.055	µg/L	B221293	S220634
2206149-28	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221293	S220634
2206149-28	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206149-28	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221293	S220634
2206149-28	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221293	S220634
RG_ERCK_WS_LAEMP_EVO_2022-06-02_NP_NAL										
2206149-29	Se	WS	TR	146		0.165	0.528	µg/L	B221311	S220650
RG_ERCK_WS_LAEMP_EVO_2022-06-02_NP_NAL										
2206149-30	Se	WS	D	146		0.165	0.528	µg/L	B221311	S220650



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_MI3_WS_LAEMP_EVO_2022-06-02_NP										
2206149-31	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206149-31	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206149-31	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206149-31	Se(IV)	WS	D	0.030	J	0.010	0.075	µg/L	B221293	S220634
2206149-31	Se(VI)	WS	D	0.764		0.010	0.055	µg/L	B221293	S220634
2206149-31	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221293	S220634
2206149-31	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206149-31	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221293	S220634
2206149-31	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221293	S220634
RG_MI3_WS_LAEMP_EVO_2022-06-02_NP_NAL										
2206149-32	Se	WS	TR	1.12		0.165	0.528	µg/L	B221311	S220650
RG_MI3_WS_LAEMP_EVO_2022-06-02_NP_NAL										
2206149-33	Se	WS	D	1.05		0.165	0.528	µg/L	B221311	S220650
RG_MIDER_WS_LAEMP_EVO_2022-06-02_NP										
2206149-34	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206149-34	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206149-34	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206149-34	Se(IV)	WS	D	0.040	J	0.010	0.075	µg/L	B221293	S220634
2206149-34	Se(VI)	WS	D	1.13		0.010	0.055	µg/L	B221293	S220634
2206149-34	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221293	S220634
2206149-34	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206149-34	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221293	S220634
2206149-34	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221293	S220634
RG_MIDER_WS_LAEMP_EVO_2022-06-02_NP_NAL										
2206149-35	Se	WS	TR	1.18		0.165	0.528	µg/L	B221311	S220650
RG_MIDER_WS_LAEMP_EVO_2022-06-02_NP_NAL										
2206149-36	Se	WS	D	1.30		0.165	0.528	µg/L	B221311	S220650



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_GATE_WS_LAEMP_EVO_2022-06-02_NP										
2206149-37	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206149-37	MeSe(IV)	WS	D	0.024	J	0.010	0.025	µg/L	B221293	S220634
2206149-37	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206149-37	Se(IV)	WS	D	0.550		0.010	0.075	µg/L	B221293	S220634
2206149-37	Se(VI)	WS	D	70.2		0.010	0.055	µg/L	B221293	S220634
2206149-37	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221293	S220634
2206149-37	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206149-37	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221293	S220634
2206149-37	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221293	S220634
RG_GATE_WS_LAEMP_EVO_2022-06-02_NP_NAL										
2206149-38	Se	WS	TR	69.1		0.165	0.528	µg/L	B221311	S220650
RG_GATE_WS_LAEMP_EVO_2022-06-02_NP_NAL										
2206149-39	Se	WS	D	68.7		0.165	0.528	µg/L	B221311	S220650
RG_FBLANK_WS_LAEMP_EVO_2022-06-02_NP										
2206149-40	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206149-40	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206149-40	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206149-40	Se(IV)	WS	D	0.014	J	0.010	0.075	µg/L	B221293	S220634
2206149-40	Se(VI)	WS	D	0.013	J	0.010	0.055	µg/L	B221293	S220634
2206149-40	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221293	S220634
2206149-40	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206149-40	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221293	S220634
2206149-40	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221293	S220634
RG_FBLANK_WS_LAEMP_EVO_2022-06-02_NP_NAL										
2206149-41	Se	WS	TR	0.209	J	0.165	0.528	µg/L	B221311	S220650
RG_FBLANK_WS_LAEMP_EVO_2022-06-02_NP_NAL										
2206149-42	Se	WS	D	≤ 0.165	U	0.165	0.528	µg/L	B221311	S220650



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_RIVER_WS_LAEMP_EVO_2022-06-02_NP_NAL										
2206149-43	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206149-43	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206149-43	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206149-43	Se(IV)	WS	D	0.034	J	0.010	0.075	µg/L	B221293	S220634
2206149-43	Se(VI)	WS	D	1.17		0.010	0.055	µg/L	B221293	S220634
2206149-43	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221293	S220634
2206149-43	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221293	S220634
2206149-43	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221293	S220634
2206149-43	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221293	S220634
RG_RIVER_WS_LAEMP_EVO_2022-06-02_NP_NAL										
2206149-44	Se	WS	TR	1.36		0.165	0.528	µg/L	B221311	S220650
RG_RIVER_WS_LAEMP_EVO_2022-06-02_NP_NAL										
2206149-45	Se	WS	D	1.29		0.165	0.528	µg/L	B221311	S220650



Accuracy & Precision Summary

Batch: B221293
Lab Matrix: Water
Method: SOP BAL-4201

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221293-BS1	Blank Spike, (2124033)						
	MeSe(IV)		5.095	5.519	µg/L	108% 75-125	
	Se(IV)		5.000	4.887	µg/L	98% 75-125	
	Se(VI)		5.000	4.730	µg/L	95% 75-125	
	SeCN		5.015	4.638	µg/L	92% 75-125	
	SeMet		4.932	4.613	µg/L	94% 75-125	
B221293-DUP2	Duplicate, (2206149-07)						
	DMSeO	ND		ND	µg/L		N/C 25
	MeSe(IV)	ND		ND	µg/L		N/C 25
	MeSe(VI)	ND		ND	µg/L		N/C 25
	Se(IV)	0.064		0.054	µg/L		17% 25
	Se(VI)	3.610		3.325	µg/L		8% 25
	SeCN	ND		ND	µg/L		N/C 25
	SeMet	ND		ND	µg/L		N/C 25
	SeSO3	0.012		ND	µg/L		N/C 25
Unk Se Sp	ND		ND	µg/L		N/C 25	
B221293-MS2	Matrix Spike, (2206149-07)						
	Se(IV)	0.064	4.900	5.284	µg/L	107% 75-125	
	Se(VI)	3.610	5.100	8.456	µg/L	95% 75-125	
	SeCN	ND	1.962	1.910	µg/L	97% 75-125	
	SeMet	ND	1.977	1.853	µg/L	94% 75-125	
B221293-MSD2	Matrix Spike Duplicate, (2206149-07)						
	Se(IV)	0.064	4.900	5.105	µg/L	103% 75-125	3% 25
	Se(VI)	3.610	5.100	8.295	µg/L	92% 75-125	2% 25
	SeCN	ND	1.962	1.871	µg/L	95% 75-125	2% 25
	SeMet	ND	1.977	1.809	µg/L	91% 75-125	2% 25



Accuracy & Precision Summary

Batch: B221293
Lab Matrix: Water
Method: SOP BAL-4201

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221293-DUP3	Duplicate, (2206149-28)						
	DMS ₂ SeO	ND		ND	µg/L		N/C 25
	MeSe(IV)	ND		ND	µg/L		N/C 25
	MeSe(VI)	ND		ND	µg/L		N/C 25
	Se(IV)	0.177		0.178	µg/L		0.9% 25
	Se(VI)	148.4		147.2	µg/L		0.9% 25
	SeCN	ND		ND	µg/L		N/C 25
	SeMet	ND		ND	µg/L		N/C 25
	SeSO ₃	ND		ND	µg/L		N/C 25
Unk Se Sp	ND		ND	µg/L		N/C 25	
B221293-MS3	Matrix Spike, (2206149-28)						
	Se(IV)	0.177	4.900	4.977	µg/L	98% 75-125	
	Se(VI)	148.4	5.100	152.4	µg/L	NR 75-125	
	SeCN	ND	1.962	1.866	µg/L	95% 75-125	
SeMet	ND	1.977	1.731	µg/L	88% 75-125		
B221293-MSD3	Matrix Spike Duplicate, (2206149-28)						
	Se(IV)	0.177	4.900	4.906	µg/L	97% 75-125	1% 25
	Se(VI)	148.4	5.100	150.6	µg/L	NR 75-125	N/C 25
	SeCN	ND	1.962	1.905	µg/L	97% 75-125	2% 25
SeMet	ND	1.977	1.753	µg/L	89% 75-125	1% 25	



Accuracy & Precision Summary

Batch: B221311
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221311-BS1	Blank Spike, (2137005) Se		200.0	192.0	µg/L	96% 75-125	
B221311-BS2	Blank Spike, (2137005) Se		200.0	186.5	µg/L	93% 75-125	
B221311-BS3	Blank Spike, (2137005) Se		200.0	195.5	µg/L	98% 75-125	
B221311-BS4	Blank Spike, (2137005) Se		200.0	189.3	µg/L	95% 75-125	
B221311-SRM1	Reference Material (2214010, TMDA 51.5 Reference Standard - Bottle 2 - SRM) Se		14.30	13.56	µg/L	95% 75-125	
B221311-SRM2	Reference Material (2214010, TMDA 51.5 Reference Standard - Bottle 2 - SRM) Se		14.30	13.43	µg/L	94% 75-125	
B221311-SRM3	Reference Material (2214010, TMDA 51.5 Reference Standard - Bottle 2 - SRM) Se		14.30	14.77	µg/L	103% 75-125	
B221311-SRM4	Reference Material (2214010, TMDA 51.5 Reference Standard - Bottle 2 - SRM) Se		14.30	13.33	µg/L	93% 75-125	
B221311-DUP3	Duplicate, (2206149-02) Se	151.6		150.2	µg/L		0.9% 20
B221311-MS3	Matrix Spike, (2206149-02) Se	151.6	220.0	356.2	µg/L	93% 75-125	
B221311-MSD3	Matrix Spike Duplicate, (2206149-02) Se	151.6	220.0	362.6	µg/L	96% 75-125	2% 20



Accuracy & Precision Summary

Batch: B221311
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221311-DUP4	Duplicate, (2206149-14) Se	5.104		5.335	µg/L		4% 20
B221311-MS4	Matrix Spike, (2206149-14) Se	5.104	220.0	213.8	µg/L	95% 75-125	
B221311-MSD4	Matrix Spike Duplicate, (2206149-14) Se	5.104	220.0	206.0	µg/L	91% 75-125	4% 20
B221311-DUP5	Duplicate, (2206149-29) Se	146.1		148.2	µg/L		1% 20
B221311-MS5	Matrix Spike, (2206149-29) Se	146.1	220.0	352.3	µg/L	94% 75-125	
B221311-MSD5	Matrix Spike Duplicate, (2206149-29) Se	146.1	220.0	351.9	µg/L	94% 75-125	0.1% 20
B221311-DUP6	Duplicate, (2206149-38) Se	69.06		67.44	µg/L		2% 20
B221311-MS6	Matrix Spike, (2206149-38) Se	69.06	220.0	268.7	µg/L	91% 75-125	
B221311-MSD6	Matrix Spike Duplicate, (2206149-38) Se	69.06	220.0	258.8	µg/L	86% 75-125	4% 20



Method Blanks & Reporting Limits

Batch: B221293
Matrix: Water
Method: SOP BAL-4201
Analyte: DMSeO

Sample	Result	Units	
B221293-BLK1	0.00	µg/L	
B221293-BLK2	0.00	µg/L	
B221293-BLK3	0.00	µg/L	
B221293-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005

Analyte: MeSe(IV)

Sample	Result	Units	
B221293-BLK1	0.00	µg/L	
B221293-BLK2	0.00	µg/L	
B221293-BLK3	0.00	µg/L	
B221293-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005

Analyte: MeSe(VI)

Sample	Result	Units	
B221293-BLK1	0.00	µg/L	
B221293-BLK2	0.00	µg/L	
B221293-BLK3	0.00	µg/L	
B221293-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005



Method Blanks & Reporting Limits

Analyte: Se(IV)

Sample	Result	Units	
B221293-BLK1	0.00	µg/L	
B221293-BLK2	0.00	µg/L	
B221293-BLK3	0.00	µg/L	
B221293-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.015		MRL: 0.015

Analyte: Se(VI)

Sample	Result	Units	
B221293-BLK1	0.00	µg/L	
B221293-BLK2	0.00	µg/L	
B221293-BLK3	0.00	µg/L	
B221293-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.011		MRL: 0.011

Analyte: SeCN

Sample	Result	Units	
B221293-BLK1	0.00	µg/L	
B221293-BLK2	0.00	µg/L	
B221293-BLK3	0.00	µg/L	
B221293-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.010		MRL: 0.010

Analyte: SeMet

Sample	Result	Units	
B221293-BLK1	0.00	µg/L	
B221293-BLK2	0.00	µg/L	
B221293-BLK3	0.00	µg/L	
B221293-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.005		MRL: 0.005



Method Blanks & Reporting Limits

Analyte: SeSO3

Sample	Result	Units	
B221293-BLK1	0.00	µg/L	
B221293-BLK2	0.00	µg/L	
B221293-BLK3	0.00	µg/L	
B221293-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.011		MRL: 0.011

Analyte: Unk Se Sp

Sample	Result	Units	
B221293-BLK1	0.00	µg/L	
B221293-BLK2	0.00	µg/L	
B221293-BLK3	0.00	µg/L	
B221293-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.015		MRL: 0.015



Method Blanks & Reporting Limits

Batch: B221311
Matrix: Water
Method: EPA 1638 Mod
Analyte: Se

Sample	Result	Units	
B221311-BLK1	0.096	µg/L	
B221311-BLK2	0.093	µg/L	
B221311-BLK3	0.127	µg/L	
B221311-BLK4	0.094	µg/L	
Average:	0.103		MDL: 0.150
Limit:	0.480		MRL: 0.480



Sample Containers

Lab ID: 2206149-01

Report Matrix: WS

Collected: 05/31/2022

Sample:

Sample Type: Sample + Sum

Received: 06/09/2022

RG_ERCKUT_WS_LAEMP_EVO_2022-05-31_NP

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2206149
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2206149
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 4 - 2206149

Lab ID: 2206149-02

Report Matrix: WS

Collected: 05/31/2022

Sample:

Sample Type: Sample + Sum

Received: 06/09/2022

RG_ERCKUT_WS_LAEMP_EVO_2022-05-31_NP_NAL

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 8 - 2206149

Lab ID: 2206149-03

Report Matrix: WS

Collected: 05/31/2022

Sample:

Sample Type: Sample + Sum

Received: 06/09/2022

RG_ERCKUT_WS_LAEMP_EVO_2022-05-31_NP_NAL

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 8 - 2206149

Lab ID: 2206149-04

Report Matrix: WS

Collected: 05/31/2022

Sample:

Sample Type: Sample + Sum

Received: 06/09/2022

RG_ERCKMD_WS_LAEMP_EVO_2022-05-31_NP

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2206149
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2206149
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 4 - 2206149



Sample Containers

Lab ID: 2206149-05			Report Matrix: WS			Collected: 05/31/2022		
Sample: RG_ERCKMD_WS_LAEMP_EVO_2022-05-31_NP_NAL			Sample Type: Sample + Sum			Received: 06/09/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 8 - 2206149	
Lab ID: 2206149-06			Report Matrix: WS			Collected: 05/31/2022		
Sample: RG_ERCKMD_WS_LAEMP_EVO_2022-05-31_NP_NAL			Sample Type: Sample + Sum			Received: 06/09/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 8 - 2206149	
Lab ID: 2206149-07			Report Matrix: WS			Collected: 06/01/2022		
Sample: RG_MIDBO_WS_LAEMP_EVO_2022-06-01_NP			Sample Type: Sample + Sum			Received: 06/09/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2206149	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2206149	
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 4 - 2206149	
Lab ID: 2206149-08			Report Matrix: WS			Collected: 06/01/2022		
Sample: RG_MIDBO_WS_LAEMP_EVO_2022-06-01_NP_NAL			Sample Type: Sample + Sum			Received: 06/09/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 8 - 2206149	



Sample Containers

Lab ID: 2206149-09

Sample:

RG_MIDBO_WS_LAEMP_EVO_2022-06-01_NP_N
 AL

Report Matrix: WS

Sample Type: Sample + Sum

Collected: 06/01/2022

Received: 06/09/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 8 - 2206149

Lab ID: 2206149-10

Sample:

RG_RIVER_WS_LAEMP_EVO_2022-06-01_NP

Report Matrix: WS

Sample Type: Sample + Sum

Collected: 06/01/2022

Received: 06/09/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2206149
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2206149
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 4 - 2206149

Lab ID: 2206149-11

Sample:

RG_RIVER_WS_LAEMP_EVO_2022-06-01_NP_NA
 L

Report Matrix: WS

Sample Type: Sample + Sum

Collected: 06/01/2022

Received: 06/09/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 8 - 2206149

Lab ID: 2206149-12

Sample:

RG_RIVER_WS_LAEMP_EVO_2022-06-01_NP_NA
 L

Report Matrix: WS

Sample Type: Sample + Sum

Collected: 06/01/2022

Received: 06/09/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 8 - 2206149



Sample Containers

Lab ID: 2206149-13

Sample:

RG_MIDGA_WS_LAEMP_EVO_2022-06-01_NP

Report Matrix: WS

Sample Type: Sample + Sum

Collected: 06/01/2022

Received: 06/09/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2206149
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2206149
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 4 - 2206149

Lab ID: 2206149-14

Sample:

RG_MIDGA_WS_LAEMP_EVO_2022-06-01_NP_N
AL

Report Matrix: WS

Sample Type: Sample + Sum

Collected: 06/01/2022

Received: 06/09/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 8 - 2206149

Lab ID: 2206149-15

Sample:

RG_MIDGA_WS_LAEMP_EVO_2022-06-01_NP_N
AL

Report Matrix: WS

Sample Type: Sample + Sum

Collected: 06/01/2022

Received: 06/09/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 8 - 2206149

Lab ID: 2206149-16

Sample:

RG_FBLANK_WS_LAEMP_EVO_2022-06-01_NP

Report Matrix: WS

Sample Type: Sample + Sum

Collected: 06/01/2022

Received: 06/09/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2206149
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2206149
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 4 - 2206149



Sample Containers

Lab ID: 2206149-17			Report Matrix: WS			Collected: 06/01/2022	
Sample: RG_FBLANK_WS_LAEMP_EVO_2022-06-01_NP_NAL			Sample Type: Sample + Sum			Received: 06/09/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 8 - 2206149
Lab ID: 2206149-18			Report Matrix: WS			Collected: 06/01/2022	
Sample: RG_FBLANK_WS_LAEMP_EVO_2022-06-01_NP_NAL			Sample Type: Sample + Sum			Received: 06/09/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 8 - 2206149
Lab ID: 2206149-19			Report Matrix: WS			Collected: 06/01/2022	
Sample: RG_GATEDP_WS_LAEMP_EVO_2022-06-01_NP			Sample Type: Sample + Sum			Received: 06/09/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2206149
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2206149
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 4 - 2206149
Lab ID: 2206149-20			Report Matrix: WS			Collected: 06/01/2022	
Sample: RG_GATEDP_WS_LAEMP_EVO_2022-06-01_NP_NAL			Sample Type: Sample + Sum			Received: 06/09/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 8 - 2206149



Sample Containers

Lab ID: 2206149-21			Report Matrix: WS			Collected: 06/01/2022	
Sample: RG_GATEDP_WS_LAEMP_EVO_2022-06-01_NP_NAL			Sample Type: Sample + Sum			Received: 06/09/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 8 - 2206149

Lab ID: 2206149-22			Report Matrix: WS			Collected: 06/01/2022	
Sample: RG_ERCKDT_WS_LAEMP_EVO_2022-06-01_NP			Sample Type: Sample + Sum			Received: 06/09/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2206149
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2206149
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 4 - 2206149

Lab ID: 2206149-23			Report Matrix: WS			Collected: 06/01/2022	
Sample: RG_ERCKDT_WS_LAEMP_EVO_2022-06-01_NP_NAL			Sample Type: Sample + Sum			Received: 06/09/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 8 - 2206149

Lab ID: 2206149-24			Report Matrix: WS			Collected: 06/01/2022	
Sample: RG_ERCKDT_WS_LAEMP_EVO_2022-06-01_NP_NAL			Sample Type: Sample + Sum			Received: 06/09/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 8 - 2206149



Sample Containers

Lab ID: 2206149-25
Sample: RG_ERCKUC_WS_LAEMP_EVO_2022-06-02_NP
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 06/02/2022
Received: 06/09/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2206149
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2206149
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 4 - 2206149

Lab ID: 2206149-26
Sample: RG_ERCKUC_WS_LAEMP_EVO_2022-06-02_NP_NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 06/02/2022
Received: 06/09/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 8 - 2206149

Lab ID: 2206149-27
Sample: RG_ERCKUC_WS_LAEMP_EVO_2022-06-02_NP_NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 06/02/2022
Received: 06/09/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 8 - 2206149

Lab ID: 2206149-28
Sample: RG_ERCK_WS_LAEMP_EVO_2022-06-02_NP
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 06/02/2022
Received: 06/09/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2206149
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2206149
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 4 - 2206149



Sample Containers

Lab ID: 2206149-29			Report Matrix: WS			Collected: 06/02/2022	
Sample: RG_ERCK_WS_LAEMP_EVO_2022-06-02_NP_NAL			Sample Type: Sample + Sum			Received: 06/09/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 8 - 2206149

Lab ID: 2206149-30			Report Matrix: WS			Collected: 06/02/2022	
Sample: RG_ERCK_WS_LAEMP_EVO_2022-06-02_NP_NAL			Sample Type: Sample + Sum			Received: 06/09/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 8 - 2206149

Lab ID: 2206149-31			Report Matrix: WS			Collected: 06/02/2022	
Sample: RG_MI3_WS_LAEMP_EVO_2022-06-02_NP			Sample Type: Sample + Sum			Received: 06/09/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2206149
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2206149
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 4 - 2206149

Lab ID: 2206149-32			Report Matrix: WS			Collected: 06/02/2022	
Sample: RG_MI3_WS_LAEMP_EVO_2022-06-02_NP_NAL			Sample Type: Sample + Sum			Received: 06/09/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 8 - 2206149



Sample Containers

Lab ID: 2206149-33
Sample: RG_MI3_WS_LAEMP_EVO_2022-06-02_NP_NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 06/02/2022
Received: 06/09/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 8 - 2206149

Lab ID: 2206149-34
Sample: RG_MIDER_WS_LAEMP_EVO_2022-06-02_NP
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 06/02/2022
Received: 06/09/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2206149
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2206149
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 4 - 2206149

Lab ID: 2206149-35
Sample: RG_MIDER_WS_LAEMP_EVO_2022-06-02_NP_NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 06/02/2022
Received: 06/09/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 8 - 2206149

Lab ID: 2206149-36
Sample: RG_MIDER_WS_LAEMP_EVO_2022-06-02_NP_NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 06/02/2022
Received: 06/09/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 8 - 2206149



Sample Containers

Lab ID: 2206149-37

Report Matrix: WS

Collected: 06/02/2022

Sample:

Sample Type: Sample + Sum

Received: 06/09/2022

RG_GATE_WS_LAEMP_EVO_2022-06-02_NP

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2206149
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2206149
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 4 - 2206149

Lab ID: 2206149-38

Report Matrix: WS

Collected: 06/02/2022

Sample:

Sample Type: Sample + Sum

Received: 06/09/2022

RG_GATE_WS_LAEMP_EVO_2022-06-02_NP_NA

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 8 - 2206149

Lab ID: 2206149-39

Report Matrix: WS

Collected: 06/02/2022

Sample:

Sample Type: Sample + Sum

Received: 06/09/2022

RG_GATE_WS_LAEMP_EVO_2022-06-02_NP_NA

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 8 - 2206149

Lab ID: 2206149-40

Report Matrix: WS

Collected: 06/02/2022

Sample:

Sample Type: Sample + Sum

Received: 06/09/2022

RG_FBLANK_WS_LAEMP_EVO_2022-06-02_NP

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2206149
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2206149
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 4 - 2206149



Sample Containers

Lab ID: 2206149-41			Report Matrix: WS			Collected: 06/02/2022	
Sample: RG_FBLANK_WS_LAEMP_EVO_2022-06-02_NP_NAL			Sample Type: Sample + Sum			Received: 06/09/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 8 - 2206149
Lab ID: 2206149-42			Report Matrix: WS			Collected: 06/02/2022	
Sample: RG_FBLANK_WS_LAEMP_EVO_2022-06-02_NP_NAL			Sample Type: Sample + Sum			Received: 06/09/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 8 - 2206149
Lab ID: 2206149-43			Report Matrix: WS			Collected: 06/02/2022	
Sample: RG_RIVER_WS_LAEMP_EVO_2022-06-02_NP_NAL			Sample Type: Sample + Sum			Received: 06/09/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2206149
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2206149
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 4 - 2206149
Lab ID: 2206149-44			Report Matrix: WS			Collected: 06/02/2022	
Sample: RG_RIVER_WS_LAEMP_EVO_2022-06-02_NP_NAL			Sample Type: Sample + Sum			Received: 06/09/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 8 - 2206149



Sample Containers

Lab ID: 2206149-45

Report Matrix: WS

Collected: 06/02/2022

Sample:

Sample Type: Sample + Sum

Received: 06/09/2022

RG_RIVER_WS_LAEMP_EVO_2022-06-02_NP_NA
L

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 8 - 2206149

Shipping Containers

Cooler 4 - 2206149

Received: June 9, 2022 7:15

Tracking No: PAPS#RWHV92292 via Courier

Coolant Type: Ice

Temperature: 2.3 °C

Description:

Damaged in transit? No

Returned to client? No

Comments: IR#33

Custody seals present? No

Custody seals intact? No

COC present? No

Cooler 8 - 2206149

Received: June 9, 2022 7:15

Tracking No: PAPS#RWHV92292 via Courier

Coolant Type: Ice

Temperature: 1.8 °C

Description: Large Cooler

Damaged in transit? No

Returned to client? No

Comments: IR#33

Custody seals present? No

Custody seals intact? No

COC present? Yes

COC ID: REP_EVO LAEMP_2022_MAY_Brooks		TURNAROUND TIME:		RUSH:													
PROJECT/CLIENT INFO				LABORATORY		OTHER INFO											
Facility Name / Job# Regional Effects Program				Lab Name Brooks Applied Labs		Report Format / Distribution											
Project Manager Mike Pope				Lab Contact Ben Wozniak		Excel PDF EDD											
Email: 421 Pine Ave				Email: Ben@brooksapplied.com		Email 1: X X X											
Address: 421 Pine Ave				Address: 18804 North Creek Parkway		Email 2: X X X											
City: Sparwood Province: BC				Address: Suite 100		Email 3: Teck Lab Results@teck.com X X X											
Postal Code: V0B 2G0 Country: Canada				City: Bothell Province: WA		Email 4: Arpa@clab@teck.com X X X											
Phone Number: 250-425-8202				Postal Code: 98011 Country: United States		Email 5: bcoverton@smirnow.ca X X X											
				Phone Number: (206) 753-6158		Email 6: X X X											
				PO number: 817033													
SAMPLE DETAILS				ANALYSIS REQUESTED													
Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com p	# Of Cont.	Brooks_Sc_Speciation	Brooks_Sc_D	Brooks_Sc_T	Filtered: F, Pb, Cd, Cr, Cu, Fe, Hg, Ni, Mn, Se, Zn						
RG_ERCKUT_WS_LAEMP_EVO_2022-05-31_NP	RG_ERCKUT	WS	No	31-May-22	12:45	G	1	1									
RG_ERCKUT_WS_LAEMP_EVO_2022-05-31_NP_NAL	RG_ERCKUT	WS	No	31-May-22	12:45	G	2		1	1							
RG_ERCKMD_WS_LAEMP_EVO_2022-05-31_NP	RG_ERCKMD	WS	No	31-May-22	15:18	G	1	1									
RG_ERCKMD_WS_LAEMP_EVO_2022-05-31_NP_NAL	RG_ERCKMD	WS	No	31-May-22	15:18	G	2		1	1							
RG_MIDBO_WS_LAEMP_EVO_2022-06-01_NP	RG_MIDBO	WS	No	1-Jun-22	7:58	G	1	1									
RG_MIDBO_WS_LAEMP_EVO_2022-06-01_NP_NAL	RG_MIDBO	WS	No	1-Jun-22	7:58	G	2		1	1							
RG_RIVER_WS_LAEMP_EVO_2022-06-01_NP	RG_RIVER	WS	No	1-Jun-22	7:58	G	1	1									
RG_RIVER_WS_LAEMP_EVO_2022-06-01_NP_NAL	RG_RIVER	WS	No	1-Jun-22	7:58	G	2		1	1							
RG_MIDGA_WS_LAEMP_EVO_2022-06-01_NP	RG_MIDGA	WS	No	1-Jun-22	9:16	G	1	1									
RG_MIDGA_WS_LAEMP_EVO_2022-06-01_NP_NAL	RG_MIDGA	WS	No	1-Jun-22	9:16	G	2		1	1							
ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS				RELINQUISHED BY / AFFILIATION		DATE/TIME		ACCEPTED BY/AFFILIATION		DATE/TIME							
				Robin Valleau		June 6, 2022		RWV/BAC		6/9/22 2:15							
SERVICE REQUEST (rush - subject to availability)																	
Regular (default) X				Sampler's Name		Robin Valleau		Mobile #		780-293-6750							
Priority (2-3 business days) - 50% surcharge				Sampler's Signature				Date/Time		June 6, 2022							
Emergency (1 Business Day) - 100% surcharge																	
For Emergency <1 Day, ASAP or Weekend - Contact ALS																	

COC ID:		REP_EVO LAEMP_2022_MAY_Brooks		TURNAROUND TIME:			RUSH:				
PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name / Job# Regional Effects Program				Lab Name Brooks Applied Labs		Report Format / Distribution			Excel	PDF	EDD
Project Manager Mike Pope				Lab Contact Ben Wozniak		Email 1:			X	X	X
Email: [redacted]				Email Ben@brooksupplied.com		Email 2:					
Address 421 Pine Ave				Address 18804 North Creek Parkway		Email 3:			X	X	X
				Suite 100		Email 4:			X	X	X
City Sparwood		Province BC	City Bothell		Province WA	Email 5:			X	X	X
Postal Code V0B 2G0		Country Canada	Postal Code 98011		Country United States	Email 6:			X	X	X
Phone Number 250-425-8202				Phone Number (206) 753-6158			PO number 817033				
SAMPLE DETAILS							ANALYSIS REQUESTED				
Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com p	# Of Cont.	Brooks_Se_Speciation	Brooks_Se_D	Brooks_Se_T	Filtered - F: Field, L: Lab, F1: Field & Lab, N: None
RG_FBLANK_WS_LAEMP_EVO_2022-06-01_NP	RG_FBLANK	WS	No	1-Jun-22	9:16	G	1	1			
RG_FBLANK_WS_LAEMP_EVO_2022-06-01_NP_NAL	RG_FBLANK	WS	No	1-Jun-22	9:16	G	2		1	1	
RG_GATEDP_WS_LAEMP_EVO_2022-06-01_NP	RG_GATEDP	WS	No	1-Jun-22	10:09	G	1	1			
RG_GATEDP_WS_LAEMP_EVO_2022-06-01_NP_NAL	RG_GATEDP	WS	No	1-Jun-22	10:09	G	2		1	1	
RG_ERCKDT_WS_LAEMP_EVO_2022-06-01_NP	RG_ERCKDT	WS	No	1-Jun-22	14:47	G	1	1			
RG_ERCKDT_WS_LAEMP_EVO_2022-06-01_NP_NAL	RG_ERCKDT	WS	No	1-Jun-22	14:47	G	2		1	1	
RG_ERCKUC_WS_LAEMP_EVO_2022-06-02_NP	RG_ERCKUC	WS	No	2-Jun-22	8:45	G	1	1			
RG_ERCKUC_WS_LAEMP_EVO_2022-06-02_NP_NAL	RG_ERCKUC	WS	No	2-Jun-22	8:45	G	2		1	1	
RG_ERCK_WS_LAEMP_EVO_2022-06-02_NP	RG_ERCK	WS	No	2-Jun-22	9:34	G	1	1			
RG_ERCK_WS_LAEMP_EVO_2022-06-02_NP_NAL	RG_ERCK	WS	No	2-Jun-22	9:34	G	2		1	1	
ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS			RELINQUISHED BY/AFFILIATION			DATE/TIME	ACCEPTED BY/AFFILIATION		DATE/TIME		
			Robin Valleu			June 6, 2022	[Signature] BAC		6/9/22 7:15		
SERVICE REQUEST (rush - subject to availability)			Sampler's Name			Robin Valleu	Mobile #		780-293-6750		
Regular (default) X			Sampler's Signature				Date/Time		June 6, 2022		
Priority (2-3 business days) - 50% surcharge											
Emergency (1 Business Day) - 100% surcharge											
For Emergency <1 Day, ASAP or Weekend - Contact ALS											

COC ID:		REP_EVO LAEMP_2022_MAY_Brooks		TURNAROUND TIME:		RUSH:								
PROJECT/CLIENT INFO				LABORATORY				OTHER INFO						
Facility Name / Job# Regional Effects Program				Lab Name Brooks Applied Labs		Report Format / Distribution		Excel	PDF	EDD				
Project Manager Mike Pope				Lab Contact Ben Wozniak		Email 1:		X	X	X				
Email: [redacted]				Email Ben@brooksupplied.com		Email 2:								
Address 421 Pine Ave				Address 18804 North Creek Parkway		Email 3: Teck.Lab.Results@teck.com		X	X	X				
City Sparwood Province BC				City Bothell Province WA		Email 4: AquasolLab@teck.com		X	X	X				
Postal Code V0B 2G0 Country Canada				Postal Code 98011 Country United		Email 5: [redacted]@minnew.ca		X	X	X				
Phone Number 250-425-8202				Phone Number (206) 753-6158		PO number		837033						
SAMPLE DETAILS								ANALYSIS REQUESTED						
Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com p	# Of Cont.	P	F	N				
RG_MI3_WS_LAEMP_EVO_2022-06-02_NP	RG_MI3	WS	No	2-Jun-22	10:34	G	1	1						
RG_MI3_WS_LAEMP_EVO_2022-06-02_NP_NAL	RG_MI3	WS	No	2-Jun-22	10:34	G	2		1	1				
RG_MIDER_WS_LAEMP_EVO_2022-06-02_NP	RG_MIDER	WS	No	2-Jun-22	12:32	G	1	1						
RG_MIDER_WS_LAEMP_EVO_2022-06-02_NP_NAL	RG_MIDER	WS	No	2-Jun-22	12:32	G	2		1	1				
RG_GATE_WS_LAEMP_EVO_2022-06-02_NP	RG_GATE	WS	No	2-Jun-22	13:15	G	1	1						
RG_GATE_WS_LAEMP_EVO_2022-06-02_NP_NAL	RG_GATE	WS	No	2-Jun-22	13:15	G	2		1	1				
RG_FBLANK_WS_LAEMP_EVO_2022-06-02_NP	RG_FBLANK	WS	No	2-Jun-22	13:15	G	1	1						
RG_FBLANK_WS_LAEMP_EVO_2022-06-02_NP_NAL	RG_FBLANK	WS	No	2-Jun-22	13:15	G	2		1	1				
RG_RIVER_WS_LAEMP_EVO_2022-06-02_NP_NAL	RG_RIVER	WS	No	2-Jun-22	12:32	G	1	1						
RG_RIVER_WS_LAEMP_EVO_2022-06-02_NP_NAL	RG_RIVER	WS	No	2-Jun-22	12:32	G	2		1	1				
ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS				RELINQUISHED BY/AFFILIATION		DATE/TIME		ACCEPTED BY/AFFILIATION		DATE/TIME				
				Robin Valleau		June 6, 2022		[Signature]		6/9/22 7:15				
SERVICE REQUEST (rush - subject to availability)				Sampler's Name		Mobile #		Sampler's Signature		Date/Time				
Regular (default) <input checked="" type="checkbox"/>				Robin Valleau		780-293-6750				June 6, 2022				
Priority (2-3 business days) - 50% surcharge														
Emergency (1 Business Day) - 100% surcharge														
For Emergency <1 Day, ASAP or Weekend - Contact ALS														

Confidential

STRAIGHT BILL OF LADING
NOT NEGOTIABLE

RW HOT SHOT SERVICE INC.

250-425-7447
24 Hour Hot Shot Service

BAL Final Report 2206149 R1

No. 92292

Sparwood, BC
Terrace, BC
Red Deer, AB

Vancouver, BC
Calgary, AB
Montreal, QC

Prince George, BC
Edmonton, AB
Spokane, WA

Elkford, BC
Ft. McMurray, AB
Shelby, MT

Tumbler Ridge, BC
Hinton, AB
Gillette, WY

INVOICE TO		DATE	
BILL OF LADING #		PURCHASE ORDER NUMBER	
SHIPPER (FROM)		CONSIGNEE (TO)	
STREET		STREET	
CITY/PROVINCE	POSTAL CODE	CITY/PROVINCE	POSTAL CODE
SPECIAL INSTRUCTIONS		FREIGHT CHARGES SHIPPER TO CHECK	
PACKAGES	DESCRIPTION OF ARTICLE AND SPECIAL MARKS	WEIGHT (Subject to Correction)	<input type="checkbox"/> PREPAID <input type="checkbox"/> COLLECT If not indicated, shipping will automatically move collect.
FEE		WAITING	
XPU		CHARGES	
FSC		US	
SUB TOTAL		GST	
TOTAL \$		IF AT OWNER'S RISK, WRITE ORD HERE	
UNIT #	DECLARED VALUATION: Maximum liability of carrier is \$2.00 per lb. (\$4.41 per kilogram) unless declared valuation states otherwise.		DATE
DRIVER'S SIGNATURE - PICK UP BY	PICK UP TIME	DRIVER'S SIGNATURE - DELIVERY BY	FINISH TIME
<small>NOTICE OF CLAIM: (a) No Carrier is liable for loss, damage or delay of any goods under the Bill of Lading unless notice, therefore setting out particulars of the origin, destination and date of shipment of the goods and the estimated amount claimed in respect of such loss, damage or delay is given in writing to the originating carrier or the delivering carrier within nine (9) days after the delivery of the goods, or in the case of failure to make delivery within nine (9) months from the date of shipment. (b) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. RECEIVED at the point of origin on the date specified from the consignor mentioned herein, the property herein described, in apparent good order, except as noted (contents and condition of contents of package unknown) marked, consigned and delivered as indicated below, which the carrier agrees to carry and to deliver to the consignee at the said destination, subject to the rates and classification in effect on the date of shipment. It is mutually agreed, as to each carrier of all or any of the goods over all or any portion of the route to destination, and as to each carrier of any time interested in all or any of the goods, that every service to be performed hereunder shall be subject to the conditions standard Bill of Lading, in power at the date of issuing, which are hereto agreed by the consignor and accepted for himself and his assigns. Printed or written, including conditions set aside by the standard Bill of Lading, in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. The Contract for the carriage of the goods listed in the Bill of Lading is governed by regulation in force in the jurisdiction at the time and place of shipment and is subject to the conditions set out in such conditions.</small>			
SHIPPER PRINT	CONSIGNEE PRINT	DATE	
SHIPPER SIGN	CONSIGNEE SIGN	TIME	
WHITE: Office	YELLOW: Carrier	PINK: Consignee	GOLDENROAD: Shipper
GST # 864540398RT0001		NUMBER OF PIECES RECEIVED ▲	

PAPS# RWHV92292

Cooler ID: Cooler 4

CQC (Y/N)

Temperature: 2.3

IR: 33

Coolant Type: Ice Blue Ice Ambient

Notes:

Sampling Locations:

Sample Types:

Container Types:

Opened By: AS6

Date: 6/1/22

	RG	LC	EV	GH
T/D	SP	T/D	SP	T/D
	60ml plastic	125ml plastic	60ml plastic	60ml plastic

COPY

STRAIGHT BILL OF LADING
NOT NEGOTIABLE

RW HOT SHOT SERVICE INC.

250-425-7447
24 Hour Hot Shot Service

No. 92294

Sparwood, BC
Terrace, BC
Red Deer, AB

Vancouver, BC
Calgary, AB
Montreal, QC

Prince George, BC
Edmonton, AB
Spokane, WA

Elkford, BC
Ft. McMurray, AB
Shelby, MT

Tumbler Ridge, BC
Hinton, AB
Gillette, WY

INVOICE TO		DATE		
BILL OF LADING #		PURCHASE ORDER NUMBER		
SHIPPER (FROM)		CONSIGNEE (TO)		
STREET		STREET		
CITY/PROVINCE	POSTAL CODE	CITY/PROVINCE	POSTAL CODE	
SPECIAL INSTRUCTIONS			FREIGHT CHARGES SHIPPER TO CHECK <input type="checkbox"/> PREPAID <input type="checkbox"/> COLLECT <small>If not indicated, shipping will automatically invoice collect</small> FEE _____ WAITING _____ XPU _____ CHARGES _____ FSC _____ US _____ SUB TOTAL _____ GST _____ TOTAL \$ _____ <small>IF AT OWNER'S RISK, WRITE ORD HERE</small>	
PACKAGES	DESCRIPTION OF ARTICLES AND SPECIAL MARKS	WEIGHT (Subject to Correction)		
PAPS# RWHV92292				
UNIT #	DECLARED VALUATION: Maximum liability of carrier is \$2.00 per lb. (\$4.41 per kilogram) unless declared valuation states otherwise.			
DRIVER'S SIGNATURE - PICK UP BY	PICK UP TIME	DRIVER'S SIGNATURE - DELIVERY BY		FINISH TIME
<small>NOTICE OF CLAIM: (a) No carrier is liable for loss, damage or delay of any goods under the Bill of Lading unless notice, thereto setting out particulars of the origin, destination and date of shipment of the goods and the estimated amount claimed respect of such loss, damage or delay is given in writing to the originating carrier or the delivering carrier within sixty (60) days after the delivery of the goods, on the case of failure to make delivery within nine (9) months from the date of shipment. (b) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. Received at the point of origin on the date specified from the consignor mentioned herein, the property herein described, in apparent good order, except as noted (contents and condition of contents of package unknown) marked, consigned and destined as indicated below, which the carrier agrees to carry and to deliver to the consignee at the said destination, subject to the rates and classification in effect on the date of shipment. It is mutually agreed, as to each carton of all or any of the goods over all or any portion of the route to destination, and also each party of any time interested in all or any of the goods, that every service to be performed hereunder shall be subject to the conditions standard Bill of Lading, in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. Printed or written, including conditions set aside by the standard Bill of Lading, in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. The Contract for the carriage of the goods listed in the Bill of Lading is governed by regulation in force in the jurisdiction at the time and place of shipment and is subject to the conditions set out in such conditions.</small>				
SHIPPER PRINT	CONSIGNEE PRINT	DATE		
SHIPPER SIGN	CONSIGNEE SIGN	TIME		
WHITE: Office	YELLOW: Carrier	PINK: Consignee		GOLDENROAD: Shipper
GST # 864540398RT0001		NUMBER OF PIECES RECEIVED ▲		

AMCO'S PRINTING

Cooler ID: 8 CQC (Y/N) Temperature: 1.8 IR: 33

Coolant Type: Ice Blue Ice Ambient

Notes:

Sampling Locations:

T/D	SP	T/D	SP	T/D	SP	T/D	SP
40 ml glass		40 ml glass	40 ml glass	40 ml glass	121 ml plastic		

Opened By: UW Date: 1/10/12



2206149

Effective 7/29/20

Revision 004

Cooler 8



13751 Lake City Way NE, Ste 108, Seattle, WA 98125 • USA • T:206-632-6206 • info@brooksapplied.com

June 27, 2022

Teck Resources Limited - Vancouver
Mike Pope
421 Pine Avenue
Sparwood, B.C. CANADA V0B2G0
mike.pope@teck.com

Re: Elkview Operations

Dear Mike Pope,

On June 9, 2022, Brooks Applied Labs (BAL) received three (3) aqueous samples. The samples were logged-in for total recoverable selenium [Se], dissolved Se [Se], and Se speciation analyses, according to the chain-of-custody (COC) form.

The sample fractions for total recoverable Se and dissolved Se were not preserved in the field. The samples were preserved (pH < 2) upon receipt at BAL. All sample fractions for total recoverable Se and dissolved Se were preserved within the (14 calendar day) preservation holding time.

The sample fractions logged in for Se speciation and dissolved Se had been field-filtered prior to receipt at BAL. All samples were stored according to BAL SOPs.

Total Recoverable Se and Dissolved Se

Each aqueous sample fraction for dissolved Se was digested in a closed vessel (bomb) with nitric and hydrochloric acids. The resulting digests were analyzed for Se content via inductively coupled plasma triple quadrupole mass spectrometry (ICP-QQQ-MS). The ICP-QQQ-MS instrumentation uses advanced interference removal techniques to ensure accuracy of the sample results. For more information, please visit the *Interference Reduction Technology* section on our website, brooksapplied.com.

Selenium Speciation

Each aqueous sample was analyzed for selenium speciation using ion chromatography inductively coupled plasma collision reaction cell mass spectrometry (IC-ICP-CRC-MS). Selenium species are chromatographically separated on an ion exchange column and then quantified using inductively coupled plasma collision reaction cell mass spectrometry (ICP-CRC-MS); for more information on this determinative technique, please visit the *Interference Reduction Technology* section on our website. The chromatographic method applied for the analyses provides greater retention of methylseleninic acid and selenomethionine, allowing for more definitive quantitation of these species.

In accordance with the quotation issued for this project, selenium speciation was defined as dissolved selenite [Se(IV)], selenate [Se(VI)], selenocyanate [SeCN], methylseleninic acid [MeSe(IV)], methaneselenonic acid [MeSe(VI)], selenomethionine [SeMef], selenosulfate [SeSO₃], and dimethylselenoxide [DMSeO]. Unknown Se species was defined as the total concentration of all unknown Se species observed during the analysis. This item is identified on the report as [Unk Se Sp].

DMS₂SeO elutes early in the chromatographic run due to the nature of the molecule and the applied chromatographic separation method. Since this species elutes near the dead volume, additional selenium species may coelute. Alternate methods can be applied, upon client request, to increase the separation of DMS₂SeO from potentially co-eluting selenium species.

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

In instances where a matrix spike/matrix spike duplicate (MS/MSD) set was spiked at a level less than the native sample concentration, the recoveries and the relative percent difference (RPD) are not considered valid indicators of data quality. In such instances, the recoveries of the laboratory fortified blanks (BS) and/or standard reference materials (SRM) demonstrate the accuracy of the applied methods. When the spiking level was less than 25% of the native sample concentration, the spike recovery was not reported (**NR**) and the relative percent difference (RPD) of the MS/MSD set was not calculated (**N/C**).

In cases when either the native sample concentration was non-detectable (reported as less than or equal to the MDL) and/or the corresponding DUP result was also non-detectable, the RPD between the two values was not calculated (**N/C**).

Except for concentration qualifiers, all data were reported without qualification. All associated quality control sample results met the acceptance criteria.

BAL, an accredited laboratory, certifies that the reported results of all analyses for which BAL is NELAP accredited meet all NELAP requirements. For more information, please see the *Report Information* page.

Please feel free to contact us if you have any questions regarding this report.

Sincerely,



Jeremy Maute

Senior Project Manager

Jeremy@brooksapplied.com



Report Information

Laboratory Accreditation

BAL is accredited by the *National Environmental Laboratory Accreditation Program* (NELAP) through the State of Florida Department of Health, Bureau of Laboratories (E87982) and is certified to perform many environmental analyses. BAL is also certified by many other states to perform environmental analyses. For a current list of our accreditations/certifications, please visit our website at <http://www.brooksapplied.com/resources/certificates-permits/> or review Tables 1 and 2 in our Accreditation Information. Results reported relate only to the samples listed in the report.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

AR	as received	MS	matrix spike
BAL	Brooks Applied Labs	MSD	matrix spike duplicate
BLK	method blank	ND	non-detect
BS	blank spike	NR	non-reportable
CAL	calibration standard	N/C	not calculated
CCB	continuing calibration blank	PS	post preparation spike
CCV	continuing calibration verification	REC	percent recovery
COC	chain of custody record	RPD	relative percent difference
D	dissolved fraction	SCV	secondary calibration verification
DUP	duplicate	SOP	standard operating procedure
IBL	instrument blank	SRM	reference material
ICV	initial calibration verification	T	total fraction
MDL	method detection limit	TR	total recoverable fraction
MRL	method reporting limit		

Definition of Data Qualifiers

(Effective 3/23/2020)

E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Please see narrative for explanation.
J	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1	Estimated value. A full explanation is presented in the narrative.
M	Duplicate precision (RPD) was not within acceptance criteria. Please see narrative for explanation.
N	Spike recovery was not within acceptance criteria. Please see narrative for explanation.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.
Z	Holding time and/or preservation requirements not established for this method; however, BAL recommendations for holding time were not followed. Please see narrative for explanation.

These qualifiers are based on those previously utilized by Brooks Applied Labs, those found in the EPA SOW ILM03.0, Exhibit B, Section III, pg. B-18, and the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review; USEPA; January 2010. These supersede all previous qualifiers ever employed by BAL.



Accreditation Information

Table 1. Accredited method/matrix/analytes for TNI
Issued by: State of Florida Dept. of Health (The NELAC Institute 2016 Standard)
Issued on: July 1, 2021; Valid to: June 30, 2022
Certificate Number: E87982-37

Method	Matrix	TNI Accredited Analyte(s)
EPA 1638	Non-Potable Waters	Ag, Cd, Cu, Ni, Pb, Sb, Se, Ti, Zn
EPA 200.8	Non-Potable Waters	Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Sb, Se, Ti, U, V, Zn
EPA 6020	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Ti, U, V, Zn
	Solids/Chemicals & Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Ti, V, Zn
BAL-5000	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, U, V, Zn, Hardness
	Solids/Chemicals	Ag, As, B, Be, Cd, Co, Cr, Cu, Pb, Mo, Ni, Sb, Se, Sn, Sr, Ti, V, Zn
	Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Ti, V, Zn
EPA 1640	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn
EPA 1631E	Non-Potable Waters, Solids/Chemicals & Biological	Total Mercury
EPA 1630	Non-Potable Waters	Methyl Mercury
BAL-3200	Solids/Chemicals & Biological	Methyl Mercury
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
BAL-4201	Non-Potable Waters	Se(IV), Se(VI)
BAL-4300	Non-Potable Waters Solid/Chemicals	Cr(VI)
SM2340B	Non-Potable Waters	Hardness



Accreditation Information

**Table 2. Accredited method/matrix/analytes for ISO (1),
 Non-Governmental TNI (2)
 Issued by: ANAB
 Issued on: September 21, 2021; Valid to: March 30, 2024**

Method	Matrix	ISO and Non-Gov. TNI Accredited Analyte(s)
EPA 1638 Mod EPA 200.8 Mod EPA 6020 Mod	Non-Potable Waters	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, U, V, Zn
BAL-5000	Solids/Chemicals & Biological	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, V, Zn Hg (Biological Only)
EPA 1640 Mod	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn Ag, As, Cr, Co, Se, Ti, V (ISO Only)
EPA 1631E Mod BAL-3100	Non-Potable Waters, Solids/Chemicals & Biological/Food	Total Mercury
EPA 1630 Mod BAL-3200	Non-Potable Waters, Solids/Chemicals Biological	Methyl Mercury
EPA 1632A Mod BAL-3300	Non-Potable Waters Biological/Food Solids/Chemicals	Inorganic Arsenic (ISO Only) Inorganic Arsenic (ISO Only)
AOAC 2015.01 Mod BAL-5000	Food	As, Cd, Hg, Pb
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
	Biological by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4101	Food by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4201	Non-Potable Waters	Se(IV), Se(VI), SeCN, SeMet
BAL-4300	Non-Potable Waters, Solid/Chemicals	Cr(VI)
SM 3500-Fe BAL-4500	Non-Potable Waters	Fe, Fe(II) (ISO Only)
SM2340B	Non-Potable Waters	Hardness
SM 2540G BAL-0501	Solids/Chemicals & Biological	% Dry Weight



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
<i>EV_MC3A_WS_LAEMP_EVO_2022-06-02_NP</i>	2206143-01	WS	Sample	06/02/2022	06/09/2022
<i>EV_MC3A_WS_LAEMP_EVO_2022-06-02_NP_NAL</i>	2206143-02	WS	Sample	06/02/2022	06/09/2022
<i>EV_MC3A_WS_LAEMP_EVO_2022-06-02_NP_NAL</i>	2206143-03	WS	Sample	06/02/2022	06/09/2022

Batch Summary

Analyte	Lab Matrix	Method	Prepared	Analyzed	Batch	Sequence
DMS ₂ SeO	Water	SOP BAL-4201	06/10/2022	06/11/2022	B221286	S220622
MeSe(IV)	Water	SOP BAL-4201	06/10/2022	06/11/2022	B221286	S220622
MeSe(VI)	Water	SOP BAL-4201	06/10/2022	06/11/2022	B221286	S220622
Se	Water	EPA 1638 Mod	06/15/2022	06/17/2022	B221309	S220650
Se(IV)	Water	SOP BAL-4201	06/10/2022	06/11/2022	B221286	S220622
Se(VI)	Water	SOP BAL-4201	06/10/2022	06/11/2022	B221286	S220622
SeCN	Water	SOP BAL-4201	06/10/2022	06/11/2022	B221286	S220622
SeMet	Water	SOP BAL-4201	06/10/2022	06/11/2022	B221286	S220622
SeSO ₃	Water	SOP BAL-4201	06/10/2022	06/11/2022	B221286	S220622
Unk Se Sp	Water	SOP BAL-4201	06/10/2022	06/11/2022	B221286	S220622



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>EV_MC3A_WS_LAEMP_EVO_2022-06-02_NP</i>										
2206143-01	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221286	S220622
2206143-01	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221286	S220622
2206143-01	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221286	S220622
2206143-01	Se(IV)	WS	D	0.024	J	0.010	0.075	µg/L	B221286	S220622
2206143-01	Se(VI)	WS	D	1.18		0.010	0.055	µg/L	B221286	S220622
2206143-01	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221286	S220622
2206143-01	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221286	S220622
2206143-01	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221286	S220622
2206143-01	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221286	S220622
<i>EV_MC3A_WS_LAEMP_EVO_2022-06-02_NP_NAL</i>										
2206143-02	Se	WS	D	1.36		0.165	0.528	µg/L	B221309	S220650
<i>EV_MC3A_WS_LAEMP_EVO_2022-06-02_NP_NAL</i>										
2206143-03	Se	WS	TR	1.42		0.165	0.528	µg/L	B221309	S220650



Accuracy & Precision Summary

Batch: B221286
Lab Matrix: Water
Method: SOP BAL-4201

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221286-BS1	Blank Spike, (2124033)						
	MeSe(IV)		5.095	5.162	µg/L	101% 75-125	
	Se(IV)		5.000	4.694	µg/L	94% 75-125	
	Se(VI)		5.000	4.574	µg/L	91% 75-125	
	SeCN		5.015	4.560	µg/L	91% 75-125	
	SeMet		4.932	4.587	µg/L	93% 75-125	
B221286-DUP1	Duplicate, (2206130-01)						
	DMSeO	ND		ND	µg/L		N/C 25
	MeSe(IV)	0.029		0.028	µg/L		6% 25
	MeSe(VI)	ND		ND	µg/L		N/C 25
	Se(IV)	0.942		0.930	µg/L		1% 25
	Se(VI)	200.3		204.5	µg/L		2% 25
	SeCN	ND		ND	µg/L		N/C 25
	SeMet	ND		ND	µg/L		N/C 25
	SeSO3	ND		ND	µg/L		N/C 25
Unk Se Sp	ND		ND	µg/L		N/C 25	
B221286-MS1	Matrix Spike, (2206130-01)						
	Se(IV)	0.942	4.900	5.454	µg/L	92% 75-125	
	Se(VI)	200.3	5.100	208.5	µg/L	NR 75-125	
	SeCN	ND	1.962	1.791	µg/L	91% 75-125	
	SeMet	ND	1.977	1.852	µg/L	94% 75-125	
B221286-MSD1	Matrix Spike Duplicate, (2206130-01)						
	Se(IV)	0.942	4.900	5.326	µg/L	89% 75-125	2% 25
	Se(VI)	200.3	5.100	204.6	µg/L	NR 75-125	N/C 25
	SeCN	ND	1.962	1.727	µg/L	88% 75-125	4% 25
	SeMet	ND	1.977	1.793	µg/L	91% 75-125	3% 25



Accuracy & Precision Summary

Batch: B221309
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221309-BS1	Blank Spike, (2137005) Se		200.0	189.7	µg/L	95% 75-125	
B221309-BS2	Blank Spike, (2137005) Se		200.0	189.3	µg/L	95% 75-125	
B221309-BS3	Blank Spike, (2137005) Se		200.0	193.5	µg/L	97% 75-125	
B221309-BS4	Blank Spike, (2137005) Se		200.0	193.4	µg/L	97% 75-125	
B221309-SRM1	Reference Material (2214010, TMDA 51.5 Reference Standard - Bottle 2 - SRM) Se		14.30	13.70	µg/L	96% 75-125	
B221309-SRM2	Reference Material (2214010, TMDA 51.5 Reference Standard - Bottle 2 - SRM) Se		14.30	13.64	µg/L	95% 75-125	
B221309-SRM3	Reference Material (2214010, TMDA 51.5 Reference Standard - Bottle 2 - SRM) Se		14.30	13.88	µg/L	97% 75-125	
B221309-SRM4	Reference Material (2214010, TMDA 51.5 Reference Standard - Bottle 2 - SRM) Se		14.30	13.60	µg/L	95% 75-125	
B221309-DUP7	Duplicate, (2206144-02) Se	1.703		1.835	µg/L		7% 20
B221309-MS7	Matrix Spike, (2206144-02) Se	1.703	220.0	205.5	µg/L	93% 75-125	
B221309-MSD7	Matrix Spike Duplicate, (2206144-02) Se	1.703	220.0	210.9	µg/L	95% 75-125	3% 20



Method Blanks & Reporting Limits

Batch: B221286
Matrix: Water
Method: SOP BAL-4201
Analyte: DMSeO

Sample	Result	Units	
B221286-BLK1	0.00	µg/L	
B221286-BLK2	0.00	µg/L	
B221286-BLK3	0.00	µg/L	
B221286-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005

Analyte: MeSe(IV)

Sample	Result	Units	
B221286-BLK1	0.00	µg/L	
B221286-BLK2	0.00	µg/L	
B221286-BLK3	0.00	µg/L	
B221286-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005

Analyte: MeSe(VI)

Sample	Result	Units	
B221286-BLK1	0.00	µg/L	
B221286-BLK2	0.00	µg/L	
B221286-BLK3	0.00	µg/L	
B221286-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005



Method Blanks & Reporting Limits

Analyte: Se(IV)

Sample	Result	Units	
B221286-BLK1	0.00	µg/L	
B221286-BLK2	0.002	µg/L	
B221286-BLK3	0.002	µg/L	
B221286-BLK4	0.002	µg/L	
Average:	0.002		MDL: 0.002
Limit:	0.015		MRL: 0.015

Analyte: Se(VI)

Sample	Result	Units	
B221286-BLK1	0.00	µg/L	
B221286-BLK2	0.00	µg/L	
B221286-BLK3	0.00	µg/L	
B221286-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.011		MRL: 0.011

Analyte: SeCN

Sample	Result	Units	
B221286-BLK1	0.00	µg/L	
B221286-BLK2	0.00	µg/L	
B221286-BLK3	0.00	µg/L	
B221286-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.010		MRL: 0.010

Analyte: SeMet

Sample	Result	Units	
B221286-BLK1	0.00	µg/L	
B221286-BLK2	0.00	µg/L	
B221286-BLK3	0.00	µg/L	
B221286-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.005		MRL: 0.005



Method Blanks & Reporting Limits

Analyte: SeSO3

Sample	Result	Units	
B221286-BLK1	0.00	µg/L	
B221286-BLK2	0.00	µg/L	
B221286-BLK3	0.00	µg/L	
B221286-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.011		MRL: 0.011

Analyte: Unk Se Sp

Sample	Result	Units	
B221286-BLK1	0.00	µg/L	
B221286-BLK2	0.00	µg/L	
B221286-BLK3	0.00	µg/L	
B221286-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.015		MRL: 0.015



Method Blanks & Reporting Limits

Batch: B221309
Matrix: Water
Method: EPA 1638 Mod
Analyte: Se

Sample	Result	Units	
B221309-BLK1	0.162	µg/L	
B221309-BLK2	0.190	µg/L	
B221309-BLK3	0.122	µg/L	
B221309-BLK4	0.108	µg/L	
Average:	0.146		MDL: 0.150
Limit:	0.480		MRL: 0.480



Sample Containers

Lab ID: 2206143-01

Report Matrix: WS

Collected: 06/02/2022

Sample:

Sample Type: Sample + Sum

Received: 06/09/2022

EV_MC3A_WS_LAEMP_EVO_2022-06-02_NP

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2206143
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2206143
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 4 - 2206143

Lab ID: 2206143-02

Report Matrix: WS

Collected: 06/02/2022

Sample:

Sample Type: Sample + Sum

Received: 06/09/2022

EV_MC3A_WS_LAEMP_EVO_2022-06-02_NP_NAL

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 7 - 2206143

Lab ID: 2206143-03

Report Matrix: WS

Collected: 06/02/2022

Sample:

Sample Type: Sample + Sum

Received: 06/09/2022

EV_MC3A_WS_LAEMP_EVO_2022-06-02_NP_NAL

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 7 - 2206143



Shipping Containers

Cooler 4 - 2206143

Received: June 9, 2022 7:15
Tracking No: PAPS#RWHV92292 via Courier
Coolant Type: Ice
Temperature: 2.3 °C

Description: Styrofoam Cooler
Damaged in transit? No
Returned to client? No
Comments: IR#: 33

Custody seals present? No
Custody seals intact? No
COC present? Yes

Cooler 7 - 2206143

Received: June 9, 2022 7:15
Tracking No: PAPS#RWHV92292 via Courier
Coolant Type: Blue Ice
Temperature: 8.0 °C

Description: Styrofoam Cooler
Damaged in transit? No
Returned to client? No
Comments: IR#: 33

Custody seals present? No
Custody seals intact? No
COC present? Yes



COC ID:		REP_EVO LAEMP_2022_MAY_Brooks			TURNAROUND TIME:			RUSH:								
PROJECT/CLIENT INFO				LABORATORY				OTHER INFO								
Facility Name / Job# Elkview Operations				Lab Name Brooks Applied Labs				Report Format / Distribution								
Project Manager Mike Pope				Lab Contact Ben Wozniak				Excel								
Email <small>Mike.Pope@teck.com</small>				Email Ben@brooksapplied.com				PDF								
Address 421 Pine Ave				Address 18804 North Creek Parkway				EDD								
City Sparwood				City Bothell				Teck Lab Results@teck.com								
Postal Code V0B 2G0				Postal Code 98011				AguaSci_Lab@teck.com								
Province BC				Province WA				shawron@trinnow.ca								
Country Canada				Country United States				Brooks@brooksapplied.com								
Phone Number 250-425-8202				Phone Number (206) 753-6158				PO number 817033								
SAMPLE DETAILS							ANALYSIS REQUESTED									
Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com p	# Of Cont.	Brooks_Se_Speciation	Brooks_Se_D	Brooks_Se_T						
EV_MC3A_WS_LAEMP_EVO_2022-06-02_NP	EV_MC3A	WS	No	2-Jun-22	12:00	G	1	1								
EV_MC3A_WS_LAEMP_EVO_2022-06-02_NP_NAL	EV_MC3A	WS	No	2-Jun-22	12:00	G	2		1	1						
ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS							RELINQUISHED BY/AFFILIATION		DATE/TIME		ACCEPTED BY/AFFILIATION		DATE/TIME			
							Robin Valteau		June 6, 2022		RW/BAL		W1912 7:15			
SERVICE REQUEST (rush - subject to availability)							SAMPLER'S NAME		MOBILE #		DATE/TIME					
Regular (default) X							Robin Valteau		780-293-6750							
Priority (2-3 business days) - 50% surcharge							SAMPLER'S SIGNATURE									
Emergency (1 Business Day) - 100% surcharge																
For Emergency <1 Day, ASAP or Weekend - Contact ALS																

STRAIGHT BILL OF LADING
NOT NEGOTIABLE

RW HOT SHOT SERVICE INC.

250-425-7447
24 Hour Hot Shot Service

No. 92294

Sparwood, BC
Terrace, BC
Red Deer, AB

Vancouver, BC
Calgary, AB
Montreal, QC

Prince George, BC
Edmonton, AB
Spokane, WA

Elkford, BC
Ft. McMurray, AB
Shelby, MT

Tumbler Ridge, BC
Hinton, AB
Gillette, WY

INVOICE TO		DATE	
BILL OF LADING #		PURCHASE ORDER NUMBER	
SHIPPER (FROM)		CONSIGNEE (TO)	
STREET		STREET	
CITY/PROVINCE		POSTAL CODE	CITY/PROVINCE
SPECIAL INSTRUCTIONS		POSTAL CODE	
PACKAGES		DESCRIPTION OF ARTICLES AND SPECIAL MARKS	WEIGHT (Subject to Correction)
		<input type="checkbox"/> PREPAID <input type="checkbox"/> COLLECT <small>If not indicated, shipping will automatically move collect.</small>	
		FEE	
		WAITING	
		XPU	
		CHARGES	
		FSC	
		US	
		SUB TOTAL	
		GST	
		TOTAL \$	
		IF AT OWNER'S RISK, WRITE ORD HERE	
UNIT #	DECLARED VALUATION: Maximum liability of carrier is \$2.00 per lb. (\$4.41 per kilogram) unless declared valuation states otherwise.		\$
DRIVER'S SIGNATURE - PICK UP BY	PICK UP TIME	DRIVER'S SIGNATURE - DELIVERY BY	FINISH TIME
<small>NOTICE OF CLAIM: (a) No carrier is liable for loss, damage or delay of any goods under the Bill of Lading unless notice, therefor setting out particulars of the origin, destination and date of shipment of the goods and the estimated amount claimed in respect of such loss, damage or delay is given in writing to the originating carrier or the delivering carrier within sixty (60) days after the delivery of the goods, on the case of failure to make delivery within nine (9) months from the date of shipment. (b) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. RECEIVED at the point of origin on the date specified from the consignor mentioned herein, the property herein described, in apparent good order, except as noted (contents and condition of contents of package unknown) marked, consigned and it is mutually agreed, as to each carrier of all or any of the goods over all or any portion of the route to destination, and also each party of any time interested in all or any of the goods, that every service to be performed hereunder shall be subject to the conditions standard Bill of Lading, in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. Printed or written, including conditions set aside by the standard Bill of Lading, in power at the date of the contract for the carriage of the goods listed in the Bill of Lading is governed by regulation in force in the jurisdiction at the time and place of shipment and is subject to the conditions set out in such conditions.</small>			
SHIPPER PRINT	CONSIGNEE PRINT	DATE	
SHIPPER SIGN	CONSIGNEE SIGN	TIME	
WHITE: Office	YELLOW: Carrier	PINK: Consignee	GOLDENROAD: Shipper
GST # 864540398RT001			NUMBER OF PIECES RECEIVED

PAPS# RWHV92292

Cooler ID: Cooler 7

COOL (Y/N)

Temperature: 8.0

IR: 77

Coolant Type: Ice Blue Ice Ambient

Notes:

Sampling Locations:

Sample Types:

Container Types:

Opened By: *WJW*

<u>B51</u>		<u>LC</u>		<u>CEU</u>					
T/D	SP	T/D	SP	T/D	SP	T/D	SP	T/D	SP
<i>40 mc glass</i>		<i>12 mc plastic</i>		<i>40 mc glass</i>					
Date: <i>11/11/12</i>									



COPY

Confidential

STRAIGHT BILL OF LADING
NOT NEGOTIABLE

RW HOT SHOT SERVICE INC.

250-425-7447
24 Hour Hot Shot Service

BAL Final Report 2206143

No. 92292

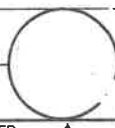
Sparwood, BC
Terrace, BC
Red Deer, AB

Vancouver, BC
Calgary, AB
Montreal, QC

Prince George, BC
Edmonton, AB
Spokane, WA

Elkford, BC
Ft. McMurray, AB
Shelby, MT

Tumbler Ridge, BC
Hinton, AB
Gillette, WY

INVOICE TO				DATE			
BILL OF LADING #				PURCHASE ORDER NUMBER			
SHIPPER (FROM)				CONSIGNEE (TO)			
STREET				STREET			
CITY/PROVINCE		POSTAL CODE		CITY/PROVINCE		POSTAL CODE	
SPECIAL INSTRUCTIONS							FREIGHT CHARGES SHIPPER TO CHECK <input type="checkbox"/> PREPAID <input checked="" type="checkbox"/> COLLECT <small>If not indicated, shipping will automatically move collect.</small>
PACKAGES	DESCRIPTION OF ARTICLE AND SPECIAL MARKS			WEIGHT (Subject to Correction)			FEE
<h1>PAPS# RWHV92292</h1>							WAITING
							XPU
							CHARGES
							FSC
UNIT #			DECLARED VALUATION: Maximum liability of carrier is \$2.00 per lb. (\$4.41 per kilogram) unless declared valuation states otherwise.				US
DRIVER'S SIGNATURE - PICK UP BY		PICK UP TIME	DRIVER'S SIGNATURE - DELIVERY BY		FINISH TIME		SUB TOTAL
<small>NOTICE OF CLAIM: (a) No carrier is liable for loss, damage or delay of any goods under the Bill of Lading unless notice, therefore setting out particulars of the origin, destination and date of shipment of the goods and the estimated amount claimed, is given in writing to the originating carrier or the delivering carrier within sixty (60) days after the delivery of the goods, or in the case of failure to make delivery within ninety (90) months from the date of shipment. (b) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. (c) The contract of carriage is the bill of lading, which is subject to the terms and conditions of the bill of lading, which are printed on the back of the bill of lading. (d) The carrier is not liable for loss, damage or delay of any goods under the Bill of Lading unless notice, therefore setting out particulars of the origin, destination and date of shipment of the goods and the estimated amount claimed, is given in writing to the originating carrier or the delivering carrier within sixty (60) days after the delivery of the goods, or in the case of failure to make delivery within ninety (90) months from the date of shipment. (e) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. (f) The contract of carriage is the bill of lading, which is subject to the terms and conditions of the bill of lading, which are printed on the back of the bill of lading. (g) It is mutually agreed, as to each carrier of all or any of the goods over all or any portion of the route to destination, and as to each carrier of any time interested in all or any of the goods, that every service to be performed hereunder shall be subject to all the conditions standard Bill of Lading, in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. Printed or written, including conditions set aside by the standard Bill of Lading, in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. The Contract for the carriage of the goods listed in the Bill of Lading is governed by regulation in force in the jurisdiction at the time and place of shipment and is subject to the provisions set out in such conditions.</small>							TOTAL \$
SHIPPER PRINT			CONSIGNEE PRINT		DATE		
SHIPPER SIGN			CONSIGNEE SIGN		TIME		
WHITE: Office			YELLOW: Carrier		PINK: Consignee		NUMBER OF PIECES RECEIVED
GOLDENROAD: Shipper			GST # 864540398RT0001				

Cooler ID: Cooler 4

CQC (Y/N) 0

Temperature: 2.3

IR: 33

Coolant Type: Ice Blue Ice Ambient

Notes:

Sampling Locations:

Sample Types:

Container Types:

Opened By: ASG

Date: 6/2/22

	<u>RG</u>		<u>LC</u>		<u>EV</u>		<u>GH</u>		
T/D	SP	T/D	SP	T/D	SP	T/D	SP	T/D	SP
	<u>60ml plastic</u>		<u>125ml plastic</u>		<u>60ml plastic</u>		<u>60ml plastic</u>		

COPY

Effective 7/29/20

Revision 004



July 21, 2022

Teck Resources Limited - Vancouver
Mike Pope
421 Pine Avenue
Sparwood, B.C. CANADA V0B2G0
mike.pope@teck.com

Re: Elkview Operations

Dear Mike Pope,

On July 7, 2022, Brooks Applied Labs (BAL) received two (2) aqueous samples. The samples were logged-in for total recoverable selenium [Se], dissolved Se [Se], and Se speciation analyses, according to the chain-of-custody (COC) form.

The sample fractions for total recoverable Se and dissolved Se were not preserved in the field. The samples were preserved (pH < 2) upon receipt at BAL. All sample fractions for total recoverable Se and dissolved Se were preserved within the (14 calendar day) preservation holding time.

The sample fractions logged in for Se speciation and dissolved Se had been field-filtered prior to receipt at BAL. All samples were stored according to BAL SOPs.

Total Recoverable Se and Dissolved Se

Each aqueous sample fraction for dissolved Se was digested in a closed vessel (bomb) with nitric and hydrochloric acids. The resulting digests were analyzed for Se content via inductively coupled plasma triple quadrupole mass spectrometry (ICP-QQQ-MS). The ICP-QQQ-MS instrumentation uses advanced interference removal techniques to ensure accuracy of the sample results. For more information, please visit the *Interference Reduction Technology* section on our website, brooksapplied.com.

Selenium Speciation

Each aqueous sample was analyzed for selenium speciation using ion chromatography inductively coupled plasma collision reaction cell mass spectrometry (IC-ICP-CRC-MS). Selenium species are chromatographically separated on an ion exchange column and then quantified using inductively coupled plasma collision reaction cell mass spectrometry (ICP-CRC-MS); for more information on this determinative technique, please visit the *Interference Reduction Technology* section on our website. The chromatographic method applied for the analyses provides greater retention of methylseleninic acid and selenomethionine, allowing for more definitive quantitation of these species.

In accordance with the quotation issued for this project, selenium speciation was defined as dissolved selenite [Se(IV)], selenate [Se(VI)], selenocyanate [SeCN], methylseleninic acid [MeSe(IV)], methaneselenonic acid [MeSe(VI)], selenomethionine [SeMef], selenosulfate [SeSO₃], and dimethylselenoxide [DMSeO]. Unknown Se species was defined as the total concentration of all unknown Se species observed during the analysis. This item is identified on the report as [Unk Se Sp].

DMS₂SeO elutes early in the chromatographic run due to the nature of the molecule and the applied chromatographic separation method. Since this species elutes near the dead volume, additional selenium species may coelute. Alternate methods can be applied, upon client request, to increase the separation of DMS₂SeO from potentially co-eluting selenium species.

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

In instances where a matrix spike/matrix spike duplicate (MS/MSD) set was spiked at a level less than the native sample concentration, the recoveries and the relative percent difference (RPD) are not considered valid indicators of data quality. In such instances, the recoveries of the laboratory fortified blanks (BS) and/or standard reference materials (SRM) demonstrate the accuracy of the applied methods. When the spiking level was less than 25% of the native sample concentration, the spike recovery was not reported (**NR**) and the relative percent difference (RPD) of the MS/MSD set was not calculated (**N/C**).

In cases when either the native sample concentration was non-detectable (reported as less than or equal to the MDL) and/or the corresponding DUP result was also non-detectable, the RPD between the two values was not calculated (**N/C**).

Except for concentration qualifiers, all data were reported without qualification. All associated quality control sample results met the acceptance criteria.

BAL, an accredited laboratory, certifies that the reported results of all analyses for which BAL is NELAP accredited meet all NELAP requirements. For more information, please see the *Report Information* page.

Please feel free to contact us if you have any questions regarding this report.

Sincerely,



Jeremy Maute

Senior Project Manager

Jeremy@brooksapplied.com



Report Information

Laboratory Accreditation

BAL is accredited by the *National Environmental Laboratory Accreditation Program* (NELAP) through the State of Florida Department of Health, Bureau of Laboratories (E87982) and is certified to perform many environmental analyses. BAL is also certified by many other states to perform environmental analyses. For a current list of our accreditations/certifications, please visit our website at <http://www.brooksapplied.com/resources/certificates-permits/> or review Tables 1 and 2 in our Accreditation Information. Results reported relate only to the samples listed in the report.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

AR	as received	MS	matrix spike
BAL	Brooks Applied Labs	MSD	matrix spike duplicate
BLK	method blank	ND	non-detect
BS	blank spike	NR	non-reportable
CAL	calibration standard	N/C	not calculated
CCB	continuing calibration blank	PS	post preparation spike
CCV	continuing calibration verification	REC	percent recovery
COC	chain of custody record	RPD	relative percent difference
D	dissolved fraction	SCV	secondary calibration verification
DUP	duplicate	SOP	standard operating procedure
IBL	instrument blank	SRM	reference material
ICV	initial calibration verification	T	total fraction
MDL	method detection limit	TR	total recoverable fraction
MRL	method reporting limit		

Definition of Data Qualifiers

(Effective 3/23/2020)

E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Please see narrative for explanation.
J	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1	Estimated value. A full explanation is presented in the narrative.
M	Duplicate precision (RPD) was not within acceptance criteria. Please see narrative for explanation.
N	Spike recovery was not within acceptance criteria. Please see narrative for explanation.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.
Z	Holding time and/or preservation requirements not established for this method; however, BAL recommendations for holding time were not followed. Please see narrative for explanation.

These qualifiers are based on those previously utilized by Brooks Applied Labs, those found in the EPA SOW ILM03.0, Exhibit B, Section III, pg. B-18, and the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review; USEPA; January 2010. These supersede all previous qualifiers ever employed by BAL.



Accreditation Information

Table 1. Accredited method/matrix/analytes for TNI
Issued by: State of Florida Dept. of Health (The NELAC Institute 2016 Standard)
Issued on: July 1, 2021; Valid to: June 30, 2022
Certificate Number: E87982-37

Method	Matrix	TNI Accredited Analyte(s)
EPA 1638	Non-Potable Waters	Ag, Cd, Cu, Ni, Pb, Sb, Se, Ti, Zn
EPA 200.8	Non-Potable Waters	Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Sb, Se, Ti, U, V, Zn
EPA 6020	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Ti, U, V, Zn
	Solids/Chemicals & Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Ti, V, Zn
BAL-5000	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, U, V, Zn, Hardness
	Solids/Chemicals	Ag, As, B, Be, Cd, Co, Cr, Cu, Pb, Mo, Ni, Sb, Se, Sn, Sr, Ti, V, Zn
	Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Ti, V, Zn
EPA 1640	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn
EPA 1631E	Non-Potable Waters, Solids/Chemicals & Biological	Total Mercury
EPA 1630	Non-Potable Waters	Methyl Mercury
BAL-3200	Solids/Chemicals & Biological	Methyl Mercury
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
BAL-4201	Non-Potable Waters	Se(IV), Se(VI)
BAL-4300	Non-Potable Waters Solid/Chemicals	Cr(VI)
SM2340B	Non-Potable Waters	Hardness



Accreditation Information

**Table 2. Accredited method/matrix/analytes for ISO (1),
 Non-Governmental TNI (2)
 Issued by: ANAB
 Issued on: September 21, 2021; Valid to: March 30, 2024**

Method	Matrix	ISO and Non-Gov. TNI Accredited Analyte(s)
EPA 1638 Mod EPA 200.8 Mod EPA 6020 Mod	Non-Potable Waters	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, U, V, Zn
BAL-5000	Solids/Chemicals & Biological	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, V, Zn Hg (Biological Only)
EPA 1640 Mod	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn Ag, As, Cr, Co, Se, Ti, V (ISO Only)
EPA 1631E Mod BAL-3100	Non-Potable Waters, Solids/Chemicals & Biological/Food	Total Mercury
EPA 1630 Mod BAL-3200	Non-Potable Waters, Solids/Chemicals Biological	Methyl Mercury
EPA 1632A Mod BAL-3300	Non-Potable Waters Biological/Food Solids/Chemicals	Inorganic Arsenic (ISO Only) Inorganic Arsenic (ISO Only)
AOAC 2015.01 Mod BAL-5000	Food	As, Cd, Hg, Pb
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
	Biological by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4101	Food by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4201	Non-Potable Waters	Se(IV), Se(VI), SeCN, SeMet
BAL-4300	Non-Potable Waters, Solid/Chemicals	Cr(VI)
SM 3500-Fe BAL-4500	Non-Potable Waters	Fe, Fe(II) (ISO Only)
SM2340B	Non-Potable Waters	Hardness
SM 2540G BAL-0501	Solids/Chemicals & Biological	% Dry Weight



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
<i>EV_MC3A_WS_LAEMP_EVO_2022-06-29_NP</i>	2207061-01	WS	Sample	06/29/2022	07/07/2022
<i>EV_MC3A_WS_LAEMP_EVO_2022-06-29_NP_NAL</i>	2207061-02	WS	Sample	06/29/2022	07/07/2022
<i>EV_MC3A_WS_LAEMP_EVO_2022-06-29_NP_NAL</i>	2207061-03	WS	Sample	06/29/2022	07/07/2022

Batch Summary

Analyte	Lab Matrix	Method	Prepared	Analyzed	Batch	Sequence
DMS ₂ SeO	Water	SOP BAL-4201	07/07/2022	07/09/2022	B221516	S220700
MeSe(IV)	Water	SOP BAL-4201	07/07/2022	07/09/2022	B221516	S220700
MeSe(VI)	Water	SOP BAL-4201	07/07/2022	07/09/2022	B221516	S220700
Se	Water	EPA 1638 Mod	07/14/2022	07/18/2022	B221574	S220737
Se(IV)	Water	SOP BAL-4201	07/07/2022	07/09/2022	B221516	S220700
Se(VI)	Water	SOP BAL-4201	07/07/2022	07/09/2022	B221516	S220700
SeCN	Water	SOP BAL-4201	07/07/2022	07/09/2022	B221516	S220700
SeMet	Water	SOP BAL-4201	07/07/2022	07/09/2022	B221516	S220700
SeSO ₃	Water	SOP BAL-4201	07/07/2022	07/09/2022	B221516	S220700
Unk Se Sp	Water	SOP BAL-4201	07/07/2022	07/09/2022	B221516	S220700



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
EV_MC3A_WS_LAEMP_EVO_2022-06-29_NP										
2207061-01	DMSeO	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221516	S220700
2207061-01	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221516	S220700
2207061-01	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221516	S220700
2207061-01	Se(IV)	WS	D	0.020	J	0.010	0.075	µg/L	B221516	S220700
2207061-01	Se(VI)	WS	D	1.00		0.010	0.055	µg/L	B221516	S220700
2207061-01	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221516	S220700
2207061-01	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221516	S220700
2207061-01	SeSO3	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221516	S220700
2207061-01	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221516	S220700
EV_MC3A_WS_LAEMP_EVO_2022-06-29_NP_NAL										
2207061-02	Se	WS	D	1.43		0.165	0.528	µg/L	B221574	S220737
EV_MC3A_WS_LAEMP_EVO_2022-06-29_NP_NAL										
2207061-03	Se	WS	TR	1.44		0.165	0.528	µg/L	B221574	S220737



Accuracy & Precision Summary

Batch: B221516
Lab Matrix: Water
Method: SOP BAL-4201

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221516-BS1	Blank Spike, (2124033)						
	MeSe(IV)		5.095	5.462	µg/L	107% 75-125	
	Se(IV)		5.000	4.985	µg/L	100% 75-125	
	Se(VI)		5.000	5.057	µg/L	101% 75-125	
	SeCN		5.015	4.932	µg/L	98% 75-125	
	SeMet		4.932	5.211	µg/L	106% 75-125	
B221516-DUP3	Duplicate, (2207059-13)						
	DMS ₂ SeO	ND		ND	µg/L		N/C 25
	MeSe(IV)	ND		ND	µg/L		N/C 25
	MeSe(VI)	ND		ND	µg/L		N/C 25
	Se(IV)	0.015		0.013	µg/L		12% 25
	Se(VI)	0.356		0.348	µg/L		2% 25
	SeCN	ND		ND	µg/L		N/C 25
	SeMet	ND		ND	µg/L		N/C 25
	SeSO ₃	ND		ND	µg/L		N/C 25
Unk Se Sp	ND		ND	µg/L		N/C 25	
B221516-MS3	Matrix Spike, (2207059-13)						
	Se(IV)	0.015	4.900	4.606	µg/L	94% 75-125	
	Se(VI)	0.356	5.100	4.974	µg/L	91% 75-125	
	SeCN	ND	1.962	1.745	µg/L	89% 75-125	
	SeMet	ND	1.977	1.829	µg/L	93% 75-125	
B221516-MSD3	Matrix Spike Duplicate, (2207059-13)						
	Se(IV)	0.015	4.900	4.583	µg/L	93% 75-125	0.5% 25
	Se(VI)	0.356	5.100	4.998	µg/L	91% 75-125	0.5% 25
	SeCN	ND	1.962	1.744	µg/L	89% 75-125	0.04% 25
	SeMet	ND	1.977	1.829	µg/L	93% 75-125	0.01% 25



Accuracy & Precision Summary

Batch: B221574
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221574-BS1	Blank Spike, (2137005) Se		200.0	203.6	µg/L	102% 75-125	
B221574-BS2	Blank Spike, (2137005) Se		200.0	203.5	µg/L	102% 75-125	
B221574-BS3	Blank Spike, (2137005) Se		200.0	196.6	µg/L	98% 75-125	
B221574-BS4	Blank Spike, (2137005) Se		200.0	194.1	µg/L	97% 75-125	
B221574-SRM1	Reference Material (2214012, TMDA 51.5 Reference Standard - Bottle 4 - SRM) Se		14.30	14.29	µg/L	100% 75-125	
B221574-SRM2	Reference Material (2214012, TMDA 51.5 Reference Standard - Bottle 4 - SRM) Se		14.30	13.54	µg/L	95% 75-125	
B221574-SRM3	Reference Material (2214012, TMDA 51.5 Reference Standard - Bottle 4 - SRM) Se		14.30	14.04	µg/L	98% 75-125	
B221574-SRM4	Reference Material (2214012, TMDA 51.5 Reference Standard - Bottle 4 - SRM) Se		14.30	13.59	µg/L	95% 75-125	
B221574-DUP9	Duplicate, (2207071-08) Se	3.638		3.459	µg/L		5% 20
B221574-MS9	Matrix Spike, (2207071-08) Se	3.638	220.0	225.7	µg/L	101% 75-125	
B221574-MSD9	Matrix Spike Duplicate, (2207071-08) Se	3.638	220.0	219.9	µg/L	98% 75-125	3% 20



Method Blanks & Reporting Limits

Batch: B221516
Matrix: Water
Method: SOP BAL-4201
Analyte: DMSeO

Sample	Result	Units	
B221516-BLK1	0.00	µg/L	
B221516-BLK2	0.00	µg/L	
B221516-BLK3	0.00	µg/L	
B221516-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.005		MRL: 0.005

Analyte: MeSe(IV)

Sample	Result	Units	
B221516-BLK1	0.00	µg/L	
B221516-BLK2	0.00	µg/L	
B221516-BLK3	0.00	µg/L	
B221516-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.005		MRL: 0.005

Analyte: MeSe(VI)

Sample	Result	Units	
B221516-BLK1	0.00	µg/L	
B221516-BLK2	0.00	µg/L	
B221516-BLK3	0.00	µg/L	
B221516-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.005		MRL: 0.005



Method Blanks & Reporting Limits

Analyte: Se(IV)

Sample	Result	Units	
B221516-BLK1	0.00	µg/L	
B221516-BLK2	0.00	µg/L	
B221516-BLK3	0.00	µg/L	
B221516-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.015		MRL: 0.015

Analyte: Se(VI)

Sample	Result	Units	
B221516-BLK1	0.00	µg/L	
B221516-BLK2	0.00	µg/L	
B221516-BLK3	0.00	µg/L	
B221516-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.011		MRL: 0.011

Analyte: SeCN

Sample	Result	Units	
B221516-BLK1	0.00	µg/L	
B221516-BLK2	0.00	µg/L	
B221516-BLK3	0.00	µg/L	
B221516-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.010		MRL: 0.010

Analyte: SeMet

Sample	Result	Units	
B221516-BLK1	0.00	µg/L	
B221516-BLK2	0.00	µg/L	
B221516-BLK3	0.00	µg/L	
B221516-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.005		MRL: 0.005



Method Blanks & Reporting Limits

Analyte: SeSO3

Sample	Result	Units	
B221516-BLK1	0.00	µg/L	
B221516-BLK2	0.00	µg/L	
B221516-BLK3	0.00	µg/L	
B221516-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.011		MRL: 0.011

Analyte: Unk Se Sp

Sample	Result	Units	
B221516-BLK1	0.00	µg/L	
B221516-BLK2	0.00	µg/L	
B221516-BLK3	0.00	µg/L	
B221516-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.015		MRL: 0.015



Method Blanks & Reporting Limits

Batch: B221574
Matrix: Water
Method: EPA 1638 Mod
Analyte: Se

Sample	Result	Units	
B221574-BLK1	0.103	µg/L	
B221574-BLK2	0.004	µg/L	
B221574-BLK3	0.037	µg/L	
B221574-BLK4	0.023	µg/L	
Average:	0.042		MDL: 0.150
Limit:	0.480		MRL: 0.480



Sample Containers

Lab ID: 2207061-01

Report Matrix: WS

Collected: 06/29/2022

Sample:

Sample Type: Sample + Sum

Received: 07/07/2022

EV_MC3A_WS_LAEMP_EVO_2022-06-29_NP

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 3 - 2207061
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 3 - 2207061
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 3 - 2207061

Lab ID: 2207061-02

Report Matrix: WS

Collected: 06/29/2022

Sample:

Sample Type: Sample + Sum

Received: 07/07/2022

EV_MC3A_WS_LAEMP_EVO_2022-06-29_NP_NAL

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 3 - 2207061

Lab ID: 2207061-03

Report Matrix: WS

Collected: 06/29/2022

Sample:

Sample Type: Sample + Sum

Received: 07/07/2022

EV_MC3A_WS_LAEMP_EVO_2022-06-29_NP_NAL

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 3 - 2207061

Shipping Containers

Cooler 3 - 2207061

Received: July 7, 2022 7:25

Tracking No: PAPS#RWHV55071 via Courier

Coolant Type: Ice

Temperature: -0.8 °C

Description: Cooler 3

Damaged in transit? No

Returned to client? No

Comments: IR #33

Custody seals present? No

Custody seals intact? No

COC present? Yes

COC ID:	REP_EVO LAEMP_2022_MAY_Brooks	TURNAROUND TIME:	RUSH:				
PROJECT/CLIENT INFO		LABORATORY		OTHER INFO			
Facility Name / Job#	Elkview Operations	Lab Name	Brooks Applied Labs	Report Format / Distribution	Excel	PDF	EDD
Project Manager	Mike Pope	Lab Contact	Ben Wozniak	Email 1:	X	X	X
Email	brooks@teck.com	Email	Ben@brooksupplied.com	Email 2:			
Address	421 Pine Ave	Address	18804 North Creek Parkway	Email 3:	Teck Lab Results@teck.com	X	X
			Suite 100	Email 4:	AquaSci_lab@teck.com	X	X
City	Sparwood	City	Bothell	Province	WA		
Postal Code	V0B 2G0	Postal Code	98011	Country	United States		
Phone Number	250-425-8202	Phone Number	(206) 753-6158	PO number	817033		

SAMPLE DETAILS								ANALYSIS REQUESTED												
Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com p	# Of Cont.	Brooks_Se_Spectation	Brooks_Se_D	Brooks_Se_T										
EV_MC3A_WS_LAEMP_EVO_2022-06-29_NP	EV_MC3A	WS	No	29-Jun-22	13:30	G	1	1												
EV_MC3A_WS_LAEMP_EVO_2022-06-29_NP_NAL	EV_MC3A	WS	No	29-Jun-22	13:30	G	2		1	1										

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
	Alex McClymont	July 4, 2022	AKW/BAL	7/7/22 7:25
SERVICE REQUEST (rush - subject to availability)	Sampler's Name	Sampler's Signature	Mobile #	Date/Time
Regular (default) X Priority (2-3 business days) - 50% surcharge Emergency (1 Business Day) - 100% surcharge For Emergency <1 Day, ASAP or Weekend - Contact ALS	Alex McClymont		780-293-6750	July 4, 2022

Confidential

RW Hot Shot Service Inc.

BAL Final Report 2207061

STRAIGHT BILL OF LADING
NOT NEGOTIABLE

24 Hour Hot Shot Service
P.O. BOX 276, SPARWOOD, BC V0B 2G0
PHONE: (250) 425-7447
FAX: (250) 425-7450

55072

INVOICE TO		DATE	
BILL OF LADING #		PURCHASE ORDER NUMBER	
SHIPPER (FROM)		CONSIGNEE (TO)	
STREET		STREET	
CITY/PROVINCE		POSTAL CODE	CITY/PROVINCE
INTERLINE CARRIER		WAY BILL #	
SPECIAL INSTRUCTIONS			
PACKAGES	DESCRIPTION OF ARTICLES AND SPECIAL MARKS	WEIGHT (Subject to Correction)	FREIGHT CHARGES
2	Coolers - white	72 LBS	SHIPPER TO CHECK <input type="checkbox"/> PREPAID <input type="checkbox"/> COLLECT If not indicated, shipping will automatically require collect
<p style="font-size: 2em; text-align: center;">PAPS# RWHV/55071</p>			WAITING
			XPU
			CHARGES
			FSC
			SUB TOTAL
			GST
UNIT #	PERMIT #	DECLARED VALUATION: Maximum liability of carrier is \$2.00 per kg. (\$4.47 per kilogram) unless declared valuation states otherwise	\$
DRIVER'S SIGNATURE - PICK UP BY		DRIVER'S SIGNATURE - DELIVERY BY	
<small>NOTICE OF CLAIM: (a) No carrier is liable for loss, damage or delay of any goods under this Bill of Lading unless the carrier, warehouse or other person to whom the goods are delivered is shown to be negligent in respect of such loss, damage or delay in writing in the originating office of the carrier's office and the date of such loss, damage or delay is shown to be within one (1) month from the date of shipment. (b) The final statement of the claim must be filed within one (1) month from the date of shipment. (c) The carrier's liability is limited to the actual value of the goods at the date of shipment. (d) The carrier's liability is limited to the actual value of the goods at the date of shipment. (e) The carrier's liability is limited to the actual value of the goods at the date of shipment. (f) The carrier's liability is limited to the actual value of the goods at the date of shipment. (g) The carrier's liability is limited to the actual value of the goods at the date of shipment. (h) The carrier's liability is limited to the actual value of the goods at the date of shipment. (i) The carrier's liability is limited to the actual value of the goods at the date of shipment. (j) The carrier's liability is limited to the actual value of the goods at the date of shipment. (k) The carrier's liability is limited to the actual value of the goods at the date of shipment. (l) The carrier's liability is limited to the actual value of the goods at the date of shipment. (m) The carrier's liability is limited to the actual value of the goods at the date of shipment. (n) The carrier's liability is limited to the actual value of the goods at the date of shipment. (o) The carrier's liability is limited to the actual value of the goods at the date of shipment. (p) The carrier's liability is limited to the actual value of the goods at the date of shipment. (q) The carrier's liability is limited to the actual value of the goods at the date of shipment. (r) The carrier's liability is limited to the actual value of the goods at the date of shipment. (s) The carrier's liability is limited to the actual value of the goods at the date of shipment. (t) The carrier's liability is limited to the actual value of the goods at the date of shipment. (u) The carrier's liability is limited to the actual value of the goods at the date of shipment. (v) The carrier's liability is limited to the actual value of the goods at the date of shipment. (w) The carrier's liability is limited to the actual value of the goods at the date of shipment. (x) The carrier's liability is limited to the actual value of the goods at the date of shipment. (y) The carrier's liability is limited to the actual value of the goods at the date of shipment. (z) The carrier's liability is limited to the actual value of the goods at the date of shipment.</small>			
SHIPPER PRINT	CONSIGNEE PRINT	DATE	
SHIPPER SIGN	CONSIGNEE SIGN	TIME	

WHITE Office YELLOW Carrier PINK Consignee GOLDENROAD Shipper GST # 864540398R0001 NUMBER OF PIECES RECEIVED 2

Cooler ID: Cooler 3 COC(Y/N) Temperature: -0.8 IR: 33
 Coolant Type: Ice Blue Ice Ambient

Notes:

Sampling Locations:

F2		EV							
(T/D)	(SP)	(T/D)	(SP)	T/D	SP	T/D	SP	T/D	SP
4oz glass	125mL Plastic	4oz glass	125mL Plastic						

Opened By: ERL Date: 7/7/22



COPY

Effective 7/29/20



July 25, 2022

Teck Resources Limited - Vancouver
 Mike Pope
 421 Pine Avenue
 Sparwood, B.C. CANADA V0B2G0
mike.pope@teck.com

Revision 1

Following the submission of the original report on July 25, 2022, it was determined that the **Sample ID** values listed on the chain-of-custody (COC) form were incorrect. Per client request, the **Sample ID** values have been changed for reporting. All sample containers listed a “*WS_LAEMP*” term in place of the “*_LAEMP*” term embedded in the **Sample ID**. In this revised report the **Sample ID** values on the container labels have been used for reporting. No other changes were made in this revised report, with respect to the original report issued on July 25, 2022.

Re: Regional Effects Program

Dear Mike Pope,

On July 7, 2022, Brooks Applied Labs (BAL) received ten (10) aqueous samples. The samples were logged-in for total recoverable selenium [Se], dissolved Se [Se], and Se speciation analyses, according to the chain-of-custody (COC) form.

The **Sample ID** values listed on the chain-of-custody (COC) form did not exactly match the corresponding **Sample ID** values provided on container labels. All sample containers listed a “*WS_LAEMP*” term in place of the “*_LAEMP*” term embedded in the **Sample ID**. Per client request, the samples were logged in and reported using the “*WS_LAEMP*” term in the **Sample ID** values, in accordance with the container labels.

The **Date/Time Collected** value listed on the chain-of-custody (COC) form did not match the corresponding **Date/Time Collected** value listed on container label for 2207062-03. The discrepancy is described in the table below.

Date/Time Collected Discrepancies

Laboratory ID	Sample ID	Date/Time Collected (on COC form)	Date/Time Collected (on container label)
2207062-03	RG_MI3_LAEMP_EVO_2022-06-29_NP_NAL	06/29/2022 12:45	06/29/2022 14:45

2207062-03 was logged in and reported using the **Date/Time Collected** value listed on the COC form (*column 3 in the table above*).

The sample fractions for total recoverable Se and dissolved Se were not preserved in the field. The samples were preserved (pH < 2) upon receipt at BAL. All sample fractions for total recoverable Se and dissolved Se were preserved within the (14 calendar day) preservation holding time.

The sample fractions logged in for Se speciation and dissolved Se had been field-filtered prior to receipt at BAL. All samples were stored according to BAL SOPs.

Total Recoverable Se and Dissolved Se

Each aqueous sample fraction for dissolved Se was digested in a closed vessel (bomb) with nitric and hydrochloric acids. The resulting digests were analyzed for Se content via inductively coupled plasma triple quadrupole mass spectrometry (ICP-QQQ-MS). The ICP-QQQ-MS instrumentation uses advanced interference removal techniques to ensure accuracy of the sample results. For more information, please visit the *Interference Reduction Technology* section on our website, brooksapplied.com.

Selenium Speciation

Each aqueous sample was analyzed for selenium speciation using ion chromatography inductively coupled plasma collision reaction cell mass spectrometry (IC-ICP-CRC-MS). Selenium species are chromatographically separated on an ion exchange column and then quantified using inductively coupled plasma collision reaction cell mass spectrometry (ICP-CRC-MS); for more information on this determinative technique, please visit the *Interference Reduction Technology* section on our website. The chromatographic method applied for the analyses provides greater retention of methylseleninic acid and selenomethionine, allowing for more definitive quantitation of these species.

In accordance with the quotation issued for this project, selenium speciation was defined as dissolved selenite [Se(IV)], selenate [Se(VI)], selenocyanate [SeCN], methylseleninic acid [MeSe(IV)], methaneselenonic acid [MeSe(VI)], selenomethionine [SeMe₂], selenosulfate [SeSO₃], and dimethylselenoxide [DMSeO]. Unknown Se species was defined as the total concentration of all unknown Se species observed during the analysis. This item is identified on the report as [Unk Se Sp].

DMSeO elutes early in the chromatographic run due to the nature of the molecule and the applied chromatographic separation method. Since this species elutes near the dead volume, additional selenium species may coelute. Alternate methods can be applied, upon client request, to increase the separation of DMSeO from potentially co-eluting selenium species.

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

In instances where a matrix spike/matrix spike duplicate (MS/MSD) set was spiked at a level less than the native sample concentration, the recoveries and the relative percent difference (RPD) are not considered valid indicators of data quality. In such instances, the recoveries of the laboratory fortified blanks (BS) and/or standard reference materials (SRM) demonstrate the accuracy of the applied methods. When the spiking level was less than 25% of the native sample concentration, the spike recovery was not reported (**NR**) and the relative percent difference (RPD) of the MS/MSD set was not calculated (**N/C**).

In cases when either the native sample concentration was non-detectable (reported as less than or equal to the MDL) and/or the corresponding DUP result was also non-detectable, the RPD between the two values was not calculated (**N/C**).

Except for concentration qualifiers, all data were reported without qualification. All associated quality control sample results met the acceptance criteria.

BAL, an accredited laboratory, certifies that the reported results of all analyses for which BAL is NELAP accredited meet all NELAP requirements. For more information, please see the *Report Information* page.

Please feel free to contact us if you have any questions regarding this report.

Sincerely,

A handwritten signature in black ink, appearing to read 'Jeremy Maute', with a stylized flourish at the end.

Jeremy Maute
Senior Project Manager
Jeremy@brooksapplied.com



Report Information

Laboratory Accreditation

BAL is accredited by the *National Environmental Laboratory Accreditation Program* (NELAP) through the State of Florida Department of Health, Bureau of Laboratories (E87982) and is certified to perform many environmental analyses. BAL is also certified by many other states to perform environmental analyses. For a current list of our accreditations/certifications, please visit our website at <http://www.brooksapplied.com/resources/certificates-permits/> or review Tables 1 and 2 in our Accreditation Information. Results reported relate only to the samples listed in the report.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

AR	as received	MS	matrix spike
BAL	Brooks Applied Labs	MSD	matrix spike duplicate
BLK	method blank	ND	non-detect
BS	blank spike	NR	non-reportable
CAL	calibration standard	N/C	not calculated
CCB	continuing calibration blank	PS	post preparation spike
CCV	continuing calibration verification	REC	percent recovery
COC	chain of custody record	RPD	relative percent difference
D	dissolved fraction	SCV	secondary calibration verification
DUP	duplicate	SOP	standard operating procedure
IBL	instrument blank	SRM	reference material
ICV	initial calibration verification	T	total fraction
MDL	method detection limit	TR	total recoverable fraction
MRL	method reporting limit		

Definition of Data Qualifiers

(Effective 3/23/2020)

E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Please see narrative for explanation.
J	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1	Estimated value. A full explanation is presented in the narrative.
M	Duplicate precision (RPD) was not within acceptance criteria. Please see narrative for explanation.
N	Spike recovery was not within acceptance criteria. Please see narrative for explanation.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.
Z	Holding time and/or preservation requirements not established for this method; however, BAL recommendations for holding time were not followed. Please see narrative for explanation.

These qualifiers are based on those previously utilized by Brooks Applied Labs, those found in the EPA SOW ILM03.0, Exhibit B, Section III, pg. B-18, and the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review; USEPA; January 2010. These supersede all previous qualifiers ever employed by BAL.



Accreditation Information

Table 1. Accredited method/matrix/analytes for TNI
Issued by: State of Florida Dept. of Health (The NELAC Institute 2016 Standard)
Issued on: July 1, 2021; Valid to: June 30, 2022
Certificate Number: E87982-37

Method	Matrix	TNI Accredited Analyte(s)
EPA 1638	Non-Potable Waters	Ag, Cd, Cu, Ni, Pb, Sb, Se, Ti, Zn
EPA 200.8	Non-Potable Waters	Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Sb, Se, Ti, U, V, Zn
EPA 6020	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Ti, U, V, Zn
	Solids/Chemicals & Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Ti, V, Zn
BAL-5000	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, U, V, Zn, Hardness
	Solids/Chemicals	Ag, As, B, Be, Cd, Co, Cr, Cu, Pb, Mo, Ni, Sb, Se, Sn, Sr, Ti, V, Zn
	Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Ti, V, Zn
EPA 1640	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn
EPA 1631E	Non-Potable Waters, Solids/Chemicals & Biological	Total Mercury
EPA 1630	Non-Potable Waters	Methyl Mercury
BAL-3200	Solids/Chemicals & Biological	Methyl Mercury
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
BAL-4201	Non-Potable Waters	Se(IV), Se(VI)
BAL-4300	Non-Potable Waters Solid/Chemicals	Cr(VI)
SM2340B	Non-Potable Waters	Hardness



Accreditation Information

**Table 2. Accredited method/matrix/analytes for ISO (1),
 Non-Governmental TNI (2)
 Issued by: ANAB
 Issued on: September 21, 2021; Valid to: March 30, 2024**

Method	Matrix	ISO and Non-Gov. TNI Accredited Analyte(s)
EPA 1638 Mod EPA 200.8 Mod EPA 6020 Mod	Non-Potable Waters	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, U, V, Zn
BAL-5000	Solids/Chemicals & Biological	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, V, Zn Hg (Biological Only)
EPA 1640 Mod	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn Ag, As, Cr, Co, Se, Ti, V (ISO Only)
EPA 1631E Mod BAL-3100	Non-Potable Waters, Solids/Chemicals & Biological/Food	Total Mercury
EPA 1630 Mod BAL-3200	Non-Potable Waters, Solids/Chemicals Biological	Methyl Mercury
EPA 1632A Mod BAL-3300	Non-Potable Waters Biological/Food Solids/Chemicals	Inorganic Arsenic (ISO Only) Inorganic Arsenic (ISO Only)
AOAC 2015.01 Mod BAL-5000	Food	As, Cd, Hg, Pb
BAL-4100	Non-Potable Waters Biological by BAL-4117	As(III), As(V), DMAs, MMAs Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4101	Food by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4201	Non-Potable Waters	Se(IV), Se(VI), SeCN, SeMet
BAL-4300	Non-Potable Waters, Solid/Chemicals	Cr(VI)
SM 3500-Fe BAL-4500	Non-Potable Waters	Fe, Fe(II) (ISO Only)
SM2340B	Non-Potable Waters	Hardness
SM 2540G BAL-0501	Solids/Chemicals & Biological	% Dry Weight



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
RG_MI3_WS_LAEMP_EVO_2022-06-29_NP	2207062-01	WS	Sample	06/29/2022	07/07/2022
RG_MI3_WS_LAEMP_EVO_2022-06-29_NP_NAL	2207062-02	WS	Sample	06/29/2022	07/07/2022
RG_MI3_WS_LAEMP_EVO_2022-06-29_NP_NAL	2207062-03	WS	Sample	06/29/2022	07/07/2022
RG_MIDGA_WS_LAEMP_EVO_2022-06-29_NP	2207062-04	WS	Sample	06/29/2022	07/07/2022
RG_MIDGA_WS_LAEMP_EVO_2022-06-29_NP_NAL	2207062-05	WS	Sample	06/29/2022	07/07/2022
RG_MIDGA_WS_LAEMP_EVO_2022-06-29_NP_NAL	2207062-06	WS	Sample	06/29/2022	07/07/2022
RG_MIDBO_WS_LAEMP_EVO_2022-06-29_NP	2207062-07	WS	Sample	06/29/2022	07/07/2022
RG_MIDBO_WS_LAEMP_EVO_2022-06-29_NP_NAL	2207062-08	WS	Sample	06/29/2022	07/07/2022
RG_MIDBO_WS_LAEMP_EVO_2022-06-29_NP_NAL	2207062-09	WS	Sample	06/29/2022	07/07/2022
RG_MICOMP_WS_LAEMP_EVO_2022-06-29_NP	2207062-10	WS	Sample	06/29/2022	07/07/2022
RG_MICOMP_WS_LAEMP_EVO_2022-06-29_NP_NAL	2207062-11	WS	Sample	06/29/2022	07/07/2022
RG_MICOMP_WS_LAEMP_EVO_2022-06-29_NP_NAL	2207062-12	WS	Sample	06/29/2022	07/07/2022
RG_FBLANK_WS_LAEMP_EVO_2022-06-30_NP	2207062-13	WS	Sample	06/30/2022	07/07/2022
RG_FBLANK_WS_LAEMP_EVO_2022-06-30_NP_NAL	2207062-14	WS	Sample	06/30/2022	07/07/2022
RG_FBLANK_WS_LAEMP_EVO_2022-06-30_NP_NAL	2207062-15	WS	Sample	06/30/2022	07/07/2022



Batch Summary

Analyte	Lab Matrix	Method	Prepared	Analyzed	Batch	Sequence
DMS ₂ SeO	Water	SOP BAL-4201	07/07/2022	07/09/2022	B221516	S220700
MeSe(IV)	Water	SOP BAL-4201	07/07/2022	07/09/2022	B221516	S220700
MeSe(VI)	Water	SOP BAL-4201	07/07/2022	07/09/2022	B221516	S220700
Se	Water	EPA 1638 Mod	07/14/2022	07/16/2022	B221574	S220736
Se(IV)	Water	SOP BAL-4201	07/07/2022	07/09/2022	B221516	S220700
Se(VI)	Water	SOP BAL-4201	07/07/2022	07/09/2022	B221516	S220700
SeCN	Water	SOP BAL-4201	07/07/2022	07/09/2022	B221516	S220700
SeMet	Water	SOP BAL-4201	07/07/2022	07/09/2022	B221516	S220700
SeSO ₃	Water	SOP BAL-4201	07/07/2022	07/09/2022	B221516	S220700
Unk Se Sp	Water	SOP BAL-4201	07/07/2022	07/09/2022	B221516	S220700



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_MI3_WS_LAEMP_EVO_2022-06-29_NP										
2207062-01	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221516	S220700
2207062-01	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221516	S220700
2207062-01	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221516	S220700
2207062-01	Se(IV)	WS	D	0.023	J	0.010	0.075	µg/L	B221516	S220700
2207062-01	Se(VI)	WS	D	0.867		0.010	0.055	µg/L	B221516	S220700
2207062-01	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221516	S220700
2207062-01	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221516	S220700
2207062-01	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221516	S220700
2207062-01	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221516	S220700
RG_MI3_WS_LAEMP_EVO_2022-06-29_NP_NAL										
2207062-02	Se	WS	D	1.05		0.165	0.528	µg/L	B221574	S220736
RG_MI3_WS_LAEMP_EVO_2022-06-29_NP_NAL										
2207062-03	Se	WS	TR	0.973		0.165	0.528	µg/L	B221574	S220736
RG_MIDGA_WS_LAEMP_EVO_2022-06-29_NP										
2207062-04	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221516	S220700
2207062-04	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221516	S220700
2207062-04	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221516	S220700
2207062-04	Se(IV)	WS	D	0.044	J	0.010	0.075	µg/L	B221516	S220700
2207062-04	Se(VI)	WS	D	5.58		0.010	0.055	µg/L	B221516	S220700
2207062-04	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221516	S220700
2207062-04	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221516	S220700
2207062-04	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221516	S220700
2207062-04	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221516	S220700
RG_MIDGA_WS_LAEMP_EVO_2022-06-29_NP_NAL										
2207062-05	Se	WS	D	5.74		0.165	0.528	µg/L	B221574	S220736
RG_MIDGA_WS_LAEMP_EVO_2022-06-29_NP_NAL										
2207062-06	Se	WS	TR	6.14		0.165	0.528	µg/L	B221574	S220736



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_MIDBO_WS_LAEMP_EVO_2022-06-29_NP										
2207062-07	DMSeO	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221516	S220700
2207062-07	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221516	S220700
2207062-07	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221516	S220700
2207062-07	Se(IV)	WS	D	0.031	J	0.010	0.075	µg/L	B221516	S220700
2207062-07	Se(VI)	WS	D	3.88		0.010	0.055	µg/L	B221516	S220700
2207062-07	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221516	S220700
2207062-07	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221516	S220700
2207062-07	SeSO3	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221516	S220700
2207062-07	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221516	S220700
RG_MIDBO_WS_LAEMP_EVO_2022-06-29_NP_NAL										
2207062-08	Se	WS	D	4.12		0.165	0.528	µg/L	B221574	S220736
RG_MIDBO_WS_LAEMP_EVO_2022-06-29_NP_NAL										
2207062-09	Se	WS	TR	4.01		0.165	0.528	µg/L	B221574	S220736
RG_MICOMP_WS_LAEMP_EVO_2022-06-29_NP										
2207062-10	DMSeO	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221516	S220700
2207062-10	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221516	S220700
2207062-10	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221516	S220700
2207062-10	Se(IV)	WS	D	0.025	J	0.010	0.075	µg/L	B221516	S220700
2207062-10	Se(VI)	WS	D	3.18		0.010	0.055	µg/L	B221516	S220700
2207062-10	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221516	S220700
2207062-10	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221516	S220700
2207062-10	SeSO3	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221516	S220700
2207062-10	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221516	S220700
RG_MICOMP_WS_LAEMP_EVO_2022-06-29_NP_NAL										
2207062-11	Se	WS	D	3.32		0.165	0.528	µg/L	B221574	S220736
RG_MICOMP_WS_LAEMP_EVO_2022-06-29_NP_NAL										
2207062-12	Se	WS	TR	3.38		0.165	0.528	µg/L	B221574	S220736



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_FBLANK_WS_LAEMP_EVO_2022-06-30_NP										
2207062-13	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221516	S220700
2207062-13	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221516	S220700
2207062-13	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221516	S220700
2207062-13	Se(IV)	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221516	S220700
2207062-13	Se(VI)	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221516	S220700
2207062-13	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221516	S220700
2207062-13	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221516	S220700
2207062-13	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221516	S220700
2207062-13	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221516	S220700
RG_FBLANK_WS_LAEMP_EVO_2022-06-30_NP_NAL										
2207062-14	Se	WS	D	≤ 0.165	U	0.165	0.528	µg/L	B221574	S220736
RG_FBLANK_WS_LAEMP_EVO_2022-06-30_NP_NAL										
2207062-15	Se	WS	TR	≤ 0.165	U	0.165	0.528	µg/L	B221574	S220736



Accuracy & Precision Summary

Batch: B221516
Lab Matrix: Water
Method: SOP BAL-4201

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221516-BS1	Blank Spike, (2124033)						
	MeSe(IV)		5.095	5.462	µg/L	107% 75-125	
	Se(IV)		5.000	4.985	µg/L	100% 75-125	
	Se(VI)		5.000	5.057	µg/L	101% 75-125	
	SeCN		5.015	4.932	µg/L	98% 75-125	
	SeMet		4.932	5.211	µg/L	106% 75-125	
B221516-DUP4	Duplicate, (2207062-01)						
	DMSeO	ND		ND	µg/L		N/C 25
	MeSe(IV)	ND		ND	µg/L		N/C 25
	MeSe(VI)	ND		ND	µg/L		N/C 25
	Se(IV)	0.023		0.022	µg/L		3% 25
	Se(VI)	0.867		0.892	µg/L		3% 25
	SeCN	ND		ND	µg/L		N/C 25
	SeMet	ND		ND	µg/L		N/C 25
	SeSO3	ND		ND	µg/L		N/C 25
Unk Se Sp	ND		ND	µg/L		N/C 25	
B221516-MS4	Matrix Spike, (2207062-01)						
	Se(IV)	0.023	4.900	4.622	µg/L	94% 75-125	
	Se(VI)	0.867	5.100	5.547	µg/L	92% 75-125	
	SeCN	ND	1.962	1.762	µg/L	90% 75-125	
	SeMet	ND	1.977	1.808	µg/L	91% 75-125	
B221516-MSD4	Matrix Spike Duplicate, (2207062-01)						
	Se(IV)	0.023	4.900	4.734	µg/L	96% 75-125	2% 25
	Se(VI)	0.867	5.100	5.633	µg/L	93% 75-125	2% 25
	SeCN	ND	1.962	1.806	µg/L	92% 75-125	2% 25
	SeMet	ND	1.977	1.847	µg/L	93% 75-125	2% 25



Accuracy & Precision Summary

Batch: B221574
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221574-BS1	Blank Spike, (2137005) Se		200.0	203.6	µg/L	102% 75-125	
B221574-BS2	Blank Spike, (2137005) Se		200.0	203.5	µg/L	102% 75-125	
B221574-BS3	Blank Spike, (2137005) Se		200.0	196.6	µg/L	98% 75-125	
B221574-BS4	Blank Spike, (2137005) Se		200.0	194.1	µg/L	97% 75-125	
B221574-SRM1	Reference Material (2214012, TMDA 51.5 Reference Standard - Bottle 4 - SRM) Se		14.30	14.29	µg/L	100% 75-125	
B221574-SRM2	Reference Material (2214012, TMDA 51.5 Reference Standard - Bottle 4 - SRM) Se		14.30	13.54	µg/L	95% 75-125	
B221574-SRM3	Reference Material (2214012, TMDA 51.5 Reference Standard - Bottle 4 - SRM) Se		14.30	14.04	µg/L	98% 75-125	
B221574-SRM4	Reference Material (2214012, TMDA 51.5 Reference Standard - Bottle 4 - SRM) Se		14.30	13.59	µg/L	95% 75-125	
B221574-DUP1	Duplicate, (2207062-03) Se	0.973		0.974	µg/L		0.01% 20
B221574-MS1	Matrix Spike, (2207062-03) Se	0.973	220.0	223.6	µg/L	101% 75-125	
B221574-MSD1	Matrix Spike Duplicate, (2207062-03) Se	0.973	220.0	220.8	µg/L	100% 75-125	1% 20



Method Blanks & Reporting Limits

Batch: B221516
Matrix: Water
Method: SOP BAL-4201
Analyte: DMSeO

Sample	Result	Units	
B221516-BLK1	0.00	µg/L	
B221516-BLK2	0.00	µg/L	
B221516-BLK3	0.00	µg/L	
B221516-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005

Analyte: MeSe(IV)

Sample	Result	Units	
B221516-BLK1	0.00	µg/L	
B221516-BLK2	0.00	µg/L	
B221516-BLK3	0.00	µg/L	
B221516-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005

Analyte: MeSe(VI)

Sample	Result	Units	
B221516-BLK1	0.00	µg/L	
B221516-BLK2	0.00	µg/L	
B221516-BLK3	0.00	µg/L	
B221516-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005



Method Blanks & Reporting Limits

Analyte: Se(IV)

Sample	Result	Units	
B221516-BLK1	0.00	µg/L	
B221516-BLK2	0.00	µg/L	
B221516-BLK3	0.00	µg/L	
B221516-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.015		MRL: 0.015

Analyte: Se(VI)

Sample	Result	Units	
B221516-BLK1	0.00	µg/L	
B221516-BLK2	0.00	µg/L	
B221516-BLK3	0.00	µg/L	
B221516-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.011		MRL: 0.011

Analyte: SeCN

Sample	Result	Units	
B221516-BLK1	0.00	µg/L	
B221516-BLK2	0.00	µg/L	
B221516-BLK3	0.00	µg/L	
B221516-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.010		MRL: 0.010

Analyte: SeMet

Sample	Result	Units	
B221516-BLK1	0.00	µg/L	
B221516-BLK2	0.00	µg/L	
B221516-BLK3	0.00	µg/L	
B221516-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.005		MRL: 0.005



Method Blanks & Reporting Limits

Analyte: SeSO3

Sample	Result	Units	
B221516-BLK1	0.00	µg/L	
B221516-BLK2	0.00	µg/L	
B221516-BLK3	0.00	µg/L	
B221516-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.011		MRL: 0.011

Analyte: Unk Se Sp

Sample	Result	Units	
B221516-BLK1	0.00	µg/L	
B221516-BLK2	0.00	µg/L	
B221516-BLK3	0.00	µg/L	
B221516-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.015		MRL: 0.015



Method Blanks & Reporting Limits

Batch: B221574
Matrix: Water
Method: EPA 1638 Mod
Analyte: Se

Sample	Result	Units	
B221574-BLK1	0.103	µg/L	
B221574-BLK2	0.004	µg/L	
B221574-BLK3	0.037	µg/L	
B221574-BLK4	0.023	µg/L	
Average:	0.042		MDL: 0.150
Limit:	0.480		MRL: 0.480



Sample Containers

Lab ID: 2207062-01			Report Matrix: WS			Collected: 06/29/2022		
Sample: RG_MI3_WS_LAEMP_EVO_2022-06-29_NP			Sample Type: Sample + Sum			Received: 07/07/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 6 - 2207062	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 6 - 2207062	
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 6 - 2207062	
Lab ID: 2207062-02			Report Matrix: WS			Collected: 06/29/2022		
Sample: RG_MI3_WS_LAEMP_EVO_2022-06-29_NP_NAL			Sample Type: Sample + Sum			Received: 07/07/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 1 - 2207062	
Lab ID: 2207062-03			Report Matrix: WS			Collected: 06/29/2022		
Sample: RG_MI3_WS_LAEMP_EVO_2022-06-29_NP_NAL			Sample Type: Sample + Sum			Received: 07/07/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 1 - 2207062	
Lab ID: 2207062-04			Report Matrix: WS			Collected: 06/29/2022		
Sample: RG_MIDGA_WS_LAEMP_EVO_2022-06-29_NP			Sample Type: Sample + Sum			Received: 07/07/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 6 - 2207062	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 6 - 2207062	
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 6 - 2207062	



Sample Containers

Lab ID: 2207062-05

Sample:

RG_MIDGA_WS_LAEMP_EVO_2022-06-29_NP_N
 AL

Report Matrix: WS

Sample Type: Sample + Sum

Collected: 06/29/2022

Received: 07/07/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 1 - 2207062

Lab ID: 2207062-06

Sample:

RG_MIDGA_WS_LAEMP_EVO_2022-06-29_NP_N
 AL

Report Matrix: WS

Sample Type: Sample + Sum

Collected: 06/29/2022

Received: 07/07/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 1 - 2207062

Lab ID: 2207062-07

Sample:

RG_MIDBO_WS_LAEMP_EVO_2022-06-29_NP

Report Matrix: WS

Sample Type: Sample + Sum

Collected: 06/29/2022

Received: 07/07/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 6 - 2207062
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 6 - 2207062
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 6 - 2207062

Lab ID: 2207062-08

Sample:

RG_MIDBO_WS_LAEMP_EVO_2022-06-29_NP_N
 AL

Report Matrix: WS

Sample Type: Sample + Sum

Collected: 06/29/2022

Received: 07/07/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 1 - 2207062



Sample Containers

Lab ID: 2207062-09

Sample:

RG_MIDBO_WS_LAEMP_EVO_2022-06-29_NP_N
 AL

Report Matrix: WS

Sample Type: Sample + Sum

Collected: 06/29/2022

Received: 07/07/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 1 - 2207062

Lab ID: 2207062-10

Sample:

RG_MICOMP_WS_LAEMP_EVO_2022-06-29_NP

Report Matrix: WS

Sample Type: Sample + Sum

Collected: 06/29/2022

Received: 07/07/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 6 - 2207062
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 6 - 2207062
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 6 - 2207062

Lab ID: 2207062-11

Sample:

RG_MICOMP_WS_LAEMP_EVO_2022-06-29_NP_
 NAL

Report Matrix: WS

Sample Type: Sample + Sum

Collected: 06/29/2022

Received: 07/07/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 1 - 2207062

Lab ID: 2207062-12

Sample:

RG_MICOMP_WS_LAEMP_EVO_2022-06-29_NP_
 NAL

Report Matrix: WS

Sample Type: Sample + Sum

Collected: 06/29/2022

Received: 07/07/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 1 - 2207062



Sample Containers

Lab ID: 2207062-13

Report Matrix: WS

Collected: 06/30/2022

Sample:

Sample Type: Sample + Sum

Received: 07/07/2022

RG_FBLANK_WS_LAEMP_EVO_2022-06-30_NP

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 6 - 2207062
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 6 - 2207062
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 6 - 2207062

Lab ID: 2207062-14

Report Matrix: WS

Collected: 06/30/2022

Sample:

Sample Type: Sample + Sum

Received: 07/07/2022

RG_FBLANK_WS_LAEMP_EVO_2022-06-30_NP_NAL

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 1 - 2207062

Lab ID: 2207062-15

Report Matrix: WS

Collected: 06/30/2022

Sample:

Sample Type: Sample + Sum

Received: 07/07/2022

RG_FBLANK_WS_LAEMP_EVO_2022-06-30_NP_NAL

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 1 - 2207062



Shipping Containers

Cooler 1 - 2207062

Received: July 7, 2022 7:25
Tracking No: PAPS#RWHV55071 via Courier
Coolant Type: Ice
Temperature: -0.5 °C

Description: Styrofoam Cooler
Damaged in transit? No
Returned to client? No
Comments: IR#:33

Custody seals present? No
Custody seals intact? No
COC present? Yes

Cooler 6 - 2207062

Received: July 7, 2022 7:25
Tracking No: PAPS#RWHV55071 via Courier
Coolant Type: Ice
Temperature: 0.7 °C

Description: Styrofoam Cooler
Damaged in transit? No
Returned to client? No
Comments: IR#:33

Custody seals present? No
Custody seals intact? No
COC present? Yes

COC ID:		REP_EVO LAEMP_2022_JUNE_Brooks				TURNAROUND TIME:				RUSH:			
PROJECT/CLIENT INFO						LABORATORY				OTHER INFO			
Facility Name / Job# Regional Effects Program						Lab Name Brooks Applied Labs				Report Format / Distribution			
Project Manager Mike Pope						Lab Contact Ben Wozniak				Excel	PDF	EDD	
Email						Email Ben@brooksupplied.com				Email 1:	X	X	X
Address 421 Pine Ave						Address 18804 North Creek Parkway				Email 2:			
City Sparwood Province BC						City Bothell Province WA				Email 3: Teck.Lab.Results@teck.com	X	X	X
Postal Code V0B 2G0 Country Canada						Postal Code 98011 Country United				Email 4: AquaSol.lab@teck.com	X	X	X
Phone Number 250-425-8202						Phone Number (206) 753-6158				Email 5: bwozni@minnwa.ca	X	X	X
										Email 6:	X	X	X
										PO number	817033		
SAMPLE DETAILS						ANALYSIS REQUESTED							
Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com p	# Of Cont.	Brooks_Se_Speciation	Brooks_Se_D	Brooks_Se_T			
RG_M13_LAEMP_EVO_2022-06-29_NP	RG_M13	WS	No	6/29/2022	12:45	G	1	1					
RG_M13_LAEMP_EVO_2022-06-29_NP_NAL	RG_M13	WS	No	6/29/2022	12:45	G	2		1	1			
RG_MIDGA_LAEMP_EVO_2022-06-29_NP	RG_MIDGA	WS	No	6/29/2022	14:00	G	1	1					
RG_MIDGA_LAEMP_EVO_2022-06-29_NP_NAL	RG_MIDGA	WS	No	6/29/2022	14:00	G	2		1	1			
RG_MIDBO_LAEMP_EVO_2022-06-29_NP	RG_MIDBO	WS	No	6/29/2022	14:45	G	1	1					
RG_MIDBO_LAEMP_EVO_2022-06-29_NP_NAL	RG_MIDBO	WS	No	6/29/2022	14:45	G	2		1	1			
RG_MICOMP_LAEMP_EVO_2022-06-29_NP	RG_MICOMP	WS	No	6/29/2022	15:10	G	1	1					
RG_MICOMP_LAEMP_EVO_2022-06-29_NP_NAL	RG_MICOMP	WS	No	6/29/2022	15:10	G	2		1	1			
RG_FBLANK_LAEMP_EVO_2022-06-30_NP	RG_FBLANK	WS	No	6/30/2022	9:00	G	1	1					
RG_FBLANK_LAEMP_EVO_2022-06-30_NP_NAL	RG_FBLANK	WS	No	6/30/2022	9:00	G	2		1	1			
ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS						RELINQUISHED BY/AFFILIATION		DATE/TIME		ACCEPTED BY/AFFILIATION		DATE/TIME	
						Alex McClymont		July 4, 2022		LBAU		7/7/22 07:25	
SERVICE REQUEST (rush - subject to availability)						Sampler's Name		Mobile #		Date/Time			
Regular (default) X						Alex McClymont		780-293-6750					
Priority (2-3 business days) - 50% surcharge						Sample's Signature							
Emergency (1 Business Day) - 100% surcharge													
For Emergency <1 Day, ASAP or Weekend - Contact ALS													



July 26, 2022

Teck Resources Limited - Vancouver
Mike Pope
421 Pine Avenue
Sparwood, B.C. CANADA V0B2G0
mike.pope@teck.com

Re: Regional Effects Program

Dear Mike Pope,

On July 7, 2022, Brooks Applied Labs (BAL) received ten (10) . The samples were logged-in for total recoverable selenium [Se], dissolved Se [Se], and Se speciation analyses, according to the chain-of-custody (COC) form.

This report includes the analyses associated with the samples described on the first eight (8) rows of the COC form. The samples described in the last two rows (*RG_FBLANK_WS_LAEMP_EVO_2022-06-28_NP*, 06/28/2022 11:00) and (*RG_FBLANK_WS_LAEMP_EVO_2022-06-28_NP_NAL*, 06/28/2022 11:00) were logged into a separate work order. Results for these two samples are described in a separate report.

The **Sample ID** values listed on the chain-of-custody (COC) form did not exactly match the corresponding **Sample ID** values provided on container labels. All sample containers listed a “*WS_LAEMP*” term in place of the “*_LAEMP*” term embedded in the **Sample ID**. The samples were logged in and reported using the “*WS_LAEMP*” term in the **Sample ID** values, in accordance with the container labels.

The sample fractions for total recoverable Se and dissolved Se were not preserved in the field. The samples were preserved (pH < 2) upon receipt at BAL. All sample fractions for total recoverable Se and dissolved Se were preserved within the (14 calendar day) preservation holding time.

The sample fractions logged in for Se speciation and dissolved Se had been field-filtered prior to receipt at BAL. All samples were stored according to BAL SOPs.

Total Recoverable Se and Dissolved Se

Each aqueous sample fraction for dissolved Se was digested in a closed vessel (bomb) with nitric and hydrochloric acids. The resulting digests were analyzed for Se content via inductively coupled plasma triple quadrupole mass spectrometry (ICP-QQQ-MS). The ICP-QQQ-MS instrumentation uses advanced interference removal techniques to ensure accuracy of the sample results. For more information, please visit the *Interference Reduction Technology* section on our website, brooksapplied.com.

Selenium Speciation

Each aqueous sample was analyzed for selenium speciation using ion chromatography inductively coupled plasma collision reaction cell mass spectrometry (IC-ICP-CRC-MS). Selenium species are chromatographically separated on an ion exchange column and then quantified using inductively coupled

plasma collision reaction cell mass spectrometry (ICP-CRC-MS); for more information on this determinative technique, please visit the *Interference Reduction Technology* section on our website. The chromatographic method applied for the analyses provides greater retention of methylseleninic acid and selenomethionine, allowing for more definitive quantitation of these species.

In accordance with the quotation issued for this project, selenium speciation was defined as dissolved selenite [Se(IV)], selenate [Se(VI)], selenocyanate [SeCN], methylseleninic acid [MeSe(IV)], methaneselenonic acid [MeSe(VI)], selenomethionine [SeMet], selenosulfate [SeSO₃], and dimethylselenoxide [DMSeO]. Unknown Se species was defined as the total concentration of all unknown Se species observed during the analysis. This item is identified on the report as [Unk Se Sp].

DMSeO elutes early in the chromatographic run due to the nature of the molecule and the applied chromatographic separation method. Since this species elutes near the dead volume, additional selenium species may coelute. Alternate methods can be applied, upon client request, to increase the separation of DMSeO from potentially co-eluting selenium species.

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

In instances where a matrix spike/matrix spike duplicate (MS/MSD) set was spiked at a level less than the native sample concentration, the recoveries and the relative percent difference (RPD) are not considered valid indicators of data quality. In such instances, the recoveries of the laboratory fortified blanks (BS) and/or standard reference materials (SRM) demonstrate the accuracy of the applied methods. When the spiking level was less than 25% of the native sample concentration, the spike recovery was not reported (**NR**) and the relative percent difference (RPD) of the MS/MSD set was not calculated (**N/C**).

In cases when either the native sample concentration was non-detectable (reported as less than or equal to the MDL) and/or the corresponding DUP result was also non-detectable, the RPD between the two values was not calculated (**N/C**).

Except for concentration qualifiers, all data were reported without qualification. All associated quality control sample results met the acceptance criteria.

BAL, an accredited laboratory, certifies that the reported results of all analyses for which BAL is NELAP accredited meet all NELAP requirements. For more information, please see the *Report Information* page.

Please feel free to contact us if you have any questions regarding this report.

Sincerely,



Jeremy Maute

Senior Project Manager

Jeremy@brooksapplied.com



Report Information

Laboratory Accreditation

BAL is accredited by the *National Environmental Laboratory Accreditation Program* (NELAP) through the State of Florida Department of Health, Bureau of Laboratories (E87982) and is certified to perform many environmental analyses. BAL is also certified by many other states to perform environmental analyses. For a current list of our accreditations/certifications, please visit our website at <<http://www.brooksapplied.com/resources/certificates-permits/>> or review Tables 1 and 2 in our Accreditation Information. Results reported relate only to the samples listed in the report.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

AR	as received	MS	matrix spike
BAL	Brooks Applied Labs	MSD	matrix spike duplicate
BLK	method blank	ND	non-detect
BS	blank spike	NR	non-reportable
CAL	calibration standard	N/C	not calculated
CCB	continuing calibration blank	PS	post preparation spike
CCV	continuing calibration verification	REC	percent recovery
COC	chain of custody record	RPD	relative percent difference
D	dissolved fraction	SCV	secondary calibration verification
DUP	duplicate	SOP	standard operating procedure
IBL	instrument blank	SRM	reference material
ICV	initial calibration verification	T	total fraction
MDL	method detection limit	TR	total recoverable fraction
MRL	method reporting limit		

Definition of Data Qualifiers

(Effective 3/23/2020)

E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Please see narrative for explanation.
J	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1	Estimated value. A full explanation is presented in the narrative.
M	Duplicate precision (RPD) was not within acceptance criteria. Please see narrative for explanation.
N	Spike recovery was not within acceptance criteria. Please see narrative for explanation.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.
Z	Holding time and/or preservation requirements not established for this method; however, BAL recommendations for holding time were not followed. Please see narrative for explanation.

These qualifiers are based on those previously utilized by Brooks Applied Labs, those found in the EPA SOW ILM03.0, Exhibit B, Section III, pg. B-18, and the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review; USEPA; January 2010. These supersede all previous qualifiers ever employed by BAL.



Accreditation Information

Table 1. Accredited method/matrix/analytes for TNI
Issued by: State of Florida Dept. of Health (The NELAC Institute 2016 Standard)
Issued on: July 1, 2021; Valid to: June 30, 2022
Certificate Number: E87982-37

Method	Matrix	TNI Accredited Analyte(s)
EPA 1638	Non-Potable Waters	Ag, Cd, Cu, Ni, Pb, Sb, Se, Tl, Zn
EPA 200.8	Non-Potable Waters	Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Sb, Se, Tl, U, V, Zn
EPA 6020	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Tl, U, V, Zn
	Solids/Chemicals & Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Tl, V, Zn
BAL-5000	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Tl, U, V, Zn, Hardness
	Solids/Chemicals	Ag, As, B, Be, Cd, Co, Cr, Cu, Pb, Mo, Ni, Sb, Se, Sn, Sr, Tl, V, Zn
	Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Tl, V, Zn
EPA 1640	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn
EPA 1631E	Non-Potable Waters, Solids/Chemicals & Biological	Total Mercury
EPA 1630	Non-Potable Waters	Methyl Mercury
BAL-3200	Solids/Chemicals & Biological	Methyl Mercury
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
BAL-4201	Non-Potable Waters	Se(IV), Se(VI)
BAL-4300	Non-Potable Waters Solid/Chemicals	Cr(VI)
SM2340B	Non-Potable Waters	Hardness



Accreditation Information

**Table 2. Accredited method/matrix/analytes for ISO (1),
 Non-Governmental TNI (2)
 Issued by: ANAB
 Issued on: September 21, 2021; Valid to: March 30, 2024**

Method	Matrix	ISO and Non-Gov. TNI Accredited Analyte(s)
EPA 1638 Mod EPA 200.8 Mod EPA 6020 Mod	Non-Potable Waters	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, U, V, Zn
BAL-5000	Solids/Chemicals & Biological	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, V, Zn Hg (Biological Only)
EPA 1640 Mod	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn Ag, As, Cr, Co, Se, Ti, V (ISO Only)
EPA 1631E Mod BAL-3100	Non-Potable Waters, Solids/Chemicals & Biological/Food	Total Mercury
EPA 1630 Mod BAL-3200	Non-Potable Waters, Solids/Chemicals Biological	Methyl Mercury
EPA 1632A Mod BAL-3300	Non-Potable Waters Biological/Food Solids/Chemicals	Inorganic Arsenic (ISO Only) Inorganic Arsenic (ISO Only)
AOAC 2015.01 Mod BAL-5000	Food	As, Cd, Hg, Pb
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
	Biological by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4101	Food by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4201	Non-Potable Waters	Se(IV), Se(VI), SeCN, SeMet
BAL-4300	Non-Potable Waters, Solid/Chemicals	Cr(VI)
SM 3500-Fe BAL-4500	Non-Potable Waters	Fe, Fe(II) (ISO Only)
SM2340B	Non-Potable Waters	Hardness
SM 2540G BAL-0501	Solids/Chemicals & Biological	% Dry Weight



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
RG_RIVER_WS_LAEMP_EVO_2022-06-30_NP	2207063-01	WS	Sample	06/30/2022	07/07/2022
RG_RIVER_WS_LAEMP_EVO_2022-06-30_NP_NAL	2207063-02	WS	Sample	06/30/2022	07/07/2022
RG_RIVER_WS_LAEMP_EVO_2022-06-30_NP_NAL	2207063-03	WS	Sample	06/30/2022	07/07/2022
RG_ALUSM_WS_LAEMP_EVO_2022-06-30_NP	2207063-04	WS	Sample	06/30/2022	07/07/2022
RG_ALUSM_WS_LAEMP_EVO_2022-06-30_NP_NAL	2207063-05	WS	Sample	06/30/2022	07/07/2022
RG_ALUSM_WS_LAEMP_EVO_2022-06-30_NP_NAL	2207063-06	WS	Sample	06/30/2022	07/07/2022
RG_MI25_WS_LAEMP_EVO_2022-06-30_NP	2207063-07	WS	Sample	06/30/2022	07/07/2022
RG_MI25_WS_LAEMP_EVO_2022-06-30_NP_NAL	2207063-08	WS	Sample	06/30/2022	07/07/2022
RG_MI25_WS_LAEMP_EVO_2022-06-30_NP_NAL	2207063-09	WS	Sample	06/30/2022	07/07/2022
RG_MIDER_WS_LAEMP_EVO_2022-06-30_NP	2207063-10	WS	Sample	06/30/2022	07/07/2022
RG_MIDER_WS_LAEMP_EVO_2022-06-30_NP_NAL	2207063-11	WS	Sample	06/30/2022	07/07/2022
RG_MIDER_WS_LAEMP_EVO_2022-06-30_NP_NAL	2207063-12	WS	Sample	06/30/2022	07/07/2022



Batch Summary

Analyte	Lab Matrix	Method	Prepared	Analyzed	Batch	Sequence
DMS ₂ SeO	Water	SOP BAL-4201	07/11/2022	07/12/2022	B221524	S220723
MeSe(IV)	Water	SOP BAL-4201	07/11/2022	07/12/2022	B221524	S220723
MeSe(VI)	Water	SOP BAL-4201	07/11/2022	07/12/2022	B221524	S220723
Se	Water	EPA 1638 Mod	07/14/2022	07/16/2022	B221574	S220736
Se(IV)	Water	SOP BAL-4201	07/11/2022	07/12/2022	B221524	S220723
Se(VI)	Water	SOP BAL-4201	07/11/2022	07/12/2022	B221524	S220723
SeCN	Water	SOP BAL-4201	07/11/2022	07/12/2022	B221524	S220723
SeMet	Water	SOP BAL-4201	07/11/2022	07/12/2022	B221524	S220723
SeSO ₃	Water	SOP BAL-4201	07/11/2022	07/12/2022	B221524	S220723
Unk Se Sp	Water	SOP BAL-4201	07/11/2022	07/12/2022	B221524	S220723



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_RIVER_WS_LAEMP_EVO_2022-06-30_NP										
2207063-01	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221524	S220723
2207063-01	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221524	S220723
2207063-01	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221524	S220723
2207063-01	Se(IV)	WS	D	≤ 0.020	U	0.020	0.075	µg/L	B221524	S220723
2207063-01	Se(VI)	WS	D	0.155		0.010	0.055	µg/L	B221524	S220723
2207063-01	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221524	S220723
2207063-01	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221524	S220723
2207063-01	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221524	S220723
2207063-01	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221524	S220723
RG_RIVER_WS_LAEMP_EVO_2022-06-30_NP_NAL										
2207063-02	Se	WS	D	0.206	J	0.165	0.528	µg/L	B221574	S220736
RG_RIVER_WS_LAEMP_EVO_2022-06-30_NP_NAL										
2207063-03	Se	WS	TR	0.211	J	0.165	0.528	µg/L	B221574	S220736
RG_ALUSM_WS_LAEMP_EVO_2022-06-30_NP										
2207063-04	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221524	S220723
2207063-04	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221524	S220723
2207063-04	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221524	S220723
2207063-04	Se(IV)	WS	D	≤ 0.020	U	0.020	0.075	µg/L	B221524	S220723
2207063-04	Se(VI)	WS	D	0.317		0.010	0.055	µg/L	B221524	S220723
2207063-04	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221524	S220723
2207063-04	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221524	S220723
2207063-04	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221524	S220723
2207063-04	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221524	S220723
RG_ALUSM_WS_LAEMP_EVO_2022-06-30_NP_NAL										
2207063-05	Se	WS	D	0.335	J	0.165	0.528	µg/L	B221574	S220736
RG_ALUSM_WS_LAEMP_EVO_2022-06-30_NP_NAL										
2207063-06	Se	WS	TR	0.454	J	0.165	0.528	µg/L	B221574	S220736



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_MI25_WS_LAEMP_EVO_2022-06-30_NP										
2207063-07	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221524	S220723
2207063-07	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221524	S220723
2207063-07	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221524	S220723
2207063-07	Se(IV)	WS	D	≤ 0.020	U	0.020	0.075	µg/L	B221524	S220723
2207063-07	Se(VI)	WS	D	0.158		0.010	0.055	µg/L	B221524	S220723
2207063-07	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221524	S220723
2207063-07	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221524	S220723
2207063-07	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221524	S220723
2207063-07	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221524	S220723
RG_MI25_WS_LAEMP_EVO_2022-06-30_NP_NAL										
2207063-08	Se	WS	D	0.336	J	0.165	0.528	µg/L	B221574	S220736
RG_MI25_WS_LAEMP_EVO_2022-06-30_NP_NAL										
2207063-09	Se	WS	TR	0.302	J	0.165	0.528	µg/L	B221574	S220736
RG_MIDER_WS_LAEMP_EVO_2022-06-30_NP										
2207063-10	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221524	S220723
2207063-10	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221524	S220723
2207063-10	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221524	S220723
2207063-10	Se(IV)	WS	D	≤ 0.020	U	0.020	0.075	µg/L	B221524	S220723
2207063-10	Se(VI)	WS	D	0.921		0.010	0.055	µg/L	B221524	S220723
2207063-10	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221524	S220723
2207063-10	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221524	S220723
2207063-10	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221524	S220723
2207063-10	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221524	S220723
RG_MIDER_WS_LAEMP_EVO_2022-06-30_NP_NAL										
2207063-11	Se	WS	D	1.23		0.165	0.528	µg/L	B221574	S220736
RG_MIDER_WS_LAEMP_EVO_2022-06-30_NP_NAL										
2207063-12	Se	WS	TR	1.06		0.165	0.528	µg/L	B221574	S220736



Accuracy & Precision Summary

Batch: B221524
Lab Matrix: Water
Method: SOP BAL-4201

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221524-BS1	Blank Spike, (2124033)						
	MeSe(IV)		5.095	5.850	µg/L	115% 75-125	
	Se(IV)		5.000	4.879	µg/L	98% 75-125	
	Se(VI)		5.000	5.056	µg/L	101% 75-125	
	SeCN		5.015	4.998	µg/L	100% 75-125	
	SeMet		4.932	5.184	µg/L	105% 75-125	
B221524-DUP1	Duplicate, (2207063-10)						
	DMSeO	ND		ND	µg/L		N/C 25
	MeSe(IV)	ND		ND	µg/L		N/C 25
	MeSe(VI)	ND		ND	µg/L		N/C 25
	Se(IV)	ND		ND	µg/L		N/C 25
	Se(VI)	0.921		0.902	µg/L		2% 25
	SeCN	ND		ND	µg/L		N/C 25
	SeMet	ND		ND	µg/L		N/C 25
	SeSO3	ND		ND	µg/L		N/C 25
Unk Se Sp	ND		ND	µg/L		N/C 25	
B221524-MS1	Matrix Spike, (2207063-10)						
	Se(IV)	ND	4.900	4.646	µg/L	95% 75-125	
	Se(VI)	0.921	5.100	5.807	µg/L	96% 75-125	
	SeCN	ND	1.962	1.809	µg/L	92% 75-125	
	SeMet	ND	1.977	1.900	µg/L	96% 75-125	
B221524-MSD1	Matrix Spike Duplicate, (2207063-10)						
	Se(IV)	ND	4.900	4.733	µg/L	97% 75-125	2% 25
	Se(VI)	0.921	5.100	5.799	µg/L	96% 75-125	0.1% 25
	SeCN	ND	1.962	1.814	µg/L	92% 75-125	0.3% 25
	SeMet	ND	1.977	1.968	µg/L	100% 75-125	3% 25



Accuracy & Precision Summary

Batch: B221574
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221574-BS1	Blank Spike, (2137005) Se		200.0	203.6	µg/L	102% 75-125	
B221574-BS2	Blank Spike, (2137005) Se		200.0	203.5	µg/L	102% 75-125	
B221574-BS3	Blank Spike, (2137005) Se		200.0	196.6	µg/L	98% 75-125	
B221574-BS4	Blank Spike, (2137005) Se		200.0	194.1	µg/L	97% 75-125	
B221574-SRM1	Reference Material (2214012, TMDA 51.5 Reference Standard - Bottle 4 - SRM) Se		14.30	14.29	µg/L	100% 75-125	
B221574-SRM2	Reference Material (2214012, TMDA 51.5 Reference Standard - Bottle 4 - SRM) Se		14.30	13.54	µg/L	95% 75-125	
B221574-SRM3	Reference Material (2214012, TMDA 51.5 Reference Standard - Bottle 4 - SRM) Se		14.30	14.04	µg/L	98% 75-125	
B221574-SRM4	Reference Material (2214012, TMDA 51.5 Reference Standard - Bottle 4 - SRM) Se		14.30	13.59	µg/L	95% 75-125	
B221574-DUP2	Duplicate, (2207063-06) Se	0.454		0.380	µg/L		18% 20
B221574-MS2	Matrix Spike, (2207063-06) Se	0.454	220.0	217.9	µg/L	99% 75-125	
B221574-MSD2	Matrix Spike Duplicate, (2207063-06) Se	0.454	220.0	217.1	µg/L	98% 75-125	0.3% 20



Method Blanks & Reporting Limits

Batch: B221524
Matrix: Water
Method: SOP BAL-4201
Analyte: DMSeO

Sample	Result	Units	
B221524-BLK1	0.00	µg/L	
B221524-BLK2	0.00	µg/L	
B221524-BLK3	0.00	µg/L	
B221524-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005

Analyte: MeSe(IV)

Sample	Result	Units	
B221524-BLK1	0.00	µg/L	
B221524-BLK2	0.00	µg/L	
B221524-BLK3	0.00	µg/L	
B221524-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005

Analyte: MeSe(VI)

Sample	Result	Units	
B221524-BLK1	0.00	µg/L	
B221524-BLK2	0.00	µg/L	
B221524-BLK3	0.00	µg/L	
B221524-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005



Method Blanks & Reporting Limits

Analyte: Se(IV)

Sample	Result	Units	
B221524-BLK1	0.00	µg/L	
B221524-BLK2	0.00	µg/L	
B221524-BLK3	0.00	µg/L	
B221524-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.004
Limit:	0.015		MRL: 0.015

Analyte: Se(VI)

Sample	Result	Units	
B221524-BLK1	0.00	µg/L	
B221524-BLK2	0.00	µg/L	
B221524-BLK3	0.00	µg/L	
B221524-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.011		MRL: 0.011

Analyte: SeCN

Sample	Result	Units	
B221524-BLK1	0.00	µg/L	
B221524-BLK2	0.00	µg/L	
B221524-BLK3	0.00	µg/L	
B221524-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.010		MRL: 0.010

Analyte: SeMet

Sample	Result	Units	
B221524-BLK1	0.00	µg/L	
B221524-BLK2	0.00	µg/L	
B221524-BLK3	0.00	µg/L	
B221524-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.005		MRL: 0.005



Method Blanks & Reporting Limits

Analyte: SeSO3

Sample	Result	Units	
B221524-BLK1	0.00	µg/L	
B221524-BLK2	0.00	µg/L	
B221524-BLK3	0.00	µg/L	
B221524-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.011		MRL: 0.011

Analyte: Unk Se Sp

Sample	Result	Units	
B221524-BLK1	0.00	µg/L	
B221524-BLK2	0.00	µg/L	
B221524-BLK3	0.00	µg/L	
B221524-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.015		MRL: 0.015



Method Blanks & Reporting Limits

Batch: B221574
Matrix: Water
Method: EPA 1638 Mod
Analyte: Se

Sample	Result	Units	
B221574-BLK1	0.103	µg/L	
B221574-BLK2	0.004	µg/L	
B221574-BLK3	0.037	µg/L	
B221574-BLK4	0.023	µg/L	
Average:	0.042		MDL: 0.150
Limit:	0.480		MRL: 0.480



Sample Containers

Lab ID: 2207063-01

Report Matrix: WS

Collected: 06/30/2022

Sample:

Sample Type: Sample + Sum

Received: 07/07/2022

RG_RIVER_WS_LAEMP_EVO_2022-06-30_NP

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 6 - 2207063
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 6 - 2207063
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 6 - 2207063

Lab ID: 2207063-02

Report Matrix: WS

Collected: 06/30/2022

Sample:

Sample Type: Sample + Sum

Received: 07/07/2022

RG_RIVER_WS_LAEMP_EVO_2022-06-30_NP_NA

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 1 - 2207063

Lab ID: 2207063-03

Report Matrix: WS

Collected: 06/30/2022

Sample:

Sample Type: Sample + Sum

Received: 07/07/2022

RG_RIVER_WS_LAEMP_EVO_2022-06-30_NP_NA

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 1 - 2207063

Lab ID: 2207063-04

Report Matrix: WS

Collected: 06/30/2022

Sample:

Sample Type: Sample + Sum

Received: 07/07/2022

RG_ALUSM_WS_LAEMP_EVO_2022-06-30_NP

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 6 - 2207063
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 6 - 2207063
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 6 - 2207063



Sample Containers

Lab ID: 2207063-05

Sample:

RG_ALUSM_WS_LAEMP_EVO_2022-06-30_NP_N
 AL

Report Matrix: WS

Sample Type: Sample + Sum

Collected: 06/30/2022

Received: 07/07/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 1 - 2207063

Lab ID: 2207063-06

Sample:

RG_ALUSM_WS_LAEMP_EVO_2022-06-30_NP_N
 AL

Report Matrix: WS

Sample Type: Sample + Sum

Collected: 06/30/2022

Received: 07/07/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 1 - 2207063

Lab ID: 2207063-07

Sample:

RG_MI25_WS_LAEMP_EVO_2022-06-30_NP

Report Matrix: WS

Sample Type: Sample + Sum

Collected: 06/30/2022

Received: 07/07/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 6 - 2207063
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 6 - 2207063
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 6 - 2207063

Lab ID: 2207063-08

Sample:

RG_MI25_WS_LAEMP_EVO_2022-06-30_NP_NAL

Report Matrix: WS

Sample Type: Sample + Sum

Collected: 06/30/2022

Received: 07/07/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 1 - 2207063



Sample Containers

Lab ID: 2207063-09 **Report Matrix:** WS **Collected:** 06/30/2022
Sample: RG_MI25_WS_LAEMP_EVO_2022-06-30_NP_NAL **Sample Type:** Sample + Sum **Received:** 07/07/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 1 - 2207063

Lab ID: 2207063-10 **Report Matrix:** WS **Collected:** 06/30/2022
Sample: RG_MIDER_WS_LAEMP_EVO_2022-06-30_NP **Sample Type:** Sample + Sum **Received:** 07/07/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 6 - 2207063
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 6 - 2207063
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 6 - 2207063

Lab ID: 2207063-11 **Report Matrix:** WS **Collected:** 06/30/2022
Sample: RG_MIDER_WS_LAEMP_EVO_2022-06-30_NP_NAL **Sample Type:** Sample + Sum **Received:** 07/07/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 1 - 2207063

Lab ID: 2207063-12 **Report Matrix:** WS **Collected:** 06/30/2022
Sample: RG_MIDER_WS_LAEMP_EVO_2022-06-30_NP_NAL **Sample Type:** Sample + Sum **Received:** 07/07/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 1 - 2207063



Shipping Containers

Cooler 1 - 2207063

Received: July 7, 2022 7:25
Tracking No: PAPS#RWHV55071 via Courier
Coolant Type: Ice
Temperature: -0.5 °C

Description:
Damaged in transit? No
Returned to client? No
Comments: IR#33

Custody seals present? No
Custody seals intact? No
COC present? Yes

Cooler 6 - 2207063

Received: July 7, 2022 7:25
Tracking No: PAPS#RWHV55071 via Courier
Coolant Type: Ice
Temperature: 0.7 °C

Description: Large Cooler
Damaged in transit? No
Returned to client? No
Comments: IR#33

Custody seals present? No
Custody seals intact? No
COC present? No

COC ID:		REP_EVO LAEMP_2022_MAY_Brooks				TURNAROUND TIME:				RUSH:				
PROJECT/CLIENT INFO						LABORATORY						OTHER INFO		
Facility Name / Job#		Regional Effects Program				Lab Name		Brooks Applied Labs		Report Format / Distribution		Excel	PDF	EDD
Project Manager		Mike Pope				Lab Contact		Ben Wozniak		Email 1:				
Email		m.pope@teck.com				Email		Ben@brooksapplied.com		Email 2:				
Address		421 Pine Ave				Address		18804 North Creek Parkway		Email 3:		Teck Lab Results@teck.com		
City		Sparwood		Province	BC	City		Bothell	Province	WA	Email 4:		AquaSciLab@teck.com	
Postal Code		V0B 2G0		Country	Canada	Postal Code		98011	Country	United	Email 5:		brooks@hudson.ca	
Phone Number		250-425-8202				Phone Number		(206) 753-6158		PO number		817033		
SAMPLE DETAILS						ANALYSIS REQUESTED						Priority: P, F, M, L, Lab, CL, P, M, & Lab, N, None		
Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com p	# Of Cont.	Brooks_Se_Speciation	Brooks_Se_D	Brooks_Se_T				
RG_RIVER_LAEMP_EVO_2022-06-30_NP	RG_RIVER	WS	No	6/30/2022	9:00	G	1	1						
RG_RIVER_LAEMP_EVO_2022-06-30_NP_NAL	RG_RIVER	WS	No	6/30/2022	9:00	G	2		1	1				
RG_ALUSM_LAEMP_EVO_2022-06-30_NP	RG_ALUSM	WS	No	6/30/2022	11:00	G	1	1						
RG_ALUSM_LAEMP_EVO_2022-06-30_NP_NAL	RG_ALUSM	WS	No	6/30/2022	11:00	G	2		1	1				
RG_MI25_LAEMP_EVO_2022-06-30_NP	RG_MI25	WS	No	6/30/2022	9:00	G	1	1						
RG_MI25_LAEMP_EVO_2022-06-30_NP_NAL	RG_MI25	WS	No	6/30/2022	9:00	G	2		1	1				
RG_MIDER_LAEMP_EVO_2022-06-30_NP	RG_MIDER	WS	No	6/30/2022	12:45	G	1	1						
RG_MIDER_LAEMP_EVO_2022-06-30_NP_NAL	RG_MIDER	WS	No	6/30/2022	12:45	G	2		1	1				
RG_FBLANK_WS_LAEMP_EVO_2022-06-28_NP	RG_FBLANK	WS	No	6/28/2022	11:00	G	1							
RG_FBLANK_WS_LAEMP_EVO_2022-06-28_NP_NAL	RG_FBLANK	WS	No	6/28/2022	11:00	G	2							
ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS						RELINQUISHED BY/AFFILIATION		DATE/TIME		ACCEPTED BY/AFFILIATION		DATE/TIME		
						Alex McClymont		July 4, 2022		LJZ (BAL)		7/7/22 07:25		
SERVICE REQUEST (rush - subject to availability)						Sampler's Name		Alex McClymont		Mobile #		780-293-6750		
Regular (default) X						Sampler's Signature				Date/Time		July 4, 2022		
Priority (2-3 business days) - 50% surcharge														
Emergency (1 Business Day) - 100% surcharge														
For Emergency <1 Day, ASAP or Weekend - Contact ALS														

Confidential

RW Hot Shot Service Inc.

BAL Final Report 2207063

STRAIGHT BILL OF LADING
NOT NEGOTIABLE

24 Hour Hot Shot Service
P.O. BOX 276, SPARWOOD, BC V0B 2G0
PHONE: (250) 425-7447
FAX: (250) 425-7450

55071

VOICE TO		DATE <u>July 5-22</u>	
BILL OF LADING #		PURCHASE ORDER NUMBER	
SHIPPER (FROM)		CONSIGNEE (TO)	
CITY/PROVINCE		CITY/PROVINCE	
POSTAL CODE		POSTAL CODE	
TERMINAL CARRIER		WAY BILL #	

Tracking # 2207A1218

PACKAGES	DESCRIPTION OF ARTICLES AND SPECIAL MARKS	WEIGHT (Subject to Correction)	FREIGHT CHARGES
5	Coolers - Water samples	175 lbs	SHIPPER TO CHECK <input type="checkbox"/> PREPAID <input type="checkbox"/> COLLECT If not indicated, shipping will automatically move collect.
PAPS# RWHV55071			WAITING _____
			XPU _____
			CHARGES _____
			FSC _____
			SUB TOTAL _____
			GST _____
			TOTAL \$ _____
			IF AT OWNER'S RISK, WRITE CRD HERE _____
SHIPPER'S SIGNATURE - PICK UP BY	DRIVER'S SIGNATURE - DELIVERY BY		DATE <u>July 6</u>
			TIME <u>7:45 am</u>
SHIPPER'S PERMIT #	DECLARED VALUATION: Maximum liability of carrier is \$2 00 per lb (\$4 41 per kilogram) unless declared valuation states otherwise	\$ _____	NUMBER OF PIECES RECEIVED <u>5</u>
SHIPPER'S SIGNATURE	CONSIGNEE PRINT	CONSIGNEE SIGN	

WHITE Office YELLOW Carrier PINK Consignee GOLDENROAD Shipper GST # 86540396R10001

Cooler ID: Cooler 1

COC (Y/N)

Temperature: 0.5 - 0.5

IR: 33

Coolant Type: Ice Blue Ice Ambient

Notes:

RG

Sampling Locations:

Sample Types:

Container Types:

Opened By: ERL

Date: 7/7/22

T/D	SP	T/D	SP	T/D	SP	T/D	SP	T/D	SP

40 ML GLASS

Effective 7/29/20

@ EE AM 7/7/22



2207062

4

Confidential

RW Hot Shot Service Inc.

BAL Final Report 2207063

STRAIGHT BILL OF LADING
NOT NEGOTIABLE

24 Hour Hot Shot Service
P.O. BOX 276, SPARWOOD, BC V0B 2G0
PHONE: (250) 425-7447
FAX: (250) 425-7450

55071

VOICE TO		DATE July 5-22	
BILL OF LADING #		PURCHASE ORDER NUMBER	
SHIPPER (FROM)		CONSIGNEE (TO)	
SHIPPER (FROM) Bioscience Applied Labs		STREET 13751 Lake City Way NE Ste 108	
CITY/PROVINCE Sparwood BC		POSTAL CODE V0B 2G0	CITY/PROVINCE Seattle, WA
POSTAL CODE		POSTAL CODE 98112	
CARRIER		WAY BILL #	

SPECIAL INSTRUCTIONS
Tracking # 2207A1218

PACKAGES	DESCRIPTION OF ARTICLES AND SPECIAL MARKS	WEIGHT (Subject to Correction)	FREIGHT CHARGES
5	Coasters - Winter Samples	175 lbs	SHIPPER TO CHECK <input type="checkbox"/> PREPAID <input type="checkbox"/> COLLECT If not indicated, shipping will automatically move collect
PAPS# RWHV/55071			WAITING _____
			XPU _____
			CHARGES _____
			FSC _____
			SUB TOTAL _____
			GST _____
			TOTAL \$ _____
			IF AT OWNER'S RISK, WRITE ORD HERE _____
PERMIT #	DECLARED VALUATION: Maximum liability of carrier is \$2 00 per lb (\$4 41 per kilogram) unless declared valuation states otherwise	\$	DATE July 6
SHIPPER'S SIGNATURE - PICK UP BY	DRIVER'S SIGNATURE - DELIVERY BY		TIME 7:45 pm
SHIPPER'S SIGNATURE	CONSIGNEE PRINT Stora		NUMBER OF PIECES RECEIVED
SHIPPER'S SIGNATURE	CONSIGNEE SIGN Bliss		

WHITE Office YELLOW Carrier PINK Consignee GOLDENROAD Shipper GST # 864540388R0001

Cooler ID: Cooler 6 COC (Y/N) Y Temperature: 0.7 IR: 33
 Coolant Type: Ice Blue Ice Ambient

Notes:

Sampling Locations:

RG		EU		LC			
T/D	SP	T/D	SP	T/D	SP	T/D	SP
	60mm plastic		60mm plastic		125mm plastic		125mm plastic

Container Types:

Opened By: WW Date: 7/7/22



July 26, 2022

Teck Resources Limited - Vancouver
 Mike Pope
 421 Pine Avenue
 Sparwood, B.C. CANADA V0B2G0
mike.pope@teck.com

Re: Regional Effects Program

Dear Mike Pope,

On July 7, 2022, Brooks Applied Labs (BAL) received ten (10) aqueous samples. The samples were logged-in for total recoverable selenium [Se], dissolved Se [Se], and Se speciation analyses, according to the chain-of-custody (COC) form.

This report includes the analyses associated with the samples described in the last two rows of the COC form (RG_FBLANK_WS_LAEMP_EVO_2022-06-28_NP, 06/28/2022 11:00) and (RG_FBLANK_WS_LAEMP_EVO_2022-06-28_NP_NAL, 06/28/2022 11:00). The samples described on the first eight (8) rows of the COC form were logged into a separate work order. Results for these samples (*first eight rows of the COC form*) are described in a separate report.

The **Date/Time Collected** value listed on the chain-of-custody (COC) form did not match the corresponding **Date/Time Collected** value listed on container label for 2207084-01. The discrepancy is described in the table below.

Date/Time Collected Discrepancies

Laboratory ID	Sample ID	Date/Time Collected (on COC form)	Date/Time Collected (on container label)
2207084-01	RG_FBLANK_WS_LAEMP_EVO_2022-06-28_NP	06/28/2022 11:00	06/28/2022 14:00

2207084-01 was logged in and reported using the **Date/Time Collected** value listed on the COC form (*column 3 in the table above*).

The sample fractions for total recoverable Se and dissolved Se were not preserved in the field. The samples were preserved (pH < 2) upon receipt at BAL. All sample fractions for total recoverable Se and dissolved Se were preserved within the (14 calendar day) preservation holding time.

The sample fractions logged in for Se speciation and dissolved Se had been field-filtered prior to receipt at BAL. All samples were stored according to BAL SOPs.

Total Recoverable Se and Dissolved Se

Each aqueous sample fraction for dissolved Se was digested in a closed vessel (bomb) with nitric and hydrochloric acids. The resulting digests were analyzed for Se content via inductively coupled plasma triple quadrupole mass spectrometry (ICP-QQQ-MS). The ICP-QQQ-MS instrumentation uses advanced interference removal techniques to ensure accuracy of the sample results. For more information, please visit the *Interference Reduction Technology* section on our website, brooksapplied.com.

Selenium Speciation

Each aqueous sample was analyzed for selenium speciation using ion chromatography inductively coupled plasma collision reaction cell mass spectrometry (IC-ICP-CRC-MS). Selenium species are chromatographically separated on an ion exchange column and then quantified using inductively coupled plasma collision reaction cell mass spectrometry (ICP-CRC-MS); for more information on this determinative technique, please visit the *Interference Reduction Technology* section on our website. The chromatographic method applied for the analyses provides greater retention of methylseleninic acid and selenomethionine, allowing for more definitive quantitation of these species.

In accordance with the quotation issued for this project, selenium speciation was defined as dissolved selenite [Se(IV)], selenate [Se(VI)], selenocyanate [SeCM], methylseleninic acid [MeSe(IV)], methaneselenonic acid [MeSe(VI)], selenomethionine [SeMet], selenosulfate [SeSO₃], and dimethylselenoxide [DMSeO]. Unknown Se species was defined as the total concentration of all unknown Se species observed during the analysis. This item is identified on the report as [Unk Se Sp].

DMSeO elutes early in the chromatographic run due to the nature of the molecule and the applied chromatographic separation method. Since this species elutes near the dead volume, additional selenium species may coelute. Alternate methods can be applied, upon client request, to increase the separation of DMSeO from potentially co-eluting selenium species.

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

In instances where a matrix spike/matrix spike duplicate (MS/MSD) set was spiked at a level less than the native sample concentration, the recoveries and the relative percent difference (RPD) are not considered valid indicators of data quality. In such instances, the recoveries of the laboratory fortified blanks (BS) and/or standard reference materials (SRM) demonstrate the accuracy of the applied methods. When the spiking level was less than 25% of the native sample concentration, the spike recovery was not reported (**NR**) and the relative percent difference (RPD) of the MS/MSD set was not calculated (**N/C**).

In cases when either the native sample concentration was non-detectable (reported as less than or equal to the MDL) and/or the corresponding DUP result was also non-detectable, the RPD between the two values was not calculated (**N/C**).

Except for concentration qualifiers, all data were reported without qualification. All associated quality control sample results met the acceptance criteria.

BAL, an accredited laboratory, certifies that the reported results of all analyses for which BAL is NELAP accredited meet all NELAP requirements. For more information, please see the *Report Information* page.

Please feel free to contact us if you have any questions regarding this report.

Sincerely,

A handwritten signature in black ink, appearing to read 'Jeremy Maute', with a stylized flourish at the end.

Jeremy Maute

Senior Project Manager

Jeremy@brooksapplied.com



Report Information

Laboratory Accreditation

BAL is accredited by the *National Environmental Laboratory Accreditation Program* (NELAP) through the State of Florida Department of Health, Bureau of Laboratories (E87982) and is certified to perform many environmental analyses. BAL is also certified by many other states to perform environmental analyses. For a current list of our accreditations/certifications, please visit our website at <http://www.brooksapplied.com/resources/certificates-permits/> or review Tables 1 and 2 in our Accreditation Information. Results reported relate only to the samples listed in the report.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

AR	as received	MS	matrix spike
BAL	Brooks Applied Labs	MSD	matrix spike duplicate
BLK	method blank	ND	non-detect
BS	blank spike	NR	non-reportable
CAL	calibration standard	N/C	not calculated
CCB	continuing calibration blank	PS	post preparation spike
CCV	continuing calibration verification	REC	percent recovery
COC	chain of custody record	RPD	relative percent difference
D	dissolved fraction	SCV	secondary calibration verification
DUP	duplicate	SOP	standard operating procedure
IBL	instrument blank	SRM	reference material
ICV	initial calibration verification	T	total fraction
MDL	method detection limit	TR	total recoverable fraction
MRL	method reporting limit		

Definition of Data Qualifiers

(Effective 3/23/2020)

E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Please see narrative for explanation.
J	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1	Estimated value. A full explanation is presented in the narrative.
M	Duplicate precision (RPD) was not within acceptance criteria. Please see narrative for explanation.
N	Spike recovery was not within acceptance criteria. Please see narrative for explanation.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.
Z	Holding time and/or preservation requirements not established for this method; however, BAL recommendations for holding time were not followed. Please see narrative for explanation.

These qualifiers are based on those previously utilized by Brooks Applied Labs, those found in the EPA SOW ILM03.0, Exhibit B, Section III, pg. B-18, and the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review; USEPA; January 2010. These supersede all previous qualifiers ever employed by BAL.



Accreditation Information

Table 1. Accredited method/matrix/analytes for TNI
Issued by: State of Florida Dept. of Health (The NELAC Institute 2016 Standard)
Issued on: July 1, 2021; Valid to: June 30, 2022
Certificate Number: E87982-37

Method	Matrix	TNI Accredited Analyte(s)
EPA 1638	Non-Potable Waters	Ag, Cd, Cu, Ni, Pb, Sb, Se, Tl, Zn
EPA 200.8	Non-Potable Waters	Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Sb, Se, Tl, U, V, Zn
EPA 6020	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Tl, U, V, Zn
	Solids/Chemicals & Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Tl, V, Zn
BAL-5000	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Tl, U, V, Zn, Hardness
	Solids/Chemicals	Ag, As, B, Be, Cd, Co, Cr, Cu, Pb, Mo, Ni, Sb, Se, Sn, Sr, Tl, V, Zn
	Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Tl, V, Zn
EPA 1640	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn
EPA 1631E	Non-Potable Waters, Solids/Chemicals & Biological	Total Mercury
EPA 1630	Non-Potable Waters	Methyl Mercury
BAL-3200	Solids/Chemicals & Biological	Methyl Mercury
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
BAL-4201	Non-Potable Waters	Se(IV), Se(VI)
BAL-4300	Non-Potable Waters Solid/Chemicals	Cr(VI)
SM2340B	Non-Potable Waters	Hardness



Accreditation Information

**Table 2. Accredited method/matrix/analytes for ISO (1),
Non-Governmental TNI (2)
Issued by: ANAB
Issued on: September 21, 2021; Valid to: March 30, 2024**

Method	Matrix	ISO and Non-Gov. TNI Accredited Analyte(s)
EPA 1638 Mod EPA 200.8 Mod EPA 6020 Mod	Non-Potable Waters	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, U, V, Zn
BAL-5000	Solids/Chemicals & Biological	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, V, Zn Hg (Biological Only)
EPA 1640 Mod	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn Ag, As, Cr, Co, Se, Ti, V (ISO Only)
EPA 1631E Mod BAL-3100	Non-Potable Waters, Solids/Chemicals & Biological/Food	Total Mercury
EPA 1630 Mod BAL-3200	Non-Potable Waters, Solids/Chemicals Biological	Methyl Mercury
EPA 1632A Mod BAL-3300	Non-Potable Waters Biological/Food Solids/Chemicals	Inorganic Arsenic (ISO Only) Inorganic Arsenic (ISO Only)
AOAC 2015.01 Mod BAL-5000	Food	As, Cd, Hg, Pb
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
	Biological by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4101	Food by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4201	Non-Potable Waters	Se(IV), Se(VI), SeCN, SeMet
BAL-4300	Non-Potable Waters, Solid/Chemicals	Cr(VI)
SM 3500-Fe BAL-4500	Non-Potable Waters	Fe, Fe(II) (ISO Only)
SM2340B	Non-Potable Waters	Hardness
SM 2540G BAL-0501	Solids/Chemicals & Biological	% Dry Weight



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
RG_FBLANK_WS_LAEMP_EVO_20 22-06-28_NP	2207084-01	WS	Sample	06/28/2022	07/07/2022
RG_FBLANK_WS_LAEMP_EVO_20 22-06-28_NP_NAL	2207084-02	WS	Sample	06/28/2022	07/07/2022
RG_FBLANK_WS_LAEMP_EVO_20 22-06-28_NP_NAL	2207084-03	WS	Sample	06/28/2022	07/07/2022

Batch Summary

Analyte	Lab Matrix	Method	Prepared	Analyzed	Batch	Sequence
DMSeO	Water	SOP BAL-4201	07/07/2022	07/08/2022	B221517	S220701
MeSe(IV)	Water	SOP BAL-4201	07/07/2022	07/08/2022	B221517	S220701
MeSe(VI)	Water	SOP BAL-4201	07/07/2022	07/08/2022	B221517	S220701
Se	Water	EPA 1638 Mod	07/15/2022	07/18/2022	B221581	S220737
Se(IV)	Water	SOP BAL-4201	07/07/2022	07/08/2022	B221517	S220701
Se(VI)	Water	SOP BAL-4201	07/07/2022	07/08/2022	B221517	S220701
SeCN	Water	SOP BAL-4201	07/07/2022	07/08/2022	B221517	S220701
SeMet	Water	SOP BAL-4201	07/07/2022	07/08/2022	B221517	S220701
SeSO3	Water	SOP BAL-4201	07/07/2022	07/08/2022	B221517	S220701
Unk Se Sp	Water	SOP BAL-4201	07/07/2022	07/08/2022	B221517	S220701



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_FBLANK_WS_LAEMP_EVO_2022-06-28_NP										
2207084-01	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221517	S220701
2207084-01	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221517	S220701
2207084-01	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221517	S220701
2207084-01	Se(IV)	WS	D	≤ 0.020	U	0.020	0.075	µg/L	B221517	S220701
2207084-01	Se(VI)	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221517	S220701
2207084-01	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221517	S220701
2207084-01	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221517	S220701
2207084-01	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221517	S220701
2207084-01	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221517	S220701
RG_FBLANK_WS_LAEMP_EVO_2022-06-28_NP_NAL										
2207084-02	Se	WS	D	0.202	J	0.165	0.528	µg/L	B221581	S220737
RG_FBLANK_WS_LAEMP_EVO_2022-06-28_NP_NAL										
2207084-03	Se	WS	TR	≤ 0.165	U	0.165	0.528	µg/L	B221581	S220737



Accuracy & Precision Summary

Batch: B221517
Lab Matrix: Water
Method: SOP BAL-4201

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221517-BS1	Blank Spike, (2124033)						
	MeSe(IV)		5.095	5.972	µg/L	117% 75-125	
	Se(IV)		5.000	5.160	µg/L	103% 75-125	
	Se(VI)		5.000	5.185	µg/L	104% 75-125	
	SeCN		5.015	5.367	µg/L	107% 75-125	
	SeMet		4.932	5.289	µg/L	107% 75-125	
B221517-DUP1	Duplicate, (2207076-37)						
	DMSeO	0.465		0.497	µg/L		7% 25
	MeSe(IV)	0.205		0.195	µg/L		5% 25
	MeSe(VI)	0.236		0.239	µg/L		1% 25
	Se(IV)	6.783		6.910	µg/L		2% 25
	Se(VI)	0.145		0.162	µg/L		11% 25
	SeCN	1.958		2.037	µg/L		4% 25
	SeMet	0.040		0.039	µg/L		3% 25
	SeSO3	0.112		0.117	µg/L		4% 25
	Unk Se Sp	0.579		0.584	µg/L		0.8% 25
B221517-MS1	Matrix Spike, (2207076-37)						
	Se(IV)	6.783	4.900	11.25	µg/L	91% 75-125	
	Se(VI)	0.145	5.100	5.545	µg/L	106% 75-125	
	SeCN	1.958	1.962	4.098	µg/L	109% 75-125	
	SeMet	0.040	1.977	2.110	µg/L	105% 75-125	
B221517-MSD1	Matrix Spike Duplicate, (2207076-37)						
	Se(IV)	6.783	4.900	11.36	µg/L	93% 75-125	1% 25
	Se(VI)	0.145	5.100	5.149	µg/L	98% 75-125	7% 25
	SeCN	1.958	1.962	3.973	µg/L	103% 75-125	3% 25
	SeMet	0.040	1.977	2.116	µg/L	105% 75-125	0.3% 25



Accuracy & Precision Summary

Batch: B221581
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221581-BS1	Blank Spike, (2137005) Se		200.0	193.6	µg/L	97% 75-125	
B221581-BS2	Blank Spike, (2137005) Se		200.0	195.0	µg/L	97% 75-125	
B221581-BS3	Blank Spike, (2137005) Se		200.0	194.8	µg/L	97% 75-125	
B221581-BS4	Blank Spike, (2137005) Se		200.0	195.0	µg/L	98% 75-125	
B221581-BS5	Blank Spike, (2137005) Se		200.0	181.4	µg/L	91% 75-125	
B221581-SRM1	Reference Material (2214012, TMDA 51.5 Reference Standard - Bottle 4 - SRM) Se		14.30	13.45	µg/L	94% 75-125	
B221581-SRM2	Reference Material (2214012, TMDA 51.5 Reference Standard - Bottle 4 - SRM) Se		14.30	14.84	µg/L	104% 75-125	
B221581-SRM3	Reference Material (2214012, TMDA 51.5 Reference Standard - Bottle 4 - SRM) Se		14.30	13.77	µg/L	96% 75-125	
B221581-SRM4	Reference Material (2214012, TMDA 51.5 Reference Standard - Bottle 4 - SRM) Se		14.30	13.88	µg/L	97% 75-125	
B221581-SRM5	Reference Material (2214012, TMDA 51.5 Reference Standard - Bottle 4 - SRM) Se		14.30	13.72	µg/L	96% 75-125	
B221581-DUP2	Duplicate, (2207083-27) Se	68.05		66.11	µg/L		3% 20



Accuracy & Precision Summary

Batch: B221581
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221581-MS2	Matrix Spike, (2207083-27) Se	68.05	220.0	283.2	µg/L	98% 75-125	
B221581-MSD2	Matrix Spike Duplicate, (2207083-27) Se	68.05	220.0	281.5	µg/L	97% 75-125	0.6% 20



Method Blanks & Reporting Limits

Batch: B221517
Matrix: Water
Method: SOP BAL-4201
Analyte: DMSeO

Sample	Result	Units	
B221517-BLK1	0.00	µg/L	
B221517-BLK2	0.00	µg/L	
B221517-BLK3	0.00	µg/L	
B221517-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005

Analyte: MeSe(IV)

Sample	Result	Units	
B221517-BLK1	0.00	µg/L	
B221517-BLK2	0.00	µg/L	
B221517-BLK3	0.00	µg/L	
B221517-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005

Analyte: MeSe(VI)

Sample	Result	Units	
B221517-BLK1	0.00	µg/L	
B221517-BLK2	0.00	µg/L	
B221517-BLK3	0.00	µg/L	
B221517-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005



Method Blanks & Reporting Limits

Analyte: Se(IV)

Sample	Result	Units	
B221517-BLK1	0.00	µg/L	
B221517-BLK2	0.00	µg/L	
B221517-BLK3	0.00	µg/L	
B221517-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.004
Limit:	0.015		MRL: 0.015

Analyte: Se(VI)

Sample	Result	Units	
B221517-BLK1	0.00	µg/L	
B221517-BLK2	0.00	µg/L	
B221517-BLK3	0.00	µg/L	
B221517-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.011		MRL: 0.011

Analyte: SeCN

Sample	Result	Units	
B221517-BLK1	0.00	µg/L	
B221517-BLK2	0.00	µg/L	
B221517-BLK3	0.00	µg/L	
B221517-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.010		MRL: 0.010

Analyte: SeMet

Sample	Result	Units	
B221517-BLK1	0.00	µg/L	
B221517-BLK2	0.00	µg/L	
B221517-BLK3	0.00	µg/L	
B221517-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.005		MRL: 0.005



Method Blanks & Reporting Limits

Analyte: SeSO3

Sample	Result	Units	
B221517-BLK1	0.00	µg/L	
B221517-BLK2	0.00	µg/L	
B221517-BLK3	0.00	µg/L	
B221517-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.011		MRL: 0.011

Analyte: Unk Se Sp

Sample	Result	Units	
B221517-BLK1	0.00	µg/L	
B221517-BLK2	0.00	µg/L	
B221517-BLK3	0.00	µg/L	
B221517-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.015		MRL: 0.015



Method Blanks & Reporting Limits

Batch: B221581
Matrix: Water
Method: EPA 1638 Mod
Analyte: Se

Sample	Result	Units	
B221581-BLK1	0.172	µg/L	
B221581-BLK2	0.150	µg/L	
B221581-BLK3	0.174	µg/L	
B221581-BLK4	0.157	µg/L	
B221581-BLK5	0.183	µg/L	
Average:	0.167		MDL: 0.150
Limit:	0.480		MRL: 0.480



Sample Containers

Lab ID: 2207084-01

Report Matrix: WS

Collected: 06/28/2022

Sample:

Sample Type: Sample + Sum

Received: 07/07/2022

RG_FBLANK_WS_LAEMP_EVO_2022-06-28_NP

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 6 - 2207084
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 6 - 2207084
C	XTRA_VOL	60 mL	na	none	na	na	Cooler 6 - 2207084

Lab ID: 2207084-02

Report Matrix: WS

Collected: 06/28/2022

Sample:

Sample Type: Sample + Sum

Received: 07/07/2022

RG_FBLANK_WS_LAEMP_EVO_2022-06-28_NP_NAL

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	60 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 1 - 2207084

Lab ID: 2207084-03

Report Matrix: WS

Collected: 06/28/2022

Sample:

Sample Type: Sample + Sum

Received: 07/07/2022

RG_FBLANK_WS_LAEMP_EVO_2022-06-28_NP_NAL

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	60 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 1 - 2207084



Shipping Containers

Cooler 1 - 2207084

Received: July 7, 2022 7:25
Tracking No: PAPS#RWHV55071 via Courier
Coolant Type: Ice
Temperature: -0.5 °C

Description:
Damaged in transit? No
Returned to client? No
Comments: IR#33

Custody seals present? No
Custody seals intact? No
COC present? No

Cooler 6 - 2207084

Received: July 7, 2022 7:25
Tracking No: PAPS#RWHV55071 via Courier
Coolant Type: Ice
Temperature: 0.7 °C

Description: Large Cooler
Damaged in transit? No
Returned to client? No
Comments: IR#33

Custody seals present? No
Custody seals intact? No
COC present? Yes

COC ID:		REP_EVO LAEMP_2022_MAY_Brooks				TURNAROUND TIME:				RUSH:						
PROJECT/CLIENT INFO						LABORATORY						OTHER INFO				
Facility Name / Job#		Regional Effects Program				Lab Name		Brooks Applied Labs		Report Format / Distribution		Excel	PDF	EDD		
Project Manager		Mike Pope				Lab Contact		Ben Wozniak		Email 1:						
Email		m.pope@teck.com				Email		Ben@brooksapplied.com		Email 2:						
Address		421 Pine Ave				Address		18804 North Creek Parkway		Email 3:		Teck Lab Results@teck.com	X	X	X	
City		Sparwood		Province	BC	City		Bothell	Province	WA	Email 4:		AquaSciLab@teck.com	X	X	X
Postal Code		V0B 2G0		Country	Canada	Postal Code		98011	Country	United	Email 5:		brooks@brooksapplied.com	X	X	X
Phone Number		250-425-8202				Phone Number		(206) 753-6158		PO number		817033				
SAMPLE DETAILS						ANALYSIS REQUESTED						OTHER INFO				
Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com p	# Of Cont.	Brooks_Se_Speciation	Brooks_Se_D	Brooks_Se_T						
RG_RIVER_LAEMP_EVO_2022-06-30_NP	RG_RIVER	WS	No	6/30/2022	9:00	G	1	1								
RG_RIVER_LAEMP_EVO_2022-06-30_NP_NAL	RG_RIVER	WS	No	6/30/2022	9:00	G	2		1	1						
RG_ALUSM_LAEMP_EVO_2022-06-30_NP	RG_ALUSM	WS	No	6/30/2022	11:00	G	1	1								
RG_ALUSM_LAEMP_EVO_2022-06-30_NP_NAL	RG_ALUSM	WS	No	6/30/2022	11:00	G	2		1	1						
RG_MI25_LAEMP_EVO_2022-06-30_NP	RG_MI25	WS	No	6/30/2022	9:00	G	1	1								
RG_MI25_LAEMP_EVO_2022-06-30_NP_NAL	RG_MI25	WS	No	6/30/2022	9:00	G	2		1	1						
RG_MIDER_LAEMP_EVO_2022-06-30_NP	RG_MIDER	WS	No	6/30/2022	12:45	G	1	1								
RG_MIDER_LAEMP_EVO_2022-06-30_NP_NAL	RG_MIDER	WS	No	6/30/2022	12:45	G	2		1	1						
RG_FBLANK_WS_LAEMP_EVO_2022-06-28_NP	RG_FBLANK	WS	No	6/28/2022	11:00	G	1									
RG_FBLANK_WS_LAEMP_EVO_2022-06-28_NP_NAL	RG_FBLANK	WS	No	6/28/2022	11:00	G	2									
ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS						RELINQUISHED BY/AFFILIATION		DATE/TIME		ACCEPTED BY/AFFILIATION		DATE/TIME				
						Alex McClymont		July 4, 2022		LJZ (BAL)		7/7/22 07:25				
SERVICE REQUEST (rush - subject to availability)						Sampler's Name		Alex McClymont		Mobile #		780-293-6750				
Regular (default) X						Sampler's Signature				Date/Time		July 4, 2022				
Priority (2-3 business days) - 50% surcharge																
Emergency (1 Business Day) - 100% surcharge																
For Emergency <1 Day, ASAP or Weekend - Contact ALS																

Confidential

RW Hot Shot Service Inc.

BAL Final Report 2207084

STRAIGHT BILL OF LADING
NOT NEGOTIABLE

24 Hour Hot Shot Service
P.O. BOX 276, SPARWOOD, BC V0B 2G0
PHONE: (250) 425-7447
FAX: (250) 425-7450

55071

VOICE TO		DATE July 5-22	
BILL OF LADING #		PURCHASE ORDER NUMBER	
SHIPPER (FROM)		CONSIGNEE (TO)	
STREET		STREET	
CITY/PROVINCE		CITY/PROVINCE	
POSTAL CODE		POSTAL CODE	
TERMINAL CARRIER		WAY BILL #	

SPECIAL INSTRUCTIONS
Tracking # 2207A1218

PACKAGES	DESCRIPTION OF ARTICLES AND SPECIAL MARKS	WEIGHT (Subject to Correction)	FREIGHT CHARGES
5	Coolers - Water samples	175 lbs	SHIPPER TO CHECK <input type="checkbox"/> PREPAID <input type="checkbox"/> COLLECT If not indicated, shipping will automatically move collect.
PAPS# RWHV55071			WAITING _____
			XPU _____
			CHARGES _____
			FSC _____
			SUB TOTAL _____
			GST _____
			TOTAL \$ _____
			IF AT OWNER'S RISK, WRITE CRD HERE _____
SHIPPER'S SIGNATURE - PICK UP BY	DRIVER'S SIGNATURE - DELIVERY BY		DATE July 6
			TIME 7:45 am
SHIPPER'S PERMIT #	DECLARED VALUATION: Maximum liability of carrier is \$2 00 per lb (\$4 41 per kilogram) unless declared valuation states otherwise	\$ _____	
SHIPPER'S PERMIT #	CONSIGNEE PRINT	Stova	
	CONSIGNEE SIGN	<i>[Signature]</i>	

WHITE Office YELLOW Carrier PINK Consignee GOLDENROAD Shipper GST # 86540396R10001 NUMBER OF PIECES RECEIVED **5**

Cooler ID: **cooler 1**

COC (Y/N)

Temperature: **0.5⁰ - 0.5**

IR: **33**

Coolant Type: **Ice** Blue Ice Ambient

Notes:

RG

Sampling Locations:

Sample Types:

Container Types:

Opened By: **ERL**

Date: **7/7/22**

T/D	SP	T/D	SP	T/D	SP	T/D	SP	T/D	SP
40 ML GLASS									

Effective 7/29/20

@ EE AM 7/7/22



2207062

4

Confidential

RW Hot Shot Service Inc.

BAL Final Report 2207084

STRAIGHT BILL OF LADING
NOT NEGOTIABLE

24 Hour Hot Shot Service
P.O. BOX 276, SPARWOOD, BC V0B 2G0
PHONE: (250) 425-7447
FAX: (250) 425-7450

55071

VOICE TO		DATE July 5-22	
BILL OF LADING #		PURCHASE ORDER NUMBER	
SHIPPER (FROM)		CONSIGNEE (TO)	
STREET		STREET	
CITY/PROVINCE	POSTAL CODE	CITY/PROVINCE	POSTAL CODE
TELEPHONE CARRIER	WAY BILL #		

SPECIAL INSTRUCTIONS
Tracking # 2207A1218

PACKAGES	DESCRIPTION OF ARTICLES AND SPECIAL MARKS	WEIGHT (Subject to Correction)	FREIGHT CHARGES
5	Coasters - Winter Samples	175 lbs	SHIPPER TO CHECK <input type="checkbox"/> PREPAID <input type="checkbox"/> COLLECT If not indicated, shipping will automatically move collect
PAPS# RWHV/55071			WAITING _____
			XPU _____
			CHARGES _____
			FSC _____
			SUB TOTAL _____
			GST _____
			TOTAL \$ _____

PERMIT #	DECLARED VALUATION: Maximum liability of carrier is \$2 00 per lb (\$4 41 per kilogram) unless declared valuation states otherwise	\$
SHIPPER'S SIGNATURE - PICK UP BY	DRIVER'S SIGNATURE - DELIVERY BY	

TERMS OF CLAIM: The carrier is liable for loss, damage or delay of any goods under the Bill of Lading unless otherwise stated. The carrier's liability is limited to the value of the goods at the time of shipment. The carrier is not liable for loss, damage or delay of any goods if the loss, damage or delay is caused by the negligence of the consignee or the shipper. The carrier is not liable for loss, damage or delay of any goods if the loss, damage or delay is caused by the negligence of the consignee or the shipper. The carrier is not liable for loss, damage or delay of any goods if the loss, damage or delay is caused by the negligence of the consignee or the shipper.

SHIPPER'S SIGNATURE	CONSIGNEE PRINT	DATE
SHIPPER'S SIGNATURE	CONSIGNEE SIGN	TIME

WHITE Office YELLOW Carrier PINK Consignee GOLDENROAD Shipper GST # 864540388R0001 NUMBER OF PIECES RECEIVED

Cooler ID: Cooler 6 COC (Y/N) Y Temperature: 0.7 IR: 33
 Coolant Type: Ice Blue Ice Ambient

Notes:

Sampling Locations:

T/D	<u>RG</u>	T/D	<u>EU</u>	T/D	<u>LC</u>	T/D	SP
	<u>SP</u>		<u>SP</u>		<u>SP</u>		SP
	<u>60mm plastic</u>		<u>60mm plastic</u>		<u>125mm plastic</u>		<u>125mm plastic</u>

Container Types:

Opened By: WW Date: 7/7/22



13751 Lake City Way NE, Ste 108, Seattle, WA 98125 • USA • T:206-632-6206 • info@brooksupplied.com

July 27, 2022

Teck Resources Limited - Vancouver
 Mike Pope
 421 Pine Avenue
 Sparwood, B.C. CANADA V0B2G0
mike.pope@teck.com

Re: Regional Effects Program

Dear Mike Pope,

On July 7, 2022, Brooks Applied Labs (BAL) received twenty (20) aqueous samples. The samples were logged-in for total recoverable selenium [Se], dissolved Se [Se], and Se speciation analyses, according to the chain-of-custody (COC) forms.

On the COC form, *RG_GATE* is used as the **Sample Location (sys_loc_code)** for most of the samples described on page two. Per client request, the *RG_GATE* value should be used for the first two samples on this page of the COC form (2207083-16, 2207083-17, and 2207083-18). For reporting, samples 2207083-19 through 2207083-27 **Sample Location (sys_loc_code)** values have been updated to line up with beginning terms in the **Sample ID** values. Please see the table below for **Sample Location (sys_loc_code)** values used for reporting.

Sample ID/Sample Location (sys_loc_code) Cross Reference Table

Laboratory ID	Sample ID	Sample Location (sys_loc_code) (Provided on COC forms)	Sample Location (sys_loc_code) (Used for Reporting)
2207083-16	RG_GATE_WS_LAEMP_EVO_2022-06-28_NP	RG_GATE	RG_GATE
2207083-17/ 2207083-18	RG_GATE_WS_LAEMP_EVO_2022-06-28_NP_NAL	RG_GATE	RG_GATE
2207083-19	RG_GATEDP_WS_LAEMP_EVO_2022-06-28_NP	RG_GATE	RG_GATEDP
2207083-20/ 2207083-21	RG_GATEDP_WS_LAEMP_EVO_2022-06-28_NP_NAL	RG_GATE	RG_GATEDP
2207083-22	RG_BOCK_WS_LAEMP_EVO_2022-06-28_NP	RG_GATE	RG_BOCK
2207083-23/ 2207083-24	RG_BOCK_WS_LAEMP_EVO_2022-06-28_NP_NAL	RG_GATE	RG_BOCK
2207083-25	RG_BOCKRD_WS_LAEMP_EVO_2022-06-28_NP	RG_GATE	RG_BOCKRD
2207083-26/ 2207083-27	RG_BOCKRD_WS_LAEMP_EVO_2022-06-28_NP_NAL	RG_GATE	RG_BOCKRD

The sample fractions for total recoverable Se and dissolved Se were not preserved in the field. The samples were preserved (pH < 2) upon receipt at BAL. All sample fractions for total recoverable Se and dissolved Se were preserved within the (14 calendar day) preservation holding time.

The sample fractions logged in for Se speciation and dissolved Se had been field-filtered prior to receipt at BAL. All samples were stored according to BAL SOPs.

Total Recoverable Se and Dissolved Se

Each aqueous sample fraction for dissolved Se was digested in a closed vessel (bomb) with nitric and hydrochloric acids. The resulting digests were analyzed for Se content via inductively coupled plasma triple quadrupole mass spectrometry (ICP-QQQ-MS). The ICP-QQQ-MS instrumentation uses advanced interference removal techniques to ensure accuracy of the sample results. For more information, please visit the *Interference Reduction Technology* section on our website, brooksapplied.com.

Selenium Speciation

Each aqueous sample was analyzed for selenium speciation using ion chromatography inductively coupled plasma collision reaction cell mass spectrometry (IC-ICP-CRC-MS). Selenium species are chromatographically separated on an ion exchange column and then quantified using inductively coupled plasma collision reaction cell mass spectrometry (ICP-CRC-MS); for more information on this determinative technique, please visit the *Interference Reduction Technology* section on our website. The chromatographic method applied for the analyses provides greater retention of methylseleninic acid and selenomethionine, allowing for more definitive quantitation of these species.

In accordance with the quotation issued for this project, selenium speciation was defined as dissolved selenite [Se(IV)], selenate [Se(VI)], selenocyanate [SeCN], methylseleninic acid [MeSe(IV)], methaneselenonic acid [MeSe(VI)], selenomethionine [SeMef], selenosulfate [SeSO₃], and dimethylselenoxide [DMSeO]. Unknown Se species was defined as the total concentration of all unknown Se species observed during the analysis. This item is identified on the report as [Unk Se Sp].

DMSeO elutes early in the chromatographic run due to the nature of the molecule and the applied chromatographic separation method. Since this species elutes near the dead volume, additional selenium species may coelute. Alternate methods can be applied, upon client request, to increase the separation of DMSeO from potentially co-eluting selenium species.

Chromatographic interference, as indicated by an elevated baseline, or co-eluting peak, was observed for selenosulfate in samples 2207083-01, 2207083-04, 2207083-07, 2207083-10, and 2207083-13. Due to potential bias, the affected results have been qualified as estimated (**J-1**). Upon client request, Brooks Applied Labs can apply a higher dilution to these samples to potentially mitigate the chromatographic interferences, but a higher dilution would elevate the detection limit for SeMet above the client's requested limit of 0.010µg/L.

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

In instances where a matrix spike/matrix spike duplicate (MS/MSD) set was spiked at a level less than the native sample concentration, the recoveries and the relative percent difference (RPD) are not considered valid indicators of data quality. In such instances, the recoveries of the laboratory fortified blanks (BS) and/or standard reference materials (SRM) demonstrate the accuracy of the applied methods. When the spiking

level was less than 25% of the native sample concentration, the spike recovery was not reported (**NR**) and the relative percent difference (RPD) of the MS/MSD set was not calculated (**N/C**).

In cases when either the native sample concentration was non-detectable (reported as less than or equal to the MDL) and/or the corresponding DUP result was also non-detectable, the RPD between the two values was not calculated (**N/C**).

Except for concentration qualifiers and items noted above, all data were reported without qualification. All associated quality control sample results met the acceptance criteria.

BAL, an accredited laboratory, certifies that the reported results of all analyses for which BAL is NELAP accredited meet all NELAP requirements. For more information, please see the *Report Information* page.

Please feel free to contact us if you have any questions regarding this report.

Sincerely,



Jeremy Maute
Senior Project Manager

Jeremy@brooksapplied.com



Report Information

Laboratory Accreditation

BAL is accredited by the *National Environmental Laboratory Accreditation Program* (NELAP) through the State of Florida Department of Health, Bureau of Laboratories (E87982) and is certified to perform many environmental analyses. BAL is also certified by many other states to perform environmental analyses. For a current list of our accreditations/certifications, please visit our website at <http://www.brooksapplied.com/resources/certificates-permits/> or review Tables 1 and 2 in our Accreditation Information. Results reported relate only to the samples listed in the report.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

AR	as received	MS	matrix spike
BAL	Brooks Applied Labs	MSD	matrix spike duplicate
BLK	method blank	ND	non-detect
BS	blank spike	NR	non-reportable
CAL	calibration standard	N/C	not calculated
CCB	continuing calibration blank	PS	post preparation spike
CCV	continuing calibration verification	REC	percent recovery
COC	chain of custody record	RPD	relative percent difference
D	dissolved fraction	SCV	secondary calibration verification
DUP	duplicate	SOP	standard operating procedure
IBL	instrument blank	SRM	reference material
ICV	initial calibration verification	T	total fraction
MDL	method detection limit	TR	total recoverable fraction
MRL	method reporting limit		

Definition of Data Qualifiers

(Effective 3/23/2020)

E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Please see narrative for explanation.
J	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1	Estimated value. A full explanation is presented in the narrative.
M	Duplicate precision (RPD) was not within acceptance criteria. Please see narrative for explanation.
N	Spike recovery was not within acceptance criteria. Please see narrative for explanation.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.
Z	Holding time and/or preservation requirements not established for this method; however, BAL recommendations for holding time were not followed. Please see narrative for explanation.

These qualifiers are based on those previously utilized by Brooks Applied Labs, those found in the EPA SOW ILM03.0, Exhibit B, Section III, pg. B-18, and the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review; USEPA; January 2010. These supersede all previous qualifiers ever employed by BAL.



Accreditation Information

Table 1. Accredited method/matrix/analytes for TNI
Issued by: State of Florida Dept. of Health (The NELAC Institute 2016 Standard)
Issued on: July 1, 2021; Valid to: June 30, 2022
Certificate Number: E87982-37

Method	Matrix	TNI Accredited Analyte(s)
EPA 1638	Non-Potable Waters	Ag, Cd, Cu, Ni, Pb, Sb, Se, Ti, Zn
EPA 200.8	Non-Potable Waters	Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Sb, Se, Ti, U, V, Zn
EPA 6020	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Ti, U, V, Zn
	Solids/Chemicals & Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Ti, V, Zn
BAL-5000	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, U, V, Zn, Hardness
	Solids/Chemicals	Ag, As, B, Be, Cd, Co, Cr, Cu, Pb, Mo, Ni, Sb, Se, Sn, Sr, Ti, V, Zn
	Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Ti, V, Zn
EPA 1640	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn
EPA 1631E	Non-Potable Waters, Solids/Chemicals & Biological	Total Mercury
EPA 1630	Non-Potable Waters	Methyl Mercury
BAL-3200	Solids/Chemicals & Biological	Methyl Mercury
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
BAL-4201	Non-Potable Waters	Se(IV), Se(VI)
BAL-4300	Non-Potable Waters Solid/Chemicals	Cr(VI)
SM2340B	Non-Potable Waters	Hardness



Accreditation Information

**Table 2. Accredited method/matrix/analytes for ISO (1),
 Non-Governmental TNI (2)
 Issued by: ANAB
 Issued on: September 21, 2021; Valid to: March 30, 2024**

Method	Matrix	ISO and Non-Gov. TNI Accredited Analyte(s)
EPA 1638 Mod EPA 200.8 Mod EPA 6020 Mod	Non-Potable Waters	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, U, V, Zn
BAL-5000	Solids/Chemicals & Biological	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, V, Zn Hg (Biological Only)
EPA 1640 Mod	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn Ag, As, Cr, Co, Se, Ti, V (ISO Only)
EPA 1631E Mod BAL-3100	Non-Potable Waters, Solids/Chemicals & Biological/Food	Total Mercury
EPA 1630 Mod BAL-3200	Non-Potable Waters, Solids/Chemicals Biological	Methyl Mercury
EPA 1632A Mod BAL-3300	Non-Potable Waters Biological/Food Solids/Chemicals	Inorganic Arsenic (ISO Only) Inorganic Arsenic (ISO Only)
AOAC 2015.01 Mod BAL-5000	Food	As, Cd, Hg, Pb
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
	Biological by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4101	Food by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4201	Non-Potable Waters	Se(IV), Se(VI), SeCN, SeMet
BAL-4300	Non-Potable Waters, Solid/Chemicals	Cr(VI)
SM 3500-Fe BAL-4500	Non-Potable Waters	Fe, Fe(II) (ISO Only)
SM2340B	Non-Potable Waters	Hardness
SM 2540G BAL-0501	Solids/Chemicals & Biological	% Dry Weight



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
RG_ERCKUT_WS_LAEMP_EVO_20 22-06-29_NP	2207083-01	WS	Sample	06/29/2022	07/07/2022
RG_ERCKUT_WS_LAEMP_EVO_20 22-06-29_NP_NAL	2207083-02	WS	Sample	06/29/2022	07/07/2022
RG_ERCKUT_WS_LAEMP_EVO_20 22-06-29_NP_NAL	2207083-03	WS	Sample	06/29/2022	07/07/2022
RG_ERCKDT_WS_LAEMP_EVO_20 22-06-29_NP	2207083-04	WS	Sample	06/29/2022	07/07/2022
RG_ERCKDT_WS_LAEMP_EVO_20 22-06-29_NP_NAL	2207083-05	WS	Sample	06/29/2022	07/07/2022
RG_ERCKDT_WS_LAEMP_EVO_20 22-06-29_NP_NAL	2207083-06	WS	Sample	06/29/2022	07/07/2022
RG_ERCKMD_WS_LAEMP_EVO_2 022-06-29_NP	2207083-07	WS	Sample	06/29/2022	07/07/2022
RG_ERCKMD_WS_LAEMP_EVO_2 022-06-29_NP_NAL	2207083-08	WS	Sample	06/29/2022	07/07/2022
RG_ERCKMD_WS_LAEMP_EVO_2 022-06-29_NP_NAL	2207083-09	WS	Sample	06/29/2022	07/07/2022
RG_ERCKUC_WS_LAEMP_EVO_20 22-06-30_NP	2207083-10	WS	Sample	06/30/2022	07/07/2022
RG_ERCKUC_WS_LAEMP_EVO_20 22-06-30_NP_NAL	2207083-11	WS	Sample	06/30/2022	07/07/2022
RG_ERCKUC_WS_LAEMP_EVO_20 22-06-30_NP_NAL	2207083-12	WS	Sample	06/30/2022	07/07/2022
RG_ERCK_WS_LAEMP_EVO_2022- 06-30_NP	2207083-13	WS	Sample	06/30/2022	07/07/2022
RG_ERCK_WS_LAEMP_EVO_2022- 06-30_NP_NAL	2207083-14	WS	Sample	06/30/2022	07/07/2022
RG_ERCK_WS_LAEMP_EVO_2022- 06-30_NP_NAL	2207083-15	WS	Sample	06/30/2022	07/07/2022
RG_GATE_WS_LAEMP_EVO_2022- 06-28_NP	2207083-16	WS	Sample	06/28/2022	07/07/2022
RG_GATE_WS_LAEMP_EVO_2022- 06-28_NP_NAL	2207083-17	WS	Sample	06/28/2022	07/07/2022
RG_GATE_WS_LAEMP_EVO_2022- 06-28_NP_NAL	2207083-18	WS	Sample	06/28/2022	07/07/2022
RG_GATEDP_WS_LAEMP_EVO_20 22-06-28_NP	2207083-19	WS	Sample	06/28/2022	07/07/2022
RG_GATEDP_WS_LAEMP_EVO_20 22-06-28_NP_NAL	2207083-20	WS	Sample	06/28/2022	07/07/2022
RG_GATEDP_WS_LAEMP_EVO_20 22-06-28_NP_NAL	2207083-21	WS	Sample	06/28/2022	07/07/2022



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
RG_BOCK_WS_LAEMP_EVO_2022-06-28_NP	2207083-22	WS	Sample	06/28/2022	07/07/2022
RG_BOCK_WS_LAEMP_EVO_2022-06-28_NP_NAL	2207083-23	WS	Sample	06/28/2022	07/07/2022
RG_BOCK_WS_LAEMP_EVO_2022-06-28_NP_NAL	2207083-24	WS	Sample	06/28/2022	07/07/2022
RG_BOCKRD_WS_LAEMP_EVO_2022-06-28_NP	2207083-25	WS	Sample	06/28/2022	07/07/2022
RG_BOCKRD_WS_LAEMP_EVO_2022-06-28_NP_NAL	2207083-26	WS	Sample	06/28/2022	07/07/2022
RG_BOCKRD_WS_LAEMP_EVO_2022-06-28_NP_NAL	2207083-27	WS	Sample	06/28/2022	07/07/2022
RG_RIVER_WS_LAEMP_EVO_2022-06-28_NP	2207083-28	WS	Sample	06/28/2022	07/07/2022
RG_RIVER_WS_LAEMP_EVO_2022-06-28_NP_NAL	2207083-29	WS	Sample	06/28/2022	07/07/2022
RG_RIVER_WS_LAEMP_EVO_2022-06-28_NP_NAL	2207083-30	WS	Sample	06/28/2022	07/07/2022

Batch Summary

Analyte	Lab Matrix	Method	Prepared	Analyzed	Batch	Sequence
DMSeO	Water	SOP BAL-4201	07/07/2022	07/10/2022	B221430	S220716
MeSe(IV)	Water	SOP BAL-4201	07/07/2022	07/10/2022	B221430	S220716
MeSe(VI)	Water	SOP BAL-4201	07/07/2022	07/10/2022	B221430	S220716
Se	Water	EPA 1638 Mod	07/15/2022	07/18/2022	B221581	S220737
Se(IV)	Water	SOP BAL-4201	07/07/2022	07/10/2022	B221430	S220716
Se(VI)	Water	SOP BAL-4201	07/07/2022	07/10/2022	B221430	S220716
SeCN	Water	SOP BAL-4201	07/07/2022	07/10/2022	B221430	S220716
SeMet	Water	SOP BAL-4201	07/07/2022	07/10/2022	B221430	S220716
SeSO3	Water	SOP BAL-4201	07/07/2022	07/10/2022	B221430	S220716
Unk Se Sp	Water	SOP BAL-4201	07/07/2022	07/10/2022	B221430	S220716



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKUT_WS_LAEMP_EVO_2022-06-29_NP										
2207083-01	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221430	S220716
2207083-01	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221430	S220716
2207083-01	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221430	S220716
2207083-01	Se(IV)	WS	D	0.025	J	0.020	0.075	µg/L	B221430	S220716
2207083-01	Se(VI)	WS	D	127		0.010	0.055	µg/L	B221430	S220716
2207083-01	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221430	S220716
2207083-01	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221430	S220716
2207083-01	SeSO ₃	WS	D	≤ 0.010	J-1 U	0.010	0.055	µg/L	B221430	S220716
2207083-01	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221430	S220716
RG_ERCKUT_WS_LAEMP_EVO_2022-06-29_NP_NAL										
2207083-02	Se	WS	D	141		0.165	0.528	µg/L	B221581	S220737
RG_ERCKUT_WS_LAEMP_EVO_2022-06-29_NP_NAL										
2207083-03	Se	WS	TR	154		0.165	0.528	µg/L	B221581	S220737
RG_ERCKDT_WS_LAEMP_EVO_2022-06-29_NP										
2207083-04	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221430	S220716
2207083-04	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221430	S220716
2207083-04	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221430	S220716
2207083-04	Se(IV)	WS	D	0.035	J	0.020	0.075	µg/L	B221430	S220716
2207083-04	Se(VI)	WS	D	127		0.010	0.055	µg/L	B221430	S220716
2207083-04	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221430	S220716
2207083-04	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221430	S220716
2207083-04	SeSO ₃	WS	D	≤ 0.010	J-1 U	0.010	0.055	µg/L	B221430	S220716
2207083-04	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221430	S220716
RG_ERCKDT_WS_LAEMP_EVO_2022-06-29_NP_NAL										
2207083-05	Se	WS	D	146		0.165	0.528	µg/L	B221581	S220737
RG_ERCKDT_WS_LAEMP_EVO_2022-06-29_NP_NAL										
2207083-06	Se	WS	TR	142		0.165	0.528	µg/L	B221581	S220737



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKMD_WS_LAEMP_EVO_2022-06-29_NP										
2207083-07	DMSeO	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221430	S220716
2207083-07	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221430	S220716
2207083-07	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221430	S220716
2207083-07	Se(IV)	WS	D	0.068	J	0.020	0.075	µg/L	B221430	S220716
2207083-07	Se(VI)	WS	D	135		0.010	0.055	µg/L	B221430	S220716
2207083-07	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221430	S220716
2207083-07	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221430	S220716
2207083-07	SeSO3	WS	D	≤ 0.010	J-1 U	0.010	0.055	µg/L	B221430	S220716
2207083-07	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221430	S220716
RG_ERCKMD_WS_LAEMP_EVO_2022-06-29_NP_NAL										
2207083-08	Se	WS	D	144		0.165	0.528	µg/L	B221581	S220737
RG_ERCKMD_WS_LAEMP_EVO_2022-06-29_NP_NAL										
2207083-09	Se	WS	TR	144		0.165	0.528	µg/L	B221581	S220737
RG_ERCKUC_WS_LAEMP_EVO_2022-06-30_NP										
2207083-10	DMSeO	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221430	S220716
2207083-10	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221430	S220716
2207083-10	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221430	S220716
2207083-10	Se(IV)	WS	D	0.138		0.020	0.075	µg/L	B221430	S220716
2207083-10	Se(VI)	WS	D	130		0.010	0.055	µg/L	B221430	S220716
2207083-10	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221430	S220716
2207083-10	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221430	S220716
2207083-10	SeSO3	WS	D	≤ 0.010	J-1 U	0.010	0.055	µg/L	B221430	S220716
2207083-10	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221430	S220716
RG_ERCKUC_WS_LAEMP_EVO_2022-06-30_NP_NAL										
2207083-11	Se	WS	D	145		0.165	0.528	µg/L	B221581	S220737
RG_ERCKUC_WS_LAEMP_EVO_2022-06-30_NP_NAL										
2207083-12	Se	WS	TR	144		0.165	0.528	µg/L	B221581	S220737



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCK_WS_LAEMP_EVO_2022-06-30_NP										
2207083-13	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221430	S220716
2207083-13	MeSe(IV)	WS	D	0.013	J	0.010	0.025	µg/L	B221430	S220716
2207083-13	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221430	S220716
2207083-13	Se(IV)	WS	D	0.150		0.020	0.075	µg/L	B221430	S220716
2207083-13	Se(VI)	WS	D	129		0.010	0.055	µg/L	B221430	S220716
2207083-13	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221430	S220716
2207083-13	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221430	S220716
2207083-13	SeSO ₃	WS	D	≤ 0.010	J-1 U	0.010	0.055	µg/L	B221430	S220716
2207083-13	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221430	S220716
RG_ERCK_WS_LAEMP_EVO_2022-06-30_NP_NAL										
2207083-14	Se	WS	D	140		0.165	0.528	µg/L	B221581	S220737
RG_ERCK_WS_LAEMP_EVO_2022-06-30_NP_NAL										
2207083-15	Se	WS	TR	144		0.165	0.528	µg/L	B221581	S220737
RG_GATE_WS_LAEMP_EVO_2022-06-28_NP										
2207083-16	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221430	S220716
2207083-16	MeSe(IV)	WS	D	0.020	J	0.010	0.025	µg/L	B221430	S220716
2207083-16	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221430	S220716
2207083-16	Se(IV)	WS	D	0.525		0.020	0.075	µg/L	B221430	S220716
2207083-16	Se(VI)	WS	D	67.8		0.010	0.055	µg/L	B221430	S220716
2207083-16	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221430	S220716
2207083-16	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221430	S220716
2207083-16	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221430	S220716
2207083-16	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221430	S220716
RG_GATE_WS_LAEMP_EVO_2022-06-28_NP_NAL										
2207083-17	Se	WS	D	74.5		0.165	0.528	µg/L	B221581	S220737
RG_GATE_WS_LAEMP_EVO_2022-06-28_NP_NAL										
2207083-18	Se	WS	TR	74.1		0.165	0.528	µg/L	B221581	S220737



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_GATEDP_WS_LAEMP_EVO_2022-06-28_NP										
2207083-19	DMS ₂ O	WS	D	0.028		0.010	0.025	µg/L	B221430	S220716
2207083-19	MeSe(IV)	WS	D	0.033		0.010	0.025	µg/L	B221430	S220716
2207083-19	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221430	S220716
2207083-19	Se(IV)	WS	D	0.600		0.020	0.075	µg/L	B221430	S220716
2207083-19	Se(VI)	WS	D	69.6		0.010	0.055	µg/L	B221430	S220716
2207083-19	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221430	S220716
2207083-19	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221430	S220716
2207083-19	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221430	S220716
2207083-19	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221430	S220716
RG_GATEDP_WS_LAEMP_EVO_2022-06-28_NP_NAL										
2207083-20	Se	WS	D	82.5		0.165	0.528	µg/L	B221581	S220737
RG_GATEDP_WS_LAEMP_EVO_2022-06-28_NP_NAL										
2207083-21	Se	WS	TR	77.4		0.165	0.528	µg/L	B221581	S220737
RG_BOCK_WS_LAEMP_EVO_2022-06-28_NP										
2207083-22	DMS ₂ O	WS	D	0.044		0.010	0.025	µg/L	B221430	S220716
2207083-22	MeSe(IV)	WS	D	0.052		0.010	0.025	µg/L	B221430	S220716
2207083-22	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221430	S220716
2207083-22	Se(IV)	WS	D	0.791		0.020	0.075	µg/L	B221430	S220716
2207083-22	Se(VI)	WS	D	56.5		0.010	0.055	µg/L	B221430	S220716
2207083-22	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221430	S220716
2207083-22	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221430	S220716
2207083-22	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221430	S220716
2207083-22	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221430	S220716
RG_BOCK_WS_LAEMP_EVO_2022-06-28_NP_NAL										
2207083-23	Se	WS	D	64.3		0.165	0.528	µg/L	B221581	S220737
RG_BOCK_WS_LAEMP_EVO_2022-06-28_NP_NAL										
2207083-24	Se	WS	TR	64.5		0.165	0.528	µg/L	B221581	S220737



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_BOCKRD_WS_LAEMP_EVO_2022-06-28_NP										
2207083-25	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221430	S220716
2207083-25	MeSe(IV)	WS	D	0.013	J	0.010	0.025	µg/L	B221430	S220716
2207083-25	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221430	S220716
2207083-25	Se(IV)	WS	D	0.482		0.020	0.075	µg/L	B221430	S220716
2207083-25	Se(VI)	WS	D	57.5		0.010	0.055	µg/L	B221430	S220716
2207083-25	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221430	S220716
2207083-25	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221430	S220716
2207083-25	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221430	S220716
2207083-25	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221430	S220716
RG_BOCKRD_WS_LAEMP_EVO_2022-06-28_NP_NAL										
2207083-26	Se	WS	D	66.7		0.165	0.528	µg/L	B221581	S220737
RG_BOCKRD_WS_LAEMP_EVO_2022-06-28_NP_NAL										
2207083-27	Se	WS	TR	68.0		0.165	0.528	µg/L	B221581	S220737
RG_RIVER_WS_LAEMP_EVO_2022-06-28_NP										
2207083-28	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221430	S220716
2207083-28	MeSe(IV)	WS	D	0.016	J	0.010	0.025	µg/L	B221430	S220716
2207083-28	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221430	S220716
2207083-28	Se(IV)	WS	D	0.516		0.020	0.075	µg/L	B221430	S220716
2207083-28	Se(VI)	WS	D	60.6		0.010	0.055	µg/L	B221430	S220716
2207083-28	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221430	S220716
2207083-28	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221430	S220716
2207083-28	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221430	S220716
2207083-28	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221430	S220716
RG_RIVER_WS_LAEMP_EVO_2022-06-28_NP_NAL										
2207083-29	Se	WS	D	75.6		0.165	0.528	µg/L	B221581	S220737
RG_RIVER_WS_LAEMP_EVO_2022-06-28_NP_NAL										
2207083-30	Se	WS	TR	66.4		0.165	0.528	µg/L	B221581	S220737



Accuracy & Precision Summary

Batch: B221430
Lab Matrix: Water
Method: SOP BAL-4201

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221430-BS1	Blank Spike, (2124033)						
	MeSe(IV)		5.095	5.241	µg/L	103% 75-125	
	Se(IV)		5.000	4.841	µg/L	97% 75-125	
	Se(VI)		5.000	4.829	µg/L	97% 75-125	
	SeCN		5.015	4.667	µg/L	93% 75-125	
	SeMet		4.932	4.690	µg/L	95% 75-125	
B221430-DUP3	Duplicate, (2207083-07)						
	DMSeO	ND		ND	µg/L		N/C 25
	MeSe(IV)	ND		ND	µg/L		N/C 25
	MeSe(VI)	ND		ND	µg/L		N/C 25
	Se(IV)	0.068		0.073	µg/L		7% 25
	Se(VI)	134.8		130.7	µg/L		3% 25
	SeCN	ND		ND	µg/L		N/C 25
	SeMet	ND		ND	µg/L		N/C 25
	SeSO3	ND		ND	µg/L		N/C 25
	Unk Se Sp	ND		ND	µg/L		N/C 25
B221430-MS3	Matrix Spike, (2207083-07)						
	Se(IV)	0.068	4.900	4.024	µg/L	81% 75-125	
	Se(VI)	134.8	5.100	130.2	µg/L	NR 75-125	
	SeCN	ND	1.962	1.560	µg/L	80% 75-125	
	SeMet	ND	1.977	1.527	µg/L	77% 75-125	
B221430-MSD3	Matrix Spike Duplicate, (2207083-07)						
	Se(IV)	0.068	4.900	3.899	µg/L	78% 75-125	3% 25
	Se(VI)	134.8	5.100	129.4	µg/L	NR 75-125	N/C 25
	SeCN	ND	1.962	1.479	µg/L	75% 75-125	5% 25
	SeMet	ND	1.977	1.475	µg/L	75% 75-125	3% 25



Accuracy & Precision Summary

Batch: B221581
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221581-BS1	Blank Spike, (2137005) Se		200.0	193.6	µg/L	97% 75-125	
B221581-BS2	Blank Spike, (2137005) Se		200.0	195.0	µg/L	97% 75-125	
B221581-BS3	Blank Spike, (2137005) Se		200.0	194.8	µg/L	97% 75-125	
B221581-BS4	Blank Spike, (2137005) Se		200.0	195.0	µg/L	98% 75-125	
B221581-BS5	Blank Spike, (2137005) Se		200.0	181.4	µg/L	91% 75-125	
B221581-SRM1	Reference Material (2214012, TMDA 51.5 Reference Standard - Bottle 4 - SRM) Se		14.30	13.45	µg/L	94% 75-125	
B221581-SRM2	Reference Material (2214012, TMDA 51.5 Reference Standard - Bottle 4 - SRM) Se		14.30	14.84	µg/L	104% 75-125	
B221581-SRM3	Reference Material (2214012, TMDA 51.5 Reference Standard - Bottle 4 - SRM) Se		14.30	13.77	µg/L	96% 75-125	
B221581-SRM4	Reference Material (2214012, TMDA 51.5 Reference Standard - Bottle 4 - SRM) Se		14.30	13.88	µg/L	97% 75-125	
B221581-SRM5	Reference Material (2214012, TMDA 51.5 Reference Standard - Bottle 4 - SRM) Se		14.30	13.72	µg/L	96% 75-125	
B221581-DUP1	Duplicate, (2207083-09) Se	144.4		144.5	µg/L		0.1% 20



Accuracy & Precision Summary

Batch: B221581
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221581-MS1	Matrix Spike, (2207083-09) Se	144.4	220.0	367.4	µg/L	101% 75-125	
B221581-MSD1	Matrix Spike Duplicate, (2207083-09) Se	144.4	220.0	375.6	µg/L	105% 75-125	2% 20
B221581-DUP2	Duplicate, (2207083-27) Se	68.05		66.11	µg/L		3% 20
B221581-MS2	Matrix Spike, (2207083-27) Se	68.05	220.0	283.2	µg/L	98% 75-125	
B221581-MSD2	Matrix Spike Duplicate, (2207083-27) Se	68.05	220.0	281.5	µg/L	97% 75-125	0.6% 20



Method Blanks & Reporting Limits

Batch: B221430
Matrix: Water
Method: SOP BAL-4201
Analyte: DMSeO

Sample	Result	Units	
B221430-BLK1	0.00	µg/L	
B221430-BLK2	0.00	µg/L	
B221430-BLK3	0.00	µg/L	
B221430-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005

Analyte: MeSe(IV)

Sample	Result	Units	
B221430-BLK1	0.00	µg/L	
B221430-BLK2	0.00	µg/L	
B221430-BLK3	0.00	µg/L	
B221430-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005

Analyte: MeSe(VI)

Sample	Result	Units	
B221430-BLK1	0.00	µg/L	
B221430-BLK2	0.00	µg/L	
B221430-BLK3	0.00	µg/L	
B221430-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005



Method Blanks & Reporting Limits

Analyte: Se(IV)

Sample	Result	Units	
B221430-BLK1	0.00	µg/L	
B221430-BLK2	0.00	µg/L	
B221430-BLK3	0.00	µg/L	
B221430-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.004
Limit:	0.015		MRL: 0.015

Analyte: Se(VI)

Sample	Result	Units	
B221430-BLK1	0.00	µg/L	
B221430-BLK2	0.00	µg/L	
B221430-BLK3	0.00	µg/L	
B221430-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.011		MRL: 0.011

Analyte: SeCN

Sample	Result	Units	
B221430-BLK1	0.00	µg/L	
B221430-BLK2	0.00	µg/L	
B221430-BLK3	0.00	µg/L	
B221430-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.010		MRL: 0.010

Analyte: SeMet

Sample	Result	Units	
B221430-BLK1	0.00	µg/L	
B221430-BLK2	0.00	µg/L	
B221430-BLK3	0.00	µg/L	
B221430-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.005		MRL: 0.005



Method Blanks & Reporting Limits

Analyte: SeSO3

Sample	Result	Units	
B221430-BLK1	0.00	µg/L	
B221430-BLK2	0.00	µg/L	
B221430-BLK3	0.00	µg/L	
B221430-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.011		MRL: 0.011

Analyte: Unk Se Sp

Sample	Result	Units	
B221430-BLK1	0.00	µg/L	
B221430-BLK2	0.00	µg/L	
B221430-BLK3	0.00	µg/L	
B221430-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.015		MRL: 0.015



Method Blanks & Reporting Limits

Batch: B221581
Matrix: Water
Method: EPA 1638 Mod
Analyte: Se

Sample	Result	Units	
B221581-BLK1	0.172	µg/L	
B221581-BLK2	0.150	µg/L	
B221581-BLK3	0.174	µg/L	
B221581-BLK4	0.157	µg/L	
B221581-BLK5	0.183	µg/L	
Average:	0.167		MDL: 0.150
Limit:	0.480		MRL: 0.480



Sample Containers

Lab ID: 2207083-01 **Report Matrix:** WS **Collected:** 06/29/2022
Sample: RG_ERCKUT_WS_LAEMP_EVO_2022-06-29_NP **Sample Type:** Sample + Sum **Received:** 07/07/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 6 - 2207083
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 6 - 2207083
C	XTRA_VOL	60 mL	na	none	na	na	Cooler 6 - 2207083

Lab ID: 2207083-02 **Report Matrix:** WS **Collected:** 06/29/2022
Sample: RG_ERCKUT_WS_LAEMP_EVO_2022-06-29_NP_NAL **Sample Type:** Sample + Sum **Received:** 07/07/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	60 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 1 - 2207083

Lab ID: 2207083-03 **Report Matrix:** WS **Collected:** 06/29/2022
Sample: RG_ERCKUT_WS_LAEMP_EVO_2022-06-29_NP_NAL **Sample Type:** Sample + Sum **Received:** 07/07/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	60 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 1 - 2207083

Lab ID: 2207083-04 **Report Matrix:** WS **Collected:** 06/29/2022
Sample: RG_ERCKDT_WS_LAEMP_EVO_2022-06-29_NP **Sample Type:** Sample + Sum **Received:** 07/07/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 6 - 2207083
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 6 - 2207083
C	XTRA_VOL	60 mL	na	none	na	na	Cooler 6 - 2207083



Sample Containers

Lab ID: 2207083-05

Sample:

RG_ERCKDT_WS_LAEMP_EVO_2022-06-29_NP_NAL

Report Matrix: WS

Sample Type: Sample + Sum

Collected: 06/29/2022

Received: 07/07/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	60 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 1 - 2207083

Lab ID: 2207083-06

Sample:

RG_ERCKDT_WS_LAEMP_EVO_2022-06-29_NP_NAL

Report Matrix: WS

Sample Type: Sample + Sum

Collected: 06/29/2022

Received: 07/07/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	60 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 1 - 2207083

Lab ID: 2207083-07

Sample:

RG_ERCKMD_WS_LAEMP_EVO_2022-06-29_NP

Report Matrix: WS

Sample Type: Sample + Sum

Collected: 06/29/2022

Received: 07/07/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 6 - 2207083
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 6 - 2207083
C	XTRA_VOL	60 mL	na	none	na	na	Cooler 6 - 2207083

Lab ID: 2207083-08

Sample:

RG_ERCKMD_WS_LAEMP_EVO_2022-06-29_NP_NAL

Report Matrix: WS

Sample Type: Sample + Sum

Collected: 06/29/2022

Received: 07/07/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	60 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 1 - 2207083



Sample Containers

Lab ID: 2207083-09

Sample:
 RG_ERCKMD_WS_LAEMP_EVO_2022-06-29_NP_NAL

Report Matrix: WS
Sample Type: Sample + Sum

Collected: 06/29/2022
Received: 07/07/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	60 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 1 - 2207083

Lab ID: 2207083-10

Sample:
 RG_ERCKUC_WS_LAEMP_EVO_2022-06-30_NP

Report Matrix: WS
Sample Type: Sample + Sum

Collected: 06/30/2022
Received: 07/07/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 6 - 2207083
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 6 - 2207083
C	XTRA_VOL	60 mL	na	none	na	na	Cooler 6 - 2207083

Lab ID: 2207083-11

Sample:
 RG_ERCKUC_WS_LAEMP_EVO_2022-06-30_NP_NAL

Report Matrix: WS
Sample Type: Sample + Sum

Collected: 06/30/2022
Received: 07/07/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	60 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 1 - 2207083

Lab ID: 2207083-12

Sample:
 RG_ERCKUC_WS_LAEMP_EVO_2022-06-30_NP_NAL

Report Matrix: WS
Sample Type: Sample + Sum

Collected: 06/30/2022
Received: 07/07/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	60 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 1 - 2207083



Sample Containers

Lab ID: 2207083-13

Report Matrix: WS

Collected: 06/30/2022

Sample:

Sample Type: Sample + Sum

Received: 07/07/2022

RG_ERCK_WS_LAEMP_EVO_2022-06-30_NP

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 6 - 2207083
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 6 - 2207083
C	XTRA_VOL	60 mL	na	none	na	na	Cooler 6 - 2207083

Lab ID: 2207083-14

Report Matrix: WS

Collected: 06/30/2022

Sample:

Sample Type: Sample + Sum

Received: 07/07/2022

RG_ERCK_WS_LAEMP_EVO_2022-06-30_NP_NA
L

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	60 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 1 - 2207083

Lab ID: 2207083-15

Report Matrix: WS

Collected: 06/30/2022

Sample:

Sample Type: Sample + Sum

Received: 07/07/2022

RG_ERCK_WS_LAEMP_EVO_2022-06-30_NP_NA
L

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	60 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 1 - 2207083

Lab ID: 2207083-16

Report Matrix: WS

Collected: 06/28/2022

Sample:

Sample Type: Sample + Sum

Received: 07/07/2022

RG_GATE_WS_LAEMP_EVO_2022-06-28_NP

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 6 - 2207083
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 6 - 2207083
C	XTRA_VOL	60 mL	na	none	na	na	Cooler 6 - 2207083



Sample Containers

Lab ID: 2207083-17

Sample:
 RG_GATE_WS_LAEMP_EVO_2022-06-28_NP_NA
 L

Report Matrix: WS
Sample Type: Sample + Sum

Collected: 06/28/2022
Received: 07/07/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	60 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 1 - 2207083

Lab ID: 2207083-18

Sample:
 RG_GATE_WS_LAEMP_EVO_2022-06-28_NP_NA
 L

Report Matrix: WS
Sample Type: Sample + Sum

Collected: 06/28/2022
Received: 07/07/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	60 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 1 - 2207083

Lab ID: 2207083-19

Sample:
 RG_GATEDP_WS_LAEMP_EVO_2022-06-28_NP
 L

Report Matrix: WS
Sample Type: Sample + Sum

Collected: 06/28/2022
Received: 07/07/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 6 - 2207083
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 6 - 2207083
C	XTRA_VOL	60 mL	na	none	na	na	Cooler 6 - 2207083

Lab ID: 2207083-20

Sample:
 RG_GATEDP_WS_LAEMP_EVO_2022-06-28_NP_
 NAL

Report Matrix: WS
Sample Type: Sample + Sum

Collected: 06/28/2022
Received: 07/07/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	60 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 1 - 2207083



Sample Containers

Lab ID: 2207083-21

Sample:

RG_GATEDP_WS_LAEMP_EVO_2022-06-28_NP_NAL

Report Matrix: WS

Sample Type: Sample + Sum

Collected: 06/28/2022

Received: 07/07/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	60 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 1 - 2207083

Lab ID: 2207083-22

Sample:

RG_BOCK_WS_LAEMP_EVO_2022-06-28_NP

Report Matrix: WS

Sample Type: Sample + Sum

Collected: 06/28/2022

Received: 07/07/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 6 - 2207083
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 6 - 2207083
C	XTRA_VOL	60 mL	na	none	na	na	Cooler 6 - 2207083

Lab ID: 2207083-23

Sample:

RG_BOCK_WS_LAEMP_EVO_2022-06-28_NP_NAL

Report Matrix: WS

Sample Type: Sample + Sum

Collected: 06/28/2022

Received: 07/07/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	60 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 1 - 2207083

Lab ID: 2207083-24

Sample:

RG_BOCK_WS_LAEMP_EVO_2022-06-28_NP_NAL

Report Matrix: WS

Sample Type: Sample + Sum

Collected: 06/28/2022

Received: 07/07/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	60 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 1 - 2207083



Sample Containers

Lab ID: 2207083-25
Sample: RG_BOCKRD_WS_LAEMP_EVO_2022-06-28_NP
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 06/28/2022
Received: 07/07/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 6 - 2207083
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 6 - 2207083
C	XTRA_VOL	60 mL	na	none	na	na	Cooler 6 - 2207083

Lab ID: 2207083-26
Sample: RG_BOCKRD_WS_LAEMP_EVO_2022-06-28_NP_NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 06/28/2022
Received: 07/07/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	60 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 1 - 2207083

Lab ID: 2207083-27
Sample: RG_BOCKRD_WS_LAEMP_EVO_2022-06-28_NP_NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 06/28/2022
Received: 07/07/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	60 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 1 - 2207083

Lab ID: 2207083-28
Sample: RG_RIVER_WS_LAEMP_EVO_2022-06-28_NP
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 06/28/2022
Received: 07/07/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 6 - 2207083
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 6 - 2207083
C	XTRA_VOL	60 mL	na	none	na	na	Cooler 6 - 2207083



Sample Containers

Lab ID: 2207083-29

Report Matrix: WS

Collected: 06/28/2022

Sample:

Sample Type: Sample + Sum

Received: 07/07/2022

RG_RIVER_WS_LAEMP_EVO_2022-06-28_NP_NA
L

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	60 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 1 - 2207083

Lab ID: 2207083-30

Report Matrix: WS

Collected: 06/28/2022

Sample:

Sample Type: Sample + Sum

Received: 07/07/2022

RG_RIVER_WS_LAEMP_EVO_2022-06-28_NP_NA
L

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	60 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 1 - 2207083

Shipping Containers

Cooler 1 - 2207083

Received: July 7, 2022 7:25

Tracking No: PAPS#RWHV55071 via Courier

Coolant Type: Ice

Temperature: -0.5 °C

Description: Styrofoam Cooler

Damaged in transit? No

Returned to client? No

Comments: IR#:33

Custody seals present? No

Custody seals intact? No

COC present? Yes

Cooler 6 - 2207083

Received: July 7, 2022 7:25

Tracking No: PAPS#RWHV55071 via Courier

Coolant Type: Ice

Temperature: 0.7 °C

Description: Styrofoam Cooler

Damaged in transit? No

Returned to client? No

Comments: IR#:33

Custody seals present? No

Custody seals intact? No

COC present? Yes

COC ID:	REP_EVO LAEMP_2022_JUNE_Brooks	TURNAROUND TIME:	RUSH:
PROJECT/CLIENT INFO		LABORATORY	
Facility Name / Job#	Regional Effects Program	Lab Name	Brooks Applied Labs
Project Manager	Mike Pope	Lab Contact	Ben Wozniak
Email		Email	Ben@brooksapplied.com
Address	421 Pine Ave	Address	18804 North Creek Parkway Suite 100
City	Sparwood	City	Bothell
Postal Code	V0B 2G0	Province	WA
Country	Canada	Country	United
Phone Number	250-425-8202	Phone Number	(206) 753-6158
		Report Format / Distribution	Excel PDF EDD
		Email 1:	✓ ✓ ✓
		Email 2:	
		Email 3:	Teck Lab Results@teck.com ✓ ✓ ✓
		Email 4:	AcusSoftLab@teck.com ✓ ✓ ✓
		Email 5:	lbrown@minnwa.ca ✓ ✓ ✓
		Email 6:	
		PO number	817033

SAMPLE DETAILS								ANALYSIS REQUEST												
Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com p	# Of Cont.	Brooks_Se_Speciation	Brooks_Se_D	Brooks_Se_T										
RG_ERCKUT_WS_LAEMP_EVO_2022-06-29_NP	RG_ERCKUT	WS	N	6/29/2022	9:00	G	1	1												
RG_ERCKUT_WS_LAEMP_EVO_2022-06-29_NP_NAL	RG_ERCKUT	WS	N	6/29/2022	9:00	G	2		1	1										
RG_ERCKDT_WS_LAEMP_EVO_2022-06-29_NP	RG_ERCKDT	ws	N	6/29/2022	10:00	G	1	1												
RG_ERCKDT_WS_LAEMP_EVO_2022-06-29_NP_NAL	RG_ERCKDT	ws	N	6/29/2022	10:00	G	2		1	1										
RG_ERCKMD_WS_LAEMP_EVO_2022-06-29_NP	RG_ERCKMD	ws	N	6/29/2022	11:00	G	1	1												
RG_ERCKMD_WS_LAEMP_EVO_2022-06-29_NP_NAL	RG_ERCKMD	ws	N	6/29/2022	11:00	G	2		1	1										
RG_ERCKUC_WS_LAEMP_EVO_2022-06-30_NP	RG_ERCKUC	WS	N	6/30/2022	8:40	G	1	1												
RG_ERCKUC_WS_LAEMP_EVO_2022-06-30_NP_NAL	RG_ERCKUC	WS	N	6/30/2022	8:40	G	2		1	1										
RG_ERCK_WS_LAEMP_EVO_2022-06-30_NP	RG_ERCK	WS	N	6/30/2022	8:30	G	1	1												
RG_ERCK_WS_LAEMP_EVO_2022-06-30_NP_NAL	RG_ERCK	WS	N	6/30/2022	8:30	G	2		1	1										

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELEASED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
	Alex McClymont	July 4, 2022	<i>LMR</i> (BAL)	7/7/22 07:25

SERVICE REQUEST (rush - subject to availability)					
Regular (default)	X	Sampler's Name	Alex McClymont	Mobile #	780-293-6750
Priority (2-3 business days) - 50% surcharge		Sampler's Signature	<i>[Signature]</i>	Date/Time	July 4, 2022
Emergency (1 Business Day) - 100% surcharge					
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

COC ID:		REP_EVO LAEMP_2022_JUNE_Brooks		TURNAROUND TIME:				RUSH:				
PROJECT/CLIENT INFO								LABORATORY				
Facility Name / Job#		Regional Effects Program		Lab Name		Brooks Applied Labs		Report Format / Distribution		Excel	PDF	FDD
Project Manager		Mike Pope		Lab Contact		Ben Wozniak		Email 1:		X	X	X
Email		[redacted]		Email		Ben@brooksupplied.com		Email 2:				
Address		421 Pine Ave		Address		18804 North Creek Parkway Suite 100		Email 3:		Teck Lab Results@teck.com	X	X
City		Sparwood		City		Bothell		Email 4:		AgusSol.lab@teck.com	X	X
Postal Code		VOB 2G0		Country		Canada		Email 5:		bro@tr@trinnov.ca	X	X
Phone Number		250-425-8202		Phone Number		(206) 753-6158		Email 6:		[redacted]	X	X
								PO number		817033		

SAMPLE DETAILS								ANALYSIS REQUESTED															
Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com p	# Of Cont.	DL	F	F	N												
RG_GATE_WS_LAEMP_EVO_2022-06-28_NP	RG_GATE	WS	No	6/28/2022	8:30	G	1		1														
RG_GATE_WS_LAEMP_EVO_2022-06-28_NP_NAL	RG_GATE	WS	No	6/28/2022	8:30	G	2			1	1												
RG_GATEDP_WS_LAEMP_EVO_2022-06-28_NP	RG_GATE	WS	No	6/28/2022	8:00	G	1		1														
RG_GATEDP_WS_LAEMP_EVO_2022-06-28_NP_NAL	RG_GATE	WS	No	6/28/2022	8:00	G	2			1	1												
RG_BOCK_WS_LAEMP_EVO_2022-06-28_NP	RG_GATE	WS	No	6/28/2022	9:30	G	1		1														
RG_BOCK_WS_LAEMP_EVO_2022-06-28_NP_NAL	RG_GATE	WS	No	6/28/2022	9:30	G	2			1	1												
RG_BOCKRD_WS_LAEMP_EVO_2022-06-28_NP	RG_GATE	WS	No	6/28/2022	11:00	G	1		1														
RG_BOCKRD_WS_LAEMP_EVO_2022-06-28_NP_NAL	RG_GATE	WS	No	6/28/2022	11:00	G	2			1	1												
RG_RIVER_WS_LAEMP_EVO_2022-06-28_NP	RG_RIVER	WS	No	6/28/2022	11:00	G	1		1														
RG_RIVER_WS_LAEMP_EVO_2022-06-28_NP_NAL	RG_RIVER	WS	No	6/28/2022	11:00	G	2			1	1												

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS				RELAYED BY/AFFILIATION				DATE/TIME				ACCEPTED BY/AFFILIATION				DATE/TIME			
				Alex McClymont				July 4, 2022				[Signature] (BAL)				7/7/22 07:25			

SERVICE REQUEST (trash - subject to availability)				Sampler's Name		Mobile #		Sampler's Signature		Date/Time	
Regular (default) X				Alex McClymont		780-293-6750		[Signature]		July 4, 2022	
Priority (2-3 business days) - 50% surcharge											
Emergency (1 Business Day) - 100% surcharge											
For Emergency <1 Day, ASAP or Weekend - Contact ALS											

Confidential

RW Hot Shot Service Inc.

BAL Final Report 2207083

55071

STRAIGHT BILL OF LADING
NOT NEGOTIABLE

24 Hour Hot Shot Service
P.O. BOX 276, SPARWOOD, BC V0B 2G0
PHONE: (250) 425-7447
FAX: (250) 425-7450

VOICE TO		DATE	
BILL OF LADING #		PURCHASE ORDER NUMBER	
SHIPPER (FROM)		CONSIGNEE (TO)	
STREET		STREET	
CITY/PROVINCE	POSTAL CODE	CITY/PROVINCE	POSTAL CODE
AIRLINE CARRIER		WAY BILL #	

SPECIAL INSTRUCTIONS

PACKAGES	DESCRIPTION OF ARTICLES AND SPECIAL MARKS	WEIGHT (Subject to Correction)	FREIGHT CHARGES
5	COOLERS - WATER SAMPLES	175 lbs	SHIPPER TO CHECK <input type="checkbox"/> PREPAID <input type="checkbox"/> COLLECT If not indicated, shipping will automatically move collect.
			WAITING _____
			XPU _____
			CHARGES _____
			FSC _____
			SUB TOTAL _____
			GST _____
			TOTAL \$ _____

PAPS# RWHV55071

#	PERMIT #	DECLARED VALUATION: Maximum liability of carrier is \$2.00 per lb. (\$4.51 per kilogram) unless declared valuation states otherwise.	\$
SHIPPER'S SIGNATURE - PICK UP BY		DRIVER'S SIGNATURE - DELIVERY BY	

SHIPPER'S SIGNATURE		DRIVER'S SIGNATURE		DATE
CONSIGNEE PRINT		CONSIGNEE SIGN		TIME

WHITE Office YELLOW Carrier PINK Consignee GOLDENROAD Shipper GST # 854540388RT0001 NUMBER OF PIECES RECEIVED ▲

Cooler ID: cooler 1

COC (Y/N)

Temperature: 0.5 - 0.5

IR: 33

Coolant Type: Ice Blue Ice Ambient

Notes:

RG

Sampling Locations:

Sample Types:

T/D
40 ML
GLASS

Container Types:

Opened By: ERL

Date: 7/7/22

Effective 7/29/20

@ EE AM 7/7/22



Revision 004

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RW Hot Shot Service Inc.

BAL Final Report 2207083

STRAIGHT BILL OF LADING
NOT NEGOTIABLE

24 Hour Hot Shot Service
P.O. BOX 276, SPARWOOD, BC V0B 2G0
PHONE: (250) 425-7447
FAX: (250) 425-7450

55071

VOICE TO		DATE	
BILL OF LADING #		PURCHASE ORDER NUMBER	
SHIPPER (FROM)		CONSIGNEE (TO)	
STREET		STREET	
CITY/PROVINCE		CITY/PROVINCE	
POSTAL CODE		POSTAL CODE	
AIRLINE CARRIER		WAY BILL #	
SPECIAL INSTRUCTIONS			
PACKAGES	DESCRIPTION OF ARTICLES AND SPECIAL MARKS	WEIGHT (Subject to Correction)	FREIGHT CHARGES
5	Coolers - Water Samples	175 lbs	SHIPPER TO CHECK <input type="checkbox"/> PREPAID <input type="checkbox"/> COLLECT If not indicated, shipping cost automatically more collect
PAPS# RWHV55071			WAITING _____
			XPU _____
			CHARGES _____
			FSC _____
			SUB TOTAL _____
			GST _____
			TOTAL \$ _____
			NET CARRIER'S RISK: WRITE ORN HERE _____
SHIPPER'S SIGNATURE - PICK UP BY	DRIVER'S SIGNATURE - DELIVERY BY		DATE
	Storia		July 6
	Blair		TIME 7:45 am
PERMIT #	DECLARED VALUATION: Maximum liability of carrier is \$2.00 per lb. (\$4.41 per kilogram) unless declared valuation states otherwise	\$	NUMBER OF PIECES RECEIVED
			5
WHITE Office	YELLOW Carrier	PINK Consignee	GOLDENROAD Shipper
GST # 864540398RT0001			

Cooler ID: Cooler 6

COC(Y/N)

Temperature: 0.7

IR: 33

Coolant Type: Ice

Blue Ice Ambient

Notes:

Sampling Locations:

Sample Types:

Container Types:

Opened By: WW

Date: 7/7/22

	RG		EU		LC				
T/D	SP	T/D	SP	T/D	SP	T/D	SP	T/D	SP
	60ml plastic		60ml plastic		125ml plastic		125ml plastic		

Effective 7/29/20



COPY Revision 004

From: [Tyler Mehler](#)
To: [Jeremy Maute](#); mike.pope@teck.com; jess.ritz@teck.com; AquaSciLab@Teck.com; [Lisa Bowron](mailto:Lisa.Bowron@minnow.ca)
Cc: [Mariyeh Moradnzhad](mailto:Mariyeh.Moradnzhad@brooksapplied.com)
Subject: RE: Question on WO 2207083: Regional Effects Program, REP Project - Confidential
Date: Wednesday, July 27, 2022 11:53:05 AM

Great – thank you for catching that.

Tyler

From: Jeremy Maute <Jeremy@brooksapplied.com>
Sent: Wednesday, July 27, 2022 12:47 PM
To: Tyler Mehler <tyler.mehler@minnow.ca>; mike.pope@teck.com; jess.ritz@teck.com; AquaSciLab@Teck.com; [Lisa Bowron](mailto:Lisa.Bowron@minnow.ca) <LBowron@minnow.ca>
Cc: [Mariyeh Moradnzhad](mailto:Mariyeh.Moradnzhad@brooksapplied.com) <mariyeh@brooksapplied.com>
Subject: RE: Question on WO 2207083: Regional Effects Program, REP Project - Confidential

Thanks for the confirmation. I am going to use the following sys_loc_codes.

Sample ID/Sample Location (sys_loc_code) Cross Reference Table

Laboratory ID	Sample ID	Sample Location (sys_loc_code) (Provided on COC forms)	Sample Location (sys_loc_code) (Used for Reporting)	Analytical Parameter
2207083-16	RG_GATE_WS_LAEMP_EVO_2022-06-28_NP	RG_GATE	RG_GATE	Se Speciation
2207083-17/ 2207083-18	RG_GATE_WS_LAEMP_EVO_2022-06-28_NP_NAL	RG_GATE	RG_GATE	Dissolved Se/Total Recoverable Se
2207083-19	RG_GATEDP_WS_LAEMP_EVO_2022-06-28_NP	RG_GATE	RG_GATEDP	Se Speciation
2207083-20/ 2207083-21	RG_GATEDP_WS_LAEMP_EVO_2022-06-28_NP_NAL	RG_GATE	RG_GATEDP	Dissolved Se/Total Recoverable Se
2207083-22	RG_BOCK_WS_LAEMP_EVO_2022-06-28_NP	RG_GATE	RG_BOCK	Se Speciation
2207083-23/ 2207083-24	RG_BOCK_WS_LAEMP_EVO_2022-06-28_NP_NAL	RG_GATE	RG_BOCK	Dissolved Se/Total Recoverable Se
2207083-25	RG_BOCKRD_WS_LAEMP_EVO_2022-06-28_NP	RG_GATE	RG_BOCKRD	Se Speciation
2207083-26/ 2207083-27	RG_BOCKRD_WS_LAEMP_EVO_2022-06-28_NP_NAL	RG_GATE	RG_BOCKRD	Dissolved Se/Total Recoverable

				Se
--	--	--	--	----

Is this acceptable?

Regards,

Jeremy Maute
Senior Project Manager
206-753-6116
email: jeremy@brooksapplied.com

BROOKS APPLIED LABS

Meaningful Metals Data and Advanced Speciation Solutions

P: 206-632-6206 | F: 206-632-6017 | **13751 Lake City Way NE, Suite 108, Seattle, WA 98125, USA**

Brooks Applied Labs has moved to a new facility! As of June 20th, all sample shipments should be sent to the following address: 13751 Lake City Way NE, Suite 108, Seattle, WA 98125.

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From: Tyler Mehler <tyler.mehler@minnow.ca>
Sent: Wednesday, July 27, 2022 11:34 AM
To: Jeremy Maute <Jeremy@brooksapplied.com>; mike.pope@teck.com; jess.ritz@teck.com; AquaSciLab@Teck.com; Lisa Bowron <LBowron@minnow.ca>
Cc: Mariyeh Moradnzhad <mariyeh@brooksapplied.com>
Subject: RE: Question on WO 2207083: Regional Effects Program, REP Project - Confidential

You are correct. The sample ID has the correct sys loc code.

Thanks!

From: Jeremy Maute <Jeremy@brooksapplied.com>
Sent: Wednesday, July 27, 2022 12:19 PM
To: mike.pope@teck.com; jess.ritz@teck.com; AquaSciLab@Teck.com; Lisa Bowron <LBowron@minnow.ca>; Tyler Mehler <tyler.mehler@minnow.ca>
Cc: Mariyeh Moradnzhad <mariyeh@brooksapplied.com>
Subject: Question on WO 2207083: Regional Effects Program, REP Project - Confidential
Importance: High

I am going to review and report the analyses for work order 2207083 (see attached COC form).

Please see page two of the COC forms. On the COC form, *RG_GATE* is used as the **Sample Location (sys_loc_code)** for most of the samples described on page two. It looks like the *RG_GATE* value should be used for the first two samples (2207083-16, 2207083-17, and 2207083-18). But I think there is a chance your group intended to use different **Sample Location (sys_loc_code)** values for the remaining samples. Please see the summary in the table below.

Sample ID/Sample Location (sys_loc_code) Cross Reference Table

Laboratory ID	Sample ID	Sample Location (sys_loc_code)	Analytical Parameter
2207083-16	RG_GATE_WS_LAEMP_EVO_2022-06-28_NP	RG_GATE	Se Speciation
2207083-17/ 2207083-18	RG_GATE_WS_LAEMP_EVO_2022-06-28_NP_NAL	RG_GATE	Dissolved Se/Total Recoverable Se
2207083-19	RG_GATEDP_WS_LAEMP_EVO_2022-06-28_NP	RG_GATE	Se Speciation
2207083-20/ 2207083-21	RG_GATEDP_WS_LAEMP_EVO_2022-06-28_NP_NAL	RG_GATE	Dissolved Se/Total Recoverable Se
2207083-22	RG_BOCK_WS_LAEMP_EVO_2022-06-28_NP	RG_GATE	Se Speciation
2207083-23/ 2207083-24	RG_BOCK_WS_LAEMP_EVO_2022-06-28_NP_NAL	RG_GATE	Dissolved Se/Total Recoverable Se
2207083-25	RG_BOCKRD_WS_LAEMP_EVO_2022-06-28_NP	RG_GATE	Se Speciation
2207083-26/ 2207083-27	RG_BOCKRD_WS_LAEMP_EVO_2022-06-28_NP_NAL	RG_GATE	Dissolved Se/Total Recoverable Se

It seems as though samples 2207083-19 through 2207083-27 should have updated **Sample Location (sys_loc_code)** values, perhaps **Sample Location (sys_loc_code)** values that line up with beginning terms in the **Sample ID** values. I could be wrong, but could you take a look and let me know? I intend to get this report out within the hour.

Thanks everyone.

Regards,

Jeremy Maute
Senior Project Manager
206-753-6116
email: jeremy@brooksapplied.com

BROOKS APPLIED LABS

Meaningful Metals Data and Advanced Speciation Solutions

P: 206-632-6206 | F: 206-632-6017 | 13751 Lake City Way NE, Suite 108, Seattle, WA 98125, USA

Brooks Applied Labs has moved to a new facility! As of June 20th, all sample shipments should be sent to the following address: 13751 Lake City Way NE, Suite 108, Seattle, WA 98125.

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September 2, 2022

Teck Resources Limited - Vancouver
 Mike Pope
 421 Pine Avenue
 Sparwood, B.C. CANADA V0B2G0
mike.pope@teck.com

Re: Regional Effects Program

Dear Mike Pope,

On August 4, 2022, Brooks Applied Labs (BAL) received two (2) aqueous samples. The samples were logged-in for total recoverable selenium [Se], dissolved Se [Se], and Se speciation analyses, according to the chain-of-custody (COC) form.

The following sample was described on the COC form but there were no containers matching this information present in the sample shipment.

Laboratory ID	Sample ID	Analytical Parameter
2208056-02	EV_MC3a_WS_LAEMP_EVO_2022-07-27_NP-NAL	Total Recoverable Se

An additional container was received with no information on the container label. The container type matched those used for total recoverable/dissolved Se fractions. Since there were no other fractions missing, except for 2208056-02, the unlabeled sample was assigned to 2208056-02 for total recoverable Se analysis. Results are reported for 2208056-02, however the field ID assignment for this sample is still uncertain.

The sample fractions for total recoverable Se and dissolved Se were not preserved in the field. The samples were preserved (pH < 2) upon receipt at BAL. All sample fractions for total recoverable Se and dissolved Se were preserved within the (14 calendar day) preservation holding time.

The sample fractions logged in for Se speciation and dissolved Se had been field-filtered prior to receipt at BAL. All samples were stored according to BAL SOPs.

Total Recoverable Se and Dissolved Se

Each aqueous sample fraction for dissolved Se was digested in a closed vessel (bomb) with nitric and hydrochloric acids. The resulting digests were analyzed for Se content via inductively coupled plasma triple quadrupole mass spectrometry (ICP-QQQ-MS). The ICP-QQQ-MS instrumentation uses advanced interference removal techniques to ensure accuracy of the sample results. For more information, please visit the *Interference Reduction Technology* section on our website, brooksapplied.com.

Selenium Speciation

Each aqueous sample was analyzed for selenium speciation using ion chromatography inductively coupled plasma collision reaction cell mass spectrometry (IC-ICP-CRC-MS). Selenium species are chromatographically separated on an ion exchange column and then quantified using inductively coupled plasma collision reaction cell mass spectrometry (ICP-CRC-MS); for more information on this determinative technique, please visit the *Interference Reduction Technology* section on our website. The chromatographic method applied for the analyses provides greater retention of methylseleninic acid and selenomethionine, allowing for more definitive quantitation of these species.

In accordance with the quotation issued for this project, selenium speciation was defined as dissolved selenite [Se(IV)], selenate [Se(VI)], selenocyanate [SeCN], methylseleninic acid [MeSe(IV)], methaneselenonic acid [MeSe(VI)], selenomethionine [SeMef], selenosulfate [SeSO₃], and dimethylselenoxide [DMSeO]. Unknown Se species was defined as the total concentration of all unknown Se species observed during the analysis. This item is identified on the report as [Unk Se Sp].

DMSeO elutes early in the chromatographic run due to the nature of the molecule and the applied chromatographic separation method. Since this species elutes near the dead volume, additional selenium species may coelute. Alternate methods can be applied, upon client request, to increase the separation of DMSeO from potentially co-eluting selenium species.

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

In instances where a matrix spike/matrix spike duplicate (MS/MSD) set was spiked at a level less than the native sample concentration, the recoveries and the relative percent difference (RPD) are not considered valid indicators of data quality. In such instances, the recoveries of the laboratory fortified blanks (BS) and/or standard reference materials (SRM) demonstrate the accuracy of the applied methods. When the spiking level was less than 25% of the native sample concentration, the spike recovery was not reported (**NR**) and the relative percent difference (RPD) of the MS/MSD set was not calculated (**N/C**).

In cases when either the native sample concentration was non-detectable (reported as less than or equal to the MDL) and/or the corresponding DUP result was also non-detectable, the RPD between the two values was not calculated (**N/C**).

Except for concentration qualifiers, all data were reported without qualification. All associated quality control sample results met the acceptance criteria.

BAL, an accredited laboratory, certifies that the reported results of all analyses for which BAL is NELAP accredited meet all NELAP requirements. For more information, please see the *Report Information* page.

Please feel free to contact us if you have any questions regarding this report.

Sincerely,

A handwritten signature in black ink, appearing to read 'Jeremy Maute', written in a cursive style.

Jeremy Maute
Senior Project Manager

Jeremy@brooksapplied.com



Report Information

Laboratory Accreditation

BAL is accredited by the *National Environmental Laboratory Accreditation Program* (NELAP) through the State of Florida Department of Health, Bureau of Laboratories (E87982) and is certified to perform many environmental analyses. BAL is also certified by many other states to perform environmental analyses. For a current list of our accreditations/certifications, please visit our website at <http://www.brooksapplied.com/resources/certificates-permits/> or review Tables 1 and 2 in our Accreditation Information. Results reported relate only to the samples listed in the report.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

AR	as received	MS	matrix spike
BAL	Brooks Applied Labs	MSD	matrix spike duplicate
BLK	method blank	ND	non-detect
BS	blank spike	NR	non-reportable
CAL	calibration standard	N/C	not calculated
CCB	continuing calibration blank	PS	post preparation spike
CCV	continuing calibration verification	REC	percent recovery
COC	chain of custody record	RPD	relative percent difference
D	dissolved fraction	SCV	secondary calibration verification
DUP	duplicate	SOP	standard operating procedure
IBL	instrument blank	SRM	reference material
ICV	initial calibration verification	T	total fraction
MDL	method detection limit	TR	total recoverable fraction
MRL	method reporting limit		

Definition of Data Qualifiers

(Effective 3/23/2020)

E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Please see narrative for explanation.
J	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1	Estimated value. A full explanation is presented in the narrative.
M	Duplicate precision (RPD) was not within acceptance criteria. Please see narrative for explanation.
N	Spike recovery was not within acceptance criteria. Please see narrative for explanation.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.
Z	Holding time and/or preservation requirements not established for this method; however, BAL recommendations for holding time were not followed. Please see narrative for explanation.

These qualifiers are based on those previously utilized by Brooks Applied Labs, those found in the EPA SOW ILM03.0, Exhibit B, Section III, pg. B-18, and the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review; USEPA; January 2010. These supersede all previous qualifiers ever employed by BAL.



Accreditation Information

Table 1. Accredited method/matrix/analytes for TNI
Issued by: State of Florida Dept. of Health (The NELAC Institute 2016 Standard)
Issued on: July 1, 2021; Valid to: June 30, 2022
Certificate Number: E87982-37

Method	Matrix	TNI Accredited Analyte(s)
EPA 1638	Non-Potable Waters	Ag, Cd, Cu, Ni, Pb, Sb, Se, Ti, Zn
EPA 200.8	Non-Potable Waters	Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Sb, Se, Ti, U, V, Zn
EPA 6020	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Ti, U, V, Zn
	Solids/Chemicals & Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Ti, V, Zn
BAL-5000	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, U, V, Zn, Hardness
	Solids/Chemicals	Ag, As, B, Be, Cd, Co, Cr, Cu, Pb, Mo, Ni, Sb, Se, Sn, Sr, Ti, V, Zn
	Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Ti, V, Zn
EPA 1640	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn
EPA 1631E	Non-Potable Waters, Solids/Chemicals & Biological	Total Mercury
EPA 1630	Non-Potable Waters	Methyl Mercury
BAL-3200	Solids/Chemicals & Biological	Methyl Mercury
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
BAL-4201	Non-Potable Waters	Se(IV), Se(VI)
BAL-4300	Non-Potable Waters Solid/Chemicals	Cr(VI)
SM2340B	Non-Potable Waters	Hardness



Accreditation Information

**Table 2. Accredited method/matrix/analytes for ISO (1),
 Non-Governmental TNI (2)**

Issued by: ANAB

Issued on: September 21, 2021; Valid to: March 30, 2024

Method	Matrix	ISO and Non-Gov. TNI Accredited Analyte(s)
EPA 1638 Mod EPA 200.8 Mod EPA 6020 Mod	Non-Potable Waters	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, U, V, Zn
BAL-5000	Solids/Chemicals & Biological	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, V, Zn Hg (Biological Only)
EPA 1640 Mod	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn Ag, As, Cr, Co, Se, Ti, V (ISO Only)
EPA 1631E Mod BAL-3100	Non-Potable Waters, Solids/Chemicals & Biological/Food	Total Mercury
EPA 1630 Mod BAL-3200	Non-Potable Waters, Solids/Chemicals Biological	Methyl Mercury
EPA 1632A Mod BAL-3300	Non-Potable Waters Biological/Food Solids/Chemicals	Inorganic Arsenic (ISO Only) Inorganic Arsenic (ISO Only)
AOAC 2015.01 Mod BAL-5000	Food	As, Cd, Hg, Pb
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
	Biological by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4101	Food by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4201	Non-Potable Waters	Se(IV), Se(VI), SeCN, SeMet
BAL-4300	Non-Potable Waters, Solid/Chemicals	Cr(VI)
SM 3500-Fe BAL-4500	Non-Potable Waters	Fe, Fe(II) (ISO Only)
SM2340B	Non-Potable Waters	Hardness
SM 2540G BAL-0501	Solids/Chemicals & Biological	% Dry Weight



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
<i>EV_MC3a_WS_LAEMP_EVO_2022-07-27_NP-NAL</i>	2208056-01	WS	Sample	07/27/2022	08/04/2022
<i>EV_MC3a_WS_LAEMP_EVO_2022-07-27_NP-NAL</i>	2208056-02	WS	Sample	07/27/2022	08/04/2022
<i>EV_MC3a_WS_LAEMP_EVO_2022-07-27_N</i>	2208056-03	WS	Sample	07/27/2022	08/04/2022

Batch Summary

Analyte	Lab Matrix	Method	Prepared	Analyzed	Batch	Sequence
DMS ₂ SeO	Water	SOP BAL-4201	08/04/2022	08/05/2022	B221733	S220813
MeSe(IV)	Water	SOP BAL-4201	08/04/2022	08/05/2022	B221733	S220813
MeSe(VI)	Water	SOP BAL-4201	08/04/2022	08/05/2022	B221733	S220813
Se	Water	EPA 1638 Mod	08/08/2022	08/10/2022	B221777	S220839
Se(IV)	Water	SOP BAL-4201	08/04/2022	08/05/2022	B221733	S220813
Se(VI)	Water	SOP BAL-4201	08/04/2022	08/05/2022	B221733	S220813
SeCN	Water	SOP BAL-4201	08/04/2022	08/05/2022	B221733	S220813
SeMet	Water	SOP BAL-4201	08/04/2022	08/05/2022	B221733	S220813
SeSO ₃	Water	SOP BAL-4201	08/04/2022	08/05/2022	B221733	S220813
Unk Se Sp	Water	SOP BAL-4201	08/04/2022	08/05/2022	B221733	S220813



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>EV_MC3a_WS_LAEMP_EVO_2022-07-27_NP-NAL</i>										
2208056-01	Se	WS	D	1.71		0.165	0.528	µg/L	B221777	S220839
<i>EV_MC3a_WS_LAEMP_EVO_2022-07-27_NP-NAL</i>										
2208056-02	Se	WS	TR	1.70		0.165	0.528	µg/L	B221777	S220839
<i>EV_MC3a_WS_LAEMP_EVO_2022-07-27_N</i>										
2208056-03	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208056-03	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208056-03	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208056-03	Se(IV)	WS	D	0.033	J	0.020	0.075	µg/L	B221733	S220813
2208056-03	Se(VI)	WS	D	1.49		0.010	0.055	µg/L	B221733	S220813
2208056-03	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221733	S220813
2208056-03	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208056-03	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221733	S220813
2208056-03	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221733	S220813



Accuracy & Precision Summary

Batch: B221733
Lab Matrix: Water
Method: SOP BAL-4201

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221733-BS1	Blank Spike, (2124033)						
	MeSe(IV)		5.095	5.937	µg/L	117% 75-125	
	Se(IV)		5.000	5.095	µg/L	102% 75-125	
	Se(VI)		5.000	4.844	µg/L	97% 75-125	
	SeCN		5.015	4.820	µg/L	96% 75-125	
	SeMet		4.932	5.138	µg/L	104% 75-125	
B221733-DUP3	Duplicate, (2208058-04)						
	DMSeO	0.061		0.063	µg/L		2% 25
	MeSe(IV)	0.052		0.052	µg/L		1% 25
	MeSe(VI)	ND		ND	µg/L		N/C 25
	Se(IV)	1.588		1.608	µg/L		1% 25
	Se(VI)	100.6		101.7	µg/L		1% 25
	SeCN	ND		ND	µg/L		N/C 25
	SeMet	ND		ND	µg/L		N/C 25
	SeSO3	ND		ND	µg/L		N/C 25
Unk Se Sp	ND		ND	µg/L		N/C 25	
B221733-MS3	Matrix Spike, (2208058-04)						
	Se(IV)	1.588	4.900	7.148	µg/L	113% 75-125	
	Se(VI)	100.6	5.100	110.3	µg/L	NR 75-125	
	SeCN	ND	1.962	2.041	µg/L	104% 75-125	
	SeMet	ND	1.977	2.149	µg/L	109% 75-125	
B221733-MSD3	Matrix Spike Duplicate, (2208058-04)						
	Se(IV)	1.588	4.900	7.222	µg/L	115% 75-125	1% 25
	Se(VI)	100.6	5.100	108.4	µg/L	NR 75-125	N/C 25
	SeCN	ND	1.962	2.090	µg/L	107% 75-125	2% 25
	SeMet	ND	1.977	2.258	µg/L	114% 75-125	5% 25



Accuracy & Precision Summary

Batch: B221777
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221777-BS1	Blank Spike, (2137005) Se		200.0	185.8	µg/L	93% 75-125	
B221777-BS2	Blank Spike, (2137005) Se		200.0	180.5	µg/L	90% 75-125	
B221777-BS3	Blank Spike, (2137005) Se		200.0	192.1	µg/L	96% 75-125	
B221777-BS4	Blank Spike, (2137005) Se		200.0	188.0	µg/L	94% 75-125	
B221777-SRM1	Reference Material (2214017, TMDA 51.5 Reference Standard - Bottle 9 - SRM) Se		14.30	13.36	µg/L	93% 75-125	
B221777-SRM2	Reference Material (2214017, TMDA 51.5 Reference Standard - Bottle 9 - SRM) Se		14.30	13.29	µg/L	93% 75-125	
B221777-SRM3	Reference Material (2214017, TMDA 51.5 Reference Standard - Bottle 9 - SRM) Se		14.30	12.81	µg/L	90% 75-125	
B221777-SRM4	Reference Material (2214017, TMDA 51.5 Reference Standard - Bottle 9 - SRM) Se		14.30	14.92	µg/L	104% 75-125	
B221777-DUP6	Duplicate, (2208052-06) Se	124.0		121.8	µg/L		2% 20
B221777-MS6	Matrix Spike, (2208052-06) Se	124.0	220.0	335.8	µg/L	96% 75-125	
B221777-MSD6	Matrix Spike Duplicate, (2208052-06) Se	124.0	220.0	341.1	µg/L	99% 75-125	2% 20



Method Blanks & Reporting Limits

Batch: B221733
Matrix: Water
Method: SOP BAL-4201
Analyte: DMSeO

Sample	Result	Units	
B221733-BLK1	0.00	µg/L	
B221733-BLK2	0.00	µg/L	
B221733-BLK3	0.00	µg/L	
B221733-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005

Analyte: MeSe(IV)

Sample	Result	Units	
B221733-BLK1	0.00	µg/L	
B221733-BLK2	0.00	µg/L	
B221733-BLK3	0.00	µg/L	
B221733-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005

Analyte: MeSe(VI)

Sample	Result	Units	
B221733-BLK1	0.00	µg/L	
B221733-BLK2	0.00	µg/L	
B221733-BLK3	0.00	µg/L	
B221733-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005



Method Blanks & Reporting Limits

Analyte: Se(IV)

Sample	Result	Units	
B221733-BLK1	0.00	µg/L	
B221733-BLK2	0.00	µg/L	
B221733-BLK3	0.00	µg/L	
B221733-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.004
Limit:	0.015		MRL: 0.015

Analyte: Se(VI)

Sample	Result	Units	
B221733-BLK1	0.00	µg/L	
B221733-BLK2	0.00	µg/L	
B221733-BLK3	0.00	µg/L	
B221733-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.011		MRL: 0.011

Analyte: SeCN

Sample	Result	Units	
B221733-BLK1	0.00	µg/L	
B221733-BLK2	0.00	µg/L	
B221733-BLK3	0.00	µg/L	
B221733-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.010		MRL: 0.010

Analyte: SeMet

Sample	Result	Units	
B221733-BLK1	0.00	µg/L	
B221733-BLK2	0.00	µg/L	
B221733-BLK3	0.00	µg/L	
B221733-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.005		MRL: 0.005



Method Blanks & Reporting Limits

Analyte: SeSO3

Sample	Result	Units	
B221733-BLK1	0.00	µg/L	
B221733-BLK2	0.00	µg/L	
B221733-BLK3	0.00	µg/L	
B221733-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.011		MRL: 0.011

Analyte: Unk Se Sp

Sample	Result	Units	
B221733-BLK1	0.00	µg/L	
B221733-BLK2	0.00	µg/L	
B221733-BLK3	0.00	µg/L	
B221733-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.015		MRL: 0.015



Method Blanks & Reporting Limits

Batch: B221777
Matrix: Water
Method: EPA 1638 Mod
Analyte: Se

Sample	Result	Units
B221777-BLK1	0.178	µg/L
B221777-BLK2	0.170	µg/L
B221777-BLK3	0.095	µg/L
B221777-BLK4	0.142	µg/L

Average: 0.146
Limit: 0.480

MDL: 0.150
MRL: 0.480



Sample Containers

Lab ID: 2208056-01			Report Matrix: WS			Collected: 07/27/2022		
Sample: EV_MC3a_WS_LAEMP_EVO_2022-07-27_NP-NAL			Sample Type: Sample + Sum			Received: 08/04/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 1 - 2208056	
Lab ID: 2208056-02			Report Matrix: WS			Collected: 07/27/2022		
Sample: EV_MC3a_WS_LAEMP_EVO_2022-07-27_NP-NAL			Sample Type: Sample + Sum			Received: 08/04/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 1 - 2208056	
Lab ID: 2208056-03			Report Matrix: WS			Collected: 07/27/2022		
Sample: EV_MC3a_WS_LAEMP_EVO_2022-07-27_N			Sample Type: Sample + Sum			Received: 08/04/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2208056	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2208056	
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 1 - 2208056	

Shipping Containers

Cooler 1 - 2208056

Received: August 4, 2022 7:00
Tracking No: PAPS#RWHV95301 via Courier
Coolant Type: Blue Ice
Temperature: 1.1 °C

Description: Cooler 1
Damaged in transit? No
Returned to client? No
Comments: IR #33

Custody seals present? No
Custody seals intact? No
COC present? Yes

COC ID:	EV_MC3a 2022_JULY_Brooks	TURNAROUND TIME:		RUSH:	
PROJECT/CLIENT INFO		LABORATORY		OTHER INFO	
Facility Name / Job#	Regional Effects Program	Lab Name	Brooks Applied Labs	Report Format / Distribution	Excel PDF EDD
Project Manager	Mike Pope	Lab Contact	Ben Wozniak	Email 1:	X X X
Email	Mike.Pope@teck.com	Email	Ben@brooksupplied.com	Email 2:	
Address	421 Pine Ave	Address	18804 North Creek Parkway	Email 3:	Teck Lab Results@teck.com X X X
City	Sparwood	City	Suite 100	Email 4:	AquaSciLab@teck.com X X X
Postal Code	V0B 2G0	Province	BC	Email 5:	lbrown@minnow.ca X X X
Country	Canada	Postal Code	98011	Email 6:	
Phone Number	250-425-8202	Country	United States	PO number	1/P000847032

SAMPLE DETAILS								ANALYSIS REQUESTED							
Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com p	# Of Cont.	Brooks_Se_Speciation	Brooks_Se_D	Brooks_Se_T					
EV_MC3a_WS_LAEMP_EVO_2022-07-27_NP-NAL	EV_MC3a	WS	N	7/27/2022	11:00	G	2		1	1					
EV_MC3a_WS_LAEMP_EVO_2022-07-27_N	EV_MC3a	WS	N	7/27/2022	11:00	G	1	1							

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
	Brianna Barnhart/Minnow Env.	July 28, 2022	ERL / BAL	8/4/22 7:00
SERVICE REQUEST (rush - subject to availability)	Sampler's Name	Mobile #	Sampler's Signature	Date/Time
Regular (default) <input checked="" type="checkbox"/> X Priority (2-3 business days) - 50% surcharge Emergency (1 Business Day) - 100% surcharge For Emergency <1 Day, ASAP or Weekend - Contact ALS	Brianna Barnhart	519-731-3821		July 28, 2022

Brooks WS

Confidential

STRAIGHT BILL OF LADING
NOT NEGOTIABLE

RW HOT SHOT SERVICE INC.

250-425-7447
24 Hour Hot Shot Service

BAL Final Report 2208056

No. 95302

Sparwood, BC
Terrace, BC
Red Deer, AB

Vancouver, BC
Calgary, AB
Montreal, QC

Prince George, BC
Edmonton, AB
Spokane, WA

Elkford, BC
Ft. McMurray, AB
Shelby, MT

Tumbler Ridge, BC
Hinton, AB
Gillette, WY

INVOICE TO		DATE	
BILL OF LADING #		PURCHASE ORDER NUMBER	
SHIPPER (FROM)		CONSIGNEE (TO)	
STREET		STREET	
CITY/PROVINCE	POSTAL CODE	CITY/PROVINCE	POSTAL CODE
SPECIAL INSTRUCTIONS		FREIGHT CHARGES	
PACKAGES	DESCRIPTION OF ARTICLES AND SPECIAL MARKS	WEIGHT (Subject to Correction)	SHIPPER TO CHECK
			<input type="checkbox"/> PREPAID <input type="checkbox"/> COLLECT
			If not indicated shipping will automatically move collect
			FEE
			WAITING
			XPU
			CHARGES
			FSC
			US
			SUB TOTAL
			GST
			TOTAL \$
			IF AT OWNER'S RISK, WRITE ORD HERE
UNIT #	DECLARED VALUATION: Maximum liability of carrier is \$2.00 per lb. (\$4.41 per kilogram) unless declared valuation states otherwise.	\$	
DRIVER'S SIGNATURE - PICK UP BY	PICK UP TIME	DRIVER'S SIGNATURE - DELIVERY BY	FINISH TIME
<small>NOTICE OF CLAIM: (a) No carrier is liable for loss, damage or delay of any goods under the Bill of Lading unless notice, therefore setting out particulars of origin, destination and date of shipment of the goods and the estimated amount claimed in respect of such loss, damage or delay is given in writing to the originating carrier or the delivering carrier within sixty (60) days after the delivery of the goods, or in the case of failure to make delivery within nine (9) months from the date of shipment. (b) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. RECEIVED at the point of origin on the date specified from the consignor mentioned herein, the property herein described in apparent good order, except as noted (contents and condition of contents of package unknown) packed, consigned and it is mutually agreed, as to each carrier of all or any of the goods over all or any portion of the route to destination, and as to each party of any time interested in all or any of the goods, that every service to be performed hereunder shall be subject to all the conditions standard Bill of Lading, in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. Printed or written, including conditions set aside by the standard Bill of Lading, in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. The Contract for the carriage of the goods listed in the Bill of Lading is governed by regulation in force in the jurisdiction at the time and place of shipment and is subject to the conditions set out in such conditions.</small>			
SHIPPER PRINT	CONSIGNEE PRINT	DATE	
SHIPPER SIGN	CONSIGNEE SIGN	TIME	
WHITE: Office	YELLOW: Carrier	PINK: Consignee	GOLDENROAD: Snipper
GST # 864540398RT0001			NUMBER OF PIECES RECEIVED ▲

PAPS# RWHV95301

Cooler ID: Cooler 2

COC (Y/N)

Temperature: 1, 1

IR: 33

Coolant Type: Ice Blue Ice Ambient

Notes:

Sampling Locations:

Sample Types:

Container Types:

Opened By: ERU

Date: 8/4/22

EV		F2							
T/D	SP	T/D	SP	T/D	SP	T/D	SP	T/D	SP
40 ml	125 ml	40 ml	125 ml						
Glass	Plastic	Glass	Plastic						

Effective 7/29/20



COPY



2208056

Revision 004



September 2, 2022

Teck Resources Limited - Vancouver
 Mike Pope
 421 Pine Avenue
 Sparwood, B.C. CANADA V0B2G0
mike.pope@teck.com

Re: Regional Effects Program

Dear Mike Pope,

On August 4, 2022, Brooks Applied Labs (BAL) received forty (40) aqueous samples. The samples were logged-in for total recoverable selenium [Se], dissolved Se [Se], and Se speciation analyses, according to the chain-of-custody (COC) forms.

Date/Time Collected values listed on the chain-of-custody (COC) form did not exactly match the corresponding **Date/Time Collected** values on the container labels. The discrepancies are described in the table below.

Date/Time Collected Discrepancies

Laboratory ID	Sample ID	Date/Time Collected (on COC form)	Date/Time Collected (on container label)
2208059-23	RG_MIDGA_WS_LAEMP_EVO_2022-07-26_N	07/25/2022 08:45	07/26/2022 08:45
2208059-25	RG_MICOMP_WS_LAEMP_EVO_2022-07-26_N	07/25/2022 07:00	07/26/2022 07:00
2208059-26	RG_RIVER_WS_LAEMP_EVO_2022-07-26_N	07/25/2022 08.15	07/26/2022 08.15

Per request, samples 2208059-23, 2208059-25, and 2208059-26 were logged in and reported using the **Date/Time Collected** values listed on the container labels (*column 4 in the table above*).

The Se speciation fraction 2208059-52 (*RG_ERCKUC_WS_LAEMP_EVO_2022-07-27_N*) was not filtered in the field. 2208059-52 was filtered (0.45 µm) by BAL staff upon receipt. The filtration took place beyond the (2-calander day) filtration holding time. Consequently, the Se speciation results for 2208059-52 are qualified (Z) for the filtration holding time violation. The remaining fractions logged in for Se speciation and dissolved Se were filtered (0.45 µm) within the (2-calander day) filtration holding time.

The sample fractions for total recoverable Se and dissolved Se were not preserved in the field. The samples were preserved (pH < 2) upon receipt at BAL. All sample fractions for total recoverable Se and dissolved Se were preserved within the (14 calendar day) preservation holding time.

The sample fractions logged in for Se speciation and dissolved Se had been field-filtered prior to receipt at BAL. All samples were stored according to BAL SOPs.

Total Recoverable Se and Dissolved Se

Each aqueous sample fraction for dissolved Se was digested in a closed vessel (bomb) with nitric and hydrochloric acids. The resulting digests were analyzed for Se content via inductively coupled plasma triple quadrupole mass spectrometry (ICP-QQQ-MS). The ICP-QQQ-MS instrumentation uses advanced interference removal techniques to ensure accuracy of the sample results. For more information, please visit the *Interference Reduction Technology* section on our website, brooksapplied.com.

Selenium Speciation

Each aqueous sample was analyzed for selenium speciation using ion chromatography inductively coupled plasma collision reaction cell mass spectrometry (IC-ICP-CRC-MS). Selenium species are chromatographically separated on an ion exchange column and then quantified using inductively coupled plasma collision reaction cell mass spectrometry (ICP-CRC-MS); for more information on this determinative technique, please visit the *Interference Reduction Technology* section on our website. The chromatographic method applied for the analyses provides greater retention of methylseleninic acid and selenomethionine, allowing for more definitive quantitation of these species.

In accordance with the quotation issued for this project, selenium speciation was defined as dissolved selenite [Se(IV)], selenate [Se(VI)], selenocyanate [SeCN], methylseleninic acid [MeSe(IV)], methaneselenonic acid [MeSe(VI)], selenomethionine [SeMet], selenosulfate [SeSO₃], and dimethylselenoxide [DMSeO]. Unknown Se species was defined as the total concentration of all unknown Se species observed during the analysis. This item is identified on the report as [Unk Se Sp].

DMSeO elutes early in the chromatographic run due to the nature of the molecule and the applied chromatographic separation method. Since this species elutes near the dead volume, additional selenium species may coelute. Alternate methods can be applied, upon client request, to increase the separation of DMSeO from potentially co-eluting selenium species.

The Se speciation results for 2208059-52 are qualified (**Z**) due to filtration beyond the (2-calendar day) filtration holding time.

Chromatographic interference, as indicated by an elevated baseline, or co-eluting peak, was observed for selenosulfate in 2208059-29 and 2208059-56. Due to potential bias, the affected data have been qualified as estimated (**J-1**). Upon client request, Brooks Applied Labs can apply a higher dilution to these samples to potentially mitigate the chromatographic interferences, but a higher dilution would elevate the detection limit for SeMet above the client's requested limit of 0.010µg/L.

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

In instances where a matrix spike/matrix spike duplicate (MS/MSD) set was spiked at a level less than the native sample concentration, the recoveries and the relative percent difference (RPD) are not considered valid indicators of data quality. In such instances, the recoveries of the laboratory fortified blanks (BS) and/or standard reference materials (SRM) demonstrate the accuracy of the applied methods. When the spiking level was less than 25% of the native sample concentration, the spike recovery was not reported (**NR**) and the relative percent difference (RPD) of the MS/MSD set was not calculated (**N/C**).

In cases when either the native sample concentration was non-detectable (reported as less than or equal to the MDL) and/or the corresponding DUP result was also non-detectable, the RPD between the two values was not calculated (**N/C**).

Except for concentration qualifiers and items noted above, all data were reported without qualification. All associated quality control sample results met the acceptance criteria.

BAL, an accredited laboratory, certifies that the reported results of all analyses for which BAL is NELAP accredited meet all NELAP requirements. For more information, please see the *Report Information* page.

Please feel free to contact us if you have any questions regarding this report.

Sincerely,



Jeremy Maute

Senior Project Manager

Jeremy@brooksapplied.com



Report Information

Laboratory Accreditation

BAL is accredited by the *National Environmental Laboratory Accreditation Program* (NELAP) through the State of Florida Department of Health, Bureau of Laboratories (E87982) and is certified to perform many environmental analyses. BAL is also certified by many other states to perform environmental analyses. For a current list of our accreditations/certifications, please visit our website at <http://www.brooksapplied.com/resources/certificates-permits/> or review Tables 1 and 2 in our Accreditation Information. Results reported relate only to the samples listed in the report.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

AR	as received	MS	matrix spike
BAL	Brooks Applied Labs	MSD	matrix spike duplicate
BLK	method blank	ND	non-detect
BS	blank spike	NR	non-reportable
CAL	calibration standard	N/C	not calculated
CCB	continuing calibration blank	PS	post preparation spike
CCV	continuing calibration verification	REC	percent recovery
COC	chain of custody record	RPD	relative percent difference
D	dissolved fraction	SCV	secondary calibration verification
DUP	duplicate	SOP	standard operating procedure
IBL	instrument blank	SRM	reference material
ICV	initial calibration verification	T	total fraction
MDL	method detection limit	TR	total recoverable fraction
MRL	method reporting limit		

Definition of Data Qualifiers

(Effective 3/23/2020)

E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Please see narrative for explanation.
J	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1	Estimated value. A full explanation is presented in the narrative.
M	Duplicate precision (RPD) was not within acceptance criteria. Please see narrative for explanation.
N	Spike recovery was not within acceptance criteria. Please see narrative for explanation.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.
Z	Holding time and/or preservation requirements not established for this method; however, BAL recommendations for holding time were not followed. Please see narrative for explanation.

These qualifiers are based on those previously utilized by Brooks Applied Labs, those found in the EPA SOW ILM03.0, Exhibit B, Section III, pg. B-18, and the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review; USEPA; January 2010. These supersede all previous qualifiers ever employed by BAL.



Accreditation Information

Table 1. Accredited method/matrix/analytes for TNI
Issued by: State of Florida Dept. of Health (The NELAC Institute 2016 Standard)
Issued on: July 1, 2021; Valid to: June 30, 2022
Certificate Number: E87982-37

Method	Matrix	TNI Accredited Analyte(s)
EPA 1638	Non-Potable Waters	Ag, Cd, Cu, Ni, Pb, Sb, Se, Ti, Zn
EPA 200.8	Non-Potable Waters	Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Sb, Se, Ti, U, V, Zn
EPA 6020	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Ti, U, V, Zn
	Solids/Chemicals & Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Ti, V, Zn
BAL-5000	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, U, V, Zn, Hardness
	Solids/Chemicals	Ag, As, B, Be, Cd, Co, Cr, Cu, Pb, Mo, Ni, Sb, Se, Sn, Sr, Ti, V, Zn
	Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Ti, V, Zn
EPA 1640	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn
EPA 1631E	Non-Potable Waters, Solids/Chemicals & Biological	Total Mercury
EPA 1630	Non-Potable Waters	Methyl Mercury
BAL-3200	Solids/Chemicals & Biological	Methyl Mercury
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
BAL-4201	Non-Potable Waters	Se(IV), Se(VI)
BAL-4300	Non-Potable Waters Solid/Chemicals	Cr(VI)
SM2340B	Non-Potable Waters	Hardness



Accreditation Information

**Table 2. Accredited method/matrix/analytes for ISO (1),
 Non-Governmental TNI (2)
 Issued by: ANAB
 Issued on: September 21, 2021; Valid to: March 30, 2024**

Method	Matrix	ISO and Non-Gov. TNI Accredited Analyte(s)
EPA 1638 Mod EPA 200.8 Mod EPA 6020 Mod	Non-Potable Waters	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, U, V, Zn
BAL-5000	Solids/Chemicals & Biological	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, V, Zn Hg (Biological Only)
EPA 1640 Mod	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn Ag, As, Cr, Co, Se, Ti, V (ISO Only)
EPA 1631E Mod BAL-3100	Non-Potable Waters, Solids/Chemicals & Biological/Food	Total Mercury
EPA 1630 Mod BAL-3200	Non-Potable Waters, Solids/Chemicals Biological	Methyl Mercury
EPA 1632A Mod BAL-3300	Non-Potable Waters Biological/Food Solids/Chemicals	Inorganic Arsenic (ISO Only) Inorganic Arsenic (ISO Only)
AOAC 2015.01 Mod BAL-5000	Food	As, Cd, Hg, Pb
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
	Biological by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4101	Food by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4201	Non-Potable Waters	Se(IV), Se(VI), SeCN, SeMet
BAL-4300	Non-Potable Waters, Solid/Chemicals	Cr(VI)
SM 3500-Fe BAL-4500	Non-Potable Waters	Fe, Fe(II) (ISO Only)
SM2340B	Non-Potable Waters	Hardness
SM 2540G BAL-0501	Solids/Chemicals & Biological	% Dry Weight



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
RG_GATEDP_WS_LAEMP_EVO_20 22-07-26_NP-NAL	2208059-01	WS	Sample	07/26/2022	08/04/2022
RG_GATEDP_WS_LAEMP_EVO_20 22-07-26_NP-NAL	2208059-02	WS	Sample	07/26/2022	08/04/2022
RG_GATE_WS_LAEMP_EVO_2022- 07-26_NP-NAL	2208059-03	WS	Sample	07/26/2022	08/04/2022
RG_GATE_WS_LAEMP_EVO_2022- 07-26_NP-NAL	2208059-04	WS	Sample	07/26/2022	08/04/2022
RG_MIDGA_WS_LAEMP_EVO_202 2-07-26_NP-NAL	2208059-05	WS	Sample	07/26/2022	08/04/2022
RG_MIDGA_WS_LAEMP_EVO_202 2-07-26_NP-NAL	2208059-06	WS	Sample	07/26/2022	08/04/2022
RG_MIDBO_WS_LAEMP_EVO_202 2-07-26_NP-NAL	2208059-07	WS	Sample	07/26/2022	08/04/2022
RG_MIDBO_WS_LAEMP_EVO_202 2-07-26_NP-NAL	2208059-08	WS	Sample	07/26/2022	08/04/2022
RG_MICOMP_WS_LAEMP_EVO_20 22-07-26_NP-NAL	2208059-09	WS	Sample	07/26/2022	08/04/2022
RG_MICOMP_WS_LAEMP_EVO_20 22-07-26_NP-NAL	2208059-10	WS	Sample	07/26/2022	08/04/2022
RG_RIVER_WS_LAEMP_EVO_2022 -07-26_NP-NAL	2208059-11	WS	Sample	07/26/2022	08/04/2022
RG_RIVER_WS_LAEMP_EVO_2022 -07-26_NP-NAL	2208059-12	WS	Sample	07/26/2022	08/04/2022
RG_BOCK_WS_LAEMP_EVO_2022 -07-26_NP-NAL	2208059-13	WS	Sample	07/26/2022	08/04/2022
RG_BOCK_WS_LAEMP_EVO_2022 -07-26_NP-NAL	2208059-14	WS	Sample	07/26/2022	08/04/2022
RG_BOCKRD_WS_LAEMP_EVO_2 022-07-26_NP-NAL	2208059-15	WS	Sample	07/26/2022	08/04/2022
RG_BOCKRD_WS_LAEMP_EVO_2 022-07-26_NP-NAL	2208059-16	WS	Sample	07/26/2022	08/04/2022
RG_ERCKUT_WS_LAEMP_EVO_20 22-07-26_NP-NAL	2208059-17	WS	Sample	07/26/2022	08/04/2022
RG_ERCKUT_WS_LAEMP_EVO_20 22-07-26_NP-NAL	2208059-18	WS	Sample	07/26/2022	08/04/2022
RG_ERCKMD_WS_LAEMP_EVO_2 022-07-26_NP-NAL	2208059-19	WS	Sample	07/26/2022	08/04/2022
RG_ERCKMD_WS_LAEMP_EVO_2 022-07-26_NP-NAL	2208059-20	WS	Sample	07/26/2022	08/04/2022
RG_GATEDP_WS_LAEMP_EVO_20 22-07-26_N	2208059-21	WS	Sample	07/25/2022	08/04/2022



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
RG_GATE_WS_LAEMP_EVO_2022-07-26_N	2208059-22	WS	Sample	07/25/2022	08/04/2022
RG_MIDGA_WS_LAEMP_EVO_2022-07-26_N	2208059-23	WS	Sample	07/26/2022	08/04/2022
RG_MIDBO_WS_LAEMP_EVO_2022-07-26_N	2208059-24	WS	Sample	07/25/2022	08/04/2022
RG_MICOMP_WS_LAEMP_EVO_2022-07-26_N	2208059-25	WS	Sample	07/26/2022	08/04/2022
RG_RIVER_WS_LAEMP_EVO_2022-07-26_N	2208059-26	WS	Sample	07/26/2022	08/04/2022
RG_BOCK_WS_LAEMP_EVO_2022-07-26_N	2208059-27	WS	Sample	07/25/2022	08/04/2022
RG_BOCKRD_WS_LAEMP_EVO_2022-07-26_N	2208059-28	WS	Sample	07/26/2022	08/04/2022
RG_ERCKUT_WS_LAEMP_EVO_2022-07-26_N	2208059-29	WS	Sample	07/26/2022	08/04/2022
RG_ERCKMD_WS_LAEMP_EVO_2022-07-26_N	2208059-30	WS	Sample	07/26/2022	08/04/2022
RG_ERCKDT_WS_LAEMP_EVO_2022-07-26_NP-NAL	2208059-31	WS	Sample	07/26/2022	08/04/2022
RG_ERCKDT_WS_LAEMP_EVO_2022-07-26_NP-NAL	2208059-32	WS	Sample	07/26/2022	08/04/2022
RG_ERCKUC_WS_LAEMP_EVO_2022-07-27_NP-NAL	2208059-33	WS	Sample	07/27/2022	08/04/2022
RG_ERCKUC_WS_LAEMP_EVO_2022-07-27_NP-NAL	2208059-34	WS	Sample	07/27/2022	08/04/2022
RG_ERCK_WS_LAEMP_EVO_2022-07-27_NP-NAL	2208059-35	WS	Sample	07/27/2022	08/04/2022
RG_ERCK_WS_LAEMP_EVO_2022-07-27_NP-NAL	2208059-36	WS	Sample	07/27/2022	08/04/2022
RG_MI3_WS_LAEMP_EVO_2022-07-27_NP-NAL	2208059-37	WS	Sample	07/27/2022	08/04/2022
RG_MI3_WS_LAEMP_EVO_2022-07-27_NP-NAL	2208059-38	WS	Sample	07/27/2022	08/04/2022
RG_MIDER_WS_LAEMP_EVO_2022-07-27_NP-NAL	2208059-39	WS	Sample	07/27/2022	08/04/2022
RG_MIDER_WS_LAEMP_EVO_2022-07-27_NP-NAL	2208059-40	WS	Sample	07/27/2022	08/04/2022
RG_RIVER_WS_LAEMP_EVO_2022-07-27_NP-NAL	2208059-41	WS	Sample	07/27/2022	08/04/2022
RG_RIVER_WS_LAEMP_EVO_2022-07-27_NP-NAL	2208059-42	WS	Sample	07/27/2022	08/04/2022



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
RG_MI25_WS_LAEMP_EVO_2022-07-27_NP-NAL	2208059-43	WS	Sample	07/27/2022	08/04/2022
RG_MI25_WS_LAEMP_EVO_2022-07-27_NP-NAL	2208059-44	WS	Sample	07/27/2022	08/04/2022
RG_ALUSM_WS_LAEMP_EVO_2022-07-27_NP-NAL	2208059-45	WS	Sample	07/27/2022	08/04/2022
RG_ALUSM_WS_LAEMP_EVO_2022-07-27_NP-NAL	2208059-46	WS	Sample	07/27/2022	08/04/2022
RG_FBLANK_WS_LAEMP_EVO_2022-07-27_NP-NAL	2208059-47	WS	Sample	07/27/2022	08/04/2022
RG_FBLANK_WS_LAEMP_EVO_2022-07-27_NP-NAL	2208059-48	WS	Sample	07/27/2022	08/04/2022
RG_FBLANK_WS_LAEMP_EVO_2022-07-27_NP-NAL	2208059-49	WS	Sample	07/27/2022	08/04/2022
RG_FBLANK_WS_LAEMP_EVO_2022-07-27_NP-NAL	2208059-50	WS	Sample	07/27/2022	08/04/2022
RG_ERCKDT_WS_LAEMP_EVO_2022-07-26_N	2208059-51	WS	Sample	07/26/2022	08/04/2022
RG_ERCKUC_WS_LAEMP_EVO_2022-07-27_N	2208059-52	WS	Sample	07/27/2022	08/04/2022
RG_ERCK_WS_LAEMP_EVO_2022-07-27_N	2208059-53	WS	Sample	07/27/2022	08/04/2022
RG_MI3_WS_LAEMP_EVO_2022-07-27_N	2208059-54	WS	Sample	07/27/2022	08/04/2022
RG_MIDER_WS_LAEMP_EVO_2022-07-27_N	2208059-55	WS	Sample	07/27/2022	08/04/2022
RG_RIVER_WS_LAEMP_EVO_2022-07-27_N	2208059-56	WS	Sample	07/27/2022	08/04/2022
RG_MI25_WS_LAEMP_EVO_2022-07-27_N	2208059-57	WS	Sample	07/27/2022	08/04/2022
RG_ALUSM_WS_LAEMP_EVO_2022-07-27_N	2208059-58	WS	Sample	07/27/2022	08/04/2022
RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N	2208059-59	WS	Sample	07/27/2022	08/04/2022
RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N	2208059-60	WS	Sample	07/27/2022	08/04/2022



Batch Summary

Analyte	Lab Matrix	Method	Prepared	Analyzed	Batch	Sequence
DMS ₂ SeO	Water	SOP BAL-4201	08/04/2022	08/05/2022	B221733	S220813
MeSe(IV)	Water	SOP BAL-4201	08/04/2022	08/05/2022	B221733	S220813
MeSe(VI)	Water	SOP BAL-4201	08/04/2022	08/05/2022	B221733	S220813
Se	Water	EPA 1638 Mod	08/08/2022	08/10/2022	B221777	S220839
Se	Water	EPA 1638 Mod	08/09/2022	08/11/2022	B221794	S220839
Se(IV)	Water	SOP BAL-4201	08/04/2022	08/05/2022	B221733	S220813
Se(VI)	Water	SOP BAL-4201	08/04/2022	08/05/2022	B221733	S220813
SeCN	Water	SOP BAL-4201	08/04/2022	08/05/2022	B221733	S220813
SeMet	Water	SOP BAL-4201	08/04/2022	08/05/2022	B221733	S220813
SeSO ₃	Water	SOP BAL-4201	08/04/2022	08/05/2022	B221733	S220813
Unk Se Sp	Water	SOP BAL-4201	08/04/2022	08/05/2022	B221733	S220813



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_GATEDP_WS_LAEMP_EVO_2022-07-26_NP-NAL</i>										
2208059-01	Se	WS	D	69.4		0.165	0.528	µg/L	B221777	S220839
<i>RG_GATEDP_WS_LAEMP_EVO_2022-07-26_NP-NAL</i>										
2208059-02	Se	WS	TR	70.7		0.165	0.528	µg/L	B221777	S220839
<i>RG_GATE_WS_LAEMP_EVO_2022-07-26_NP-NAL</i>										
2208059-03	Se	WS	D	75.5		0.165	0.528	µg/L	B221777	S220839
<i>RG_GATE_WS_LAEMP_EVO_2022-07-26_NP-NAL</i>										
2208059-04	Se	WS	TR	73.3		0.165	0.528	µg/L	B221777	S220839
<i>RG_MIDGA_WS_LAEMP_EVO_2022-07-26_NP-NAL</i>										
2208059-05	Se	WS	D	24.6		0.165	0.528	µg/L	B221777	S220839
<i>RG_MIDGA_WS_LAEMP_EVO_2022-07-26_NP-NAL</i>										
2208059-06	Se	WS	TR	25.0		0.165	0.528	µg/L	B221777	S220839
<i>RG_MIDBO_WS_LAEMP_EVO_2022-07-26_NP-NAL</i>										
2208059-07	Se	WS	D	10.1		0.165	0.528	µg/L	B221777	S220839
<i>RG_MIDBO_WS_LAEMP_EVO_2022-07-26_NP-NAL</i>										
2208059-08	Se	WS	TR	10.1		0.165	0.528	µg/L	B221777	S220839
<i>RG_MICOMP_WS_LAEMP_EVO_2022-07-26_NP-NAL</i>										
2208059-09	Se	WS	D	9.91		0.165	0.528	µg/L	B221777	S220839
<i>RG_MICOMP_WS_LAEMP_EVO_2022-07-26_NP-NAL</i>										
2208059-10	Se	WS	TR	10.1		0.165	0.528	µg/L	B221777	S220839
<i>RG_RIVER_WS_LAEMP_EVO_2022-07-26_NP-NAL</i>										
2208059-11	Se	WS	D	9.74		0.165	0.528	µg/L	B221777	S220839
<i>RG_RIVER_WS_LAEMP_EVO_2022-07-26_NP-NAL</i>										
2208059-12	Se	WS	TR	10.1		0.165	0.528	µg/L	B221777	S220839



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_BOCK_WS_LAEMP_EVO_2022-07-26_NP-NAL										
2208059-13	Se	WS	D	53.2		0.165	0.528	µg/L	B221777	S220839
RG_BOCK_WS_LAEMP_EVO_2022-07-26_NP-NAL										
2208059-14	Se	WS	TR	51.7		0.165	0.528	µg/L	B221777	S220839
RG_BOCKRD_WS_LAEMP_EVO_2022-07-26_NP-NAL										
2208059-15	Se	WS	D	58.9		0.165	0.528	µg/L	B221777	S220839
RG_BOCKRD_WS_LAEMP_EVO_2022-07-26_NP-NAL										
2208059-16	Se	WS	TR	63.4		0.165	0.528	µg/L	B221777	S220839
RG_ERCKUT_WS_LAEMP_EVO_2022-07-26_NP-NAL										
2208059-17	Se	WS	D	139		0.165	0.528	µg/L	B221777	S220839
RG_ERCKUT_WS_LAEMP_EVO_2022-07-26_NP-NAL										
2208059-18	Se	WS	TR	140		0.165	0.528	µg/L	B221777	S220839
RG_ERCKMD_WS_LAEMP_EVO_2022-07-26_NP-NAL										
2208059-19	Se	WS	D	143		0.165	0.528	µg/L	B221777	S220839
RG_ERCKMD_WS_LAEMP_EVO_2022-07-26_NP-NAL										
2208059-20	Se	WS	TR	135		0.165	0.528	µg/L	B221777	S220839
RG_GATEDP_WS_LAEMP_EVO_2022-07-26_N										
2208059-21	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-21	MeSe(IV)	WS	D	0.044		0.010	0.025	µg/L	B221733	S220813
2208059-21	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-21	Se(IV)	WS	D	0.711		0.020	0.075	µg/L	B221733	S220813
2208059-21	Se(VI)	WS	D	75.9		0.010	0.055	µg/L	B221733	S220813
2208059-21	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221733	S220813
2208059-21	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-21	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221733	S220813
2208059-21	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221733	S220813



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_GATE_WS_LAEMP_EVO_2022-07-26_N										
2208059-22	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-22	MeSe(IV)	WS	D	0.032		0.010	0.025	µg/L	B221733	S220813
2208059-22	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-22	Se(IV)	WS	D	0.731		0.020	0.075	µg/L	B221733	S220813
2208059-22	Se(VI)	WS	D	80.2		0.010	0.055	µg/L	B221733	S220813
2208059-22	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221733	S220813
2208059-22	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-22	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221733	S220813
2208059-22	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221733	S220813
RG_MIDGA_WS_LAEMP_EVO_2022-07-26_N										
2208059-23	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-23	MeSe(IV)	WS	D	0.014	J	0.010	0.025	µg/L	B221733	S220813
2208059-23	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-23	Se(IV)	WS	D	0.220		0.020	0.075	µg/L	B221733	S220813
2208059-23	Se(VI)	WS	D	26.3		0.010	0.055	µg/L	B221733	S220813
2208059-23	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221733	S220813
2208059-23	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-23	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221733	S220813
2208059-23	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221733	S220813
RG_MIDBO_WS_LAEMP_EVO_2022-07-26_N										
2208059-24	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-24	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-24	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-24	Se(IV)	WS	D	0.058	J	0.020	0.075	µg/L	B221733	S220813
2208059-24	Se(VI)	WS	D	10.6		0.010	0.055	µg/L	B221733	S220813
2208059-24	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221733	S220813
2208059-24	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-24	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221733	S220813
2208059-24	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221733	S220813



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_MICOMP_WS_LAEMP_EVO_2022-07-26_N										
2208059-25	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-25	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-25	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-25	Se(IV)	WS	D	0.057	J	0.020	0.075	µg/L	B221733	S220813
2208059-25	Se(VI)	WS	D	11.0		0.010	0.055	µg/L	B221733	S220813
2208059-25	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221733	S220813
2208059-25	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-25	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221733	S220813
2208059-25	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221733	S220813
RG_RIVER_WS_LAEMP_EVO_2022-07-26_N										
2208059-26	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-26	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-26	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-26	Se(IV)	WS	D	0.065	J	0.020	0.075	µg/L	B221733	S220813
2208059-26	Se(VI)	WS	D	10.9		0.010	0.055	µg/L	B221733	S220813
2208059-26	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221733	S220813
2208059-26	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-26	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221733	S220813
2208059-26	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221733	S220813
RG_BOCK_WS_LAEMP_EVO_2022-07-26_N										
2208059-27	DMS ₂ O	WS	D	0.150		0.010	0.025	µg/L	B221733	S220813
2208059-27	MeSe(IV)	WS	D	0.083		0.010	0.025	µg/L	B221733	S220813
2208059-27	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-27	Se(IV)	WS	D	2.06		0.020	0.075	µg/L	B221733	S220813
2208059-27	Se(VI)	WS	D	57.3		0.010	0.055	µg/L	B221733	S220813
2208059-27	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221733	S220813
2208059-27	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-27	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221733	S220813
2208059-27	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221733	S220813



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_BOCKRD_WS_LAEMP_EVO_2022-07-26_N										
2208059-28	DMSeO	WS	D	0.011	J	0.010	0.025	µg/L	B221733	S220813
2208059-28	MeSe(IV)	WS	D	0.020	J	0.010	0.025	µg/L	B221733	S220813
2208059-28	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-28	Se(IV)	WS	D	0.613		0.020	0.075	µg/L	B221733	S220813
2208059-28	Se(VI)	WS	D	65.4		0.010	0.055	µg/L	B221733	S220813
2208059-28	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221733	S220813
2208059-28	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-28	SeSO3	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221733	S220813
2208059-28	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221733	S220813
RG_ERCKUT_WS_LAEMP_EVO_2022-07-26_N										
2208059-29	DMSeO	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-29	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-29	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-29	Se(IV)	WS	D	≤ 0.020	U	0.020	0.075	µg/L	B221733	S220813
2208059-29	Se(VI)	WS	D	151		0.010	0.055	µg/L	B221733	S220813
2208059-29	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221733	S220813
2208059-29	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-29	SeSO3	WS	D	≤ 0.010	J-1 U	0.010	0.055	µg/L	B221733	S220813
2208059-29	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221733	S220813
RG_ERCKMD_WS_LAEMP_EVO_2022-07-26_N										
2208059-30	DMSeO	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-30	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-30	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-30	Se(IV)	WS	D	0.087		0.020	0.075	µg/L	B221733	S220813
2208059-30	Se(VI)	WS	D	152		0.010	0.055	µg/L	B221733	S220813
2208059-30	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221733	S220813
2208059-30	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-30	SeSO3	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221733	S220813
2208059-30	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221733	S220813
RG_ERCKDT_WS_LAEMP_EVO_2022-07-26_NP-NAL										
2208059-31	Se	WS	D	145		0.165	0.528	µg/L	B221794	S220839
RG_ERCKDT_WS_LAEMP_EVO_2022-07-26_NP-NAL										
2208059-32	Se	WS	TR	146		0.165	0.528	µg/L	B221794	S220839



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKUC_WS_LAEMP_EVO_2022-07-27_NP-NAL</i>										
2208059-33	Se	WS	D	146		0.165	0.528	µg/L	B221794	S220839
<i>RG_ERCKUC_WS_LAEMP_EVO_2022-07-27_NP-NAL</i>										
2208059-34	Se	WS	TR	146		0.165	0.528	µg/L	B221794	S220839
<i>RG_ERCK_WS_LAEMP_EVO_2022-07-27_NP-NAL</i>										
2208059-35	Se	WS	D	139		0.165	0.528	µg/L	B221794	S220839
<i>RG_ERCK_WS_LAEMP_EVO_2022-07-27_NP-NAL</i>										
2208059-36	Se	WS	TR	139		0.165	0.528	µg/L	B221794	S220839
<i>RG_MI3_WS_LAEMP_EVO_2022-07-27_NP-NAL</i>										
2208059-37	Se	WS	D	1.12		0.165	0.528	µg/L	B221794	S220839
<i>RG_MI3_WS_LAEMP_EVO_2022-07-27_NP-NAL</i>										
2208059-38	Se	WS	TR	1.11		0.165	0.528	µg/L	B221794	S220839
<i>RG_MIDER_WS_LAEMP_EVO_2022-07-27_NP-NAL</i>										
2208059-39	Se	WS	D	1.68		0.165	0.528	µg/L	B221794	S220839
<i>RG_MIDER_WS_LAEMP_EVO_2022-07-27_NP-NAL</i>										
2208059-40	Se	WS	TR	1.61		0.165	0.528	µg/L	B221794	S220839
<i>RG_RIVER_WS_LAEMP_EVO_2022-07-27_NP-NAL</i>										
2208059-41	Se	WS	D	147		0.165	0.528	µg/L	B221794	S220839
<i>RG_RIVER_WS_LAEMP_EVO_2022-07-27_NP-NAL</i>										
2208059-42	Se	WS	TR	141		0.165	0.528	µg/L	B221794	S220839
<i>RG_MI25_WS_LAEMP_EVO_2022-07-27_NP-NAL</i>										
2208059-43	Se	WS	D	0.624		0.165	0.528	µg/L	B221794	S220839
<i>RG_MI25_WS_LAEMP_EVO_2022-07-27_NP-NAL</i>										
2208059-44	Se	WS	TR	0.570		0.165	0.528	µg/L	B221794	S220839



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ALUSM_WS_LAEMP_EVO_2022-07-27_NP-NAL										
2208059-45	Se	WS	D	0.734		0.165	0.528	µg/L	B221794	S220839
RG_ALUSM_WS_LAEMP_EVO_2022-07-27_NP-NAL										
2208059-46	Se	WS	TR	0.741		0.165	0.528	µg/L	B221794	S220839
RG_FBLANK_WS_LAEMP_EVO_2022-07-27_NP-NAL										
2208059-47	Se	WS	D	0.203	J	0.165	0.528	µg/L	B221794	S220839
RG_FBLANK_WS_LAEMP_EVO_2022-07-27_NP-NAL										
2208059-48	Se	WS	TR	0.209	J	0.165	0.528	µg/L	B221794	S220839
RG_FBLANK_WS_LAEMP_EVO_2022-07-27_NP-NAL										
2208059-49	Se	WS	D	0.230	J	0.165	0.528	µg/L	B221794	S220839
RG_FBLANK_WS_LAEMP_EVO_2022-07-27_NP-NAL										
2208059-50	Se	WS	TR	0.216	J	0.165	0.528	µg/L	B221794	S220839
RG_ERCKDT_WS_LAEMP_EVO_2022-07-26_N										
2208059-51	DMSeO	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-51	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-51	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-51	Se(IV)	WS	D	0.035	J	0.020	0.075	µg/L	B221733	S220813
2208059-51	Se(VI)	WS	D	156		0.010	0.055	µg/L	B221733	S220813
2208059-51	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221733	S220813
2208059-51	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-51	SeSO3	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221733	S220813
2208059-51	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221733	S220813
RG_ERCKUC_WS_LAEMP_EVO_2022-07-27_N										
2208059-52	DMSeO	WS	D	≤ 0.010	Z U	0.010	0.025	µg/L	B221733	S220813
2208059-52	MeSe(IV)	WS	D	≤ 0.010	Z U	0.010	0.025	µg/L	B221733	S220813
2208059-52	MeSe(VI)	WS	D	≤ 0.010	Z U	0.010	0.025	µg/L	B221733	S220813
2208059-52	Se(IV)	WS	D	0.199	Z	0.020	0.075	µg/L	B221733	S220813
2208059-52	Se(VI)	WS	D	153	Z	0.010	0.055	µg/L	B221733	S220813
2208059-52	SeCN	WS	D	≤ 0.010	Z U	0.010	0.050	µg/L	B221733	S220813
2208059-52	SeMet	WS	D	≤ 0.010	Z U	0.010	0.025	µg/L	B221733	S220813
2208059-52	SeSO3	WS	D	≤ 0.010	Z U	0.010	0.055	µg/L	B221733	S220813
2208059-52	Unk Se Sp	WS	D	≤ 0.010	Z U	0.010	0.075	µg/L	B221733	S220813



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCK_WS_LAEMP_EVO_2022-07-27_N</i>										
2208059-53	DMSeO	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-53	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-53	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-53	Se(IV)	WS	D	0.205		0.020	0.075	µg/L	B221733	S220813
2208059-53	Se(VI)	WS	D	153		0.010	0.055	µg/L	B221733	S220813
2208059-53	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221733	S220813
2208059-53	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-53	SeSO3	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221733	S220813
2208059-53	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221733	S220813
<i>RG_MI3_WS_LAEMP_EVO_2022-07-27_N</i>										
2208059-54	DMSeO	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-54	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-54	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-54	Se(IV)	WS	D	0.026	J	0.020	0.075	µg/L	B221733	S220813
2208059-54	Se(VI)	WS	D	0.915		0.010	0.055	µg/L	B221733	S220813
2208059-54	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221733	S220813
2208059-54	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-54	SeSO3	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221733	S220813
2208059-54	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221733	S220813
<i>RG_MIDER_WS_LAEMP_EVO_2022-07-27_N</i>										
2208059-55	DMSeO	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-55	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-55	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-55	Se(IV)	WS	D	0.044	J	0.020	0.075	µg/L	B221733	S220813
2208059-55	Se(VI)	WS	D	1.44		0.010	0.055	µg/L	B221733	S220813
2208059-55	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221733	S220813
2208059-55	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-55	SeSO3	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221733	S220813
2208059-55	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221733	S220813



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_RIVER_WS_LAEMP_EVO_2022-07-27_N										
2208059-56	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-56	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-56	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-56	Se(IV)	WS	D	0.198		0.020	0.075	µg/L	B221733	S220813
2208059-56	Se(VI)	WS	D	156		0.010	0.055	µg/L	B221733	S220813
2208059-56	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221733	S220813
2208059-56	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-56	SeSO ₃	WS	D	≤ 0.010	J-1 U	0.010	0.055	µg/L	B221733	S220813
2208059-56	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221733	S220813
RG_MI25_WS_LAEMP_EVO_2022-07-27_N										
2208059-57	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-57	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-57	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-57	Se(IV)	WS	D	≤ 0.020	U	0.020	0.075	µg/L	B221733	S220813
2208059-57	Se(VI)	WS	D	0.182		0.010	0.055	µg/L	B221733	S220813
2208059-57	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221733	S220813
2208059-57	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-57	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221733	S220813
2208059-57	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221733	S220813
RG_ALUSM_WS_LAEMP_EVO_2022-07-27_N										
2208059-58	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-58	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-58	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-58	Se(IV)	WS	D	≤ 0.020	U	0.020	0.075	µg/L	B221733	S220813
2208059-58	Se(VI)	WS	D	0.497		0.010	0.055	µg/L	B221733	S220813
2208059-58	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221733	S220813
2208059-58	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-58	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221733	S220813
2208059-58	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221733	S220813



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N</i>										
2208059-59	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-59	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-59	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-59	Se(IV)	WS	D	≤ 0.020	U	0.020	0.075	µg/L	B221733	S220813
2208059-59	Se(VI)	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221733	S220813
2208059-59	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221733	S220813
2208059-59	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-59	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221733	S220813
2208059-59	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221733	S220813
<i>RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N</i>										
2208059-60	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-60	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-60	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-60	Se(IV)	WS	D	≤ 0.020	U	0.020	0.075	µg/L	B221733	S220813
2208059-60	Se(VI)	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221733	S220813
2208059-60	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B221733	S220813
2208059-60	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B221733	S220813
2208059-60	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B221733	S220813
2208059-60	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B221733	S220813



Accuracy & Precision Summary

Batch: B221733
Lab Matrix: Water
Method: SOP BAL-4201

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221733-BS1	Blank Spike, (2124033)						
	MeSe(IV)		5.095	5.937	µg/L	117% 75-125	
	Se(IV)		5.000	5.095	µg/L	102% 75-125	
	Se(VI)		5.000	4.844	µg/L	97% 75-125	
	SeCN		5.015	4.820	µg/L	96% 75-125	
	SeMet		4.932	5.138	µg/L	104% 75-125	
B221733-DUP3	Duplicate, (2208058-04)						
	DMSeO	0.061		0.063	µg/L		2% 25
	MeSe(IV)	0.052		0.052	µg/L		1% 25
	MeSe(VI)	ND		ND	µg/L		N/C 25
	Se(IV)	1.588		1.608	µg/L		1% 25
	Se(VI)	100.6		101.7	µg/L		1% 25
	SeCN	ND		ND	µg/L		N/C 25
	SeMet	ND		ND	µg/L		N/C 25
	SeSO3	ND		ND	µg/L		N/C 25
	Unk Se Sp	ND		ND	µg/L		N/C 25
B221733-MS3	Matrix Spike, (2208058-04)						
	Se(IV)	1.588	4.900	7.148	µg/L	113% 75-125	
	Se(VI)	100.6	5.100	110.3	µg/L	NR 75-125	
	SeCN	ND	1.962	2.041	µg/L	104% 75-125	
	SeMet	ND	1.977	2.149	µg/L	109% 75-125	
B221733-MSD3	Matrix Spike Duplicate, (2208058-04)						
	Se(IV)	1.588	4.900	7.222	µg/L	115% 75-125	1% 25
	Se(VI)	100.6	5.100	108.4	µg/L	NR 75-125	N/C 25
	SeCN	ND	1.962	2.090	µg/L	107% 75-125	2% 25
	SeMet	ND	1.977	2.258	µg/L	114% 75-125	5% 25



Accuracy & Precision Summary

Batch: B221733
Lab Matrix: Water
Method: SOP BAL-4201

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221733-DUP2	Duplicate, (2208059-26)						
	DMS ₂ SeO	ND		ND	µg/L		N/C 25
	MeSe(IV)	ND		ND	µg/L		N/C 25
	MeSe(VI)	ND		ND	µg/L		N/C 25
	Se(IV)	0.065		0.059	µg/L		9% 25
	Se(VI)	10.93		10.72	µg/L		2% 25
	SeCN	ND		ND	µg/L		N/C 25
	SeMet	ND		ND	µg/L		N/C 25
	SeSO ₃	ND		ND	µg/L		N/C 25
Unk Se Sp	ND		ND	µg/L		N/C 25	
B221733-MS2	Matrix Spike, (2208059-26)						
	Se(IV)	0.065	4.900	5.441	µg/L	110% 75-125	
	Se(VI)	10.93	5.100	16.21	µg/L	104% 75-125	
	SeCN	ND	1.962	2.029	µg/L	103% 75-125	
	SeMet	ND	1.977	2.086	µg/L	106% 75-125	
B221733-MSD2	Matrix Spike Duplicate, (2208059-26)						
	Se(IV)	0.065	4.900	5.506	µg/L	111% 75-125	1% 25
	Se(VI)	10.93	5.100	16.36	µg/L	107% 75-125	0.9% 25
	SeCN	ND	1.962	2.007	µg/L	102% 75-125	1% 25
	SeMet	ND	1.977	2.190	µg/L	111% 75-125	5% 25



Accuracy & Precision Summary

Batch: B221777
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221777-BS1	Blank Spike, (2137005) Se		200.0	185.8	µg/L	93% 75-125	
B221777-BS2	Blank Spike, (2137005) Se		200.0	180.5	µg/L	90% 75-125	
B221777-BS3	Blank Spike, (2137005) Se		200.0	192.1	µg/L	96% 75-125	
B221777-BS4	Blank Spike, (2137005) Se		200.0	188.0	µg/L	94% 75-125	
B221777-SRM1	Reference Material (2214017, TMDA 51.5 Reference Standard - Bottle 9 - SRM) Se		14.30	13.36	µg/L	93% 75-125	
B221777-SRM2	Reference Material (2214017, TMDA 51.5 Reference Standard - Bottle 9 - SRM) Se		14.30	13.29	µg/L	93% 75-125	
B221777-SRM3	Reference Material (2214017, TMDA 51.5 Reference Standard - Bottle 9 - SRM) Se		14.30	12.81	µg/L	90% 75-125	
B221777-SRM4	Reference Material (2214017, TMDA 51.5 Reference Standard - Bottle 9 - SRM) Se		14.30	14.92	µg/L	104% 75-125	
B221777-DUP7	Duplicate, (2208058-03) Se	131.9		128.7	µg/L		2% 20
B221777-MS7	Matrix Spike, (2208058-03) Se	131.9	220.0	350.3	µg/L	99% 75-125	
B221777-MSD7	Matrix Spike Duplicate, (2208058-03) Se	131.9	220.0	356.1	µg/L	102% 75-125	2% 20



Accuracy & Precision Summary

Batch: B221777
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221777-DUP8	Duplicate, (2208059-08) Se	10.08		9.516	µg/L		6% 20
B221777-MS8	Matrix Spike, (2208059-08) Se	10.08	220.0	211.5	µg/L	92% 75-125	
B221777-MSD8	Matrix Spike Duplicate, (2208059-08) Se	10.08	220.0	219.1	µg/L	95% 75-125	4% 20



Accuracy & Precision Summary

Batch: B221794
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221794-BS1	Blank Spike, (2137005) Se		200.0	195.2	µg/L	98% 75-125	
B221794-BS2	Blank Spike, (2152010) Se		1000	977.0	µg/L	98% 75-125	
B221794-BS3	Blank Spike, (2137005) Se		200.0	195.6	µg/L	98% 75-125	
B221794-BS4	Blank Spike, (2137005) Se		200.0	200.9	µg/L	100% 75-125	
B221794-BS5	Blank Spike, (2137005) Se		200.0	194.6	µg/L	97% 75-125	
B221794-SRM1	Reference Material (2214017, TMDA 51.5 Reference Standard - Bottle 9 - SRM) Se		14.30	13.69	µg/L	96% 75-125	
B221794-SRM2	Reference Material (2214017, TMDA 51.5 Reference Standard - Bottle 9 - SRM) Se		14.30	13.42	µg/L	94% 75-125	
B221794-SRM3	Reference Material (2214017, TMDA 51.5 Reference Standard - Bottle 9 - SRM) Se		14.30	13.40	µg/L	94% 75-125	
B221794-SRM4	Reference Material (2214017, TMDA 51.5 Reference Standard - Bottle 9 - SRM) Se		14.30	14.41	µg/L	101% 75-125	
B221794-SRM5	Reference Material (2214017, TMDA 51.5 Reference Standard - Bottle 9 - SRM) Se		14.30	13.80	µg/L	97% 75-125	
B221794-DUP1	Duplicate, (2208059-32) Se	146.1		142.7	µg/L		2% 20



Accuracy & Precision Summary

Batch: B221794
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221794-MS1	Matrix Spike, (2208059-32) Se	146.1	220.0	354.5	µg/L	95% 75-125	
B221794-MSD1	Matrix Spike Duplicate, (2208059-32) Se	146.1	220.0	357.7	µg/L	96% 75-125	0.9% 20
B221794-DUP2	Duplicate, (2208059-42) Se	140.9		139.4	µg/L		1% 20
B221794-MS2	Matrix Spike, (2208059-42) Se	140.9	220.0	354.1	µg/L	97% 75-125	
B221794-MSD2	Matrix Spike Duplicate, (2208059-42) Se	140.9	220.0	351.6	µg/L	96% 75-125	0.7% 20



Method Blanks & Reporting Limits

Batch: B221733
Matrix: Water
Method: SOP BAL-4201
Analyte: DMSeO

Sample	Result	Units	
B221733-BLK1	0.00	µg/L	
B221733-BLK2	0.00	µg/L	
B221733-BLK3	0.00	µg/L	
B221733-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005

Analyte: MeSe(IV)

Sample	Result	Units	
B221733-BLK1	0.00	µg/L	
B221733-BLK2	0.00	µg/L	
B221733-BLK3	0.00	µg/L	
B221733-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005

Analyte: MeSe(VI)

Sample	Result	Units	
B221733-BLK1	0.00	µg/L	
B221733-BLK2	0.00	µg/L	
B221733-BLK3	0.00	µg/L	
B221733-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005



Method Blanks & Reporting Limits

Analyte: Se(IV)

Sample	Result	Units	
B221733-BLK1	0.00	µg/L	
B221733-BLK2	0.00	µg/L	
B221733-BLK3	0.00	µg/L	
B221733-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.004
Limit:	0.015		MRL: 0.015

Analyte: Se(VI)

Sample	Result	Units	
B221733-BLK1	0.00	µg/L	
B221733-BLK2	0.00	µg/L	
B221733-BLK3	0.00	µg/L	
B221733-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.011		MRL: 0.011

Analyte: SeCN

Sample	Result	Units	
B221733-BLK1	0.00	µg/L	
B221733-BLK2	0.00	µg/L	
B221733-BLK3	0.00	µg/L	
B221733-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.010		MRL: 0.010

Analyte: SeMet

Sample	Result	Units	
B221733-BLK1	0.00	µg/L	
B221733-BLK2	0.00	µg/L	
B221733-BLK3	0.00	µg/L	
B221733-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.005		MRL: 0.005



Method Blanks & Reporting Limits

Analyte: SeSO3

Sample	Result	Units	
B221733-BLK1	0.00	µg/L	
B221733-BLK2	0.00	µg/L	
B221733-BLK3	0.00	µg/L	
B221733-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.011		MRL: 0.011

Analyte: Unk Se Sp

Sample	Result	Units	
B221733-BLK1	0.00	µg/L	
B221733-BLK2	0.00	µg/L	
B221733-BLK3	0.00	µg/L	
B221733-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.015		MRL: 0.015



Method Blanks & Reporting Limits

Batch: B221777
Matrix: Water
Method: EPA 1638 Mod
Analyte: Se

Sample	Result	Units	
B221777-BLK1	0.178	µg/L	
B221777-BLK2	0.170	µg/L	
B221777-BLK3	0.095	µg/L	
B221777-BLK4	0.142	µg/L	
Average:	0.146		MDL: 0.150
Limit:	0.480		MRL: 0.480



Method Blanks & Reporting Limits

Batch: B221794
Matrix: Water
Method: EPA 1638 Mod
Analyte: Se

Sample	Result	Units	
B221794-BLK1	0.211	µg/L	
B221794-BLK2	0.145	µg/L	
B221794-BLK3	0.174	µg/L	
B221794-BLK4	0.164	µg/L	
B221794-BLK5	0.105	µg/L	
Average:	0.160		MDL: 0.150
Limit:	0.480		MRL: 0.480



Sample Containers

Lab ID: 2208059-01			Report Matrix: WS			Collected: 07/26/2022		
Sample: RG_GATEDP_WS_LAEMP_EVO_2022-07-26_NP-NAL			Sample Type: Sample + Sum			Received: 08/04/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 3 - 2208059	
Lab ID: 2208059-02			Report Matrix: WS			Collected: 07/26/2022		
Sample: RG_GATEDP_WS_LAEMP_EVO_2022-07-26_NP-NAL			Sample Type: Sample + Sum			Received: 08/04/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 3 - 2208059	
Lab ID: 2208059-03			Report Matrix: WS			Collected: 07/26/2022		
Sample: RG_GATE_WS_LAEMP_EVO_2022-07-26_NP-NAL			Sample Type: Sample + Sum			Received: 08/04/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 3 - 2208059	
Lab ID: 2208059-04			Report Matrix: WS			Collected: 07/26/2022		
Sample: RG_GATE_WS_LAEMP_EVO_2022-07-26_NP-NAL			Sample Type: Sample + Sum			Received: 08/04/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 3 - 2208059	
Lab ID: 2208059-05			Report Matrix: WS			Collected: 07/26/2022		
Sample: RG_MIDGA_WS_LAEMP_EVO_2022-07-26_NP-NAL			Sample Type: Sample + Sum			Received: 08/04/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 3 - 2208059	



Sample Containers

Lab ID: 2208059-06
Sample: RG_MIDGA_WS_LAEMP_EVO_2022-07-26_NP-NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 07/26/2022
Received: 08/04/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 3 - 2208059

Lab ID: 2208059-07
Sample: RG_MIDBO_WS_LAEMP_EVO_2022-07-26_NP-NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 07/26/2022
Received: 08/04/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 3 - 2208059

Lab ID: 2208059-08
Sample: RG_MIDBO_WS_LAEMP_EVO_2022-07-26_NP-NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 07/26/2022
Received: 08/04/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 3 - 2208059

Lab ID: 2208059-09
Sample: RG_MICOMP_WS_LAEMP_EVO_2022-07-26_NP-NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 07/26/2022
Received: 08/04/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 3 - 2208059

Lab ID: 2208059-10
Sample: RG_MICOMP_WS_LAEMP_EVO_2022-07-26_NP-NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 07/26/2022
Received: 08/04/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 3 - 2208059



Sample Containers

Lab ID: 2208059-11			Report Matrix: WS			Collected: 07/26/2022	
Sample: RG_RIVER_WS_LAEMP_EVO_2022-07-26_NP-NAL			Sample Type: Sample + Sum			Received: 08/04/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 3 - 2208059
Lab ID: 2208059-12			Report Matrix: WS			Collected: 07/26/2022	
Sample: RG_RIVER_WS_LAEMP_EVO_2022-07-26_NP-NAL			Sample Type: Sample + Sum			Received: 08/04/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 3 - 2208059
Lab ID: 2208059-13			Report Matrix: WS			Collected: 07/26/2022	
Sample: RG_BOCK_WS_LAEMP_EVO_2022-07-26_NP-NAL			Sample Type: Sample + Sum			Received: 08/04/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 3 - 2208059
Lab ID: 2208059-14			Report Matrix: WS			Collected: 07/26/2022	
Sample: RG_BOCK_WS_LAEMP_EVO_2022-07-26_NP-NAL			Sample Type: Sample + Sum			Received: 08/04/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 3 - 2208059
Lab ID: 2208059-15			Report Matrix: WS			Collected: 07/26/2022	
Sample: RG_BOCKRD_WS_LAEMP_EVO_2022-07-26_NP-NAL			Sample Type: Sample + Sum			Received: 08/04/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 3 - 2208059



Sample Containers

Lab ID: 2208059-16
Sample: RG_BOCKRD_WS_LAEMP_EVO_2022-07-26_NP-NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 07/26/2022
Received: 08/04/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 3 - 2208059

Lab ID: 2208059-17
Sample: RG_ERCKUT_WS_LAEMP_EVO_2022-07-26_NP-NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 07/26/2022
Received: 08/04/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 3 - 2208059

Lab ID: 2208059-18
Sample: RG_ERCKUT_WS_LAEMP_EVO_2022-07-26_NP-NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 07/26/2022
Received: 08/04/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 3 - 2208059

Lab ID: 2208059-19
Sample: RG_ERCKMD_WS_LAEMP_EVO_2022-07-26_NP-NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 07/26/2022
Received: 08/04/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 3 - 2208059

Lab ID: 2208059-20
Sample: RG_ERCKMD_WS_LAEMP_EVO_2022-07-26_NP-NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 07/26/2022
Received: 08/04/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 3 - 2208059



Sample Containers

Lab ID: 2208059-21

Report Matrix: WS

Collected: 07/25/2022

Sample:

Sample Type: Sample + Sum

Received: 08/04/2022

RG_GATEDP_WS_LAEMP_EVO_2022-07-26_N

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2208059
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2208059
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 4 - 2208059

Lab ID: 2208059-22

Report Matrix: WS

Collected: 07/25/2022

Sample:

Sample Type: Sample + Sum

Received: 08/04/2022

RG_GATE_WS_LAEMP_EVO_2022-07-26_N

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2208059
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2208059
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 4 - 2208059

Lab ID: 2208059-23

Report Matrix: WS

Collected: 07/26/2022

Sample:

Sample Type: Sample + Sum

Received: 08/04/2022

RG_MIDGA_WS_LAEMP_EVO_2022-07-26_N

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2208059
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2208059
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 4 - 2208059



Sample Containers

Lab ID: 2208059-24

Report Matrix: WS

Collected: 07/25/2022

Sample:

Sample Type: Sample + Sum

Received: 08/04/2022

RG_MIDBO_WS_LAEMP_EVO_2022-07-26_N

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2208059
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2208059
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 4 - 2208059

Lab ID: 2208059-25

Report Matrix: WS

Collected: 07/26/2022

Sample:

Sample Type: Sample + Sum

Received: 08/04/2022

RG_MICOMP_WS_LAEMP_EVO_2022-07-26_N

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2208059
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2208059
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 4 - 2208059

Lab ID: 2208059-26

Report Matrix: WS

Collected: 07/26/2022

Sample:

Sample Type: Sample + Sum

Received: 08/04/2022

RG_RIVER_WS_LAEMP_EVO_2022-07-26_N

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2208059
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2208059
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 4 - 2208059



Sample Containers

Lab ID: 2208059-27

Report Matrix: WS

Collected: 07/25/2022

Sample:

Sample Type: Sample + Sum

Received: 08/04/2022

RG_BOCK_WS_LAEMP_EVO_2022-07-26_N

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2208059
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2208059
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 4 - 2208059

Lab ID: 2208059-28

Report Matrix: WS

Collected: 07/26/2022

Sample:

Sample Type: Sample + Sum

Received: 08/04/2022

RG_BOCKRD_WS_LAEMP_EVO_2022-07-26_N

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2208059
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2208059
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 4 - 2208059

Lab ID: 2208059-29

Report Matrix: WS

Collected: 07/26/2022

Sample:

Sample Type: Sample + Sum

Received: 08/04/2022

RG_ERCKUT_WS_LAEMP_EVO_2022-07-26_N

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2208059
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2208059
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 4 - 2208059



Sample Containers

Lab ID: 2208059-30

Sample:

RG_ERCKMD_WS_LAEMP_EVO_2022-07-26_N

Report Matrix: WS

Sample Type: Sample + Sum

Collected: 07/26/2022

Received: 08/04/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2208059
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2208059
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 4 - 2208059

Lab ID: 2208059-31

Sample:

RG_ERCKDT_WS_LAEMP_EVO_2022-07-26_NP-NAL

Report Matrix: WS

Sample Type: Sample + Sum

Collected: 07/26/2022

Received: 08/04/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 3 - 2208059

Lab ID: 2208059-32

Sample:

RG_ERCKDT_WS_LAEMP_EVO_2022-07-26_NP-NAL

Report Matrix: WS

Sample Type: Sample + Sum

Collected: 07/26/2022

Received: 08/04/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 3 - 2208059

Lab ID: 2208059-33

Sample:

RG_ERCKUC_WS_LAEMP_EVO_2022-07-27_NP-NAL

Report Matrix: WS

Sample Type: Sample + Sum

Collected: 07/27/2022

Received: 08/04/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 3 - 2208059



Sample Containers

Lab ID: 2208059-34			Report Matrix: WS			Collected: 07/27/2022	
Sample: RG_ERCKUC_WS_LAEMP_EVO_2022-07-27_NP-NAL			Sample Type: Sample + Sum			Received: 08/04/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 3 - 2208059
Lab ID: 2208059-35			Report Matrix: WS			Collected: 07/27/2022	
Sample: RG_ERCK_WS_LAEMP_EVO_2022-07-27_NP-NAL			Sample Type: Sample + Sum			Received: 08/04/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 3 - 2208059
Lab ID: 2208059-36			Report Matrix: WS			Collected: 07/27/2022	
Sample: RG_ERCK_WS_LAEMP_EVO_2022-07-27_NP-NAL			Sample Type: Sample + Sum			Received: 08/04/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 3 - 2208059
Lab ID: 2208059-37			Report Matrix: WS			Collected: 07/27/2022	
Sample: RG_MI3_WS_LAEMP_EVO_2022-07-27_NP-NAL			Sample Type: Sample + Sum			Received: 08/04/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 3 - 2208059
Lab ID: 2208059-38			Report Matrix: WS			Collected: 07/27/2022	
Sample: RG_MI3_WS_LAEMP_EVO_2022-07-27_NP-NAL			Sample Type: Sample + Sum			Received: 08/04/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 3 - 2208059



Sample Containers

Lab ID: 2208059-39 Sample: RG_MIDER_WS_LAEMP_EVO_2022-07-27_NP-NAL	Report Matrix: WS Sample Type: Sample + Sum	Collected: 07/27/2022 Received: 08/04/2022					
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 3 - 2208059
Lab ID: 2208059-40 Sample: RG_MIDER_WS_LAEMP_EVO_2022-07-27_NP-NAL	Report Matrix: WS Sample Type: Sample + Sum	Collected: 07/27/2022 Received: 08/04/2022					
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 3 - 2208059
Lab ID: 2208059-41 Sample: RG_RIVER_WS_LAEMP_EVO_2022-07-27_NP-NAL	Report Matrix: WS Sample Type: Sample + Sum	Collected: 07/27/2022 Received: 08/04/2022					
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 3 - 2208059
Lab ID: 2208059-42 Sample: RG_RIVER_WS_LAEMP_EVO_2022-07-27_NP-NAL	Report Matrix: WS Sample Type: Sample + Sum	Collected: 07/27/2022 Received: 08/04/2022					
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 3 - 2208059
Lab ID: 2208059-43 Sample: RG_MI25_WS_LAEMP_EVO_2022-07-27_NP-NAL	Report Matrix: WS Sample Type: Sample + Sum	Collected: 07/27/2022 Received: 08/04/2022					
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 3 - 2208059



Sample Containers

Lab ID: 2208059-44
Sample: RG_MI25_WS_LAEMP_EVO_2022-07-27_NP-NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 07/27/2022
Received: 08/04/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 3 - 2208059

Lab ID: 2208059-45
Sample: RG_ALUSM_WS_LAEMP_EVO_2022-07-27_NP-NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 07/27/2022
Received: 08/04/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 3 - 2208059

Lab ID: 2208059-46
Sample: RG_ALUSM_WS_LAEMP_EVO_2022-07-27_NP-NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 07/27/2022
Received: 08/04/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 3 - 2208059

Lab ID: 2208059-47
Sample: RG_FBLANK_WS_LAEMP_EVO_2022-07-27_NP-NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 07/27/2022
Received: 08/04/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 3 - 2208059

Lab ID: 2208059-48
Sample: RG_FBLANK_WS_LAEMP_EVO_2022-07-27_NP-NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 07/27/2022
Received: 08/04/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 3 - 2208059



Sample Containers

Lab ID: 2208059-49			Report Matrix: WS			Collected: 07/27/2022	
Sample: RG_FBLANK_WS_LAEMP_EVO_2022-07-27_NP-NAL			Sample Type: Sample + Sum			Received: 08/04/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 3 - 2208059

Lab ID: 2208059-50			Report Matrix: WS			Collected: 07/27/2022	
Sample: RG_FBLANK_WS_LAEMP_EVO_2022-07-27_NP-NAL			Sample Type: Sample + Sum			Received: 08/04/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2218038	<2	Cooler 3 - 2208059

Lab ID: 2208059-51			Report Matrix: WS			Collected: 07/26/2022	
Sample: RG_ERCKDT_WS_LAEMP_EVO_2022-07-26_N			Sample Type: Sample + Sum			Received: 08/04/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2208059
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2208059
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 4 - 2208059

Lab ID: 2208059-52			Report Matrix: WS			Collected: 07/27/2022	
Sample: RG_ERCKUC_WS_LAEMP_EVO_2022-07-27_N			Sample Type: Sample + Sum			Received: 08/04/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2208059
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2208059
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 4 - 2208059



Sample Containers

Lab ID: 2208059-53

Report Matrix: WS

Collected: 07/27/2022

Sample:

Sample Type: Sample + Sum

Received: 08/04/2022

RG_ERCK_WS_LAEMP_EVO_2022-07-27_N

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2208059
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2208059
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 4 - 2208059

Lab ID: 2208059-54

Report Matrix: WS

Collected: 07/27/2022

Sample:

Sample Type: Sample + Sum

Received: 08/04/2022

RG_MI3_WS_LAEMP_EVO_2022-07-27_N

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2208059
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2208059
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 4 - 2208059

Lab ID: 2208059-55

Report Matrix: WS

Collected: 07/27/2022

Sample:

Sample Type: Sample + Sum

Received: 08/04/2022

RG_MIDER_WS_LAEMP_EVO_2022-07-27_N

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2208059
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2208059
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 4 - 2208059



Sample Containers

Lab ID: 2208059-56

Report Matrix: WS

Collected: 07/27/2022

Sample:

Sample Type: Sample + Sum

Received: 08/04/2022

RG_RIVER_WS_LAEMP_EVO_2022-07-27_N

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2208059
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2208059
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 4 - 2208059

Lab ID: 2208059-57

Report Matrix: WS

Collected: 07/27/2022

Sample:

Sample Type: Sample + Sum

Received: 08/04/2022

RG_MI25_WS_LAEMP_EVO_2022-07-27_N

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2208059
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2208059
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 4 - 2208059

Lab ID: 2208059-58

Report Matrix: WS

Collected: 07/27/2022

Sample:

Sample Type: Sample + Sum

Received: 08/04/2022

RG_ALUSM_WS_LAEMP_EVO_2022-07-27_N

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2208059
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2208059
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 4 - 2208059



Sample Containers

Lab ID: 2208059-59

Report Matrix: WS

Collected: 07/27/2022

Sample:

Sample Type: Sample + Sum

Received: 08/04/2022

RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2208059
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2208059
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 4 - 2208059

Lab ID: 2208059-60

Report Matrix: WS

Collected: 07/27/2022

Sample:

Sample Type: Sample + Sum

Received: 08/04/2022

RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2208059
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2208059
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 4 - 2208059

Shipping Containers

Cooler 3 - 2208059

Received: August 4, 2022 7:00
Tracking No: PAPS#RWHV95301 via Courier
Coolant Type: Ice
Temperature: 4.0 °C

Description:
Damaged in transit? No
Returned to client? No
Comments: IR#1

Custody seals present? No
Custody seals intact? No
COC present? Yes

Cooler 4 - 2208059

Received: August 4, 2022 7:00
Tracking No: PAPS#RWHV95301 via Courier
Coolant Type: Ice
Temperature: -1.0 °C

Description: Large Cooler
Damaged in transit? No
Returned to client? No
Comments: IR#1

Custody seals present? No
Custody seals intact? No
COC present? Yes

COC ID: EVO LAEMP_2022_JULY_Brooks TURNAROUND TIME: RUSH:

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name / Job#	Regional Effects Program			Lab Name	Brooks Applied Labs			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Mike Pope			Lab Contact	Ben Wozniak			Email 1:		X	X	X
Email	Mike.Pope@teck.com			Email	Ben@brooksupplied.com			Email 2:				
Address	421 Pine Ave			Address	18804 North Creek Parkway			Email 3:	Teck.Lab.Results@teck.com	X	X	X
City	Sparwood	Province	BC	City	Bothell	Province	WA	Email 4:	AquaSciLab@teck.com	X	X	X
Postal Code	V0B 2G0	Country	Canada	Postal Code	98011	Country	United States	Email 5:	lbrown@minnow.ca	X	X	X
Phone Number	250-425-8202			Phone Number	(206) 753-6158			PO number	VPO00847032			

SAMPLE DETAILS								ANALYSIS REQUESTED					
Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com p	# Of Cont.	Brooks_Se_Speciation	Brooks_Se_D	Brooks_Se_T			
RG_GATEDP_WS_LAEMP_EVO_2022-07-26_NP-NAL	RG_GATEDP	WS	N	7/26/2022	8:40	G	2		1	1			
RG_GATE_WS_LAEMP_EVO_2022-07-26_NP-NAL	RG_GATE	WS	N	7/26/2022	8:30	G	2		1	1			
RG_MIDGA_WS_LAEMP_EVO_2022-07-26_NP-NAL	RG_MIDGA	WS	N	7/26/2022	8:45	G	2		1	1			
RG_MIDBO_WS_LAEMP_EVO_2022-07-26_NP-NAL	RG_MIDBO	WS	N	7/26/2022	8:15	G	2		1	1			
RG_MICOMP_WS_LAEMP_EVO_2022-07-26_NP-NAL	RG_MICOMP	WS	N	7/26/2022	7:30	G	2		1	1			
RG_RIVER_WS_LAEMP_EVO_2022-07-26_NP-NAL	RG_RIVER	WS	N	7/26/2022	8:15	G	2		1	1			
RG_BOCK_WS_LAEMP_EVO_2022-07-26_NP-NAL	RG_BOCK	WS	N	7/26/2022	7:30	G	2		1	1			
RG_BOCKRD_WS_LAEMP_EVO_2022-07-26_NP-NAL	RG_BOCKRD	WS	N	7/26/2022	14:30	G	2		1	1			
RG_ERCKUT_WS_LAEMP_EVO_2022-07-26_NP-NAL	RG_ERCKUT	WS	N	7/26/2022	10:00	G	2		1	1			
RG_ERCKMD_WS_LAEMP_EVO_2022-07-26_NP-NAL	RG_ERCKMD	WS	N	7/26/2022	13:30	G	2		1	1			

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
Please FILTER RG_ERCKUC_N for Se speciation. Highlighted on page 4.	Robin Valteau	July 28, 2022	JKW IBAE	8/4/22 7:00

SERVICE REQUEST (rush - subject to availability)				
Regular (default) <input checked="" type="checkbox"/>	Priority (2-3 business days) - 50% surcharge	Emergency (1 Business Day) - 100% surcharge	For Emergency <1 Day, ASAP or Weekend - Contact ALS	
Sampler's Name	Robin Valteau	Mobile #	416-970-7535	
Sampler's Signature		Date/Time	July 28, 2022	

Brooks WS

COC ID: EVO LAEMP_2022_JULY_Brooks		TURNAROUND TIME:		RUSH:				
PROJECT/CLIENT INFO				LABORATORY		OTHER INFO		
Facility Name / Job# Regional Effects Program		Lab Name Brooks Applied Labs		Report Format / Distribution		Excel	PDF	EDD
Project Manager Mike Pope		Lab Contact Ben Wozniak		Email 1:		X	X	X
Email Mike.Pope@teck.com		Email Ben@brooksapplied.com		Email 2:				
Address 421 Pine Ave		Address 18804 North Creek Parkway		Email 3:		X	X	X
		Suite 100		Email 4:		X	X	X
City Sparwood		City Bothell		Email 5:		X	X	X
Postal Code V0B 2G0		Postal Code 98011		Email 6:		X	X	X
Province BC		Province WA		PO number				
Country Canada		Country United States						
Phone Number 250-425-8202		Phone Number (206) 753-6158						

Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com p	# Of Cont.	ANALYSIS REQUESTED		
								Brooks_Se_Speciation	Brooks_Se_D	Brooks_Se_T
RG_GATEDP_WS_LAEMP_EVO_2022-07-26_N	RG_GATEDP	WS	N	7/25/2022	8:40	G	1	1		
RG_GATE_WS_LAEMP_EVO_2022-07-26_N	RG_GATE	WS	N	7/25/2022	8:30	G	1	1		
RG_MIDGA_WS_LAEMP_EVO_2022-07-26_N	RG_MIDGA	WS	N	7/25/2022	8:45	G	1	1		
RG_MIDBO_WS_LAEMP_EVO_2022-07-26_N	RG_MIDBO	WS	N	7/25/2022	8:15	G	1	1		
RG_MICOMP_WS_LAEMP_EVO_2022-07-26_N	RG_MICOMP	WS	N	7/25/2022	7:00	G	1	1		
RG_RIVER_WS_LAEMP_EVO_2022-07-26_N	RG_RIVER	WS	N	7/25/2022	8:15	G	1	1		
RG_BOCK_WS_LAEMP_EVO_2022-07-26_N	RG_BOCK	WS	N	7/25/2022	7:30	G	1	1		
RG_BOCKRD_WS_LAEMP_EVO_2022-07-26_N	RG_BOCKRD	WS	N	7/26/2022	14:30	G	1	1		
RG_ERCKUT_WS_LAEMP_EVO_2022-07-26_N	RG_ERCKUT	WS	N	7/26/2022	10:00	G	1	1		
RG_ERCKMD_WS_LAEMP_EVO_2022-07-26_N	RG_ERCKMD	WS	N	7/26/2022	13:30	G	1	1		

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS		RELINQUISHED BY/AFFILIATION		DATE/TIME		ACCEPTED BY/AFFILIATION		DATE/TIME	
		Robin Valleau		July 28, 2022		RWV / BAL		8/14/22 7:00	
SERVICE REQUEST (rush - subject to availability)		Sampler's Name		Mobile #		Date/Time			
Regular (default) X		Robin Valleau		416-970-7535					
Priority (2-3 business days) - 50% surcharge		Sampler's Signature		Date/Time					
Emergency (1 Business Day) - 100% surcharge				July 28, 2022					
For Emergency <1 Day, ASAP or Weekend - Contact ALS									

COC ID:		EVO LAEMP_2022_JULY_Brooks		TURNAROUND TIME:		RUSH:						
PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name / Job#		Regional Effects Program		Lab Name		Brooks Applied Labs		Report Format / Distribution		Excel	PDF	EDD
Project Manager		Mike Pope		Lab Contact		Ben Wozniak		Email 1:		X	X	X
Email		Mike.Pope@teck.com		Email		Ben@brooksapplied.com		Email 2:				
Address		421 Pine Ave		Address		18804 North Creek Parkway		Email 3:		X	X	X
City		Sparwood		City		Bothell		Email 4:		X	X	X
Postal Code		VOB 2G0		Postal Code		98011		Email 5:		X	X	X
Province		BC		Province		WA		Email 6:		X	X	X
Country		Canada		Country		United States		PO number		YPO00847032		
Phone Number		250-425-8202		Phone Number		(206) 753-6158						

SAMPLE DETAILS								ANALYSIS REQUESTED					
Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com p	# Of Cont.	Brooks_Se_Speciation	Brooks_Se_D	Brooks_Se_T			
RG_ERCKDT_WS_LAEMP_EVO_2022-07-26_NP-NAL	RG_ERCK_DT	WS	N	7/26/2022	11:30	G	2		1	1			
RG_ERCKUC_WS_LAEMP_EVO_2022-07-27_NP-NAL	RG_ERCKUC	WS	N	7/27/2022	8:30	G	2		1	1			
RG_ERCK_WS_LAEMP_EVO_2022-07-27_NP-NAL	RG_ERCK	WS	N	7/27/2022	10:00	G	2		1	1			
RG_MI3_WS_LAEMP_EVO_2022-07-27_NP-NAL	RG_MI3	WS	N	7/27/2022	12:30	G	2		1	1			
RG_MIDER_WS_LAEMP_EVO_2022-07-27_NP-NAL	RG_MIDER	WS	N	7/27/2022	11:00	G	2		1	1			
RG_RIVER_WS_LAEMP_EVO_2022-07-27_NP-NAL	RG_RIVER	WS	N	7/27/2022	8:30	G	2		1	1			
RG_MI25_WS_LAEMP_EVO_2022-07-27_NP-NAL	RG_MI25	WS	N	7/27/2022	14:00	G	2		1	1			
RG_ALUSM_WS_LAEMP_EVO_2022-07-27_NP-NAL	RG_ALUSM	WS	N	7/27/2022	15:30	G	2		1	1			
RG_FBLANK_WS_LAEMP_EVO_2022-07-27_NP-NAL	RG_FBLANK	WS	N	7/27/2022	16:00	G	2		1	1			
RG_FBLANK_WS_LAEMP_EVO_2022-07-27_NP-NAL	RG_FBLANK	WS	N	7/27/2022	17:00	G	2		1	1			

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS				RELINQUISHED BY/AFFILIATION		DATE/TIME		ACCEPTED BY/AFFILIATION		DATE/TIME	
				Robin Vallean		July 28, 2022		RW BAL		8/1/22 7:00	
SERVICE REQUEST (rush - subject to availability)											
Regular (default) X				Sampler's Name		Robin Vallean		Mobile #		416-970-7535	
Priority (2-3 business days) - 50% surcharge				Sampler's Signature				Date/Time		July 28, 2022	
Emergency (1 Business Day) - 100% surcharge											
For Emergency <1 Day, ASAP or Weekend - Contact ALS											

COC ID: EVO LAEMP_2022_JULY_Brooks		TURNAROUND TIME:			RUSH:						
PROJECT CLIENT INFO				LABORATORY			OTHER INFO				
Facility Name / Job#	Regional Effects Program			Lab Name	Brooks Applied Labs			Report Format / Distribution	Excel	PDF	EDD
Project Manager	Mike Pope			Lab Contact	Ben Wozniak			Email 1:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Email	Mike.Pope@teck.com			Email	Ben@brooksapplied.com			Email 2:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Address	421 Pine Ave			Address	18804 North Creek Parkway			Email 3:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
					Suite 100			Email 4:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
City	Sparwood	Province	BC	City	Bothell	Province	WA	Email 5:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Postal Code	VOB 2G0	Country	Canada	Postal Code	98011	Country	United States	Email 6:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Phone Number	250-425-8202			Phone Number	(206) 753-6158			PO number	VPO00847032		

SAMPLE DETAILS								ANALYSIS REQUESTED					
Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com p	# Of Cont.	Brooks_Se_Speciation	Brooks_Se_D	Brooks_Se_T			
RG_ERCKDT_WS_LAEMP_EVO_2022-07-26_N	RG_ERCK_DI	WS	N	7/26/2022	11:30	G	1	1					
RG_ERCKUC_WS_LAEMP_EVO_2022-07-27_N	RG_ERCKUC	WS	N	7/27/2022	8:30	G	1	1					
RG_ERCK_WS_LAEMP_EVO_2022-07-27_N	RG_ERCK	WS	N	7/27/2022	10:00	G	1	1					
RG_M13_WS_LAEMP_EVO_2022-07-27_N	RG_M13	WS	N	7/27/2022	12:30	G	1	1					
RG_MIDER_WS_LAEMP_EVO_2022-07-27_N	RG_MIDER	WS	N	7/27/2022	11:00	G	1	1					
RG_RIVER_WS_LAEMP_EVO_2022-07-27_N	RG_RIVER	WS	N	7/27/2022	8:30	G	1	1					
RG_M125_WS_LAEMP_EVO_2022-07-27_N	RG_M125	WS	N	7/27/2022	14:00	G	1	1					
RG_ALUSM_WS_LAEMP_EVO_2022-07-27_N	RG_ALUSM	WS	N	7/27/2022	15:30	G	1	1					
RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N	RG_FBLANK	WS	N	7/27/2022	16:00	G	1	1					
RG_FBLANK_WS_LAEMP_EVO_2022-07-27_N	RG_FBLANK	WS	N	7/27/2022	17:00	G	1	1					

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS Please FILTER RG_ERCKUC_N for Se Speciation	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
	Robin Vallean	July 28, 2022	WV/BAC	8/14/22 Kev
SERVICE REQUEST (rush - subject to availability)				
Regular (default) <input checked="" type="checkbox"/>	Priority (2-3 business days) - 50% surcharge	Emergency (1 Business Day) - 100% surcharge	For Emergency <1 Day, ASAP or Weekend - Contact ALS	
Sampler's Name		Robin Vallean	Mobile #	416-970-7535
Sampler's Signature			Date/Time	July 28, 2022

Confidential

STRAIGHT BILL OF LADING
NOT NEGOTIABLE

RW HOT SHOT SERVICE INC.

250-425-7447
24 Hour Hot Shot Service

BAL Final Report 2208059
No. 95301

Sparwood, BC
Terrace, BC
Red Deer, AB

Vancouver, BC
Calgary, AB
Montreal, QC

Prince George, BC
Edmonton, AB
Spokane, WA

Elkford, BC
Ft. McMurray, AB
Shelby, MT

Tumbler Ridge, BC
Hinton, AB
Gillette, WY

INVOICE TO		DATE	
BILL OF LADING #		PURCHASE ORDER NUMBER	
SHIPPER (FROM)		CONSIGNEE (TO)	
STREET		STREET	
CITY/PROVINCE		POSTAL CODE	CITY/PROVINCE
SPECIAL INSTRUCTIONS		FREIGHT CHARGES	
PACKAGES	DESCRIPTION OF ARTICLES AND SPECIAL MARKS	WEIGHT (Subject to Correction)	SHIPPER TO CHECK
3	COOLERS - WATER SAMPLES	100 LBS	<input type="checkbox"/> PREPAID <input type="checkbox"/> COLLECT
PAPS# RWHV95301			FEE
UNIT #			WAITING
DECLARED VALUATION: Maximum liability of carrier is \$2.00 per lb. (\$4.41 per kilogram) unless declared valuation states otherwise.		\$	XPU
DRIVER'S SIGNATURE - PICK UP BY	PICK UP TIME	DRIVER'S SIGNATURE - DELIVERY BY	FINISH TIME
		Shayne	8:15pm
NOTICE OF CLAIM: (a) No carrier is liable for loss, damage or delay of any goods under the Bill of Lading unless notice, therefor setting out particulars of the origin, destination and date of shipment of the goods and the estimated amount claimed in respect of such loss, damage or delay is given in writing to the originating carrier or the delivering carrier within sixty (60) days after the delivery of the goods, on the case of failure to make delivery within nine (9) months from the date of shipment. (b) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. RECEIVED at the point of origin on the date specified from the consignor mentioned herein, the property herein described, in apparent good order, except as noted (contents and condition of contents of package unknown) marked, consigned and delivered as indicated below, which the carrier agrees to carry and to deliver to the consignee at the said destination, subject to the rates and classification in effect on the date of shipment, it is mutually agreed, as to each carrier of all or any of the goods over all or any portion of the route to destination, and as to each party of any time interested in all or any of the goods, that every service to be performed hereunder shall be subject to the conditions standard Bill of Lading, in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. Printed or written including conditions set aside by the standard Bill of Lading, in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. The Contract for the carriage of the goods listed in the Bill of Lading is governed by regulation in force in the jurisdiction at the time and place of shipment and is subject to the conditions set out in such conditions.			TOTAL \$
SHIPPER PRINT	CONSIGNEE PRINT	DATE	IF AT OWNER'S RISK WRITE ORD HERE
SHIPPER SIGN	CONSIGNEE SIGN	TIME	
WHITE: Office	YELLOW: Carrier	PINK: Consignee	GOLDENROAD: Shipper
GST # 864540398RT0001		NUMBER OF PIECES RECEIVED	

Cooler ID: COOLR4

COC(Y/N)

Temperature: -1.0

IR: 1

Coolant Type: (Ice) Blue Ice Ambient

Notes:

Sampling Locations:

Sample Types:

Container Types:

Opened By: ERV

Date: 8/4/22

WL	LL	RG	EV	GH
(T/D) 40mL glass	(SP) 125mL PLASTIC	(T/D) 125mL PLASTIC	(SP) 60mL PLASTIC	(T/D) 60mL PLASTIC

Effective 7/29/20

Revision 004

Confidential

STRAIGHT BILL OF LADING
NOT NEGOTIABLE

RW HOT SHOT SERVICE INC.

250-425-7447
24 Hour Hot Shot Service

BAL Final Report 2208059

No. 95301

Sparwood, BC
Terrace, BC
Red Deer, AB

Vancouver, BC
Calgary, AB
Montreal, QC

Prince George, BC
Edmonton, AB
Spokane, WA

Elkford, BC
Ft. McMurray, AB
Shelby, MT

Tumbler Ridge, BC
Hinton, AB
Gillette, WY

INVOICE TO		DATE	
BILL OF LADING #		PURCHASE ORDER NUMBER	
SHIPPER (FROM)		CONSIGNEE (TO)	
STREET		STREET	
CITY/PROVINCE		POSTAL CODE	CITY/PROVINCE
SPECIAL INSTRUCTIONS		FREIGHT CHARGES SHIPPER TO CHECK	
PACKAGES	DESCRIPTION OF ARTICLES AND SPECIAL MARKS	WEIGHT (Subject to Correction)	<input type="checkbox"/> PREPAID <input type="checkbox"/> COLLECT If not indicated, shipping will automatically move collect.
3	Coasters - Water Supply	100 LBS	FEE _____
PAPS# RWHV95301			WAITING _____
UNIT #	DECLARED VALUATION: Maximum liability of carrier is \$2.00 per lb. (\$4.41 per kilogram) unless declared valuation states otherwise.	\$ _____	XPU _____
DRIVER'S SIGNATURE - PICK UP BY	PICK UP TIME	DRIVER'S SIGNATURE - DELIVERY BY	FINISH TIME
		Shayne	8:15pm
NOTICE OF CLAIM: (a) No carrier is liable for loss, damage or delay of any goods under the Bill of Lading unless notice, therefore setting out particulars of the origin, destination and date of shipment of the goods and the estimated amount claimed respect of such loss, damage or delay is given in writing to the originating carrier or the delivering carrier within sixty (60) days after the delivery of the goods, on the case of failure to make delivery within nine (9) months from the date of shipment. (b) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. RECEIVED at the point of origin on the date specified from the consignor mentioned herein, the property herein described, in apparent good order, except as noted (contents and condition of contents of package unknown) marked, consigned and destined as indicated below, which the carrier agrees to carry and to deliver to the consignee at the said destination, subject to the rates and classification in effect on the date of shipment. It is mutually agreed, as to each carrier of all or any of the goods over all or any portion of the route to destination, and as to each party of any time interested in all or any of the goods, that every service to be performed hereunder shall be subject to all the conditions standard Bill of Lading, in power at the date of issuing, which are hereto agreed by the consignor and accepted for himself and his assigns. Printed or written, including conditions set aside by the standard Bill of Lading, in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. The Contract for the carriage of the goods listed in the Bill of Lading is governed by regulation in force in the jurisdiction at the time and place of shipment and is subject to the conditions set out in such conditions.			TOTAL \$ _____
SHIPPER PRINT	CONSIGNEE PRINT	DATE	IF AT OWNER'S RISK, WRITE ORD HERE _____
SHIPPER SIGN	CONSIGNEE SIGN	TIME	
WHITE: Office	YELLOW: Carrier	PINK: Consignee	GOLDENROAD: Shipper
GST # 864540398RT0001			NUMBER OF PIECES RECEIVED 7

Cooler ID: COOLER 3

COC (Y/N)

Temperature: 4

IR: 1

Coolant Type: **ICE** Blue Ice Ambient

Notes:

Sampling Locations:

Sample Types:

Container Types:

Opened By: ERH

Date: 8/4/22

RG		EV		GH		EV			
T/D	SP	T/D	SP	T/D	SP	T/D	SP	T/D	SP
40ml		40ml		40ml		40ml			
Glass		Glass		Glass		STOP			
						vol. file			



September 28, 2022

Teck Resources Limited - Vancouver
 Mike Pope
 421 Pine Avenue
 Sparwood, B.C. CANADA V0B2G0
mike.pope@teck.com

Re: Regional Effects Program

Dear Mike Pope,

On September 22, 2022, Brooks Applied Labs (BAL) received twenty-six (26) aqueous samples. The samples were logged-in for total recoverable selenium [Se], dissolved Se [Se], and Se speciation analyses, according to the chain-of-custody (COC) form.

The Date/Time Collected value listed on the chain-of-custody (COC) forms did not exactly match the corresponding **Date/Time Collected** value on the container label for 2209285-26. The discrepancy is described in the table below.

Date/Time Collected Discrepancies

Laboratory ID	Sample ID	Date/Time Collected (on COC form)	Date/Time Collected (on container label)
2209285-26	RG_MICOMP_WS_LAEMP_EVO_2022-09_NP-NAL	09/18/2022 17:00	09/18/2022 17:10

2209285-26 was logged in and reported using the **Date/Time Collected** value listed on the COC forms (*column 3 in the table above*).

The sample fractions for total recoverable Se and dissolved Se were not preserved in the field. The samples were preserved (pH < 2) upon receipt at BAL. All sample fractions for total recoverable Se and dissolved Se were preserved within the (14 calendar day) preservation holding time.

The sample fractions logged in for Se speciation and dissolved Se had been field-filtered prior to receipt at BAL. All samples were stored according to BAL SOPs.

Total Recoverable Se and Dissolved Se

Each aqueous sample fraction for dissolved Se was digested in a closed vessel (bomb) with nitric and hydrochloric acids. The resulting digests were analyzed for Se content via inductively coupled plasma triple quadrupole mass spectrometry (ICP-QQQ-MS). The ICP-QQQ-MS instrumentation uses advanced interference removal techniques to ensure accuracy of the sample results. For more information, please visit the *Interference Reduction Technology* section on our website, brooksapplied.com.

Selenium Speciation

Each aqueous sample was analyzed for selenium speciation using ion chromatography inductively coupled plasma collision reaction cell mass spectrometry (IC-ICP-CRC-MS). Selenium species are chromatographically separated on an ion exchange column and then quantified using inductively coupled plasma collision reaction cell mass spectrometry (ICP-CRC-MS); for more information on this determinative technique, please visit the *Interference Reduction Technology* section on our website. The chromatographic method applied for the analyses provides greater retention of methylseleninic acid and selenomethionine, allowing for more definitive quantitation of these species.

In accordance with the quotation issued for this project, selenium speciation was defined as dissolved selenite [Se(IV)], selenate [Se(VI)], selenocyanate [SeCN], methylseleninic acid [MeSe(IV)], methaneselenonic acid [MeSe(VI)], selenomethionine [SeMef], selenosulfate [SeSO₃], and dimethylselenoxide [DMSeO]. Unknown Se species was defined as the total concentration of all unknown Se species observed during the analysis. This item is identified on the report as [Unk Se Sp].

DMSeO elutes early in the chromatographic run due to the nature of the molecule and the applied chromatographic separation method. Since this species elutes near the dead volume, additional selenium species may coelute. Alternate methods can be applied, upon client request, to increase the separation of DMSeO from potentially co-eluting selenium species.

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

In instances where a matrix spike/matrix spike duplicate (MS/MSD) set was spiked at a level less than the native sample concentration, the recoveries and the relative percent difference (RPD) are not considered valid indicators of data quality. In such instances, the recoveries of the laboratory fortified blanks (BS) and/or standard reference materials (SRM) demonstrate the accuracy of the applied methods. When the spiking level was less than 25% of the native sample concentration, the spike recovery was not reported (**NR**) and the relative percent difference (RPD) of the MS/MSD set was not calculated (**N/C**).

In cases when either the native sample concentration was non-detectable (reported as less than or equal to the MDL) and/or the corresponding DUP result was also non-detectable, the RPD between the two values was not calculated (**N/C**).

Except for concentration qualifiers, all data were reported without qualification. All associated quality control sample results met the acceptance criteria.

BAL, an accredited laboratory, certifies that the reported results of all analyses for which BAL is NELAP accredited meet all NELAP requirements. For more information, please see the *Report Information* page.

Please feel free to contact us if you have any questions regarding this report.

Sincerely,

A handwritten signature in black ink, appearing to read 'Jeremy Maute', written over a light blue horizontal line.

Jeremy Maute

Senior Project Manager

Jeremy@brooksapplied.com



Report Information

Laboratory Accreditation

BAL is accredited by the *National Environmental Laboratory Accreditation Program* (NELAP) through the State of Florida Department of Health, Bureau of Laboratories (E87982) and is certified to perform many environmental analyses. BAL is also certified by many other states to perform environmental analyses. For a current list of our accreditations/certifications, please visit our website at <http://www.brooksapplied.com/resources/certificates-permits/> or review Tables 1 and 2 in our Accreditation Information. Results reported relate only to the samples listed in the report.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

AR	as received	MS	matrix spike
BAL	Brooks Applied Labs	MSD	matrix spike duplicate
BLK	method blank	ND	non-detect
BS	blank spike	NR	non-reportable
CAL	calibration standard	N/C	not calculated
CCB	continuing calibration blank	PS	post preparation spike
CCV	continuing calibration verification	REC	percent recovery
COC	chain of custody record	RPD	relative percent difference
D	dissolved fraction	SCV	secondary calibration verification
DUP	duplicate	SOP	standard operating procedure
IBL	instrument blank	SRM	reference material
ICV	initial calibration verification	T	total fraction
MDL	method detection limit	TR	total recoverable fraction
MRL	method reporting limit		

Definition of Data Qualifiers

(Effective 3/23/2020)

E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Please see narrative for explanation.
J	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1	Estimated value. A full explanation is presented in the narrative.
M	Duplicate precision (RPD) was not within acceptance criteria. Please see narrative for explanation.
N	Spike recovery was not within acceptance criteria. Please see narrative for explanation.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.
Z	Holding time and/or preservation requirements not established for this method; however, BAL recommendations for holding time were not followed. Please see narrative for explanation.

These qualifiers are based on those previously utilized by Brooks Applied Labs, those found in the EPA SOW ILM03.0, Exhibit B, Section III, pg. B-18, and the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review; USEPA; January 2010. These supersede all previous qualifiers ever employed by BAL.



Accreditation Information

Table 1. Accredited method/matrix/analytes for TNI
Issued by: State of Florida Dept. of Health (The NELAC Institute 2016 Standard)
Issued on: July 1, 2021; Valid to: June 30, 2022
Certificate Number: E87982-37

Method	Matrix	TNI Accredited Analyte(s)
EPA 1638	Non-Potable Waters	Ag, Cd, Cu, Ni, Pb, Sb, Se, Tl, Zn
EPA 200.8	Non-Potable Waters	Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Sb, Se, Tl, U, V, Zn
EPA 6020	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Tl, U, V, Zn
	Solids/Chemicals & Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Tl, V, Zn
BAL-5000	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Tl, U, V, Zn, Hardness
	Solids/Chemicals	Ag, As, B, Be, Cd, Co, Cr, Cu, Pb, Mo, Ni, Sb, Se, Sn, Sr, Tl, V, Zn
	Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Tl, V, Zn
EPA 1640	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn
EPA 1631E	Non-Potable Waters, Solids/Chemicals & Biological	Total Mercury
EPA 1630	Non-Potable Waters	Methyl Mercury
BAL-3200	Solids/Chemicals & Biological	Methyl Mercury
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
BAL-4201	Non-Potable Waters	Se(IV), Se(VI)
BAL-4300	Non-Potable Waters Solid/Chemicals	Cr(VI)
SM2340B	Non-Potable Waters	Hardness



Accreditation Information

**Table 2. Accredited method/matrix/analytes for ISO (1),
 Non-Governmental TNI (2)
 Issued by: ANAB
 Issued on: September 21, 2021; Valid to: March 30, 2024**

Method	Matrix	ISO and Non-Gov. TNI Accredited Analyte(s)
EPA 1638 Mod EPA 200.8 Mod EPA 6020 Mod	Non-Potable Waters	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, U, V, Zn
BAL-5000	Solids/Chemicals & Biological	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, V, Zn Hg (Biological Only)
EPA 1640 Mod	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn Ag, As, Cr, Co, Se, Ti, V (ISO Only)
EPA 1631E Mod BAL-3100	Non-Potable Waters, Solids/Chemicals & Biological/Food	Total Mercury
EPA 1630 Mod BAL-3200	Non-Potable Waters, Solids/Chemicals Biological	Methyl Mercury
EPA 1632A Mod BAL-3300	Non-Potable Waters Biological/Food Solids/Chemicals	Inorganic Arsenic (ISO Only) Inorganic Arsenic (ISO Only)
AOAC 2015.01 Mod BAL-5000	Food	As, Cd, Hg, Pb
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
	Biological by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4101	Food by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4201	Non-Potable Waters	Se(IV), Se(VI), SeCN, SeMet
BAL-4300	Non-Potable Waters, Solid/Chemicals	Cr(VI)
SM 3500-Fe BAL-4500	Non-Potable Waters	Fe, Fe(II) (ISO Only)
SM2340B	Non-Potable Waters	Hardness
SM 2540G BAL-0501	Solids/Chemicals & Biological	% Dry Weight



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
RG_ALUSM_WS_LAEMP_EVO_202 2-09_N	2209285-01	WS	Sample	09/18/2022	09/22/2022
RG_ALUSM_WS_LAEMP_EVO_202 2-09_NP-NAL	2209285-02	WS	Sample	09/18/2022	09/22/2022
RG_ALUSM_WS_LAEMP_EVO_202 2-09_NP-NAL	2209285-03	WS	Sample	09/18/2022	09/22/2022
RG_BOCK_WS_LAEMP_EVO_2022 -09_N	2209285-04	WS	Sample	09/15/2022	09/22/2022
RG_BOCK_WS_LAEMP_EVO_2022 -09_NP-NAL	2209285-05	WS	Sample	09/15/2022	09/22/2022
RG_BOCK_WS_LAEMP_EVO_2022 -09_NP-NAL	2209285-06	WS	Sample	09/15/2022	09/22/2022
RG_ERCKUT_WS_LAEMP_EVO_20 22-09_N	2209285-07	WS	Sample	09/16/2022	09/22/2022
RG_ERCKUT_WS_LAEMP_EVO_20 22-09_NP-NAL	2209285-08	WS	Sample	09/16/2022	09/22/2022
RG_ERCKUT_WS_LAEMP_EVO_20 22-09_NP-NAL	2209285-09	WS	Sample	09/16/2022	09/22/2022
RG_ERCK_WS_LAEMP_EVO_2022- 09_N	2209285-10	WS	Sample	09/14/2022	09/22/2022
RG_ERCK_WS_LAEMP_EVO_2022- 09_NP-NAL	2209285-11	WS	Sample	09/14/2022	09/22/2022
RG_ERCK_WS_LAEMP_EVO_2022- 09_NP-NAL	2209285-12	WS	Sample	09/14/2022	09/22/2022
RG_GATE_WS_LAEMP_EVO_2022- 09_N	2209285-13	WS	Sample	09/15/2022	09/22/2022
RG_GATE_WS_LAEMP_EVO_2022- 09_NP-NAL	2209285-14	WS	Sample	09/15/2022	09/22/2022
RG_GATE_WS_LAEMP_EVO_2022- 09_NP-NAL	2209285-15	WS	Sample	09/15/2022	09/22/2022
RG_GATEDP_WS_LAEMP_EVO_20 22-09_N	2209285-16	WS	Sample	09/15/2022	09/22/2022
RG_GATEDP_WS_LAEMP_EVO_20 22-09_NP-NAL	2209285-17	WS	Sample	09/15/2022	09/22/2022
RG_GATEDP_WS_LAEMP_EVO_20 22-09_NP-NAL	2209285-18	WS	Sample	09/15/2022	09/22/2022
RG_MI25_WS_LAEMP_EVO_2022-0 9_N	2209285-19	WS	Sample	09/15/2022	09/22/2022
RG_MI25_WS_LAEMP_EVO_2022-0 9_NP-NAL	2209285-20	WS	Sample	09/15/2022	09/22/2022
RG_MI25_WS_LAEMP_EVO_2022-0 9_NP-NAL	2209285-21	WS	Sample	09/15/2022	09/22/2022



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
RG_MI3_WS_LAEMP_EVO_2022-09_N	2209285-22	WS	Sample	09/12/2022	09/22/2022
RG_MI3_WS_LAEMP_EVO_2022-09_NP-NAL	2209285-23	WS	Sample	09/12/2022	09/22/2022
RG_MI3_WS_LAEMP_EVO_2022-09_NP-NAL	2209285-24	WS	Sample	09/12/2022	09/22/2022
RG_MICOMP_WS_LAEMP_EVO_2022-09_N	2209285-25	WS	Sample	09/18/2022	09/22/2022
RG_MICOMP_WS_LAEMP_EVO_2022-09_NP-NAL	2209285-26	WS	Sample	09/18/2022	09/22/2022
RG_MICOMP_WS_LAEMP_EVO_2022-09_NP-NAL	2209285-27	WS	Sample	09/18/2022	09/22/2022
RG_MIDGA_WS_LAEMP_EVO_2022-09_N	2209285-28	WS	Sample	09/18/2022	09/22/2022
RG_MIDGA_WS_LAEMP_EVO_2022-09_NP-NAL	2209285-29	WS	Sample	09/18/2022	09/22/2022
RG_MIDGA_WS_LAEMP_EVO_2022-09_NP-NAL	2209285-30	WS	Sample	09/18/2022	09/22/2022
RG_MIDER_WS_LAEMP_EVO_2022-09_N	2209285-31	WS	Sample	09/13/2022	09/22/2022
RG_MIDER_WS_LAEMP_EVO_2022-09_NP-NAL	2209285-32	WS	Sample	09/13/2022	09/22/2022
RG_MIDER_WS_LAEMP_EVO_2022-09_NP-NAL	2209285-33	WS	Sample	09/13/2022	09/22/2022
RG_MIDBO_WS_LAEMP_EVO_2022-09_N	2209285-34	WS	Sample	09/13/2022	09/22/2022
RG_MIDBO_WS_LAEMP_EVO_2022-09_NP-NAL	2209285-35	WS	Sample	09/13/2022	09/22/2022
RG_MIDBO_WS_LAEMP_EVO_2022-09_NP-NAL	2209285-36	WS	Sample	09/13/2022	09/22/2022
RG_RIVER_WS_LAEMP_EVO_2022-09_N	2209285-37	WS	Sample	09/18/2022	09/22/2022
RG_RIVER_WS_LAEMP_EVO_2022-09_NP-NAL	2209285-38	WS	Sample	09/18/2022	09/22/2022
RG_RIVER_WS_LAEMP_EVO_2022-09_NP-NAL	2209285-39	WS	Sample	09/18/2022	09/22/2022



Batch Summary

Analyte	Lab Matrix	Method	Prepared	Analyzed	Batch	Sequence
DMS ₂ SeO	Water	SOP BAL-4201	09/20/2022	09/24/2022	B222130	S220995
MeSe(IV)	Water	SOP BAL-4201	09/20/2022	09/24/2022	B222130	S220995
MeSe(VI)	Water	SOP BAL-4201	09/20/2022	09/24/2022	B222130	S220995
Se	Water	EPA 1638 Mod	09/23/2022	09/26/2022	B222203	S221000
Se	Water	EPA 1638 Mod	09/26/2022	09/27/2022	B222222	S221004
Se(IV)	Water	SOP BAL-4201	09/20/2022	09/24/2022	B222130	S220995
Se(VI)	Water	SOP BAL-4201	09/20/2022	09/24/2022	B222130	S220995
SeCN	Water	SOP BAL-4201	09/20/2022	09/24/2022	B222130	S220995
SeMet	Water	SOP BAL-4201	09/20/2022	09/24/2022	B222130	S220995
SeSO ₃	Water	SOP BAL-4201	09/20/2022	09/24/2022	B222130	S220995
Unk Se Sp	Water	SOP BAL-4201	09/20/2022	09/24/2022	B222130	S220995



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ALUSM_WS_LAEMP_EVO_2022-09_N										
2209285-01	DMSeO	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222130	S220995
2209285-01	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222130	S220995
2209285-01	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222130	S220995
2209285-01	Se(IV)	WS	D	≤ 0.020	U	0.020	0.075	µg/L	B222130	S220995
2209285-01	Se(VI)	WS	D	0.489		0.010	0.055	µg/L	B222130	S220995
2209285-01	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B222130	S220995
2209285-01	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222130	S220995
2209285-01	SeSO3	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B222130	S220995
2209285-01	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B222130	S220995
RG_ALUSM_WS_LAEMP_EVO_2022-09_NP-NAL										
2209285-02	Se	WS	D	0.554		0.165	0.528	µg/L	B222203	S221000
RG_ALUSM_WS_LAEMP_EVO_2022-09_NP-NAL										
2209285-03	Se	WS	TR	0.530		0.165	0.528	µg/L	B222203	S221000
RG_BOCK_WS_LAEMP_EVO_2022-09_N										
2209285-04	DMSeO	WS	D	0.160		0.010	0.025	µg/L	B222130	S220995
2209285-04	MeSe(IV)	WS	D	0.110		0.010	0.025	µg/L	B222130	S220995
2209285-04	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222130	S220995
2209285-04	Se(IV)	WS	D	3.08		0.020	0.075	µg/L	B222130	S220995
2209285-04	Se(VI)	WS	D	61.5		0.010	0.055	µg/L	B222130	S220995
2209285-04	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B222130	S220995
2209285-04	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222130	S220995
2209285-04	SeSO3	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B222130	S220995
2209285-04	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B222130	S220995
RG_BOCK_WS_LAEMP_EVO_2022-09_NP-NAL										
2209285-05	Se	WS	D	62.2		0.165	0.528	µg/L	B222203	S221000
RG_BOCK_WS_LAEMP_EVO_2022-09_NP-NAL										
2209285-06	Se	WS	TR	58.6		0.165	0.528	µg/L	B222203	S221000



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKUT_WS_LAEMP_EVO_2022-09_N										
2209285-07	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222130	S220995
2209285-07	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222130	S220995
2209285-07	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222130	S220995
2209285-07	Se(IV)	WS	D	≤ 0.020	U	0.020	0.075	µg/L	B222130	S220995
2209285-07	Se(VI)	WS	D	145		0.010	0.055	µg/L	B222130	S220995
2209285-07	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B222130	S220995
2209285-07	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222130	S220995
2209285-07	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B222130	S220995
2209285-07	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B222130	S220995
RG_ERCKUT_WS_LAEMP_EVO_2022-09_NP-NAL										
2209285-08	Se	WS	D	131		0.165	0.528	µg/L	B222203	S221000
RG_ERCKUT_WS_LAEMP_EVO_2022-09_NP-NAL										
2209285-09	Se	WS	TR	131		0.165	0.528	µg/L	B222203	S221000
RG_ERCK_WS_LAEMP_EVO_2022-09_N										
2209285-10	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222130	S220995
2209285-10	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222130	S220995
2209285-10	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222130	S220995
2209285-10	Se(IV)	WS	D	0.223		0.020	0.075	µg/L	B222130	S220995
2209285-10	Se(VI)	WS	D	143		0.010	0.055	µg/L	B222130	S220995
2209285-10	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B222130	S220995
2209285-10	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222130	S220995
2209285-10	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B222130	S220995
2209285-10	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B222130	S220995
RG_ERCK_WS_LAEMP_EVO_2022-09_NP-NAL										
2209285-11	Se	WS	D	126		0.165	0.528	µg/L	B222203	S221000
RG_ERCK_WS_LAEMP_EVO_2022-09_NP-NAL										
2209285-12	Se	WS	TR	134		0.165	0.528	µg/L	B222203	S221000



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_GATE_WS_LAEMP_EVO_2022-09_N										
2209285-13	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222130	S220995
2209285-13	MeSe(IV)	WS	D	0.026		0.010	0.025	µg/L	B222130	S220995
2209285-13	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222130	S220995
2209285-13	Se(IV)	WS	D	0.633		0.020	0.075	µg/L	B222130	S220995
2209285-13	Se(VI)	WS	D	83.0		0.010	0.055	µg/L	B222130	S220995
2209285-13	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B222130	S220995
2209285-13	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222130	S220995
2209285-13	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B222130	S220995
2209285-13	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B222130	S220995
RG_GATE_WS_LAEMP_EVO_2022-09_NP-NAL										
2209285-14	Se	WS	D	76.8		0.165	0.528	µg/L	B222203	S221000
RG_GATE_WS_LAEMP_EVO_2022-09_NP-NAL										
2209285-15	Se	WS	TR	73.1		0.165	0.528	µg/L	B222203	S221000
RG_GATEDP_WS_LAEMP_EVO_2022-09_N										
2209285-16	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222130	S220995
2209285-16	MeSe(IV)	WS	D	0.041		0.010	0.025	µg/L	B222130	S220995
2209285-16	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222130	S220995
2209285-16	Se(IV)	WS	D	0.675		0.020	0.075	µg/L	B222130	S220995
2209285-16	Se(VI)	WS	D	82.2		0.010	0.055	µg/L	B222130	S220995
2209285-16	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B222130	S220995
2209285-16	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222130	S220995
2209285-16	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B222130	S220995
2209285-16	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B222130	S220995
RG_GATEDP_WS_LAEMP_EVO_2022-09_NP-NAL										
2209285-17	Se	WS	D	76.1		0.165	0.528	µg/L	B222203	S221000
RG_GATEDP_WS_LAEMP_EVO_2022-09_NP-NAL										
2209285-18	Se	WS	TR	75.9		0.165	0.528	µg/L	B222203	S221000



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_MI25_WS_LAEMP_EVO_2022-09_N										
2209285-19	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222130	S220995
2209285-19	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222130	S220995
2209285-19	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222130	S220995
2209285-19	Se(IV)	WS	D	≤ 0.020	U	0.020	0.075	µg/L	B222130	S220995
2209285-19	Se(VI)	WS	D	0.156		0.010	0.055	µg/L	B222130	S220995
2209285-19	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B222130	S220995
2209285-19	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222130	S220995
2209285-19	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B222130	S220995
2209285-19	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B222130	S220995
RG_MI25_WS_LAEMP_EVO_2022-09_NP-NAL										
2209285-20	Se	WS	D	0.410	J	0.165	0.528	µg/L	B222203	S221000
RG_MI25_WS_LAEMP_EVO_2022-09_NP-NAL										
2209285-21	Se	WS	TR	0.384	J	0.165	0.528	µg/L	B222203	S221000
RG_MI3_WS_LAEMP_EVO_2022-09_N										
2209285-22	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222130	S220995
2209285-22	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222130	S220995
2209285-22	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222130	S220995
2209285-22	Se(IV)	WS	D	0.071	J	0.020	0.075	µg/L	B222130	S220995
2209285-22	Se(VI)	WS	D	1.40		0.010	0.055	µg/L	B222130	S220995
2209285-22	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B222130	S220995
2209285-22	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222130	S220995
2209285-22	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B222130	S220995
2209285-22	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B222130	S220995
RG_MI3_WS_LAEMP_EVO_2022-09_NP-NAL										
2209285-23	Se	WS	D	1.49		0.165	0.528	µg/L	B222203	S221000
RG_MI3_WS_LAEMP_EVO_2022-09_NP-NAL										
2209285-24	Se	WS	TR	1.55		0.165	0.528	µg/L	B222203	S221000



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_MICOMP_WS_LAEMP_EVO_2022-09_N										
2209285-25	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222130	S220995
2209285-25	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222130	S220995
2209285-25	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222130	S220995
2209285-25	Se(IV)	WS	D	0.139		0.020	0.075	µg/L	B222130	S220995
2209285-25	Se(VI)	WS	D	16.6		0.010	0.055	µg/L	B222130	S220995
2209285-25	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B222130	S220995
2209285-25	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222130	S220995
2209285-25	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B222130	S220995
2209285-25	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B222130	S220995
RG_MICOMP_WS_LAEMP_EVO_2022-09_NP-NAL										
2209285-26	Se	WS	D	16.3		0.165	0.528	µg/L	B222203	S221000
RG_MICOMP_WS_LAEMP_EVO_2022-09_NP-NAL										
2209285-27	Se	WS	TR	16.4		0.165	0.528	µg/L	B222222	S221004
RG_MIDGA_WS_LAEMP_EVO_2022-09_N										
2209285-28	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222130	S220995
2209285-28	MeSe(IV)	WS	D	0.024	J	0.010	0.025	µg/L	B222130	S220995
2209285-28	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222130	S220995
2209285-28	Se(IV)	WS	D	0.350		0.020	0.075	µg/L	B222130	S220995
2209285-28	Se(VI)	WS	D	42.6		0.010	0.055	µg/L	B222130	S220995
2209285-28	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B222130	S220995
2209285-28	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222130	S220995
2209285-28	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B222130	S220995
2209285-28	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B222130	S220995
RG_MIDGA_WS_LAEMP_EVO_2022-09_NP-NAL										
2209285-29	Se	WS	D	40.3		0.165	0.528	µg/L	B222203	S221000
RG_MIDGA_WS_LAEMP_EVO_2022-09_NP-NAL										
2209285-30	Se	WS	TR	39.4		0.165	0.528	µg/L	B222203	S221000



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_MIDER_WS_LAEMP_EVO_2022-09_N										
2209285-31	DMSeO	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222130	S220995
2209285-31	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222130	S220995
2209285-31	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222130	S220995
2209285-31	Se(IV)	WS	D	0.046	J	0.020	0.075	µg/L	B222130	S220995
2209285-31	Se(VI)	WS	D	2.32		0.010	0.055	µg/L	B222130	S220995
2209285-31	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B222130	S220995
2209285-31	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222130	S220995
2209285-31	SeSO3	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B222130	S220995
2209285-31	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B222130	S220995
RG_MIDER_WS_LAEMP_EVO_2022-09_NP-NAL										
2209285-32	Se	WS	D	2.26		0.165	0.528	µg/L	B222203	S221000
RG_MIDER_WS_LAEMP_EVO_2022-09_NP-NAL										
2209285-33	Se	WS	TR	2.36		0.165	0.528	µg/L	B222203	S221000
RG_MIDBO_WS_LAEMP_EVO_2022-09_N										
2209285-34	DMSeO	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222130	S220995
2209285-34	MeSe(IV)	WS	D	0.013	J	0.010	0.025	µg/L	B222130	S220995
2209285-34	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222130	S220995
2209285-34	Se(IV)	WS	D	0.164		0.020	0.075	µg/L	B222130	S220995
2209285-34	Se(VI)	WS	D	16.7		0.010	0.055	µg/L	B222130	S220995
2209285-34	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B222130	S220995
2209285-34	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222130	S220995
2209285-34	SeSO3	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B222130	S220995
2209285-34	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B222130	S220995
RG_MIDBO_WS_LAEMP_EVO_2022-09_NP-NAL										
2209285-35	Se	WS	D	16.6		0.165	0.528	µg/L	B222203	S221000
RG_MIDBO_WS_LAEMP_EVO_2022-09_NP-NAL										
2209285-36	Se	WS	TR	15.7		0.165	0.528	µg/L	B222203	S221000



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_RIVER_WS_LAEMP_EVO_2022-09_N										
2209285-37	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222130	S220995
2209285-37	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222130	S220995
2209285-37	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222130	S220995
2209285-37	Se(IV)	WS	D	0.139		0.020	0.075	µg/L	B222130	S220995
2209285-37	Se(VI)	WS	D	16.5		0.010	0.055	µg/L	B222130	S220995
2209285-37	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B222130	S220995
2209285-37	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222130	S220995
2209285-37	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B222130	S220995
2209285-37	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B222130	S220995
RG_RIVER_WS_LAEMP_EVO_2022-09_NP-NAL										
2209285-38	Se	WS	D	14.9		0.165	0.528	µg/L	B222203	S221000
RG_RIVER_WS_LAEMP_EVO_2022-09_NP-NAL										
2209285-39	Se	WS	TR	16.0		0.165	0.528	µg/L	B222203	S221000



Accuracy & Precision Summary

Batch: B222130
Lab Matrix: Water
Method: SOP BAL-4201

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222130-BS1	Blank Spike, (2124033)						
	MeSe(IV)		5.095	6.159	µg/L	121% 75-125	
	Se(IV)		5.000	5.689	µg/L	114% 75-125	
	Se(VI)		5.000	5.231	µg/L	105% 75-125	
	SeCN		5.015	5.177	µg/L	103% 75-125	
	SeMet		4.932	5.459	µg/L	111% 75-125	
B222130-DUP4	Duplicate, (2209285-19)						
	DMSeO	ND		ND	µg/L		N/C 25
	MeSe(IV)	ND		ND	µg/L		N/C 25
	MeSe(VI)	ND		ND	µg/L		N/C 25
	Se(IV)	ND		ND	µg/L		N/C 25
	Se(VI)	0.156		0.152	µg/L		3% 25
	SeCN	ND		ND	µg/L		N/C 25
	SeMet	ND		ND	µg/L		N/C 25
	SeSO3	ND		ND	µg/L		N/C 25
Unk Se Sp	ND		ND	µg/L		N/C 25	
B222130-MS4	Matrix Spike, (2209285-19)						
	Se(IV)	ND	4.900	4.994	µg/L	102% 75-125	
	Se(VI)	0.156	5.100	5.181	µg/L	99% 75-125	
	SeCN	ND	1.962	1.798	µg/L	92% 75-125	
	SeMet	ND	1.977	1.917	µg/L	97% 75-125	
B222130-MSD4	Matrix Spike Duplicate, (2209285-19)						
	Se(IV)	ND	4.900	5.055	µg/L	103% 75-125	1% 25
	Se(VI)	0.156	5.100	5.198	µg/L	99% 75-125	0.3% 25
	SeCN	ND	1.962	1.818	µg/L	93% 75-125	1% 25
	SeMet	ND	1.977	1.875	µg/L	95% 75-125	2% 25



Accuracy & Precision Summary

Batch: B222130
Lab Matrix: Water
Method: SOP BAL-4201

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222130-DUP5	Duplicate, (2209285-37)						
	DMS ₂ SeO	ND		ND	µg/L		N/C 25
	MeSe(IV)	ND		0.011	µg/L		N/C 25
	MeSe(VI)	ND		ND	µg/L		N/C 25
	Se(IV)	0.139		0.136	µg/L		3% 25
	Se(VI)	16.53		16.51	µg/L		0.1% 25
	SeCN	ND		ND	µg/L		N/C 25
	SeMet	ND		ND	µg/L		N/C 25
	SeSO ₃	ND		ND	µg/L		N/C 25
Unk Se Sp	ND		ND	µg/L		N/C 25	
B222130-MS5	Matrix Spike, (2209285-37)						
	Se(IV)	0.139	4.900	5.165	µg/L	103% 75-125	
	Se(VI)	16.53	5.100	21.43	µg/L	96% 75-125	
	SeCN	ND	1.962	1.804	µg/L	92% 75-125	
	SeMet	ND	1.977	1.964	µg/L	99% 75-125	
B222130-MSD5	Matrix Spike Duplicate, (2209285-37)						
	Se(IV)	0.139	4.900	5.091	µg/L	101% 75-125	1% 25
	Se(VI)	16.53	5.100	21.28	µg/L	93% 75-125	0.7% 25
	SeCN	ND	1.962	1.811	µg/L	92% 75-125	0.4% 25
	SeMet	ND	1.977	1.957	µg/L	99% 75-125	0.3% 25



Accuracy & Precision Summary

Batch: B222203
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222203-BS1	Blank Spike, (2128023) Se		200.0	174.3	µg/L	87% 75-125	
B222203-BS2	Blank Spike, (2128023) Se		200.0	178.8	µg/L	89% 75-125	
B222203-BS3	Blank Spike, (2128023) Se		200.0	179.9	µg/L	90% 75-125	
B222203-BS4	Blank Spike, (2128023) Se		200.0	173.4	µg/L	87% 75-125	
B222203-BS5	Blank Spike, (2128023) Se		200.0	182.9	µg/L	91% 75-125	
B222203-SRM1	Reference Material (2214016, TMDA 51.5 Reference Standard - Bottle 8 - SRM) Se		14.30	12.81	µg/L	90% 75-125	
B222203-SRM2	Reference Material (2214016, TMDA 51.5 Reference Standard - Bottle 8 - SRM) Se		14.30	13.33	µg/L	93% 75-125	
B222203-SRM3	Reference Material (2214016, TMDA 51.5 Reference Standard - Bottle 8 - SRM) Se		14.30	13.09	µg/L	92% 75-125	
B222203-SRM4	Reference Material (2214016, TMDA 51.5 Reference Standard - Bottle 8 - SRM) Se		14.30	13.25	µg/L	93% 75-125	
B222203-SRM5	Reference Material (2214016, TMDA 51.5 Reference Standard - Bottle 8 - SRM) Se		14.30	13.11	µg/L	92% 75-125	
B222203-DUP3	Duplicate, (2209285-03) Se	0.530		0.550	µg/L		4% 20



Accuracy & Precision Summary

Batch: B222203
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222203-MS3	Matrix Spike, (2209285-03) Se	0.530	220.0	199.9	µg/L	91% 75-125	
B222203-MSD3	Matrix Spike Duplicate, (2209285-03) Se	0.530	220.0	204.0	µg/L	92% 75-125	2% 20
B222203-DUP4	Duplicate, (2209285-18) Se	75.87		76.12	µg/L		0.3% 20
B222203-MS4	Matrix Spike, (2209285-18) Se	75.87	220.0	279.7	µg/L	93% 75-125	
B222203-MSD4	Matrix Spike Duplicate, (2209285-18) Se	75.87	220.0	280.9	µg/L	93% 75-125	0.4% 20
B222203-DUP5	Duplicate, (2209285-33) Se	2.362		2.324	µg/L		2% 20
B222203-MS5	Matrix Spike, (2209285-33) Se	2.362	220.0	210.4	µg/L	95% 75-125	
B222203-MSD5	Matrix Spike Duplicate, (2209285-33) Se	2.362	220.0	208.3	µg/L	94% 75-125	1% 20



Accuracy & Precision Summary

Batch: B222222
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222222-BS1	Blank Spike, (2128023) Se		200.0	188.8	µg/L	94% 75-125	
B222222-BS2	Blank Spike, (2128023) Se		200.0	189.0	µg/L	95% 75-125	
B222222-BS3	Blank Spike, (2128023) Se		200.0	197.7	µg/L	99% 75-125	
B222222-SRM1	Reference Material (2214016, TMDA 51.5 Reference Standard - Bottle 8 - SRM) Se		14.30	13.47	µg/L	94% 75-125	
B222222-SRM2	Reference Material (2214016, TMDA 51.5 Reference Standard - Bottle 8 - SRM) Se		14.30	14.06	µg/L	98% 75-125	
B222222-SRM3	Reference Material (2214016, TMDA 51.5 Reference Standard - Bottle 8 - SRM) Se		14.30	13.53	µg/L	95% 75-125	
B222222-DUP1	Duplicate, (2209288-12) Se	1.634		1.461	µg/L		11% 20
B222222-MS1	Matrix Spike, (2209288-12) Se	1.634	220.0	224.4	µg/L	101% 75-125	
B222222-MSD1	Matrix Spike Duplicate, (2209288-12) Se	1.634	220.0	225.3	µg/L	102% 75-125	0.4% 20



Method Blanks & Reporting Limits

Batch: B222130
Matrix: Water
Method: SOP BAL-4201
Analyte: DMSeO

Sample	Result	Units	
B222130-BLK1	0.00	µg/L	
B222130-BLK2	0.00	µg/L	
B222130-BLK3	0.00	µg/L	
B222130-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.005		MRL: 0.005

Analyte: MeSe(IV)

Sample	Result	Units	
B222130-BLK1	0.00	µg/L	
B222130-BLK2	0.00	µg/L	
B222130-BLK3	0.00	µg/L	
B222130-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.005		MRL: 0.005

Analyte: MeSe(VI)

Sample	Result	Units	
B222130-BLK1	0.00	µg/L	
B222130-BLK2	0.00	µg/L	
B222130-BLK3	0.00	µg/L	
B222130-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.005		MRL: 0.005



Method Blanks & Reporting Limits

Analyte: Se(IV)

Sample	Result	Units	
B222130-BLK1	0.00	µg/L	
B222130-BLK2	0.00	µg/L	
B222130-BLK3	0.00	µg/L	
B222130-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.004
Limit:	0.015		MRL: 0.015

Analyte: Se(VI)

Sample	Result	Units	
B222130-BLK1	0.00	µg/L	
B222130-BLK2	0.00	µg/L	
B222130-BLK3	0.00	µg/L	
B222130-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.011		MRL: 0.011

Analyte: SeCN

Sample	Result	Units	
B222130-BLK1	0.00	µg/L	
B222130-BLK2	0.00	µg/L	
B222130-BLK3	0.00	µg/L	
B222130-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.010		MRL: 0.010

Analyte: SeMet

Sample	Result	Units	
B222130-BLK1	0.00	µg/L	
B222130-BLK2	0.00	µg/L	
B222130-BLK3	0.00	µg/L	
B222130-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.005		MRL: 0.005



Method Blanks & Reporting Limits

Analyte: SeSO3

Sample	Result	Units	
B222130-BLK1	0.00	µg/L	
B222130-BLK2	0.00	µg/L	
B222130-BLK3	0.00	µg/L	
B222130-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.011		MRL: 0.011

Analyte: Unk Se Sp

Sample	Result	Units	
B222130-BLK1	0.00	µg/L	
B222130-BLK2	0.00	µg/L	
B222130-BLK3	0.00	µg/L	
B222130-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.015		MRL: 0.015



Method Blanks & Reporting Limits

Batch: B222203
Matrix: Water
Method: EPA 1638 Mod
Analyte: Se

Sample	Result	Units
B222203-BLK1	-0.026	µg/L
B222203-BLK2	-0.076	µg/L
B222203-BLK3	-0.031	µg/L
B222203-BLK4	-0.040	µg/L
B222203-BLK5	-0.054	µg/L

Average: -0.045
Limit: 0.480

MDL: 0.150
MRL: 0.480



Method Blanks & Reporting Limits

Batch: B222222
Matrix: Water
Method: EPA 1638 Mod
Analyte: Se

Sample	Result	Units
B222222-BLK1	0.107	µg/L
B222222-BLK2	0.054	µg/L
B222222-BLK3	0.052	µg/L
B222222-BLK4	0.008	µg/L

Average: 0.055
Limit: 0.480

MDL: 0.150
MRL: 0.480



Sample Containers

Lab ID: 2209285-01

Report Matrix: WS

Collected: 09/18/2022

Sample:

Sample Type: Sample + Sum

Received: 09/22/2022

RG_ALUSM_WS_LAEMP_EVO_2022-09_N

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 7 - 2209285
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 7 - 2209285
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 7 - 2209285

Lab ID: 2209285-02

Report Matrix: WS

Collected: 09/18/2022

Sample:

Sample Type: Sample + Sum

Received: 09/22/2022

RG_ALUSM_WS_LAEMP_EVO_2022-09_NP-NAL

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2230023	<2	Cooler 1 - 2209285

Lab ID: 2209285-03

Report Matrix: WS

Collected: 09/18/2022

Sample:

Sample Type: Sample + Sum

Received: 09/22/2022

RG_ALUSM_WS_LAEMP_EVO_2022-09_NP-NAL

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2230023	<2	Cooler 1 - 2209285

Lab ID: 2209285-04

Report Matrix: WS

Collected: 09/15/2022

Sample: RG_BOCK_WS_LAEMP_EVO_2022-09_N

Sample Type: Sample + Sum

Received: 09/22/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 7 - 2209285
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 7 - 2209285
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 7 - 2209285



Sample Containers

Lab ID: 2209285-05
Sample: RG_BOCK_WS_LAEMP_EVO_2022-09_NP-NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 09/15/2022
Received: 09/22/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2230023	<2	Cooler 1 - 2209285

Lab ID: 2209285-06
Sample: RG_BOCK_WS_LAEMP_EVO_2022-09_NP-NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 09/15/2022
Received: 09/22/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2230023	<2	Cooler 1 - 2209285

Lab ID: 2209285-07
Sample: RG_ERCKUT_WS_LAEMP_EVO_2022-09_N
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 09/16/2022
Received: 09/22/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 7 - 2209285
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 7 - 2209285
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 7 - 2209285

Lab ID: 2209285-08
Sample: RG_ERCKUT_WS_LAEMP_EVO_2022-09_NP-NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 09/16/2022
Received: 09/22/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2230023	<2	Cooler 1 - 2209285

Lab ID: 2209285-09
Sample: RG_ERCKUT_WS_LAEMP_EVO_2022-09_NP-NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 09/16/2022
Received: 09/22/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2230023	<2	Cooler 1 - 2209285



Sample Containers

Lab ID: 2209285-10
Sample: RG_ERCK_WS_LAEMP_EVO_2022-09_N

Report Matrix: WS
Sample Type: Sample + Sum

Collected: 09/14/2022
Received: 09/22/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 7 - 2209285
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 7 - 2209285
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 7 - 2209285

Lab ID: 2209285-11
Sample: RG_ERCK_WS_LAEMP_EVO_2022-09_NP-NAL

Report Matrix: WS
Sample Type: Sample + Sum

Collected: 09/14/2022
Received: 09/22/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2230023	<2	Cooler 1 - 2209285

Lab ID: 2209285-12
Sample: RG_ERCK_WS_LAEMP_EVO_2022-09_NP-NAL

Report Matrix: WS
Sample Type: Sample + Sum

Collected: 09/14/2022
Received: 09/22/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2230023	<2	Cooler 1 - 2209285

Lab ID: 2209285-13
Sample: RG_GATE_WS_LAEMP_EVO_2022-09_N

Report Matrix: WS
Sample Type: Sample + Sum

Collected: 09/15/2022
Received: 09/22/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 7 - 2209285
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 7 - 2209285
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 7 - 2209285



Sample Containers

Lab ID: 2209285-14
Sample: RG_GATE_WS_LAEMP_EVO_2022-09_NP-NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 09/15/2022
Received: 09/22/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2230023	<2	Cooler 1 - 2209285

Lab ID: 2209285-15
Sample: RG_GATE_WS_LAEMP_EVO_2022-09_NP-NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 09/15/2022
Received: 09/22/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2230023	<2	Cooler 1 - 2209285

Lab ID: 2209285-16
Sample: RG_GATEDP_WS_LAEMP_EVO_2022-09_N
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 09/15/2022
Received: 09/22/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 7 - 2209285
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 7 - 2209285
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 7 - 2209285

Lab ID: 2209285-17
Sample: RG_GATEDP_WS_LAEMP_EVO_2022-09_NP-NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 09/15/2022
Received: 09/22/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2230023	<2	Cooler 1 - 2209285

Lab ID: 2209285-18
Sample: RG_GATEDP_WS_LAEMP_EVO_2022-09_NP-NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 09/15/2022
Received: 09/22/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2230023	<2	Cooler 1 - 2209285



Sample Containers

Lab ID: 2209285-19
Sample: RG_MI25_WS_LAEMP_EVO_2022-09_N

Report Matrix: WS
Sample Type: Sample + Sum

Collected: 09/15/2022
Received: 09/22/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 7 - 2209285
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 7 - 2209285
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 7 - 2209285

Lab ID: 2209285-20
Sample: RG_MI25_WS_LAEMP_EVO_2022-09_NP-NAL

Report Matrix: WS
Sample Type: Sample + Sum

Collected: 09/15/2022
Received: 09/22/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2230023	<2	Cooler 1 - 2209285

Lab ID: 2209285-21
Sample: RG_MI25_WS_LAEMP_EVO_2022-09_NP-NAL

Report Matrix: WS
Sample Type: Sample + Sum

Collected: 09/15/2022
Received: 09/22/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2230023	<2	Cooler 1 - 2209285

Lab ID: 2209285-22
Sample: RG_MI3_WS_LAEMP_EVO_2022-09_N

Report Matrix: WS
Sample Type: Sample + Sum

Collected: 09/12/2022
Received: 09/22/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 7 - 2209285
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 7 - 2209285
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 7 - 2209285



Sample Containers

Lab ID: 2209285-23
Sample: RG_MI3_WS_LAEMP_EVO_2022-09_NP-NAL

Report Matrix: WS
Sample Type: Sample + Sum

Collected: 09/12/2022
Received: 09/22/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2230023	<2	Cooler 1 - 2209285

Lab ID: 2209285-24
Sample: RG_MI3_WS_LAEMP_EVO_2022-09_NP-NAL

Report Matrix: WS
Sample Type: Sample + Sum

Collected: 09/12/2022
Received: 09/22/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2230023	<2	Cooler 1 - 2209285

Lab ID: 2209285-25
Sample: RG_MICOMP_WS_LAEMP_EVO_2022-09_N

Report Matrix: WS
Sample Type: Sample + Sum

Collected: 09/18/2022
Received: 09/22/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 7 - 2209285
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 7 - 2209285
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 7 - 2209285

Lab ID: 2209285-26
Sample: RG_MICOMP_WS_LAEMP_EVO_2022-09_NP-NAL

Report Matrix: WS
Sample Type: Sample + Sum

Collected: 09/18/2022
Received: 09/22/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2230023	<2	Cooler 1 - 2209285

Lab ID: 2209285-27
Sample: RG_MICOMP_WS_LAEMP_EVO_2022-09_NP-NAL

Report Matrix: WS
Sample Type: Sample + Sum

Collected: 09/18/2022
Received: 09/22/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2230023	<2	Cooler 1 - 2209285



Sample Containers

Lab ID: 2209285-28

Report Matrix: WS

Collected: 09/18/2022

Sample:

Sample Type: Sample + Sum

Received: 09/22/2022

RG_MIDGA_WS_LAEMP_EVO_2022-09_N

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 7 - 2209285
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 7 - 2209285
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 7 - 2209285

Lab ID: 2209285-29

Report Matrix: WS

Collected: 09/18/2022

Sample:

Sample Type: Sample + Sum

Received: 09/22/2022

RG_MIDGA_WS_LAEMP_EVO_2022-09_NP-NAL

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2230023	<2	Cooler 1 - 2209285

Lab ID: 2209285-30

Report Matrix: WS

Collected: 09/18/2022

Sample:

Sample Type: Sample + Sum

Received: 09/22/2022

RG_MIDGA_WS_LAEMP_EVO_2022-09_NP-NAL

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2230023	<2	Cooler 1 - 2209285

Lab ID: 2209285-31

Report Matrix: WS

Collected: 09/13/2022

Sample:

Sample Type: Sample + Sum

Received: 09/22/2022

RG_MIDER_WS_LAEMP_EVO_2022-09_N

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 7 - 2209285
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 7 - 2209285
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 7 - 2209285



Sample Containers

Lab ID: 2209285-32
Sample: RG_MIDER_WS_LAEMP_EVO_2022-09_NP-NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 09/13/2022
Received: 09/22/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2230023	<2	Cooler 1 - 2209285

Lab ID: 2209285-33
Sample: RG_MIDER_WS_LAEMP_EVO_2022-09_NP-NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 09/13/2022
Received: 09/22/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2230023	<2	Cooler 1 - 2209285

Lab ID: 2209285-34
Sample: RG_MIDBO_WS_LAEMP_EVO_2022-09_N
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 09/13/2022
Received: 09/22/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 7 - 2209285
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 7 - 2209285
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 7 - 2209285

Lab ID: 2209285-35
Sample: RG_MIDBO_WS_LAEMP_EVO_2022-09_NP-NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 09/13/2022
Received: 09/22/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2230023	<2	Cooler 1 - 2209285

Lab ID: 2209285-36
Sample: RG_MIDBO_WS_LAEMP_EVO_2022-09_NP-NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 09/13/2022
Received: 09/22/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2230023	<2	Cooler 1 - 2209285



Sample Containers

Lab ID: 2209285-37				Report Matrix: WS		Collected: 09/18/2022	
Sample: RG_RIVER_WS_LAEMP_EVO_2022-09_N				Sample Type: Sample + Sum		Received: 09/22/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 7 - 2209285
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 7 - 2209285
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 7 - 2209285

Lab ID: 2209285-38				Report Matrix: WS		Collected: 09/18/2022	
Sample: RG_RIVER_WS_LAEMP_EVO_2022-09_NP-NAL				Sample Type: Sample + Sum		Received: 09/22/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2230023	<2	Cooler 1 - 2209285

Lab ID: 2209285-39				Report Matrix: WS		Collected: 09/18/2022	
Sample: RG_RIVER_WS_LAEMP_EVO_2022-09_NP-NAL				Sample Type: Sample + Sum		Received: 09/22/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2230023	<2	Cooler 1 - 2209285



Shipping Containers

Cooler 1 - 2209285

Received: September 22, 2022 7:37
Tracking No: RWHV95583 via Courier
Coolant Type: None
Temperature: 9.5 °C

Description: Styrofoam Cooler
Damaged in transit? No
Returned to client? No
Comments: IR#:1

Custody seals present? No
Custody seals intact? No
COC present? No

Cooler 7 - 2209285

Received: September 22, 2022 7:37
Tracking No: RWHV95583 via Courier
Coolant Type: Blue Ice
Temperature: -0.8 °C

Description: Styrofoam Cooler
Damaged in transit? No
Returned to client? No
Comments: IR#:1

Custody seals present? No
Custody seals intact? No
COC present? Yes

COC ID: **REP_LAEMP_EVO_2022-09_BROOKS** TURNAROUND TIME: **Rush** RUSH Priority

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name / Job#	Regional Effects Program			Lab Name	Brooks Applied Labs			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Mike Pope			Lab Contact	Ben Wozniak			Email 1:	AguaSciLab@Teck.com	X	X	X
Email	Mike.Pope@Teck.com			Email	Ben@brooksapplied.com			Email 2:	teckcoal@tequisonline.com			X
Address	421 Pine Ave			Address	13751 Lake City Way			Email 3:	Teck.Lab.Results@teck.com	X	X	X
					Suite 108			Email 4:	Lisa.Bowrop@minnow.ca	X	X	X
City	Sparwood	Province	BC	City	Seattle	Province	WA	Email 5:	Tyler.Mehler@minnow.ca	X	X	X
Postal Code	VOB 2G1	Country	Canada	Postal Code	98125	Country	United States	Email 6:	jessica.rite@teck.com	X	X	X
Phone Number	250-425-8247			Phone Number	(206) 753-6158			PO number	VPO00817033			

SAMPLE DETAILS								ANALYSIS REQUESTED					Filtered: F: Field, L: Lab, FL: Field & Lab, N: None				
Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com p	# Of Cont.	Brooks_Se_Speciation	Brooks_Se_D	Brooks_Se_T							
RG_ALUSM_WS_LAEMP_EVO_2022-09_N	RG_ALUSM	WS		9/18/2022	12:17	G	1	1									
RG_ALUSM_WS_LAEMP_EVO_2022-09_NP-NAL	RG_ALUSM	WS		9/18/2022	12:17	G	2		1	1							
RG_BOCK_WS_LAEMP_EVO_2022-09_N	RG_BOCK	WS		2022/09/15	14:30	G	1	1									
RG_BOCK_WS_LAEMP_EVO_2022-09_NP-NAL	RG_BOCK	WS		2022/09/15	14:30	G	2		1	1							
RG_ERCKUT_WS_LAEMP_EVO_2022-09_N	RG_ERCKUT	WS		2022/09/16	11:30	G	1	1									
RG_ERCKUT_WS_LAEMP_EVO_2022-09_NP-NAL	RG_ERCKUT	WS		2022/09/16	11:30	G	2		1	1							
RG_ERCK_WS_LAEMP_EVO_2022-09_N	RG_ERCK	WS		2022/09/14	9:15	G	1	1									
RG_ERCK_WS_LAEMP_EVO_2022-09_NP-NAL	RG_ERCK	WS		2022/09/14	9:15	G	2		1	1							
RG_GATE_WS_LAEMP_EVO_2022-09_N	RG_GATE	WS		2022/09/15	9:45	G	1	1									
RG_GATE_WS_LAEMP_EVO_2022-09_NP-NAL	RG_GATE	WS		2022/09/15	9:45	G	2		1	1							

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
	Jennifer Ings/Minnow	#####	<i>JW IBA</i>	9/22/22 7:37

SERVICE REQUEST (rush - subject to availability)				
Regular (default)				
Priority (2-3 business days) - 50% surcharge	X	Sampler's Name	Jennifer Ings	Mobile #
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature	<i>Jennifer Ings</i>	Date/Time
For Emergency <1 Day, ASAP or Weekend - Contact ALS				519-500-3444
				September 19, 2022

COC ID: **REP_LAEMP_EVO_2022-09_BROOKS** TURNAROUND TIME: **Rush** RUSH: Priority

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name / Job#	Regional Effects Program			Lab Name	Brooks Applied Labs			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Mike Pope			Lab Contact	Ben Wozniak			Email 1:	AquaSciLab@Teck.com	X	X	X
Email	Mike.Pope@Teck.com			Email	Ben@brooksapplied.com			Email 2:	teckcoal@equisonline.com			X
Address	421 Pine Ave			Address	13751 Lake City Way Suite 108			Email 3:	Teck_Lab_Results@teck.com	X	X	X
City	Sparwood	Province	BC	City	Seattle	Province	WA	Email 4:	Lisa.Bowring@minnow.ca	X	X	X
Postal Code	V0B 2G1	Country	Canada	Postal Code	98125	Country	United States	Email 5:	Tyler.Mehler@minnow.ca	X	X	X
Phone Number	250-425-8247			Phone Number	(206) 753-6158			Email 6:	Jessica.Ritz@Teck.com	X	X	X
								PO number	YPO00817033			

SAMPLE DETAILS							ANALYSIS REQUESTED												
Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com p	# Of Cont.	Brooks_Se_Speciation	Brooks_Se_D	Brooks_Se_T	F	N	N						
RG_GATEDP_WS_LAEMP_EVO_2022-09_N	RG_GATEDP	WS		2022/09/15	7:50	G	1	1											
RG_GATEDP_WS_LAEMP_EVO_2022-09_NP-NAL	RG_GATEDP	WS		2022/09/15	7:50	G	2		1	1									
RG_MI25_WS_LAEMP_EVO_2022-09_N	RG_MI25	WS		9/15/2022	11:30	G	1	1											
RG_MI25_WS_LAEMP_EVO_2022-09_NP-NAL	RG_MI25	WS		9/15/2022	11:30	G	2		1	1									
RG_MI3_WS_LAEMP_EVO_2022-09_N	RG_MI3	WS		9/12/2022	8:45	G	1	1											
RG_MI3_WS_LAEMP_EVO_2022-09_NP-NAL	RG_MI3	WS		9/12/2022	8:45	G	2		1	1									
RG_MICOMP_WS_LAEMP_EVO_2022-09_N	RG_MICOMP	WS		9/18/2022	17:10	G	1	1											
RG_MICOMP_WS_LAEMP_EVO_2022-09_NP-NAL	RG_MICOMP	WS		9/18/2022	17:10	G	2		1	1									
RG_MIDGA_WS_LAEMP_EVO_2022-09_N	RG_MIDGA	WS		9/18/2022	10:00	G	1	1											
RG_MIDGA_WS_LAEMP_EVO_2022-09_NP-NAL	RG_MIDGA	WS		9/18/2022	10:00	G	2		1	1									

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
	Jennifer Ings/Minnow	#####	<i>JW IBA</i>	9/22/22 7:37

SERVICE REQUEST (rush - subject to availability)					
Regular (default)		Sampler's Name	Jennifer Ings	Mobile #	519-500-3444
Priority (2-3 business days) - 50% surcharge	X	Sampler's Signature	<i>Jennifer Ings</i>	Date/Time	September 19, 2022
Emergency (1 Business Day) - 100% surcharge					
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

COC ID: **REP_LAEMP_EVO_2022-09_BROOKS** TURNAROUND TIME: **Rush** RUSH Priority

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name / Job#	Regional Effects Program			Lab Name	Brooks Applied Labs			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Mike Pope			Lab Contact	Ben Wozniak			Email 1:	AquaSciLab@Teck.com	X	X	X
Email	Mike.Pope@Teck.com			Email	Ben@brooksupplied.com			Email 2:	teckcoal@equisonline.com			X
Address	421 Pine Ave			Address	13751 Lake City Way			Email 3:	Teck.Lab.Results@teck.com	X	X	X
City	Sparwood	Province	BC	City	Seattle	Province	WA	Email 4:	Lisa.Bowron@minnow.ca	X	X	X
Postal Code	VOB 2G1	Country	Canada	Postal Code	98125	Country	United States	Email 5:	Tyler.Mehler@minnow.ca	X	X	X
Phone Number	250-425-8247			Phone Number	(206) 753-6158			PO number	VPO00817033			

SAMPLE DETAILS								ANALYSIS REQUESTED								
Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com p	# Of Cont.	Brooks_Se_Speciation	Brooks_Se_D	Brooks_Se_T	Filters - F: Field, L: Lab, FL: Field & Lab, N: None					
RG_MIDER_WS_LAEMP_EVO_2022-09_N	RG_MIDER	WS		2022/09/13	7:45	G	1	1								
RG_MIDER_WS_LAEMP_EVO_2022-09_NP-NAL	RG_MIDER	WS		2022/09/13	7:45	G	2		1	1						
RG_MIDBO_WS_LAEMP_EVO_2022-09_N	RG_MIDBO	WS		2022/09/13	14:40	G	1	1								
RG_MIDBO_WS_LAEMP_EVO_2022-09_NP-NAL	RG_MIDBO	WS		2022/09/13	14:40	G	2		1	1						
RG_RIVER_WS_LAEMP_EVO_2022-09_N	RG_RIVER	WS		9/18/2022	17:10	G	1		1	1						
RG_RIVER_WS_LAEMP_EVO_2022-09_NP-NAL	RG_RIVER	WS		9/18/2022	17:10	G	2	1								
		WS														
		WS														
		WS														
		WS														

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
	Jennifer Ings/Minnow	#####	LKW IBA	9/22/22 7:37

SERVICE REQUEST (rush - subject to availability)			
Regular (default)	Sampler's Name	Jennifer Ings	Mobile #
Priority (2-3 business days) - 50% surcharge X	Sampler's Signature	<i>[Signature]</i>	519-500-3444
Emergency (1 Business Day) - 100% surcharge			Date/Time
For Emergency <1 Day, ASAP or Weekend - Contact ALS			September 19, 2022

Confidential

STRAIGHT BILL OF LADING
NOT NEGOTIABLE

RW HOT SHOT SERVICE INC.

250-425-7447
24 Hour Hot Shot Service

BAL Final Report 2209285
No. 95583

Sparwood, BC
Terrace, BC
Red Deer, AB

Vancouver, BC
Calgary, AB
Montreal, QC

Prince George, BC
Edmonton, AB
Spokane, WA

Elkford, BC
Ft. McMurray, AB
Shelby, MT

Tumbler Ridge, BC
Hinton, AB
Gillette, WY

INVOICE TO <i>Cap 227994370</i>		DATE <i>Sept 2/22</i>	
BILL OF LADING #		PURCHASE ORDER NUMBER	
SHIPPER (FROM)		CONSIGNEE (TO)	
STREET		STREET	
CITY/PROVINCE		CITY/PROVINCE	
POSTAL CODE		POSTAL CODE	
SPECIAL INSTRUCTIONS			
PACKAGES 7	DESCRIPTION OF ARTICLES AND SPECIAL MARKS <i>2x6 lbs</i>	WEIGHT (Subject to Correction) <i>2x6 lbs</i>	FREIGHT CHARGES SHIPPER TO CHECK <input type="checkbox"/> PREPAID <input type="checkbox"/> COLLECT <small>If not indicated, shipping will automatically move collect.</small> FEE _____ WAITING _____ XPU _____ CHARGES _____ FSC _____ US _____ SUB TOTAL _____ GST _____ TOTAL \$ _____ <small>IF AT OWNER'S RISK - WRITE ORD HERE</small>
RW 95583			
UNIT #	DECLARED VALUATION: Maximum liability of carrier is \$2.00 per lb. (\$4.41 per kilogram) unless declared valuation states otherwise.		
DRIVER'S SIGNATURE - PICK UP BY	PICK UP TIME	DRIVER'S SIGNATURE - DELIVERY BY	
NOTICE OF CLAIM: (a) No carrier is liable for loss, damage or delay of any goods under the Bill of Lading unless notice, therein setting out particulars of the claim, destination and date of shipment of the goods and the estimated amount claimed, is given in writing to the originating carrier or the delivering carrier within sixty (60) days after the delivery of the goods, or in the case of failure to make delivery within nine (9) months from the date of shipment. (b) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. RECEIVED at the point of origin on the date specified from the consignee mentioned herein, the property herein described, in apparent good order, except as noted (contents and classification in effect on the date of shipment) as indicated below, which the carrier agrees to carry and to deliver to the consignee at the said destination, subject to the rates and conditions of carriage of package unknownly marked, consigned and it is mutually agreed, as to each carrier of all or any portion of the goods over all or any portion of the route to destination, and as to each party of any time interested in all or any of the goods, that every service to be performed hereunder shall be subject to the conditions standard Bill of Lading, in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. Printed or written, including conditions set aside by the standard Bill of Lading, in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns.		FINISH TIME	
SHIPPER PRINT	CONSIGNEE PRINT		DATE
SHIPPER SIGN	CONSIGNEE SIGN		TIME
WHITE: Office	YELLOW: Carrier	PINK: Consignee	GOLDENROAD: Shipper
GST # 864540398RT0001			NUMBER OF PIECES RECEIVED 7

Cooler ID: *cooler 1*

COC (Y/N) *(Y)*

Temperature: *9.5*

IR: *1*

Coolant Type: Ice Blue Ice Ambient

Notes:

Sampling Locations:

Sample Types:

Container Types:

Opened By: *VW*

Date: *9/22/22*

<i>EV</i>		<i>EG</i>					
<i>(T/D)</i>	SP	<i>(T/D)</i>	SP	T/D	SP	T/D	SP
<i>125 ml</i>		<i>125 ml</i>					

Effective 7/29/20

COPY Revision 004

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STRAIGHT BILL OF LADING
NOT NEGOTIABLE

RW HOT SHOT SERVICE INC.

250-425-7447
24 Hour Hot Shot Service

BAL Final Report 2209285

No. 95583

Sparwood, BC
Terrace, BC
Red Deer, AB

Vancouver, BC
Calgary, AB
Montreal, QC

Prince George, BC
Edmonton, AB
Spokane, WA

Elkford, BC
Ft. McMurray, AB
Shelby, MT

Tumbler Ridge, BC
Hinton, AB
Gillette, WY

INVOICE TO <i>Cap 22092854370</i>		DATE <i>Sept 2, 22</i>	
BILL OF LADING #		PURCHASE ORDER NUMBER	
SHIPPER (FROM)		CONSIGNEE (TO)	
STREET		STREET	
CITY/PROVINCE		POSTAL CODE	CITY/PROVINCE
POSTAL CODE		POSTAL CODE	
SPECIAL INSTRUCTIONS			FREIGHT CHARGES SHIPPER TO CHECK <input type="checkbox"/> PREPAID <input type="checkbox"/> COLLECT <small>If not indicated, shipping will automatically move collect</small> FEE _____ WAITING _____ XPU _____ CHARGES _____ FSC _____ US _____ SUB TOTAL _____ GST _____ TOTAL \$ _____ IF AT OWNER'S RISK, WRITE ORD HERE _____
PACKAGES	DESCRIPTION OF ARTICLES AND SPECIAL MARKS	WEIGHT (Subject to Correction)	
<i>7</i>	<i>COOLERS - 125ml plastic</i>	<i>266 lbs</i>	
<h1>RWHV95583</h1>			
UNIT #	DECLARED VALUATION: Maximum liability of carrier is \$2.00 per lb. (\$4.41 per kilogram) unless declared valuation states otherwise.		
DRIVER'S SIGNATURE - PICK UP BY	PICK UP TIME	DRIVER'S SIGNATURE - DELIVERY BY	FINISH TIME
<small>NOTICE OF CLAIM: (a) No carrier is liable for loss, damage or delay of any goods under the Bill of Lading unless notice, there is setting out particulars of the claim, destination and date of shipment of the goods, and the estimated amount claimed, is given in writing to the shipping carrier or the delivering carrier within sixty (60) days after the delivery of the goods, on the case of failure to make delivery, within nine (9) months from the date of shipment. (b) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. RECEIVED at the point of origin on the date specified from the consignee mentioned herein, the property herein described, in apparent good order, except as noted (contents and condition of contents of package unknown) marked, consigned and it is mutually agreed, as to each carrier of all or any of the goods over all or any portion of the route to destination, and as to each party of any time interested in all or any of the goods, that every service to be performed hereunder shall be subject to the conditions standard Bill of Lading, in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. Printed or written, including conditions set aside by the standard Bill of Lading, in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. The Contract for the carriage of the goods listed in the Bill of Lading is governed by regulation in force in the jurisdiction at the time and place of shipment and is subject to the conditions set out in such regulations.</small>			
SHIPPER PRINT	CONSIGNEE PRINT	DATE	
SHIPPER SIGN	CONSIGNEE SIGN	TIME	
WHITE: Office	YELLOW: Carrier	PINK: Consignee	GOLDENROAD: Shipper
GST # 864540398RT0001			NUMBER OF PIECES RECEIVED <i>7</i>

Cooler ID: *Cooler 7*

COC *(Y/N)*

Temperature: *-0.8*

IR: *2*

Coolant Type: Ice *Blue Ice* Ambient

Notes:

Sampling Locations:

<i>RG</i>		<i>LC</i>		<i>GH</i>					
T/D	SP	T/D	SP	T/D	SP	T/D	SP	T/D	SP
	<i>60ml PLASTIC</i>		<i>125ml PLASTIC</i>		<i>60ml PLASTIC</i>				

Sample Types:

Container Types:

Opened By: *ERL*

125ml PLASTIC Date: 9/22/22

Effective 7/29/20

COPY

Revision 004



September 28, 2022

Teck Resources Limited - Vancouver
 Mike Pope
 421 Pine Avenue
 Sparwood, B.C. CANADA V0B2G0
mike.pope@teck.com

Re: Regional Effects Program

Dear Mike Pope,

On September 22, 2022, Brooks Applied Labs (BAL) received two (2) aqueous samples. The samples were logged-in for total recoverable selenium [Se], dissolved Se [Se], and Se speciation analyses, according to the chain-of-custody (COC) form.

The **Sample ID** values listed on the chain-of-custody (COC) form did not exactly match the corresponding **Sample ID** values on the container labels for 2209286-02 and 2209286-03. The discrepancies are described in the table below.

Sample ID Agreement Between COC and Container Labels

Laboratory ID	Sample ID (on COC form)	Sample ID (on container label)
2209286-02/ 2209286-03	RG_ERCKUC_WS_LAEMP_EVO_2022- 09_NP-NAL	RG_ERCKUC_LAEMP_EVO_2022-09_NP-NAL

2209286-02 and 2209286-03 were logged in and reported using the **Sample ID** values listed on the COC form (*column 2 in the table above*).

The sample fractions for total recoverable Se and dissolved Se were not preserved in the field. The samples were preserved (pH < 2) upon receipt at BAL. All sample fractions for total recoverable Se and dissolved Se were preserved within the (14 calendar day) preservation holding time.

The sample fractions logged in for Se speciation and dissolved Se had been field-filtered prior to receipt at BAL. All samples were stored according to BAL SOPs.

Total Recoverable Se and Dissolved Se

Each aqueous sample fraction for dissolved Se was digested in a closed vessel (bomb) with nitric and hydrochloric acids. The resulting digests were analyzed for Se content via inductively coupled plasma triple quadrupole mass spectrometry (ICP-QQQ-MS). The ICP-QQQ-MS instrumentation uses advanced interference removal techniques to ensure accuracy of the sample results. For more information, please visit the *Interference Reduction Technology* section on our website, brooksapplied.com.

Selenium Speciation

Each aqueous sample was analyzed for selenium speciation using ion chromatography inductively coupled plasma collision reaction cell mass spectrometry (IC-ICP-CRC-MS). Selenium species are chromatographically separated on an ion exchange column and then quantified using inductively coupled plasma collision reaction cell mass spectrometry (ICP-CRC-MS); for more information on this determinative technique, please visit the *Interference Reduction Technology* section on our website. The chromatographic method applied for the analyses provides greater retention of methylseleninic acid and selenomethionine, allowing for more definitive quantitation of these species.

In accordance with the quotation issued for this project, selenium speciation was defined as dissolved selenite [Se(IV)], selenate [Se(VI)], selenocyanate [SeCN], methylseleninic acid [MeSe(IV)], methaneselenonic acid [MeSe(VI)], selenomethionine [SeMef], selenosulfate [SeSO₃], and dimethylselenoxide [DMSeO]. Unknown Se species was defined as the total concentration of all unknown Se species observed during the analysis. This item is identified on the report as [Unk Se Sp].

DMSeO elutes early in the chromatographic run due to the nature of the molecule and the applied chromatographic separation method. Since this species elutes near the dead volume, additional selenium species may coelute. Alternate methods can be applied, upon client request, to increase the separation of DMSeO from potentially co-eluting selenium species.

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

In instances where a matrix spike/matrix spike duplicate (MS/MSD) set was spiked at a level less than the native sample concentration, the recoveries and the relative percent difference (RPD) are not considered valid indicators of data quality. In such instances, the recoveries of the laboratory fortified blanks (BS) and/or standard reference materials (SRM) demonstrate the accuracy of the applied methods. When the spiking level was less than 25% of the native sample concentration, the spike recovery was not reported (**NR**) and the relative percent difference (RPD) of the MS/MSD set was not calculated (**N/C**).

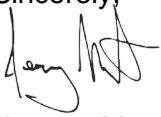
In cases when either the native sample concentration was non-detectable (reported as less than or equal to the MDL) and/or the corresponding DUP result was also non-detectable, the RPD between the two values was not calculated (**N/C**).

Except for concentration qualifiers, all data were reported without qualification. All associated quality control sample results met the acceptance criteria.

BAL, an accredited laboratory, certifies that the reported results of all analyses for which BAL is NELAP accredited meet all NELAP requirements. For more information, please see the *Report Information* page.

Please feel free to contact us if you have any questions regarding this report.

Sincerely,

A handwritten signature in black ink, appearing to read 'Jeremy Maute', with a stylized flourish at the end.

Jeremy Maute
Senior Project Manager

Jeremy@brooksapplied.com



Report Information

Laboratory Accreditation

BAL is accredited by the *National Environmental Laboratory Accreditation Program* (NELAP) through the State of Florida Department of Health, Bureau of Laboratories (E87982) and is certified to perform many environmental analyses. BAL is also certified by many other states to perform environmental analyses. For a current list of our accreditations/certifications, please visit our website at <http://www.brooksapplied.com/resources/certificates-permits/> or review Tables 1 and 2 in our Accreditation Information. Results reported relate only to the samples listed in the report.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

AR	as received	MS	matrix spike
BAL	Brooks Applied Labs	MSD	matrix spike duplicate
BLK	method blank	ND	non-detect
BS	blank spike	NR	non-reportable
CAL	calibration standard	N/C	not calculated
CCB	continuing calibration blank	PS	post preparation spike
CCV	continuing calibration verification	REC	percent recovery
COC	chain of custody record	RPD	relative percent difference
D	dissolved fraction	SCV	secondary calibration verification
DUP	duplicate	SOP	standard operating procedure
IBL	instrument blank	SRM	reference material
ICV	initial calibration verification	T	total fraction
MDL	method detection limit	TR	total recoverable fraction
MRL	method reporting limit		

Definition of Data Qualifiers

(Effective 3/23/2020)

E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Please see narrative for explanation.
J	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1	Estimated value. A full explanation is presented in the narrative.
M	Duplicate precision (RPD) was not within acceptance criteria. Please see narrative for explanation.
N	Spike recovery was not within acceptance criteria. Please see narrative for explanation.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.
Z	Holding time and/or preservation requirements not established for this method; however, BAL recommendations for holding time were not followed. Please see narrative for explanation.

These qualifiers are based on those previously utilized by Brooks Applied Labs, those found in the EPA SOW ILM03.0, Exhibit B, Section III, pg. B-18, and the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review; USEPA; January 2010. These supersede all previous qualifiers ever employed by BAL.



Accreditation Information

Table 1. Accredited method/matrix/analytes for TNI
Issued by: State of Florida Dept. of Health (The NELAC Institute 2016 Standard)
Issued on: July 1, 2021; Valid to: June 30, 2022
Certificate Number: E87982-37

Method	Matrix	TNI Accredited Analyte(s)
EPA 1638	Non-Potable Waters	Ag, Cd, Cu, Ni, Pb, Sb, Se, Tl, Zn
EPA 200.8	Non-Potable Waters	Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Sb, Se, Tl, U, V, Zn
EPA 6020	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Tl, U, V, Zn
	Solids/Chemicals & Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Tl, V, Zn
BAL-5000	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Tl, U, V, Zn, Hardness
	Solids/Chemicals	Ag, As, B, Be, Cd, Co, Cr, Cu, Pb, Mo, Ni, Sb, Se, Sn, Sr, Tl, V, Zn
	Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Tl, V, Zn
EPA 1640	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn
EPA 1631E	Non-Potable Waters, Solids/Chemicals & Biological	Total Mercury
EPA 1630	Non-Potable Waters	Methyl Mercury
BAL-3200	Solids/Chemicals & Biological	Methyl Mercury
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
BAL-4201	Non-Potable Waters	Se(IV), Se(VI)
BAL-4300	Non-Potable Waters Solid/Chemicals	Cr(VI)
SM2340B	Non-Potable Waters	Hardness



Accreditation Information

**Table 2. Accredited method/matrix/analytes for ISO (1),
 Non-Governmental TNI (2)
 Issued by: ANAB
 Issued on: September 21, 2021; Valid to: March 30, 2024**

Method	Matrix	ISO and Non-Gov. TNI Accredited Analyte(s)
EPA 1638 Mod EPA 200.8 Mod EPA 6020 Mod	Non-Potable Waters	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, U, V, Zn
BAL-5000	Solids/Chemicals & Biological	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, V, Zn Hg (Biological Only)
EPA 1640 Mod	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn Ag, As, Cr, Co, Se, Ti, V (ISO Only)
EPA 1631E Mod BAL-3100	Non-Potable Waters, Solids/Chemicals & Biological/Food	Total Mercury
EPA 1630 Mod BAL-3200	Non-Potable Waters, Solids/Chemicals Biological	Methyl Mercury
EPA 1632A Mod BAL-3300	Non-Potable Waters Biological/Food Solids/Chemicals	Inorganic Arsenic (ISO Only) Inorganic Arsenic (ISO Only)
AOAC 2015.01 Mod BAL-5000	Food	As, Cd, Hg, Pb
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
	Biological by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4101	Food by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4201	Non-Potable Waters	Se(IV), Se(VI), SeCN, SeMet
BAL-4300	Non-Potable Waters, Solid/Chemicals	Cr(VI)
SM 3500-Fe BAL-4500	Non-Potable Waters	Fe, Fe(II) (ISO Only)
SM2340B	Non-Potable Waters	Hardness
SM 2540G BAL-0501	Solids/Chemicals & Biological	% Dry Weight



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
RG_ERCKUC_WS_LAEMP_EVO_20 22-09_N	2209286-01	WS	Sample	09/14/2022	09/22/2022
RG_ERCKUC_WS_LAEMP_EVO_20 22-09_NP-NAL	2209286-02	WS	Sample	09/14/2022	09/22/2022
RG_ERCKUC_WS_LAEMP_EVO_20 22-09_NP-NAL	2209286-03	WS	Sample	09/14/2022	09/22/2022

Batch Summary

Analyte	Lab Matrix	Method	Prepared	Analyzed	Batch	Sequence
DMSeO	Water	SOP BAL-4201	09/20/2022	09/23/2022	B222130	S220995
MeSe(IV)	Water	SOP BAL-4201	09/20/2022	09/23/2022	B222130	S220995
MeSe(VI)	Water	SOP BAL-4201	09/20/2022	09/23/2022	B222130	S220995
Se	Water	EPA 1638 Mod	09/23/2022	09/26/2022	B222203	S221000
Se(IV)	Water	SOP BAL-4201	09/20/2022	09/23/2022	B222130	S220995
Se(VI)	Water	SOP BAL-4201	09/20/2022	09/23/2022	B222130	S220995
SeCN	Water	SOP BAL-4201	09/20/2022	09/23/2022	B222130	S220995
SeMet	Water	SOP BAL-4201	09/20/2022	09/23/2022	B222130	S220995
SeSO3	Water	SOP BAL-4201	09/20/2022	09/23/2022	B222130	S220995
Unk Se Sp	Water	SOP BAL-4201	09/20/2022	09/23/2022	B222130	S220995



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKUC_WS_LAEMP_EVO_2022-09_N										
2209286-01	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222130	S220995
2209286-01	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222130	S220995
2209286-01	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222130	S220995
2209286-01	Se(IV)	WS	D	0.215		0.020	0.075	µg/L	B222130	S220995
2209286-01	Se(VI)	WS	D	144		0.010	0.055	µg/L	B222130	S220995
2209286-01	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B222130	S220995
2209286-01	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222130	S220995
2209286-01	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B222130	S220995
2209286-01	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B222130	S220995
RG_ERCKUC_WS_LAEMP_EVO_2022-09_NP-NAL										
2209286-02	Se	WS	D	133		0.165	0.528	µg/L	B222203	S221000
RG_ERCKUC_WS_LAEMP_EVO_2022-09_NP-NAL										
2209286-03	Se	WS	TR	133		0.165	0.528	µg/L	B222203	S221000



Accuracy & Precision Summary

Batch: B222130
Lab Matrix: Water
Method: SOP BAL-4201

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222130-BS1	Blank Spike, (2124033)						
	MeSe(IV)		5.095	6.159	µg/L	121% 75-125	
	Se(IV)		5.000	5.689	µg/L	114% 75-125	
	Se(VI)		5.000	5.231	µg/L	105% 75-125	
	SeCN		5.015	5.177	µg/L	103% 75-125	
	SeMet		4.932	5.459	µg/L	111% 75-125	
B222130-DUP3	Duplicate, (2209286-01)						
	DMSeO	ND		ND	µg/L		N/C 25
	MeSe(IV)	ND		ND	µg/L		N/C 25
	MeSe(VI)	ND		ND	µg/L		N/C 25
	Se(IV)	0.215		0.235	µg/L		9% 25
	Se(VI)	144.4		147.6	µg/L		2% 25
	SeCN	ND		ND	µg/L		N/C 25
	SeMet	ND		ND	µg/L		N/C 25
	SeSO3	ND		ND	µg/L		N/C 25
	Unk Se Sp	ND		ND	µg/L		N/C 25
B222130-MS3	Matrix Spike, (2209286-01)						
	Se(IV)	0.215	4.900	5.010	µg/L	98% 75-125	
	Se(VI)	144.4	5.100	156.6	µg/L	NR 75-125	
	SeCN	ND	1.962	1.876	µg/L	96% 75-125	
	SeMet	ND	1.977	2.046	µg/L	104% 75-125	
B222130-MSD3	Matrix Spike Duplicate, (2209286-01)						
	Se(IV)	0.215	4.900	5.056	µg/L	99% 75-125	0.9% 25
	Se(VI)	144.4	5.100	156.1	µg/L	NR 75-125	N/C 25
	SeCN	ND	1.962	1.875	µg/L	96% 75-125	0.06% 25
	SeMet	ND	1.977	1.986	µg/L	100% 75-125	3% 25



Accuracy & Precision Summary

Batch: B222203
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222203-BS1	Blank Spike, (2128023) Se		200.0	174.3	µg/L	87% 75-125	
B222203-BS2	Blank Spike, (2128023) Se		200.0	178.8	µg/L	89% 75-125	
B222203-BS3	Blank Spike, (2128023) Se		200.0	179.9	µg/L	90% 75-125	
B222203-BS4	Blank Spike, (2128023) Se		200.0	173.4	µg/L	87% 75-125	
B222203-BS5	Blank Spike, (2128023) Se		200.0	182.9	µg/L	91% 75-125	
B222203-SRM1	Reference Material (2214016, TMDA 51.5 Reference Standard - Bottle 8 - SRM) Se		14.30	12.81	µg/L	90% 75-125	
B222203-SRM2	Reference Material (2214016, TMDA 51.5 Reference Standard - Bottle 8 - SRM) Se		14.30	13.33	µg/L	93% 75-125	
B222203-SRM3	Reference Material (2214016, TMDA 51.5 Reference Standard - Bottle 8 - SRM) Se		14.30	13.09	µg/L	92% 75-125	
B222203-SRM4	Reference Material (2214016, TMDA 51.5 Reference Standard - Bottle 8 - SRM) Se		14.30	13.25	µg/L	93% 75-125	
B222203-SRM5	Reference Material (2214016, TMDA 51.5 Reference Standard - Bottle 8 - SRM) Se		14.30	13.11	µg/L	92% 75-125	
B222203-DUP5	Duplicate, (2209285-33) Se	2.362		2.324	µg/L		2% 20



Accuracy & Precision Summary

Batch: B222203
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222203-MS5	Matrix Spike, (2209285-33) Se	2.362	220.0	210.4	µg/L	95% 75-125	
B222203-MSD5	Matrix Spike Duplicate, (2209285-33) Se	2.362	220.0	208.3	µg/L	94% 75-125	1% 20



Method Blanks & Reporting Limits

Batch: B222130
Matrix: Water
Method: SOP BAL-4201
Analyte: DMSeO

Sample	Result	Units	
B222130-BLK1	0.00	µg/L	
B222130-BLK2	0.00	µg/L	
B222130-BLK3	0.00	µg/L	
B222130-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.005		MRL: 0.005

Analyte: MeSe(IV)

Sample	Result	Units	
B222130-BLK1	0.00	µg/L	
B222130-BLK2	0.00	µg/L	
B222130-BLK3	0.00	µg/L	
B222130-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.005		MRL: 0.005

Analyte: MeSe(VI)

Sample	Result	Units	
B222130-BLK1	0.00	µg/L	
B222130-BLK2	0.00	µg/L	
B222130-BLK3	0.00	µg/L	
B222130-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.005		MRL: 0.005



Method Blanks & Reporting Limits

Analyte: Se(IV)

Sample	Result	Units	
B222130-BLK1	0.00	µg/L	
B222130-BLK2	0.00	µg/L	
B222130-BLK3	0.00	µg/L	
B222130-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.004
Limit:	0.015		MRL: 0.015

Analyte: Se(VI)

Sample	Result	Units	
B222130-BLK1	0.00	µg/L	
B222130-BLK2	0.00	µg/L	
B222130-BLK3	0.00	µg/L	
B222130-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.011		MRL: 0.011

Analyte: SeCN

Sample	Result	Units	
B222130-BLK1	0.00	µg/L	
B222130-BLK2	0.00	µg/L	
B222130-BLK3	0.00	µg/L	
B222130-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.010		MRL: 0.010

Analyte: SeMet

Sample	Result	Units	
B222130-BLK1	0.00	µg/L	
B222130-BLK2	0.00	µg/L	
B222130-BLK3	0.00	µg/L	
B222130-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.005		MRL: 0.005



Method Blanks & Reporting Limits

Analyte: SeSO3

Sample	Result	Units	
B222130-BLK1	0.00	µg/L	
B222130-BLK2	0.00	µg/L	
B222130-BLK3	0.00	µg/L	
B222130-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.011		MRL: 0.011

Analyte: Unk Se Sp

Sample	Result	Units	
B222130-BLK1	0.00	µg/L	
B222130-BLK2	0.00	µg/L	
B222130-BLK3	0.00	µg/L	
B222130-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.015		MRL: 0.015



Method Blanks & Reporting Limits

Batch: B222203
Matrix: Water
Method: EPA 1638 Mod
Analyte: Se

Sample	Result	Units
B222203-BLK1	-0.026	µg/L
B222203-BLK2	-0.076	µg/L
B222203-BLK3	-0.031	µg/L
B222203-BLK4	-0.040	µg/L
B222203-BLK5	-0.054	µg/L

Average: -0.045
Limit: 0.480

MDL: 0.150
MRL: 0.480



Sample Containers

Lab ID: 2209286-01

Report Matrix: WS

Collected: 09/14/2022

Sample:

Sample Type: Sample + Sum

Received: 09/22/2022

RG_ERCKUC_WS_LAEMP_EVO_2022-09_N

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2209286
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2209286
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 4 - 2209286

Lab ID: 2209286-02

Report Matrix: WS

Collected: 09/14/2022

Sample:

Sample Type: Sample + Sum

Received: 09/22/2022

RG_ERCKUC_WS_LAEMP_EVO_2022-09_NP-NAL

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2230023	<2	Cooler 1 - 2209286

Lab ID: 2209286-03

Report Matrix: WS

Collected: 09/14/2022

Sample:

Sample Type: Sample + Sum

Received: 09/22/2022

RG_ERCKUC_WS_LAEMP_EVO_2022-09_NP-NAL

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2230023	<2	Cooler 1 - 2209286



Shipping Containers

Cooler 1 - 2209286

Received: September 22, 2022 7:37
Tracking No: RWHV95583 via Courier
Coolant Type: Blue Ice
Temperature: 9.5 °C

Description: Styrofoam Cooler
Damaged in transit? No
Returned to client? No
Comments: IR#:1

Custody seals present? No
Custody seals intact? No
COC present? Yes

Cooler 4 - 2209286

Received: September 22, 2022 7:37
Tracking No: RWHV95583 via Courier
Coolant Type: Blue Ice
Temperature: -0.3 °C

Description: Styrofoam Cooler
Damaged in transit? No
Returned to client? No
Comments: IR#:1

Custody seals present? No
Custody seals intact? No
COC present? No

COC ID: **REP_LAEMP_EVO_2022-09_BROOKS** TURNAROUND TIME: **Rush** RUSH: **Priority**

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name / Job#	Regional Effects Program			Lab Name	Brooks Applied Labs			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Mike Pope			Lab Contact	Ben Wozniak			Email 1:	AquaSci-lab@Teck.com	X	X	X
Email	Mike.Pope@Teck.com			Email	Ben@brooksupplied.com			Email 2:	teckcoal@equisonline.com			X
Address	421 Pine Ave			Address	13751 Lake City Way			Email 3:	Teck.Lab.Results@teck.com	X	X	X
City	Sparwood	Province	BC	City	Seattle	Province	WA	Email 4:	Lisa.Bowton@minnow.ca	X	X	X
Postal Code	V0B 2G1	Country	Canada	Postal Code	98125	Country	United States	Email 5:	Tyler.Mehter@minnow.ca	X	X	X
Phone Number	250-425-8247			Phone Number	(206) 753-6158		PO number	VPO00847032				

SAMPLE DETAILS								ANALYSIS REQUESTED												
Sample ID	Sample Location (svs loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com p	# Of Cont.	PHIL	F	N	N									
RG_ERCKUC_WS_LAEMP_EVO_2022-09_N	RG_ERCKUC	WS		2022/09/14	14:22	G	1		1											
RG_ERCKUC_WS_LAEMP_EVO_2022-09_NP-NAL	RG_ERCKUC	WS		2022/09/14	14:22	G	2			1	1									

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
The samples included in this COC are considered Privileged and Confidential .	Jennifer Ings/Minnow	#####	<i>UW/BAL</i>	9/22/22 7:37

SERVICE REQUEST (rush - subject to availability)					
Regular (default)		Sampler's Name	Jennifer Ings	Mobile #	519-500-3444
Priority (2-3 business days) - 50% surcharge	X	Sampler's Signature	<i>Jennifer Ings</i>	Date/Time	September 19, 2022
Emergency (1 Business Day) - 100% surcharge					
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

Confidential

STRAIGHT BILL OF LADING
NOT NEGOTIABLE

RW HOT SHOT SERVICE INC.

250-425-7447
24 Hour Hot Shot Service

BAL Final Report 2209286

No. 95583

Sparwood, BC
Terrace, BC
Red Deer, AB

Vancouver, BC
Calgary, AB
Montreal, QC

Prince George, BC
Edmonton, AB
Spokane, WA

Elkford, BC
Ft. McMurray, AB
Shelby, MT

Tumbler Ridge, BC
Hinton, AB
Gillette, WY

INVOICE TO <i>Cap 2209286 4370</i>		DATE <i>Sept 2/22</i>	
BILL OF LADING #		PURCHASE ORDER NUMBER	
SHIPPER (FROM) <i>... Limited</i>		CONSIGNEE (TO) <i>Brooks Applied Labs</i>	
STREET <i>+ Line creek</i>		STREET <i>151 L.R. Hwy NE</i>	
CITY/PROVINCE <i>Sparwood B.C.</i>		POSTAL CODE	CITY/PROVINCE <i>Seattle WA</i>
SPECIAL INSTRUCTIONS		POSTAL CODE	
PACKAGES		FREIGHT CHARGES	
DESCRIPTION OF ARTICLES AND SPECIAL MARKS		SHIPPER TO CHECK	
WEIGHT (Subject to Correction)		<input type="checkbox"/> PREPAID <input type="checkbox"/> COLLECT	
7 Coolers - water samples		If not indicated, shipping will automatically move collect	
266 lbs		FEE	
PANTH 95583		WAITING	
DECLARED VALUATION: Maximum liability of carrier is \$2.00 per lb. (\$4.41 per kilogram) unless declared valuation states otherwise.		XPU	
DRIVER'S SIGNATURE - PICK UP BY		CHARGES	
PICK UP TIME		FSC	
DRIVER'S SIGNATURE - DELIVERY BY		US	
FINISH TIME		SUB TOTAL	
NOTICE OF CLAIM: (a) No carrier is liable for loss, damage or delay of any goods under the Bill of Lading unless notice, therein setting out particulars of the origin, destination and date of shipment of the goods and the estimated amount claimed, is given in writing to the originating carrier or the delivering carrier within sixty (60) days after the delivery of the goods, or in the case of failure to make delivery within nine (9) months from the date of shipment. (b) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. RECEIVED at the point of origin on the date specified from the consignor mentioned herein, the property herein described, in apparent good order, except as noted (contents and condition of contents or package unknown, marked, consigned and destined as indicated below, which the carrier agrees to carry and to deliver to the consignee at the said destination, subject to the rates and classification in effect on the date of shipment. It is mutually agreed, as to each carrier of all or any of the goods over all or any portion of the route to destination, and as to each party of any time interested in all or any of the goods that every service to be performed hereunder shall be subject to all the conditions standard Bill of Lading, in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. Printed or written, including conditions set aside by the standard Bill of Lading, in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. The Contract for the carriage of the goods listed in the Bill of Lading is governed by regulation in force in the jurisdiction at the time and place of shipment and is subject to the conditions set out in such conditions.		TOTAL \$	
SHIPPER PRINT		IF AT OWNER'S RISK, WRITE "ORD HERE"	
SHIPPER SIGN		DATE <i>Sept 7</i>	
CONSIGNEE PRINT		TIME	
CONSIGNEE SIGN		NUMBER OF PIECES RECEIVED	
WHITE: Office		YELLOW: Carrier	
PINK: Consignee		GOLDENROAD: Shipper	
GST # 864540398RT0001			

Cooler ID: *cooler 1*

COC (Y/N) *(N)*

Temperature: *9.5*

IR: *1*

Coolant Type: Ice Blue Ice Ambient

Notes:

Sampling Locations:

Sample Types:

Container Types:

Opened By: *VMW*

Date: *9/22/22*

<i>EV</i>		<i>EG</i>									
(T/D)	SP	(T/D)	SP	T/D	SP	T/D	SP	T/D	SP	T/D	SP
<i>125 ml</i>		<i>125 ml</i>									
<i>9/22/22</i>		<i>9/22/22</i>									

Confidential

STRAIGHT BILL OF LADING
NOT NEGOTIABLE

RW HOT SHOT SERVICE INC.

250-425-7447
24 Hour Hot Shot Service

BAL Final Report 2209286

No. 95583

Sparwood, BC
Terrace, BC
Red Deer, AB

Vancouver, BC
Calgary, AB
Montreal, QC

Prince George, BC
Edmonton, AB
Spokane, WA

Elkford, BC
Ft. McMurray, AB
Shelby, MT

Tumbler Ridge, BC
Hinton, AB
Gillette, WY

INVOICE TO <i>Cap 22092864370</i>		DATE <i>Sept 2/22</i>	
BILL OF LADING #		PURCHASE ORDER NUMBER	
SHIPPER (FROM)		CONSIGNEE (TO)	
STREET		STREET	
CITY/PROVINCE	POSTAL CODE	CITY/PROVINCE	POSTAL CODE
SPECIAL INSTRUCTIONS		FREIGHT CHARGES SHIPPER TO CHECK	
PACKAGES	DESCRIPTION OF ARTICLES AND SPECIAL MARKS	WEIGHT (Subject to Correction)	<input type="checkbox"/> PREPAID <input type="checkbox"/> COLLECT If not indicated, shipping will automatically move collect.
<i>7</i>	<i>coolers - water samples</i>	<i>266 lbs</i>	FEE _____
RWHV95583			WAITING _____
			XPU _____
UNIT #			CHARGES _____
DECLARED VALUATION: Maximum liability of carrier is \$2.00 per lb. (\$4.41 per kilogram) unless declared valuation states otherwise.			FSC _____
DRIVER'S SIGNATURE - PICK UP BY		PICK UP TIME	US _____
DRIVER'S SIGNATURE - DELIVERY BY		FINISH TIME	SUB TOTAL _____
NOTICE OF CLAIM: (a) No carrier is liable for loss, damage or delay of any goods under the Bill of Lading unless notice, thereafter setting out particulars of the origin, destination and date of shipment of the goods and the estimated amount claimed, is received at the port of origin on the date specified from the consignor mentioned herein, the property herein described, in apparent good order, except as stated (contents and condition of package unknown) marked, consigned and destined as indicated below, which the carrier agrees to carry and to deliver to the consignee at the said destination, subject to the rates and classification in effect on the date of shipment. It is mutually agreed, as to each carrier of all or any portion of the route to destination, and as to each party of any time interested in all or any of the goods, that every service to be performed hereunder shall be subject to the conditions standard Bill of Lading, in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. Printed or written, including conditions set aside by the standard Bill of Lading in power at the date of the Contract for the carriage of the goods listed in the Bill of Lading is governed by regulation in force in the jurisdiction at the time and place of shipment and is subject to the conditions set out in such conditions.			TOTAL \$ _____
SHIPPER PRINT	CONSIGNEE PRINT	DATE	
SHIPPER SIGN	CONSIGNEE SIGN	TIME	
WHITE: Office	YELLOW: Carrier	PINK: Consignee	GOLDENROAD: Shipper
GST # 864540398RT001			NUMBER OF PIECES RECEIVED 7

Cooler ID: *Cooler 4*

COC (Y/N)

Temperature: *-0.3*

IR: *1*

Coolant Type: Ice **Blue Ice** Ambient

Notes:

Sampling Locations:

Sample Types:

Container Types:

Opened By: *MMW*

Date: *9/22/22*

<i>CC</i>	<i>WL.C</i>	<i>GH</i>	<i>RG</i>	
T/D	T/D	T/D	T/D	T/D
(SP)	(SP)	(SP)	(SP)	SP
<i>60ml HDPE</i>	<i>10ml PLASTIC</i>	<i>60ml HDPE</i>	<i>60ml HDPE</i>	



October 5, 2022

Teck Resources Limited - Vancouver
Mike Pope
421 Pine Avenue
Sparwood, B.C. CANADA V0B2G0
mike.pope@teck.com

Re: Regional Effects Program

Dear Mike Pope,

On September 29, 2022, Brooks Applied Labs (BAL) received two (2) aqueous samples. The samples were logged-in for total recoverable selenium [Se], dissolved Se [Se], and Se speciation analyses, according to the chain-of-custody (COC) form.

The sample fractions for total recoverable Se and dissolved Se were not preserved in the field. The samples were preserved (pH < 2) upon receipt at BAL. All sample fractions for total recoverable Se and dissolved Se were preserved within the (14 calendar day) preservation holding time.

The sample fractions logged in for Se speciation and dissolved Se had been field-filtered prior to receipt at BAL. All samples were stored according to BAL SOPs.

Total Recoverable Se and Dissolved Se

Each aqueous sample fraction for dissolved Se was digested in a closed vessel (bomb) with nitric and hydrochloric acids. The resulting digests were analyzed for Se content via inductively coupled plasma triple quadrupole mass spectrometry (ICP-QQQ-MS). The ICP-QQQ-MS instrumentation uses advanced interference removal techniques to ensure accuracy of the sample results. For more information, please visit the *Interference Reduction Technology* section on our website, brooksapplied.com.

Selenium Speciation

Each aqueous sample was analyzed for selenium speciation using ion chromatography inductively coupled plasma collision reaction cell mass spectrometry (IC-ICP-CRC-MS). Selenium species are chromatographically separated on an ion exchange column and then quantified using inductively coupled plasma collision reaction cell mass spectrometry (ICP-CRC-MS); for more information on this determinative technique, please visit the *Interference Reduction Technology* section on our website. The chromatographic method applied for the analyses provides greater retention of methylseleninic acid and selenomethionine, allowing for more definitive quantitation of these species.

In accordance with the quotation issued for this project, selenium speciation was defined as dissolved selenite [Se(IV)], selenate [Se(VI)], selenocyanate [SeCN], methylseleninic acid [MeSe(IV)], methaneselenonic acid [MeSe(VI)], selenomethionine [SeMe], selenosulfate [SeSO₃], and dimethylselenoxide [DMSeO]. Unknown Se species was defined as the total concentration of all unknown Se species observed during the analysis. This item is identified on the report as [Unk Se Sp].

DMSeO elutes early in the chromatographic run due to the nature of the molecule and the applied chromatographic separation method. Since this species elutes near the dead volume, additional selenium species may coelute. Alternate methods can be applied, upon client request, to increase the separation of DMSeO from potentially co-eluting selenium species.

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

In instances where a matrix spike/matrix spike duplicate (MS/MSD) set was spiked at a level less than the native sample concentration, the recoveries and the relative percent difference (RPD) are not considered valid indicators of data quality. In such instances, the recoveries of the laboratory fortified blanks (BS) and/or standard reference materials (SRM) demonstrate the accuracy of the applied methods. When the spiking level was less than 25% of the native sample concentration, the spike recovery was not reported (**NR**) and the relative percent difference (RPD) of the MS/MSD set was not calculated (**N/C**).

In cases when either the native sample concentration was non-detectable (reported as less than or equal to the MDL) and/or the corresponding DUP result was also non-detectable, the RPD between the two values was not calculated (**N/C**).

Except for concentration qualifiers, all data were reported without qualification. All associated quality control sample results met the acceptance criteria.

BAL, an accredited laboratory, certifies that the reported results of all analyses for which BAL is NELAP accredited meet all NELAP requirements. For more information, please see the *Report Information* page.

Please feel free to contact us if you have any questions regarding this report.

Sincerely,



Jeremy Maute

Senior Project Manager

Jeremy@brooksapplied.com



Report Information

Laboratory Accreditation

BAL is accredited by the *National Environmental Laboratory Accreditation Program* (NELAP) through the State of Florida Department of Health, Bureau of Laboratories (E87982) and is certified to perform many environmental analyses. BAL is also certified by many other states to perform environmental analyses. For a current list of our accreditations/certifications, please visit our website at <http://www.brooksapplied.com/resources/certificates-permits/> or review Tables 1 and 2 in our Accreditation Information. Results reported relate only to the samples listed in the report.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

AR	as received	MS	matrix spike
BAL	Brooks Applied Labs	MSD	matrix spike duplicate
BLK	method blank	ND	non-detect
BS	blank spike	NR	non-reportable
CAL	calibration standard	N/C	not calculated
CCB	continuing calibration blank	PS	post preparation spike
CCV	continuing calibration verification	REC	percent recovery
COC	chain of custody record	RPD	relative percent difference
D	dissolved fraction	SCV	secondary calibration verification
DUP	duplicate	SOP	standard operating procedure
IBL	instrument blank	SRM	reference material
ICV	initial calibration verification	T	total fraction
MDL	method detection limit	TR	total recoverable fraction
MRL	method reporting limit		

Definition of Data Qualifiers

(Effective 3/23/2020)

E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Please see narrative for explanation.
J	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1	Estimated value. A full explanation is presented in the narrative.
M	Duplicate precision (RPD) was not within acceptance criteria. Please see narrative for explanation.
N	Spike recovery was not within acceptance criteria. Please see narrative for explanation.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.
Z	Holding time and/or preservation requirements not established for this method; however, BAL recommendations for holding time were not followed. Please see narrative for explanation.

These qualifiers are based on those previously utilized by Brooks Applied Labs, those found in the EPA SOW ILM03.0, Exhibit B, Section III, pg. B-18, and the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review; USEPA; January 2010. These supersede all previous qualifiers ever employed by BAL.



Accreditation Information

Table 1. Accredited method/matrix/analytes for TNI
Issued by: State of Florida Dept. of Health (The NELAC Institute 2016 Standard)
Issued on: July 1, 2021; Valid to: June 30, 2022
Certificate Number: E87982-37

Method	Matrix	TNI Accredited Analyte(s)
EPA 1638	Non-Potable Waters	Ag, Cd, Cu, Ni, Pb, Sb, Se, Ti, Zn
EPA 200.8	Non-Potable Waters	Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Sb, Se, Ti, U, V, Zn
EPA 6020	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Ti, U, V, Zn
	Solids/Chemicals & Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Ti, V, Zn
BAL-5000	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, U, V, Zn, Hardness
	Solids/Chemicals	Ag, As, B, Be, Cd, Co, Cr, Cu, Pb, Mo, Ni, Sb, Se, Sn, Sr, Ti, V, Zn
	Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Ti, V, Zn
EPA 1640	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn
EPA 1631E	Non-Potable Waters, Solids/Chemicals & Biological	Total Mercury
EPA 1630	Non-Potable Waters	Methyl Mercury
BAL-3200	Solids/Chemicals & Biological	Methyl Mercury
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
BAL-4201	Non-Potable Waters	Se(IV), Se(VI)
BAL-4300	Non-Potable Waters Solid/Chemicals	Cr(VI)
SM2340B	Non-Potable Waters	Hardness



Accreditation Information

**Table 2. Accredited method/matrix/analytes for ISO (1),
 Non-Governmental TNI (2)**

Issued by: ANAB

Issued on: September 21, 2021; Valid to: March 30, 2024

Method	Matrix	ISO and Non-Gov. TNI Accredited Analyte(s)
EPA 1638 Mod EPA 200.8 Mod EPA 6020 Mod	Non-Potable Waters	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, U, V, Zn
BAL-5000	Solids/Chemicals & Biological	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, V, Zn Hg (Biological Only)
EPA 1640 Mod	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn Ag, As, Cr, Co, Se, Ti, V (ISO Only)
EPA 1631E Mod BAL-3100	Non-Potable Waters, Solids/Chemicals & Biological/Food	Total Mercury
EPA 1630 Mod BAL-3200	Non-Potable Waters, Solids/Chemicals Biological	Methyl Mercury
EPA 1632A Mod BAL-3300	Non-Potable Waters Biological/Food Solids/Chemicals	Inorganic Arsenic (ISO Only) Inorganic Arsenic (ISO Only)
AOAC 2015.01 Mod BAL-5000	Food	As, Cd, Hg, Pb
BAL-4100	Non-Potable Waters Biological by BAL-4117	As(III), As(V), DMAs, MMAs Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4101	Food by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4201	Non-Potable Waters	Se(IV), Se(VI), SeCN, SeMet
BAL-4300	Non-Potable Waters, Solid/Chemicals	Cr(VI)
SM 3500-Fe BAL-4500	Non-Potable Waters	Fe, Fe(II) (ISO Only)
SM2340B	Non-Potable Waters	Hardness
SM 2540G BAL-0501	Solids/Chemicals & Biological	% Dry Weight



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
RG_ERCKDT_WS_LAEMP_EVO_20 22-09_N	2209377-01	WS	Sample	09/19/2022	09/29/2022
RG_ERCKDT_WS_LAEMP_EVO_20 22-09_NP-NAL	2209377-02	WS	Sample	09/19/2022	09/29/2022
RG_ERCKDT_WS_LAEMP_EVO_20 22-09_NP-NAL	2209377-03	WS	Sample	09/19/2022	09/29/2022

Batch Summary

Analyte	Lab Matrix	Method	Prepared	Analyzed	Batch	Sequence
DMS ₂ SeO	Water	SOP BAL-4201	09/29/2022	09/30/2022	B222221	S221013
MeSe(IV)	Water	SOP BAL-4201	09/29/2022	09/30/2022	B222221	S221013
MeSe(VI)	Water	SOP BAL-4201	09/29/2022	09/30/2022	B222221	S221013
Se	Water	EPA 1638 Mod	09/30/2022	10/04/2022	B222268	S221024
Se	Water	EPA 1638 Mod	10/03/2022	10/05/2022	B222284	S221024
Se(IV)	Water	SOP BAL-4201	09/29/2022	09/30/2022	B222221	S221013
Se(VI)	Water	SOP BAL-4201	09/29/2022	09/30/2022	B222221	S221013
SeCN	Water	SOP BAL-4201	09/29/2022	09/30/2022	B222221	S221013
SeMet	Water	SOP BAL-4201	09/29/2022	09/30/2022	B222221	S221013
SeSO ₃	Water	SOP BAL-4201	09/29/2022	09/30/2022	B222221	S221013
Unk Se Sp	Water	SOP BAL-4201	09/29/2022	09/30/2022	B222221	S221013



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKDT_WS_LAEMP_EVO_2022-09_N										
2209377-01	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222221	S221013
2209377-01	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222221	S221013
2209377-01	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222221	S221013
2209377-01	Se(IV)	WS	D	0.036	J	0.020	0.075	µg/L	B222221	S221013
2209377-01	Se(VI)	WS	D	132		0.010	0.055	µg/L	B222221	S221013
2209377-01	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B222221	S221013
2209377-01	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222221	S221013
2209377-01	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B222221	S221013
2209377-01	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B222221	S221013
RG_ERCKDT_WS_LAEMP_EVO_2022-09_NP-NAL										
2209377-02	Se	WS	D	126		0.165	0.528	µg/L	B222284	S221024
RG_ERCKDT_WS_LAEMP_EVO_2022-09_NP-NAL										
2209377-03	Se	WS	TR	128		0.165	0.528	µg/L	B222268	S221024



Accuracy & Precision Summary

Batch: B222221
Lab Matrix: Water
Method: SOP BAL-4201

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222221-BS1	Blank Spike, (2236035)						
	MeSe(IV)		5.095	5.499	µg/L	108% 75-125	
	Se(IV)		5.000	5.194	µg/L	104% 75-125	
	Se(VI)		5.000	4.839	µg/L	97% 75-125	
	SeCN		5.015	4.817	µg/L	96% 75-125	
	SeMet		4.982	4.857	µg/L	97% 75-125	
B222221-DUP4	Duplicate, (2209376-10)						
	DMSeO	ND		ND	µg/L		N/C 25
	MeSe(IV)	ND		ND	µg/L		N/C 25
	MeSe(VI)	ND		ND	µg/L		N/C 25
	Se(IV)	0.073		0.067	µg/L		7% 25
	Se(VI)	134.8		135.1	µg/L		0.2% 25
	SeCN	ND		ND	µg/L		N/C 25
	SeMet	ND		ND	µg/L		N/C 25
	SeSO3	ND		ND	µg/L		N/C 25
Unk Se Sp	ND		ND	µg/L		N/C 25	
B222221-MS4	Matrix Spike, (2209376-10)						
	Se(IV)	0.073	4.900	4.437	µg/L	89% 75-125	
	Se(VI)	134.8	5.100	140.5	µg/L	NR 75-125	
	SeCN	ND	1.962	1.766	µg/L	90% 75-125	
	SeMet	ND	1.977	1.920	µg/L	97% 75-125	
B222221-MSD4	Matrix Spike Duplicate, (2209376-10)						
	Se(IV)	0.073	4.900	4.348	µg/L	87% 75-125	2% 25
	Se(VI)	134.8	5.100	138.8	µg/L	NR 75-125	N/C 25
	SeCN	ND	1.962	1.769	µg/L	90% 75-125	0.2% 25
	SeMet	ND	1.977	1.864	µg/L	94% 75-125	3% 25



Accuracy & Precision Summary

Batch: B222268
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222268-BS1	Blank Spike, (2128023) Se		200.0	170.2	µg/L	85% 75-125	
B222268-BS2	Blank Spike, (2128023) Se		200.0	157.6	µg/L	79% 75-125	
B222268-BS3	Blank Spike, (2128023) Se		200.0	178.1	µg/L	89% 75-125	
B222268-SRM1	Reference Material (2214016, TMDA 51.5 Reference Standard - Bottle 8 - SRM) Se		14.30	11.10	µg/L	78% 75-125	
B222268-SRM2	Reference Material (2214016, TMDA 51.5 Reference Standard - Bottle 8 - SRM) Se		14.30	11.88	µg/L	83% 75-125	
B222268-SRM3	Reference Material (2214016, TMDA 51.5 Reference Standard - Bottle 8 - SRM) Se		14.30	11.92	µg/L	83% 75-125	
B222268-DUP3	Duplicate, (2209376-06) Se	56.67		62.24	µg/L		9% 20
B222268-MS3	Matrix Spike, (2209376-06) Se	56.67	220.0	224.9	µg/L	76% 75-125	
B222268-MSD3	Matrix Spike Duplicate, (2209376-06) Se	56.67	220.0	247.3	µg/L	87% 75-125	10% 20



Accuracy & Precision Summary

Batch: B222284
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222284-BS1	Blank Spike, (2128023) Se		200.0	163.0	µg/L	82% 75-125	
B222284-BS2	Blank Spike, (2128023) Se		200.0	163.7	µg/L	82% 75-125	
B222284-BS3	Blank Spike, (2128023) Se		200.0	176.2	µg/L	88% 75-125	
B222284-SRM1	Reference Material (2214016, TMDA 51.5 Reference Standard - Bottle 8 - SRM) Se		14.30	12.95	µg/L	91% 75-125	
B222284-SRM2	Reference Material (2214016, TMDA 51.5 Reference Standard - Bottle 8 - SRM) Se		14.30	12.03	µg/L	84% 75-125	
B222284-SRM3	Reference Material (2214016, TMDA 51.5 Reference Standard - Bottle 8 - SRM) Se		14.30	11.97	µg/L	84% 75-125	
B222284-DUP1	Duplicate, (2209401-02) Se	2.281		2.496	µg/L		9% 20
B222284-MS1	Matrix Spike, (2209401-02) Se	2.281	220.0	201.0	µg/L	90% 75-125	
B222284-MSD1	Matrix Spike Duplicate, (2209401-02) Se	2.281	220.0	182.8	µg/L	82% 75-125	9% 20



Method Blanks & Reporting Limits

Batch: B222221
Matrix: Water
Method: SOP BAL-4201
Analyte: DMSeO

Sample	Result	Units	
B222221-BLK1	0.00	µg/L	
B222221-BLK2	0.00	µg/L	
B222221-BLK3	0.00	µg/L	
B222221-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005

Analyte: MeSe(IV)

Sample	Result	Units	
B222221-BLK1	0.00	µg/L	
B222221-BLK2	0.00	µg/L	
B222221-BLK3	0.00	µg/L	
B222221-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005

Analyte: MeSe(VI)

Sample	Result	Units	
B222221-BLK1	0.00	µg/L	
B222221-BLK2	0.00	µg/L	
B222221-BLK3	0.00	µg/L	
B222221-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005



Method Blanks & Reporting Limits

Analyte: Se(IV)

Sample	Result	Units	
B222221-BLK1	0.00	µg/L	
B222221-BLK2	0.00	µg/L	
B222221-BLK3	0.00	µg/L	
B222221-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.004
Limit:	0.015		MRL: 0.015

Analyte: Se(VI)

Sample	Result	Units	
B222221-BLK1	0.00	µg/L	
B222221-BLK2	0.00	µg/L	
B222221-BLK3	0.00	µg/L	
B222221-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.011		MRL: 0.011

Analyte: SeCN

Sample	Result	Units	
B222221-BLK1	0.00	µg/L	
B222221-BLK2	0.00	µg/L	
B222221-BLK3	0.00	µg/L	
B222221-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.010		MRL: 0.010

Analyte: SeMet

Sample	Result	Units	
B222221-BLK1	0.00	µg/L	
B222221-BLK2	0.00	µg/L	
B222221-BLK3	0.00	µg/L	
B222221-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.005		MRL: 0.005



Method Blanks & Reporting Limits

Analyte: SeSO3

Sample	Result	Units	
B222221-BLK1	0.00	µg/L	
B222221-BLK2	0.00	µg/L	
B222221-BLK3	0.00	µg/L	
B222221-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.011		MRL: 0.011

Analyte: Unk Se Sp

Sample	Result	Units	
B222221-BLK1	0.00	µg/L	
B222221-BLK2	0.00	µg/L	
B222221-BLK3	0.00	µg/L	
B222221-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.015		MRL: 0.015



Method Blanks & Reporting Limits

Batch: B222268
Matrix: Water
Method: EPA 1638 Mod
Analyte: Se

Sample	Result	Units
B222268-BLK1	0.027	µg/L
B222268-BLK2	0.095	µg/L
B222268-BLK3	-0.028	µg/L
B222268-BLK4	0.019	µg/L

Average: 0.028
Limit: 0.480

MDL: 0.150
MRL: 0.480



Method Blanks & Reporting Limits

Batch: B222284
Matrix: Water
Method: EPA 1638 Mod
Analyte: Se

Sample	Result	Units	
B222284-BLK1	-0.012	µg/L	
B222284-BLK2	-0.035	µg/L	
B222284-BLK3	-0.008	µg/L	
B222284-BLK4	-0.049	µg/L	
Average:	-0.026		MDL: 0.150
Limit:	0.480		MRL: 0.480



Sample Containers

Lab ID: 2209377-01

Report Matrix: WS

Collected: 09/19/2022

Sample:

Sample Type: Sample + Sum

Received: 09/29/2022

RG_ERCKDT_WS_LAEMP_EVO_2022-09_N

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2209377
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2209377
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 1 - 2209377

Lab ID: 2209377-02

Report Matrix: WS

Collected: 09/19/2022

Sample:

Sample Type: Sample + Sum

Received: 09/29/2022

RG_ERCKDT_WS_LAEMP_EVO_2022-09_NP-NAL

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2037003	<2	Cooler 1 - 2209377

Lab ID: 2209377-03

Report Matrix: WS

Collected: 09/19/2022

Sample:

Sample Type: Sample + Sum

Received: 09/29/2022

RG_ERCKDT_WS_LAEMP_EVO_2022-09_NP-NAL

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2037003	<2	Cooler 1 - 2209377

Shipping Containers

Cooler 1 - 2209377

Received: September 29, 2022 7:07
Tracking No: RWHV95589 via Courier
Coolant Type: Ice
Temperature: -1.4 °C

Description: Styrofoam Cooler
Damaged in transit? No
Returned to client? No
Comments: IR#:2

Custody seals present? No
Custody seals intact? No
COC present? Yes

COC ID: **REP_LAEMP_EVO_2022-09_BROOKS** TURNAROUND TIME: **Rush** RUSH: Priority

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name / Job#	Regional Effects Program			Lab Name	Brooks Applied Labs			Report Format / Distribution	Excel	PDF	EDD	
Project Manager	Mike Pope			Lab Contact	Ben Wozniak			Email 1:	ArusSciLab@Teck.com	X	X	X
Email	Mike.Pope@Teck.com			Email	Ben@brooksapplied.com			Email 2:	teckcoal@equisonline.com			X
Address	421 Pine Ave			Address	13751 Lake City Way			Email 3:	Teck.Lab.Results@teck.com	X	X	X
City	Sparwood	Province	BC	City	Seattle	Province	WA	Email 4:	lbrown@minnow.ca	X	X	X
Postal Code	V0B 2G1	Country	Canada	Postal Code	98125	Country	United S	Email 5:	Tyler.Mahler@minnow.ca	X	X	X
Phone Number	250-425-8247			Phone Number	(206) 753-6158			PO number	VPO00817033			

SAMPLE DETAILS								ANALYSIS REQUESTED														
Sample ID	Sample Location (sys_loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com p	# Of Cont.	FIG	F	F	N											
RG_ERCKDT_WS_LAEMP_EVO_2022-09_N	RG_ERCKDT	WS		9/19/2022	13:27	G	1		1													
RG_ERCKDT_WS_LAEMP_EVO_2022-09_NP-NAL	RG_ERCKDT	WS		9/19/2022	13:27	G	2			1	1											

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
	Jennifer Ings/Minnow	#####	VWV IBAZ	9/29/22 7:07

SERVICE REQUEST (rush - subject to availability)					
Regular (default)		Sampler's Name	Jennifer Ings	Mobile #	519-500-3444
Priority (2-3 business days) - 50% surcharge	X	Sampler's Signature	<i>Jennifer Ings</i>	Date/Time	September 26, 2022
Emergency (1 Business Day) - 100% surcharge					
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

Confidential

STRAIGHT BILL OF LADING
NOT NEGOTIABLE

RW HOT SHOT SERVICE INC.

250-425-7447
24 Hour Hot Shot Service

BAL Final Report 2209377
No. 95589

Sparwood, BC
Terrace, BC
Red Deer, AB

Vancouver, BC
Calgary, AB
Montreal, QC

Prince George, BC
Edmonton, AB
Spokane, WA

Elkford, BC
Ft. McMurray, AB
Shelby, MT

Tumbler Ridge, BC
Hinton, AB
Gillette, WY

INVOICE TO		DATE	
BILL OF LADING #		PURCHASE ORDER NUMBER	
SHIPPER (FROM)		CONSIGNEE (TO)	
STREET		STREET	
CITY/PROVINCE		CITY/PROVINCE	
POSTAL CODE		POSTAL CODE	
SPECIAL INSTRUCTIONS			
PACKAGES			FREIGHT CHARGES SHIPPER TO CHECK
DESCRIPTION OF ARTICLES AND SPECIAL MARKS			
WEIGHT (Subject to Correction)			<input type="checkbox"/> PREPAID <input type="checkbox"/> COLLECT
UNIT #			FEE
DECLARED VALUATION: Maximum liability of carrier is \$2.00 per lb. (\$4.41 per kilogram) unless declared valuation states otherwise			WAITING
DRIVER'S SIGNATURE - PICK UP BY			XPU
PICK UP TIME			CHARGES
DRIVER'S SIGNATURE - DELIVERY BY			FSC
FINISH TIME			US
NOTICE OF CLAIM: (a) No carrier is liable for loss, damage or delay of any goods under the Bill of Lading unless notice, therein setting out particulars of the origin, destination and date of shipment of the goods and the estimated amount claimed, is given in writing to the originating carrier or the delivering carrier within sixty (60) days after the delivery of the goods, or the date of failure to make delivery within nine (9) months from the date of shipment. (b) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. RECEIVED at the point of origin or the date specified from the consignor mentioned herein, the property herein described, in apparent good order, except as noted (contents and condition of contents of package unknown) marked, consigned and destined as indicated below, which the carrier agrees to carry and to deliver to the consignee at the said destination, subject to the rates and classification in effect on the date of shipment. It is mutually agreed, as to each carrier of all or any of the goods over all or any portion of the route to destination, and as to each party of any time interested in all or any of the goods, that every service to be performed hereunder shall be subject to all the conditions, clauses, terms and conditions of the Bill of Lading, in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns, printed or written, including conditions set aside by the standard Bill of Lading, in power at the date of issuing, which are hereby agreed by the consignee and accepted for himself and his assigns. The Contract for the carriage of the goods listed in the Bill of Lading is governed by regulation in force in the jurisdiction at the time and place of shipment and is subject to the conditions set out in such conditions.			SUB TOTAL
SHIPPER PRINT			GST
SHIPPER SIGN			TOTAL \$
CONSIGNEE PRINT			IF AT OWNER'S RISK WRITE ORD HERE
CONSIGNEE SIGN			DATE
WHITE: Office YELLOW: Carrier PINK: Consignee GOLDENROAD: Shipper			TIME
GST # 864540398RT0001			NUMBER OF PIECES RECEIVED

RWHV 95589

Cooler ID: Cooler 1

COC (Y/N) (Y)

Temperature: -1.4

IR: 2

Coolant Type: Ice Blue Ice Ambient

Notes:

Sampling Locations:

Sample Types:

Container Types:

Opened By: WV

Date: 9/29/22

<u>EG</u>	<u>SP</u>	<u>LC</u>	<u>WLC</u>	<u>EG</u>		
T/D	SP	T/D	SP	T/D	SP	T/D
40mc plate	40mc plate	40mc plate	40mc plate	40mc plate		

Effective 7/29/



2209377

Revision 004

COPY



October 5, 2022

Teck Resources Limited - Vancouver
Mike Pope
421 Pine Avenue
Sparwood, B.C. CANADA V0B2G0
mike.pope@teck.com

Re: Regional Effects Program

Dear Mike Pope,

On September 29, 2022, Brooks Applied Labs (BAL) received six (6) aqueous samples. The samples were logged-in for total recoverable selenium [Se], dissolved Se [Se], and Se speciation analyses, according to the chain-of-custody (COC) form.

The dissolved Se fraction for *RG_ERCKBR_WS_LAEMP_EVO_2022-09_NP-NAL* (Laboratory ID = 2209376-08) arrived in a container that leaked during shipping. Some volume was spilled into the secondary containment bag, but still contained in the bag. The potential for cross contamination is low. The remaining volume left in the container was digested and analyzed for selenium. Since it is unknown if contamination occurred during shipping, the dissolved selenium result for 2209376-08 is qualified as estimated (**J-1**).

The sample fractions for total recoverable Se and dissolved Se were not preserved in the field. The samples were preserved (pH < 2) upon receipt at BAL. All sample fractions for total recoverable Se and dissolved Se were preserved within the (14 calendar day) preservation holding time.

The sample fractions logged in for Se speciation and dissolved Se had been field-filtered prior to receipt at BAL. All samples were stored according to BAL SOPs.

Total Recoverable Se and Dissolved Se

Each aqueous sample fraction for dissolved Se was digested in a closed vessel (bomb) with nitric and hydrochloric acids. The resulting digests were analyzed for Se content via inductively coupled plasma triple quadrupole mass spectrometry (ICP-QQQ-MS). The ICP-QQQ-MS instrumentation uses advanced interference removal techniques to ensure accuracy of the sample results. For more information, please visit the *Interference Reduction Technology* section on our website, brooksapplied.com.

The dissolved selenium result for 2209376-08 is qualified as estimated (**J-1**) due to a leaking container during shipping.

Selenium Speciation

Each aqueous sample was analyzed for selenium speciation using ion chromatography inductively coupled plasma collision reaction cell mass spectrometry (IC-ICP-CRC-MS). Selenium species are chromatographically separated on an ion exchange column and then quantified using inductively coupled plasma collision reaction cell mass spectrometry (ICP-CRC-MS); for more information on this determinative technique, please visit the *Interference Reduction Technology* section on our website. The chromatographic

method applied for the analyses provides greater retention of methylseleninic acid and selenomethionine, allowing for more definitive quantitation of these species.

In accordance with the quotation issued for this project, selenium speciation was defined as dissolved selenite [Se(IV)], selenate [Se(VI)], selenocyanate [SeCN], methylseleninic acid [MeSe(IV)], methaneselenonic acid [MeSe(VI)], selenomethionine [SeMet], selenosulfate [SeSO₃], and dimethylselenoxide [DMSeO]. Unknown Se species was defined as the total concentration of all unknown Se species observed during the analysis. This item is identified on the report as [Unk Se Sp].

DMSeO elutes early in the chromatographic run due to the nature of the molecule and the applied chromatographic separation method. Since this species elutes near the dead volume, additional selenium species may coelute. Alternate methods can be applied, upon client request, to increase the separation of DMSeO from potentially co-eluting selenium species.

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

In instances where a matrix spike/matrix spike duplicate (MS/MSD) set was spiked at a level less than the native sample concentration, the recoveries and the relative percent difference (RPD) are not considered valid indicators of data quality. In such instances, the recoveries of the laboratory fortified blanks (BS) and/or standard reference materials (SRM) demonstrate the accuracy of the applied methods. When the spiking level was less than 25% of the native sample concentration, the spike recovery was not reported (**NR**) and the relative percent difference (RPD) of the MS/MSD set was not calculated (**N/C**).

In cases when either the native sample concentration was non-detectable (reported as less than or equal to the MDL) and/or the corresponding DUP result was also non-detectable, the RPD between the two values was not calculated (**N/C**).

Except for concentration qualifiers and the item noted above (container leaking during shipping), all data were reported without qualification. All associated quality control sample results met the acceptance criteria.

BAL, an accredited laboratory, certifies that the reported results of all analyses for which BAL is NELAP accredited meet all NELAP requirements. For more information, please see the *Report Information* page.

Please feel free to contact us if you have any questions regarding this report.

Sincerely,



Jeremy Maute

Senior Project Manager

Jeremy@brooksapplied.com



Report Information

Laboratory Accreditation

BAL is accredited by the *National Environmental Laboratory Accreditation Program* (NELAP) through the State of Florida Department of Health, Bureau of Laboratories (E87982) and is certified to perform many environmental analyses. BAL is also certified by many other states to perform environmental analyses. For a current list of our accreditations/certifications, please visit our website at <http://www.brooksapplied.com/resources/certificates-permits/> or review Tables 1 and 2 in our Accreditation Information. Results reported relate only to the samples listed in the report.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

AR	as received	MS	matrix spike
BAL	Brooks Applied Labs	MSD	matrix spike duplicate
BLK	method blank	ND	non-detect
BS	blank spike	NR	non-reportable
CAL	calibration standard	N/C	not calculated
CCB	continuing calibration blank	PS	post preparation spike
CCV	continuing calibration verification	REC	percent recovery
COC	chain of custody record	RPD	relative percent difference
D	dissolved fraction	SCV	secondary calibration verification
DUP	duplicate	SOP	standard operating procedure
IBL	instrument blank	SRM	reference material
ICV	initial calibration verification	T	total fraction
MDL	method detection limit	TR	total recoverable fraction
MRL	method reporting limit		

Definition of Data Qualifiers

(Effective 3/23/2020)

E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Please see narrative for explanation.
J	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1	Estimated value. A full explanation is presented in the narrative.
M	Duplicate precision (RPD) was not within acceptance criteria. Please see narrative for explanation.
N	Spike recovery was not within acceptance criteria. Please see narrative for explanation.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.
Z	Holding time and/or preservation requirements not established for this method; however, BAL recommendations for holding time were not followed. Please see narrative for explanation.

These qualifiers are based on those previously utilized by Brooks Applied Labs, those found in the EPA SOW ILM03.0, Exhibit B, Section III, pg. B-18, and the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review; USEPA; January 2010. These supersede all previous qualifiers ever employed by BAL.



Accreditation Information

Table 1. Accredited method/matrix/analytes for TNI
Issued by: State of Florida Dept. of Health (The NELAC Institute 2016 Standard)
Issued on: July 1, 2021; Valid to: June 30, 2022
Certificate Number: E87982-37

Method	Matrix	TNI Accredited Analyte(s)
EPA 1638	Non-Potable Waters	Ag, Cd, Cu, Ni, Pb, Sb, Se, Ti, Zn
EPA 200.8	Non-Potable Waters	Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Sb, Se, Ti, U, V, Zn
EPA 6020	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Ti, U, V, Zn
	Solids/Chemicals & Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Ti, V, Zn
BAL-5000	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, U, V, Zn, Hardness
	Solids/Chemicals	Ag, As, B, Be, Cd, Co, Cr, Cu, Pb, Mo, Ni, Sb, Se, Sn, Sr, Ti, V, Zn
	Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Ti, V, Zn
EPA 1640	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn
EPA 1631E	Non-Potable Waters, Solids/Chemicals & Biological	Total Mercury
EPA 1630	Non-Potable Waters	Methyl Mercury
BAL-3200	Solids/Chemicals & Biological	Methyl Mercury
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
BAL-4201	Non-Potable Waters	Se(IV), Se(VI)
BAL-4300	Non-Potable Waters Solid/Chemicals	Cr(VI)
SM2340B	Non-Potable Waters	Hardness



Accreditation Information

**Table 2. Accredited method/matrix/analytes for ISO (1),
 Non-Governmental TNI (2)
 Issued by: ANAB
 Issued on: September 21, 2021; Valid to: March 30, 2024**

Method	Matrix	ISO and Non-Gov. TNI Accredited Analyte(s)
EPA 1638 Mod EPA 200.8 Mod EPA 6020 Mod	Non-Potable Waters	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, U, V, Zn
BAL-5000	Solids/Chemicals & Biological	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, V, Zn Hg (Biological Only)
EPA 1640 Mod	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn Ag, As, Cr, Co, Se, Ti, V (ISO Only)
EPA 1631E Mod BAL-3100	Non-Potable Waters, Solids/Chemicals & Biological/Food	Total Mercury
EPA 1630 Mod BAL-3200	Non-Potable Waters, Solids/Chemicals Biological	Methyl Mercury
EPA 1632A Mod BAL-3300	Non-Potable Waters Biological/Food Solids/Chemicals	Inorganic Arsenic (ISO Only) Inorganic Arsenic (ISO Only)
AOAC 2015.01 Mod BAL-5000	Food	As, Cd, Hg, Pb
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
	Biological by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4101	Food by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4201	Non-Potable Waters	Se(IV), Se(VI), SeCN, SeMet
BAL-4300	Non-Potable Waters, Solid/Chemicals	Cr(VI)
SM 3500-Fe BAL-4500	Non-Potable Waters	Fe, Fe(II) (ISO Only)
SM2340B	Non-Potable Waters	Hardness
SM 2540G BAL-0501	Solids/Chemicals & Biological	% Dry Weight



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
RG_ERCKMD_WS_LAEMP_EVO_2 022-09_N	2209376-01	WS	Sample	09/20/2022	09/29/2022
RG_ERCKMD_WS_LAEMP_EVO_2 022-09_NP-NAL	2209376-02	WS	Sample	09/20/2022	09/29/2022
RG_ERCKMD_WS_LAEMP_EVO_2 022-09_NP-NAL	2209376-03	WS	Sample	09/20/2022	09/29/2022
RG_BOCKRD_WS_LAEMP_EVO_2 022-09_N	2209376-04	WS	Sample	09/20/2022	09/29/2022
RG_BOCKRD_WS_LAEMP_EVO_2 022-09_NP-NAL	2209376-05	WS	Sample	09/20/2022	09/29/2022
RG_BOCKRD_WS_LAEMP_EVO_2 022-09_NP-NAL	2209376-06	WS	Sample	09/20/2022	09/29/2022
RG_ERCKBR_WS_LAEMP_EVO_20 22-09_N	2209376-07	WS	Sample	09/20/2022	09/29/2022
RG_ERCKBR_WS_LAEMP_EVO_20 22-09_NP-NAL	2209376-08	WS	Sample	09/20/2022	09/29/2022
RG_ERCKBR_WS_LAEMP_EVO_20 22-09_NP-NAL	2209376-09	WS	Sample	09/20/2022	09/29/2022
RG_RIVER_WS_LAEMP_EVO_2022 -09_N	2209376-10	WS	Sample	09/20/2022	09/29/2022
RG_RIVER_WS_LAEMP_EVO_2022 -09_NP-NAL	2209376-11	WS	Sample	09/20/2022	09/29/2022
RG_RIVER_WS_LAEMP_EVO_2022 -09_NP-NAL	2209376-12	WS	Sample	09/20/2022	09/29/2022



Batch Summary

Analyte	Lab Matrix	Method	Prepared	Analyzed	Batch	Sequence
DMS ₂ SeO	Water	SOP BAL-4201	09/29/2022	09/30/2022	B222221	S221013
MeSe(IV)	Water	SOP BAL-4201	09/29/2022	09/30/2022	B222221	S221013
MeSe(VI)	Water	SOP BAL-4201	09/29/2022	09/30/2022	B222221	S221013
Se	Water	EPA 1638 Mod	09/30/2022	10/04/2022	B222268	S221024
Se(IV)	Water	SOP BAL-4201	09/29/2022	09/30/2022	B222221	S221013
Se(VI)	Water	SOP BAL-4201	09/29/2022	09/30/2022	B222221	S221013
SeCN	Water	SOP BAL-4201	09/29/2022	09/30/2022	B222221	S221013
SeMet	Water	SOP BAL-4201	09/29/2022	09/30/2022	B222221	S221013
SeSO ₃	Water	SOP BAL-4201	09/29/2022	09/30/2022	B222221	S221013
Unk Se Sp	Water	SOP BAL-4201	09/29/2022	09/30/2022	B222221	S221013



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKMD_WS_LAEMP_EVO_2022-09_N										
2209376-01	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222221	S221013
2209376-01	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222221	S221013
2209376-01	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222221	S221013
2209376-01	Se(IV)	WS	D	0.065	J	0.020	0.075	µg/L	B222221	S221013
2209376-01	Se(VI)	WS	D	132		0.010	0.055	µg/L	B222221	S221013
2209376-01	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B222221	S221013
2209376-01	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222221	S221013
2209376-01	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B222221	S221013
2209376-01	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B222221	S221013
RG_ERCKMD_WS_LAEMP_EVO_2022-09_NP-NAL										
2209376-02	Se	WS	D	126		0.165	0.528	µg/L	B222268	S221024
RG_ERCKMD_WS_LAEMP_EVO_2022-09_NP-NAL										
2209376-03	Se	WS	TR	128		0.165	0.528	µg/L	B222268	S221024
RG_BOCKRD_WS_LAEMP_EVO_2022-09_N										
2209376-04	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222221	S221013
2209376-04	MeSe(IV)	WS	D	0.020	J	0.010	0.025	µg/L	B222221	S221013
2209376-04	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222221	S221013
2209376-04	Se(IV)	WS	D	0.531		0.020	0.075	µg/L	B222221	S221013
2209376-04	Se(VI)	WS	D	66.5		0.010	0.055	µg/L	B222221	S221013
2209376-04	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B222221	S221013
2209376-04	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222221	S221013
2209376-04	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B222221	S221013
2209376-04	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B222221	S221013
RG_BOCKRD_WS_LAEMP_EVO_2022-09_NP-NAL										
2209376-05	Se	WS	D	65.4		0.165	0.528	µg/L	B222268	S221024
RG_BOCKRD_WS_LAEMP_EVO_2022-09_NP-NAL										
2209376-06	Se	WS	TR	56.7		0.165	0.528	µg/L	B222268	S221024



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKBR_WS_LAEMP_EVO_2022-09_N										
2209376-07	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222221	S221013
2209376-07	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222221	S221013
2209376-07	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222221	S221013
2209376-07	Se(IV)	WS	D	0.029	J	0.020	0.075	µg/L	B222221	S221013
2209376-07	Se(VI)	WS	D	134		0.010	0.055	µg/L	B222221	S221013
2209376-07	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B222221	S221013
2209376-07	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222221	S221013
2209376-07	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B222221	S221013
2209376-07	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B222221	S221013
RG_ERCKBR_WS_LAEMP_EVO_2022-09_NP-NAL										
2209376-08	Se	WS	D	131	J-1	0.165	0.528	µg/L	B222268	S221024
RG_ERCKBR_WS_LAEMP_EVO_2022-09_NP-NAL										
2209376-09	Se	WS	TR	122		0.165	0.528	µg/L	B222268	S221024
RG_RIVER_WS_LAEMP_EVO_2022-09_N										
2209376-10	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222221	S221013
2209376-10	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222221	S221013
2209376-10	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222221	S221013
2209376-10	Se(IV)	WS	D	0.073	J	0.020	0.075	µg/L	B222221	S221013
2209376-10	Se(VI)	WS	D	135		0.010	0.055	µg/L	B222221	S221013
2209376-10	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B222221	S221013
2209376-10	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222221	S221013
2209376-10	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B222221	S221013
2209376-10	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B222221	S221013
RG_RIVER_WS_LAEMP_EVO_2022-09_NP-NAL										
2209376-11	Se	WS	D	122		0.165	0.528	µg/L	B222268	S221024
RG_RIVER_WS_LAEMP_EVO_2022-09_NP-NAL										
2209376-12	Se	WS	TR	117		0.165	0.528	µg/L	B222268	S221024



Accuracy & Precision Summary

Batch: B222221
Lab Matrix: Water
Method: SOP BAL-4201

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222221-BS1	Blank Spike, (2236035)						
	MeSe(IV)		5.095	5.499	µg/L	108% 75-125	
	Se(IV)		5.000	5.194	µg/L	104% 75-125	
	Se(VI)		5.000	4.839	µg/L	97% 75-125	
	SeCN		5.015	4.817	µg/L	96% 75-125	
	SeMet		4.982	4.857	µg/L	97% 75-125	
B222221-DUP4	Duplicate, (2209376-10)						
	DMSeO	ND		ND	µg/L		N/C 25
	MeSe(IV)	ND		ND	µg/L		N/C 25
	MeSe(VI)	ND		ND	µg/L		N/C 25
	Se(IV)	0.073		0.067	µg/L		7% 25
	Se(VI)	134.8		135.1	µg/L		0.2% 25
	SeCN	ND		ND	µg/L		N/C 25
	SeMet	ND		ND	µg/L		N/C 25
	SeSO3	ND		ND	µg/L		N/C 25
Unk Se Sp	ND		ND	µg/L		N/C 25	
B222221-MS4	Matrix Spike, (2209376-10)						
	Se(IV)	0.073	4.900	4.437	µg/L	89% 75-125	
	Se(VI)	134.8	5.100	140.5	µg/L	NR 75-125	
	SeCN	ND	1.962	1.766	µg/L	90% 75-125	
	SeMet	ND	1.977	1.920	µg/L	97% 75-125	
B222221-MSD4	Matrix Spike Duplicate, (2209376-10)						
	Se(IV)	0.073	4.900	4.348	µg/L	87% 75-125	2% 25
	Se(VI)	134.8	5.100	138.8	µg/L	NR 75-125	N/C 25
	SeCN	ND	1.962	1.769	µg/L	90% 75-125	0.2% 25
	SeMet	ND	1.977	1.864	µg/L	94% 75-125	3% 25



Accuracy & Precision Summary

Batch: B222268
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222268-BS1	Blank Spike, (2128023) Se		200.0	170.2	µg/L	85% 75-125	
B222268-BS2	Blank Spike, (2128023) Se		200.0	157.6	µg/L	79% 75-125	
B222268-BS3	Blank Spike, (2128023) Se		200.0	178.1	µg/L	89% 75-125	
B222268-SRM1	Reference Material (2214016, TMDA 51.5 Reference Standard - Bottle 8 - SRM) Se		14.30	11.10	µg/L	78% 75-125	
B222268-SRM2	Reference Material (2214016, TMDA 51.5 Reference Standard - Bottle 8 - SRM) Se		14.30	11.88	µg/L	83% 75-125	
B222268-SRM3	Reference Material (2214016, TMDA 51.5 Reference Standard - Bottle 8 - SRM) Se		14.30	11.92	µg/L	83% 75-125	
B222268-DUP3	Duplicate, (2209376-06) Se	56.67		62.24	µg/L		9% 20
B222268-MS3	Matrix Spike, (2209376-06) Se	56.67	220.0	224.9	µg/L	76% 75-125	
B222268-MSD3	Matrix Spike Duplicate, (2209376-06) Se	56.67	220.0	247.3	µg/L	87% 75-125	10% 20



Method Blanks & Reporting Limits

Batch: B222221
Matrix: Water
Method: SOP BAL-4201
Analyte: DMSeO

Sample	Result	Units	
B222221-BLK1	0.00	µg/L	
B222221-BLK2	0.00	µg/L	
B222221-BLK3	0.00	µg/L	
B222221-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005

Analyte: MeSe(IV)

Sample	Result	Units	
B222221-BLK1	0.00	µg/L	
B222221-BLK2	0.00	µg/L	
B222221-BLK3	0.00	µg/L	
B222221-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005

Analyte: MeSe(VI)

Sample	Result	Units	
B222221-BLK1	0.00	µg/L	
B222221-BLK2	0.00	µg/L	
B222221-BLK3	0.00	µg/L	
B222221-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005



Method Blanks & Reporting Limits

Analyte: Se(IV)

Sample	Result	Units	
B222221-BLK1	0.00	µg/L	
B222221-BLK2	0.00	µg/L	
B222221-BLK3	0.00	µg/L	
B222221-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.004
Limit:	0.015		MRL: 0.015

Analyte: Se(VI)

Sample	Result	Units	
B222221-BLK1	0.00	µg/L	
B222221-BLK2	0.00	µg/L	
B222221-BLK3	0.00	µg/L	
B222221-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.011		MRL: 0.011

Analyte: SeCN

Sample	Result	Units	
B222221-BLK1	0.00	µg/L	
B222221-BLK2	0.00	µg/L	
B222221-BLK3	0.00	µg/L	
B222221-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.010		MRL: 0.010

Analyte: SeMet

Sample	Result	Units	
B222221-BLK1	0.00	µg/L	
B222221-BLK2	0.00	µg/L	
B222221-BLK3	0.00	µg/L	
B222221-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.005		MRL: 0.005



Method Blanks & Reporting Limits

Analyte: SeSO3

Sample	Result	Units	
B222221-BLK1	0.00	µg/L	
B222221-BLK2	0.00	µg/L	
B222221-BLK3	0.00	µg/L	
B222221-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.011		MRL: 0.011

Analyte: Unk Se Sp

Sample	Result	Units	
B222221-BLK1	0.00	µg/L	
B222221-BLK2	0.00	µg/L	
B222221-BLK3	0.00	µg/L	
B222221-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.015		MRL: 0.015



Method Blanks & Reporting Limits

Batch: B222268
Matrix: Water
Method: EPA 1638 Mod
Analyte: Se

Sample	Result	Units	
B222268-BLK1	0.027	µg/L	
B222268-BLK2	0.095	µg/L	
B222268-BLK3	-0.028	µg/L	
B222268-BLK4	0.019	µg/L	
Average:	0.028		MDL: 0.150
Limit:	0.480		MRL: 0.480



Sample Containers

Lab ID: 2209376-01

Report Matrix: WS

Collected: 09/20/2022

Sample:

Sample Type: Sample + Sum

Received: 09/29/2022

RG_ERCKMD_WS_LAEMP_EVO_2022-09_N

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2209376
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2209376
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 1 - 2209376

Lab ID: 2209376-02

Report Matrix: WS

Collected: 09/20/2022

Sample:

Sample Type: Sample + Sum

Received: 09/29/2022

RG_ERCKMD_WS_LAEMP_EVO_2022-09_NP-NAL

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2037003	<2	Cooler 1 - 2209376

Lab ID: 2209376-03

Report Matrix: WS

Collected: 09/20/2022

Sample:

Sample Type: Sample + Sum

Received: 09/29/2022

RG_ERCKMD_WS_LAEMP_EVO_2022-09_NP-NAL

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2037003	<2	Cooler 1 - 2209376

Lab ID: 2209376-04

Report Matrix: WS

Collected: 09/20/2022

Sample:

Sample Type: Sample + Sum

Received: 09/29/2022

RG_BOCKRD_WS_LAEMP_EVO_2022-09_N

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2209376
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2209376
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 1 - 2209376



Sample Containers

Lab ID: 2209376-05 **Report Matrix:** WS **Collected:** 09/20/2022
Sample: RG_BOCKRD_WS_LAEMP_EVO_2022-09_NP-NAL **Sample Type:** Sample + Sum **Received:** 09/29/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2037003	<2	Cooler 1 - 2209376

Lab ID: 2209376-06 **Report Matrix:** WS **Collected:** 09/20/2022
Sample: RG_BOCKRD_WS_LAEMP_EVO_2022-09_NP-NAL **Sample Type:** Sample + Sum **Received:** 09/29/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2037003	<2	Cooler 1 - 2209376

Lab ID: 2209376-07 **Report Matrix:** WS **Collected:** 09/20/2022
Sample: RG_ERCKBR_WS_LAEMP_EVO_2022-09_N **Sample Type:** Sample + Sum **Received:** 09/29/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2209376
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2209376
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 1 - 2209376

Lab ID: 2209376-08 **Report Matrix:** WS **Collected:** 09/20/2022
Sample: RG_ERCKBR_WS_LAEMP_EVO_2022-09_NP-NAL **Sample Type:** Sample + Sum **Received:** 09/29/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2037003	<2	Cooler 1 - 2209376

Lab ID: 2209376-09 **Report Matrix:** WS **Collected:** 09/20/2022
Sample: RG_ERCKBR_WS_LAEMP_EVO_2022-09_NP-NAL **Sample Type:** Sample + Sum **Received:** 09/29/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2037003	<2	Cooler 1 - 2209376



Sample Containers

Lab ID: 2209376-10				Report Matrix: WS		Collected: 09/20/2022	
Sample: RG_RIVER_WS_LAEMP_EVO_2022-09_N				Sample Type: Sample + Sum		Received: 09/29/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2209376
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2209376
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 1 - 2209376

Lab ID: 2209376-11				Report Matrix: WS		Collected: 09/20/2022	
Sample: RG_RIVER_WS_LAEMP_EVO_2022-09_NP-NAL				Sample Type: Sample + Sum		Received: 09/29/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2037003	<2	Cooler 1 - 2209376

Lab ID: 2209376-12				Report Matrix: WS		Collected: 09/20/2022	
Sample: RG_RIVER_WS_LAEMP_EVO_2022-09_NP-NAL				Sample Type: Sample + Sum		Received: 09/29/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2037003	<2	Cooler 1 - 2209376

Shipping Containers

Cooler 1 - 2209376

Received: September 29, 2022 7:07
Tracking No: RWHV95589 via Courier
Coolant Type: Ice
Temperature: -1.4 °C

Description: Styrofoam Cooler
Damaged in transit? No
Returned to client? No
Comments: IR#:2

Custody seals present? No
Custody seals intact? No
COC present? Yes

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO											
Facility Name / Job# Regional Effects Program				Lab Name Brooks Applied Labs				Report Format / Distribution											
Project Manager Mike Pope				Lab Contact Ben Wozniak				Excel PDF EDD											
Email Mike.Pope@Teck.com				Email Ben@brooksapplied.com				Email 1: AquaSciLab@Teck.com X X X											
Address 421 Pine Ave				Address 13751 Lake City Way				Email 2: teckcoal@equisonline.com X X X											
City Sparwood Province BC				City Seattle Province WA				Email 3: Teck.Lab.Results@teck.com X X X											
Postal Code V0B 2G1 Country Canada				Postal Code 98125 Country United States				Email 4: jhowron@minnow.ca X X X											
Phone Number 250-425-8247				Phone Number (206) 753-6158				Email 5: Tyler.Mehler@minnow.ca X X X											
								Email 6: Jessica.Ritz@Teck.com X X X											
								PO number VPO00847032											
SAMPLE DETAILS								ANALYSIS REQUESTED											
Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com	# Of Cont.	Brooks_Sc_Speciation	Brooks_Se_D	Brooks_Se_T	F	F	N						
RG_ERCKMD_WS_LAEMP_EVO_2022-09_N	RG_ERCKMD	WS		2022/09/20	15:47	G	1	1											
RG_ERCKMD_WS_LAEMP_EVO_2022-09_NP-NAL	RG_ERCKMD	WS		2022/09/20	15:47	G	2		1	1									
RG_BOCKRD_WS_LAEMP_EVO_2022-09_N	RG_BOCKRD	WS		2022/09/20	9:38	G	1	1											
RG_BOCKRD_WS_LAEMP_EVO_2022-09_NP-NAL	RG_BOCKRD	WS		2022/09/20	9:38	G	2		1	1									
RG_ERCKBR_WS_LAEMP_EVO_2022-09_N	RG_ERCKBR	WS		2022/09/20	11:47	G	1	1											
RG_ERCKBR_WS_LAEMP_EVO_2022-09_NP-NAL	RG_ERCKBR	WS		2022/09/20	11:47	G	2		1	1									
RG_RIVER_WS_LAEMP_EVO_2022-09_N	RG_RIVER	WS		2022/09/20	15:47	G	1												
RG_RIVER_WS_LAEMP_EVO_2022-09_NP-NAL	RG_RIVER	WS		2022/09/20	15:47	G	2												
ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS			RELINQUISHED BY/AFFILIATION				DATE/TIME		ACCEPTED BY/AFFILIATION		DATE/TIME								
The samples included in this COC are considered Privileged and Confidential .			Jennifer Ings/Minnow				#####		JWI/BAL		01/29/22 7:07								
SERVICE REQUEST (rush - subject to availability)			SAMPLER'S INFORMATION				DATE/TIME		DATE/TIME										
Regular (default)			Sampler's Name				Jennifer Ings		Mobile #		519-500-3444								
Priority (2-3 business days) - 50% surcharge X			Sampler's Signature						Date/Time		September 26, 2022								
Emergency (1 Business Day) - 100% surcharge																			
For Emergency <1 Day, ASAP or Weekend - Contact ALS																			

Confidential

STRAIGHT BILL OF LADING
NOT NEGOTIABLE

RW HOT SHOT SERVICE INC.

250-425-7447
24 Hour Hot Shot Service

BAL Final Report 2209376
No. 95589

Sparwood, BC
Terrace, BC
Red Deer, AB

Vancouver, BC
Calgary, AB
Montreal, QC

Prince George, BC
Edmonton, AB
Spokane, WA

Elkford, BC
Ft. McMurray, AB
Shelby, MT

Tumbler Ridge, BC
Hinton, AB
Gillette, WY

INVOICE TO			DATE		
BILL OF LADING #			PURCHASE ORDER NUMBER		
SHIPPER (FROM)			CONSIGNEE (TO)		
STREET			STREET		
CITY/PROVINCE		POSTAL CODE	CITY/PROVINCE		POSTAL CODE
SPECIAL INSTRUCTIONS					
PACKAGES				FREIGHT CHARGES	
DESCRIPTION OF ARTICLES AND SPECIAL MARKS				SHIPPER TO CHECK	
WEIGHT (Subject to Correction)				<input type="checkbox"/> PREPAID <input type="checkbox"/> COLLECT	
FEE				If not indicated, shipping will automatically move collect	
WAITING				XPU	
CHARGES				FSC	
US				SUB TOTAL	
GST				TOTAL \$	
IF AT OWNER'S RISK, WRITE ORD HERE					
UNIT #		DECLARED VALUATION: Maximum liability of carrier is \$2.00 per lb. (\$4.41 per kilogram) unless declared valuation states otherwise			
DRIVER'S SIGNATURE - PICK UP BY		PICK UP TIME	DRIVER'S SIGNATURE - DELIVERY BY		FINISH TIME
NOTICE OF CLAIM: No carrier is liable for loss, damage or delay of any goods under the Bill of Lading unless notice, therein setting out particulars of the origin, destination and date of shipment of the goods and the estimated amount claimed, is given in writing to the originating carrier or the delivering carrier within sixty (60) days after the delivery of the goods, or, in the case of failure to make delivery within nine (9) months from the date of shipment, the final statement of the claim, must be filed within nine (9) months from the date of shipment, together with a copy of the paid freight bill. RECEIVED at the point of origin or the destination from the consignor mentioned herein the property herein described in apparent good order, except as noted, contents and condition of contents of package unknown, marked, consigned and delivered as indicated below, which the carrier agrees to carry and to deliver to the consignee at the said destination, subject to the rules and classification in effect on the date of shipment. It is mutually agreed that the carrier shall be liable for any loss of or damage to any of the goods over all or any portion of the route to destination, and as to each party of any time interested in all or any of the goods, that every service to be performed hereunder shall be subject to all the conditions, terms, conditions, and provisions of the standard Bill of Lading, in power at the date of issuing, which are hereby agreed by the consignor and accepted by himself and his consignee. The Carrier and the consignee of the goods listed in the Bill of Lading is governed by regulation in force in the jurisdiction at the time of the place of shipment and is subject to the conditions set out in such conditions.					
SHIPPER PRINT		CONSIGNEE PRINT		DATE	
SHIPPER SIGN		CONSIGNEE SIGN		TIME	
WHITE: Office		YELLOW: Carrier		PINK: Consignee	
GOLDENROAD: Shipper		GST # 864540398RT001		NUMBER OF PIECES RECEIVED	

RWH/95589

Cooler ID: Cooler 1 COC (Y/N) Temperature: -1.4 IR: 2
Coolant Type: Ice Blue Ice Ambient

Notes:

Sampling Locations:

EG		WLC		EG	
T/D	SP	T/D	SP	T/D	SP
40mc plate	40mc plate	40mc plate	40mc plate	40mc plate	40mc plate

Opened By: WU Date: 9/29/22

Effective 7/29/:



Revision 004
COPY



November 21, 2022

Teck Resources Limited - Vancouver
 Mike Pope
 421 Pine Avenue
 Sparwood, B.C. CANADA V0B2G0
mike.pope@teck.com

Re: Regional Effects Program

Dear Mike Pope,

On November 10, 2022, Brooks Applied Labs (BAL) received sixty-four (64) aqueous samples. The samples were logged-in for total recoverable selenium [Se], dissolved Se [Se], and Se speciation analyses, according to the chain-of-custody (COC) forms.

Date/Time Collected values listed on the chain-of-custody (COC) forms did not exactly match the corresponding **Date/Time Collected** values on the container labels for 2211127-76, 2211127-77, 2211127-82, and 2211127-83. The discrepancies are described in the table below.

Date/Time Collected Discrepancies

Laboratory ID	Sample ID	Date/Time Collected (on COC form)	Date/Time Collected (on container label)
2211127-76	RG_ALUSM_WS_LAEMP_EVO_2022-11_NP-NAL	11/03/2022 14:00	11/03/2022 14:30
2211127-77	RG_ALUSM_WS_LAEMP_EVO_2022-11_NP-NAL	11/03/2022 14:00	11/03/2022 14:30
2211127-82	RG_FBLANK2_WS_LAEMP_EVO_2022-11_NP-NAL	11/03/2022 09:00	11/03/2022 11:00
2211127-83	RG_FBLANK2_WS_LAEMP_EVO_2022-11_NP-NAL	11/03/2022 09:00	11/03/2022 11:00

Per client request, samples 2211127-76, 2211127-77, 2211127-82, and 2211127-83 were logged in and reported using the **Date/Time Collected** values listed on the COC form (*column 3 in the table above*).

Chain-of-custody (COC) forms were received with the sample shipment and the laboratory documented receipt of the samples on these COC forms. Revised COC forms (*for COC pages 2, 3, and 4*) were subsequently provided via email. Per client request, BAL was instructed to use the corrected **Date/Time Collected** values (on the revised COC forms) for reporting. Please see the revised COC forms at the end of this report. The cases where changes to **Date/Time Collected** values were requested are highlighted in

yellow on the revised COC forms. In order to document custody, both sets of COC forms are included in this report.

The container labels for 2211127-02 and 2211127-20 both listed the following information: (*RG_ERCKDT_1_PW-2_2022-10_N, 10/31/2022 08:45*), which describes the information on the COC forms that corresponds to 2211127-02. A container for (*RG_ERCKUT_1_PW-2_2022-10_N, 10/31/2022 13:15*), which describes the information on the COC forms that corresponds to 2211127-20, was not received. Per client request, the *RG_ERCKDT_1_PW-2_2022-10_N, 10/31/2022 08:45* was assigned to 2211127-20 and sample 2211127-02 was assigned to (*RG_ERCKUT_1_PW-2_2022-10_N, 10/31/2022 13:15*).

The dissolved fraction for *RG_RIVER_WS_LAEMP_EVO_2022-11_NP-NAL* (Laboratory ID = 2211127-46) arrived in a container that leaked during shipping. The entire sample volume for 2211127-46 was lost. A fraction of the corresponding unfiltered, total recoverable Se fraction (laboratory ID: 2211127-47) was filtered (0.45 μm) into a new container to support the dissolved Se analysis for *RG_RIVER_WS_LAEMP_EVO_2022-11_NP-NAL*. This new dissolved Se fraction was preserved (pH < 2) by BAL staff at the time of receipt and logged in under 2211127-46. The filtration for 2211127-46 took place beyond the (2-calander day) filtration holding time. Consequently, the dissolved Se result for 2211127-46 is qualified (**H**) for a filtration holding time violation.

The sample fractions for total recoverable Se and dissolved Se were not preserved in the field. The samples were preserved (pH < 2) upon receipt at BAL. All sample fractions for total recoverable Se and dissolved Se were preserved within the (14 calendar day) preservation holding time.

The sample fractions logged in for Se speciation and dissolved Se had been field-filtered prior to receipt at BAL. All samples were stored according to BAL SOPs.

Total Recoverable Se and Dissolved Se

Each aqueous sample fraction for dissolved Se was digested in a closed vessel (bomb) with nitric and hydrochloric acids. The resulting digests were analyzed for Se content via inductively coupled plasma triple quadrupole mass spectrometry (ICP-QQQ-MS). The ICP-QQQ-MS instrumentation uses advanced interference removal techniques to ensure accuracy of the sample results. For more information, please visit the *Interference Reduction Technology* section on our website, brooksapplied.com.

The dissolved Se result for 2211127-46 is qualified (**H**) for filtration beyond the (2-calander day) filtration holding time.

Selenium Speciation

Each aqueous sample was analyzed for selenium speciation using ion chromatography inductively coupled plasma collision reaction cell mass spectrometry (IC-ICP-CRC-MS). Selenium species are chromatographically separated on an ion exchange column and then quantified using inductively coupled plasma collision reaction cell mass spectrometry (ICP-CRC-MS); for more information on this determinative technique, please visit the *Interference Reduction Technology* section on our website. The chromatographic method applied for the analyses provides greater retention of methylseleninic acid and selenomethionine, allowing for more definitive quantitation of these species.

In accordance with the quotation issued for this project, selenium speciation was defined as dissolved selenite [Se(IV)], selenate [Se(VI)], selenocyanate [SeCN], methylseleninic acid [MeSe(IV)], methaneselenonic acid [MeSe(VI)], selenomethionine [SeMef], selenosulfate [SeSO₃], and dimethylselenoxide [DMSeO]. Unknown Se species was defined as the total concentration of all unknown Se species observed during the analysis. This item is identified in the report as [Unk Se Sp].

DMSeO elutes early in the chromatographic run due to the nature of the molecule and the applied chromatographic separation method. Since this species elutes near the dead volume, additional selenium species may coelute. Alternate methods can be applied, upon client request, to increase the separation of DMSeO from potentially co-eluting selenium species.

Poor mass balance was observed in *RG_RIVER_WS_LAEMP_EVO_2022-11_N* when the sum of Se species (in sample 2211127-45) were compared to the corresponding dissolved Se result (2211127-46). Container labels were inspected and there was no indication that samples had been mis-labeled. Re-analyses confirmed the results for 2211127-45, 2211127-46, and 2211127-47. Consequently, no additional corrective actions are necessary. Results for these samples are reported from initial injections, and the reported results are deemed representative of the submitted containers.

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

In instances where a matrix spike/matrix spike duplicate (MS/MSD) set was spiked at a level less than the native sample concentration, the recoveries and the relative percent difference (RPD) are not considered valid indicators of data quality. In such instances, the recoveries of the laboratory fortified blanks (BS) and/or standard reference materials (SRM) demonstrate the accuracy of the applied methods. When the spiking level was less than 25% of the native sample concentration, the spike recovery was not reported (**NR**) and the relative percent difference (RPD) of the MS/MSD set was not calculated (**N/C**).

In cases when either the native sample concentration was non-detectable (reported as less than or equal to the MDL) and/or the corresponding DUP result was also non-detectable, the RPD between the two values was not calculated (**N/C**).

Except for concentration qualifiers and items noted above, all data were reported without qualification. All associated quality control sample results met the acceptance criteria.

BAL verifies that the reported results of all analyses for which the laboratory is accredited meet the requirements of the accrediting body, unless otherwise noted in the report narrative. For more information regarding accreditations please see the *Report Information* and *Batch Summary* pages. This report must be used in its entirety for interpretation of results.

Please feel free to contact us if you have any questions regarding this report.

Sincerely,

A handwritten signature in black ink, appearing to read 'Jeremy Maute', with a stylized flourish at the end.

Jeremy Maute

Senior Project Manager

Jeremy@brooksapplied.com



Report Information

General Disclaimers

Test results are based solely upon the sample submitted to Brooks Applied Labs in the condition it was received. This report shall not be reproduced or copied, except in full, without written approval of the laboratory. Brooks Applied Labs is not responsible for the consequences arising from the use of a partial report.

Laboratory Accreditation

BAL maintains accreditation with various state and national agencies for select test methods. For a current list of BAL accreditations, please visit our website at <http://www.brooksapplied.com/resources/certificates-permits/>. The reported analyte/matrix/method combination shall be considered outside BAL's scopes of accreditation unless otherwise identified as ISO, TNI, or ISO,TNI in the tables. It is the responsibility of the client to verify whether a specific accreditation is required for the intended data use.

ISO: ISO/IEC 17025:2017 accredited test method. Issued by ANSI National Accreditation Board (ANAB), #ADE-1447.02

TNI: NELAP accredited test method. Issued by the State of Florida Department of Health, #E87982.

ISO,TNI: Test method is accredited under both the ISO/IEC 17025:2017 and NELAP accreditations referenced above.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

AR	as received	MS	matrix spike
BAL	Brooks Applied Labs	MSD	matrix spike duplicate
BLK	method blank	ND	non-detect
BS	blank spike	NR	non-reportable
CAL	calibration standard	N/C	not calculated
CCB	continuing calibration blank	PS	post preparation spike
CCV	continuing calibration verification	REC	percent recovery
COC	chain of custody record	RPD	relative percent difference
D	dissolved fraction	SCV	secondary calibration verification
DUP	duplicate	SOP	standard operating procedure
IBL	instrument blank	SRM	reference material
ICV	initial calibration verification	T	total fraction
MDL	method detection limit	TR	total recoverable fraction
MRL	method reporting limit		

Definition of Data Qualifiers

E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Please see narrative for explanation.
J	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1	Estimated value. A full explanation is presented in the narrative.
M	Duplicate precision (RPD) was not within acceptance criteria. Please see narrative for explanation.
N	Spike recovery was not within acceptance criteria. Please see narrative for explanation.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.
Z	Holding time and/or preservation requirements not established for this method; however, BAL recommendations for holding time were not followed. Please see narrative for explanation.



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
RG_ERCKDT_1_PW-1_2022-10_N	2211127-01	PW	Sample	10/31/2022	11/10/2022
RG_ERCKUT_1_PW-2_2022-10_N	2211127-02	PW	Sample	10/31/2022	11/10/2022
RG_ERCKDT_1_PW-3_2022-10_N	2211127-03	PW	Sample	10/31/2022	11/10/2022
RG_ERCKDT_2_PW-1_2022-10_N	2211127-04	PW	Sample	10/31/2022	11/10/2022
RG_ERCKDT_2_PW-2_2022-10_N	2211127-05	PW	Sample	10/31/2022	11/10/2022
RG_ERCKDT_2_PW-3_2022-10_N	2211127-06	PW	Sample	10/31/2022	11/10/2022
RG_ERCKDT_3_PW-1_2022-10_N	2211127-07	PW	Sample	10/31/2022	11/10/2022
RG_ERCKDT_3_PW-2_2022-10_N	2211127-08	PW	Sample	10/31/2022	11/10/2022
RG_ERCKDT_3_PW-3_2022-10_N	2211127-09	PW	Sample	10/31/2022	11/10/2022
RG_ERCKMD_1_PW-1_2022-10_N	2211127-10	PW	Sample	10/31/2022	11/10/2022
RG_ERCKMD_1_PW-2_2022-10_N	2211127-11	PW	Sample	10/31/2022	11/10/2022
RG_ERCKMD_1_PW-3_2022-10_N	2211127-12	PW	Sample	10/31/2022	11/10/2022
RG_ERCKMD_2_PW-1_2022-10_N	2211127-13	PW	Sample	10/31/2022	11/10/2022
RG_ERCKMD_2_PW-2_2022-10_N	2211127-14	PW	Sample	10/31/2022	11/10/2022
RG_ERCKMD_2_PW-3_2022-10_N	2211127-15	PW	Sample	10/31/2022	11/10/2022
RG_ERCKMD_3_PW-1_2022-10_N	2211127-16	PW	Sample	10/31/2022	11/10/2022
RG_ERCKMD_3_PW-2_2022-10_N	2211127-17	PW	Sample	10/31/2022	11/10/2022
RG_ERCKMD_3_PW-3_2022-10_N	2211127-18	PW	Sample	10/31/2022	11/10/2022
RG_ERCKUT_1_PW-1_2022-10_N	2211127-19	PW	Sample	10/31/2022	11/10/2022
RG_ERCKDT_1_PW-2_2022-10_N	2211127-20	PW	Sample	10/31/2022	11/10/2022
RG_ERCKUT_1_PW-3_2022-10_N	2211127-21	PW	Sample	10/31/2022	11/10/2022
RG_ERCKUT_2_PW-1_2022-10_N	2211127-22	PW	Sample	10/31/2022	11/10/2022
RG_ERCKUT_2_PW-2_2022-10_N	2211127-23	PW	Sample	10/31/2022	11/10/2022
RG_ERCKUT_3_PW-1_2022-11_N	2211127-24	PW	Sample	11/01/2022	11/10/2022
RG_ERCKUT_3_PW-2_2022-11_N	2211127-25	PW	Sample	11/01/2022	11/10/2022
RG_ERCKUT_3_PW-3_2022-11_N	2211127-26	PW	Sample	11/01/2022	11/10/2022
RG_ERCKDT_WS_LAEMP_EVO_20 22-10_N	2211127-27	WS	Sample	10/31/2022	11/10/2022
RG_ERCKDT_WS_LAEMP_EVO_20 22-10_NP-NAL	2211127-28	WS	Sample	10/31/2022	11/10/2022
RG_ERCKDT_WS_LAEMP_EVO_20 22-10_NP-NAL	2211127-29	WS	Sample	10/31/2022	11/10/2022
RG_ERCKMD_WS_LAEMP_EVO_2 022-10_N	2211127-30	WS	Sample	10/31/2022	11/10/2022
RG_ERCKMD_WS_LAEMP_EVO_2 022-10_NP-NAL	2211127-31	WS	Sample	10/31/2022	11/10/2022
RG_ERCKMD_WS_LAEMP_EVO_2 022-10_NP-NAL	2211127-32	WS	Sample	10/31/2022	11/10/2022
RG_ERCKUT_WS_LAEMP_EVO_20 22-11_N	2211127-33	WS	Sample	11/01/2022	11/10/2022



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
RG_ERCKUT_WS_LAEMP_EVO_20 22-11_NP-NAL	2211127-34	WS	Sample	11/01/2022	11/10/2022
RG_ERCKUT_WS_LAEMP_EVO_20 22-11_NP-NAL	2211127-35	WS	Sample	11/01/2022	11/10/2022
RG_ERCK_WS_LAEMP_EVO_2022- 11_N	2211127-36	WS	Sample	11/01/2022	11/10/2022
RG_ERCK_WS_LAEMP_EVO_2022- 11_NP-NAL	2211127-37	WS	Sample	11/01/2022	11/10/2022
RG_ERCK_WS_LAEMP_EVO_2022- 11_NP-NAL	2211127-38	WS	Sample	11/01/2022	11/10/2022
RG_ERCKUC_WS_LAEMP_EVO_20 22-11_N	2211127-39	WS	Sample	11/01/2022	11/10/2022
RG_ERCKUC_WS_LAEMP_EVO_20 22-11_NP-NAL	2211127-40	WS	Sample	11/01/2022	11/10/2022
RG_ERCKUC_WS_LAEMP_EVO_20 22-11_NP-NAL	2211127-41	WS	Sample	11/01/2022	11/10/2022
RG_GATEDP_WS_LAEMP_EVO_20 22-11_N	2211127-42	WS	Sample	11/01/2022	11/10/2022
RG_GATEDP_WS_LAEMP_EVO_20 22-11_NP-NAL	2211127-43	WS	Sample	11/01/2022	11/10/2022
RG_GATEDP_WS_LAEMP_EVO_20 22-11_NP-NAL	2211127-44	WS	Sample	11/01/2022	11/10/2022
RG_RIVER_WS_LAEMP_EVO_2022 -11_N	2211127-45	WS	Sample	11/01/2022	11/10/2022
RG_RIVER_WS_LAEMP_EVO_2022 -11_NP-NAL	2211127-46	WS	Sample	11/01/2022	11/10/2022
RG_RIVER_WS_LAEMP_EVO_2022 -11_NP-NAL	2211127-47	WS	Sample	11/01/2022	11/10/2022
RG_FBLANK_WS_LAEMP_EVO_20 22-11_N	2211127-48	WS	Sample	11/01/2022	11/10/2022
RG_FBLANK_WS_LAEMP_EVO_20 22-11_NP-NAL	2211127-49	WS	Sample	11/01/2022	11/10/2022
RG_FBLANK_WS_LAEMP_EVO_20 22-11_NP-NAL	2211127-50	WS	Sample	11/01/2022	11/10/2022
RG_MI3_WS_LAEMP_EVO_2022-11 _N	2211127-51	WS	Sample	11/02/2022	11/10/2022
RG_MI3_WS_LAEMP_EVO_2022-11 _NP-NAL	2211127-52	WS	Sample	11/02/2022	11/10/2022
RG_MI3_WS_LAEMP_EVO_2022-11 _NP-NAL	2211127-53	WS	Sample	11/02/2022	11/10/2022
RG_MIDGA_WS_LAEMP_EVO_202 2-11_N	2211127-54	WS	Sample	11/02/2022	11/10/2022



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
RG_MIDGA_WS_LAEMP_EVO_202 2-11_NP-NAL	2211127-55	WS	Sample	11/02/2022	11/10/2022
RG_MIDGA_WS_LAEMP_EVO_202 2-11_NP-NAL	2211127-56	WS	Sample	11/02/2022	11/10/2022
RG_MIDBO_WS_LAEMP_EVO_202 2-11_N	2211127-57	WS	Sample	11/02/2022	11/10/2022
RG_MIDBO_WS_LAEMP_EVO_202 2-11_NP-NAL	2211127-58	WS	Sample	11/02/2022	11/10/2022
RG_MIDBO_WS_LAEMP_EVO_202 2-11_NP-NAL	2211127-59	WS	Sample	11/02/2022	11/10/2022
RG_MIDER_WS_LAEMP_EVO_202 2-11_N	2211127-60	WS	Sample	11/02/2022	11/10/2022
RG_MIDER_WS_LAEMP_EVO_202 2-11_NP-NAL	2211127-61	WS	Sample	11/02/2022	11/10/2022
RG_MIDER_WS_LAEMP_EVO_202 2-11_NP-NAL	2211127-62	WS	Sample	11/02/2022	11/10/2022
RG_MICOMP_WS_LAEMP_EVO_20 22-11_N	2211127-63	WS	Sample	11/02/2022	11/10/2022
RG_MICOMP_WS_LAEMP_EVO_20 22-11_NP-NAL	2211127-64	WS	Sample	11/02/2022	11/10/2022
RG_MICOMP_WS_LAEMP_EVO_20 22-11_NP-NAL	2211127-65	WS	Sample	11/02/2022	11/10/2022
RG_GATE_WS_LAEMP_EVO_2022- 11_N	2211127-66	WS	Sample	11/03/2022	11/10/2022
RG_GATE_WS_LAEMP_EVO_2022- 11_NP-NAL	2211127-67	WS	Sample	11/03/2022	11/10/2022
RG_GATE_WS_LAEMP_EVO_2022- 11_NP-NAL	2211127-68	WS	Sample	11/03/2022	11/10/2022
RG_BOCK_WS_LAEMP_EVO_2022 -11_N	2211127-69	WS	Sample	11/03/2022	11/10/2022
RG_BOCK_WS_LAEMP_EVO_2022 -11_NP-NAL	2211127-70	WS	Sample	11/03/2022	11/10/2022
RG_BOCK_WS_LAEMP_EVO_2022 -11_NP-NAL	2211127-71	WS	Sample	11/03/2022	11/10/2022
RG_BOCKRD_WS_LAEMP_EVO_2 022-11_N	2211127-72	WS	Sample	11/03/2022	11/10/2022
RG_BOCKRD_WS_LAEMP_EVO_2 022-11_NP-NAL	2211127-73	WS	Sample	11/03/2022	11/10/2022
RG_BOCKRD_WS_LAEMP_EVO_2 022-11_NP-NAL	2211127-74	WS	Sample	11/03/2022	11/10/2022
RG_ALUSM_WS_LAEMP_EVO_202 2-11_N	2211127-75	WS	Sample	11/03/2022	11/10/2022



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
RG_ALUSM_WS_LAEMP_EVO_202 2-11_NP-NAL	2211127-76	WS	Sample	11/03/2022	11/10/2022
RG_ALUSM_WS_LAEMP_EVO_202 2-11_NP-NAL	2211127-77	WS	Sample	11/03/2022	11/10/2022
RG_RIVER2_WS_LAEMP_EVO_202 2-11_N	2211127-78	WS	Sample	11/03/2022	11/10/2022
RG_RIVER2_WS_LAEMP_EVO_202 2-11_NP-NAL	2211127-79	WS	Sample	11/03/2022	11/10/2022
RG_RIVER2_WS_LAEMP_EVO_202 2-11_NP-NAL	2211127-80	WS	Sample	11/03/2022	11/10/2022
RG_FBLANK2_WS_LAEMP_EVO_2 022-11_N	2211127-81	WS	Sample	11/03/2022	11/10/2022
RG_FBLANK2_WS_LAEMP_EVO_2 022-11_NP-NAL	2211127-82	WS	Sample	11/03/2022	11/10/2022
RG_FBLANK2_WS_LAEMP_EVO_2 022-11_NP-NAL	2211127-83	WS	Sample	11/03/2022	11/10/2022

Batch Summary

Analyte	Lab Matrix	Method	Accred.	Prepared	Analyzed	Batch	Sequence
DMSeO	Water	SOP BAL-4201		11/10/22	11/11/22	B222741	S221187
MeSe(IV)	Water	SOP BAL-4201		11/10/22	11/11/22	B222741	S221187
MeSe(VI)	Water	SOP BAL-4201		11/10/22	11/11/22	B222741	S221187
Se	Water	EPA 1638 Mod		11/11/22	11/14/22	B222762	S221199
Se(IV)	Water	SOP BAL-4201	ISO,TNI	11/10/22	11/11/22	B222741	S221187
Se(VI)	Water	SOP BAL-4201	ISO,TNI	11/10/22	11/11/22	B222741	S221187
SeCN	Water	SOP BAL-4201	ISO	11/10/22	11/11/22	B222741	S221187
SeMet	Water	SOP BAL-4201	ISO	11/10/22	11/11/22	B222741	S221187
SeSO3	Water	SOP BAL-4201		11/10/22	11/11/22	B222741	S221187
Unk Se Sp	Water	SOP BAL-4201		11/10/22	11/11/22	B222741	S221187



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKDT_1_PW-1_2022-10_N										
2211127-01	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-01	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-01	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-01	Se(IV)	PW	D	0.332		0.020	0.075	µg/L	B222741	S221187
2211127-01	Se(VI)	PW	D	86.3		0.010	0.055	µg/L	B222741	S221187
2211127-01	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-01	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-01	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-01	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_ERCKUT_1_PW-2_2022-10_N										
2211127-02	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-02	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-02	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-02	Se(IV)	PW	D	0.035	J	0.020	0.075	µg/L	B222741	S221187
2211127-02	Se(VI)	PW	D	147		0.010	0.055	µg/L	B222741	S221187
2211127-02	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-02	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-02	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-02	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_ERCKDT_1_PW-3_2022-10_N										
2211127-03	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-03	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-03	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-03	Se(IV)	PW	D	0.323		0.020	0.075	µg/L	B222741	S221187
2211127-03	Se(VI)	PW	D	86.9		0.010	0.055	µg/L	B222741	S221187
2211127-03	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-03	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-03	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-03	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKDT_2_PW-1_2022-10_N										
2211127-04	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-04	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-04	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-04	Se(IV)	PW	D	0.267		0.020	0.075	µg/L	B222741	S221187
2211127-04	Se(VI)	PW	D	87.9		0.010	0.055	µg/L	B222741	S221187
2211127-04	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-04	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-04	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-04	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_ERCKDT_2_PW-2_2022-10_N										
2211127-05	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-05	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-05	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-05	Se(IV)	PW	D	0.266		0.020	0.075	µg/L	B222741	S221187
2211127-05	Se(VI)	PW	D	89.1		0.010	0.055	µg/L	B222741	S221187
2211127-05	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-05	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-05	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-05	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_ERCKDT_2_PW-3_2022-10_N										
2211127-06	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-06	MeSe(IV)	PW	D	0.011	J	0.010	0.025	µg/L	B222741	S221187
2211127-06	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-06	Se(IV)	PW	D	0.865		0.020	0.075	µg/L	B222741	S221187
2211127-06	Se(VI)	PW	D	88.1		0.010	0.055	µg/L	B222741	S221187
2211127-06	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-06	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-06	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-06	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKDT_3_PW-1_2022-10_N										
2211127-07	DMS ₂ SeO	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-07	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-07	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-07	Se(IV)	PW	D	0.334		0.020	0.075	µg/L	B222741	S221187
2211127-07	Se(VI)	PW	D	71.4		0.010	0.055	µg/L	B222741	S221187
2211127-07	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-07	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-07	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-07	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_ERCKDT_3_PW-2_2022-10_N										
2211127-08	DMS ₂ SeO	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-08	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-08	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-08	Se(IV)	PW	D	0.332		0.020	0.075	µg/L	B222741	S221187
2211127-08	Se(VI)	PW	D	70.1		0.010	0.055	µg/L	B222741	S221187
2211127-08	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-08	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-08	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-08	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_ERCKDT_3_PW-3_2022-10_N										
2211127-09	DMS ₂ SeO	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-09	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-09	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-09	Se(IV)	PW	D	0.338		0.020	0.075	µg/L	B222741	S221187
2211127-09	Se(VI)	PW	D	71.5		0.010	0.055	µg/L	B222741	S221187
2211127-09	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-09	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-09	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-09	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKMD_1_PW-1_2022-10_N										
2211127-10	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-10	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-10	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-10	Se(IV)	PW	D	0.296		0.020	0.075	µg/L	B222741	S221187
2211127-10	Se(VI)	PW	D	83.3		0.010	0.055	µg/L	B222741	S221187
2211127-10	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-10	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-10	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-10	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_ERCKMD_1_PW-2_2022-10_N										
2211127-11	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-11	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-11	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-11	Se(IV)	PW	D	0.306		0.020	0.075	µg/L	B222741	S221187
2211127-11	Se(VI)	PW	D	85.2		0.010	0.055	µg/L	B222741	S221187
2211127-11	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-11	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-11	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-11	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_ERCKMD_1_PW-3_2022-10_N										
2211127-12	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-12	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-12	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-12	Se(IV)	PW	D	0.318		0.020	0.075	µg/L	B222741	S221187
2211127-12	Se(VI)	PW	D	84.1		0.010	0.055	µg/L	B222741	S221187
2211127-12	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-12	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-12	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-12	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKMD_2_PW-1_2022-10_N										
2211127-13	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-13	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-13	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-13	Se(IV)	PW	D	0.292		0.020	0.075	µg/L	B222741	S221187
2211127-13	Se(VI)	PW	D	81.9		0.010	0.055	µg/L	B222741	S221187
2211127-13	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-13	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-13	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-13	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_ERCKMD_2_PW-2_2022-10_N										
2211127-14	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-14	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-14	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-14	Se(IV)	PW	D	0.329		0.020	0.075	µg/L	B222741	S221187
2211127-14	Se(VI)	PW	D	82.4		0.010	0.055	µg/L	B222741	S221187
2211127-14	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-14	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-14	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-14	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_ERCKMD_2_PW-3_2022-10_N										
2211127-15	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-15	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-15	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-15	Se(IV)	PW	D	0.274		0.020	0.075	µg/L	B222741	S221187
2211127-15	Se(VI)	PW	D	80.8		0.010	0.055	µg/L	B222741	S221187
2211127-15	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-15	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-15	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-15	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKMD_3_PW-1_2022-10_N										
2211127-16	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-16	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-16	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-16	Se(IV)	PW	D	0.295		0.020	0.075	µg/L	B222741	S221187
2211127-16	Se(VI)	PW	D	80.9		0.010	0.055	µg/L	B222741	S221187
2211127-16	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-16	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-16	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-16	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_ERCKMD_3_PW-2_2022-10_N										
2211127-17	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-17	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-17	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-17	Se(IV)	PW	D	0.293		0.020	0.075	µg/L	B222741	S221187
2211127-17	Se(VI)	PW	D	79.9		0.010	0.055	µg/L	B222741	S221187
2211127-17	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-17	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-17	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-17	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_ERCKMD_3_PW-3_2022-10_N										
2211127-18	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-18	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-18	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-18	Se(IV)	PW	D	0.456		0.020	0.075	µg/L	B222741	S221187
2211127-18	Se(VI)	PW	D	80.5		0.010	0.055	µg/L	B222741	S221187
2211127-18	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-18	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-18	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-18	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKUT_1_PW-1_2022-10_N										
2211127-19	DMS ₂ SeO	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-19	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-19	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-19	Se(IV)	PW	D	0.079		0.020	0.075	µg/L	B222741	S221187
2211127-19	Se(VI)	PW	D	137		0.010	0.055	µg/L	B222741	S221187
2211127-19	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-19	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-19	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-19	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_ERCKDT_1_PW-2_2022-10_N										
2211127-20	DMS ₂ SeO	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-20	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-20	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-20	Se(IV)	PW	D	0.324		0.020	0.075	µg/L	B222741	S221187
2211127-20	Se(VI)	PW	D	82.4		0.010	0.055	µg/L	B222741	S221187
2211127-20	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-20	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-20	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-20	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_ERCKUT_1_PW-3_2022-10_N										
2211127-21	DMS ₂ SeO	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-21	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-21	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-21	Se(IV)	PW	D	0.031	J	0.020	0.075	µg/L	B222741	S221187
2211127-21	Se(VI)	PW	D	137		0.010	0.055	µg/L	B222741	S221187
2211127-21	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-21	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-21	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-21	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKUT_2_PW-1_2022-10_N										
2211127-22	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-22	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-22	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-22	Se(IV)	PW	D	0.030	J	0.020	0.075	µg/L	B222741	S221187
2211127-22	Se(VI)	PW	D	139		0.010	0.055	µg/L	B222741	S221187
2211127-22	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-22	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-22	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-22	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_ERCKUT_2_PW-2_2022-10_N										
2211127-23	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-23	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-23	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-23	Se(IV)	PW	D	0.066	J	0.020	0.075	µg/L	B222741	S221187
2211127-23	Se(VI)	PW	D	137		0.010	0.055	µg/L	B222741	S221187
2211127-23	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-23	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-23	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-23	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_ERCKUT_3_PW-1_2022-11_N										
2211127-24	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-24	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-24	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-24	Se(IV)	PW	D	0.023	J	0.020	0.075	µg/L	B222741	S221187
2211127-24	Se(VI)	PW	D	137		0.010	0.055	µg/L	B222741	S221187
2211127-24	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-24	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-24	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-24	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKUT_3_PW-2_2022-11_N										
2211127-25	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-25	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-25	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-25	Se(IV)	PW	D	0.030	J	0.020	0.075	µg/L	B222741	S221187
2211127-25	Se(VI)	PW	D	139		0.010	0.055	µg/L	B222741	S221187
2211127-25	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-25	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-25	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-25	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_ERCKUT_3_PW-3_2022-11_N										
2211127-26	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-26	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-26	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-26	Se(IV)	PW	D	0.021	J	0.020	0.075	µg/L	B222741	S221187
2211127-26	Se(VI)	PW	D	137		0.010	0.055	µg/L	B222741	S221187
2211127-26	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-26	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-26	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-26	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_ERCKDT_WS_LAEMP_EVO_2022-10_N										
2211127-27	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-27	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-27	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-27	Se(IV)	WS	D	0.150		0.020	0.075	µg/L	B222741	S221187
2211127-27	Se(VI)	WS	D	104		0.010	0.055	µg/L	B222741	S221187
2211127-27	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-27	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-27	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-27	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP-NAL										
2211127-28	Se	WS	D	117		0.165	0.528	µg/L	B222762	S221199
RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP-NAL										
2211127-29	Se	WS	TR	133		0.165	0.528	µg/L	B222762	S221199



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKMD_WS_LAEMP_EVO_2022-10_N										
2211127-30	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-30	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-30	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-30	Se(IV)	WS	D	0.262		0.020	0.075	µg/L	B222741	S221187
2211127-30	Se(VI)	WS	D	79.6		0.010	0.055	µg/L	B222741	S221187
2211127-30	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-30	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-30	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-30	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP-NAL										
2211127-31	Se	WS	D	91.5		0.165	0.528	µg/L	B222762	S221199
RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP-NAL										
2211127-32	Se	WS	TR	87.4		0.165	0.528	µg/L	B222762	S221199
RG_ERCKUT_WS_LAEMP_EVO_2022-11_N										
2211127-33	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-33	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-33	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-33	Se(IV)	WS	D	≤ 0.020	U	0.020	0.075	µg/L	B222741	S221187
2211127-33	Se(VI)	WS	D	133		0.010	0.055	µg/L	B222741	S221187
2211127-33	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-33	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-33	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-33	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-34	Se	WS	D	150		0.165	0.528	µg/L	B222762	S221199
RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-35	Se	WS	TR	149		0.165	0.528	µg/L	B222762	S221199



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCK_WS_LAEMP_EVO_2022-11_N										
2211127-36	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-36	MeSe(IV)	WS	D	0.013	J	0.010	0.025	µg/L	B222741	S221187
2211127-36	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-36	Se(IV)	WS	D	0.333		0.020	0.075	µg/L	B222741	S221187
2211127-36	Se(VI)	WS	D	78.2		0.010	0.055	µg/L	B222741	S221187
2211127-36	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-36	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-36	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-36	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_ERCK_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-37	Se	WS	D	93.3		0.165	0.528	µg/L	B222762	S221199
RG_ERCK_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-38	Se	WS	TR	92.5		0.165	0.528	µg/L	B222762	S221199
RG_ERCKUC_WS_LAEMP_EVO_2022-11_N										
2211127-39	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-39	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-39	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-39	Se(IV)	WS	D	0.323		0.020	0.075	µg/L	B222741	S221187
2211127-39	Se(VI)	WS	D	79.0		0.010	0.055	µg/L	B222741	S221187
2211127-39	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-39	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-39	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-39	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_ERCKUC_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-40	Se	WS	D	86.4		0.165	0.528	µg/L	B222762	S221199
RG_ERCKUC_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-41	Se	WS	TR	91.1		0.165	0.528	µg/L	B222762	S221199



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_GATEDP_WS_LAEMP_EVO_2022-11_N										
2211127-42	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-42	MeSe(IV)	WS	D	0.067		0.010	0.025	µg/L	B222741	S221187
2211127-42	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-42	Se(IV)	WS	D	0.864		0.020	0.075	µg/L	B222741	S221187
2211127-42	Se(VI)	WS	D	214		0.010	0.055	µg/L	B222741	S221187
2211127-42	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-42	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-42	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-42	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_GATEDP_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-43	Se	WS	D	245		0.165	0.528	µg/L	B222762	S221199
RG_GATEDP_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-44	Se	WS	TR	253		0.165	0.528	µg/L	B222762	S221199
RG_RIVER_WS_LAEMP_EVO_2022-11_N										
2211127-45	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-45	MeSe(IV)	WS	D	0.044		0.010	0.025	µg/L	B222741	S221187
2211127-45	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-45	Se(IV)	WS	D	0.697		0.020	0.075	µg/L	B222741	S221187
2211127-45	Se(VI)	WS	D	158		0.010	0.055	µg/L	B222741	S221187
2211127-45	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-45	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-45	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-45	Unk Se Sp	WS	D	≤ 0.020	U	0.020	0.075	µg/L	B222741	S221187
RG_RIVER_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-46	Se	WS	D	248	H	0.165	0.528	µg/L	B222762	S221199
RG_RIVER_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-47	Se	WS	TR	229		0.165	0.528	µg/L	B222762	S221199



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_FBLANK_WS_LAEMP_EVO_2022-11_N										
2211127-48	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-48	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-48	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-48	Se(IV)	WS	D	≤ 0.020	U	0.020	0.075	µg/L	B222741	S221187
2211127-48	Se(VI)	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-48	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-48	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-48	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-48	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_FBLANK_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-49	Se	WS	D	≤ 0.165	U	0.165	0.528	µg/L	B222762	S221199
RG_FBLANK_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-50	Se	WS	TR	≤ 0.165	U	0.165	0.528	µg/L	B222762	S221199
RG_MI3_WS_LAEMP_EVO_2022-11_N										
2211127-51	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-51	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-51	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-51	Se(IV)	WS	D	0.024	J	0.020	0.075	µg/L	B222741	S221187
2211127-51	Se(VI)	WS	D	0.906		0.010	0.055	µg/L	B222741	S221187
2211127-51	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-51	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-51	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-51	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_MI3_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-52	Se	WS	D	1.21		0.165	0.528	µg/L	B222762	S221199
RG_MI3_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-53	Se	WS	TR	1.12		0.165	0.528	µg/L	B222762	S221199



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_MIDGA_WS_LAEMP_EVO_2022-11_N										
2211127-54	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-54	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-54	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-54	Se(IV)	WS	D	0.074	J	0.020	0.075	µg/L	B222741	S221187
2211127-54	Se(VI)	WS	D	5.83		0.010	0.055	µg/L	B222741	S221187
2211127-54	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-54	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-54	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-54	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_MIDGA_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-55	Se	WS	D	7.04		0.165	0.528	µg/L	B222762	S221199
RG_MIDGA_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-56	Se	WS	TR	6.72		0.165	0.528	µg/L	B222762	S221199
RG_MIDBO_WS_LAEMP_EVO_2022-11_N										
2211127-57	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-57	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-57	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-57	Se(IV)	WS	D	0.082		0.020	0.075	µg/L	B222741	S221187
2211127-57	Se(VI)	WS	D	7.31		0.010	0.055	µg/L	B222741	S221187
2211127-57	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-57	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-57	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-57	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_MIDBO_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-58	Se	WS	D	8.60		0.165	0.528	µg/L	B222762	S221199
RG_MIDBO_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-59	Se	WS	TR	8.41		0.165	0.528	µg/L	B222762	S221199



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_MIDER_WS_LAEMP_EVO_2022-11_N										
2211127-60	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-60	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-60	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-60	Se(IV)	WS	D	0.036	J	0.020	0.075	µg/L	B222741	S221187
2211127-60	Se(VI)	WS	D	1.33		0.010	0.055	µg/L	B222741	S221187
2211127-60	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-60	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-60	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-60	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_MIDER_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-61	Se	WS	D	1.74		0.165	0.528	µg/L	B222762	S221199
RG_MIDER_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-62	Se	WS	TR	1.91		0.165	0.528	µg/L	B222762	S221199
RG_MICOMP_WS_LAEMP_EVO_2022-11_N										
2211127-63	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-63	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-63	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-63	Se(IV)	WS	D	0.084		0.020	0.075	µg/L	B222741	S221187
2211127-63	Se(VI)	WS	D	8.25		0.010	0.055	µg/L	B222741	S221187
2211127-63	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-63	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-63	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-63	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_MICOMP_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-64	Se	WS	D	10.0		0.165	0.528	µg/L	B222762	S221199
RG_MICOMP_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-65	Se	WS	TR	9.67		0.165	0.528	µg/L	B222762	S221199



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_GATE_WS_LAEMP_EVO_2022-11_N										
2211127-66	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-66	MeSe(IV)	WS	D	0.035		0.010	0.025	µg/L	B222741	S221187
2211127-66	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-66	Se(IV)	WS	D	0.748		0.020	0.075	µg/L	B222741	S221187
2211127-66	Se(VI)	WS	D	242		0.010	0.055	µg/L	B222741	S221187
2211127-66	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-66	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-66	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-66	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_GATE_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-67	Se	WS	D	285		0.165	0.528	µg/L	B222762	S221199
RG_GATE_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-68	Se	WS	TR	270		0.165	0.528	µg/L	B222762	S221199
RG_BOCK_WS_LAEMP_EVO_2022-11_N										
2211127-69	DMS ₂ O	WS	D	0.020	J	0.010	0.025	µg/L	B222741	S221187
2211127-69	MeSe(IV)	WS	D	0.083		0.010	0.025	µg/L	B222741	S221187
2211127-69	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-69	Se(IV)	WS	D	1.23		0.020	0.075	µg/L	B222741	S221187
2211127-69	Se(VI)	WS	D	132		0.010	0.055	µg/L	B222741	S221187
2211127-69	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-69	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-69	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-69	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_BOCK_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-70	Se	WS	D	155		0.165	0.528	µg/L	B222762	S221199
RG_BOCK_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-71	Se	WS	TR	154		0.165	0.528	µg/L	B222762	S221199



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_BOCKRD_WS_LAEMP_EVO_2022-11_N										
2211127-72	DMSeO	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-72	MeSe(IV)	WS	D	0.018	J	0.010	0.025	µg/L	B222741	S221187
2211127-72	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-72	Se(IV)	WS	D	0.720		0.020	0.075	µg/L	B222741	S221187
2211127-72	Se(VI)	WS	D	401		0.010	0.055	µg/L	B222741	S221187
2211127-72	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-72	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-72	SeSO3	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-72	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_BOCKRD_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-73	Se	WS	D	467		0.165	0.528	µg/L	B222762	S221199
RG_BOCKRD_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-74	Se	WS	TR	481		0.165	0.528	µg/L	B222762	S221199
RG_ALUSM_WS_LAEMP_EVO_2022-11_N										
2211127-75	DMSeO	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-75	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-75	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-75	Se(IV)	WS	D	≤ 0.020	U	0.020	0.075	µg/L	B222741	S221187
2211127-75	Se(VI)	WS	D	0.474		0.010	0.055	µg/L	B222741	S221187
2211127-75	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-75	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-75	SeSO3	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-75	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_ALUSM_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-76	Se	WS	D	0.782		0.165	0.528	µg/L	B222762	S221199
RG_ALUSM_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-77	Se	WS	TR	0.647		0.165	0.528	µg/L	B222762	S221199



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_RIVER2_WS_LAEMP_EVO_2022-11_N										
2211127-78	DMSeO	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-78	MeSe(IV)	WS	D	0.018	J	0.010	0.025	µg/L	B222741	S221187
2211127-78	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-78	Se(IV)	WS	D	0.649		0.020	0.075	µg/L	B222741	S221187
2211127-78	Se(VI)	WS	D	390		0.010	0.055	µg/L	B222741	S221187
2211127-78	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-78	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-78	SeSO3	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-78	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_RIVER2_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-79	Se	WS	D	452		0.165	0.528	µg/L	B222762	S221199
RG_RIVER2_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-80	Se	WS	TR	441		0.165	0.528	µg/L	B222762	S221199
RG_FBLANK2_WS_LAEMP_EVO_2022-11_N										
2211127-81	DMSeO	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-81	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-81	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-81	Se(IV)	WS	D	≤ 0.020	U	0.020	0.075	µg/L	B222741	S221187
2211127-81	Se(VI)	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-81	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-81	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-81	SeSO3	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-81	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_FBLANK2_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-82	Se	WS	D	0.241	J	0.165	0.528	µg/L	B222762	S221199
RG_FBLANK2_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-83	Se	WS	TR	≤ 0.165	U	0.165	0.528	µg/L	B222762	S221199



Accuracy & Precision Summary

Batch: B222741
Lab Matrix: Water
Method: SOP BAL-4201

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222741-BS1	Blank Spike, (2236035)						
	MeSe(IV)		5.095	5.581	µg/L	110% 75-125	
	Se(IV)		5.000	4.877	µg/L	98% 75-125	
	Se(VI)		5.000	4.498	µg/L	90% 75-125	
	SeCN		5.015	4.708	µg/L	94% 75-125	
	SeMet		4.982	4.972	µg/L	100% 75-125	
B222741-DUP3	Duplicate, (2211127-14)						
	DMSeO	ND		ND	µg/L		N/C 25
	MeSe(IV)	ND		ND	µg/L		N/C 25
	MeSe(VI)	ND		ND	µg/L		N/C 25
	Se(IV)	0.329		0.329	µg/L		0.2% 25
	Se(VI)	82.38		82.03	µg/L		0.4% 25
	SeCN	ND		ND	µg/L		N/C 25
	SeMet	ND		ND	µg/L		N/C 25
	SeSO3	ND		ND	µg/L		N/C 25
	Unk Se Sp	ND		ND	µg/L		N/C 25
B222741-MS3	Matrix Spike, (2211127-14)						
	Se(IV)	0.329	4.900	4.659	µg/L	88% 75-125	
	Se(VI)	82.38	5.100	87.58	µg/L	NR 75-125	
	SeCN	ND	1.962	1.756	µg/L	90% 75-125	
	SeMet	ND	1.977	1.727	µg/L	87% 75-125	
B222741-MSD3	Matrix Spike Duplicate, (2211127-14)						
	Se(IV)	0.329	4.900	4.602	µg/L	87% 75-125	1% 25
	Se(VI)	82.38	5.100	87.03	µg/L	NR 75-125	N/C 25
	SeCN	ND	1.962	1.730	µg/L	88% 75-125	1% 25
	SeMet	ND	1.977	1.692	µg/L	86% 75-125	2% 25



Accuracy & Precision Summary

Batch: B222741
Lab Matrix: Water
Method: SOP BAL-4201

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222741-DUP4	Duplicate, (2211127-21)						
	DMS ₂ SeO	ND		ND	µg/L		N/C 25
	MeSe(IV)	ND		ND	µg/L		N/C 25
	MeSe(VI)	ND		ND	µg/L		N/C 25
	Se(IV)	0.031		0.030	µg/L		4% 25
	Se(VI)	137.2		137.9	µg/L		0.5% 25
	SeCN	ND		ND	µg/L		N/C 25
	SeMet	ND		ND	µg/L		N/C 25
	SeSO ₃	ND		ND	µg/L		N/C 25
Unk Se Sp	ND		ND	µg/L		N/C 25	
B222741-MS4	Matrix Spike, (2211127-21)						
	Se(IV)	0.031	4.900	3.934	µg/L	80% 75-125	
	Se(VI)	137.2	5.100	142.2	µg/L	NR 75-125	
	SeCN	ND	1.962	1.789	µg/L	91% 75-125	
	SeMet	ND	1.977	1.838	µg/L	93% 75-125	
B222741-MSD4	Matrix Spike Duplicate, (2211127-21)						
	Se(IV)	0.031	4.900	3.913	µg/L	79% 75-125	0.6% 25
	Se(VI)	137.2	5.100	142.5	µg/L	NR 75-125	N/C 25
	SeCN	ND	1.962	1.762	µg/L	90% 75-125	2% 25
	SeMet	ND	1.977	1.829	µg/L	93% 75-125	0.5% 25
B222741-DUP7	Duplicate, (2211127-45)						
	DMS ₂ SeO	ND		ND	µg/L		N/C 25
	MeSe(IV)	0.044		0.040	µg/L		8% 25
	MeSe(VI)	ND		ND	µg/L		N/C 25
	Se(IV)	0.697		0.643	µg/L		8% 25
	Se(VI)	157.9		145.5	µg/L		8% 25
	SeCN	ND		ND	µg/L		N/C 25
	SeMet	ND		ND	µg/L		N/C 25
	SeSO ₃	ND		ND	µg/L		N/C 25
Unk Se Sp	ND		ND	µg/L		N/C 25	



Accuracy & Precision Summary

Batch: B222741
Lab Matrix: Water
Method: SOP BAL-4201

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222741-MS7	Matrix Spike, (2211127-45)						
	Se(IV)	0.697	4.900	5.228	µg/L	92% 75-125	
	Se(VI)	157.9	5.100	157.1	µg/L	NR 75-125	
	SeCN	ND	1.962	1.765	µg/L	90% 75-125	
	SeMet	ND	1.977	1.863	µg/L	94% 75-125	
B222741-MSD7	Matrix Spike Duplicate, (2211127-45)						
	Se(IV)	0.697	4.900	5.173	µg/L	91% 75-125	1% 25
	Se(VI)	157.9	5.100	184.1	µg/L	NR 75-125	N/C 25
	SeCN	ND	1.962	1.734	µg/L	88% 75-125	2% 25
	SeMet	ND	1.977	1.850	µg/L	94% 75-125	0.7% 25
B222741-DUP5	Duplicate, (2211127-60)						
	DMSeO	ND		ND	µg/L		N/C 25
	MeSe(IV)	ND		ND	µg/L		N/C 25
	MeSe(VI)	ND		ND	µg/L		N/C 25
	Se(IV)	0.036		0.034	µg/L		5% 25
	Se(VI)	1.331		1.352	µg/L		2% 25
	SeCN	ND		ND	µg/L		N/C 25
	SeMet	ND		ND	µg/L		N/C 25
	SeSO3	ND		ND	µg/L		N/C 25
Unk Se Sp	ND		ND	µg/L		N/C 25	
B222741-MS5	Matrix Spike, (2211127-60)						
	Se(IV)	0.036	4.900	4.431	µg/L	90% 75-125	
	Se(VI)	1.331	5.100	5.778	µg/L	87% 75-125	
	SeCN	ND	1.962	1.630	µg/L	83% 75-125	
	SeMet	ND	1.977	1.769	µg/L	90% 75-125	
B222741-MSD5	Matrix Spike Duplicate, (2211127-60)						
	Se(IV)	0.036	4.900	4.577	µg/L	93% 75-125	3% 25
	Se(VI)	1.331	5.100	6.001	µg/L	92% 75-125	4% 25
	SeCN	ND	1.962	1.675	µg/L	85% 75-125	3% 25
	SeMet	ND	1.977	1.795	µg/L	91% 75-125	1% 25



Accuracy & Precision Summary

Batch: B222741
Lab Matrix: Water
Method: SOP BAL-4201

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222741-DUP6	Duplicate, (2211127-78)						
	DMS ₂ SeO	ND		ND	µg/L		N/C 25
	MeSe(IV)	0.018		0.019	µg/L		3% 25
	MeSe(VI)	ND		ND	µg/L		N/C 25
	Se(IV)	0.649		0.665	µg/L		3% 25
	Se(VI)	389.9		400.0	µg/L		3% 25
	SeCN	ND		ND	µg/L		N/C 25
	SeMet	ND		ND	µg/L		N/C 25
	SeSO ₃	ND		ND	µg/L		N/C 25
	Unk Se Sp	ND		ND	µg/L		N/C 25
B222741-MS6	Matrix Spike, (2211127-78)						
	Se(IV)	0.649	4.900	4.856	µg/L	86% 75-125	
	Se(VI)	389.9	5.100	399.7	µg/L	NR 75-125	
	SeCN	ND	1.962	1.740	µg/L	89% 75-125	
	SeMet	ND	1.977	1.779	µg/L	90% 75-125	
B222741-MSD6	Matrix Spike Duplicate, (2211127-78)						
	Se(IV)	0.649	4.900	4.896	µg/L	87% 75-125	0.8% 25
	Se(VI)	389.9	5.100	399.3	µg/L	NR 75-125	N/C 25
	SeCN	ND	1.962	1.752	µg/L	89% 75-125	0.7% 25
	SeMet	ND	1.977	1.849	µg/L	94% 75-125	4% 25



Accuracy & Precision Summary

Batch: B222762
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222762-BS1	Blank Spike, (2146024) Se		200.0	197.2	µg/L	99% 75-125	
B222762-BS2	Blank Spike, (2146024) Se		200.0	201.4	µg/L	101% 75-125	
B222762-BS3	Blank Spike, (2146024) Se		200.0	195.9	µg/L	98% 75-125	
B222762-SRM1	Reference Material (2128018, T221) Se		3.800	3.836	µg/L	101% 75-125	
B222762-SRM2	Reference Material (2128018, T221) Se		3.800	3.732	µg/L	98% 75-125	
B222762-SRM3	Reference Material (2128018, T221) Se		3.800	3.581	µg/L	94% 75-125	
B222762-DUP1	Duplicate, (2211127-35) Se	149.1		151.2	µg/L		1% 20
B222762-MS1	Matrix Spike, (2211127-35) Se	149.1	220.0	366.9	µg/L	99% 75-125	
B222762-MSD1	Matrix Spike Duplicate, (2211127-35) Se	149.1	220.0	368.1	µg/L	100% 75-125	0.3% 20
B222762-DUP2	Duplicate, (2211127-47) Se	229.4		239.1	µg/L		4% 20
B222762-MS2	Matrix Spike, (2211127-47) Se	229.4	220.0	461.3	µg/L	105% 75-125	



Accuracy & Precision Summary

Batch: B222762
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222762-MSD2	Matrix Spike Duplicate, (2211127-47) Se	229.4	220.0	447.8	µg/L	99% 75-125	3% 20
B222762-DUP3	Duplicate, (2211127-62) Se	1.912		2.002	µg/L		5% 20
B222762-MS3	Matrix Spike, (2211127-62) Se	1.912	220.0	217.1	µg/L	98% 75-125	
B222762-MSD3	Matrix Spike Duplicate, (2211127-62) Se	1.912	220.0	220.1	µg/L	99% 75-125	1% 20
B222762-DUP4	Duplicate, (2211127-80) Se	441.4		455.1	µg/L		3% 20
B222762-MS4	Matrix Spike, (2211127-80) Se	441.4	220.0	663.8	µg/L	101% 75-125	
B222762-MSD4	Matrix Spike Duplicate, (2211127-80) Se	441.4	220.0	660.3	µg/L	100% 75-125	0.5% 20



Method Blanks & Reporting Limits

Batch: B222741
Matrix: Water
Method: SOP BAL-4201
Analyte: DMSeO

Sample	Result	Units	
B222741-BLK1	0.00	µg/L	
B222741-BLK2	0.00	µg/L	
B222741-BLK3	0.00	µg/L	
B222741-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.005		MRL: 0.005

Analyte: MeSe(IV)

Sample	Result	Units	
B222741-BLK1	0.00	µg/L	
B222741-BLK2	0.00	µg/L	
B222741-BLK3	0.00	µg/L	
B222741-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.005		MRL: 0.005

Analyte: MeSe(VI)

Sample	Result	Units	
B222741-BLK1	0.00	µg/L	
B222741-BLK2	0.00	µg/L	
B222741-BLK3	0.00	µg/L	
B222741-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.005		MRL: 0.005



Method Blanks & Reporting Limits

Analyte: Se(IV)

Sample	Result	Units	
B222741-BLK1	0.00	µg/L	
B222741-BLK2	0.00	µg/L	
B222741-BLK3	0.00	µg/L	
B222741-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.004
Limit:	0.015		MRL: 0.015

Analyte: Se(VI)

Sample	Result	Units	
B222741-BLK1	0.00	µg/L	
B222741-BLK2	0.00	µg/L	
B222741-BLK3	0.00	µg/L	
B222741-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.011		MRL: 0.011

Analyte: SeCN

Sample	Result	Units	
B222741-BLK1	0.00	µg/L	
B222741-BLK2	0.00	µg/L	
B222741-BLK3	0.00	µg/L	
B222741-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.010		MRL: 0.010

Analyte: SeMet

Sample	Result	Units	
B222741-BLK1	0.00	µg/L	
B222741-BLK2	0.00	µg/L	
B222741-BLK3	0.00	µg/L	
B222741-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.005		MRL: 0.005



Method Blanks & Reporting Limits

Analyte: SeSO3

Sample	Result	Units	
B222741-BLK1	0.00	µg/L	
B222741-BLK2	0.00	µg/L	
B222741-BLK3	0.00	µg/L	
B222741-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.011		MRL: 0.011

Analyte: Unk Se Sp

Sample	Result	Units	
B222741-BLK1	0.00	µg/L	
B222741-BLK2	0.00	µg/L	
B222741-BLK3	0.00	µg/L	
B222741-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.015		MRL: 0.015



Method Blanks & Reporting Limits

Batch: B222762
Matrix: Water
Method: EPA 1638 Mod
Analyte: Se

Sample	Result	Units	
B222762-BLK1	0.107	µg/L	
B222762-BLK2	0.067	µg/L	
B222762-BLK3	0.085	µg/L	
B222762-BLK4	0.063	µg/L	
Average:	0.081		MDL: 0.150
Limit:	0.480		MRL: 0.480



Sample Containers

Lab ID: 2211127-01			Report Matrix: PW			Collected: 10/31/2022		
Sample: RG_ERCKDT_1_PW-1_2022-10_N			Sample Type: Sample + Sum			Received: 11/10/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127	

Lab ID: 2211127-02			Report Matrix: PW			Collected: 10/31/2022		
Sample: RG_ERCKUT_1_PW-2_2022-10_N			Sample Type: Sample + Sum			Received: 11/10/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127	

Lab ID: 2211127-03			Report Matrix: PW			Collected: 10/31/2022		
Sample: RG_ERCKDT_1_PW-3_2022-10_N			Sample Type: Sample + Sum			Received: 11/10/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127	

Lab ID: 2211127-04			Report Matrix: PW			Collected: 10/31/2022		
Sample: RG_ERCKDT_2_PW-1_2022-10_N			Sample Type: Sample + Sum			Received: 11/10/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127	



Sample Containers

Lab ID: 2211127-05				Report Matrix: PW			Collected: 10/31/2022	
Sample: RG_ERCKDT_2_PW-2_2022-10_N				Sample Type: Sample + Sum			Received: 11/10/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127	

Lab ID: 2211127-06				Report Matrix: PW			Collected: 10/31/2022	
Sample: RG_ERCKDT_2_PW-3_2022-10_N				Sample Type: Sample + Sum			Received: 11/10/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127	

Lab ID: 2211127-07				Report Matrix: PW			Collected: 10/31/2022	
Sample: RG_ERCKDT_3_PW-1_2022-10_N				Sample Type: Sample + Sum			Received: 11/10/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127	

Lab ID: 2211127-08				Report Matrix: PW			Collected: 10/31/2022	
Sample: RG_ERCKDT_3_PW-2_2022-10_N				Sample Type: Sample + Sum			Received: 11/10/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127	



Sample Containers

Lab ID: 2211127-09			Report Matrix: PW			Collected: 10/31/2022	
Sample: RG_ERCKDT_3_PW-3_2022-10_N			Sample Type: Sample + Sum			Received: 11/10/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127

Lab ID: 2211127-10			Report Matrix: PW			Collected: 10/31/2022	
Sample: RG_ERCKMD_1_PW-1_2022-10_N			Sample Type: Sample + Sum			Received: 11/10/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127

Lab ID: 2211127-11			Report Matrix: PW			Collected: 10/31/2022	
Sample: RG_ERCKMD_1_PW-2_2022-10_N			Sample Type: Sample + Sum			Received: 11/10/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127

Lab ID: 2211127-12			Report Matrix: PW			Collected: 10/31/2022	
Sample: RG_ERCKMD_1_PW-3_2022-10_N			Sample Type: Sample + Sum			Received: 11/10/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127



Sample Containers

Lab ID: 2211127-13			Report Matrix: PW			Collected: 10/31/2022	
Sample: RG_ERCKMD_2_PW-1_2022-10_N			Sample Type: Sample + Sum			Received: 11/10/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127

Lab ID: 2211127-14			Report Matrix: PW			Collected: 10/31/2022	
Sample: RG_ERCKMD_2_PW-2_2022-10_N			Sample Type: Sample + Sum			Received: 11/10/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127

Lab ID: 2211127-15			Report Matrix: PW			Collected: 10/31/2022	
Sample: RG_ERCKMD_2_PW-3_2022-10_N			Sample Type: Sample + Sum			Received: 11/10/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127

Lab ID: 2211127-16			Report Matrix: PW			Collected: 10/31/2022	
Sample: RG_ERCKMD_3_PW-1_2022-10_N			Sample Type: Sample + Sum			Received: 11/10/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127



Sample Containers

Lab ID: 2211127-17				Report Matrix: PW			Collected: 10/31/2022	
Sample: RG_ERCKMD_3_PW-2_2022-10_N				Sample Type: Sample + Sum			Received: 11/10/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127	

Lab ID: 2211127-18				Report Matrix: PW			Collected: 10/31/2022	
Sample: RG_ERCKMD_3_PW-3_2022-10_N				Sample Type: Sample + Sum			Received: 11/10/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127	

Lab ID: 2211127-19				Report Matrix: PW			Collected: 10/31/2022	
Sample: RG_ERCKUT_1_PW-1_2022-10_N				Sample Type: Sample + Sum			Received: 11/10/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127	

Lab ID: 2211127-20				Report Matrix: PW			Collected: 10/31/2022	
Sample: RG_ERCKDT_1_PW-2_2022-10_N				Sample Type: Sample + Sum			Received: 11/10/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127	



Sample Containers

Lab ID: 2211127-21			Report Matrix: PW			Collected: 10/31/2022		
Sample: RG_ERCKUT_1_PW-3_2022-10_N			Sample Type: Sample + Sum			Received: 11/10/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127	

Lab ID: 2211127-22			Report Matrix: PW			Collected: 10/31/2022		
Sample: RG_ERCKUT_2_PW-1_2022-10_N			Sample Type: Sample + Sum			Received: 11/10/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127	

Lab ID: 2211127-23			Report Matrix: PW			Collected: 10/31/2022		
Sample: RG_ERCKUT_2_PW-2_2022-10_N			Sample Type: Sample + Sum			Received: 11/10/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127	

Lab ID: 2211127-24			Report Matrix: PW			Collected: 11/01/2022		
Sample: RG_ERCKUT_3_PW-1_2022-11_N			Sample Type: Sample + Sum			Received: 11/10/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127	



Sample Containers

Lab ID: 2211127-25			Report Matrix: PW			Collected: 11/01/2022		
Sample: RG_ERCKUT_3_PW-2_2022-11_N			Sample Type: Sample + Sum			Received: 11/10/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127	
Lab ID: 2211127-26			Report Matrix: PW			Collected: 11/01/2022		
Sample: RG_ERCKUT_3_PW-3_2022-11_N			Sample Type: Sample + Sum			Received: 11/10/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127	
Lab ID: 2211127-27			Report Matrix: WS			Collected: 10/31/2022		
Sample: RG_ERCKDT_WS_LAEMP_EVO_2022-10_N			Sample Type: Sample + Sum			Received: 11/10/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127	
Lab ID: 2211127-28			Report Matrix: WS			Collected: 10/31/2022		
Sample: RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP-NAL			Sample Type: Sample + Sum			Received: 11/10/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127	



Sample Containers

Lab ID: 2211127-29 **Report Matrix:** WS **Collected:** 10/31/2022
Sample: RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP-NAL **Sample Type:** Sample + Sum **Received:** 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127

Lab ID: 2211127-30 **Report Matrix:** WS **Collected:** 10/31/2022
Sample: RG_ERCKMD_WS_LAEMP_EVO_2022-10_N **Sample Type:** Sample + Sum **Received:** 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 1 - 2211127

Lab ID: 2211127-31 **Report Matrix:** WS **Collected:** 10/31/2022
Sample: RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP-NAL **Sample Type:** Sample + Sum **Received:** 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127

Lab ID: 2211127-32 **Report Matrix:** WS **Collected:** 10/31/2022
Sample: RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP-NAL **Sample Type:** Sample + Sum **Received:** 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127



Sample Containers

Lab ID: 2211127-33

Report Matrix: WS

Collected: 11/01/2022

Sample:

Sample Type: Sample + Sum

Received: 11/10/2022

RG_ERCKUT_WS_LAEMP_EVO_2022-11_N

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 1 - 2211127

Lab ID: 2211127-34

Report Matrix: WS

Collected: 11/01/2022

Sample:

Sample Type: Sample + Sum

Received: 11/10/2022

RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP-NAL

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127

Lab ID: 2211127-35

Report Matrix: WS

Collected: 11/01/2022

Sample:

Sample Type: Sample + Sum

Received: 11/10/2022

RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP-NAL

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127

Lab ID: 2211127-36

Report Matrix: WS

Collected: 11/01/2022

Sample: RG_ERCK_WS_LAEMP_EVO_2022-11_N

Sample Type: Sample + Sum

Received: 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 1 - 2211127



Sample Containers

Lab ID: 2211127-37
Sample: RG_ERCK_WS_LAEMP_EVO_2022-11_NP-NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 11/01/2022
Received: 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127

Lab ID: 2211127-38
Sample: RG_ERCK_WS_LAEMP_EVO_2022-11_NP-NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 11/01/2022
Received: 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127

Lab ID: 2211127-39
Sample: RG_ERCKUC_WS_LAEMP_EVO_2022-11_N
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 11/01/2022
Received: 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 1 - 2211127

Lab ID: 2211127-40
Sample: RG_ERCKUC_WS_LAEMP_EVO_2022-11_NP-NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 11/01/2022
Received: 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127

Lab ID: 2211127-41
Sample: RG_ERCKUC_WS_LAEMP_EVO_2022-11_NP-NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 11/01/2022
Received: 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127



Sample Containers

Lab ID: 2211127-42

Report Matrix: WS

Collected: 11/01/2022

Sample:

Sample Type: Sample + Sum

Received: 11/10/2022

RG_GATEDP_WS_LAEMP_EVO_2022-11_N

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 1 - 2211127

Lab ID: 2211127-43

Report Matrix: WS

Collected: 11/01/2022

Sample:

Sample Type: Sample + Sum

Received: 11/10/2022

RG_GATEDP_WS_LAEMP_EVO_2022-11_NP-NAL

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127

Lab ID: 2211127-44

Report Matrix: WS

Collected: 11/01/2022

Sample:

Sample Type: Sample + Sum

Received: 11/10/2022

RG_GATEDP_WS_LAEMP_EVO_2022-11_NP-NAL

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127

Lab ID: 2211127-45

Report Matrix: WS

Collected: 11/01/2022

Sample: RG_RIVER_WS_LAEMP_EVO_2022-11_N

Sample Type: Sample + Sum

Received: 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 1 - 2211127



Sample Containers

Lab ID: 2211127-46 **Report Matrix:** WS **Collected:** 11/01/2022
Sample: RG_RIVER_WS_LAEMP_EVO_2022-11_NP-NAL **Sample Type:** Sample + Sum **Received:** 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127

Lab ID: 2211127-47 **Report Matrix:** WS **Collected:** 11/01/2022
Sample: RG_RIVER_WS_LAEMP_EVO_2022-11_NP-NAL **Sample Type:** Sample + Sum **Received:** 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127

Lab ID: 2211127-48 **Report Matrix:** WS **Collected:** 11/01/2022
Sample: RG_FBLANK_WS_LAEMP_EVO_2022-11_N **Sample Type:** Sample + Sum **Received:** 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 1 - 2211127

Lab ID: 2211127-49 **Report Matrix:** WS **Collected:** 11/01/2022
Sample: RG_FBLANK_WS_LAEMP_EVO_2022-11_NP-NAL **Sample Type:** Sample + Sum **Received:** 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127

Lab ID: 2211127-50 **Report Matrix:** WS **Collected:** 11/01/2022
Sample: RG_FBLANK_WS_LAEMP_EVO_2022-11_NP-NAL **Sample Type:** Sample + Sum **Received:** 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127



Sample Containers

Lab ID: 2211127-51
Sample: RG_MI3_WS_LAEMP_EVO_2022-11_N

Report Matrix: WS
Sample Type: Sample + Sum

Collected: 11/02/2022
Received: 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 1 - 2211127

Lab ID: 2211127-52
Sample: RG_MI3_WS_LAEMP_EVO_2022-11_NP-NAL

Report Matrix: WS
Sample Type: Sample + Sum

Collected: 11/02/2022
Received: 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127

Lab ID: 2211127-53
Sample: RG_MI3_WS_LAEMP_EVO_2022-11_NP-NAL

Report Matrix: WS
Sample Type: Sample + Sum

Collected: 11/02/2022
Received: 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127

Lab ID: 2211127-54
Sample: RG_MIDGA_WS_LAEMP_EVO_2022-11_N

Report Matrix: WS
Sample Type: Sample + Sum

Collected: 11/02/2022
Received: 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 1 - 2211127



Sample Containers

Lab ID: 2211127-55
Sample: RG_MIDGA_WS_LAEMP_EVO_2022-11_NP-NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 11/02/2022
Received: 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127

Lab ID: 2211127-56
Sample: RG_MIDGA_WS_LAEMP_EVO_2022-11_NP-NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 11/02/2022
Received: 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127

Lab ID: 2211127-57
Sample: RG_MIDBO_WS_LAEMP_EVO_2022-11_N
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 11/02/2022
Received: 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 1 - 2211127

Lab ID: 2211127-58
Sample: RG_MIDBO_WS_LAEMP_EVO_2022-11_NP-NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 11/02/2022
Received: 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127

Lab ID: 2211127-59
Sample: RG_MIDBO_WS_LAEMP_EVO_2022-11_NP-NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 11/02/2022
Received: 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127



Sample Containers

Lab ID: 2211127-60

Report Matrix: WS

Collected: 11/02/2022

Sample:

Sample Type: Sample + Sum

Received: 11/10/2022

RG_MIDER_WS_LAEMP_EVO_2022-11_N

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 1 - 2211127

Lab ID: 2211127-61

Report Matrix: WS

Collected: 11/02/2022

Sample:

Sample Type: Sample + Sum

Received: 11/10/2022

RG_MIDER_WS_LAEMP_EVO_2022-11_NP-NAL

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127

Lab ID: 2211127-62

Report Matrix: WS

Collected: 11/02/2022

Sample:

Sample Type: Sample + Sum

Received: 11/10/2022

RG_MIDER_WS_LAEMP_EVO_2022-11_NP-NAL

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127

Lab ID: 2211127-63

Report Matrix: WS

Collected: 11/02/2022

Sample:

Sample Type: Sample + Sum

Received: 11/10/2022

RG_MICOMP_WS_LAEMP_EVO_2022-11_N

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 1 - 2211127



Sample Containers

Lab ID: 2211127-64			Report Matrix: WS			Collected: 11/02/2022	
Sample: RG_MICOMP_WS_LAEMP_EVO_2022-11_NP-NAL			Sample Type: Sample + Sum			Received: 11/10/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127
Lab ID: 2211127-65			Report Matrix: WS			Collected: 11/02/2022	
Sample: RG_MICOMP_WS_LAEMP_EVO_2022-11_NP-NAL			Sample Type: Sample + Sum			Received: 11/10/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127
Lab ID: 2211127-66			Report Matrix: WS			Collected: 11/03/2022	
Sample: RG_GATE_WS_LAEMP_EVO_2022-11_N			Sample Type: Sample + Sum			Received: 11/10/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 1 - 2211127
Lab ID: 2211127-67			Report Matrix: WS			Collected: 11/03/2022	
Sample: RG_GATE_WS_LAEMP_EVO_2022-11_NP-NAL			Sample Type: Sample + Sum			Received: 11/10/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127
Lab ID: 2211127-68			Report Matrix: WS			Collected: 11/03/2022	
Sample: RG_GATE_WS_LAEMP_EVO_2022-11_NP-NAL			Sample Type: Sample + Sum			Received: 11/10/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127



Sample Containers

Lab ID: 2211127-69				Report Matrix: WS		Collected: 11/03/2022	
Sample: RG_BOCK_WS_LAEMP_EVO_2022-11_N				Sample Type: Sample + Sum		Received: 11/10/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 1 - 2211127

Lab ID: 2211127-70				Report Matrix: WS		Collected: 11/03/2022	
Sample: RG_BOCK_WS_LAEMP_EVO_2022-11_NP-NAL				Sample Type: Sample + Sum		Received: 11/10/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127

Lab ID: 2211127-71				Report Matrix: WS		Collected: 11/03/2022	
Sample: RG_BOCK_WS_LAEMP_EVO_2022-11_NP-NAL				Sample Type: Sample + Sum		Received: 11/10/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127

Lab ID: 2211127-72				Report Matrix: WS		Collected: 11/03/2022	
Sample: RG_BOCKRD_WS_LAEMP_EVO_2022-11_N				Sample Type: Sample + Sum		Received: 11/10/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 1 - 2211127



Sample Containers

Lab ID: 2211127-73 **Report Matrix:** WS **Collected:** 11/03/2022
Sample: RG_BOCKRD_WS_LAEMP_EVO_2022-11_NP-NAL **Sample Type:** Sample + Sum **Received:** 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127

Lab ID: 2211127-74 **Report Matrix:** WS **Collected:** 11/03/2022
Sample: RG_BOCKRD_WS_LAEMP_EVO_2022-11_NP-NAL **Sample Type:** Sample + Sum **Received:** 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127

Lab ID: 2211127-75 **Report Matrix:** WS **Collected:** 11/03/2022
Sample: RG_ALUSM_WS_LAEMP_EVO_2022-11_N **Sample Type:** Sample + Sum **Received:** 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 1 - 2211127

Lab ID: 2211127-76 **Report Matrix:** WS **Collected:** 11/03/2022
Sample: RG_ALUSM_WS_LAEMP_EVO_2022-11_NP-NAL **Sample Type:** Sample + Sum **Received:** 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127

Lab ID: 2211127-77 **Report Matrix:** WS **Collected:** 11/03/2022
Sample: RG_ALUSM_WS_LAEMP_EVO_2022-11_NP-NAL **Sample Type:** Sample + Sum **Received:** 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127



Sample Containers

Lab ID: 2211127-78

Sample:

RG_RIVER2_WS_LAEMP_EVO_2022-11_N

Report Matrix: WS

Sample Type: Sample + Sum

Collected: 11/03/2022

Received: 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 1 - 2211127

Lab ID: 2211127-79

Sample:

RG_RIVER2_WS_LAEMP_EVO_2022-11_NP-NAL

Report Matrix: WS

Sample Type: Sample + Sum

Collected: 11/03/2022

Received: 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127

Lab ID: 2211127-80

Sample:

RG_RIVER2_WS_LAEMP_EVO_2022-11_NP-NAL

Report Matrix: WS

Sample Type: Sample + Sum

Collected: 11/03/2022

Received: 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127

Lab ID: 2211127-81

Sample:

RG_FBLANK2_WS_LAEMP_EVO_2022-11_N

Report Matrix: WS

Sample Type: Sample + Sum

Collected: 11/03/2022

Received: 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 1 - 2211127



Sample Containers

Lab ID: 2211127-82

Report Matrix: WS

Collected: 11/03/2022

Sample:

Sample Type: Sample + Sum

Received: 11/10/2022

RG_FBLANK2_WS_LAEMP_EVO_2022-11_NP-NA
L

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127

Lab ID: 2211127-83

Report Matrix: WS

Collected: 11/03/2022

Sample:

Sample Type: Sample + Sum

Received: 11/10/2022

RG_FBLANK2_WS_LAEMP_EVO_2022-11_NP-NA
L

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127

Shipping Containers

Cooler 1 - 2211127

Received: November 10, 2022 7:19

Tracking No: RWHV89560 via Courier

Coolant Type: Blue Ice

Temperature: 1.4 °C

Description: Cooler 1

Damaged in transit? No

Returned to client? No

Comments: R-IR-1

Custody seals present? No

Custody seals intact? No

COC present? Yes

COC ID: EVO LAEMP NOV 2022		TURNAROUND TIME: RUSH					
PROJECT/CLIENT INFO				LABORATORY			
Facility Name / Job#	Regional Effects Program			Lab Name	Brooks Applied Labs		
Project Manager	Mike Pope			Lab Contact	Ben Wozniak		
Email	mike.pope@teck.com			Email	Ben@brooksapplied.com		
Address	421 Pine Avenue			Address	18804 North Creek Parkway		
City	Sparwood			City	Bothell		
Postal Code	V0B 2G0			Postal Code	98011		
Phone Number	250-425-8202			Phone Number	(206) 753-6158		
	Province	BC		Province	WA		
	Country	Canada		Country	United States		

SAMPLE DETAILS								ANALYSIS REQUESTED												
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	PHL	F	F	N									
								PRECISION	N	N	N									
								QUALITY	Brooks_Se_Speciation	Brooks_Se_D	Brooks_Se_T									
RG_ERCKDT_1_PW-1_2022-10_N	RG_ERCKDT	PW	N	10/31/2022	8:30	G	1		X											
RG_ERCKDT_1_PW-2_2022-10_N	RG_ERCKDT	PW	N	10/31/2022	8:45	G	1		X											
RG_ERCKDT_1_PW-3_2022-10_N	RG_ERCKDT	PW	N	10/31/2022	9:00	G	1		X											
RG_ERCKDT_2_PW-1_2022-10_N	RG_ERCKDT	PW	N	10/31/2022	9:15	G	1		X											
RG_ERCKDT_2_PW-2_2022-10_N	RG_ERCKDT	PW	N	10/31/2022	9:30	G	1		X											
RG_ERCKDT_2_PW-3_2022-10_N	RG_ERCKDT	PW	N	10/31/2022	9:45	G	1		X											
RG_ERCKDT_3_PW-1_2022-10_N	RG_ERCKDT	PW	N	10/31/2022	10:00	G	1		X											
RG_ERCKDT_3_PW-2_2022-10_N	RG_ERCKDT	PW	N	10/31/2022	10:15	G	1		X											
RG_ERCKDT_3_PW-3_2022-10_N	RG_ERCKDT	PW	N	10/31/2022	10:30	G	1		X											

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
VPO00847032	Alex McClymont/Minnow	November 8, 2022	VF / BAL 11/10/22 FH

NR OF BOTTLES RETURNED/DESCRIPTION	Sampler's Name	Mobile #
Regular (default)	Hillary Quian-Austria	613-620-3778
Priority (2-3 business days) - 50% surcharge X	Signature: HQ	Date/Time
Emergency (1 Business Day) - 100% surcharge		November 8, 2022
For Emergency <1 Day, ASAP or Weekend - Contact ALS		

COC ID: **EVO LAEMP NOV 2022** TURNAROUND TIME: RUSH

PROJECT/CLIENT INFO				LABORATORY			
Facility Name / Job#	Regional Effects Program			Lab Name	Brooks Applied Labs		
Project Manager	Mike Pope			Lab Contact	Ben Wozniak		
Email	mike.pope@teck.com			Email	Ben@brooksapplied.com		
Address	421 Pine Avenue			Address	18804 North Creek Parkway		
City	Sparwood		Province	BC	City	Suite 100	
Postal Code	V0B 2G0		Country	Canada	City	Bothell	Province
Phone Number	250-425-8202			Postal Code	98011		Country
				Phone Number	(206) 753-6158		

SAMPLE DETAILS								ANALYSIS REQUESTED					
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	Brooks_Se_Speciation	Brooks_Se_D	Brooks_Se_T	Excel	PDF	EDD
RG_ERCKMD_1_PW-1_2022-10_N	RG_ERCKMD	PW	N	10/31/2022	8:30	G	1	X					
RG_ERCKMD_1_PW-2_2022-10_N	RG_ERCKMD	PW	N	10/31/2022	8:45	G	1	X					
RG_ERCKMD_1_PW-3_2022-10_N	RG_ERCKMD	PW	N	10/31/2022	9:00	G	1	X					
RG_ERCKMD_2_PW-1_2022-10_N	RG_ERCKMD	PW	N	10/31/2022	9:15	G	1	X					
RG_ERCKMD_2_PW-2_2022-10_N	RG_ERCKMD	PW	N	10/31/2022	9:30	G	1	X					
RG_ERCKMD_2_PW-3_2022-10_N	RG_ERCKMD	PW	N	10/31/2022	9:45	G	1	X					
RG_ERCKMD_3_PW-1_2022-10_N	RG_ERCKMD	PW	N	10/31/2022	10:00	G	1	X					
RG_ERCKMD_3_PW-2_2022-10_N	RG_ERCKMD	PW	N	10/31/2022	10:15	G	1	X					
RG_ERCKMD_3_PW-3_2022-10_N	RG_ERCKMD	PW	N	10/31/2022	10:30	G	1	X					

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
VPO00847032	Alex McClymont/Minnow	November 8, 2022	UFIBAL 11/10/22 9:19

NB OF BOTTLES RETURNED/DESCRIPTION		Sampler's Name	Mobile #
Regular (default)		Hillary Quinn-Austin	613-620-3778
Priority (2-3 business days) - 50% surcharge	X		
Emergency (1 Business Day) - 100% surcharge			
For Emergency <1 Day, ASAP or Weekend - Contact ALS			
		Sampler's Signature	Date/Time
		<i>HQA</i>	November 8, 2022

COC ID: **EVO LAEMP NOV 2022** TURNAROUND TIME: RUSH

PROJECT/CLIENT INFO				LABORATORY			
Facility Name / Job#	Regional Effects Program			Lab Name	Brooks Applied Labs		
Project Manager	Mike Pope			Lab Contact	Ben Wozniak		
Email	mike.pope@teck.com			Email	Ben@brooksapplied.com		
Address	421 Pine Avenue			Address	18804 North Creek Parkway		
City	Sparwood			City	Bothell		
Postal Code	VOB 2G0			Postal Code	98011		
Phone Number	250-425-8202			Phone Number	(206) 753-6158		

SAMPLE DETAILS								ANALYSIS REQUESTED					
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	Brooks_Se_Speciation	Brooks_Se_D	Brooks_Se_T	Excel	PDF	EDD
RG_ERCKUT_1_PW-1_2022-10_N	RG_ERCKUT	PW	N	10/31/2022	8:30	G	1	X			X	X	X
RG_ERCKUT_1_PW-2_2022-10_N	RG_ERCKUT	PW	N	10/31/2022	8:45	G	1	X			X	X	X
RG_ERCKUT_1_PW-3_2022-10_N	RG_ERCKUT	PW	N	10/31/2022	9:00	G	1	X			X	X	X
RG_ERCKUT_2_PW-1_2022-10_N	RG_ERCKUT	PW	N	10/31/2022	9:15	G	1	X			X	X	X
RG_ERCKUT_2_PW-2_2022-10_N	RG_ERCKUT	PW	N	10/31/2022	9:30	G	1	X			X	X	X
RG_ERCKUT_3_PW-1_2022-11_N	RG_ERCKUT	PW	N	10/31/2022	10:00	G	1	X			X	X	X
RG_ERCKUT_3_PW-2_2022-11_N	RG_ERCKUT	PW	N	10/31/2022	10:15	G	1	X			X	X	X
RG_ERCKUT_3_PW-3_2022-11_N	RG_ERCKUT	PW	N	10/31/2022	10:30	G	1	X			X	X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
VPO00847032	Alex McClymont/Minnow	November 8, 2022	VF/BAL 11/10/22 9:19

NB OF BOTTLES RETURNED/DESCRIPTION	Sampler's Name	Mobile #
Regular (default) X	Hillary Quinn-Austin	613-620-3778
Priority (2-3 business days) - 50% surcharge		
Emergency (1 Business Day) - 100% surcharge		
For Emergency <1 Day, ASAP or Weekend - Contact ALS		
	Sampler's Signature	Date/Time
	HQA	November 8, 2022

COC ID: EVO LAEMP NOV 2022		TURNAROUND TIME: RUSH					
PROJECT/CLIENT INFO				LABORATORY			
Facility Name / Job#	Regional Effects Program			Lab Name	Brooks Applied Labs		Excel PDF EDD
Project Manager	Mike Pope			Lab Contact	Ben Wozniak		mike.pope@teck.com
Email	mike.pope@teck.com			Email	Ben@brooksapplied.com		teckcoal@equisonline.com
Address	421 Pine Avenue			Address	18804 North Creek Parkway		lbrown@minnow.ca
				Suite 100			jessica.ritz@teck.com
City	Sparwood		Province	BC		City	Bothell
Postal Code	V0B 2G0		Country	Canada		Province	WA
Phone Number	250-425-8202			Postal Code	98011		Country
				United States	Phone Number		(206) 753-6158

SAMPLE DETAILS								ANALYSIS REQUESTED										
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	Brooks_Se_Speciation	Brooks_Se_D	Brooks_Se_T								
RG_ERCKDT_WS_LAEMP_EVO_2022-10_N	RG_ERCKDT	WS	N	10/31/2022	10:35	G	1	X										
RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP-NAL	RG_ERCKDT	WS	N	10/31/2022	10:35	G	2		X	X								
RG_ERCKMD_WS_LAEMP_EVO_2022-10_N	RG_ERCKMD	WS	N	10/31/2022	10:35	G	1	X										
RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP-NAL	RG_ERCKMD	WS	N	10/31/2022	10:35	G	2		X	X								
RG_ERCKUT_WS_LAEMP_EVO_2022-11_N	RG_ERCKUT	WS	N	11/1/2022	9:15	G	1	X										
RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP-NAL	RG_ERCKUT	WS	N	11/1/2022	9:15	G	2		X	X								
RG_ERCK_WS_LAEMP_EVO_2022-11_N	RG_ERCK	WS	N	11/1/2022	12:00	G	1	X										
RG_ERCK_WS_LAEMP_EVO_2022-11_NP-NAL	RG_ERCK	WS	N	11/1/2022	12:00	G	2		X	X								
RG_ERCKUC_WS_LAEMP_EVO_2022-11_N	RG_ERCKUC	WS	N	11/1/2022	13:00	G	1	X										
RG_ERCKUC_WS_LAEMP_EVO_2022-11_NP-NAL	RG_ERCKUC	WS	N	11/1/2022	13:00	G	2		X	X								

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
VPO00847032	Alex McClymont/Minnow	November 8, 2022	VF1392 11/10/22 9:14

NB OF BOTTLES RETURNED/DESCRIPTION	Sampler's Name	Mobile #
Regular (default) X	Hillary Quinn-Austin	613-620-3778
Priority (2-3 business days) - 50% surcharge		
Emergency (1 Business Day) - 100% surcharge		
For Emergency <1 Day, ASAP or Weekend - Contact ALS		
	Sampler's Signature	Date/Time
	HQ	November 8, 2022

COC ID:	EVO LAEMP NOV 2022				TURNAROUND TIME:	RUSH					
PROJECT/CLIENT INFO					LABORATORY						
Facility Name / Job#	Regional Effects Program				Lab Name	Brooks Applied Labs			Excel	PDF	EDD
Project Manager	Mike Pope				Lab Contact	Ben Wozniak			mike.pope@teck.com		
Email	mike.pope@teck.com				Email	Ben@brooksapplied.com			teckcoal@equisonline.com		
Address	421 Pine Avenue				Address	18804 North Creek Parkway			lbowron@minnow.ca		
City	Sparwood		Province	BC	City	Bothell	Province	WA	jeffica.ritz@teck.com		
Postal Code	V0B 2G0		Country	Canada	Postal Code	98011	Country	United States	robin.valleau@minnow.ca		
Phone Number	250-425-8202				Phone Number	(206) 753-6158					

SAMPLE DETAILS								ANALYSIS REQUESTED						
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	Brooks_Se_Speciation	Brooks_Se_D	Brooks_Se_I				
RG_GATEDP_WS_LAEMP_EVO_2022-11_N	RG_GATEDP	WS	No	11/1/2022	13:40	G	1	X						
RG_GATEDP_WS_LAEMP_EVO_2022-11_NP-NAL	RG_GATEDP	WS	No	11/1/2022	13:40	G	2		X	X				
RG_RIVER_WS_LAEMP_EVO_2022-11_N	RG_RIVER	WS	No	11/1/2022	13:40	G	1	X						
RG_RIVER_WS_LAEMP_EVO_2022-11_NP-NAL	RG_RIVER	WS	No	11/1/2022	13:40	G	2		X	X				
RG_FBLANK_WS_LAEMP_EVO_2022-11_N	RG_FBLANK	WS	No	11/1/2022	13:40	G	1	X						
RG_FBLANK_WS_LAEMP_EVO_2022-11_NP-NAL	RG_FBLANK	WS	No	11/1/2022	13:40	G	2		X	X				
RG_MI3_WS_LAEMP_EVO_2022-11_N	RG_MI3	WS	No	11/2/2022	9:45	G	1	X						
RG_MI3_WS_LAEMP_EVO_2022-11_NP-NAL	RG_MI3	WS	No	11/2/2022	9:45	G	2		X	X				
RG_MIDGA_WS_LAEMP_EVO_2022-11_N	RG_MIDGA	WS	No	11/2/2022	13:00	G	1	X						
RG_MIDGA_WS_LAEMP_EVO_2022-11_NP-NAL	RG_MIDGA	WS	No	11/2/2022	13:00	G	2		X	X				

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
VPO00847032	Alex McClymont/Minnow	November 8, 2022	UT=13AL 11/10/19 7:19

NB OF BOTTLES RETURNED/DESCRIPTION	Sampler's Name	Mobile #	Date/Time
Regular (default)	Hillary Quinn-Austin	613-620-3778	November 8, 2022
Priority (2-3 business days) - 50% surcharge X			
Emergency (1 Business Day) - 100% surcharge			
For Emergency <1 Day, ASAP or Weekend - Contact ALS			

COC ID: **EVO LAEMP NOV 2022** TURNAROUND TIME: RUSH

PROJECT/CLIENT INFO				LABORATORY				
Facility Name / Job#	Regional Effects Program			Lab Name	Brooks Applied Labs			
Project Manager	Mike Pope			Lab Contact	Ben Wozniak			
Email	mike.pope@teck.com			Email	Ben@brooksapplied.com			
Address	421 Pine Avenue			Address	18804 North Creek Parkway			
City	Sparwood		Province	BC		City	Bothell	
Postal Code	V0B 2G0		Country	Canada		Postal Code	98011	
Phone Number	250-425-8202			Phone Number	(206) 753-6158			

SAMPLE DETAILS									ANALYSIS REQUESTED				
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	Brooks_Se_Speciation	Brooks_Se_D	Brooks_Se_T	Excel	PDF	EDD
RG_MIDBO_WS_LAEMP_EVO_2022-11_N	RG_MIDBO	WS	No	11/2/2022	14:00	G	1	X			X	X	X
RG_MIDBO_WS_LAEMP_EVO_2022-11_NP-NAL	RG_MIDBO	WS	No	11/2/2022	14:00	G	2		X	X			
RG_MIDER_WS_LAEMP_EVO_2022-11_N	RG_MIDER	WS	No	11/2/2022	11:30	G	1	X					
RG_MIDER_WS_LAEMP_EVO_2022-11_NP-NAL	RG_MIDER	WS	No	11/2/2022	11:30	G	2		X	X			
RG_MICOMP_WS_LAEMP_EVO_2022-11_N	RG_MICOMP	WS	No	11/2/2022	15:00	G	1	X					
RG_MICOMP_WS_LAEMP_EVO_2022-11_NP-NAL	RG_MICOMP	WS	No	11/2/2022	15:00	G	2		X	X			
RG_GATE_WS_LAEMP_EVO_2022-11_N	RG_GATE	WS	No	11/3/2022	13:00	G	1	X					
RG_GATE_WS_LAEMP_EVO_2022-11_NP-NAL	RG_GATE	WS	No	11/3/2022	13:00	G	2		X	X			
RG_BOCK_WS_LAEMP_EVO_2022-11_N	RG_BOCK	WS	No	11/3/2022	11:00	G	1	X					
RG_BOCK_WS_LAEMP_EVO_2022-11_NP-NAL	RG_BOCK	WS	No	11/3/2022	11:00	G	2		X	X			

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
VPO00847032	Alex McClymont/Minnow	November 8, 2022	VF/BAL 11/10/22 7:19

NB OF BOTTLES RETURNED/DESCRIPTION	Sampler's Name	Mobile #
Regular (default)	Hillary Quinn-Austin	613-620-3778
Priority (2-3 business days) - 50% surcharge		
Emergency (1 Business Day) - 100% surcharge		
For Emergency <1 Day, ASAP or Weekend - Contact ALS	HQ	November 8, 2022

COC ID: **EVO LAEMP NOV 2022**

TURNAROUND TIME:

RUSH

PROJECT/CLIENT INFO				LABORATORY					
Facility Name / Job#	Regional Effects Program			Lab Name	Brooks Applied Labs				
Project Manager	Mike Pope			Lab Contact	Ben Wozniak				
Email	mike.pope@teck.com			Email	Ben@brooksapplied.com				
Address	421 Pine Avenue			Address	18804 North Creek Parkway				
City	Sparwood		Province	BC	City	Bothell	Province	WA	
Postal Code	V0B 2G0		Country	Canada	Postal Code	98011		Country	United States
Phone Number	250-425-8202			Phone Number	(206) 753-6158				

SAMPLE DETAILS								ANALYSIS REQUESTED				
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	HR	F	F	N	Other
RG_BOCKRD_WS_LAEMP_EVO_2022-11_N	RG_BOCKRD	WS	No	11/3/2022	9:00	G	1		X			
RG_BOCKRD_WS_LAEMP_EVO_2022-11_NP-NAL	RG_BOCKRD	WS	No	11/3/2022	9:00	G	2			X	X	
RG_ALUSM_WS_LAEMP_EVO_2022-11_N	RG_ALUSM	WS	No	11/3/2022	14:00	G	1		X			
RG_ALUSM_WS_LAEMP_EVO_2022-11_NP-NAL	RG_ALUSM	WS	No	11/3/2022	14:00	G	2			X	X	
RG_RIVER2_WS_LAEMP_EVO_2022-11_N	RG_RIVER	WS	No	11/3/2022	9:00	G	1		X			
RG_RIVER2_WS_LAEMP_EVO_2022-11_NP-NAL	RG_RIVER	WS	No	11/3/2022	9:00	G	2			X	X	
RG_FBLANK2_WS_LAEMP_EVO_2022-11_N	RG_FBLANK	WS	No	11/3/2022	9:00	G	1		X			
RG_FBLANK2_WS_LAEMP_EVO_2022-11_NP-NAL	RG_FBLANK	WS	No	11/3/2022	9:00	G	2			X	X	

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
VPO00847032	Alex McClymont/Mianow	November 8, 2022	VE113AL 11/10/22 7:19

NB OF BOTTLES RETURNED/DESCRIPTION	Sampler's Name	Mobile #
Regular (default)	Hillary Quinn-Austin	613-620-3778
Priority (2-3 business days) - 50% surcharge X	Sampler's Signature	Date/Time
Emergency (1 Business Day) - 100% surcharge	HQ	November 8, 2022
For Emergency <1 Day, ASAP or Weekend - Contact ALS		

Confidential

STRAIGHT BILL OF LADING
NOT NEGOTIABLE

RW HOT SHOT SERVICE INC.

250-425-7447
24 Hour Hot Shot Service

BAL Final Report 2211127
No. 89560

Sparwood, BC
Terrace, BC
Red Deer, AB

Vancouver, BC
Calgary, AB
Montreal, QC

Prince George, BC
Edmonton, AB
Spokane, WA

Elkford, BC
Ft. McMurray, AB
Shelby, MT

Tumbler Ridge, BC
Hinton, AB
Gillette, WY

INVOICE TO		DATE	
BILL OF LADING #		PURCHASE ORDER NUMBER	
SHIPPER (FROM)		CONSIGNEE (TO)	
STREET		STREET	
CITY/PROVINCE	POSTAL CODE	CITY/PROVINCE	POSTAL CODE
SPECIAL INSTRUCTIONS			FREIGHT CHARGES SHIPPER TO CHECK <input type="checkbox"/> PREPAID <input type="checkbox"/> COLLECT <small>If not indicated, shipping will automatically receive collect.</small> FEE _____ WAITING _____ XPU _____ CHARGES _____ FSC _____ US _____ SUB TOTAL _____ GST _____ TOTAL \$ _____ IF AT OWNER'S RISK, WRITE ORU HERE _____
PACKAGES	DESCRIPTION OF ARTICLES AND SPECIAL MARKS	WEIGHT (Subject to Correction)	
5	RWHV 81560	130 lbs	
UNIT #	DECLARED VALUATION: Maximum liability of carrier is \$2.00 per lb. (\$4.41 per kilogram) unless declared valuation states otherwise. \$ _____		
DRIVER'S SIGNATURE - PICK UP BY	PICK UP TIME	DRIVER'S SIGNATURE - DELIVERY BY	
<small>NOTICE OF CLAIM: (a) No carrier is liable for loss, damage or delay of any goods under the Bill of Lading unless notice, therefore setting out particulars of the origin, destination and date of shipment of the goods, and the estimated amount claimed respect of such loss, damage or delay is given in writing to the originating carrier or the delivering carrier within sixty (60) days after the delivery of the goods, or in the case of failure to make delivery within nine (9) months from the date of shipment (b) The time statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill RECEIVED at the point of origin on the date specified from the consignor mentioned herein, the property herein described, in apparent good order, except as noted (contents and condition of contents of package unknown) marked, packaged and destined as indicated below, which the carrier agrees to carry and to deliver to the consignee at the said destination, subject to the rates and classification in effect on the date of shipment. It is mutually agreed as to each carrier of all or any of the goods over all or any portion of the route to destination, and as to each party or any time interested in all or any of the goods, that every act done to be performed hereunder, shall be subject to the conditions standard Bill of Lading, in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. Printed or written, including conditions set aside by the standard Bill of Lading, in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. The Contract for the carriage of the goods listed in the Bill of Lading is governed by regulation in force in the jurisdiction at the time and place of shipment and is subject to the conditions set out in such conditions.</small>			DATE _____ TIME _____ NUMBER OF PIECES RECEIVED _____ ▲
SHIPPER PRINT	CONSIGNEE PRINT	GST # 864540398RT0001	
SHIPPER SIGN	CONSIGNEE SIGN	WHITE: Office YELLOW: Carrier PINK: Consignee GOLDENROAD: Shipper	

Cooler ID: Cooler 1

COC (Y/N)

Temperature: 1.4

IR: R-12-1

Coolant Type: Ice Blue Ice Ambient

Notes:

Sampling Locations:

Sample Types:

Container Types:

Opened By: *new*

Date: 11/10/22

<i>WL</i>									
T/D	SP	T/D	SP	T/D	SP	T/D	SP	T/D	SP
<i>40ml glass</i>	<i>120ml Plastic</i>	<i>40ml 120ml glass</i>	<i>600ml Plastic</i>	<i>R6</i>	<i>100ml glass</i>				

Effective 7/29/20



Revision 004

COPY

2211127

From: [Robin Valleau](#)
To: [Jeremy Maute](#); [Mike Pope](#); [Jessica Ritz](#); [Lisa Bowron](#); [Hillary Quinn-Austin](#)
Cc: teck.lab.results@teck.com; [Mariyeh Moradnazhad](#)
Subject: RE: Brooks Preliminary Report/EDD, WO 2211127: Regional Effects Program, REP Project - Confidential
Date: Thursday, November 17, 2022 1:55:42 PM
Attachments: [image002.png](#)

Hi Jeremy!

First, thank you for being patient with our mislabeling!

I have looked at the results please name the samples as follows:

2211127-02 RG_ERCKUT_1_PW-2_2022-10_N

2211127-20 RG_ERCKDT_1_PW-2_2022-10_N

These can all be submitted in the same lab file now.

Thanks!!

Robin

Robin Valleau, Ph.D. (she/her)

Aquatic Scientist



minnow environmental inc. (A Trinity Consultants Company)

Sparwood, British Columbia

Cell 416-970-7535

Check out our new website: www.minnow.ca

From: Jeremy Maute <Jeremy@brooksapplied.com>
Sent: Thursday, November 17, 2022 1:38 PM
To: Mike Pope <mike.pope@teck.com>; Jessica Ritz <Jessica.Ritz@teck.com>; Lisa Bowron <LBowron@minnow.ca>; Robin Valleau <robin.valleau@minnow.ca>; Hillary Quinn-Austin <Hillary.Quinn-Austin@minnow.ca>
Cc: teck.lab.results@teck.com; Mariyeh Moradnazhad <mariyeh@brooksapplied.com>
Subject: Brooks Preliminary Report/EDD, WO 2211127: Regional Effects Program, REP Project - Confidential

Attached are the [preliminary report and EDD](#) for COC ID **EVO LAEMP NOV 2022**, associated with the REP Project.

Poor mass balance was observed in *RG_RIVER_WS_LAEMP_EVO_2022-11_N* when the sum of Se species (in sample 2211127-45) were compared to the corresponding dissolved Se result (2211127-46). Some confirmation analyses have been completed. The speciation profile in 2211127-45 looks like a *RG_RIVER_WS* sample, but the mass balance with the dissolved Se fraction is off. Additional confirmation analyses are underway. Consequently, the results in the attached report are only preliminary. Once the confirmation analyses are completed, a final report will be issued. In the final report, results may change for some samples (*potentially 2211127-45 or 2211127-46*) depending on the findings in the re-analyses.

Date/Time Collected values listed on the chain-of-custody (COC) forms did not exactly match the corresponding **Date/Time Collected** values on the container labels for 2211127-76, 2211127-77, 2211127-82, and 2211127-83. The discrepancies are described in the table below.

Date/Time Collected Discrepancies

Laboratory ID	Sample ID	Date/Time Collected (on COC form)	Date/Time Collected (on container label)
2211127-76	RG_ALUSM_WS_LAEMP_EVO_2022-11_NP-NAL	11/03/2022 14:00	11/03/2022 14:30
2211127-77	RG_ALUSM_WS_LAEMP_EVO_2022-11_NP-NAL	11/03/2022 14:00	11/03/2022 14:30
2211127-82	RG_FBLANK2_WS_LAEMP_EVO_2022-11_NP-NAL	11/03/2022 09:00	11/03/2022 11:00
2211127-83	RG_FBLANK2_WS_LAEMP_EVO_2022-11_NP-NAL	11/03/2022 09:00	11/03/2022 11:00

Per request, samples 2211127-76, 2211127-77, 2211127-82, and 2211127-83 were logged in and reported using the **Date/Time Collected** values listed on the COC form (*column 3 in the table above*).

Chain-of-custody (COC) forms were received with the sample shipment and the laboratory documented receipt of the samples on these COC forms. Revised COC forms (*for COC pages 2, 3, and 4*) were subsequently provided via email. Per client request, BAL was instructed to use the corrected **Date/Time Collected** values (on the revised COC forms) for reporting. Please see the revised COC forms at the end of this report. The cases where changes to **Date/Time Collected** values were requested are highlighted in yellow on the revised COC forms. In order to document custody, both sets of COC forms are included in this report.

The container labels for 2211127-02 and 2211127-20 both listed the following information: (*RG_ERCKDT_1_PW-2_2022-10_N, 10/31/2022 08:45*). This describes the information on the COC forms that corresponds to 2211127-02. A container for *RG_ERCKUT_1_PW-2_2022-10_N, 10/31/2022 13:15*, which describes the information on the COC forms that corresponds to 2211127-20, was not received. The two fractions labeled *RG_ERCKDT_1_PW-2_2022-10_N, 10/31/2022 08:45* were logged in under 2211127-02 and 2211127-20. AT this time, it is unclear if the field ID assignments are correct for 2211127-02 and 2211127-20.

The dissolved fraction for *RG_RIVER_WS_LAEMP_EVO_2022-11_NP-NAL* (Laboratory ID = 2211127-46) arrived in a container that leaked during shipping. The entire sample volume for 2211127-46 was lost. A fraction of the corresponding unfiltered, total recoverable Se fraction (laboratory ID: 2211127-47) was filtered (0.45 µm) into a new container to support the dissolved Se analysis for *RG_RIVER_WS_LAEMP_EVO_2022-11_NP-NAL*. This new dissolved Se fraction was preserved (pH < 2) by BAL staff at the time of receipt and logged in under 2211127-46. The filtration for 2211127-46 took place beyond the (2-calendar day) filtration holding time. Consequently, the dissolved Se result for 2211127-46 is qualified (**H**) for a filtration holding time violation.

The sample fractions for total recoverable Se and dissolved Se were not preserved in the field. The samples were preserved (pH < 2) upon receipt at BAL. All sample fractions for total recoverable Se and dissolved Se were preserved within the (14 calendar day) preservation holding time.

As always, please contact us if there are any questions about this data.

Regards,

Jeremy Maute
Senior Project Manager
206-753-6116
email: jeremy@brooksapplied.com

BROOKS APPLIED LABS

Meaningful Metals Data and Advanced Speciation Solutions

P: 206-632-6206 | F: 206-632-6017 | 13751 Lake City Way NE, Suite 108, Seattle, WA 98125, USA

Brooks Applied Labs has moved to a new facility! As of June 20th, all sample shipments should be sent to the following address: 13751 Lake City Way NE, Suite 108, Seattle, WA 98125.

This electronic message transmission (including any attachments) is intended only for use by the addressee(s) named herein; it contains legally privileged and confidential information. If you are not the intended recipient, you are hereby notified that any dissemination, distribution, printing, or copying is strictly prohibited. If you have received this e-mail in error, please notify the sender and permanently delete any copies thereof.



December 15, 2022

Teck Resources Limited - Vancouver
 Mike Pope
 421 Pine Avenue
 Sparwood, B.C. CANADA V0B2G0
mike.pope@teck.com

Re: Regional Effects Program

Dear Mike Pope,

On December 9, 2022, Brooks Applied Labs (BAL) received thirty-four (34) aqueous samples. The samples were logged-in for total recoverable selenium [Se], dissolved Se [Se], and Se speciation analyses, according to the chain-of-custody (COC) forms.

The **Date/Time Collected** value listed on the chain-of-custody (COC) forms did not exactly match the corresponding **Date/Time Collected** value on the container label for 2212161-13. The discrepancy is described in the table below.

Date/Time Collected Discrepancies

Laboratory ID	Sample ID	Date/Time Collected (on COC form)	Date/Time Collected (on container label)
2212161-13	RG_GATEDP_WS_LAEMP_EVO_2022-12_N	11/29/2022 13:30	11/29/2022 14:30

Per client request, 2212161-13 was logged in and reported using the **Date/Time Collected** value listed on the COC form (*column 3 in the table above*).

The dissolved selenium fraction for *RG_FBLANK_WS_LAEMP_EVO_2022-12_NP-NAL* (Laboratory ID = 2212161-29) arrived in a container that leaked during shipping. The entire volume of the sample was lost. An aliquot from the corresponding Se speciation fraction (Laboratory ID = 2212161-28) was poured off to recreate the dissolved selenium fraction for 2212161-29.

Sample ID values provided on the chain-of-custody (COC) forms did not exactly match the corresponding **Sample ID** values listed on container labels for several samples. The discrepancies are described in the table below.

Sample ID Agreement Issues

Laboratory ID	Sample ID (On COC form)	Sample ID (On container label)
2212161-01	RG_RIVER_WS_LAEMP_EVO_2022-12_N	RG_RIVER_WS_LAEMP_EVO_2022-11-28_N
2212161-02 / 2212161-03	RG_RIVER_WS_LAEMP_EVO_2022-12_NP-NAL	RG_RIVER_WS_LAEMP_EVO_2022-11-28_NP-NAL
2212161-04	RG_ERCKMD_WS_LAEMP_EVO_2022-12_N	RG_ERCKMD_WS_LAEMP_EVO_2022-11-28_N
2212161-05 / 2212161-06	RG_ERCKMD_WS_LAEMP_EVO_2022-12_NP-NAL	RG_ERCKMD_WS_LAEMP_EVO_2022-11-28_NP-NAL
2212161-07	RG_ERCKDT_WS_LAEMP_EVO_2022-12_N	RG_ERCKDT_WS_LAEMP_EVO_2022-11-28_N
2212161-08 / 2212161-09	RG_ERCKDT_WS_LAEMP_EVO_2022-12_NP-NAL	RG_ERCKDT_WS_LAEMP_EVO_2022-11-28_NP-NAL
2212161-10	RG_ERCKUT_WS_LAEMP_EVO_2022-12_N	RG_ERCKUT_WS_LAEMP_EVO_2022-11-29_N
2212161-11 / 2212161-12	RG_ERCKUT_WS_LAEMP_EVO_2022-12_NP-NAL	RG_ERCKUT_WS_LAEMP_EVO_2022-11-29_NP-NAL
2212161-13	RG_GATEDP_WS_LAEMP_EVO_2022-12_N	RG_GATEDP_WS_LAEMP_EVO_2022-11-29_N
2212161-14 / 2212161-15	RG_GATEDP_WS_LAEMP_EVO_2022-12_NP-NAL	RG_GATEDP_WS_LAEMP_EVO_2022-11-29_NP-NAL
2212161-19	RG_BOCK_WS_LAEMP_EVO_2022-12_N	RG_BOCK_WS_LAEMP_EVO_2022-11-29_N
2212161-22	RG_BOCKRD_WS_LAEMP_EVO_2022-12_N	RG_BOCKRD_WS_LAEMP_EVO_2022-11-29_N
2212161-23 / 2212161-24	RG_BOCKRD_WS_LAEMP_EVO_2022-12_NP-NAL	RG_BOCKRD_WS_LAEMP_EVO_2022-11-29_NP-NAL
2212161-25	RG_RIVER2_WS_LAEMP_EVO_2022-12_N	RG_RIVER2_WS_LAEMP_EVO_2022-11-29_N
2212161-26 / 2212161-27	RG_RIVER2_WS_LAEMP_EVO_2022-12_NP-NAL	RG_RIVER2_WS_LAEMP_EVO_2022-11-29_NP-NAL
2212161-31	RG_ERCK_WS_LAEMP_EVO_2022-12_N	RG_ERCK_WS_LAEMP_EVO_2022-11-30_N
2212161-32 / 2212161-33	RG_ERCK_WS_LAEMP_EVO_2022-12_NP-NAL	RG_ERCK_WS_LAEMP_EVO_2022-11-30_NP-NAL
2212161-40	RG_ERCKUC_WS_LAEMP_EVO_2022-12_N	RG_ERCKUC_WS_LAEMP_EVO_2022-11-30_N
2212161-41 / 2212161-42	RG_ERCKUC_WS_LAEMP_EVO_2022-12_NP-NAL	RG_ERCKUC_WS_LAEMP_EVO_2022-11-30_NP-NAL

BAL was instructed to use the **Sample ID** values on the COC form (*column 2 in the table above*) for reporting.

The sample fractions for total recoverable Se and dissolved Se were not preserved in the field. The samples were preserved (pH < 2) upon receipt at BAL. All sample fractions for total recoverable Se and dissolved Se were preserved within the (14 calendar day) preservation holding time.

The sample fractions logged in for Se speciation and dissolved Se had been field-filtered prior to receipt at BAL. All samples were stored according to BAL SOPs.

Total Recoverable Se and Dissolved Se

Each aqueous sample fraction for dissolved Se was digested in a closed vessel (bomb) with nitric and hydrochloric acids. The resulting digests were analyzed for Se content via inductively coupled plasma triple quadrupole mass spectrometry (ICP-QQQ-MS). The ICP-QQQ-MS instrumentation uses advanced interference removal techniques to ensure accuracy of the sample results. For more information, please visit the *Interference Reduction Technology* section on our website, brooksapplied.com.

Selenium Speciation

Each aqueous sample was analyzed for selenium speciation using ion chromatography inductively coupled plasma collision reaction cell mass spectrometry (IC-ICP-CRC-MS). Selenium species are chromatographically separated on an ion exchange column and then quantified using inductively coupled plasma collision reaction cell mass spectrometry (ICP-CRC-MS); for more information on this determinative technique, please visit the *Interference Reduction Technology* section on our website. The chromatographic method applied for the analyses provides greater retention of methylseleninic acid and selenomethionine, allowing for more definitive quantitation of these species.

In accordance with the quotation issued for this project, selenium speciation was defined as dissolved selenite [Se(IV)], selenate [Se(VI)], selenocyanate [SeCM], methylseleninic acid [MeSe(IV)], methaneselenonic acid [MeSe(VI)], selenomethionine [SeMet], selenosulfate [SeSO₃], and dimethylselenoxide [DMSeO]. Unknown Se species was defined as the total concentration of all unknown Se species observed during the analysis. This item is identified in the report as [Unk Se Sp].

DMSeO elutes early in the chromatographic run due to the nature of the molecule and the applied chromatographic separation method. Since this species elutes near the dead volume, additional selenium species may coelute. Alternate methods can be applied, upon client request, to increase the separation of DMSeO from potentially co-eluting selenium species.

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

In instances where a matrix spike/matrix spike duplicate (MS/MSD) set was spiked at a level less than the native sample concentration, the recoveries and the relative percent difference (RPD) are not considered valid indicators of data quality. In such instances, the recoveries of the laboratory fortified blanks (BS) and/or standard reference materials (SRM) demonstrate the accuracy of the applied methods. When the spiking level was less than 25% of the native sample concentration, the spike recovery was not reported (**NR**) and the relative percent difference (RPD) of the MS/MSD set was not calculated (**N/C**).

In cases when either the native sample concentration was non-detectable (reported as less than or equal to the MDL) and/or the corresponding DUP result was also non-detectable, the RPD between the two values was not calculated (**N/C**).

Except for concentration qualifiers, all data were reported without qualification. All associated quality control sample results met the acceptance criteria.

BAL verifies that the reported results of all analyses for which the laboratory is accredited meet the requirements of the accrediting body, unless otherwise noted in the report narrative. For more information regarding accreditations please see the *Report Information* and *Batch Summary* pages. This report must be used in its entirety for interpretation of results.

Please feel free to contact us if you have any questions regarding this report.

Sincerely,

A handwritten signature in black ink, appearing to read 'Jeremy Maute', with a stylized flourish at the end.

Jeremy Maute

Senior Project Manager

Jeremy@brooksapplied.com



Report Information

General Disclaimers

Test results are based solely upon the sample submitted to Brooks Applied Labs in the condition it was received. This report shall not be reproduced or copied, except in full, without written approval of the laboratory. Brooks Applied Labs is not responsible for the consequences arising from the use of a partial report.

Laboratory Accreditation

BAL maintains accreditation with various state and national agencies for select test methods. For a current list of BAL accreditations, please visit our website at <http://www.brooksapplied.com/resources/certificates-permits/>. The reported analyte/matrix/method combination shall be considered outside BAL's scopes of accreditation unless otherwise identified as ISO, TNI, or ISO,TNI in the tables. It is the responsibility of the client to verify whether a specific accreditation is required for the intended data use.

ISO: ISO/IEC 17025:2017 accredited test method. Issued by ANSI National Accreditation Board (ANAB), #ADE-1447.02

TNI: NELAP accredited test method. Issued by the State of Florida Department of Health, #E87982.

ISO,TNI: Test method is accredited under both the ISO/IEC 17025:2017 and NELAP accreditations referenced above.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

AR	as received	MS	matrix spike
BAL	Brooks Applied Labs	MSD	matrix spike duplicate
BLK	method blank	ND	non-detect
BS	blank spike	NR	non-reportable
CAL	calibration standard	N/C	not calculated
CCB	continuing calibration blank	PS	post preparation spike
CCV	continuing calibration verification	REC	percent recovery
COC	chain of custody record	RPD	relative percent difference
D	dissolved fraction	SCV	secondary calibration verification
DUP	duplicate	SOP	standard operating procedure
IBL	instrument blank	SRM	reference material
ICV	initial calibration verification	T	total fraction
MDL	method detection limit	TR	total recoverable fraction
MRL	method reporting limit		

Definition of Data Qualifiers

E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Please see narrative for explanation.
J	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1	Estimated value. A full explanation is presented in the narrative.
M	Duplicate precision (RPD) was not within acceptance criteria. Please see narrative for explanation.
N	Spike recovery was not within acceptance criteria. Please see narrative for explanation.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.
Z	Holding time and/or preservation requirements not established for this method; however, BAL recommendations for holding time were not followed. Please see narrative for explanation.



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
RG_RIVER_WS_LAEMP_EVO_2022-12_N	2212161-01	WS	Sample	11/28/2022	12/09/2022
RG_RIVER_WS_LAEMP_EVO_2022-12_NP-NAL	2212161-02	WS	Sample	11/28/2022	12/09/2022
RG_RIVER_WS_LAEMP_EVO_2022-12_NP-NAL	2212161-03	WS	Sample	11/28/2022	12/09/2022
RG_ERCKMD_WS_LAEMP_EVO_2022-12_N	2212161-04	WS	Sample	11/28/2022	12/09/2022
RG_ERCKMD_WS_LAEMP_EVO_2022-12_NP-NAL	2212161-05	WS	Sample	11/28/2022	12/09/2022
RG_ERCKMD_WS_LAEMP_EVO_2022-12_NP-NAL	2212161-06	WS	Sample	11/28/2022	12/09/2022
RG_ERCKDT_WS_LAEMP_EVO_2022-12_N	2212161-07	WS	Sample	11/28/2022	12/09/2022
RG_ERCKDT_WS_LAEMP_EVO_2022-12_NP-NAL	2212161-08	WS	Sample	11/28/2022	12/09/2022
RG_ERCKDT_WS_LAEMP_EVO_2022-12_NP-NAL	2212161-09	WS	Sample	11/28/2022	12/09/2022
RG_ERCKUT_WS_LAEMP_EVO_2022-12_N	2212161-10	WS	Sample	11/29/2022	12/09/2022
RG_ERCKUT_WS_LAEMP_EVO_2022-12_NP-NAL	2212161-11	WS	Sample	11/29/2022	12/09/2022
RG_ERCKUT_WS_LAEMP_EVO_2022-12_NP-NAL	2212161-12	WS	Sample	11/29/2022	12/09/2022
RG_GATEDP_WS_LAEMP_EVO_2022-12_N	2212161-13	WS	Sample	11/29/2022	12/09/2022
RG_GATEDP_WS_LAEMP_EVO_2022-12_NP-NAL	2212161-14	WS	Sample	11/29/2022	12/09/2022
RG_GATEDP_WS_LAEMP_EVO_2022-12_NP-NAL	2212161-15	WS	Sample	11/29/2022	12/09/2022
RG_GATE_WS_LAEMP_EVO_2022-12_N	2212161-16	WS	Sample	11/29/2022	12/09/2022
RG_GATE_WS_LAEMP_EVO_2022-12_NP-NAL	2212161-17	WS	Sample	11/29/2022	12/09/2022
RG_GATE_WS_LAEMP_EVO_2022-12_NP-NAL	2212161-18	WS	Sample	11/29/2022	12/09/2022
RG_BOCK_WS_LAEMP_EVO_2022-12_N	2212161-19	WS	Sample	11/29/2022	12/09/2022
RG_BOCK_WS_LAEMP_EVO_2022-12_NP-NAL	2212161-20	WS	Sample	11/29/2022	12/09/2022
RG_BOCK_WS_LAEMP_EVO_2022-12_NP-NAL	2212161-21	WS	Sample	11/29/2022	12/09/2022



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
RG_BOCKRD_WS_LAEMP_EVO_2 022-12_N	2212161-22	WS	Sample	11/29/2022	12/09/2022
RG_BOCKRD_WS_LAEMP_EVO_2 022-12_NP-NAL	2212161-23	WS	Sample	11/29/2022	12/09/2022
RG_BOCKRD_WS_LAEMP_EVO_2 022-12_NP-NAL	2212161-24	WS	Sample	11/29/2022	12/09/2022
RG_RIVER2_WS_LAEMP_EVO_202 2-12_N	2212161-25	WS	Sample	11/29/2022	12/09/2022
RG_RIVER2_WS_LAEMP_EVO_202 2-12_NP-NAL	2212161-26	WS	Sample	11/29/2022	12/09/2022
RG_RIVER2_WS_LAEMP_EVO_202 2-12_NP-NAL	2212161-27	WS	Sample	11/29/2022	12/09/2022
RG_FBLANK_WS_LAEMP_EVO_20 22-12_N	2212161-28	WS	Sample	11/28/2022	12/09/2022
RG_FBLANK_WS_LAEMP_EVO_20 22-12_NP-NAL	2212161-29	WS	Sample	11/28/2022	12/09/2022
RG_FBLANK_WS_LAEMP_EVO_20 22-12_NP-NAL	2212161-30	WS	Sample	11/28/2022	12/09/2022
RG_ERCK_WS_LAEMP_EVO_2022- 12_N	2212161-31	WS	Sample	11/30/2022	12/09/2022
RG_ERCK_WS_LAEMP_EVO_2022- 12_NP-NAL	2212161-32	WS	Sample	11/30/2022	12/09/2022
RG_ERCK_WS_LAEMP_EVO_2022- 12_NP-NAL	2212161-33	WS	Sample	11/30/2022	12/09/2022
RG_MICOMP_WS_LAEMP_EVO_20 22-12_N	2212161-34	WS	Sample	11/30/2022	12/09/2022
RG_MICOMP_WS_LAEMP_EVO_20 22-12_NP-NAL	2212161-35	WS	Sample	11/30/2022	12/09/2022
RG_MICOMP_WS_LAEMP_EVO_20 22-12_NP-NAL	2212161-36	WS	Sample	11/30/2022	12/09/2022
RG_MI3_WS_LAEMP_EVO_2022-12 _N	2212161-37	WS	Sample	11/30/2022	12/09/2022
RG_MI3_WS_LAEMP_EVO_2022-12 _NP-NAL	2212161-38	WS	Sample	11/30/2022	12/09/2022
RG_MI3_WS_LAEMP_EVO_2022-12 _NP-NAL	2212161-39	WS	Sample	11/30/2022	12/09/2022
RG_ERCKUC_WS_LAEMP_EVO_20 22-12_N	2212161-40	WS	Sample	11/30/2022	12/09/2022
RG_ERCKUC_WS_LAEMP_EVO_20 22-12_NP-NAL	2212161-41	WS	Sample	11/30/2022	12/09/2022
RG_ERCKUC_WS_LAEMP_EVO_20 22-12_NP-NAL	2212161-42	WS	Sample	11/30/2022	12/09/2022



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
RG_MIDER_WS_LAEMP_EVO_202 2-12_N	2212161-43	WS	Sample	11/30/2022	12/09/2022
RG_MIDER_WS_LAEMP_EVO_202 2-12_NP-NAL	2212161-44	WS	Sample	11/30/2022	12/09/2022
RG_MIDER_WS_LAEMP_EVO_202 2-12_NP-NAL	2212161-45	WS	Sample	11/30/2022	12/09/2022
RG_MIDBO_WS_LAEMP_EVO_202 2-12_N	2212161-46	WS	Sample	12/02/2022	12/09/2022
RG_MIDBO_WS_LAEMP_EVO_202 2-12_NP-NAL	2212161-47	WS	Sample	12/02/2022	12/09/2022
RG_MIDBO_WS_LAEMP_EVO_202 2-12_NP-NAL	2212161-48	WS	Sample	12/02/2022	12/09/2022
RG_MIDGA_WS_LAEMP_EVO_202 2-12_N	2212161-49	WS	Sample	12/02/2022	12/09/2022
RG_MIDGA_WS_LAEMP_EVO_202 2-12_NP-NAL	2212161-50	WS	Sample	12/02/2022	12/09/2022
RG_MIDGA_WS_LAEMP_EVO_202 2-12_NP-NAL	2212161-51	WS	Sample	12/02/2022	12/09/2022



Batch Summary

Analyte	Lab Matrix	Method	Accred.	Prepared	Analyzed	Batch	Sequence
DMSeO	Water	SOP BAL-4201		12/09/22	12/10/22	B223010	S221287
MeSe(IV)	Water	SOP BAL-4201		12/09/22	12/10/22	B223010	S221287
MeSe(VI)	Water	SOP BAL-4201		12/09/22	12/10/22	B223010	S221287
Se	Water	EPA 1638 Mod		12/12/22	12/13/22	B223032	S221298
Se(IV)	Water	SOP BAL-4201	ISO,TNI	12/09/22	12/10/22	B223010	S221287
Se(VI)	Water	SOP BAL-4201	ISO,TNI	12/09/22	12/10/22	B223010	S221287
SeCN	Water	SOP BAL-4201	ISO	12/09/22	12/10/22	B223010	S221287
SeMet	Water	SOP BAL-4201	ISO	12/09/22	12/10/22	B223010	S221287
SeSO3	Water	SOP BAL-4201		12/09/22	12/10/22	B223010	S221287
Unk Se Sp	Water	SOP BAL-4201		12/09/22	12/10/22	B223010	S221287



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_RIVER_WS_LAEMP_EVO_2022-12_N										
2212161-01	DMSeO	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B223010	S221287
2212161-01	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B223010	S221287
2212161-01	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B223010	S221287
2212161-01	Se(IV)	WS	D	0.175		0.020	0.075	µg/L	B223010	S221287
2212161-01	Se(VI)	WS	D	100		0.010	0.055	µg/L	B223010	S221287
2212161-01	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B223010	S221287
2212161-01	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B223010	S221287
2212161-01	SeSO3	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B223010	S221287
2212161-01	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B223010	S221287
RG_RIVER_WS_LAEMP_EVO_2022-12_NP-NAL										
2212161-02	Se	WS	D	113		0.165	0.528	µg/L	B223032	S221298
RG_RIVER_WS_LAEMP_EVO_2022-12_NP-NAL										
2212161-03	Se	WS	TR	110		0.165	0.528	µg/L	B223032	S221298
RG_ERCKMD_WS_LAEMP_EVO_2022-12_N										
2212161-04	DMSeO	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B223010	S221287
2212161-04	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B223010	S221287
2212161-04	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B223010	S221287
2212161-04	Se(IV)	WS	D	0.334		0.020	0.075	µg/L	B223010	S221287
2212161-04	Se(VI)	WS	D	72.2		0.010	0.055	µg/L	B223010	S221287
2212161-04	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B223010	S221287
2212161-04	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B223010	S221287
2212161-04	SeSO3	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B223010	S221287
2212161-04	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B223010	S221287
RG_ERCKMD_WS_LAEMP_EVO_2022-12_NP-NAL										
2212161-05	Se	WS	D	77.9		0.165	0.528	µg/L	B223032	S221298
RG_ERCKMD_WS_LAEMP_EVO_2022-12_NP-NAL										
2212161-06	Se	WS	TR	80.7		0.165	0.528	µg/L	B223032	S221298



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKDT_WS_LAEMP_EVO_2022-12_N										
2212161-07	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B223010	S221287
2212161-07	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B223010	S221287
2212161-07	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B223010	S221287
2212161-07	Se(IV)	WS	D	0.192		0.020	0.075	µg/L	B223010	S221287
2212161-07	Se(VI)	WS	D	101		0.010	0.055	µg/L	B223010	S221287
2212161-07	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B223010	S221287
2212161-07	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B223010	S221287
2212161-07	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B223010	S221287
2212161-07	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B223010	S221287
RG_ERCKDT_WS_LAEMP_EVO_2022-12_NP-NAL										
2212161-08	Se	WS	D	111		0.165	0.528	µg/L	B223032	S221298
RG_ERCKDT_WS_LAEMP_EVO_2022-12_NP-NAL										
2212161-09	Se	WS	TR	111		0.165	0.528	µg/L	B223032	S221298
RG_ERCKUT_WS_LAEMP_EVO_2022-12_N										
2212161-10	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B223010	S221287
2212161-10	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B223010	S221287
2212161-10	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B223010	S221287
2212161-10	Se(IV)	WS	D	≤ 0.020	U	0.020	0.075	µg/L	B223010	S221287
2212161-10	Se(VI)	WS	D	139		0.010	0.055	µg/L	B223010	S221287
2212161-10	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B223010	S221287
2212161-10	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B223010	S221287
2212161-10	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B223010	S221287
2212161-10	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B223010	S221287
RG_ERCKUT_WS_LAEMP_EVO_2022-12_NP-NAL										
2212161-11	Se	WS	D	190		0.165	0.528	µg/L	B223032	S221298
RG_ERCKUT_WS_LAEMP_EVO_2022-12_NP-NAL										
2212161-12	Se	WS	TR	150		0.165	0.528	µg/L	B223032	S221298



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_GATEDP_WS_LAEMP_EVO_2022-12_N										
2212161-13	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B223010	S221287
2212161-13	MeSe(IV)	WS	D	0.024	J	0.010	0.025	µg/L	B223010	S221287
2212161-13	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B223010	S221287
2212161-13	Se(IV)	WS	D	0.497		0.020	0.075	µg/L	B223010	S221287
2212161-13	Se(VI)	WS	D	58.6		0.010	0.055	µg/L	B223010	S221287
2212161-13	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B223010	S221287
2212161-13	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B223010	S221287
2212161-13	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B223010	S221287
2212161-13	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B223010	S221287
RG_GATEDP_WS_LAEMP_EVO_2022-12_NP-NAL										
2212161-14	Se	WS	D	67.2		0.165	0.528	µg/L	B223032	S221298
RG_GATEDP_WS_LAEMP_EVO_2022-12_NP-NAL										
2212161-15	Se	WS	TR	66.3		0.165	0.528	µg/L	B223032	S221298
RG_GATE_WS_LAEMP_EVO_2022-12_N										
2212161-16	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B223010	S221287
2212161-16	MeSe(IV)	WS	D	0.019	J	0.010	0.025	µg/L	B223010	S221287
2212161-16	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B223010	S221287
2212161-16	Se(IV)	WS	D	0.429		0.020	0.075	µg/L	B223010	S221287
2212161-16	Se(VI)	WS	D	54.3		0.010	0.055	µg/L	B223010	S221287
2212161-16	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B223010	S221287
2212161-16	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B223010	S221287
2212161-16	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B223010	S221287
2212161-16	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B223010	S221287
RG_GATE_WS_LAEMP_EVO_2022-12_NP-NAL										
2212161-17	Se	WS	D	64.5		0.165	0.528	µg/L	B223032	S221298
RG_GATE_WS_LAEMP_EVO_2022-12_NP-NAL										
2212161-18	Se	WS	TR	62.6		0.165	0.528	µg/L	B223032	S221298



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_BOCK_WS_LAEMP_EVO_2022-12_N										
2212161-19	DMS ₂ O	WS	D	0.018	J	0.010	0.025	µg/L	B223010	S221287
2212161-19	MeSe(IV)	WS	D	0.021	J	0.010	0.025	µg/L	B223010	S221287
2212161-19	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B223010	S221287
2212161-19	Se(IV)	WS	D	0.647		0.020	0.075	µg/L	B223010	S221287
2212161-19	Se(VI)	WS	D	55.5		0.010	0.055	µg/L	B223010	S221287
2212161-19	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B223010	S221287
2212161-19	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B223010	S221287
2212161-19	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B223010	S221287
2212161-19	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B223010	S221287
RG_BOCK_WS_LAEMP_EVO_2022-12_NP-NAL										
2212161-20	Se	WS	D	75.9		0.165	0.528	µg/L	B223032	S221298
RG_BOCK_WS_LAEMP_EVO_2022-12_NP-NAL										
2212161-21	Se	WS	TR	73.1		0.165	0.528	µg/L	B223032	S221298
RG_BOCKRD_WS_LAEMP_EVO_2022-12_N										
2212161-22	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B223010	S221287
2212161-22	MeSe(IV)	WS	D	0.011	J	0.010	0.025	µg/L	B223010	S221287
2212161-22	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B223010	S221287
2212161-22	Se(IV)	WS	D	0.409		0.020	0.075	µg/L	B223010	S221287
2212161-22	Se(VI)	WS	D	49.4		0.010	0.055	µg/L	B223010	S221287
2212161-22	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B223010	S221287
2212161-22	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B223010	S221287
2212161-22	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B223010	S221287
2212161-22	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B223010	S221287
RG_BOCKRD_WS_LAEMP_EVO_2022-12_NP-NAL										
2212161-23	Se	WS	D	56.4		0.165	0.528	µg/L	B223032	S221298
RG_BOCKRD_WS_LAEMP_EVO_2022-12_NP-NAL										
2212161-24	Se	WS	TR	54.6		0.165	0.528	µg/L	B223032	S221298



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_RIVER2_WS_LAEMP_EVO_2022-12_N										
2212161-25	DMSeO	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B223010	S221287
2212161-25	MeSe(IV)	WS	D	0.022	J	0.010	0.025	µg/L	B223010	S221287
2212161-25	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B223010	S221287
2212161-25	Se(IV)	WS	D	0.474		0.020	0.075	µg/L	B223010	S221287
2212161-25	Se(VI)	WS	D	58.0		0.010	0.055	µg/L	B223010	S221287
2212161-25	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B223010	S221287
2212161-25	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B223010	S221287
2212161-25	SeSO3	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B223010	S221287
2212161-25	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B223010	S221287
RG_RIVER2_WS_LAEMP_EVO_2022-12_NP-NAL										
2212161-26	Se	WS	D	65.1		0.165	0.528	µg/L	B223032	S221298
RG_RIVER2_WS_LAEMP_EVO_2022-12_NP-NAL										
2212161-27	Se	WS	TR	62.2		0.165	0.528	µg/L	B223032	S221298
RG_FBLANK_WS_LAEMP_EVO_2022-12_N										
2212161-28	DMSeO	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B223010	S221287
2212161-28	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B223010	S221287
2212161-28	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B223010	S221287
2212161-28	Se(IV)	WS	D	≤ 0.020	U	0.020	0.075	µg/L	B223010	S221287
2212161-28	Se(VI)	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B223010	S221287
2212161-28	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B223010	S221287
2212161-28	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B223010	S221287
2212161-28	SeSO3	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B223010	S221287
2212161-28	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B223010	S221287
RG_FBLANK_WS_LAEMP_EVO_2022-12_NP-NAL										
2212161-29	Se	WS	D	≤ 0.165	U	0.165	0.528	µg/L	B223032	S221298
RG_FBLANK_WS_LAEMP_EVO_2022-12_NP-NAL										
2212161-30	Se	WS	TR	≤ 0.165	U	0.165	0.528	µg/L	B223032	S221298



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCK_WS_LAEMP_EVO_2022-12_N										
2212161-31	DMS ₂ O	WS	D	0.014	J	0.010	0.025	µg/L	B223010	S221287
2212161-31	MeSe(IV)	WS	D	0.012	J	0.010	0.025	µg/L	B223010	S221287
2212161-31	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B223010	S221287
2212161-31	Se(IV)	WS	D	0.377		0.020	0.075	µg/L	B223010	S221287
2212161-31	Se(VI)	WS	D	73.0		0.010	0.055	µg/L	B223010	S221287
2212161-31	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B223010	S221287
2212161-31	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B223010	S221287
2212161-31	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B223010	S221287
2212161-31	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B223010	S221287
RG_ERCK_WS_LAEMP_EVO_2022-12_NP-NAL										
2212161-32	Se	WS	D	82.3		0.165	0.528	µg/L	B223032	S221298
RG_ERCK_WS_LAEMP_EVO_2022-12_NP-NAL										
2212161-33	Se	WS	TR	81.1		0.165	0.528	µg/L	B223032	S221298
RG_MICOMP_WS_LAEMP_EVO_2022-12_N										
2212161-34	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B223010	S221287
2212161-34	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B223010	S221287
2212161-34	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B223010	S221287
2212161-34	Se(IV)	WS	D	0.077		0.020	0.075	µg/L	B223010	S221287
2212161-34	Se(VI)	WS	D	13.0		0.010	0.055	µg/L	B223010	S221287
2212161-34	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B223010	S221287
2212161-34	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B223010	S221287
2212161-34	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B223010	S221287
2212161-34	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B223010	S221287
RG_MICOMP_WS_LAEMP_EVO_2022-12_NP-NAL										
2212161-35	Se	WS	D	14.5		0.165	0.528	µg/L	B223032	S221298
RG_MICOMP_WS_LAEMP_EVO_2022-12_NP-NAL										
2212161-36	Se	WS	TR	14.7		0.165	0.528	µg/L	B223032	S221298



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_MI3_WS_LAEMP_EVO_2022-12_N										
2212161-37	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B223010	S221287
2212161-37	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B223010	S221287
2212161-37	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B223010	S221287
2212161-37	Se(IV)	WS	D	≤ 0.020	U	0.020	0.075	µg/L	B223010	S221287
2212161-37	Se(VI)	WS	D	1.00		0.010	0.055	µg/L	B223010	S221287
2212161-37	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B223010	S221287
2212161-37	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B223010	S221287
2212161-37	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B223010	S221287
2212161-37	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B223010	S221287
RG_MI3_WS_LAEMP_EVO_2022-12_NP-NAL										
2212161-38	Se	WS	D	1.33		0.165	0.528	µg/L	B223032	S221298
RG_MI3_WS_LAEMP_EVO_2022-12_NP-NAL										
2212161-39	Se	WS	TR	1.25		0.165	0.528	µg/L	B223032	S221298
RG_ERCKUC_WS_LAEMP_EVO_2022-12_N										
2212161-40	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B223010	S221287
2212161-40	MeSe(IV)	WS	D	0.013	J	0.010	0.025	µg/L	B223010	S221287
2212161-40	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B223010	S221287
2212161-40	Se(IV)	WS	D	0.358		0.020	0.075	µg/L	B223010	S221287
2212161-40	Se(VI)	WS	D	72.3		0.010	0.055	µg/L	B223010	S221287
2212161-40	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B223010	S221287
2212161-40	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B223010	S221287
2212161-40	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B223010	S221287
2212161-40	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B223010	S221287
RG_ERCKUC_WS_LAEMP_EVO_2022-12_NP-NAL										
2212161-41	Se	WS	D	78.6		0.165	0.528	µg/L	B223032	S221298
RG_ERCKUC_WS_LAEMP_EVO_2022-12_NP-NAL										
2212161-42	Se	WS	TR	80.6		0.165	0.528	µg/L	B223032	S221298



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_MIDER_WS_LAEMP_EVO_2022-12_N										
2212161-43	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B223010	S221287
2212161-43	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B223010	S221287
2212161-43	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B223010	S221287
2212161-43	Se(IV)	WS	D	0.026	J	0.020	0.075	µg/L	B223010	S221287
2212161-43	Se(VI)	WS	D	2.39		0.010	0.055	µg/L	B223010	S221287
2212161-43	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B223010	S221287
2212161-43	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B223010	S221287
2212161-43	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B223010	S221287
2212161-43	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B223010	S221287
RG_MIDER_WS_LAEMP_EVO_2022-12_NP-NAL										
2212161-44	Se	WS	D	2.56		0.165	0.528	µg/L	B223032	S221298
RG_MIDER_WS_LAEMP_EVO_2022-12_NP-NAL										
2212161-45	Se	WS	TR	2.88		0.165	0.528	µg/L	B223032	S221298
RG_MIDBO_WS_LAEMP_EVO_2022-12_N										
2212161-46	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B223010	S221287
2212161-46	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B223010	S221287
2212161-46	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B223010	S221287
2212161-46	Se(IV)	WS	D	0.095		0.020	0.075	µg/L	B223010	S221287
2212161-46	Se(VI)	WS	D	11.5		0.010	0.055	µg/L	B223010	S221287
2212161-46	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B223010	S221287
2212161-46	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B223010	S221287
2212161-46	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B223010	S221287
2212161-46	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B223010	S221287
RG_MIDBO_WS_LAEMP_EVO_2022-12_NP-NAL										
2212161-47	Se	WS	D	13.6		0.165	0.528	µg/L	B223032	S221298
RG_MIDBO_WS_LAEMP_EVO_2022-12_NP-NAL										
2212161-48	Se	WS	TR	12.5		0.165	0.528	µg/L	B223032	S221298



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_MIDGA_WS_LAEMP_EVO_2022-12_N										
2212161-49	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B223010	S221287
2212161-49	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B223010	S221287
2212161-49	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B223010	S221287
2212161-49	Se(IV)	WS	D	0.121		0.020	0.075	µg/L	B223010	S221287
2212161-49	Se(VI)	WS	D	15.3		0.010	0.055	µg/L	B223010	S221287
2212161-49	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B223010	S221287
2212161-49	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B223010	S221287
2212161-49	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B223010	S221287
2212161-49	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B223010	S221287
RG_MIDGA_WS_LAEMP_EVO_2022-12_NP-NAL										
2212161-50	Se	WS	D	17.3		0.165	0.528	µg/L	B223032	S221298
RG_MIDGA_WS_LAEMP_EVO_2022-12_NP-NAL										
2212161-51	Se	WS	TR	17.2		0.165	0.528	µg/L	B223032	S221298



Accuracy & Precision Summary

Batch: B223010
Lab Matrix: Water
Method: SOP BAL-4201

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B223010-BS1	Blank Spike, (2236035)						
	MeSe(IV)		5.095	5.568	µg/L	109% 75-125	
	Se(IV)		5.000	5.028	µg/L	101% 75-125	
	Se(VI)		5.000	4.677	µg/L	94% 75-125	
	SeCN		5.015	4.796	µg/L	96% 75-125	
	SeMet		4.982	5.108	µg/L	103% 75-125	
B223010-DUP4	Duplicate, (2212161-16)						
	DMSeO	ND		ND	µg/L		N/C 25
	MeSe(IV)	0.019		0.016	µg/L		15% 25
	MeSe(VI)	ND		ND	µg/L		N/C 25
	Se(IV)	0.429		0.426	µg/L		0.6% 25
	Se(VI)	54.32		53.98	µg/L		0.6% 25
	SeCN	ND		ND	µg/L		N/C 25
	SeMet	ND		ND	µg/L		N/C 25
	SeSO3	ND		ND	µg/L		N/C 25
Unk Se Sp	ND		ND	µg/L		N/C 25	
B223010-MS4	Matrix Spike, (2212161-16)						
	Se(IV)	0.429	4.900	4.760	µg/L	88% 75-125	
	Se(VI)	54.32	5.100	59.14	µg/L	NR 75-125	
	SeCN	ND	1.962	1.840	µg/L	94% 75-125	
	SeMet	ND	1.977	1.871	µg/L	95% 75-125	
B223010-MSD4	Matrix Spike Duplicate, (2212161-16)						
	Se(IV)	0.429	4.900	4.745	µg/L	88% 75-125	0.3% 25
	Se(VI)	54.32	5.100	58.36	µg/L	NR 75-125	N/C 25
	SeCN	ND	1.962	1.823	µg/L	93% 75-125	0.9% 25
	SeMet	ND	1.977	1.835	µg/L	93% 75-125	2% 25



Accuracy & Precision Summary

Batch: B223010
Lab Matrix: Water
Method: SOP BAL-4201

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B223010-DUP5	Duplicate, (2212161-34)						
	DMS ₂ SeO	ND		ND	µg/L		N/C 25
	MeSe(IV)	ND		ND	µg/L		N/C 25
	MeSe(VI)	ND		ND	µg/L		N/C 25
	Se(IV)	0.077		0.077	µg/L		0% 25
	Se(VI)	13.03		13.16	µg/L		1% 25
	SeCN	ND		ND	µg/L		N/C 25
	SeMet	ND		ND	µg/L		N/C 25
	SeSO ₃	ND		ND	µg/L		N/C 25
Unk Se Sp	ND		ND	µg/L		N/C 25	
B223010-MS5	Matrix Spike, (2212161-34)						
	Se(IV)	0.077	4.900	4.473	µg/L	90% 75-125	
	Se(VI)	13.03	5.100	17.71	µg/L	92% 75-125	
	SeCN	ND	1.962	1.780	µg/L	91% 75-125	
	SeMet	ND	1.977	1.820	µg/L	92% 75-125	
B223010-MSD5	Matrix Spike Duplicate, (2212161-34)						
	Se(IV)	0.077	4.900	4.554	µg/L	91% 75-125	2% 25
	Se(VI)	13.03	5.100	17.87	µg/L	95% 75-125	0.9% 25
	SeCN	ND	1.962	1.763	µg/L	90% 75-125	0.9% 25
	SeMet	ND	1.977	1.840	µg/L	93% 75-125	1% 25



Accuracy & Precision Summary

Batch: B223032
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B223032-BS1	Blank Spike, (2146024) Se		200.0	198.2	µg/L	99% 75-125	
B223032-BS2	Blank Spike, (2146024) Se		200.0	192.5	µg/L	96% 75-125	
B223032-BS3	Blank Spike, (2146024) Se		200.0	194.7	µg/L	97% 75-125	
B223032-SRM1	Reference Material (2128018, T221) Se		3.800	3.774	µg/L	99% 75-125	
B223032-SRM2	Reference Material (2128018, T221) Se		3.800	3.802	µg/L	100% 75-125	
B223032-SRM3	Reference Material (2128018, T221) Se		3.800	3.699	µg/L	97% 75-125	
B223032-DUP1	Duplicate, (2212161-06) Se	80.72		78.35	µg/L		3% 20
B223032-MS1	Matrix Spike, (2212161-06) Se	80.72	220.0	304.9	µg/L	102% 75-125	
B223032-MSD1	Matrix Spike Duplicate, (2212161-06) Se	80.72	220.0	296.7	µg/L	98% 75-125	3% 20
B223032-DUP2	Duplicate, (2212161-21) Se	73.10		75.34	µg/L		3% 20
B223032-MS2	Matrix Spike, (2212161-21) Se	73.10	220.0	293.5	µg/L	100% 75-125	



Accuracy & Precision Summary

Batch: B223032
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B223032-MSD2	Matrix Spike Duplicate, (2212161-21) Se	73.10	220.0	293.5	µg/L	100% 75-125	0.01% 20
B223032-DUP3	Duplicate, (2212161-36) Se	14.69		13.69	µg/L		7% 20
B223032-MS3	Matrix Spike, (2212161-36) Se	14.69	220.0	220.0	µg/L	93% 75-125	
B223032-MSD3	Matrix Spike Duplicate, (2212161-36) Se	14.69	220.0	233.9	µg/L	100% 75-125	6% 20
B223032-DUP4	Duplicate, (2212164-01) Se	78.22		78.82	µg/L		0.8% 20
B223032-MS4	Matrix Spike, (2212164-01) Se	78.22	220.0	299.8	µg/L	101% 75-125	
B223032-MSD4	Matrix Spike Duplicate, (2212164-01) Se	78.22	220.0	295.6	µg/L	99% 75-125	1% 20



Method Blanks & Reporting Limits

Batch: B223010
Matrix: Water
Method: SOP BAL-4201
Analyte: DMSeO

Sample	Result	Units	
B223010-BLK1	0.00	µg/L	
B223010-BLK2	0.00	µg/L	
B223010-BLK3	0.00	µg/L	
B223010-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005

Analyte: MeSe(IV)

Sample	Result	Units	
B223010-BLK1	0.00	µg/L	
B223010-BLK2	0.00	µg/L	
B223010-BLK3	0.00	µg/L	
B223010-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005

Analyte: MeSe(VI)

Sample	Result	Units	
B223010-BLK1	0.00	µg/L	
B223010-BLK2	0.00	µg/L	
B223010-BLK3	0.00	µg/L	
B223010-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005



Method Blanks & Reporting Limits

Analyte: Se(IV)

Sample	Result	Units	
B223010-BLK1	0.00	µg/L	
B223010-BLK2	0.00	µg/L	
B223010-BLK3	0.00	µg/L	
B223010-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.004
Limit:	0.015		MRL: 0.015

Analyte: Se(VI)

Sample	Result	Units	
B223010-BLK1	0.00	µg/L	
B223010-BLK2	0.00	µg/L	
B223010-BLK3	0.00	µg/L	
B223010-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.011		MRL: 0.011

Analyte: SeCN

Sample	Result	Units	
B223010-BLK1	0.00	µg/L	
B223010-BLK2	0.00	µg/L	
B223010-BLK3	0.00	µg/L	
B223010-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.010		MRL: 0.010

Analyte: SeMet

Sample	Result	Units	
B223010-BLK1	0.00	µg/L	
B223010-BLK2	0.00	µg/L	
B223010-BLK3	0.00	µg/L	
B223010-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.005		MRL: 0.005



Method Blanks & Reporting Limits

Analyte: SeSO3

Sample	Result	Units	
B223010-BLK1	0.00	µg/L	
B223010-BLK2	0.00	µg/L	
B223010-BLK3	0.00	µg/L	
B223010-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.011		MRL: 0.011

Analyte: Unk Se Sp

Sample	Result	Units	
B223010-BLK1	0.00	µg/L	
B223010-BLK2	0.00	µg/L	
B223010-BLK3	0.00	µg/L	
B223010-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.015		MRL: 0.015



Method Blanks & Reporting Limits

Batch: B223032
Matrix: Water
Method: EPA 1638 Mod
Analyte: Se

Sample	Result	Units
B223032-BLK1	-0.001	µg/L
B223032-BLK2	0.006	µg/L
B223032-BLK3	-0.012	µg/L
B223032-BLK4	0.014	µg/L

Average: 0.002
Limit: 0.480

MDL: 0.150
MRL: 0.480



Sample Containers

Lab ID: 2212161-01
Sample: RG_RIVER_WS_LAEMP_EVO_2022-12_N

Report Matrix: WS
Sample Type: Sample + Sum

Collected: 11/28/2022
Received: 12/09/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2212161
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2212161
C	XTRA_VOL	125mL	na	none	na	na	Cooler 4 - 2212161

Lab ID: 2212161-02
Sample: RG_RIVER_WS_LAEMP_EVO_2022-12_NP-NAL

Report Matrix: WS
Sample Type: Sample + Sum

Collected: 11/28/2022
Received: 12/09/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212161

Lab ID: 2212161-03
Sample: RG_RIVER_WS_LAEMP_EVO_2022-12_NP-NAL

Report Matrix: WS
Sample Type: Sample + Sum

Collected: 11/28/2022
Received: 12/09/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212161

Lab ID: 2212161-04
Sample: RG_ERCKMD_WS_LAEMP_EVO_2022-12_N

Report Matrix: WS
Sample Type: Sample + Sum

Collected: 11/28/2022
Received: 12/09/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2212161
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2212161
C	XTRA_VOL	125mL	na	none	na	na	Cooler 4 - 2212161



Sample Containers

Lab ID: 2212161-05			Report Matrix: WS			Collected: 11/28/2022	
Sample: RG_ERCKMD_WS_LAEMP_EVO_2022-12_NP-NAL			Sample Type: Sample + Sum			Received: 12/09/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212161

Lab ID: 2212161-06			Report Matrix: WS			Collected: 11/28/2022	
Sample: RG_ERCKMD_WS_LAEMP_EVO_2022-12_NP-NAL			Sample Type: Sample + Sum			Received: 12/09/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212161

Lab ID: 2212161-07			Report Matrix: WS			Collected: 11/28/2022	
Sample: RG_ERCKDT_WS_LAEMP_EVO_2022-12_N			Sample Type: Sample + Sum			Received: 12/09/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2212161
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2212161
C	XTRA_VOL	125mL	na	none	na	na	Cooler 4 - 2212161

Lab ID: 2212161-08			Report Matrix: WS			Collected: 11/28/2022	
Sample: RG_ERCKDT_WS_LAEMP_EVO_2022-12_NP-NAL			Sample Type: Sample + Sum			Received: 12/09/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212161



Sample Containers

Lab ID: 2212161-09 **Report Matrix:** WS **Collected:** 11/28/2022
Sample: RG_ERCKDT_WS_LAEMP_EVO_2022-12_NP-NAL **Sample Type:** Sample + Sum **Received:** 12/09/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212161

Lab ID: 2212161-10 **Report Matrix:** WS **Collected:** 11/29/2022
Sample: RG_ERCKUT_WS_LAEMP_EVO_2022-12_N **Sample Type:** Sample + Sum **Received:** 12/09/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2212161
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2212161
C	XTRA_VOL	125mL	na	none	na	na	Cooler 4 - 2212161

Lab ID: 2212161-11 **Report Matrix:** WS **Collected:** 11/29/2022
Sample: RG_ERCKUT_WS_LAEMP_EVO_2022-12_NP-NAL **Sample Type:** Sample + Sum **Received:** 12/09/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212161

Lab ID: 2212161-12 **Report Matrix:** WS **Collected:** 11/29/2022
Sample: RG_ERCKUT_WS_LAEMP_EVO_2022-12_NP-NAL **Sample Type:** Sample + Sum **Received:** 12/09/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212161



Sample Containers

Lab ID: 2212161-13

Report Matrix: WS

Collected: 11/29/2022

Sample:

Sample Type: Sample + Sum

Received: 12/09/2022

RG_GATEDP_WS_LAEMP_EVO_2022-12_N

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2212161
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2212161
C	XTRA_VOL	125mL	na	none	na	na	Cooler 4 - 2212161

Lab ID: 2212161-14

Report Matrix: WS

Collected: 11/29/2022

Sample:

Sample Type: Sample + Sum

Received: 12/09/2022

RG_GATEDP_WS_LAEMP_EVO_2022-12_NP-NAL

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212161

Lab ID: 2212161-15

Report Matrix: WS

Collected: 11/29/2022

Sample:

Sample Type: Sample + Sum

Received: 12/09/2022

RG_GATEDP_WS_LAEMP_EVO_2022-12_NP-NAL

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212161

Lab ID: 2212161-16

Report Matrix: WS

Collected: 11/29/2022

Sample: RG_GATE_WS_LAEMP_EVO_2022-12_N

Sample Type: Sample + Sum

Received: 12/09/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2212161
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2212161
C	XTRA_VOL	125mL	na	none	na	na	Cooler 4 - 2212161



Sample Containers

Lab ID: 2212161-17
Sample: RG_GATE_WS_LAEMP_EVO_2022-12_NP-NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 11/29/2022
Received: 12/09/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212161

Lab ID: 2212161-18
Sample: RG_GATE_WS_LAEMP_EVO_2022-12_NP-NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 11/29/2022
Received: 12/09/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212161

Lab ID: 2212161-19
Sample: RG_BOCK_WS_LAEMP_EVO_2022-12_N
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 11/29/2022
Received: 12/09/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2212161
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2212161
C	XTRA_VOL	125mL	na	none	na	na	Cooler 4 - 2212161

Lab ID: 2212161-20
Sample: RG_BOCK_WS_LAEMP_EVO_2022-12_NP-NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 11/29/2022
Received: 12/09/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212161

Lab ID: 2212161-21
Sample: RG_BOCK_WS_LAEMP_EVO_2022-12_NP-NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 11/29/2022
Received: 12/09/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212161



Sample Containers

Lab ID: 2212161-22

Report Matrix: WS

Collected: 11/29/2022

Sample:

Sample Type: Sample + Sum

Received: 12/09/2022

RG_BOCKRD_WS_LAEMP_EVO_2022-12_N

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2212161
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2212161
C	XTRA_VOL	125mL	na	none	na	na	Cooler 4 - 2212161

Lab ID: 2212161-23

Report Matrix: WS

Collected: 11/29/2022

Sample:

Sample Type: Sample + Sum

Received: 12/09/2022

RG_BOCKRD_WS_LAEMP_EVO_2022-12_NP-NAL

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212161

Lab ID: 2212161-24

Report Matrix: WS

Collected: 11/29/2022

Sample:

Sample Type: Sample + Sum

Received: 12/09/2022

RG_BOCKRD_WS_LAEMP_EVO_2022-12_NP-NAL

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212161

Lab ID: 2212161-25

Report Matrix: WS

Collected: 11/29/2022

Sample:

Sample Type: Sample + Sum

Received: 12/09/2022

RG_RIVER2_WS_LAEMP_EVO_2022-12_N

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2212161
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2212161
C	XTRA_VOL	125mL	na	none	na	na	Cooler 4 - 2212161



Sample Containers

Lab ID: 2212161-26 **Report Matrix:** WS **Collected:** 11/29/2022
Sample: RG_RIVER2_WS_LAEMP_EVO_2022-12_NP-NAL **Sample Type:** Sample + Sum **Received:** 12/09/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212161

Lab ID: 2212161-27 **Report Matrix:** WS **Collected:** 11/29/2022
Sample: RG_RIVER2_WS_LAEMP_EVO_2022-12_NP-NAL **Sample Type:** Sample + Sum **Received:** 12/09/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212161

Lab ID: 2212161-28 **Report Matrix:** WS **Collected:** 11/28/2022
Sample: RG_FBLANK_WS_LAEMP_EVO_2022-12_N **Sample Type:** Sample + Sum **Received:** 12/09/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2212161
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2212161
C	XTRA_VOL	125mL	na	none	na	na	Cooler 4 - 2212161

Lab ID: 2212161-29 **Report Matrix:** WS **Collected:** 11/28/2022
Sample: RG_FBLANK_WS_LAEMP_EVO_2022-12_NP-NAL **Sample Type:** Sample + Sum **Received:** 12/09/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212161

Lab ID: 2212161-30 **Report Matrix:** WS **Collected:** 11/28/2022
Sample: RG_FBLANK_WS_LAEMP_EVO_2022-12_NP-NAL **Sample Type:** Sample + Sum **Received:** 12/09/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212161



Sample Containers

Lab ID: 2212161-31
Sample: RG_ERCK_WS_LAEMP_EVO_2022-12_N

Report Matrix: WS
Sample Type: Sample + Sum

Collected: 11/30/2022
Received: 12/09/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2212161
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2212161
C	XTRA_VOL	125mL	na	none	na	na	Cooler 4 - 2212161

Lab ID: 2212161-32
Sample: RG_ERCK_WS_LAEMP_EVO_2022-12_NP-NAL

Report Matrix: WS
Sample Type: Sample + Sum

Collected: 11/30/2022
Received: 12/09/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212161

Lab ID: 2212161-33
Sample: RG_ERCK_WS_LAEMP_EVO_2022-12_NP-NAL

Report Matrix: WS
Sample Type: Sample + Sum

Collected: 11/30/2022
Received: 12/09/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212161

Lab ID: 2212161-34
Sample: RG_MICOMP_WS_LAEMP_EVO_2022-12_N

Report Matrix: WS
Sample Type: Sample + Sum

Collected: 11/30/2022
Received: 12/09/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2212161
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2212161
C	XTRA_VOL	125mL	na	none	na	na	Cooler 4 - 2212161



Sample Containers

Lab ID: 2212161-35
Sample: RG_MICOMP_WS_LAEMP_EVO_2022-12_NP-NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 11/30/2022
Received: 12/09/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212161

Lab ID: 2212161-36
Sample: RG_MICOMP_WS_LAEMP_EVO_2022-12_NP-NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 11/30/2022
Received: 12/09/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212161

Lab ID: 2212161-37
Sample: RG_MI3_WS_LAEMP_EVO_2022-12_N
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 11/30/2022
Received: 12/09/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2212161
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2212161
C	XTRA_VOL	125mL	na	none	na	na	Cooler 4 - 2212161

Lab ID: 2212161-38
Sample: RG_MI3_WS_LAEMP_EVO_2022-12_NP-NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 11/30/2022
Received: 12/09/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212161

Lab ID: 2212161-39
Sample: RG_MI3_WS_LAEMP_EVO_2022-12_NP-NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 11/30/2022
Received: 12/09/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212161



Sample Containers

Lab ID: 2212161-40

Report Matrix: WS

Collected: 11/30/2022

Sample:

Sample Type: Sample + Sum

Received: 12/09/2022

RG_ERCKUC_WS_LAEMP_EVO_2022-12_N

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2212161
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2212161
C	XTRA_VOL	125mL	na	none	na	na	Cooler 4 - 2212161

Lab ID: 2212161-41

Report Matrix: WS

Collected: 11/30/2022

Sample:

Sample Type: Sample + Sum

Received: 12/09/2022

RG_ERCKUC_WS_LAEMP_EVO_2022-12_NP-NAL

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212161

Lab ID: 2212161-42

Report Matrix: WS

Collected: 11/30/2022

Sample:

Sample Type: Sample + Sum

Received: 12/09/2022

RG_ERCKUC_WS_LAEMP_EVO_2022-12_NP-NAL

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212161

Lab ID: 2212161-43

Report Matrix: WS

Collected: 11/30/2022

Sample:

Sample Type: Sample + Sum

Received: 12/09/2022

RG_MIDER_WS_LAEMP_EVO_2022-12_N

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2212161
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2212161
C	XTRA_VOL	125mL	na	none	na	na	Cooler 4 - 2212161



Sample Containers

Lab ID: 2212161-44
Sample: RG_MIDER_WS_LAEMP_EVO_2022-12_NP-NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 11/30/2022
Received: 12/09/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212161

Lab ID: 2212161-45
Sample: RG_MIDER_WS_LAEMP_EVO_2022-12_NP-NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 11/30/2022
Received: 12/09/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212161

Lab ID: 2212161-46
Sample: RG_MIDBO_WS_LAEMP_EVO_2022-12_N
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 12/02/2022
Received: 12/09/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2212161
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2212161
C	XTRA_VOL	125mL	na	none	na	na	Cooler 4 - 2212161

Lab ID: 2212161-47
Sample: RG_MIDBO_WS_LAEMP_EVO_2022-12_NP-NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 12/02/2022
Received: 12/09/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212161

Lab ID: 2212161-48
Sample: RG_MIDBO_WS_LAEMP_EVO_2022-12_NP-NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 12/02/2022
Received: 12/09/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212161



Sample Containers

Lab ID: 2212161-49

Report Matrix: WS

Collected: 12/02/2022

Sample:

Sample Type: Sample + Sum

Received: 12/09/2022

RG_MIDGA_WS_LAEMP_EVO_2022-12_N

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2212161
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2212161
C	XTRA_VOL	125mL	na	none	na	na	Cooler 4 - 2212161

Lab ID: 2212161-50

Report Matrix: WS

Collected: 12/02/2022

Sample:

Sample Type: Sample + Sum

Received: 12/09/2022

RG_MIDGA_WS_LAEMP_EVO_2022-12_NP-NAL

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212161

Lab ID: 2212161-51

Report Matrix: WS

Collected: 12/02/2022

Sample:

Sample Type: Sample + Sum

Received: 12/09/2022

RG_MIDGA_WS_LAEMP_EVO_2022-12_NP-NAL

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212161

Shipping Containers

Cooler 4 - 2212161

Received: December 9, 2022 7:07
Tracking No: RWHV97351 via Courier
Coolant Type: Blue Ice
Temperature: -2.4 °C

Description: Cooler 4
Damaged in transit? No
Returned to client? No
Comments: R-IR-2

Custody seals present? No
Custody seals intact? No
COC present? Yes

COC ID: **EVO LAEMP DEC 2022** TURNAROUND TIME: RUSH

PROJECT/CLIENT INFO				LABORATORY					
Facility Name / Job#	Regional Effects Program			Lab Name	Brooks Applied Labs				
Project Manager	Mike Pope			Lab Contact	Ben Wozniak				
Email	mike.pope@teck.com			Email	Ben@brooksapplied.com				
Address	421 Pine Avenue			Address	18804 North Creek Parkway				
City	Sparwood		Province	BC		City	Bothell		
Postal Code	V0B 2G0		Country	Canada		Province	WA		
Phone Number	250-425-8202			Postal Code	98011		Country	United States	
				Phone Number	(206) 753-6158			VPO00847032	

SAMPLE DETAILS								ANALYSIS REQUESTED		
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	Brooks_Se_Speciation	Brooks_Se_D	Brooks_Se_T
RG_RIVER_WS_LAEMP_EVO_2022-12_N	RG_RIVER	WS	No	11/28/2022	13:00	G	1	X		
RG_RIVER_WS_LAEMP_EVO_2022-12_NP-NAL	RG_RIVER	WS	No	11/28/2022	13:00	G	2		X	X
RG_ERCKMD_WS_LAEMP_EVO_2022-12_N	RG_ERCKMD	WS	No	11/28/2022	9:30	G	1	X		
RG_ERCKMD_WS_LAEMP_EVO_2022-12_NP-NAL	RG_ERCKMD	WS	No	11/28/2022	9:30	G	2		X	X
RG_ERCKDT_WS_LAEMP_EVO_2022-12_N	RG_ERCKDT	WS	No	11/28/2022	13:00	G	1	X		
RG_ERCKDT_WS_LAEMP_EVO_2022-12_NP-NAL	RG_ERCKDT	WS	No	11/28/2022	13:00	G	2		X	X
RG_ERCKUT_WS_LAEMP_EVO_2022-12_N	RG_ERCKUT	WS	No	11/29/2022	9:00	G	1	X		
RG_ERCKUT_WS_LAEMP_EVO_2022-12_NP-NAL	RG_ERCKUT	WS	No	11/29/2022	9:00	G	2		X	X
RG_GATEDP_WS_LAEMP_EVO_2022-12_N	RG_GATEDP	WS	No	11/29/2022	13:30	G	1	X		
RG_GATEDP_WS_LAEMP_EVO_2022-12_NP-NAL	RG_GATEDP	WS	No	11/29/2022	13:30	G	2		X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
VPO00847032	Alex McClymont/Minnow	December 6, 2022	ERW/BAL 12/14/22 7:07

NB OF BOTTLES RETURNED/DESCRIPTION		Sampler's Name	Mobile #
Regular (default)		Alex McClymont	613-620-3778
Priority (2-3 business days) - 50% surcharge	X		
Emergency (1 Business Day) - 100% surcharge			
For Emergency <1 Day, ASAP or Weekend - Contact ALS			
		Sampler's Signature	Date/Time
			December 6, 2022

COC ID:

EVO LAEMP DEC 2022

TURNAROUND TIME:

RUSH

PROJECT/CLIENT INFO				LABORATORY						
Facility Name / Job#	Regional Effects Program			Lab Name	Brooks Applied Labs			Excel	PDF	EDD
Project Manager	Mike Pope			Lab Contact	Ben Wozniak					
Email	mike.pope@teck.com			Email	Ben@brooksapplied.com			mike.pope@teck.com		
Address	421 Pine Avenue			Address	18804 North Creek Parkway			teckcoal@equisonline.com		
				Address	Suite 100			lbowron@minnow.ca		
City	Sparwood		Province	BC	City	Bothell		Province	WA	rossica.ritz@teck.com
Postal Code	V0B 2G0		Country	Canada	Postal Code	98011		Country	United States	robin.valleau@minnow.ca
Phone Number	250-425-8202			Phone Number	(206) 753-6158			VPO00847032		

SAMPLE DETAILS								ANALYSIS REQUESTED		
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	Brooks_Se_Speciation	Brooks_Se_D	Brooks_Se_T
RG_GATE_WS_LAEMP_EVO_2022-12_N	RG_GATE	WS	No	11/29/2022	13:45	G	1	X		
RG_GATE_WS_LAEMP_EVO_2022-12_NP-NAL	RG_GATE	WS	No	11/29/2022	13:45	G	2		X	X
RG_BOCK_WS_LAEMP_EVO_2022-12_N	RG_BOCK	WS	No	11/29/2022	15:00	G	1	X		
RG_BOCK_WS_LAEMP_EVO_2022-12_NP-NAL	RG_BOCK	WS	No	11/29/2022	15:00	G	2		X	X
RG_BOCKRD_WS_LAEMP_EVO_2022-12_N	RG_BOCKRD	WS	No	11/29/2022	12:20	G	1	X		
RG_BOCKRD_WS_LAEMP_EVO_2022-12_NP-NAL	RG_BOCKRD	WS	No	11/29/2022	12:20	G	2		X	X
RG_RIVER2_WS_LAEMP_EVO_2022-12_N	RG_RIVER	WS	No	11/29/2022	13:30	G	1	X		
RG_RIVER2_WS_LAEMP_EVO_2022-12_NP-NAL	RG_RIVER	WS	No	11/29/2022	13:30	G	2		X	X
RG_FBLANK_WS_LAEMP_EVO_2022-12_N	RG_FBLANK	WS	No	11/28/2022	13:00	G	1	X		
RG_FBLANK_WS_LAEMP_EVO_2022-12_NP-NAL	RG_FBLANK	WS	No	11/28/2022	13:00	G	2		X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
VPO00847032	Alex McClymont/Minnow	December 6, 2022	EDL/DAL 12/9/22 7:07

NB OF BOTTLES RETURNED/DESCRIPTION	Sampler's Name	Mobile #
Regular (default)	Alex McClymont	613-620-3778
Priority (2-3 business days) - 50% surcharge X	Sampler's Signature	Date/Time
Emergency (1 Business Day) - 100% surcharge		December 6, 2022
For Emergency <1 Day, ASAP or Weekend - Contact ALS		

COC ID: **EVO LAEMP DEC 2022**

TURNAROUND TIME: RUSH

PROJECT/CLIENT INFO				LABORATORY						
Facility Name / Job#	Regional Effects Program			Lab Name	Brooks Applied Labs			Excel	PDF	EDD
Project Manager	Mike Pope			Lab Contact	Ben Wozniak			mike.pope@teck.com		
Email	mike.pope@teck.com			Email	Ben@brooksapplied.com			teckcoal@equilonline.com		
Address	421 Pine Avenue			Address	18804 North Creek Parkway			lbwron@minnow.ca		
				Suite 100				jessica.ritz@teck.com		
City	Sparwood		Province	BC	City	Bothell	Province	WA	robin.valleau@minnow.ca	
Postal Code	V0B 2G0		Country	Canada	Postal Code	98011	Country	United S	hillary.quinn-austin@minnow.ca	
Phone Number	250-425-8202			Phone Number	(206) 753-6158			VPO00847032		

SAMPLE DETAILS								ANALYSIS REQUESTED					
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	Brooks_Se_Speciation	Brooks_Se_D	Brooks_Se_T			
RG_ERCK_WS_LAEMP_EVO_2022-12_N	RG_ERCK	WS	No	11/30/2022	9:30	G	1	X					
RG_ERCK_WS_LAEMP_EVO_2022-12_NP-NAL	RG_ERCK	WS	No	11/30/2022	9:30	G	2		X	X			
RG_MICOMP_WS_LAEMP_EVO_2022-12_N	RG_MICOMP	WS	No	11/30/2022	14:00	G	1	X					
RG_MICOMP_WS_LAEMP_EVO_2022-12_NP-NAL	RG_MICOMP	WS	No	11/30/2022	14:00	G	2		X	X			
RG_MI3_WS_LAEMP_EVO_2022-12_N	RG_MI3	WS	No	11/30/2022	11:15	G	1	X					
RG_MI3_WS_LAEMP_EVO_2022-12_NP-NAL	RG_MI3	WS	No	11/30/2022	11:15	G	2		X	X			
RG_ERCKUC_WS_LAEMP_EVO_2022-12_N	RG_ERCKUC	WS	No	11/30/2022	10:20	G	1	X					
RG_ERCKUC_WS_LAEMP_EVO_2022-12_NP-NAL	RG_ERCKUC	WS	No	11/30/2022	10:20	G	2		X	X			
RG_MIDER_WS_LAEMP_EVO_2022-12_N	RG_MIDER	WS	No	11/30/2022	12:30	G	1	X					
RG_MIDER_WS_LAEMP_EVO_2022-12_NP-NAL	RG_MIDER	WS	No	11/30/2022	12:30	G	2		X	X			

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
VPO00847032	Alex McClymont/Minnow	December 6, 2022	ERL/BAL 12/4/22 7:07

NB OF BOTTLES RETURNED/DESCRIPTION			
Regular (default)	Sampler's Name	Alex McClymont	Mobile # 613-620-3778
Priority (2-3 business days) - 50% surcharge X	Sampler's Signature		Date/Time December 6, 2022
Emergency (1 Business Day) - 100% surcharge			
For Emergency <1 Day, ASAP or Weekend - Contact ALS			

COC ID: **EVO LAEMP DEC 2022** TURNAROUND TIME: RUSH

PROJECT/CLIENT INFO				LABORATORY				
Facility Name / Job#	Regional Effects Program			Lab Name	Brooks Applied Labs			
Project Manager	Mike Pope			Lab Contact	Ben Wozniak			
Email	mike.pope@teck.com			Email	Ben@brooksapplied.com			
Address	421 Pine Avenue			Address	18804 North Creek Parkway			
City	Sparwood		Province	BC		City	Bothell	
Postal Code	V0B 2G0		Country	Canada		Postal Code	98011	
Phone Number	250-425-8202			Phone Number	(206) 753-6158			

SAMPLE DETAILS								ANALYSIS REQUESTED					
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	Brooks_Se_Spectiation	Brooks_Se_D	Brooks_Se_T	Excel	PDF	EDD
RG_MIDBO_WS_LAEMP_EVO_2022-12_N	RG_MIDBO	WS	No	12/2/2022	9:00	G	1	X			X	X	X
RG_MIDBO_WS_LAEMP_EVO_2022-12_NP-NAL	RG_MIDBO	WS	No	12/2/2022	9:00	G	2		X	X			
RG_MIDGA_WS_LAEMP_EVO_2022-12_N	RG_MIDGA	WS	No	12/2/2022	10:30	G	1	X					
RG_MIDGA_WS_LAEMP_EVO_2022-12_NP-NAL	RG_MIDGA	WS	No	12/2/2022	10:30	G	2		X	X			

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
VPO00847032	Alex McClymont/Minnow	December 6, 2022	ERL/BAL 12/19/22 7:07

NB OF BOTTLES RETURNED/DESCRIPTION	Sampler's Name	Mobile #
Regular (default)	Alex McClymont	613-620-3778
Priority (2-3 business days) - 50% surcharge X	Sampler's Signature	Date/Time
Emergency (1 Business Day) - 100% surcharge		December 6, 2022
For Emergency <1 Day, ASAP or Weekend - Contact ALS		

Confidential

Sparwood, BC
Terrace, BC
Red Deer, AB

Vancouver, BC
Calgary, AB
Montreal, QC

Prince George, BC
Edmonton, AB
Spokane, WA

Elkford, BC
Ft. McMurray, AB
Shelby, MT

Tumbler Ridge, BC
Hinton, AB
Gillette, WY

INVOICE TO <i>DAP</i>		DATE <i>Dec 26 2022</i>	
BILL OF LADING # <i>1312A1917</i>		PURCHASE ORDER NUMBER	
SHIPPER (FROM)		CONSIGNEE (TO)	
STREET		STREET	
CITY/PROVINCE		POSTAL CODE	CITY/PROVINCE
SPECIAL INSTRUCTIONS		FREIGHT CHARGES SHIPPER TO CHECK	
PACKAGES	DESCRIPTION OF ARTICLES AND SPECIAL MARKS	WEIGHT (Subject to Correction)	<input type="checkbox"/> PREPAID <input type="checkbox"/> COLLECT <small>If not indicated, shipping will automatically move collect.</small>
<i>4</i>	<i>water coolers / coolers</i>	<i>120 lbs</i>	SEE
	<i>RWHV 97351</i>		WAITING
			XPU
			CHARGES
			FSC
			US
UNIT #	DECLARED VALUATION: Maximum liability of carrier is \$2.00 per lb. (\$4.41 per kilogram) unless declared valuation states otherwise.	\$	SUB TOTAL
SHIPPER'S SIGNATURE	DRIVER'S SIGNATURE - DELIVERY BY	FINISH TIME	TOTAL \$
			IF NOT OWNER'S RISK, WRITE ORD HERE
SHIPPER PRINT	CONSIGNEE PRINT	DATE	TIME
SHIPPER SIGN	CONSIGNEE SIGN		
WHITE: Office	YELLOW: Carrier	PINK: Consignee	GOLDENROAD: Shipper
GST # 864540398RT001			NUMBER OF PIECES RECEIVED <i>4</i>

NOTICE OF CLAIM: No carrier is liable for loss, damage or delay of any goods under the Bill of Lading unless notice, in writing, is given to the originating carrier or the delivering carrier within sixty (60) days after the delivery of the goods or the estimated amount claimed, whichever is later. A statement of the claim must be filed within nine (9) months from the date of shipment, together with a copy of the paid freight bill RECEIVED at the point of origin or the date specified from the consignee mentioned herein. The property herein described, in apparent good order, except as noted, contents and condition of contents of package unknown, marked, consigned and destined as indicated below, which the carrier agrees to carry and to deliver to the consignee at the said destination, subject to the rates and classification in effect on the date of shipment. It is mutually agreed, as to each carrier of all or any of the goods over all or any portion of the route to destination, and as to each party of any time interested in all or any of the goods, that every service to be performed hereunder shall be subject to the conditions set forth in the Bill of Lading, in power at the date of issuing, which are hereto agreed by the shipper and accepted for himself and his assigns. Printed or written, including conditions set aside by the standard Bill of Lading in power at the date of issuing, which are hereby agreed by the consignee and accepted for himself and his assigns. The Contract for the carriage of the goods listed in the Bill of Lading is governed by regulation in force in the jurisdiction at the time and place of shipment and is subject to the conditions set out in such conditions.

Cooler ID: *COOLER4*

COC Y N

Temperature: *-2.4*

IR: *R-IR-2*

Coolant Type: Ice *(Blue Ice)* Ambient

Notes:

Sampling Locations:	LC	RG	RG soil					
Sample Types:	T/D	SP	T/D	SP	T/D	SP	T/D	SP
Container Types:	<i>12.5 mL Plastic</i>	<i>15 mL cent tube</i>	<i>15 mL cent tube</i>	<i>2-SP HOPE Jar</i>				

Opened By: *ERL*

Date: *12/19/22*

COPY



Revision 004

Effective 7/29/20

DEE ERL 12/19/22

INTERSTITIAL BRYOPHYTE CHEMISTRY

BAL Final Reports



18804 North Creek Parkway, Ste 100, Bothell, WA 98011 • USA • T: 206 632 6206 F: 206 632 6017 • info@brooksapplied.com

June 16, 2022

Teck Resources Limited - Vancouver
Mike Pope
421 Pine Avenue
Sparwood, B.C. CANADA V0B2G0
mike.pope@teck.com

Re: Regional Effects Program

Dear Mike Pope,

On June 2, 2022, Brooks Applied Labs (BAL) received nine (9) aqueous samples. The samples were logged-in for Se speciation analyses, according to the chain-of-custody (COC) form.

The sample fractions logged in for Se speciation had been field-filtered prior to receipt at BAL. All samples were stored according to BAL SOPs.

Selenium Speciation

Each aqueous sample was analyzed for selenium speciation using ion chromatography inductively coupled plasma collision reaction cell mass spectrometry (IC-ICP-CRC-MS). Selenium species are chromatographically separated on an ion exchange column and then quantified using inductively coupled plasma collision reaction cell mass spectrometry (ICP-CRC-MS); for more information on this determinative technique, please visit the *Interference Reduction Technology* section on our website. The chromatographic method applied for the analyses provides greater retention of methylseleninic acid and selenomethionine, allowing for more definitive quantitation of these species.

In accordance with the quotation issued for this project, selenium speciation was defined as dissolved selenite [Se(IV)], selenate [Se(VI)], selenocyanate [SeCN], methylseleninic acid [MeSe(IV)], methaneselenonic acid [MeSe(VI)], selenomethionine [SeMet], selenosulfate [SeSO₃], and dimethylselenoxide [DMSeO]. Unknown Se species was defined as the total concentration of all unknown Se species observed during the analysis. This item is identified on the report as [Unk Se Sp].

DMSeO elutes early in the chromatographic run due to the nature of the molecule and the applied chromatographic separation method. Since this species elutes near the dead volume, additional selenium species may coelute. Alternate methods can be applied, upon client request, to increase the separation of DMSeO from potentially co-eluting selenium species.

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

In instances where a matrix spike/matrix spike duplicate (MS/MSD) set was spiked at a level less than the native sample concentration, the recoveries and the relative percent difference (RPD) are not considered valid indicators of data quality. In such instances, the recoveries of the laboratory fortified blanks (BS) and/or standard reference materials (SRM) demonstrate the accuracy of the applied methods. When the spiking

level was less than 25% of the native sample concentration, the spike recovery was not reported (**NR**) and the relative percent difference (RPD) of the MS/MSD set was not calculated (**N/C**).

In cases when either the native sample concentration was non-detectable (reported as less than or equal to the MDL) and/or the corresponding DUP result was also non-detectable, the RPD between the two values was not calculated (**N/C**).

Except for concentration qualifiers, all data were reported without qualification. All associated quality control sample results met the acceptance criteria.

BAL, an accredited laboratory, certifies that the reported results of all analyses for which BAL is NELAP accredited meet all NELAP requirements. For more information, please see the *Report Information* page.

Please feel free to contact us if you have any questions regarding this report.

Sincerely,

A handwritten signature in black ink, appearing to read 'Jeremy Maute', written in a cursive style.

Jeremy Maute
Senior Project Manager
Jeremy@brooksapplied.com



Report Information

Laboratory Accreditation

BAL is accredited by the *National Environmental Laboratory Accreditation Program* (NELAP) through the State of Florida Department of Health, Bureau of Laboratories (E87982) and is certified to perform many environmental analyses. BAL is also certified by many other states to perform environmental analyses. For a current list of our accreditations/certifications, please visit our website at <http://www.brooksapplied.com/resources/certificates-permits/> or review Tables 1 and 2 in our Accreditation Information. Results reported relate only to the samples listed in the report.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

AR	as received	MS	matrix spike
BAL	Brooks Applied Labs	MSD	matrix spike duplicate
BLK	method blank	ND	non-detect
BS	blank spike	NR	non-reportable
CAL	calibration standard	N/C	not calculated
CCB	continuing calibration blank	PS	post preparation spike
CCV	continuing calibration verification	REC	percent recovery
COC	chain of custody record	RPD	relative percent difference
D	dissolved fraction	SCV	secondary calibration verification
DUP	duplicate	SOP	standard operating procedure
IBL	instrument blank	SRM	reference material
ICV	initial calibration verification	T	total fraction
MDL	method detection limit	TR	total recoverable fraction
MRL	method reporting limit		

Definition of Data Qualifiers

(Effective 3/23/2020)

E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Please see narrative for explanation.
J	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1	Estimated value. A full explanation is presented in the narrative.
M	Duplicate precision (RPD) was not within acceptance criteria. Please see narrative for explanation.
N	Spike recovery was not within acceptance criteria. Please see narrative for explanation.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.
Z	Holding time and/or preservation requirements not established for this method; however, BAL recommendations for holding time were not followed. Please see narrative for explanation.

These qualifiers are based on those previously utilized by Brooks Applied Labs, those found in the EPA SOW ILM03.0, Exhibit B, Section III, pg. B-18, and the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review; USEPA; January 2010. These supersede all previous qualifiers ever employed by BAL.



Accreditation Information

Table 1. Accredited method/matrix/analytes for TNI
Issued by: State of Florida Dept. of Health (The NELAC Institute 2016 Standard)
Issued on: July 1, 2021; Valid to: June 30, 2022
Certificate Number: E87982-37

Method	Matrix	TNI Accredited Analyte(s)
EPA 1638	Non-Potable Waters	Ag, Cd, Cu, Ni, Pb, Sb, Se, Tl, Zn
EPA 200.8	Non-Potable Waters	Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Sb, Se, Tl, U, V, Zn
EPA 6020	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Tl, U, V, Zn
	Solids/Chemicals & Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Tl, V, Zn
BAL-5000	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Tl, U, V, Zn, Hardness
	Solids/Chemicals	Ag, As, B, Be, Cd, Co, Cr, Cu, Pb, Mo, Ni, Sb, Se, Sn, Sr, Tl, V, Zn
	Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Tl, V, Zn
EPA 1640	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn
EPA 1631E	Non-Potable Waters, Solids/Chemicals & Biological	Total Mercury
EPA 1630	Non-Potable Waters	Methyl Mercury
BAL-3200	Solids/Chemicals & Biological	Methyl Mercury
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
BAL-4201	Non-Potable Waters	Se(IV), Se(VI)
BAL-4300	Non-Potable Waters Solid/Chemicals	Cr(VI)
SM2340B	Non-Potable Waters	Hardness



Accreditation Information

**Table 2. Accredited method/matrix/analytes for ISO (1),
 Non-Governmental TNI (2)
 Issued by: ANAB
 Issued on: September 21, 2021; Valid to: March 30, 2024**

Method	Matrix	ISO and Non-Gov. TNI Accredited Analyte(s)
EPA 1638 Mod EPA 200.8 Mod EPA 6020 Mod	Non-Potable Waters	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, U, V, Zn
BAL-5000	Solids/Chemicals & Biological	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, V, Zn Hg (Biological Only)
EPA 1640 Mod	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn Ag, As, Cr, Co, Se, Ti, V (ISO Only)
EPA 1631E Mod BAL-3100	Non-Potable Waters, Solids/Chemicals & Biological/Food	Total Mercury
EPA 1630 Mod BAL-3200	Non-Potable Waters, Solids/Chemicals Biological	Methyl Mercury
EPA 1632A Mod BAL-3300	Non-Potable Waters Biological/Food Solids/Chemicals	Inorganic Arsenic (ISO Only) Inorganic Arsenic (ISO Only)
AOAC 2015.01 Mod BAL-5000	Food	As, Cd, Hg, Pb
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
	Biological by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4101	Food by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4201	Non-Potable Waters	Se(IV), Se(VI), SeCN, SeMet
BAL-4300	Non-Potable Waters, Solid/Chemicals	Cr(VI)
SM 3500-Fe BAL-4500	Non-Potable Waters	Fe, Fe(II) (ISO Only)
SM2340B	Non-Potable Waters	Hardness
SM 2540G BAL-0501	Solids/Chemicals & Biological	% Dry Weight



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
RG_ERCKUT_PW-01_D1_LAEMP_ EVO_2022-05-20_NP	2206053-01	PW	Sample	05/20/2022	06/02/2022
RG_ERCKUT_PW-01_D2_LAEMP_ EVO_2022-05-20_NP	2206053-02	PW	Sample	05/20/2022	06/02/2022
RG_ERCKUT_PW-01_D3_LAEMP_ EVO_2022-05-20_NP	2206053-03	PW	Sample	05/20/2022	06/02/2022
RG_ERCKUT_PW-02_D1_LAEMP_ EVO_2022-05-20_NP	2206053-04	PW	Sample	05/20/2022	06/02/2022
RG_ERCKUT_PW-02_D2_LAEMP_ EVO_2022-05-20_NP	2206053-05	PW	Sample	05/20/2022	06/02/2022
RG_ERCKUT_PW-02_D3_LAEMP_ EVO_2022-05-20_NP	2206053-06	PW	Sample	05/20/2022	06/02/2022
RG_ERCKUT_PW-03_D1_LAEMP_ EVO_2022-05-20_NP	2206053-07	PW	Sample	05/20/2022	06/02/2022
RG_ERCKUT_PW-03_D2_LAEMP_ EVO_2022-05-20_NP	2206053-08	PW	Sample	05/20/2022	06/02/2022
RG_ERCKUT_PW-03_D3_LAEMP_ EVO_2022-05-20_NP	2206053-09	PW	Sample	05/20/2022	06/02/2022

Batch Summary

Analyte	Lab Matrix	Method	Prepared	Analyzed	Batch	Sequence
DMSeO	Water	SOP BAL-4201	06/01/2022	06/02/2022	B221234	S220600
MeSe(IV)	Water	SOP BAL-4201	06/01/2022	06/02/2022	B221234	S220600
MeSe(VI)	Water	SOP BAL-4201	06/01/2022	06/02/2022	B221234	S220600
Se(IV)	Water	SOP BAL-4201	06/01/2022	06/02/2022	B221234	S220600
Se(VI)	Water	SOP BAL-4201	06/01/2022	06/02/2022	B221234	S220600
SeCN	Water	SOP BAL-4201	06/01/2022	06/02/2022	B221234	S220600
SeMet	Water	SOP BAL-4201	06/01/2022	06/02/2022	B221234	S220600
SeSO3	Water	SOP BAL-4201	06/01/2022	06/02/2022	B221234	S220600
Unk Se Sp	Water	SOP BAL-4201	06/01/2022	06/02/2022	B221234	S220600



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKUT_PW-01_D1_LAEMP_EVO_2022-05-20_NP										
2206053-01	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206053-01	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206053-01	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206053-01	Se(IV)	PW	D	0.023	J	0.010	0.075	µg/L	B221234	S220600
2206053-01	Se(VI)	PW	D	142		0.010	0.055	µg/L	B221234	S220600
2206053-01	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B221234	S220600
2206053-01	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206053-01	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B221234	S220600
2206053-01	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B221234	S220600
RG_ERCKUT_PW-01_D2_LAEMP_EVO_2022-05-20_NP										
2206053-02	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206053-02	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206053-02	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206053-02	Se(IV)	PW	D	0.026	J	0.010	0.075	µg/L	B221234	S220600
2206053-02	Se(VI)	PW	D	147		0.010	0.055	µg/L	B221234	S220600
2206053-02	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B221234	S220600
2206053-02	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206053-02	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B221234	S220600
2206053-02	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B221234	S220600
RG_ERCKUT_PW-01_D3_LAEMP_EVO_2022-05-20_NP										
2206053-03	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206053-03	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206053-03	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206053-03	Se(IV)	PW	D	0.025	J	0.010	0.075	µg/L	B221234	S220600
2206053-03	Se(VI)	PW	D	150		0.010	0.055	µg/L	B221234	S220600
2206053-03	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B221234	S220600
2206053-03	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206053-03	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B221234	S220600
2206053-03	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B221234	S220600



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKUT_PW-02_D1_LAEMP_EVO_2022-05-20_NP										
2206053-04	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206053-04	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206053-04	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206053-04	Se(IV)	PW	D	0.021	J	0.010	0.075	µg/L	B221234	S220600
2206053-04	Se(VI)	PW	D	148		0.010	0.055	µg/L	B221234	S220600
2206053-04	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B221234	S220600
2206053-04	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206053-04	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B221234	S220600
2206053-04	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B221234	S220600
RG_ERCKUT_PW-02_D2_LAEMP_EVO_2022-05-20_NP										
2206053-05	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206053-05	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206053-05	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206053-05	Se(IV)	PW	D	0.026	J	0.010	0.075	µg/L	B221234	S220600
2206053-05	Se(VI)	PW	D	153		0.010	0.055	µg/L	B221234	S220600
2206053-05	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B221234	S220600
2206053-05	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206053-05	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B221234	S220600
2206053-05	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B221234	S220600
RG_ERCKUT_PW-02_D3_LAEMP_EVO_2022-05-20_NP										
2206053-06	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206053-06	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206053-06	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206053-06	Se(IV)	PW	D	0.023	J	0.010	0.075	µg/L	B221234	S220600
2206053-06	Se(VI)	PW	D	150		0.010	0.055	µg/L	B221234	S220600
2206053-06	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B221234	S220600
2206053-06	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206053-06	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B221234	S220600
2206053-06	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B221234	S220600



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKUT_PW-03_D1_LAEMP_EVO_2022-05-20_NP										
2206053-07	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206053-07	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206053-07	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206053-07	Se(IV)	PW	D	0.022	J	0.010	0.075	µg/L	B221234	S220600
2206053-07	Se(VI)	PW	D	141		0.010	0.055	µg/L	B221234	S220600
2206053-07	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B221234	S220600
2206053-07	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206053-07	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B221234	S220600
2206053-07	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B221234	S220600
RG_ERCKUT_PW-03_D2_LAEMP_EVO_2022-05-20_NP										
2206053-08	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206053-08	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206053-08	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206053-08	Se(IV)	PW	D	0.025	J	0.010	0.075	µg/L	B221234	S220600
2206053-08	Se(VI)	PW	D	151		0.010	0.055	µg/L	B221234	S220600
2206053-08	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B221234	S220600
2206053-08	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206053-08	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B221234	S220600
2206053-08	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B221234	S220600
RG_ERCKUT_PW-03_D3_LAEMP_EVO_2022-05-20_NP										
2206053-09	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206053-09	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206053-09	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206053-09	Se(IV)	PW	D	0.023	J	0.010	0.075	µg/L	B221234	S220600
2206053-09	Se(VI)	PW	D	151		0.010	0.055	µg/L	B221234	S220600
2206053-09	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B221234	S220600
2206053-09	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206053-09	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B221234	S220600
2206053-09	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B221234	S220600



Accuracy & Precision Summary

Batch: B221234
Lab Matrix: Water
Method: SOP BAL-4201

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221234-BS1	Blank Spike, (2124033)						
	MeSe(IV)		5.095	5.432	µg/L	107% 75-125	
	Se(IV)		5.000	4.908	µg/L	98% 75-125	
	Se(VI)		5.000	4.850	µg/L	97% 75-125	
	SeCN		5.015	4.777	µg/L	95% 75-125	
	SeMet		4.932	5.031	µg/L	102% 75-125	
B221234-DUP1	Duplicate, (2206053-06)						
	DMSeO	ND		ND	µg/L		N/C 25
	MeSe(IV)	ND		ND	µg/L		N/C 25
	MeSe(VI)	ND		ND	µg/L		N/C 25
	Se(IV)	0.023		0.023	µg/L		2% 25
	Se(VI)	149.9		153.3	µg/L		2% 25
	SeCN	ND		ND	µg/L		N/C 25
	SeMet	ND		ND	µg/L		N/C 25
	SeSO3	ND		ND	µg/L		N/C 25
	Unk Se Sp	ND		ND	µg/L		N/C 25
B221234-MS1	Matrix Spike, (2206053-06)						
	Se(IV)	0.023	4.900	4.547	µg/L	92% 75-125	
	Se(VI)	149.9	5.100	157.3	µg/L	NR 75-125	
	SeCN	ND	1.962	1.825	µg/L	93% 75-125	
	SeMet	ND	1.977	1.891	µg/L	96% 75-125	
B221234-MSD1	Matrix Spike Duplicate, (2206053-06)						
	Se(IV)	0.023	4.900	4.481	µg/L	91% 75-125	1% 25
	Se(VI)	149.9	5.100	157.7	µg/L	NR 75-125	N/C 25
	SeCN	ND	1.962	1.841	µg/L	94% 75-125	0.9% 25
	SeMet	ND	1.977	1.927	µg/L	97% 75-125	2% 25



Method Blanks & Reporting Limits

Batch: B221234
Matrix: Water
Method: SOP BAL-4201
Analyte: DMSeO

Sample	Result	Units	
B221234-BLK1	0.00	µg/L	
B221234-BLK2	0.00	µg/L	
B221234-BLK3	0.00	µg/L	
B221234-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005

Analyte: MeSe(IV)

Sample	Result	Units	
B221234-BLK1	0.00	µg/L	
B221234-BLK2	0.00	µg/L	
B221234-BLK3	0.00	µg/L	
B221234-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005

Analyte: MeSe(VI)

Sample	Result	Units	
B221234-BLK1	0.00	µg/L	
B221234-BLK2	0.00	µg/L	
B221234-BLK3	0.00	µg/L	
B221234-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005



Method Blanks & Reporting Limits

Analyte: Se(IV)

Sample	Result	Units	
B221234-BLK1	0.00	µg/L	
B221234-BLK2	0.00	µg/L	
B221234-BLK3	0.00	µg/L	
B221234-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.015		MRL: 0.015

Analyte: Se(VI)

Sample	Result	Units	
B221234-BLK1	0.00	µg/L	
B221234-BLK2	0.00	µg/L	
B221234-BLK3	0.00	µg/L	
B221234-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.011		MRL: 0.011

Analyte: SeCN

Sample	Result	Units	
B221234-BLK1	0.00	µg/L	
B221234-BLK2	0.00	µg/L	
B221234-BLK3	0.00	µg/L	
B221234-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.010		MRL: 0.010

Analyte: SeMet

Sample	Result	Units	
B221234-BLK1	0.00	µg/L	
B221234-BLK2	0.00	µg/L	
B221234-BLK3	0.00	µg/L	
B221234-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.005		MRL: 0.005



Method Blanks & Reporting Limits

Analyte: SeSO3

Sample	Result	Units	
B221234-BLK1	0.00	µg/L	
B221234-BLK2	0.00	µg/L	
B221234-BLK3	0.00	µg/L	
B221234-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.011		MRL: 0.011

Analyte: Unk Se Sp

Sample	Result	Units	
B221234-BLK1	0.00	µg/L	
B221234-BLK2	0.00	µg/L	
B221234-BLK3	0.00	µg/L	
B221234-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.015		MRL: 0.015



Sample Containers

Lab ID: 2206053-01

Report Matrix: PW

Collected: 05/20/2022

Sample:

Sample Type: Sample + Sum

Received: 06/02/2022

RG_ERCKUT_PW-01_D1_LAEMP_EVO_2022-05-20_NP

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 5 - 2206053
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 5 - 2206053
C	XTRA_VOL	60 mL	na	none	na	na	Cooler 5 - 2206053

Lab ID: 2206053-02

Report Matrix: PW

Collected: 05/20/2022

Sample:

Sample Type: Sample + Sum

Received: 06/02/2022

RG_ERCKUT_PW-01_D2_LAEMP_EVO_2022-05-20_NP

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 5 - 2206053
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 5 - 2206053
C	XTRA_VOL	60 mL	na	none	na	na	Cooler 5 - 2206053

Lab ID: 2206053-03

Report Matrix: PW

Collected: 05/20/2022

Sample:

Sample Type: Sample + Sum

Received: 06/02/2022

RG_ERCKUT_PW-01_D3_LAEMP_EVO_2022-05-20_NP

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 5 - 2206053
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 5 - 2206053
C	XTRA_VOL	60 mL	na	none	na	na	Cooler 5 - 2206053



Sample Containers

Lab ID: 2206053-04

Report Matrix: PW

Collected: 05/20/2022

Sample:

Sample Type: Sample + Sum

Received: 06/02/2022

RG_ERCKUT_PW-02_D1_LAEMP_EVO_2022-05-20_NP

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 5 - 2206053
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 5 - 2206053
C	XTRA_VOL	60 mL	na	none	na	na	Cooler 5 - 2206053

Lab ID: 2206053-05

Report Matrix: PW

Collected: 05/20/2022

Sample:

Sample Type: Sample + Sum

Received: 06/02/2022

RG_ERCKUT_PW-02_D2_LAEMP_EVO_2022-05-20_NP

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 5 - 2206053
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 5 - 2206053
C	XTRA_VOL	60 mL	na	none	na	na	Cooler 5 - 2206053

Lab ID: 2206053-06

Report Matrix: PW

Collected: 05/20/2022

Sample:

Sample Type: Sample + Sum

Received: 06/02/2022

RG_ERCKUT_PW-02_D3_LAEMP_EVO_2022-05-20_NP

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 5 - 2206053
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 5 - 2206053
C	XTRA_VOL	60 mL	na	none	na	na	Cooler 5 - 2206053



Sample Containers

Lab ID: 2206053-07

Report Matrix: PW

Collected: 05/20/2022

Sample:

Sample Type: Sample + Sum

Received: 06/02/2022

RG_ERCKUT_PW-03_D1_LAEMP_EVO_2022-05-20_NP

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 5 - 2206053
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 5 - 2206053
C	XTRA_VOL	60 mL	na	none	na	na	Cooler 5 - 2206053

Lab ID: 2206053-08

Report Matrix: PW

Collected: 05/20/2022

Sample:

Sample Type: Sample + Sum

Received: 06/02/2022

RG_ERCKUT_PW-03_D2_LAEMP_EVO_2022-05-20_NP

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 5 - 2206053
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 5 - 2206053
C	XTRA_VOL	60 mL	na	none	na	na	Cooler 5 - 2206053

Lab ID: 2206053-09

Report Matrix: PW

Collected: 05/20/2022

Sample:

Sample Type: Sample + Sum

Received: 06/02/2022

RG_ERCKUT_PW-03_D3_LAEMP_EVO_2022-05-20_NP

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 5 - 2206053
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 5 - 2206053
C	XTRA_VOL	60 mL	na	none	na	na	Cooler 5 - 2206053



Shipping Containers

Cooler 5 - 2206053

Received: June 2, 2022 7:00
Tracking No: PAPS#RWHV92287 via Courier
Coolant Type: Ice
Temperature: 0.6 °C

Description: Large Cooler
Damaged in transit? No
Returned to client? No
Comments: IR#33

Custody seals present? No
Custody seals intact? No
COC present? Yes



COC ID:		REP_EVO LAEMP_2022_MAY_Brooks		TURNAROUND TIME:		RUSH:							
PROJECT/CLIENT INFO				LABORATORY				OTHER INFO					
Facility Name / Job# Regional Effects Program				Lab Name Brooks Applied Labs				Report Format / Distribution					
Project Manager Mike Pope				Lab Contact Ben Wozniak				Email 1: <input checked="" type="checkbox"/> Excel <input checked="" type="checkbox"/> PDF <input checked="" type="checkbox"/> EDD					
Email: mike.pope@teck.com				Email Ben@brooksapplied.com				Email 2: teckcoal@equisonline.com					
Address 421 Pine Ave				Address 18804 North Creek Parkway				Email 3: Teck Lab Results@teck.com					
				Suite 100				Email 4: AquaScilab@teck.com					
City Sparwood		Province BC		City Bothell		Province WA		Email 5: brookspp@minrow.ca					
Postal Code V0B 2G0		Country Canada		Postal Code 98011		Country United States		Email 6: ben.wozniak@brooksapplied.com					
Phone Number 250-425-8202				Phone Number (206) 753-6158				PO number 748540					
SAMPLE DETAILS						ANALYSIS REQUESTED							
Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com p	# Of Cont.	PH	PRECIPITATION	ANALYSIS	PH	PRECIPITATION	ANALYSIS
RG_ERCKUT_PW-01_D1_LAEMP_EVO_2022-05-20_NP	RG_ERCKUT	PW	No	5/20/2022	9:30	G	1	1		Brooks_Se_Speciation			
RG_ERCKUT_PW-01_D2_LAEMP_EVO_2022-05-20_NP	RG_ERCKUT	PW	No	5/20/2022	9:45	G	2	1					
RG_ERCKUT_PW-01_D3_LAEMP_EVO_2022-05-20_NP	RG_ERCKUT	PW	No	5/20/2022	10:00	G	1	1					
RG_ERCKUT_PW-02_D1_LAEMP_EVO_2022-05-20_NP	RG_ERCKUT	PW	No	5/20/2022	11:30	G	2	1					
RG_ERCKUT_PW-02_D2_LAEMP_EVO_2022-05-20_NP	RG_ERCKUT	PW	No	5/20/2022	11:50	G	1	1					
RG_ERCKUT_PW-02_D3_LAEMP_EVO_2022-05-20_NP	RG_ERCKUT	PW	No	5/20/2022	12:25	G	2	1					
RG_ERCKUT_PW-03_D1_LAEMP_EVO_2022-05-20_NP	RG_ERCKUT	PW	No	5/20/2022	13:10	G	1	1					
RG_ERCKUT_PW-03_D2_LAEMP_EVO_2022-05-20_NP	RG_ERCKUT	PW	No	5/20/2022	13:30	G	2	1					
RG_ERCKUT_PW-03_D3_LAEMP_EVO_2022-05-20_NP	RG_ERCKUT	PW	No	5/20/2022	13:50	G	1	1					
ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS						RELINQUISHED BY/AFFILIATION		DATE/TIME		ACCEPTED BY/AFFILIATION		DATE/TIME	
						Alex McClymont		May 24, 2022		[Signature] (BAL)		6/2/22 F.W.	
SERVICE REQUEST (rush - subject to availability)													
Regular (default) <input checked="" type="checkbox"/>						Sampler's Name		Alex McClymont		Mobile #		780-293-6750	
Priority (2-3 business days) - 50% surcharge						Sampler's Signature		[Signature]		Date/Time		May 24, 2022	
Emergency (1 Business Day) - 100% surcharge													
For Emergency <1 Day, ASAP or Weekend - Contact ALS													

STRAIGHT BILL OF LADING
NOT NEGOTIABLE

RW HOT SHOT SERVICE INC.

250-425-7447
24 Hour Hot Shot Service

No. 92289

Sparwood, BC
Terrace, BC
Red Deer, AB

Vancouver, BC
Calgary, AB
Montreal, QC

Prince George, BC
Edmonton, AB
Spokane, WA

Elkford, BC
Ft. McMurray, AB
Shelby, MT

Tumbler Ridge, BC
Hinton, AB
Gillette, WY

INVOICE TO		DATE	
BILL OF LADING #		PURCHASE ORDER NUMBER	
SHIPPER (FROM)		CONSIGNEE (TO)	
STREET		STREET	
CITY/PROVINCE		POSTAL CODE	CITY/PROVINCE
CITY/PROVINCE		POSTAL CODE	POSTAL CODE
SPECIAL INSTRUCTIONS		FREIGHT CHARGES SHIPPER TO CHECK <input type="checkbox"/> PREPAID <input type="checkbox"/> COLLECT <small>If not indicated, shipping will automatically move collect.</small>	
PACKAGES	DESCRIPTION OF ARTICLE AND SPECIAL MARKS	WEIGHT (Subject to Correction)	
PAPS # RWHV92287			
UNIT #	DECLARED VALUATION: Maximum liability of carrier is \$2.00 per lb. (\$4.41 per kilogram) unless declared valuation states otherwise.		
DRIVER'S SIGNATURE - PICK UP BY	PICK UP TIME	DRIVER'S SIGNATURE - DELIVERY BY	FINISH TIME
<small>NOTICE OF CLAIM: (e) No carrier is liable for loss, damage or delay of any goods under the Bill of Lading unless notice is given in writing to the original carrier or the delivering carrier within sixty (60) days after the delivery of the goods, on the case of failure to make delivery within nine (9) months from the date of shipment, respect of such loss, damage or delay is given in writing to the original carrier or the delivering carrier within ninety (90) days after the date of shipment together with a copy of the paid freight bill. (f) The final statement of the claim must be filed within nine (9) months from the date of shipment (contents and condition of contents of package unknown) marked, consigned and RECEIVED at the point of origin on the date specified from the consignor mentioned herein, the property herein described, in apparent good order, except as noted (contents and condition of contents of package unknown) marked, consigned and RECEIVED as indicated below, which the carrier agrees to carry and to deliver to the consignee at the said destination, subject to the rates and classification in effect on the date of shipment. It is mutually agreed, as to each carrier of all or any of the goods over all or any portion of the route to destination, and as to each party at any time interested in all or any of the goods, that every service to be performed hereunder shall be subject to all the conditions standard Bill of Lading, in power at the date of issuing, which are hereto agreed by the consignor and accepted for himself and his assigns. Printed or written, including conditions set aside by the standard Bill of Lading, in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. The Contract for the carriage of the goods listed in the Bill of Lading is governed by regulation in force in the jurisdiction at the time and place of shipment and is subject to the conditions set out in such conditions.</small>		TOTAL \$ <small>IF AT OWNER'S RISK, WRITE ORD HERE</small>	
SHIPPER PRINT	CONSIGNEE PRINT	DATE	
SHIPPER SIGN	CONSIGNEE SIGN	TIME	
WHITE: Office	YELLOW: Carrier	PINK: Consignee	GOLDENROAD: Shipper
GST # 864540398RT0001		NUMBER OF PIECES RECEIVED ▲	

Cooler ID: Cooler 5 CQC(Y/N) Temperature: 0.6 IR: 33
Coolant Type: Ice Blue Ice Ambient

Notes:
Sampling Locations: WL LCO RG EK 6H
Sample Types: (T/D) (SP) (T/D) SP (T/D) SP (T/D) SP
Container Types: 40mL glass 125mL Plastic 125mL Plastic 40mL glass 60mL HOPE 40mL glass 40mL glass 40mL glass
Opened By: KMN 6/2/22 Date: _____

COPY

Effective 7/29/20

① EEKMN 6/2/22





18804 North Creek Parkway, Ste 100, Bothell, WA 98011 • USA • T: 206 632 6206 F: 206 632 6017 • info@brooksapplied.com

June 16, 2022

Teck Resources Limited - Vancouver
Mike Pope
421 Pine Avenue
Sparwood, B.C. CANADA V0B2G0
mike.pope@teck.com

Re: Regional Effects Program

Dear Mike Pope,

On June 2, 2022, Brooks Applied Labs (BAL) received nine (9) aqueous samples. The samples were logged-in for Se speciation analyses, according to the chain-of-custody (COC) form.

The sample fractions logged in for Se speciation had been field-filtered prior to receipt at BAL. All samples were stored according to BAL SOPs.

Selenium Speciation

Each aqueous sample was analyzed for selenium speciation using ion chromatography inductively coupled plasma collision reaction cell mass spectrometry (IC-ICP-CRC-MS). Selenium species are chromatographically separated on an ion exchange column and then quantified using inductively coupled plasma collision reaction cell mass spectrometry (ICP-CRC-MS); for more information on this determinative technique, please visit the *Interference Reduction Technology* section on our website. The chromatographic method applied for the analyses provides greater retention of methylseleninic acid and selenomethionine, allowing for more definitive quantitation of these species.

In accordance with the quotation issued for this project, selenium speciation was defined as dissolved selenite [Se(IV)], selenate [Se(VI)], selenocyanate [SeCN], methylseleninic acid [MeSe(IV)], methaneselenonic acid [MeSe(VI)], selenomethionine [SeMet], selenosulfate [SeSO₃], and dimethylselenoxide [DMSeO]. Unknown Se species was defined as the total concentration of all unknown Se species observed during the analysis. This item is identified on the report as [Unk Se Sp].

DMSeO elutes early in the chromatographic run due to the nature of the molecule and the applied chromatographic separation method. Since this species elutes near the dead volume, additional selenium species may coelute. Alternate methods can be applied, upon client request, to increase the separation of DMSeO from potentially co-eluting selenium species.

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

In instances where a matrix spike/matrix spike duplicate (MS/MSD) set was spiked at a level less than the native sample concentration, the recoveries and the relative percent difference (RPD) are not considered valid indicators of data quality. In such instances, the recoveries of the laboratory fortified blanks (BS) and/or standard reference materials (SRM) demonstrate the accuracy of the applied methods. When the spiking

level was less than 25% of the native sample concentration, the spike recovery was not reported (**NR**) and the relative percent difference (RPD) of the MS/MSD set was not calculated (**N/C**).

In cases when either the native sample concentration was non-detectable (reported as less than or equal to the MDL) and/or the corresponding DUP result was also non-detectable, the RPD between the two values was not calculated (**N/C**).

Except for concentration qualifiers, all data were reported without qualification. All associated quality control sample results met the acceptance criteria.

BAL, an accredited laboratory, certifies that the reported results of all analyses for which BAL is NELAP accredited meet all NELAP requirements. For more information, please see the *Report Information* page.

Please feel free to contact us if you have any questions regarding this report.

Sincerely,

A handwritten signature in black ink, appearing to read 'Jeremy Maute', is positioned above the typed name.

Jeremy Maute
Senior Project Manager
Jeremy@brooksapplied.com



Report Information

Laboratory Accreditation

BAL is accredited by the *National Environmental Laboratory Accreditation Program* (NELAP) through the State of Florida Department of Health, Bureau of Laboratories (E87982) and is certified to perform many environmental analyses. BAL is also certified by many other states to perform environmental analyses. For a current list of our accreditations/certifications, please visit our website at <http://www.brooksapplied.com/resources/certificates-permits/> or review Tables 1 and 2 in our Accreditation Information. Results reported relate only to the samples listed in the report.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

AR	as received	MS	matrix spike
BAL	Brooks Applied Labs	MSD	matrix spike duplicate
BLK	method blank	ND	non-detect
BS	blank spike	NR	non-reportable
CAL	calibration standard	N/C	not calculated
CCB	continuing calibration blank	PS	post preparation spike
CCV	continuing calibration verification	REC	percent recovery
COC	chain of custody record	RPD	relative percent difference
D	dissolved fraction	SCV	secondary calibration verification
DUP	duplicate	SOP	standard operating procedure
IBL	instrument blank	SRM	reference material
ICV	initial calibration verification	T	total fraction
MDL	method detection limit	TR	total recoverable fraction
MRL	method reporting limit		

Definition of Data Qualifiers

(Effective 3/23/2020)

E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Please see narrative for explanation.
J	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1	Estimated value. A full explanation is presented in the narrative.
M	Duplicate precision (RPD) was not within acceptance criteria. Please see narrative for explanation.
N	Spike recovery was not within acceptance criteria. Please see narrative for explanation.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.
Z	Holding time and/or preservation requirements not established for this method; however, BAL recommendations for holding time were not followed. Please see narrative for explanation.

These qualifiers are based on those previously utilized by Brooks Applied Labs, those found in the EPA SOW ILM03.0, Exhibit B, Section III, pg. B-18, and the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review; USEPA; January 2010. These supersede all previous qualifiers ever employed by BAL.



Accreditation Information

Table 1. Accredited method/matrix/analytes for TNI
Issued by: State of Florida Dept. of Health (The NELAC Institute 2016 Standard)
Issued on: July 1, 2021; Valid to: June 30, 2022
Certificate Number: E87982-37

Method	Matrix	TNI Accredited Analyte(s)
EPA 1638	Non-Potable Waters	Ag, Cd, Cu, Ni, Pb, Sb, Se, Tl, Zn
EPA 200.8	Non-Potable Waters	Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Sb, Se, Tl, U, V, Zn
EPA 6020	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Tl, U, V, Zn
	Solids/Chemicals & Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Tl, V, Zn
BAL-5000	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Tl, U, V, Zn, Hardness
	Solids/Chemicals	Ag, As, B, Be, Cd, Co, Cr, Cu, Pb, Mo, Ni, Sb, Se, Sn, Sr, Tl, V, Zn
	Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Tl, V, Zn
EPA 1640	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn
EPA 1631E	Non-Potable Waters, Solids/Chemicals & Biological	Total Mercury
EPA 1630	Non-Potable Waters	Methyl Mercury
BAL-3200	Solids/Chemicals & Biological	Methyl Mercury
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
BAL-4201	Non-Potable Waters	Se(IV), Se(VI)
BAL-4300	Non-Potable Waters Solid/Chemicals	Cr(VI)
SM2340B	Non-Potable Waters	Hardness



Accreditation Information

**Table 2. Accredited method/matrix/analytes for ISO (1),
 Non-Governmental TNI (2)
 Issued by: ANAB
 Issued on: September 21, 2021; Valid to: March 30, 2024**

Method	Matrix	ISO and Non-Gov. TNI Accredited Analyte(s)
EPA 1638 Mod EPA 200.8 Mod EPA 6020 Mod	Non-Potable Waters	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, U, V, Zn
BAL-5000	Solids/Chemicals & Biological	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, V, Zn Hg (Biological Only)
EPA 1640 Mod	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn Ag, As, Cr, Co, Se, Ti, V (ISO Only)
EPA 1631E Mod BAL-3100	Non-Potable Waters, Solids/Chemicals & Biological/Food	Total Mercury
EPA 1630 Mod BAL-3200	Non-Potable Waters, Solids/Chemicals Biological	Methyl Mercury
EPA 1632A Mod BAL-3300	Non-Potable Waters Biological/Food Solids/Chemicals	Inorganic Arsenic (ISO Only) Inorganic Arsenic (ISO Only)
AOAC 2015.01 Mod BAL-5000	Food	As, Cd, Hg, Pb
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
	Biological by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4101	Food by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4201	Non-Potable Waters	Se(IV), Se(VI), SeCN, SeMet
BAL-4300	Non-Potable Waters, Solid/Chemicals	Cr(VI)
SM 3500-Fe BAL-4500	Non-Potable Waters	Fe, Fe(II) (ISO Only)
SM2340B	Non-Potable Waters	Hardness
SM 2540G BAL-0501	Solids/Chemicals & Biological	% Dry Weight



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
RG-ERCKDT_PW-01_D1_LAEMP_E VO_2022-05-19_NP	2206057-01	PW	Sample	05/19/2022	06/02/2022
RG-ERCKDT_PW-01_D2_LAEMP_E VO_2022-05-19_NP	2206057-02	PW	Sample	05/19/2022	06/02/2022
RG-ERCKDT_PW-01_D3_LAEMP_E VO_2022-05-19_NP	2206057-03	PW	Sample	05/19/2022	06/02/2022
RG-ERCKDT_PW-02_D1_LAEMP_E VO_2022-05-19_NP	2206057-04	PW	Sample	05/19/2022	06/02/2022
RG-ERCKDT_PW-02_D2_LAEMP_E VO_2022-05-19_NP	2206057-05	PW	Sample	05/19/2022	06/02/2022
RG-ERCKDT_PW-02_D3_LAEMP_E VO_2022-05-19_NP	2206057-06	PW	Sample	05/19/2022	06/02/2022
RG-ERCKDT_PW-03_D1_LAEMP_E VO_2022-05-19_NP	2206057-07	PW	Sample	05/19/2022	06/02/2022
RG-ERCKDT_PW-03_D2_LAEMP_E VO_2022-05-19_NP	2206057-08	PW	Sample	05/19/2022	06/02/2022
RG-ERCKDT_PW-03_D3_LAEMP_E VO_2022-05-19_NP	2206057-09	PW	Sample	05/19/2022	06/02/2022
RG_RIVER_PW_LAEMP_EVO_2022 -05-19_NP	2206057-10	PW	Sample	05/19/2022	06/02/2022

Batch Summary

Analyte	Lab Matrix	Method	Prepared	Analyzed	Batch	Sequence
DMSeO	Water	SOP BAL-4201	06/01/2022	06/03/2022	B221234	S220600
MeSe(IV)	Water	SOP BAL-4201	06/01/2022	06/03/2022	B221234	S220600
MeSe(VI)	Water	SOP BAL-4201	06/01/2022	06/03/2022	B221234	S220600
Se(IV)	Water	SOP BAL-4201	06/01/2022	06/03/2022	B221234	S220600
Se(VI)	Water	SOP BAL-4201	06/01/2022	06/03/2022	B221234	S220600
SeCN	Water	SOP BAL-4201	06/01/2022	06/03/2022	B221234	S220600
SeMet	Water	SOP BAL-4201	06/01/2022	06/03/2022	B221234	S220600
SeSO3	Water	SOP BAL-4201	06/01/2022	06/03/2022	B221234	S220600
Unk Se Sp	Water	SOP BAL-4201	06/01/2022	06/03/2022	B221234	S220600



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG-ERCKDT_PW-01_D1_LAEMP_EVO_2022-05-19_NP</i>										
2206057-01	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206057-01	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206057-01	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206057-01	Se(IV)	PW	D	0.034	J	0.010	0.075	µg/L	B221234	S220600
2206057-01	Se(VI)	PW	D	154		0.010	0.055	µg/L	B221234	S220600
2206057-01	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B221234	S220600
2206057-01	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206057-01	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B221234	S220600
2206057-01	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B221234	S220600
<i>RG-ERCKDT_PW-01_D2_LAEMP_EVO_2022-05-19_NP</i>										
2206057-02	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206057-02	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206057-02	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206057-02	Se(IV)	PW	D	0.345		0.010	0.075	µg/L	B221234	S220600
2206057-02	Se(VI)	PW	D	156		0.010	0.055	µg/L	B221234	S220600
2206057-02	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B221234	S220600
2206057-02	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206057-02	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B221234	S220600
2206057-02	Unk Se Sp	PW	D	0.032	J	0.010	0.075	µg/L	B221234	S220600
<i>RG-ERCKDT_PW-01_D3_LAEMP_EVO_2022-05-19_NP</i>										
2206057-03	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206057-03	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206057-03	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206057-03	Se(IV)	PW	D	0.588		0.010	0.075	µg/L	B221234	S220600
2206057-03	Se(VI)	PW	D	156		0.010	0.055	µg/L	B221234	S220600
2206057-03	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B221234	S220600
2206057-03	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206057-03	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B221234	S220600
2206057-03	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B221234	S220600



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG-ERCKDT_PW-02_D1_LAEMP_EVO_2022-05-19_NP</i>										
2206057-04	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206057-04	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206057-04	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206057-04	Se(IV)	PW	D	0.042	J	0.010	0.075	µg/L	B221234	S220600
2206057-04	Se(VI)	PW	D	157		0.010	0.055	µg/L	B221234	S220600
2206057-04	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B221234	S220600
2206057-04	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206057-04	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B221234	S220600
2206057-04	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B221234	S220600
<i>RG-ERCKDT_PW-02_D2_LAEMP_EVO_2022-05-19_NP</i>										
2206057-05	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206057-05	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206057-05	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206057-05	Se(IV)	PW	D	0.048	J	0.010	0.075	µg/L	B221234	S220600
2206057-05	Se(VI)	PW	D	160		0.010	0.055	µg/L	B221234	S220600
2206057-05	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B221234	S220600
2206057-05	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206057-05	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B221234	S220600
2206057-05	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B221234	S220600
<i>RG-ERCKDT_PW-02_D3_LAEMP_EVO_2022-05-19_NP</i>										
2206057-06	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206057-06	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206057-06	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206057-06	Se(IV)	PW	D	0.165		0.010	0.075	µg/L	B221234	S220600
2206057-06	Se(VI)	PW	D	156		0.010	0.055	µg/L	B221234	S220600
2206057-06	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B221234	S220600
2206057-06	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206057-06	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B221234	S220600
2206057-06	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B221234	S220600



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG-ERCKDT_PW-03_D1_LAEMP_EVO_2022-05-19_NP										
2206057-07	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206057-07	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206057-07	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206057-07	Se(IV)	PW	D	0.035	J	0.010	0.075	µg/L	B221234	S220600
2206057-07	Se(VI)	PW	D	159		0.010	0.055	µg/L	B221234	S220600
2206057-07	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B221234	S220600
2206057-07	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206057-07	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B221234	S220600
2206057-07	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B221234	S220600
RG-ERCKDT_PW-03_D2_LAEMP_EVO_2022-05-19_NP										
2206057-08	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206057-08	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206057-08	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206057-08	Se(IV)	PW	D	0.020	J	0.010	0.075	µg/L	B221234	S220600
2206057-08	Se(VI)	PW	D	152		0.010	0.055	µg/L	B221234	S220600
2206057-08	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B221234	S220600
2206057-08	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206057-08	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B221234	S220600
2206057-08	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B221234	S220600
RG-ERCKDT_PW-03_D3_LAEMP_EVO_2022-05-19_NP										
2206057-09	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206057-09	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206057-09	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206057-09	Se(IV)	PW	D	0.042	J	0.010	0.075	µg/L	B221234	S220600
2206057-09	Se(VI)	PW	D	152		0.010	0.055	µg/L	B221234	S220600
2206057-09	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B221234	S220600
2206057-09	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206057-09	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B221234	S220600
2206057-09	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B221234	S220600



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_RIVER_PW_LAEMP_EVO_2022-05-19_NP</i>										
2206057-10	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206057-10	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206057-10	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206057-10	Se(IV)	PW	D	0.051	J	0.010	0.075	µg/L	B221234	S220600
2206057-10	Se(VI)	PW	D	151		0.010	0.055	µg/L	B221234	S220600
2206057-10	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B221234	S220600
2206057-10	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221234	S220600
2206057-10	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B221234	S220600
2206057-10	Unk Se Sp	PW	D	0.037	J	0.010	0.075	µg/L	B221234	S220600



Accuracy & Precision Summary

Batch: B221234
Lab Matrix: Water
Method: SOP BAL-4201

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221234-BS1	Blank Spike, (2124033)						
	MeSe(IV)		5.095	5.432	µg/L	107% 75-125	
	Se(IV)		5.000	4.908	µg/L	98% 75-125	
	Se(VI)		5.000	4.850	µg/L	97% 75-125	
	SeCN		5.015	4.777	µg/L	95% 75-125	
	SeMet		4.932	5.031	µg/L	102% 75-125	
B221234-DUP2	Duplicate, (2206027-06)						
	DMSeO	ND		ND	µg/L		N/C 25
	MeSe(IV)	ND		ND	µg/L		N/C 25
	MeSe(VI)	ND		ND	µg/L		N/C 25
	Se(IV)	0.774		0.749	µg/L		3% 25
	Se(VI)	2.141		2.166	µg/L		1% 25
	SeCN	ND		ND	µg/L		N/C 25
	SeMet	ND		ND	µg/L		N/C 25
	SeSO3	ND		ND	µg/L		N/C 25
Unk Se Sp	ND		ND	µg/L		N/C 25	
B221234-MS2	Matrix Spike, (2206027-06)						
	Se(IV)	0.774	4.900	5.736	µg/L	101% 75-125	
	Se(VI)	2.141	5.100	7.473	µg/L	105% 75-125	
	SeCN	ND	1.962	1.890	µg/L	96% 75-125	
	SeMet	ND	1.977	1.985	µg/L	100% 75-125	
B221234-MSD2	Matrix Spike Duplicate, (2206027-06)						
	Se(IV)	0.774	4.900	5.747	µg/L	101% 75-125	0.2% 25
	Se(VI)	2.141	5.100	7.563	µg/L	106% 75-125	1% 25
	SeCN	ND	1.962	1.946	µg/L	99% 75-125	3% 25
	SeMet	ND	1.977	2.017	µg/L	102% 75-125	2% 25



Accuracy & Precision Summary

Batch: B221234
Lab Matrix: Water
Method: SOP BAL-4201

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221234-DUP1	Duplicate, (2206053-06)						
	DMS ₂ O	ND		ND	µg/L		N/C 25
	MeSe(IV)	ND		ND	µg/L		N/C 25
	MeSe(VI)	ND		ND	µg/L		N/C 25
	Se(IV)	0.023		0.023	µg/L		2% 25
	Se(VI)	149.9		153.3	µg/L		2% 25
	SeCN	ND		ND	µg/L		N/C 25
	SeMet	ND		ND	µg/L		N/C 25
	SeSO ₃	ND		ND	µg/L		N/C 25
Unk Se Sp	ND		ND	µg/L		N/C 25	
B221234-MS1	Matrix Spike, (2206053-06)						
	Se(IV)	0.023	4.900	4.547	µg/L	92% 75-125	
	Se(VI)	149.9	5.100	157.3	µg/L	NR 75-125	
	SeCN	ND	1.962	1.825	µg/L	93% 75-125	
	SeMet	ND	1.977	1.891	µg/L	96% 75-125	
B221234-MSD1	Matrix Spike Duplicate, (2206053-06)						
	Se(IV)	0.023	4.900	4.481	µg/L	91% 75-125	1% 25
	Se(VI)	149.9	5.100	157.7	µg/L	NR 75-125	N/C 25
	SeCN	ND	1.962	1.841	µg/L	94% 75-125	0.9% 25
	SeMet	ND	1.977	1.927	µg/L	97% 75-125	2% 25



Method Blanks & Reporting Limits

Batch: B221234
Matrix: Water
Method: SOP BAL-4201
Analyte: DMSeO

Sample	Result	Units	
B221234-BLK1	0.00	µg/L	
B221234-BLK2	0.00	µg/L	
B221234-BLK3	0.00	µg/L	
B221234-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005

Analyte: MeSe(IV)

Sample	Result	Units	
B221234-BLK1	0.00	µg/L	
B221234-BLK2	0.00	µg/L	
B221234-BLK3	0.00	µg/L	
B221234-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005

Analyte: MeSe(VI)

Sample	Result	Units	
B221234-BLK1	0.00	µg/L	
B221234-BLK2	0.00	µg/L	
B221234-BLK3	0.00	µg/L	
B221234-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005



Method Blanks & Reporting Limits

Analyte: Se(IV)

Sample	Result	Units	
B221234-BLK1	0.00	µg/L	
B221234-BLK2	0.00	µg/L	
B221234-BLK3	0.00	µg/L	
B221234-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.015		MRL: 0.015

Analyte: Se(VI)

Sample	Result	Units	
B221234-BLK1	0.00	µg/L	
B221234-BLK2	0.00	µg/L	
B221234-BLK3	0.00	µg/L	
B221234-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.011		MRL: 0.011

Analyte: SeCN

Sample	Result	Units	
B221234-BLK1	0.00	µg/L	
B221234-BLK2	0.00	µg/L	
B221234-BLK3	0.00	µg/L	
B221234-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.010		MRL: 0.010

Analyte: SeMet

Sample	Result	Units	
B221234-BLK1	0.00	µg/L	
B221234-BLK2	0.00	µg/L	
B221234-BLK3	0.00	µg/L	
B221234-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.005		MRL: 0.005



Method Blanks & Reporting Limits

Analyte: SeSO3

Sample	Result	Units	
B221234-BLK1	0.00	µg/L	
B221234-BLK2	0.00	µg/L	
B221234-BLK3	0.00	µg/L	
B221234-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.011		MRL: 0.011

Analyte: Unk Se Sp

Sample	Result	Units	
B221234-BLK1	0.00	µg/L	
B221234-BLK2	0.00	µg/L	
B221234-BLK3	0.00	µg/L	
B221234-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.015		MRL: 0.015



Sample Containers

Lab ID: 2206057-01

Sample:
 RG-ERCKDT_PW-01_D1_LAEMP_EVO_2022-05-1
 9_NP

Report Matrix: PW
Sample Type: Sample + Sum

Collected: 05/19/2022
Received: 06/02/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 5 - 2206057

Lab ID: 2206057-02

Sample:
 RG-ERCKDT_PW-01_D2_LAEMP_EVO_2022-05-1
 9_NP

Report Matrix: PW
Sample Type: Sample + Sum

Collected: 05/19/2022
Received: 06/02/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 5 - 2206057
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 5 - 2206057

Lab ID: 2206057-03

Sample:
 RG-ERCKDT_PW-01_D3_LAEMP_EVO_2022-05-1
 9_NP

Report Matrix: PW
Sample Type: Sample + Sum

Collected: 05/19/2022
Received: 06/02/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 5 - 2206057
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 5 - 2206057

Lab ID: 2206057-04

Sample:
 RG-ERCKDT_PW-02_D1_LAEMP_EVO_2022-05-1
 9_NP

Report Matrix: PW
Sample Type: Sample + Sum

Collected: 05/19/2022
Received: 06/02/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 5 - 2206057
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 5 - 2206057



Sample Containers

Lab ID: 2206057-05

Report Matrix: PW

Collected: 05/19/2022

Sample:

Sample Type: Sample + Sum

Received: 06/02/2022

RG-ERCKDT_PW-02_D2_LAEMP_EVO_2022-05-1
 9_NP

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 5 - 2206057
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 5 - 2206057

Lab ID: 2206057-06

Report Matrix: PW

Collected: 05/19/2022

Sample:

Sample Type: Sample + Sum

Received: 06/02/2022

RG-ERCKDT_PW-02_D3_LAEMP_EVO_2022-05-1
 9_NP

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 5 - 2206057
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 5 - 2206057

Lab ID: 2206057-07

Report Matrix: PW

Collected: 05/19/2022

Sample:

Sample Type: Sample + Sum

Received: 06/02/2022

RG-ERCKDT_PW-03_D1_LAEMP_EVO_2022-05-1
 9_NP

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 5 - 2206057
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 5 - 2206057



Sample Containers

Lab ID: 2206057-08

Sample:
 RG-ERCKDT_PW-03_D2_LAEMP_EVO_2022-05-19_NP

Report Matrix: PW
Sample Type: Sample + Sum

Collected: 05/19/2022
Received: 06/02/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 5 - 2206057
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 5 - 2206057

Lab ID: 2206057-09

Sample:
 RG-ERCKDT_PW-03_D3_LAEMP_EVO_2022-05-19_NP

Report Matrix: PW
Sample Type: Sample + Sum

Collected: 05/19/2022
Received: 06/02/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 5 - 2206057
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 5 - 2206057

Lab ID: 2206057-10

Sample:
 RG_RIVER_PW_LAEMP_EVO_2022-05-19_NP

Report Matrix: PW
Sample Type: Sample + Sum

Collected: 05/19/2022
Received: 06/02/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 5 - 2206057
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 5 - 2206057



Shipping Containers

Cooler 5 - 2206057

Received: June 2, 2022 7:00
Tracking No: PAPS#RWHV92287 via Courier
Coolant Type: Ice
Temperature: 0.6 °C

Description: Large Cooler
Damaged in transit? No
Returned to client? No
Comments: IR#33

Custody seals present? No
Custody seals intact? No
COC present? Yes

PROJECT/CLIENT INFO		LABORATORY		OTHER INFO														
Facility Name / Job#	Regional Effects Program	Lab Name	Brooks Applied Labs	Report Format / Distribution	Excel	PDF	EDD											
Project Manager	Mike Pope	Lab Contact	Ben Wozniak	Email 1:	X	X	X											
Email	Mike.Pope@teck.com	Email	Ben@brooksupplied.com	Email 2:	teckcont@equisonline.com		X											
Address	421 Pine Ave	Address	18804 North Creek Parkway	Email 3:	Teck.Lab.Results@teck.com	X	X											
			Suite 100	Email 4:	AquaScilab@teck.com	X	X											
City	Sparwood	Province	BC	City	Bothell	Province	WA											
Postal Code	V0B 2G0	Country	Canada	Postal Code	98011	Country	United States											
Phone Number	250-425-8202	Phone Number	(206) 753-6158	PO number	748540													
SAMPLE DETAILS				ANALYSIS REQUESTED														
Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com p	# Of Cont.	ANALYSIS	PHENOL	IN	F	N						
RG_ERCKDT_PW-01_D1_LAEMP_EVO_2022-05-19_NP	RG_ERCKDT	PW	No	5/19/2022	11:15	G	1	1										
RG_ERCKDT_PW-01_D2_LAEMP_EVO_2022-05-19_NP	RG_ERCKDT	PW	No	5/19/2022	11:30	G	1	1										
RG_ERCKDT_PW-01_D3_LAEMP_EVO_2022-05-19_NP	RG_ERCKDT	PW	No	5/19/2022	11:45	G	1	1										
RG_ERCKDT_PW-02_D1_LAEMP_EVO_2022-05-19_NP	RG_ERCKDT	PW	No	5/19/2022	9:00	G	1	1										
RG_ERCKDT_PW-02_D2_LAEMP_EVO_2022-05-19_NP	RG_ERCKDT	PW	No	5/19/2022	10:30	G	1	1										
RG_ERCKDT_PW-02_D3_LAEMP_EVO_2022-05-19_NP	RG_ERCKDT	PW	No	5/19/2022	10:45	G	1	1										
RG_ERCKDT_PW-03_D1_LAEMP_EVO_2022-05-19_NP	RG_ERCKDT	PW	No	5/19/2022	13:30	G	1	1										
RG_ERCKDT_PW-03_D2_LAEMP_EVO_2022-05-19_NP	RG_ERCKDT	PW	No	5/19/2022	14:00	G	1	1										
RG_ERCKDT_PW-03_D3_LAEMP_EVO_2022-05-19_NP	RG_ERCKDT	PW	No	5/19/2022	14:15	G	1	1										
RG_RIVER_PW_LAEMP_EVO_2022-05-19_NP	RG_RIVER	PW	No	5/19/2022	14:15	G	1	1										
ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS			RELINQUISHED BY/AFFILIATION			DATE/TIME	ACCEPTED BY/AFFILIATION		DATE/TIME									
			Alex McClymont			May 24, 2022	<i>[Signature]</i> (BAL)		6/2/22 7:00									
SERVICE REQUEST (rush - subject to availability)																		
Regular (default) X			Sampler's Name			Alex McClymont	Mobile #		780-293-6750									
Priority (2-3 business days) - 50% surcharge			Sampler's Signature			<i>[Signature]</i>	Date/Time		May 24, 2022									
Emergency (1 Business Day) - 100% surcharge																		
For Emergency <1 Day, ASAP or Weekend - Contact ALS																		

STRAIGHT BILL OF LADING
NOT NEGOTIABLE

RW HOT SHOT SERVICE INC.

250-425-7447
24 Hour Hot Shot Service

No. 92289

Sparwood, BC
Terrace, BC
Red Deer, AB

Vancouver, BC
Calgary, AB
Montreal, QC

Prince George, BC
Edmonton, AB
Spokane, WA

Elkford, BC
Ft. McMurray, AB
Shelby, MT

Tumbler Ridge, BC
Hinton, AB
Gillette, WY

INVOICE TO				DATE							
BILL OF LADING #			PURCHASE ORDER NUMBER								
SHIPPER (FROM)			CONSIGNEE (TO)								
STREET			STREET								
CITY/PROVINCE		POSTAL CODE	CITY/PROVINCE		POSTAL CODE						
SPECIAL INSTRUCTIONS											
PACKAGES	DESCRIPTION OF ARTICLE AND SPECIAL MARKS			WEIGHT (Subject to Correction)							
<h1>PAPS # RWHV92287</h1>											
						<input type="checkbox"/> PREPAID <input type="checkbox"/> COLLECT <small>If not indicated, shipping will automatically move collect.</small>					
						FEE					
						WAITING					
						XPU					
CHARGES											
FSC											
US											
SUB TOTAL											
GST											
TOTAL \$											
IF AT OWNER'S RISK, WRITE ORD HERE											
UNIT #		DECLARED VALUATION: Maximum liability of carrier is \$2.00 per lb. (\$4.41 per kilogram) unless declared valuation states otherwise.									
DRIVER'S SIGNATURE - PICK UP BY		PICK UP TIME	DRIVER'S SIGNATURE - DELIVERY BY		FINISH TIME						
<small>NOTICE OF CLAIM: (a) No carrier is liable for loss, damage or delay of any goods under the Bill of Lading unless notice is given in writing to the originating carrier or the delivering carrier within sixty (60) days after the delivery of the goods, in the case of packages to mail delivery within nine (9) months from the date of shipment. (b) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. RECEIVED at the point of origin on the date specified from the consignor mentioned herein, the property herein described, in apparent good order, except as noted (contents and condition of packages unknown) marked, consigned and destined as indicated below, which the carrier agrees to carry and to deliver to the consignee at the said destination, subject to the rates and classification in effect on the date of shipment. It is mutually agreed, as to each carrier of all or any portion of the goods over all or any portion of the route to destination, and as to each party or any time interested in all or any of the goods, that every service to be performed hereunder shall be subject to the conditions standard Bill of Lading, in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. Printed or written, including conditions set made by the standard Bill of Lading, in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. The Contract for the carriage of the goods listed in the Bill of Lading is governed by regulation in force in the jurisdiction at the time and place of shipment and is subject to the conditions set out in such conditions.</small>											
SHIPPER PRINT		CONSIGNEE PRINT		DATE							
SHIPPER SIGN		CONSIGNEE SIGN		TIME							
WHITE: Office YELLOW: Carrier PINK: Consignee GOLDENROAD: Shipper				GST # 864540398RT0001							
NUMBER OF PIECES RECEIVED ▲											

Cooler ID: *Cooler 5*

Coolant Type: *Ice* *Blue Ice* Ambient

Notes:

Sampling Locations: *WL* *LCO* *RG* *EV* *6H*

Sample Types: *(T/D)* *(SP)* *(T/D)* *SP* *(T/D)* *SP* *(T/D)* *(SP)*

Container Types: *40mL glass* *125mL plastic* *125mL plastic* *40mL glass* *60mL HOPE* *40mL glass* *40mL glass* *40mL glass*

Opened By: *KMN* *6/2/22*

Date:

COPY

Effective 7/29/20

EE KMN 6/2/22



2206057

EX cont



September 28, 2022

Teck Resources Limited - Vancouver
 Mike Pope
 421 Pine Avenue
 Sparwood, B.C. CANADA V0B2G0
mike.pope@teck.com

Re: Regional EVO LAEMP

Revision 1

Following the submission of the original report on September 22, 2022, 2022, it was determined that **Sample ID** value for 2208261-24 was incorrect. Per client request, the Sample ID value for 2208261-24 has been changed from "RG_ERCKMD_3_PW-2_2022-08_N" to "RG_ERCKMD_3_PW-1_2022-08_N" for reporting. The **Sample ID** value "RG_ERCKMD_3_PW-1_2022-08_N" was listed on the container label for 2208261-24. No other changes were made, with respect to the original report issued on September 22, 2022.

Dear Mike Pope,

On August 18, 2022, Brooks Applied Labs (BAL) received twenty-seven (27) aqueous samples. The samples were logged-in for Se speciation analyses, according to the chain-of-custody (COC) forms.

The **Sample ID** value listed on the chain-of-custody (COC) forms did not exactly match the corresponding Sample ID value on the container label for 2208261-24. The discrepancy is described in the table below.

Sample ID Agreement Between COC and Container Labels

Laboratory ID	Sample ID (on COC form)	Sample ID (on container label)	Date/Time Collected
2208261-24	RG_ERCKMD_3_PW-2_2022-08_N	RG_ERCKMD_3_PW-1_2022-08_N	08/09/2022 14:00

Per client request, 2208261-24 was logged in and reported using the **Sample ID** value listed on the container label (*column 3 in the table above*).

The ink on the container label for sample 2208261-22 was partially lost during shipping due to condensation and smearing, and it was difficult to decipher the **Sample ID** on the container label. The client sample (RG_ERCKMD_2_PW-2_2022-08_N, 08/09/22 13:50) was the only item missing from the shipment, so the container with the smeared ink was assigned to 2208261-22 (RG_ERCKMD_2_PW-2_2022-08_N, 08/09/22 13:50). The information that was legible on the container (i.e., **Date collected**, requested analysis = Se speciation) did match the information provided on the COC forms for 2208261-22 (RG_ERCKMD_2_PW-2_2022-08_N, 08/09/22 13:50).

The remaining samples had container labels with legible information.

The sample fractions logged in for Se speciation had been field-filtered prior to receipt at BAL. All samples were stored according to BAL SOPs.

Selenium Speciation

Each aqueous sample was analyzed for selenium speciation using ion chromatography inductively coupled plasma collision reaction cell mass spectrometry (IC-ICP-CRC-MS). Selenium species are chromatographically separated on an ion exchange column and then quantified using inductively coupled plasma collision reaction cell mass spectrometry (ICP-CRC-MS); for more information on this determinative technique, please visit the *Interference Reduction Technology* section on our website. The chromatographic method applied for the analyses provides greater retention of methylseleninic acid and selenomethionine, allowing for more definitive quantitation of these species.

In accordance with the quotation issued for this project, selenium speciation was defined as dissolved selenite [Se(IV)], selenate [Se(VI)], selenocyanate [SeCN], methylseleninic acid [MeSe(IV)], methaneselenonic acid [MeSe(VI)], selenomethionine [SeMet], selenosulfate [SeSO₃], and dimethylselenoxide [DMSeO]. Unknown Se species was defined as the total concentration of all unknown Se species observed during the analysis. This item is identified on the report as [Unk Se Sp].

DMSeO elutes early in the chromatographic run due to the nature of the molecule and the applied chromatographic separation method. Since this species elutes near the dead volume, additional selenium species may coelute. Alternate methods can be applied, upon client request, to increase the separation of DMSeO from potentially co-eluting selenium species.

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

In instances where a matrix spike/matrix spike duplicate (MS/MSD) set was spiked at a level less than the native sample concentration, the recoveries and the relative percent difference (RPD) are not considered valid indicators of data quality. In such instances, the recoveries of the laboratory fortified blanks (BS) and/or standard reference materials (SRM) demonstrate the accuracy of the applied methods. When the spiking level was less than 25% of the native sample concentration, the spike recovery was not reported (**NR**) and the relative percent difference (RPD) of the MS/MSD set was not calculated (**N/C**).

In cases when either the native sample concentration was non-detectable (reported as less than or equal to the MDL) and/or the corresponding DUP result was also non-detectable, the RPD between the two values was not calculated (**N/C**).

Except for concentration qualifiers, all data were reported without qualification. All associated quality control sample results met the acceptance criteria.

BAL, an accredited laboratory, certifies that the reported results of all analyses for which BAL is NELAP accredited meet all NELAP requirements. For more information, please see the *Report Information* page.

Please feel free to contact us if you have any questions regarding this report.

Sincerely,

A handwritten signature in black ink, appearing to read 'Jeremy Maute', with a stylized flourish at the end.

Jeremy Maute
Senior Project Manager

Jeremy@brooksapplied.com



Report Information

Laboratory Accreditation

BAL is accredited by the *National Environmental Laboratory Accreditation Program* (NELAP) through the State of Florida Department of Health, Bureau of Laboratories (E87982) and is certified to perform many environmental analyses. BAL is also certified by many other states to perform environmental analyses. For a current list of our accreditations/certifications, please visit our website at <http://www.brooksapplied.com/resources/certificates-permits/> or review Tables 1 and 2 in our Accreditation Information. Results reported relate only to the samples listed in the report.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

AR	as received	MS	matrix spike
BAL	Brooks Applied Labs	MSD	matrix spike duplicate
BLK	method blank	ND	non-detect
BS	blank spike	NR	non-reportable
CAL	calibration standard	N/C	not calculated
CCB	continuing calibration blank	PS	post preparation spike
CCV	continuing calibration verification	REC	percent recovery
COC	chain of custody record	RPD	relative percent difference
D	dissolved fraction	SCV	secondary calibration verification
DUP	duplicate	SOP	standard operating procedure
IBL	instrument blank	SRM	reference material
ICV	initial calibration verification	T	total fraction
MDL	method detection limit	TR	total recoverable fraction
MRL	method reporting limit		

Definition of Data Qualifiers

(Effective 3/23/2020)

E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Please see narrative for explanation.
J	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1	Estimated value. A full explanation is presented in the narrative.
M	Duplicate precision (RPD) was not within acceptance criteria. Please see narrative for explanation.
N	Spike recovery was not within acceptance criteria. Please see narrative for explanation.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.
Z	Holding time and/or preservation requirements not established for this method; however, BAL recommendations for holding time were not followed. Please see narrative for explanation.

These qualifiers are based on those previously utilized by Brooks Applied Labs, those found in the EPA SOW ILM03.0, Exhibit B, Section III, pg. B-18, and the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review; USEPA; January 2010. These supersede all previous qualifiers ever employed by BAL.



Accreditation Information

Table 1. Accredited method/matrix/analytes for TNI
Issued by: State of Florida Dept. of Health (The NELAC Institute 2016 Standard)
Issued on: July 1, 2021; Valid to: June 30, 2022
Certificate Number: E87982-37

Method	Matrix	TNI Accredited Analyte(s)
EPA 1638	Non-Potable Waters	Ag, Cd, Cu, Ni, Pb, Sb, Se, Ti, Zn
EPA 200.8	Non-Potable Waters	Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Sb, Se, Ti, U, V, Zn
EPA 6020	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Ti, U, V, Zn
	Solids/Chemicals & Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Ti, V, Zn
BAL-5000	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, U, V, Zn, Hardness
	Solids/Chemicals	Ag, As, B, Be, Cd, Co, Cr, Cu, Pb, Mo, Ni, Sb, Se, Sn, Sr, Ti, V, Zn
	Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Ti, V, Zn
EPA 1640	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn
EPA 1631E	Non-Potable Waters, Solids/Chemicals & Biological	Total Mercury
EPA 1630	Non-Potable Waters	Methyl Mercury
BAL-3200	Solids/Chemicals & Biological	Methyl Mercury
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
BAL-4201	Non-Potable Waters	Se(IV), Se(VI)
BAL-4300	Non-Potable Waters Solid/Chemicals	Cr(VI)
SM2340B	Non-Potable Waters	Hardness



Accreditation Information

**Table 2. Accredited method/matrix/analytes for ISO (1),
 Non-Governmental TNI (2)
 Issued by: ANAB
 Issued on: September 21, 2021; Valid to: March 30, 2024**

Method	Matrix	ISO and Non-Gov. TNI Accredited Analyte(s)
EPA 1638 Mod EPA 200.8 Mod EPA 6020 Mod	Non-Potable Waters	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, U, V, Zn
BAL-5000	Solids/Chemicals & Biological	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, V, Zn Hg (Biological Only)
EPA 1640 Mod	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn Ag, As, Cr, Co, Se, Ti, V (ISO Only)
EPA 1631E Mod BAL-3100	Non-Potable Waters, Solids/Chemicals & Biological/Food	Total Mercury
EPA 1630 Mod BAL-3200	Non-Potable Waters, Solids/Chemicals Biological	Methyl Mercury
EPA 1632A Mod BAL-3300	Non-Potable Waters Biological/Food Solids/Chemicals	Inorganic Arsenic (ISO Only) Inorganic Arsenic (ISO Only)
AOAC 2015.01 Mod BAL-5000	Food	As, Cd, Hg, Pb
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
	Biological by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4101	Food by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4201	Non-Potable Waters	Se(IV), Se(VI), SeCN, SeMet
BAL-4300	Non-Potable Waters, Solid/Chemicals	Cr(VI)
SM 3500-Fe BAL-4500	Non-Potable Waters	Fe, Fe(II) (ISO Only)
SM2340B	Non-Potable Waters	Hardness
SM 2540G BAL-0501	Solids/Chemicals & Biological	% Dry Weight



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
RG_ERCKUT_1_PW-1_2022-08_N	2208261-01	PW	Sample	08/08/2022	08/18/2022
RG_ERCKUT_1_PW-2_2022-08_N	2208261-02	PW	Sample	08/08/2022	08/18/2022
RG_ERCKUT_2_PW-1_2022-08_N	2208261-03	PW	Sample	08/08/2022	08/18/2022
RG_ERCKUT_2_PW-2_2022-08_N	2208261-04	PW	Sample	08/08/2022	08/18/2022
RG_ERCKUT_3_PW-1_2022-08_N	2208261-05	PW	Sample	08/08/2022	08/18/2022
RG_ERCKUT_3_PW-2_2022-08_N	2208261-06	PW	Sample	08/08/2022	08/18/2022
RG_ERCKUT_WS-1_2022-08_N	2208261-07	PW	Sample	08/09/2022	08/18/2022
RG_ERCKUT_WS-2_2022-08_N	2208261-08	PW	Sample	08/09/2022	08/18/2022
RG_ERCKUT_WS-3_2022-08_N	2208261-09	PW	Sample	08/09/2022	08/18/2022
RG_ERCKDT_1_PW-1_2022-08_N	2208261-10	PW	Sample	08/09/2022	08/18/2022
RG_ERCKDT_1_PW-2_2022-08_N	2208261-11	PW	Sample	08/09/2022	08/18/2022
RG_ERCKDT_2_PW-1_2022-08_N	2208261-12	PW	Sample	08/09/2022	08/18/2022
RG_ERCKDT_2_PW-2_2022-08_N	2208261-13	PW	Sample	08/09/2022	08/18/2022
RG_ERCKDT_3_PW-1_2022-08_N	2208261-14	PW	Sample	08/09/2022	08/18/2022
RG_ERCKDT_3_PW-2_2022-08_N	2208261-15	PW	Sample	08/09/2022	08/18/2022
RG_ERCKDT_WS-1_2022-08_N	2208261-16	PW	Sample	08/09/2022	08/18/2022
RG_ERCKDT_WS-2_2022-08_N	2208261-17	PW	Sample	08/09/2022	08/18/2022
RG_ERCKDT_WS-3_2022-08_N	2208261-18	PW	Sample	08/09/2022	08/18/2022
RG_ERCKMD_1_PW-1_2022-08_N	2208261-19	PW	Sample	08/09/2022	08/18/2022
RG_ERCKMD_1_PW-2_2022-08_N	2208261-20	PW	Sample	08/09/2022	08/18/2022
RG_ERCKMD_2_PW-1_2022-08_N	2208261-21	PW	Sample	08/09/2022	08/18/2022
RG_ERCKMD_2_PW-2_2022-08_N	2208261-22	PW	Sample	08/09/2022	08/18/2022
RG_ERCKMD_3_PW-2_2022-08_N	2208261-23	PW	Sample	08/09/2022	08/18/2022
RG_ERCKMD_3_PW-1_2022-08_N	2208261-24	PW	Sample	08/09/2022	08/18/2022
RG_ERCKMD_WS-1_2022-08_N	2208261-25	PW	Sample	08/09/2022	08/18/2022
RG_ERCKMD_WS-2_2022-08_N	2208261-26	PW	Sample	08/09/2022	08/18/2022
RG_ERCKMD_WS-3_2022-08_N	2208261-27	PW	Sample	08/09/2022	08/18/2022



Batch Summary

Analyte	Lab Matrix	Method	Prepared	Analyzed	Batch	Sequence
DMS ₂ SeO	Water	SOP BAL-4201	08/18/2022	08/18/2022	B221882	S220868
MeSe(IV)	Water	SOP BAL-4201	08/18/2022	08/18/2022	B221882	S220868
MeSe(VI)	Water	SOP BAL-4201	08/18/2022	08/18/2022	B221882	S220868
Se(IV)	Water	SOP BAL-4201	08/18/2022	08/18/2022	B221882	S220868
Se(VI)	Water	SOP BAL-4201	08/18/2022	08/18/2022	B221882	S220868
SeCN	Water	SOP BAL-4201	08/18/2022	08/18/2022	B221882	S220868
SeMet	Water	SOP BAL-4201	08/18/2022	08/18/2022	B221882	S220868
SeSO ₃	Water	SOP BAL-4201	08/18/2022	08/18/2022	B221882	S220868
Unk Se Sp	Water	SOP BAL-4201	08/18/2022	08/18/2022	B221882	S220868



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKUT_1_PW-1_2022-08_N										
2208261-01	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-01	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-01	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-01	Se(IV)	PW	D	≤ 0.020	U	0.020	0.075	µg/L	B221882	S220868
2208261-01	Se(VI)	PW	D	65.4		0.010	0.055	µg/L	B221882	S220868
2208261-01	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B221882	S220868
2208261-01	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-01	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B221882	S220868
2208261-01	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B221882	S220868
RG_ERCKUT_1_PW-2_2022-08_N										
2208261-02	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-02	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-02	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-02	Se(IV)	PW	D	0.839		0.020	0.075	µg/L	B221882	S220868
2208261-02	Se(VI)	PW	D	50.6		0.010	0.055	µg/L	B221882	S220868
2208261-02	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B221882	S220868
2208261-02	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-02	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B221882	S220868
2208261-02	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B221882	S220868
RG_ERCKUT_2_PW-1_2022-08_N										
2208261-03	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-03	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-03	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-03	Se(IV)	PW	D	≤ 0.020	U	0.020	0.075	µg/L	B221882	S220868
2208261-03	Se(VI)	PW	D	18.0		0.010	0.055	µg/L	B221882	S220868
2208261-03	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B221882	S220868
2208261-03	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-03	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B221882	S220868
2208261-03	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B221882	S220868



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKUT_2_PW-2_2022-08_N										
2208261-04	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-04	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-04	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-04	Se(IV)	PW	D	0.794		0.020	0.075	µg/L	B221882	S220868
2208261-04	Se(VI)	PW	D	100		0.010	0.055	µg/L	B221882	S220868
2208261-04	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B221882	S220868
2208261-04	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-04	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B221882	S220868
2208261-04	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B221882	S220868
RG_ERCKUT_3_PW-1_2022-08_N										
2208261-05	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-05	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-05	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-05	Se(IV)	PW	D	≤ 0.020	U	0.020	0.075	µg/L	B221882	S220868
2208261-05	Se(VI)	PW	D	45.2		0.010	0.055	µg/L	B221882	S220868
2208261-05	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B221882	S220868
2208261-05	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-05	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B221882	S220868
2208261-05	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B221882	S220868
RG_ERCKUT_3_PW-2_2022-08_N										
2208261-06	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-06	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-06	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-06	Se(IV)	PW	D	≤ 0.020	U	0.020	0.075	µg/L	B221882	S220868
2208261-06	Se(VI)	PW	D	127		0.010	0.055	µg/L	B221882	S220868
2208261-06	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B221882	S220868
2208261-06	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-06	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B221882	S220868
2208261-06	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B221882	S220868



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKUT_WS-1_2022-08_N										
2208261-07	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-07	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-07	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-07	Se(IV)	PW	D	≤ 0.020	U	0.020	0.075	µg/L	B221882	S220868
2208261-07	Se(VI)	PW	D	121		0.010	0.055	µg/L	B221882	S220868
2208261-07	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B221882	S220868
2208261-07	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-07	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B221882	S220868
2208261-07	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B221882	S220868
RG_ERCKUT_WS-2_2022-08_N										
2208261-08	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-08	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-08	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-08	Se(IV)	PW	D	≤ 0.020	U	0.020	0.075	µg/L	B221882	S220868
2208261-08	Se(VI)	PW	D	134		0.010	0.055	µg/L	B221882	S220868
2208261-08	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B221882	S220868
2208261-08	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-08	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B221882	S220868
2208261-08	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B221882	S220868
RG_ERCKUT_WS-3_2022-08_N										
2208261-09	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-09	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-09	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-09	Se(IV)	PW	D	≤ 0.020	U	0.020	0.075	µg/L	B221882	S220868
2208261-09	Se(VI)	PW	D	63.0		0.010	0.055	µg/L	B221882	S220868
2208261-09	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B221882	S220868
2208261-09	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-09	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B221882	S220868
2208261-09	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B221882	S220868



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKDT_1_PW-1_2022-08_N										
2208261-10	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-10	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-10	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-10	Se(IV)	PW	D	0.030	J	0.020	0.075	µg/L	B221882	S220868
2208261-10	Se(VI)	PW	D	98.0		0.010	0.055	µg/L	B221882	S220868
2208261-10	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B221882	S220868
2208261-10	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-10	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B221882	S220868
2208261-10	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B221882	S220868
RG_ERCKDT_1_PW-2_2022-08_N										
2208261-11	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-11	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-11	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-11	Se(IV)	PW	D	0.040	J	0.020	0.075	µg/L	B221882	S220868
2208261-11	Se(VI)	PW	D	35.3		0.010	0.055	µg/L	B221882	S220868
2208261-11	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B221882	S220868
2208261-11	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-11	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B221882	S220868
2208261-11	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B221882	S220868
RG_ERCKDT_2_PW-1_2022-08_N										
2208261-12	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-12	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-12	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-12	Se(IV)	PW	D	≤ 0.020	U	0.020	0.075	µg/L	B221882	S220868
2208261-12	Se(VI)	PW	D	39.9		0.010	0.055	µg/L	B221882	S220868
2208261-12	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B221882	S220868
2208261-12	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-12	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B221882	S220868
2208261-12	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B221882	S220868



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKDT_2_PW-2_2022-08_N										
2208261-13	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-13	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-13	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-13	Se(IV)	PW	D	0.037	J	0.020	0.075	µg/L	B221882	S220868
2208261-13	Se(VI)	PW	D	132		0.010	0.055	µg/L	B221882	S220868
2208261-13	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B221882	S220868
2208261-13	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-13	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B221882	S220868
2208261-13	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B221882	S220868
RG_ERCKDT_3_PW-1_2022-08_N										
2208261-14	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-14	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-14	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-14	Se(IV)	PW	D	0.144		0.020	0.075	µg/L	B221882	S220868
2208261-14	Se(VI)	PW	D	130		0.010	0.055	µg/L	B221882	S220868
2208261-14	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B221882	S220868
2208261-14	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-14	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B221882	S220868
2208261-14	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B221882	S220868
RG_ERCKDT_3_PW-2_2022-08_N										
2208261-15	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-15	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-15	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-15	Se(IV)	PW	D	≤ 0.020	U	0.020	0.075	µg/L	B221882	S220868
2208261-15	Se(VI)	PW	D	35.1		0.010	0.055	µg/L	B221882	S220868
2208261-15	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B221882	S220868
2208261-15	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-15	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B221882	S220868
2208261-15	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B221882	S220868



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKDT_WS-1_2022-08_N										
2208261-16	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-16	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-16	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-16	Se(IV)	PW	D	≤ 0.020	U	0.020	0.075	µg/L	B221882	S220868
2208261-16	Se(VI)	PW	D	30.0		0.010	0.055	µg/L	B221882	S220868
2208261-16	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B221882	S220868
2208261-16	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-16	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B221882	S220868
2208261-16	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B221882	S220868
RG_ERCKDT_WS-2_2022-08_N										
2208261-17	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-17	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-17	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-17	Se(IV)	PW	D	≤ 0.020	U	0.020	0.075	µg/L	B221882	S220868
2208261-17	Se(VI)	PW	D	31.0		0.010	0.055	µg/L	B221882	S220868
2208261-17	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B221882	S220868
2208261-17	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-17	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B221882	S220868
2208261-17	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B221882	S220868
RG_ERCKDT_WS-3_2022-08_N										
2208261-18	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-18	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-18	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-18	Se(IV)	PW	D	≤ 0.020	U	0.020	0.075	µg/L	B221882	S220868
2208261-18	Se(VI)	PW	D	36.3		0.010	0.055	µg/L	B221882	S220868
2208261-18	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B221882	S220868
2208261-18	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-18	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B221882	S220868
2208261-18	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B221882	S220868



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKMD_1_PW-1_2022-08_N										
2208261-19	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-19	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-19	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-19	Se(IV)	PW	D	≤ 0.020	U	0.020	0.075	µg/L	B221882	S220868
2208261-19	Se(VI)	PW	D	23.8		0.010	0.055	µg/L	B221882	S220868
2208261-19	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B221882	S220868
2208261-19	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-19	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B221882	S220868
2208261-19	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B221882	S220868
RG_ERCKMD_1_PW-2_2022-08_N										
2208261-20	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-20	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-20	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-20	Se(IV)	PW	D	0.055	J	0.020	0.075	µg/L	B221882	S220868
2208261-20	Se(VI)	PW	D	81.8		0.010	0.055	µg/L	B221882	S220868
2208261-20	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B221882	S220868
2208261-20	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-20	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B221882	S220868
2208261-20	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B221882	S220868
RG_ERCKMD_2_PW-1_2022-08_N										
2208261-21	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-21	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-21	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-21	Se(IV)	PW	D	0.040	J	0.020	0.075	µg/L	B221882	S220868
2208261-21	Se(VI)	PW	D	50.8		0.010	0.055	µg/L	B221882	S220868
2208261-21	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B221882	S220868
2208261-21	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-21	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B221882	S220868
2208261-21	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B221882	S220868



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKMD_2_PW-2_2022-08_N										
2208261-22	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-22	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-22	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-22	Se(IV)	PW	D	0.136		0.020	0.075	µg/L	B221882	S220868
2208261-22	Se(VI)	PW	D	132		0.010	0.055	µg/L	B221882	S220868
2208261-22	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B221882	S220868
2208261-22	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-22	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B221882	S220868
2208261-22	Unk Se Sp	PW	D	0.014	J	0.010	0.075	µg/L	B221882	S220868
RG_ERCKMD_3_PW-2_2022-08_N										
2208261-23	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-23	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-23	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-23	Se(IV)	PW	D	0.858		0.020	0.075	µg/L	B221882	S220868
2208261-23	Se(VI)	PW	D	136		0.010	0.055	µg/L	B221882	S220868
2208261-23	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B221882	S220868
2208261-23	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-23	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B221882	S220868
2208261-23	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B221882	S220868
RG_ERCKMD_3_PW-1_2022-08_N										
2208261-24	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-24	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-24	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-24	Se(IV)	PW	D	0.079		0.020	0.075	µg/L	B221882	S220868
2208261-24	Se(VI)	PW	D	131		0.010	0.055	µg/L	B221882	S220868
2208261-24	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B221882	S220868
2208261-24	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-24	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B221882	S220868
2208261-24	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B221882	S220868



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKMD_WS-1_2022-08_N										
2208261-25	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-25	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-25	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-25	Se(IV)	PW	D	0.073	J	0.020	0.075	µg/L	B221882	S220868
2208261-25	Se(VI)	PW	D	132		0.010	0.055	µg/L	B221882	S220868
2208261-25	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B221882	S220868
2208261-25	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-25	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B221882	S220868
2208261-25	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B221882	S220868
RG_ERCKMD_WS-2_2022-08_N										
2208261-26	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-26	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-26	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-26	Se(IV)	PW	D	0.054	J	0.020	0.075	µg/L	B221882	S220868
2208261-26	Se(VI)	PW	D	101		0.010	0.055	µg/L	B221882	S220868
2208261-26	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B221882	S220868
2208261-26	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-26	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B221882	S220868
2208261-26	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B221882	S220868
RG_ERCKMD_WS-3_2022-08_N										
2208261-27	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-27	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-27	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-27	Se(IV)	PW	D	0.071	J	0.020	0.075	µg/L	B221882	S220868
2208261-27	Se(VI)	PW	D	130		0.010	0.055	µg/L	B221882	S220868
2208261-27	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B221882	S220868
2208261-27	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B221882	S220868
2208261-27	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B221882	S220868
2208261-27	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B221882	S220868



Accuracy & Precision Summary

Batch: B221882
Lab Matrix: Water
Method: SOP BAL-4201

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221882-BS1	Blank Spike, (2124033)						
	MeSe(IV)		5.095	5.507	µg/L	108% 75-125	
	Se(IV)		5.000	4.978	µg/L	100% 75-125	
	Se(VI)		5.000	4.754	µg/L	95% 75-125	
	SeCN		5.015	4.918	µg/L	98% 75-125	
	SeMet		4.932	5.094	µg/L	103% 75-125	
B221882-DUP1	Duplicate, (2208261-07)						
	DMSeO	ND		ND	µg/L		N/C 25
	MeSe(IV)	ND		ND	µg/L		N/C 25
	MeSe(VI)	ND		ND	µg/L		N/C 25
	Se(IV)	ND		ND	µg/L		N/C 25
	Se(VI)	120.6		119.0	µg/L		1% 25
	SeCN	ND		ND	µg/L		N/C 25
	SeMet	ND		ND	µg/L		N/C 25
	SeSO3	ND		ND	µg/L		N/C 25
	Unk Se Sp	ND		ND	µg/L		N/C 25
B221882-MS1	Matrix Spike, (2208261-07)						
	Se(IV)	ND	4.900	4.733	µg/L	97% 75-125	
	Se(VI)	120.6	5.100	123.9	µg/L	NR 75-125	
	SeCN	ND	1.962	1.874	µg/L	96% 75-125	
	SeMet	ND	1.977	1.924	µg/L	97% 75-125	
B221882-MSD1	Matrix Spike Duplicate, (2208261-07)						
	Se(IV)	ND	4.900	4.798	µg/L	98% 75-125	1% 25
	Se(VI)	120.6	5.100	124.9	µg/L	NR 75-125	N/C 25
	SeCN	ND	1.962	1.894	µg/L	97% 75-125	1% 25
	SeMet	ND	1.977	1.923	µg/L	97% 75-125	0.08% 25



Accuracy & Precision Summary

Batch: B221882
Lab Matrix: Water
Method: SOP BAL-4201

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221882-DUP2	Duplicate, (2208261-14)						
	DMS ₂ O	ND		ND	µg/L		N/C 25
	MeSe(IV)	ND		ND	µg/L		N/C 25
	MeSe(VI)	ND		ND	µg/L		N/C 25
	Se(IV)	0.144		0.135	µg/L		6% 25
	Se(VI)	130.0		128.1	µg/L		2% 25
	SeCN	ND		ND	µg/L		N/C 25
	SeMet	ND		ND	µg/L		N/C 25
	SeSO ₃	ND		ND	µg/L		N/C 25
Unk Se Sp	ND		ND	µg/L		N/C 25	
B221882-MS2	Matrix Spike, (2208261-14)						
	Se(IV)	0.144	4.900	4.920	µg/L	97% 75-125	
	Se(VI)	130.0	5.100	131.8	µg/L	NR 75-125	
	SeCN	ND	1.962	1.888	µg/L	96% 75-125	
	SeMet	ND	1.977	1.873	µg/L	95% 75-125	
B221882-MSD2	Matrix Spike Duplicate, (2208261-14)						
	Se(IV)	0.144	4.900	4.952	µg/L	98% 75-125	0.7% 25
	Se(VI)	130.0	5.100	132.8	µg/L	NR 75-125	N/C 25
	SeCN	ND	1.962	1.906	µg/L	97% 75-125	1% 25
	SeMet	ND	1.977	1.956	µg/L	99% 75-125	4% 25
B221882-DUP3	Duplicate, (2208261-21)						
	DMS ₂ O	ND		ND	µg/L		N/C 25
	MeSe(IV)	ND		ND	µg/L		N/C 25
	MeSe(VI)	ND		ND	µg/L		N/C 25
	Se(IV)	0.040		0.037	µg/L		7% 25
	Se(VI)	50.76		50.68	µg/L		0.2% 25
	SeCN	ND		ND	µg/L		N/C 25
	SeMet	ND		ND	µg/L		N/C 25
	SeSO ₃	ND		ND	µg/L		N/C 25
Unk Se Sp	ND		ND	µg/L		N/C 25	



Accuracy & Precision Summary

Batch: B221882
Lab Matrix: Water
Method: SOP BAL-4201

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221882-MS3	Matrix Spike, (2208261-21)						
	Se(IV)	0.040	4.900	4.835	µg/L	98% 75-125	
	Se(VI)	50.76	5.100	56.23	µg/L	NR 75-125	
	SeCN	ND	1.962	1.879	µg/L	96% 75-125	
	SeMet	ND	1.977	1.916	µg/L	97% 75-125	
B221882-MSD3	Matrix Spike Duplicate, (2208261-21)						
	Se(IV)	0.040	4.900	4.765	µg/L	96% 75-125	1% 25
	Se(VI)	50.76	5.100	55.59	µg/L	NR 75-125	N/C 25
	SeCN	ND	1.962	1.858	µg/L	95% 75-125	1% 25
	SeMet	ND	1.977	1.866	µg/L	94% 75-125	3% 25



Method Blanks & Reporting Limits

Batch: B221882
Matrix: Water
Method: SOP BAL-4201
Analyte: DMSeO

Sample	Result	Units	
B221882-BLK1	0.00	µg/L	
B221882-BLK2	0.00	µg/L	
B221882-BLK3	0.00	µg/L	
B221882-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005

Analyte: MeSe(IV)

Sample	Result	Units	
B221882-BLK1	0.00	µg/L	
B221882-BLK2	0.00	µg/L	
B221882-BLK3	0.00	µg/L	
B221882-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005

Analyte: MeSe(VI)

Sample	Result	Units	
B221882-BLK1	0.00	µg/L	
B221882-BLK2	0.00	µg/L	
B221882-BLK3	0.00	µg/L	
B221882-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005



Method Blanks & Reporting Limits

Analyte: Se(IV)

Sample	Result	Units	
B221882-BLK1	0.00	µg/L	
B221882-BLK2	0.00	µg/L	
B221882-BLK3	0.00	µg/L	
B221882-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.004
Limit:	0.015		MRL: 0.015

Analyte: Se(VI)

Sample	Result	Units	
B221882-BLK1	0.00	µg/L	
B221882-BLK2	0.00	µg/L	
B221882-BLK3	0.00	µg/L	
B221882-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.011		MRL: 0.011

Analyte: SeCN

Sample	Result	Units	
B221882-BLK1	0.00	µg/L	
B221882-BLK2	0.00	µg/L	
B221882-BLK3	0.00	µg/L	
B221882-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.010		MRL: 0.010

Analyte: SeMet

Sample	Result	Units	
B221882-BLK1	0.00	µg/L	
B221882-BLK2	0.00	µg/L	
B221882-BLK3	0.00	µg/L	
B221882-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.005		MRL: 0.005



Method Blanks & Reporting Limits

Analyte: SeSO3

Sample	Result	Units	
B221882-BLK1	0.00	µg/L	
B221882-BLK2	0.00	µg/L	
B221882-BLK3	0.00	µg/L	
B221882-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.011		MRL: 0.011

Analyte: Unk Se Sp

Sample	Result	Units	
B221882-BLK1	0.00	µg/L	
B221882-BLK2	0.00	µg/L	
B221882-BLK3	0.00	µg/L	
B221882-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.015		MRL: 0.015



Sample Containers

Lab ID: 2208261-01				Report Matrix: PW			Collected: 08/08/2022	
Sample: RG_ERCKUT_1_PW-1_2022-08_N				Sample Type: Sample + Sum			Received: 08/18/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 9 - 2208261	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 9 - 2208261	

Lab ID: 2208261-02				Report Matrix: PW			Collected: 08/08/2022	
Sample: RG_ERCKUT_1_PW-2_2022-08_N				Sample Type: Sample + Sum			Received: 08/18/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 9 - 2208261	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 9 - 2208261	

Lab ID: 2208261-03				Report Matrix: PW			Collected: 08/08/2022	
Sample: RG_ERCKUT_2_PW-1_2022-08_N				Sample Type: Sample + Sum			Received: 08/18/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 9 - 2208261	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 9 - 2208261	

Lab ID: 2208261-04				Report Matrix: PW			Collected: 08/08/2022	
Sample: RG_ERCKUT_2_PW-2_2022-08_N				Sample Type: Sample + Sum			Received: 08/18/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 9 - 2208261	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 9 - 2208261	



Sample Containers

Lab ID: 2208261-05			Report Matrix: PW			Collected: 08/08/2022	
Sample: RG_ERCKUT_3_PW-1_2022-08_N			Sample Type: Sample + Sum			Received: 08/18/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 9 - 2208261
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 9 - 2208261

Lab ID: 2208261-06			Report Matrix: PW			Collected: 08/08/2022	
Sample: RG_ERCKUT_3_PW-2_2022-08_N			Sample Type: Sample + Sum			Received: 08/18/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 9 - 2208261
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 9 - 2208261

Lab ID: 2208261-07			Report Matrix: PW			Collected: 08/09/2022	
Sample: RG_ERCKUT_WS-1_2022-08_N			Sample Type: Sample + Sum			Received: 08/18/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 9 - 2208261
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 9 - 2208261

Lab ID: 2208261-08			Report Matrix: PW			Collected: 08/09/2022	
Sample: RG_ERCKUT_WS-2_2022-08_N			Sample Type: Sample + Sum			Received: 08/18/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 9 - 2208261
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 9 - 2208261



Sample Containers

Lab ID: 2208261-09			Report Matrix: PW			Collected: 08/09/2022		
Sample: RG_ERCKUT_WS-3_2022-08_N			Sample Type: Sample + Sum			Received: 08/18/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 9 - 2208261	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 9 - 2208261	

Lab ID: 2208261-10			Report Matrix: PW			Collected: 08/09/2022		
Sample: RG_ERCKDT_1_PW-1_2022-08_N			Sample Type: Sample + Sum			Received: 08/18/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 9 - 2208261	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 9 - 2208261	

Lab ID: 2208261-11			Report Matrix: PW			Collected: 08/09/2022		
Sample: RG_ERCKDT_1_PW-2_2022-08_N			Sample Type: Sample + Sum			Received: 08/18/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 9 - 2208261	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 9 - 2208261	

Lab ID: 2208261-12			Report Matrix: PW			Collected: 08/09/2022		
Sample: RG_ERCKDT_2_PW-1_2022-08_N			Sample Type: Sample + Sum			Received: 08/18/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 9 - 2208261	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 9 - 2208261	



Sample Containers

Lab ID: 2208261-13				Report Matrix: PW			Collected: 08/09/2022	
Sample: RG_ERCKDT_2_PW-2_2022-08_N				Sample Type: Sample + Sum			Received: 08/18/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 9 - 2208261	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 9 - 2208261	

Lab ID: 2208261-14				Report Matrix: PW			Collected: 08/09/2022	
Sample: RG_ERCKDT_3_PW-1_2022-08_N				Sample Type: Sample + Sum			Received: 08/18/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 9 - 2208261	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 9 - 2208261	

Lab ID: 2208261-15				Report Matrix: PW			Collected: 08/09/2022	
Sample: RG_ERCKDT_3_PW-2_2022-08_N				Sample Type: Sample + Sum			Received: 08/18/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 9 - 2208261	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 9 - 2208261	

Lab ID: 2208261-16				Report Matrix: PW			Collected: 08/09/2022	
Sample: RG_ERCKDT_WS-1_2022-08_N				Sample Type: Sample + Sum			Received: 08/18/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 9 - 2208261	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 9 - 2208261	



Sample Containers

Lab ID: 2208261-17			Report Matrix: PW			Collected: 08/09/2022		
Sample: RG_ERCKDT_WS-2_2022-08_N			Sample Type: Sample + Sum			Received: 08/18/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 9 - 2208261	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 9 - 2208261	

Lab ID: 2208261-18			Report Matrix: PW			Collected: 08/09/2022		
Sample: RG_ERCKDT_WS-3_2022-08_N			Sample Type: Sample + Sum			Received: 08/18/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 9 - 2208261	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 9 - 2208261	

Lab ID: 2208261-19			Report Matrix: PW			Collected: 08/09/2022		
Sample: RG_ERCKMD_1_PW-1_2022-08_N			Sample Type: Sample + Sum			Received: 08/18/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 9 - 2208261	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 9 - 2208261	

Lab ID: 2208261-20			Report Matrix: PW			Collected: 08/09/2022		
Sample: RG_ERCKMD_1_PW-2_2022-08_N			Sample Type: Sample + Sum			Received: 08/18/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 9 - 2208261	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 9 - 2208261	



Sample Containers

Lab ID: 2208261-21				Report Matrix: PW			Collected: 08/09/2022	
Sample: RG_ERCKMD_2_PW-1_2022-08_N				Sample Type: Sample + Sum			Received: 08/18/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 9 - 2208261	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 9 - 2208261	

Lab ID: 2208261-22				Report Matrix: PW			Collected: 08/09/2022	
Sample: RG_ERCKMD_2_PW-2_2022-08_N				Sample Type: Sample + Sum			Received: 08/18/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 9 - 2208261	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 9 - 2208261	

Lab ID: 2208261-23				Report Matrix: PW			Collected: 08/09/2022	
Sample: RG_ERCKMD_3_PW-2_2022-08_N				Sample Type: Sample + Sum			Received: 08/18/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 9 - 2208261	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 9 - 2208261	

Lab ID: 2208261-24				Report Matrix: PW			Collected: 08/09/2022	
Sample: RG_ERCKMD_3_PW-1_2022-08_N				Sample Type: Sample + Sum			Received: 08/18/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 9 - 2208261	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 9 - 2208261	



Sample Containers

Lab ID: 2208261-25			Report Matrix: PW			Collected: 08/09/2022		
Sample: RG_ERCKMD_WS-1_2022-08_N			Sample Type: Sample + Sum			Received: 08/18/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 9 - 2208261	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 9 - 2208261	

Lab ID: 2208261-26			Report Matrix: PW			Collected: 08/09/2022		
Sample: RG_ERCKMD_WS-2_2022-08_N			Sample Type: Sample + Sum			Received: 08/18/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 9 - 2208261	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 9 - 2208261	

Lab ID: 2208261-27			Report Matrix: PW			Collected: 08/09/2022		
Sample: RG_ERCKMD_WS-3_2022-08_N			Sample Type: Sample + Sum			Received: 08/18/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 9 - 2208261	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 9 - 2208261	

Shipping Containers

Cooler 9 - 2208261

Received: August 18, 2022 7:07
Tracking No: PAPS#RWHV95313 via Courier
Coolant Type: Blue Ice
Temperature: -2.3 °C

Description: Large Cooler
Damaged in transit? No
Returned to client? No
Comments: IR#2

Custody seals present? No
Custody seals intact? No
COC present? Yes

COC ID:		REP_EVO LAEMP_2022_August_Brooks		TURNAROUND TIME:			
PROJECT/CLIENT INFO							
Facility Name / Job# Regional EVO LAEMP				Lab Name Brooks Applied Labs			
Project Manager Mike Pope				Lab Contact Ben Wozniak			
Email mike.pope@teck.com				Email Ben@brooksupplied.com			
Address 421 Pine Avenue				Address 13751 Lake City Way NE			
				Suite 108			
City Sparwood		Province BC		City Seattle		Province WA	
Postal Code V0B 2G0		Country Canada		Postal Code 98125		Country United States	
Phone Number 250-425-8202				Phone Number (206) 753-6158			

SAMPLE DETAILS								ANALYSIS REQUESTED				
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	Brooks_Sc_Speciation				
RG_ERCKUT_1_PW-1_2022-08_N	RG_ERCKUT	PW	No	8/8/2022	10:00	G	1	X				
RG_ERCKUT_1_PW-2_2022-08_N	RG_ERCKUT	PW	No	8/8/2022	10:15	G	1	X				
RG_ERCKUT_2_PW-1_2022-08_N	RG_ERCKUT	PW	No	8/8/2022	10:30	G	1	X				
RG_ERCKUT_2_PW-2_2022-08_N	RG_ERCKUT	PW	No	8/8/2022	10:45	G	1	X				
RG_ERCKUT_3_PW-1_2022-08_N	RG_ERCKUT	PW	No	8/8/2022	11:00	G	1	X				
RG_ERCKUT_3_PW-2_2022-08_N	RG_ERCKUT	PW	No	8/8/2022	11:15	G	1	X				
RG_ERCKUT_WS-1_2022-08_N	RG_ERCKUT	PW	No	8/9/2022	11:30	G	1	X				
RG_ERCKUT_WS-2_2022-08_N	RG_ERCKUT	PW	No	8/9/2022	11:45	G	1	X				
RG_ERCKUT_WS-3_2022-08_N	RG_ERCKUT	PW	No	8/9/2022	12:00	G	1	X				
RG_ERCKDT_1_PW-1_2022-08_N	RG_ERCKDT	PW	No	8/9/2022	8:30	G	1	X				

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS				RELINQUISHED BY/AFFILIATION		DATE/TIME		ACCEPTED BY/AFFILIATION	
				Tyler Mehrer		10:24 8/13		ERW/DAL 8/18/22 7:07	

NB OF BOTTLES RETURNED/DESCRIPTION				SAMPLER'S NAME		MOBILE #	
Regular (default) x				Tyler Mehrer		587-597-1612	
Priority (2-3 business days) - 50% surcharge				SAMPLER'S SIGNATURE		DATE/TIME	
Emergency (1 Business Day) - 100% surcharge						8/13 10:29	
For Emergency <1 Day, ASAP or Weekend - Contact ALS							

COC ID: RFP_EVO LAEMP_2022_August_Brooks		TURNAROUND TIME:	
CLIENT INFO			
Facility Name / Job#	Regional EVO LAEMP	Lab Name	Brooks Applied Labs
Project Manager	Mike Pope	Lab Contact	Ben Wozniak
Email	mike.pope@teck.com	Email	Ben@brooksapplied.com
Address	421 Pine Avenue	Address	13751 Lake City Way NE Suite 108
City	Sparwood	Province	BC
Postal Code	V0B 2G0	Country	Canada
Phone Number	343-333-3905	City	Seattle
		Province	WA
		Postal Code	98125
		Country	United States
		Phone Number	(206) 753-6158

SAMPLE DETAILS								ANALYSIS REQUESTED				
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G-Grab C-Comp	# Of Cont.	Brooks_Sc_Speciation				
RG_ERCKDT_1_PW-2_2022-08_N	RG_ERCKDT	PW	No	8/9/2022	8:45	G	1	X				
RG_ERCKDT_2_PW-1_2022-08_N	RG_ERCKDT	PW	No	8/9/2022	9:00	G	1	X				
RG_ERCKDT_2_PW-2_2022-08_N	RG_ERCKDT	PW	No	8/9/2022	9:15	G	1	X				
RG_ERCKDT_3_PW-1_2022-08_N	RG_ERCKDT	PW	No	8/9/2022	9:30	G	1	X				
RG_ERCKDT_3_PW-2_2022-08_N	RG_ERCKDT	PW	No	8/9/2022	9:45	G	1	X				
RG_ERCKDT_WS-1_2022-08_N	RG_ERCKDT	PW	No	8/9/2022	10:00	G	1	X				
RG_ERCKDT_WS-2_2022-08_N	RG_ERCKDT	PW	No	8/9/2022	10:15	G	1	X				
RG_ERCKDT_WS-3_2022-08_N	RG_ERCKDT	PW	No	8/9/2022	10:30	G	1	X				
RG_ERCKMD_1_PW-1_2022-08_N	RG_ERCKMD	PW	No	8/9/2022	13:15	G	1	X				
RG_ERCKMD_1_PW-2_2022-08_N	RG_ERCKMD	PW	No	8/9/2022	13:30	G	1	X				
ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS				REQUESTED BY/AFFILIATION				DATE/TIME		ACCEPTED BY/AFFILIATION		
				Tyler Mehler				10:24 8/13		ERL/PAL 6/15/22 7207		
NB OF BOTTLES RETURNED/DESCRIPTION				SAMPLER'S NAME				MOBILE #		DATE/TIME		
Regular (default) x				Tyler Mehler				587-597-1612		8/13 10:24		
Priority (2-3 business days) - 50% surcharge				SAMPLER'S SIGNATURE								
Emergency (1 Business Day) - 100% surcharge												
For Emergency <1 Day, ASAP or Weekend - Contact ALS												

COC ID:		REP_EVO LAEMP_2022_August_Brooks		TURNAROUND TIME:			
PROJECT/CLIENT INFO							
Facility Name / Job# Regional EVO LAEMP				Lab Name Brooks Applied Labs			
Project Manager Mike Pope				Lab Contact Ben Wozniak			
Email mike.pope@teck.com				Email Ben@brooksapplied.com			
Address 421 Pine Avenue				Address 13751 Lake City Way NE Suite 108			
City Sparwood		Province BC		City Seattle		Province WA	
Postal Code V0B 2G0		Country Canada		Postal Code 98125		Country United States	
Phone Number 343-333-3905				Phone Number (206) 753-6158			

SAMPLE DETAILS								ANALYSIS REQUESTED									
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	PHOSPHORUS	PERMANGANATE	AMMONIUM	Brooks Se. Speciation						
RG_ERCKMD_2_PW-1_2022-08_N	RG_ERCKMD	PW	No	8/9/2022	13:45	G	1	X									
RG_ERCKMD_2_PW-2_2022-08_N	RG_ERCKMD	PW	No	8/9/2022	13:50	G	1	X									
RG_ERCKMD_3_PW-2_2022-08_N	RG_ERCKMD	PW	No	8/9/2022	13:55	G	1	X									
RG_ERCKMD_3_PW-2_2022-08_N	RG_ERCKMD	PW	No	8/9/2022	14:00	G	1	X									
RG_ERCKMD_WS-1_2022-08_N	RG_ERCKMD	PW	No	8/9/2022	14:15	G	1	X									
RG_ERCKMD_WS-2_2022-08_N	RG_ERCKMD	PW	No	8/9/2022	14:30	G	1	X									
RG_ERCKMD_WS-3_2022-08_N	RG_ERCKMD	PW	No	8/9/2022	14:45	G	1	X									

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS				RELINQUISHED BY/AFFILIATION				DATE/TIME				ACCEPTED BY/AFFILIATION			
				Tyler Mehler				10:24 8/13				ERL / BAL 8/18/22 7:07			
NB OF BOTTLES RETURNED/DESCRIPTION															
Regular (default) x								Sampler's Name				Tyler Mehler			
Priority (2-3 business days) - 50% surcharge								Sampler's Signature				[Signature]			
Emergency (1 Business Day) - 100% surcharge								Mobile #				587-587-1612			
For Emergency <1 Day, ASAP or Weekend - Contact ALS								Date/Time				8/13 10:24			

STRAIGHT BILL OF LADING
NOT NEGOTIABLE

RW HOT SHOT SERVICE INC.

250-425-7447
24 Hour Hot Shot Service

No. 95313

Sparwood, BC
Terrace, BC
Red Deer, AB

Vancouver, BC
Calgary, AB
Montreal, QC

Prince George, BC
Edmonton, AB
Spokane, WA

Elkford, BC
Ft. McMurray, AB
Shelby, MT

Tumbler Ridge, BC
Hinton, AB
Gillette, WY

INVOICE TO		DATE	
BILL OF LADING #		PURCHASE ORDER NUMBER	
SHIPPER (FROM)		CONSIGNEE (TO)	
STREET		STREET	
CITY/PROVINCE		POSTAL CODE	CITY/PROVINCE
SPECIAL INSTRUCTIONS		FREIGHT CHARGES SHIPPER TO CHECK	
PACKAGES	DESCRIPTION OF ARTICLES AND SPECIAL MARKS	WEIGHT (Subject to Correction)	<input type="checkbox"/> PREPAID <input type="checkbox"/> COLLECT <small>If not indicated, shipping will automatically move collect.</small>
PAPS# RWHV95313			FEE _____
UNIT #		DECLARED VALUATION: Maximum liability of carrier is \$2.00 per lb. (\$4.41 per kilogram) unless declared valuation states otherwise.	WAITING _____
DRIVER'S SIGNATURE - PICK UP BY		PICK UP TIME	XPU _____
DRIVER'S SIGNATURE - DELIVERY BY		FINISH TIME	CHARGES _____
NOTICE OF CLAIM: (a) No carrier is liable for loss, damage or delay of any goods under the Bill of Lading unless notice is received in writing before setting out particulars of the origin, destination, date of shipment of the goods and the estimated amount claimed in respect of such loss, damage or delay is given in writing to the originating carrier or the delivering carrier within nine (9) months from the date of shipment together with a copy of the paid freight bill. (b) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. (c) The carrier agrees to carry and to deliver to the consignee at the said destination, subject to the rates and classification in effect on the date of shipment as indicated below, which the carrier agrees to carry and to deliver to the consignee at the said destination, subject to the rates and classification in effect on the date of shipment. It is mutually agreed, as to each carrier of all or any of the goods over all or any portion of the route to destination, and each party of any line interested in all or any of the goods, that every service to be performed hereunder shall be subject to the conditions standard Bill of Lading, in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. Printed or written, including conditions set forth in such conditions. The Contract for the carriage of the goods listed in the Bill of Lading is governed by regulations in force in the jurisdiction of origin and place of shipment and is subject to the conditions set out in such conditions.			FSC _____
SHIPPER PRINT	CONSIGNEE PRINT		US _____
SHIPPER SIGN	CONSIGNEE SIGN		SUB TOTAL _____
WHITE: Office YELLOW: Carrier PINK: Consignee GOLDENROAD: Shipper		GST # 864540398RT0001	GST _____
			TOTAL \$ _____
			IF AT OWNER'S RISK, WRITE ORD HERE _____
			DATE _____
			TIME _____
			NUMBER OF PIECES RECEIVED 5

Cooler ID: Cooler 9

COC (Y/N)

Temperature: -2.3

IR: 2

Coolant Type: Ice Blue Ice Ambient

Notes:

Sampling Locations:

Sample Types:

Container Types:

Opened By: VF

WL	GH	EV	RG		
T/D	SP	T/D	SP	T/D	SP
40ml Amber	125ml Plastic	125ml 6-1015 125ml Plastic	125ml Plastic	125ml Plastic	15ml Cent tube

Date: 6/18/22



November 3, 2022

Teck Resources Limited - Vancouver
Mike Pope
421 Pine Avenue
Sparwood, B.C. CANADA V0B2G0
mike.pope@teck.com

Re: Regional EVO LAEMP

Dear Mike Pope,

On October 6, 2022, Brooks Applied Labs (BAL) received twenty-six (26) aqueous samples. The samples were logged-in for Se speciation analyses, according to the chain-of-custody (COC) forms.

The sample fractions logged in for Se speciation had been field-filtered prior to receipt at BAL. All samples were stored according to BAL SOPs.

Selenium Speciation

Each aqueous sample was analyzed for selenium speciation using ion chromatography inductively coupled plasma collision reaction cell mass spectrometry (IC-ICP-CRC-MS). Selenium species are chromatographically separated on an ion exchange column and then quantified using inductively coupled plasma collision reaction cell mass spectrometry (ICP-CRC-MS); for more information on this determinative technique, please visit the *Interference Reduction Technology* section on our website. The chromatographic method applied for the analyses provides greater retention of methylseleninic acid and selenomethionine, allowing for more definitive quantitation of these species.

In accordance with the quotation issued for this project, selenium speciation was defined as dissolved selenite [Se(IV)], selenate [Se(VI)], selenocyanate [SeCN], methylseleninic acid [MeSe(IV)], methaneselenonic acid [MeSe(VI)], selenomethionine [SeMet], selenosulfate [SeSO₃], and dimethylselenoxide [DMSeO]. Unknown Se species was defined as the total concentration of all unknown Se species observed during the analysis. This item is identified on the report as [Unk Se Sp].

DMSeO elutes early in the chromatographic run due to the nature of the molecule and the applied chromatographic separation method. Since this species elutes near the dead volume, additional selenium species may coelute. Alternate methods can be applied, upon client request, to increase the separation of DMSeO from potentially co-eluting selenium species.

Chromatographic interference, as indicated by an elevated baseline, or co-eluting peak, was observed for selenosulfate in samples 2210075-02, 2210075-06, 2210075-08, 2210075-09, and 2210075-11. Due to potential bias, the affected results have been qualified as estimated (**J-1**). Upon client request, Brooks Applied Labs can apply a higher dilution to these samples to potentially mitigate the chromatographic interferences, but a higher dilution would elevate the detection limit for SeMet above the client's requested limit of 0.010µg/L.

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

In instances where a matrix spike/matrix spike duplicate (MS/MSD) set was spiked at a level less than the native sample concentration, the recoveries and the relative percent difference (RPD) are not considered valid indicators of data quality. In such instances, the recoveries of the laboratory fortified blanks (BS) and/or standard reference materials (SRM) demonstrate the accuracy of the applied methods. When the spiking level was less than 25% of the native sample concentration, the spike recovery was not reported (**NR**) and the relative percent difference (RPD) of the MS/MSD set was not calculated (**N/C**).

In cases when either the native sample concentration was non-detectable (reported as less than or equal to the MDL) and/or the corresponding DUP result was also non-detectable, the RPD between the two values was not calculated (**N/C**).

Except for concentration qualifiers, all data were reported without qualification. All associated quality control sample results met the acceptance criteria.

BAL verifies that the reported results of all analyses for which the laboratory is accredited meet the requirements of the accrediting body, unless otherwise noted in the report narrative. For more information regarding accreditations please see the *Report Information* and *Batch Summary* pages. This report must be used in its entirety for interpretation of results.

Please feel free to contact us if you have any questions regarding this report.

Sincerely,



Jeremy Maute

Senior Project Manager

Jeremy@brooksapplied.com



Report Information

General Disclaimers

Test results are based solely upon the sample submitted to Brooks Applied Labs in the condition it was received. This report shall not be reproduced or copied, except in full, without written approval of the laboratory. Brooks Applied Labs is not responsible for the consequences arising from the use of a partial report.

Laboratory Accreditation

BAL maintains accreditation with various state and national agencies for select test methods. For a current list of BAL accreditations, please visit our website at <http://www.brooksapplied.com/resources/certificates-permits/>. The reported analyte/matrix/method combination shall be considered outside BAL's scopes of accreditation unless otherwise identified as ISO, TNI, or ISO,TNI in the tables. It is the responsibility of the client to verify whether a specific accreditation is required for the intended data use.

ISO: ISO/IEC 17025:2017 accredited test method. Issued by ANSI National Accreditation Board (ANAB), #ADE-1447.02

TNI: NELAP accredited test method. Issued by the State of Florida Department of Health, #E87982.

ISO,TNI: Test method is accredited under both the ISO/IEC 17025:2017 and NELAP accreditations referenced above.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

AR	as received	MS	matrix spike
BAL	Brooks Applied Labs	MSD	matrix spike duplicate
BLK	method blank	ND	non-detect
BS	blank spike	NR	non-reportable
CAL	calibration standard	N/C	not calculated
CCB	continuing calibration blank	PS	post preparation spike
CCV	continuing calibration verification	REC	percent recovery
COC	chain of custody record	RPD	relative percent difference
D	dissolved fraction	SCV	secondary calibration verification
DUP	duplicate	SOP	standard operating procedure
IBL	instrument blank	SRM	reference material
ICV	initial calibration verification	T	total fraction
MDL	method detection limit	TR	total recoverable fraction
MRL	method reporting limit		

Definition of Data Qualifiers

E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Please see narrative for explanation.
J	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1	Estimated value. A full explanation is presented in the narrative.
M	Duplicate precision (RPD) was not within acceptance criteria. Please see narrative for explanation.
N	Spike recovery was not within acceptance criteria. Please see narrative for explanation.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.
Z	Holding time and/or preservation requirements not established for this method; however, BAL recommendations for holding time were not followed. Please see narrative for explanation.



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
RG_ERCKDT_1_PW-1_2022-09_NP	2210075-01	PW	Sample	09/27/2022	10/06/2022
RG_ERCKDT_1_PW-2_2022-09_NP	2210075-02	PW	Sample	09/27/2022	10/06/2022
RG_ERCKDT_1_PW-3_2022-09_NP	2210075-03	PW	Sample	09/27/2022	10/06/2022
RG_ERCKDT_2_PW-1_2022-09_NP	2210075-04	PW	Sample	09/27/2022	10/06/2022
RG_ERCKDT_2_PW-2_2022-09_NP	2210075-05	PW	Sample	09/27/2022	10/06/2022
RG_ERCKDT_2_PW-3_2022-09_NP	2210075-06	PW	Sample	09/27/2022	10/06/2022
RG_ERCKDT_3_PW-1_2022-09_NP	2210075-07	PW	Sample	09/27/2022	10/06/2022
RG_ERCKDT_3_PW-2_2022-09_NP	2210075-08	PW	Sample	09/27/2022	10/06/2022
RG_ERCKDT_WS-1_2022-09_NP	2210075-09	PW	Sample	09/27/2022	10/06/2022
RG_ERCKUT_1_PW-1_2022-09_NP	2210075-10	PW	Sample	09/27/2022	10/06/2022
RG_ERCKUT_1_PW-2_2022-09_NP	2210075-11	PW	Sample	09/27/2022	10/06/2022
RG_ERCKUT_2_PW-1_2022-09_NP	2210075-12	PW	Sample	09/27/2022	10/06/2022
RG_ERCKUT_2_PW-2_2022-09_NP	2210075-13	PW	Sample	09/27/2022	10/06/2022
RG_ERCKUT_3_PW-1_2022-09_NP	2210075-14	PW	Sample	09/27/2022	10/06/2022
RG_ERCKUT_3_PW-2_2022-09_NP	2210075-15	PW	Sample	09/27/2022	10/06/2022
RG_ERCKUT_WS-1_2022-09_NP	2210075-16	PW	Sample	09/27/2022	10/06/2022
RG_ERCKMD_1_PW-1_2022-09_NP	2210075-17	PW	Sample	09/27/2022	10/06/2022
RG_ERCKMD_1_PW-2_2022-09_NP	2210075-18	PW	Sample	09/27/2022	10/06/2022
RG_ERCKMD_1_PW-3_2022-09_NP	2210075-19	PW	Sample	09/27/2022	10/06/2022
RG_ERCKMD_2_PW-1_2022-09_NP	2210075-20	PW	Sample	09/27/2022	10/06/2022
RG_ERCKMD_2_PW-2_2022-09_NP	2210075-21	PW	Sample	09/27/2022	10/06/2022
RG_ERCKMD_2_PW-3_2022-09_NP	2210075-22	PW	Sample	09/27/2022	10/06/2022
RG_ERCKMD_3_PW-1_2022-09_NP	2210075-23	PW	Sample	09/27/2022	10/06/2022
RG_ERCKMD_3_PW-2_2022-09_NP	2210075-24	PW	Sample	09/27/2022	10/06/2022
RG_ERCKMD_3_PW-3_2022-09_NP	2210075-25	PW	Sample	09/27/2022	10/06/2022
RG_ERCKMD_WS-1_2022-09_NP	2210075-26	PW	Sample	09/27/2022	10/06/2022



Batch Summary

Analyte	Lab Matrix	Method	Accred.	Prepared	Analyzed	Batch	Sequence
DMSeO	Water	SOP BAL-4201		10/04/22	10/08/22	B222327	S221034
DMSeO	Water	SOP BAL-4201		10/12/22	10/13/22	B222390	S221067
MeSe(IV)	Water	SOP BAL-4201		10/04/22	10/08/22	B222327	S221034
MeSe(IV)	Water	SOP BAL-4201		10/12/22	10/13/22	B222390	S221067
MeSe(IV)	Water	SOP BAL-4201		10/04/22	10/13/22	B222327	S221067
MeSe(VI)	Water	SOP BAL-4201		10/04/22	10/08/22	B222327	S221034
MeSe(VI)	Water	SOP BAL-4201		10/12/22	10/13/22	B222390	S221067
MeSe(VI)	Water	SOP BAL-4201		10/04/22	10/13/22	B222327	S221067
Se(IV)	Water	SOP BAL-4201	ISO,TNI	10/04/22	10/08/22	B222327	S221034
Se(IV)	Water	SOP BAL-4201	ISO,TNI	10/12/22	10/13/22	B222390	S221067
Se(IV)	Water	SOP BAL-4201	ISO,TNI	10/04/22	10/13/22	B222327	S221067
Se(VI)	Water	SOP BAL-4201	ISO,TNI	10/04/22	10/08/22	B222327	S221034
Se(VI)	Water	SOP BAL-4201	ISO,TNI	10/12/22	10/13/22	B222390	S221067
Se(VI)	Water	SOP BAL-4201	ISO,TNI	10/04/22	10/13/22	B222327	S221067
SeCN	Water	SOP BAL-4201	ISO	10/04/22	10/08/22	B222327	S221034
SeCN	Water	SOP BAL-4201	ISO	10/12/22	10/13/22	B222390	S221067
SeCN	Water	SOP BAL-4201	ISO	10/04/22	10/13/22	B222327	S221067
SeMet	Water	SOP BAL-4201	ISO	10/04/22	10/08/22	B222327	S221034
SeMet	Water	SOP BAL-4201	ISO	10/12/22	10/13/22	B222390	S221067
SeMet	Water	SOP BAL-4201	ISO	10/04/22	10/13/22	B222327	S221067
SeSO3	Water	SOP BAL-4201		10/04/22	10/08/22	B222327	S221034
SeSO3	Water	SOP BAL-4201		10/12/22	10/13/22	B222390	S221067
SeSO3	Water	SOP BAL-4201		10/04/22	10/13/22	B222327	S221067
Unk Se Sp	Water	SOP BAL-4201		10/04/22	10/08/22	B222327	S221034
Unk Se Sp	Water	SOP BAL-4201		10/12/22	10/13/22	B222390	S221067
Unk Se Sp	Water	SOP BAL-4201		10/04/22	10/13/22	B222327	S221067



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKDT_1_PW-1_2022-09_NP										
2210075-01	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-01	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-01	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-01	Se(IV)	PW	D	0.053	J	0.020	0.075	µg/L	B222327	S221034
2210075-01	Se(VI)	PW	D	107		0.010	0.055	µg/L	B222327	S221034
2210075-01	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222327	S221034
2210075-01	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-01	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222327	S221034
2210075-01	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222327	S221034
RG_ERCKDT_1_PW-2_2022-09_NP										
2210075-02	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-02	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-02	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-02	Se(IV)	PW	D	0.081		0.020	0.075	µg/L	B222327	S221034
2210075-02	Se(VI)	PW	D	133		0.010	0.055	µg/L	B222327	S221034
2210075-02	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222327	S221034
2210075-02	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-02	SeSO ₃	PW	D	≤ 0.010	J-1 U	0.010	0.055	µg/L	B222327	S221034
2210075-02	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222327	S221034
RG_ERCKDT_1_PW-3_2022-09_NP										
2210075-03	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-03	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-03	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-03	Se(IV)	PW	D	0.091		0.020	0.075	µg/L	B222327	S221034
2210075-03	Se(VI)	PW	D	99.7		0.010	0.055	µg/L	B222327	S221034
2210075-03	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222327	S221034
2210075-03	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-03	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222327	S221034
2210075-03	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222327	S221034



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKDT_2_PW-1_2022-09_NP										
2210075-04	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-04	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-04	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-04	Se(IV)	PW	D	0.029	J	0.020	0.075	µg/L	B222327	S221034
2210075-04	Se(VI)	PW	D	58.8		0.010	0.055	µg/L	B222327	S221034
2210075-04	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222327	S221034
2210075-04	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-04	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222327	S221034
2210075-04	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222327	S221034
RG_ERCKDT_2_PW-2_2022-09_NP										
2210075-05	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-05	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-05	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-05	Se(IV)	PW	D	0.041	J	0.020	0.075	µg/L	B222327	S221034
2210075-05	Se(VI)	PW	D	114		0.010	0.055	µg/L	B222327	S221034
2210075-05	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222327	S221034
2210075-05	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-05	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222327	S221034
2210075-05	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222327	S221034
RG_ERCKDT_2_PW-3_2022-09_NP										
2210075-06	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-06	MeSe(IV)	PW	D	0.012	J	0.010	0.025	µg/L	B222327	S221034
2210075-06	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-06	Se(IV)	PW	D	5.88		0.020	0.075	µg/L	B222327	S221034
2210075-06	Se(VI)	PW	D	115		0.010	0.055	µg/L	B222327	S221034
2210075-06	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222327	S221034
2210075-06	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-06	SeSO ₃	PW	D	≤ 0.010	J-1 U	0.010	0.055	µg/L	B222327	S221034
2210075-06	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222327	S221034



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKDT_3_PW-1_2022-09_NP										
2210075-07	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-07	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-07	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-07	Se(IV)	PW	D	0.069	J	0.020	0.075	µg/L	B222327	S221034
2210075-07	Se(VI)	PW	D	97.6		0.010	0.055	µg/L	B222327	S221034
2210075-07	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222327	S221034
2210075-07	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-07	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222327	S221034
2210075-07	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222327	S221034
RG_ERCKDT_3_PW-2_2022-09_NP										
2210075-08	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-08	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-08	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-08	Se(IV)	PW	D	0.089		0.020	0.075	µg/L	B222327	S221034
2210075-08	Se(VI)	PW	D	130		0.010	0.055	µg/L	B222327	S221034
2210075-08	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222327	S221034
2210075-08	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-08	SeSO ₃	PW	D	≤ 0.010	J-1 U	0.010	0.055	µg/L	B222327	S221034
2210075-08	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222327	S221034
RG_ERCKDT_WS-1_2022-09_NP										
2210075-09	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-09	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-09	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-09	Se(IV)	PW	D	0.039	J	0.020	0.075	µg/L	B222327	S221034
2210075-09	Se(VI)	PW	D	135		0.010	0.055	µg/L	B222327	S221034
2210075-09	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222327	S221034
2210075-09	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-09	SeSO ₃	PW	D	≤ 0.010	J-1 U	0.010	0.055	µg/L	B222327	S221034
2210075-09	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222327	S221034



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKUT_1_PW-1_2022-09_NP										
2210075-10	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-10	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-10	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-10	Se(IV)	PW	D	0.042	J	0.020	0.075	µg/L	B222327	S221034
2210075-10	Se(VI)	PW	D	91.0		0.010	0.055	µg/L	B222327	S221034
2210075-10	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222327	S221034
2210075-10	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-10	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222327	S221034
2210075-10	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222327	S221034
RG_ERCKUT_1_PW-2_2022-09_NP										
2210075-11	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-11	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-11	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-11	Se(IV)	PW	D	0.074	J	0.020	0.075	µg/L	B222327	S221034
2210075-11	Se(VI)	PW	D	135		0.010	0.055	µg/L	B222327	S221034
2210075-11	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222327	S221034
2210075-11	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-11	SeSO ₃	PW	D	≤ 0.010	J-1 U	0.010	0.055	µg/L	B222327	S221034
2210075-11	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222327	S221034
RG_ERCKUT_2_PW-1_2022-09_NP										
2210075-12	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-12	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-12	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-12	Se(IV)	PW	D	0.050	J	0.020	0.075	µg/L	B222327	S221034
2210075-12	Se(VI)	PW	D	126		0.010	0.055	µg/L	B222327	S221034
2210075-12	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222327	S221034
2210075-12	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-12	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222327	S221034
2210075-12	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222327	S221034



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKUT_2_PW-2_2022-09_NP										
2210075-13	DMS ₂ SeO	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-13	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-13	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-13	Se(IV)	PW	D	0.043	J	0.020	0.075	µg/L	B222327	S221034
2210075-13	Se(VI)	PW	D	131		0.010	0.055	µg/L	B222327	S221034
2210075-13	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222327	S221034
2210075-13	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-13	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222327	S221034
2210075-13	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222327	S221034
RG_ERCKUT_3_PW-1_2022-09_NP										
2210075-14	DMS ₂ SeO	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-14	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-14	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-14	Se(IV)	PW	D	0.035	J	0.020	0.075	µg/L	B222327	S221034
2210075-14	Se(VI)	PW	D	121		0.010	0.055	µg/L	B222327	S221034
2210075-14	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222327	S221034
2210075-14	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-14	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222327	S221034
2210075-14	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222327	S221034
RG_ERCKUT_3_PW-2_2022-09_NP										
2210075-15	DMS ₂ SeO	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-15	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-15	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-15	Se(IV)	PW	D	0.021	J	0.020	0.075	µg/L	B222327	S221034
2210075-15	Se(VI)	PW	D	56.0		0.010	0.055	µg/L	B222327	S221034
2210075-15	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222327	S221034
2210075-15	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-15	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222327	S221034
2210075-15	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222327	S221034



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKUT_WS-1_2022-09_NP										
2210075-16	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-16	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-16	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-16	Se(IV)	PW	D	0.021	J	0.020	0.075	µg/L	B222327	S221034
2210075-16	Se(VI)	PW	D	76.8		0.010	0.055	µg/L	B222327	S221034
2210075-16	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222327	S221034
2210075-16	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-16	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222327	S221034
2210075-16	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222327	S221034
RG_ERCKMD_1_PW-1_2022-09_NP										
2210075-17	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-17	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-17	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-17	Se(IV)	PW	D	0.088		0.020	0.075	µg/L	B222327	S221034
2210075-17	Se(VI)	PW	D	126		0.010	0.055	µg/L	B222327	S221034
2210075-17	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222327	S221034
2210075-17	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221034
2210075-17	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222327	S221034
2210075-17	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222327	S221034
RG_ERCKMD_1_PW-2_2022-09_NP										
2210075-18	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222390	S221067
2210075-18	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222390	S221067
2210075-18	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222390	S221067
2210075-18	Se(IV)	PW	D	0.081		0.020	0.075	µg/L	B222390	S221067
2210075-18	Se(VI)	PW	D	137		0.010	0.055	µg/L	B222390	S221067
2210075-18	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222390	S221067
2210075-18	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222390	S221067
2210075-18	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222390	S221067
2210075-18	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222390	S221067



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKMD_1_PW-3_2022-09_NP										
2210075-19	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222390	S221067
2210075-19	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222390	S221067
2210075-19	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222390	S221067
2210075-19	Se(IV)	PW	D	0.103		0.020	0.075	µg/L	B222390	S221067
2210075-19	Se(VI)	PW	D	144		0.010	0.055	µg/L	B222390	S221067
2210075-19	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222390	S221067
2210075-19	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222390	S221067
2210075-19	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222390	S221067
2210075-19	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222390	S221067
RG_ERCKMD_2_PW-1_2022-09_NP										
2210075-20	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222390	S221067
2210075-20	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222390	S221067
2210075-20	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222390	S221067
2210075-20	Se(IV)	PW	D	0.069	J	0.020	0.075	µg/L	B222390	S221067
2210075-20	Se(VI)	PW	D	139		0.010	0.055	µg/L	B222390	S221067
2210075-20	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222390	S221067
2210075-20	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222390	S221067
2210075-20	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222390	S221067
2210075-20	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222390	S221067
RG_ERCKMD_2_PW-2_2022-09_NP										
2210075-21	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222390	S221067
2210075-21	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222390	S221067
2210075-21	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222390	S221067
2210075-21	Se(IV)	PW	D	0.077		0.020	0.075	µg/L	B222390	S221067
2210075-21	Se(VI)	PW	D	98.4		0.010	0.055	µg/L	B222390	S221067
2210075-21	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222390	S221067
2210075-21	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222390	S221067
2210075-21	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222390	S221067
2210075-21	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222390	S221067



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKMD_2_PW-3_2022-09_NP										
2210075-22	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222390	S221067
2210075-22	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222390	S221067
2210075-22	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222390	S221067
2210075-22	Se(IV)	PW	D	0.122		0.020	0.075	µg/L	B222390	S221067
2210075-22	Se(VI)	PW	D	120		0.010	0.055	µg/L	B222390	S221067
2210075-22	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222390	S221067
2210075-22	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222390	S221067
2210075-22	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222390	S221067
2210075-22	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222390	S221067
RG_ERCKMD_3_PW-1_2022-09_NP										
2210075-23	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222390	S221067
2210075-23	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222390	S221067
2210075-23	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222390	S221067
2210075-23	Se(IV)	PW	D	0.048	J	0.020	0.075	µg/L	B222390	S221067
2210075-23	Se(VI)	PW	D	89.2		0.010	0.055	µg/L	B222390	S221067
2210075-23	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222390	S221067
2210075-23	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222390	S221067
2210075-23	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222390	S221067
2210075-23	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222390	S221067
RG_ERCKMD_3_PW-2_2022-09_NP										
2210075-24	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222390	S221067
2210075-24	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222390	S221067
2210075-24	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222390	S221067
2210075-24	Se(IV)	PW	D	0.055	J	0.020	0.075	µg/L	B222390	S221067
2210075-24	Se(VI)	PW	D	70.4		0.010	0.055	µg/L	B222390	S221067
2210075-24	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222390	S221067
2210075-24	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222390	S221067
2210075-24	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222390	S221067
2210075-24	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222390	S221067



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKMD_3_PW-3_2022-09_NP										
2210075-25	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222390	S221067
2210075-25	MeSe(IV)	PW	D	0.011	J	0.010	0.025	µg/L	B222390	S221067
2210075-25	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222390	S221067
2210075-25	Se(IV)	PW	D	0.272		0.020	0.075	µg/L	B222390	S221067
2210075-25	Se(VI)	PW	D	141		0.010	0.055	µg/L	B222390	S221067
2210075-25	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222390	S221067
2210075-25	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222390	S221067
2210075-25	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222390	S221067
2210075-25	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222390	S221067
RG_ERCKMD_WS-1_2022-09_NP										
2210075-26	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222390	S221067
2210075-26	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221067
2210075-26	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221067
2210075-26	Se(IV)	PW	D	0.050	J	0.020	0.075	µg/L	B222327	S221067
2210075-26	Se(VI)	PW	D	95.9		0.010	0.055	µg/L	B222327	S221067
2210075-26	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222327	S221067
2210075-26	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222327	S221067
2210075-26	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222327	S221067
2210075-26	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222327	S221067



Accuracy & Precision Summary

Batch: B222327
Lab Matrix: Water
Method: SOP BAL-4201

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222327-BS1	Blank Spike, (2236035)						
	MeSe(IV)		5.095	5.300	µg/L	104% 75-125	
	Se(IV)		5.000	4.826	µg/L	97% 75-125	
	Se(VI)		5.000	4.550	µg/L	91% 75-125	
	SeCN		5.015	4.594	µg/L	92% 75-125	
	SeMet		4.982	4.541	µg/L	91% 75-125	
B222327-DUP1	Duplicate, (2210075-07)						
	DMSeO	ND		ND	µg/L		N/C 25
	MeSe(IV)	ND		ND	µg/L		N/C 25
	MeSe(VI)	ND		ND	µg/L		N/C 25
	Se(IV)	0.069		0.058	µg/L		16% 25
	Se(VI)	97.62		96.23	µg/L		1% 25
	SeCN	ND		ND	µg/L		N/C 25
	SeMet	ND		ND	µg/L		N/C 25
	SeSO3	ND		ND	µg/L		N/C 25
Unk Se Sp	ND		ND	µg/L		N/C 25	
B222327-MS1	Matrix Spike, (2210075-07)						
	Se(IV)	0.069	4.900	4.444	µg/L	89% 75-125	
	Se(VI)	97.62	5.100	101.5	µg/L	NR 75-125	
	SeCN	ND	1.962	1.838	µg/L	94% 75-125	
	SeMet	ND	1.977	1.832	µg/L	93% 75-125	
B222327-MSD1	Matrix Spike Duplicate, (2210075-07)						
	Se(IV)	0.069	4.900	4.799	µg/L	97% 75-125	8% 25
	Se(VI)	97.62	5.100	102.1	µg/L	NR 75-125	N/C 25
	SeCN	ND	1.962	1.994	µg/L	102% 75-125	8% 25
	SeMet	ND	1.977	2.040	µg/L	103% 75-125	11% 25



Accuracy & Precision Summary

Batch: B222390
Lab Matrix: Water
Method: SOP BAL-4201

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222390-BS1	Blank Spike, (2236035)						
	MeSe(IV)		5.095	5.920	µg/L	116% 75-125	
	Se(IV)		5.000	5.279	µg/L	106% 75-125	
	Se(VI)		5.000	4.924	µg/L	98% 75-125	
	SeCN		5.015	4.960	µg/L	99% 75-125	
	SeMet		4.982	5.088	µg/L	102% 75-125	
B222390-DUP1	Duplicate, (2210075-21)						
	DMSeO	ND		ND	µg/L		N/C 25
	MeSe(IV)	ND		ND	µg/L		N/C 25
	MeSe(VI)	ND		ND	µg/L		N/C 25
	Se(IV)	0.077		0.071	µg/L		8% 25
	Se(VI)	98.35		97.58	µg/L		0.8% 25
	SeCN	ND		ND	µg/L		N/C 25
	SeMet	ND		ND	µg/L		N/C 25
	SeSO3	ND		ND	µg/L		N/C 25
Unk Se Sp	ND		ND	µg/L		N/C 25	
B222390-MS1	Matrix Spike, (2210075-21)						
	Se(IV)	0.077	4.900	4.908	µg/L	99% 75-125	
	Se(VI)	98.35	5.100	102.9	µg/L	NR 75-125	
	SeCN	ND	1.962	1.988	µg/L	101% 75-125	
	SeMet	ND	1.977	2.083	µg/L	105% 75-125	
B222390-MSD1	Matrix Spike Duplicate, (2210075-21)						
	Se(IV)	0.077	4.900	4.940	µg/L	99% 75-125	0.7% 25
	Se(VI)	98.35	5.100	103.2	µg/L	NR 75-125	N/C 25
	SeCN	ND	1.962	1.948	µg/L	99% 75-125	2% 25
	SeMet	ND	1.977	2.093	µg/L	106% 75-125	0.5% 25



Accuracy & Precision Summary

Batch: B222390
Lab Matrix: Water
Method: SOP BAL-4201

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222390-DUP2	Duplicate, (2210088-12)						
	DMS ₂ O	0.020		0.020	µg/L		2% 25
	MeSe(IV)	ND		ND	µg/L		N/C 25
	MeSe(VI)	ND		ND	µg/L		N/C 25
	Se(IV)	8.910		8.917	µg/L		0.07% 25
	Se(VI)	406.7		402.5	µg/L		1% 25
	SeCN	ND		ND	µg/L		N/C 25
	SeMet	ND		ND	µg/L		N/C 25
	SeSO ₃	ND		ND	µg/L		N/C 25
Unk Se Sp	ND		ND	µg/L		N/C 25	
B222390-MS2	Matrix Spike, (2210088-12)						
	Se(IV)	8.910	9.800	17.50	µg/L	88% 75-125	
	Se(VI)	406.7	10.20	420.7	µg/L	NR 75-125	
	SeCN	ND	3.924	4.016	µg/L	102% 75-125	
	SeMet	ND	3.954	4.143	µg/L	105% 75-125	
B222390-MSD2	Matrix Spike Duplicate, (2210088-12)						
	Se(IV)	8.910	9.800	17.11	µg/L	84% 75-125	2% 25
	Se(VI)	406.7	10.20	416.8	µg/L	NR 75-125	N/C 25
	SeCN	ND	3.924	3.997	µg/L	102% 75-125	0.5% 25
	SeMet	ND	3.954	4.206	µg/L	106% 75-125	2% 25



Method Blanks & Reporting Limits

Batch: B222327
Matrix: Water
Method: SOP BAL-4201
Analyte: DMSeO

Sample	Result	Units	
B222327-BLK1	0.00	µg/L	
B222327-BLK2	0.00	µg/L	
B222327-BLK3	0.00	µg/L	
B222327-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005

Analyte: MeSe(IV)

Sample	Result	Units	
B222327-BLK1	0.00	µg/L	
B222327-BLK2	0.00	µg/L	
B222327-BLK3	0.00	µg/L	
B222327-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005

Analyte: MeSe(VI)

Sample	Result	Units	
B222327-BLK1	0.00	µg/L	
B222327-BLK2	0.00	µg/L	
B222327-BLK3	0.00	µg/L	
B222327-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005



Method Blanks & Reporting Limits

Analyte: Se(IV)

Sample	Result	Units	
B222327-BLK1	0.004	µg/L	
B222327-BLK2	0.004	µg/L	
B222327-BLK3	0.004	µg/L	
B222327-BLK4	0.004	µg/L	
Average:	0.004		MDL: 0.004
Limit:	0.015		MRL: 0.015

Analyte: Se(VI)

Sample	Result	Units	
B222327-BLK1	0.00	µg/L	
B222327-BLK2	0.00	µg/L	
B222327-BLK3	0.00	µg/L	
B222327-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.011		MRL: 0.011

Analyte: SeCN

Sample	Result	Units	
B222327-BLK1	0.00	µg/L	
B222327-BLK2	0.00	µg/L	
B222327-BLK3	0.00	µg/L	
B222327-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.010		MRL: 0.010

Analyte: SeMet

Sample	Result	Units	
B222327-BLK1	0.00	µg/L	
B222327-BLK2	0.00	µg/L	
B222327-BLK3	0.00	µg/L	
B222327-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.005		MRL: 0.005



Method Blanks & Reporting Limits

Analyte: SeSO3

Sample	Result	Units	
B222327-BLK1	0.00	µg/L	
B222327-BLK2	0.00	µg/L	
B222327-BLK3	0.00	µg/L	
B222327-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.011		MRL: 0.011

Analyte: Unk Se Sp

Sample	Result	Units	
B222327-BLK1	0.00	µg/L	
B222327-BLK2	0.00	µg/L	
B222327-BLK3	0.00	µg/L	
B222327-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.015		MRL: 0.015



Method Blanks & Reporting Limits

Batch: B222390
Matrix: Water
Method: SOP BAL-4201
Analyte: DMSeO

Sample	Result	Units	
B222390-BLK1	0.00	µg/L	
B222390-BLK2	0.00	µg/L	
B222390-BLK3	0.00	µg/L	
B222390-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005

Analyte: MeSe(IV)

Sample	Result	Units	
B222390-BLK1	0.00	µg/L	
B222390-BLK2	0.00	µg/L	
B222390-BLK3	0.00	µg/L	
B222390-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005

Analyte: MeSe(VI)

Sample	Result	Units	
B222390-BLK1	0.00	µg/L	
B222390-BLK2	0.00	µg/L	
B222390-BLK3	0.00	µg/L	
B222390-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005



Method Blanks & Reporting Limits

Analyte: Se(IV)

Sample	Result	Units	
B222390-BLK1	0.00	µg/L	
B222390-BLK2	0.00	µg/L	
B222390-BLK3	0.00	µg/L	
B222390-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.004
Limit: 0.015			MRL: 0.015

Analyte: Se(VI)

Sample	Result	Units	
B222390-BLK1	0.00	µg/L	
B222390-BLK2	0.00	µg/L	
B222390-BLK3	0.00	µg/L	
B222390-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.011			MRL: 0.011

Analyte: SeCN

Sample	Result	Units	
B222390-BLK1	0.00	µg/L	
B222390-BLK2	0.00	µg/L	
B222390-BLK3	0.00	µg/L	
B222390-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.010			MRL: 0.010

Analyte: SeMet

Sample	Result	Units	
B222390-BLK1	0.00	µg/L	
B222390-BLK2	0.00	µg/L	
B222390-BLK3	0.00	µg/L	
B222390-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005



Method Blanks & Reporting Limits

Analyte: SeSO3

Sample	Result	Units	
B222390-BLK1	0.00	µg/L	
B222390-BLK2	0.00	µg/L	
B222390-BLK3	0.00	µg/L	
B222390-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.011		MRL: 0.011

Analyte: Unk Se Sp

Sample	Result	Units	
B222390-BLK1	0.00	µg/L	
B222390-BLK2	0.00	µg/L	
B222390-BLK3	0.00	µg/L	
B222390-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.015		MRL: 0.015



Sample Containers

Lab ID: 2210075-01				Report Matrix: PW			Collected: 09/27/2022	
Sample: RG_ERCKDT_1_PW-1_2022-09_NP				Sample Type: Sample + Sum			Received: 10/06/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2210075	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2210075	

Lab ID: 2210075-02				Report Matrix: PW			Collected: 09/27/2022	
Sample: RG_ERCKDT_1_PW-2_2022-09_NP				Sample Type: Sample + Sum			Received: 10/06/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2210075	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2210075	

Lab ID: 2210075-03				Report Matrix: PW			Collected: 09/27/2022	
Sample: RG_ERCKDT_1_PW-3_2022-09_NP				Sample Type: Sample + Sum			Received: 10/06/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2210075	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2210075	

Lab ID: 2210075-04				Report Matrix: PW			Collected: 09/27/2022	
Sample: RG_ERCKDT_2_PW-1_2022-09_NP				Sample Type: Sample + Sum			Received: 10/06/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2210075	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2210075	



Sample Containers

Lab ID: 2210075-05				Report Matrix: PW			Collected: 09/27/2022	
Sample: RG_ERCKDT_2_PW-2_2022-09_NP				Sample Type: Sample + Sum			Received: 10/06/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2210075	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2210075	

Lab ID: 2210075-06				Report Matrix: PW			Collected: 09/27/2022	
Sample: RG_ERCKDT_2_PW-3_2022-09_NP				Sample Type: Sample + Sum			Received: 10/06/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2210075	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2210075	

Lab ID: 2210075-07				Report Matrix: PW			Collected: 09/27/2022	
Sample: RG_ERCKDT_3_PW-1_2022-09_NP				Sample Type: Sample + Sum			Received: 10/06/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2210075	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2210075	

Lab ID: 2210075-08				Report Matrix: PW			Collected: 09/27/2022	
Sample: RG_ERCKDT_3_PW-2_2022-09_NP				Sample Type: Sample + Sum			Received: 10/06/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2210075	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2210075	



Sample Containers

Lab ID: 2210075-09			Report Matrix: PW			Collected: 09/27/2022		
Sample: RG_ERCKDT_WS-1_2022-09_NP			Sample Type: Sample + Sum			Received: 10/06/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2210075	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2210075	

Lab ID: 2210075-10			Report Matrix: PW			Collected: 09/27/2022		
Sample: RG_ERCKUT_1_PW-1_2022-09_NP			Sample Type: Sample + Sum			Received: 10/06/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2210075	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2210075	

Lab ID: 2210075-11			Report Matrix: PW			Collected: 09/27/2022		
Sample: RG_ERCKUT_1_PW-2_2022-09_NP			Sample Type: Sample + Sum			Received: 10/06/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2210075	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2210075	

Lab ID: 2210075-12			Report Matrix: PW			Collected: 09/27/2022		
Sample: RG_ERCKUT_2_PW-1_2022-09_NP			Sample Type: Sample + Sum			Received: 10/06/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2210075	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2210075	



Sample Containers

Lab ID: 2210075-13				Report Matrix: PW			Collected: 09/27/2022	
Sample: RG_ERCKUT_2_PW-2_2022-09_NP				Sample Type: Sample + Sum			Received: 10/06/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2210075	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2210075	

Lab ID: 2210075-14				Report Matrix: PW			Collected: 09/27/2022	
Sample: RG_ERCKUT_3_PW-1_2022-09_NP				Sample Type: Sample + Sum			Received: 10/06/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2210075	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2210075	

Lab ID: 2210075-15				Report Matrix: PW			Collected: 09/27/2022	
Sample: RG_ERCKUT_3_PW-2_2022-09_NP				Sample Type: Sample + Sum			Received: 10/06/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2210075	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2210075	

Lab ID: 2210075-16				Report Matrix: PW			Collected: 09/27/2022	
Sample: RG_ERCKUT_WS-1_2022-09_NP				Sample Type: Sample + Sum			Received: 10/06/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2210075	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2210075	



Sample Containers

Lab ID: 2210075-17			Report Matrix: PW			Collected: 09/27/2022	
Sample: RG_ERCKMD_1_PW-1_2022-09_NP			Sample Type: Sample + Sum			Received: 10/06/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2210075
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2210075

Lab ID: 2210075-18			Report Matrix: PW			Collected: 09/27/2022	
Sample: RG_ERCKMD_1_PW-2_2022-09_NP			Sample Type: Sample + Sum			Received: 10/06/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2210075
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2210075

Lab ID: 2210075-19			Report Matrix: PW			Collected: 09/27/2022	
Sample: RG_ERCKMD_1_PW-3_2022-09_NP			Sample Type: Sample + Sum			Received: 10/06/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2210075
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2210075

Lab ID: 2210075-20			Report Matrix: PW			Collected: 09/27/2022	
Sample: RG_ERCKMD_2_PW-1_2022-09_NP			Sample Type: Sample + Sum			Received: 10/06/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2210075
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2210075



Sample Containers

Lab ID: 2210075-21			Report Matrix: PW			Collected: 09/27/2022	
Sample: RG_ERCKMD_2_PW-2_2022-09_NP			Sample Type: Sample + Sum			Received: 10/06/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2210075
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2210075

Lab ID: 2210075-22			Report Matrix: PW			Collected: 09/27/2022	
Sample: RG_ERCKMD_2_PW-3_2022-09_NP			Sample Type: Sample + Sum			Received: 10/06/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2210075
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2210075

Lab ID: 2210075-23			Report Matrix: PW			Collected: 09/27/2022	
Sample: RG_ERCKMD_3_PW-1_2022-09_NP			Sample Type: Sample + Sum			Received: 10/06/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2210075
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2210075

Lab ID: 2210075-24			Report Matrix: PW			Collected: 09/27/2022	
Sample: RG_ERCKMD_3_PW-2_2022-09_NP			Sample Type: Sample + Sum			Received: 10/06/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2210075
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2210075



Sample Containers

Lab ID: 2210075-25			Report Matrix: PW			Collected: 09/27/2022		
Sample: RG_ERCKMD_3_PW-3_2022-09_NP			Sample Type: Sample + Sum			Received: 10/06/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2210075	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2210075	

Lab ID: 2210075-26			Report Matrix: PW			Collected: 09/27/2022		
Sample: RG_ERCKMD_WS-1_2022-09_NP			Sample Type: Sample + Sum			Received: 10/06/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2210075	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2210075	

Shipping Containers

Cooler 4 - 2210075

Received: October 6, 2022 6:57
Tracking No: RWHV95592 via Courier
Coolant Type: Blue Ice
Temperature: 0.6 °C

Description: Styrofoam Cooler
Damaged in transit? No
Returned to client? No
Comments: IR#:1

Custody seals present? No
Custody seals intact? No
COC present? Yes

COC ID:		September EVO LAEMP 2022 PW				TURNAROUND TIME:						
PROJECT/CLIENT INFO								LABORATORY				
Facility Name / Job#	Regional EVO LAEMP				Lab Name	Brooks Applied Labs				Excel	PDF	EDD
Project Manager	Mike Pope				Lab Contact	Ben Wozniak						
Email	mike.pope@teck.com				Email	Ben@brooksapplied.com				mike.pope@teck.com		
Address	421 Pine Avenue				Address	13751 Lake City Way NE						
						Suite 108				lbrown@minnow.ca		
City	Sparwood		Province	BC	City	Seattle	Province	WA	tyler.mehler@minnow.ca			
Postal Code	V0B 2G0		Country	Canada	Postal Code	98125	Country	USA				
Phone Number	343-333-3905				Phone Number	(206) 753-6158				PO number	VPO00847032	
SAMPLE DETAILS								ANALYSIS REQUESTED				
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	Brooks_Sg_Speciation				
RG_ERCKDT_1_PW-1_2022-09_NP	RG_ERCKDT	PW	No	9/27/2022	10:00	G	2	X				
RG_ERCKDT_1_PW-2_2022-09_NP	RG_ERCKDT	PW	No	9/27/2022	10:15	G	2	X				
RG_ERCKDT_1_PW-3_2022-09_NP	RG_ERCKDT	PW	No	9/27/2022	10:18	G	2	X				
RG_ERCKDT_2_PW-1_2022-09_NP	RG_ERCKDT	PW	No	9/27/2022	10:30	G	2	X				
RG_ERCKDT_2_PW-2_2022-09_NP	RG_ERCKDT	PW	No	9/27/2022	10:45	G	2	X				
RG_ERCKDT_2_PW-3_2022-09_NP	RG_ERCKDT	PW	No	9/27/2022	11:00	G	2	X				
RG_ERCKDT_3_PW-1_2022-09_NP	RG_ERCKDT	PW	No	9/27/2022	11:15	G	2	X				
RG_ERCKDT_3_PW-2_2022-09_NP	RG_ERCKDT	PW	No	9/27/2022	11:18	G	2	X				
RG_ERCKDT_WS-1_2022-09_NP	RG_ERCKDT	PW	No	9/27/2022	11:30	G	2	X				
ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS				RELINQUISHED BY/AFFILIATION				DATE/TIME	ACCEPTED BY/AFFILIATION			
Three pages for COC.				Alex McClymont				September 30, 2022	ERL/BAL			
NB OF BOTTLES RETURNED/DESCRIPTION												
Regular (default) x								Sampler's Name	Tyler Mehler		Mobile #	587-597-1612
Priority (2-3 business days) - 50% surcharge								Sampler's Signature			Date/Time	September 30, 2022
Emergency (1 Business Day) - 100% surcharge												
For Emergency <1 Day, ASAP or Weekend - Contact ALS												

COC ID:		September EVO LAEMP 2022 PW				TURNAROUND TIME:									
PROJECT/CLIENT INFO						LABORATORY									
Facility Name / Job#		Regional EVO LAEMP				Lab Name		Brooks Applied Labs							
Project Manager		Mike Pope				Lab Contact		Ben Wozniak							
Email		mike.pope@teck.com				Email		Ben@brooksapplied.com							
Address		421 Pine Avenue				Address		13751 Lake City Way NE							
City		Sparwood		Province	BC	City		Seattle	Province	WA					
Postal Code		V0B 2G0		Country	Canada	Postal Code		98125	Country	USA					
Phone Number		343-333-3905				Phone Number		(206) 753-6158							
SAMPLE DETAILS						ANALYSIS REQUESTED									
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS REQUESTED	ANALYSIS REQUESTED	ANALYSIS REQUESTED	ANALYSIS REQUESTED	ANALYSIS REQUESTED	ANALYSIS REQUESTED	ANALYSIS REQUESTED	ANALYSIS REQUESTED
RG_ERCKUT_1_PW-1_2022-09_NP	RG_ERCKUT	PW	No	9/27/2022	10:00	G	2	X							
RG_ERCKUT_1_PW-2_2022-09_NP	RG_ERCKUT	PW	No	9/27/2022	10:15	G	2	X							
RG_ERCKUT_2_PW-1_2022-09_NP	RG_ERCKUT	PW	No	9/27/2022	10:30	G	2	X							
RG_ERCKUT_2_PW-2_2022-09_NP	RG_ERCKUT	PW	No	9/27/2022	10:32	G	2	X							
RG_ERCKUT_3_PW-1_2022-09_NP	RG_ERCKUT	PW	No	9/27/2022	10:36	G	2	X							
RG_ERCKUT_3_PW-2_2022-09_NP	RG_ERCKUT	PW	No	9/27/2022	11:00	G	2	X							
RG_ERCKUT_WS-1_2022-09_NP	RG_ERCKUT	PW	No	9/27/2022	11:15	G	2	X							
ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS						RELINQUISHED BY/AFFILIATION		DATE/TIME		ACCEPTED BY/AFFILIATION					
Three pages for COC.						Alex McClymont		September 30, 2022		ERC / BAL		10/6/22 6:57			
						NB OF BOTTLES RETURNED/DESCRIPTION									
Regular (default) x						Sampler's Name		Tyler Mehler		Mobile #		587-597-1612			
Priority (2-3 business days) - 50% surcharge						Sampler's Signature				Date/Time		September 30, 2022			
Emergency (1 Business Day) - 100% surcharge															
For Emergency <1 Day, ASAP or Weekend - Contact ALS															

COC ID: **September EVO LAEMP 2022 PW**

TURNAROUND TIME:

PROJECT/CLIENT INFO

LABORATORY

Facility Name / Job# Regional EVO LAEMP

Lab Name Brooks Applied Labs

Project Manager Mike Pope

Lab Contact Ben Wozniak

Email mike.pope@teck.com

Email Ben@brooksapplied.com

Address 421 Pine Avenue

Address 13751 Lake City Way NE

City

Sparwood

Province BC

City

Seattle

Province WA

Postal Code

V0B 2G0

Country Canada

Postal Code

98125

Country USA

Phone Number 343-333-3905

Phone Number (206) 753-6158

	Excel	PDF	EDD
mike.pope@teck.com	X	X	X
lbowron@minnow.ca	X	X	X
jesica.rtz@teck.com	X	X	X
Tyler.mehler@minnow.ca	X	X	X

SAMPLE DETAILS

ANALYSIS REQUESTED

Filtered: F Field L Lab FL Field @ Lab % Non

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS REQUESTED				
								PRESENCE	ANALYSIS	FIELD	LAB	
RG_ERCKMD_1_PW-1_2022-09_NP	RG_ERCKMD	PW	No	9/27/2022	10:00	G	2	F				
RG_ERCKMD_1_PW-2_2022-09_NP	RG_ERCKMD	PW	No	9/27/2022	10:15	G	2	N				
RG_ERCKMD_1_PW-3_2022-09_NP	RG_ERCKMD	PW	No	9/27/2022	10:18	G	2	Brooks_Sc_Speciation				
RG_ERCKMD_2_PW-1_2022-09_NP	RG_ERCKMD	PW	No	9/27/2022	10:30	G	2					
RG_ERCKMD_2_PW-2_2022-09_NP	RG_ERCKMD	PW	No	9/27/2022	10:45	G	2					
RG_ERCKMD_2_PW-3_2022-09_NP	RG_ERCKMD	PW	No	9/27/2022	11:00	G	2					
RG_ERCKMD_3_PW-1_2022-09_NP	RG_ERCKMD	PW	No	9/27/2022	11:15	G	2					
RG_ERCKMD_3_PW-2_2022-09_NP	RG_ERCKMD	PW	No	9/27/2022	11:18	G	2					
RG_ERCKMD_3_PW-3_2022-09_NP	RG_ERCKMD	PW	No	9/27/2022	11:28	G	2					
RG_ERCKMD_WS-1_2022-09_NP	RG_ERCKMD	PW	No	9/27/2022	11:30	G	2					

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS

RELINQUISHED BY/AFFILIATION

DATE/TIME

ACCEPTED BY/AFFILIATION

Three pages for COC.	Alex McClymont	September 30, 2022	ERL / BAL	10/6/22 6:57

NB OF BOTTLES RETURNED/DESCRIPTION

Regular (default) x	Sampler's Name	Tyler Mehler	Mobile #	587-597-1612
Priority (2-3 business days) - 50% surcharge	Sampler's Signature		Date/Time	September 30, 2022
Emergency (1 Business Day) - 100% surcharge				
For Emergency <1 Day, ASAP or Weekend - Contact ALS				

Confidential

STRAIGHT BILL OF LADING
NOT NEGOTIABLE

KW HOT SHOT SERVICE INC.

250-425-7447
24 Hour Hot Shot Service

BAL Final Report 2210075
No. 95592

Sparwood, BC
Terrace, BC
Red Deer, AB

Vancouver, BC
Calgary, AB
Montreal, QC

Prince George, BC
Edmonton, AB
Spokane, WA

Elkford, BC
Ft. McMurray, AB
Shelby, MT

Tumbler Ridge, BC
Hinton, AB
Gillette, WY

INVOICE TO		DATE	
BILL OF LADING #		PURCHASE ORDER NUMBER	
SHIPPER (FROM)		CONSIGNEE (TO)	
STREET		STREET	
CITY/PROVINCE	POSTAL CODE	CITY/PROVINCE	POSTAL CODE
SPECIAL INSTRUCTIONS			
PACKAGES		DESCRIPTION OF ARTICLES AND SPECIAL MARKS	WEIGHT (Subject to Correction)
FREIGHT CHARGES SHIPPER TO CHECK			
<input type="checkbox"/> PREPAID <input type="checkbox"/> COLLECT			
If not indicated, shipping will automatically move collect			
FEE _____			
WAITING _____			
XPU _____			
CHARGES _____			
FSC _____			
US _____			
SUB TOTAL _____			
GST _____			
UNIT #		DECLARED VALUATION: Maximum liability of carrier is \$2.00 per lb. (\$4.41 per kilogram) unless declared valuation states otherwise.	
DRIVER'S SIGNATURE - PICK UP BY		PICK UP TIME	DRIVER'S SIGNATURE - DELIVERY BY
FINISH TIME		TOTAL \$ _____	
NOTICE OF CLAIM: (a) No carrier is liable for loss, damage or delay of any goods under the Bill of Lading unless notice is given in writing to the originating carrier or the delivering carrier within sixty (60) days after the delivery of the goods... (b) The final statement of the claim must be filed within nine (9) months from the date of shipment... RECEIVED at the point of origin on the date specified from the consignor mentioned herein, the property herein described, in apparent good order, except as noted (contents and condition of contents of package unknown) marked, consigned and destined as indicated below, which the carrier agrees to carry and to deliver to the consignee at the said destination subject to the rates and classification in effect on the date of shipment... IF AT OWNER'S RISK, WRITE ORD HERE _____			
SHIPPER PRINT	CONSIGNEE PRINT	DATE	TIME
SHIPPER SIGN	CONSIGNEE SIGN		
WHITE: Office	YELLOW: Carrier	PINK: Consignee	GOLDENROAD: Shipper
GST # 864540398RT0001			NUMBER OF PIECES RECEIVED ▲

Cooler ID: cooler 4

COC (Y/N)

Temperature: 0.6°C

IR: R-IR-1

Coolant Type: Ice Blue Ice Ambient

Notes:

Sampling Locations:

Sample Types:	T/D	SP	T/D	SP	T/D	SP	T/D	SP	T/D	SP
Container Types:	Soil									
Opened By:	ERL									

Date: 10/6/22

15mL
Cent

Effective 7/29/20

Revision 004



November 21, 2022

Teck Resources Limited - Vancouver
 Mike Pope
 421 Pine Avenue
 Sparwood, B.C. CANADA V0B2G0
mike.pope@teck.com

Re: Regional Effects Program

Dear Mike Pope,

On November 10, 2022, Brooks Applied Labs (BAL) received sixty-four (64) aqueous samples. The samples were logged-in for total recoverable selenium [Se], dissolved Se [Se], and Se speciation analyses, according to the chain-of-custody (COC) forms.

Date/Time Collected values listed on the chain-of-custody (COC) forms did not exactly match the corresponding **Date/Time Collected** values on the container labels for 2211127-76, 2211127-77, 2211127-82, and 2211127-83. The discrepancies are described in the table below.

Date/Time Collected Discrepancies

Laboratory ID	Sample ID	Date/Time Collected (on COC form)	Date/Time Collected (on container label)
2211127-76	RG_ALUSM_WS_LAEMP_EVO_2022-11_NP-NAL	11/03/2022 14:00	11/03/2022 14:30
2211127-77	RG_ALUSM_WS_LAEMP_EVO_2022-11_NP-NAL	11/03/2022 14:00	11/03/2022 14:30
2211127-82	RG_FBLANK2_WS_LAEMP_EVO_2022-11_NP-NAL	11/03/2022 09:00	11/03/2022 11:00
2211127-83	RG_FBLANK2_WS_LAEMP_EVO_2022-11_NP-NAL	11/03/2022 09:00	11/03/2022 11:00

Per client request, samples 2211127-76, 2211127-77, 2211127-82, and 2211127-83 were logged in and reported using the **Date/Time Collected** values listed on the COC form (*column 3 in the table above*).

Chain-of-custody (COC) forms were received with the sample shipment and the laboratory documented receipt of the samples on these COC forms. Revised COC forms (*for COC pages 2, 3, and 4*) were subsequently provided via email. Per client request, BAL was instructed to use the corrected **Date/Time Collected** values (on the revised COC forms) for reporting. Please see the revised COC forms at the end of this report. The cases where changes to **Date/Time Collected** values were requested are highlighted in

yellow on the revised COC forms. In order to document custody, both sets of COC forms are included in this report.

The container labels for 2211127-02 and 2211127-20 both listed the following information: (*RG_ERCKDT_1_PW-2_2022-10_N, 10/31/2022 08:45*), which describes the information on the COC forms that corresponds to 2211127-02. A container for (*RG_ERCKUT_1_PW-2_2022-10_N, 10/31/2022 13:15*), which describes the information on the COC forms that corresponds to 2211127-20, was not received. Per client request, the *RG_ERCKDT_1_PW-2_2022-10_N, 10/31/2022 08:45* was assigned to 2211127-20 and sample 2211127-02 was assigned to (*RG_ERCKUT_1_PW-2_2022-10_N, 10/31/2022 13:15*).

The dissolved fraction for *RG_RIVER_WS_LAEMP_EVO_2022-11_NP-NAL* (Laboratory ID = 2211127-46) arrived in a container that leaked during shipping. The entire sample volume for 2211127-46 was lost. A fraction of the corresponding unfiltered, total recoverable Se fraction (laboratory ID: 2211127-47) was filtered (0.45 μm) into a new container to support the dissolved Se analysis for *RG_RIVER_WS_LAEMP_EVO_2022-11_NP-NAL*. This new dissolved Se fraction was preserved (pH < 2) by BAL staff at the time of receipt and logged in under 2211127-46. The filtration for 2211127-46 took place beyond the (2-calander day) filtration holding time. Consequently, the dissolved Se result for 2211127-46 is qualified (**H**) for a filtration holding time violation.

The sample fractions for total recoverable Se and dissolved Se were not preserved in the field. The samples were preserved (pH < 2) upon receipt at BAL. All sample fractions for total recoverable Se and dissolved Se were preserved within the (14 calendar day) preservation holding time.

The sample fractions logged in for Se speciation and dissolved Se had been field-filtered prior to receipt at BAL. All samples were stored according to BAL SOPs.

Total Recoverable Se and Dissolved Se

Each aqueous sample fraction for dissolved Se was digested in a closed vessel (bomb) with nitric and hydrochloric acids. The resulting digests were analyzed for Se content via inductively coupled plasma triple quadrupole mass spectrometry (ICP-QQQ-MS). The ICP-QQQ-MS instrumentation uses advanced interference removal techniques to ensure accuracy of the sample results. For more information, please visit the *Interference Reduction Technology* section on our website, brooksupplied.com.

The dissolved Se result for 2211127-46 is qualified (**H**) for filtration beyond the (2-calander day) filtration holding time.

Selenium Speciation

Each aqueous sample was analyzed for selenium speciation using ion chromatography inductively coupled plasma collision reaction cell mass spectrometry (IC-ICP-CRC-MS). Selenium species are chromatographically separated on an ion exchange column and then quantified using inductively coupled plasma collision reaction cell mass spectrometry (ICP-CRC-MS); for more information on this determinative technique, please visit the *Interference Reduction Technology* section on our website. The chromatographic method applied for the analyses provides greater retention of methylseleninic acid and selenomethionine, allowing for more definitive quantitation of these species.

In accordance with the quotation issued for this project, selenium speciation was defined as dissolved selenite [Se(IV)], selenate [Se(VI)], selenocyanate [SeCN], methylseleninic acid [MeSe(IV)], methaneselenonic acid [MeSe(VI)], selenomethionine [SeMef], selenosulfate [SeSO₃], and dimethylselenoxide [DMSeO]. Unknown Se species was defined as the total concentration of all unknown Se species observed during the analysis. This item is identified in the report as [Unk Se Sp].

DMSeO elutes early in the chromatographic run due to the nature of the molecule and the applied chromatographic separation method. Since this species elutes near the dead volume, additional selenium species may coelute. Alternate methods can be applied, upon client request, to increase the separation of DMSeO from potentially co-eluting selenium species.

Poor mass balance was observed in *RG_RIVER_WS_LAEMP_EVO_2022-11_N* when the sum of Se species (in sample 2211127-45) were compared to the corresponding dissolved Se result (2211127-46). Container labels were inspected and there was no indication that samples had been mis-labeled. Re-analyses confirmed the results for 2211127-45, 2211127-46, and 2211127-47. Consequently, no additional corrective actions are necessary. Results for these samples are reported from initial injections, and the reported results are deemed representative of the submitted containers.

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

In instances where a matrix spike/matrix spike duplicate (MS/MSD) set was spiked at a level less than the native sample concentration, the recoveries and the relative percent difference (RPD) are not considered valid indicators of data quality. In such instances, the recoveries of the laboratory fortified blanks (BS) and/or standard reference materials (SRM) demonstrate the accuracy of the applied methods. When the spiking level was less than 25% of the native sample concentration, the spike recovery was not reported (**NR**) and the relative percent difference (RPD) of the MS/MSD set was not calculated (**N/C**).

In cases when either the native sample concentration was non-detectable (reported as less than or equal to the MDL) and/or the corresponding DUP result was also non-detectable, the RPD between the two values was not calculated (**N/C**).

Except for concentration qualifiers and items noted above, all data were reported without qualification. All associated quality control sample results met the acceptance criteria.

BAL verifies that the reported results of all analyses for which the laboratory is accredited meet the requirements of the accrediting body, unless otherwise noted in the report narrative. For more information regarding accreditations please see the *Report Information* and *Batch Summary* pages. This report must be used in its entirety for interpretation of results.

Please feel free to contact us if you have any questions regarding this report.

Sincerely,

A handwritten signature in black ink, appearing to read 'Jeremy Maute', with a stylized flourish at the end.

Jeremy Maute

Senior Project Manager

Jeremy@brooksapplied.com



Report Information

General Disclaimers

Test results are based solely upon the sample submitted to Brooks Applied Labs in the condition it was received. This report shall not be reproduced or copied, except in full, without written approval of the laboratory. Brooks Applied Labs is not responsible for the consequences arising from the use of a partial report.

Laboratory Accreditation

BAL maintains accreditation with various state and national agencies for select test methods. For a current list of BAL accreditations, please visit our website at <http://www.brooksapplied.com/resources/certificates-permits/>. The reported analyte/matrix/method combination shall be considered outside BAL's scopes of accreditation unless otherwise identified as ISO, TNI, or ISO,TNI in the tables. It is the responsibility of the client to verify whether a specific accreditation is required for the intended data use.

ISO: ISO/IEC 17025:2017 accredited test method. Issued by ANSI National Accreditation Board (ANAB), #ADE-1447.02

TNI: NELAP accredited test method. Issued by the State of Florida Department of Health, #E87982.

ISO,TNI: Test method is accredited under both the ISO/IEC 17025:2017 and NELAP accreditations referenced above.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

AR	as received	MS	matrix spike
BAL	Brooks Applied Labs	MSD	matrix spike duplicate
BLK	method blank	ND	non-detect
BS	blank spike	NR	non-reportable
CAL	calibration standard	N/C	not calculated
CCB	continuing calibration blank	PS	post preparation spike
CCV	continuing calibration verification	REC	percent recovery
COC	chain of custody record	RPD	relative percent difference
D	dissolved fraction	SCV	secondary calibration verification
DUP	duplicate	SOP	standard operating procedure
IBL	instrument blank	SRM	reference material
ICV	initial calibration verification	T	total fraction
MDL	method detection limit	TR	total recoverable fraction
MRL	method reporting limit		

Definition of Data Qualifiers

E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Please see narrative for explanation.
J	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1	Estimated value. A full explanation is presented in the narrative.
M	Duplicate precision (RPD) was not within acceptance criteria. Please see narrative for explanation.
N	Spike recovery was not within acceptance criteria. Please see narrative for explanation.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.
Z	Holding time and/or preservation requirements not established for this method; however, BAL recommendations for holding time were not followed. Please see narrative for explanation.



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
RG_ERCKDT_1_PW-1_2022-10_N	2211127-01	PW	Sample	10/31/2022	11/10/2022
RG_ERCKUT_1_PW-2_2022-10_N	2211127-02	PW	Sample	10/31/2022	11/10/2022
RG_ERCKDT_1_PW-3_2022-10_N	2211127-03	PW	Sample	10/31/2022	11/10/2022
RG_ERCKDT_2_PW-1_2022-10_N	2211127-04	PW	Sample	10/31/2022	11/10/2022
RG_ERCKDT_2_PW-2_2022-10_N	2211127-05	PW	Sample	10/31/2022	11/10/2022
RG_ERCKDT_2_PW-3_2022-10_N	2211127-06	PW	Sample	10/31/2022	11/10/2022
RG_ERCKDT_3_PW-1_2022-10_N	2211127-07	PW	Sample	10/31/2022	11/10/2022
RG_ERCKDT_3_PW-2_2022-10_N	2211127-08	PW	Sample	10/31/2022	11/10/2022
RG_ERCKDT_3_PW-3_2022-10_N	2211127-09	PW	Sample	10/31/2022	11/10/2022
RG_ERCKMD_1_PW-1_2022-10_N	2211127-10	PW	Sample	10/31/2022	11/10/2022
RG_ERCKMD_1_PW-2_2022-10_N	2211127-11	PW	Sample	10/31/2022	11/10/2022
RG_ERCKMD_1_PW-3_2022-10_N	2211127-12	PW	Sample	10/31/2022	11/10/2022
RG_ERCKMD_2_PW-1_2022-10_N	2211127-13	PW	Sample	10/31/2022	11/10/2022
RG_ERCKMD_2_PW-2_2022-10_N	2211127-14	PW	Sample	10/31/2022	11/10/2022
RG_ERCKMD_2_PW-3_2022-10_N	2211127-15	PW	Sample	10/31/2022	11/10/2022
RG_ERCKMD_3_PW-1_2022-10_N	2211127-16	PW	Sample	10/31/2022	11/10/2022
RG_ERCKMD_3_PW-2_2022-10_N	2211127-17	PW	Sample	10/31/2022	11/10/2022
RG_ERCKMD_3_PW-3_2022-10_N	2211127-18	PW	Sample	10/31/2022	11/10/2022
RG_ERCKUT_1_PW-1_2022-10_N	2211127-19	PW	Sample	10/31/2022	11/10/2022
RG_ERCKDT_1_PW-2_2022-10_N	2211127-20	PW	Sample	10/31/2022	11/10/2022
RG_ERCKUT_1_PW-3_2022-10_N	2211127-21	PW	Sample	10/31/2022	11/10/2022
RG_ERCKUT_2_PW-1_2022-10_N	2211127-22	PW	Sample	10/31/2022	11/10/2022
RG_ERCKUT_2_PW-2_2022-10_N	2211127-23	PW	Sample	10/31/2022	11/10/2022
RG_ERCKUT_3_PW-1_2022-11_N	2211127-24	PW	Sample	11/01/2022	11/10/2022
RG_ERCKUT_3_PW-2_2022-11_N	2211127-25	PW	Sample	11/01/2022	11/10/2022
RG_ERCKUT_3_PW-3_2022-11_N	2211127-26	PW	Sample	11/01/2022	11/10/2022
RG_ERCKDT_WS_LAEMP_EVO_20 22-10_N	2211127-27	WS	Sample	10/31/2022	11/10/2022
RG_ERCKDT_WS_LAEMP_EVO_20 22-10_NP-NAL	2211127-28	WS	Sample	10/31/2022	11/10/2022
RG_ERCKDT_WS_LAEMP_EVO_20 22-10_NP-NAL	2211127-29	WS	Sample	10/31/2022	11/10/2022
RG_ERCKMD_WS_LAEMP_EVO_2 022-10_N	2211127-30	WS	Sample	10/31/2022	11/10/2022
RG_ERCKMD_WS_LAEMP_EVO_2 022-10_NP-NAL	2211127-31	WS	Sample	10/31/2022	11/10/2022
RG_ERCKMD_WS_LAEMP_EVO_2 022-10_NP-NAL	2211127-32	WS	Sample	10/31/2022	11/10/2022
RG_ERCKUT_WS_LAEMP_EVO_20 22-11_N	2211127-33	WS	Sample	11/01/2022	11/10/2022



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
RG_ERCKUT_WS_LAEMP_EVO_20 22-11_NP-NAL	2211127-34	WS	Sample	11/01/2022	11/10/2022
RG_ERCKUT_WS_LAEMP_EVO_20 22-11_NP-NAL	2211127-35	WS	Sample	11/01/2022	11/10/2022
RG_ERCK_WS_LAEMP_EVO_2022- 11_N	2211127-36	WS	Sample	11/01/2022	11/10/2022
RG_ERCK_WS_LAEMP_EVO_2022- 11_NP-NAL	2211127-37	WS	Sample	11/01/2022	11/10/2022
RG_ERCK_WS_LAEMP_EVO_2022- 11_NP-NAL	2211127-38	WS	Sample	11/01/2022	11/10/2022
RG_ERCKUC_WS_LAEMP_EVO_20 22-11_N	2211127-39	WS	Sample	11/01/2022	11/10/2022
RG_ERCKUC_WS_LAEMP_EVO_20 22-11_NP-NAL	2211127-40	WS	Sample	11/01/2022	11/10/2022
RG_ERCKUC_WS_LAEMP_EVO_20 22-11_NP-NAL	2211127-41	WS	Sample	11/01/2022	11/10/2022
RG_GATEDP_WS_LAEMP_EVO_20 22-11_N	2211127-42	WS	Sample	11/01/2022	11/10/2022
RG_GATEDP_WS_LAEMP_EVO_20 22-11_NP-NAL	2211127-43	WS	Sample	11/01/2022	11/10/2022
RG_GATEDP_WS_LAEMP_EVO_20 22-11_NP-NAL	2211127-44	WS	Sample	11/01/2022	11/10/2022
RG_RIVER_WS_LAEMP_EVO_2022 -11_N	2211127-45	WS	Sample	11/01/2022	11/10/2022
RG_RIVER_WS_LAEMP_EVO_2022 -11_NP-NAL	2211127-46	WS	Sample	11/01/2022	11/10/2022
RG_RIVER_WS_LAEMP_EVO_2022 -11_NP-NAL	2211127-47	WS	Sample	11/01/2022	11/10/2022
RG_FBLANK_WS_LAEMP_EVO_20 22-11_N	2211127-48	WS	Sample	11/01/2022	11/10/2022
RG_FBLANK_WS_LAEMP_EVO_20 22-11_NP-NAL	2211127-49	WS	Sample	11/01/2022	11/10/2022
RG_FBLANK_WS_LAEMP_EVO_20 22-11_NP-NAL	2211127-50	WS	Sample	11/01/2022	11/10/2022
RG_MI3_WS_LAEMP_EVO_2022-11 _N	2211127-51	WS	Sample	11/02/2022	11/10/2022
RG_MI3_WS_LAEMP_EVO_2022-11 _NP-NAL	2211127-52	WS	Sample	11/02/2022	11/10/2022
RG_MI3_WS_LAEMP_EVO_2022-11 _NP-NAL	2211127-53	WS	Sample	11/02/2022	11/10/2022
RG_MIDGA_WS_LAEMP_EVO_202 2-11_N	2211127-54	WS	Sample	11/02/2022	11/10/2022



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
RG_MIDGA_WS_LAEMP_EVO_202 2-11_NP-NAL	2211127-55	WS	Sample	11/02/2022	11/10/2022
RG_MIDGA_WS_LAEMP_EVO_202 2-11_NP-NAL	2211127-56	WS	Sample	11/02/2022	11/10/2022
RG_MIDBO_WS_LAEMP_EVO_202 2-11_N	2211127-57	WS	Sample	11/02/2022	11/10/2022
RG_MIDBO_WS_LAEMP_EVO_202 2-11_NP-NAL	2211127-58	WS	Sample	11/02/2022	11/10/2022
RG_MIDBO_WS_LAEMP_EVO_202 2-11_NP-NAL	2211127-59	WS	Sample	11/02/2022	11/10/2022
RG_MIDER_WS_LAEMP_EVO_202 2-11_N	2211127-60	WS	Sample	11/02/2022	11/10/2022
RG_MIDER_WS_LAEMP_EVO_202 2-11_NP-NAL	2211127-61	WS	Sample	11/02/2022	11/10/2022
RG_MIDER_WS_LAEMP_EVO_202 2-11_NP-NAL	2211127-62	WS	Sample	11/02/2022	11/10/2022
RG_MICOMP_WS_LAEMP_EVO_20 22-11_N	2211127-63	WS	Sample	11/02/2022	11/10/2022
RG_MICOMP_WS_LAEMP_EVO_20 22-11_NP-NAL	2211127-64	WS	Sample	11/02/2022	11/10/2022
RG_MICOMP_WS_LAEMP_EVO_20 22-11_NP-NAL	2211127-65	WS	Sample	11/02/2022	11/10/2022
RG_GATE_WS_LAEMP_EVO_2022- 11_N	2211127-66	WS	Sample	11/03/2022	11/10/2022
RG_GATE_WS_LAEMP_EVO_2022- 11_NP-NAL	2211127-67	WS	Sample	11/03/2022	11/10/2022
RG_GATE_WS_LAEMP_EVO_2022- 11_NP-NAL	2211127-68	WS	Sample	11/03/2022	11/10/2022
RG_BOCK_WS_LAEMP_EVO_2022 -11_N	2211127-69	WS	Sample	11/03/2022	11/10/2022
RG_BOCK_WS_LAEMP_EVO_2022 -11_NP-NAL	2211127-70	WS	Sample	11/03/2022	11/10/2022
RG_BOCK_WS_LAEMP_EVO_2022 -11_NP-NAL	2211127-71	WS	Sample	11/03/2022	11/10/2022
RG_BOCKRD_WS_LAEMP_EVO_2 022-11_N	2211127-72	WS	Sample	11/03/2022	11/10/2022
RG_BOCKRD_WS_LAEMP_EVO_2 022-11_NP-NAL	2211127-73	WS	Sample	11/03/2022	11/10/2022
RG_BOCKRD_WS_LAEMP_EVO_2 022-11_NP-NAL	2211127-74	WS	Sample	11/03/2022	11/10/2022
RG_ALUSM_WS_LAEMP_EVO_202 2-11_N	2211127-75	WS	Sample	11/03/2022	11/10/2022



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
RG_ALUSM_WS_LAEMP_EVO_202 2-11_NP-NAL	2211127-76	WS	Sample	11/03/2022	11/10/2022
RG_ALUSM_WS_LAEMP_EVO_202 2-11_NP-NAL	2211127-77	WS	Sample	11/03/2022	11/10/2022
RG_RIVER2_WS_LAEMP_EVO_202 2-11_N	2211127-78	WS	Sample	11/03/2022	11/10/2022
RG_RIVER2_WS_LAEMP_EVO_202 2-11_NP-NAL	2211127-79	WS	Sample	11/03/2022	11/10/2022
RG_RIVER2_WS_LAEMP_EVO_202 2-11_NP-NAL	2211127-80	WS	Sample	11/03/2022	11/10/2022
RG_FBLANK2_WS_LAEMP_EVO_2 022-11_N	2211127-81	WS	Sample	11/03/2022	11/10/2022
RG_FBLANK2_WS_LAEMP_EVO_2 022-11_NP-NAL	2211127-82	WS	Sample	11/03/2022	11/10/2022
RG_FBLANK2_WS_LAEMP_EVO_2 022-11_NP-NAL	2211127-83	WS	Sample	11/03/2022	11/10/2022

Batch Summary

Analyte	Lab Matrix	Method	Accred.	Prepared	Analyzed	Batch	Sequence
DMSeO	Water	SOP BAL-4201		11/10/22	11/11/22	B222741	S221187
MeSe(IV)	Water	SOP BAL-4201		11/10/22	11/11/22	B222741	S221187
MeSe(VI)	Water	SOP BAL-4201		11/10/22	11/11/22	B222741	S221187
Se	Water	EPA 1638 Mod		11/11/22	11/14/22	B222762	S221199
Se(IV)	Water	SOP BAL-4201	ISO,TNI	11/10/22	11/11/22	B222741	S221187
Se(VI)	Water	SOP BAL-4201	ISO,TNI	11/10/22	11/11/22	B222741	S221187
SeCN	Water	SOP BAL-4201	ISO	11/10/22	11/11/22	B222741	S221187
SeMet	Water	SOP BAL-4201	ISO	11/10/22	11/11/22	B222741	S221187
SeSO3	Water	SOP BAL-4201		11/10/22	11/11/22	B222741	S221187
Unk Se Sp	Water	SOP BAL-4201		11/10/22	11/11/22	B222741	S221187



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKDT_1_PW-1_2022-10_N										
2211127-01	DMS ₂ SeO	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-01	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-01	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-01	Se(IV)	PW	D	0.332		0.020	0.075	µg/L	B222741	S221187
2211127-01	Se(VI)	PW	D	86.3		0.010	0.055	µg/L	B222741	S221187
2211127-01	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-01	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-01	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-01	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_ERCKUT_1_PW-2_2022-10_N										
2211127-02	DMS ₂ SeO	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-02	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-02	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-02	Se(IV)	PW	D	0.035	J	0.020	0.075	µg/L	B222741	S221187
2211127-02	Se(VI)	PW	D	147		0.010	0.055	µg/L	B222741	S221187
2211127-02	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-02	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-02	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-02	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_ERCKDT_1_PW-3_2022-10_N										
2211127-03	DMS ₂ SeO	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-03	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-03	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-03	Se(IV)	PW	D	0.323		0.020	0.075	µg/L	B222741	S221187
2211127-03	Se(VI)	PW	D	86.9		0.010	0.055	µg/L	B222741	S221187
2211127-03	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-03	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-03	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-03	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKDT_2_PW-1_2022-10_N										
2211127-04	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-04	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-04	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-04	Se(IV)	PW	D	0.267		0.020	0.075	µg/L	B222741	S221187
2211127-04	Se(VI)	PW	D	87.9		0.010	0.055	µg/L	B222741	S221187
2211127-04	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-04	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-04	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-04	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_ERCKDT_2_PW-2_2022-10_N										
2211127-05	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-05	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-05	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-05	Se(IV)	PW	D	0.266		0.020	0.075	µg/L	B222741	S221187
2211127-05	Se(VI)	PW	D	89.1		0.010	0.055	µg/L	B222741	S221187
2211127-05	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-05	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-05	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-05	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_ERCKDT_2_PW-3_2022-10_N										
2211127-06	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-06	MeSe(IV)	PW	D	0.011	J	0.010	0.025	µg/L	B222741	S221187
2211127-06	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-06	Se(IV)	PW	D	0.865		0.020	0.075	µg/L	B222741	S221187
2211127-06	Se(VI)	PW	D	88.1		0.010	0.055	µg/L	B222741	S221187
2211127-06	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-06	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-06	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-06	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKDT_3_PW-1_2022-10_N										
2211127-07	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-07	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-07	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-07	Se(IV)	PW	D	0.334		0.020	0.075	µg/L	B222741	S221187
2211127-07	Se(VI)	PW	D	71.4		0.010	0.055	µg/L	B222741	S221187
2211127-07	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-07	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-07	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-07	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_ERCKDT_3_PW-2_2022-10_N										
2211127-08	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-08	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-08	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-08	Se(IV)	PW	D	0.332		0.020	0.075	µg/L	B222741	S221187
2211127-08	Se(VI)	PW	D	70.1		0.010	0.055	µg/L	B222741	S221187
2211127-08	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-08	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-08	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-08	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_ERCKDT_3_PW-3_2022-10_N										
2211127-09	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-09	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-09	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-09	Se(IV)	PW	D	0.338		0.020	0.075	µg/L	B222741	S221187
2211127-09	Se(VI)	PW	D	71.5		0.010	0.055	µg/L	B222741	S221187
2211127-09	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-09	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-09	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-09	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKMD_1_PW-1_2022-10_N										
2211127-10	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-10	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-10	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-10	Se(IV)	PW	D	0.296		0.020	0.075	µg/L	B222741	S221187
2211127-10	Se(VI)	PW	D	83.3		0.010	0.055	µg/L	B222741	S221187
2211127-10	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-10	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-10	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-10	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_ERCKMD_1_PW-2_2022-10_N										
2211127-11	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-11	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-11	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-11	Se(IV)	PW	D	0.306		0.020	0.075	µg/L	B222741	S221187
2211127-11	Se(VI)	PW	D	85.2		0.010	0.055	µg/L	B222741	S221187
2211127-11	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-11	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-11	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-11	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_ERCKMD_1_PW-3_2022-10_N										
2211127-12	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-12	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-12	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-12	Se(IV)	PW	D	0.318		0.020	0.075	µg/L	B222741	S221187
2211127-12	Se(VI)	PW	D	84.1		0.010	0.055	µg/L	B222741	S221187
2211127-12	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-12	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-12	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-12	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKMD_2_PW-1_2022-10_N										
2211127-13	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-13	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-13	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-13	Se(IV)	PW	D	0.292		0.020	0.075	µg/L	B222741	S221187
2211127-13	Se(VI)	PW	D	81.9		0.010	0.055	µg/L	B222741	S221187
2211127-13	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-13	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-13	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-13	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_ERCKMD_2_PW-2_2022-10_N										
2211127-14	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-14	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-14	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-14	Se(IV)	PW	D	0.329		0.020	0.075	µg/L	B222741	S221187
2211127-14	Se(VI)	PW	D	82.4		0.010	0.055	µg/L	B222741	S221187
2211127-14	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-14	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-14	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-14	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_ERCKMD_2_PW-3_2022-10_N										
2211127-15	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-15	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-15	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-15	Se(IV)	PW	D	0.274		0.020	0.075	µg/L	B222741	S221187
2211127-15	Se(VI)	PW	D	80.8		0.010	0.055	µg/L	B222741	S221187
2211127-15	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-15	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-15	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-15	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKMD_3_PW-1_2022-10_N										
2211127-16	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-16	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-16	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-16	Se(IV)	PW	D	0.295		0.020	0.075	µg/L	B222741	S221187
2211127-16	Se(VI)	PW	D	80.9		0.010	0.055	µg/L	B222741	S221187
2211127-16	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-16	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-16	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-16	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_ERCKMD_3_PW-2_2022-10_N										
2211127-17	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-17	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-17	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-17	Se(IV)	PW	D	0.293		0.020	0.075	µg/L	B222741	S221187
2211127-17	Se(VI)	PW	D	79.9		0.010	0.055	µg/L	B222741	S221187
2211127-17	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-17	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-17	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-17	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_ERCKMD_3_PW-3_2022-10_N										
2211127-18	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-18	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-18	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-18	Se(IV)	PW	D	0.456		0.020	0.075	µg/L	B222741	S221187
2211127-18	Se(VI)	PW	D	80.5		0.010	0.055	µg/L	B222741	S221187
2211127-18	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-18	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-18	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-18	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKUT_1_PW-1_2022-10_N										
2211127-19	DMS ₂ SeO	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-19	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-19	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-19	Se(IV)	PW	D	0.079		0.020	0.075	µg/L	B222741	S221187
2211127-19	Se(VI)	PW	D	137		0.010	0.055	µg/L	B222741	S221187
2211127-19	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-19	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-19	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-19	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_ERCKDT_1_PW-2_2022-10_N										
2211127-20	DMS ₂ SeO	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-20	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-20	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-20	Se(IV)	PW	D	0.324		0.020	0.075	µg/L	B222741	S221187
2211127-20	Se(VI)	PW	D	82.4		0.010	0.055	µg/L	B222741	S221187
2211127-20	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-20	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-20	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-20	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_ERCKUT_1_PW-3_2022-10_N										
2211127-21	DMS ₂ SeO	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-21	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-21	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-21	Se(IV)	PW	D	0.031	J	0.020	0.075	µg/L	B222741	S221187
2211127-21	Se(VI)	PW	D	137		0.010	0.055	µg/L	B222741	S221187
2211127-21	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-21	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-21	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-21	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKUT_2_PW-1_2022-10_N										
2211127-22	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-22	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-22	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-22	Se(IV)	PW	D	0.030	J	0.020	0.075	µg/L	B222741	S221187
2211127-22	Se(VI)	PW	D	139		0.010	0.055	µg/L	B222741	S221187
2211127-22	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-22	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-22	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-22	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_ERCKUT_2_PW-2_2022-10_N										
2211127-23	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-23	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-23	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-23	Se(IV)	PW	D	0.066	J	0.020	0.075	µg/L	B222741	S221187
2211127-23	Se(VI)	PW	D	137		0.010	0.055	µg/L	B222741	S221187
2211127-23	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-23	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-23	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-23	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_ERCKUT_3_PW-1_2022-11_N										
2211127-24	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-24	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-24	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-24	Se(IV)	PW	D	0.023	J	0.020	0.075	µg/L	B222741	S221187
2211127-24	Se(VI)	PW	D	137		0.010	0.055	µg/L	B222741	S221187
2211127-24	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-24	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-24	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-24	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKUT_3_PW-2_2022-11_N										
2211127-25	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-25	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-25	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-25	Se(IV)	PW	D	0.030	J	0.020	0.075	µg/L	B222741	S221187
2211127-25	Se(VI)	PW	D	139		0.010	0.055	µg/L	B222741	S221187
2211127-25	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-25	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-25	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-25	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_ERCKUT_3_PW-3_2022-11_N										
2211127-26	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-26	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-26	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-26	Se(IV)	PW	D	0.021	J	0.020	0.075	µg/L	B222741	S221187
2211127-26	Se(VI)	PW	D	137		0.010	0.055	µg/L	B222741	S221187
2211127-26	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-26	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-26	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-26	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_ERCKDT_WS_LAEMP_EVO_2022-10_N										
2211127-27	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-27	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-27	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-27	Se(IV)	WS	D	0.150		0.020	0.075	µg/L	B222741	S221187
2211127-27	Se(VI)	WS	D	104		0.010	0.055	µg/L	B222741	S221187
2211127-27	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-27	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-27	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-27	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP-NAL										
2211127-28	Se	WS	D	117		0.165	0.528	µg/L	B222762	S221199
RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP-NAL										
2211127-29	Se	WS	TR	133		0.165	0.528	µg/L	B222762	S221199



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKMD_WS_LAEMP_EVO_2022-10_N										
2211127-30	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-30	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-30	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-30	Se(IV)	WS	D	0.262		0.020	0.075	µg/L	B222741	S221187
2211127-30	Se(VI)	WS	D	79.6		0.010	0.055	µg/L	B222741	S221187
2211127-30	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-30	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-30	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-30	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP-NAL										
2211127-31	Se	WS	D	91.5		0.165	0.528	µg/L	B222762	S221199
RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP-NAL										
2211127-32	Se	WS	TR	87.4		0.165	0.528	µg/L	B222762	S221199
RG_ERCKUT_WS_LAEMP_EVO_2022-11_N										
2211127-33	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-33	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-33	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-33	Se(IV)	WS	D	≤ 0.020	U	0.020	0.075	µg/L	B222741	S221187
2211127-33	Se(VI)	WS	D	133		0.010	0.055	µg/L	B222741	S221187
2211127-33	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-33	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-33	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-33	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-34	Se	WS	D	150		0.165	0.528	µg/L	B222762	S221199
RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-35	Se	WS	TR	149		0.165	0.528	µg/L	B222762	S221199



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCK_WS_LAEMP_EVO_2022-11_N										
2211127-36	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-36	MeSe(IV)	WS	D	0.013	J	0.010	0.025	µg/L	B222741	S221187
2211127-36	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-36	Se(IV)	WS	D	0.333		0.020	0.075	µg/L	B222741	S221187
2211127-36	Se(VI)	WS	D	78.2		0.010	0.055	µg/L	B222741	S221187
2211127-36	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-36	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-36	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-36	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_ERCK_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-37	Se	WS	D	93.3		0.165	0.528	µg/L	B222762	S221199
RG_ERCK_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-38	Se	WS	TR	92.5		0.165	0.528	µg/L	B222762	S221199
RG_ERCKUC_WS_LAEMP_EVO_2022-11_N										
2211127-39	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-39	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-39	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-39	Se(IV)	WS	D	0.323		0.020	0.075	µg/L	B222741	S221187
2211127-39	Se(VI)	WS	D	79.0		0.010	0.055	µg/L	B222741	S221187
2211127-39	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-39	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-39	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-39	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_ERCKUC_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-40	Se	WS	D	86.4		0.165	0.528	µg/L	B222762	S221199
RG_ERCKUC_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-41	Se	WS	TR	91.1		0.165	0.528	µg/L	B222762	S221199



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_GATEDP_WS_LAEMP_EVO_2022-11_N										
2211127-42	DMSeO	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-42	MeSe(IV)	WS	D	0.067		0.010	0.025	µg/L	B222741	S221187
2211127-42	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-42	Se(IV)	WS	D	0.864		0.020	0.075	µg/L	B222741	S221187
2211127-42	Se(VI)	WS	D	214		0.010	0.055	µg/L	B222741	S221187
2211127-42	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-42	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-42	SeSO3	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-42	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_GATEDP_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-43	Se	WS	D	245		0.165	0.528	µg/L	B222762	S221199
RG_GATEDP_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-44	Se	WS	TR	253		0.165	0.528	µg/L	B222762	S221199
RG_RIVER_WS_LAEMP_EVO_2022-11_N										
2211127-45	DMSeO	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-45	MeSe(IV)	WS	D	0.044		0.010	0.025	µg/L	B222741	S221187
2211127-45	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-45	Se(IV)	WS	D	0.697		0.020	0.075	µg/L	B222741	S221187
2211127-45	Se(VI)	WS	D	158		0.010	0.055	µg/L	B222741	S221187
2211127-45	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-45	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-45	SeSO3	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-45	Unk Se Sp	WS	D	≤ 0.020	U	0.020	0.075	µg/L	B222741	S221187
RG_RIVER_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-46	Se	WS	D	248	H	0.165	0.528	µg/L	B222762	S221199
RG_RIVER_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-47	Se	WS	TR	229		0.165	0.528	µg/L	B222762	S221199



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_FBLANK_WS_LAEMP_EVO_2022-11_N										
2211127-48	DMSeO	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-48	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-48	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-48	Se(IV)	WS	D	≤ 0.020	U	0.020	0.075	µg/L	B222741	S221187
2211127-48	Se(VI)	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-48	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-48	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-48	SeSO3	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-48	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_FBLANK_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-49	Se	WS	D	≤ 0.165	U	0.165	0.528	µg/L	B222762	S221199
RG_FBLANK_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-50	Se	WS	TR	≤ 0.165	U	0.165	0.528	µg/L	B222762	S221199
RG_MI3_WS_LAEMP_EVO_2022-11_N										
2211127-51	DMSeO	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-51	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-51	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-51	Se(IV)	WS	D	0.024	J	0.020	0.075	µg/L	B222741	S221187
2211127-51	Se(VI)	WS	D	0.906		0.010	0.055	µg/L	B222741	S221187
2211127-51	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-51	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-51	SeSO3	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-51	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_MI3_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-52	Se	WS	D	1.21		0.165	0.528	µg/L	B222762	S221199
RG_MI3_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-53	Se	WS	TR	1.12		0.165	0.528	µg/L	B222762	S221199



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_MIDGA_WS_LAEMP_EVO_2022-11_N										
2211127-54	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-54	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-54	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-54	Se(IV)	WS	D	0.074	J	0.020	0.075	µg/L	B222741	S221187
2211127-54	Se(VI)	WS	D	5.83		0.010	0.055	µg/L	B222741	S221187
2211127-54	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-54	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-54	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-54	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_MIDGA_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-55	Se	WS	D	7.04		0.165	0.528	µg/L	B222762	S221199
RG_MIDGA_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-56	Se	WS	TR	6.72		0.165	0.528	µg/L	B222762	S221199
RG_MIDBO_WS_LAEMP_EVO_2022-11_N										
2211127-57	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-57	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-57	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-57	Se(IV)	WS	D	0.082		0.020	0.075	µg/L	B222741	S221187
2211127-57	Se(VI)	WS	D	7.31		0.010	0.055	µg/L	B222741	S221187
2211127-57	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-57	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-57	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-57	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_MIDBO_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-58	Se	WS	D	8.60		0.165	0.528	µg/L	B222762	S221199
RG_MIDBO_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-59	Se	WS	TR	8.41		0.165	0.528	µg/L	B222762	S221199



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_MIDER_WS_LAEMP_EVO_2022-11_N										
2211127-60	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-60	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-60	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-60	Se(IV)	WS	D	0.036	J	0.020	0.075	µg/L	B222741	S221187
2211127-60	Se(VI)	WS	D	1.33		0.010	0.055	µg/L	B222741	S221187
2211127-60	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-60	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-60	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-60	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_MIDER_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-61	Se	WS	D	1.74		0.165	0.528	µg/L	B222762	S221199
RG_MIDER_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-62	Se	WS	TR	1.91		0.165	0.528	µg/L	B222762	S221199
RG_MICOMP_WS_LAEMP_EVO_2022-11_N										
2211127-63	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-63	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-63	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-63	Se(IV)	WS	D	0.084		0.020	0.075	µg/L	B222741	S221187
2211127-63	Se(VI)	WS	D	8.25		0.010	0.055	µg/L	B222741	S221187
2211127-63	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-63	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-63	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-63	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_MICOMP_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-64	Se	WS	D	10.0		0.165	0.528	µg/L	B222762	S221199
RG_MICOMP_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-65	Se	WS	TR	9.67		0.165	0.528	µg/L	B222762	S221199



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_GATE_WS_LAEMP_EVO_2022-11_N										
2211127-66	DMSeO	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-66	MeSe(IV)	WS	D	0.035		0.010	0.025	µg/L	B222741	S221187
2211127-66	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-66	Se(IV)	WS	D	0.748		0.020	0.075	µg/L	B222741	S221187
2211127-66	Se(VI)	WS	D	242		0.010	0.055	µg/L	B222741	S221187
2211127-66	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-66	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-66	SeSO3	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-66	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_GATE_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-67	Se	WS	D	285		0.165	0.528	µg/L	B222762	S221199
RG_GATE_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-68	Se	WS	TR	270		0.165	0.528	µg/L	B222762	S221199
RG_BOCK_WS_LAEMP_EVO_2022-11_N										
2211127-69	DMSeO	WS	D	0.020	J	0.010	0.025	µg/L	B222741	S221187
2211127-69	MeSe(IV)	WS	D	0.083		0.010	0.025	µg/L	B222741	S221187
2211127-69	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-69	Se(IV)	WS	D	1.23		0.020	0.075	µg/L	B222741	S221187
2211127-69	Se(VI)	WS	D	132		0.010	0.055	µg/L	B222741	S221187
2211127-69	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-69	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-69	SeSO3	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-69	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_BOCK_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-70	Se	WS	D	155		0.165	0.528	µg/L	B222762	S221199
RG_BOCK_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-71	Se	WS	TR	154		0.165	0.528	µg/L	B222762	S221199



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_BOCKRD_WS_LAEMP_EVO_2022-11_N										
2211127-72	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-72	MeSe(IV)	WS	D	0.018	J	0.010	0.025	µg/L	B222741	S221187
2211127-72	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-72	Se(IV)	WS	D	0.720		0.020	0.075	µg/L	B222741	S221187
2211127-72	Se(VI)	WS	D	401		0.010	0.055	µg/L	B222741	S221187
2211127-72	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-72	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-72	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-72	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_BOCKRD_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-73	Se	WS	D	467		0.165	0.528	µg/L	B222762	S221199
RG_BOCKRD_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-74	Se	WS	TR	481		0.165	0.528	µg/L	B222762	S221199
RG_ALUSM_WS_LAEMP_EVO_2022-11_N										
2211127-75	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-75	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-75	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-75	Se(IV)	WS	D	≤ 0.020	U	0.020	0.075	µg/L	B222741	S221187
2211127-75	Se(VI)	WS	D	0.474		0.010	0.055	µg/L	B222741	S221187
2211127-75	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-75	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-75	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-75	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_ALUSM_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-76	Se	WS	D	0.782		0.165	0.528	µg/L	B222762	S221199
RG_ALUSM_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-77	Se	WS	TR	0.647		0.165	0.528	µg/L	B222762	S221199



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_RIVER2_WS_LAEMP_EVO_2022-11_N										
2211127-78	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-78	MeSe(IV)	WS	D	0.018	J	0.010	0.025	µg/L	B222741	S221187
2211127-78	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-78	Se(IV)	WS	D	0.649		0.020	0.075	µg/L	B222741	S221187
2211127-78	Se(VI)	WS	D	390		0.010	0.055	µg/L	B222741	S221187
2211127-78	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-78	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-78	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-78	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_RIVER2_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-79	Se	WS	D	452		0.165	0.528	µg/L	B222762	S221199
RG_RIVER2_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-80	Se	WS	TR	441		0.165	0.528	µg/L	B222762	S221199
RG_FBLANK2_WS_LAEMP_EVO_2022-11_N										
2211127-81	DMS ₂ O	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-81	MeSe(IV)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-81	MeSe(VI)	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-81	Se(IV)	WS	D	≤ 0.020	U	0.020	0.075	µg/L	B222741	S221187
2211127-81	Se(VI)	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-81	SeCN	WS	D	≤ 0.010	U	0.010	0.050	µg/L	B222741	S221187
2211127-81	SeMet	WS	D	≤ 0.010	U	0.010	0.025	µg/L	B222741	S221187
2211127-81	SeSO ₃	WS	D	≤ 0.010	U	0.010	0.055	µg/L	B222741	S221187
2211127-81	Unk Se Sp	WS	D	≤ 0.010	U	0.010	0.075	µg/L	B222741	S221187
RG_FBLANK2_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-82	Se	WS	D	0.241	J	0.165	0.528	µg/L	B222762	S221199
RG_FBLANK2_WS_LAEMP_EVO_2022-11_NP-NAL										
2211127-83	Se	WS	TR	≤ 0.165	U	0.165	0.528	µg/L	B222762	S221199



Accuracy & Precision Summary

Batch: B222741
Lab Matrix: Water
Method: SOP BAL-4201

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222741-BS1	Blank Spike, (2236035)						
	MeSe(IV)		5.095	5.581	µg/L	110% 75-125	
	Se(IV)		5.000	4.877	µg/L	98% 75-125	
	Se(VI)		5.000	4.498	µg/L	90% 75-125	
	SeCN		5.015	4.708	µg/L	94% 75-125	
	SeMet		4.982	4.972	µg/L	100% 75-125	
B222741-DUP3	Duplicate, (2211127-14)						
	DMSeO	ND		ND	µg/L		N/C 25
	MeSe(IV)	ND		ND	µg/L		N/C 25
	MeSe(VI)	ND		ND	µg/L		N/C 25
	Se(IV)	0.329		0.329	µg/L		0.2% 25
	Se(VI)	82.38		82.03	µg/L		0.4% 25
	SeCN	ND		ND	µg/L		N/C 25
	SeMet	ND		ND	µg/L		N/C 25
	SeSO3	ND		ND	µg/L		N/C 25
	Unk Se Sp	ND		ND	µg/L		N/C 25
B222741-MS3	Matrix Spike, (2211127-14)						
	Se(IV)	0.329	4.900	4.659	µg/L	88% 75-125	
	Se(VI)	82.38	5.100	87.58	µg/L	NR 75-125	
	SeCN	ND	1.962	1.756	µg/L	90% 75-125	
	SeMet	ND	1.977	1.727	µg/L	87% 75-125	
B222741-MSD3	Matrix Spike Duplicate, (2211127-14)						
	Se(IV)	0.329	4.900	4.602	µg/L	87% 75-125	1% 25
	Se(VI)	82.38	5.100	87.03	µg/L	NR 75-125	N/C 25
	SeCN	ND	1.962	1.730	µg/L	88% 75-125	1% 25
	SeMet	ND	1.977	1.692	µg/L	86% 75-125	2% 25



Accuracy & Precision Summary

Batch: B222741
Lab Matrix: Water
Method: SOP BAL-4201

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222741-DUP4	Duplicate, (2211127-21)						
	DMS ₂ SeO	ND		ND	µg/L		N/C 25
	MeSe(IV)	ND		ND	µg/L		N/C 25
	MeSe(VI)	ND		ND	µg/L		N/C 25
	Se(IV)	0.031		0.030	µg/L		4% 25
	Se(VI)	137.2		137.9	µg/L		0.5% 25
	SeCN	ND		ND	µg/L		N/C 25
	SeMet	ND		ND	µg/L		N/C 25
	SeSO ₃	ND		ND	µg/L		N/C 25
Unk Se Sp	ND		ND	µg/L		N/C 25	
B222741-MS4	Matrix Spike, (2211127-21)						
	Se(IV)	0.031	4.900	3.934	µg/L	80% 75-125	
	Se(VI)	137.2	5.100	142.2	µg/L	NR 75-125	
	SeCN	ND	1.962	1.789	µg/L	91% 75-125	
	SeMet	ND	1.977	1.838	µg/L	93% 75-125	
B222741-MSD4	Matrix Spike Duplicate, (2211127-21)						
	Se(IV)	0.031	4.900	3.913	µg/L	79% 75-125	0.6% 25
	Se(VI)	137.2	5.100	142.5	µg/L	NR 75-125	N/C 25
	SeCN	ND	1.962	1.762	µg/L	90% 75-125	2% 25
	SeMet	ND	1.977	1.829	µg/L	93% 75-125	0.5% 25
B222741-DUP7	Duplicate, (2211127-45)						
	DMS ₂ SeO	ND		ND	µg/L		N/C 25
	MeSe(IV)	0.044		0.040	µg/L		8% 25
	MeSe(VI)	ND		ND	µg/L		N/C 25
	Se(IV)	0.697		0.643	µg/L		8% 25
	Se(VI)	157.9		145.5	µg/L		8% 25
	SeCN	ND		ND	µg/L		N/C 25
	SeMet	ND		ND	µg/L		N/C 25
	SeSO ₃	ND		ND	µg/L		N/C 25
Unk Se Sp	ND		ND	µg/L		N/C 25	



Accuracy & Precision Summary

Batch: B222741
Lab Matrix: Water
Method: SOP BAL-4201

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222741-MS7	Matrix Spike, (2211127-45)						
	Se(IV)	0.697	4.900	5.228	µg/L	92% 75-125	
	Se(VI)	157.9	5.100	157.1	µg/L	NR 75-125	
	SeCN	ND	1.962	1.765	µg/L	90% 75-125	
	SeMet	ND	1.977	1.863	µg/L	94% 75-125	
B222741-MSD7	Matrix Spike Duplicate, (2211127-45)						
	Se(IV)	0.697	4.900	5.173	µg/L	91% 75-125	1% 25
	Se(VI)	157.9	5.100	184.1	µg/L	NR 75-125	N/C 25
	SeCN	ND	1.962	1.734	µg/L	88% 75-125	2% 25
	SeMet	ND	1.977	1.850	µg/L	94% 75-125	0.7% 25
B222741-DUP5	Duplicate, (2211127-60)						
	DMSeO	ND		ND	µg/L		N/C 25
	MeSe(IV)	ND		ND	µg/L		N/C 25
	MeSe(VI)	ND		ND	µg/L		N/C 25
	Se(IV)	0.036		0.034	µg/L		5% 25
	Se(VI)	1.331		1.352	µg/L		2% 25
	SeCN	ND		ND	µg/L		N/C 25
	SeMet	ND		ND	µg/L		N/C 25
	SeSO3	ND		ND	µg/L		N/C 25
Unk Se Sp	ND		ND	µg/L		N/C 25	
B222741-MS5	Matrix Spike, (2211127-60)						
	Se(IV)	0.036	4.900	4.431	µg/L	90% 75-125	
	Se(VI)	1.331	5.100	5.778	µg/L	87% 75-125	
	SeCN	ND	1.962	1.630	µg/L	83% 75-125	
	SeMet	ND	1.977	1.769	µg/L	90% 75-125	
B222741-MSD5	Matrix Spike Duplicate, (2211127-60)						
	Se(IV)	0.036	4.900	4.577	µg/L	93% 75-125	3% 25
	Se(VI)	1.331	5.100	6.001	µg/L	92% 75-125	4% 25
	SeCN	ND	1.962	1.675	µg/L	85% 75-125	3% 25
	SeMet	ND	1.977	1.795	µg/L	91% 75-125	1% 25



Accuracy & Precision Summary

Batch: B222741
Lab Matrix: Water
Method: SOP BAL-4201

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222741-DUP6	Duplicate, (2211127-78)						
	DMS ₂ SeO	ND		ND	µg/L		N/C 25
	MeSe(IV)	0.018		0.019	µg/L		3% 25
	MeSe(VI)	ND		ND	µg/L		N/C 25
	Se(IV)	0.649		0.665	µg/L		3% 25
	Se(VI)	389.9		400.0	µg/L		3% 25
	SeCN	ND		ND	µg/L		N/C 25
	SeMet	ND		ND	µg/L		N/C 25
	SeSO ₃	ND		ND	µg/L		N/C 25
	Unk Se Sp	ND		ND	µg/L		N/C 25
B222741-MS6	Matrix Spike, (2211127-78)						
	Se(IV)	0.649	4.900	4.856	µg/L	86% 75-125	
	Se(VI)	389.9	5.100	399.7	µg/L	NR 75-125	
	SeCN	ND	1.962	1.740	µg/L	89% 75-125	
	SeMet	ND	1.977	1.779	µg/L	90% 75-125	
B222741-MSD6	Matrix Spike Duplicate, (2211127-78)						
	Se(IV)	0.649	4.900	4.896	µg/L	87% 75-125	0.8% 25
	Se(VI)	389.9	5.100	399.3	µg/L	NR 75-125	N/C 25
	SeCN	ND	1.962	1.752	µg/L	89% 75-125	0.7% 25
	SeMet	ND	1.977	1.849	µg/L	94% 75-125	4% 25



Accuracy & Precision Summary

Batch: B222762
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222762-BS1	Blank Spike, (2146024) Se		200.0	197.2	µg/L	99% 75-125	
B222762-BS2	Blank Spike, (2146024) Se		200.0	201.4	µg/L	101% 75-125	
B222762-BS3	Blank Spike, (2146024) Se		200.0	195.9	µg/L	98% 75-125	
B222762-SRM1	Reference Material (2128018, T221) Se		3.800	3.836	µg/L	101% 75-125	
B222762-SRM2	Reference Material (2128018, T221) Se		3.800	3.732	µg/L	98% 75-125	
B222762-SRM3	Reference Material (2128018, T221) Se		3.800	3.581	µg/L	94% 75-125	
B222762-DUP1	Duplicate, (2211127-35) Se	149.1		151.2	µg/L		1% 20
B222762-MS1	Matrix Spike, (2211127-35) Se	149.1	220.0	366.9	µg/L	99% 75-125	
B222762-MSD1	Matrix Spike Duplicate, (2211127-35) Se	149.1	220.0	368.1	µg/L	100% 75-125	0.3% 20
B222762-DUP2	Duplicate, (2211127-47) Se	229.4		239.1	µg/L		4% 20
B222762-MS2	Matrix Spike, (2211127-47) Se	229.4	220.0	461.3	µg/L	105% 75-125	



Accuracy & Precision Summary

Batch: B222762
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222762-MSD2	Matrix Spike Duplicate, (2211127-47) Se	229.4	220.0	447.8	µg/L	99% 75-125	3% 20
B222762-DUP3	Duplicate, (2211127-62) Se	1.912		2.002	µg/L		5% 20
B222762-MS3	Matrix Spike, (2211127-62) Se	1.912	220.0	217.1	µg/L	98% 75-125	
B222762-MSD3	Matrix Spike Duplicate, (2211127-62) Se	1.912	220.0	220.1	µg/L	99% 75-125	1% 20
B222762-DUP4	Duplicate, (2211127-80) Se	441.4		455.1	µg/L		3% 20
B222762-MS4	Matrix Spike, (2211127-80) Se	441.4	220.0	663.8	µg/L	101% 75-125	
B222762-MSD4	Matrix Spike Duplicate, (2211127-80) Se	441.4	220.0	660.3	µg/L	100% 75-125	0.5% 20



Method Blanks & Reporting Limits

Batch: B222741
Matrix: Water
Method: SOP BAL-4201
Analyte: DMSeO

Sample	Result	Units	
B222741-BLK1	0.00	µg/L	
B222741-BLK2	0.00	µg/L	
B222741-BLK3	0.00	µg/L	
B222741-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.005		MRL: 0.005

Analyte: MeSe(IV)

Sample	Result	Units	
B222741-BLK1	0.00	µg/L	
B222741-BLK2	0.00	µg/L	
B222741-BLK3	0.00	µg/L	
B222741-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.005		MRL: 0.005

Analyte: MeSe(VI)

Sample	Result	Units	
B222741-BLK1	0.00	µg/L	
B222741-BLK2	0.00	µg/L	
B222741-BLK3	0.00	µg/L	
B222741-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.005		MRL: 0.005



Method Blanks & Reporting Limits

Analyte: Se(IV)

Sample	Result	Units	
B222741-BLK1	0.00	µg/L	
B222741-BLK2	0.00	µg/L	
B222741-BLK3	0.00	µg/L	
B222741-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.004
Limit:	0.015		MRL: 0.015

Analyte: Se(VI)

Sample	Result	Units	
B222741-BLK1	0.00	µg/L	
B222741-BLK2	0.00	µg/L	
B222741-BLK3	0.00	µg/L	
B222741-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.011		MRL: 0.011

Analyte: SeCN

Sample	Result	Units	
B222741-BLK1	0.00	µg/L	
B222741-BLK2	0.00	µg/L	
B222741-BLK3	0.00	µg/L	
B222741-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.010		MRL: 0.010

Analyte: SeMet

Sample	Result	Units	
B222741-BLK1	0.00	µg/L	
B222741-BLK2	0.00	µg/L	
B222741-BLK3	0.00	µg/L	
B222741-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.005		MRL: 0.005



Method Blanks & Reporting Limits

Analyte: SeSO3

Sample	Result	Units	
B222741-BLK1	0.00	µg/L	
B222741-BLK2	0.00	µg/L	
B222741-BLK3	0.00	µg/L	
B222741-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.011		MRL: 0.011

Analyte: Unk Se Sp

Sample	Result	Units	
B222741-BLK1	0.00	µg/L	
B222741-BLK2	0.00	µg/L	
B222741-BLK3	0.00	µg/L	
B222741-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.015		MRL: 0.015



Method Blanks & Reporting Limits

Batch: B222762
Matrix: Water
Method: EPA 1638 Mod
Analyte: Se

Sample	Result	Units
B222762-BLK1	0.107	µg/L
B222762-BLK2	0.067	µg/L
B222762-BLK3	0.085	µg/L
B222762-BLK4	0.063	µg/L

Average: 0.081
Limit: 0.480

MDL: 0.150
MRL: 0.480



Sample Containers

Lab ID: 2211127-01				Report Matrix: PW			Collected: 10/31/2022	
Sample: RG_ERCKDT_1_PW-1_2022-10_N				Sample Type: Sample + Sum			Received: 11/10/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127	

Lab ID: 2211127-02				Report Matrix: PW			Collected: 10/31/2022	
Sample: RG_ERCKUT_1_PW-2_2022-10_N				Sample Type: Sample + Sum			Received: 11/10/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127	

Lab ID: 2211127-03				Report Matrix: PW			Collected: 10/31/2022	
Sample: RG_ERCKDT_1_PW-3_2022-10_N				Sample Type: Sample + Sum			Received: 11/10/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127	

Lab ID: 2211127-04				Report Matrix: PW			Collected: 10/31/2022	
Sample: RG_ERCKDT_2_PW-1_2022-10_N				Sample Type: Sample + Sum			Received: 11/10/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127	



Sample Containers

Lab ID: 2211127-05				Report Matrix: PW			Collected: 10/31/2022	
Sample: RG_ERCKDT_2_PW-2_2022-10_N				Sample Type: Sample + Sum			Received: 11/10/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127	

Lab ID: 2211127-06				Report Matrix: PW			Collected: 10/31/2022	
Sample: RG_ERCKDT_2_PW-3_2022-10_N				Sample Type: Sample + Sum			Received: 11/10/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127	

Lab ID: 2211127-07				Report Matrix: PW			Collected: 10/31/2022	
Sample: RG_ERCKDT_3_PW-1_2022-10_N				Sample Type: Sample + Sum			Received: 11/10/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127	

Lab ID: 2211127-08				Report Matrix: PW			Collected: 10/31/2022	
Sample: RG_ERCKDT_3_PW-2_2022-10_N				Sample Type: Sample + Sum			Received: 11/10/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127	



Sample Containers

Lab ID: 2211127-09			Report Matrix: PW			Collected: 10/31/2022	
Sample: RG_ERCKDT_3_PW-3_2022-10_N			Sample Type: Sample + Sum			Received: 11/10/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127

Lab ID: 2211127-10			Report Matrix: PW			Collected: 10/31/2022	
Sample: RG_ERCKMD_1_PW-1_2022-10_N			Sample Type: Sample + Sum			Received: 11/10/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127

Lab ID: 2211127-11			Report Matrix: PW			Collected: 10/31/2022	
Sample: RG_ERCKMD_1_PW-2_2022-10_N			Sample Type: Sample + Sum			Received: 11/10/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127

Lab ID: 2211127-12			Report Matrix: PW			Collected: 10/31/2022	
Sample: RG_ERCKMD_1_PW-3_2022-10_N			Sample Type: Sample + Sum			Received: 11/10/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127



Sample Containers

Lab ID: 2211127-13			Report Matrix: PW			Collected: 10/31/2022	
Sample: RG_ERCKMD_2_PW-1_2022-10_N			Sample Type: Sample + Sum			Received: 11/10/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127

Lab ID: 2211127-14			Report Matrix: PW			Collected: 10/31/2022	
Sample: RG_ERCKMD_2_PW-2_2022-10_N			Sample Type: Sample + Sum			Received: 11/10/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127

Lab ID: 2211127-15			Report Matrix: PW			Collected: 10/31/2022	
Sample: RG_ERCKMD_2_PW-3_2022-10_N			Sample Type: Sample + Sum			Received: 11/10/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127

Lab ID: 2211127-16			Report Matrix: PW			Collected: 10/31/2022	
Sample: RG_ERCKMD_3_PW-1_2022-10_N			Sample Type: Sample + Sum			Received: 11/10/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127



Sample Containers

Lab ID: 2211127-17				Report Matrix: PW			Collected: 10/31/2022	
Sample: RG_ERCKMD_3_PW-2_2022-10_N				Sample Type: Sample + Sum			Received: 11/10/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127	

Lab ID: 2211127-18				Report Matrix: PW			Collected: 10/31/2022	
Sample: RG_ERCKMD_3_PW-3_2022-10_N				Sample Type: Sample + Sum			Received: 11/10/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127	

Lab ID: 2211127-19				Report Matrix: PW			Collected: 10/31/2022	
Sample: RG_ERCKUT_1_PW-1_2022-10_N				Sample Type: Sample + Sum			Received: 11/10/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127	

Lab ID: 2211127-20				Report Matrix: PW			Collected: 10/31/2022	
Sample: RG_ERCKDT_1_PW-2_2022-10_N				Sample Type: Sample + Sum			Received: 11/10/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127	



Sample Containers

Lab ID: 2211127-21			Report Matrix: PW			Collected: 10/31/2022		
Sample: RG_ERCKUT_1_PW-3_2022-10_N			Sample Type: Sample + Sum			Received: 11/10/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127	

Lab ID: 2211127-22			Report Matrix: PW			Collected: 10/31/2022		
Sample: RG_ERCKUT_2_PW-1_2022-10_N			Sample Type: Sample + Sum			Received: 11/10/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127	

Lab ID: 2211127-23			Report Matrix: PW			Collected: 10/31/2022		
Sample: RG_ERCKUT_2_PW-2_2022-10_N			Sample Type: Sample + Sum			Received: 11/10/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127	

Lab ID: 2211127-24			Report Matrix: PW			Collected: 11/01/2022		
Sample: RG_ERCKUT_3_PW-1_2022-11_N			Sample Type: Sample + Sum			Received: 11/10/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127	



Sample Containers

Lab ID: 2211127-25			Report Matrix: PW			Collected: 11/01/2022		
Sample: RG_ERCKUT_3_PW-2_2022-11_N			Sample Type: Sample + Sum			Received: 11/10/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127	
Lab ID: 2211127-26			Report Matrix: PW			Collected: 11/01/2022		
Sample: RG_ERCKUT_3_PW-3_2022-11_N			Sample Type: Sample + Sum			Received: 11/10/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127	
Lab ID: 2211127-27			Report Matrix: WS			Collected: 10/31/2022		
Sample: RG_ERCKDT_WS_LAEMP_EVO_2022-10_N			Sample Type: Sample + Sum			Received: 11/10/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127	
Lab ID: 2211127-28			Report Matrix: WS			Collected: 10/31/2022		
Sample: RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP-NAL			Sample Type: Sample + Sum			Received: 11/10/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127	



Sample Containers

Lab ID: 2211127-29 **Report Matrix:** WS **Collected:** 10/31/2022
Sample: RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP-NAL **Sample Type:** Sample + Sum **Received:** 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127

Lab ID: 2211127-30 **Report Matrix:** WS **Collected:** 10/31/2022
Sample: RG_ERCKMD_WS_LAEMP_EVO_2022-10_N **Sample Type:** Sample + Sum **Received:** 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 1 - 2211127

Lab ID: 2211127-31 **Report Matrix:** WS **Collected:** 10/31/2022
Sample: RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP-NAL **Sample Type:** Sample + Sum **Received:** 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127

Lab ID: 2211127-32 **Report Matrix:** WS **Collected:** 10/31/2022
Sample: RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP-NAL **Sample Type:** Sample + Sum **Received:** 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127



Sample Containers

Lab ID: 2211127-33

Report Matrix: WS

Collected: 11/01/2022

Sample:

Sample Type: Sample + Sum

Received: 11/10/2022

RG_ERCKUT_WS_LAEMP_EVO_2022-11_N

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 1 - 2211127

Lab ID: 2211127-34

Report Matrix: WS

Collected: 11/01/2022

Sample:

Sample Type: Sample + Sum

Received: 11/10/2022

RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP-NAL

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127

Lab ID: 2211127-35

Report Matrix: WS

Collected: 11/01/2022

Sample:

Sample Type: Sample + Sum

Received: 11/10/2022

RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP-NAL

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127

Lab ID: 2211127-36

Report Matrix: WS

Collected: 11/01/2022

Sample: RG_ERCK_WS_LAEMP_EVO_2022-11_N

Sample Type: Sample + Sum

Received: 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 1 - 2211127



Sample Containers

Lab ID: 2211127-37
Sample: RG_ERCK_WS_LAEMP_EVO_2022-11_NP-NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 11/01/2022
Received: 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127

Lab ID: 2211127-38
Sample: RG_ERCK_WS_LAEMP_EVO_2022-11_NP-NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 11/01/2022
Received: 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127

Lab ID: 2211127-39
Sample: RG_ERCKUC_WS_LAEMP_EVO_2022-11_N
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 11/01/2022
Received: 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 1 - 2211127

Lab ID: 2211127-40
Sample: RG_ERCKUC_WS_LAEMP_EVO_2022-11_NP-NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 11/01/2022
Received: 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127

Lab ID: 2211127-41
Sample: RG_ERCKUC_WS_LAEMP_EVO_2022-11_NP-NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 11/01/2022
Received: 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127



Sample Containers

Lab ID: 2211127-42

Report Matrix: WS

Collected: 11/01/2022

Sample:

Sample Type: Sample + Sum

Received: 11/10/2022

RG_GATEDP_WS_LAEMP_EVO_2022-11_N

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 1 - 2211127

Lab ID: 2211127-43

Report Matrix: WS

Collected: 11/01/2022

Sample:

Sample Type: Sample + Sum

Received: 11/10/2022

RG_GATEDP_WS_LAEMP_EVO_2022-11_NP-NAL

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127

Lab ID: 2211127-44

Report Matrix: WS

Collected: 11/01/2022

Sample:

Sample Type: Sample + Sum

Received: 11/10/2022

RG_GATEDP_WS_LAEMP_EVO_2022-11_NP-NAL

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127

Lab ID: 2211127-45

Report Matrix: WS

Collected: 11/01/2022

Sample: RG_RIVER_WS_LAEMP_EVO_2022-11_N

Sample Type: Sample + Sum

Received: 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 1 - 2211127



Sample Containers

Lab ID: 2211127-46
Sample: RG_RIVER_WS_LAEMP_EVO_2022-11_NP-NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 11/01/2022
Received: 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127

Lab ID: 2211127-47
Sample: RG_RIVER_WS_LAEMP_EVO_2022-11_NP-NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 11/01/2022
Received: 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127

Lab ID: 2211127-48
Sample: RG_FBLANK_WS_LAEMP_EVO_2022-11_N
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 11/01/2022
Received: 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 1 - 2211127

Lab ID: 2211127-49
Sample: RG_FBLANK_WS_LAEMP_EVO_2022-11_NP-NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 11/01/2022
Received: 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127

Lab ID: 2211127-50
Sample: RG_FBLANK_WS_LAEMP_EVO_2022-11_NP-NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 11/01/2022
Received: 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127



Sample Containers

Lab ID: 2211127-51
Sample: RG_MI3_WS_LAEMP_EVO_2022-11_N

Report Matrix: WS
Sample Type: Sample + Sum

Collected: 11/02/2022
Received: 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 1 - 2211127

Lab ID: 2211127-52
Sample: RG_MI3_WS_LAEMP_EVO_2022-11_NP-NAL

Report Matrix: WS
Sample Type: Sample + Sum

Collected: 11/02/2022
Received: 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127

Lab ID: 2211127-53
Sample: RG_MI3_WS_LAEMP_EVO_2022-11_NP-NAL

Report Matrix: WS
Sample Type: Sample + Sum

Collected: 11/02/2022
Received: 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127

Lab ID: 2211127-54
Sample: RG_MIDGA_WS_LAEMP_EVO_2022-11_N

Report Matrix: WS
Sample Type: Sample + Sum

Collected: 11/02/2022
Received: 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 1 - 2211127



Sample Containers

Lab ID: 2211127-55 **Report Matrix:** WS **Collected:** 11/02/2022
Sample: RG_MIDGA_WS_LAEMP_EVO_2022-11_NP-NAL **Sample Type:** Sample + Sum **Received:** 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127

Lab ID: 2211127-56 **Report Matrix:** WS **Collected:** 11/02/2022
Sample: RG_MIDGA_WS_LAEMP_EVO_2022-11_NP-NAL **Sample Type:** Sample + Sum **Received:** 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127

Lab ID: 2211127-57 **Report Matrix:** WS **Collected:** 11/02/2022
Sample: RG_MIDBO_WS_LAEMP_EVO_2022-11_N **Sample Type:** Sample + Sum **Received:** 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 1 - 2211127

Lab ID: 2211127-58 **Report Matrix:** WS **Collected:** 11/02/2022
Sample: RG_MIDBO_WS_LAEMP_EVO_2022-11_NP-NAL **Sample Type:** Sample + Sum **Received:** 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127

Lab ID: 2211127-59 **Report Matrix:** WS **Collected:** 11/02/2022
Sample: RG_MIDBO_WS_LAEMP_EVO_2022-11_NP-NAL **Sample Type:** Sample + Sum **Received:** 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127



Sample Containers

Lab ID: 2211127-60

Report Matrix: WS

Collected: 11/02/2022

Sample:

Sample Type: Sample + Sum

Received: 11/10/2022

RG_MIDER_WS_LAEMP_EVO_2022-11_N

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 1 - 2211127

Lab ID: 2211127-61

Report Matrix: WS

Collected: 11/02/2022

Sample:

Sample Type: Sample + Sum

Received: 11/10/2022

RG_MIDER_WS_LAEMP_EVO_2022-11_NP-NAL

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127

Lab ID: 2211127-62

Report Matrix: WS

Collected: 11/02/2022

Sample:

Sample Type: Sample + Sum

Received: 11/10/2022

RG_MIDER_WS_LAEMP_EVO_2022-11_NP-NAL

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127

Lab ID: 2211127-63

Report Matrix: WS

Collected: 11/02/2022

Sample:

Sample Type: Sample + Sum

Received: 11/10/2022

RG_MICOMP_WS_LAEMP_EVO_2022-11_N

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 1 - 2211127



Sample Containers

Lab ID: 2211127-64
Sample: RG_MICOMP_WS_LAEMP_EVO_2022-11_NP-NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 11/02/2022
Received: 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127

Lab ID: 2211127-65
Sample: RG_MICOMP_WS_LAEMP_EVO_2022-11_NP-NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 11/02/2022
Received: 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127

Lab ID: 2211127-66
Sample: RG_GATE_WS_LAEMP_EVO_2022-11_N
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 11/03/2022
Received: 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 1 - 2211127

Lab ID: 2211127-67
Sample: RG_GATE_WS_LAEMP_EVO_2022-11_NP-NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 11/03/2022
Received: 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127

Lab ID: 2211127-68
Sample: RG_GATE_WS_LAEMP_EVO_2022-11_NP-NAL
Report Matrix: WS
Sample Type: Sample + Sum
Collected: 11/03/2022
Received: 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127



Sample Containers

Lab ID: 2211127-69
Sample: RG_BOCK_WS_LAEMP_EVO_2022-11_N

Report Matrix: WS
Sample Type: Sample + Sum

Collected: 11/03/2022
Received: 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 1 - 2211127

Lab ID: 2211127-70
Sample: RG_BOCK_WS_LAEMP_EVO_2022-11_NP-NAL

Report Matrix: WS
Sample Type: Sample + Sum

Collected: 11/03/2022
Received: 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127

Lab ID: 2211127-71
Sample: RG_BOCK_WS_LAEMP_EVO_2022-11_NP-NAL

Report Matrix: WS
Sample Type: Sample + Sum

Collected: 11/03/2022
Received: 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127

Lab ID: 2211127-72
Sample: RG_BOCKRD_WS_LAEMP_EVO_2022-11_N

Report Matrix: WS
Sample Type: Sample + Sum

Collected: 11/03/2022
Received: 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 1 - 2211127



Sample Containers

Lab ID: 2211127-73 **Report Matrix:** WS **Collected:** 11/03/2022
Sample: RG_BOCKRD_WS_LAEMP_EVO_2022-11_NP-NAL **Sample Type:** Sample + Sum **Received:** 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127

Lab ID: 2211127-74 **Report Matrix:** WS **Collected:** 11/03/2022
Sample: RG_BOCKRD_WS_LAEMP_EVO_2022-11_NP-NAL **Sample Type:** Sample + Sum **Received:** 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127

Lab ID: 2211127-75 **Report Matrix:** WS **Collected:** 11/03/2022
Sample: RG_ALUSM_WS_LAEMP_EVO_2022-11_N **Sample Type:** Sample + Sum **Received:** 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 1 - 2211127

Lab ID: 2211127-76 **Report Matrix:** WS **Collected:** 11/03/2022
Sample: RG_ALUSM_WS_LAEMP_EVO_2022-11_NP-NAL **Sample Type:** Sample + Sum **Received:** 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127

Lab ID: 2211127-77 **Report Matrix:** WS **Collected:** 11/03/2022
Sample: RG_ALUSM_WS_LAEMP_EVO_2022-11_NP-NAL **Sample Type:** Sample + Sum **Received:** 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127



Sample Containers

Lab ID: 2211127-78

Sample:

RG_RIVER2_WS_LAEMP_EVO_2022-11_N

Report Matrix: WS

Sample Type: Sample + Sum

Collected: 11/03/2022

Received: 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 1 - 2211127

Lab ID: 2211127-79

Sample:

RG_RIVER2_WS_LAEMP_EVO_2022-11_NP-NAL

Report Matrix: WS

Sample Type: Sample + Sum

Collected: 11/03/2022

Received: 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127

Lab ID: 2211127-80

Sample:

RG_RIVER2_WS_LAEMP_EVO_2022-11_NP-NAL

Report Matrix: WS

Sample Type: Sample + Sum

Collected: 11/03/2022

Received: 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127

Lab ID: 2211127-81

Sample:

RG_FBLANK2_WS_LAEMP_EVO_2022-11_N

Report Matrix: WS

Sample Type: Sample + Sum

Collected: 11/03/2022

Received: 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 1 - 2211127
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 1 - 2211127
C	XTRA_VOL	125 mL	na	none	na	na	Cooler 1 - 2211127



Sample Containers

Lab ID: 2211127-82

Report Matrix: WS

Collected: 11/03/2022

Sample:

Sample Type: Sample + Sum

Received: 11/10/2022

RG_FBLANK2_WS_LAEMP_EVO_2022-11_NP-NA
L

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127

Lab ID: 2211127-83

Report Matrix: WS

Collected: 11/03/2022

Sample:

Sample Type: Sample + Sum

Received: 11/10/2022

RG_FBLANK2_WS_LAEMP_EVO_2022-11_NP-NA
L

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40 mL	na	10% HNO3 (BAL)	2238023	<2	Cooler 1 - 2211127

Shipping Containers

Cooler 1 - 2211127

Received: November 10, 2022 7:19

Tracking No: RWHV89560 via Courier

Coolant Type: Blue Ice

Temperature: 1.4 °C

Description: Cooler 1

Damaged in transit? No

Returned to client? No

Comments: R-IR-1

Custody seals present? No

Custody seals intact? No

COC present? Yes

COC ID: EVO LAEMP NOV 2022		TURNAROUND TIME: RUSH					
PROJECT/CLIENT INFO				LABORATORY			
Facility Name / Job#	Regional Effects Program			Lab Name	Brooks Applied Labs		
Project Manager	Mike Pope			Lab Contact	Ben Wozniak		
Email	mike.pope@teck.com			Email	Ben@brooksapplied.com		
Address	421 Pine Avenue			Address	18804 North Creek Parkway		
City	Sparwood			City	Bothell		
Postal Code	V0B 2G0			Postal Code	98011		
Phone Number	250-425-8202			Phone Number	(206) 753-6158		
	Province	BC		Province	WA		
	Country	Canada		Country	United States		

SAMPLE DETAILS								ANALYSIS REQUESTED									
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	PHL	F	F	N						
								PRECISION	N	N	N						
								QUALITY	Brooks_Se_Speciation	Brooks_Se_D	Brooks_Se_T						
RG_ERCKDT_1_PW-1_2022-10_N	RG_ERCKDT	PW	N	10/31/2022	8:30	G	1		X								
RG_ERCKDT_1_PW-2_2022-10_N	RG_ERCKDT	PW	N	10/31/2022	8:45	G	1		X								
RG_ERCKDT_1_PW-3_2022-10_N	RG_ERCKDT	PW	N	10/31/2022	9:00	G	1		X								
RG_ERCKDT_2_PW-1_2022-10_N	RG_ERCKDT	PW	N	10/31/2022	9:15	G	1		X								
RG_ERCKDT_2_PW-2_2022-10_N	RG_ERCKDT	PW	N	10/31/2022	9:30	G	1		X								
RG_ERCKDT_2_PW-3_2022-10_N	RG_ERCKDT	PW	N	10/31/2022	9:45	G	1		X								
RG_ERCKDT_3_PW-1_2022-10_N	RG_ERCKDT	PW	N	10/31/2022	10:00	G	1		X								
RG_ERCKDT_3_PW-2_2022-10_N	RG_ERCKDT	PW	N	10/31/2022	10:15	G	1		X								
RG_ERCKDT_3_PW-3_2022-10_N	RG_ERCKDT	PW	N	10/31/2022	10:30	G	1		X								

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
VPO00847032	Alex McClymont/Minnow	November 8, 2022	VF / BAL 11/10/22 FH

NR OF BOTTLES RETURNED/DESCRIPTION	Sampler's Name	Mobile #
Regular (default)	Hillary Quian-Austia	613-620-3778
Priority (2-3 business days) - 50% surcharge X		
Emergency (1 Business Day) - 100% surcharge		
For Emergency <1 Day, ASAP or Weekend - Contact ALS		
	Sampler's Signature	Date/Time
	HQ	November 8, 2022

COC ID: **EVO LAEMP NOV 2022** TURNAROUND TIME: RUSH

PROJECT/CLIENT INFO				LABORATORY			
Facility Name / Job#	Regional Effects Program			Lab Name	Brooks Applied Labs		
Project Manager	Mike Pope			Lab Contact	Ben Wozniak		
Email	mike.pope@teck.com			Email	Ben@brooksapplied.com		
Address	421 Pine Avenue			Address	18804 North Creek Parkway		
City	Sparwood		Province	BC	City	Suite 100	
Postal Code	V0B 2G0		Country	Canada	City	Bothell	Province
Phone Number	250-425-8202			Postal Code	98011		Country
				Phone Number	(206) 753-6158		

SAMPLE DETAILS								ANALYSIS REQUESTED					
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	Brooks_Se_Speciation	Brooks_Se_D	Brooks_Se_T	Excel	PDF	EDD
RG_ERCKMD_1_PW-1_2022-10_N	RG_ERCKMD	PW	N	10/31/2022	8:30	G	1	X			X	X	X
RG_ERCKMD_1_PW-2_2022-10_N	RG_ERCKMD	PW	N	10/31/2022	8:45	G	1	X			X	X	X
RG_ERCKMD_1_PW-3_2022-10_N	RG_ERCKMD	PW	N	10/31/2022	9:00	G	1	X			X	X	X
RG_ERCKMD_2_PW-1_2022-10_N	RG_ERCKMD	PW	N	10/31/2022	9:15	G	1	X			X	X	X
RG_ERCKMD_2_PW-2_2022-10_N	RG_ERCKMD	PW	N	10/31/2022	9:30	G	1	X			X	X	X
RG_ERCKMD_2_PW-3_2022-10_N	RG_ERCKMD	PW	N	10/31/2022	9:45	G	1	X			X	X	X
RG_ERCKMD_3_PW-1_2022-10_N	RG_ERCKMD	PW	N	10/31/2022	10:00	G	1	X			X	X	X
RG_ERCKMD_3_PW-2_2022-10_N	RG_ERCKMD	PW	N	10/31/2022	10:15	G	1	X			X	X	X
RG_ERCKMD_3_PW-3_2022-10_N	RG_ERCKMD	PW	N	10/31/2022	10:30	G	1	X			X	X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
VPO00847032	Alex McClymont/Minnow	November 8, 2022	UFIBAL 11/10/22 9:19

NB OF BOTTLES RETURNED/DESCRIPTION		Sampler's Name	Mobile #
Regular (default)		Hillary Quinn-Austin	613-620-3778
Priority (2-3 business days) - 50% surcharge	X		
Emergency (1 Business Day) - 100% surcharge			
For Emergency <1 Day, ASAP or Weekend - Contact ALS			
		Sampler's Signature	Date/Time
		HQA	November 8, 2022

COC ID: **EVO LAEMP NOV 2022** TURNAROUND TIME: RUSH

PROJECT/CLIENT INFO				LABORATORY			
Facility Name / Job#	Regional Effects Program			Lab Name	Brooks Applied Labs		
Project Manager	Mike Pope			Lab Contact	Ben Wozniak		
Email	mike.pope@teck.com			Email	Ben@brooksapplied.com		
Address	421 Pine Avenue			Address	18804 North Creek Parkway		
City	Sparwood			City	Bothell		
Postal Code	VOB 2G0			Postal Code	98011		
Phone Number	250-425-8202			Phone Number	(206) 753-6158		

SAMPLE DETAILS								ANALYSIS REQUESTED					
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	Brooks_Se_Speciation	Brooks_Se_D	Brooks_Se_T	Excel	PDF	EDD
RG_ERCKUT_1_PW-1_2022-10_N	RG_ERCKUT	PW	N	10/31/2022	8:30	G	1	X			X	X	X
RG_ERCKUT_1_PW-2_2022-10_N	RG_ERCKUT	PW	N	10/31/2022	8:45	G	1	X			X	X	X
RG_ERCKUT_1_PW-3_2022-10_N	RG_ERCKUT	PW	N	10/31/2022	9:00	G	1	X			X	X	X
RG_ERCKUT_2_PW-1_2022-10_N	RG_ERCKUT	PW	N	10/31/2022	9:15	G	1	X			X	X	X
RG_ERCKUT_2_PW-2_2022-10_N	RG_ERCKUT	PW	N	10/31/2022	9:30	G	1	X			X	X	X
RG_ERCKUT_3_PW-1_2022-11_N	RG_ERCKUT	PW	N	10/31/2022	10:00	G	1	X			X	X	X
RG_ERCKUT_3_PW-2_2022-11_N	RG_ERCKUT	PW	N	10/31/2022	10:15	G	1	X			X	X	X
RG_ERCKUT_3_PW-3_2022-11_N	RG_ERCKUT	PW	N	10/31/2022	10:30	G	1	X			X	X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
VPO00847032	Alex McClymont/Minnow	November 8, 2022	VF/BAL 11/10/22 9:19

NB OF BOTTLES RETURNED/DESCRIPTION	Sampler's Name	Mobile #
Regular (default) X	Hillary Quinn-Austin	613-620-3778
Priority (2-3 business days) - 50% surcharge		
Emergency (1 Business Day) - 100% surcharge		
For Emergency <1 Day, ASAP or Weekend - Contact ALS		
	Sampler's Signature	Date/Time
	HQA	November 8, 2022

COC ID:		EVO LAEMP NOV 2022		TURNAROUND TIME:		RUSH	
PROJECT/CLIENT INFO				LABORATORY			
Facility Name / Job#	Regional Effects Program			Lab Name	Brooks Applied Labs		Excel PDF EDD
Project Manager	Mike Pope			Lab Contact	Ben Wozniak		mike.pope@teck.com
Email	mike.pope@teck.com			Email	Ben@brooksapplied.com		teckcoal@equisonline.com
Address	421 Pine Avenue			Address	18804 North Creek Parkway		lbrown@minnow.ca
				Suite 100			jessica.ritz@teck.com
City	Sparwood		Province	BC		City	Bothell
Postal Code	V0B 2G0		Country	Canada		Province	WA
Phone Number	250-425-8202			Postal Code	98011		Country
				Phone Number	(206) 753-6158		United States

SAMPLE DETAILS								ANALYSIS REQUESTED												
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	THI	F	P	N									
								PRELIM.	N	N	N									
								ANALYSIS	Brooks_Se_Speciation	Brooks_Se_D	Brooks_Se_T									
RG_ERCKDT_WS_LAEMP_EVO_2022-10_N	RG_ERCKDT	WS	N	10/31/2022	10:35	G	1		X											
RG_ERCKDT_WS_LAEMP_EVO_2022-10_NP-NAL	RG_ERCKDT	WS	N	10/31/2022	10:35	G	2			X	X									
RG_ERCKMD_WS_LAEMP_EVO_2022-10_N	RG_ERCKMD	WS	N	10/31/2022	10:35	G	1		X											
RG_ERCKMD_WS_LAEMP_EVO_2022-10_NP-NAL	RG_ERCKMD	WS	N	10/31/2022	10:35	G	2			X	X									
RG_ERCKUT_WS_LAEMP_EVO_2022-11_N	RG_ERCKUT	WS	N	11/1/2022	9:15	G	1		X											
RG_ERCKUT_WS_LAEMP_EVO_2022-11_NP-NAL	RG_ERCKUT	WS	N	11/1/2022	9:15	G	2			X	X									
RG_ERCK_WS_LAEMP_EVO_2022-11_N	RG_ERCK	WS	N	11/1/2022	12:00	G	1		X											
RG_ERCK_WS_LAEMP_EVO_2022-11_NP-NAL	RG_ERCK	WS	N	11/1/2022	12:00	G	2			X	X									
RG_ERCKUC_WS_LAEMP_EVO_2022-11_N	RG_ERCKUC	WS	N	11/1/2022	13:00	G	1		X											
RG_ERCKUC_WS_LAEMP_EVO_2022-11_NP-NAL	RG_ERCKUC	WS	N	11/1/2022	13:00	G	2			X	X									

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
VPO00847032	Alex McClymont/Minnow	November 8, 2022	VF1392 11/10/22 9:14

NB OF BOTTLES RETURNED/DESCRIPTION	Sampler's Name	Mobile #
Regular (default)	Hillary Quinn-Austin	613-620-3778
Priority (2-3 business days) - 50% surcharge X		
Emergency (1 Business Day) - 100% surcharge		
For Emergency <1 Day, ASAP or Weekend - Contact ALS		
	Sampler's Signature	Date/Time
	HQ	November 8, 2022

COC ID:

EVO LAEMP NOV 2022

TURNAROUND TIME:

RUSH

PROJECT/CLIENT INFO				LABORATORY						
Facility Name / Job#	Regional Effects Program			Lab Name	Brooks Applied Labs			Excel	PDF	EDD
Project Manager	Mike Pope			Lab Contact	Ben Wozniak			mike.pope@teck.com		
Email	mike.pope@teck.com			Email	Ben@brooksapplied.com			teckcoal@equisonline.com		
Address	421 Pine Avenue			Address	18804 North Creek Parkway			lbowron@minnow.ca		
City	Sparwood		Province	BC	City	Bothell	Province	WA		
Postal Code	V0B 2G0		Country	Canada	Postal Code	98011	Country	United States		
Phone Number	250-425-8202			Phone Number	(206) 753-6158					

SAMPLE DETAILS								ANALYSIS REQUESTED						
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	Brooks_Se_Speciation	Brooks_Se_D	Brooks_Se_I	PHI	F	F	N
RG_GATEDP_WS_LAEMP_EVO_2022-11_N	RG_GATEDP	WS	No	11/1/2022	13:40	G	1	X						
RG_GATEDP_WS_LAEMP_EVO_2022-11_NP-NAL	RG_GATEDP	WS	No	11/1/2022	13:40	G	2		X	X				
RG_RIVER_WS_LAEMP_EVO_2022-11_N	RG_RIVER	WS	No	11/1/2022	13:40	G	1	X						
RG_RIVER_WS_LAEMP_EVO_2022-11_NP-NAL	RG_RIVER	WS	No	11/1/2022	13:40	G	2		X	X				
RG_FBLANK_WS_LAEMP_EVO_2022-11_N	RG_FBLANK	WS	No	11/1/2022	13:40	G	1	X						
RG_FBLANK_WS_LAEMP_EVO_2022-11_NP-NAL	RG_FBLANK	WS	No	11/1/2022	13:40	G	2		X	X				
RG_MI3_WS_LAEMP_EVO_2022-11_N	RG_MI3	WS	No	11/2/2022	9:45	G	1	X						
RG_MI3_WS_LAEMP_EVO_2022-11_NP-NAL	RG_MI3	WS	No	11/2/2022	9:45	G	2		X	X				
RG_MIDGA_WS_LAEMP_EVO_2022-11_N	RG_MIDGA	WS	No	11/2/2022	13:00	G	1	X						
RG_MIDGA_WS_LAEMP_EVO_2022-11_NP-NAL	RG_MIDGA	WS	No	11/2/2022	13:00	G	2		X	X				

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
VPO00847032	Alex McClymont/Minnow	November 8, 2022	UT=13A2 11/10/19 7:19

NB OF BOTTLES RETURNED/DESCRIPTION	Sampler's Name	Mobile #
Regular (default)	Hillary Quinn-Austin	613-620-3778
Priority (2-3 business days) - 50% surcharge X		
Emergency (1 Business Day) - 100% surcharge		
For Emergency <1 Day, ASAP or Weekend - Contact ALS		
	Sampler's Signature	Date/Time
	HA	November 8, 2022

COC ID: **EVO LAEMP NOV 2022** TURNAROUND TIME: RUSH

PROJECT/CLIENT INFO				LABORATORY				
Facility Name / Job#	Regional Effects Program			Lab Name	Brooks Applied Labs			
Project Manager	Mike Pope			Lab Contact	Ben Wozniak			
Email	mike.pope@teck.com			Email	Ben@brooksapplied.com			
Address	421 Pine Avenue			Address	18804 North Creek Parkway			
City	Sparwood		Province	BC		City	Bothell	
Postal Code	V0B 2G0		Country	Canada		Postal Code	98011	
Phone Number	250-425-8202			Phone Number	(206) 753-6158			

SAMPLE DETAILS									ANALYSIS REQUESTED				
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	Brooks_Se_Speciation	Brooks_Se_D	Brooks_Se_T	Excel	PDF	EDD
RG_MIDBO_WS_LAEMP_EVO_2022-11_N	RG_MIDBO	WS	No	11/2/2022	14:00	G	1	X			X	X	X
RG_MIDBO_WS_LAEMP_EVO_2022-11_NP-NAL	RG_MIDBO	WS	No	11/2/2022	14:00	G	2		X	X			
RG_MIDER_WS_LAEMP_EVO_2022-11_N	RG_MIDER	WS	No	11/2/2022	11:30	G	1	X					
RG_MIDER_WS_LAEMP_EVO_2022-11_NP-NAL	RG_MIDER	WS	No	11/2/2022	11:30	G	2		X	X			
RG_MICOMP_WS_LAEMP_EVO_2022-11_N	RG_MICOMP	WS	No	11/2/2022	15:00	G	1	X					
RG_MICOMP_WS_LAEMP_EVO_2022-11_NP-NAL	RG_MICOMP	WS	No	11/2/2022	15:00	G	2		X	X			
RG_GATE_WS_LAEMP_EVO_2022-11_N	RG_GATE	WS	No	11/3/2022	13:00	G	1	X					
RG_GATE_WS_LAEMP_EVO_2022-11_NP-NAL	RG_GATE	WS	No	11/3/2022	13:00	G	2		X	X			
RG_BOCK_WS_LAEMP_EVO_2022-11_N	RG_BOCK	WS	No	11/3/2022	11:00	G	1	X					
RG_BOCK_WS_LAEMP_EVO_2022-11_NP-NAL	RG_BOCK	WS	No	11/3/2022	11:00	G	2		X	X			

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
VPO00847032	Alex McClymont/Minnow	November 8, 2022	VF/BAL 11/10/22 7:19

NB OF BOTTLES RETURNED/DESCRIPTION	Sampler's Name	Mobile #
Regular (default)	Hillary Quinn-Austin	613-620-3778
Priority (2-3 business days) - 50% surcharge X	Sampler's Signature	Date/Time
Emergency (1 Business Day) - 100% surcharge	HQ	November 8, 2022
For Emergency <1 Day, ASAP or Weekend - Contact ALS		

COC ID: **EVO LAEMP NOV 2022**

TURNAROUND TIME: RUSH

PROJECT/CLIENT INFO				LABORATORY			
Facility Name / Job#	Regional Effects Program			Lab Name	Brooks Applied Labs		
Project Manager	Mike Pope			Lab Contact	Ben Wozniak		
Email	mike.pope@teck.com			Email	Ben@brooksapplied.com		
Address	421 Pine Avenue			Address	18804 North Creek Parkway		
City	Sparwood			City	Bothell		
Postal Code	V0B 2G0			Postal Code	98011		
Phone Number	250-425-8202			Phone Number	(206) 753-6158		

SAMPLE DETAILS								ANALYSIS REQUESTED						
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	HR	F	F	N	Excel	PDF	EDD
RG_BOCKRD_WS_LAEMP_EVO_2022-11_N	RG_BOCKRD	WS	No	11/3/2022	9:00	G	1		X			X	X	X
RG_BOCKRD_WS_LAEMP_EVO_2022-11_NP-NAL	RG_BOCKRD	WS	No	11/3/2022	9:00	G	2			X	X			
RG_ALUSM_WS_LAEMP_EVO_2022-11_N	RG_ALUSM	WS	No	11/3/2022	14:00	G	1		X					
RG_ALUSM_WS_LAEMP_EVO_2022-11_NP-NAL	RG_ALUSM	WS	No	11/3/2022	14:00	G	2			X	X			
RG_RIVER2_WS_LAEMP_EVO_2022-11_N	RG_RIVER	WS	No	11/3/2022	9:00	G	1		X					
RG_RIVER2_WS_LAEMP_EVO_2022-11_NP-NAL	RG_RIVER	WS	No	11/3/2022	9:00	G	2			X	X			
RG_FBLANK2_WS_LAEMP_EVO_2022-11_N	RG_FBLANK	WS	No	11/3/2022	9:00	G	1		X					
RG_FBLANK2_WS_LAEMP_EVO_2022-11_NP-NAL	RG_FBLANK	WS	No	11/3/2022	9:00	G	2			X	X			

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
VPO00847032	Alex McClymont/Mianow	November 8, 2022	VE113AL 11/10/22 7:19

NB OF BOTTLES RETURNED/DESCRIPTION	Sampler's Name	Mobile #
Regular (default)	Hillary Quinn-Austin	613-620-3778
Priority (2-3 business days) - 50% surcharge X		
Emergency (1 Business Day) - 100% surcharge	HQ	
For Emergency <1 Day, ASAP or Weekend - Contact ALS		Date/Time November 8, 2022

Confidential

STRAIGHT BILL OF LADING
NOT NEGOTIABLE

RW HOT SHOT SERVICE INC.

250-425-7447
24 Hour Hot Shot Service

BAL Final Report 2211127
No. 89560

Sparwood, BC
Terrace, BC
Red Deer, AB

Vancouver, BC
Calgary, AB
Montreal, QC

Prince George, BC
Edmonton, AB
Spokane, WA

Elkford, BC
Ft. McMurray, AB
Shelby, MT

Tumbler Ridge, BC
Hinton, AB
Gillette, WY

INVOICE TO		DATE	
BILL OF LADING #		PURCHASE ORDER NUMBER	
SHIPPER (FROM)		CONSIGNEE (TO)	
STREET		STREET	
CITY/PROVINCE	POSTAL CODE	CITY/PROVINCE	POSTAL CODE
SPECIAL INSTRUCTIONS			FREIGHT CHARGES SHIPPER TO CHECK <input type="checkbox"/> PREPAID <input type="checkbox"/> COLLECT <small>If not indicated, shipping will automatically receive collect.</small> FEE _____ WAITING _____ XPU _____ CHARGES _____ FSC _____ US _____ SUB TOTAL _____ GST _____ TOTAL \$ _____ IF AT OWNER'S RISK, WRITE ORU HERE _____
PACKAGES	DESCRIPTION OF ARTICLES AND SPECIAL MARKS	WEIGHT (Subject to Correction)	
5		130 lbs	
RWHV 81560			
UNIT #	DECLARED VALUATION: Maximum liability of carrier is \$2.00 per lb. (\$4.41 per kilogram) unless declared valuation states otherwise.		
DRIVER'S SIGNATURE - PICK UP BY	PICK UP TIME	DRIVER'S SIGNATURE - DELIVERY BY	FINISH TIME
<small>NOTICE OF CLAIM: (a) No carrier is liable for loss, damage or delay of any goods under the Bill of Lading unless notice, therefore setting out particulars of the origin, destination and date of shipment of the goods, and the estimated amount claimed respect of such loss, damage or delay is given in writing to the originating carrier or the delivering carrier within sixty (60) days after the delivery of the goods, or in the case of failure to make delivery within nine (9) months from the date of shipment (b) The time statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill RECEIVED at the point of origin on the date specified from the consignor mentioned herein, the property herein described, in apparent good order, except as noted (contents and condition of contents of package unknown) marked, packaged and destined as indicated below, which the carrier agrees to carry and to deliver to the consignee at the said destination, subject to the rates and classification in effect on the date of shipment. It is mutually agreed as to each carrier of all or any of the goods over all or any portion of the route to destination, and as to each party or any time interested in all or any of the goods, that every act done to be performed hereunder, shall be subject to the conditions standard Bill of Lading, in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. Printed or written, including conditions set aside by the standard Bill of Lading, in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. The Contract for the carriage of the goods listed in the Bill of Lading is governed by regulation in force in the jurisdiction at the time and place of shipment and is subject to the conditions set out in such conditions.</small>			
SHIPPER PRINT	CONSIGNEE PRINT	DATE	
SHIPPER SIGN	CONSIGNEE SIGN	TIME	
WHITE: Office	YELLOW: Carrier	PINK: Consignee	GOLDENROAD: Shipper
GST # 864540398RT0001			NUMBER OF PIECES RECEIVED

Cooler ID: Cooler 1

COC (Y/N)

Temperature: 1.4

IR: R-12-1

Coolant Type: Ice Blue Ice Ambient

Notes:

Sampling Locations:

Sample Types:

Container Types:

Opened By: new

Date: 11/10/22

<u>WL</u>									
T/D	SP	T/D	SP	T/D	SP	T/D	SP	T/D	SP
40ml glass	120ml Plastic	40ml glass	120ml Plastic	40ml glass	120ml Plastic	40ml glass	120ml Plastic	40ml glass	120ml Plastic

Effective 7/29/20



Revision 004

COPY

2211127

From: [Robin Valleau](#)
To: [Jeremy Maute](#); [Mike Pope](#); [Jessica Ritz](#); [Lisa Bowron](#); [Hillary Quinn-Austin](#)
Cc: teck.lab.results@teck.com; [Mariyeh Moradnazhad](#)
Subject: RE: Brooks Preliminary Report/EDD, WO 2211127: Regional Effects Program, REP Project - Confidential
Date: Thursday, November 17, 2022 1:55:42 PM
Attachments: [image002.png](#)

Hi Jeremy!

First, thank you for being patient with our mislabeling!

I have looked at the results please name the samples as follows:

2211127-02 RG_ERCKUT_1_PW-2_2022-10_N

2211127-20 RG_ERCKDT_1_PW-2_2022-10_N

These can all be submitted in the same lab file now.

Thanks!!

Robin

Robin Valleau, Ph.D. (she/her)

Aquatic Scientist



minnow environmental inc. (A Trinity Consultants Company)

Sparwood, British Columbia

Cell 416-970-7535

Check out our new website: www.minnow.ca

From: Jeremy Maute <Jeremy@brooksapplied.com>
Sent: Thursday, November 17, 2022 1:38 PM
To: Mike Pope <mike.pope@teck.com>; Jessica Ritz <Jessica.Ritz@teck.com>; Lisa Bowron <LBowron@minnow.ca>; Robin Valleau <robin.valleau@minnow.ca>; Hillary Quinn-Austin <Hillary.Quinn-Austin@minnow.ca>
Cc: teck.lab.results@teck.com; Mariyeh Moradnazhad <mariyeh@brooksapplied.com>
Subject: Brooks Preliminary Report/EDD, WO 2211127: Regional Effects Program, REP Project - Confidential

Attached are the [preliminary report and EDD](#) for COC ID **EVO LAEMP NOV 2022**, associated with the REP Project.

Poor mass balance was observed in *RG_RIVER_WS_LAEMP_EVO_2022-11_N* when the sum of Se species (in sample 2211127-45) were compared to the corresponding dissolved Se result (2211127-46). Some confirmation analyses have been completed. The speciation profile in 2211127-45 looks like a *RG_RIVER_WS* sample, but the mass balance with the dissolved Se fraction is off. Additional confirmation analyses are underway. Consequently, the results in the attached report are only preliminary. Once the confirmation analyses are completed, a final report will be issued. In the final report, results may change for some samples (*potentially 2211127-45 or 2211127-46*) depending on the findings in the re-analyses.

Date/Time Collected values listed on the chain-of-custody (COC) forms did not exactly match the corresponding **Date/Time Collected** values on the container labels for 2211127-76, 2211127-77, 2211127-82, and 2211127-83. The discrepancies are described in the table below.

Date/Time Collected Discrepancies

Laboratory ID	Sample ID	Date/Time Collected (on COC form)	Date/Time Collected (on container label)
2211127-76	RG_ALUSM_WS_LAEMP_EVO_2022-11_NP-NAL	11/03/2022 14:00	11/03/2022 14:30
2211127-77	RG_ALUSM_WS_LAEMP_EVO_2022-11_NP-NAL	11/03/2022 14:00	11/03/2022 14:30
2211127-82	RG_FBLANK2_WS_LAEMP_EVO_2022-11_NP-NAL	11/03/2022 09:00	11/03/2022 11:00
2211127-83	RG_FBLANK2_WS_LAEMP_EVO_2022-11_NP-NAL	11/03/2022 09:00	11/03/2022 11:00

Per request, samples 2211127-76, 2211127-77, 2211127-82, and 2211127-83 were logged in and reported using the **Date/Time Collected** values listed on the COC form (*column 3 in the table above*).

Chain-of-custody (COC) forms were received with the sample shipment and the laboratory documented receipt of the samples on these COC forms. Revised COC forms (*for COC pages 2, 3, and 4*) were subsequently provided via email. Per client request, BAL was instructed to use the corrected **Date/Time Collected** values (on the revised COC forms) for reporting. Please see the revised COC forms at the end of this report. The cases where changes to **Date/Time Collected** values were requested are highlighted in yellow on the revised COC forms. In order to document custody, both sets of COC forms are included in this report.

The container labels for 2211127-02 and 2211127-20 both listed the following information: (*RG_ERCKDT_1_PW-2_2022-10_N, 10/31/2022 08:45*). This describes the information on the COC forms that corresponds to 2211127-02. A container for *RG_ERCKUT_1_PW-2_2022-10_N, 10/31/2022 13:15*, which describes the information on the COC forms that corresponds to 2211127-20, was not received. The two fractions labeled *RG_ERCKDT_1_PW-2_2022-10_N, 10/31/2022 08:45* were logged in under 2211127-02 and 2211127-20. AT this time, it is unclear if the field ID assignments are correct for 2211127-02 and 2211127-20.

The dissolved fraction for *RG_RIVER_WS_LAEMP_EVO_2022-11_NP-NAL* (Laboratory ID = 2211127-46) arrived in a container that leaked during shipping. The entire sample volume for 2211127-46 was lost. A fraction of the corresponding unfiltered, total recoverable Se fraction (laboratory ID: 2211127-47) was filtered (0.45 µm) into a new container to support the dissolved Se analysis for *RG_RIVER_WS_LAEMP_EVO_2022-11_NP-NAL*. This new dissolved Se fraction was preserved (pH < 2) by BAL staff at the time of receipt and logged in under 2211127-46. The filtration for 2211127-46 took place beyond the (2-calendar day) filtration holding time. Consequently, the dissolved Se result for 2211127-46 is qualified (**H**) for a filtration holding time violation.

The sample fractions for total recoverable Se and dissolved Se were not preserved in the field. The samples were preserved (pH < 2) upon receipt at BAL. All sample fractions for total recoverable Se and dissolved Se were preserved within the (14 calendar day) preservation holding time.

As always, please contact us if there are any questions about this data.

Regards,

Jeremy Maute
Senior Project Manager
206-753-6116
email: jeremy@brooksapplied.com

BROOKS APPLIED LABS

Meaningful Metals Data and Advanced Speciation Solutions

P: 206-632-6206 | F: 206-632-6017 | 13751 Lake City Way NE, Suite 108, Seattle, WA 98125, USA

Brooks Applied Labs has moved to a new facility! As of June 20th, all sample shipments should be sent to the following address: 13751 Lake City Way NE, Suite 108, Seattle, WA 98125.

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January 3, 2023

Teck Resources Limited - Vancouver
 Mike Pope
 421 Pine Avenue
 Sparwood, B.C. CANADA V0B2G0
mike.pope@teck.com

Re: Regional Effects Program

Dear Mike Pope,

On December 9, 2022, Brooks Applied Labs (BAL) received twenty-five (25) aqueous samples. The samples were logged-in for dissolved selenium [Se] and Se speciation analyses, according to the chain-of-custody (COC) forms.

Sample ID values provided on the chain-of-custody (COC) forms did not exactly match the corresponding **Sample ID** values listed on container labels for several samples. The discrepancies are described in the table below.

Sample ID Agreement Issues

Laboratory ID	Sample ID (On COC form)	Sample ID (On container label)
2212162-16	RG_ERCKDT_1_PW_1_2022-12_N	RG_ERCKDT1_PW_1_2022-12_N
2212162-18	RG_ERCKDT_1_PW_2_2022-12_N	RG_ERCKDT1_PW_2_2022-12_N
2212162-22	RG_ERCKDT_2_PW_1_2022-12_N	RG_ERCKDT2_PW_1_2022-12_N
2212162-24	RG_ERCKDT_2_PW_2_2022-12_N	RG_ERCKDT2_PW_2_2022-12_N
2212162-26	RG_ERCKDT_2_PW_3_2022-12_N	RG_ERCKDT2_PW_3_2022-12_N
2212162-32	RG_ERCKDT_3_PW_3_2022-12_N	RG_ERCKDT3_PW_3_2022-12_N
2212162-34	RG_ERCKMD_1_PW_1_2022-12_N	RG_ERCKND_1_PW_1_2022-11-28_N
2212162-40	RG_ERCKMD_2_PW_1_2022-12_N	RG_ERCKMD_2_PW_1_2022-12_N
2212162-44	RG_ERCKMD_2_PW_3_2022-12_N	RG_ERCKND_2_PW_3_2022-11-28_N
2212162-46	RG_ERCKMD_3_PW_1_2022-12_N	RG_ERCKND_3_PW_1_2022-11-28_N
2212162-50	RG_ERCKMD_3_PW_3_2022-12_N	RG_ERCKND_3_PW_3_2022-11-28_N

BAL was instructed to use the **Sample ID** values on the COC form (*column 2 in the table above*) for reporting.

Several containers were damaged during shipment. In each case, the entire volume was lost, leaving no sample available for quantitation. The sample containers that were broken are described in the table below.

Sample Containers were damaged during shipment. Entire volume lost

Laboratory ID	Sample ID	Date/Time Collected	Analytical Parameter
2212162-1	RG_ERCKUT_1_PW_1_2022-12_N	11/29/22 09:30	Se Speciation
2212162-2	RG_ERCKUT_1_PW_1_2022-12_N	11/29/22 09:30	Dissolved Se
2212162-5	RG_ERCKUT_2_PW_1_2022-12_N	11/29/22 09:30	Se Speciation
2212162-6	RG_ERCKUT_2_PW_1_2022-12_N	11/29/22 10:15	Dissolved Se
2212162-7	RG_ERCKUT_2_PW_2_2022-12_N	11/29/22 10:30	Se Speciation
2212162-8	RG_ERCKUT_2_PW_2_2022-12_N	11/29/22 10:30	Dissolved Se
2212162-19	RG_ERCKDT_1_PW_3_2022-12_N	11/28/22 13:30	Se Speciation
2212162-20	RG_ERCKDT_1_PW_3_2022-12_N	11/28/22 13:30	Dissolved Se
2212162-27	RG_ERCKDT_3_PW_1_2022-12_N	11/28/22 14:50	Se Speciation
2212162-28	RG_ERCKDT_3_PW_1_2022-12_N	11/28/22 14:50	Dissolved Se
2212162-35	RG_ERCKMD_1_PW_2_2022-12_N	11/28/22 14:50	Se Speciation
2212162-36	RG_ERCKMD_1_PW_2_2022-12_N	11/28/22 09:45	Dissolved Se
2212162-37	RG_ERCKMD_1_PW_3_2022-12_N	11/28/22 10:00	Se Speciation
2212162-38	RG_ERCKMD_1_PW_3_2022-12_N	11/28/22 10:00	Dissolved Se
2212162-41	RG_ERCKMD_2_PW_2_2022-12_N	11/28/22 10:45	Se Speciation
2212162-42	RG_ERCKMD_2_PW_2_2022-12_N	11/28/22 10:45	Dissolved Se
2212162-47	RG_ERCKMD_3_PW_2_2022-12_N	11/28/22 11:45	Se Speciation
2212162-48	RG_ERCKMD_3_PW_2_2022-12_N	11/28/22 11:45	Dissolved Se

BAL was unable to provide results for the samples in the table above.

The sample fractions for dissolved Se were not preserved in the field. The samples were preserved (pH < 2) upon receipt at BAL. The preservation took place beyond the (14-calendar day) preservation holding time for 2212162-50. Consequently, the dissolved Se result for 2212162-50 is qualified (**H**) for the filtration holding time violation. The remaining dissolved Se fractions were preserved within the (14 calendar day) preservation holding time.

The sample fractions logged in for Se speciation and dissolved Se had been field-filtered prior to receipt at BAL. All samples were stored according to BAL SOPs.

Total Recoverable Se and Dissolved Se

Each aqueous sample fraction for dissolved Se was digested in a closed vessel (bomb) with nitric and hydrochloric acids. The resulting digests were analyzed for Se content via inductively coupled plasma triple quadrupole mass spectrometry (ICP-QQQ-MS). The ICP-QQQ-MS instrumentation uses advanced interference removal techniques to ensure accuracy of the sample results. For more information, please visit the *Interference Reduction Technology* section on our website, brooksapplied.com.

The dissolved Se result for 2212162-50 is qualified (**H**) for preservation beyond the (14-calander day) preservation holding time.

Selenium Speciation

Each aqueous sample was analyzed for selenium speciation using ion chromatography inductively coupled plasma collision reaction cell mass spectrometry (IC-ICP-CRC-MS). Selenium species are chromatographically separated on an ion exchange column and then quantified using inductively coupled plasma collision reaction cell mass spectrometry (ICP-CRC-MS); for more information on this determinative technique, please visit the *Interference Reduction Technology* section on our website. The chromatographic method applied for the analyses provides greater retention of methylseleninic acid and selenomethionine, allowing for more definitive quantitation of these species.

In accordance with the quotation issued for this project, selenium speciation was defined as dissolved selenite [Se(IV)], selenate [Se(VI)], selenocyanate [SeCN], methylseleninic acid [MeSe(IV)], methaneselenonic acid [MeSe(VI)], selenomethionine [SeMef], selenosulfate [SeSO₃], and dimethylselenoxide [DMSeO]. Unknown Se species was defined as the total concentration of all unknown Se species observed during the analysis. This item is identified in the report as [Unk Se Sp].

DMSeO elutes early in the chromatographic run due to the nature of the molecule and the applied chromatographic separation method. Since this species elutes near the dead volume, additional selenium species may coelute. Alternate methods can be applied, upon client request, to increase the separation of DMSeO from potentially co-eluting selenium species.

The instrument sensitivity drifted after the initial calibration in sequence S221328, so a second calibration was analyzed after the samples. This second calibration was applied to the entire sequence. The recoveries of all continuing calibration verification (CCV) standards and matrix spike sets were within acceptance limits, demonstrating the suitability of this approach.

Poor mass balance was observed in several samples when the sum of Se species were compared to the corresponding dissolved Se results. Multiple re-analyses confirmed the results for dissolved Se and Se speciation fractions. Consequently, no additional corrective actions are necessary. The reported results are deemed representative of the submitted containers.

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

In instances where a matrix spike/matrix spike duplicate (MS/MSD) set was spiked at a level less than the native sample concentration, the recoveries, and the relative percent difference (RPD) values are not considered valid indicators of data quality. In such instances, the recoveries of the laboratory fortified blanks (BS) and/or standard reference materials (SRM) demonstrate the accuracy of the applied methods. When the spiking level was less than 25% of the native sample concentration, the spike recovery was not reported (NR) and the relative percent difference (RPD) of the MS/MSD set was not calculated (N/C).

In cases when either the native sample concentration was non-detectable (reported as less than or equal to the MDL) and/or the corresponding DUP result was also non-detectable, the RPD between the two values was not calculated (**N/C**).

Except for concentration qualifiers and the (**H**) qualifier for preservation beyond the (14-calander day) preservation holding time, all data were reported without qualification. All associated quality control sample results met the acceptance criteria.

BAL verifies that the reported results of all analyses for which the laboratory is accredited meet the requirements of the accrediting body, unless otherwise noted in the report narrative. For more information regarding accreditations please see the *Report Information* and *Batch Summary* pages. This report must be used in its entirety for interpretation of results.

Please feel free to contact us if you have any questions regarding this report.

Sincerely,



Jeremy Maute

Senior Project Manager

Jeremy@brooksapplied.com



Report Information

General Disclaimers

Test results are based solely upon the sample submitted to Brooks Applied Labs in the condition it was received. This report shall not be reproduced or copied, except in full, without written approval of the laboratory. Brooks Applied Labs is not responsible for the consequences arising from the use of a partial report.

Laboratory Accreditation

BAL maintains accreditation with various state and national agencies for select test methods. For a current list of BAL accreditations, please visit our website at <http://www.brooksapplied.com/resources/certificates-permits/>. The reported analyte/matrix/method combination shall be considered outside BAL's scopes of accreditation unless otherwise identified as ISO, TNI, or ISO,TNI in the tables. It is the responsibility of the client to verify whether a specific accreditation is required for the intended data use.

ISO: ISO/IEC 17025:2017 accredited test method. Issued by ANSI National Accreditation Board (ANAB), #ADE-1447.02

TNI: NELAP accredited test method. Issued by the State of Florida Department of Health, #E87982.

ISO,TNI: Test method is accredited under both the ISO/IEC 17025:2017 and NELAP accreditations referenced above.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

AR	as received	MS	matrix spike
BAL	Brooks Applied Labs	MSD	matrix spike duplicate
BLK	method blank	ND	non-detect
BS	blank spike	NR	non-reportable
CAL	calibration standard	N/C	not calculated
CCB	continuing calibration blank	PS	post preparation spike
CCV	continuing calibration verification	REC	percent recovery
COC	chain of custody record	RPD	relative percent difference
D	dissolved fraction	SCV	secondary calibration verification
DUP	duplicate	SOP	standard operating procedure
IBL	instrument blank	SRM	reference material
ICV	initial calibration verification	T	total fraction
MDL	method detection limit	TR	total recoverable fraction
MRL	method reporting limit		

Definition of Data Qualifiers

E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Please see narrative for explanation.
J	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1	Estimated value. A full explanation is presented in the narrative.
M	Duplicate precision (RPD) was not within acceptance criteria. Please see narrative for explanation.
N	Spike recovery was not within acceptance criteria. Please see narrative for explanation.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.
Z	Holding time and/or preservation requirements not established for this method; however, BAL recommendations for holding time were not followed. Please see narrative for explanation.



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
RG_ERCKUT_1_PW_1_2022-12_N	2212162-01	PW	Sample	11/29/2022	12/09/2022
RG_ERCKUT_1_PW_1_2022-12_N	2212162-02	PW	Sample	11/29/2022	12/09/2022
RG_ERCKUT_1_PW_2_2022-12_N	2212162-03	PW	Sample	11/29/2022	12/09/2022
RG_ERCKUT_1_PW_2_2022-12_N	2212162-04	PW	Sample	11/29/2022	12/09/2022
RG_ERCKUT_2_PW_1_2022-12_N	2212162-05	PW	Sample	11/29/2022	12/09/2022
RG_ERCKUT_2_PW_1_2022-12_N	2212162-06	PW	Sample	11/29/2022	12/09/2022
RG_ERCKUT_2_PW_2_2022-12_N	2212162-07	PW	Sample	11/29/2022	12/09/2022
RG_ERCKUT_2_PW_2_2022-12_N	2212162-08	PW	Sample	11/29/2022	12/09/2022
RG_ERCKUT_2_PW_3_2022-12_N	2212162-09	PW	Sample	11/29/2022	12/09/2022
RG_ERCKUT_2_PW_3_2022-12_N	2212162-10	PW	Sample	11/29/2022	12/09/2022
RG_ERCKUT_3_PW_1_2022-12_N	2212162-11	PW	Sample	11/29/2022	12/09/2022
RG_ERCKUT_3_PW_1_2022-12_N	2212162-12	PW	Sample	11/29/2022	12/09/2022
RG_ERCKUT_3_PW_2_2022-12_N	2212162-13	PW	Sample	11/29/2022	12/09/2022
RG_ERCKUT_3_PW_2_2022-12_N	2212162-14	PW	Sample	11/29/2022	12/09/2022
RG_ERCKDT_1_PW_1_2022-12_N	2212162-15	PW	Sample	11/28/2022	12/09/2022
RG_ERCKDT_1_PW_1_2022-12_N	2212162-16	PW	Sample	11/28/2022	12/09/2022
RG_ERCKDT_1_PW_2_2022-12_N	2212162-17	PW	Sample	11/28/2022	12/09/2022
RG_ERCKDT_1_PW_2_2022-12_N	2212162-18	PW	Sample	11/28/2022	12/09/2022
RG_ERCKDT_1_PW_3_2022-12_N	2212162-19	PW	Sample	11/28/2022	12/09/2022
RG_ERCKDT_1_PW_3_2022-12_N	2212162-20	PW	Sample	11/28/2022	12/09/2022
RG_ERCKDT_2_PW_1_2022-12_N	2212162-21	PW	Sample	11/28/2022	12/09/2022
RG_ERCKDT_2_PW_1_2022-12_N	2212162-22	PW	Sample	11/28/2022	12/09/2022
RG_ERCKDT_2_PW_2_2022-12_N	2212162-23	PW	Sample	11/28/2022	12/09/2022
RG_ERCKDT_2_PW_2_2022-12_N	2212162-24	PW	Sample	11/28/2022	12/09/2022
RG_ERCKDT_2_PW_3_2022-12_N	2212162-25	PW	Sample	11/28/2022	12/09/2022
RG_ERCKDT_2_PW_3_2022-12_N	2212162-26	PW	Sample	11/28/2022	12/09/2022
RG_ERCKDT_3_PW_1_2022-12_N	2212162-27	PW	Sample	11/28/2022	12/09/2022
RG_ERCKDT_3_PW_1_2022-12_N	2212162-28	PW	Sample	11/28/2022	12/09/2022
RG_ERCKDT_3_PW_2_2022-12_N	2212162-29	PW	Sample	11/28/2022	12/09/2022
RG_ERCKDT_3_PW_2_2022-12_N	2212162-30	PW	Sample	11/28/2022	12/09/2022
RG_ERCKDT_3_PW_3_2022-12_N	2212162-31	PW	Sample	11/28/2022	12/09/2022
RG_ERCKDT_3_PW_3_2022-12_N	2212162-32	PW	Sample	11/28/2022	12/09/2022
RG_ERCKMD_1_PW_1_2022-12_N	2212162-33	PW	Sample	11/28/2022	12/09/2022
RG_ERCKMD_1_PW_1_2022-12_N	2212162-34	PW	Sample	11/28/2022	12/09/2022
RG_ERCKMD_1_PW_2_2022-12_N	2212162-35	PW	Sample	11/28/2022	12/09/2022
RG_ERCKMD_1_PW_2_2022-12_N	2212162-36	PW	Sample	11/28/2022	12/09/2022
RG_ERCKMD_1_PW_3_2022-12_N	2212162-37	PW	Sample	11/28/2022	12/09/2022
RG_ERCKMD_1_PW_3_2022-12_N	2212162-38	PW	Sample	11/28/2022	12/09/2022
RG_ERCKMD_2_PW_1_2022-12_N	2212162-39	PW	Sample	11/28/2022	12/09/2022
RG_ERCKMD_2_PW_1_2022-12_N	2212162-40	PW	Sample	11/28/2022	12/09/2022
RG_ERCKMD_2_PW_2_2022-12_N	2212162-41	PW	Sample	11/28/2022	12/09/2022



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
RG_ERCKMD_2_PW_2_2022-12_N	2212162-42	PW	Sample	11/28/2022	12/09/2022
RG_ERCKMD_2_PW_3_2022-12_N	2212162-43	PW	Sample	11/28/2022	12/09/2022
RG_ERCKMD_2_PW_3_2022-12_N	2212162-44	PW	Sample	11/28/2022	12/09/2022
RG_ERCKMD_3_PW_1_2022-12_N	2212162-45	PW	Sample	11/28/2022	12/09/2022
RG_ERCKMD_3_PW_1_2022-12_N	2212162-46	PW	Sample	11/28/2022	12/09/2022
RG_ERCKMD_3_PW_2_2022-12_N	2212162-47	PW	Sample	11/28/2022	12/09/2022
RG_ERCKMD_3_PW_2_2022-12_N	2212162-48	PW	Sample	11/28/2022	12/09/2022
RG_ERCKMD_3_PW_3_2022-12_N	2212162-49	PW	Sample	10/28/2022	12/09/2022
RG_ERCKMD_3_PW_3_2022-12_N	2212162-50	PW	Sample	10/28/2022	12/09/2022

Batch Summary

Analyte	Lab Matrix	Method	Accred.	Prepared	Analyzed	Batch	Sequence
DMSeO	Water	SOP BAL-4201		12/06/22	12/10/22	B223021	S221328
MeSe(IV)	Water	SOP BAL-4201		12/06/22	12/10/22	B223021	S221328
MeSe(VI)	Water	SOP BAL-4201		12/06/22	12/10/22	B223021	S221328
Se	Water	EPA 1638 Mod		12/10/22	12/12/22	B223023	S221298
Se(IV)	Water	SOP BAL-4201	ISO,TNI	12/06/22	12/10/22	B223021	S221328
Se(VI)	Water	SOP BAL-4201	ISO,TNI	12/06/22	12/10/22	B223021	S221328
SeCN	Water	SOP BAL-4201	ISO	12/06/22	12/10/22	B223021	S221328
SeMet	Water	SOP BAL-4201	ISO	12/06/22	12/10/22	B223021	S221328
SeSO3	Water	SOP BAL-4201		12/06/22	12/10/22	B223021	S221328
Unk Se Sp	Water	SOP BAL-4201		12/06/22	12/10/22	B223021	S221328



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKUT_1_PW_2_2022-12_N										
2212162-03	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B223021	S221328
2212162-03	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B223021	S221328
2212162-03	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B223021	S221328
2212162-03	Se(IV)	PW	D	0.037	J	0.020	0.075	µg/L	B223021	S221328
2212162-03	Se(VI)	PW	D	71.4		0.010	0.055	µg/L	B223021	S221328
2212162-03	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B223021	S221328
2212162-03	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B223021	S221328
2212162-03	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B223021	S221328
2212162-03	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B223021	S221328
RG_ERCKUT_1_PW_2_2022-12_N										
2212162-04	Se	PW	D	90.2		0.165	0.528	µg/L	B223023	S221298
RG_ERCKUT_2_PW_3_2022-12_N										
2212162-09	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B223021	S221328
2212162-09	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B223021	S221328
2212162-09	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B223021	S221328
2212162-09	Se(IV)	PW	D	≤ 0.020	U	0.020	0.075	µg/L	B223021	S221328
2212162-09	Se(VI)	PW	D	40.2		0.010	0.055	µg/L	B223021	S221328
2212162-09	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B223021	S221328
2212162-09	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B223021	S221328
2212162-09	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B223021	S221328
2212162-09	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B223021	S221328
RG_ERCKUT_2_PW_3_2022-12_N										
2212162-10	Se	PW	D	55.3		0.165	0.528	µg/L	B223023	S221298
RG_ERCKUT_3_PW_1_2022-12_N										
2212162-11	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B223021	S221328
2212162-11	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B223021	S221328
2212162-11	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B223021	S221328
2212162-11	Se(IV)	PW	D	0.029	J	0.020	0.075	µg/L	B223021	S221328
2212162-11	Se(VI)	PW	D	63.3		0.010	0.055	µg/L	B223021	S221328
2212162-11	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B223021	S221328
2212162-11	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B223021	S221328
2212162-11	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B223021	S221328
2212162-11	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B223021	S221328



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKUT_3_PW_1_2022-12_N										
2212162-12	Se	PW	D	102		0.165	0.528	µg/L	B223023	S221298
RG_ERCKUT_3_PW_2_2022-12_N										
2212162-13	DMS ₂ SeO	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B223021	S221328
2212162-13	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B223021	S221328
2212162-13	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B223021	S221328
2212162-13	Se(IV)	PW	D	0.033	J	0.020	0.075	µg/L	B223021	S221328
2212162-13	Se(VI)	PW	D	80.6		0.010	0.055	µg/L	B223021	S221328
2212162-13	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B223021	S221328
2212162-13	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B223021	S221328
2212162-13	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B223021	S221328
2212162-13	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B223021	S221328
RG_ERCKUT_3_PW_2_2022-12_N										
2212162-14	Se	PW	D	93.9		0.165	0.528	µg/L	B223023	S221298
RG_ERCKDT_1_PW_1_2022-12_N										
2212162-15	DMS ₂ SeO	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B223021	S221328
2212162-15	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B223021	S221328
2212162-15	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B223021	S221328
2212162-15	Se(IV)	PW	D	0.175		0.020	0.075	µg/L	B223021	S221328
2212162-15	Se(VI)	PW	D	31.1		0.010	0.055	µg/L	B223021	S221328
2212162-15	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B223021	S221328
2212162-15	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B223021	S221328
2212162-15	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B223021	S221328
2212162-15	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B223021	S221328
RG_ERCKDT_1_PW_1_2022-12_N										
2212162-16	Se	PW	D	68.8		0.165	0.528	µg/L	B223023	S221298



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKDT_1_PW_2_2022-12_N										
2212162-17	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B223021	S221328
2212162-17	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B223021	S221328
2212162-17	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B223021	S221328
2212162-17	Se(IV)	PW	D	0.207		0.020	0.075	µg/L	B223021	S221328
2212162-17	Se(VI)	PW	D	43.1		0.010	0.055	µg/L	B223021	S221328
2212162-17	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B223021	S221328
2212162-17	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B223021	S221328
2212162-17	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B223021	S221328
2212162-17	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B223021	S221328
RG_ERCKDT_1_PW_2_2022-12_N										
2212162-18	Se	PW	D	71.9		0.165	0.528	µg/L	B223023	S221298
RG_ERCKDT_2_PW_1_2022-12_N										
2212162-21	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B223021	S221328
2212162-21	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B223021	S221328
2212162-21	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B223021	S221328
2212162-21	Se(IV)	PW	D	0.201		0.020	0.075	µg/L	B223021	S221328
2212162-21	Se(VI)	PW	D	36.8		0.010	0.055	µg/L	B223021	S221328
2212162-21	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B223021	S221328
2212162-21	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B223021	S221328
2212162-21	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B223021	S221328
2212162-21	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B223021	S221328
RG_ERCKDT_2_PW_1_2022-12_N										
2212162-22	Se	PW	D	49.1		0.165	0.528	µg/L	B223023	S221298
RG_ERCKDT_2_PW_2_2022-12_N										
2212162-23	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B223021	S221328
2212162-23	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B223021	S221328
2212162-23	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B223021	S221328
2212162-23	Se(IV)	PW	D	0.202		0.020	0.075	µg/L	B223021	S221328
2212162-23	Se(VI)	PW	D	44.7		0.010	0.055	µg/L	B223021	S221328
2212162-23	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B223021	S221328
2212162-23	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B223021	S221328
2212162-23	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B223021	S221328
2212162-23	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B223021	S221328



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKDT_2_PW_2_2022-12_N										
2212162-24	Se	PW	D	62.9		0.165	0.528	µg/L	B223023	S221298
RG_ERCKDT_2_PW_3_2022-12_N										
2212162-25	DMS ₂ SeO	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B223021	S221328
2212162-25	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B223021	S221328
2212162-25	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B223021	S221328
2212162-25	Se(IV)	PW	D	0.291		0.020	0.075	µg/L	B223021	S221328
2212162-25	Se(VI)	PW	D	50.1		0.010	0.055	µg/L	B223021	S221328
2212162-25	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B223021	S221328
2212162-25	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B223021	S221328
2212162-25	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B223021	S221328
2212162-25	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B223021	S221328
RG_ERCKDT_2_PW_3_2022-12_N										
2212162-26	Se	PW	D	72.1		0.165	0.528	µg/L	B223023	S221298
RG_ERCKDT_3_PW_2_2022-12_N										
2212162-29	DMS ₂ SeO	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B223021	S221328
2212162-29	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B223021	S221328
2212162-29	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B223021	S221328
2212162-29	Se(IV)	PW	D	0.253		0.020	0.075	µg/L	B223021	S221328
2212162-29	Se(VI)	PW	D	30.3		0.010	0.055	µg/L	B223021	S221328
2212162-29	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B223021	S221328
2212162-29	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B223021	S221328
2212162-29	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B223021	S221328
2212162-29	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B223021	S221328
RG_ERCKDT_3_PW_2_2022-12_N										
2212162-30	Se	PW	D	87.9		0.165	0.528	µg/L	B223023	S221298



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKDT_3_PW_3_2022-12_N										
2212162-31	DMS ₂ O	PW	D	0.014	J	0.010	0.025	µg/L	B223021	S221328
2212162-31	MeSe(IV)	PW	D	0.027		0.010	0.025	µg/L	B223021	S221328
2212162-31	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B223021	S221328
2212162-31	Se(IV)	PW	D	1.16		0.020	0.075	µg/L	B223021	S221328
2212162-31	Se(VI)	PW	D	67.6		0.010	0.055	µg/L	B223021	S221328
2212162-31	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B223021	S221328
2212162-31	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B223021	S221328
2212162-31	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B223021	S221328
2212162-31	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B223021	S221328
RG_ERCKDT_3_PW_3_2022-12_N										
2212162-32	Se	PW	D	76.1		0.165	0.528	µg/L	B223023	S221298
RG_ERCKMD_1_PW_1_2022-12_N										
2212162-33	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B223021	S221328
2212162-33	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B223021	S221328
2212162-33	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B223021	S221328
2212162-33	Se(IV)	PW	D	0.277		0.020	0.075	µg/L	B223021	S221328
2212162-33	Se(VI)	PW	D	49.8		0.010	0.055	µg/L	B223021	S221328
2212162-33	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B223021	S221328
2212162-33	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B223021	S221328
2212162-33	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B223021	S221328
2212162-33	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B223021	S221328
RG_ERCKMD_1_PW_1_2022-12_N										
2212162-34	Se	PW	D	91.7		0.165	0.528	µg/L	B223023	S221298
RG_ERCKMD_2_PW_1_2022-12_N										
2212162-39	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B223021	S221328
2212162-39	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B223021	S221328
2212162-39	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B223021	S221328
2212162-39	Se(IV)	PW	D	0.324		0.020	0.075	µg/L	B223021	S221328
2212162-39	Se(VI)	PW	D	40.8		0.010	0.055	µg/L	B223021	S221328
2212162-39	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B223021	S221328
2212162-39	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B223021	S221328
2212162-39	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B223021	S221328
2212162-39	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B223021	S221328



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKMD_2_PW_1_2022-12_N										
2212162-40	Se	PW	D	53.3		0.165	0.528	µg/L	B223023	S221298
RG_ERCKMD_2_PW_3_2022-12_N										
2212162-43	DMS ₂ SeO	PW	D	0.015	J	0.010	0.025	µg/L	B223021	S221328
2212162-43	MeSe(IV)	PW	D	0.027		0.010	0.025	µg/L	B223021	S221328
2212162-43	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B223021	S221328
2212162-43	Se(IV)	PW	D	4.04		0.020	0.075	µg/L	B223021	S221328
2212162-43	Se(VI)	PW	D	60.9		0.010	0.055	µg/L	B223021	S221328
2212162-43	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B223021	S221328
2212162-43	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B223021	S221328
2212162-43	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B223021	S221328
2212162-43	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B223021	S221328
RG_ERCKMD_2_PW_3_2022-12_N										
2212162-44	Se	PW	D	80.4		0.165	0.528	µg/L	B223023	S221298
RG_ERCKMD_3_PW_1_2022-12_N										
2212162-45	DMS ₂ SeO	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B223021	S221328
2212162-45	MeSe(IV)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B223021	S221328
2212162-45	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B223021	S221328
2212162-45	Se(IV)	PW	D	0.250		0.020	0.075	µg/L	B223021	S221328
2212162-45	Se(VI)	PW	D	35.8		0.010	0.055	µg/L	B223021	S221328
2212162-45	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B223021	S221328
2212162-45	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B223021	S221328
2212162-45	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B223021	S221328
2212162-45	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B223021	S221328
RG_ERCKMD_3_PW_1_2022-12_N										
2212162-46	Se	PW	D	42.9		0.165	0.528	µg/L	B223023	S221298



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKMD_3_PW_3_2022-12_N</i>										
2212162-49	DMS ₂ O	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B223021	S221328
2212162-49	MeSe(IV)	PW	D	0.013	J	0.010	0.025	µg/L	B223021	S221328
2212162-49	MeSe(VI)	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B223021	S221328
2212162-49	Se(IV)	PW	D	0.636		0.020	0.075	µg/L	B223021	S221328
2212162-49	Se(VI)	PW	D	60.7		0.010	0.055	µg/L	B223021	S221328
2212162-49	SeCN	PW	D	≤ 0.010	U	0.010	0.050	µg/L	B223021	S221328
2212162-49	SeMet	PW	D	≤ 0.010	U	0.010	0.025	µg/L	B223021	S221328
2212162-49	SeSO ₃	PW	D	≤ 0.010	U	0.010	0.055	µg/L	B223021	S221328
2212162-49	Unk Se Sp	PW	D	≤ 0.010	U	0.010	0.075	µg/L	B223021	S221328
<i>RG_ERCKMD_3_PW_3_2022-12_N</i>										
2212162-50	Se	PW	D	96.1	H	0.165	0.528	µg/L	B223023	S221298



Accuracy & Precision Summary

Batch: B223021
Lab Matrix: Water
Method: SOP BAL-4201

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B223021-BS1	Blank Spike, (2236035)						
	MeSe(IV)		5.095	6.229	µg/L	122% 75-125	
	Se(IV)		5.000	5.731	µg/L	115% 75-125	
	Se(VI)		5.000	5.571	µg/L	111% 75-125	
	SeCN		5.015	5.730	µg/L	114% 75-125	
	SeMet		4.982	5.552	µg/L	111% 75-125	
B223021-DUP2	Duplicate, (2212162-09)						
	DMSeO	ND		ND	µg/L		N/C 25
	MeSe(IV)	ND		ND	µg/L		N/C 25
	MeSe(VI)	ND		ND	µg/L		N/C 25
	Se(IV)	ND		ND	µg/L		N/C 25
	Se(VI)	40.19		39.46	µg/L		2% 25
	SeCN	ND		ND	µg/L		N/C 25
	SeMet	ND		ND	µg/L		N/C 25
	SeSO3	ND		ND	µg/L		N/C 25
	Unk Se Sp	ND		ND	µg/L		N/C 25
B223021-MS2	Matrix Spike, (2212162-09)						
	Se(IV)	ND	4.900	4.617	µg/L	94% 75-125	
	Se(VI)	40.19	5.100	46.91	µg/L	NR 75-125	
	SeCN	ND	1.962	1.928	µg/L	98% 75-125	
	SeMet	ND	1.977	1.976	µg/L	100% 75-125	
B223021-MSD2	Matrix Spike Duplicate, (2212162-09)						
	Se(IV)	ND	4.900	4.720	µg/L	96% 75-125	2% 25
	Se(VI)	40.19	5.100	46.55	µg/L	NR 75-125	N/C 25
	SeCN	ND	1.962	2.044	µg/L	104% 75-125	6% 25
	SeMet	ND	1.977	2.046	µg/L	103% 75-125	3% 25



Accuracy & Precision Summary

Batch: B223021
Lab Matrix: Water
Method: SOP BAL-4201

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B223021-DUP3	Duplicate, (2212162-49)						
	DMS ₂ SeO	ND		ND	µg/L		N/C 25
	MeSe(IV)	0.013		0.013	µg/L		3% 25
	MeSe(VI)	ND		ND	µg/L		N/C 25
	Se(IV)	0.636		0.674	µg/L		6% 25
	Se(VI)	60.70		61.39	µg/L		1% 25
	SeCN	ND		ND	µg/L		N/C 25
	SeMet	ND		ND	µg/L		N/C 25
	SeSO ₃	ND		ND	µg/L		N/C 25
Unk Se Sp	ND		ND	µg/L		N/C 25	
B223021-MS3	Matrix Spike, (2212162-49)						
	Se(IV)	0.636	4.900	5.674	µg/L	103% 75-125	
	Se(VI)	60.70	5.100	67.93	µg/L	NR 75-125	
	SeCN	ND	1.962	2.027	µg/L	103% 75-125	
	SeMet	ND	1.977	2.084	µg/L	105% 75-125	
B223021-MSD3	Matrix Spike Duplicate, (2212162-49)						
	Se(IV)	0.636	4.900	5.776	µg/L	105% 75-125	2% 25
	Se(VI)	60.70	5.100	67.02	µg/L	NR 75-125	N/C 25
	SeCN	ND	1.962	1.955	µg/L	100% 75-125	4% 25
	SeMet	ND	1.977	2.118	µg/L	107% 75-125	2% 25



Accuracy & Precision Summary

Batch: B223023
Lab Matrix: Water
Method: EPA 1638 Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B223023-BS1	Blank Spike, (2146024) Se		200.0	189.0	µg/L	94% 75-125	
B223023-BS2	Blank Spike, (2146024) Se		200.0	183.7	µg/L	92% 75-125	
B223023-SRM1	Reference Material (2128018, T221) Se		3.800	3.725	µg/L	98% 75-125	
B223023-SRM2	Reference Material (2128018, T221) Se		3.800	3.540	µg/L	93% 75-125	
B223023-DUP2	Duplicate, (2212158-08) Se	21.68		22.30	µg/L		3% 20
B223023-MS2	Matrix Spike, (2212158-08) Se	21.68	220.0	230.3	µg/L	95% 75-125	
B223023-MSD2	Matrix Spike Duplicate, (2212158-08) Se	21.68	220.0	234.0	µg/L	97% 75-125	2% 20
B223023-DUP3	Duplicate, (2212178-01) Se	8.838		8.625	µg/L		2% 20
B223023-MS3	Matrix Spike, (2212178-01) Se	8.838	220.0	214.4	µg/L	93% 75-125	
B223023-MSD3	Matrix Spike Duplicate, (2212178-01) Se	8.838	220.0	211.0	µg/L	92% 75-125	2% 20



Method Blanks & Reporting Limits

Batch: B223021
Matrix: Water
Method: SOP BAL-4201
Analyte: DMSeO

Sample	Result	Units	
B223021-BLK1	0.00	µg/L	
B223021-BLK2	0.00	µg/L	
B223021-BLK3	0.00	µg/L	
B223021-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005

Analyte: MeSe(IV)

Sample	Result	Units	
B223021-BLK1	0.00	µg/L	
B223021-BLK2	0.00	µg/L	
B223021-BLK3	0.00	µg/L	
B223021-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005

Analyte: MeSe(VI)

Sample	Result	Units	
B223021-BLK1	0.00	µg/L	
B223021-BLK2	0.00	µg/L	
B223021-BLK3	0.00	µg/L	
B223021-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.002
Limit: 0.005			MRL: 0.005



Method Blanks & Reporting Limits

Analyte: Se(IV)

Sample	Result	Units	
B223021-BLK1	0.003	µg/L	
B223021-BLK2	0.003	µg/L	
B223021-BLK3	0.002	µg/L	
B223021-BLK4	0.002	µg/L	
Average:	0.003		MDL: 0.004
Limit:	0.015		MRL: 0.015

Analyte: Se(VI)

Sample	Result	Units	
B223021-BLK1	0.00	µg/L	
B223021-BLK2	0.00	µg/L	
B223021-BLK3	0.00	µg/L	
B223021-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.011		MRL: 0.011

Analyte: SeCN

Sample	Result	Units	
B223021-BLK1	0.00	µg/L	
B223021-BLK2	0.00	µg/L	
B223021-BLK3	0.00	µg/L	
B223021-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.010		MRL: 0.010

Analyte: SeMet

Sample	Result	Units	
B223021-BLK1	0.00	µg/L	
B223021-BLK2	0.00	µg/L	
B223021-BLK3	0.00	µg/L	
B223021-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.005		MRL: 0.005



Method Blanks & Reporting Limits

Analyte: SeSO3

Sample	Result	Units	
B223021-BLK1	0.00	µg/L	
B223021-BLK2	0.00	µg/L	
B223021-BLK3	0.00	µg/L	
B223021-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.011		MRL: 0.011

Analyte: Unk Se Sp

Sample	Result	Units	
B223021-BLK1	0.00	µg/L	
B223021-BLK2	0.00	µg/L	
B223021-BLK3	0.00	µg/L	
B223021-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.002
Limit:	0.015		MRL: 0.015



Method Blanks & Reporting Limits

Batch: B223023
Matrix: Water
Method: EPA 1638 Mod
Analyte: Se

Sample	Result	Units	
B223023-BLK1	0.101	µg/L	
B223023-BLK2	0.076	µg/L	
B223023-BLK3	0.043	µg/L	
B223023-BLK4	0.041	µg/L	
Average:	0.065		MDL: 0.150
Limit:	0.480		MRL: 0.480



Sample Containers

Lab ID: 2212162-01			Report Matrix: PW			Collected: 11/29/2022		
Sample: RG_ERCKUT_1_PW_1_2022-12_N			Sample Type: Sample + Sum			Received: 12/09/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2212162	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2212162	
C	XTRA_VOL	125mL	na	none	na	na	Cooler 4 - 2212162	

Lab ID: 2212162-02			Report Matrix: PW			Collected: 11/29/2022		
Sample: RG_ERCKUT_1_PW_1_2022-12_N			Sample Type: Sample + Sum			Received: 12/09/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212162	

Lab ID: 2212162-03			Report Matrix: PW			Collected: 11/29/2022		
Sample: RG_ERCKUT_1_PW_2_2022-12_N			Sample Type: Sample + Sum			Received: 12/09/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2212162	

Lab ID: 2212162-04			Report Matrix: PW			Collected: 11/29/2022		
Sample: RG_ERCKUT_1_PW_2_2022-12_N			Sample Type: Sample + Sum			Received: 12/09/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212162	

Lab ID: 2212162-05			Report Matrix: PW			Collected: 11/29/2022		
Sample: RG_ERCKUT_2_PW_1_2022-12_N			Sample Type: Sample + Sum			Received: 12/09/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2212162	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2212162	
C	XTRA_VOL	125mL	na	none	na	na	Cooler 4 - 2212162	



Sample Containers

Lab ID: 2212162-06			Report Matrix: PW			Collected: 11/29/2022	
Sample: RG_ERCKUT_2_PW_1_2022-12_N			Sample Type: Sample + Sum			Received: 12/09/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212162
Lab ID: 2212162-07			Report Matrix: PW			Collected: 11/29/2022	
Sample: RG_ERCKUT_2_PW_2_2022-12_N			Sample Type: Sample + Sum			Received: 12/09/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2212162
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2212162
C	XTRA_VOL	125mL	na	none	na	na	Cooler 4 - 2212162
Lab ID: 2212162-08			Report Matrix: PW			Collected: 11/29/2022	
Sample: RG_ERCKUT_2_PW_2_2022-12_N			Sample Type: Sample + Sum			Received: 12/09/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212162
Lab ID: 2212162-09			Report Matrix: PW			Collected: 11/29/2022	
Sample: RG_ERCKUT_2_PW_3_2022-12_N			Sample Type: Sample + Sum			Received: 12/09/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2212162
Lab ID: 2212162-10			Report Matrix: PW			Collected: 11/29/2022	
Sample: RG_ERCKUT_2_PW_3_2022-12_N			Sample Type: Sample + Sum			Received: 12/09/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212162



Sample Containers

Lab ID: 2212162-11			Report Matrix: PW			Collected: 11/29/2022		
Sample: RG_ERCKUT_3_PW_1_2022-12_N			Sample Type: Sample + Sum			Received: 12/09/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2212162	
Lab ID: 2212162-12			Report Matrix: PW			Collected: 11/29/2022		
Sample: RG_ERCKUT_3_PW_1_2022-12_N			Sample Type: Sample + Sum			Received: 12/09/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212162	
Lab ID: 2212162-13			Report Matrix: PW			Collected: 11/29/2022		
Sample: RG_ERCKUT_3_PW_2_2022-12_N			Sample Type: Sample + Sum			Received: 12/09/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2212162	
Lab ID: 2212162-14			Report Matrix: PW			Collected: 11/29/2022		
Sample: RG_ERCKUT_3_PW_2_2022-12_N			Sample Type: Sample + Sum			Received: 12/09/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212162	
Lab ID: 2212162-15			Report Matrix: PW			Collected: 11/28/2022		
Sample: RG_ERCKDT_1_PW_1_2022-12_N			Sample Type: Sample + Sum			Received: 12/09/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2212162	
Lab ID: 2212162-16			Report Matrix: PW			Collected: 11/28/2022		
Sample: RG_ERCKDT_1_PW_1_2022-12_N			Sample Type: Sample + Sum			Received: 12/09/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212162	



Sample Containers

Lab ID: 2212162-17			Report Matrix: PW			Collected: 11/28/2022		
Sample: RG_ERCKDT_1_PW_2_2022-12_N			Sample Type: Sample + Sum			Received: 12/09/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2212162	
Lab ID: 2212162-18			Report Matrix: PW			Collected: 11/28/2022		
Sample: RG_ERCKDT_1_PW_2_2022-12_N			Sample Type: Sample + Sum			Received: 12/09/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212162	
Lab ID: 2212162-19			Report Matrix: PW			Collected: 11/28/2022		
Sample: RG_ERCKDT_1_PW_3_2022-12_N			Sample Type: Sample + Sum			Received: 12/09/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2212162	
Lab ID: 2212162-20			Report Matrix: PW			Collected: 11/28/2022		
Sample: RG_ERCKDT_1_PW_3_2022-12_N			Sample Type: Sample + Sum			Received: 12/09/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212162	
Lab ID: 2212162-21			Report Matrix: PW			Collected: 11/28/2022		
Sample: RG_ERCKDT_2_PW_1_2022-12_N			Sample Type: Sample + Sum			Received: 12/09/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2212162	
Lab ID: 2212162-22			Report Matrix: PW			Collected: 11/28/2022		
Sample: RG_ERCKDT_2_PW_1_2022-12_N			Sample Type: Sample + Sum			Received: 12/09/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212162	



Sample Containers

Lab ID:	Sample:	Report Matrix:	Sample Type:	Collected:
2212162-23	RG_ERCKDT_2_PW_2_2022-12_N	PW	Sample + Sum	11/28/2022
Des	Container	Lot	Preservation	Received: 12/09/2022
A	Cent Tube 15mL Se-Sp	na	none	pH Ship. Cont.
	15 mL			na Cooler 4 - 2212162
2212162-24	RG_ERCKDT_2_PW_2_2022-12_N	PW	Sample + Sum	11/28/2022
Des	Container	Lot	Preservation	Received: 12/09/2022
A	Client-Provided - TM	na	10% HNO3 (BAL)	pH Ship. Cont.
	40mL			<2 Cooler 4 - 2212162
2212162-25	RG_ERCKDT_2_PW_3_2022-12_N	PW	Sample + Sum	11/28/2022
Des	Container	Lot	Preservation	Received: 12/09/2022
A	Cent Tube 15mL Se-Sp	na	none	pH Ship. Cont.
	15 mL			na Cooler 4 - 2212162
2212162-26	RG_ERCKDT_2_PW_3_2022-12_N	PW	Sample + Sum	11/28/2022
Des	Container	Lot	Preservation	Received: 12/09/2022
A	Client-Provided - TM	na	10% HNO3 (BAL)	pH Ship. Cont.
	40mL			<2 Cooler 4 - 2212162
2212162-27	RG_ERCKDT_3_PW_1_2022-12_N	PW	Sample + Sum	11/28/2022
Des	Container	Lot	Preservation	Received: 12/09/2022
A	Cent Tube 15mL Se-Sp	na	none	pH Ship. Cont.
	15 mL			na Cooler 4 - 2212162
B	XTRA_VOL	na	none	na Cooler 4 - 2212162
	15 mL			
C	XTRA_VOL	na	none	na Cooler 4 - 2212162
	125mL			



Sample Containers

Lab ID: 2212162-28			Report Matrix: PW			Collected: 11/28/2022		
Sample: RG_ERCKDT_3_PW_1_2022-12_N			Sample Type: Sample + Sum			Received: 12/09/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212162	
Lab ID: 2212162-29			Report Matrix: PW			Collected: 11/28/2022		
Sample: RG_ERCKDT_3_PW_2_2022-12_N			Sample Type: Sample + Sum			Received: 12/09/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2212162	
Lab ID: 2212162-30			Report Matrix: PW			Collected: 11/28/2022		
Sample: RG_ERCKDT_3_PW_2_2022-12_N			Sample Type: Sample + Sum			Received: 12/09/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212162	
Lab ID: 2212162-31			Report Matrix: PW			Collected: 11/28/2022		
Sample: RG_ERCKDT_3_PW_3_2022-12_N			Sample Type: Sample + Sum			Received: 12/09/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2212162	
Lab ID: 2212162-32			Report Matrix: PW			Collected: 11/28/2022		
Sample: RG_ERCKDT_3_PW_3_2022-12_N			Sample Type: Sample + Sum			Received: 12/09/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212162	
Lab ID: 2212162-33			Report Matrix: PW			Collected: 11/28/2022		
Sample: RG_ERCKMD_1_PW_1_2022-12_N			Sample Type: Sample + Sum			Received: 12/09/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2212162	



Sample Containers

Lab ID: 2212162-34			Report Matrix: PW			Collected: 11/28/2022		
Sample: RG_ERCKMD_1_PW_1_2022-12_N			Sample Type: Sample + Sum			Received: 12/09/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212162	
Lab ID: 2212162-35			Report Matrix: PW			Collected: 11/28/2022		
Sample: RG_ERCKMD_1_PW_2_2022-12_N			Sample Type: Sample + Sum			Received: 12/09/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2212162	
Lab ID: 2212162-36			Report Matrix: PW			Collected: 11/28/2022		
Sample: RG_ERCKMD_1_PW_2_2022-12_N			Sample Type: Sample + Sum			Received: 12/09/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212162	
Lab ID: 2212162-37			Report Matrix: PW			Collected: 11/28/2022		
Sample: RG_ERCKMD_1_PW_3_2022-12_N			Sample Type: Sample + Sum			Received: 12/09/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2212162	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2212162	
C	XTRA_VOL	125mL	na	none	na	na	Cooler 4 - 2212162	
Lab ID: 2212162-38			Report Matrix: PW			Collected: 11/28/2022		
Sample: RG_ERCKMD_1_PW_3_2022-12_N			Sample Type: Sample + Sum			Received: 12/09/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212162	



Sample Containers

Lab ID: 2212162-39			Report Matrix: PW			Collected: 11/28/2022		
Sample: RG_ERCKMD_2_PW_1_2022-12_N			Sample Type: Sample + Sum			Received: 12/09/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2212162	
Lab ID: 2212162-40			Report Matrix: PW			Collected: 11/28/2022		
Sample: RG_ERCKMD_2_PW_1_2022-12_N			Sample Type: Sample + Sum			Received: 12/09/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212162	
Lab ID: 2212162-41			Report Matrix: PW			Collected: 11/28/2022		
Sample: RG_ERCKMD_2_PW_2_2022-12_N			Sample Type: Sample + Sum			Received: 12/09/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2212162	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2212162	
C	XTRA_VOL	125mL	na	none	na	na	Cooler 4 - 2212162	
Lab ID: 2212162-42			Report Matrix: PW			Collected: 11/28/2022		
Sample: RG_ERCKMD_2_PW_2_2022-12_N			Sample Type: Sample + Sum			Received: 12/09/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212162	
Lab ID: 2212162-43			Report Matrix: PW			Collected: 11/28/2022		
Sample: RG_ERCKMD_2_PW_3_2022-12_N			Sample Type: Sample + Sum			Received: 12/09/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2212162	



Sample Containers

Lab ID: 2212162-44			Report Matrix: PW			Collected: 11/28/2022		
Sample: RG_ERCKMD_2_PW_3_2022-12_N			Sample Type: Sample + Sum			Received: 12/09/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212162	
Lab ID: 2212162-45			Report Matrix: PW			Collected: 11/28/2022		
Sample: RG_ERCKMD_3_PW_1_2022-12_N			Sample Type: Sample + Sum			Received: 12/09/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2212162	
Lab ID: 2212162-46			Report Matrix: PW			Collected: 11/28/2022		
Sample: RG_ERCKMD_3_PW_1_2022-12_N			Sample Type: Sample + Sum			Received: 12/09/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212162	
Lab ID: 2212162-47			Report Matrix: PW			Collected: 11/28/2022		
Sample: RG_ERCKMD_3_PW_2_2022-12_N			Sample Type: Sample + Sum			Received: 12/09/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Cent Tube 15mL Se-Sp	15 mL	na	none	na	na	Cooler 4 - 2212162	
B	XTRA_VOL	15 mL	na	none	na	na	Cooler 4 - 2212162	
C	XTRA_VOL	125mL	na	none	na	na	Cooler 4 - 2212162	
Lab ID: 2212162-48			Report Matrix: PW			Collected: 11/28/2022		
Sample: RG_ERCKMD_3_PW_2_2022-12_N			Sample Type: Sample + Sum			Received: 12/09/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212162	



Sample Containers

Lab ID: 2212162-49	Report Matrix: PW	Collected: 10/28/2022
Sample: RG_ERCKMD_3_PW_3_2022-12_N	Sample Type: Sample + Sum	Received: 12/09/2022
Des Container Size	Lot Preservation P-Lot	pH Ship. Cont.
A Cent Tube 15mL Se-Sp 15 mL	na none na	na Cooler 4 - 2212162
Lab ID: 2212162-50	Report Matrix: PW	Collected: 10/28/2022
Sample: RG_ERCKMD_3_PW_3_2022-12_N	Sample Type: Sample + Sum	Received: 12/09/2022
Des Container Size	Lot Preservation P-Lot	pH Ship. Cont.
A Client-Provided - TM 40mL	na 10% HNO3 (BAL) 2244016	<2 Cooler 4 - 2212162

Shipping Containers

Cooler 4 - 2212162

Received: December 9, 2022 7:07
Tracking No: RWHV97351 via Courier
Coolant Type: Blue Ice
Temperature: -2.4 °C

Description: Cooler 4
Damaged in transit? No
Returned to client? No
Comments: R-IR-2

Custody seals present? No
Custody seals intact? No
COC present? Yes

COC ID: **EVO LAEMP DEC 2022**

TURNAROUND TIME: RUSH

PROJECT/CLIENT INFO				LABORATORY							
Facility Name / Job#	Regional Effects Program			Lab Name	Brooks Applied Labs			Excel	PDF	EDD	
Project Manager	Mike Pope			Lab Contact	Ben Wozniak			mike.pope@teck.com			
Email	mike.pope@teck.com			Email	Ben@brooksapplied.com			teckcoal@equisonline.com			
Address	421 Pine Avenue			Address	18804 North Creek Parkway			lbrown@minnow.ca			
					Suite 100			jessica.rtz@teck.com			
City	Sparwood		Province	BC		City	Bothell		Province	WA	
Postal Code	V0B 2G0		Country	Canada		Postal Code	98011		Country	United States	
Phone Number	250-425-8202			Phone Number	(206) 753-6158			VPO00847032			

SAMPLE DETAILS								ANALYSIS REQUESTED					
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	Brooks_Se_Speciation	Brooks_Se_D	Brooks_Se_T	Filter: - E Field, L Lab, P3 Field, A Lab, N None		
RG_ERCKUT_1_PW_1_2022-12_N	RG_ERCKUT	PW	No	11/29/2022	9:30	G	1	X	X				
RG_ERCKUT_1_PW_2_2022-12_N	RG_ERCKUT	PW	No	11/29/2022	9:45	G	1	X	X				
RG_ERCKUT_2_PW_1_2022-12_N	RG_ERCKUT	PW	No	11/29/2022	10:15	G	1	X	X				
RG_ERCKUT_2_PW_2_2022-12_N	RG_ERCKUT	PW	No	11/29/2022	10:30	G	1	X	X				
RG_ERCKUT_2_PW_3_2022-12_N	RG_ERCKUT	PW	No	11/29/2022	10:45	G	1	X	X				
RG_ERCKUT_3_PW_1_2022-12_N	RG_ERCKUT	PW	No	11/29/2022	11:15	G	1	X	X				
RG_ERCKUT_3_PW_2_2022-12_N	RG_ERCKUT	PW	No	11/29/2022	11:30	G	1	X	X				

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
VPO00847032	Alex McClymont	December 6, 2022	ERL/BAL 12/9/22 7:07

NB OF BOTTLES RETURNED/DESCRIPTION	Sampler's Name	Sampler's Signature	Mobile #	Date/Time
Regular (default)	Hillary Quinn-Austin		613-620-3778	December 6, 2022
Priority (2-3 business days) - 50% surcharge X				
Emergency (1 Business Day) - 100% surcharge				
For Emergency <1 Day, ASAP or Weekend - Contact ALS				

COC ID: **EVO LAEMP DEC 2022** TURNAROUND TIME: RUSH

PROJECT/CLIENT INFO				LABORATORY			
Facility Name / Job#	Regional Effects Program			Lab Name	Brooks Applied Labs		
Project Manager	Mike Pope			Lab Contact	Ben Wozniak		
Email	mike.pope@teck.com			Email	Ben@brooksapplied.com		
Address	421 Pine Avenue			Address	18804 North Creek Parkway		
City	Sparwood			City	Bothell		
Postal Code	V0B 2G0			Postal Code	98011		
Province	BC			Province	WA		
Country	Canada			Country	United States		
Phone Number	250-425-8202			Phone Number	(206) 753-6158		
							VPO00847032

SAMPLE DETAILS								ANALYSIS REQUESTED						
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	Brooks_Se_Speciation	Brooks_Se_D	Brooks_Se_T				
RG_ERCKDT_1_PW_1_2022-12_N	RG_ERCKDT	PW	No	11/28/2022	13:00	G	1	X	X					
RG_ERCKDT_1_PW_2_2022-12_N	RG_ERCKDT	PW	No	11/28/2022	13:15	G	1	X	X					
RG_ERCKDT_1_PW_3_2022-12_N	RG_ERCKDT	PW	No	11/28/2022	13:30	G	1	X	X					
RG_ERCKDT_2_PW_1_2022-12_N	RG_ERCKDT	PW	No	11/28/2022	14:00	G	1	X	X					
RG_ERCKDT_2_PW_2_2022-12_N	RG_ERCKDT	PW	No	11/28/2022	14:15	G	1	X	X					
RG_ERCKDT_2_PW_3_2022-12_N	RG_ERCKDT	PW	No	11/28/2022	14:30	G	1	X	X					
RG_ERCKDT_3_PW_1_2022-12_N	RG_ERCKDT	PW	No	11/28/2022	14:50	G	1	X	X					
RG_ERCKDT_3_PW_2_2022-12_N	RG_ERCKDT	PW	No	11/28/2022	15:05	G	1	X	X					
RG_ERCKDT_3_PW_3_2022-12_N	RG_ERCKDT	PW	No	11/28/2022	15:20	G	1	X	X					

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
VPO00847032	Alex McClymont/Minnow	December 6, 2022	ERL/BAL 12/9/22 7:07

NB OF BOTTLES RETURNED/DESCRIPTION		Sampler's Name	Mobile #
Regular (default)		Alex McClymont	613-620-3778
Priority (2-3 business days) - 50% surcharge	X		
Emergency (1 Business Day) - 100% surcharge			
For Emergency <1 Day, ASAP or Weekend - Contact ALS			
		Sampler's Signature	Date/Time
			December 6, 2022

COC ID: **EVO LAEMP DEC 2022** TURNAROUND TIME: RUSH

PROJECT/CLIENT INFO				LABORATORY				
Facility Name / Job#	Regional Effects Program			Lab Name	Brooks Applied Labs			
Project Manager	Mike Pope			Lab Contact	Ben Wozniak			
Email	mike.pope@teck.com			Email	Ben@brooksapplied.com			
Address	421 Pine Avenue			Address	18804 North Creek Parkway			
City	Sparwood	Province	BC	Address	Suite 100			
Postal Code	V0B 2G0	Country	Canada	City	Bothell	Province	WA	
Phone Number	250-425-8202			Postal Code	98011		Country	United S
				Phone Number	(206) 753-6158			VPO00847032

SAMPLE DETAILS								ANALYSIS REQUESTED									
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	FR	F	F	N						
								PRESENT									
								ANALYSIS	Brooks_Se_Speciation	Brooks_Se_D	Brooks_Se_T						
RG_ERCKMD_1_PW_1_2022-12_N	RG_ERCKMD	PW	No	11/28/2022	9:30	G	1		X	X							
RG_ERCKMD_1_PW_2_2022-12_N	RG_ERCKMD	PW	No	11/28/2022	9:45	G	1		X	X							
RG_ERCKMD_1_PW_3_2022-12_N	RG_ERCKMD	PW	No	11/28/2022	10:00	G	1		X	X							
RG_ERCKMD_2_PW_1_2022-12_N	RG_ERCKMD	PW	No	11/28/2022	10:30	G	1		X	X							
RG_ERCKMD_2_PW_2_2022-12_N	RG_ERCKMD	PW	No	11/28/2022	10:45	G	1		X	X							
RG_ERCKMD_2_PW_3_2022-12_N	RG_ERCKMD	PW	No	11/28/2022	11:00	G	1		X	X							
RG_ERCKMD_3_PW_1_2022-12_N	RG_ERCKMD	PW	No	11/28/2022	11:30	G	1		X	X							
RG_ERCKMD_3_PW_2_2022-12_N	RG_ERCKMD	PW	No	11/28/2022	11:45	G	1		X	X							
RG_ERCKMD_3_PW_3_2022-12_N	RG_ERCKMD	PW	No	10/28/2022	12:00	G	1		X	X							

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
VPO00847032	Alex McClymont/Minnow	December 6, 2022	ERL / BAL 12/9/22 7:07

NB OF BOTTLES RETURNED/DESCRIPTION				Sampler's Name	Mobile #
Regular (default)				Alex McClymont	613-620-3778
Priority (2-3 business days) - 50% surcharge	X				
Emergency (1 Business Day) - 100% surcharge					
For Emergency <1 Day, ASAP or Weekend - Contact ALS					
				Sampler's Signature	Date/Time
					December 6, 2022

Confidential

SERVICE INC.
250-425-7447
24 Hour Hot Shot Service

No. 97351

BAL Final Report 2212162

Sparwood, BC
Terrace, BC
Red Deer, AB

Vancouver, BC
Calgary, AB
Montreal, QC

Prince George, BC
Edmonton, AB
Spokane, WA

Elkford, BC
Ft. McMurray, AB
Shelby, MT

Tumbler Ridge, BC
Hinton, AB
Gillette, WY

INVOICE TO		DATE	
BILL OF LADING #		PURCHASE ORDER NUMBER	
SHIPPER (FROM)		CONSIGNEE (TO)	
STREET		STREET	
CITY/PROVINCE		CITY/PROVINCE	
POSTAL CODE		POSTAL CODE	
SPECIAL INSTRUCTIONS			FREIGHT CHARGES SHIPPER TO CHECK <input type="checkbox"/> PREPAID <input type="checkbox"/> COLLECT <small>If not indicated, shipping cost automatically moves collect</small> FEE _____ WAITING _____ XPU _____ CHARGES _____ FSC _____ US _____ SUB TOTAL _____ GST _____ TOTAL \$ _____ <small>IF AT OWNER'S RISK, WRITE ORD. HERE</small>
PACKAGES	DESCRIPTION OF ARTICLES AND SPECIAL MARKS	WEIGHT (Subject to Correction)	
	RWHV 97351	120 lbs	
UNIT #	DECLARED VALUATION: Maximum liability of carrier is \$2.00 per lb. (\$4.41 per kilogram) unless declared valuation states otherwise.		\$ _____
SHIPPER'S SIGNATURE	DRIVER'S SIGNATURE - DELIVERY BY	FINISH TIME	
SHIPPER PRINT	CONSIGNEE PRINT	DATE	
SHIPPER SIGN	CONSIGNEE SIGN	TIME	
WHITE: Office	YELLOW: Carrier	PINK: Consignee	GOLDENROAD: Shipper
GST # 864540398RT0001			NUMBER OF PIECES RECEIVED

NOTICE OF CLAIM: No carrier is liable for loss, damage or delay of any goods under the Bill of Lading unless notice, thereto setting out particulars of the origin, destination and date of shipment of the goods and the estimated amount claimed, is given in writing to the originator, carrier or the consignee, carrier within sixty (60) days after the delivery of the goods, on the case of failure to make delivery within nine (9) months from the date of shipment. (b) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. RECEIVED at the port of origin on the date specified for the consignment mentioned herein. The property herein described is in apparent good order, except as noted (contents and condition of contents of package unknown) marked, consigned and sealed as indicated herein, which the carrier agrees to carry and to deliver to the consignee at the said destination subject to the rates and classification in effect on the date of shipment. It is mutually agreed as to each carrier of all or any of the goods over all or any portion of the route to destination, and as to each party of any time interested in all or any of the goods, that every service to be performed hereunder shall be subject to the conditions standard Bill of Lading in power at the date of issuing, which are hereto agreed by the consignor and accepted for himself and his assigns. Printed or written, including conditions set aside by the Standard Bill of Lading in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. The Contract for the carriage of the goods listed in the Bill of Lading is governed by regulation in force in the jurisdiction at the time and place of shipment and is subject to the conditions set out in such conditions.

Cooler ID: Cooler 4 COC (Y/N) Temperature: -2.4 IR: R-IR-2
 Coolant Type: Ice (Blue Ice) Ambient
 Notes:
 Sampling Locations: LC RG RG soil
 Sample Types: T/D SP T/D SP T/D SP T/D SP
 12.5ml Plastic 15ml Cent tube 15ml Cent tube 2-SP HOPE Jar
 Container Types:
 Opened By: ERK Date: 12/9/22

COPY

Effective 7/29/20

EE ERK 12/9/22



Revision 004

SEDIMENT CHEMISTRY

BAL Final Reports



18804 North Creek Parkway, Ste 100, Bothell, WA 98011 • USA • T: 206 632 6206 F: 206 632 6017 • info@brooksupplied.com

June 13, 2022

Teck Resources Limited - Vancouver
 Mike Pope
 421 Pine Avenue
 Sparwood, B.C. CANADA V0B2G0
mike.pope@teck.com

Re: REP

Dear Mike Pope,

On May 19, 2022, Brooks Applied Labs (BAL) received fourteen (14) solid samples at an acceptable temperature of 1.8°C

Each solid sample was logged-in for the analysis of total recoverable Se, Se sequential extraction, and total solids.

Some of the sediments were very wet and the water overlaying the sediments in the containers was decanted before the sediments were stored frozen. After receipt, all solid samples were stored in accordance with BAL SOPs.

Se Selective Sequential Extraction (SSE)

An aliquot of each solid was extracted in accordance with BAL's in-house five-step selective sequential extraction for Se. The samples were extracted with a series of reagents designed to target the following fractions:

SSE Fraction	Fraction Description
F1	Se present as salt (e.g., SeO_4^{2-} , MeSe(IV) , SeCN)
F2	Weakly adsorbed Se (e.g., SeO_4^{2-} , SeO_3^{2-} , SeCN , MeSe(IV))
F3	Amorphous and crystalline Se (e.g., S_2Se , Se^0)
F4	Selenides (e.g., HgSe , PbSe , CdSe , ZnSe)
F5	Residual Se

All resulting SSE fractions were directly analyzed for Se via inductively coupled plasma triple quadrupole mass spectrometry (ICP-QQQ-MS) and have been reported as Se(F1), Se(F2), Se(F3), Se(F4), and Se(F5) according to the corresponding extraction step (see table above).

Batch B221147 (SSE F1)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

Batch B221165 (SSE F2)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

Batch B221166 (SSE F3)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

The laboratory duplicate sample (B221166-DUP2) produced a relative percent difference (RPD) value greater than the control limit of 25%, at 27%. Re-analysis confirmed the RPD outlier. Consequently, the Se(F3) result for the source sample 2205263-03 is qualified as estimated (**M**) due to the poor precision.

Batch B221167 (SSE F4)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

The laboratory duplicate sample (B221167-DUP1) produced an RPD value greater than the control limit of 25%, at 44%. However, secondary criteria met (i.e., average result $\leq 5x$ the MRL and results within $2x$ the MRL of each other). No qualification of data was necessary.

Batch B221168 (SSE F5)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

Se Speciation for the SSE

Fractions F1 and F2 of the SSE were also analyzed for individual Se species via ion chromatography inductively coupled plasma collision reaction cell mass spectrometry (IC-ICP-CRC-MS). Selenium species were chromatographically separated on an ion exchange column and then quantified using inductively coupled plasma collision reaction cell mass spectrometry (ICP-CRC-MS); for more information on this determinative technique, please visit the *Interference Reduction Technology* section on our website. The chromatographic method applied for the analyses provides greater retention of methylseleninic acid and selenomethionine, allowing for more definitive quantitation of these species.

Selenium speciation for these SSE fractions was defined as dissolved selenite [*Se(IV)*], selenate [*Se(VI)*], selenocyanate [*SeCN*], methylseleninic acid [*MeSe(IV)*], selenomethionine [*SeMet*], selenosulfate [*SeSO₃*], and dimethylselenoxide [*DMeSeO*]. Methaneselenonic acid [*MeSe(VI)*] is reported under *Se Unk A*. The total concentration of any remaining unidentified Se-containing species detected in each sample has also been reported as [*Unk Se Sp*].

DMeSeO elutes early in the chromatographic run due to the nature of the molecule and the applied chromatographic separation method. Since this species elutes near the dead volume, additional Se species may coelute. Alternate methods can be applied, upon client request, to increase the separation of DMeSeO from potentially co-eluting Se species.

Batch B221133 (Selenium Speciation on SSE F1)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the Sample Results page for sample-specific MDLs, MRLs, and other details.

The laboratory duplicate sample (B221133-DUP4) produced an RPD value for *MeSe(IV) F1*, which was greater than the control limit of 25%, at 30%. However, secondary criteria met (i.e., average result \leq 5x the MRL and results within 2x the MRL of each other). No qualification of data was necessary.

Batch B221134 (Selenium Speciation on SSE F2)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the Sample Results page for sample-specific MDLs, MRLs, and other details.

RPD values were greater than the control limit for *Unk Se Sp F2* in B221134-DUP1, B221134-DUP3, and B221134-DUP2. The laboratory duplicate sample (B221134-DUP4) yielded an RPD value for *SeSO3 F2*, which was greater than the control limit of 25%. In each case, secondary criteria met (i.e., average result \leq 5x the MRL and results within 2x the MRL of each other). No qualification of data was necessary.

Total Recoverable Se (EPA 3050b MOD)

An aliquot of each solid was digested via modified EPA Method 3050B, using additions of concentrated nitric acid, hydrogen peroxide, and hydrochloric acid. The resulting digests were analyzed for Se content via inductively coupled plasma triple quadrupole mass spectrometry (ICP-QQQ-MS). The ICP-QQQ-MS instrumentation uses advanced interference removal techniques to ensure accuracy of the sample results. For more information, please visit the *Interference Reduction Technology* section on our website, brooksapplied.com.

Batch B221186 (Total Recoverable Se)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the Sample Results page for sample-specific MDLs, MRLs, and other details.

Batch B221244 (Total Recoverable Se)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the Sample Results page for sample-specific MDLs, MRLs, and other details.

Percent Total Solids (SOP BAL-0501)

An aliquot of each solid was measured into a pre-weighed vessel, dried in an oven at 105°C overnight, weighed again, and the percent of dried solid material was calculated.

Batch B221142 (%TS)

%TS results were used to dry-weight correct results for the remaining analytical parameters.

In instances when a matrix spike/matrix spike duplicate (MS/MSD) set was spiked at a level less than the native sample concentration, the recoveries and the RPD were not considered valid indicators of data quality. In such instances, the recoveries of the blank spikes (BS) and/or standard reference materials (SRM) demonstrate the accuracy of the applied methods. When the spiking level was less than 25% of the native sample concentration, the spike recovery was not reported (NR) and the RPD of the MS/MSD set was not calculated (N/C).

Except for concentration qualifiers and any items noted above, all data were reported without qualification and all associated quality control sample results met the acceptance criteria.

BAL, an accredited laboratory, certifies that the reported results of all analyses for which BAL is NELAP accredited meet all NELAP requirements. For more information, please see the Report Information page.

Please feel free to contact us if you have any questions regarding this report.

Sincerely,

A handwritten signature in black ink, appearing to read 'Jeremy Maute', with a stylized flourish at the end.

Jeremy Maute
Senior Project Manager
Jeremy@brooksapplied.com



Report Information

Laboratory Accreditation

BAL is accredited by the *National Environmental Laboratory Accreditation Program* (NELAP) through the State of Florida Department of Health, Bureau of Laboratories (E87982) and is certified to perform many environmental analyses. BAL is also certified by many other states to perform environmental analyses. For a current list of our accreditations/certifications, please visit our website at <http://www.brooksapplied.com/resources/certificates-permits/> or review Tables 1 and 2 in our Accreditation Information. Results reported relate only to the samples listed in the report.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

AR	as received	MS	matrix spike
BAL	Brooks Applied Labs	MSD	matrix spike duplicate
BLK	method blank	ND	non-detect
BS	blank spike	NR	non-reportable
CAL	calibration standard	N/C	not calculated
CCB	continuing calibration blank	PS	post preparation spike
CCV	continuing calibration verification	REC	percent recovery
COC	chain of custody record	RPD	relative percent difference
D	dissolved fraction	SCV	secondary calibration verification
DUP	duplicate	SOP	standard operating procedure
IBL	instrument blank	SRM	reference material
ICV	initial calibration verification	T	total fraction
MDL	method detection limit	TR	total recoverable fraction
MRL	method reporting limit		

Definition of Data Qualifiers

(Effective 3/23/2020)

E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Please see narrative for explanation.
J	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1	Estimated value. A full explanation is presented in the narrative.
M	Duplicate precision (RPD) was not within acceptance criteria. Please see narrative for explanation.
N	Spike recovery was not within acceptance criteria. Please see narrative for explanation.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.
Z	Holding time and/or preservation requirements not established for this method; however, BAL recommendations for holding time were not followed. Please see narrative for explanation.

These qualifiers are based on those previously utilized by Brooks Applied Labs, those found in the EPA SOW ILM03.0, Exhibit B, Section III, pg. B-18, and the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review; USEPA; January 2010. These supersede all previous qualifiers ever employed by BAL.



Accreditation Information

Table 1. Accredited method/matrix/analytes for TNI
Issued by: State of Florida Dept. of Health (The NELAC Institute 2016 Standard)
Issued on: July 1, 2021; Valid to: June 30, 2022
Certificate Number: E87982-37

Method	Matrix	TNI Accredited Analyte(s)
EPA 1638	Non-Potable Waters	Ag, Cd, Cu, Ni, Pb, Sb, Se, Ti, Zn
EPA 200.8	Non-Potable Waters	Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Sb, Se, Ti, U, V, Zn
EPA 6020	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Ti, U, V, Zn
	Solids/Chemicals & Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Ti, V, Zn
BAL-5000	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, U, V, Zn, Hardness
	Solids/Chemicals	Ag, As, B, Be, Cd, Co, Cr, Cu, Pb, Mo, Ni, Sb, Se, Sn, Sr, Ti, V, Zn
	Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Ti, V, Zn
EPA 1640	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn
EPA 1631E	Non-Potable Waters, Solids/Chemicals & Biological	Total Mercury
EPA 1630	Non-Potable Waters	Methyl Mercury
BAL-3200	Solids/Chemicals & Biological	Methyl Mercury
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
BAL-4201	Non-Potable Waters	Se(IV), Se(VI)
BAL-4300	Non-Potable Waters Solid/Chemicals	Cr(VI)
SM2340B	Non-Potable Waters	Hardness



Accreditation Information

**Table 2. Accredited method/matrix/analytes for ISO (1),
 Non-Governmental TNI (2)**

Issued by: ANAB

Issued on: September 21, 2021; Valid to: March 30, 2024

Method	Matrix	ISO and Non-Gov. TNI Accredited Analyte(s)
EPA 1638 Mod EPA 200.8 Mod EPA 6020 Mod	Non-Potable Waters	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, U, V, Zn
BAL-5000	Solids/Chemicals & Biological	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, V, Zn Hg (Biological Only)
EPA 1640 Mod	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn Ag, As, Cr, Co, Se, Ti, V (ISO Only)
EPA 1631E Mod BAL-3100	Non-Potable Waters, Solids/Chemicals & Biological/Food	Total Mercury
EPA 1630 Mod BAL-3200	Non-Potable Waters, Solids/Chemicals Biological	Methyl Mercury
EPA 1632A Mod BAL-3300	Non-Potable Waters Biological/Food Solids/Chemicals	Inorganic Arsenic (ISO Only) Inorganic Arsenic (ISO Only)
AOAC 2015.01 Mod BAL-5000	Food	As, Cd, Hg, Pb
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
	Biological by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4101	Food by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4201	Non-Potable Waters	Se(IV), Se(VI), SeCN, SeMet
BAL-4300	Non-Potable Waters, Solid/Chemicals	Cr(VI)
SM 3500-Fe BAL-4500	Non-Potable Waters	Fe, Fe(II) (ISO Only)
SM2340B	Non-Potable Waters	Hardness
SM 2540G BAL-0501	Solids/Chemicals & Biological	% Dry Weight



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
RG_ERCKUT_SE-01_2022-05-12_N P	2205263-01	SE	Sample	05/12/2022	05/19/2022
RG_ERCKUT_SE-02_2022-05-12_N P	2205263-02	SE	Sample	05/12/2022	05/19/2022
RG_ERCKUT_SE-03_2022-05-12_N P	2205263-03	SE	Sample	05/12/2022	05/19/2022
RG_ERCKUT_SE-04_2022-05-12_N P	2205263-04	SE	Sample	05/12/2022	05/19/2022
RG_ERCKUT_SE-05_2022-05-12_N P	2205263-05	SE	Sample	05/12/2022	05/19/2022
RG_ERCKDT_SE-01_2022-05-12_N P	2205263-06	SE	Sample	05/12/2022	05/19/2022
RG_ERCKDT_SE-02_2022-05-12_N P	2205263-07	SE	Sample	05/12/2022	05/19/2022
RG_ERCKDT_SE-03_2022-05-12_N P	2205263-08	SE	Sample	05/12/2022	05/19/2022
RG_ERCKDT_SE-04_2022-05-12_N P	2205263-09	SE	Sample	05/12/2022	05/19/2022
RG_ERCKDT_SE-05_2022-05-12_N P	2205263-10	SE	Sample	05/12/2022	05/19/2022
RG_ERCKDT_SE-06_2022-05-12_N P	2205263-11	SE	Sample	05/12/2022	05/19/2022
RG_ERCKMD_SE-01_2022-05-13_N P	2205263-12	SE	Sample	05/13/2022	05/19/2022
RG_ERCKMD_SE-02_2022-05-13_N P	2205263-13	SE	Sample	05/13/2022	05/19/2022
RG_ERCKMD_SE-03_2022-05-13_N P	2205263-14	SE	Sample	05/13/2022	05/19/2022



Batch Summary

Analyte	Lab Matrix	Method	Prepared	Analyzed	Batch	Sequence
%TS	Soil/Sediment	SOP BAL-0501	06/03/2022	06/06/2022	B221142	N/A
DMS ₂ O F1	Soil/Sediment	In-House	05/24/2022	05/26/2022	B221133	S220582
DMS ₂ O F2	Soil/Sediment	In-House	05/24/2022	05/30/2022	B221134	S220586
MeSe(IV) F1	Soil/Sediment	In-House	05/24/2022	05/26/2022	B221133	S220582
MeSe(IV) F2	Soil/Sediment	In-House	05/24/2022	05/30/2022	B221134	S220586
Se	Soil/Sediment	EPA 6020B Mod	05/31/2022	06/01/2022	B221186	S220594
Se	Soil/Sediment	EPA 6020B Mod	06/03/2022	06/03/2022	B221244	S220604
Se Unk A F1	Soil/Sediment	In-House	05/24/2022	05/26/2022	B221133	S220582
Se Unk A F2	Soil/Sediment	In-House	05/24/2022	05/30/2022	B221134	S220586
Se(F1)	Soil/Sediment	In-House	05/23/2022	05/25/2022	B221147	S220574
Se(F2)	Soil/Sediment	In-House	05/25/2022	05/26/2022	B221165	S220575
Se(F3)	Soil/Sediment	In-House	05/24/2022	05/28/2022	B221166	S220584
Se(F4)	Soil/Sediment	In-House	05/24/2022	06/01/2022	B221167	S220576
Se(F5)	Soil/Sediment	In-House	05/31/2022	06/02/2022	B221168	S220601
Se(IV) F1	Soil/Sediment	In-House	05/24/2022	05/26/2022	B221133	S220582
Se(IV) F2	Soil/Sediment	In-House	05/24/2022	05/30/2022	B221134	S220586
Se(VI) F1	Soil/Sediment	In-House	05/24/2022	05/26/2022	B221133	S220582
Se(VI) F2	Soil/Sediment	In-House	05/24/2022	05/30/2022	B221134	S220586
SeCN F1	Soil/Sediment	In-House	05/24/2022	05/26/2022	B221133	S220582
SeCN F2	Soil/Sediment	In-House	05/24/2022	05/30/2022	B221134	S220586
SeMet F1	Soil/Sediment	In-House	05/24/2022	05/26/2022	B221133	S220582
SeMet F2	Soil/Sediment	In-House	05/24/2022	05/30/2022	B221134	S220586
SeSO ₃ F1	Soil/Sediment	In-House	05/24/2022	05/26/2022	B221133	S220582
SeSO ₃ F2	Soil/Sediment	In-House	05/24/2022	05/30/2022	B221134	S220586
Unk Se Sp F1	Soil/Sediment	In-House	05/24/2022	05/26/2022	B221133	S220582
Unk Se Sp F2	Soil/Sediment	In-House	05/24/2022	05/30/2022	B221134	S220586



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKUT_SE-01_2022-05-12_NP										
2205263-01	%TS	SE	NA	54.64		0.02	0.08	%	B221142	N/A
2205263-01	DMSeO F1	SE	dry	≤ 0.007	U	0.007	0.016	mg/kg	B221133	S220582
2205263-01	DMSeO F2	SE	dry	≤ 0.007	U	0.007	0.016	mg/kg	B221134	S220586
2205263-01	MeSe(IV) F1	SE	dry	≤ 0.007	U	0.007	0.016	mg/kg	B221133	S220582
2205263-01	MeSe(IV) F2	SE	dry	0.355		0.007	0.016	mg/kg	B221134	S220586
2205263-01	Se	SE	dry	5.32		0.168	0.336	mg/kg	B221186	S220594
2205263-01	Se Unk A F1	SE	dry	≤ 0.007	U	0.007	0.016	mg/kg	B221133	S220582
2205263-01	Se Unk A F2	SE	dry	≤ 0.007	U	0.007	0.016	mg/kg	B221134	S220586
2205263-01	Se(F1)	SE	dry	0.178		0.007	0.066	mg/kg	B221147	S220574
2205263-01	Se(F2)	SE	dry	2.19		0.038	0.078	mg/kg	B221165	S220575
2205263-01	Se(F3)	SE	dry	2.66		0.007	0.066	mg/kg	B221166	S220584
2205263-01	Se(F4)	SE	dry	0.164		0.007	0.066	mg/kg	B221167	S220576
2205263-01	Se(F5)	SE	dry	0.030	J	0.012	0.082	mg/kg	B221168	S220601
2205263-01	Se(IV) F1	SE	dry	0.086		0.007	0.049	mg/kg	B221133	S220582
2205263-01	Se(IV) F2	SE	dry	0.665		0.007	0.049	mg/kg	B221134	S220586
2205263-01	Se(VI) F1	SE	dry	0.060		0.007	0.036	mg/kg	B221133	S220582
2205263-01	Se(VI) F2	SE	dry	≤ 0.007	U	0.007	0.036	mg/kg	B221134	S220586
2205263-01	SeCN F1	SE	dry	≤ 0.007	U	0.007	0.033	mg/kg	B221133	S220582
2205263-01	SeCN F2	SE	dry	0.247		0.007	0.016	mg/kg	B221134	S220586
2205263-01	SeMet F1	SE	dry	≤ 0.007	U	0.007	0.016	mg/kg	B221133	S220582
2205263-01	SeMet F2	SE	dry	≤ 0.007	U	0.007	0.016	mg/kg	B221134	S220586
2205263-01	SeSO3 F1	SE	dry	≤ 0.007	U	0.007	0.036	mg/kg	B221133	S220582
2205263-01	SeSO3 F2	SE	dry	≤ 0.007	U	0.007	0.036	mg/kg	B221134	S220586
2205263-01	Unk Se Sp F1	SE	dry	≤ 0.007	U	0.007	0.049	mg/kg	B221133	S220582
2205263-01	Unk Se Sp F2	SE	dry	0.063	J	0.020	0.148	mg/kg	B221134	S220586



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKUT_SE-02_2022-05-12_NP										
2205263-02	%TS	SE	NA	32.06		0.03	0.10	%	B221142	N/A
2205263-02	DMS ₂ O F1	SE	dry	≤ 0.011	U	0.011	0.028	mg/kg	B221133	S220582
2205263-02	DMS ₂ O F2	SE	dry	≤ 0.011	U	0.011	0.028	mg/kg	B221134	S220586
2205263-02	MeSe(IV) F1	SE	dry	≤ 0.011	U	0.011	0.028	mg/kg	B221133	S220582
2205263-02	MeSe(IV) F2	SE	dry	0.231		0.011	0.028	mg/kg	B221134	S220586
2205263-02	Se	SE	dry	6.12		0.286	0.571	mg/kg	B221186	S220594
2205263-02	Se Unk A F1	SE	dry	≤ 0.011	U	0.011	0.028	mg/kg	B221133	S220582
2205263-02	Se Unk A F2	SE	dry	≤ 0.011	U	0.011	0.028	mg/kg	B221134	S220586
2205263-02	Se(F1)	SE	dry	0.227		0.011	0.114	mg/kg	B221147	S220574
2205263-02	Se(F2)	SE	dry	1.81		0.066	0.135	mg/kg	B221165	S220575
2205263-02	Se(F3)	SE	dry	2.16		0.011	0.114	mg/kg	B221166	S220584
2205263-02	Se(F4)	SE	dry	0.286		0.012	0.114	mg/kg	B221167	S220576
2205263-02	Se(F5)	SE	dry	0.038	J	0.021	0.142	mg/kg	B221168	S220601
2205263-02	Se(IV) F1	SE	dry	0.126		0.011	0.085	mg/kg	B221133	S220582
2205263-02	Se(IV) F2	SE	dry	0.607		0.011	0.085	mg/kg	B221134	S220586
2205263-02	Se(VI) F1	SE	dry	0.050	J	0.011	0.063	mg/kg	B221133	S220582
2205263-02	Se(VI) F2	SE	dry	≤ 0.011	U	0.011	0.063	mg/kg	B221134	S220586
2205263-02	SeCN F1	SE	dry	≤ 0.011	U	0.011	0.057	mg/kg	B221133	S220582
2205263-02	SeCN F2	SE	dry	0.243		0.011	0.028	mg/kg	B221134	S220586
2205263-02	SeMet F1	SE	dry	≤ 0.011	U	0.011	0.028	mg/kg	B221133	S220582
2205263-02	SeMet F2	SE	dry	≤ 0.011	U	0.011	0.028	mg/kg	B221134	S220586
2205263-02	SeSO ₃ F1	SE	dry	≤ 0.011	U	0.011	0.063	mg/kg	B221133	S220582
2205263-02	SeSO ₃ F2	SE	dry	≤ 0.011	U	0.011	0.063	mg/kg	B221134	S220586
2205263-02	Unk Se Sp F1	SE	dry	≤ 0.011	U	0.011	0.085	mg/kg	B221133	S220582
2205263-02	Unk Se Sp F2	SE	dry	0.051	J	0.023	0.171	mg/kg	B221134	S220586



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKUT_SE-03_2022-05-12_NP										
2205263-03	%TS	SE	NA	56.67		0.02	0.05	%	B221142	N/A
2205263-03	DMS ₂ O F1	SE	dry	≤ 0.007	U	0.007	0.017	mg/kg	B221133	S220582
2205263-03	DMS ₂ O F2	SE	dry	≤ 0.007	U	0.007	0.017	mg/kg	B221134	S220586
2205263-03	MeSe(IV) F1	SE	dry	≤ 0.007	U	0.007	0.017	mg/kg	B221133	S220582
2205263-03	MeSe(IV) F2	SE	dry	0.168		0.007	0.017	mg/kg	B221134	S220586
2205263-03	Se	SE	dry	3.54		0.160	0.319	mg/kg	B221244	S220604
2205263-03	Se Unk A F1	SE	dry	≤ 0.007	U	0.007	0.017	mg/kg	B221133	S220582
2205263-03	Se Unk A F2	SE	dry	≤ 0.007	U	0.007	0.017	mg/kg	B221134	S220586
2205263-03	Se(F1)	SE	dry	0.111		0.007	0.069	mg/kg	B221147	S220574
2205263-03	Se(F2)	SE	dry	1.10		0.040	0.082	mg/kg	B221165	S220575
2205263-03	Se(F3)	SE	dry	1.91	M	0.007	0.069	mg/kg	B221166	S220584
2205263-03	Se(F4)	SE	dry	0.382		0.007	0.069	mg/kg	B221167	S220576
2205263-03	Se(F5)	SE	dry	0.049	J	0.013	0.087	mg/kg	B221168	S220601
2205263-03	Se(IV) F1	SE	dry	0.073		0.007	0.052	mg/kg	B221133	S220582
2205263-03	Se(IV) F2	SE	dry	0.348		0.007	0.052	mg/kg	B221134	S220586
2205263-03	Se(VI) F1	SE	dry	0.011	J	0.007	0.038	mg/kg	B221133	S220582
2205263-03	Se(VI) F2	SE	dry	≤ 0.007	U	0.007	0.038	mg/kg	B221134	S220586
2205263-03	SeCN F1	SE	dry	≤ 0.007	U	0.007	0.035	mg/kg	B221133	S220582
2205263-03	SeCN F2	SE	dry	0.132		0.007	0.017	mg/kg	B221134	S220586
2205263-03	SeMet F1	SE	dry	≤ 0.007	U	0.007	0.017	mg/kg	B221133	S220582
2205263-03	SeMet F2	SE	dry	≤ 0.007	U	0.007	0.017	mg/kg	B221134	S220586
2205263-03	SeSO ₃ F1	SE	dry	≤ 0.007	U	0.007	0.038	mg/kg	B221133	S220582
2205263-03	SeSO ₃ F2	SE	dry	≤ 0.007	U	0.007	0.038	mg/kg	B221134	S220586
2205263-03	Unk Se Sp F1	SE	dry	≤ 0.007	U	0.007	0.052	mg/kg	B221133	S220582
2205263-03	Unk Se Sp F2	SE	dry	0.037	J	0.014	0.104	mg/kg	B221134	S220586



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKUT_SE-04_2022-05-12_NP										
2205263-04	%TS	SE	NA	37.16		0.03	0.09	%	B221142	N/A
2205263-04	DMS ₂ O F1	SE	dry	≤ 0.010	U	0.010	0.026	mg/kg	B221133	S220582
2205263-04	DMS ₂ O F2	SE	dry	≤ 0.010	U	0.010	0.026	mg/kg	B221134	S220586
2205263-04	MeSe(IV) F1	SE	dry	≤ 0.010	U	0.010	0.026	mg/kg	B221133	S220582
2205263-04	MeSe(IV) F2	SE	dry	0.267		0.010	0.026	mg/kg	B221134	S220586
2205263-04	Se	SE	dry	4.12		0.236	0.473	mg/kg	B221186	S220594
2205263-04	Se Unk A F1	SE	dry	≤ 0.010	U	0.010	0.026	mg/kg	B221133	S220582
2205263-04	Se Unk A F2	SE	dry	≤ 0.010	U	0.010	0.026	mg/kg	B221134	S220586
2205263-04	Se(F1)	SE	dry	0.177		0.010	0.104	mg/kg	B221147	S220574
2205263-04	Se(F2)	SE	dry	1.37		0.061	0.124	mg/kg	B221165	S220575
2205263-04	Se(F3)	SE	dry	1.66		0.010	0.104	mg/kg	B221166	S220584
2205263-04	Se(F4)	SE	dry	0.037	J	0.011	0.104	mg/kg	B221167	S220576
2205263-04	Se(F5)	SE	dry	≤ 0.020	U	0.020	0.130	mg/kg	B221168	S220601
2205263-04	Se(IV) F1	SE	dry	0.076	J	0.010	0.078	mg/kg	B221133	S220582
2205263-04	Se(IV) F2	SE	dry	0.433		0.010	0.078	mg/kg	B221134	S220586
2205263-04	Se(VI) F1	SE	dry	0.049	J	0.010	0.057	mg/kg	B221133	S220582
2205263-04	Se(VI) F2	SE	dry	≤ 0.010	U	0.010	0.057	mg/kg	B221134	S220586
2205263-04	SeCN F1	SE	dry	≤ 0.010	U	0.010	0.052	mg/kg	B221133	S220582
2205263-04	SeCN F2	SE	dry	0.169		0.010	0.026	mg/kg	B221134	S220586
2205263-04	SeMet F1	SE	dry	≤ 0.010	U	0.010	0.026	mg/kg	B221133	S220582
2205263-04	SeMet F2	SE	dry	≤ 0.010	U	0.010	0.026	mg/kg	B221134	S220586
2205263-04	SeSO ₃ F1	SE	dry	≤ 0.010	U	0.010	0.057	mg/kg	B221133	S220582
2205263-04	SeSO ₃ F2	SE	dry	≤ 0.010	U	0.010	0.057	mg/kg	B221134	S220586
2205263-04	Unk Se Sp F1	SE	dry	≤ 0.010	U	0.010	0.078	mg/kg	B221133	S220582
2205263-04	Unk Se Sp F2	SE	dry	0.044	J	0.021	0.156	mg/kg	B221134	S220586



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKUT_SE-05_2022-05-12_NP										
2205263-05	%TS	SE	NA	16.00		0.10	0.32	%	B221142	N/A
2205263-05	DMS ₂ O F1	SE	dry	≤ 0.024	U	0.024	0.059	mg/kg	B221133	S220582
2205263-05	DMS ₂ O F2	SE	dry	≤ 0.024	U	0.024	0.059	mg/kg	B221134	S220586
2205263-05	MeSe(IV) F1	SE	dry	≤ 0.024	U	0.024	0.059	mg/kg	B221133	S220582
2205263-05	MeSe(IV) F2	SE	dry	1.20		0.024	0.059	mg/kg	B221134	S220586
2205263-05	Se	SE	dry	20.7		0.586	1.17	mg/kg	B221186	S220594
2205263-05	Se Unk A F1	SE	dry	≤ 0.024	U	0.024	0.059	mg/kg	B221133	S220582
2205263-05	Se Unk A F2	SE	dry	≤ 0.024	U	0.024	0.059	mg/kg	B221134	S220586
2205263-05	Se(F1)	SE	dry	0.317		0.024	0.235	mg/kg	B221147	S220574
2205263-05	Se(F2)	SE	dry	5.55		0.137	0.279	mg/kg	B221165	S220575
2205263-05	Se(F3)	SE	dry	7.55		0.024	0.235	mg/kg	B221166	S220584
2205263-05	Se(F4)	SE	dry	0.166	J	0.025	0.235	mg/kg	B221167	S220576
2205263-05	Se(F5)	SE	dry	≤ 0.044	U	0.044	0.294	mg/kg	B221168	S220601
2205263-05	Se(IV) F1	SE	dry	0.112	J	0.024	0.176	mg/kg	B221133	S220582
2205263-05	Se(IV) F2	SE	dry	1.95		0.024	0.176	mg/kg	B221134	S220586
2205263-05	Se(VI) F1	SE	dry	0.057	J	0.024	0.129	mg/kg	B221133	S220582
2205263-05	Se(VI) F2	SE	dry	≤ 0.024	U	0.024	0.129	mg/kg	B221134	S220586
2205263-05	SeCN F1	SE	dry	≤ 0.024	U	0.024	0.118	mg/kg	B221133	S220582
2205263-05	SeCN F2	SE	dry	0.858		0.024	0.059	mg/kg	B221134	S220586
2205263-05	SeMet F1	SE	dry	≤ 0.024	U	0.024	0.059	mg/kg	B221133	S220582
2205263-05	SeMet F2	SE	dry	≤ 0.024	U	0.024	0.059	mg/kg	B221134	S220586
2205263-05	SeSO ₃ F1	SE	dry	≤ 0.024	U	0.024	0.129	mg/kg	B221133	S220582
2205263-05	SeSO ₃ F2	SE	dry	≤ 0.024	U	0.024	0.129	mg/kg	B221134	S220586
2205263-05	Unk Se Sp F1	SE	dry	≤ 0.024	U	0.024	0.176	mg/kg	B221133	S220582
2205263-05	Unk Se Sp F2	SE	dry	0.191	J	0.047	0.353	mg/kg	B221134	S220586



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKDT_SE-01_2022-05-12_NP										
2205263-06	%TS	SE	NA	38.49		0.03	0.11	%	B221142	N/A
2205263-06	DMS ₂ O F1	SE	dry	0.094		0.010	0.026	mg/kg	B221133	S220582
2205263-06	DMS ₂ O F2	SE	dry	≤ 0.010	U	0.010	0.026	mg/kg	B221134	S220586
2205263-06	MeSe(IV) F1	SE	dry	≤ 0.010	U	0.010	0.026	mg/kg	B221133	S220582
2205263-06	MeSe(IV) F2	SE	dry	0.696		0.010	0.026	mg/kg	B221134	S220586
2205263-06	Se	SE	dry	43.4		0.217	0.434	mg/kg	B221186	S220594
2205263-06	Se Unk A F1	SE	dry	≤ 0.010	U	0.010	0.026	mg/kg	B221133	S220582
2205263-06	Se Unk A F2	SE	dry	≤ 0.010	U	0.010	0.026	mg/kg	B221134	S220586
2205263-06	Se(F1)	SE	dry	0.528		0.010	0.103	mg/kg	B221147	S220574
2205263-06	Se(F2)	SE	dry	18.2		0.060	0.122	mg/kg	B221165	S220575
2205263-06	Se(F3)	SE	dry	14.4		0.010	0.103	mg/kg	B221166	S220584
2205263-06	Se(F4)	SE	dry	0.431		0.011	0.103	mg/kg	B221167	S220576
2205263-06	Se(F5)	SE	dry	0.045	J	0.019	0.128	mg/kg	B221168	S220601
2205263-06	Se(IV) F1	SE	dry	0.316		0.010	0.077	mg/kg	B221133	S220582
2205263-06	Se(IV) F2	SE	dry	13.9		0.010	0.077	mg/kg	B221134	S220586
2205263-06	Se(VI) F1	SE	dry	≤ 0.010	U	0.010	0.056	mg/kg	B221133	S220582
2205263-06	Se(VI) F2	SE	dry	≤ 0.010	U	0.010	0.056	mg/kg	B221134	S220586
2205263-06	SeCN F1	SE	dry	≤ 0.010	U	0.010	0.051	mg/kg	B221133	S220582
2205263-06	SeCN F2	SE	dry	1.89		0.010	0.026	mg/kg	B221134	S220586
2205263-06	SeMet F1	SE	dry	≤ 0.010	U	0.010	0.026	mg/kg	B221133	S220582
2205263-06	SeMet F2	SE	dry	≤ 0.010	U	0.010	0.026	mg/kg	B221134	S220586
2205263-06	SeSO ₃ F1	SE	dry	≤ 0.010	U	0.010	0.056	mg/kg	B221133	S220582
2205263-06	SeSO ₃ F2	SE	dry	0.050	J	0.010	0.056	mg/kg	B221134	S220586
2205263-06	Unk Se Sp F1	SE	dry	≤ 0.010	U	0.010	0.077	mg/kg	B221133	S220582
2205263-06	Unk Se Sp F2	SE	dry	0.219		0.021	0.154	mg/kg	B221134	S220586



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKDT_SE-02_2022-05-12_NP										
2205263-07	%TS	SE	NA	55.08		0.02	0.06	%	B221142	N/A
2205263-07	DMS ₂ O F1	SE	dry	0.030		0.007	0.017	mg/kg	B221133	S220582
2205263-07	DMS ₂ O F2	SE	dry	≤ 0.007	U	0.007	0.017	mg/kg	B221134	S220586
2205263-07	MeSe(IV) F1	SE	dry	≤ 0.007	U	0.007	0.017	mg/kg	B221133	S220582
2205263-07	MeSe(IV) F2	SE	dry	0.425		0.007	0.017	mg/kg	B221134	S220586
2205263-07	Se	SE	dry	11.9		0.167	0.335	mg/kg	B221244	S220604
2205263-07	Se Unk A F1	SE	dry	≤ 0.007	U	0.007	0.017	mg/kg	B221133	S220582
2205263-07	Se Unk A F2	SE	dry	≤ 0.007	U	0.007	0.017	mg/kg	B221134	S220586
2205263-07	Se(F1)	SE	dry	0.400		0.007	0.067	mg/kg	B221147	S220574
2205263-07	Se(F2)	SE	dry	7.07		0.039	0.079	mg/kg	B221165	S220575
2205263-07	Se(F3)	SE	dry	5.85		0.007	0.067	mg/kg	B221166	S220584
2205263-07	Se(F4)	SE	dry	0.285		0.007	0.067	mg/kg	B221167	S220576
2205263-07	Se(F5)	SE	dry	0.042	J	0.013	0.084	mg/kg	B221168	S220601
2205263-07	Se(IV) F1	SE	dry	0.192		0.007	0.050	mg/kg	B221133	S220582
2205263-07	Se(IV) F2	SE	dry	4.86		0.007	0.050	mg/kg	B221134	S220586
2205263-07	Se(VI) F1	SE	dry	0.082		0.007	0.037	mg/kg	B221133	S220582
2205263-07	Se(VI) F2	SE	dry	≤ 0.007	U	0.007	0.037	mg/kg	B221134	S220586
2205263-07	SeCN F1	SE	dry	≤ 0.007	U	0.007	0.033	mg/kg	B221133	S220582
2205263-07	SeCN F2	SE	dry	0.816		0.007	0.017	mg/kg	B221134	S220586
2205263-07	SeMet F1	SE	dry	≤ 0.007	U	0.007	0.017	mg/kg	B221133	S220582
2205263-07	SeMet F2	SE	dry	≤ 0.007	U	0.007	0.017	mg/kg	B221134	S220586
2205263-07	SeSO ₃ F1	SE	dry	≤ 0.007	U	0.007	0.037	mg/kg	B221133	S220582
2205263-07	SeSO ₃ F2	SE	dry	0.013	J	0.007	0.037	mg/kg	B221134	S220586
2205263-07	Unk Se Sp F1	SE	dry	≤ 0.007	U	0.007	0.050	mg/kg	B221133	S220582
2205263-07	Unk Se Sp F2	SE	dry	0.095	J	0.013	0.100	mg/kg	B221134	S220586



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKDT_SE-03_2022-05-12_NP										
2205263-08	%TS	SE	NA	41.74		0.02	0.08	%	B221142	N/A
2205263-08	DMS ₂ O F1	SE	dry	0.330		0.009	0.022	mg/kg	B221133	S220582
2205263-08	DMS ₂ O F2	SE	dry	≤ 0.009	U	0.009	0.022	mg/kg	B221134	S220586
2205263-08	MeSe(IV) F1	SE	dry	0.024		0.009	0.022	mg/kg	B221133	S220582
2205263-08	MeSe(IV) F2	SE	dry	2.09		0.009	0.022	mg/kg	B221134	S220586
2205263-08	Se	SE	dry	53.9		0.224	0.447	mg/kg	B221186	S220594
2205263-08	Se Unk A F1	SE	dry	≤ 0.009	U	0.009	0.022	mg/kg	B221133	S220582
2205263-08	Se Unk A F2	SE	dry	≤ 0.009	U	0.009	0.022	mg/kg	B221134	S220586
2205263-08	Se(F1)	SE	dry	1.11		0.009	0.090	mg/kg	B221147	S220574
2205263-08	Se(F2)	SE	dry	22.1		0.052	0.106	mg/kg	B221165	S220575
2205263-08	Se(F3)	SE	dry	18.8		0.009	0.090	mg/kg	B221166	S220584
2205263-08	Se(F4)	SE	dry	0.571		0.010	0.090	mg/kg	B221167	S220576
2205263-08	Se(F5)	SE	dry	0.070	J	0.017	0.112	mg/kg	B221168	S220601
2205263-08	Se(IV) F1	SE	dry	0.521		0.009	0.067	mg/kg	B221133	S220582
2205263-08	Se(IV) F2	SE	dry	15.4		0.009	0.067	mg/kg	B221134	S220586
2205263-08	Se(VI) F1	SE	dry	0.014	J	0.009	0.049	mg/kg	B221133	S220582
2205263-08	Se(VI) F2	SE	dry	≤ 0.009	U	0.009	0.049	mg/kg	B221134	S220586
2205263-08	SeCN F1	SE	dry	≤ 0.009	U	0.009	0.045	mg/kg	B221133	S220582
2205263-08	SeCN F2	SE	dry	2.16		0.009	0.022	mg/kg	B221134	S220586
2205263-08	SeMet F1	SE	dry	≤ 0.009	U	0.009	0.022	mg/kg	B221133	S220582
2205263-08	SeMet F2	SE	dry	≤ 0.009	U	0.009	0.022	mg/kg	B221134	S220586
2205263-08	SeSO ₃ F1	SE	dry	≤ 0.009	U	0.009	0.049	mg/kg	B221133	S220582
2205263-08	SeSO ₃ F2	SE	dry	0.173		0.009	0.049	mg/kg	B221134	S220586
2205263-08	Unk Se Sp F1	SE	dry	≤ 0.009	U	0.009	0.067	mg/kg	B221133	S220582
2205263-08	Unk Se Sp F2	SE	dry	0.461		0.027	0.202	mg/kg	B221134	S220586



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKDT_SE-04_2022-05-12_NP										
2205263-09	%TS	SE	NA	30.52		0.04	0.12	%	B221142	N/A
2205263-09	DMS ₂ O F1	SE	dry	0.044		0.013	0.032	mg/kg	B221133	S220582
2205263-09	DMS ₂ O F2	SE	dry	≤ 0.013	U	0.013	0.032	mg/kg	B221134	S220586
2205263-09	MeSe(IV) F1	SE	dry	0.018	J	0.013	0.032	mg/kg	B221133	S220582
2205263-09	MeSe(IV) F2	SE	dry	0.895		0.013	0.032	mg/kg	B221134	S220586
2205263-09	Se	SE	dry	26.2		0.302	0.605	mg/kg	B221186	S220594
2205263-09	Se Unk A F1	SE	dry	≤ 0.013	U	0.013	0.032	mg/kg	B221133	S220582
2205263-09	Se Unk A F2	SE	dry	≤ 0.013	U	0.013	0.032	mg/kg	B221134	S220586
2205263-09	Se(F1)	SE	dry	0.543		0.013	0.129	mg/kg	B221147	S220574
2205263-09	Se(F2)	SE	dry	6.57		0.075	0.154	mg/kg	B221165	S220575
2205263-09	Se(F3)	SE	dry	9.78		0.013	0.129	mg/kg	B221166	S220584
2205263-09	Se(F4)	SE	dry	0.438		0.014	0.129	mg/kg	B221167	S220576
2205263-09	Se(F5)	SE	dry	0.036	J	0.024	0.162	mg/kg	B221168	S220601
2205263-09	Se(IV) F1	SE	dry	0.208		0.013	0.097	mg/kg	B221133	S220582
2205263-09	Se(IV) F2	SE	dry	6.23		0.013	0.097	mg/kg	B221134	S220586
2205263-09	Se(VI) F1	SE	dry	≤ 0.013	U	0.013	0.071	mg/kg	B221133	S220582
2205263-09	Se(VI) F2	SE	dry	≤ 0.013	U	0.013	0.071	mg/kg	B221134	S220586
2205263-09	SeCN F1	SE	dry	≤ 0.013	U	0.013	0.065	mg/kg	B221133	S220582
2205263-09	SeCN F2	SE	dry	1.20		0.013	0.032	mg/kg	B221134	S220586
2205263-09	SeMet F1	SE	dry	≤ 0.013	U	0.013	0.032	mg/kg	B221133	S220582
2205263-09	SeMet F2	SE	dry	≤ 0.013	U	0.013	0.032	mg/kg	B221134	S220586
2205263-09	SeSO ₃ F1	SE	dry	≤ 0.013	U	0.013	0.071	mg/kg	B221133	S220582
2205263-09	SeSO ₃ F2	SE	dry	0.073		0.013	0.071	mg/kg	B221134	S220586
2205263-09	Unk Se Sp F1	SE	dry	≤ 0.013	U	0.013	0.097	mg/kg	B221133	S220582
2205263-09	Unk Se Sp F2	SE	dry	0.238	J	0.039	0.291	mg/kg	B221134	S220586



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKDT_SE-05_2022-05-12_NP										
2205263-10	%TS	SE	NA	32.05		0.04	0.15	%	B221142	N/A
2205263-10	DMS ₂ O F1	SE	dry	0.038		0.012	0.029	mg/kg	B221133	S220582
2205263-10	DMS ₂ O F2	SE	dry	≤ 0.012	U	0.012	0.029	mg/kg	B221134	S220586
2205263-10	MeSe(IV) F1	SE	dry	≤ 0.012	U	0.012	0.029	mg/kg	B221133	S220582
2205263-10	MeSe(IV) F2	SE	dry	0.488		0.012	0.029	mg/kg	B221134	S220586
2205263-10	Se	SE	dry	33.7		0.292	0.583	mg/kg	B221186	S220594
2205263-10	Se Unk A F1	SE	dry	≤ 0.012	U	0.012	0.029	mg/kg	B221133	S220582
2205263-10	Se Unk A F2	SE	dry	≤ 0.012	U	0.012	0.029	mg/kg	B221134	S220586
2205263-10	Se(F1)	SE	dry	0.423		0.012	0.117	mg/kg	B221147	S220574
2205263-10	Se(F2)	SE	dry	15.6		0.068	0.139	mg/kg	B221165	S220575
2205263-10	Se(F3)	SE	dry	10.1		0.012	0.117	mg/kg	B221166	S220584
2205263-10	Se(F4)	SE	dry	0.604		0.012	0.117	mg/kg	B221167	S220576
2205263-10	Se(F5)	SE	dry	0.054	J	0.022	0.147	mg/kg	B221168	S220601
2205263-10	Se(IV) F1	SE	dry	0.246		0.012	0.088	mg/kg	B221133	S220582
2205263-10	Se(IV) F2	SE	dry	13.7		0.012	0.088	mg/kg	B221134	S220586
2205263-10	Se(VI) F1	SE	dry	≤ 0.012	U	0.012	0.064	mg/kg	B221133	S220582
2205263-10	Se(VI) F2	SE	dry	≤ 0.012	U	0.012	0.064	mg/kg	B221134	S220586
2205263-10	SeCN F1	SE	dry	≤ 0.012	U	0.012	0.059	mg/kg	B221133	S220582
2205263-10	SeCN F2	SE	dry	1.25		0.012	0.029	mg/kg	B221134	S220586
2205263-10	SeMet F1	SE	dry	≤ 0.012	U	0.012	0.029	mg/kg	B221133	S220582
2205263-10	SeMet F2	SE	dry	≤ 0.012	U	0.012	0.029	mg/kg	B221134	S220586
2205263-10	SeSO ₃ F1	SE	dry	≤ 0.012	U	0.012	0.064	mg/kg	B221133	S220582
2205263-10	SeSO ₃ F2	SE	dry	0.026	J	0.012	0.064	mg/kg	B221134	S220586
2205263-10	Unk Se Sp F1	SE	dry	≤ 0.012	U	0.012	0.088	mg/kg	B221133	S220582
2205263-10	Unk Se Sp F2	SE	dry	0.180		0.023	0.176	mg/kg	B221134	S220586



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKDT_SE-06_2022-05-12_NP										
2205263-11	%TS	SE	NA	24.90		0.04	0.13	%	B221142	N/A
2205263-11	DMS ₂ O F1	SE	dry	≤ 0.016	U	0.016	0.040	mg/kg	B221133	S220582
2205263-11	DMS ₂ O F2	SE	dry	≤ 0.016	U	0.016	0.040	mg/kg	B221134	S220586
2205263-11	MeSe(IV) F1	SE	dry	≤ 0.016	U	0.016	0.040	mg/kg	B221133	S220582
2205263-11	MeSe(IV) F2	SE	dry	0.836		0.016	0.040	mg/kg	B221134	S220586
2205263-11	Se	SE	dry	35.4		0.376	0.752	mg/kg	B221186	S220594
2205263-11	Se Unk A F1	SE	dry	≤ 0.016	U	0.016	0.040	mg/kg	B221133	S220582
2205263-11	Se Unk A F2	SE	dry	≤ 0.016	U	0.016	0.040	mg/kg	B221134	S220586
2205263-11	Se(F1)	SE	dry	0.713		0.016	0.160	mg/kg	B221147	S220574
2205263-11	Se(F2)	SE	dry	15.4		0.093	0.190	mg/kg	B221165	S220575
2205263-11	Se(F3)	SE	dry	13.8		0.016	0.160	mg/kg	B221166	S220584
2205263-11	Se(F4)	SE	dry	0.442		0.017	0.160	mg/kg	B221167	S220576
2205263-11	Se(F5)	SE	dry	0.037	J	0.030	0.200	mg/kg	B221168	S220601
2205263-11	Se(IV) F1	SE	dry	0.171		0.016	0.120	mg/kg	B221133	S220582
2205263-11	Se(IV) F2	SE	dry	9.71		0.016	0.120	mg/kg	B221134	S220586
2205263-11	Se(VI) F1	SE	dry	≤ 0.016	U	0.016	0.088	mg/kg	B221133	S220582
2205263-11	Se(VI) F2	SE	dry	≤ 0.016	U	0.016	0.088	mg/kg	B221134	S220586
2205263-11	SeCN F1	SE	dry	≤ 0.016	U	0.016	0.080	mg/kg	B221133	S220582
2205263-11	SeCN F2	SE	dry	1.33		0.016	0.040	mg/kg	B221134	S220586
2205263-11	SeMet F1	SE	dry	≤ 0.016	U	0.016	0.040	mg/kg	B221133	S220582
2205263-11	SeMet F2	SE	dry	≤ 0.016	U	0.016	0.040	mg/kg	B221134	S220586
2205263-11	SeSO ₃ F1	SE	dry	≤ 0.016	U	0.016	0.088	mg/kg	B221133	S220582
2205263-11	SeSO ₃ F2	SE	dry	0.073	J	0.016	0.088	mg/kg	B221134	S220586
2205263-11	Unk Se Sp F1	SE	dry	≤ 0.016	U	0.016	0.120	mg/kg	B221133	S220582
2205263-11	Unk Se Sp F2	SE	dry	0.412		0.048	0.361	mg/kg	B221134	S220586



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKMD_SE-01_2022-05-13_NP										
2205263-12	%TS	SE	NA	23.85		0.05	0.17	%	B221142	N/A
2205263-12	DMS ₂ O F1	SE	dry	0.069		0.015	0.038	mg/kg	B221133	S220582
2205263-12	DMS ₂ O F2	SE	dry	≤ 0.015	U	0.015	0.038	mg/kg	B221134	S220586
2205263-12	MeSe(IV) F1	SE	dry	0.022	J	0.015	0.038	mg/kg	B221133	S220582
2205263-12	MeSe(IV) F2	SE	dry	0.896		0.015	0.038	mg/kg	B221134	S220586
2205263-12	Se	SE	dry	43.1		0.370	0.740	mg/kg	B221186	S220594
2205263-12	Se Unk A F1	SE	dry	≤ 0.015	U	0.015	0.038	mg/kg	B221133	S220582
2205263-12	Se Unk A F2	SE	dry	≤ 0.015	U	0.015	0.038	mg/kg	B221134	S220586
2205263-12	Se(F1)	SE	dry	0.497		0.015	0.152	mg/kg	B221147	S220574
2205263-12	Se(F2)	SE	dry	13.8		0.088	0.180	mg/kg	B221165	S220575
2205263-12	Se(F3)	SE	dry	17.3		0.015	0.152	mg/kg	B221166	S220584
2205263-12	Se(F4)	SE	dry	0.329		0.016	0.152	mg/kg	B221167	S220576
2205263-12	Se(F5)	SE	dry	0.039	J	0.028	0.190	mg/kg	B221168	S220601
2205263-12	Se(IV) F1	SE	dry	0.183		0.015	0.114	mg/kg	B221133	S220582
2205263-12	Se(IV) F2	SE	dry	8.71		0.015	0.114	mg/kg	B221134	S220586
2205263-12	Se(VI) F1	SE	dry	≤ 0.015	U	0.015	0.084	mg/kg	B221133	S220582
2205263-12	Se(VI) F2	SE	dry	≤ 0.015	U	0.015	0.084	mg/kg	B221134	S220586
2205263-12	SeCN F1	SE	dry	≤ 0.015	U	0.015	0.076	mg/kg	B221133	S220582
2205263-12	SeCN F2	SE	dry	2.25		0.015	0.038	mg/kg	B221134	S220586
2205263-12	SeMet F1	SE	dry	≤ 0.015	U	0.015	0.038	mg/kg	B221133	S220582
2205263-12	SeMet F2	SE	dry	≤ 0.015	U	0.015	0.038	mg/kg	B221134	S220586
2205263-12	SeSO ₃ F1	SE	dry	≤ 0.015	U	0.015	0.084	mg/kg	B221133	S220582
2205263-12	SeSO ₃ F2	SE	dry	0.060	J	0.015	0.084	mg/kg	B221134	S220586
2205263-12	Unk Se Sp F1	SE	dry	≤ 0.015	U	0.015	0.114	mg/kg	B221133	S220582
2205263-12	Unk Se Sp F2	SE	dry	0.362		0.046	0.342	mg/kg	B221134	S220586



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKMD_SE-02_2022-05-13_NP										
2205263-13	%TS	SE	NA	33.64		0.03	0.10	%	B221142	N/A
2205263-13	DMS ₂ O F1	SE	dry	0.081		0.011	0.028	mg/kg	B221133	S220582
2205263-13	DMS ₂ O F2	SE	dry	≤ 0.011	U	0.011	0.028	mg/kg	B221134	S220586
2205263-13	MeSe(IV) F1	SE	dry	0.017	J	0.011	0.028	mg/kg	B221133	S220582
2205263-13	MeSe(IV) F2	SE	dry	0.614		0.011	0.028	mg/kg	B221134	S220586
2205263-13	Se	SE	dry	41.1		0.236	0.472	mg/kg	B221186	S220594
2205263-13	Se Unk A F1	SE	dry	≤ 0.011	U	0.011	0.028	mg/kg	B221133	S220582
2205263-13	Se Unk A F2	SE	dry	≤ 0.011	U	0.011	0.028	mg/kg	B221134	S220586
2205263-13	Se(F1)	SE	dry	0.432		0.011	0.111	mg/kg	B221147	S220574
2205263-13	Se(F2)	SE	dry	12.9		0.064	0.132	mg/kg	B221165	S220575
2205263-13	Se(F3)	SE	dry	15.4		0.011	0.111	mg/kg	B221166	S220584
2205263-13	Se(F4)	SE	dry	0.622		0.012	0.111	mg/kg	B221167	S220576
2205263-13	Se(F5)	SE	dry	0.037	J	0.021	0.138	mg/kg	B221168	S220601
2205263-13	Se(IV) F1	SE	dry	0.175		0.011	0.083	mg/kg	B221133	S220582
2205263-13	Se(IV) F2	SE	dry	8.89		0.011	0.083	mg/kg	B221134	S220586
2205263-13	Se(VI) F1	SE	dry	≤ 0.011	U	0.011	0.061	mg/kg	B221133	S220582
2205263-13	Se(VI) F2	SE	dry	≤ 0.011	U	0.011	0.061	mg/kg	B221134	S220586
2205263-13	SeCN F1	SE	dry	≤ 0.011	U	0.011	0.055	mg/kg	B221133	S220582
2205263-13	SeCN F2	SE	dry	2.23		0.011	0.028	mg/kg	B221134	S220586
2205263-13	SeMet F1	SE	dry	≤ 0.011	U	0.011	0.028	mg/kg	B221133	S220582
2205263-13	SeMet F2	SE	dry	≤ 0.011	U	0.011	0.028	mg/kg	B221134	S220586
2205263-13	SeSO ₃ F1	SE	dry	≤ 0.011	U	0.011	0.061	mg/kg	B221133	S220582
2205263-13	SeSO ₃ F2	SE	dry	0.059	J	0.011	0.061	mg/kg	B221134	S220586
2205263-13	Unk Se Sp F1	SE	dry	≤ 0.011	U	0.011	0.083	mg/kg	B221133	S220582
2205263-13	Unk Se Sp F2	SE	dry	0.171		0.022	0.166	mg/kg	B221134	S220586



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKMD_SE-03_2022-05-13_NP										
2205263-14	%TS	SE	NA	23.07		0.05	0.18	%	B221142	N/A
2205263-14	DMS ₂ O F1	SE	dry	0.181		0.016	0.040	mg/kg	B221133	S220582
2205263-14	DMS ₂ O F2	SE	dry	≤ 0.016	U	0.016	0.040	mg/kg	B221134	S220586
2205263-14	MeSe(IV) F1	SE	dry	0.021	J	0.016	0.040	mg/kg	B221133	S220582
2205263-14	MeSe(IV) F2	SE	dry	0.731		0.016	0.040	mg/kg	B221134	S220586
2205263-14	Se	SE	dry	71.2		0.363	0.726	mg/kg	B221186	S220594
2205263-14	Se Unk A F1	SE	dry	≤ 0.016	U	0.016	0.040	mg/kg	B221133	S220582
2205263-14	Se Unk A F2	SE	dry	≤ 0.016	U	0.016	0.040	mg/kg	B221134	S220586
2205263-14	Se(F1)	SE	dry	0.979		0.016	0.158	mg/kg	B221147	S220574
2205263-14	Se(F2)	SE	dry	22.5		0.092	0.188	mg/kg	B221165	S220575
2205263-14	Se(F3)	SE	dry	28.7		0.016	0.158	mg/kg	B221166	S220584
2205263-14	Se(F4)	SE	dry	0.885		0.017	0.158	mg/kg	B221167	S220576
2205263-14	Se(F5)	SE	dry	0.044	J	0.030	0.198	mg/kg	B221168	S220601
2205263-14	Se(IV) F1	SE	dry	0.138		0.016	0.119	mg/kg	B221133	S220582
2205263-14	Se(IV) F2	SE	dry	14.9		0.016	0.119	mg/kg	B221134	S220586
2205263-14	Se(VI) F1	SE	dry	0.384		0.016	0.087	mg/kg	B221133	S220582
2205263-14	Se(VI) F2	SE	dry	≤ 0.016	U	0.016	0.087	mg/kg	B221134	S220586
2205263-14	SeCN F1	SE	dry	≤ 0.016	U	0.016	0.079	mg/kg	B221133	S220582
2205263-14	SeCN F2	SE	dry	4.49		0.016	0.040	mg/kg	B221134	S220586
2205263-14	SeMet F1	SE	dry	≤ 0.016	U	0.016	0.040	mg/kg	B221133	S220582
2205263-14	SeMet F2	SE	dry	≤ 0.016	U	0.016	0.040	mg/kg	B221134	S220586
2205263-14	SeSO ₃ F1	SE	dry	≤ 0.016	U	0.016	0.087	mg/kg	B221133	S220582
2205263-14	SeSO ₃ F2	SE	dry	0.074	J	0.016	0.087	mg/kg	B221134	S220586
2205263-14	Unk Se Sp F1	SE	dry	≤ 0.016	U	0.016	0.119	mg/kg	B221133	S220582
2205263-14	Unk Se Sp F2	SE	dry	0.319	J	0.047	0.356	mg/kg	B221134	S220586

2205263-01 = RG_ERCKUT_SE-01_2022-05-12_NP

Fraction	Se (Total)	% of Total	Se(IV)	Se(VI)	SeCN	MeSe(IV)	SeMet	SeSO3	DMSeO	MeSe(VI)	Unk Se Sp	Speciation Recovery
F1	0.178	3.3%	0.086	0.060	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	82%
F2	2.19	41.2%	0.665	< 0.007	0.247	0.355	< 0.007	< 0.007	< 0.007	< 0.007	0.063 J	61%
F3	2.66	50.0%	-	-	-	-	-	-	-	-	-	-
F4	0.164	3.1%	-	-	-	-	-	-	-	-	-	-
F5	0.030 J	0.6%	-	-	-	-	-	-	-	-	-	-
Total (Original Sample)	5.32	-	-	-	-	-	-	-	-	-	-	-
% Recovery of SSE	98%	-	-	-	-	-	-	-	-	-	-	-

All sample concentrations reported in mg/kg (dry weight)

2205263-02 = RG_ERCKUT_SE-02_2022-05-12_NP

Fraction	Se (Total)	% of Total	Se(IV)	Se(VI)	SeCN	MeSe(IV)	SeMet	SeSO3	DMSeO	MeSe(VI)	Unk Se Sp	Speciation Recovery
F1	0.227	3.7%	0.126	0.050 J	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	78%
F2	1.81	29.6%	0.607	< 0.011	0.243	0.231	< 0.011	< 0.011	< 0.011	< 0.011	0.051 J	63%
F3	2.16	35.3%	-	-	-	-	-	-	-	-	-	-
F4	0.286	4.7%	-	-	-	-	-	-	-	-	-	-
F5	0.038 J	0.6%	-	-	-	-	-	-	-	-	-	-
Total (Original Sample)	6.12	-	-	-	-	-	-	-	-	-	-	-
% Recovery of SSE	74%	-	-	-	-	-	-	-	-	-	-	-

All sample concentrations reported in mg/kg (dry weight)

2205263-03 = RG_ERCKUT_SE-03_2022-05-12_NP

Fraction	Se (Total)	% of Total	Se(IV)	Se(VI)	SeCN	MeSe(IV)	SeMet	SeSO3	DMSeO	MeSe(VI)	Unk Se Sp	Speciation Recovery
F1	0.111	3.1%	0.073	0.011 J	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	76%
F2	1.10	31.1%	0.348	< 0.007	0.132	0.168	< 0.007	< 0.007	< 0.007	< 0.007	0.037 J	62%
F3	1.91 M	54.0%	-	-	-	-	-	-	-	-	-	-
F4	0.382	10.8%	-	-	-	-	-	-	-	-	-	-
F5	0.049 J	1.4%	-	-	-	-	-	-	-	-	-	-
Total (Original Sample)	3.54	-	-	-	-	-	-	-	-	-	-	-
% Recovery of SSE	100%	-	-	-	-	-	-	-	-	-	-	-

All sample concentrations reported in mg/kg (dry weight)

2205263-04 = RG_ERCKUT_SE-04_2022-05-12_NP

Fraction	Se (Total)	% of Total	Se(IV)	Se(VI)	SeCN	MeSe(IV)	SeMet	SeSO3	DMSeO	MeSe(VI)	Unk Se Sp	Speciation Recovery
F1	0.177	4.3%	0.076 J	0.049 J	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	71%
F2	1.37	33.3%	0.433	< 0.010	0.169	0.267	< 0.010	< 0.010	< 0.010	< 0.010	0.044 J	67%
F3	1.66	40.3%	-	-	-	-	-	-	-	-	-	-
F4	0.037 J	0.9%	-	-	-	-	-	-	-	-	-	-
F5	< 0.020	0%	-	-	-	-	-	-	-	-	-	-
Total (Original Sample)	4.12	-	-	-	-	-	-	-	-	-	-	-
% Recovery of SSE	79%	-	-	-	-	-	-	-	-	-	-	-

All sample concentrations reported in mg/kg (dry weight)

2205263-05 = RG_ERCKUT_SE-05_2022-05-12_NP

Fraction	Se (Total)	% of Total	Se(IV)	Se(VI)	SeCN	MeSe(IV)	SeMet	SeSO3	DMSeO	MeSe(VI)	Unk Se Sp	Speciation Recovery
F1	0.317	1.5%	0.112 J	0.057	< 0.024	< 0.024	< 0.024	< 0.024	< 0.024	< 0.024	< 0.024	53%
F2	5.55	26.8%	1.95	< 0.024	0.858	1.20	< 0.024	< 0.024	< 0.024	< 0.024	0.191 J	76%
F3	7.55	36.5%	-	-	-	-	-	-	-	-	-	-
F4	0.166 J	0.8%	-	-	-	-	-	-	-	-	-	-
F5	< 0.044	0.0%	-	-	-	-	-	-	-	-	-	-
Total (Original Sample)	20.7	-	-	-	-	-	-	-	-	-	-	-
% Recovery of SSE	66%	-	-	-	-	-	-	-	-	-	-	-

All sample concentrations reported in mg/kg (dry weight)

2205263-06 =RG_ERCKDT_SE-01_2022-05-12_NP

Fraction	Se (Total)	% of Total	Se(IV)	Se(VI)	SeCN	MeSe(IV)	SeMet	SeSO3	DMSeO	MeSe(VI)	Unk Se Sp	Speciation Recovery
F1	0.528	1.2%	0.316	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	0.094	< 0.010	< 0.010	78%
F2	18.2	41.9%	13.9	< 0.010	1.89	0.696	< 0.010	0.050 J	< 0.010	< 0.010	0.219	92%
F3	14.4	33.2%	-	-	-	-	-	-	-	-	-	-
F4	0.431	1.0%	-	-	-	-	-	-	-	-	-	-
F5	0.045 J	0.1%	-	-	-	-	-	-	-	-	-	-
Total (Original Sample)	43.4	-	-	-	-	-	-	-	-	-	-	-
% Recovery of SSE	77%	-	-	-	-	-	-	-	-	-	-	-

All sample concentrations reported in mg/kg (dry weight)

2205263-07 = RG_ERCKDT_SE-02_2022-05-12_NP

Fraction	Se (Total)	% of Total	Se(IV)	Se(VI)	SeCN	MeSe(IV)	SeMet	SeSO3	DMSeO	Se Unk A	Unk Se Sp	Speciation Recovery
F1	0.4	3.4%	0.192	0.082	< 0.007	< 0.007	< 0.007	< 0.007	0.030	< 0.007	< 0.007	76%
F2	7.07	59.4%	4.86	< 0.007	0.816	0.425	< 0.007	0.013	< 0.007	< 0.007	0.095	88%
F3	5.85	49.2%	-	-	-	-	-	-	-	-	-	-
F4	0.285	2.4%	-	-	-	-	-	-	-	-	-	-
F5	0.042 J	0.4%	-	-	-	-	-	-	-	-	-	-
Total (Original Sample)	11.9	-	-	-	-	-	-	-	-	-	-	-
% Recovery of SSE	115%	-	-	-	-	-	-	-	-	-	-	-

All sample concentrations reported in mg/kg (dry weight)

2205263-08 = RG_ERCKDT_SE-03_2022-05-12_NP

Fraction	Se (Total)	% of Total	Se(IV)	Se(VI)	SeCN	MeSe(IV)	SeMet	SeSO3	DMSeO	MeSe(VI)	Unk Se Sp	Speciation Recovery
F1	1.11	2.1%	0.521	0.014 J	< 0.009	0.024	< 0.009	< 0.009	0.330	< 0.009	< 0.009	80%
F2	22.1	41.0%	15.4	< 0.009	2.16	2.09	< 0.009	0.173	< 0.009	< 0.009	0.461	92%
F3	18.8	34.9%	-	-	-	-	-	-	-	-	-	-
F4	0.571	1.1%	-	-	-	-	-	-	-	-	-	-
F5	0.070 J	0.1%	-	-	-	-	-	-	-	-	-	-
Total (Original Sample)	53.9	-	-	-	-	-	-	-	-	-	-	-
% Recovery of SSE	79%	-	-	-	-	-	-	-	-	-	-	-

All sample concentrations reported in mg/kg (dry weight)

2205263-09 = RG_ERCKDT_SE-04_2022-05-12_NP

Fraction	Se (Total)	% of Total	Se(IV)	Se(VI)	SeCN	MeSe(IV)	SeMet	SeSO3	DMSeO	MeSe(VI)	Unk Se Sp	Speciation Recovery
F1	0.543	2.1%	0.208	< 0.013	< 0.013	0.018 J	< 0.013	< 0.013	0.044	< 0.013	< 0.013	50%
F2	6.57	25.1%	6.23	< 0.013	1.20	0.895	< 0.013	0.073	< 0.013	< 0.013	0.238 J	131%
F3	9.78	37.3%	-	-	-	-	-	-	-	-	-	-
F4	0.438	1.7%	-	-	-	-	-	-	-	-	-	-
F5	0.036 J	0.1%	-	-	-	-	-	-	-	-	-	-
Total (Original Sample)	26.2	-	-	-	-	-	-	-	-	-	-	-
% Recovery of SSE	66%	-	-	-	-	-	-	-	-	-	-	-

All sample concentrations reported in mg/kg (dry weight)

2205263-10 = RG_ERCKDT_SE-05_2022-05-12_NP

Fraction	Se (Total)	% of Total	Se(IV)	Se(VI)	SeCN	MeSe(IV)	SeMet	SeSO3	DMSeO	MeSe(VI)	Unk Se Sp	Speciation Recovery
F1	0.423	1.3%	0.246	< 0.012	< 0.012	< 0.012	< 0.012	< 0.012	0.038	< 0.012	< 0.012	67%
F2	15.6	46.3%	13.7	< 0.012	1.250	0.488	< 0.012	0.026	< 0.012	< 0.012	0.180	100%
F3	10.1	30.0%	-	-	-	-	-	-	-	-	-	-
F4	0.60	1.8%	-	-	-	-	-	-	-	-	-	-
F5	0.054 J	0.2%	-	-	-	-	-	-	-	-	-	-
Total (Original Sample)	33.7	-	-	-	-	-	-	-	-	-	-	-
% Recovery of SSE	79%	-	-	-	-	-	-	-	-	-	-	-

All sample concentrations reported in mg/kg (dry weight)

2205263-11 = RG_ERCKDT_SE-06_2022-05-12_NP

Fraction	Se (Total)	% of Total	Se(IV)	Se(VI)	SeCN	MeSe(IV)	SeMet	SeSO3	DMSeO	MeSe(VI)	Unk Se Sp	Speciation Recovery
F1	0.713	2.0%	0.171	< 0.116	< 0.016	< 0.016	< 0.016	< 0.016	< 0.016	< 0.016	< 0.016	24%
F2	15.4	43.5%	9.71	< 0.016	1.33	0.836	< 0.016	0.073 J	< 0.016	< 0.016	0.412	80%
F3	13.8	39.0%	-	-	-	-	-	-	-	-	-	-
F4	0.442	1.2%	-	-	-	-	-	-	-	-	-	-
F5	0.037 J	0.1%	-	-	-	-	-	-	-	-	-	-
Total (Original Sample)	35.4	-	-	-	-	-	-	-	-	-	-	-
% Recovery of SSE	86%	-	-	-	-	-	-	-	-	-	-	-

All sample concentrations reported in mg/kg (dry weight)

2205263-12 = RG_ERCKMD_SE-01_2022-05-13_NP

Fraction	Se (Total)	% of Total	Se(IV)	Se(VI)	SeCN	MeSe(IV)	SeMet	SeSO3	DMSeO	MeSe(VI)	Unk Se Sp	Speciation Recovery
F1	0.497	1.2%	0.183	< 0.015	< 0.015	0.022 J	< 0.015	< 0.015	0.069	< 0.015	< 0.015	55%
F2	13.8	32.0%	8.71	< 0.015	2.25	0.896	< 0.015	0.060 J	< 0.015	< 0.015	0.362	89%
F3	17.3	40.1%	-	-	-	-	-	-	-	-	-	-
F4	0.329	0.8%	-	-	-	-	-	-	-	-	-	-
F5	0.039 J	0.1%	-	-	-	-	-	-	-	-	-	-
Total (Original Sample)	43.1	-	-	-	-	-	-	-	-	-	-	-
% Recovery of SSE	74%	-	-	-	-	-	-	-	-	-	-	-

All sample concentrations reported in mg/kg (dry weight)

2205263-13 = RG_ERCKMD_SE-02_2022-05-13_NP

Fraction	Se (Total)	% of Total	Se(IV)	Se(VI)	SeCN	MeSe(IV)	SeMet	SeSO3	DMSeO	MeSe(VI)	Unk Se Sp	Speciation Recovery
F1	0.432	1.1%	0.175	< 0.011	< 0.011	0.017 J	< 0.011	< 0.011	0.081	< 0.011	< 0.011	63%
F2	12.9	31.4%	8.89	< 0.011	2.23	0.614	< 0.011	0.059 J	< 0.011	< 0.011	0.171	93%
F3	15.4	37.5%	-	-	-	-	-	-	-	-	-	-
F4	0.622	1.5%	-	-	-	-	-	-	-	-	-	-
F5	0.037 J	0.1%	-	-	-	-	-	-	-	-	-	-
Total (Original Sample)	41.1	-	-	-	-	-	-	-	-	-	-	-
% Recovery of SSE	72%	-	-	-	-	-	-	-	-	-	-	-

All sample concentrations reported in mg/kg (dry weight)

2205263-14 = RG_ERCKMD_SE-03_2022-05-13_NP

Fraction	Se (Total)	% of Total	Se(IV)	Se(VI)	SeCN	MeSe(IV)	SeMet	SeSO3	DMSeO	MeSe(VI)	Unk Se Sp	Speciation Recovery
F1	0.979	1.4%	0.138	0.384	< 0.016	0.021 J	< 0.016	< 0.016	0.181	< 0.016	< 0.016	74%
F2	22.5	31.6%	14.9	< 0.016	4.49	0.731	< 0.016	0.074 J	< 0.016	< 0.016	0.319 J	91%
F3	28.7	40.3%	-	-	-	-	-	-	-	-	-	-
F4	0.885	1.2%	-	-	-	-	-	-	-	-	-	-
F5	0.044 J	0.1%	-	-	-	-	-	-	-	-	-	-
Total (Original Sample)	71.2	-	-	-	-	-	-	-	-	-	-	-
% Recovery of SSE	75%	-	-	-	-	-	-	-	-	-	-	-

All sample concentrations reported in mg/kg (dry weight)



Accuracy & Precision Summary

Batch: B221133
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221133-DUP1	Duplicate, (2205262-03)						
	DMS ₂ O F1	ND		ND	mg/kg		N/C 25
	MeSe(IV) F1	0.015		0.013	mg/kg		16% 25
	Se Unk A F1	ND		ND	mg/kg		N/C 25
	Se(IV) F1	0.115		0.109	mg/kg		6% 25
	Se(VI) F1	ND		ND	mg/kg		N/C 25
	SeCN F1	ND		ND	mg/kg		N/C 25
	SeMet F1	0.022		0.024	mg/kg		9% 25
	SeSO ₃ F1	ND		ND	mg/kg		N/C 25
	Unk Se Sp F1	ND		ND	mg/kg		N/C 25
B221133-DUP3	Duplicate, (2205262-03)						
	DMS ₂ O F1	ND		ND	mg/kg		N/C 25
	MeSe(IV) F1	0.015		0.016	mg/kg		5% 25
	Se Unk A F1	ND		ND	mg/kg		N/C 25
	Se(IV) F1	0.115		0.117	mg/kg		1% 25
	Se(VI) F1	ND		ND	mg/kg		N/C 25
	SeCN F1	ND		ND	mg/kg		N/C 25
	SeMet F1	0.022		0.021	mg/kg		7% 25
	SeSO ₃ F1	ND		ND	mg/kg		N/C 25
	Unk Se Sp F1	ND		ND	mg/kg		N/C 25
B221133-MS1	Matrix Spike, (2205262-03)						
	Se(IV) F1	0.115	4.860	4.973	mg/kg	100% 75-125	
	Se(VI) F1	ND	5.058	4.919	mg/kg	97% 75-125	
	SeCN F1	ND	1.946	1.547	mg/kg	80% 75-125	
	SeMet F1	0.022	1.961	1.912	mg/kg	96% 75-125	
B221133-MSD1	Matrix Spike Duplicate, (2205262-03)						
	Se(IV) F1	0.115	4.860	5.182	mg/kg	104% 75-125	4% 25
	Se(VI) F1	ND	5.058	5.140	mg/kg	102% 75-125	4% 25
	SeCN F1	ND	1.946	1.603	mg/kg	82% 75-125	4% 25
	SeMet F1	0.022	1.961	2.005	mg/kg	101% 75-125	5% 25



Accuracy & Precision Summary

Batch: B221133
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221133-DUP2	Duplicate, (2205263-03)						
	DMS ₂ O F1	ND		ND	mg/kg		N/C 25
	MeSe(IV) F1	ND		ND	mg/kg		N/C 25
	Se Unk A F1	ND		ND	mg/kg		N/C 25
	Se(IV) F1	0.073		0.058	mg/kg		22% 25
	Se(VI) F1	0.011		0.011	mg/kg		3% 25
	SeCN F1	ND		ND	mg/kg		N/C 25
	SeMet F1	ND		ND	mg/kg		N/C 25
	SeSO ₃ F1	ND		ND	mg/kg		N/C 25
	Unk Se Sp F1	ND		ND	mg/kg		N/C 25
B221133-DUP4	Duplicate, (2205263-14)						
	DMS ₂ O F1	0.181		0.179	mg/kg		0.7% 25
	MeSe(IV) F1	0.021		0.028	mg/kg		30% 25
	Se Unk A F1	ND		ND	mg/kg		N/C 25
	Se(IV) F1	0.138		0.145	mg/kg		5% 25
	Se(VI) F1	0.384		0.372	mg/kg		3% 25
	SeCN F1	ND		ND	mg/kg		N/C 25
	SeMet F1	ND		ND	mg/kg		N/C 25
	SeSO ₃ F1	ND		ND	mg/kg		N/C 25
	Unk Se Sp F1	ND		ND	mg/kg		N/C 25
B221133-MS2	Matrix Spike, (2205263-14)						
	Se(IV) F1	0.138	7.751	7.729	mg/kg	98% 75-125	
	Se(VI) F1	0.384	8.067	8.163	mg/kg	96% 75-125	
	SeCN F1	ND	3.103	2.746	mg/kg	88% 75-125	
	SeMet F1	ND	3.127	3.013	mg/kg	96% 75-125	
B221133-MSD2	Matrix Spike Duplicate, (2205263-14)						
	Se(IV) F1	0.138	7.751	7.728	mg/kg	98% 75-125	0.003% 25
	Se(VI) F1	0.384	8.067	8.121	mg/kg	96% 75-125	0.6% 25
	SeCN F1	ND	3.103	2.828	mg/kg	91% 75-125	3% 25
	SeMet F1	ND	3.127	2.946	mg/kg	94% 75-125	2% 25



Accuracy & Precision Summary

Batch: B221134
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221134-DUP1	Duplicate, (2205262-03)						
	DMS ₂ O F2	ND		ND	mg/kg		N/C 25
	MeSe(IV) F2	0.111		0.117	mg/kg		6% 25
	Se Unk A F2	ND		ND	mg/kg		N/C 25
	Se(IV) F2	3.739		4.133	mg/kg		10% 25
	Se(VI) F2	ND		ND	mg/kg		N/C 25
	SeCN F2	0.378		0.412	mg/kg		8% 25
	SeMet F2	ND		ND	mg/kg		N/C 25
	SeSO ₃ F2	ND		ND	mg/kg		N/C 25
	Unk Se Sp F2	0.095		0.046	mg/kg		69% 25
B221134-DUP3	Duplicate, (2205262-03)						
	DMS ₂ O F2	ND		ND	mg/kg		N/C 25
	MeSe(IV) F2	0.111		0.112	mg/kg		1% 25
	Se Unk A F2	ND		ND	mg/kg		N/C 25
	Se(IV) F2	3.739		3.787	mg/kg		1% 25
	Se(VI) F2	ND		ND	mg/kg		N/C 25
	SeCN F2	0.378		0.400	mg/kg		6% 25
	SeMet F2	ND		ND	mg/kg		N/C 25
	SeSO ₃ F2	ND		ND	mg/kg		N/C 25
	Unk Se Sp F2	0.095		0.072	mg/kg		27% 25
B221134-MS1	Matrix Spike, (2205262-03)						
	Se(IV) F2	3.739	4.860	8.055	mg/kg	89% 75-125	
	Se(VI) F2	ND	5.058	4.378	mg/kg	87% 75-125	
	SeCN F2	0.378	1.946	2.049	mg/kg	86% 75-125	
	SeMet F2	ND	1.961	1.820	mg/kg	93% 75-125	
B221134-MSD1	Matrix Spike Duplicate, (2205262-03)						
	Se(IV) F2	3.739	4.860	8.038	mg/kg	88% 75-125	0.4% 25
	Se(VI) F2	ND	5.058	4.475	mg/kg	88% 75-125	2% 25
	SeCN F2	0.378	1.946	2.049	mg/kg	86% 75-125	0.06% 25
	SeMet F2	ND	1.961	1.823	mg/kg	93% 75-125	0.2% 25



Accuracy & Precision Summary

Batch: B221134
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221134-DUP2	Duplicate, (2205263-03)						
	DMS ₂ O F2	ND		ND	mg/kg		N/C 25
	MeSe(IV) F2	0.168		0.154	mg/kg		9% 25
	Se Unk A F2	ND		ND	mg/kg		N/C 25
	Se(IV) F2	0.348		0.310	mg/kg		11% 25
	Se(VI) F2	ND		ND	mg/kg		N/C 25
	SeCN F2	0.132		0.129	mg/kg		3% 25
	SeMet F2	ND		ND	mg/kg		N/C 25
	SeSO ₃ F2	ND		ND	mg/kg		N/C 25
	Unk Se Sp F2	0.037		0.019	mg/kg		65% 25
B221134-DUP4	Duplicate, (2205263-14)						
	DMS ₂ O F2	ND		ND	mg/kg		N/C 25
	MeSe(IV) F2	0.731		0.770	mg/kg		5% 25
	Se Unk A F2	ND		ND	mg/kg		N/C 25
	Se(IV) F2	14.88		15.15	mg/kg		2% 25
	Se(VI) F2	ND		ND	mg/kg		N/C 25
	SeCN F2	4.489		4.581	mg/kg		2% 25
	SeMet F2	ND		ND	mg/kg		N/C 25
	SeSO ₃ F2	0.074		0.097	mg/kg		28% 25
	Unk Se Sp F2	0.319		0.273	mg/kg		15% 25
B221134-MS2	Matrix Spike, (2205263-14)						
	Se(IV) F2	14.88	7.751	21.81	mg/kg	89% 75-125	
	Se(VI) F2	ND	8.067	7.126	mg/kg	88% 75-125	
	SeCN F2	4.489	3.103	7.193	mg/kg	87% 75-125	
	SeMet F2	ND	3.127	2.942	mg/kg	94% 75-125	
B221134-MSD2	Matrix Spike Duplicate, (2205263-14)						
	Se(IV) F2	14.88	7.751	21.49	mg/kg	85% 75-125	5% 25
	Se(VI) F2	ND	8.067	7.122	mg/kg	88% 75-125	0.05% 25
	SeCN F2	4.489	3.103	7.184	mg/kg	87% 75-125	0.3% 25
	SeMet F2	ND	3.127	2.948	mg/kg	94% 75-125	0.2% 25



Accuracy & Precision Summary

Batch: B221142
Lab Matrix: Biota
Method: SOP BAL-0501

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221142-DUP1	Duplicate, (2205262-03) %TS	40.02		39.45	%		1% 15
B221142-DUP2	Duplicate, (2205263-03) %TS	56.67		56.89	%		0.4% 15



Accuracy & Precision Summary

Batch: B221147
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221147-DUP1	Duplicate, (2205262-03) Se(F1)	0.460		0.480	mg/kg		4% 25
B221147-PS1	Post Spike, (2205262-03) Se(F1)	0.460	24.79	24.55	mg/kg	97% 75-125	
B221147-PS2	Post Spike, (2205262-03) Se(F1)	0.460	24.79	24.23	mg/kg	96% 75-125	
B221147-DUP2	Duplicate, (2205263-03) Se(F1)	0.111		0.094	mg/kg		17% 25
B221147-PS3	Post Spike, (2205263-03) Se(F1)	0.111	17.31	17.57	mg/kg	101% 75-125	
B221147-PS4	Post Spike, (2205263-03) Se(F1)	0.111	17.31	16.97	mg/kg	97% 75-125	



Accuracy & Precision Summary

Batch: B221165
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221165-DUP1	Duplicate, (2205262-03) Se(F2)	6.677		6.525	mg/kg		2% 25
B221165-PS1	Post Spike, (2205262-03) Se(F2)	6.677	24.79	29.67	mg/kg	93% 75-125	
B221165-PS2	Post Spike, (2205262-03) Se(F2)	6.677	24.79	30.25	mg/kg	95% 75-125	
B221165-DUP2	Duplicate, (2205263-03) Se(F2)	1.101		0.874	mg/kg		23% 25
B221165-PS3	Post Spike, (2205263-03) Se(F2)	1.101	17.31	17.64	mg/kg	96% 75-125	
B221165-PS4	Post Spike, (2205263-03) Se(F2)	1.101	17.31	16.75	mg/kg	90% 75-125	



Accuracy & Precision Summary

Batch: B221166
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221166-DUP1	Duplicate, (2205262-03) Se(F3)	3.101		2.999	mg/kg		3% 25
B221166-PS1	Post Spike, (2205262-03) Se(F3)	3.101	24.79	27.20	mg/kg	97% 75-125	
B221166-PS2	Post Spike, (2205262-03) Se(F3)	3.101	24.79	27.15	mg/kg	97% 75-125	
B221166-DUP2	Duplicate, (2205263-03) Se(F3)	1.913		1.458	mg/kg		27% 25
B221166-PS3	Post Spike, (2205263-03) Se(F3)	1.913	17.31	18.48	mg/kg	96% 75-125	
B221166-PS4	Post Spike, (2205263-03) Se(F3)	1.913	17.31	17.93	mg/kg	93% 75-125	



Accuracy & Precision Summary

Batch: B221167
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221167-DUP1	Duplicate, (2205262-03) Se(F4)	0.091		0.143	mg/kg		44% 25
B221167-PS1	Post Spike, (2205262-03) Se(F4)	0.091	24.79	26.46	mg/kg	106% 75-125	
B221167-PS2	Post Spike, (2205262-03) Se(F4)	0.091	24.79	26.49	mg/kg	106% 75-125	
B221167-DUP2	Duplicate, (2205263-03) Se(F4)	0.382		0.325	mg/kg		16% 25
B221167-PS3	Post Spike, (2205263-03) Se(F4)	0.382	17.31	18.41	mg/kg	104% 75-125	
B221167-PS4	Post Spike, (2205263-03) Se(F4)	0.382	17.31	18.01	mg/kg	102% 75-125	



Accuracy & Precision Summary

Batch: B221168
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221168-DUP1	Duplicate, (2205262-03) Se(F5)	ND		ND	mg/kg		N/C 25
B221168-PS1	Post Spike, (2205262-03) Se(F5)	ND	30.99	30.06	mg/kg	97% 75-125	
B221168-PS2	Post Spike, (2205262-03) Se(F5)	ND	30.99	27.54	mg/kg	89% 75-125	
B221168-DUP2	Duplicate, (2205263-03) Se(F5)	0.049		0.043	mg/kg		14% 25
B221168-PS3	Post Spike, (2205263-03) Se(F5)	0.049	21.64	20.28	mg/kg	94% 75-125	
B221168-PS4	Post Spike, (2205263-03) Se(F5)	0.049	21.64	19.57	mg/kg	90% 75-125	



Accuracy & Precision Summary

Batch: B221186
Lab Matrix: Soil/Sediment
Method: EPA 6020B Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221186-BS1	Blank Spike, (2152009) Se		50.00	48.17	mg/kg	96% 75-125	
B221186-SRM1	Reference Material (2005027, CRM052-50G Loamy Clay) Se		169.0	162.0	mg/kg	96% 75-125	
B221186-DUP1	Duplicate, (2205262-03) Se	11.17		11.99	mg/kg		7% 30
B221186-MS1	Matrix Spike, (2205262-03) Se	11.17	117.2	124.5	mg/kg	97% 70-130	
B221186-MSD1	Matrix Spike Duplicate, (2205262-03) Se	11.17	111.9	128.3	mg/kg	105% 70-130	8% 30



Accuracy & Precision Summary

Batch: B221244
Lab Matrix: Soil/Sediment
Method: EPA 6020B Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221244-BS1	Blank Spike, (2152009) Se		50.00	44.44	mg/kg	89% 75-125	
B221244-SRM1	Reference Material (2041047, NIST 2702 Inorganics in Marine Sediment) Se		4.950	4.497	mg/kg	91% N/A	
B221244-DUP1	Duplicate, (2205263-03) Se	3.541		3.218	mg/kg		10% 30
B221244-MS1	Matrix Spike, (2205263-03) Se	3.541	84.45	74.84	mg/kg	84% 70-130	
B221244-MSD1	Matrix Spike Duplicate, (2205263-03) Se	3.541	85.73	80.62	mg/kg	90% 70-130	6% 30



Method Blanks & Reporting Limits

Batch: B221133
Matrix: Soil/Sediment
Method: In-House
Analyte: DMSeO F1

Sample	Result	Units	
B221133-BLK1	0.00	mg/kg	
B221133-BLK2	0.00	mg/kg	
B221133-BLK3	0.00	mg/kg	
B221133-BLK4	0.00	mg/kg	
Average: 0.000			MDL: 0.004
Limit: 0.010			MRL: 0.010

Analyte: MeSe(IV) F1

Sample	Result	Units	
B221133-BLK1	0.00	mg/kg	
B221133-BLK2	0.00	mg/kg	
B221133-BLK3	0.00	mg/kg	
B221133-BLK4	0.00	mg/kg	
Average: 0.000			MDL: 0.004
Limit: 0.010			MRL: 0.010

Analyte: Se Unk A F1

Sample	Result	Units	
B221133-BLK1	0.00	mg/kg	
B221133-BLK2	0.00	mg/kg	
B221133-BLK3	0.00	mg/kg	
B221133-BLK4	0.00	mg/kg	
Average: 0.000			MDL: 0.004
Limit: 0.010			MRL: 0.010



Method Blanks & Reporting Limits

Analyte: Se(IV) F1

Sample	Result	Units	
B221133-BLK1	0.00	mg/kg	
B221133-BLK2	0.00	mg/kg	
B221133-BLK3	0.00	mg/kg	
B221133-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.004
Limit:	0.030		MRL: 0.030

Analyte: Se(VI) F1

Sample	Result	Units	
B221133-BLK1	0.00	mg/kg	
B221133-BLK2	0.00	mg/kg	
B221133-BLK3	0.00	mg/kg	
B221133-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.004
Limit:	0.022		MRL: 0.022

Analyte: SeCN F1

Sample	Result	Units	
B221133-BLK1	0.00	mg/kg	
B221133-BLK2	0.00	mg/kg	
B221133-BLK3	0.00	mg/kg	
B221133-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.004
Limit:	0.020		MRL: 0.020

Analyte: SeMet F1

Sample	Result	Units	
B221133-BLK1	0.00	mg/kg	
B221133-BLK2	0.00	mg/kg	
B221133-BLK3	0.00	mg/kg	
B221133-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.004
Limit:	0.010		MRL: 0.010



Method Blanks & Reporting Limits

Analyte: SeSO3 F1

Sample	Result	Units	
B221133-BLK1	0.00	mg/kg	
B221133-BLK2	0.00	mg/kg	
B221133-BLK3	0.00	mg/kg	
B221133-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.004
Limit:	0.022		MRL: 0.022

Analyte: Unk Se Sp F1

Sample	Result	Units	
B221133-BLK1	0.00	mg/kg	
B221133-BLK2	0.00	mg/kg	
B221133-BLK3	0.00	mg/kg	
B221133-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.004
Limit:	0.030		MRL: 0.030



Method Blanks & Reporting Limits

Batch: B221134
Matrix: Soil/Sediment
Method: In-House
Analyte: DMSeO F2

Sample	Result	Units	
B221134-BLK1	0.00	mg/kg	
B221134-BLK2	0.00	mg/kg	
B221134-BLK3	0.00	mg/kg	
B221134-BLK4	0.00	mg/kg	
Average: 0.000			MDL: 0.004
Limit: 0.010			MRL: 0.010

Analyte: MeSe(IV) F2

Sample	Result	Units	
B221134-BLK1	0.00	mg/kg	
B221134-BLK2	0.00	mg/kg	
B221134-BLK3	0.00	mg/kg	
B221134-BLK4	0.00	mg/kg	
Average: 0.000			MDL: 0.004
Limit: 0.010			MRL: 0.010

Analyte: Se Unk A F2

Sample	Result	Units	
B221134-BLK1	0.00	mg/kg	
B221134-BLK2	0.00	mg/kg	
B221134-BLK3	0.00	mg/kg	
B221134-BLK4	0.00	mg/kg	
Average: 0.000			MDL: 0.004
Limit: 0.010			MRL: 0.010



Method Blanks & Reporting Limits

Analyte: Se(IV) F2

Sample	Result	Units	
B221134-BLK1	0.00	mg/kg	
B221134-BLK2	0.00	mg/kg	
B221134-BLK3	0.00	mg/kg	
B221134-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.004
Limit:	0.030		MRL: 0.030

Analyte: Se(VI) F2

Sample	Result	Units	
B221134-BLK1	0.00	mg/kg	
B221134-BLK2	0.00	mg/kg	
B221134-BLK3	0.00	mg/kg	
B221134-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.004
Limit:	0.022		MRL: 0.022

Analyte: SeCN F2

Sample	Result	Units	
B221134-BLK1	0.00	mg/kg	
B221134-BLK2	0.00	mg/kg	
B221134-BLK3	0.00	mg/kg	
B221134-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.004
Limit:	0.010		MRL: 0.010

Analyte: SeMet F2

Sample	Result	Units	
B221134-BLK1	0.00	mg/kg	
B221134-BLK2	0.00	mg/kg	
B221134-BLK3	0.00	mg/kg	
B221134-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.004
Limit:	0.010		MRL: 0.010



Method Blanks & Reporting Limits

Analyte: SeSO3 F2

Sample	Result	Units	
B221134-BLK1	0.00	mg/kg	
B221134-BLK2	0.00	mg/kg	
B221134-BLK3	0.00	mg/kg	
B221134-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.004
Limit:	0.022		MRL: 0.022

Analyte: Unk Se Sp F2

Sample	Result	Units	
B221134-BLK1	0.00	mg/kg	
B221134-BLK2	0.00	mg/kg	
B221134-BLK3	0.00	mg/kg	
B221134-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.004
Limit:	0.030		MRL: 0.030



Method Blanks & Reporting Limits

Batch: B221142
Matrix: Biota
Method: SOP BAL-0501
Analyte: %TS

Sample	Result	Units	
B221142-BLK1	-0.32	%	
B221142-BLK2	-0.15	%	
Average:	-0.24		MDL: 0.03
Limit:	0.10		MRL: 0.10



Method Blanks & Reporting Limits

Batch: B221147
Matrix: Soil/Sediment
Method: In-House
Analyte: Se(F1)

Sample	Result	Units	
B221147-BLK1	0.002	mg/kg	
B221147-BLK2	0.0007	mg/kg	
B221147-BLK3	0.0002	mg/kg	
B221147-BLK4	-0.0005	mg/kg	
Average:	0.001		MDL: 0.004
Limit:	0.040		MRL: 0.040



Method Blanks & Reporting Limits

Batch: B221165
Matrix: Soil/Sediment
Method: In-House
Analyte: Se(F2)

Sample	Result	Units	
B221165-BLK1	0.017	mg/kg	
B221165-BLK2	0.010	mg/kg	
B221165-BLK3	0.008	mg/kg	
B221165-BLK4	0.011	mg/kg	
Average:	0.011		MDL: 0.023
Limit:	0.048		MRL: 0.048



Method Blanks & Reporting Limits

Batch: B221166
Matrix: Soil/Sediment
Method: In-House
Analyte: Se(F3)

Sample	Result	Units	
B221166-BLK1	-0.00002	mg/kg	
B221166-BLK2	0.0005	mg/kg	
B221166-BLK3	-0.0002	mg/kg	
B221166-BLK4	-0.0009	mg/kg	
Average: 0.000			MDL: 0.004
Limit: 0.040			MRL: 0.040



Method Blanks & Reporting Limits

Batch: B221167
Matrix: Soil/Sediment
Method: In-House
Analyte: Se(F4)

Sample	Result	Units	
B221167-BLK1	0.002	mg/kg	
B221167-BLK2	0.002	mg/kg	
B221167-BLK3	0.003	mg/kg	
B221167-BLK4	0.003	mg/kg	
Average:	0.003		MDL: 0.004
Limit:	0.040		MRL: 0.040



Method Blanks & Reporting Limits

Batch: B221168
Matrix: Soil/Sediment
Method: In-House
Analyte: Se(F5)

Sample	Result	Units	
B221168-BLK1	0.005	mg/kg	
B221168-BLK2	0.004	mg/kg	
B221168-BLK3	0.002	mg/kg	
B221168-BLK4	0.003	mg/kg	
Average:	0.004		MDL: 0.008
Limit:	0.050		MRL: 0.050



Method Blanks & Reporting Limits

Batch: B221186
Matrix: Soil/Sediment
Method: EPA 6020B Mod
Analyte: Se

Sample	Result	Units	
B221186-BLK1	0.011	mg/kg	
B221186-BLK2	0.007	mg/kg	
B221186-BLK3	0.007	mg/kg	
B221186-BLK4	0.003	mg/kg	
Average:	0.007		MDL: 0.095
Limit:	0.190		MRL: 0.190



Method Blanks & Reporting Limits

Batch: B221244
Matrix: Soil/Sediment
Method: EPA 6020B Mod
Analyte: Se

Sample	Result	Units	
B221244-BLK1	0.015	mg/kg	
B221244-BLK2	0.012	mg/kg	
B221244-BLK3	0.005	mg/kg	
B221244-BLK4	0.003	mg/kg	
Average:	0.009		MDL: 0.095
Limit:	0.190		MRL: 0.190



Sample Containers

Lab ID: 2205263-01				Report Matrix: SE		Collected: 05/12/2022	
Sample: RG_ERCKUT_SE-01_2022-05-12_NP				Sample Type: Sample + Sum		Received: 05/19/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	N/A	N/A	none	N/A	N/A	Cooler 5 - 2205263
B	XTRA_VOL	15 mL	N/A	none	N/A	N/A	Cooler 5 - 2205263
C	Cent Tube 50mL	50 mL	N/A	none	N/A	N/A	Cooler 5 - 2205263

Lab ID: 2205263-02				Report Matrix: SE		Collected: 05/12/2022	
Sample: RG_ERCKUT_SE-02_2022-05-12_NP				Sample Type: Sample + Sum		Received: 05/19/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	N/A	N/A	none	N/A	N/A	Cooler 5 - 2205263
B	XTRA_VOL	15 mL	N/A	none	N/A	N/A	Cooler 5 - 2205263
C	Cent Tube 50mL	50 mL	N/A	none	N/A	N/A	Cooler 5 - 2205263

Lab ID: 2205263-03				Report Matrix: SE		Collected: 05/12/2022	
Sample: RG_ERCKUT_SE-03_2022-05-12_NP				Sample Type: Sample + Sum		Received: 05/19/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	N/A	N/A	none	N/A	N/A	Cooler 5 - 2205263
B	XTRA_VOL	15 mL	N/A	none	N/A	N/A	Cooler 5 - 2205263
C	Cent Tube 50mL	50 mL	N/A	none	N/A	N/A	Cooler 5 - 2205263



Sample Containers

Lab ID: 2205263-04				Report Matrix: SE		Collected: 05/12/2022	
Sample: RG_ERCKUT_SE-04_2022-05-12_NP				Sample Type: Sample + Sum		Received: 05/19/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	N/A	N/A	none	N/A	N/A	Cooler 5 - 2205263
B	XTRA_VOL	15 mL	N/A	none	N/A	N/A	Cooler 5 - 2205263
C	Cent Tube 50mL	50 mL	N/A	none	N/A	N/A	Cooler 5 - 2205263

Lab ID: 2205263-05				Report Matrix: SE		Collected: 05/12/2022	
Sample: RG_ERCKUT_SE-05_2022-05-12_NP				Sample Type: Sample + Sum		Received: 05/19/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	N/A	N/A	none	N/A	N/A	Cooler 5 - 2205263
B	XTRA_VOL	15 mL	N/A	none	N/A	N/A	Cooler 5 - 2205263
C	Cent Tube 50mL	50 mL	N/A	none	N/A	N/A	Cooler 5 - 2205263

Lab ID: 2205263-06				Report Matrix: SE		Collected: 05/12/2022	
Sample: RG_ERCKDT_SE-01_2022-05-12_NP				Sample Type: Sample + Sum		Received: 05/19/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	N/A	N/A	none	N/A	N/A	Cooler 5 - 2205263
B	XTRA_VOL	15 mL	N/A	none	N/A	N/A	Cooler 5 - 2205263
C	Cent Tube 50mL	50 mL	N/A	none	N/A	N/A	Cooler 5 - 2205263



Sample Containers

Lab ID: 2205263-07				Report Matrix: SE		Collected: 05/12/2022	
Sample: RG_ERCKDT_SE-02_2022-05-12_NP				Sample Type: Sample + Sum		Received: 05/19/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	N/A	N/A	none	N/A	N/A	Cooler 5 - 2205263
B	XTRA_VOL	15 mL	N/A	none	N/A	N/A	Cooler 5 - 2205263
C	Cent Tube 50mL	50 mL	N/A	none	N/A	N/A	Cooler 5 - 2205263

Lab ID: 2205263-08				Report Matrix: SE		Collected: 05/12/2022	
Sample: RG_ERCKDT_SE-03_2022-05-12_NP				Sample Type: Sample + Sum		Received: 05/19/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	N/A	N/A	none	N/A	N/A	Cooler 5 - 2205263
B	XTRA_VOL	15 mL	N/A	none	N/A	N/A	Cooler 5 - 2205263
C	Cent Tube 50mL	50 mL	N/A	none	N/A	N/A	Cooler 5 - 2205263

Lab ID: 2205263-09				Report Matrix: SE		Collected: 05/12/2022	
Sample: RG_ERCKDT_SE-04_2022-05-12_NP				Sample Type: Sample + Sum		Received: 05/19/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	N/A	N/A	none	N/A	N/A	Cooler 5 - 2205263
B	XTRA_VOL	15 mL	N/A	none	N/A	N/A	Cooler 5 - 2205263
C	Cent Tube 50mL	50 mL	N/A	none	N/A	N/A	Cooler 5 - 2205263



Sample Containers

Lab ID: 2205263-10				Report Matrix: SE		Collected: 05/12/2022	
Sample: RG_ERCKDT_SE-05_2022-05-12_NP				Sample Type: Sample + Sum		Received: 05/19/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	N/A	N/A	none	N/A	N/A	Cooler 5 - 2205263
B	XTRA_VOL	15 mL	N/A	none	N/A	N/A	Cooler 5 - 2205263
C	Cent Tube 50mL	50 mL	N/A	none	N/A	N/A	Cooler 5 - 2205263

Lab ID: 2205263-11				Report Matrix: SE		Collected: 05/12/2022	
Sample: RG_ERCKDT_SE-06_2022-05-12_NP				Sample Type: Sample + Sum		Received: 05/19/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	N/A	N/A	none	N/A	N/A	Cooler 5 - 2205263
B	XTRA_VOL	15 mL	N/A	none	N/A	N/A	Cooler 5 - 2205263
C	Cent Tube 50mL	50 mL	N/A	none	N/A	N/A	Cooler 5 - 2205263

Lab ID: 2205263-12				Report Matrix: SE		Collected: 05/13/2022	
Sample: RG_ERCKMD_SE-01_2022-05-13_NP				Sample Type: Sample + Sum		Received: 05/19/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	N/A	N/A	none	N/A	N/A	Cooler 5 - 2205263
B	XTRA_VOL	15 mL	N/A	none	N/A	N/A	Cooler 5 - 2205263
C	Cent Tube 50mL	50 mL	N/A	none	N/A	N/A	Cooler 5 - 2205263



Sample Containers

Lab ID: 2205263-13				Report Matrix: SE		Collected: 05/13/2022	
Sample: RG_ERCKMD_SE-02_2022-05-13_NP				Sample Type: Sample + Sum		Received: 05/19/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	N/A	N/A	none	N/A	N/A	Cooler 5 - 2205263
B	XTRA_VOL	15 mL	N/A	none	N/A	N/A	Cooler 5 - 2205263
C	Cent Tube 50mL	50 mL	N/A	none	N/A	N/A	Cooler 5 - 2205263

Lab ID: 2205263-14				Report Matrix: SE		Collected: 05/13/2022	
Sample: RG_ERCKMD_SE-03_2022-05-13_NP				Sample Type: Sample + Sum		Received: 05/19/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	N/A	N/A	none	N/A	N/A	Cooler 5 - 2205263
B	XTRA_VOL	15 mL	N/A	none	N/A	N/A	Cooler 5 - 2205263
C	Cent Tube 50mL	50 mL	N/A	none	N/A	N/A	Cooler 5 - 2205263

Shipping Containers

Cooler 5 - 2205263

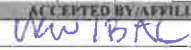
Received: May 19, 2022 7:00
Tracking No: PAPS#RWHV99228 via
Coolant Type: Ice
Temperature: 1.8 °C


Description: Cooler 5
Damaged in transit? No
Returned to client? No
Comments: IR #33

Custody seals present? No
Custody seals intact? No
COC present? Yes

COC ID:		MAY EVO LAEMP 2022				TURNAROUND TIME:																
PROJECT/CLIENT INFO										LABORATORY												
Facility Name / Job#					REP					Lab Name					Brooks Applied Labs					Excel	PDF	EDD
Project Manager					Mike Pope					Lab Contact					Ben Wozniak							
Email					m.pope@rep.com					Email					Ben@brooksapplied.com							
Address					421 Pine Avenue					Address					18804 North Creek Parkway							
City					Sparwood					City					Bothell							
Postal Code					V0B 2G0					Postal Code					98011							
Province					BC					Province					WA							
Country					Canada					Country					United S							
Phone Number					250-425-8202					Phone Number					(206) 753-6158							

SAMPLE DETAILS								ANALYSIS REQUESTED														
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	Asbestos	Lead	Cadmium	Chromium	Copper	Iron	Manganese	Mercury	Nickel	Selenium	Silver	Sulfate	Tin	Zinc	
RG_ERCKUT_SE-01_2022-05-12_NP	RG ERCKUT	SE	No	5/12/2022	10:00	G	1										X					
RG_ERCKUT_SE-02_2022-05-12_NP	RG ERCKUT	SE	No	5/12/2022	10:00	G	1										X					
RG_ERCKUT_SE-03_2022-05-12_NP	RG ERCKUT	SE	No	5/12/2022	10:00	G	1										X					
RG_ERCKUT_SE-04_2022-05-12_NP	RG ERCKUT	SE	No	5/12/2022	10:00	G	1										X					
RG_ERCKUT_SE-05_2022-05-12_NP	RG ERCKUT	SE	No	5/12/2022	10:00	G	1										X					
RG_ERCKDT_SE-01_2022-05-12_NP	RG ERCKDT	SE	No	5/12/2022	14:30	G	1										X					
RG_ERCKDT_SE-02_2022-05-12_NP	RG ERCKDT	SE	No	5/12/2022	14:30	G	1										X					
RG_ERCKDT_SE-03_2022-05-12_NP	RG ERCKDT	SE	No	5/12/2022	14:30	G	1										X					
RG_ERCKDT_SE-04_2022-05-12_NP	RG ERCKDT	SE	No	5/12/2022	14:30	G	1										X					
RG_ERCKDT_SE-05_2022-05-12_NP	RG ERCKDT	SE	No	5/12/2022	14:30	G	1										X					

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS				RELINQUISHED BY/AFFILIATION				DATE/TIME				ACCEPTED BY/AFFILIATION			
VPO00816101				Robin Valleau/Minnow								 5/19/2022			

NB OF BOTTLES RETURNED/DESCRIPTION				SAMPLER'S NAME				MOBILE #			
Regular (default) x				Robin Valleau				416-970-7535			
Priority (2-3 business days) - 50% surcharge								Date/Time May 16/2022			
Emergency (1 Business Day) - 100% surcharge											
For Emergency <1 Day, ASAP or Weekend - Contact ALS											

COC ID:		MAY EVO LAEMP 2022				TURNAROUND TIME:					
PROJECT/CLIENT INFO								LABORATORY			
Facility Name / Job#		REP				Lab Name		Brooks Applied Labs			
Project Manager		Mike Pope				Lab Contact		Ben Wozniak			
Email		mike.pope@bal.com				Email		Ben@brooksapplied.com			
Address		421 Pine Avenue				Address		18804 North Creek Parkway			
City		Sparwood		Province	BC	City		Bothell	Province	WA	
Postal Code		V0B 2G0		Country	Canada	Postal Code		98011	Country	United S	
Phone Number		250-425-8202				Phone Number		(206) 753-6158			

SAMPLE DETAILS								ANALYSIS REQUESTED					
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	Asbestos	Lead	Cadmium	Mercury	Chromium	Vanadium
RG_ERCKDT_SE-06_2022-05-12_NP	RG ERCKDT	SE	No	5/12/2022	14:30	G	1	X					
RG_ERCKMD_SE-01_2022-05-13_NP	RG ERCKMD	SE	No	5/13/2022	9:30	G	1	X					
RG_ERCKMD_SE-02_2022-05-13_NP	RG ERCKMD	SE	No	5/13/2022	9:30	G	1	X					
RG_ERCKMD_SE-03_2022-05-13_NP	RG ERCKMD	SE	No	5/13/2022	9:30	G	1	X					

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS		RELINQUISHED BY/AFFILIATION		DATE/TIME		ACCEPTED BY/AFFILIATION	
VPO00816101		Robin Valteau/Minnow				LKW/BAL 5/16/22	

NB OF BOTTLES RETURNED/DESCRIPTION				SAMPLER'S NAME		MOBILE #	
Regular (default) x				Robin Valteau		416-970-7535	
Priority (2-3 business days) - 50% surcharge				Sampler's Signature		Date/Time	
Emergency (1 Business Day) - 100% surcharge							
For Emergency <1 Day, ASAP or Weekend - Contact ALS				RV		May 16/2022	

STRAIGHT BILL OF LADING
NOT NEGOTIABLE

RW HOT SHOT SERVICE INC.

250-425-7447
24 Hour Hot Shot Service

No. 92280

Sparwood, BC
Terrace, BC
Red Deer, AB

Vancouver, BC
Calgary, AB
Montreal, QG

Prince George, BC
Edmonton, AB
Spokane, WA

Elkford, BC
Ft. McMurray, AB
Shelby, MT

Tumbler Ridge, BC
Hinton, AB
Gillette, WY

INVOICE TO		DATE	
BILL OF LADING #		PURCHASE ORDER NUMBER	
SHIPPER (FROM)		CONSIGNEE (TO)	
STREET		STREET	
CITY/PROVINCE		POSTAL CODE	CITY/PROVINCE
SPECIAL INSTRUCTIONS		FREIGHT CHARGES SHIPPER TO CHECK	
PACKAGES	DESCRIPTION OF ARTICLES AND SPECIAL MARKS	WEIGHT (Subject to Correction)	<input type="checkbox"/> PREPAID <input type="checkbox"/> COLLECT If not indicated, shipping will automatically move collect.
		52 lbs	FEE
			WAITING
			XPU
			CHARGES
			FSC
			US
UNIT #	DECLARED VALUATION: Maximum liability of carrier is \$2.00 per lb. (\$4.41 per kilogram) unless declared valuation states otherwise.	\$	SUB TOTAL
DRIVER'S SIGNATURE - PICK UP BY	PICK UP TIME	DRIVER'S SIGNATURE - DELIVERY BY	FINISH TIME
<small>NOTICE OF CLAIM: (a) No carrier is liable for loss, damage or delay of any goods under the Bill of Lading unless notice, in writing, is given to the originating carrier or the delivering carrier within six (6) days after the delivery of the goods, or in the case of failure to make delivery within nine (9) months from the date of shipment, receipt of such loss, damage or delay is given in writing to the originating carrier or the delivering carrier within nine (9) months from the date of shipment. (b) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the said freight bill. (c) The carrier agrees to carry and to deliver to the consignee at the said destination, subject to the rates and classification in effect on the date of shipment, as indicated below, which the carrier agrees to carry and to deliver to the consignee at the said destination, subject to the rates and classification in effect on the date of shipment, all the conditions standard Bill of Lading, in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. Printed or written, including conditions set aside by the standard Bill of Lading, in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. The Contract for the carriage of the goods listed in the Bill of Lading is governed by regulation in force in the jurisdiction at the time and place of shipment and is subject to the conditions set out in such conditions.</small>			
SHIPPER PRINT	CONSIGNEE PRINT	DATE	TIME
SHIPPER SIGN	CONSIGNEE SIGN	NUMBER OF PIECES RECEIVED ▲	
WHITE: Office	YELLOW: Carrier	PINK: Consignee	GOLDENROAD: Shipper

AMGOS PRINTING

Cooler ID: Coolers

COC (Y/N)

Temperature: 1.8

IR: 33

Coolant Type: Ice Blue Ice Ambient

Notes:

Sampling Locations:

Sample Types:

Container Types:

Opened By: WNW

T/D	SP	T/D	SP	T/D	SP	T/D	SP
10 ml plastic	10 ml plastic	10 ml plastic	10 ml plastic	10 ml plastic	10 ml plastic	10 ml plastic	10 ml plastic
10 ml plastic	10 ml plastic	10 ml plastic	10 ml plastic	10 ml plastic	10 ml plastic	10 ml plastic	10 ml plastic

Date: 5/19/12

Effective 7/29/20

COPY

Revision 004



18804 North Creek Parkway, Ste 100, Bothell, WA 98011 • USA • T: 206 632 6206 F: 206 632 6017 • info@brooksapplied.com

June 15, 2022

Teck Resources Limited - Vancouver
 Brett Mason
 RR1 HWY 3
 Sparwood, B.C. CANADA V0B2G0
Brett.Mason@teck.com

Re: F2 SRF FST

Dear Brett Mason,

On May 19, 2022, Brooks Applied Labs (BAL) received two (2) aqueous samples and three (3) solid samples at an acceptable temperature of -0.7 °C.

Results for aqueous samples are reported in a separate report (work order 2205256). Results for the solid samples are described in this report. Each solid sample was logged-in for the analysis of total recoverable Se, Se sequential extraction, and total solids.

Upon receipt, the water overlaying the sediments in the containers was decanted before the sediments were stored frozen. After receipt, all solid samples were stored in accordance with BAL SOPs.

Se Selective Sequential Extraction (SSE)

An aliquot of each solid was extracted in accordance with BAL's in-house five-step selective sequential extraction for Se. The samples were extracted with a series of reagents designed to target the following fractions:

SSE Fraction	Fraction Description
F1	Se present as salt (e.g., SeO_4^{2-} , MeSe(IV) , SeCN)
F2	Weakly adsorbed Se (e.g., SeO_4^{2-} , SeO_3^{2-} , SeCN , MeSe(IV))
F3	Amorphous and crystalline Se (e.g., S_2Se , Se^0)
F4	Selenides (e.g., HgSe , PbSe , CdSe , ZnSe)
F5	Residual Se

All resulting SSE fractions were directly analyzed for Se via inductively coupled plasma triple quadrupole mass spectrometry (ICP-QQQ-MS) and have been reported as Se(F1), Se(F2), Se(F3), Se(F4), and Se(F5) according to the corresponding extraction step (see table above).

Batch B221147 (SSE F1)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

Batch B221165 (SSE F2)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

Batch B221166 (SSE F3)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

Batch B221167 (SSE F4)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

The laboratory duplicate sample (B221167-DUP1) produced an RPD value greater than the control limit of 25%, at 44%. However, secondary criteria met (i.e., average result $\leq 5x$ the MRL and results within $2x$ the MRL of each other). No qualification of data was necessary.

Batch B221168 (SSE F5)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

Se Speciation for the SSE

Fractions F1 and F2 of the SSE were also analyzed for individual Se species via ion chromatography inductively coupled plasma collision reaction cell mass spectrometry (IC-ICP-CRC-MS). Selenium species were chromatographically separated on an ion exchange column and then quantified using inductively coupled plasma collision reaction cell mass spectrometry (ICP-CRC-MS); for more information on this determinative technique, please visit the *Interference Reduction Technology* section on our website. The chromatographic method applied for the analyses provides greater retention of methylseleninic acid and selenomethionine, allowing for more definitive quantitation of these species.

Selenium speciation for these SSE fractions was defined as dissolved selenite [*Se(IV)*], selenate [*Se(VI)*], selenocyanate [*SeCN*], methylseleninic acid [*MeSe(IV)*], selenomethionine [*SeMet*], selenosulfate [*SeSO₃*], and dimethylselenoxide [*DMSeO*]. Methaneselenonic acid [*MeSe(VI)*] is reported under *Se Unk A*. The total concentration of any remaining unidentified Se-containing species detected in each sample has also been reported as [*Unk Se Sp*].

DMSeO elutes early in the chromatographic run due to the nature of the molecule and the applied chromatographic separation method. Since this species elutes near the dead volume, additional Se species may coelute. Alternate methods can be applied, upon client request, to increase the separation of DMSeO from potentially co-eluting Se species.

Batch B221133 (Selenium Speciation on SSE F1)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the Sample Results page for sample-specific MDLs, MRLs, and other details.

SeMet was observed at a concentration above the MDL in sample 2205262-03. 2205262-03 was used as the source sample for the matrix spike/matrix spike duplicate pair (B221133-MS1/B221133-MSD1), and the presence of SeMet was confirmed. With the confirmation that the SeMet peak was appropriately assigned, the selenium speciation results for 2205262-03 are reported from the initial injection in batch B221133.

Batch B221134 (Selenium Speciation on SSE F2)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the Sample Results page for sample-specific MDLs, MRLs, and other details.

RPD values were greater than the control limit for *Unk Se Sp F2* in B221134-DUP1 and B221134-DUP3. In each case, secondary criteria met (i.e., average result $\leq 5x$ the MRL and results within $2x$ the MRL of each other). No qualification of data was necessary.

Total Recoverable Se (EPA 3050b MOD)

An aliquot of each solid was digested via modified EPA Method 3050B, using additions of concentrated nitric acid, hydrogen peroxide, and hydrochloric acid. The resulting digests were analyzed for Se content via inductively coupled plasma triple quadrupole mass spectrometry (ICP-QQQ-MS). The ICP-QQQ-MS instrumentation uses advanced interference removal techniques to ensure accuracy of the sample results. For more information, please visit the *Interference Reduction Technology* section on our website, brooksapplied.com.

Batch B221186 (Total Recoverable Se)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the Sample Results page for sample-specific MDLs, MRLs, and other details.

Percent Total Solids (SOP BAL-0501)

An aliquot of each solid was measured into a pre-weighed vessel, dried in an oven at 105°C overnight, weighed again, and the percent of dried solid material was calculated.

Batch B221142 (%TS)

%TS results were used to dry-weight correct results for the remaining analytical parameters.

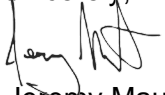
In instances when a matrix spike/matrix spike duplicate (MS/MSD) set was spiked at a level less than the native sample concentration, the recoveries and the RPD were not considered valid indicators of data quality. In such instances, the recoveries of the blank spikes (BS) and/or standard reference materials (SRM) demonstrate the accuracy of the applied methods. When the spiking level was less than 25% of the native sample concentration, the spike recovery was not reported (NR) and the RPD of the MS/MSD set was not calculated (N/C).

Except for concentration qualifiers, all data were reported without qualification. All associated quality control sample results met the acceptance criteria.

BAL, an accredited laboratory, certifies that the reported results of all analyses for which BAL is NELAP accredited meet all NELAP requirements. For more information, please see the Report Information page.

Please feel free to contact us if you have any questions regarding this report.

Sincerely,

A handwritten signature in black ink, appearing to read 'Jeremy Maute', written over a thin horizontal line.

Jeremy Maute
Senior Project Manager
Jeremy@brooksapplied.com



Report Information

Laboratory Accreditation

BAL is accredited by the *National Environmental Laboratory Accreditation Program* (NELAP) through the State of Florida Department of Health, Bureau of Laboratories (E87982) and is certified to perform many environmental analyses. BAL is also certified by many other states to perform environmental analyses. For a current list of our accreditations/certifications, please visit our website at <http://www.brooksapplied.com/resources/certificates-permits/> or review Tables 1 and 2 in our Accreditation Information. Results reported relate only to the samples listed in the report.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

AR	as received	MS	matrix spike
BAL	Brooks Applied Labs	MSD	matrix spike duplicate
BLK	method blank	ND	non-detect
BS	blank spike	NR	non-reportable
CAL	calibration standard	N/C	not calculated
CCB	continuing calibration blank	PS	post preparation spike
CCV	continuing calibration verification	REC	percent recovery
COC	chain of custody record	RPD	relative percent difference
D	dissolved fraction	SCV	secondary calibration verification
DUP	duplicate	SOP	standard operating procedure
IBL	instrument blank	SRM	reference material
ICV	initial calibration verification	T	total fraction
MDL	method detection limit	TR	total recoverable fraction
MRL	method reporting limit		

Definition of Data Qualifiers

(Effective 3/23/2020)

E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Please see narrative for explanation.
J	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1	Estimated value. A full explanation is presented in the narrative.
M	Duplicate precision (RPD) was not within acceptance criteria. Please see narrative for explanation.
N	Spike recovery was not within acceptance criteria. Please see narrative for explanation.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.
Z	Holding time and/or preservation requirements not established for this method; however, BAL recommendations for holding time were not followed. Please see narrative for explanation.

These qualifiers are based on those previously utilized by Brooks Applied Labs, those found in the EPA SOW ILM03.0, Exhibit B, Section III, pg. B-18, and the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review; USEPA; January 2010. These supersede all previous qualifiers ever employed by BAL.



Accreditation Information

Table 1. Accredited method/matrix/analytes for TNI
Issued by: State of Florida Dept. of Health (The NELAC Institute 2016 Standard)
Issued on: July 1, 2021; Valid to: June 30, 2022
Certificate Number: E87982-37

Method	Matrix	TNI Accredited Analyte(s)
EPA 1638	Non-Potable Waters	Ag, Cd, Cu, Ni, Pb, Sb, Se, Ti, Zn
EPA 200.8	Non-Potable Waters	Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Sb, Se, Ti, U, V, Zn
EPA 6020	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Ti, U, V, Zn
	Solids/Chemicals & Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Ti, V, Zn
BAL-5000	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, U, V, Zn, Hardness
	Solids/Chemicals	Ag, As, B, Be, Cd, Co, Cr, Cu, Pb, Mo, Ni, Sb, Se, Sn, Sr, Ti, V, Zn
	Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Ti, V, Zn
EPA 1640	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn
EPA 1631E	Non-Potable Waters, Solids/Chemicals & Biological	Total Mercury
EPA 1630	Non-Potable Waters	Methyl Mercury
BAL-3200	Solids/Chemicals & Biological	Methyl Mercury
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
BAL-4201	Non-Potable Waters	Se(IV), Se(VI)
BAL-4300	Non-Potable Waters Solid/Chemicals	Cr(VI)
SM2340B	Non-Potable Waters	Hardness



Accreditation Information

**Table 2. Accredited method/matrix/analytes for ISO (1),
 Non-Governmental TNI (2)**

Issued by: ANAB

Issued on: September 21, 2021; Valid to: March 30, 2024

Method	Matrix	ISO and Non-Gov. TNI Accredited Analyte(s)
EPA 1638 Mod EPA 200.8 Mod EPA 6020 Mod	Non-Potable Waters	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, U, V, Zn
BAL-5000	Solids/Chemicals & Biological	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, V, Zn Hg (Biological Only)
EPA 1640 Mod	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn Ag, As, Cr, Co, Se, Ti, V (ISO Only)
EPA 1631E Mod BAL-3100	Non-Potable Waters, Solids/Chemicals & Biological/Food	Total Mercury
EPA 1630 Mod BAL-3200	Non-Potable Waters, Solids/Chemicals Biological	Methyl Mercury
EPA 1632A Mod BAL-3300	Non-Potable Waters Biological/Food Solids/Chemicals	Inorganic Arsenic (ISO Only) Inorganic Arsenic (ISO Only)
AOAC 2015.01 Mod BAL-5000	Food	As, Cd, Hg, Pb
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
	Biological by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4101	Food by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4201	Non-Potable Waters	Se(IV), Se(VI), SeCN, SeMet
BAL-4300	Non-Potable Waters, Solid/Chemicals	Cr(VI)
SM 3500-Fe BAL-4500	Non-Potable Waters	Fe, Fe(II) (ISO Only)
SM2340B	Non-Potable Waters	Hardness
SM 2540G BAL-0501	Solids/Chemicals & Biological	% Dry Weight



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
EV_BC4_WS_2022-05-12_NP	2205262-01	Sed	Sample	05/12/2022	05/19/2022
F2_BPM_WS_2022-05-12_NP	2205262-02	Sed	Sample	05/12/2022	05/19/2022
SRF_OUTFALL_BOX_WS_2022-05-12_NP	2205262-03	Sed	Sample	05/12/2022	05/19/2022

Batch Summary

Analyte	Lab Matrix	Method	Prepared	Analyzed	Batch	Sequence
%TS	Biota	SOP BAL-0501	06/03/2022	06/06/2022	B221142	N/A
DMS ₆ O F1	Soil/Sediment	In-House	05/24/2022	05/25/2022	B221133	S220582
DMS ₆ O F2	Soil/Sediment	In-House	05/24/2022	05/30/2022	B221134	S220586
MeSe(IV) F1	Soil/Sediment	In-House	05/24/2022	05/25/2022	B221133	S220582
MeSe(IV) F2	Soil/Sediment	In-House	05/24/2022	05/30/2022	B221134	S220586
Se	Soil/Sediment	EPA 6020B Mod	05/31/2022	06/01/2022	B221186	S220594
Se Unk A F1	Soil/Sediment	In-House	05/24/2022	05/25/2022	B221133	S220582
Se Unk A F2	Soil/Sediment	In-House	05/24/2022	05/30/2022	B221134	S220586
Se(F1)	Soil/Sediment	In-House	05/23/2022	05/25/2022	B221147	S220574
Se(F2)	Soil/Sediment	In-House	05/25/2022	05/26/2022	B221165	S220575
Se(F3)	Soil/Sediment	In-House	05/24/2022	05/28/2022	B221166	S220584
Se(F4)	Soil/Sediment	In-House	05/24/2022	06/01/2022	B221167	S220576
Se(F5)	Soil/Sediment	In-House	05/31/2022	06/02/2022	B221168	S220601
Se(IV) F1	Soil/Sediment	In-House	05/24/2022	05/25/2022	B221133	S220582
Se(IV) F2	Soil/Sediment	In-House	05/24/2022	05/30/2022	B221134	S220586
Se(VI) F1	Soil/Sediment	In-House	05/24/2022	05/25/2022	B221133	S220582
Se(VI) F2	Soil/Sediment	In-House	05/24/2022	05/30/2022	B221134	S220586
SeCN F1	Soil/Sediment	In-House	05/24/2022	05/25/2022	B221133	S220582
SeCN F2	Soil/Sediment	In-House	05/24/2022	05/30/2022	B221134	S220586
SeMet F1	Soil/Sediment	In-House	05/24/2022	05/25/2022	B221133	S220582
SeMet F2	Soil/Sediment	In-House	05/24/2022	05/30/2022	B221134	S220586
SeSO ₃ F1	Soil/Sediment	In-House	05/24/2022	05/25/2022	B221133	S220582
SeSO ₃ F2	Soil/Sediment	In-House	05/24/2022	05/30/2022	B221134	S220586
Unk Se Sp F1	Soil/Sediment	In-House	05/24/2022	05/25/2022	B221133	S220582
Unk Se Sp F2	Soil/Sediment	In-House	05/24/2022	05/30/2022	B221134	S220586



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
EV_BC4_WS_2022-05-12_NP										
2205262-01	%TS	Sed	NA	65.41		0.02	0.06	%	B221142	N/A
2205262-01	DMS ₂ O F1	Sed	dry	≤ 0.006	U	0.006	0.014	mg/kg	B221133	S220582
2205262-01	DMS ₂ O F2	Sed	dry	≤ 0.006	U	0.006	0.014	mg/kg	B221134	S220586
2205262-01	MeSe(IV) F1	Sed	dry	≤ 0.006	U	0.006	0.014	mg/kg	B221133	S220582
2205262-01	MeSe(IV) F2	Sed	dry	0.013	J	0.006	0.014	mg/kg	B221134	S220586
2205262-01	Se	Sed	dry	2.42		0.143	0.286	mg/kg	B221186	S220594
2205262-01	Se Unk A F1	Sed	dry	≤ 0.006	U	0.006	0.014	mg/kg	B221133	S220582
2205262-01	Se Unk A F2	Sed	dry	≤ 0.006	U	0.006	0.014	mg/kg	B221134	S220586
2205262-01	Se(F1)	Sed	dry	0.138		0.006	0.058	mg/kg	B221147	S220574
2205262-01	Se(F2)	Sed	dry	0.740		0.034	0.068	mg/kg	B221165	S220575
2205262-01	Se(F3)	Sed	dry	1.49		0.006	0.058	mg/kg	B221166	S220584
2205262-01	Se(F4)	Sed	dry	0.115		0.006	0.058	mg/kg	B221167	S220576
2205262-01	Se(F5)	Sed	dry	0.027	J	0.011	0.072	mg/kg	B221168	S220601
2205262-01	Se(IV) F1	Sed	dry	0.124		0.006	0.043	mg/kg	B221133	S220582
2205262-01	Se(IV) F2	Sed	dry	0.509		0.006	0.043	mg/kg	B221134	S220586
2205262-01	Se(VI) F1	Sed	dry	≤ 0.006	U	0.006	0.032	mg/kg	B221133	S220582
2205262-01	Se(VI) F2	Sed	dry	0.011	J	0.006	0.032	mg/kg	B221134	S220586
2205262-01	SeCN F1	Sed	dry	≤ 0.006	U	0.006	0.029	mg/kg	B221133	S220582
2205262-01	SeCN F2	Sed	dry	0.019		0.006	0.014	mg/kg	B221134	S220586
2205262-01	SeMet F1	Sed	dry	≤ 0.006	U	0.006	0.014	mg/kg	B221133	S220582
2205262-01	SeMet F2	Sed	dry	≤ 0.006	U	0.006	0.014	mg/kg	B221134	S220586
2205262-01	SeSO ₃ F1	Sed	dry	≤ 0.006	U	0.006	0.032	mg/kg	B221133	S220582
2205262-01	SeSO ₃ F2	Sed	dry	≤ 0.006	U	0.006	0.032	mg/kg	B221134	S220586
2205262-01	Unk Se Sp F1	Sed	dry	≤ 0.006	U	0.006	0.043	mg/kg	B221133	S220582
2205262-01	Unk Se Sp F2	Sed	dry	≤ 0.006	U	0.006	0.043	mg/kg	B221134	S220586



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
F2_BPM_WS_2022-05-12_NP										
2205262-02	%TS	Sed	NA	51.55		0.02	0.06	%	B221142	N/A
2205262-02	DMS ₂ O F1	Sed	dry	≤ 0.007	U	0.007	0.018	mg/kg	B221133	S220582
2205262-02	DMS ₂ O F2	Sed	dry	≤ 0.007	U	0.007	0.018	mg/kg	B221134	S220586
2205262-02	MeSe(IV) F1	Sed	dry	≤ 0.007	U	0.007	0.018	mg/kg	B221133	S220582
2205262-02	MeSe(IV) F2	Sed	dry	0.107		0.007	0.018	mg/kg	B221134	S220586
2205262-02	Se	Sed	dry	9.25		0.166	0.332	mg/kg	B221186	S220594
2205262-02	Se Unk A F1	Sed	dry	≤ 0.007	U	0.007	0.018	mg/kg	B221133	S220582
2205262-02	Se Unk A F2	Sed	dry	≤ 0.007	U	0.007	0.018	mg/kg	B221134	S220586
2205262-02	Se(F1)	Sed	dry	0.075		0.007	0.071	mg/kg	B221147	S220574
2205262-02	Se(F2)	Sed	dry	2.54		0.041	0.084	mg/kg	B221165	S220575
2205262-02	Se(F3)	Sed	dry	4.07		0.007	0.071	mg/kg	B221166	S220584
2205262-02	Se(F4)	Sed	dry	0.198		0.008	0.071	mg/kg	B221167	S220576
2205262-02	Se(F5)	Sed	dry	0.054	J	0.013	0.088	mg/kg	B221168	S220601
2205262-02	Se(IV) F1	Sed	dry	0.034	J	0.007	0.053	mg/kg	B221133	S220582
2205262-02	Se(IV) F2	Sed	dry	3.78		0.007	0.053	mg/kg	B221134	S220586
2205262-02	Se(VI) F1	Sed	dry	0.008	J	0.007	0.039	mg/kg	B221133	S220582
2205262-02	Se(VI) F2	Sed	dry	0.018	J	0.007	0.039	mg/kg	B221134	S220586
2205262-02	SeCN F1	Sed	dry	≤ 0.007	U	0.007	0.035	mg/kg	B221133	S220582
2205262-02	SeCN F2	Sed	dry	≤ 0.007	U	0.007	0.018	mg/kg	B221134	S220586
2205262-02	SeMet F1	Sed	dry	≤ 0.007	U	0.007	0.018	mg/kg	B221133	S220582
2205262-02	SeMet F2	Sed	dry	≤ 0.007	U	0.007	0.018	mg/kg	B221134	S220586
2205262-02	SeSO ₃ F1	Sed	dry	≤ 0.007	U	0.007	0.039	mg/kg	B221133	S220582
2205262-02	SeSO ₃ F2	Sed	dry	0.008	J	0.007	0.039	mg/kg	B221134	S220586
2205262-02	Unk Se Sp F1	Sed	dry	≤ 0.007	U	0.007	0.053	mg/kg	B221133	S220582
2205262-02	Unk Se Sp F2	Sed	dry	0.058	J	0.014	0.106	mg/kg	B221134	S220586



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
SRF_OUTFALL_BOX_WS_2022-05-12_NP										
2205262-03	%TS	Sed	NA	40.02		0.03	0.10	%	B221142	N/A
2205262-03	DMS ₂ O F1	Sed	dry	≤ 0.010	U	0.010	0.025	mg/kg	B221133	S220582
2205262-03	DMS ₂ O F2	Sed	dry	≤ 0.010	U	0.010	0.025	mg/kg	B221134	S220586
2205262-03	MeSe(IV) F1	Sed	dry	0.015	J	0.010	0.025	mg/kg	B221133	S220582
2205262-03	MeSe(IV) F2	Sed	dry	0.111		0.010	0.025	mg/kg	B221134	S220586
2205262-03	Se	Sed	dry	11.2		0.229	0.458	mg/kg	B221186	S220594
2205262-03	Se Unk A F1	Sed	dry	≤ 0.010	U	0.010	0.025	mg/kg	B221133	S220582
2205262-03	Se Unk A F2	Sed	dry	≤ 0.010	U	0.010	0.025	mg/kg	B221134	S220586
2205262-03	Se(F1)	Sed	dry	0.460		0.010	0.099	mg/kg	B221147	S220574
2205262-03	Se(F2)	Sed	dry	6.68		0.058	0.118	mg/kg	B221165	S220575
2205262-03	Se(F3)	Sed	dry	3.10		0.010	0.099	mg/kg	B221166	S220584
2205262-03	Se(F4)	Sed	dry	0.091	J	0.011	0.099	mg/kg	B221167	S220576
2205262-03	Se(F5)	Sed	dry	≤ 0.019	U	0.019	0.124	mg/kg	B221168	S220601
2205262-03	Se(IV) F1	Sed	dry	0.115		0.010	0.074	mg/kg	B221133	S220582
2205262-03	Se(IV) F2	Sed	dry	3.74		0.010	0.074	mg/kg	B221134	S220586
2205262-03	Se(VI) F1	Sed	dry	≤ 0.010	U	0.010	0.055	mg/kg	B221133	S220582
2205262-03	Se(VI) F2	Sed	dry	≤ 0.010	U	0.010	0.055	mg/kg	B221134	S220586
2205262-03	SeCN F1	Sed	dry	≤ 0.010	U	0.010	0.050	mg/kg	B221133	S220582
2205262-03	SeCN F2	Sed	dry	0.378		0.010	0.025	mg/kg	B221134	S220586
2205262-03	SeMet F1	Sed	dry	0.022	J	0.010	0.025	mg/kg	B221133	S220582
2205262-03	SeMet F2	Sed	dry	≤ 0.010	U	0.010	0.025	mg/kg	B221134	S220586
2205262-03	SeSO ₃ F1	Sed	dry	≤ 0.010	U	0.010	0.055	mg/kg	B221133	S220582
2205262-03	SeSO ₃ F2	Sed	dry	≤ 0.010	U	0.010	0.055	mg/kg	B221134	S220586
2205262-03	Unk Se Sp F1	Sed	dry	≤ 0.010	U	0.010	0.074	mg/kg	B221133	S220582
2205262-03	Unk Se Sp F2	Sed	dry	0.095	J	0.020	0.149	mg/kg	B221134	S220586

Sample = 2205262-01 (EV_BC4_WS_2022-05-12_NP)

Fraction	Se (Total)	% of Total	Se(IV)	Se(VI)	SeCN	MeSe(IV)	SeMet	SeSO3	DMSeO	MeSe(VI)	Unk Se Sp	Speciation Recovery
F1	0.138	5.7%	0.124	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	90%
F2	0.740	30.6%	0.509	0.011 J	0.019	0.013 J	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	75%
F3	1.49	61.6%	-	-	-	-	-	-	-	-	-	-
F4	0.115	4.8%	-	-	-	-	-	-	-	-	-	-
F5	0.027 J	1.1%	-	-	-	-	-	-	-	-	-	-
Total (Original Sample)	2.42	-	-	-	-	-	-	-	-	-	-	-
% Recovery of SSE	104%	-	-	-	-	-	-	-	-	-	-	-

All sample concentrations reported in mg/kg (dry weight)

Sample = 2205262-02 (F2_BPM_WS_2022-05-12_NP)

Fraction	Se (Total)	% of Total	Se(IV)	Se(VI)	SeCN	MeSe(IV)	SeMet	SeSO3	DMSeO	MeSe(VI)	Unk Se Sp	Speciation Recovery
F1	0.075	0.8%	0.034 J	0.008 J	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	56%
F2	2.54	27.5%	3.78	0.018 J	< 0.007	0.107	< 0.007	0.008 J	< 0.007	< 0.007	0.058 J	156%
F3	4.07	44.0%	-	-	-	-	-	-	-	-	-	-
F4	0.198	2.1%	-	-	-	-	-	-	-	-	-	-
F5	0.054 J	0.6%	-	-	-	-	-	-	-	-	-	-
Total (Original Sample)	9.25	-	-	-	-	-	-	-	-	-	-	-
% Recovery of SSE	75%	-	-	-	-	-	-	-	-	-	-	-

All sample concentrations reported in mg/kg (dry weight)

Sample = 2205262-03 (SRF_OUTFALL_BOX_WS_2022-05-12_NP)

Fraction	Se (Total)	% of Total	Se(IV)	Se(VI)	SeCN	MeSe(IV)	SeMet	SeSO3	DMSeO	MeSe(VI)	Unk Se Sp	Speciation Recovery
F1	0.460	4.1%	0.115	< 0.010	< 0.010	0.015 J	0.022 J	< 0.010	< 0.010	< 0.010	< 0.010	33%
F2	6.68	59.6%	3.74	< 0.010	0.378	0.111	< 0.010	< 0.010	< 0.010	< 0.010	0.095 J	65%
F3	3.10	27.7%	-	-	-	-	-	-	-	-	-	-
F4	0.091 J	0.8%	-	-	-	-	-	-	-	-	-	-
F5	< 0.019	0%	-	-	-	-	-	-	-	-	-	-
Total (Original Sample)	11.2	-	-	-	-	-	-	-	-	-	-	-
% Recovery of SSE	92%	-	-	-	-	-	-	-	-	-	-	-

All sample concentrations reported in mg/kg (dry weight)



Accuracy & Precision Summary

Batch: B221133
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221133-DUP1	Duplicate, (2205262-03)						
	DMS ₂ O F1	ND		ND	mg/kg		N/C 25
	MeSe(IV) F1	0.015		0.013	mg/kg		16% 25
	Se Unk A F1	ND		ND	mg/kg		N/C 25
	Se(IV) F1	0.115		0.109	mg/kg		6% 25
	Se(VI) F1	ND		ND	mg/kg		N/C 25
	SeCN F1	ND		ND	mg/kg		N/C 25
	SeMet F1	0.022		0.024	mg/kg		9% 25
	SeSO ₃ F1	ND		ND	mg/kg		N/C 25
	Unk Se Sp F1	ND		ND	mg/kg		N/C 25
B221133-DUP3	Duplicate, (2205262-03)						
	DMS ₂ O F1	ND		ND	mg/kg		N/C 25
	MeSe(IV) F1	0.015		0.016	mg/kg		5% 25
	Se Unk A F1	ND		ND	mg/kg		N/C 25
	Se(IV) F1	0.115		0.117	mg/kg		1% 25
	Se(VI) F1	ND		ND	mg/kg		N/C 25
	SeCN F1	ND		ND	mg/kg		N/C 25
	SeMet F1	0.022		0.021	mg/kg		7% 25
	SeSO ₃ F1	ND		ND	mg/kg		N/C 25
	Unk Se Sp F1	ND		ND	mg/kg		N/C 25
B221133-MS1	Matrix Spike, (2205262-03)						
	Se(IV) F1	0.115	4.860	4.973	mg/kg	100% 75-125	
	Se(VI) F1	ND	5.058	4.919	mg/kg	97% 75-125	
	SeCN F1	ND	1.946	1.547	mg/kg	80% 75-125	
	SeMet F1	0.022	1.961	1.912	mg/kg	96% 75-125	
B221133-MSD1	Matrix Spike Duplicate, (2205262-03)						
	Se(IV) F1	0.115	4.860	5.182	mg/kg	104% 75-125	4% 25
	Se(VI) F1	ND	5.058	5.140	mg/kg	102% 75-125	4% 25
	SeCN F1	ND	1.946	1.603	mg/kg	82% 75-125	4% 25
	SeMet F1	0.022	1.961	2.005	mg/kg	101% 75-125	5% 25



Accuracy & Precision Summary

Batch: B221134
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221134-DUP1	Duplicate, (2205262-03)						
	DMS ₂ O F2	ND		ND	mg/kg		N/C 25
	MeSe(IV) F2	0.111		0.117	mg/kg		6% 25
	Se Unk A F2	ND		ND	mg/kg		N/C 25
	Se(IV) F2	3.739		4.133	mg/kg		10% 25
	Se(VI) F2	ND		ND	mg/kg		N/C 25
	SeCN F2	0.378		0.412	mg/kg		8% 25
	SeMet F2	ND		ND	mg/kg		N/C 25
	SeSO ₃ F2	ND		ND	mg/kg		N/C 25
	Unk Se Sp F2	0.095		0.046	mg/kg		69% 25
B221134-DUP3	Duplicate, (2205262-03)						
	DMS ₂ O F2	ND		ND	mg/kg		N/C 25
	MeSe(IV) F2	0.111		0.112	mg/kg		1% 25
	Se Unk A F2	ND		ND	mg/kg		N/C 25
	Se(IV) F2	3.739		3.787	mg/kg		1% 25
	Se(VI) F2	ND		ND	mg/kg		N/C 25
	SeCN F2	0.378		0.400	mg/kg		6% 25
	SeMet F2	ND		ND	mg/kg		N/C 25
	SeSO ₃ F2	ND		ND	mg/kg		N/C 25
	Unk Se Sp F2	0.095		0.072	mg/kg		27% 25
B221134-MS1	Matrix Spike, (2205262-03)						
	Se(IV) F2	3.739	4.860	8.055	mg/kg	89% 75-125	
	Se(VI) F2	ND	5.058	4.378	mg/kg	87% 75-125	
	SeCN F2	0.378	1.946	2.049	mg/kg	86% 75-125	
	SeMet F2	ND	1.961	1.820	mg/kg	93% 75-125	
B221134-MSD1	Matrix Spike Duplicate, (2205262-03)						
	Se(IV) F2	3.739	4.860	8.038	mg/kg	88% 75-125	0.4% 25
	Se(VI) F2	ND	5.058	4.475	mg/kg	88% 75-125	2% 25
	SeCN F2	0.378	1.946	2.049	mg/kg	86% 75-125	0.06% 25
	SeMet F2	ND	1.961	1.823	mg/kg	93% 75-125	0.2% 25



Accuracy & Precision Summary

Batch: B221142
Lab Matrix: Biota
Method: SOP BAL-0501

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221142-DUP1	Duplicate, (2205262-03) %TS	40.02		39.45	%		1% 15



Accuracy & Precision Summary

Batch: B221147
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221147-DUP1	Duplicate, (2205262-03) Se(F1)	0.460		0.480	mg/kg		4% 25
B221147-PS1	Post Spike, (2205262-03) Se(F1)	0.460	24.79	24.55	mg/kg	97% 75-125	
B221147-PS2	Post Spike, (2205262-03) Se(F1)	0.460	24.79	24.23	mg/kg	96% 75-125	



Accuracy & Precision Summary

Batch: B221165
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221165-DUP1	Duplicate, (2205262-03) Se(F2)	6.677		6.525	mg/kg		2% 25
B221165-PS1	Post Spike, (2205262-03) Se(F2)	6.677	24.79	29.67	mg/kg	93% 75-125	
B221165-PS2	Post Spike, (2205262-03) Se(F2)	6.677	24.79	30.25	mg/kg	95% 75-125	



Accuracy & Precision Summary

Batch: B221166
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221166-DUP1	Duplicate, (2205262-03) Se(F3)	3.101		2.999	mg/kg		3% 25
B221166-PS1	Post Spike, (2205262-03) Se(F3)	3.101	24.79	27.20	mg/kg	97% 75-125	
B221166-PS2	Post Spike, (2205262-03) Se(F3)	3.101	24.79	27.15	mg/kg	97% 75-125	



Accuracy & Precision Summary

Batch: B221167
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221167-DUP1	Duplicate, (2205262-03) Se(F4)	0.091		0.143	mg/kg		44% 25
B221167-PS1	Post Spike, (2205262-03) Se(F4)	0.091	24.79	26.46	mg/kg	106% 75-125	
B221167-PS2	Post Spike, (2205262-03) Se(F4)	0.091	24.79	26.49	mg/kg	106% 75-125	



Accuracy & Precision Summary

Batch: B221168
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221168-DUP1	Duplicate, (2205262-03) Se(F5)	ND		ND	mg/kg		N/C 25
B221168-PS1	Post Spike, (2205262-03) Se(F5)	ND	30.99	30.06	mg/kg	97% 75-125	
B221168-PS2	Post Spike, (2205262-03) Se(F5)	ND	30.99	27.54	mg/kg	89% 75-125	



Accuracy & Precision Summary

Batch: B221186
Lab Matrix: Soil/Sediment
Method: EPA 6020B Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221186-BS1	Blank Spike, (2152009) Se		50.00	48.17	mg/kg	96% 75-125	
B221186-SRM1	Reference Material (2005027, CRM052-50G Loamy Clay) Se		169.0	162.0	mg/kg	96% 75-125	
B221186-DUP1	Duplicate, (2205262-03) Se	11.17		11.99	mg/kg		7% 30
B221186-MS1	Matrix Spike, (2205262-03) Se	11.17	117.2	124.5	mg/kg	97% 70-130	
B221186-MSD1	Matrix Spike Duplicate, (2205262-03) Se	11.17	111.9	128.3	mg/kg	105% 70-130	8% 30



Method Blanks & Reporting Limits

Batch: B221133
Matrix: Soil/Sediment
Method: In-House
Analyte: DMSeO F1

Sample	Result	Units	
B221133-BLK1	0.00	mg/kg	
B221133-BLK2	0.00	mg/kg	
B221133-BLK3	0.00	mg/kg	
B221133-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.004
Limit:	0.010		MRL: 0.010

Analyte: MeSe(IV) F1

Sample	Result	Units	
B221133-BLK1	0.00	mg/kg	
B221133-BLK2	0.00	mg/kg	
B221133-BLK3	0.00	mg/kg	
B221133-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.004
Limit:	0.010		MRL: 0.010

Analyte: Se Unk A F1

Sample	Result	Units	
B221133-BLK1	0.00	mg/kg	
B221133-BLK2	0.00	mg/kg	
B221133-BLK3	0.00	mg/kg	
B221133-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.004
Limit:	0.010		MRL: 0.010



Method Blanks & Reporting Limits

Analyte: Se(IV) F1

Sample	Result	Units	
B221133-BLK1	0.00	mg/kg	
B221133-BLK2	0.00	mg/kg	
B221133-BLK3	0.00	mg/kg	
B221133-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.004
Limit:	0.030		MRL: 0.030

Analyte: Se(VI) F1

Sample	Result	Units	
B221133-BLK1	0.00	mg/kg	
B221133-BLK2	0.00	mg/kg	
B221133-BLK3	0.00	mg/kg	
B221133-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.004
Limit:	0.022		MRL: 0.022

Analyte: SeCN F1

Sample	Result	Units	
B221133-BLK1	0.00	mg/kg	
B221133-BLK2	0.00	mg/kg	
B221133-BLK3	0.00	mg/kg	
B221133-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.004
Limit:	0.020		MRL: 0.020

Analyte: SeMet F1

Sample	Result	Units	
B221133-BLK1	0.00	mg/kg	
B221133-BLK2	0.00	mg/kg	
B221133-BLK3	0.00	mg/kg	
B221133-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.004
Limit:	0.010		MRL: 0.010



Method Blanks & Reporting Limits

Analyte: SeSO3 F1

Sample	Result	Units	
B221133-BLK1	0.00	mg/kg	
B221133-BLK2	0.00	mg/kg	
B221133-BLK3	0.00	mg/kg	
B221133-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.004
Limit:	0.022		MRL: 0.022

Analyte: Unk Se Sp F1

Sample	Result	Units	
B221133-BLK1	0.00	mg/kg	
B221133-BLK2	0.00	mg/kg	
B221133-BLK3	0.00	mg/kg	
B221133-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.004
Limit:	0.030		MRL: 0.030



Method Blanks & Reporting Limits

Batch: B221134
Matrix: Soil/Sediment
Method: In-House
Analyte: DMSeO F2

Sample	Result	Units	
B221134-BLK1	0.00	mg/kg	
B221134-BLK2	0.00	mg/kg	
B221134-BLK3	0.00	mg/kg	
B221134-BLK4	0.00	mg/kg	
Average: 0.000			MDL: 0.004
Limit: 0.010			MRL: 0.010

Analyte: MeSe(IV) F2

Sample	Result	Units	
B221134-BLK1	0.00	mg/kg	
B221134-BLK2	0.00	mg/kg	
B221134-BLK3	0.00	mg/kg	
B221134-BLK4	0.00	mg/kg	
Average: 0.000			MDL: 0.004
Limit: 0.010			MRL: 0.010

Analyte: Se Unk A F2

Sample	Result	Units	
B221134-BLK1	0.00	mg/kg	
B221134-BLK2	0.00	mg/kg	
B221134-BLK3	0.00	mg/kg	
B221134-BLK4	0.00	mg/kg	
Average: 0.000			MDL: 0.004
Limit: 0.010			MRL: 0.010



Method Blanks & Reporting Limits

Analyte: Se(IV) F2

Sample	Result	Units	
B221134-BLK1	0.00	mg/kg	
B221134-BLK2	0.00	mg/kg	
B221134-BLK3	0.00	mg/kg	
B221134-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.004
Limit:	0.030		MRL: 0.030

Analyte: Se(VI) F2

Sample	Result	Units	
B221134-BLK1	0.00	mg/kg	
B221134-BLK2	0.00	mg/kg	
B221134-BLK3	0.00	mg/kg	
B221134-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.004
Limit:	0.022		MRL: 0.022

Analyte: SeCN F2

Sample	Result	Units	
B221134-BLK1	0.00	mg/kg	
B221134-BLK2	0.00	mg/kg	
B221134-BLK3	0.00	mg/kg	
B221134-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.004
Limit:	0.010		MRL: 0.010

Analyte: SeMet F2

Sample	Result	Units	
B221134-BLK1	0.00	mg/kg	
B221134-BLK2	0.00	mg/kg	
B221134-BLK3	0.00	mg/kg	
B221134-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.004
Limit:	0.010		MRL: 0.010



Method Blanks & Reporting Limits

Analyte: SeSO3 F2

Sample	Result	Units	
B221134-BLK1	0.00	mg/kg	
B221134-BLK2	0.00	mg/kg	
B221134-BLK3	0.00	mg/kg	
B221134-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.004
Limit:	0.022		MRL: 0.022

Analyte: Unk Se Sp F2

Sample	Result	Units	
B221134-BLK1	0.00	mg/kg	
B221134-BLK2	0.00	mg/kg	
B221134-BLK3	0.00	mg/kg	
B221134-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.004
Limit:	0.030		MRL: 0.030



Method Blanks & Reporting Limits

Batch: B221142
Matrix: Biota
Method: SOP BAL-0501
Analyte: %TS

Sample	Result	Units	
B221142-BLK1	-0.32	%	
B221142-BLK2	-0.15	%	
	Average: -0.24		MDL: 0.03
	Limit: 0.10		MRL: 0.10



Method Blanks & Reporting Limits

Batch: B221147
Matrix: Soil/Sediment
Method: In-House
Analyte: Se(F1)

Sample	Result	Units	
B221147-BLK1	0.002	mg/kg	
B221147-BLK2	0.0007	mg/kg	
B221147-BLK3	0.0002	mg/kg	
B221147-BLK4	-0.0005	mg/kg	
Average:	0.001		MDL: 0.004
Limit:	0.040		MRL: 0.040



Method Blanks & Reporting Limits

Batch: B221165
Matrix: Soil/Sediment
Method: In-House
Analyte: Se(F2)

Sample	Result	Units	
B221165-BLK1	0.017	mg/kg	
B221165-BLK2	0.010	mg/kg	
B221165-BLK3	0.008	mg/kg	
B221165-BLK4	0.011	mg/kg	
Average:	0.011		MDL: 0.023
Limit:	0.048		MRL: 0.048



Method Blanks & Reporting Limits

Batch: B221166
Matrix: Soil/Sediment
Method: In-House
Analyte: Se(F3)

Sample	Result	Units	
B221166-BLK1	-0.00002	mg/kg	
B221166-BLK2	0.0005	mg/kg	
B221166-BLK3	-0.0002	mg/kg	
B221166-BLK4	-0.0009	mg/kg	
Average: 0.000			MDL: 0.004
Limit: 0.040			MRL: 0.040



Method Blanks & Reporting Limits

Batch: B221167
Matrix: Soil/Sediment
Method: In-House
Analyte: Se(F4)

Sample	Result	Units	
B221167-BLK1	0.002	mg/kg	
B221167-BLK2	0.002	mg/kg	
B221167-BLK3	0.003	mg/kg	
B221167-BLK4	0.003	mg/kg	
Average:	0.003		MDL: 0.004
Limit:	0.040		MRL: 0.040



Method Blanks & Reporting Limits

Batch: B221168
Matrix: Soil/Sediment
Method: In-House
Analyte: Se(F5)

Sample	Result	Units	
B221168-BLK1	0.005	mg/kg	
B221168-BLK2	0.004	mg/kg	
B221168-BLK3	0.002	mg/kg	
B221168-BLK4	0.003	mg/kg	
Average:	0.004		MDL: 0.008
Limit:	0.050		MRL: 0.050



Method Blanks & Reporting Limits

Batch: B221186
Matrix: Soil/Sediment
Method: EPA 6020B Mod
Analyte: Se

Sample	Result	Units	
B221186-BLK1	0.011	mg/kg	
B221186-BLK2	0.007	mg/kg	
B221186-BLK3	0.007	mg/kg	
B221186-BLK4	0.003	mg/kg	
Average:	0.007		MDL: 0.095
Limit:	0.190		MRL: 0.190



Sample Containers

Lab ID: 2205262-01
Sample: EV_BC4_WS_2022-05-12_NP

Report Matrix: Sed
Sample Type: Sample

Collected: 05/12/2022
Received: 05/19/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	N/A	N/A	none	N/A	N/A	Cooler 3 - 2205262
B	XTRA_VOL	15 mL	N/A	none	N/A	N/A	Cooler 3 - 2205262
C	Cent Tube 50mL	50 mL	NA	none	N/A	N/A	Cooler 3 - 2205262

Lab ID: 2205262-02
Sample: F2_BPM_WS_2022-05-12_NP

Report Matrix: Sed
Sample Type: Sample

Collected: 05/12/2022
Received: 05/19/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	N/A	N/A	none	N/A	N/A	Cooler 3 - 2205262
B	XTRA_VOL	15 mL	N/A	none	N/A	N/A	Cooler 3 - 2205262
C	Cent Tube 50mL	50 mL	NA	none	N/A	N/A	Cooler 3 - 2205262

Lab ID: 2205262-03
Sample: SRF_OUTFALL_BOX_WS_2022-05-12_NP

Report Matrix: Sed
Sample Type: Sample

Collected: 05/12/2022
Received: 05/19/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	N/A	N/A	none	N/A	N/A	Cooler 3 - 2205262
B	XTRA_VOL	15 mL	N/A	none	N/A	N/A	Cooler 3 - 2205262
C	Cent Tube 50mL	50 mL	NA	none	N/A	N/A	Cooler 3 - 2205262



Shipping Containers

Cooler 3 - 2205262

Received: May 19, 2022 7:23
Tracking No: PAPS#RWHV99228 via
Coolant Type: None
Temperature: -0.7 °C

Description: Cooler 3
Damaged in transit? No
Returned to client? No
Comments: IR #33

Custody seals present? No
Custody seals intact? No
COC present? Yes

COC ID: **SRF Sediment SSE Samples** TURNAROUND TIME: RUSH:

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name / Job#	F2 SRF FST			Lab Name	Brooks Applied Labs			Report Format / Distribution	Excel	PDF	EDD	
Project Manager	Brett Mason			Lab Contact	Ben Wozniak			Email 1:	Colo.Macgregor@teck.com	X	X	X
Email	Brett.Mason@teck.com			Email	Ben@brooksupplied.com			Email 2:				
Address	RR1 HWY 3			Address	18804 North Creek Parkway			Email 3:	DL-EVO-SRF-LAB@teck.com	X	X	X
City	Sparwood	Province	BC	City	Bothell	State	WA	Email 4:	teckcoal@equisonline.com			X
Postal Code	VOB 2G0		Country	Canada	Postal Code	98011	Country	USA	Email 5:			
Phone Number	250-425-6179			Phone Number	1 (206) 753-6158			PO number	822033			

SAMPLE DETAILS							ANALYSIS REQUESTED								
Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com p # Of Cont.	Total Selenium	Disolved Selenium	Selenium Speciation	Selenium SSE	Filter: - F: Field, L: Lab, FL: Field & Lab, N: None				
EV_BC4_WS_2022-05-12_NP	EV_BC4	WS		2022/05/12	9:30	G 2			1	1					
EV_BC4_WS_2022-05-12_NP-NAL	EV_BC4	WS		2022/05/12	9:30	G 2			1	1					
F2_BPM_WS_2022-05-12_NP	F2_BPM	WS		2022/05/12	12:00	G 1	1	1							
SRF_OUTFALL_BOX_WS_2022-05-12_NP		WS		2022/05/12	13:00	G 1				1					

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS

SERVICE REQUEST (rush - subject to availability)

DATE/TIME: May 4, 2022 ACCEPTED BY/AFFILIATION: ASG/BPL DATE/TIME: 5/19/22 7:23

Priority (2-3 business days) - 50% surcharge Regular (default) X

Emergency (1 Business Day) - 100% surcharge

For Emergency <1 Day, ASAP or Weekend - Contact

Sampler's Name: _____ Mobile #: _____

Sampler's Signature: _____ Date/Time: May 4, 2022

STRAIGHT BILL OF LADING
NOT NEGOTIABLE

RW HOT SHOT SERVICE INC.

250-425-7447
24 Hour Hot Shot Service

No. 92282

Sparwood, BC
Terrace, BC
Red Deer, AB

Vancouver, BC
Calgary, AB
Montreal, QC

Prince George, BC
Edmonton, AB
Spokane, WA

Elkford, BC
Ft. McMurray, AB
Shelby, MT

Tumbler Ridge, BC
Hinton, AB
Gillette, WY

INVOICE TO		DATE	
BILL OF LADING #		PURCHASE ORDER NUMBER	
SHIPPER (FROM)		CONSIGNEE (TO)	
STREET		STREET	
CITY/PROVINCE		POSTAL CODE	CITY/PROVINCE
CITY/PROVINCE		POSTAL CODE	POSTAL CODE
SPECIAL INSTRUCTIONS		FREIGHT CHARGES SHIPPER TO CHECK <input type="checkbox"/> PREPAID <input type="checkbox"/> COLLECT <small>If not indicated, shipping will automatically move collect.</small>	
PACKAGES	DESCRIPTION OF ARTICLE AND SPECIAL MARKS	WEIGHT (Subject to Correction)	
		26 lbs	
UNIT #	DECLARED VALUATION: Maximum liability of carrier is \$2.00 per lb. (\$4.41 per kilogram) unless declared valuation states otherwise.		
DRIVER'S SIGNATURE - PICK UP BY	PICK UP TIME	DRIVER'S SIGNATURE - DELIVERY BY	FINISH TIME
<small>NOTICE OF CLAIM: (a) No carrier is liable for loss, damage or delay of any goods under the Bill of Lading unless notice, therefore setting out particulars of the origin, destination and date of shipment of the goods and the estimated amount claimed, is received of such loss, damage or delay in writing to the originating carrier or the delivering carrier within 90 days after the delivery of the goods, or the case of failure to make delivery within nine (9) months from the date of shipment. (b) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. RECEIVED at the point of origin on the date specified from the consignor mentioned herein, the property herein described, in apparent good order, except as noted (contents and condition of packages unknown) marked, consigned and destined as indicated below, which the carrier agrees to carry and to deliver to the consignee at the said destination, subject to the rates and classification in effect on the date of shipment. It is mutually agreed, as to each carrier of all or any of the goods over all or any portion of the route to destination, and as to each party of any time interested in all or any of the goods, that every service to be performed hereunder shall be subject to the conditions standard Bill of Lading, in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. Printed or written, including conditions set made by the standard Bill of Lading, in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. The Contract for the carriage of the goods listed in the Bill of Lading is governed by regulation in force in the jurisdiction at the time and place of shipment and is subject to the conditions set out in such conditions.</small>		TOTAL \$	
SHIPPER PRINT	CONSIGNEE PRINT	DATE	
SHIPPER SIGN	CONSIGNEE SIGN	TIME	
WHITE: Office YELLOW: Carrier PINK: Consignee GOLDENROAD: Shipper		GST # 864540398RT0001	
		NUMBER OF PIECES RECEIVED	

Cooler ID: Cooler 3

COG (N)

Temperature: -0.7

IR: 33

Coolant Type: Ice

Blue Ice Ambient

Notes:

Sampling Locations:

Sample Types:

Container Types:

Opened By: ASG

Date: 5/19/27

F2	EV	F2 (CSSE)			
T/D	SP	T/D	SP	T/D	SP
40ml glass	125ml plastic	125ml plastic			

COPY



From: [Mike Pope](#)
To: [Jeremy Maute](#); [Brett Mason](#); [Cole Macgregor](#); [DL-EVO-SRF-LAB](#); [Annie.Larrivee@teck.com](#); [Chris Wend](#)
Cc: [Mariyeh Moradnzhad](#); [Ethan Upp](#); [Anais Gentilhomme](#)
Subject: Re: Brooks Samples Received - WOs (2205256, 2205262) F2 SRF FST - Privileged and Confidential
Date: Tuesday, June 7, 2022 12:30:46 PM

Hi Jeremy,

Can you please use F2_ECF as the location. If that doesn't work, please just email the results and we can figure out how to get it in the data base on the back end.

Thanks,
Mike

Mike Pope

Lead, Aquatic Sciences
Teck Resources Limited
Work: 250.433.6398
Cell: 343.333.3905

From: Jeremy Maute <Jeremy@brooksapplied.com>
Sent: Tuesday, June 7, 2022 11:45 AM
To: Brett Mason <brett.mason@teck.com>; Cole Macgregor <cole.macgregor@teck.com>; DL-EVO-SRF-LAB <DL-EVO-SRF-LAB@teck.com>; Annie.Larrivee@teck.com <annie.larrivee@teck.com>; Chris Wend <chris.wend@teck.com>; Mike Pope <mike.pope@teck.com>
Cc: Mariyeh Moradnzhad <mariyeh@brooksapplied.com>; Ethan Upp <ethan@brooksapplied.com>; Anais Gentilhomme <Anais@brooksapplied.com>
Subject: RE: Brooks Samples Received - WOs (2205256, 2205262) F2 SRF FST - Privileged and Confidential

[External email]

Analyses/review are not yet completed for work order 2205262. I am looking over the data that is available and I noticed something that may need to be addressed.

This is for the analyses on the sediment samples (selenium SSE). For work order 2205262, the COC form indicates that results should be uploaded into the EQUIS database (see attached COC form). The last sample on this COC form (*SRF_OUTFALL_BOX_WS_2022-05-12_NP, 05/12/2022 13:00*) does not have a **(sys_loc_code)** value provided on the COC form. Is this going to prevent this sample from a successful upload in the EQUIS database? Furthermore, I am unsure if this sample (*SRF_OUTFALL_BOX_WS_2022-05-12_NP, 05/12/2022 13:00*) has the correct naming structure for upload into the EQUIS database. Could you look into this for me? Are we going to be able to upload this sample into the EQUIS database?

Regards,

Jeremy Maute

Senior Project Manager
206-753-6116
email: jeremy@brooksapplied.com

BROOKS APPLIED LABS

Meaningful Metals Data and Advanced Speciation Solutions

P: 206-632-6206 | F: 206-632-6017 | 18804 North Creek Parkway, Suite 100, Bothell, WA 98011, USA

Brooks Applied Labs is moving to a new facility! Starting June 20th, all sample shipments should be sent to the following address: 13751 Lake City Way NE, Suite 108, Seattle, WA 98125. Please contact your account representative if you have any questions on our upcoming move or brand new location!

This electronic message transmission (including any attachments) is intended only for use by the addressee(s) named herein; it contains legally privileged and confidential information. If you are not the intended recipient, you are hereby notified that any dissemination, distribution, printing, or copying is strictly prohibited. If you have received this e-mail in error, please notify the sender and permanently delete any copies thereof.

From: Jeremy Maute

Sent: Friday, May 20, 2022 11:15 AM

To: brett.mason@teck.com; Cole Macgregor <cole.macgregor@teck.com>; DL-EVO-SRF-LAB@teck.com; Annie.Larrivee@teck.com; chris.wend@teck.com; mike.pope@teck.com

Cc: Mariyeh Moradnazhad <mariyeh@brooksapplied.com>; Ethan Upp <ethan@brooksapplied.com>; Anaïs Gentilhomme <Anais@brooksapplied.com>

Subject: Brooks Samples Received - WOs (2205256, 2205262) F2 SRF FST - Privileged and Confidential

Good afternoon,

This is confirmation that samples from the **FSF** project were received at Brooks Applied Labs on May 19, 2022. Samples were received in acceptable condition.

The samples derive from the same chain of custody (COC) form. However, the samples were logged into two distinct work orders. The water samples were logged into work order 2205256 under the project **TRL-VC1706**. The sediments were logged into work order 2205262 under project **TRL-VC2201**. Some of the sediments were very wet and the water overlaying the sediments in the containers was decanted before the sediments were stored frozen.

The samples were logged in for the following turnaround times (TATs):

WO#2205256 – (5-9 business day) TAT

WO#2205262 – (15 business day) TAT

I've attached copies of the COC forms. Feel free to contact us with any questions.

Regards,

Jeremy Maute
Senior Project Manager
206-753-6116
email: jeremy@brooksapplied.com

BROOKS APPLIED LABS

Meaningful Metals Data and Advanced Speciation Solutions

P: 206-632-6206 | F: 206-632-6017 | **18804 North Creek Parkway, Suite 100, Bothell, WA 98011, USA**

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18804 North Creek Parkway, Ste 100, Bothell, WA 98011 • USA • T: 206 632 6206 F: 206 632 6017 • info@brooksapplied.com

August 5, 2022

Teck Resources Limited - Vancouver
 Mike Pope
 421 Pine Avenue
 Sparwood, B.C. CANADA V0B2G0
mike.pope@teck.com

Re: Regional effects program

Dear Mike Pope,

On July 7, 2022, Brooks Applied Labs (BAL) received thirty-six (36) solid samples at an acceptable temperature of -0.8 °C.

Date/Time Collected values listed on the chain-of-custody (COC) forms did not exactly match the corresponding **Date/Time Collected** values on the container labels for several samples in this work order. The discrepancies are described in the table below.

Date/Time Collected Discrepancies

Laboratory ID	Sample ID	Date/Time Collected (on COC form)	Date/Time Collected (on container label)
2207064-09	RG_ERCKMD_SE-1_LAEMP_EVO_2022-06_29_NP	06/29/22 08:00	06/29/22 11:11
2207064-10	RG_ERCKMD_SE-2_LAEMP_EVO_2022-06_29_NP	06/29/22 08:05	06/29/22 11:05
2207064-11	RG_ERCKMD_SE-3_LAEMP_EVO_2022-06_29_NP	06/29/22 08:10	06/29/22 11:10
2207064-12	RG_ERCKMD_BRYOSE-1_LAEMP_EVO_2022-06_29_NP	06/29/22 08:25	06/29/22 11:00
2207064-13	RG_ERCKMD_BRYOSE-2_LAEMP_EVO_2022-06_29_NP	06/29/22 08:30	06/29/22 11:05
2207064-19	RG_ERCKDT_SE-2_LAEMP_EVO_2022-06_29_NP	06/29/22 08:05	06/29/22 11:45
2207064-20	RG_ERCKDT_SE-3_LAEMP_EVO_2022-06_29_NP	06/29/22 08:10	06/29/22 14:30
2207064-22	RG_ERCKDT_SE-5_LAEMP_EVO_2022-06_29_NP	06/29/22 08:20	06/29/22 14:30

2207064-28	RG_ERCKDT_BRYOSE-1_LAEMP_EVO_2022-06_29_NP	06/29/22 08:25	06/29/22 13:30
2207064-30	RG_ERCKDT_BRYOSE-3_LAEMP_EVO_2022-06_29_NP	06/29/22 08:35	06/29/22 11:35

Per client request, samples in the table above were logged in using the **Date/Time Collected** values listed on the COC form (column 3 in the table above).

Upon receipt, laboratory staff at Brooks Applied Labs (BAL) noted that sample *RG_ERCKUC_SE-3_LAEMP_EVO_2022-06_30_NP* (06/30/2022 08:10, laboratory ID = 2207064-27) had a cracked lid. The material from 2207064-27 was transferred into a new container with a clean, undamaged lid. Due to the improper sample storage during shipment to BAL, results for this sample are qualified as estimated (**J-1**).

Each solid sample was logged-in for the analysis of total recoverable Se, Se sequential extraction, and total solids.

Some of the sediments were very wet and the water overlaying the sediments in the containers was decanted before the sediments were stored frozen. After receipt, all solid samples were stored in accordance with BAL SOPs.

Se Selective Sequential Extraction (SSE)

An aliquot of each solid was extracted in accordance with BAL's in-house five-step selective sequential extraction for Se. The samples were extracted with a series of reagents designed to target the following fractions:

SSE Fraction	Fraction Description
F1	Se present as salt (e.g., SeO_4^{-2} , MeSe(IV) , SeCN)
F2	Weakly adsorbed Se (e.g., SeO_4^{-2} , SeO_3^{-2} , SeCN , MeSe(IV))
F3	Amorphous and crystalline Se (e.g., S_2Se , Se^0)
F4	Selenides (e.g., HgSe , PbSe , CdSe , ZnSe)
F5	Residual Se

All resulting SSE fractions were directly analyzed for Se via inductively coupled plasma triple quadrupole mass spectrometry (ICP-QQQ-MS) and have been reported as Se(F1), Se(F2), Se(F3), Se(F4), and Se(F5) according to the corresponding extraction step (see table above).

Batch B221601 (SSE F1)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

Batch B221616 (SSE F2)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

Batch B221636 (SSE F3)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the Sample Results page for sample-specific MDLs, MRLs, and other details.

Batch B221646 (SSE F4)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

Batch B221656 (SSE F5)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the Sample Results page for sample-specific MDLs, MRLs, and other details.

Se Speciation for the SSE

Fractions F1 and F2 of the SSE were also analyzed for individual Se species via ion chromatography inductively coupled plasma collision reaction cell mass spectrometry (IC-ICP-CRC-MS). Selenium species were chromatographically separated on an ion exchange column and then quantified using inductively coupled plasma collision reaction cell mass spectrometry (ICP-CRC-MS); for more information on this determinative technique, please visit the *Interference Reduction Technology* section on our website. The chromatographic method applied for the analyses provides greater retention of methylseleninic acid and selenomethionine, allowing for more definitive quantitation of these species.

Selenium speciation for these SSE fractions was defined as dissolved selenite [*Se(IV)*], selenate [*Se(VI)*], selenocyanate [*SeCN*], methylseleninic acid [*MeSe(IV)*], selenomethionine [*SeMet*], selenosulfate [*SeSO₃*], and dimethylselenoxide [*DMSeO*]. Methaneselenonic acid [*MeSe(VI)*] is reported under *Se Unk A*. The total concentration of any remaining unidentified Se-containing species detected in each sample has also been reported as [*Unk Se Sp*].

DMS₂SeO elutes early in the chromatographic run due to the nature of the molecule and the applied chromatographic separation method. Since this species elutes near the dead volume, additional Se species may coelute. Alternate methods can be applied, upon client request, to increase the separation of DMS₂SeO from potentially co-eluting Se species.

Batch B221521 (Selenium Speciation on SSE F1)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the Sample Results page for sample-specific MDLs, MRLs, and other details.

Batch B221522 (Selenium Speciation on SSE F2)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the Sample Results page for sample-specific MDLs, MRLs, and other details.

Chromatographic interference, as indicated by an elevated baseline, or co-eluting peak, was observed for selenomethionine in 2207064-04, 2207064-22, and 2207064-26. An elevated baseline, or co-eluting peak, was observed where methaneselenonic acid [*MeSe(VI)*] elutes in samples 2207064-04, 2207064-22, and 2207064-40. Due to potential bias, the affected data have been qualified as estimated (**J-1**).

Total Recoverable Se (EPA 3050b MOD)

An aliquot of each solid was digested via modified EPA Method 3050B, using additions of concentrated nitric acid, hydrogen peroxide, and hydrochloric acid. The resulting digests were analyzed for Se content via inductively coupled plasma triple quadrupole mass spectrometry (ICP-QQQ-MS). The ICP-QQQ-MS instrumentation uses advanced interference removal techniques to ensure accuracy of the sample results. For more information, please visit the *Interference Reduction Technology* section on our website, brooksapplied.com.

Batch B221655 (Total Recoverable Se)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the Sample Results page for sample-specific MDLs, MRLs, and other details.

Percent Total Solids (SOP BAL-0501)

An aliquot of each solid was measured into a pre-weighed vessel, dried in an oven at 105°C overnight, weighed again, and the percent of dried solid material was calculated.

Batch B221754 (%TS)

%TS results were used to dry-weight correct results for the remaining analytical parameters.

In instances when a matrix spike/matrix spike duplicate (MS/MSD) set was spiked at a level less than the native sample concentration, the recoveries and the RPD were not considered valid indicators of data quality. In such instances, the recoveries of the blank spikes (BS) and/or standard reference materials (SRM) demonstrate the accuracy of the applied methods. When the spiking level was less than 25% of the native sample concentration, the spike recovery was not reported (NR) and the RPD of the MS/MSD set was not calculated (N/C).

Except for concentration qualifiers, all data were reported without qualification. All associated quality control sample results met the acceptance criteria.

BAL, an accredited laboratory, certifies that the reported results of all analyses for which BAL is NELAP accredited meet all NELAP requirements. For more information, please see the Report Information page.

Please feel free to contact us if you have any questions regarding this report.

Sincerely,



Jeremy Maute
Senior Project Manager
Jeremy@brooksapplied.com



Report Information

Laboratory Accreditation

BAL is accredited by the *National Environmental Laboratory Accreditation Program* (NELAP) through the State of Florida Department of Health, Bureau of Laboratories (E87982) and is certified to perform many environmental analyses. BAL is also certified by many other states to perform environmental analyses. For a current list of our accreditations/certifications, please visit our website at <http://www.brooksapplied.com/resources/certificates-permits/> or review Tables 1 and 2 in our Accreditation Information. Results reported relate only to the samples listed in the report.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

AR	as received	MS	matrix spike
BAL	Brooks Applied Labs	MSD	matrix spike duplicate
BLK	method blank	ND	non-detect
BS	blank spike	NR	non-reportable
CAL	calibration standard	N/C	not calculated
CCB	continuing calibration blank	PS	post preparation spike
CCV	continuing calibration verification	REC	percent recovery
COC	chain of custody record	RPD	relative percent difference
D	dissolved fraction	SCV	secondary calibration verification
DUP	duplicate	SOP	standard operating procedure
IBL	instrument blank	SRM	reference material
ICV	initial calibration verification	T	total fraction
MDL	method detection limit	TR	total recoverable fraction
MRL	method reporting limit		

Definition of Data Qualifiers

(Effective 3/23/2020)

E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Please see narrative for explanation.
J	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1	Estimated value. A full explanation is presented in the narrative.
M	Duplicate precision (RPD) was not within acceptance criteria. Please see narrative for explanation.
N	Spike recovery was not within acceptance criteria. Please see narrative for explanation.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.
Z	Holding time and/or preservation requirements not established for this method; however, BAL recommendations for holding time were not followed. Please see narrative for explanation.

These qualifiers are based on those previously utilized by Brooks Applied Labs, those found in the EPA SOW ILM03.0, Exhibit B, Section III, pg. B-18, and the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review; USEPA; January 2010. These supersede all previous qualifiers ever employed by BAL.



Accreditation Information

Table 1. Accredited method/matrix/analytes for TNI
Issued by: State of Florida Dept. of Health (The NELAC Institute 2016 Standard)
Issued on: July 1, 2021; Valid to: June 30, 2022
Certificate Number: E87982-37

Method	Matrix	TNI Accredited Analyte(s)
EPA 1638	Non-Potable Waters	Ag, Cd, Cu, Ni, Pb, Sb, Se, Ti, Zn
EPA 200.8	Non-Potable Waters	Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Sb, Se, Ti, U, V, Zn
EPA 6020	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Ti, U, V, Zn
	Solids/Chemicals & Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Ti, V, Zn
BAL-5000	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, U, V, Zn, Hardness
	Solids/Chemicals	Ag, As, B, Be, Cd, Co, Cr, Cu, Pb, Mo, Ni, Sb, Se, Sn, Sr, Ti, V, Zn
	Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Ti, V, Zn
EPA 1640	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn
EPA 1631E	Non-Potable Waters, Solids/Chemicals & Biological	Total Mercury
EPA 1630	Non-Potable Waters	Methyl Mercury
BAL-3200	Solids/Chemicals & Biological	Methyl Mercury
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
BAL-4201	Non-Potable Waters	Se(IV), Se(VI)
BAL-4300	Non-Potable Waters Solid/Chemicals	Cr(VI)
SM2340B	Non-Potable Waters	Hardness



Accreditation Information

**Table 2. Accredited method/matrix/analytes for ISO (1),
 Non-Governmental TNI (2)
 Issued by: ANAB
 Issued on: September 21, 2021; Valid to: March 30, 2024**

Method	Matrix	ISO and Non-Gov. TNI Accredited Analyte(s)
EPA 1638 Mod EPA 200.8 Mod EPA 6020 Mod	Non-Potable Waters	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, U, V, Zn
BAL-5000	Solids/Chemicals & Biological	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, V, Zn Hg (Biological Only)
EPA 1640 Mod	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn Ag, As, Cr, Co, Se, Ti, V (ISO Only)
EPA 1631E Mod BAL-3100	Non-Potable Waters, Solids/Chemicals & Biological/Food	Total Mercury
EPA 1630 Mod BAL-3200	Non-Potable Waters, Solids/Chemicals Biological	Methyl Mercury
EPA 1632A Mod BAL-3300	Non-Potable Waters Biological/Food Solids/Chemicals	Inorganic Arsenic (ISO Only) Inorganic Arsenic (ISO Only)
AOAC 2015.01 Mod BAL-5000	Food	As, Cd, Hg, Pb
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
	Biological by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4101	Food by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4201	Non-Potable Waters	Se(IV), Se(VI), SeCN, SeMet
BAL-4300	Non-Potable Waters, Solid/Chemicals	Cr(VI)
SM 3500-Fe BAL-4500	Non-Potable Waters	Fe, Fe(II) (ISO Only)
SM2340B	Non-Potable Waters	Hardness
SM 2540G BAL-0501	Solids/Chemicals & Biological	% Dry Weight



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
RG_ERCKUT_SE-1_LAEMP_EVO_2 022-06_29_NP	2207064-01	Soil/Sediment	Sample	06/29/2022	07/07/2022
RG_ERCKUT_SE-2_LAEMP_EVO_2 022-06_29_NP	2207064-02	Soil/Sediment	Sample	06/29/2022	07/07/2022
RG_ERCKUT_SE-3_LAEMP_EVO_2 022-06_29_NP	2207064-03	Soil/Sediment	Sample	06/29/2022	07/07/2022
RG_ERCKUT_SE-4_LAEMP_EVO_2 022-06_29_NP	2207064-04	Soil/Sediment	Sample	06/29/2022	07/07/2022
RG_ERCKUT_SE-5_LAEMP_EVO_2 022-06_29_NP	2207064-05	Soil/Sediment	Sample	06/29/2022	07/07/2022
RG_ERCKUT_BRYOSE-1_LAEMP_ EVO_2022-06_29_NP	2207064-06	Soil/Sediment	Sample	06/29/2022	07/07/2022
RG_ERCKUT_BRYOSE-2_LAEMP_ EVO_2022-06_29_NP	2207064-07	Soil/Sediment	Sample	06/29/2022	07/07/2022
RG_ERCKUT_BRYOSE-3_LAEMP_ EVO_2022-06_29_NP	2207064-08	Soil/Sediment	Sample	06/29/2022	07/07/2022
RG_ERCKMD_SE-1_LAEMP_EVO_ 2022-06_29_NP	2207064-09	Soil/Sediment	Sample	06/29/2022	07/07/2022
RG_ERCKMD_SE-2_LAEMP_EVO_ 2022-06_29_NP	2207064-10	Soil/Sediment	Sample	06/29/2022	07/07/2022
RG_ERCKMD_SE-3_LAEMP_EVO_ 2022-06_29_NP	2207064-11	Soil/Sediment	Sample	06/29/2022	07/07/2022
RG_ERCKMD_BRYOSE-1_LAEMP_ EVO_2022-06_29_NP	2207064-12	Soil/Sediment	Sample	06/29/2022	07/07/2022
RG_ERCKMD_BRYOSE-2_LAEMP_ EVO_2022-06_29_NP	2207064-13	Soil/Sediment	Sample	06/29/2022	07/07/2022
RG_ERCKMD_BRYOSE-3_LAEMP_ EVO_2022-06_29_NP	2207064-14	Soil/Sediment	Sample	06/29/2022	07/07/2022
RG_MI25_SE-1_LAEMP_EVO_2022 -06_NP	2207064-15	Soil/Sediment	Sample	06/30/2022	07/07/2022
RG_MI25_SE-2_LAEMP_EVO_2022 -06_NP	2207064-16	Soil/Sediment	Sample	06/30/2022	07/07/2022
RG_MI25_SE-3_LAEMP_EVO_2022 -06_NP	2207064-17	Soil/Sediment	Sample	06/30/2022	07/07/2022
Sample does not exist	2207064-18	Soil/Sediment	Sample	06/29/2022	07/07/2022
RG_ERCKDT_SE-2_LAEMP_EVO_2 022-06_29_NP	2207064-19	Soil/Sediment	Sample	06/29/2022	07/07/2022
RG_ERCKDT_SE-3_LAEMP_EVO_2 022-06_29_NP	2207064-20	Soil/Sediment	Sample	06/29/2022	07/07/2022
RG_ERCKDT_SE-4_LAEMP_EVO_2 022-06_29_NP	2207064-21	Soil/Sediment	Sample	06/29/2022	07/07/2022
RG_ERCKDT_SE-5_LAEMP_EVO_2 022-06_29_NP	2207064-22	Soil/Sediment	Sample	06/29/2022	07/07/2022



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
Sample does not exist	2207064-23	Soil/Sediment	Sample	06/29/2022	07/07/2022
Sample does not exist	2207064-24	Soil/Sediment	Sample	06/29/2022	07/07/2022
RG_ERCKUC_SE-1_LAEMP_EVO_2022-06_30_NP	2207064-25	Soil/Sediment	Sample	06/30/2022	07/07/2022
RG_ERCKUC_SE-2_LAEMP_EVO_2022-06_30_NP	2207064-26	Soil/Sediment	Sample	06/30/2022	07/07/2022
RG_ERCKUC_SE-3_LAEMP_EVO_2022-06_30_NP	2207064-27	Soil/Sediment	Sample	06/30/2022	07/07/2022
RG_ERCKDT_BRYOSE-1_LAEMP_EVO_2022-06_29_NP	2207064-28	Soil/Sediment	Sample	06/29/2022	07/07/2022
RG_ERCKDT_BRYOSE-2_LAEMP_EVO_2022-06_29_NP	2207064-29	Soil/Sediment	Sample	06/29/2022	07/07/2022
RG_ERCKDT_BRYOSE-3_LAEMP_EVO_2022-06_29_NP	2207064-30	Soil/Sediment	Sample	06/29/2022	07/07/2022
Sample does not exist	2207064-31	Soil/Sediment	Sample	06/29/2022	07/07/2022
Sample does not exist	2207064-32	Soil/Sediment	Sample	06/29/2022	07/07/2022
RG_GATE_SE-1_LAEMP_EVO_2022-06_28_NP	2207064-33	Soil/Sediment	Sample	06/28/2022	07/07/2022
RG_GATE_SE-2_LAEMP_EVO_2022-06_28_NP	2207064-34	Soil/Sediment	Sample	06/28/2022	07/07/2022
RG_GATE_SE-3_LAEMP_EVO_2022-06_28_NP	2207064-35	Soil/Sediment	Sample	06/28/2022	07/07/2022
RG_BOCK_SE-1_LAEMP_EVO_2022-06_28_NP	2207064-36	Soil/Sediment	Sample	06/28/2022	07/07/2022
RG_BOCK_SE-2_LAEMP_EVO_2022-06_28_NP	2207064-37	Soil/Sediment	Sample	06/28/2022	07/07/2022
RG_BOCK_SE-3_LAEMP_EVO_2022-06_28_NP	2207064-38	Soil/Sediment	Sample	06/28/2022	07/07/2022
RG_BOCKRD_SE-1_LAEMP_EVO_2022-06_28_NP	2207064-39	Soil/Sediment	Sample	06/28/2022	07/07/2022
RG_BOCKRD_SE-2_LAEMP_EVO_2022-06_28_NP	2207064-40	Soil/Sediment	Sample	06/28/2022	07/07/2022
RG_BOCKRD_SE-3_LAEMP_EVO_2022-06_28_NP	2207064-41	Soil/Sediment	Sample	06/28/2022	07/07/2022



Batch Summary

Analyte	Lab Matrix	Method	Prepared	Analyzed	Batch	Sequence
%TS	Soil/Sediment	SOP BAL-0501	08/04/2022	08/05/2022	B221754	N/A
DMSeO F1	Soil/Sediment	In-House	07/18/2022	07/21/2022	B221521	S220775
DMSeO F2	Soil/Sediment	In-House	07/19/2022	07/26/2022	B221522	S220769
MeSe(IV) F1	Soil/Sediment	In-House	07/18/2022	07/21/2022	B221521	S220775
MeSe(IV) F2	Soil/Sediment	In-House	07/19/2022	07/26/2022	B221522	S220769
Se	Soil/Sediment	EPA 6020B Mod	07/28/2022	07/30/2022	B221655	S220789
Se Unk A F1	Soil/Sediment	In-House	07/18/2022	07/21/2022	B221521	S220775
Se Unk A F2	Soil/Sediment	In-House	07/19/2022	07/26/2022	B221522	S220769
Se(F1)	Soil/Sediment	In-House	07/19/2022	07/19/2022	B221601	S220748
Se(F2)	Soil/Sediment	In-House	07/19/2022	07/21/2022	B221616	S220754
Se(F3)	Soil/Sediment	In-House	07/18/2022	07/22/2022	B221636	S220760
Se(F4)	Soil/Sediment	In-House	07/18/2022	07/26/2022	B221646	S220773
Se(F5)	Soil/Sediment	In-House	07/26/2022	07/28/2022	B221656	S220779
Se(IV) F1	Soil/Sediment	In-House	07/18/2022	07/21/2022	B221521	S220775
Se(IV) F2	Soil/Sediment	In-House	07/19/2022	07/26/2022	B221522	S220769
Se(VI) F1	Soil/Sediment	In-House	07/18/2022	07/21/2022	B221521	S220775
Se(VI) F2	Soil/Sediment	In-House	07/19/2022	07/26/2022	B221522	S220769
SeCN F1	Soil/Sediment	In-House	07/18/2022	07/21/2022	B221521	S220775
SeCN F2	Soil/Sediment	In-House	07/19/2022	07/26/2022	B221522	S220769
SeMet F1	Soil/Sediment	In-House	07/18/2022	07/21/2022	B221521	S220775
SeMet F2	Soil/Sediment	In-House	07/19/2022	07/26/2022	B221522	S220769
SeSO3 F1	Soil/Sediment	In-House	07/18/2022	07/21/2022	B221521	S220775
SeSO3 F2	Soil/Sediment	In-House	07/19/2022	07/26/2022	B221522	S220769
Unk Se Sp F1	Soil/Sediment	In-House	07/18/2022	07/21/2022	B221521	S220775
Unk Se Sp F2	Soil/Sediment	In-House	07/19/2022	07/26/2022	B221522	S220769



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKUT_SE-1_LAEMP_EVO_2022-06_29_NP										
2207064-01	%TS	Soil/Sediment	NA	70.68		0.004	0.01	%	B221754	N/A
2207064-01	DMS ₂ O F1	Soil/Sediment	dry	≤ 0.003	U	0.003	0.011	mg/kg	B221521	S220775
2207064-01	DMS ₂ O F2	Soil/Sediment	dry	≤ 0.001	U	0.001	0.011	mg/kg	B221522	S220769
2207064-01	MeSe(IV) F1	Soil/Sediment	dry	≤ 0.003	U	0.003	0.011	mg/kg	B221521	S220775
2207064-01	MeSe(IV) F2	Soil/Sediment	dry	0.126		0.001	0.011	mg/kg	B221522	S220769
2207064-01	Se	Soil/Sediment	dry	3.42		0.126	0.252	mg/kg	B221655	S220789
2207064-01	Se Unk A F1	Soil/Sediment	dry	≤ 0.003	U	0.003	0.011	mg/kg	B221521	S220775
2207064-01	Se Unk A F2	Soil/Sediment	dry	≤ 0.001	U	0.001	0.011	mg/kg	B221522	S220769
2207064-01	Se(F1)	Soil/Sediment	dry	0.282		0.025	0.110	mg/kg	B221601	S220748
2207064-01	Se(F2)	Soil/Sediment	dry	1.29		0.011	0.110	mg/kg	B221616	S220754
2207064-01	Se(F3)	Soil/Sediment	dry	0.829		0.213	0.427	mg/kg	B221636	S220760
2207064-01	Se(F4)	Soil/Sediment	dry	0.390		0.040	0.110	mg/kg	B221646	S220773
2207064-01	Se(F5)	Soil/Sediment	dry	≤ 0.042	U	0.042	0.138	mg/kg	B221656	S220779
2207064-01	Se(IV) F1	Soil/Sediment	dry	0.207		0.003	0.027	mg/kg	B221521	S220775
2207064-01	Se(IV) F2	Soil/Sediment	dry	0.917		0.003	0.027	mg/kg	B221522	S220769
2207064-01	Se(VI) F1	Soil/Sediment	dry	0.036		0.012	0.028	mg/kg	B221521	S220775
2207064-01	Se(VI) F2	Soil/Sediment	dry	≤ 0.006	U	0.006	0.028	mg/kg	B221522	S220769
2207064-01	SeCN F1	Soil/Sediment	dry	≤ 0.002	U	0.002	0.011	mg/kg	B221521	S220775
2207064-01	SeCN F2	Soil/Sediment	dry	0.116		0.001	0.011	mg/kg	B221522	S220769
2207064-01	SeMet F1	Soil/Sediment	dry	≤ 0.003	U	0.003	0.011	mg/kg	B221521	S220775
2207064-01	SeMet F2	Soil/Sediment	dry	≤ 0.001	U	0.001	0.011	mg/kg	B221522	S220769
2207064-01	SeSO ₃ F1	Soil/Sediment	dry	≤ 0.012	U	0.012	0.028	mg/kg	B221521	S220775
2207064-01	SeSO ₃ F2	Soil/Sediment	dry	≤ 0.006	U	0.006	0.028	mg/kg	B221522	S220769
2207064-01	Unk Se Sp F1	Soil/Sediment	dry	≤ 0.003	U	0.003	0.027	mg/kg	B221521	S220775
2207064-01	Unk Se Sp F2	Soil/Sediment	dry	0.028		0.003	0.027	mg/kg	B221522	S220769



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKUT_SE-2_LAEMP_EVO_2022-06_29_NP										
2207064-02	%TS	Soil/Sediment	NA	60.64		0.005	0.02	%	B221754	N/A
2207064-02	DMS ₂ O F1	Soil/Sediment	dry	≤ 0.003	U	0.003	0.012	mg/kg	B221521	S220775
2207064-02	DMS ₂ O F2	Soil/Sediment	dry	≤ 0.001	U	0.001	0.012	mg/kg	B221522	S220769
2207064-02	MeSe(IV) F1	Soil/Sediment	dry	≤ 0.003	U	0.003	0.012	mg/kg	B221521	S220775
2207064-02	MeSe(IV) F2	Soil/Sediment	dry	0.088		0.001	0.012	mg/kg	B221522	S220769
2207064-02	Se	Soil/Sediment	dry	1.78		0.149	0.298	mg/kg	B221655	S220789
2207064-02	Se Unk A F1	Soil/Sediment	dry	≤ 0.003	U	0.003	0.012	mg/kg	B221521	S220775
2207064-02	Se Unk A F2	Soil/Sediment	dry	≤ 0.001	U	0.001	0.012	mg/kg	B221522	S220769
2207064-02	Se(F1)	Soil/Sediment	dry	0.124		0.027	0.122	mg/kg	B221601	S220748
2207064-02	Se(F2)	Soil/Sediment	dry	0.674		0.012	0.122	mg/kg	B221616	S220754
2207064-02	Se(F3)	Soil/Sediment	dry	0.797		0.236	0.471	mg/kg	B221636	S220760
2207064-02	Se(F4)	Soil/Sediment	dry	0.175		0.044	0.122	mg/kg	B221646	S220773
2207064-02	Se(F5)	Soil/Sediment	dry	≤ 0.046	U	0.046	0.152	mg/kg	B221656	S220779
2207064-02	Se(IV) F1	Soil/Sediment	dry	0.032		0.004	0.030	mg/kg	B221521	S220775
2207064-02	Se(IV) F2	Soil/Sediment	dry	0.411		0.003	0.030	mg/kg	B221522	S220769
2207064-02	Se(VI) F1	Soil/Sediment	dry	0.072		0.013	0.031	mg/kg	B221521	S220775
2207064-02	Se(VI) F2	Soil/Sediment	dry	≤ 0.006	U	0.006	0.031	mg/kg	B221522	S220769
2207064-02	SeCN F1	Soil/Sediment	dry	≤ 0.002	U	0.002	0.012	mg/kg	B221521	S220775
2207064-02	SeCN F2	Soil/Sediment	dry	0.063		0.001	0.012	mg/kg	B221522	S220769
2207064-02	SeMet F1	Soil/Sediment	dry	≤ 0.003	U	0.003	0.012	mg/kg	B221521	S220775
2207064-02	SeMet F2	Soil/Sediment	dry	≤ 0.001	U	0.001	0.012	mg/kg	B221522	S220769
2207064-02	SeSO ₃ F1	Soil/Sediment	dry	≤ 0.013	U	0.013	0.031	mg/kg	B221521	S220775
2207064-02	SeSO ₃ F2	Soil/Sediment	dry	≤ 0.006	U	0.006	0.031	mg/kg	B221522	S220769
2207064-02	Unk Se Sp F1	Soil/Sediment	dry	≤ 0.004	U	0.004	0.030	mg/kg	B221521	S220775
2207064-02	Unk Se Sp F2	Soil/Sediment	dry	0.012	J	0.003	0.030	mg/kg	B221522	S220769



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKUT_SE-3_LAEMP_EVO_2022-06_29_NP										
2207064-03	%TS	Soil/Sediment	NA	56.21		0.006	0.02	%	B221754	N/A
2207064-03	DMS ₂ O F1	Soil/Sediment	dry	≤ 0.003	U	0.003	0.014	mg/kg	B221521	S220775
2207064-03	DMS ₂ O F2	Soil/Sediment	dry	0.006	J	0.001	0.014	mg/kg	B221522	S220769
2207064-03	MeSe(IV) F1	Soil/Sediment	dry	≤ 0.003	U	0.003	0.014	mg/kg	B221521	S220775
2207064-03	MeSe(IV) F2	Soil/Sediment	dry	0.392		0.001	0.014	mg/kg	B221522	S220769
2207064-03	Se	Soil/Sediment	dry	4.30		0.159	0.317	mg/kg	B221655	S220789
2207064-03	Se Unk A F1	Soil/Sediment	dry	≤ 0.003	U	0.003	0.014	mg/kg	B221521	S220775
2207064-03	Se Unk A F2	Soil/Sediment	dry	≤ 0.001	U	0.001	0.014	mg/kg	B221522	S220769
2207064-03	Se(F1)	Soil/Sediment	dry	0.123	J	0.031	0.139	mg/kg	B221601	S220748
2207064-03	Se(F2)	Soil/Sediment	dry	1.57		0.014	0.139	mg/kg	B221616	S220754
2207064-03	Se(F3)	Soil/Sediment	dry	1.84		0.270	0.540	mg/kg	B221636	S220760
2207064-03	Se(F4)	Soil/Sediment	dry	0.231		0.050	0.139	mg/kg	B221646	S220773
2207064-03	Se(F5)	Soil/Sediment	dry	≤ 0.053	U	0.053	0.174	mg/kg	B221656	S220779
2207064-03	Se(IV) F1	Soil/Sediment	dry	0.077		0.004	0.034	mg/kg	B221521	S220775
2207064-03	Se(IV) F2	Soil/Sediment	dry	0.945		0.003	0.034	mg/kg	B221522	S220769
2207064-03	Se(VI) F1	Soil/Sediment	dry	≤ 0.015	U	0.015	0.036	mg/kg	B221521	S220775
2207064-03	Se(VI) F2	Soil/Sediment	dry	0.012	J	0.007	0.036	mg/kg	B221522	S220769
2207064-03	SeCN F1	Soil/Sediment	dry	≤ 0.002	U	0.002	0.014	mg/kg	B221521	S220775
2207064-03	SeCN F2	Soil/Sediment	dry	0.141		0.001	0.014	mg/kg	B221522	S220769
2207064-03	SeMet F1	Soil/Sediment	dry	≤ 0.003	U	0.003	0.014	mg/kg	B221521	S220775
2207064-03	SeMet F2	Soil/Sediment	dry	≤ 0.001	U	0.001	0.014	mg/kg	B221522	S220769
2207064-03	SeSO ₃ F1	Soil/Sediment	dry	≤ 0.015	U	0.015	0.036	mg/kg	B221521	S220775
2207064-03	SeSO ₃ F2	Soil/Sediment	dry	≤ 0.007	U	0.007	0.036	mg/kg	B221522	S220769
2207064-03	Unk Se Sp F1	Soil/Sediment	dry	≤ 0.004	U	0.004	0.034	mg/kg	B221521	S220775
2207064-03	Unk Se Sp F2	Soil/Sediment	dry	0.044		0.003	0.034	mg/kg	B221522	S220769



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKUT_SE-4_LAEMP_EVO_2022-06_29_NP										
2207064-04	%TS	Soil/Sediment	NA	48.68		0.005	0.02	%	B221754	N/A
2207064-04	DMS ₂ O F1	Soil/Sediment	dry	≤ 0.004	U	0.004	0.016	mg/kg	B221521	S220775
2207064-04	DMS ₂ O F2	Soil/Sediment	dry	0.010	J	0.002	0.016	mg/kg	B221522	S220769
2207064-04	MeSe(IV) F1	Soil/Sediment	dry	0.027		0.004	0.016	mg/kg	B221521	S220775
2207064-04	MeSe(IV) F2	Soil/Sediment	dry	1.75		0.002	0.016	mg/kg	B221522	S220769
2207064-04	Se	Soil/Sediment	dry	15.3		0.199	0.399	mg/kg	B221655	S220789
2207064-04	Se Unk A F1	Soil/Sediment	dry	≤ 0.004	U	0.004	0.016	mg/kg	B221521	S220775
2207064-04	Se Unk A F2	Soil/Sediment	dry	≤ 0.002	J-1 U	0.002	0.016	mg/kg	B221522	S220769
2207064-04	Se(F1)	Soil/Sediment	dry	0.854		0.036	0.162	mg/kg	B221601	S220748
2207064-04	Se(F2)	Soil/Sediment	dry	7.32		0.016	0.162	mg/kg	B221616	S220754
2207064-04	Se(F3)	Soil/Sediment	dry	5.32		0.314	0.628	mg/kg	B221636	S220760
2207064-04	Se(F4)	Soil/Sediment	dry	0.444		0.059	0.162	mg/kg	B221646	S220773
2207064-04	Se(F5)	Soil/Sediment	dry	≤ 0.062	U	0.062	0.203	mg/kg	B221656	S220779
2207064-04	Se(IV) F1	Soil/Sediment	dry	0.571		0.005	0.040	mg/kg	B221521	S220775
2207064-04	Se(IV) F2	Soil/Sediment	dry	4.25		0.004	0.040	mg/kg	B221522	S220769
2207064-04	Se(VI) F1	Soil/Sediment	dry	≤ 0.017	U	0.017	0.042	mg/kg	B221521	S220775
2207064-04	Se(VI) F2	Soil/Sediment	dry	0.029	J	0.008	0.042	mg/kg	B221522	S220769
2207064-04	SeCN F1	Soil/Sediment	dry	≤ 0.003	U	0.003	0.016	mg/kg	B221521	S220775
2207064-04	SeCN F2	Soil/Sediment	dry	1.16		0.002	0.016	mg/kg	B221522	S220769
2207064-04	SeMet F1	Soil/Sediment	dry	≤ 0.004	U	0.004	0.016	mg/kg	B221521	S220775
2207064-04	SeMet F2	Soil/Sediment	dry	≤ 0.002	J-1 U	0.002	0.016	mg/kg	B221522	S220769
2207064-04	SeSO ₃ F1	Soil/Sediment	dry	≤ 0.017	U	0.017	0.042	mg/kg	B221521	S220775
2207064-04	SeSO ₃ F2	Soil/Sediment	dry	0.027	J	0.008	0.042	mg/kg	B221522	S220769
2207064-04	Unk Se Sp F1	Soil/Sediment	dry	≤ 0.005	U	0.005	0.040	mg/kg	B221521	S220775
2207064-04	Unk Se Sp F2	Soil/Sediment	dry	0.193		0.004	0.040	mg/kg	B221522	S220769



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKUT_SE-5_LAEMP_EVO_2022-06_29_NP										
2207064-05	%TS	Soil/Sediment	NA	55.15		0.005	0.02	%	B221754	N/A
2207064-05	DMSeO F1	Soil/Sediment	dry	≤ 0.003	U	0.003	0.014	mg/kg	B221521	S220775
2207064-05	DMSeO F2	Soil/Sediment	dry	≤ 0.001	U	0.001	0.014	mg/kg	B221522	S220769
2207064-05	MeSe(IV) F1	Soil/Sediment	dry	≤ 0.003	U	0.003	0.014	mg/kg	B221521	S220775
2207064-05	MeSe(IV) F2	Soil/Sediment	dry	0.473		0.001	0.014	mg/kg	B221522	S220769
2207064-05	Se	Soil/Sediment	dry	8.43		0.180	0.360	mg/kg	B221655	S220789
2207064-05	Se Unk A F1	Soil/Sediment	dry	≤ 0.003	U	0.003	0.014	mg/kg	B221521	S220775
2207064-05	Se Unk A F2	Soil/Sediment	dry	≤ 0.001	U	0.001	0.014	mg/kg	B221522	S220769
2207064-05	Se(F1)	Soil/Sediment	dry	0.228		0.031	0.136	mg/kg	B221601	S220748
2207064-05	Se(F2)	Soil/Sediment	dry	1.88		0.014	0.136	mg/kg	B221616	S220754
2207064-05	Se(F3)	Soil/Sediment	dry	1.76		0.263	0.526	mg/kg	B221636	S220760
2207064-05	Se(F4)	Soil/Sediment	dry	0.260		0.049	0.136	mg/kg	B221646	S220773
2207064-05	Se(F5)	Soil/Sediment	dry	≤ 0.052	U	0.052	0.170	mg/kg	B221656	S220779
2207064-05	Se(IV) F1	Soil/Sediment	dry	0.137		0.004	0.033	mg/kg	B221521	S220775
2207064-05	Se(IV) F2	Soil/Sediment	dry	1.18		0.003	0.033	mg/kg	B221522	S220769
2207064-05	Se(VI) F1	Soil/Sediment	dry	0.061		0.014	0.035	mg/kg	B221521	S220775
2207064-05	Se(VI) F2	Soil/Sediment	dry	≤ 0.007	U	0.007	0.035	mg/kg	B221522	S220769
2207064-05	SeCN F1	Soil/Sediment	dry	≤ 0.002	U	0.002	0.014	mg/kg	B221521	S220775
2207064-05	SeCN F2	Soil/Sediment	dry	0.289		0.001	0.014	mg/kg	B221522	S220769
2207064-05	SeMet F1	Soil/Sediment	dry	≤ 0.003	U	0.003	0.014	mg/kg	B221521	S220775
2207064-05	SeMet F2	Soil/Sediment	dry	≤ 0.001	U	0.001	0.014	mg/kg	B221522	S220769
2207064-05	SeSO3 F1	Soil/Sediment	dry	≤ 0.014	U	0.014	0.035	mg/kg	B221521	S220775
2207064-05	SeSO3 F2	Soil/Sediment	dry	0.009	J	0.007	0.035	mg/kg	B221522	S220769
2207064-05	Unk Se Sp F1	Soil/Sediment	dry	≤ 0.004	U	0.004	0.033	mg/kg	B221521	S220775
2207064-05	Unk Se Sp F2	Soil/Sediment	dry	0.071		0.003	0.033	mg/kg	B221522	S220769



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKUT_BRYOSE-1_LAEMP_EVO_2022-06_29_NP</i>										
2207064-06	%TS	Soil/Sediment	NA	24.41		0.02	0.08	%	B221754	N/A
2207064-06	DMS ₂ O F1	Soil/Sediment	dry	≤ 0.007	U	0.007	0.032	mg/kg	B221521	S220775
2207064-06	DMS ₂ O F2	Soil/Sediment	dry	0.018	J	0.003	0.032	mg/kg	B221522	S220769
2207064-06	MeSe(IV) F1	Soil/Sediment	dry	≤ 0.007	U	0.007	0.032	mg/kg	B221521	S220775
2207064-06	MeSe(IV) F2	Soil/Sediment	dry	1.70		0.003	0.032	mg/kg	B221522	S220769
2207064-06	Se	Soil/Sediment	dry	7.41		0.393	0.786	mg/kg	B221655	S220789
2207064-06	Se Unk A F1	Soil/Sediment	dry	≤ 0.007	U	0.007	0.032	mg/kg	B221521	S220775
2207064-06	Se Unk A F2	Soil/Sediment	dry	≤ 0.003	U	0.003	0.032	mg/kg	B221522	S220769
2207064-06	Se(F1)	Soil/Sediment	dry	0.250	J	0.071	0.317	mg/kg	B221601	S220748
2207064-06	Se(F2)	Soil/Sediment	dry	4.17		0.032	0.317	mg/kg	B221616	S220754
2207064-06	Se(F3)	Soil/Sediment	dry	7.66		0.614	1.23	mg/kg	B221636	S220760
2207064-06	Se(F4)	Soil/Sediment	dry	0.149	J	0.115	0.317	mg/kg	B221646	S220773
2207064-06	Se(F5)	Soil/Sediment	dry	≤ 0.121	U	0.121	0.396	mg/kg	B221656	S220779
2207064-06	Se(IV) F1	Soil/Sediment	dry	0.107		0.010	0.077	mg/kg	B221521	S220775
2207064-06	Se(IV) F2	Soil/Sediment	dry	2.17		0.008	0.077	mg/kg	B221522	S220769
2207064-06	Se(VI) F1	Soil/Sediment	dry	≤ 0.034	U	0.034	0.081	mg/kg	B221521	S220775
2207064-06	Se(VI) F2	Soil/Sediment	dry	≤ 0.016	U	0.016	0.081	mg/kg	B221522	S220769
2207064-06	SeCN F1	Soil/Sediment	dry	≤ 0.005	U	0.005	0.032	mg/kg	B221521	S220775
2207064-06	SeCN F2	Soil/Sediment	dry	0.795		0.003	0.032	mg/kg	B221522	S220769
2207064-06	SeMet F1	Soil/Sediment	dry	≤ 0.007	U	0.007	0.032	mg/kg	B221521	S220775
2207064-06	SeMet F2	Soil/Sediment	dry	≤ 0.003	U	0.003	0.032	mg/kg	B221522	S220769
2207064-06	SeSO ₃ F1	Soil/Sediment	dry	≤ 0.034	U	0.034	0.081	mg/kg	B221521	S220775
2207064-06	SeSO ₃ F2	Soil/Sediment	dry	0.024	J	0.016	0.081	mg/kg	B221522	S220769
2207064-06	Unk Se Sp F1	Soil/Sediment	dry	≤ 0.010	U	0.010	0.077	mg/kg	B221521	S220775
2207064-06	Unk Se Sp F2	Soil/Sediment	dry	0.205		0.008	0.077	mg/kg	B221522	S220769



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKUT_BRYOSE-2_LAEMP_EVO_2022-06_29_NP										
2207064-07	%TS	Soil/Sediment	NA	34.88		0.02	0.05	%	B221754	N/A
2207064-07	DMS ₂ O F1	Soil/Sediment	dry	≤ 0.005	U	0.005	0.022	mg/kg	B221521	S220775
2207064-07	DMS ₂ O F2	Soil/Sediment	dry	0.008	J	0.002	0.022	mg/kg	B221522	S220769
2207064-07	MeSe(IV) F1	Soil/Sediment	dry	≤ 0.005	U	0.005	0.022	mg/kg	B221521	S220775
2207064-07	MeSe(IV) F2	Soil/Sediment	dry	0.449		0.002	0.022	mg/kg	B221522	S220769
2207064-07	Se	Soil/Sediment	dry	6.14		0.248	0.496	mg/kg	B221655	S220789
2207064-07	Se Unk A F1	Soil/Sediment	dry	≤ 0.005	U	0.005	0.022	mg/kg	B221521	S220775
2207064-07	Se Unk A F2	Soil/Sediment	dry	≤ 0.002	U	0.002	0.022	mg/kg	B221522	S220769
2207064-07	Se(F1)	Soil/Sediment	dry	0.129	J	0.050	0.222	mg/kg	B221601	S220748
2207064-07	Se(F2)	Soil/Sediment	dry	1.33		0.022	0.222	mg/kg	B221616	S220754
2207064-07	Se(F3)	Soil/Sediment	dry	3.02		0.431	0.862	mg/kg	B221636	S220760
2207064-07	Se(F4)	Soil/Sediment	dry	0.116	J	0.081	0.222	mg/kg	B221646	S220773
2207064-07	Se(F5)	Soil/Sediment	dry	≤ 0.085	U	0.085	0.278	mg/kg	B221656	S220779
2207064-07	Se(IV) F1	Soil/Sediment	dry	0.065		0.007	0.054	mg/kg	B221521	S220775
2207064-07	Se(IV) F2	Soil/Sediment	dry	0.611		0.005	0.054	mg/kg	B221522	S220769
2207064-07	Se(VI) F1	Soil/Sediment	dry	≤ 0.024	U	0.024	0.057	mg/kg	B221521	S220775
2207064-07	Se(VI) F2	Soil/Sediment	dry	≤ 0.011	U	0.011	0.057	mg/kg	B221522	S220769
2207064-07	SeCN F1	Soil/Sediment	dry	≤ 0.004	U	0.004	0.022	mg/kg	B221521	S220775
2207064-07	SeCN F2	Soil/Sediment	dry	0.241		0.002	0.022	mg/kg	B221522	S220769
2207064-07	SeMet F1	Soil/Sediment	dry	≤ 0.005	U	0.005	0.022	mg/kg	B221521	S220775
2207064-07	SeMet F2	Soil/Sediment	dry	≤ 0.002	U	0.002	0.022	mg/kg	B221522	S220769
2207064-07	SeSO ₃ F1	Soil/Sediment	dry	≤ 0.024	U	0.024	0.057	mg/kg	B221521	S220775
2207064-07	SeSO ₃ F2	Soil/Sediment	dry	≤ 0.011	U	0.011	0.057	mg/kg	B221522	S220769
2207064-07	Unk Se Sp F1	Soil/Sediment	dry	≤ 0.007	U	0.007	0.054	mg/kg	B221521	S220775
2207064-07	Unk Se Sp F2	Soil/Sediment	dry	0.122		0.005	0.054	mg/kg	B221522	S220769



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKUT_BRYOSE-3_LAEMP_EVO_2022-06_29_NP										
2207064-08	%TS	Soil/Sediment	NA	22.67		0.02	0.08	%	B221754	N/A
2207064-08	DMS ₂ O F1	Soil/Sediment	dry	≤ 0.008	U	0.008	0.033	mg/kg	B221521	S220775
2207064-08	DMS ₂ O F2	Soil/Sediment	dry	≤ 0.003	U	0.003	0.033	mg/kg	B221522	S220769
2207064-08	MeSe(IV) F1	Soil/Sediment	dry	0.014	J	0.008	0.033	mg/kg	B221521	S220775
2207064-08	MeSe(IV) F2	Soil/Sediment	dry	1.04		0.003	0.033	mg/kg	B221522	S220769
2207064-08	Se	Soil/Sediment	dry	14.7		0.394	0.788	mg/kg	B221655	S220789
2207064-08	Se Unk A F1	Soil/Sediment	dry	≤ 0.008	U	0.008	0.033	mg/kg	B221521	S220775
2207064-08	Se Unk A F2	Soil/Sediment	dry	≤ 0.003	U	0.003	0.033	mg/kg	B221522	S220769
2207064-08	Se(F1)	Soil/Sediment	dry	0.314	J	0.075	0.333	mg/kg	B221601	S220748
2207064-08	Se(F2)	Soil/Sediment	dry	2.97		0.033	0.333	mg/kg	B221616	S220754
2207064-08	Se(F3)	Soil/Sediment	dry	4.79		0.645	1.29	mg/kg	B221636	S220760
2207064-08	Se(F4)	Soil/Sediment	dry	≤ 0.121	U	0.121	0.333	mg/kg	B221646	S220773
2207064-08	Se(F5)	Soil/Sediment	dry	≤ 0.127	U	0.127	0.416	mg/kg	B221656	S220779
2207064-08	Se(IV) F1	Soil/Sediment	dry	0.152		0.010	0.081	mg/kg	B221521	S220775
2207064-08	Se(IV) F2	Soil/Sediment	dry	1.57		0.008	0.081	mg/kg	B221522	S220769
2207064-08	Se(VI) F1	Soil/Sediment	dry	≤ 0.035	U	0.035	0.085	mg/kg	B221521	S220775
2207064-08	Se(VI) F2	Soil/Sediment	dry	≤ 0.017	U	0.017	0.085	mg/kg	B221522	S220769
2207064-08	SeCN F1	Soil/Sediment	dry	≤ 0.005	U	0.005	0.033	mg/kg	B221521	S220775
2207064-08	SeCN F2	Soil/Sediment	dry	0.485		0.003	0.033	mg/kg	B221522	S220769
2207064-08	SeMet F1	Soil/Sediment	dry	≤ 0.008	U	0.008	0.033	mg/kg	B221521	S220775
2207064-08	SeMet F2	Soil/Sediment	dry	≤ 0.003	U	0.003	0.033	mg/kg	B221522	S220769
2207064-08	SeSO ₃ F1	Soil/Sediment	dry	≤ 0.035	U	0.035	0.085	mg/kg	B221521	S220775
2207064-08	SeSO ₃ F2	Soil/Sediment	dry	0.020	J	0.017	0.085	mg/kg	B221522	S220769
2207064-08	Unk Se Sp F1	Soil/Sediment	dry	≤ 0.010	U	0.010	0.081	mg/kg	B221521	S220775
2207064-08	Unk Se Sp F2	Soil/Sediment	dry	0.174		0.008	0.081	mg/kg	B221522	S220769



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKMD_SE-1_LAEMP_EVO_2022-06_29_NP										
2207064-09	%TS	Soil/Sediment	NA	36.87		0.009	0.03	%	B221754	N/A
2207064-09	DMS ₂ O F1	Soil/Sediment	dry	≤ 0.005	U	0.005	0.021	mg/kg	B221521	S220775
2207064-09	DMS ₂ O F2	Soil/Sediment	dry	≤ 0.002	U	0.002	0.021	mg/kg	B221522	S220769
2207064-09	MeSe(IV) F1	Soil/Sediment	dry	0.006	J	0.005	0.021	mg/kg	B221521	S220775
2207064-09	MeSe(IV) F2	Soil/Sediment	dry	0.892		0.002	0.021	mg/kg	B221522	S220769
2207064-09	Se	Soil/Sediment	dry	10.0		0.268	0.535	mg/kg	B221655	S220789
2207064-09	Se Unk A F1	Soil/Sediment	dry	≤ 0.005	U	0.005	0.021	mg/kg	B221521	S220775
2207064-09	Se Unk A F2	Soil/Sediment	dry	≤ 0.002	U	0.002	0.021	mg/kg	B221522	S220769
2207064-09	Se(F1)	Soil/Sediment	dry	0.593		0.047	0.210	mg/kg	B221601	S220748
2207064-09	Se(F2)	Soil/Sediment	dry	5.03		0.021	0.210	mg/kg	B221616	S220754
2207064-09	Se(F3)	Soil/Sediment	dry	4.57		0.408	0.816	mg/kg	B221636	S220760
2207064-09	Se(F4)	Soil/Sediment	dry	0.292		0.076	0.210	mg/kg	B221646	S220773
2207064-09	Se(F5)	Soil/Sediment	dry	≤ 0.080	U	0.080	0.263	mg/kg	B221656	S220779
2207064-09	Se(IV) F1	Soil/Sediment	dry	0.431		0.006	0.051	mg/kg	B221521	S220775
2207064-09	Se(IV) F2	Soil/Sediment	dry	2.68		0.005	0.051	mg/kg	B221522	S220769
2207064-09	Se(VI) F1	Soil/Sediment	dry	≤ 0.022	U	0.022	0.054	mg/kg	B221521	S220775
2207064-09	Se(VI) F2	Soil/Sediment	dry	≤ 0.011	U	0.011	0.054	mg/kg	B221522	S220769
2207064-09	SeCN F1	Soil/Sediment	dry	≤ 0.003	U	0.003	0.021	mg/kg	B221521	S220775
2207064-09	SeCN F2	Soil/Sediment	dry	1.22		0.002	0.021	mg/kg	B221522	S220769
2207064-09	SeMet F1	Soil/Sediment	dry	≤ 0.005	U	0.005	0.021	mg/kg	B221521	S220775
2207064-09	SeMet F2	Soil/Sediment	dry	≤ 0.002	U	0.002	0.021	mg/kg	B221522	S220769
2207064-09	SeSO ₃ F1	Soil/Sediment	dry	≤ 0.022	U	0.022	0.054	mg/kg	B221521	S220775
2207064-09	SeSO ₃ F2	Soil/Sediment	dry	0.014	J	0.011	0.054	mg/kg	B221522	S220769
2207064-09	Unk Se Sp F1	Soil/Sediment	dry	≤ 0.006	U	0.006	0.051	mg/kg	B221521	S220775
2207064-09	Unk Se Sp F2	Soil/Sediment	dry	0.187		0.005	0.051	mg/kg	B221522	S220769



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKMD_SE-2_LAEMP_EVO_2022-06_29_NP										
2207064-10	%TS	Soil/Sediment	NA	29.84		0.01	0.03	%	B221754	N/A
2207064-10	DMS ₂ O F1	Soil/Sediment	dry	≤ 0.006	U	0.006	0.025	mg/kg	B221521	S220775
2207064-10	DMS ₂ O F2	Soil/Sediment	dry	≤ 0.003	U	0.003	0.025	mg/kg	B221522	S220769
2207064-10	MeSe(IV) F1	Soil/Sediment	dry	0.015	J	0.006	0.025	mg/kg	B221521	S220775
2207064-10	MeSe(IV) F2	Soil/Sediment	dry	1.09		0.003	0.025	mg/kg	B221522	S220769
2207064-10	Se	Soil/Sediment	dry	16.3		0.297	0.593	mg/kg	B221655	S220789
2207064-10	Se Unk A F1	Soil/Sediment	dry	≤ 0.006	U	0.006	0.025	mg/kg	B221521	S220775
2207064-10	Se Unk A F2	Soil/Sediment	dry	≤ 0.003	U	0.003	0.025	mg/kg	B221522	S220769
2207064-10	Se(F1)	Soil/Sediment	dry	0.656		0.057	0.251	mg/kg	B221601	S220748
2207064-10	Se(F2)	Soil/Sediment	dry	8.56		0.025	0.251	mg/kg	B221616	S220754
2207064-10	Se(F3)	Soil/Sediment	dry	5.36		0.487	0.974	mg/kg	B221636	S220760
2207064-10	Se(F4)	Soil/Sediment	dry	0.415		0.091	0.251	mg/kg	B221646	S220773
2207064-10	Se(F5)	Soil/Sediment	dry	≤ 0.096	U	0.096	0.314	mg/kg	B221656	S220779
2207064-10	Se(IV) F1	Soil/Sediment	dry	0.523		0.008	0.061	mg/kg	B221521	S220775
2207064-10	Se(IV) F2	Soil/Sediment	dry	6.63		0.006	0.061	mg/kg	B221522	S220769
2207064-10	Se(VI) F1	Soil/Sediment	dry	≤ 0.027	U	0.027	0.064	mg/kg	B221521	S220775
2207064-10	Se(VI) F2	Soil/Sediment	dry	≤ 0.013	U	0.013	0.064	mg/kg	B221522	S220769
2207064-10	SeCN F1	Soil/Sediment	dry	≤ 0.004	U	0.004	0.025	mg/kg	B221521	S220775
2207064-10	SeCN F2	Soil/Sediment	dry	1.18		0.003	0.025	mg/kg	B221522	S220769
2207064-10	SeMet F1	Soil/Sediment	dry	≤ 0.006	U	0.006	0.025	mg/kg	B221521	S220775
2207064-10	SeMet F2	Soil/Sediment	dry	≤ 0.003	U	0.003	0.025	mg/kg	B221522	S220769
2207064-10	SeSO ₃ F1	Soil/Sediment	dry	≤ 0.027	U	0.027	0.064	mg/kg	B221521	S220775
2207064-10	SeSO ₃ F2	Soil/Sediment	dry	0.026	J	0.013	0.064	mg/kg	B221522	S220769
2207064-10	Unk Se Sp F1	Soil/Sediment	dry	≤ 0.008	U	0.008	0.061	mg/kg	B221521	S220775
2207064-10	Unk Se Sp F2	Soil/Sediment	dry	0.205		0.006	0.061	mg/kg	B221522	S220769



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKMD_SE-3_LAEMP_EVO_2022-06_29_NP										
2207064-11	%TS	Soil/Sediment	NA	21.78		0.01	0.04	%	B221754	N/A
2207064-11	DMS ₂ O F1	Soil/Sediment	dry	0.012	J	0.008	0.035	mg/kg	B221521	S220775
2207064-11	DMS ₂ O F2	Soil/Sediment	dry	0.012	J	0.004	0.035	mg/kg	B221522	S220769
2207064-11	MeSe(IV) F1	Soil/Sediment	dry	0.010	J	0.008	0.035	mg/kg	B221521	S220775
2207064-11	MeSe(IV) F2	Soil/Sediment	dry	1.83		0.004	0.035	mg/kg	B221522	S220769
2207064-11	Se	Soil/Sediment	dry	29.6		0.394	0.788	mg/kg	B221655	S220789
2207064-11	Se Unk A F1	Soil/Sediment	dry	≤ 0.008	U	0.008	0.035	mg/kg	B221521	S220775
2207064-11	Se Unk A F2	Soil/Sediment	dry	≤ 0.004	U	0.004	0.035	mg/kg	B221522	S220769
2207064-11	Se(F1)	Soil/Sediment	dry	1.45		0.080	0.353	mg/kg	B221601	S220748
2207064-11	Se(F2)	Soil/Sediment	dry	11.2		0.035	0.353	mg/kg	B221616	S220754
2207064-11	Se(F3)	Soil/Sediment	dry	15.7		0.685	1.37	mg/kg	B221636	S220760
2207064-11	Se(F4)	Soil/Sediment	dry	0.843		0.128	0.353	mg/kg	B221646	S220773
2207064-11	Se(F5)	Soil/Sediment	dry	≤ 0.135	U	0.135	0.442	mg/kg	B221656	S220779
2207064-11	Se(IV) F1	Soil/Sediment	dry	0.903		0.011	0.086	mg/kg	B221521	S220775
2207064-11	Se(IV) F2	Soil/Sediment	dry	6.40		0.009	0.086	mg/kg	B221522	S220769
2207064-11	Se(VI) F1	Soil/Sediment	dry	0.256		0.038	0.091	mg/kg	B221521	S220775
2207064-11	Se(VI) F2	Soil/Sediment	dry	≤ 0.018	U	0.018	0.091	mg/kg	B221522	S220769
2207064-11	SeCN F1	Soil/Sediment	dry	≤ 0.006	U	0.006	0.035	mg/kg	B221521	S220775
2207064-11	SeCN F2	Soil/Sediment	dry	2.69		0.004	0.035	mg/kg	B221522	S220769
2207064-11	SeMet F1	Soil/Sediment	dry	≤ 0.008	U	0.008	0.035	mg/kg	B221521	S220775
2207064-11	SeMet F2	Soil/Sediment	dry	≤ 0.004	U	0.004	0.035	mg/kg	B221522	S220769
2207064-11	SeSO ₃ F1	Soil/Sediment	dry	≤ 0.038	U	0.038	0.091	mg/kg	B221521	S220775
2207064-11	SeSO ₃ F2	Soil/Sediment	dry	0.026	J	0.018	0.091	mg/kg	B221522	S220769
2207064-11	Unk Se Sp F1	Soil/Sediment	dry	≤ 0.011	U	0.011	0.086	mg/kg	B221521	S220775
2207064-11	Unk Se Sp F2	Soil/Sediment	dry	0.339		0.009	0.086	mg/kg	B221522	S220769



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKMD_BRYOSE-1_LAEMP_EVO_2022-06_29_NP										
2207064-12	%TS	Soil/Sediment	NA	10.48		0.05	0.16	%	B221754	N/A
2207064-12	DMS ₂ O F1	Soil/Sediment	dry	≤ 0.017	U	0.017	0.075	mg/kg	B221521	S220775
2207064-12	DMS ₂ O F2	Soil/Sediment	dry	0.078		0.008	0.075	mg/kg	B221522	S220769
2207064-12	MeSe(IV) F1	Soil/Sediment	dry	0.040	J	0.017	0.075	mg/kg	B221521	S220775
2207064-12	MeSe(IV) F2	Soil/Sediment	dry	1.29		0.008	0.075	mg/kg	B221522	S220769
2207064-12	Se	Soil/Sediment	dry	43.3		0.859	1.72	mg/kg	B221655	S220789
2207064-12	Se Unk A F1	Soil/Sediment	dry	≤ 0.017	U	0.017	0.075	mg/kg	B221521	S220775
2207064-12	Se Unk A F2	Soil/Sediment	dry	≤ 0.008	U	0.008	0.075	mg/kg	B221522	S220769
2207064-12	Se(F1)	Soil/Sediment	dry	1.73		0.169	0.750	mg/kg	B221601	S220748
2207064-12	Se(F2)	Soil/Sediment	dry	17.2		0.075	0.750	mg/kg	B221616	S220754
2207064-12	Se(F3)	Soil/Sediment	dry	20.7		1.45	2.91	mg/kg	B221636	S220760
2207064-12	Se(F4)	Soil/Sediment	dry	0.852		0.272	0.750	mg/kg	B221646	S220773
2207064-12	Se(F5)	Soil/Sediment	dry	≤ 0.286	U	0.286	0.938	mg/kg	B221656	S220779
2207064-12	Se(IV) F1	Soil/Sediment	dry	0.470		0.023	0.183	mg/kg	B221521	S220775
2207064-12	Se(IV) F2	Soil/Sediment	dry	12.0		0.018	0.183	mg/kg	B221522	S220769
2207064-12	Se(VI) F1	Soil/Sediment	dry	0.586		0.080	0.192	mg/kg	B221521	S220775
2207064-12	Se(VI) F2	Soil/Sediment	dry	≤ 0.038	U	0.038	0.192	mg/kg	B221522	S220769
2207064-12	SeCN F1	Soil/Sediment	dry	≤ 0.012	U	0.012	0.075	mg/kg	B221521	S220775
2207064-12	SeCN F2	Soil/Sediment	dry	5.34		0.008	0.075	mg/kg	B221522	S220769
2207064-12	SeMet F1	Soil/Sediment	dry	≤ 0.017	U	0.017	0.075	mg/kg	B221521	S220775
2207064-12	SeMet F2	Soil/Sediment	dry	≤ 0.008	U	0.008	0.075	mg/kg	B221522	S220769
2207064-12	SeSO ₃ F1	Soil/Sediment	dry	≤ 0.080	U	0.080	0.192	mg/kg	B221521	S220775
2207064-12	SeSO ₃ F2	Soil/Sediment	dry	0.056	J	0.038	0.192	mg/kg	B221522	S220769
2207064-12	Unk Se Sp F1	Soil/Sediment	dry	≤ 0.023	U	0.023	0.183	mg/kg	B221521	S220775
2207064-12	Unk Se Sp F2	Soil/Sediment	dry	0.449		0.018	0.183	mg/kg	B221522	S220769



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKMD_BRYOSE-2_LAEMP_EVO_2022-06_29_NP										
2207064-13	%TS	Soil/Sediment	NA	14.38		0.03	0.11	%	B221754	N/A
2207064-13	DMS ₂ O F1	Soil/Sediment	dry	0.047	J	0.013	0.055	mg/kg	B221521	S220775
2207064-13	DMS ₂ O F2	Soil/Sediment	dry	0.079		0.005	0.055	mg/kg	B221522	S220769
2207064-13	MeSe(IV) F1	Soil/Sediment	dry	0.033	J	0.013	0.055	mg/kg	B221521	S220775
2207064-13	MeSe(IV) F2	Soil/Sediment	dry	1.46		0.005	0.055	mg/kg	B221522	S220769
2207064-13	Se	Soil/Sediment	dry	41.4		0.634	1.27	mg/kg	B221655	S220789
2207064-13	Se Unk A F1	Soil/Sediment	dry	≤ 0.013	U	0.013	0.055	mg/kg	B221521	S220775
2207064-13	Se Unk A F2	Soil/Sediment	dry	≤ 0.005	U	0.005	0.055	mg/kg	B221522	S220769
2207064-13	Se(F1)	Soil/Sediment	dry	1.16		0.123	0.546	mg/kg	B221601	S220748
2207064-13	Se(F2)	Soil/Sediment	dry	20.6		0.055	0.546	mg/kg	B221616	S220754
2207064-13	Se(F3)	Soil/Sediment	dry	24.5		1.06	2.11	mg/kg	B221636	S220760
2207064-13	Se(F4)	Soil/Sediment	dry	1.13		0.198	0.546	mg/kg	B221646	S220773
2207064-13	Se(F5)	Soil/Sediment	dry	≤ 0.208	U	0.208	0.682	mg/kg	B221656	S220779
2207064-13	Se(IV) F1	Soil/Sediment	dry	0.334		0.016	0.133	mg/kg	B221521	S220775
2207064-13	Se(IV) F2	Soil/Sediment	dry	15.9		0.013	0.133	mg/kg	B221522	S220769
2207064-13	Se(VI) F1	Soil/Sediment	dry	0.272		0.058	0.140	mg/kg	B221521	S220775
2207064-13	Se(VI) F2	Soil/Sediment	dry	≤ 0.028	U	0.028	0.140	mg/kg	B221522	S220769
2207064-13	SeCN F1	Soil/Sediment	dry	≤ 0.009	U	0.009	0.055	mg/kg	B221521	S220775
2207064-13	SeCN F2	Soil/Sediment	dry	6.48		0.005	0.055	mg/kg	B221522	S220769
2207064-13	SeMet F1	Soil/Sediment	dry	≤ 0.013	U	0.013	0.055	mg/kg	B221521	S220775
2207064-13	SeMet F2	Soil/Sediment	dry	≤ 0.005	U	0.005	0.055	mg/kg	B221522	S220769
2207064-13	SeSO ₃ F1	Soil/Sediment	dry	≤ 0.058	U	0.058	0.140	mg/kg	B221521	S220775
2207064-13	SeSO ₃ F2	Soil/Sediment	dry	0.057	J	0.028	0.140	mg/kg	B221522	S220769
2207064-13	Unk Se Sp F1	Soil/Sediment	dry	≤ 0.016	U	0.016	0.133	mg/kg	B221521	S220775
2207064-13	Unk Se Sp F2	Soil/Sediment	dry	0.386		0.013	0.133	mg/kg	B221522	S220769



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKMD_BRYOSE-3_LAEMP_EVO_2022-06_29_NP</i>										
2207064-14	%TS	Soil/Sediment	NA	9.42		0.05	0.16	%	B221754	N/A
2207064-14	DMS ₂ O F1	Soil/Sediment	dry	0.045	J	0.019	0.080	mg/kg	B221521	S220775
2207064-14	DMS ₂ O F2	Soil/Sediment	dry	0.063	J	0.008	0.080	mg/kg	B221522	S220769
2207064-14	MeSe(IV) F1	Soil/Sediment	dry	0.043	J	0.019	0.080	mg/kg	B221521	S220775
2207064-14	MeSe(IV) F2	Soil/Sediment	dry	1.23		0.008	0.080	mg/kg	B221522	S220769
2207064-14	Se	Soil/Sediment	dry	44.3		0.909	1.82	mg/kg	B221655	S220789
2207064-14	Se Unk A F1	Soil/Sediment	dry	≤ 0.019	U	0.019	0.080	mg/kg	B221521	S220775
2207064-14	Se Unk A F2	Soil/Sediment	dry	≤ 0.008	U	0.008	0.080	mg/kg	B221522	S220769
2207064-14	Se(F1)	Soil/Sediment	dry	1.96		0.180	0.800	mg/kg	B221601	S220748
2207064-14	Se(F2)	Soil/Sediment	dry	17.5		0.080	0.800	mg/kg	B221616	S220754
2207064-14	Se(F3)	Soil/Sediment	dry	21.0		1.55	3.10	mg/kg	B221636	S220760
2207064-14	Se(F4)	Soil/Sediment	dry	0.820		0.290	0.800	mg/kg	B221646	S220773
2207064-14	Se(F5)	Soil/Sediment	dry	≤ 0.305	U	0.305	1.00	mg/kg	B221656	S220779
2207064-14	Se(IV) F1	Soil/Sediment	dry	0.415		0.024	0.195	mg/kg	B221521	S220775
2207064-14	Se(IV) F2	Soil/Sediment	dry	12.8		0.020	0.195	mg/kg	B221522	S220769
2207064-14	Se(VI) F1	Soil/Sediment	dry	0.937		0.085	0.205	mg/kg	B221521	S220775
2207064-14	Se(VI) F2	Soil/Sediment	dry	≤ 0.041	U	0.041	0.205	mg/kg	B221522	S220769
2207064-14	SeCN F1	Soil/Sediment	dry	≤ 0.013	U	0.013	0.080	mg/kg	B221521	S220775
2207064-14	SeCN F2	Soil/Sediment	dry	5.26		0.008	0.080	mg/kg	B221522	S220769
2207064-14	SeMet F1	Soil/Sediment	dry	≤ 0.019	U	0.019	0.080	mg/kg	B221521	S220775
2207064-14	SeMet F2	Soil/Sediment	dry	≤ 0.008	U	0.008	0.080	mg/kg	B221522	S220769
2207064-14	SeSO ₃ F1	Soil/Sediment	dry	≤ 0.085	U	0.085	0.205	mg/kg	B221521	S220775
2207064-14	SeSO ₃ F2	Soil/Sediment	dry	0.048	J	0.041	0.205	mg/kg	B221522	S220769
2207064-14	Unk Se Sp F1	Soil/Sediment	dry	≤ 0.024	U	0.024	0.195	mg/kg	B221521	S220775
2207064-14	Unk Se Sp F2	Soil/Sediment	dry	0.455		0.020	0.195	mg/kg	B221522	S220769



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_MI25_SE-1_LAEMP_EVO_2022-06_NP</i>										
2207064-15	%TS	Soil/Sediment	NA	59.44		0.003	0.01	%	B221754	N/A
2207064-15	DMS ₂ O F1	Soil/Sediment	dry	≤ 0.003	U	0.003	0.013	mg/kg	B221521	S220775
2207064-15	DMS ₂ O F2	Soil/Sediment	dry	≤ 0.001	U	0.001	0.013	mg/kg	B221522	S220769
2207064-15	MeSe(IV) F1	Soil/Sediment	dry	≤ 0.003	U	0.003	0.013	mg/kg	B221521	S220775
2207064-15	MeSe(IV) F2	Soil/Sediment	dry	0.018		0.001	0.013	mg/kg	B221522	S220769
2207064-15	Se	Soil/Sediment	dry	0.970		0.153	0.306	mg/kg	B221655	S220789
2207064-15	Se Unk A F1	Soil/Sediment	dry	≤ 0.003	U	0.003	0.013	mg/kg	B221521	S220775
2207064-15	Se Unk A F2	Soil/Sediment	dry	≤ 0.001	U	0.001	0.013	mg/kg	B221522	S220769
2207064-15	Se(F1)	Soil/Sediment	dry	≤ 0.029	U	0.029	0.127	mg/kg	B221601	S220748
2207064-15	Se(F2)	Soil/Sediment	dry	0.214		0.013	0.127	mg/kg	B221616	S220754
2207064-15	Se(F3)	Soil/Sediment	dry	0.423	J	0.246	0.493	mg/kg	B221636	S220760
2207064-15	Se(F4)	Soil/Sediment	dry	0.202		0.046	0.127	mg/kg	B221646	S220773
2207064-15	Se(F5)	Soil/Sediment	dry	≤ 0.048	U	0.048	0.159	mg/kg	B221656	S220779
2207064-15	Se(IV) F1	Soil/Sediment	dry	≤ 0.004	U	0.004	0.031	mg/kg	B221521	S220775
2207064-15	Se(IV) F2	Soil/Sediment	dry	0.146		0.003	0.031	mg/kg	B221522	S220769
2207064-15	Se(VI) F1	Soil/Sediment	dry	≤ 0.014	U	0.014	0.033	mg/kg	B221521	S220775
2207064-15	Se(VI) F2	Soil/Sediment	dry	≤ 0.006	U	0.006	0.033	mg/kg	B221522	S220769
2207064-15	SeCN F1	Soil/Sediment	dry	≤ 0.002	U	0.002	0.013	mg/kg	B221521	S220775
2207064-15	SeCN F2	Soil/Sediment	dry	0.029		0.001	0.013	mg/kg	B221522	S220769
2207064-15	SeMet F1	Soil/Sediment	dry	≤ 0.003	U	0.003	0.013	mg/kg	B221521	S220775
2207064-15	SeMet F2	Soil/Sediment	dry	≤ 0.001	U	0.001	0.013	mg/kg	B221522	S220769
2207064-15	SeSO ₃ F1	Soil/Sediment	dry	≤ 0.014	U	0.014	0.033	mg/kg	B221521	S220775
2207064-15	SeSO ₃ F2	Soil/Sediment	dry	≤ 0.006	U	0.006	0.033	mg/kg	B221522	S220769
2207064-15	Unk Se Sp F1	Soil/Sediment	dry	≤ 0.004	U	0.004	0.031	mg/kg	B221521	S220775
2207064-15	Unk Se Sp F2	Soil/Sediment	dry	0.009	J	0.003	0.031	mg/kg	B221522	S220769



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_MI25_SE-2_LAEMP_EVO_2022-06_NP										
2207064-16	%TS	Soil/Sediment	NA	68.50		0.003	0.01	%	B221754	N/A
2207064-16	DMSeO F1	Soil/Sediment	dry	≤ 0.002	U	0.002	0.011	mg/kg	B221521	S220775
2207064-16	DMSeO F2	Soil/Sediment	dry	≤ 0.001	U	0.001	0.011	mg/kg	B221522	S220769
2207064-16	MeSe(IV) F1	Soil/Sediment	dry	≤ 0.002	U	0.002	0.011	mg/kg	B221521	S220775
2207064-16	MeSe(IV) F2	Soil/Sediment	dry	0.016		0.001	0.011	mg/kg	B221522	S220769
2207064-16	Se	Soil/Sediment	dry	0.889		0.129	0.257	mg/kg	B221655	S220789
2207064-16	Se Unk A F1	Soil/Sediment	dry	≤ 0.002	U	0.002	0.011	mg/kg	B221521	S220775
2207064-16	Se Unk A F2	Soil/Sediment	dry	≤ 0.001	U	0.001	0.011	mg/kg	B221522	S220769
2207064-16	Se(F1)	Soil/Sediment	dry	≤ 0.024	U	0.024	0.108	mg/kg	B221601	S220748
2207064-16	Se(F2)	Soil/Sediment	dry	0.162		0.011	0.108	mg/kg	B221616	S220754
2207064-16	Se(F3)	Soil/Sediment	dry	0.521		0.209	0.418	mg/kg	B221636	S220760
2207064-16	Se(F4)	Soil/Sediment	dry	0.155		0.039	0.108	mg/kg	B221646	S220773
2207064-16	Se(F5)	Soil/Sediment	dry	≤ 0.041	U	0.041	0.135	mg/kg	B221656	S220779
2207064-16	Se(IV) F1	Soil/Sediment	dry	≤ 0.003	U	0.003	0.026	mg/kg	B221521	S220775
2207064-16	Se(IV) F2	Soil/Sediment	dry	0.098		0.003	0.026	mg/kg	B221522	S220769
2207064-16	Se(VI) F1	Soil/Sediment	dry	≤ 0.011	U	0.011	0.028	mg/kg	B221521	S220775
2207064-16	Se(VI) F2	Soil/Sediment	dry	≤ 0.005	U	0.005	0.028	mg/kg	B221522	S220769
2207064-16	SeCN F1	Soil/Sediment	dry	≤ 0.002	U	0.002	0.011	mg/kg	B221521	S220775
2207064-16	SeCN F2	Soil/Sediment	dry	0.019		0.001	0.011	mg/kg	B221522	S220769
2207064-16	SeMet F1	Soil/Sediment	dry	≤ 0.002	U	0.002	0.011	mg/kg	B221521	S220775
2207064-16	SeMet F2	Soil/Sediment	dry	≤ 0.001	U	0.001	0.011	mg/kg	B221522	S220769
2207064-16	SeSO3 F1	Soil/Sediment	dry	≤ 0.011	U	0.011	0.028	mg/kg	B221521	S220775
2207064-16	SeSO3 F2	Soil/Sediment	dry	≤ 0.005	U	0.005	0.028	mg/kg	B221522	S220769
2207064-16	Unk Se Sp F1	Soil/Sediment	dry	≤ 0.003	U	0.003	0.026	mg/kg	B221521	S220775
2207064-16	Unk Se Sp F2	Soil/Sediment	dry	0.004	J	0.003	0.026	mg/kg	B221522	S220769



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_MI25_SE-3_LAEMP_EVO_2022-06_NP</i>										
2207064-17	%TS	Soil/Sediment	NA	63.60		0.003	0.01	%	B221754	N/A
2207064-17	DMS ₂ O F1	Soil/Sediment	dry	≤ 0.003	U	0.003	0.012	mg/kg	B221521	S220775
2207064-17	DMS ₂ O F2	Soil/Sediment	dry	≤ 0.001	U	0.001	0.012	mg/kg	B221522	S220769
2207064-17	MeSe(IV) F1	Soil/Sediment	dry	≤ 0.003	U	0.003	0.012	mg/kg	B221521	S220775
2207064-17	MeSe(IV) F2	Soil/Sediment	dry	0.018		0.001	0.012	mg/kg	B221522	S220769
2207064-17	Se	Soil/Sediment	dry	0.856		0.126	0.252	mg/kg	B221655	S220789
2207064-17	Se Unk A F1	Soil/Sediment	dry	≤ 0.003	U	0.003	0.012	mg/kg	B221521	S220775
2207064-17	Se Unk A F2	Soil/Sediment	dry	≤ 0.001	U	0.001	0.012	mg/kg	B221522	S220769
2207064-17	Se(F1)	Soil/Sediment	dry	0.029	J	0.028	0.124	mg/kg	B221601	S220748
2207064-17	Se(F2)	Soil/Sediment	dry	0.218		0.012	0.124	mg/kg	B221616	S220754
2207064-17	Se(F3)	Soil/Sediment	dry	0.461	J	0.239	0.479	mg/kg	B221636	S220760
2207064-17	Se(F4)	Soil/Sediment	dry	0.145		0.045	0.124	mg/kg	B221646	S220773
2207064-17	Se(F5)	Soil/Sediment	dry	≤ 0.047	U	0.047	0.154	mg/kg	B221656	S220779
2207064-17	Se(IV) F1	Soil/Sediment	dry	0.005	J	0.004	0.030	mg/kg	B221521	S220775
2207064-17	Se(IV) F2	Soil/Sediment	dry	0.124		0.003	0.030	mg/kg	B221522	S220769
2207064-17	Se(VI) F1	Soil/Sediment	dry	≤ 0.013	U	0.013	0.032	mg/kg	B221521	S220775
2207064-17	Se(VI) F2	Soil/Sediment	dry	≤ 0.006	U	0.006	0.032	mg/kg	B221522	S220769
2207064-17	SeCN F1	Soil/Sediment	dry	≤ 0.002	U	0.002	0.012	mg/kg	B221521	S220775
2207064-17	SeCN F2	Soil/Sediment	dry	0.024		0.001	0.012	mg/kg	B221522	S220769
2207064-17	SeMet F1	Soil/Sediment	dry	≤ 0.003	U	0.003	0.012	mg/kg	B221521	S220775
2207064-17	SeMet F2	Soil/Sediment	dry	≤ 0.001	U	0.001	0.012	mg/kg	B221522	S220769
2207064-17	SeSO ₃ F1	Soil/Sediment	dry	≤ 0.013	U	0.013	0.032	mg/kg	B221521	S220775
2207064-17	SeSO ₃ F2	Soil/Sediment	dry	≤ 0.006	U	0.006	0.032	mg/kg	B221522	S220769
2207064-17	Unk Se Sp F1	Soil/Sediment	dry	≤ 0.004	U	0.004	0.030	mg/kg	B221521	S220775
2207064-17	Unk Se Sp F2	Soil/Sediment	dry	0.012	J	0.003	0.030	mg/kg	B221522	S220769



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKDT_SE-2_LAEMP_EVO_2022-06_29_NP										
2207064-19	%TS	Soil/Sediment	NA	17.41		0.01	0.04	%	B221754	N/A
2207064-19	DMS ₂ O F1	Soil/Sediment	dry	0.012	J	0.010	0.045	mg/kg	B221521	S220775
2207064-19	DMS ₂ O F2	Soil/Sediment	dry	≤ 0.005	U	0.005	0.045	mg/kg	B221522	S220769
2207064-19	MeSe(IV) F1	Soil/Sediment	dry	≤ 0.010	U	0.010	0.045	mg/kg	B221521	S220775
2207064-19	MeSe(IV) F2	Soil/Sediment	dry	1.41		0.005	0.045	mg/kg	B221522	S220769
2207064-19	Se	Soil/Sediment	dry	22.9		0.485	0.970	mg/kg	B221655	S220789
2207064-19	Se Unk A F1	Soil/Sediment	dry	≤ 0.010	U	0.010	0.045	mg/kg	B221521	S220775
2207064-19	Se Unk A F2	Soil/Sediment	dry	≤ 0.005	U	0.005	0.045	mg/kg	B221522	S220769
2207064-19	Se(F1)	Soil/Sediment	dry	1.41		0.102	0.454	mg/kg	B221601	S220748
2207064-19	Se(F2)	Soil/Sediment	dry	7.51		0.045	0.454	mg/kg	B221616	S220754
2207064-19	Se(F3)	Soil/Sediment	dry	9.32		0.879	1.76	mg/kg	B221636	S220760
2207064-19	Se(F4)	Soil/Sediment	dry	0.435	J	0.164	0.454	mg/kg	B221646	S220773
2207064-19	Se(F5)	Soil/Sediment	dry	≤ 0.173	U	0.173	0.567	mg/kg	B221656	S220779
2207064-19	Se(IV) F1	Soil/Sediment	dry	0.731		0.014	0.111	mg/kg	B221521	S220775
2207064-19	Se(IV) F2	Soil/Sediment	dry	4.80		0.011	0.111	mg/kg	B221522	S220769
2207064-19	Se(VI) F1	Soil/Sediment	dry	0.395		0.048	0.116	mg/kg	B221521	S220775
2207064-19	Se(VI) F2	Soil/Sediment	dry	≤ 0.023	U	0.023	0.116	mg/kg	B221522	S220769
2207064-19	SeCN F1	Soil/Sediment	dry	≤ 0.007	U	0.007	0.045	mg/kg	B221521	S220775
2207064-19	SeCN F2	Soil/Sediment	dry	1.74		0.005	0.045	mg/kg	B221522	S220769
2207064-19	SeMet F1	Soil/Sediment	dry	≤ 0.010	U	0.010	0.045	mg/kg	B221521	S220775
2207064-19	SeMet F2	Soil/Sediment	dry	≤ 0.005	U	0.005	0.045	mg/kg	B221522	S220769
2207064-19	SeSO ₃ F1	Soil/Sediment	dry	≤ 0.048	U	0.048	0.116	mg/kg	B221521	S220775
2207064-19	SeSO ₃ F2	Soil/Sediment	dry	≤ 0.023	U	0.023	0.116	mg/kg	B221522	S220769
2207064-19	Unk Se Sp F1	Soil/Sediment	dry	≤ 0.014	U	0.014	0.111	mg/kg	B221521	S220775
2207064-19	Unk Se Sp F2	Soil/Sediment	dry	0.269		0.011	0.111	mg/kg	B221522	S220769



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKDT_SE-3_LAEMP_EVO_2022-06_29_NP										
2207064-20	%TS	Soil/Sediment	NA	30.79		0.008	0.03	%	B221754	N/A
2207064-20	DMS ₂ O F1	Soil/Sediment	dry	≤ 0.006	U	0.006	0.025	mg/kg	B221521	S220775
2207064-20	DMS ₂ O F2	Soil/Sediment	dry	0.006	J	0.002	0.025	mg/kg	B221522	S220769
2207064-20	MeSe(IV) F1	Soil/Sediment	dry	0.008	J	0.006	0.025	mg/kg	B221521	S220775
2207064-20	MeSe(IV) F2	Soil/Sediment	dry	0.760		0.002	0.025	mg/kg	B221522	S220769
2207064-20	Se	Soil/Sediment	dry	9.51		0.312	0.624	mg/kg	B221655	S220789
2207064-20	Se Unk A F1	Soil/Sediment	dry	≤ 0.006	U	0.006	0.025	mg/kg	B221521	S220775
2207064-20	Se Unk A F2	Soil/Sediment	dry	≤ 0.002	U	0.002	0.025	mg/kg	B221522	S220769
2207064-20	Se(F1)	Soil/Sediment	dry	0.351		0.056	0.250	mg/kg	B221601	S220748
2207064-20	Se(F2)	Soil/Sediment	dry	3.92		0.025	0.250	mg/kg	B221616	S220754
2207064-20	Se(F3)	Soil/Sediment	dry	3.27		0.484	0.967	mg/kg	B221636	S220760
2207064-20	Se(F4)	Soil/Sediment	dry	0.328		0.091	0.250	mg/kg	B221646	S220773
2207064-20	Se(F5)	Soil/Sediment	dry	≤ 0.095	U	0.095	0.312	mg/kg	B221656	S220779
2207064-20	Se(IV) F1	Soil/Sediment	dry	0.272		0.007	0.061	mg/kg	B221521	S220775
2207064-20	Se(IV) F2	Soil/Sediment	dry	2.38		0.006	0.061	mg/kg	B221522	S220769
2207064-20	Se(VI) F1	Soil/Sediment	dry	≤ 0.027	U	0.027	0.064	mg/kg	B221521	S220775
2207064-20	Se(VI) F2	Soil/Sediment	dry	≤ 0.013	U	0.013	0.064	mg/kg	B221522	S220769
2207064-20	SeCN F1	Soil/Sediment	dry	≤ 0.004	U	0.004	0.025	mg/kg	B221521	S220775
2207064-20	SeCN F2	Soil/Sediment	dry	0.962		0.002	0.025	mg/kg	B221522	S220769
2207064-20	SeMet F1	Soil/Sediment	dry	≤ 0.006	U	0.006	0.025	mg/kg	B221521	S220775
2207064-20	SeMet F2	Soil/Sediment	dry	≤ 0.002	U	0.002	0.025	mg/kg	B221522	S220769
2207064-20	SeSO ₃ F1	Soil/Sediment	dry	≤ 0.027	U	0.027	0.064	mg/kg	B221521	S220775
2207064-20	SeSO ₃ F2	Soil/Sediment	dry	≤ 0.013	U	0.013	0.064	mg/kg	B221522	S220769
2207064-20	Unk Se Sp F1	Soil/Sediment	dry	≤ 0.007	U	0.007	0.061	mg/kg	B221521	S220775
2207064-20	Unk Se Sp F2	Soil/Sediment	dry	0.199		0.006	0.061	mg/kg	B221522	S220769



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKDT_SE-4_LAEMP_EVO_2022-06_29_NP										
2207064-21	%TS	Soil/Sediment	NA	30.08		0.01	0.03	%	B221754	N/A
2207064-21	DMS ₂ O F1	Soil/Sediment	dry	≤ 0.006	U	0.006	0.026	mg/kg	B221521	S220775
2207064-21	DMS ₂ O F2	Soil/Sediment	dry	≤ 0.003	U	0.003	0.026	mg/kg	B221522	S220769
2207064-21	MeSe(IV) F1	Soil/Sediment	dry	0.015	J	0.006	0.026	mg/kg	B221521	S220775
2207064-21	MeSe(IV) F2	Soil/Sediment	dry	1.48		0.003	0.026	mg/kg	B221522	S220769
2207064-21	Se	Soil/Sediment	dry	22.9		0.317	0.634	mg/kg	B221655	S220789
2207064-21	Se Unk A F1	Soil/Sediment	dry	≤ 0.006	U	0.006	0.026	mg/kg	B221521	S220775
2207064-21	Se Unk A F2	Soil/Sediment	dry	≤ 0.003	U	0.003	0.026	mg/kg	B221522	S220769
2207064-21	Se(F1)	Soil/Sediment	dry	0.884		0.057	0.255	mg/kg	B221601	S220748
2207064-21	Se(F2)	Soil/Sediment	dry	10.1		0.026	0.255	mg/kg	B221616	S220754
2207064-21	Se(F3)	Soil/Sediment	dry	7.50		0.495	0.990	mg/kg	B221636	S220760
2207064-21	Se(F4)	Soil/Sediment	dry	0.361		0.093	0.255	mg/kg	B221646	S220773
2207064-21	Se(F5)	Soil/Sediment	dry	0.099	J	0.097	0.319	mg/kg	B221656	S220779
2207064-21	Se(IV) F1	Soil/Sediment	dry	0.674		0.008	0.062	mg/kg	B221521	S220775
2207064-21	Se(IV) F2	Soil/Sediment	dry	7.29		0.006	0.062	mg/kg	B221522	S220769
2207064-21	Se(VI) F1	Soil/Sediment	dry	≤ 0.027	U	0.027	0.065	mg/kg	B221521	S220775
2207064-21	Se(VI) F2	Soil/Sediment	dry	≤ 0.013	U	0.013	0.065	mg/kg	B221522	S220769
2207064-21	SeCN F1	Soil/Sediment	dry	≤ 0.004	U	0.004	0.026	mg/kg	B221521	S220775
2207064-21	SeCN F2	Soil/Sediment	dry	2.24		0.003	0.026	mg/kg	B221522	S220769
2207064-21	SeMet F1	Soil/Sediment	dry	≤ 0.006	U	0.006	0.026	mg/kg	B221521	S220775
2207064-21	SeMet F2	Soil/Sediment	dry	≤ 0.003	U	0.003	0.026	mg/kg	B221522	S220769
2207064-21	SeSO ₃ F1	Soil/Sediment	dry	≤ 0.027	U	0.027	0.065	mg/kg	B221521	S220775
2207064-21	SeSO ₃ F2	Soil/Sediment	dry	0.031	J	0.013	0.065	mg/kg	B221522	S220769
2207064-21	Unk Se Sp F1	Soil/Sediment	dry	≤ 0.008	U	0.008	0.062	mg/kg	B221521	S220775
2207064-21	Unk Se Sp F2	Soil/Sediment	dry	0.345		0.006	0.062	mg/kg	B221522	S220769



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKDT_SE-5_LAEMP_EVO_2022-06_29_NP										
2207064-22	%TS	Soil/Sediment	NA	31.01		0.007	0.02	%	B221754	N/A
2207064-22	DMSeO F1	Soil/Sediment	dry	≤ 0.005	U	0.005	0.024	mg/kg	B221521	S220775
2207064-22	DMSeO F2	Soil/Sediment	dry	0.011	J	0.002	0.024	mg/kg	B221522	S220769
2207064-22	MeSe(IV) F1	Soil/Sediment	dry	0.030		0.005	0.024	mg/kg	B221521	S220775
2207064-22	MeSe(IV) F2	Soil/Sediment	dry	1.53		0.002	0.024	mg/kg	B221522	S220769
2207064-22	Se	Soil/Sediment	dry	21.9		0.303	0.606	mg/kg	B221655	S220789
2207064-22	Se Unk A F1	Soil/Sediment	dry	≤ 0.005	U	0.005	0.024	mg/kg	B221521	S220775
2207064-22	Se Unk A F2	Soil/Sediment	dry	≤ 0.002	J-1 U	0.002	0.024	mg/kg	B221522	S220769
2207064-22	Se(F1)	Soil/Sediment	dry	1.37		0.053	0.237	mg/kg	B221601	S220748
2207064-22	Se(F2)	Soil/Sediment	dry	8.41		0.024	0.237	mg/kg	B221616	S220754
2207064-22	Se(F3)	Soil/Sediment	dry	6.17		0.460	0.919	mg/kg	B221636	S220760
2207064-22	Se(F4)	Soil/Sediment	dry	0.316		0.086	0.237	mg/kg	B221646	S220773
2207064-22	Se(F5)	Soil/Sediment	dry	≤ 0.090	U	0.090	0.296	mg/kg	B221656	S220779
2207064-22	Se(IV) F1	Soil/Sediment	dry	0.874		0.007	0.058	mg/kg	B221521	S220775
2207064-22	Se(IV) F2	Soil/Sediment	dry	5.24		0.006	0.058	mg/kg	B221522	S220769
2207064-22	Se(VI) F1	Soil/Sediment	dry	≤ 0.025	U	0.025	0.061	mg/kg	B221521	S220775
2207064-22	Se(VI) F2	Soil/Sediment	dry	≤ 0.012	U	0.012	0.061	mg/kg	B221522	S220769
2207064-22	SeCN F1	Soil/Sediment	dry	≤ 0.004	U	0.004	0.024	mg/kg	B221521	S220775
2207064-22	SeCN F2	Soil/Sediment	dry	1.62		0.002	0.024	mg/kg	B221522	S220769
2207064-22	SeMet F1	Soil/Sediment	dry	≤ 0.005	U	0.005	0.024	mg/kg	B221521	S220775
2207064-22	SeMet F2	Soil/Sediment	dry	≤ 0.002	J-1 U	0.002	0.024	mg/kg	B221522	S220769
2207064-22	SeSO3 F1	Soil/Sediment	dry	≤ 0.025	U	0.025	0.061	mg/kg	B221521	S220775
2207064-22	SeSO3 F2	Soil/Sediment	dry	0.063		0.012	0.061	mg/kg	B221522	S220769
2207064-22	Unk Se Sp F1	Soil/Sediment	dry	0.013	J	0.007	0.058	mg/kg	B221521	S220775
2207064-22	Unk Se Sp F2	Soil/Sediment	dry	0.300		0.006	0.058	mg/kg	B221522	S220769



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKUC_SE-1_LAEMP_EVO_2022-06_30_NP										
2207064-25	%TS	Soil/Sediment	NA	58.02		0.004	0.01	%	B221754	N/A
2207064-25	DMS ₂ O F1	Soil/Sediment	dry	≤ 0.003	U	0.003	0.014	mg/kg	B221521	S220775
2207064-25	DMS ₂ O F2	Soil/Sediment	dry	0.005	J	0.001	0.014	mg/kg	B221522	S220769
2207064-25	MeSe(IV) F1	Soil/Sediment	dry	0.007	J	0.003	0.014	mg/kg	B221521	S220775
2207064-25	MeSe(IV) F2	Soil/Sediment	dry	0.107		0.001	0.014	mg/kg	B221522	S220769
2207064-25	Se	Soil/Sediment	dry	1.66		0.162	0.325	mg/kg	B221655	S220789
2207064-25	Se Unk A F1	Soil/Sediment	dry	≤ 0.003	U	0.003	0.014	mg/kg	B221521	S220775
2207064-25	Se Unk A F2	Soil/Sediment	dry	≤ 0.001	U	0.001	0.014	mg/kg	B221522	S220769
2207064-25	Se(F1)	Soil/Sediment	dry	0.127	J	0.031	0.137	mg/kg	B221601	S220748
2207064-25	Se(F2)	Soil/Sediment	dry	0.368		0.014	0.137	mg/kg	B221616	S220754
2207064-25	Se(F3)	Soil/Sediment	dry	0.652		0.265	0.531	mg/kg	B221636	S220760
2207064-25	Se(F4)	Soil/Sediment	dry	≤ 0.050	U	0.050	0.137	mg/kg	B221646	S220773
2207064-25	Se(F5)	Soil/Sediment	dry	≤ 0.052	U	0.052	0.171	mg/kg	B221656	S220779
2207064-25	Se(IV) F1	Soil/Sediment	dry	0.023	J	0.004	0.033	mg/kg	B221521	S220775
2207064-25	Se(IV) F2	Soil/Sediment	dry	0.146		0.003	0.033	mg/kg	B221522	S220769
2207064-25	Se(VI) F1	Soil/Sediment	dry	0.057		0.015	0.035	mg/kg	B221521	S220775
2207064-25	Se(VI) F2	Soil/Sediment	dry	≤ 0.007	U	0.007	0.035	mg/kg	B221522	S220769
2207064-25	SeCN F1	Soil/Sediment	dry	≤ 0.002	U	0.002	0.014	mg/kg	B221521	S220775
2207064-25	SeCN F2	Soil/Sediment	dry	0.069		0.001	0.014	mg/kg	B221522	S220769
2207064-25	SeMet F1	Soil/Sediment	dry	≤ 0.003	U	0.003	0.014	mg/kg	B221521	S220775
2207064-25	SeMet F2	Soil/Sediment	dry	≤ 0.001	U	0.001	0.014	mg/kg	B221522	S220769
2207064-25	SeSO ₃ F1	Soil/Sediment	dry	≤ 0.015	U	0.015	0.035	mg/kg	B221521	S220775
2207064-25	SeSO ₃ F2	Soil/Sediment	dry	≤ 0.007	U	0.007	0.035	mg/kg	B221522	S220769
2207064-25	Unk Se Sp F1	Soil/Sediment	dry	≤ 0.004	U	0.004	0.033	mg/kg	B221521	S220775
2207064-25	Unk Se Sp F2	Soil/Sediment	dry	0.050		0.003	0.033	mg/kg	B221522	S220769



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKUC_SE-2_LAEMP_EVO_2022-06_30_NP										
2207064-26	%TS	Soil/Sediment	NA	12.34		0.02	0.06	%	B221754	N/A
2207064-26	DMSeO F1	Soil/Sediment	dry	≤ 0.014	U	0.014	0.061	mg/kg	B221521	S220775
2207064-26	DMSeO F2	Soil/Sediment	dry	0.054	J	0.006	0.061	mg/kg	B221522	S220769
2207064-26	MeSe(IV) F1	Soil/Sediment	dry	≤ 0.014	U	0.014	0.061	mg/kg	B221521	S220775
2207064-26	MeSe(IV) F2	Soil/Sediment	dry	4.72		0.006	0.061	mg/kg	B221522	S220769
2207064-26	Se	Soil/Sediment	dry	29.0		0.734	1.47	mg/kg	B221655	S220789
2207064-26	Se Unk A F1	Soil/Sediment	dry	≤ 0.014	U	0.014	0.061	mg/kg	B221521	S220775
2207064-26	Se Unk A F2	Soil/Sediment	dry	≤ 0.006	U	0.006	0.061	mg/kg	B221522	S220769
2207064-26	Se(F1)	Soil/Sediment	dry	1.01		0.137	0.608	mg/kg	B221601	S220748
2207064-26	Se(F2)	Soil/Sediment	dry	11.6		0.061	0.608	mg/kg	B221616	S220754
2207064-26	Se(F3)	Soil/Sediment	dry	14.7		1.18	2.36	mg/kg	B221636	S220760
2207064-26	Se(F4)	Soil/Sediment	dry	0.361	J	0.221	0.608	mg/kg	B221646	S220773
2207064-26	Se(F5)	Soil/Sediment	dry	≤ 0.232	U	0.232	0.761	mg/kg	B221656	S220779
2207064-26	Se(IV) F1	Soil/Sediment	dry	0.651		0.018	0.148	mg/kg	B221521	S220775
2207064-26	Se(IV) F2	Soil/Sediment	dry	6.11		0.015	0.148	mg/kg	B221522	S220769
2207064-26	Se(VI) F1	Soil/Sediment	dry	≤ 0.065	U	0.065	0.156	mg/kg	B221521	S220775
2207064-26	Se(VI) F2	Soil/Sediment	dry	≤ 0.031	U	0.031	0.156	mg/kg	B221522	S220769
2207064-26	SeCN F1	Soil/Sediment	dry	≤ 0.010	U	0.010	0.061	mg/kg	B221521	S220775
2207064-26	SeCN F2	Soil/Sediment	dry	1.74		0.006	0.061	mg/kg	B221522	S220769
2207064-26	SeMet F1	Soil/Sediment	dry	≤ 0.014	U	0.014	0.061	mg/kg	B221521	S220775
2207064-26	SeMet F2	Soil/Sediment	dry	≤ 0.006	J-1 U	0.006	0.061	mg/kg	B221522	S220769
2207064-26	SeSO3 F1	Soil/Sediment	dry	≤ 0.065	U	0.065	0.156	mg/kg	B221521	S220775
2207064-26	SeSO3 F2	Soil/Sediment	dry	0.081	J	0.031	0.156	mg/kg	B221522	S220769
2207064-26	Unk Se Sp F1	Soil/Sediment	dry	≤ 0.018	U	0.018	0.148	mg/kg	B221521	S220775
2207064-26	Unk Se Sp F2	Soil/Sediment	dry	0.352		0.015	0.148	mg/kg	B221522	S220769



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKUC_SE-3_LAEMP_EVO_2022-06_30_NP										
2207064-27	%TS	Soil/Sediment	NA	13.02		0.02	0.07	%	B221754	N/A
2207064-27	DMS ₂ O F1	Soil/Sediment	dry	≤ 0.014	J-1 U	0.014	0.060	mg/kg	B221521	S220775
2207064-27	DMS ₂ O F2	Soil/Sediment	dry	0.044	J-1 J	0.006	0.060	mg/kg	B221522	S220769
2207064-27	MeSe(IV) F1	Soil/Sediment	dry	≤ 0.014	J-1 U	0.014	0.060	mg/kg	B221521	S220775
2207064-27	MeSe(IV) F2	Soil/Sediment	dry	1.90	J-1	0.006	0.060	mg/kg	B221522	S220769
2207064-27	Se	Soil/Sediment	dry	14.6	J-1	0.683	1.37	mg/kg	B221655	S220789
2207064-27	Se Unk A F1	Soil/Sediment	dry	≤ 0.014	J-1 U	0.014	0.060	mg/kg	B221521	S220775
2207064-27	Se Unk A F2	Soil/Sediment	dry	≤ 0.006	J-1 U	0.006	0.060	mg/kg	B221522	S220769
2207064-27	Se(F1)	Soil/Sediment	dry	0.586	J-1 J	0.136	0.605	mg/kg	B221601	S220748
2207064-27	Se(F2)	Soil/Sediment	dry	5.45	J-1	0.060	0.605	mg/kg	B221616	S220754
2207064-27	Se(F3)	Soil/Sediment	dry	6.87	J-1	1.17	2.34	mg/kg	B221636	S220760
2207064-27	Se(F4)	Soil/Sediment	dry	≤ 0.219	J-1 U	0.219	0.605	mg/kg	B221646	S220773
2207064-27	Se(F5)	Soil/Sediment	dry	≤ 0.230	J-1 U	0.230	0.756	mg/kg	B221656	S220779
2207064-27	Se(IV) F1	Soil/Sediment	dry	0.259	J-1	0.018	0.147	mg/kg	B221521	S220775
2207064-27	Se(IV) F2	Soil/Sediment	dry	2.98	J-1	0.015	0.147	mg/kg	B221522	S220769
2207064-27	Se(VI) F1	Soil/Sediment	dry	0.234	J-1	0.064	0.155	mg/kg	B221521	S220775
2207064-27	Se(VI) F2	Soil/Sediment	dry	≤ 0.031	J-1 U	0.031	0.155	mg/kg	B221522	S220769
2207064-27	SeCN F1	Soil/Sediment	dry	≤ 0.010	J-1 U	0.010	0.060	mg/kg	B221521	S220775
2207064-27	SeCN F2	Soil/Sediment	dry	0.610	J-1	0.006	0.060	mg/kg	B221522	S220769
2207064-27	SeMet F1	Soil/Sediment	dry	≤ 0.014	J-1 U	0.014	0.060	mg/kg	B221521	S220775
2207064-27	SeMet F2	Soil/Sediment	dry	≤ 0.006	J-1 U	0.006	0.060	mg/kg	B221522	S220769
2207064-27	SeSO ₃ F1	Soil/Sediment	dry	≤ 0.064	J-1 U	0.064	0.155	mg/kg	B221521	S220775
2207064-27	SeSO ₃ F2	Soil/Sediment	dry	≤ 0.031	J-1 U	0.031	0.155	mg/kg	B221522	S220769
2207064-27	Unk Se Sp F1	Soil/Sediment	dry	≤ 0.018	J-1 U	0.018	0.147	mg/kg	B221521	S220775
2207064-27	Unk Se Sp F2	Soil/Sediment	dry	0.066	J-1 J	0.015	0.147	mg/kg	B221522	S220769



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKDT_BRYOSE-1_LAEMP_EVO_2022-06_29_NP										
2207064-28	%TS	Soil/Sediment	NA	20.09		0.02	0.06	%	B221754	N/A
2207064-28	DMS ₂ O F1	Soil/Sediment	dry	≤ 0.009	U	0.009	0.040	mg/kg	B221521	S220775
2207064-28	DMS ₂ O F2	Soil/Sediment	dry	≤ 0.004	U	0.004	0.040	mg/kg	B221522	S220769
2207064-28	MeSe(IV) F1	Soil/Sediment	dry	0.022	J	0.009	0.040	mg/kg	B221521	S220775
2207064-28	MeSe(IV) F2	Soil/Sediment	dry	0.925		0.004	0.040	mg/kg	B221522	S220769
2207064-28	Se	Soil/Sediment	dry	16.5		0.488	0.977	mg/kg	B221655	S220789
2207064-28	Se Unk A F1	Soil/Sediment	dry	≤ 0.009	U	0.009	0.040	mg/kg	B221521	S220775
2207064-28	Se Unk A F2	Soil/Sediment	dry	≤ 0.004	U	0.004	0.040	mg/kg	B221522	S220769
2207064-28	Se(F1)	Soil/Sediment	dry	1.32		0.089	0.397	mg/kg	B221601	S220748
2207064-28	Se(F2)	Soil/Sediment	dry	6.48		0.040	0.397	mg/kg	B221616	S220754
2207064-28	Se(F3)	Soil/Sediment	dry	8.16		0.768	1.54	mg/kg	B221636	S220760
2207064-28	Se(F4)	Soil/Sediment	dry	0.378	J	0.144	0.397	mg/kg	B221646	S220773
2207064-28	Se(F5)	Soil/Sediment	dry	≤ 0.151	U	0.151	0.496	mg/kg	B221656	S220779
2207064-28	Se(IV) F1	Soil/Sediment	dry	0.533		0.012	0.097	mg/kg	B221521	S220775
2207064-28	Se(IV) F2	Soil/Sediment	dry	4.25		0.010	0.097	mg/kg	B221522	S220769
2207064-28	Se(VI) F1	Soil/Sediment	dry	0.111		0.042	0.102	mg/kg	B221521	S220775
2207064-28	Se(VI) F2	Soil/Sediment	dry	≤ 0.020	U	0.020	0.102	mg/kg	B221522	S220769
2207064-28	SeCN F1	Soil/Sediment	dry	≤ 0.006	U	0.006	0.040	mg/kg	B221521	S220775
2207064-28	SeCN F2	Soil/Sediment	dry	1.52		0.004	0.040	mg/kg	B221522	S220769
2207064-28	SeMet F1	Soil/Sediment	dry	≤ 0.009	U	0.009	0.040	mg/kg	B221521	S220775
2207064-28	SeMet F2	Soil/Sediment	dry	≤ 0.004	U	0.004	0.040	mg/kg	B221522	S220769
2207064-28	SeSO ₃ F1	Soil/Sediment	dry	≤ 0.042	U	0.042	0.102	mg/kg	B221521	S220775
2207064-28	SeSO ₃ F2	Soil/Sediment	dry	≤ 0.020	U	0.020	0.102	mg/kg	B221522	S220769
2207064-28	Unk Se Sp F1	Soil/Sediment	dry	≤ 0.012	U	0.012	0.097	mg/kg	B221521	S220775
2207064-28	Unk Se Sp F2	Soil/Sediment	dry	0.247		0.010	0.097	mg/kg	B221522	S220769



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKDT_BRYOSE-2_LAEMP_EVO_2022-06_29_NP										
2207064-29	%TS	Soil/Sediment	NA	26.52		0.01	0.03	%	B221754	N/A
2207064-29	DMS ₂ O F1	Soil/Sediment	dry	≤ 0.007	U	0.007	0.028	mg/kg	B221521	S220775
2207064-29	DMS ₂ O F2	Soil/Sediment	dry	0.026	J	0.003	0.028	mg/kg	B221522	S220769
2207064-29	MeSe(IV) F1	Soil/Sediment	dry	0.014	J	0.007	0.028	mg/kg	B221521	S220775
2207064-29	MeSe(IV) F2	Soil/Sediment	dry	0.860		0.003	0.028	mg/kg	B221522	S220769
2207064-29	Se	Soil/Sediment	dry	28.5		0.336	0.671	mg/kg	B221655	S220789
2207064-29	Se Unk A F1	Soil/Sediment	dry	≤ 0.007	U	0.007	0.028	mg/kg	B221521	S220775
2207064-29	Se Unk A F2	Soil/Sediment	dry	≤ 0.003	U	0.003	0.028	mg/kg	B221522	S220769
2207064-29	Se(F1)	Soil/Sediment	dry	0.933		0.064	0.284	mg/kg	B221601	S220748
2207064-29	Se(F2)	Soil/Sediment	dry	12.5		0.028	0.284	mg/kg	B221616	S220754
2207064-29	Se(F3)	Soil/Sediment	dry	10.1		0.550	1.10	mg/kg	B221636	S220760
2207064-29	Se(F4)	Soil/Sediment	dry	0.524		0.103	0.284	mg/kg	B221646	S220773
2207064-29	Se(F5)	Soil/Sediment	dry	≤ 0.108	U	0.108	0.355	mg/kg	B221656	S220779
2207064-29	Se(IV) F1	Soil/Sediment	dry	0.500		0.009	0.069	mg/kg	B221521	S220775
2207064-29	Se(IV) F2	Soil/Sediment	dry	11.3		0.007	0.069	mg/kg	B221522	S220769
2207064-29	Se(VI) F1	Soil/Sediment	dry	0.199		0.030	0.073	mg/kg	B221521	S220775
2207064-29	Se(VI) F2	Soil/Sediment	dry	≤ 0.014	U	0.014	0.073	mg/kg	B221522	S220769
2207064-29	SeCN F1	Soil/Sediment	dry	≤ 0.005	U	0.005	0.028	mg/kg	B221521	S220775
2207064-29	SeCN F2	Soil/Sediment	dry	2.15		0.003	0.028	mg/kg	B221522	S220769
2207064-29	SeMet F1	Soil/Sediment	dry	≤ 0.007	U	0.007	0.028	mg/kg	B221521	S220775
2207064-29	SeMet F2	Soil/Sediment	dry	≤ 0.003	U	0.003	0.028	mg/kg	B221522	S220769
2207064-29	SeSO ₃ F1	Soil/Sediment	dry	≤ 0.030	U	0.030	0.073	mg/kg	B221521	S220775
2207064-29	SeSO ₃ F2	Soil/Sediment	dry	0.027	J	0.014	0.073	mg/kg	B221522	S220769
2207064-29	Unk Se Sp F1	Soil/Sediment	dry	≤ 0.009	U	0.009	0.069	mg/kg	B221521	S220775
2207064-29	Unk Se Sp F2	Soil/Sediment	dry	0.235		0.007	0.069	mg/kg	B221522	S220769



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKDT_BRYOSE-3_LAEMP_EVO_2022-06_29_NP										
2207064-30	%TS	Soil/Sediment	NA	22.21		0.01	0.05	%	B221754	N/A
2207064-30	DMS ₂ O F1	Soil/Sediment	dry	≤ 0.008	U	0.008	0.034	mg/kg	B221521	S220775
2207064-30	DMS ₂ O F2	Soil/Sediment	dry	0.024	J	0.003	0.034	mg/kg	B221522	S220769
2207064-30	MeSe(IV) F1	Soil/Sediment	dry	≤ 0.008	U	0.008	0.034	mg/kg	B221521	S220775
2207064-30	MeSe(IV) F2	Soil/Sediment	dry	1.72		0.003	0.034	mg/kg	B221522	S220769
2207064-30	Se	Soil/Sediment	dry	25.9		0.407	0.813	mg/kg	B221655	S220789
2207064-30	Se Unk A F1	Soil/Sediment	dry	≤ 0.008	U	0.008	0.034	mg/kg	B221521	S220775
2207064-30	Se Unk A F2	Soil/Sediment	dry	≤ 0.003	U	0.003	0.034	mg/kg	B221522	S220769
2207064-30	Se(F1)	Soil/Sediment	dry	0.929		0.076	0.339	mg/kg	B221601	S220748
2207064-30	Se(F2)	Soil/Sediment	dry	8.27		0.034	0.339	mg/kg	B221616	S220754
2207064-30	Se(F3)	Soil/Sediment	dry	13.7		0.656	1.31	mg/kg	B221636	S220760
2207064-30	Se(F4)	Soil/Sediment	dry	0.346		0.123	0.339	mg/kg	B221646	S220773
2207064-30	Se(F5)	Soil/Sediment	dry	≤ 0.129	U	0.129	0.423	mg/kg	B221656	S220779
2207064-30	Se(IV) F1	Soil/Sediment	dry	0.721		0.010	0.083	mg/kg	B221521	S220775
2207064-30	Se(IV) F2	Soil/Sediment	dry	5.05		0.008	0.083	mg/kg	B221522	S220769
2207064-30	Se(VI) F1	Soil/Sediment	dry	≤ 0.036	U	0.036	0.087	mg/kg	B221521	S220775
2207064-30	Se(VI) F2	Soil/Sediment	dry	≤ 0.017	U	0.017	0.087	mg/kg	B221522	S220769
2207064-30	SeCN F1	Soil/Sediment	dry	≤ 0.006	U	0.006	0.034	mg/kg	B221521	S220775
2207064-30	SeCN F2	Soil/Sediment	dry	1.79		0.003	0.034	mg/kg	B221522	S220769
2207064-30	SeMet F1	Soil/Sediment	dry	≤ 0.008	U	0.008	0.034	mg/kg	B221521	S220775
2207064-30	SeMet F2	Soil/Sediment	dry	≤ 0.003	U	0.003	0.034	mg/kg	B221522	S220769
2207064-30	SeSO ₃ F1	Soil/Sediment	dry	≤ 0.036	U	0.036	0.087	mg/kg	B221521	S220775
2207064-30	SeSO ₃ F2	Soil/Sediment	dry	≤ 0.017	U	0.017	0.087	mg/kg	B221522	S220769
2207064-30	Unk Se Sp F1	Soil/Sediment	dry	≤ 0.010	U	0.010	0.083	mg/kg	B221521	S220775
2207064-30	Unk Se Sp F2	Soil/Sediment	dry	0.319		0.008	0.083	mg/kg	B221522	S220769



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_GATE_SE-1_LAEMP_EVO_2022-06_28_NP</i>										
2207064-33	%TS	Soil/Sediment	NA	40.12		0.004	0.01	%	B221754	N/A
2207064-33	DMS ₂ O F1	Soil/Sediment	dry	≤ 0.004	U	0.004	0.018	mg/kg	B221521	S220775
2207064-33	DMS ₂ O F2	Soil/Sediment	dry	≤ 0.002	U	0.002	0.018	mg/kg	B221522	S220769
2207064-33	MeSe(IV) F1	Soil/Sediment	dry	0.012	J	0.004	0.018	mg/kg	B221521	S220775
2207064-33	MeSe(IV) F2	Soil/Sediment	dry	0.595		0.002	0.018	mg/kg	B221522	S220769
2207064-33	Se	Soil/Sediment	dry	16.1		0.213	0.427	mg/kg	B221655	S220789
2207064-33	Se Unk A F1	Soil/Sediment	dry	≤ 0.004	U	0.004	0.018	mg/kg	B221521	S220775
2207064-33	Se Unk A F2	Soil/Sediment	dry	≤ 0.002	U	0.002	0.018	mg/kg	B221522	S220769
2207064-33	Se(F1)	Soil/Sediment	dry	0.789		0.041	0.183	mg/kg	B221601	S220748
2207064-33	Se(F2)	Soil/Sediment	dry	4.54		0.018	0.183	mg/kg	B221616	S220754
2207064-33	Se(F3)	Soil/Sediment	dry	6.55		0.355	0.710	mg/kg	B221636	S220760
2207064-33	Se(F4)	Soil/Sediment	dry	0.291		0.066	0.183	mg/kg	B221646	S220773
2207064-33	Se(F5)	Soil/Sediment	dry	≤ 0.070	U	0.070	0.229	mg/kg	B221656	S220779
2207064-33	Se(IV) F1	Soil/Sediment	dry	0.644		0.005	0.045	mg/kg	B221521	S220775
2207064-33	Se(IV) F2	Soil/Sediment	dry	3.37		0.004	0.045	mg/kg	B221522	S220769
2207064-33	Se(VI) F1	Soil/Sediment	dry	0.020	J	0.019	0.047	mg/kg	B221521	S220775
2207064-33	Se(VI) F2	Soil/Sediment	dry	≤ 0.009	U	0.009	0.047	mg/kg	B221522	S220769
2207064-33	SeCN F1	Soil/Sediment	dry	≤ 0.003	U	0.003	0.018	mg/kg	B221521	S220775
2207064-33	SeCN F2	Soil/Sediment	dry	0.574		0.002	0.018	mg/kg	B221522	S220769
2207064-33	SeMet F1	Soil/Sediment	dry	≤ 0.004	U	0.004	0.018	mg/kg	B221521	S220775
2207064-33	SeMet F2	Soil/Sediment	dry	≤ 0.002	U	0.002	0.018	mg/kg	B221522	S220769
2207064-33	SeSO ₃ F1	Soil/Sediment	dry	≤ 0.019	U	0.019	0.047	mg/kg	B221521	S220775
2207064-33	SeSO ₃ F2	Soil/Sediment	dry	0.022	J	0.009	0.047	mg/kg	B221522	S220769
2207064-33	Unk Se Sp F1	Soil/Sediment	dry	≤ 0.005	U	0.005	0.045	mg/kg	B221521	S220775
2207064-33	Unk Se Sp F2	Soil/Sediment	dry	0.155		0.004	0.045	mg/kg	B221522	S220769



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_GATE_SE-2_LAEMP_EVO_2022-06_28_NP</i>										
2207064-34	%TS	Soil/Sediment	NA	42.03		0.004	0.01	%	B221754	N/A
2207064-34	DMS ₂ O F1	Soil/Sediment	dry	≤ 0.004	U	0.004	0.019	mg/kg	B221521	S220775
2207064-34	DMS ₂ O F2	Soil/Sediment	dry	0.005	J	0.002	0.019	mg/kg	B221522	S220769
2207064-34	MeSe(IV) F1	Soil/Sediment	dry	0.012	J	0.004	0.019	mg/kg	B221521	S220775
2207064-34	MeSe(IV) F2	Soil/Sediment	dry	0.537		0.002	0.019	mg/kg	B221522	S220769
2207064-34	Se	Soil/Sediment	dry	11.6		0.209	0.419	mg/kg	B221655	S220789
2207064-34	Se Unk A F1	Soil/Sediment	dry	≤ 0.004	U	0.004	0.019	mg/kg	B221521	S220775
2207064-34	Se Unk A F2	Soil/Sediment	dry	≤ 0.002	U	0.002	0.019	mg/kg	B221522	S220769
2207064-34	Se(F1)	Soil/Sediment	dry	0.756		0.042	0.187	mg/kg	B221601	S220748
2207064-34	Se(F2)	Soil/Sediment	dry	3.96		0.019	0.187	mg/kg	B221616	S220754
2207064-34	Se(F3)	Soil/Sediment	dry	6.59		0.361	0.723	mg/kg	B221636	S220760
2207064-34	Se(F4)	Soil/Sediment	dry	0.261		0.068	0.187	mg/kg	B221646	S220773
2207064-34	Se(F5)	Soil/Sediment	dry	≤ 0.071	U	0.071	0.233	mg/kg	B221656	S220779
2207064-34	Se(IV) F1	Soil/Sediment	dry	0.625		0.006	0.045	mg/kg	B221521	S220775
2207064-34	Se(IV) F2	Soil/Sediment	dry	2.85		0.005	0.045	mg/kg	B221522	S220769
2207064-34	Se(VI) F1	Soil/Sediment	dry	≤ 0.020	U	0.020	0.048	mg/kg	B221521	S220775
2207064-34	Se(VI) F2	Soil/Sediment	dry	0.028	J	0.009	0.048	mg/kg	B221522	S220769
2207064-34	SeCN F1	Soil/Sediment	dry	≤ 0.003	U	0.003	0.019	mg/kg	B221521	S220775
2207064-34	SeCN F2	Soil/Sediment	dry	0.505		0.002	0.019	mg/kg	B221522	S220769
2207064-34	SeMet F1	Soil/Sediment	dry	≤ 0.004	U	0.004	0.019	mg/kg	B221521	S220775
2207064-34	SeMet F2	Soil/Sediment	dry	≤ 0.002	U	0.002	0.019	mg/kg	B221522	S220769
2207064-34	SeSO ₃ F1	Soil/Sediment	dry	≤ 0.020	U	0.020	0.048	mg/kg	B221521	S220775
2207064-34	SeSO ₃ F2	Soil/Sediment	dry	0.017	J	0.009	0.048	mg/kg	B221522	S220769
2207064-34	Unk Se Sp F1	Soil/Sediment	dry	≤ 0.006	U	0.006	0.045	mg/kg	B221521	S220775
2207064-34	Unk Se Sp F2	Soil/Sediment	dry	0.178		0.005	0.045	mg/kg	B221522	S220769



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_GATE_SE-3_LAEMP_EVO_2022-06_28_NP										
2207064-35	%TS	Soil/Sediment	NA	43.44		0.005	0.02	%	B221754	N/A
2207064-35	DMS ₂ O F1	Soil/Sediment	dry	≤ 0.004	U	0.004	0.017	mg/kg	B221521	S220775
2207064-35	DMS ₂ O F2	Soil/Sediment	dry	0.004	J	0.002	0.017	mg/kg	B221522	S220769
2207064-35	MeSe(IV) F1	Soil/Sediment	dry	0.013	J	0.004	0.017	mg/kg	B221521	S220775
2207064-35	MeSe(IV) F2	Soil/Sediment	dry	0.518		0.002	0.017	mg/kg	B221522	S220769
2207064-35	Se	Soil/Sediment	dry	10.1		0.203	0.405	mg/kg	B221655	S220789
2207064-35	Se Unk A F1	Soil/Sediment	dry	≤ 0.004	U	0.004	0.017	mg/kg	B221521	S220775
2207064-35	Se Unk A F2	Soil/Sediment	dry	≤ 0.002	U	0.002	0.017	mg/kg	B221522	S220769
2207064-35	Se(F1)	Soil/Sediment	dry	0.796		0.039	0.173	mg/kg	B221601	S220748
2207064-35	Se(F2)	Soil/Sediment	dry	4.29		0.017	0.173	mg/kg	B221616	S220754
2207064-35	Se(F3)	Soil/Sediment	dry	6.18		0.334	0.669	mg/kg	B221636	S220760
2207064-35	Se(F4)	Soil/Sediment	dry	0.341		0.063	0.173	mg/kg	B221646	S220773
2207064-35	Se(F5)	Soil/Sediment	dry	≤ 0.066	U	0.066	0.216	mg/kg	B221656	S220779
2207064-35	Se(IV) F1	Soil/Sediment	dry	0.682		0.005	0.042	mg/kg	B221521	S220775
2207064-35	Se(IV) F2	Soil/Sediment	dry	3.13		0.004	0.042	mg/kg	B221522	S220769
2207064-35	Se(VI) F1	Soil/Sediment	dry	≤ 0.018	U	0.018	0.044	mg/kg	B221521	S220775
2207064-35	Se(VI) F2	Soil/Sediment	dry	0.028	J	0.009	0.044	mg/kg	B221522	S220769
2207064-35	SeCN F1	Soil/Sediment	dry	≤ 0.003	U	0.003	0.017	mg/kg	B221521	S220775
2207064-35	SeCN F2	Soil/Sediment	dry	0.518		0.002	0.017	mg/kg	B221522	S220769
2207064-35	SeMet F1	Soil/Sediment	dry	≤ 0.004	U	0.004	0.017	mg/kg	B221521	S220775
2207064-35	SeMet F2	Soil/Sediment	dry	≤ 0.002	U	0.002	0.017	mg/kg	B221522	S220769
2207064-35	SeSO ₃ F1	Soil/Sediment	dry	≤ 0.018	U	0.018	0.044	mg/kg	B221521	S220775
2207064-35	SeSO ₃ F2	Soil/Sediment	dry	0.013	J	0.009	0.044	mg/kg	B221522	S220769
2207064-35	Unk Se Sp F1	Soil/Sediment	dry	≤ 0.005	U	0.005	0.042	mg/kg	B221521	S220775
2207064-35	Unk Se Sp F2	Soil/Sediment	dry	0.173		0.004	0.042	mg/kg	B221522	S220769



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_BOCK_SE-1_LAEMP_EVO_2022-06_28_NP</i>										
2207064-36	%TS	Soil/Sediment	NA	68.53		0.003	0.01	%	B221754	N/A
2207064-36	DMS ₂ O F1	Soil/Sediment	dry	≤ 0.003	U	0.003	0.011	mg/kg	B221521	S220775
2207064-36	DMS ₂ O F2	Soil/Sediment	dry	0.004	J	0.001	0.011	mg/kg	B221522	S220769
2207064-36	MeSe(IV) F1	Soil/Sediment	dry	0.006	J	0.003	0.011	mg/kg	B221521	S220775
2207064-36	MeSe(IV) F2	Soil/Sediment	dry	0.161		0.001	0.011	mg/kg	B221522	S220769
2207064-36	Se	Soil/Sediment	dry	8.90		0.134	0.268	mg/kg	B221655	S220789
2207064-36	Se Unk A F1	Soil/Sediment	dry	≤ 0.003	U	0.003	0.011	mg/kg	B221521	S220775
2207064-36	Se Unk A F2	Soil/Sediment	dry	≤ 0.001	U	0.001	0.011	mg/kg	B221522	S220769
2207064-36	Se(F1)	Soil/Sediment	dry	0.151		0.025	0.110	mg/kg	B221601	S220748
2207064-36	Se(F2)	Soil/Sediment	dry	0.899		0.011	0.110	mg/kg	B221616	S220754
2207064-36	Se(F3)	Soil/Sediment	dry	6.13		0.214	0.427	mg/kg	B221636	S220760
2207064-36	Se(F4)	Soil/Sediment	dry	0.137		0.040	0.110	mg/kg	B221646	S220773
2207064-36	Se(F5)	Soil/Sediment	dry	≤ 0.042	U	0.042	0.138	mg/kg	B221656	S220779
2207064-36	Se(IV) F1	Soil/Sediment	dry	0.099		0.003	0.027	mg/kg	B221521	S220775
2207064-36	Se(IV) F2	Soil/Sediment	dry	0.444		0.003	0.027	mg/kg	B221522	S220769
2207064-36	Se(VI) F1	Soil/Sediment	dry	0.024	J	0.012	0.028	mg/kg	B221521	S220775
2207064-36	Se(VI) F2	Soil/Sediment	dry	0.011	J	0.006	0.028	mg/kg	B221522	S220769
2207064-36	SeCN F1	Soil/Sediment	dry	≤ 0.002	U	0.002	0.011	mg/kg	B221521	S220775
2207064-36	SeCN F2	Soil/Sediment	dry	0.183		0.001	0.011	mg/kg	B221522	S220769
2207064-36	SeMet F1	Soil/Sediment	dry	≤ 0.003	U	0.003	0.011	mg/kg	B221521	S220775
2207064-36	SeMet F2	Soil/Sediment	dry	≤ 0.001	U	0.001	0.011	mg/kg	B221522	S220769
2207064-36	SeSO ₃ F1	Soil/Sediment	dry	≤ 0.012	U	0.012	0.028	mg/kg	B221521	S220775
2207064-36	SeSO ₃ F2	Soil/Sediment	dry	≤ 0.006	U	0.006	0.028	mg/kg	B221522	S220769
2207064-36	Unk Se Sp F1	Soil/Sediment	dry	≤ 0.003	U	0.003	0.027	mg/kg	B221521	S220775
2207064-36	Unk Se Sp F2	Soil/Sediment	dry	0.070		0.003	0.027	mg/kg	B221522	S220769



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_BOCK_SE-2_LAEMP_EVO_2022-06_28_NP										
2207064-37	%TS	Soil/Sediment	NA	51.82		0.003	0.01	%	B221754	N/A
2207064-37	DMS ₂ O F1	Soil/Sediment	dry	≤ 0.004	U	0.004	0.015	mg/kg	B221521	S220775
2207064-37	DMS ₂ O F2	Soil/Sediment	dry	0.003	J	0.002	0.015	mg/kg	B221522	S220769
2207064-37	MeSe(IV) F1	Soil/Sediment	dry	≤ 0.004	U	0.004	0.015	mg/kg	B221521	S220775
2207064-37	MeSe(IV) F2	Soil/Sediment	dry	0.280		0.002	0.015	mg/kg	B221522	S220769
2207064-37	Se	Soil/Sediment	dry	11.7		0.176	0.352	mg/kg	B221655	S220789
2207064-37	Se Unk A F1	Soil/Sediment	dry	≤ 0.004	U	0.004	0.015	mg/kg	B221521	S220775
2207064-37	Se Unk A F2	Soil/Sediment	dry	≤ 0.002	U	0.002	0.015	mg/kg	B221522	S220769
2207064-37	Se(F1)	Soil/Sediment	dry	0.283		0.034	0.151	mg/kg	B221601	S220748
2207064-37	Se(F2)	Soil/Sediment	dry	1.66		0.015	0.151	mg/kg	B221616	S220754
2207064-37	Se(F3)	Soil/Sediment	dry	8.53		0.293	0.587	mg/kg	B221636	S220760
2207064-37	Se(F4)	Soil/Sediment	dry	0.307		0.055	0.151	mg/kg	B221646	S220773
2207064-37	Se(F5)	Soil/Sediment	dry	≤ 0.058	U	0.058	0.189	mg/kg	B221656	S220779
2207064-37	Se(IV) F1	Soil/Sediment	dry	0.195		0.005	0.037	mg/kg	B221521	S220775
2207064-37	Se(IV) F2	Soil/Sediment	dry	0.848		0.004	0.037	mg/kg	B221522	S220769
2207064-37	Se(VI) F1	Soil/Sediment	dry	0.047		0.016	0.039	mg/kg	B221521	S220775
2207064-37	Se(VI) F2	Soil/Sediment	dry	0.013	J	0.008	0.039	mg/kg	B221522	S220769
2207064-37	SeCN F1	Soil/Sediment	dry	≤ 0.002	U	0.002	0.015	mg/kg	B221521	S220775
2207064-37	SeCN F2	Soil/Sediment	dry	0.261		0.002	0.015	mg/kg	B221522	S220769
2207064-37	SeMet F1	Soil/Sediment	dry	≤ 0.004	U	0.004	0.015	mg/kg	B221521	S220775
2207064-37	SeMet F2	Soil/Sediment	dry	≤ 0.002	U	0.002	0.015	mg/kg	B221522	S220769
2207064-37	SeSO ₃ F1	Soil/Sediment	dry	≤ 0.016	U	0.016	0.039	mg/kg	B221521	S220775
2207064-37	SeSO ₃ F2	Soil/Sediment	dry	≤ 0.008	U	0.008	0.039	mg/kg	B221522	S220769
2207064-37	Unk Se Sp F1	Soil/Sediment	dry	≤ 0.005	U	0.005	0.037	mg/kg	B221521	S220775
2207064-37	Unk Se Sp F2	Soil/Sediment	dry	0.113		0.004	0.037	mg/kg	B221522	S220769



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_BOCK_SE-3_LAEMP_EVO_2022-06_28_NP</i>										
2207064-38	%TS	Soil/Sediment	NA	51.34		0.003	0.009	%	B221754	N/A
2207064-38	DMS ₂ O F1	Soil/Sediment	dry	≤ 0.003	U	0.003	0.015	mg/kg	B221521	S220775
2207064-38	DMS ₂ O F2	Soil/Sediment	dry	0.006	J	0.001	0.015	mg/kg	B221522	S220769
2207064-38	MeSe(IV) F1	Soil/Sediment	dry	≤ 0.003	U	0.003	0.015	mg/kg	B221521	S220775
2207064-38	MeSe(IV) F2	Soil/Sediment	dry	0.341		0.001	0.015	mg/kg	B221522	S220769
2207064-38	Se	Soil/Sediment	dry	12.8		0.157	0.314	mg/kg	B221655	S220789
2207064-38	Se Unk A F1	Soil/Sediment	dry	≤ 0.003	U	0.003	0.015	mg/kg	B221521	S220775
2207064-38	Se Unk A F2	Soil/Sediment	dry	≤ 0.001	U	0.001	0.015	mg/kg	B221522	S220769
2207064-38	Se(F1)	Soil/Sediment	dry	0.315		0.033	0.149	mg/kg	B221601	S220748
2207064-38	Se(F2)	Soil/Sediment	dry	1.73		0.015	0.149	mg/kg	B221616	S220754
2207064-38	Se(F3)	Soil/Sediment	dry	7.89		0.288	0.577	mg/kg	B221636	S220760
2207064-38	Se(F4)	Soil/Sediment	dry	0.288		0.054	0.149	mg/kg	B221646	S220773
2207064-38	Se(F5)	Soil/Sediment	dry	≤ 0.057	U	0.057	0.186	mg/kg	B221656	S220779
2207064-38	Se(IV) F1	Soil/Sediment	dry	0.206		0.004	0.036	mg/kg	B221521	S220775
2207064-38	Se(IV) F2	Soil/Sediment	dry	0.947		0.004	0.036	mg/kg	B221522	S220769
2207064-38	Se(VI) F1	Soil/Sediment	dry	0.059		0.016	0.038	mg/kg	B221521	S220775
2207064-38	Se(VI) F2	Soil/Sediment	dry	0.013	J	0.008	0.038	mg/kg	B221522	S220769
2207064-38	SeCN F1	Soil/Sediment	dry	≤ 0.002	U	0.002	0.015	mg/kg	B221521	S220775
2207064-38	SeCN F2	Soil/Sediment	dry	0.305		0.001	0.015	mg/kg	B221522	S220769
2207064-38	SeMet F1	Soil/Sediment	dry	≤ 0.003	U	0.003	0.015	mg/kg	B221521	S220775
2207064-38	SeMet F2	Soil/Sediment	dry	≤ 0.001	U	0.001	0.015	mg/kg	B221522	S220769
2207064-38	SeSO ₃ F1	Soil/Sediment	dry	≤ 0.016	U	0.016	0.038	mg/kg	B221521	S220775
2207064-38	SeSO ₃ F2	Soil/Sediment	dry	≤ 0.008	U	0.008	0.038	mg/kg	B221522	S220769
2207064-38	Unk Se Sp F1	Soil/Sediment	dry	≤ 0.004	U	0.004	0.036	mg/kg	B221521	S220775
2207064-38	Unk Se Sp F2	Soil/Sediment	dry	0.127		0.004	0.036	mg/kg	B221522	S220769



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_BOCKRD_SE-1_LAEMP_EVO_2022-06_28_NP										
2207064-39	%TS	Soil/Sediment	NA	37.74		0.006	0.02	%	B221754	N/A
2207064-39	DMS ₂ O F1	Soil/Sediment	dry	≤ 0.005	U	0.005	0.021	mg/kg	B221521	S220775
2207064-39	DMS ₂ O F2	Soil/Sediment	dry	≤ 0.002	U	0.002	0.021	mg/kg	B221522	S220769
2207064-39	MeSe(IV) F1	Soil/Sediment	dry	0.012	J	0.005	0.021	mg/kg	B221521	S220775
2207064-39	MeSe(IV) F2	Soil/Sediment	dry	0.205		0.002	0.021	mg/kg	B221522	S220769
2207064-39	Se	Soil/Sediment	dry	4.82		0.232	0.464	mg/kg	B221655	S220789
2207064-39	Se Unk A F1	Soil/Sediment	dry	≤ 0.005	U	0.005	0.021	mg/kg	B221521	S220775
2207064-39	Se Unk A F2	Soil/Sediment	dry	≤ 0.002	U	0.002	0.021	mg/kg	B221522	S220769
2207064-39	Se(F1)	Soil/Sediment	dry	0.257		0.047	0.208	mg/kg	B221601	S220748
2207064-39	Se(F2)	Soil/Sediment	dry	1.03		0.021	0.208	mg/kg	B221616	S220754
2207064-39	Se(F3)	Soil/Sediment	dry	1.94		0.402	0.804	mg/kg	B221636	S220760
2207064-39	Se(F4)	Soil/Sediment	dry	≤ 0.075	U	0.075	0.208	mg/kg	B221646	S220773
2207064-39	Se(F5)	Soil/Sediment	dry	≤ 0.079	U	0.079	0.259	mg/kg	B221656	S220779
2207064-39	Se(IV) F1	Soil/Sediment	dry	0.116		0.006	0.051	mg/kg	B221521	S220775
2207064-39	Se(IV) F2	Soil/Sediment	dry	0.543		0.005	0.051	mg/kg	B221522	S220769
2207064-39	Se(VI) F1	Soil/Sediment	dry	0.026	J	0.022	0.053	mg/kg	B221521	S220775
2207064-39	Se(VI) F2	Soil/Sediment	dry	0.012	J	0.011	0.053	mg/kg	B221522	S220769
2207064-39	SeCN F1	Soil/Sediment	dry	≤ 0.003	U	0.003	0.021	mg/kg	B221521	S220775
2207064-39	SeCN F2	Soil/Sediment	dry	0.159		0.002	0.021	mg/kg	B221522	S220769
2207064-39	SeMet F1	Soil/Sediment	dry	≤ 0.005	U	0.005	0.021	mg/kg	B221521	S220775
2207064-39	SeMet F2	Soil/Sediment	dry	≤ 0.002	U	0.002	0.021	mg/kg	B221522	S220769
2207064-39	SeSO ₃ F1	Soil/Sediment	dry	≤ 0.022	U	0.022	0.053	mg/kg	B221521	S220775
2207064-39	SeSO ₃ F2	Soil/Sediment	dry	≤ 0.011	U	0.011	0.053	mg/kg	B221522	S220769
2207064-39	Unk Se Sp F1	Soil/Sediment	dry	≤ 0.006	U	0.006	0.051	mg/kg	B221521	S220775
2207064-39	Unk Se Sp F2	Soil/Sediment	dry	0.058		0.005	0.051	mg/kg	B221522	S220769



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_BOCKRD_SE-2_LAEMP_EVO_2022-06_28_NP										
2207064-40	%TS	Soil/Sediment	NA	37.83		0.007	0.02	%	B221754	N/A
2207064-40	DMS ₂ O F1	Soil/Sediment	dry	≤ 0.005	U	0.005	0.020	mg/kg	B221521	S220775
2207064-40	DMS ₂ O F2	Soil/Sediment	dry	0.009	J	0.002	0.020	mg/kg	B221522	S220769
2207064-40	MeSe(IV) F1	Soil/Sediment	dry	0.008	J	0.005	0.020	mg/kg	B221521	S220775
2207064-40	MeSe(IV) F2	Soil/Sediment	dry	0.483		0.002	0.020	mg/kg	B221522	S220769
2207064-40	Se	Soil/Sediment	dry	7.70		0.241	0.483	mg/kg	B221655	S220789
2207064-40	Se Unk A F1	Soil/Sediment	dry	≤ 0.005	U	0.005	0.020	mg/kg	B221521	S220775
2207064-40	Se Unk A F2	Soil/Sediment	dry	≤ 0.002	J-1 U	0.002	0.020	mg/kg	B221522	S220769
2207064-40	Se(F1)	Soil/Sediment	dry	0.376		0.044	0.196	mg/kg	B221601	S220748
2207064-40	Se(F2)	Soil/Sediment	dry	2.09		0.020	0.196	mg/kg	B221616	S220754
2207064-40	Se(F3)	Soil/Sediment	dry	3.42		0.379	0.758	mg/kg	B221636	S220760
2207064-40	Se(F4)	Soil/Sediment	dry	0.125	J	0.071	0.196	mg/kg	B221646	S220773
2207064-40	Se(F5)	Soil/Sediment	dry	≤ 0.075	U	0.075	0.245	mg/kg	B221656	S220779
2207064-40	Se(IV) F1	Soil/Sediment	dry	0.193		0.006	0.048	mg/kg	B221521	S220775
2207064-40	Se(IV) F2	Soil/Sediment	dry	1.11		0.005	0.048	mg/kg	B221522	S220769
2207064-40	Se(VI) F1	Soil/Sediment	dry	≤ 0.021	U	0.021	0.050	mg/kg	B221521	S220775
2207064-40	Se(VI) F2	Soil/Sediment	dry	0.016	J	0.010	0.050	mg/kg	B221522	S220769
2207064-40	SeCN F1	Soil/Sediment	dry	≤ 0.003	U	0.003	0.020	mg/kg	B221521	S220775
2207064-40	SeCN F2	Soil/Sediment	dry	0.345		0.002	0.020	mg/kg	B221522	S220769
2207064-40	SeMet F1	Soil/Sediment	dry	≤ 0.005	U	0.005	0.020	mg/kg	B221521	S220775
2207064-40	SeMet F2	Soil/Sediment	dry	≤ 0.002	J-1 U	0.002	0.020	mg/kg	B221522	S220769
2207064-40	SeSO ₃ F1	Soil/Sediment	dry	≤ 0.021	U	0.021	0.050	mg/kg	B221521	S220775
2207064-40	SeSO ₃ F2	Soil/Sediment	dry	≤ 0.010	U	0.010	0.050	mg/kg	B221522	S220769
2207064-40	Unk Se Sp F1	Soil/Sediment	dry	≤ 0.006	U	0.006	0.048	mg/kg	B221521	S220775
2207064-40	Unk Se Sp F2	Soil/Sediment	dry	0.121		0.005	0.048	mg/kg	B221522	S220769



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_BOCKRD_SE-3_LAEMP_EVO_2022-06_28_NP										
2207064-41	%TS	Soil/Sediment	NA	50.03		0.004	0.01	%	B221754	N/A
2207064-41	DMS ₂ O F1	Soil/Sediment	dry	≤ 0.003	U	0.003	0.015	mg/kg	B221521	S220775
2207064-41	DMS ₂ O F2	Soil/Sediment	dry	0.004	J	0.001	0.015	mg/kg	B221522	S220769
2207064-41	MeSe(IV) F1	Soil/Sediment	dry	0.011	J	0.003	0.015	mg/kg	B221521	S220775
2207064-41	MeSe(IV) F2	Soil/Sediment	dry	0.424		0.001	0.015	mg/kg	B221522	S220769
2207064-41	Se	Soil/Sediment	dry	5.47		0.174	0.348	mg/kg	B221655	S220789
2207064-41	Se Unk A F1	Soil/Sediment	dry	≤ 0.003	U	0.003	0.015	mg/kg	B221521	S220775
2207064-41	Se Unk A F2	Soil/Sediment	dry	≤ 0.001	U	0.001	0.015	mg/kg	B221522	S220769
2207064-41	Se(F1)	Soil/Sediment	dry	0.243		0.033	0.148	mg/kg	B221601	S220748
2207064-41	Se(F2)	Soil/Sediment	dry	1.61		0.015	0.148	mg/kg	B221616	S220754
2207064-41	Se(F3)	Soil/Sediment	dry	3.01		0.287	0.575	mg/kg	B221636	S220760
2207064-41	Se(F4)	Soil/Sediment	dry	0.197		0.054	0.148	mg/kg	B221646	S220773
2207064-41	Se(F5)	Soil/Sediment	dry	≤ 0.057	U	0.057	0.185	mg/kg	B221656	S220779
2207064-41	Se(IV) F1	Soil/Sediment	dry	0.214		0.004	0.036	mg/kg	B221521	S220775
2207064-41	Se(IV) F2	Soil/Sediment	dry	1.06		0.004	0.036	mg/kg	B221522	S220769
2207064-41	Se(VI) F1	Soil/Sediment	dry	≤ 0.016	U	0.016	0.038	mg/kg	B221521	S220775
2207064-41	Se(VI) F2	Soil/Sediment	dry	0.016	J	0.008	0.038	mg/kg	B221522	S220769
2207064-41	SeCN F1	Soil/Sediment	dry	≤ 0.002	U	0.002	0.015	mg/kg	B221521	S220775
2207064-41	SeCN F2	Soil/Sediment	dry	0.194		0.001	0.015	mg/kg	B221522	S220769
2207064-41	SeMet F1	Soil/Sediment	dry	≤ 0.003	U	0.003	0.015	mg/kg	B221521	S220775
2207064-41	SeMet F2	Soil/Sediment	dry	≤ 0.001	U	0.001	0.015	mg/kg	B221522	S220769
2207064-41	SeSO ₃ F1	Soil/Sediment	dry	≤ 0.016	U	0.016	0.038	mg/kg	B221521	S220775
2207064-41	SeSO ₃ F2	Soil/Sediment	dry	≤ 0.008	U	0.008	0.038	mg/kg	B221522	S220769
2207064-41	Unk Se Sp F1	Soil/Sediment	dry	≤ 0.004	U	0.004	0.036	mg/kg	B221521	S220775
2207064-41	Unk Se Sp F2	Soil/Sediment	dry	0.114		0.004	0.036	mg/kg	B221522	S220769



Accuracy & Precision Summary

Batch: B221521
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221521-DUP1	Duplicate, (2207064-02)						
	DMS ₂ O F1	ND		ND	mg/kg		N/C 25
	MeSe(IV) F1	ND		ND	mg/kg		N/C 25
	Se Unk A F1	ND		ND	mg/kg		N/C 25
	Se(IV) F1	0.032		0.033	mg/kg		3% 25
	Se(VI) F1	0.072		0.073	mg/kg		2% 25
	SeCN F1	ND		ND	mg/kg		N/C 25
	SeMet F1	ND		ND	mg/kg		N/C 25
	SeSO ₃ F1	ND		ND	mg/kg		N/C 25
	Unk Se Sp F1	ND		ND	mg/kg		N/C 25
B221521-PS1	Post Spike, (2207064-02)						
	Se(IV) F1	0.032	2.979	2.778	mg/kg	92% 75-125	
	Se(VI) F1	0.072	3.100	2.884	mg/kg	91% 75-125	
	SeCN F1	ND	1.193	1.024	mg/kg	86% 75-125	
	SeMet F1	ND	1.202	1.067	mg/kg	89% 75-125	
B221521-DUP2	Duplicate, (2207064-10)						
	DMS ₂ O F1	ND		ND	mg/kg		N/C 25
	MeSe(IV) F1	0.015		0.020	mg/kg		30% 25
	Se Unk A F1	ND		ND	mg/kg		N/C 25
	Se(IV) F1	0.523		0.523	mg/kg		0.1% 25
	Se(VI) F1	ND		ND	mg/kg		N/C 25
	SeCN F1	ND		ND	mg/kg		N/C 25
	SeMet F1	ND		ND	mg/kg		N/C 25
	SeSO ₃ F1	ND		ND	mg/kg		N/C 25
	Unk Se Sp F1	ND		ND	mg/kg		N/C 25



Accuracy & Precision Summary

Batch: B221521
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221521-DUP3	Duplicate, (2207064-11)						
	DMSeO F1	0.012		0.011	mg/kg		6% 25
	MeSe(IV) F1	0.010		0.018	mg/kg		53% 25
	Se Unk A F1	ND		ND	mg/kg		N/C 25
	Se(IV) F1	0.903		0.905	mg/kg		0.2% 25
	Se(VI) F1	0.256		0.193	mg/kg		28% 25
	SeCN F1	ND		ND	mg/kg		N/C 25
	SeMet F1	ND		ND	mg/kg		N/C 25
	SeSO3 F1	ND		ND	mg/kg		N/C 25
	Unk Se Sp F1	ND		ND	mg/kg		N/C 25
B221521-PS2	Post Spike, (2207064-11)						
	Se(IV) F1	0.903	8.439	8.736	mg/kg	93% 75-125	
	Se(VI) F1	0.256	8.784	8.320	mg/kg	92% 75-125	
	SeCN F1	ND	3.379	2.888	mg/kg	85% 75-125	
	SeMet F1	ND	3.405	2.993	mg/kg	88% 75-125	
B221521-DUP4	Duplicate, (2207064-16)						
	DMSeO F1	ND		ND	mg/kg		N/C 25
	MeSe(IV) F1	ND		ND	mg/kg		N/C 25
	Se Unk A F1	ND		ND	mg/kg		N/C 25
	Se(IV) F1	ND		ND	mg/kg		N/C 25
	Se(VI) F1	ND		ND	mg/kg		N/C 25
	SeCN F1	ND		ND	mg/kg		N/C 25
	SeMet F1	ND		ND	mg/kg		N/C 25
	SeSO3 F1	ND		ND	mg/kg		N/C 25
	Unk Se Sp F1	ND		ND	mg/kg		N/C 25



Accuracy & Precision Summary

Batch: B221521
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221521-DUP5	Duplicate, Analytical (2207064-16)						
	DMSeO F1	ND		ND	mg/kg		N/C 25
	MeSe(IV) F1	ND		ND	mg/kg		N/C 25
	Se Unk A F1	ND		ND	mg/kg		N/C 25
	Se(IV) F1	ND		ND	mg/kg		N/C 25
	Se(VI) F1	ND		ND	mg/kg		N/C 25
	SeCN F1	ND		ND	mg/kg		N/C 25
	SeMet F1	ND		ND	mg/kg		N/C 25
	SeSO3 F1	ND		ND	mg/kg		N/C 25
	Unk Se Sp F1	ND		ND	mg/kg		N/C 25
B221521-PS3	Post Spike, (2207064-16)						
	Se(IV) F1	ND	2.645	2.375	mg/kg	90% 75-125	
	Se(VI) F1	ND	2.753	2.507	mg/kg	91% 75-125	
	SeCN F1	ND	1.059	0.913	mg/kg	86% 75-125	
	SeMet F1	ND	1.067	0.941	mg/kg	88% 75-125	



Accuracy & Precision Summary

Batch: B221522
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221522-DUP1	Duplicate, (2207064-02)						
	DMSeO F2	ND		ND	mg/kg		N/C 25
	MeSe(IV) F2	0.088		0.092	mg/kg		4% 25
	Se Unk A F2	ND		ND	mg/kg		N/C 25
	Se(IV) F2	0.411		0.362	mg/kg		13% 25
	Se(VI) F2	ND		ND	mg/kg		N/C 25
	SeCN F2	0.063		0.078	mg/kg		22% 25
	SeMet F2	ND		ND	mg/kg		N/C 25
	SeSO3 F2	ND		ND	mg/kg		N/C 25
Unk Se Sp F2	0.012		0.014	mg/kg		13% 25	
B221522-PS1	Post Spike, (2207064-02)						
	Se(IV) F2	0.411	2.979	3.396	mg/kg	100% 75-125	
	Se(VI) F2	ND	3.100	3.088	mg/kg	100% 75-125	
	SeCN F2	0.063	1.193	1.223	mg/kg	97% 75-125	
SeMet F2	ND	1.202	1.205	mg/kg	100% 75-125		
B221522-DUP2	Duplicate, (2207064-10)						
	DMSeO F2	ND		ND	mg/kg		N/C 25
	MeSe(IV) F2	1.086		1.307	mg/kg		18% 25
	Se Unk A F2	ND		ND	mg/kg		N/C 25
	Se(IV) F2	6.627		7.644	mg/kg		14% 25
	Se(VI) F2	ND		ND	mg/kg		N/C 25
	SeCN F2	1.176		1.331	mg/kg		12% 25
	SeMet F2	ND		ND	mg/kg		N/C 25
	SeSO3 F2	0.026		0.032	mg/kg		21% 25
Unk Se Sp F2	0.205		0.213	mg/kg		4% 25	



Accuracy & Precision Summary

Batch: B221522
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221522-DUP3	Duplicate, (2207064-11)						
	DMSeO F2	0.012		0.014	mg/kg		15% 25
	MeSe(IV) F2	1.829		1.832	mg/kg		0.1% 25
	Se Unk A F2	ND		ND	mg/kg		N/C 25
	Se(IV) F2	6.395		6.092	mg/kg		5% 25
	Se(VI) F2	ND		ND	mg/kg		N/C 25
	SeCN F2	2.694		2.492	mg/kg		8% 25
	SeMet F2	ND		ND	mg/kg		N/C 25
	SeSO3 F2	0.026		0.023	mg/kg		12% 25
Unk Se Sp F2	0.339		0.321	mg/kg		5% 25	
B221522-PS2	Post Spike, (2207064-11)						
	Se(IV) F2	6.395	8.658	15.56	mg/kg	106% 75-125	
	Se(VI) F2	ND	9.011	9.670	mg/kg	107% 75-125	
	SeCN F2	2.694	3.467	6.429	mg/kg	108% 75-125	
SeMet F2	ND	3.493	4.082	mg/kg	117% 75-125		
B221522-DUP4	Duplicate, (2207064-16)						
	DMSeO F2	ND		ND	mg/kg		N/C 25
	MeSe(IV) F2	0.016		0.017	mg/kg		6% 25
	Se Unk A F2	ND		ND	mg/kg		N/C 25
	Se(IV) F2	0.098		0.107	mg/kg		9% 25
	Se(VI) F2	ND		ND	mg/kg		N/C 25
	SeCN F2	0.019		0.020	mg/kg		5% 25
	SeMet F2	ND		ND	mg/kg		N/C 25
	SeSO3 F2	ND		ND	mg/kg		N/C 25
Unk Se Sp F2	0.004		0.008	mg/kg		56% 25	



Accuracy & Precision Summary

Batch: B221522
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221522-DUP5	Duplicate, Analytical (2207064-16)						
	DMS ₂ O F2	ND		ND	mg/kg		N/C 25
	MeSe(IV) F2	0.016		0.016	mg/kg		2% 25
	Se Unk A F2	ND		ND	mg/kg		N/C 25
	Se(IV) F2	0.098		0.096	mg/kg		2% 25
	Se(VI) F2	ND		ND	mg/kg		N/C 25
	SeCN F2	0.019		0.019	mg/kg		0.3% 25
	SeMet F2	ND		ND	mg/kg		N/C 25
	SeSO ₃ F2	ND		ND	mg/kg		N/C 25
Unk Se Sp F2	0.004		0.008	mg/kg		55% 25	
B221522-PS3	Post Spike, (2207064-16)						
	Se(IV) F2	0.098	2.645	2.974	mg/kg	109% 75-125	
	Se(VI) F2	ND	2.753	2.965	mg/kg	108% 75-125	
	SeCN F2	0.019	1.059	1.153	mg/kg	107% 75-125	
SeMet F2	ND	1.067	1.167	mg/kg	109% 75-125		



Accuracy & Precision Summary

Batch: B221601
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221601-DUP1	Duplicate, (2207064-02) Se(F1)	0.124		0.112	mg/kg		10% 25
B221601-PS1	Post Spike, (2207064-02) Se(F1)	0.124	30.40	28.88	mg/kg	95% 75-125	
B221601-PS2	Post Spike, (2207064-02) Se(F1)	0.124	30.40	29.55	mg/kg	97% 75-125	
B221601-DUP2	Duplicate, (2207064-10) Se(F1)	0.656		0.674	mg/kg		3% 25
B221601-PS3	Post Spike, (2207064-10) Se(F1)	0.656	62.86	61.38	mg/kg	97% 75-125	
B221601-PS4	Post Spike, (2207064-10) Se(F1)	0.656	62.86	63.04	mg/kg	99% 75-125	
B221601-DUP3	Duplicate, (2207064-11) Se(F1)	1.451		1.314	mg/kg		10% 25
B221601-PS5	Post Spike, (2207064-11) Se(F1)	1.451	88.35	89.21	mg/kg	99% 75-125	
B221601-PS6	Post Spike, (2207064-11) Se(F1)	1.451	88.35	94.25	mg/kg	105% 75-125	
B221601-DUP4	Duplicate, (2207064-16) Se(F1)	ND		ND	mg/kg		N/C 25
B221601-PS7	Post Spike, (2207064-16) Se(F1)	ND	26.99	26.26	mg/kg	97% 75-125	



Accuracy & Precision Summary

Batch: B221601
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221601-PS8	Post Spike, (2207064-16) Se(F1)	ND	26.99	25.99	mg/kg	96% 75-125	



Accuracy & Precision Summary

Batch: B221616
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221616-DUP1	Duplicate, (2207064-02) Se(F2)	0.674		0.590	mg/kg		13% 25
B221616-PS1	Post Spike, (2207064-02) Se(F2)	0.674	30.40	28.68	mg/kg	92% 75-125	
B221616-PS2	Post Spike, (2207064-02) Se(F2)	0.674	30.40	29.15	mg/kg	94% 75-125	
B221616-DUP2	Duplicate, (2207064-10) Se(F2)	8.562		9.840	mg/kg		14% 25
B221616-PS3	Post Spike, (2207064-10) Se(F2)	8.562	62.86	67.90	mg/kg	94% 75-125	
B221616-PS4	Post Spike, (2207064-10) Se(F2)	8.562	62.86	68.74	mg/kg	96% 75-125	
B221616-DUP3	Duplicate, (2207064-11) Se(F2)	11.20		10.65	mg/kg		5% 25
B221616-PS5	Post Spike, (2207064-11) Se(F2)	11.20	88.35	91.59	mg/kg	91% 75-125	
B221616-PS6	Post Spike, (2207064-11) Se(F2)	11.20	88.35	90.10	mg/kg	89% 75-125	
B221616-DUP4	Duplicate, (2207064-16) Se(F2)	0.162		0.162	mg/kg		0.005% 25
B221616-PS7	Post Spike, (2207064-16) Se(F2)	0.162	26.99	25.07	mg/kg	92% 75-125	



Accuracy & Precision Summary

Batch: B221616
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221616-PS8	Post Spike, (2207064-16) Se(F2)	0.162	26.99	25.20	mg/kg	93% 75-125	



Accuracy & Precision Summary

Batch: B221636
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221636-DUP1	Duplicate, (2207064-02) Se(F3)	0.797		0.642	mg/kg		21% 25
B221636-PS1	Post Spike, (2207064-02) Se(F3)	0.797	30.40	32.17	mg/kg	103% 75-125	
B221636-PS2	Post Spike, (2207064-02) Se(F3)	0.797	30.40	31.22	mg/kg	100% 75-125	
B221636-DUP2	Duplicate, (2207064-10) Se(F3)	5.361		6.020	mg/kg		12% 25
B221636-PS3	Post Spike, (2207064-10) Se(F3)	5.361	62.86	66.36	mg/kg	97% 75-125	
B221636-PS4	Post Spike, (2207064-10) Se(F3)	5.361	62.86	65.80	mg/kg	96% 75-125	
B221636-DUP3	Duplicate, (2207064-11) Se(F3)	15.69		13.76	mg/kg		13% 25
B221636-PS5	Post Spike, (2207064-11) Se(F3)	15.69	88.35	99.08	mg/kg	94% 75-125	
B221636-PS6	Post Spike, (2207064-11) Se(F3)	15.69	88.35	99.88	mg/kg	95% 75-125	
B221636-DUP4	Duplicate, (2207064-16) Se(F3)	0.521		0.464	mg/kg		12% 25
B221636-PS7	Post Spike, (2207064-16) Se(F3)	0.521	26.99	26.70	mg/kg	97% 75-125	



Accuracy & Precision Summary

Batch: B221636
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221636-PS8	Post Spike, (2207064-16) Se(F3)	0.521	26.99	27.82	mg/kg	101% 75-125	



Accuracy & Precision Summary

Batch: B221646
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221646-DUP1	Duplicate, (2207064-02) Se(F4)	0.175		0.176	mg/kg		0.3% 25
B221646-PS1	Post Spike, (2207064-02) Se(F4)	0.175	30.40	27.66	mg/kg	90% 75-125	
B221646-PS2	Post Spike, (2207064-02) Se(F4)	0.175	30.40	27.85	mg/kg	91% 75-125	
B221646-DUP2	Duplicate, (2207064-10) Se(F4)	0.415		0.450	mg/kg		8% 25
B221646-PS3	Post Spike, (2207064-10) Se(F4)	0.415	62.86	56.62	mg/kg	89% 75-125	
B221646-PS4	Post Spike, (2207064-10) Se(F4)	0.415	62.86	58.70	mg/kg	93% 75-125	
B221646-DUP3	Duplicate, (2207064-11) Se(F4)	0.843		0.771	mg/kg		9% 25
B221646-PS5	Post Spike, (2207064-11) Se(F4)	0.843	88.35	82.68	mg/kg	93% 75-125	
B221646-PS6	Post Spike, (2207064-11) Se(F4)	0.843	88.35	82.21	mg/kg	92% 75-125	
B221646-DUP4	Duplicate, (2207064-16) Se(F4)	0.155		0.193	mg/kg		22% 25
B221646-PS7	Post Spike, (2207064-16) Se(F4)	0.155	26.99	24.92	mg/kg	92% 75-125	



Accuracy & Precision Summary

Batch: B221646
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221646-PS8	Post Spike, (2207064-16) Se(F4)	0.155	26.99	25.46	mg/kg	94% 75-125	



Accuracy & Precision Summary

Batch: B221655
Lab Matrix: Soil/Sediment
Method: EPA 6020B Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221655-BS1	Blank Spike, (2152010) Se		50.00	46.17	mg/kg	92% 75-125	
B221655-BS2	Blank Spike, (2152010) Se		50.00	46.41	mg/kg	93% 75-125	
B221655-SRM1	Reference Material (2224038, CRM052-50G Loamy Clay) Se		54.40	59.62	mg/kg	110% 75-125	
B221655-SRM2	Reference Material (2224038, CRM052-50G Loamy Clay) Se		54.40	60.31	mg/kg	111% 75-125	
B221655-DUP1	Duplicate, (2207064-02) Se	1.782		1.647	mg/kg		8% 30
B221655-MS1	Matrix Spike, (2207064-02) Se	1.782	87.77	80.98	mg/kg	90% 70-130	
B221655-MSD1	Matrix Spike Duplicate, (2207064-02) Se	1.782	82.88	90.12	mg/kg	107% 70-130	17% 30
B221655-DUP2	Duplicate, (2207064-15) Se	0.970		1.087	mg/kg		11% 30
B221655-MS2	Matrix Spike, (2207064-15) Se	0.970	75.81	69.44	mg/kg	90% 70-130	
B221655-MSD2	Matrix Spike Duplicate, (2207064-15) Se	0.970	81.81	73.13	mg/kg	88% 70-130	2% 30
B221655-DUP3	Duplicate, (2207064-27) Se	14.60		14.17	mg/kg		3% 30



Accuracy & Precision Summary

Batch: B221655
Lab Matrix: Soil/Sediment
Method: EPA 6020B Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221655-MS3	Matrix Spike, (2207064-27) Se	14.60	334.0	340.1	mg/kg	97% 70-130	
B221655-MSD3	Matrix Spike Duplicate, (2207064-27) Se	14.60	389.3	354.6	mg/kg	87% 70-130	11% 30
B221655-DUP4	Duplicate, (2207095-01) Se	37.52		35.64	mg/kg		5% 30
B221655-MS4	Matrix Spike, (2207095-01) Se	37.52	75.94	100.2	mg/kg	82% 70-130	
B221655-MSD4	Matrix Spike Duplicate, (2207095-01) Se	37.52	86.19	113.4	mg/kg	88% 70-130	7% 30



Accuracy & Precision Summary

Batch: B221656
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221656-BS1	Blank Spike, (2152010) Se(F5)		25.00	24.03	mg/kg	96% 75-125	
B221656-BS2	Blank Spike, (2152010) Se(F5)		25.00	23.34	mg/kg	93% 75-125	
B221656-DUP1	Duplicate, (2207064-02) Se(F5)	ND		ND	mg/kg		N/C 25
B221656-PS1	Post Spike, (2207064-02) Se(F5)	ND	38.00	35.32	mg/kg	93% 75-125	
B221656-PS2	Post Spike, (2207064-02) Se(F5)	ND	38.00	38.28	mg/kg	101% 75-125	
B221656-DUP2	Duplicate, (2207064-10) Se(F5)	ND		ND	mg/kg		N/C 25
B221656-PS3	Post Spike, (2207064-10) Se(F5)	ND	78.58	70.31	mg/kg	89% 75-125	
B221656-PS4	Post Spike, (2207064-10) Se(F5)	ND	78.58	74.41	mg/kg	95% 75-125	
B221656-DUP3	Duplicate, (2207064-11) Se(F5)	ND		ND	mg/kg		N/C 25
B221656-PS5	Post Spike, (2207064-11) Se(F5)	ND	110.4	108.7	mg/kg	98% 75-125	
B221656-PS6	Post Spike, (2207064-11) Se(F5)	ND	110.4	103.5	mg/kg	94% 75-125	



Accuracy & Precision Summary

Batch: B221656
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221656-DUP4	Duplicate, (2207064-16) Se(F5)	ND		ND	mg/kg		N/C 25
B221656-PS7	Post Spike, (2207064-16) Se(F5)	ND	33.74	31.39	mg/kg	93% 75-125	
B221656-PS8	Post Spike, (2207064-16) Se(F5)	ND	33.74	31.91	mg/kg	95% 75-125	



Accuracy & Precision Summary

Batch: B221754
Lab Matrix: Soil/Sediment
Method: SOP BAL-0501

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221754-DUP1	Duplicate, (2207064-04) %TS	48.68		47.02	%		3% 15
B221754-DUP2	Duplicate, (2207064-20) %TS	30.79		32.04	%		4% 15
B221754-DUP3	Duplicate, (2207064-30) %TS	22.21		22.24	%		0.1% 15
B221754-DUP4	Duplicate, (2207064-39) %TS	37.74		41.69	%		10% 15



Method Blanks & Reporting Limits

Batch: B221521
Matrix: Soil/Sediment
Method: In-House
Analyte: DMSeO F1

Sample	Result	Units	
B221521-BLK1	0.00	mg/kg	
B221521-BLK2	0.00	mg/kg	
B221521-BLK3	0.00	mg/kg	
B221521-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.008		MRL: 0.008

Analyte: MeSe(IV) F1

Sample	Result	Units	
B221521-BLK1	0.00	mg/kg	
B221521-BLK2	0.00	mg/kg	
B221521-BLK3	0.00	mg/kg	
B221521-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.008		MRL: 0.008

Analyte: Se Unk A F1

Sample	Result	Units	
B221521-BLK1	0.00	mg/kg	
B221521-BLK2	0.00	mg/kg	
B221521-BLK3	0.00	mg/kg	
B221521-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.008		MRL: 0.008



Method Blanks & Reporting Limits

Analyte: Se(IV) F1

Sample	Result	Units	
B221521-BLK1	0.00	mg/kg	
B221521-BLK2	0.00	mg/kg	
B221521-BLK3	0.00	mg/kg	
B221521-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.020		MRL: 0.020

Analyte: Se(VI) F1

Sample	Result	Units	
B221521-BLK1	0.00	mg/kg	
B221521-BLK2	0.00	mg/kg	
B221521-BLK3	0.00	mg/kg	
B221521-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.008
Limit:	0.020		MRL: 0.020

Analyte: SeCN F1

Sample	Result	Units	
B221521-BLK1	0.00	mg/kg	
B221521-BLK2	0.00	mg/kg	
B221521-BLK3	0.00	mg/kg	
B221521-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.001
Limit:	0.008		MRL: 0.008

Analyte: SeMet F1

Sample	Result	Units	
B221521-BLK1	0.00	mg/kg	
B221521-BLK2	0.00	mg/kg	
B221521-BLK3	0.00	mg/kg	
B221521-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.008		MRL: 0.008



Method Blanks & Reporting Limits

Analyte: SeSO3 F1

Sample	Result	Units	
B221521-BLK1	0.00	mg/kg	
B221521-BLK2	0.00	mg/kg	
B221521-BLK3	0.00	mg/kg	
B221521-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.008
Limit:	0.020		MRL: 0.020

Analyte: Unk Se Sp F1

Sample	Result	Units	
B221521-BLK1	0.00	mg/kg	
B221521-BLK2	0.00	mg/kg	
B221521-BLK3	0.00	mg/kg	
B221521-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.020		MRL: 0.020



Method Blanks & Reporting Limits

Batch: B221522
Matrix: Soil/Sediment
Method: In-House
Analyte: DMSeO F2

Sample	Result	Units	
B221522-BLK1	0.00	mg/kg	
B221522-BLK2	0.00	mg/kg	
B221522-BLK3	0.00	mg/kg	
B221522-BLK4	0.00	mg/kg	
Average: 0.000			MDL: 0.0008
Limit: 0.008			MRL: 0.008

Analyte: MeSe(IV) F2

Sample	Result	Units	
B221522-BLK1	0.00	mg/kg	
B221522-BLK2	0.00	mg/kg	
B221522-BLK3	0.00	mg/kg	
B221522-BLK4	0.00	mg/kg	
Average: 0.000			MDL: 0.0008
Limit: 0.008			MRL: 0.008

Analyte: Se Unk A F2

Sample	Result	Units	
B221522-BLK1	0.00	mg/kg	
B221522-BLK2	0.00	mg/kg	
B221522-BLK3	0.00	mg/kg	
B221522-BLK4	0.00	mg/kg	
Average: 0.000			MDL: 0.0008
Limit: 0.008			MRL: 0.008



Method Blanks & Reporting Limits

Analyte: Se(IV) F2

Sample	Result	Units	
B221522-BLK1	0.00	mg/kg	
B221522-BLK2	0.00	mg/kg	
B221522-BLK3	0.00	mg/kg	
B221522-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.020		MRL: 0.020

Analyte: Se(VI) F2

Sample	Result	Units	
B221522-BLK1	0.00	mg/kg	
B221522-BLK2	0.00	mg/kg	
B221522-BLK3	0.00	mg/kg	
B221522-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.004
Limit:	0.020		MRL: 0.020

Analyte: SeCN F2

Sample	Result	Units	
B221522-BLK1	0.00	mg/kg	
B221522-BLK2	0.00	mg/kg	
B221522-BLK3	0.00	mg/kg	
B221522-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.0008
Limit:	0.008		MRL: 0.008

Analyte: SeMet F2

Sample	Result	Units	
B221522-BLK1	0.00	mg/kg	
B221522-BLK2	0.00	mg/kg	
B221522-BLK3	0.00	mg/kg	
B221522-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.0008
Limit:	0.008		MRL: 0.008



Method Blanks & Reporting Limits

Analyte: SeSO3 F2

Sample	Result	Units	
B221522-BLK1	0.00	mg/kg	
B221522-BLK2	0.00	mg/kg	
B221522-BLK3	0.00	mg/kg	
B221522-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.004
Limit:	0.020		MRL: 0.020

Analyte: Unk Se Sp F2

Sample	Result	Units	
B221522-BLK1	0.00	mg/kg	
B221522-BLK2	0.00	mg/kg	
B221522-BLK3	0.00	mg/kg	
B221522-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.020		MRL: 0.020



Method Blanks & Reporting Limits

Batch: B221601
Matrix: Soil/Sediment
Method: In-House
Analyte: Se(F1)

Sample	Result	Units	
B221601-BLK1	0.011	mg/kg	
B221601-BLK2	0.004	mg/kg	
B221601-BLK3	0.001	mg/kg	
B221601-BLK4	0.005	mg/kg	
Average:	0.005		MDL: 0.018
Limit:	0.080		MRL: 0.080



Method Blanks & Reporting Limits

Batch: B221616
Matrix: Soil/Sediment
Method: In-House
Analyte: Se(F2)

Sample	Result	Units	
B221616-BLK1	0.003	mg/kg	
B221616-BLK2	0.003	mg/kg	
B221616-BLK3	0.00003	mg/kg	
B221616-BLK4	-0.0005	mg/kg	
Average:	0.001		MDL: 0.008
Limit:	0.080		MRL: 0.080



Method Blanks & Reporting Limits

Batch: B221636
Matrix: Soil/Sediment
Method: In-House
Analyte: Se(F3)

Sample	Result	Units	
B221636-BLK1	0.019	mg/kg	
B221636-BLK2	0.020	mg/kg	
B221636-BLK3	0.095	mg/kg	
B221636-BLK4	0.011	mg/kg	
Average:	0.036		MDL: 0.155
Limit:	0.310		MRL: 0.310



Method Blanks & Reporting Limits

Batch: B221646
Matrix: Soil/Sediment
Method: In-House
Analyte: Se(F4)

Sample	Result	Units	
B221646-BLK1	0.019	mg/kg	
B221646-BLK2	0.014	mg/kg	
B221646-BLK3	0.019	mg/kg	
B221646-BLK4	0.010	mg/kg	
Average:	0.016		MDL: 0.029
Limit:	0.080		MRL: 0.080



Method Blanks & Reporting Limits

Batch: B221655
Matrix: Soil/Sediment
Method: EPA 6020B Mod
Analyte: Se

Sample	Result	Units
B221655-BLK1	0.016	mg/kg
B221655-BLK2	0.013	mg/kg
B221655-BLK3	0.010	mg/kg
B221655-BLK4	0.012	mg/kg

Average: 0.013
Limit: 0.190

MDL: 0.095
MRL: 0.190



Method Blanks & Reporting Limits

Batch: B221656
Matrix: Soil/Sediment
Method: In-House
Analyte: Se(F5)

Sample	Result	Units	
B221656-BLK1	-0.016	mg/kg	
B221656-BLK2	-0.023	mg/kg	
B221656-BLK3	-0.013	mg/kg	
B221656-BLK4	-0.014	mg/kg	
Average:	-0.016		MDL: 0.030
Limit:	0.100		MRL: 0.100



Method Blanks & Reporting Limits

Batch: B221754
Matrix: Soil/Sediment
Method: SOP BAL-0501
Analyte: %TS

Sample	Result	Units	
B221754-BLK1	0.00	%	
B221754-BLK2	0.02	%	
Average:	0.01		MDL: 0.03
Limit:	0.10		MRL: 0.10



Sample Containers

Lab ID: 2207064-01	Report Matrix: Soil/Sediment	Collected: 06/29/2022					
Sample: RG_ERCKUT_SE-1_LAEMP_EVO_2022-06_29_NP	Sample Type: Sample + Sum	Received: 07/07/2022					
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	8oz	n/a	none	n/a	n/a	Cooler 10 - 2207064
Lab ID: 2207064-02	Report Matrix: Soil/Sediment	Collected: 06/29/2022					
Sample: RG_ERCKUT_SE-2_LAEMP_EVO_2022-06_29_NP	Sample Type: Sample + Sum	Received: 07/07/2022					
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	8oz	n/a	none	n/a	n/a	Cooler 10 - 2207064
Lab ID: 2207064-03	Report Matrix: Soil/Sediment	Collected: 06/29/2022					
Sample: RG_ERCKUT_SE-3_LAEMP_EVO_2022-06_29_NP	Sample Type: Sample + Sum	Received: 07/07/2022					
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	8oz	n/a	none	n/a	n/a	Cooler 10 - 2207064
Lab ID: 2207064-04	Report Matrix: Soil/Sediment	Collected: 06/29/2022					
Sample: RG_ERCKUT_SE-4_LAEMP_EVO_2022-06_29_NP	Sample Type: Sample + Sum	Received: 07/07/2022					
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	8oz	n/a	none	n/a	n/a	Cooler 10 - 2207064
Lab ID: 2207064-05	Report Matrix: Soil/Sediment	Collected: 06/29/2022					
Sample: RG_ERCKUT_SE-5_LAEMP_EVO_2022-06_29_NP	Sample Type: Sample + Sum	Received: 07/07/2022					
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	8oz	n/a	none	n/a	n/a	Cooler 10 - 2207064



Sample Containers

Lab ID: 2207064-06

Sample:

RG_ERCKUT_BRYOSE-1_LAEMP_EVO_2022-06_29_NP

Report Matrix: Soil/Sediment

Sample Type: Sample + Sum

Collected: 06/29/2022

Received: 07/07/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	8oz	n/a	none	n/a	n/a	Cooler 10 - 2207064

Lab ID: 2207064-07

Sample:

RG_ERCKUT_BRYOSE-2_LAEMP_EVO_2022-06_29_NP

Report Matrix: Soil/Sediment

Sample Type: Sample + Sum

Collected: 06/29/2022

Received: 07/07/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	8oz	n/a	none	n/a	n/a	Cooler 10 - 2207064

Lab ID: 2207064-08

Sample:

RG_ERCKUT_BRYOSE-3_LAEMP_EVO_2022-06_29_NP

Report Matrix: Soil/Sediment

Sample Type: Sample + Sum

Collected: 06/29/2022

Received: 07/07/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	8oz	n/a	none	n/a	n/a	Cooler 10 - 2207064

Lab ID: 2207064-09

Sample:

RG_ERCKMD_SE-1_LAEMP_EVO_2022-06_29_NP

Report Matrix: Soil/Sediment

Sample Type: Sample + Sum

Collected: 06/29/2022

Received: 07/07/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	8oz	n/a	none	n/a	n/a	Cooler 10 - 2207064

Lab ID: 2207064-10

Sample:

RG_ERCKMD_SE-2_LAEMP_EVO_2022-06_29_NP

Report Matrix: Soil/Sediment

Sample Type: Sample + Sum

Collected: 06/29/2022

Received: 07/07/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	8oz	n/a	none	n/a	n/a	Cooler 10 - 2207064



Sample Containers

Lab ID: 2207064-11

Sample:

RG_ERCKMD_SE-3_LAEMP_EVO_2022-06_29_N
P

Report Matrix: Soil/Sediment
Sample Type: Sample + Sum

Collected: 06/29/2022
Received: 07/07/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	8oz	n/a	none	n/a	n/a	Cooler 10 - 2207064

Lab ID: 2207064-12

Sample:

RG_ERCKMD_BRYOSE-1_LAEMP_EVO_2022-06_
29_NP

Report Matrix: Soil/Sediment
Sample Type: Sample + Sum

Collected: 06/29/2022
Received: 07/07/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	8oz	n/a	none	n/a	n/a	Cooler 10 - 2207064

Lab ID: 2207064-13

Sample:

RG_ERCKMD_BRYOSE-2_LAEMP_EVO_2022-06_
29_NP

Report Matrix: Soil/Sediment
Sample Type: Sample + Sum

Collected: 06/29/2022
Received: 07/07/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	8oz	n/a	none	n/a	n/a	Cooler 10 - 2207064

Lab ID: 2207064-14

Sample:

RG_ERCKMD_BRYOSE-3_LAEMP_EVO_2022-06_
29_NP

Report Matrix: Soil/Sediment
Sample Type: Sample + Sum

Collected: 06/29/2022
Received: 07/07/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	8oz	n/a	none	n/a	n/a	Cooler 10 - 2207064

Lab ID: 2207064-15

Sample:

RG_MI25_SE-1_LAEMP_EVO_2022-06_NP

Report Matrix: Soil/Sediment
Sample Type: Sample + Sum

Collected: 06/30/2022
Received: 07/07/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	8oz	n/a	none	n/a	n/a	Cooler 10 - 2207064



Sample Containers

Lab ID: 2207064-16			Report Matrix: Soil/Sediment			Collected: 06/30/2022		
Sample: RG_MI25_SE-2_LAEMP_EVO_2022-06_NP			Sample Type: Sample + Sum			Received: 07/07/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided - TM	8oz	n/a	none	n/a	n/a	Cooler 10 - 2207064	
Lab ID: 2207064-17			Report Matrix: Soil/Sediment			Collected: 06/30/2022		
Sample: RG_MI25_SE-3_LAEMP_EVO_2022-06_NP			Sample Type: Sample + Sum			Received: 07/07/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided - TM	8oz	n/a	none	n/a	n/a	Cooler 10 - 2207064	
Lab ID: 2207064-18			Report Matrix: Soil/Sediment			Collected: 06/29/2022		
Sample: Sample does not exist			Sample Type: Sample + Sum			Received: 07/07/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided - TM	8oz	n/a	none	n/a	n/a	Cooler 10 - 2207064	
Lab ID: 2207064-19			Report Matrix: Soil/Sediment			Collected: 06/29/2022		
Sample: RG_ERCKDT_SE-2_LAEMP_EVO_2022-06_29_NP			Sample Type: Sample + Sum			Received: 07/07/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided - TM	8oz	n/a	none	n/a	n/a	Cooler 10 - 2207064	
Lab ID: 2207064-20			Report Matrix: Soil/Sediment			Collected: 06/29/2022		
Sample: RG_ERCKDT_SE-3_LAEMP_EVO_2022-06_29_NP			Sample Type: Sample + Sum			Received: 07/07/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided - TM	8oz	n/a	none	n/a	n/a	Cooler 10 - 2207064	



Sample Containers

Lab ID: 2207064-21			Report Matrix: Soil/Sediment			Collected: 06/29/2022		
Sample: RG_ERCKDT_SE-4_LAEMP_EVO_2022-06_29_NP			Sample Type: Sample + Sum			Received: 07/07/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided - TM	8oz	n/a	none	n/a	n/a	Cooler 10 - 2207064	
Lab ID: 2207064-22			Report Matrix: Soil/Sediment			Collected: 06/29/2022		
Sample: RG_ERCKDT_SE-5_LAEMP_EVO_2022-06_29_NP			Sample Type: Sample + Sum			Received: 07/07/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided - TM	8oz	n/a	none	n/a	n/a	Cooler 10 - 2207064	
Lab ID: 2207064-23			Report Matrix: Soil/Sediment			Collected: 06/29/2022		
Sample: Sample does not exist			Sample Type: Sample + Sum			Received: 07/07/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided - TM	8oz	n/a	none	n/a	n/a	Cooler 10 - 2207064	
Lab ID: 2207064-24			Report Matrix: Soil/Sediment			Collected: 06/29/2022		
Sample: Sample does not exist			Sample Type: Sample + Sum			Received: 07/07/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided - TM	8oz	n/a	none	n/a	n/a	Cooler 10 - 2207064	
Lab ID: 2207064-25			Report Matrix: Soil/Sediment			Collected: 06/30/2022		
Sample: RG_ERCKUC_SE-1_LAEMP_EVO_2022-06_30_NP			Sample Type: Sample + Sum			Received: 07/07/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided - TM	8oz	n/a	none	n/a	n/a	Cooler 10 - 2207064	



Sample Containers

Lab ID: 2207064-26				Report Matrix: Soil/Sediment			Collected: 06/30/2022	
Sample: RG_ERCKUC_SE-2_LAEMP_EVO_2022-06_30_NP				Sample Type: Sample + Sum			Received: 07/07/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided - TM	8oz	n/a	none	n/a	n/a	Cooler 10 - 2207064	
Lab ID: 2207064-27				Report Matrix: Soil/Sediment			Collected: 06/30/2022	
Sample: RG_ERCKUC_SE-3_LAEMP_EVO_2022-06_30_NP				Sample Type: Sample + Sum			Received: 07/07/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided - TM	8oz	n/a	none	n/a	n/a	Cooler 10 - 2207064	
Lab ID: 2207064-28				Report Matrix: Soil/Sediment			Collected: 06/29/2022	
Sample: RG_ERCKDT_BRYOSE-1_LAEMP_EVO_2022-06_29_NP				Sample Type: Sample + Sum			Received: 07/07/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided - TM	8oz	n/a	none	n/a	n/a	Cooler 10 - 2207064	
Lab ID: 2207064-29				Report Matrix: Soil/Sediment			Collected: 06/29/2022	
Sample: RG_ERCKDT_BRYOSE-2_LAEMP_EVO_2022-06_29_NP				Sample Type: Sample + Sum			Received: 07/07/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided - TM	8oz	n/a	none	n/a	n/a	Cooler 10 - 2207064	
Lab ID: 2207064-30				Report Matrix: Soil/Sediment			Collected: 06/29/2022	
Sample: RG_ERCKDT_BRYOSE-3_LAEMP_EVO_2022-06_29_NP				Sample Type: Sample + Sum			Received: 07/07/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided - TM	8oz	n/a	none	n/a	n/a	Cooler 10 - 2207064	



Sample Containers

Lab ID: 2207064-31		Report Matrix: Soil/Sediment				Collected: 06/29/2022	
Sample: Sample does not exist		Sample Type: Sample + Sum				Received: 07/07/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	8oz	n/a	none	n/a	n/a	Cooler 10 - 2207064
Lab ID: 2207064-32		Report Matrix: Soil/Sediment				Collected: 06/29/2022	
Sample: Sample does not exist		Sample Type: Sample + Sum				Received: 07/07/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	8oz	n/a	none	n/a	n/a	Cooler 10 - 2207064
Lab ID: 2207064-33		Report Matrix: Soil/Sediment				Collected: 06/28/2022	
Sample: RG_GATE_SE-1_LAEMP_EVO_2022-06_28_NP		Sample Type: Sample + Sum				Received: 07/07/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	8oz	n/a	none	n/a	n/a	Cooler 10 - 2207064
Lab ID: 2207064-34		Report Matrix: Soil/Sediment				Collected: 06/28/2022	
Sample: RG_GATE_SE-2_LAEMP_EVO_2022-06_28_NP		Sample Type: Sample + Sum				Received: 07/07/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	8oz	n/a	none	n/a	n/a	Cooler 10 - 2207064
Lab ID: 2207064-35		Report Matrix: Soil/Sediment				Collected: 06/28/2022	
Sample: RG_GATE_SE-3_LAEMP_EVO_2022-06_28_NP		Sample Type: Sample + Sum				Received: 07/07/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	8oz	n/a	none	n/a	n/a	Cooler 10 - 2207064



Sample Containers

Lab ID: 2207064-36			Report Matrix: Soil/Sediment			Collected: 06/28/2022		
Sample: RG_BOCK_SE-1_LAEMP_EVO_2022-06_28_NP			Sample Type: Sample + Sum			Received: 07/07/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided - TM	8oz	n/a	none	n/a	n/a	Cooler 10 - 2207064	
Lab ID: 2207064-37			Report Matrix: Soil/Sediment			Collected: 06/28/2022		
Sample: RG_BOCK_SE-2_LAEMP_EVO_2022-06_28_NP			Sample Type: Sample + Sum			Received: 07/07/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided - TM	8oz	n/a	none	n/a	n/a	Cooler 10 - 2207064	
Lab ID: 2207064-38			Report Matrix: Soil/Sediment			Collected: 06/28/2022		
Sample: RG_BOCK_SE-3_LAEMP_EVO_2022-06_28_NP			Sample Type: Sample + Sum			Received: 07/07/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided - TM	8oz	n/a	none	n/a	n/a	Cooler 10 - 2207064	
Lab ID: 2207064-39			Report Matrix: Soil/Sediment			Collected: 06/28/2022		
Sample: RG_BOCKRD_SE-1_LAEMP_EVO_2022-06_28_NP			Sample Type: Sample + Sum			Received: 07/07/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided - TM	8oz	n/a	none	n/a	n/a	Cooler 10 - 2207064	
Lab ID: 2207064-40			Report Matrix: Soil/Sediment			Collected: 06/28/2022		
Sample: RG_BOCKRD_SE-2_LAEMP_EVO_2022-06_28_NP			Sample Type: Sample + Sum			Received: 07/07/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided - TM	8oz	n/a	none	n/a	n/a	Cooler 10 - 2207064	



Sample Containers

Lab ID: 2207064-41

Report Matrix: Soil/Sediment

Collected: 06/28/2022

Sample:

Sample Type: Sample + Sum

Received: 07/07/2022

RG_BOCKRD_SE-3_LAEMP_EVO_2022-06_28_NP

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	8oz	n/a	none	n/a	n/a	Cooler 10 - 2207064

Shipping Containers

Cooler 10 - 2207064

Received: July 7, 2022 7:25

Tracking No: PAPS#RWHV55071 via Courier

Coolant Type: Blue Ice

Temperature: -0.8 °C

Description: Large Cooler

Damaged in transit? No

Returned to client? No

Comments: IR#33

Custody seals present? No

Custody seals intact? No

COC present? Yes

2207064-01 = RG_ERCKUT_SE-1_LAEMP_EVO_2022-06_29_NP

Fraction	Se (Total)	% of Total	Se(IV)	Se(VI)	SeCN	MeSe(IV)	SeMet	SeSO3	DMSeO	MeSe(VI)	Unk Se Sp	Speciation Recovery
F1	0.282	8.2%	0.207	0.036	ND	ND	ND	ND	ND	ND	ND	86%
F2	1.29	37.7%	0.917	ND	0.116	0.126	ND	ND	ND	ND	0.028	92%
F3	0.829	24.2%	-	-	-	-	-	-	-	-	-	-
F4	0.390	11.4%	-	-	-	-	-	-	-	-	-	-
F5	ND	0.0%	-	-	-	-	-	-	-	-	-	-
Total (Original Sample)	3.42	-	-	-	-	-	-	-	-	-	-	-
% Recovery of SSE	82%	-	-	-	-	-	-	-	-	-	-	-

All sample concentrations reported in mg/kg (dry weight)

2207064-02 = RG_ERCKUT_SE-2_LAEMP_EVO_2022-06_29_NP

Fraction	Se (Total)	% of Total	Se(IV)	Se(VI)	SeCN	MeSe(IV)	SeMet	SeSO3	DMSeO	MeSe(VI)	Unk Se Sp	Speciation Recovery
F1	0.124	7.0%	0.032	0.072	ND	ND	ND	ND	ND	ND	ND	84%
F2	0.674	37.9%	0.411	ND	0.063	0.088	ND	ND	ND	ND	0.012	85%
F3	0.797	44.8%	-	-	-	-	-	-	-	-	-	-
F4	0.175	9.8%	-	-	-	-	-	-	-	-	-	-
F5	ND	0.0%	-	-	-	-	-	-	-	-	-	-
Total (Original Sample)	1.78	-	-	-	-	-	-	-	-	-	-	-
% Recovery of SSE	99%	-	-	-	-	-	-	-	-	-	-	-

All sample concentrations reported in mg/kg (dry weight)

2207064-03 = RG_ERCKUT_SE-3_LAEMP_EVO_2022-06_29_NP

Fraction	Se (Total)	% of Total	Se(IV)	Se(VI)	SeCN	MeSe(IV)	SeMet	SeSO3	DMSeO	MeSe(VI)	Unk Se Sp	Speciation Recovery
F1	0.123	2.9%	0.077	ND	ND	ND	ND	ND	ND	ND	ND	63%
F2	1.57	36.5%	0.945	0.012	0.141	0.392	ND	ND	0.006	ND	0.044	98%
F3	1.84	42.8%	-	-	-	-	-	-	-	-	-	-
F4	0.231	5.4%	-	-	-	-	-	-	-	-	-	-
F5	ND	0.0%	-	-	-	-	-	-	-	-	-	-
Total (Original Sample)	4.30	-	-	-	-	-	-	-	-	-	-	-
% Recovery of SSE	88%	-	-	-	-	-	-	-	-	-	-	-

All sample concentrations reported in mg/kg (dry weight)

2207064-04 = RG_ERCKUT_SE-4_LAEMP_EVO_2022-06_29_NP

Fraction	Se (Total)	% of Total	Se(IV)	Se(VI)	SeCN	MeSe(IV)	SeMet	SeSO3	DMSeO	MeSe(VI)	Unk Se Sp	Speciation Recovery
F1	0.854	5.6%	0.571	ND	ND	0.027	ND	ND	ND	ND	ND	70%
F2	7.32	47.8%	4.25	0.029	1.16	1.75	ND	0.027	0.010	ND	0.193	101%
F3	5.32	34.8%	-	-	-	-	-	-	-	-	-	-
F4	0.444	2.9%	-	-	-	-	-	-	-	-	-	-
F5	ND	0.0%	-	-	-	-	-	-	-	-	-	-
Total (Original Sample)	15.3	-	-	-	-	-	-	-	-	-	-	-
% Recovery of SSE	91%	-	-	-	-	-	-	-	-	-	-	-

All sample concentrations reported in mg/kg (dry weight)

2207064-05 = RG_ERCKUT_SE-5_LAEMP_EVO_2022-06_29_NP

Fraction	Se (Total)	% of Total	Se(IV)	Se(VI)	SeCN	MeSe(IV)	SeMet	SeSO3	DMSeO	MeSe(VI)	Unk Se Sp	Speciation Recovery
F1	0.228	2.7%	0.137	0.061	ND	ND	ND	ND	ND	ND	ND	87%
F2	1.88	22.3%	1.18	ND	0.289	0.473	ND	0.009	ND	ND	0.071	108%
F3	1.76	20.9%	-	-	-	-	-	-	-	-	-	-
F4	0.260	3.1%	-	-	-	-	-	-	-	-	-	-
F5	ND	0.0%	-	-	-	-	-	-	-	-	-	-
Total (Original Sample)	8.43	-	-	-	-	-	-	-	-	-	-	-
% Recovery of SSE	49%	-	-	-	-	-	-	-	-	-	-	-

All sample concentrations reported in mg/kg (dry weight)

2207064-06 = RG_ERCKUT_BRYOSE-1_LAEMP_EVO_2022-06_29_NP

Fraction	Se (Total)	% of Total	Se(IV)	Se(VI)	SeCN	MeSe(IV)	SeMet	SeSO3	DMSeO	MeSe(VI)	Unk Se Sp	Speciation Recovery
F1	0.250	3.4%	0.107	ND	ND	ND	ND	ND	ND	ND	ND	43%
F2	4.17	56.3%	2.17	ND	0.795	1.70	ND	0.024	0.018	ND	0.205	118%
F3	7.66	103.4%	-	-	-	-	-	-	-	-	-	-
F4	0.149	2.0%	-	-	-	-	-	-	-	-	-	-
F5	ND	0.0%	-	-	-	-	-	-	-	-	-	-
Total (Original Sample)	7.41	-	-	-	-	-	-	-	-	-	-	-
% Recovery of SSE	165%	-	-	-	-	-	-	-	-	-	-	-

All sample concentrations reported in mg/kg (dry weight)

2207064-07 = RG_ERCKUT_BRYOSE-2_LAEMP_EVO_2022-06_29_NP

Fraction	Se (Total)	% of Total	Se(IV)	Se(VI)	SeCN	MeSe(IV)	SeMet	SeSO3	DMSeO	MeSe(VI)	Unk Se Sp	Speciation Recovery
F1	0.129	2.1%	0.065	ND	ND	ND	ND	ND	ND	ND	ND	50%
F2	1.33	21.7%	0.611	ND	0.241	0.449	ND	ND	0.008	ND	0.122	108%
F3	3.02	49.2%	-	-	-	-	-	-	-	-	-	-
F4	0.116	1.9%	-	-	-	-	-	-	-	-	-	-
F5	ND	0.0%	-	-	-	-	-	-	-	-	-	-
Total (Original Sample)	6.14	-	-	-	-	-	-	-	-	-	-	-
% Recovery of SSE	75%	-	-	-	-	-	-	-	-	-	-	-

All sample concentrations reported in mg/kg (dry weight)

2207064-08 = RG_ERCKUT_BRYOSE-3_LAEMP_EVO_2022-06_29_NP

Fraction	Se (Total)	% of Total	Se(IV)	Se(VI)	SeCN	MeSe(IV)	SeMet	SeSO3	DMSeO	MeSe(VI)	Unk Se Sp	Speciation Recovery
F1	0.314	2.1%	0.152	ND	ND	0.014	ND	ND	ND	ND	ND	53%
F2	2.97	20.2%	1.57	ND	0.485	1.04	ND	0.020	ND	ND	0.174	111%
F3	4.79	32.6%	-	-	-	-	-	-	-	-	-	-
F4	ND	0.0%	-	-	-	-	-	-	-	-	-	-
F5	ND	0.0%	-	-	-	-	-	-	-	-	-	-
Total (Original Sample)	14.7	-	-	-	-	-	-	-	-	-	-	-
% Recovery of SSE	55%	-	-	-	-	-	-	-	-	-	-	-

All sample concentrations reported in mg/kg (dry weight)

2207064-09 = RG_ERCKMD_SE-1_LAEMP_EVO_2022-06_29_NP

Fraction	Se (Total)	% of Total	Se(IV)	Se(VI)	SeCN	MeSe(IV)	SeMet	SeSO3	DMSeO	MeSe(VI)	Unk Se Sp	Speciation Recovery
F1	0.593	5.9%	0.431	ND	ND	0.006	ND	ND	ND	ND	ND	74%
F2	5.03	50.3%	2.68	ND	1.22	0.892	ND	0.014	ND	ND	0.187	99%
F3	4.57	45.7%	-	-	-	-	-	-	-	-	-	-
F4	0.292	2.9%	-	-	-	-	-	-	-	-	-	-
F5	ND	0.0%	-	-	-	-	-	-	-	-	-	-
Total (Original Sample)	10.0	-	-	-	-	-	-	-	-	-	-	-
% Recovery of SSE	105%	-	-	-	-	-	-	-	-	-	-	-

All sample concentrations reported in mg/kg (dry weight)

2207064-10 = RG_ERCKMD_SE-2_LAEMP_EVO_2022-06_29_NP

Fraction	Se (Total)	% of Total	Se(IV)	Se(VI)	SeCN	MeSe(IV)	SeMet	SeSO3	DMSeO	MeSe(VI)	Unk Se Sp	Speciation Recovery
F1	0.656	4.0%	0.523	ND	ND	0.015	ND	ND	ND	ND	ND	82%
F2	8.56	52.5%	6.63	ND	1.18	1.09	ND	0.026	ND	ND	0.205	107%
F3	5.36	32.9%	-	-	-	-	-	-	-	-	-	-
F4	0.415	2.5%	-	-	-	-	-	-	-	-	-	-
F5	ND	0.0%	-	-	-	-	-	-	-	-	-	-
Total (Original Sample)	16.3	-	-	-	-	-	-	-	-	-	-	-
% Recovery of SSE	92%	-	-	-	-	-	-	-	-	-	-	-

All sample concentrations reported in mg/kg (dry weight)

2207064-11 = RG_ERCKMD_SE-3_LAEMP_EVO_2022-06_29_NP

Fraction	Se (Total)	% of Total	Se(IV)	Se(VI)	SeCN	MeSe(IV)	SeMet	SeSO3	DMSeO	MeSe(VI)	Unk Se Sp	Speciation Recovery
F1	1.45	4.9%	0.903	0.256	ND	0.010	ND	ND	0.012	ND	ND	81%
F2	11.2	37.8%	6.40	ND	2.69	1.83	ND	0.026	0.012	ND	0.339	101%
F3	15.7	53.0%	-	-	-	-	-	-	-	-	-	-
F4	0.843	2.8%	-	-	-	-	-	-	-	-	-	-
F5	ND	0.0%	-	-	-	-	-	-	-	-	-	-
Total (Original Sample)	29.6	-	-	-	-	-	-	-	-	-	-	-
% Recovery of SSE	99%	-	-	-	-	-	-	-	-	-	-	-

All sample concentrations reported in mg/kg (dry weight)

2207064-12 = RG_ERCKMD_BRYOSE-1_LAEMP_EVO_2022-06_29_NP

Fraction	Se (Total)	% of Total	Se(IV)	Se(VI)	SeCN	MeSe(IV)	SeMet	SeSO3	DMSeO	MeSe(VI)	Unk Se Sp	Speciation Recovery
F1	1.73	4.0%	0.470	0.586	ND	0.040	ND	ND	ND	ND	ND	63%
F2	17.2	39.7%	12.0	ND	5.34	1.29	ND	0.056	0.078	ND	0.449	112%
F3	20.7	47.8%	-	-	-	-	-	-	-	-	-	-
F4	0.852	2.0%	-	-	-	-	-	-	-	-	-	-
F5	ND	0.0%	-	-	-	-	-	-	-	-	-	-
Total (Original Sample)	43.3	-	-	-	-	-	-	-	-	-	-	-
% Recovery of SSE	93%	-	-	-	-	-	-	-	-	-	-	-

All sample concentrations reported in mg/kg (dry weight)

2207064-13 = RG_ERCKMD_BRYOSE-2_LAEMP_EVO_2022-06_29_NP

Fraction	Se (Total)	% of Total	Se(IV)	Se(VI)	SeCN	MeSe(IV)	SeMet	SeSO3	DMSeO	MeSe(VI)	Unk Se Sp	Speciation Recovery
F1	1.16	2.8%	0.334	0.272	ND	0.033	ND	ND	ND	ND	ND	55%
F2	20.6	49.8%	ND	ND	6.48	1.46	ND	0.057	0.079	ND	0.386	41%
F3	24.5	59.2%	-	-	-	-	-	-	-	-	-	-
F4	1.13	2.7%	-	-	-	-	-	-	-	-	-	-
F5	ND	0.0%	-	-	-	-	-	-	-	-	-	-
Total (Original Sample)	41.4	-	-	-	-	-	-	-	-	-	-	-
% Recovery of SSE	114%	-	-	-	-	-	-	-	-	-	-	-

All sample concentrations reported in mg/kg (dry weight)

2207064-14 = RG_ERCKMD_BRYOSE-3_LAEMP_EVO_2022-06_29_NP

Fraction	Se (Total)	% of Total	Se(IV)	Se(VI)	SeCN	MeSe(IV)	SeMet	SeSO3	DMSeO	MeSe(VI)	Unk Se Sp	Speciation Recovery
F1	1.96	4.4%	0.415	0.937	ND	0.043	ND	ND	0.045	ND	ND	73%
F2	17.5	39.5%	12.8	ND	5.26	1.23	ND	0.048	0.063	ND	0.455	113%
F3	21.0	47.4%	-	-	-	-	-	-	-	-	-	-
F4	0.820	1.9%	-	-	-	-	-	-	-	-	-	-
F5	ND	0.0%	-	-	-	-	-	-	-	-	-	-
Total (Original Sample)	44.3	-	-	-	-	-	-	-	-	-	-	-
% Recovery of SSE	93%	-	-	-	-	-	-	-	-	-	-	-

All sample concentrations reported in mg/kg (dry weight)

2207064-15 = RG_MI25_SE-1_LAEMP_EVO_2022-06_NP

Fraction	Se (Total)	% of Total	Se(IV)	Se(VI)	SeCN	MeSe(IV)	SeMet	SeSO3	DMSeO	MeSe(VI)	Unk Se Sp	Speciation Recovery
F1	< 0.029	0.0%	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A
F2	0.214	22.1%	0.146	ND	0.029	0.018	ND	ND	ND	ND	0.009	94%
F3	0.423	43.6%	-	-	-	-	-	-	-	-	-	-
F4	0.202	20.8%	-	-	-	-	-	-	-	-	-	-
F5	ND	0.0%	-	-	-	-	-	-	-	-	-	-
Total (Original Sample)	0.970	-	-	-	-	-	-	-	-	-	-	-
% Recovery of SSE	86%	-	-	-	-	-	-	-	-	-	-	-

All sample concentrations reported in mg/kg (dry weight)

2207064-16 = RG_MI25_SE-2_LAEMP_EVO_2022-06_NP

Fraction	Se (Total)	% of Total	Se(IV)	Se(VI)	SeCN	MeSe(IV)	SeMet	SeSO3	DMSeO	MeSe(VI)	Unk Se Sp	Speciation Recovery
F1	< 0.024	0.0%	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A
F2	0.162	18.2%	0.098	ND	0.019	0.016	ND	ND	ND	ND	0.004	85%
F3	0.521	58.6%	-	-	-	-	-	-	-	-	-	-
F4	0.155	17.4%	-	-	-	-	-	-	-	-	-	-
F5	ND	0.0%	-	-	-	-	-	-	-	-	-	-
Total (Original Sample)	0.889	-	-	-	-	-	-	-	-	-	-	-
% Recovery of SSE	94%	-	-	-	-	-	-	-	-	-	-	-

All sample concentrations reported in mg/kg (dry weight)

2207064-17 = RG_MI25_SE-3_LAEMP_EVO_2022-06_NP

Fraction	Se (Total)	% of Total	Se(IV)	Se(VI)	SeCN	MeSe(IV)	SeMet	SeSO3	DMSeO	MeSe(VI)	Unk Se Sp	Speciation Recovery
F1	0.029	3.4%	0.005	ND	ND	ND	ND	ND	ND	ND	ND	17%
F2	0.218	25.5%	0.124	ND	0.024	0.018	ND	ND	ND	ND	0.012	82%
F3	0.461	53.9%	-	-	-	-	-	-	-	-	-	-
F4	0.145	16.9%	-	-	-	-	-	-	-	-	-	-
F5	ND	0.0%	-	-	-	-	-	-	-	-	-	-
Total (Original Sample)	0.856	-	-	-	-	-	-	-	-	-	-	-
% Recovery of SSE	100%	-	-	-	-	-	-	-	-	-	-	-

All sample concentrations reported in mg/kg (dry weight)

2207064-19 = RG_ERCKDT_SE-2_LAEMP_EVO_2022-06_29_NP

Fraction	Se (Total)	% of Total	Se(IV)	Se(VI)	SeCN	MeSe(IV)	SeMet	SeSO3	DMSeO	MeSe(VI)	Unk Se Sp	Speciation Recovery
F1	1.41	6.2%	0.731	0.395	ND	ND	ND	ND	0.012	ND	ND	81%
F2	7.51	32.8%	4.80	ND	1.74	1.41	ND	ND	ND	ND	0.269	109%
F3	9.32	40.7%	-	-	-	-	-	-	-	-	-	-
F4	0.435	1.9%	-	-	-	-	-	-	-	-	-	-
F5	ND	0.0%	-	-	-	-	-	-	-	-	-	-
Total (Original Sample)	22.9	-	-	-	-	-	-	-	-	-	-	-
% Recovery of SSE	82%	-	-	-	-	-	-	-	-	-	-	-

All sample concentrations reported in mg/kg (dry weight)

2207064-20 = RG_ERCKDT_SE-3_LAEMP_EVO_2022-06_29_NP

Fraction	Se (Total)	% of Total	Se(IV)	Se(VI)	SeCN	MeSe(IV)	SeMet	SeSO3	DMSeO	MeSe(VI)	Unk Se Sp	Speciation Recovery
F1	0.351	3.7%	0.272	ND	ND	0.008	ND	ND	ND	ND	ND	80%
F2	3.92	41.2%	2.38	ND	0.962	0.760	ND	ND	0.006	ND	0.199	110%
F3	3.27	34.4%	-	-	-	-	-	-	-	-	-	-
F4	0.328	3.4%	-	-	-	-	-	-	-	-	-	-
F5	ND	0.0%	-	-	-	-	-	-	-	-	-	-
Total (Original Sample)	9.51	-	-	-	-	-	-	-	-	-	-	-
% Recovery of SSE	83%	-	-	-	-	-	-	-	-	-	-	-

All sample concentrations reported in mg/kg (dry weight)

2207064-21 = RG_ERCKDT_SE-4_LAEMP_EVO_2022-06_29_NP

Fraction	Se (Total)	% of Total	Se(IV)	Se(VI)	SeCN	MeSe(IV)	SeMet	SeSO3	DMSeO	MeSe(VI)	Unk Se Sp	Speciation Recovery
F1	0.884	3.9%	0.674	ND	ND	0.015	ND	ND	ND	ND	ND	78%
F2	10.1	44.1%	7.29	ND	2.24	1.48	ND	0.031	ND	ND	0.345	113%
F3	7.50	32.8%	-	-	-	-	-	-	-	-	-	-
F4	0.361	1.6%	-	-	-	-	-	-	-	-	-	-
F5	ND	0.0%	-	-	-	-	-	-	-	-	-	-
Total (Original Sample)	22.9	-	-	-	-	-	-	-	-	-	-	-
% Recovery of SSE	82%	-	-	-	-	-	-	-	-	-	-	-

All sample concentrations reported in mg/kg (dry weight)

2207064-22 = RG_ERCKDT_SE-5_LAEMP_EVO_2022-06_29_NP

Fraction	Se (Total)	% of Total	Se(IV)	Se(VI)	SeCN	MeSe(IV)	SeMet	SeSO3	DMSeO	MeSe(VI)	Unk Se Sp	Speciation Recovery
F1	1.37	6.3%	0.874	ND	ND	0.030	ND	ND	ND	ND	0.013	67%
F2	8.41	38.4%	5.24	ND	1.62	1.53	ND	0.063	0.011	ND	0.300	104%
F3	6.17	28.2%	-	-	-	-	-	-	-	-	-	-
F4	0.316	1.4%	-	-	-	-	-	-	-	-	-	-
F5	ND	0.0%	-	-	-	-	-	-	-	-	-	-
Total (Original Sample)	21.9	-	-	-	-	-	-	-	-	-	-	-
% Recovery of SSE	74%	-	-	-	-	-	-	-	-	-	-	-

All sample concentrations reported in mg/kg (dry weight)

2207064-25 = RG_ERCKUC_SE-1_LAEMP_EVO_2022-06_30_NP

Fraction	Se (Total)	% of Total	Se(IV)	Se(VI)	SeCN	MeSe(IV)	SeMet	SeSO3	DMSeO	MeSe(VI)	Unk Se Sp	Speciation Recovery
F1	0.127	7.7%	0.023	0.057	ND	0.007	ND	ND	ND	ND	ND	69%
F2	0.368	22.2%	0.146	ND	0.069	0.107	ND	ND	0.005	ND	0.050	102%
F3	0.652	39.3%	-	-	-	-	-	-	-	-	-	-
F4	ND	0.0%	-	-	-	-	-	-	-	-	-	-
F5	ND	0.0%	-	-	-	-	-	-	-	-	-	-
Total (Original Sample)	1.66	-	-	-	-	-	-	-	-	-	-	-
% Recovery of SSE	69%	-	-	-	-	-	-	-	-	-	-	-

All sample concentrations reported in mg/kg (dry weight)

2207064-26 = RG_ERCKUC_SE-2_LAEMP_EVO_2022-06_30_NP

Fraction	Se (Total)	% of Total	Se(IV)	Se(VI)	SeCN	MeSe(IV)	SeMet	SeSO3	DMSeO	MeSe(VI)	Unk Se Sp	Speciation Recovery
F1	1.01	3.5%	0.651	ND	ND	ND	ND	ND	ND	ND	ND	64%
F2	11.6	40.0%	6.11	ND	1.74	4.72	ND	0.081	0.054	ND	0.352	113%
F3	14.7	50.7%	-	-	-	-	-	-	-	-	-	-
F4	0.361	1.2%	-	-	-	-	-	-	-	-	-	-
F5	ND	0.0%	-	-	-	-	-	-	-	-	-	-
Total (Original Sample)	29.0	-	-	-	-	-	-	-	-	-	-	-
% Recovery of SSE	95%	-	-	-	-	-	-	-	-	-	-	-

All sample concentrations reported in mg/kg (dry weight)

2207064-27 = RG_ERCKUC_SE-3_LAEMP_EVO_2022-06_30_NP

Fraction	Se (Total)	% of Total	Se(IV)	Se(VI)	SeCN	MeSe(IV)	SeMet	SeSO3	DMSeO	MeSe(VI)	Unk Se Sp	Speciation Recovery
F1	0.586	4.0%	0.259	0.234	ND	ND	ND	ND	ND	ND	ND	84%
F2	5.45	37.3%	2.98	ND	0.610	1.90	ND	ND	0.044	ND	0.066	103%
F3	6.87	47.1%	-	-	-	-	-	-	-	-	-	-
F4	ND	0.0%	-	-	-	-	-	-	-	-	-	-
F5	ND	0.0%	-	-	-	-	-	-	-	-	-	-
Total (Original Sample)	14.6	-	-	-	-	-	-	-	-	-	-	-
% Recovery of SSE	88%	-	-	-	-	-	-	-	-	-	-	-

All sample concentrations reported in mg/kg (dry weight)

2207064-28 = RG_ERCKDT_BRYOSE-1_LAEMP_EVO_2022-06_29_NP

Fraction	Se (Total)	% of Total	Se(IV)	Se(VI)	SeCN	MeSe(IV)	SeMet	SeSO3	DMSeO	MeSe(VI)	Unk Se Sp	Speciation Recovery
F1	1.32	8.0%	0.533	0.111	ND	0.022	ND	ND	ND	ND	ND	50%
F2	6.48	39.3%	4.25	ND	1.520	0.925	ND	ND	ND	ND	0.247	107%
F3	8.16	49.5%	-	-	-	-	-	-	-	-	-	-
F4	0.378	2.3%	-	-	-	-	-	-	-	-	-	-
F5	ND	0.0%	-	-	-	-	-	-	-	-	-	-
Total (Original Sample)	16.5	-	-	-	-	-	-	-	-	-	-	-
% Recovery of SSE	99%	-	-	-	-	-	-	-	-	-	-	-

All sample concentrations reported in mg/kg (dry weight)

2207064-29 = RG_ERCKDT_BRYOSE-2_LAEMP_EVO_2022-06_29_NP

Fraction	Se (Total)	% of Total	Se(IV)	Se(VI)	SeCN	MeSe(IV)	SeMet	SeSO3	DMSeO	MeSe(VI)	Unk Se Sp	Speciation Recovery
F1	0.933	3.3%	0.500	0.199	ND	0.014	ND	ND	ND	ND	ND	76%
F2	12.5	43.9%	11.3	ND	2.15	0.860	ND	0.027	0.026	ND	0.235	117%
F3	10.1	35.4%	-	-	-	-	-	-	-	-	-	-
F4	0.524	1.8%	-	-	-	-	-	-	-	-	-	-
F5	ND	0.0%	-	-	-	-	-	-	-	-	-	-
Total (Original Sample)	28.5	-	-	-	-	-	-	-	-	-	-	-
% Recovery of SSE	84%	-	-	-	-	-	-	-	-	-	-	-

All sample concentrations reported in mg/kg (dry weight)

2207064-30 = RG_ERCKDT_BRYOSE-3_LAEMP_EVO_2022-06_29_NP

Fraction	Se (Total)	% of Total	Se(IV)	Se(VI)	SeCN	MeSe(IV)	SeMet	SeSO3	DMSeO	MeSe(VI)	Unk Se Sp	Speciation Recovery
F1	0.929	3.6%	ND	0.721	ND	ND	ND	ND	ND	ND	ND	78%
F2	8.27	31.9%	5.05	ND	1.79	1.72	ND	ND	0.024	ND	0.319	108%
F3	13.7	52.9%	-	-	-	-	-	-	-	-	-	-
F4	0.346	1.3%	-	-	-	-	-	-	-	-	-	-
F5	ND	0.0%	-	-	-	-	-	-	-	-	-	-
Total (Original Sample)	25.9	-	-	-	-	-	-	-	-	-	-	-
% Recovery of SSE	90%	-	-	-	-	-	-	-	-	-	-	-

All sample concentrations reported in mg/kg (dry weight)

2207064-33 = RG_GATE_SE-1_LAEMP_EVO_2022-06_28_NP

Fraction	Se (Total)	% of Total	Se(IV)	Se(VI)	SeCN	MeSe(IV)	SeMet	SeSO3	DMSeO	MeSe(VI)	Unk Se Sp	Speciation Recovery
F1	0.789	4.9%	0.644	0.020	ND	0.012	ND	ND	ND	ND	ND	86%
F2	4.54	28.2%	3.37	ND	0.574	0.595	ND	0.022	ND	ND	0.155	104%
F3	6.55	40.7%	-	-	-	-	-	-	-	-	-	-
F4	0.291	1.8%	-	-	-	-	-	-	-	-	-	-
F5	ND	0.0%	-	-	-	-	-	-	-	-	-	-
Total (Original Sample)	16.1	-	-	-	-	-	-	-	-	-	-	-
% Recovery of SSE	76%	-	-	-	-	-	-	-	-	-	-	-

All sample concentrations reported in mg/kg (dry weight)

2207064-34 = RG_GATE_SE-2_LAEMP_EVO_2022-06_28_NP

Fraction	Se (Total)	% of Total	Se(IV)	Se(VI)	SeCN	MeSe(IV)	SeMet	SeSO3	DMSeO	MeSe(VI)	Unk Se Sp	Speciation Recovery
F1	0.756	6.5%	0.625	ND	ND	0.012	ND	ND	ND	ND	ND	84%
F2	3.96	34.1%	2.85	0.028	0.505	0.537	ND	0.017	0.005	ND	0.178	104%
F3	6.59	56.8%	-	-	-	-	-	-	-	-	-	-
F4	0.261	2.3%	-	-	-	-	-	-	-	-	-	-
F5	ND	0.0%	-	-	-	-	-	-	-	-	-	-
Total (Original Sample)	11.6	-	-	-	-	-	-	-	-	-	-	-
% Recovery of SSE	100%	-	-	-	-	-	-	-	-	-	-	-

All sample concentrations reported in mg/kg (dry weight)

2207064-35 = RG_GATE_SE-3_LAEMP_EVO_2022-06_28_NP

Fraction	Se (Total)	% of Total	Se(IV)	Se(VI)	SeCN	MeSe(IV)	SeMet	SeSO3	DMSeO	MeSe(VI)	Unk Se Sp	Speciation Recovery
F1	0.796	7.9%	0.682	ND	ND	0.013	ND	ND	ND	ND	ND	87%
F2	4.29	42.5%	3.13	0.028	0.518	0.518	ND	0.013	0.004	ND	0.173	102%
F3	6.18	61.2%	-	-	-	-	-	-	-	-	-	-
F4	0.341	3.4%	-	-	-	-	-	-	-	-	-	-
F5	ND	0.0%	-	-	-	-	-	-	-	-	-	-
Total (Original Sample)	10.1	-	-	-	-	-	-	-	-	-	-	-
% Recovery of SSE	115%	-	-	-	-	-	-	-	-	-	-	-

All sample concentrations reported in mg/kg (dry weight)

2207064-36 = RG_BOCK_SE-1_LAEMP_EVO_2022-06_28_NP

Fraction	Se (Total)	% of Total	Se(IV)	Se(VI)	SeCN	MeSe(IV)	SeMet	SeSO3	DMSeO	MeSe(VI)	Unk Se Sp	Speciation Recovery
F1	0.151	1.7%	0.099	0.024	ND	0.006	ND	ND	ND	ND	ND	85%
F2	0.899	10.1%	0.444	0.011	0.183	0.161	ND	ND	0.004	ND	0.070	97%
F3	6.13	68.9%	-	-	-	-	-	-	-	-	-	-
F4	0.137	1.5%	-	-	-	-	-	-	-	-	-	-
F5	ND	0.0%	-	-	-	-	-	-	-	-	-	-
Total (Original Sample)	8.90	-	-	-	-	-	-	-	-	-	-	-
% Recovery of SSE	82%	-	-	-	-	-	-	-	-	-	-	-

All sample concentrations reported in mg/kg (dry weight)

2207064-37 = RG_BOCK_SE-2_LAEMP_EVO_2022-06_28_NP

Fraction	Se (Total)	% of Total	Se(IV)	Se(VI)	SeCN	MeSe(IV)	SeMet	SeSO3	DMSeO	MeSe(VI)	Unk Se Sp	Speciation Recovery
F1	0.283	2.4%	0.195	0.047	ND	ND	ND	ND	ND	ND	ND	86%
F2	1.66	14.2%	0.848	0.013	0.261	0.280	ND	ND	0.003	ND	0.113	91%
F3	8.53	72.9%	-	-	-	-	-	-	-	-	-	-
F4	0.307	2.6%	-	-	-	-	-	-	-	-	-	-
F5	ND	0.0%	-	-	-	-	-	-	-	-	-	-
Total (Original Sample)	11.7	-	-	-	-	-	-	-	-	-	-	-
% Recovery of SSE	92%	-	-	-	-	-	-	-	-	-	-	-

All sample concentrations reported in mg/kg (dry weight)

2207064-38 = RG_BOCK_SE-3_LAEMP_EVO_2022-06_28_NP

Fraction	Se (Total)	% of Total	Se(IV)	Se(VI)	SeCN	MeSe(IV)	SeMet	SeSO3	DMSeO	MeSe(VI)	Unk Se Sp	Speciation Recovery
F1	0.315	2.5%	0.206	0.059	ND	ND	ND	ND	ND	ND	ND	84%
F2	1.73	13.5%	0.947	0.013	0.305	0.341	ND	ND	0.006	ND	0.127	101%
F3	7.89	61.6%	-	-	-	-	-	-	-	-	-	-
F4	0.288	2.3%	-	-	-	-	-	-	-	-	-	-
F5	ND	0.0%	-	-	-	-	-	-	-	-	-	-
Total (Original Sample)	12.8	-	-	-	-	-	-	-	-	-	-	-
% Recovery of SSE	80%	-	-	-	-	-	-	-	-	-	-	-

All sample concentrations reported in mg/kg (dry weight)

2207064-39 = RG_BOCKRD_SE-1_LAEMP_EVO_2022-06_28_NP

Fraction	Se (Total)	% of Total	Se(IV)	Se(VI)	SeCN	MeSe(IV)	SeMet	SeSO3	DMSeO	MeSe(VI)	Unk Se Sp	Speciation Recovery
F1	0.257	5.3%	0.116	0.026	ND	0.012	ND	ND	ND	ND	ND	60%
F2	1.03	21.4%	0.543	0.012	0.159	0.205	ND	ND	ND	ND	0.058	95%
F3	1.94	40.2%	-	-	-	-	-	-	-	-	-	-
F4	ND	0.0%	-	-	-	-	-	-	-	-	-	-
F5	ND	0.0%	-	-	-	-	-	-	-	-	-	-
Total (Original Sample)	4.82	-	-	-	-	-	-	-	-	-	-	-
% Recovery of SSE	67%	-	-	-	-	-	-	-	-	-	-	-

All sample concentrations reported in mg/kg (dry weight)

2207064-40 = RG_BOCKRD_SE-2_LAEMP_EVO_2022-06_28_NP

Fraction	Se (Total)	% of Total	Se(IV)	Se(VI)	SeCN	MeSe(IV)	SeMet	SeSO3	DMSeO	MeSe(VI)	Unk Se Sp	Speciation Recovery
F1	0.376	4.9%	0.193	ND	ND	0.008	ND	ND	ND	ND	ND	53%
F2	2.09	27.1%	1.11	0.016	0.345	0.483	ND	ND	0.009	ND	0.121	100%
F3	3.42	44.4%	-	-	-	-	-	-	-	-	-	-
F4	0.125	1.6%	-	-	-	-	-	-	-	-	-	-
F5	ND	0.0%	-	-	-	-	-	-	-	-	-	-
Total (Original Sample)	7.70	-	-	-	-	-	-	-	-	-	-	-
% Recovery of SSE	78%	-	-	-	-	-	-	-	-	-	-	-

All sample concentrations reported in mg/kg (dry weight)

2207064-41 = RG_BOCKRD_SE-3_LAEMP_EVO_2022-06_28_NP

Fraction	Se (Total)	% of Total	Se(IV)	Se(VI)	SeCN	MeSe(IV)	SeMet	SeSO3	DMSeO	MeSe(VI)	Unk Se Sp	Speciation Recovery
F1	0.243	4.4%	0.214	ND	ND	0.011	ND	ND	ND	ND	ND	93%
F2	1.61	29.4%	1.06	0.016	0.194	0.424	ND	ND	0.004	ND	0.114	113%
F3	3.01	55.0%	-	-	-	-	-	-	-	-	-	-
F4	0.197	3.6%	-	-	-	-	-	-	-	-	-	-
F5	ND	0.0%	-	-	-	-	-	-	-	-	-	-
Total (Original Sample)	5.47	-	-	-	-	-	-	-	-	-	-	-
% Recovery of SSE	93%	-	-	-	-	-	-	-	-	-	-	-

All sample concentrations reported in mg/kg (dry weight)

COC ID:		JUNE EVO LAEMP 2022		TURNAROUND TIME:		RUSEI	
PROJECT/CLIENT INFO				LABORATORY			
Facility Name / Job#	Regional effects program			Lab Name	Brooks Applied Labs		
Project Manager	Mike Pope			Lab Contact	Ben Wozniak		
Email	mike.pope@teck.com			Email	Ben@brooksapplied.com		
Address	421 Pine Avenue			Address	18804 North Creek Parkway Suite 100		
City	Sparwood	Province	BC	City	Bothell	Province	WA
Postal Code	V0B 2G0	Country	Canada	Postal Code	98011	Country	United S
Phone Number	250-425-8202			Phone Number	(206) 753-6158		

SAMPLE DETAILS								ANALYSIS REQUESTED												
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	Asbestos	Lead	Cadmium	Mercury	Chromium	Copper	Iron	Manganese	Nickel	Selenium	Silver	Zinc	Other
RG_ERCKUT_SE-1_LAEMP_EVO_2022-06_29_NP	RG_ERCKUT	SESeSp	No	6/29/2022	8:00	G	1	X												
RG_ERCKUT_SE-2_LAEMP_EVO_2022-06_29_NP	RG_ERCKUT	SESeSp	No	6/29/2022	8:05	G	1	X												
RG_ERCKUT_SE-3_LAEMP_EVO_2022-06_29_NP	RG_ERCKUT	SESeSp	No	6/29/2022	8:10	G	1	X												
RG_ERCKUT_SE-4_LAEMP_EVO_2022-06_29_NP	RG_ERCKUT	SESeSp	No	6/29/2022	8:15	G	1	X												
RG_ERCKUT_SE-5_LAEMP_EVO_2022-06_29_NP	RG_ERCKUT	SESeSp	No	6/29/2022	8:20	G	1	X												
RG_ERCKUT_BRYOSE-1_LAEMP_EVO_2022-06_29_NP	RG_ERCKUT	SESeSp	No	6/29/2022	8:25	G	1	X												
RG_ERCKUT_BRYOSE-2_LAEMP_EVO_2022-06_29_NP	RG_ERCKUT	SESeSp	No	6/29/2022	8:30	G	1	X												
RG_ERCKUT_BRYOSE-3_LAEMP_EVO_2022-06_29_NP	RG_ERCKUT	SESeSp	No	6/29/2022	8:35	G	1	X												

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
PO 817033	Alex McClymont	July 4, 2022	<i>WJ</i> LBAL 7/7/22 07:25

NO OF BOTTLES RETURNED/DESCRIPTION		Samplers Name	Mobile #
Regular (default)		Alex McClymont	780-293-6750
Priority (2-3 business days) - 50% surcharge	X	Samplers Signature	Date/Time
Emergency (1 Business Day) - 100% surcharge			July 4, 2022
For Emergency <1 Day, ASAP or Weekend - Contact ALS			

COC ID:		JUNE EVO LAEMP 2022				TURNAROUND TIME:		RUSH		
PROJECT/CLIENT INFO						LABORATORY				
Facility Name / Job# REP						Lab Name Brooks Applied Labs		Excel PDF EDD		
Project Manager Mike Pope						Lab Contact Ben Wozniak		mike.pope@teck.com		
Email mike.pope@teck.com						Email Ben@brooksapplied.com		teckco@equisonline.ca		
Address 421 Pine Avenue						Address 18804 North Creek Parkway		lbrown@minnow.ca		
						Suite 100		petca.rts@teck.com		
City Sparwood Province BC						City Bothell Province WA		yfer@minnow.com		
Postal Code V0B 2G0 Country Canada						Postal Code 98011 Country United S				
Phone Number 250-425-8202						Phone Number (206) 753-6158				

SAMPLE DETAILS								ANALYSIS REQUESTED					
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS	Priority	Field #1	Lab #1	Field #2	Lab #2
RG_ERCKMD_SE-1_LAEMP_EVO_2022-06_29_NP	RG_ERCKMD	SESeSp	No	6/29/2022	8:00	G	1	Selenium sequential extraction	NONE				
RG_ERCKMD_SE-2_LAEMP_EVO_2022-06_29_NP	RG_ERCKMD	SESeSp	No	6/29/2022	8:05	G	1						
RG_ERCKMD_SE-3_LAEMP_EVO_2022-06_29_NP	RG_ERCKMD	SESeSp	No	6/29/2022	8:10	G	1						
RG_ERCKMD_BRYOSE-1_LAEMP_EVO_2022-06_29_NP	RG_ERCKMD	SESeSp	No	6/29/2022	8:25	G	1						
RG_ERCKMD_BRYOSE-2_LAEMP_EVO_2022-06_29_NP	RG_ERCKMD	SESeSp	No	6/29/2022	8:30	G	1						
RG_ERCKMD_BRYOSE-3_LAEMP_EVO_2022-06_29_NP	RG_ERCKMD	SESeSp	No	6/29/2022	8:35	G	1						
RG_MI25_SE-1_LAEMP_EVO_2022-06_NP	RG_MI25	SESeSp	No	6/30/2022	9:25	G	2						
RG_MI25_SE-2_LAEMP_EVO_2022-06_NP	RG_MI25	SESeSp	No	6/30/2022	9:45	G	1						
RG_MI25_SE-3_LAEMP_EVO_2022-06_NP	RG_MI25	SESeSp	No	6/30/2022	9:55	G	2						

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS PO 817033	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
	Alex McClymont	July 4, 2022	<i>WPA LDAL</i> 7/4/22 07:25

NB OF BOTTLES RETURNED/DESCRIPTION		SAMPLER'S NAME		MOBILE #	
Regular (default)		Alex McClymont		780-293-6750	
Priority (2-3 business days) - 50% surcharge	X	SAMPLER'S SIGNATURE		DATE/TIME	July 4, 2022
Emergency (1 Business Day) - 100% surcharge		<i>[Signature]</i>			
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

COC ID:	JUNE EVO LAEMP 2022				TURNAROUND TIME:	RUSH			
PROJECT/CLIENT INFO					LABORATORY				
Facility Name / Job#	REP				Lab Name	Brooks Applied Labs			
Project Manager	Mike Pope				Lab Contact	Ben Wozniak			
Email	mike.pope@teck.com				Email	Ben@brooksapplied.com			
Address	421 Pine Avenue				Address	18804 North Creek Parkway Suite 100			
City	Sparwood		Province	BC	City	Bothell		Province	WA
Postal Code	V0B 2G0		Country	Canada	Postal Code	98011		Country	United S
Phone Number	250-425-8202				Phone Number	(206) 753-6158			

Excel	PDF	EDD
mike.pope@teck.com		
ben.wozniak@brooksapplied.com		
ben.wozniak@brooksapplied.com		
eric.schmitt@teck.com		
tyler.manning@brooksapplied.com		

SAMPLE DETAILS								ANALYSIS REQUESTED					
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	Priority	Method	Lab	Field #	Lab #	Time
RG_ERCKDT_SE-2 LAEMP_EVO_2022-06_29_NP	RG_ERCKDT	SESeSp	No	6/29/2022	8:05	G	1	NONE					
RG_ERCKDT_SE-3 LAEMP_EVO_2022-06_29_NP	RG_ERCKDT	SESeSp	No	6/29/2022	8:10	G	1						
RG_ERCKDT_SE-4 LAEMP_EVO_2022-06_29_NP	RG_ERCKDT	SESeSp	No	6/29/2022	8:15	G	1						
RG_ERCKDT_SE-5 LAEMP_EVO_2022-06_29_NP	RG_ERCKDT	SESeSp	No	6/29/2022	8:20	G	1						
RG_ERCKUC_SE-1 LAEMP_EVO_2022-06_30_NP	RG_ERCKUC	SESeSp	No	6/30/2022	8:00	G	1						
RG_ERCKUC_SE-2 LAEMP_EVO_2022-06_30_NP	RG_ERCKUC	SESeSp	No	6/30/2022	8:05	G	1						
RG_ERCKUC_SE-3 LAEMP_EVO_2022-06_30_NP	RG_ERCKUC	SESeSp	No	6/30/2022	8:10	G	1						
RG_BOCK_SE-1 LAEMP_EVO_2022-06_28_NP	RG_BOCK	SESeSp	No	6/28/2022	9:30	G	1						
RG_BOCK_SE-2 LAEMP_EVO_2022-06_28_NP	RG_BOCK	SESeSp	No	6/28/2022	9:35	G	1						
RG_BOCK_SE-3 LAEMP_EVO_2022-06_28_NP	RG_BOCK	SESeSp	No	6/28/2022	9:40	G	1						

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
PO 817033	Alex McClymont	July 4, 2022	<i>[Signature]</i> (OAL) 7/7/22 07:25

NB OF BOTTLES RETURNED/DESCRIPTION	Sampler's Name	Mobile #
Regular (default) X	Alex McClymont	780-293-6750
Priority (2-3 business days) - 50% surcharge	Sampler's Signature	Date/Time
Emergency (1 Business Day) - 100% surcharge	<i>[Signature]</i>	July 4, 2022
For Emergency <1 Day, ASAP or Weekend - Contact ALS		

COC ID:		JUNE EVO LAEMP 2022				TURNAROUND TIME:				RUSH					
PROJECT/CLIENT INFO										LABORATORY					
Facility Name / Job#		REP				Lab Name		Brooks Applied Labs				Excel	PDF	EDD	
Project Manager		Mike Pope				Lab Contact		Ben Wozniak				mike.pope@teck.com			
Email		mike.pope@teck.com				Email		Ben@brooksapplied.com				teckast@enbridge.com			
Address		421 Pine Avenue				Address		18804 North Creek Parkway				bowron@nmtrow.ca			
City		Sparwood		Province	BC	City		Bothell	Province	WA	erica.rill@teck.com				
Postal Code		V0B 2G0		Country	Canada	Postal Code		98011	Country	United S	vpr.maher@nmtrow.ca				
Phone Number		250-425-8202				Phone Number		(206) 753-6158							

SAMPLE DETAILS								ANALYSIS REQUESTED								
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	PRELIM.	ANALYSIS INFORMATION	THIRD - F. Field, L. Lab, FL: Field & Lab, N. None						
RG_ERCKDT_BRYOSE-1_LAEMP_EVO_2022-06_29_NP	RG_ERCKDT	SESeSp	No	6/29/2022	8:25	G	1		Selenium sequential extraction							
RG_ERCKDT_BRYOSE-2_LAEMP_EVO_2022-06_29_NP	RG_ERCKDT	SESeSp	No	6/29/2022	8:30	G	1		X							
RG_ERCKDT_BRYOSE-3_LAEMP_EVO_2022-06_29_NP	RG_ERCKDT	SESeSp	No	6/29/2022	8:35	G	1		X							
RG_BOCKRD_SE-1_LAEMP_EVO_2022-06_28_NP	RG_BOCKRD	SESeSp	No	6/28/2022	11:00	G	1		X							
RG_BOCKRD_SE-2_LAEMP_EVO_2022-06_28_NP	RG_BOCKRD	SESeSp	No	6/28/2022	11:05	G	1		X							
RG_BOCKRD_SE-3_LAEMP_EVO_2022-06_28_NP	RG_BOCKRD	SESeSp	No	6/28/2022	11:10	G	1		X							
RG_GATE_SE-1_LAEMP_EVO_2022-06_28_NP	RG_GATE	SESeSp	No	6/28/2022	8:30	G	1		X							
RG_GATE_SE-2_LAEMP_EVO_2022-06_28_NP	RG_GATE	SESeSp	No	6/28/2022	8:35	G	1		X							
RG_GATE_SE-3_LAEMP_EVO_2022-06_28_NP	RG_GATE	SESeSp	No	6/28/2022	8:40	G	1		X							

ADDITIONAL COMMENT/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
PO 817033	Alex McClymont	July 4, 2022	<i>[Signature]</i> (DAL) 7/4/22 07:25

NO. OF BOTTLES RETURNED/DESCRIPTION	SAMPLER'S NAME	MOBILE #	DATE/TIME
Regular (default) X Priority (2-3 business days) - 50% surcharge Emergency (1 Business Day) - 100% surcharge For Emergency <1 Day, ASAP or Weekend - Contact ALS	Alex McClymont	780-293-6750	July 4, 2022

Confidential

RW Hot Shot Service Inc.

BAL Final Report 2207064

55071

STRAIGHT BILL OF LADING
NOT NEGOTIABLE

24 Hour Hot Shot Service
P.O. BOX 276, SPARWOOD, BC V0B 2G0
PHONE: (250) 425-7447
FAX: (250) 425-7450

VOICE TO		DATE <u>July 5-22</u>	
BILL OF LADING #		PURCHASE ORDER NUMBER	
SHIPPER (FROM)		CONSIGNEE (TO)	
REET		STREET	
CITY/PROVINCE		CITY/PROVINCE	
POSTAL CODE		POSTAL CODE	
AIRLINE CARRIER		WAYBILL #	
SOCIAL INSTRUCTIONS			
PACKAGES	DESCRIPTION OF ARTICLES AND SPECIAL MARKS	WEIGHT (Subject to Correction)	FREIGHT CHARGES
5	5 Coolers - winter samples	175 lbs	SHIPPER TO CHECK <input type="checkbox"/> PREPAID <input type="checkbox"/> COLLECT If not indicated, shipping will automatically move collect
WAITING _____			XPU _____
CHARGES _____			FSC _____
SUB TOTAL _____			GST _____
TOTAL \$ _____			DATE <u>July 6</u>
PAT/OWNER'S RISK - WRITE ORC HERE _____			TIME <u>7:45 pm</u>
SHIPPER'S SIGNATURE - PICK UP BY	DRIVER'S SIGNATURE - DELIVERY BY	SHIPPER'S SIGNATURE	CONSIGNEE SIGN
<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>

PAPS# RWHV55071

Cooler ID: COOLER 10

COC Y N Temperature: -0.8°C

IR: 33

Coolant Type: Ice Blue Ice Ambient

Notes:

Sampling Locations:

RG		EV							
T/D	SP	T/D	SP	T/D	SP	T/D	SP	T/D	SP
Soils	Good plastic		Good plastic						

Opened By: ASG

Date: 6/7/22

Effective 7/29/20

COPY Revision 004

From: [Tyler Mehler](#)
To: [Jeremy Maute](#); mike.pope@teck.com; Jessica.Ritz@teck.com; [Lisa Bowron](#)
Cc: [Mariyeh Moradnazard](#); [Lindy Wellenbrock](#); [Ethan Upp](#)
Subject: RE: Brooks Samples Received - WO (2207064) REP - Privileged and Confidential
Date: Monday, July 25, 2022 12:01:04 PM

Please use the COC time. Thanks for the clarification regarding the cracked lid.

From: Jeremy Maute <Jeremy@brooksapplied.com>
Sent: Monday, July 25, 2022 12:56 PM
To: mike.pope@teck.com; Jessica.Ritz@teck.com; [Lisa Bowron <LBowron@minnow.ca>](mailto:LBowron@minnow.ca); [Tyler Mehler <tyler.mehler@minnow.ca>](mailto:Tyler.Mehler@minnow.ca)
Cc: [Mariyeh Moradnazard <mariyeh@brooksapplied.com>](mailto:mariyeh@brooksapplied.com); [Lindy Wellenbrock <lindy@brooksapplied.com>](mailto:lindy@brooksapplied.com); [Ethan Upp <ethan@brooksapplied.com>](mailto:ethan@brooksapplied.com)
Subject: Brooks Samples Received - WO (2207064) REP - Privileged and Confidential
Importance: High

Good afternoon,

I apologize. A confirmation of sample reception email was not sent out for this item initially. This is confirmation that samples from the REP project were received at Brooks Applied Labs on July 7, 2022. The samples were logged in for the following turnaround time (TAT):

WO#2207064 – (15-19 business days) TAT

- Please note that we are prioritizing these analyses and we will make every effort to report ASAP

Date/Time Collected values listed on the chain-of-custody (COC) form did not exactly match the corresponding **Date/Time Collected** values on the container labels for several samples in this work order. The discrepancies are described in the table below.

Date/Time Collected Discrepancies

Laboratory ID	Sample ID	Date/Time Collected (on COC form)	Date/Time Collected (on container label)

2207064-09	RG_ERCKMD_SE-1_LAEMP_EVO_2022-06_29_NP	06/29/22 08:00	06/29/22 11:11
2207064-10	RG_ERCKMD_SE-2_LAEMP_EVO_2022-06_29_NP	06/29/22 08:05	06/29/22 11:05
2207064-11	RG_ERCKMD_SE-3_LAEMP_EVO_2022-06_29_NP	06/29/22 08:10	06/29/22 11:10
2207064-12	RG_ERCKMD_BRYOSE-1_LAEMP_EVO_2022-06_29_NP	06/29/22 08:25	06/29/22 11:00
2207064-13	RG_ERCKMD_BRYOSE-2_LAEMP_EVO_2022-06_29_NP	06/29/22 08:30	06/29/22 11:05
2207064-19	RG_ERCKDT_SE-2_LAEMP_EVO_2022-06_29_NP	06/29/22 08:05	06/29/22 11:45
2207064-20	RG_ERCKDT_SE-3_LAEMP_EVO_2022-06_29_NP	06/29/22 08:10	06/29/22 14:30
2207064-22	RG_ERCKDT_SE-5_LAEMP_EVO_2022-06_29_NP	06/29/22 08:20	06/29/22 14:30
2207064-28	RG_ERCKDT_BRYOSE-1_LAEMP_EVO_2022-06_29_NP	06/29/22 08:25	06/29/22 13:30
2207064-30	RG_ERCKDT_BRYOSE-3_LAEMP_EVO_2022-06_29_NP	06/29/22 08:35	06/29/22 11:35

Samples in the table above were logged in using the **Date/Time Collected** values listed on the COC form (column 3 in the table above). **Please let us know if you would have us do otherwise.**

Upon receipt, laboratory staff at Brooks Applied Labs (BAL) noted that sample *RG_ERCKUC_SE-3_LAEMP_EVO_2022-06_30_NP* (06/30/2022 08:10, laboratory ID = 2207064-27) had a cracked lid. The material from 2207064-27 was transferred into a new container with a clean, undamaged lid. Due to the improper sample storage during shipment to BAL, results for this sample will be qualified as estimated (**J-1**).

I've attached copies of the COC forms. If you have any questions, please contact the project manager, Jeremy Maute.

Regards,

Jeremy Maute

Senior Project Manager
206-753-6116
email: jeremy@brooksapplied.com

BROOKS APPLIED LABS

Meaningful Metals Data and Advanced Speciation Solutions

P: 206-632-6206 | F: 206-632-6017 | **13751 Lake City Way NE, Suite 108, Seattle, WA 98125, USA**

Brooks Applied Labs has moved to a new facility! As of June 20th, all sample shipments should be sent to the following address: 13751 Lake City Way NE, Suite 108, Seattle, WA 98125.

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18804 North Creek Parkway, Ste 100, Bothell, WA 98011 • USA • T: 206 632 6206 F: 206 632 6017 • info@brooksapplied.com

March 3, 2023

Teck Resources Limited - Vancouver
Mike Pope
421 Pine Avenue
Sparwood, B.C. CANADA V0B2G0
mike.pope@teck.com

Re: Regional effects program

Revision 1

Following the submission of the original report on September 22, 2022, a revised report was requested. Revised chain-of-custody (COC) forms were provided via email. BAL was instructed to use the corrected **Sample ID** values (on the revised COC forms) for reporting. In this revised report, **Sample ID** values were amended for reporting, in accordance with the revised COC forms. No other changes were made with respect to the initial report submitted.

Dear Mike Pope,

On August 4, 2022, Brooks Applied Labs (BAL) received forty-one (41) solid samples at an acceptable temperature of 4.4 °C.

COC forms were received with the shipment, and client samples were initially logged in using the **Sample ID** values on this set of COC forms. Revised chain-of-custody (COC) forms were subsequently provided via email. BAL was instructed to use the corrected **Sample ID** values (on the revised COC forms) for reporting. In order to document sample custody, both sets of COC forms are included in this report.

Each solid sample was logged-in for the analysis of total recoverable Se, Se sequential extraction, and total solids.

The sediments were wet and the water overlaying the sediments in the containers was decanted before the sediments were stored frozen. After receipt, all solid samples were stored in accordance with BAL SOPs.

Total Recoverable Se (EPA 3050b MOD)

An aliquot of each solid was digested via modified EPA Method 3050B, using additions of concentrated nitric acid, hydrogen peroxide, and hydrochloric acid. The resulting digests were analyzed for Se content via inductively coupled plasma triple quadrupole mass spectrometry (ICP-QQQ-MS). The ICP-QQQ-MS instrumentation uses advanced interference removal techniques to ensure accuracy of the sample results. For more information, please visit the *Interference Reduction Technology* section on our website, brooksapplied.com.

Batch B221842 (Total Recoverable Se)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the Sample Results page for sample-specific MDLs, MRLs, and other details.

Poor mass balance was observed in several samples (2208060-02, 2208060-12, 2208060-15, 2208060-25, and 2208060-38) when the total selenium results (EPA 3050b MOD) were compared to the corresponding selenium selective sequential extraction (SSE) results. Re-analyses confirmed the original results, suggesting sample heterogeneity in the sediments. Consequently, no additional corrective actions are necessary. Results for these samples are reported from batch B221842.

Percent Total Solids (SOP BAL-0501)

An aliquot of each solid was measured into a pre-weighed vessel, dried in an oven at 105°C overnight, weighed again, and the percent of dried solid material was calculated.

Batch B221848 (%TS)

%TS results were used to dry-weight correct results for the remaining analytical parameters.

Se Selective Sequential Extraction (SSE)

An aliquot of each solid was extracted in accordance with BAL's in-house five-step selective sequential extraction for Se. The samples were extracted with a series of reagents designed to target the following fractions:

SSE Fraction	Fraction Description
F1	Se present as salt (e.g., SeO_4^{2-} , MeSe(IV) , SeCN)
F2	Weakly adsorbed Se (e.g., SeO_4^{2-} , SeO_3^{2-} , SeCN , MeSe(IV))
F3	Amorphous and crystalline Se (e.g., S_2Se , Se^0)
F4	Selenides (e.g., HgSe , PbSe , CdSe , ZnSe)
F5	Residual Se

All resulting SSE fractions were directly analyzed for Se via inductively coupled plasma triple quadrupole mass spectrometry (ICP-QQQ-MS) and have been reported as Se(F1), Se(F2), Se(F3), Se(F4), and Se(F5) according to the corresponding extraction step (see table above).

Batch B221798 (SSE F1)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

Batch B221808 (SSE F2)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

The relative percent difference (RPD) for selenium (Se(F2)) in the laboratory duplicate sample B221808-DUP3 was greater than the control limit of 25%, at 28%. The (Se(F2)) result for the source sample (2208060-20) should be considered estimated due to poor precision and has been qualified (**M**) to reflect this discrepancy.

Batch B221826 (SSE F3)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the Sample Results page for sample-specific MDLs, MRLs, and other details.

Batch B221830 (SSE F4)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

Batch B221863 (SSE F5)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the Sample Results page for sample-specific MDLs, MRLs, and other details.

Se Speciation for the SSE

Fractions F1 and F2 of the SSE were also analyzed for individual Se species via ion chromatography inductively coupled plasma collision reaction cell mass spectrometry (IC-ICP-CRC-MS). Selenium species were chromatographically separated on an ion exchange column and then quantified using inductively coupled plasma collision reaction cell mass spectrometry (ICP-CRC-MS); for more information on this determinative technique, please visit the *Interference Reduction Technology* section on our website. The chromatographic method applied for the analyses provides greater retention of methylseleninic acid and selenomethionine, allowing for more definitive quantitation of these species.

Selenium speciation for these SSE fractions was defined as dissolved selenite [*Se(IV)*], selenate [*Se(VI)*], selenocyanate [*SeCN*], methylseleninic acid [*MeSe(IV)*], selenomethionine [*SeMet*], selenosulfate [*SeSO₃*], and dimethylselenoxide [*DMSeO*]. Methaneselenonic acid [*MeSe(VI)*] is reported under *Se Unk A*. The total concentration of any remaining unidentified Se-containing species detected in each sample has also been reported as [*Unk Se Sp*].

DMS₂SeO elutes early in the chromatographic run due to the nature of the molecule and the applied chromatographic separation method. Since this species elutes near the dead volume, additional Se species may coelute. Alternate methods can be applied, upon client request, to increase the separation of DMS₂SeO from potentially co-eluting Se species.

Batch B221769 (Selenium Speciation on SSE F1)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the Sample Results page for sample-specific MDLs, MRLs, and other details.

Batch B221770 (Selenium Speciation on SSE F2)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the Sample Results page for sample-specific MDLs, MRLs, and other details.

The RPD values for (*Se(IV) F2*) and (*MeSe(IV) F2*) in the laboratory duplicate sample B221770-DUP1 were greater than the control limit of 25%, at 31% and 66%, respectively. (*Se(IV) F2*) and (*MeSe(IV) F2*) results in the source sample (2208060-02) have been qualified as estimated (**M**) due to poor precision in the laboratory duplicate sample B221770-DUP1.

The RPD values for (*Se(IV) F2*), (*SeCN F2*), and (*MeSe(IV) F2*) in the laboratory duplicate sample B221770-DUP3 were greater than the control limit of 25%, at 29%, 51%, and 55%, respectively. (*Se(IV) F2*), (*SeCN F2*), and (*MeSe(IV) F2*) results in the source sample (2208060-20) have been qualified as estimated (**M**) due to poor precision in the laboratory duplicate sample B221770-DUP3.

Post spikes are employed on SSE samples at the instrument. The post recoveries for (*Se(IV) F2*) and (*SeCN F2*) in B221770-PS2 were greater than upper control limit of 125%, at 127% and 129%, respectively. The *Se(IV) F2*) and (*SeCN F2*) results for the source sample (2208060-02) should be considered estimated and have been qualified (**N**) due to the spike recovery outliers.

In instances when a matrix spike/matrix spike duplicate (MS/MSD) set was spiked at a level less than the native sample concentration, the recoveries and the RPD were not considered valid indicators of data quality. In such instances, the recoveries of the blank spikes (BS) and/or standard reference materials (SRM) demonstrate the accuracy of the applied methods. When the spiking level was less than 25% of the native sample concentration, the spike recovery was not reported (NR) and the RPD of the MS/MSD set was not calculated (N/C).

Except for concentration qualifiers and items noted above, all data were reported without qualification. Except for the RPD and post spike recovery outliers described above, all associated quality control sample results met the acceptance criteria.

BAL verifies that the reported results of all analyses for which the laboratory is accredited meet the requirements of the accrediting body, unless otherwise noted in the report narrative. For more information regarding accreditations please see the *Report Information* and *Batch Summary* pages. This report must be used in its entirety for interpretation of results.

Please feel free to contact us if you have any questions regarding this report.

Sincerely,



Jeremy Maute
Senior Project Manager
Jeremy@brooksapplied.com



Report Information

Laboratory Accreditation

BAL is accredited by the *National Environmental Laboratory Accreditation Program* (NELAP) through the State of Florida Department of Health, Bureau of Laboratories (E87982) and is certified to perform many environmental analyses. BAL is also certified by many other states to perform environmental analyses. For a current list of our accreditations/certifications, please visit our website at <http://www.brooksapplied.com/resources/certificates-permits/> or review Tables 1 and 2 in our Accreditation Information. Results reported relate only to the samples listed in the report.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

AR	as received	MS	matrix spike
BAL	Brooks Applied Labs	MSD	matrix spike duplicate
BLK	method blank	ND	non-detect
BS	blank spike	NR	non-reportable
CAL	calibration standard	N/C	not calculated
CCB	continuing calibration blank	PS	post preparation spike
CCV	continuing calibration verification	REC	percent recovery
COC	chain of custody record	RPD	relative percent difference
D	dissolved fraction	SCV	secondary calibration verification
DUP	duplicate	SOP	standard operating procedure
IBL	instrument blank	SRM	reference material
ICV	initial calibration verification	T	total fraction
MDL	method detection limit	TR	total recoverable fraction
MRL	method reporting limit		

Definition of Data Qualifiers

(Effective 3/23/2020)

E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Please see narrative for explanation.
J	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1	Estimated value. A full explanation is presented in the narrative.
M	Duplicate precision (RPD) was not within acceptance criteria. Please see narrative for explanation.
N	Spike recovery was not within acceptance criteria. Please see narrative for explanation.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.
Z	Holding time and/or preservation requirements not established for this method; however, BAL recommendations for holding time were not followed. Please see narrative for explanation.

These qualifiers are based on those previously utilized by Brooks Applied Labs, those found in the EPA SOW ILM03.0, Exhibit B, Section III, pg. B-18, and the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review; USEPA; January 2010. These supersede all previous qualifiers ever employed by BAL.



Accreditation Information

Table 1. Accredited method/matrix/analytes for TNI
Issued by: State of Florida Dept. of Health (The NELAC Institute 2016 Standard)
Issued on: July 1, 2021; Valid to: June 30, 2022
Certificate Number: E87982-37

Method	Matrix	TNI Accredited Analyte(s)
EPA 1638	Non-Potable Waters	Ag, Cd, Cu, Ni, Pb, Sb, Se, Tl, Zn
EPA 200.8	Non-Potable Waters	Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Sb, Se, Tl, U, V, Zn
EPA 6020	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Tl, U, V, Zn
	Solids/Chemicals & Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Tl, V, Zn
BAL-5000	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Tl, U, V, Zn, Hardness
	Solids/Chemicals	Ag, As, B, Be, Cd, Co, Cr, Cu, Pb, Mo, Ni, Sb, Se, Sn, Sr, Tl, V, Zn
	Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Tl, V, Zn
EPA 1640	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn
EPA 1631E	Non-Potable Waters, Solids/Chemicals & Biological	Total Mercury
EPA 1630	Non-Potable Waters	Methyl Mercury
BAL-3200	Solids/Chemicals & Biological	Methyl Mercury
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
BAL-4201	Non-Potable Waters	Se(IV), Se(VI)
BAL-4300	Non-Potable Waters Solid/Chemicals	Cr(VI)
SM2340B	Non-Potable Waters	Hardness



Accreditation Information

**Table 2. Accredited method/matrix/analytes for ISO (1),
 Non-Governmental TNI (2)
 Issued by: ANAB
 Issued on: September 21, 2021; Valid to: March 30, 2024**

Method	Matrix	ISO and Non-Gov. TNI Accredited Analyte(s)
EPA 1638 Mod EPA 200.8 Mod EPA 6020 Mod	Non-Potable Waters	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, U, V, Zn
BAL-5000	Solids/Chemicals & Biological	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, V, Zn Hg (Biological Only)
EPA 1640 Mod	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn Ag, As, Cr, Co, Se, Ti, V (ISO Only)
EPA 1631E Mod BAL-3100	Non-Potable Waters, Solids/Chemicals & Biological/Food	Total Mercury
EPA 1630 Mod BAL-3200	Non-Potable Waters, Solids/Chemicals Biological	Methyl Mercury
EPA 1632A Mod BAL-3300	Non-Potable Waters Biological/Food Solids/Chemicals	Inorganic Arsenic (ISO Only) Inorganic Arsenic (ISO Only)
AOAC 2015.01 Mod BAL-5000	Food	As, Cd, Hg, Pb
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
	Biological by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4101	Food by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4201	Non-Potable Waters	Se(IV), Se(VI), SeCN, SeMet
BAL-4300	Non-Potable Waters, Solid/Chemicals	Cr(VI)
SM 3500-Fe BAL-4500	Non-Potable Waters	Fe, Fe(II) (ISO Only)
SM2340B	Non-Potable Waters	Hardness
SM 2540G BAL-0501	Solids/Chemicals & Biological	% Dry Weight



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
RG_BOCKRD_SE-1_2022-07-26_N	2208060-01	SE	Sample	07/26/2022	08/04/2022
RG_BOCKRD_SE-2_2022-07-26_N	2208060-02	SE	Sample	07/26/2022	08/04/2022
RG_BOCKRD_SE-3_2022-07-26_N	2208060-03	SE	Sample	07/26/2022	08/04/2022
RG_GATE_SE-1_2022-07-25_N	2208060-04	SE	Sample	07/25/2022	08/04/2022
RG_GATE_SE-2_2022-07-25_N	2208060-05	SE	Sample	07/25/2022	08/04/2022
RG_GATE_SE-3_2022-07-25_N	2208060-06	SE	Sample	07/25/2022	08/04/2022
RG_BOCK_SE-1_2022-07-25_N	2208060-07	SE	Sample	07/25/2022	08/04/2022
RG_BOCK_SE-2_2022-07-25_N	2208060-08	SE	Sample	07/25/2022	08/04/2022
RG_BOCK_SE-3_2022-07-25_N	2208060-09	SE	Sample	07/25/2022	08/04/2022
RG_ERCKMD_SE-1_2022-07-26_N	2208060-10	SE	Sample	07/26/2022	08/04/2022
RG_ERCKMD_SE-2_2022-07-26_N	2208060-11	SE	Sample	07/26/2022	08/04/2022
RG_ERCKMD_SE-3_2022-07-26_N	2208060-12	SE	Sample	07/26/2022	08/04/2022
RG_ERCKMD_BRYOSE-1_2022-07-26_N	2208060-13	SE	Sample	07/26/2022	08/04/2022
RG_ERCKMD_BRYOSE-2_2022-07-26_N	2208060-14	SE	Sample	07/26/2022	08/04/2022
RG_ERCKMD_BRYOSE-3_2022-07-26_N	2208060-15	SE	Sample	07/26/2022	08/04/2022
RG_GATEDP_SE-1_2022-07-25_N	2208060-16	SE	Sample	07/25/2022	08/04/2022
RG_ERCKUT_SE-1_2022-07-26_N	2208060-17	SE	Sample	07/26/2022	08/04/2022
RG_ERCKUT_SE-2_2022-07-26_N	2208060-18	SE	Sample	07/26/2022	08/04/2022
RG_ERCKUT_SE-3_2022-07-26_N	2208060-19	SE	Sample	07/26/2022	08/04/2022
RG_ERCKUT_SE-4_2022-07-26_N	2208060-20	SE	Sample	07/26/2022	08/04/2022
RG_ERCKUT_SE-5_2022-07-26_N	2208060-21	SE	Sample	07/26/2022	08/04/2022



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
RG_ERCKUT_BRYOSE-1_2022-07-26_N	2208060-22	SE	Sample	07/26/2022	08/04/2022
RG_ERCKUT_BRYOSE-2_2022-07-26_N	2208060-23	SE	Sample	07/26/2022	08/04/2022
RG_ERCKUT_BRYOSE-3_2022-07-26_N	2208060-24	SE	Sample	07/26/2022	08/04/2022
RG_ERCKDT_SE-1_2022-07-26_N	2208060-25	SE	Sample	07/26/2022	08/04/2022
RG_ERCKDT_SE-2_2022-07-26_N	2208060-26	SE	Sample	07/26/2022	08/04/2022
RG_ERCKDT_SE-3_2022-07-26_N	2208060-27	SE	Sample	07/26/2022	08/04/2022
RG_ERCKDT_SE-4_2022-07-26_N	2208060-28	SE	Sample	07/26/2022	08/04/2022
RG_ERCKDT_SE-5_2022-07-26_N	2208060-29	SE	Sample	07/26/2022	08/04/2022
RG_ERCKDT_SE-6_2022-07-26_N	2208060-30	SE	Sample	07/26/2022	08/04/2022
RG_ERCKDT_SE-7_2022-07-26_N	2208060-31	SE	Sample	07/26/2022	08/04/2022
RG_ERCKDT_BRYOSE-1_2022-07-26_N	2208060-32	SE	Sample	07/26/2022	08/04/2022
RG_ERCKDT_BRYOSE-2_2022-07-26_N	2208060-33	SE	Sample	07/26/2022	08/04/2022
RG_ERCKDT_BRYOSE-3_2022-07-26_N	2208060-34	SE	Sample	07/26/2022	08/04/2022
RG_ERCK_SE-1_2022-07-27_N	2208060-35	SE	Sample	07/27/2022	08/04/2022
RG_ERCKUC_SE-1_2022-07-27_N	2208060-36	SE	Sample	07/27/2022	08/04/2022
RG_ERCKUC_SE-2_2022-07-27_N	2208060-37	SE	Sample	07/27/2022	08/04/2022
RG_ERCKUC_SE-3_2022-07-27_N	2208060-38	SE	Sample	07/27/2022	08/04/2022
RG_ERCKUC_BRYOSE-1_2022-07-27_N	2208060-39	SE	Sample	07/27/2022	08/04/2022
RG_ERCKUC_BRYOSE-2_2022-07-27_N	2208060-40	SE	Sample	07/27/2022	08/04/2022
RG_ERCKUC_BRYOSE-3_2022-07-27_N	2208060-41	SE	Sample	07/27/2022	08/04/2022



Batch Summary

Analyte	Lab Matrix	Method	Prepared	Analyzed	Batch	Sequence
%TS	Soil/Sediment	SOP BAL-0501	08/15/2022	08/16/2022	B221848	N/A
DMS ₂ O F1	Soil/Sediment	In-House	08/08/2022	08/10/2022	B221769	S220837
DMS ₂ O F2	Soil/Sediment	In-House	08/08/2022	08/11/2022	B221770	S220837
MeSe(IV) F1	Soil/Sediment	In-House	08/08/2022	08/10/2022	B221769	S220837
MeSe(IV) F2	Soil/Sediment	In-House	08/08/2022	08/11/2022	B221770	S220837
Se	Soil/Sediment	EPA 6020B Mod	08/18/2022	08/19/2022	B221842	S220875
Se Unk A F1	Soil/Sediment	In-House	08/08/2022	08/10/2022	B221769	S220837
Se Unk A F2	Soil/Sediment	In-House	08/08/2022	08/11/2022	B221770	S220837
Se(F1)	Soil/Sediment	In-House	08/08/2022	08/11/2022	B221798	S220842
Se(F2)	Soil/Sediment	In-House	08/08/2022	08/11/2022	B221808	S220842
Se(F3)	Soil/Sediment	In-House	08/11/2022	08/13/2022	B221826	S220849
Se(F4)	Soil/Sediment	In-House	08/12/2022	08/15/2022	B221830	S220851
Se(F5)	Soil/Sediment	In-House	08/16/2022	08/17/2022	B221863	S220865
Se(IV) F1	Soil/Sediment	In-House	08/08/2022	08/10/2022	B221769	S220837
Se(IV) F2	Soil/Sediment	In-House	08/08/2022	08/11/2022	B221770	S220837
Se(VI) F1	Soil/Sediment	In-House	08/08/2022	08/10/2022	B221769	S220837
Se(VI) F2	Soil/Sediment	In-House	08/08/2022	08/11/2022	B221770	S220837
SeCN F1	Soil/Sediment	In-House	08/08/2022	08/10/2022	B221769	S220837
SeCN F2	Soil/Sediment	In-House	08/08/2022	08/11/2022	B221770	S220837
SeMet F1	Soil/Sediment	In-House	08/08/2022	08/10/2022	B221769	S220837
SeMet F2	Soil/Sediment	In-House	08/08/2022	08/11/2022	B221770	S220837
SeSO ₃ F1	Soil/Sediment	In-House	08/08/2022	08/10/2022	B221769	S220837
SeSO ₃ F2	Soil/Sediment	In-House	08/08/2022	08/11/2022	B221770	S220837
Unk Se Sp F1	Soil/Sediment	In-House	08/08/2022	08/10/2022	B221769	S220837
Unk Se Sp F2	Soil/Sediment	In-House	08/08/2022	08/11/2022	B221770	S220837



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_BOCKRD_SE-1_2022-07-26_N</i>										
2208060-01	%TS	SE	NA	48.62		0.02	0.05	%	B221848	N/A
2208060-01	DMS ₂ O F1	SE	dry	0.009	J	0.002	0.016	mg/kg	B221769	S220837
2208060-01	DMS ₂ O F2	SE	dry	≤ 0.002	U	0.002	0.016	mg/kg	B221770	S220837
2208060-01	MeSe(IV) F1	SE	dry	0.013	J	0.002	0.016	mg/kg	B221769	S220837
2208060-01	MeSe(IV) F2	SE	dry	0.126		0.002	0.016	mg/kg	B221770	S220837
2208060-01	Se	SE	dry	4.12		0.148	0.296	mg/kg	B221842	S220875
2208060-01	Se Unk A F1	SE	dry	≤ 0.002	U	0.002	0.016	mg/kg	B221769	S220837
2208060-01	Se Unk A F2	SE	dry	≤ 0.002	U	0.002	0.016	mg/kg	B221770	S220837
2208060-01	Se(F1)	SE	dry	0.264		0.026	0.162	mg/kg	B221798	S220842
2208060-01	Se(F2)	SE	dry	1.20		0.046	0.162	mg/kg	B221808	S220842
2208060-01	Se(F3)	SE	dry	2.68		0.036	0.162	mg/kg	B221826	S220849
2208060-01	Se(F4)	SE	dry	0.162	J	0.023	0.162	mg/kg	B221830	S220851
2208060-01	Se(F5)	SE	dry	0.043	J	0.010	0.101	mg/kg	B221863	S220865
2208060-01	Se(IV) F1	SE	dry	0.149		0.004	0.039	mg/kg	B221769	S220837
2208060-01	Se(IV) F2	SE	dry	0.579		0.004	0.039	mg/kg	B221770	S220837
2208060-01	Se(VI) F1	SE	dry	0.038	J	0.004	0.041	mg/kg	B221769	S220837
2208060-01	Se(VI) F2	SE	dry	0.010	J	0.004	0.041	mg/kg	B221770	S220837
2208060-01	SeCN F1	SE	dry	≤ 0.002	U	0.002	0.016	mg/kg	B221769	S220837
2208060-01	SeCN F2	SE	dry	0.132		0.002	0.016	mg/kg	B221770	S220837
2208060-01	SeMet F1	SE	dry	≤ 0.002	U	0.002	0.016	mg/kg	B221769	S220837
2208060-01	SeMet F2	SE	dry	≤ 0.002	U	0.002	0.016	mg/kg	B221770	S220837
2208060-01	SeSO ₃ F1	SE	dry	≤ 0.004	U	0.004	0.041	mg/kg	B221769	S220837
2208060-01	SeSO ₃ F2	SE	dry	≤ 0.004	U	0.004	0.041	mg/kg	B221770	S220837
2208060-01	Unk Se Sp F1	SE	dry	≤ 0.004	U	0.004	0.039	mg/kg	B221769	S220837
2208060-01	Unk Se Sp F2	SE	dry	0.108		0.004	0.039	mg/kg	B221770	S220837



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_BOCKRD_SE-2_2022-07-26_N</i>										
2208060-02	%TS	SE	NA	53.09		0.01	0.03	%	B221848	N/A
2208060-02	DMS ₂ O F1	SE	dry	0.004	J	0.002	0.015	mg/kg	B221769	S220837
2208060-02	DMS ₂ O F2	SE	dry	≤ 0.002	U	0.002	0.015	mg/kg	B221770	S220837
2208060-02	MeSe(IV) F1	SE	dry	0.012	J	0.002	0.015	mg/kg	B221769	S220837
2208060-02	MeSe(IV) F2	SE	dry	0.066	M	0.002	0.015	mg/kg	B221770	S220837
2208060-02	Se	SE	dry	5.99		0.125	0.249	mg/kg	B221842	S220875
2208060-02	Se Unk A F1	SE	dry	≤ 0.002	U	0.002	0.015	mg/kg	B221769	S220837
2208060-02	Se Unk A F2	SE	dry	≤ 0.002	U	0.002	0.015	mg/kg	B221770	S220837
2208060-02	Se(F1)	SE	dry	0.338		0.024	0.149	mg/kg	B221798	S220842
2208060-02	Se(F2)	SE	dry	0.775		0.042	0.149	mg/kg	B221808	S220842
2208060-02	Se(F3)	SE	dry	2.07		0.034	0.149	mg/kg	B221826	S220849
2208060-02	Se(F4)	SE	dry	0.073	J	0.021	0.149	mg/kg	B221830	S220851
2208060-02	Se(F5)	SE	dry	0.011	J	0.009	0.093	mg/kg	B221863	S220865
2208060-02	Se(IV) F1	SE	dry	0.146		0.004	0.036	mg/kg	B221769	S220837
2208060-02	Se(IV) F2	SE	dry	0.365	M N	0.004	0.036	mg/kg	B221770	S220837
2208060-02	Se(VI) F1	SE	dry	0.044		0.004	0.038	mg/kg	B221769	S220837
2208060-02	Se(VI) F2	SE	dry	0.007	J	0.004	0.038	mg/kg	B221770	S220837
2208060-02	SeCN F1	SE	dry	≤ 0.001	U	0.001	0.015	mg/kg	B221769	S220837
2208060-02	SeCN F2	SE	dry	0.089	N	0.001	0.015	mg/kg	B221770	S220837
2208060-02	SeMet F1	SE	dry	≤ 0.002	U	0.002	0.015	mg/kg	B221769	S220837
2208060-02	SeMet F2	SE	dry	≤ 0.002	U	0.002	0.015	mg/kg	B221770	S220837
2208060-02	SeSO ₃ F1	SE	dry	≤ 0.004	U	0.004	0.038	mg/kg	B221769	S220837
2208060-02	SeSO ₃ F2	SE	dry	≤ 0.004	U	0.004	0.038	mg/kg	B221770	S220837
2208060-02	Unk Se Sp F1	SE	dry	≤ 0.004	U	0.004	0.036	mg/kg	B221769	S220837
2208060-02	Unk Se Sp F2	SE	dry	0.061		0.004	0.036	mg/kg	B221770	S220837



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_BOCKRD_SE-3_2022-07-26_N</i>										
2208060-03	%TS	SE	NA	49.46		0.01	0.04	%	B221848	N/A
2208060-03	DMS ₂ O F1	SE	dry	≤ 0.002	U	0.002	0.016	mg/kg	B221769	S220837
2208060-03	DMS ₂ O F2	SE	dry	0.004	J	0.002	0.016	mg/kg	B221770	S220837
2208060-03	MeSe(IV) F1	SE	dry	0.011	J	0.002	0.016	mg/kg	B221769	S220837
2208060-03	MeSe(IV) F2	SE	dry	0.133		0.002	0.016	mg/kg	B221770	S220837
2208060-03	Se	SE	dry	3.88		0.123	0.245	mg/kg	B221842	S220875
2208060-03	Se Unk A F1	SE	dry	≤ 0.002	U	0.002	0.016	mg/kg	B221769	S220837
2208060-03	Se Unk A F2	SE	dry	≤ 0.002	U	0.002	0.016	mg/kg	B221770	S220837
2208060-03	Se(F1)	SE	dry	0.288		0.026	0.159	mg/kg	B221798	S220842
2208060-03	Se(F2)	SE	dry	1.02		0.045	0.159	mg/kg	B221808	S220842
2208060-03	Se(F3)	SE	dry	2.17		0.036	0.159	mg/kg	B221826	S220849
2208060-03	Se(F4)	SE	dry	0.075	J	0.023	0.159	mg/kg	B221830	S220851
2208060-03	Se(F5)	SE	dry	0.019	J	0.010	0.099	mg/kg	B221863	S220865
2208060-03	Se(IV) F1	SE	dry	0.175		0.004	0.039	mg/kg	B221769	S220837
2208060-03	Se(IV) F2	SE	dry	0.478		0.004	0.039	mg/kg	B221770	S220837
2208060-03	Se(VI) F1	SE	dry	0.041	J	0.004	0.041	mg/kg	B221769	S220837
2208060-03	Se(VI) F2	SE	dry	0.016	J	0.004	0.041	mg/kg	B221770	S220837
2208060-03	SeCN F1	SE	dry	≤ 0.002	U	0.002	0.016	mg/kg	B221769	S220837
2208060-03	SeCN F2	SE	dry	0.119		0.002	0.016	mg/kg	B221770	S220837
2208060-03	SeMet F1	SE	dry	≤ 0.002	U	0.002	0.016	mg/kg	B221769	S220837
2208060-03	SeMet F2	SE	dry	≤ 0.002	U	0.002	0.016	mg/kg	B221770	S220837
2208060-03	SeSO ₃ F1	SE	dry	≤ 0.004	U	0.004	0.041	mg/kg	B221769	S220837
2208060-03	SeSO ₃ F2	SE	dry	≤ 0.004	U	0.004	0.041	mg/kg	B221770	S220837
2208060-03	Unk Se Sp F1	SE	dry	≤ 0.004	U	0.004	0.039	mg/kg	B221769	S220837
2208060-03	Unk Se Sp F2	SE	dry	0.072		0.004	0.039	mg/kg	B221770	S220837



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_GATE_SE-1_2022-07-25_N										
2208060-04	%TS	SE	NA	51.76		0.007	0.02	%	B221848	N/A
2208060-04	DMS ₂ O F1	SE	dry	≤ 0.002	U	0.002	0.015	mg/kg	B221769	S220837
2208060-04	DMS ₂ O F2	SE	dry	0.009	J	0.002	0.015	mg/kg	B221770	S220837
2208060-04	MeSe(IV) F1	SE	dry	0.013	J	0.002	0.015	mg/kg	B221769	S220837
2208060-04	MeSe(IV) F2	SE	dry	0.209		0.002	0.015	mg/kg	B221770	S220837
2208060-04	Se	SE	dry	6.66		0.174	0.349	mg/kg	B221842	S220875
2208060-04	Se Unk A F1	SE	dry	≤ 0.002	U	0.002	0.015	mg/kg	B221769	S220837
2208060-04	Se Unk A F2	SE	dry	≤ 0.002	U	0.002	0.015	mg/kg	B221770	S220837
2208060-04	Se(F1)	SE	dry	0.578		0.025	0.152	mg/kg	B221798	S220842
2208060-04	Se(F2)	SE	dry	2.31		0.043	0.152	mg/kg	B221808	S220842
2208060-04	Se(F3)	SE	dry	3.61		0.034	0.152	mg/kg	B221826	S220849
2208060-04	Se(F4)	SE	dry	0.187		0.022	0.152	mg/kg	B221830	S220851
2208060-04	Se(F5)	SE	dry	0.019	J	0.010	0.095	mg/kg	B221863	S220865
2208060-04	Se(IV) F1	SE	dry	0.461		0.004	0.037	mg/kg	B221769	S220837
2208060-04	Se(IV) F2	SE	dry	1.35		0.004	0.037	mg/kg	B221770	S220837
2208060-04	Se(VI) F1	SE	dry	0.005	J	0.004	0.039	mg/kg	B221769	S220837
2208060-04	Se(VI) F2	SE	dry	0.016	J	0.004	0.039	mg/kg	B221770	S220837
2208060-04	SeCN F1	SE	dry	≤ 0.002	U	0.002	0.015	mg/kg	B221769	S220837
2208060-04	SeCN F2	SE	dry	0.244		0.002	0.015	mg/kg	B221770	S220837
2208060-04	SeMet F1	SE	dry	≤ 0.002	U	0.002	0.015	mg/kg	B221769	S220837
2208060-04	SeMet F2	SE	dry	≤ 0.002	U	0.002	0.015	mg/kg	B221770	S220837
2208060-04	SeSO ₃ F1	SE	dry	≤ 0.004	U	0.004	0.039	mg/kg	B221769	S220837
2208060-04	SeSO ₃ F2	SE	dry	≤ 0.004	U	0.004	0.039	mg/kg	B221770	S220837
2208060-04	Unk Se Sp F1	SE	dry	≤ 0.004	U	0.004	0.037	mg/kg	B221769	S220837
2208060-04	Unk Se Sp F2	SE	dry	0.132		0.004	0.037	mg/kg	B221770	S220837



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_GATE_SE-2_2022-07-25_N										
2208060-05	%TS	SE	NA	46.41		0.008	0.03	%	B221848	N/A
2208060-05	DMS ₂ O F1	SE	dry	≤ 0.002	U	0.002	0.017	mg/kg	B221769	S220837
2208060-05	DMS ₂ O F2	SE	dry	0.005	J	0.002	0.017	mg/kg	B221770	S220837
2208060-05	MeSe(IV) F1	SE	dry	0.037		0.002	0.017	mg/kg	B221769	S220837
2208060-05	MeSe(IV) F2	SE	dry	0.329		0.002	0.017	mg/kg	B221770	S220837
2208060-05	Se	SE	dry	12.5		0.123	0.246	mg/kg	B221842	S220875
2208060-05	Se Unk A F1	SE	dry	≤ 0.002	U	0.002	0.017	mg/kg	B221769	S220837
2208060-05	Se Unk A F2	SE	dry	≤ 0.002	U	0.002	0.017	mg/kg	B221770	S220837
2208060-05	Se(F1)	SE	dry	1.04		0.028	0.172	mg/kg	B221798	S220842
2208060-05	Se(F2)	SE	dry	3.85		0.048	0.172	mg/kg	B221808	S220842
2208060-05	Se(F3)	SE	dry	7.06		0.039	0.172	mg/kg	B221826	S220849
2208060-05	Se(F4)	SE	dry	0.223		0.025	0.172	mg/kg	B221830	S220851
2208060-05	Se(F5)	SE	dry	0.033	J	0.011	0.107	mg/kg	B221863	S220865
2208060-05	Se(IV) F1	SE	dry	0.850		0.004	0.042	mg/kg	B221769	S220837
2208060-05	Se(IV) F2	SE	dry	2.15		0.004	0.042	mg/kg	B221770	S220837
2208060-05	Se(VI) F1	SE	dry	0.015	J	0.004	0.044	mg/kg	B221769	S220837
2208060-05	Se(VI) F2	SE	dry	0.016	J	0.004	0.044	mg/kg	B221770	S220837
2208060-05	SeCN F1	SE	dry	≤ 0.002	U	0.002	0.017	mg/kg	B221769	S220837
2208060-05	SeCN F2	SE	dry	0.410		0.002	0.017	mg/kg	B221770	S220837
2208060-05	SeMet F1	SE	dry	≤ 0.002	U	0.002	0.017	mg/kg	B221769	S220837
2208060-05	SeMet F2	SE	dry	≤ 0.002	U	0.002	0.017	mg/kg	B221770	S220837
2208060-05	SeSO ₃ F1	SE	dry	0.013	J	0.004	0.044	mg/kg	B221769	S220837
2208060-05	SeSO ₃ F2	SE	dry	0.023	J	0.004	0.044	mg/kg	B221770	S220837
2208060-05	Unk Se Sp F1	SE	dry	≤ 0.004	U	0.004	0.042	mg/kg	B221769	S220837
2208060-05	Unk Se Sp F2	SE	dry	0.320		0.004	0.042	mg/kg	B221770	S220837



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_GATE_SE-3_2022-07-25_N										
2208060-06	%TS	SE	NA	47.15		0.007	0.02	%	B221848	N/A
2208060-06	DMS ₂ O F1	SE	dry	≤ 0.002	U	0.002	0.017	mg/kg	B221769	S220837
2208060-06	DMS ₂ O F2	SE	dry	0.008	J	0.002	0.017	mg/kg	B221770	S220837
2208060-06	MeSe(IV) F1	SE	dry	0.036		0.002	0.017	mg/kg	B221769	S220837
2208060-06	MeSe(IV) F2	SE	dry	0.469		0.002	0.017	mg/kg	B221770	S220837
2208060-06	Se	SE	dry	15.6		0.186	0.372	mg/kg	B221842	S220875
2208060-06	Se Unk A F1	SE	dry	≤ 0.002	U	0.002	0.017	mg/kg	B221769	S220837
2208060-06	Se Unk A F2	SE	dry	≤ 0.002	U	0.002	0.017	mg/kg	B221770	S220837
2208060-06	Se(F1)	SE	dry	1.51		0.027	0.168	mg/kg	B221798	S220842
2208060-06	Se(F2)	SE	dry	5.17		0.047	0.168	mg/kg	B221808	S220842
2208060-06	Se(F3)	SE	dry	6.94		0.038	0.168	mg/kg	B221826	S220849
2208060-06	Se(F4)	SE	dry	0.294		0.024	0.168	mg/kg	B221830	S220851
2208060-06	Se(F5)	SE	dry	0.049	J	0.010	0.105	mg/kg	B221863	S220865
2208060-06	Se(IV) F1	SE	dry	1.22		0.004	0.041	mg/kg	B221769	S220837
2208060-06	Se(IV) F2	SE	dry	3.35		0.004	0.041	mg/kg	B221770	S220837
2208060-06	Se(VI) F1	SE	dry	0.019	J	0.004	0.043	mg/kg	B221769	S220837
2208060-06	Se(VI) F2	SE	dry	0.033	J	0.004	0.043	mg/kg	B221770	S220837
2208060-06	SeCN F1	SE	dry	≤ 0.002	U	0.002	0.017	mg/kg	B221769	S220837
2208060-06	SeCN F2	SE	dry	0.526		0.002	0.017	mg/kg	B221770	S220837
2208060-06	SeMet F1	SE	dry	≤ 0.002	U	0.002	0.017	mg/kg	B221769	S220837
2208060-06	SeMet F2	SE	dry	≤ 0.002	U	0.002	0.017	mg/kg	B221770	S220837
2208060-06	SeSO ₃ F1	SE	dry	0.025	J	0.004	0.043	mg/kg	B221769	S220837
2208060-06	SeSO ₃ F2	SE	dry	0.035	J	0.004	0.043	mg/kg	B221770	S220837
2208060-06	Unk Se Sp F1	SE	dry	≤ 0.004	U	0.004	0.041	mg/kg	B221769	S220837
2208060-06	Unk Se Sp F2	SE	dry	0.425		0.004	0.041	mg/kg	B221770	S220837



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_BOCK_SE-1_2022-07-25_N										
2208060-07	%TS	SE	NA	53.68		0.008	0.03	%	B221848	N/A
2208060-07	DMS ₂ O F1	SE	dry	0.020		0.002	0.015	mg/kg	B221769	S220837
2208060-07	DMS ₂ O F2	SE	dry	0.009	J	0.002	0.015	mg/kg	B221770	S220837
2208060-07	MeSe(IV) F1	SE	dry	0.016		0.002	0.015	mg/kg	B221769	S220837
2208060-07	MeSe(IV) F2	SE	dry	0.299		0.002	0.015	mg/kg	B221770	S220837
2208060-07	Se	SE	dry	10.7		0.119	0.237	mg/kg	B221842	S220875
2208060-07	Se Unk A F1	SE	dry	≤ 0.002	U	0.002	0.015	mg/kg	B221769	S220837
2208060-07	Se Unk A F2	SE	dry	≤ 0.002	U	0.002	0.015	mg/kg	B221770	S220837
2208060-07	Se(F1)	SE	dry	0.528		0.024	0.148	mg/kg	B221798	S220842
2208060-07	Se(F2)	SE	dry	2.11		0.042	0.148	mg/kg	B221808	S220842
2208060-07	Se(F3)	SE	dry	7.02		0.033	0.148	mg/kg	B221826	S220849
2208060-07	Se(F4)	SE	dry	0.150		0.021	0.148	mg/kg	B221830	S220851
2208060-07	Se(F5)	SE	dry	0.027	J	0.009	0.093	mg/kg	B221863	S220865
2208060-07	Se(IV) F1	SE	dry	0.383		0.004	0.036	mg/kg	B221769	S220837
2208060-07	Se(IV) F2	SE	dry	0.748		0.004	0.036	mg/kg	B221770	S220837
2208060-07	Se(VI) F1	SE	dry	0.029	J	0.004	0.038	mg/kg	B221769	S220837
2208060-07	Se(VI) F2	SE	dry	≤ 0.004	U	0.004	0.038	mg/kg	B221770	S220837
2208060-07	SeCN F1	SE	dry	≤ 0.001	U	0.001	0.015	mg/kg	B221769	S220837
2208060-07	SeCN F2	SE	dry	0.356		0.001	0.015	mg/kg	B221770	S220837
2208060-07	SeMet F1	SE	dry	≤ 0.002	U	0.002	0.015	mg/kg	B221769	S220837
2208060-07	SeMet F2	SE	dry	≤ 0.002	U	0.002	0.015	mg/kg	B221770	S220837
2208060-07	SeSO ₃ F1	SE	dry	≤ 0.004	U	0.004	0.038	mg/kg	B221769	S220837
2208060-07	SeSO ₃ F2	SE	dry	0.007	J	0.004	0.038	mg/kg	B221770	S220837
2208060-07	Unk Se Sp F1	SE	dry	≤ 0.004	U	0.004	0.036	mg/kg	B221769	S220837
2208060-07	Unk Se Sp F2	SE	dry	0.168		0.004	0.036	mg/kg	B221770	S220837



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_BOCK_SE-2_2022-07-25_N										
2208060-08	%TS	SE	NA	51.95		0.007	0.02	%	B221848	N/A
2208060-08	DMS ₂ O F1	SE	dry	0.021		0.002	0.015	mg/kg	B221769	S220837
2208060-08	DMS ₂ O F2	SE	dry	0.009	J	0.002	0.015	mg/kg	B221770	S220837
2208060-08	MeSe(IV) F1	SE	dry	0.014	J	0.002	0.015	mg/kg	B221769	S220837
2208060-08	MeSe(IV) F2	SE	dry	0.489		0.002	0.015	mg/kg	B221770	S220837
2208060-08	Se	SE	dry	15.8		0.129	0.259	mg/kg	B221842	S220875
2208060-08	Se Unk A F1	SE	dry	≤ 0.002	U	0.002	0.015	mg/kg	B221769	S220837
2208060-08	Se Unk A F2	SE	dry	≤ 0.002	U	0.002	0.015	mg/kg	B221770	S220837
2208060-08	Se(F1)	SE	dry	0.801		0.025	0.151	mg/kg	B221798	S220842
2208060-08	Se(F2)	SE	dry	4.26		0.043	0.151	mg/kg	B221808	S220842
2208060-08	Se(F3)	SE	dry	8.23		0.034	0.151	mg/kg	B221826	S220849
2208060-08	Se(F4)	SE	dry	0.256		0.022	0.151	mg/kg	B221830	S220851
2208060-08	Se(F5)	SE	dry	0.027	J	0.009	0.095	mg/kg	B221863	S220865
2208060-08	Se(IV) F1	SE	dry	0.528		0.004	0.037	mg/kg	B221769	S220837
2208060-08	Se(IV) F2	SE	dry	1.63		0.004	0.037	mg/kg	B221770	S220837
2208060-08	Se(VI) F1	SE	dry	0.008	J	0.004	0.039	mg/kg	B221769	S220837
2208060-08	Se(VI) F2	SE	dry	0.015	J	0.004	0.039	mg/kg	B221770	S220837
2208060-08	SeCN F1	SE	dry	≤ 0.002	U	0.002	0.015	mg/kg	B221769	S220837
2208060-08	SeCN F2	SE	dry	0.769		0.002	0.015	mg/kg	B221770	S220837
2208060-08	SeMet F1	SE	dry	≤ 0.002	U	0.002	0.015	mg/kg	B221769	S220837
2208060-08	SeMet F2	SE	dry	≤ 0.002	U	0.002	0.015	mg/kg	B221770	S220837
2208060-08	SeSO ₃ F1	SE	dry	≤ 0.004	U	0.004	0.039	mg/kg	B221769	S220837
2208060-08	SeSO ₃ F2	SE	dry	0.013	J	0.004	0.039	mg/kg	B221770	S220837
2208060-08	Unk Se Sp F1	SE	dry	≤ 0.004	U	0.004	0.037	mg/kg	B221769	S220837
2208060-08	Unk Se Sp F2	SE	dry	0.308		0.004	0.037	mg/kg	B221770	S220837



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_BOCK_SE-3_2022-07-25_N										
2208060-09	%TS	SE	NA	48.99		0.009	0.03	%	B221848	N/A
2208060-09	DMS ₂ O F1	SE	dry	0.019		0.002	0.016	mg/kg	B221769	S220837
2208060-09	DMS ₂ O F2	SE	dry	0.009	J	0.002	0.016	mg/kg	B221770	S220837
2208060-09	MeSe(IV) F1	SE	dry	0.014	J	0.002	0.016	mg/kg	B221769	S220837
2208060-09	MeSe(IV) F2	SE	dry	0.421		0.002	0.016	mg/kg	B221770	S220837
2208060-09	Se	SE	dry	16.4		0.127	0.255	mg/kg	B221842	S220875
2208060-09	Se Unk A F1	SE	dry	≤ 0.002	U	0.002	0.016	mg/kg	B221769	S220837
2208060-09	Se Unk A F2	SE	dry	≤ 0.002	U	0.002	0.016	mg/kg	B221770	S220837
2208060-09	Se(F1)	SE	dry	0.517		0.026	0.158	mg/kg	B221798	S220842
2208060-09	Se(F2)	SE	dry	3.01		0.044	0.158	mg/kg	B221808	S220842
2208060-09	Se(F3)	SE	dry	10.3		0.035	0.158	mg/kg	B221826	S220849
2208060-09	Se(F4)	SE	dry	0.219		0.023	0.158	mg/kg	B221830	S220851
2208060-09	Se(F5)	SE	dry	0.024	J	0.010	0.099	mg/kg	B221863	S220865
2208060-09	Se(IV) F1	SE	dry	0.348		0.004	0.038	mg/kg	B221769	S220837
2208060-09	Se(IV) F2	SE	dry	1.03		0.004	0.038	mg/kg	B221770	S220837
2208060-09	Se(VI) F1	SE	dry	0.048		0.004	0.040	mg/kg	B221769	S220837
2208060-09	Se(VI) F2	SE	dry	≤ 0.004	U	0.004	0.040	mg/kg	B221770	S220837
2208060-09	SeCN F1	SE	dry	≤ 0.002	U	0.002	0.016	mg/kg	B221769	S220837
2208060-09	SeCN F2	SE	dry	0.499		0.002	0.016	mg/kg	B221770	S220837
2208060-09	SeMet F1	SE	dry	≤ 0.002	U	0.002	0.016	mg/kg	B221769	S220837
2208060-09	SeMet F2	SE	dry	≤ 0.002	U	0.002	0.016	mg/kg	B221770	S220837
2208060-09	SeSO ₃ F1	SE	dry	≤ 0.004	U	0.004	0.040	mg/kg	B221769	S220837
2208060-09	SeSO ₃ F2	SE	dry	≤ 0.004	U	0.004	0.040	mg/kg	B221770	S220837
2208060-09	Unk Se Sp F1	SE	dry	≤ 0.004	U	0.004	0.038	mg/kg	B221769	S220837
2208060-09	Unk Se Sp F2	SE	dry	0.290		0.004	0.038	mg/kg	B221770	S220837



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKMD_SE-1_2022-07-26_N</i>										
2208060-10	%TS	SE	NA	23.05		0.02	0.07	%	B221848	N/A
2208060-10	DMS ₂ O F1	SE	dry	≤ 0.005	U	0.005	0.034	mg/kg	B221769	S220837
2208060-10	DMS ₂ O F2	SE	dry	0.016	J	0.005	0.034	mg/kg	B221770	S220837
2208060-10	MeSe(IV) F1	SE	dry	0.109		0.005	0.034	mg/kg	B221769	S220837
2208060-10	MeSe(IV) F2	SE	dry	1.05		0.005	0.034	mg/kg	B221770	S220837
2208060-10	Se	SE	dry	30.0		0.309	0.618	mg/kg	B221842	S220875
2208060-10	Se Unk A F1	SE	dry	≤ 0.005	U	0.005	0.034	mg/kg	B221769	S220837
2208060-10	Se Unk A F2	SE	dry	≤ 0.005	U	0.005	0.034	mg/kg	B221770	S220837
2208060-10	Se(F1)	SE	dry	0.966		0.055	0.340	mg/kg	B221798	S220842
2208060-10	Se(F2)	SE	dry	15.3		0.096	0.340	mg/kg	B221808	S220842
2208060-10	Se(F3)	SE	dry	8.09		0.077	0.340	mg/kg	B221826	S220849
2208060-10	Se(F4)	SE	dry	0.424		0.049	0.340	mg/kg	B221830	S220851
2208060-10	Se(F5)	SE	dry	0.078	J	0.021	0.213	mg/kg	B221863	S220865
2208060-10	Se(IV) F1	SE	dry	0.511		0.008	0.083	mg/kg	B221769	S220837
2208060-10	Se(IV) F2	SE	dry	10.6		0.008	0.083	mg/kg	B221770	S220837
2208060-10	Se(VI) F1	SE	dry	0.011	J	0.009	0.087	mg/kg	B221769	S220837
2208060-10	Se(VI) F2	SE	dry	≤ 0.009	U	0.009	0.087	mg/kg	B221770	S220837
2208060-10	SeCN F1	SE	dry	0.009	J	0.003	0.034	mg/kg	B221769	S220837
2208060-10	SeCN F2	SE	dry	1.12		0.003	0.034	mg/kg	B221770	S220837
2208060-10	SeMet F1	SE	dry	≤ 0.005	U	0.005	0.034	mg/kg	B221769	S220837
2208060-10	SeMet F2	SE	dry	≤ 0.005	U	0.005	0.034	mg/kg	B221770	S220837
2208060-10	SeSO ₃ F1	SE	dry	0.018	J	0.009	0.087	mg/kg	B221769	S220837
2208060-10	SeSO ₃ F2	SE	dry	0.226		0.009	0.087	mg/kg	B221770	S220837
2208060-10	Unk Se Sp F1	SE	dry	≤ 0.008	U	0.008	0.083	mg/kg	B221769	S220837
2208060-10	Unk Se Sp F2	SE	dry	1.14		0.008	0.083	mg/kg	B221770	S220837



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKMD_SE-2_2022-07-26_N</i>										
2208060-11	%TS	SE	NA	28.79		0.01	0.05	%	B221848	N/A
2208060-11	DMS ₂ O F1	SE	dry	0.012	J	0.004	0.027	mg/kg	B221769	S220837
2208060-11	DMS ₂ O F2	SE	dry	0.008	J	0.004	0.027	mg/kg	B221770	S220837
2208060-11	MeSe(IV) F1	SE	dry	0.020	J	0.004	0.027	mg/kg	B221769	S220837
2208060-11	MeSe(IV) F2	SE	dry	0.571		0.004	0.027	mg/kg	B221770	S220837
2208060-11	Se	SE	dry	15.5		0.276	0.551	mg/kg	B221842	S220875
2208060-11	Se Unk A F1	SE	dry	≤ 0.004	U	0.004	0.027	mg/kg	B221769	S220837
2208060-11	Se Unk A F2	SE	dry	≤ 0.004	U	0.004	0.027	mg/kg	B221770	S220837
2208060-11	Se(F1)	SE	dry	0.922		0.044	0.274	mg/kg	B221798	S220842
2208060-11	Se(F2)	SE	dry	5.17		0.077	0.274	mg/kg	B221808	S220842
2208060-11	Se(F3)	SE	dry	6.63		0.062	0.274	mg/kg	B221826	S220849
2208060-11	Se(F4)	SE	dry	0.494		0.039	0.274	mg/kg	B221830	S220851
2208060-11	Se(F5)	SE	dry	0.038	J	0.017	0.171	mg/kg	B221863	S220865
2208060-11	Se(IV) F1	SE	dry	0.476		0.007	0.067	mg/kg	B221769	S220837
2208060-11	Se(IV) F2	SE	dry	2.11		0.007	0.067	mg/kg	B221770	S220837
2208060-11	Se(VI) F1	SE	dry	0.281		0.007	0.070	mg/kg	B221769	S220837
2208060-11	Se(VI) F2	SE	dry	≤ 0.007	U	0.007	0.070	mg/kg	B221770	S220837
2208060-11	SeCN F1	SE	dry	≤ 0.003	U	0.003	0.027	mg/kg	B221769	S220837
2208060-11	SeCN F2	SE	dry	1.15		0.003	0.027	mg/kg	B221770	S220837
2208060-11	SeMet F1	SE	dry	≤ 0.004	U	0.004	0.027	mg/kg	B221769	S220837
2208060-11	SeMet F2	SE	dry	≤ 0.004	U	0.004	0.027	mg/kg	B221770	S220837
2208060-11	SeSO ₃ F1	SE	dry	≤ 0.007	U	0.007	0.070	mg/kg	B221769	S220837
2208060-11	SeSO ₃ F2	SE	dry	≤ 0.007	U	0.007	0.070	mg/kg	B221770	S220837
2208060-11	Unk Se Sp F1	SE	dry	≤ 0.007	U	0.007	0.067	mg/kg	B221769	S220837
2208060-11	Unk Se Sp F2	SE	dry	0.283		0.007	0.067	mg/kg	B221770	S220837



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKMD_SE-3_2022-07-26_N</i>										
2208060-12	%TS	SE	NA	5.08		0.08	0.28	%	B221848	N/A
2208060-12	DMS ₂ O F1	SE	dry	0.102	J	0.021	0.154	mg/kg	B221769	S220837
2208060-12	DMS ₂ O F2	SE	dry	0.040	J	0.021	0.154	mg/kg	B221770	S220837
2208060-12	MeSe(IV) F1	SE	dry	0.142	J	0.021	0.154	mg/kg	B221769	S220837
2208060-12	MeSe(IV) F2	SE	dry	1.10		0.021	0.154	mg/kg	B221770	S220837
2208060-12	Se	SE	dry	75.7		1.66	3.31	mg/kg	B221842	S220875
2208060-12	Se Unk A F1	SE	dry	≤ 0.021	U	0.021	0.154	mg/kg	B221769	S220837
2208060-12	Se Unk A F2	SE	dry	≤ 0.021	U	0.021	0.154	mg/kg	B221770	S220837
2208060-12	Se(F1)	SE	dry	5.65		0.250	1.54	mg/kg	B221798	S220842
2208060-12	Se(F2)	SE	dry	22.8		0.433	1.54	mg/kg	B221808	S220842
2208060-12	Se(F3)	SE	dry	18.5		0.347	1.54	mg/kg	B221826	S220849
2208060-12	Se(F4)	SE	dry	0.732	J	0.222	1.54	mg/kg	B221830	S220851
2208060-12	Se(F5)	SE	dry	≤ 0.096	U	0.096	0.963	mg/kg	B221863	S220865
2208060-12	Se(IV) F1	SE	dry	2.46		0.038	0.376	mg/kg	B221769	S220837
2208060-12	Se(IV) F2	SE	dry	15.1		0.038	0.376	mg/kg	B221770	S220837
2208060-12	Se(VI) F1	SE	dry	2.00		0.039	0.395	mg/kg	B221769	S220837
2208060-12	Se(VI) F2	SE	dry	≤ 0.039	U	0.039	0.395	mg/kg	B221770	S220837
2208060-12	SeCN F1	SE	dry	≤ 0.015	U	0.015	0.154	mg/kg	B221769	S220837
2208060-12	SeCN F2	SE	dry	3.45		0.015	0.154	mg/kg	B221770	S220837
2208060-12	SeMet F1	SE	dry	≤ 0.021	U	0.021	0.154	mg/kg	B221769	S220837
2208060-12	SeMet F2	SE	dry	≤ 0.021	U	0.021	0.154	mg/kg	B221770	S220837
2208060-12	SeSO ₃ F1	SE	dry	≤ 0.039	U	0.039	0.395	mg/kg	B221769	S220837
2208060-12	SeSO ₃ F2	SE	dry	0.082	J	0.039	0.395	mg/kg	B221770	S220837
2208060-12	Unk Se Sp F1	SE	dry	≤ 0.038	U	0.038	0.376	mg/kg	B221769	S220837
2208060-12	Unk Se Sp F2	SE	dry	1.03		0.038	0.376	mg/kg	B221770	S220837



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKMD_BRYOSE-1_2022-07-26_N</i>										
2208060-13	%TS	SE	NA	47.78		0.007	0.02	%	B221848	N/A
2208060-13	DMS ₂ O F1	SE	dry	0.014	J	0.002	0.017	mg/kg	B221769	S220837
2208060-13	DMS ₂ O F2	SE	dry	0.006	J	0.002	0.017	mg/kg	B221770	S220837
2208060-13	MeSe(IV) F1	SE	dry	0.022		0.002	0.017	mg/kg	B221769	S220837
2208060-13	MeSe(IV) F2	SE	dry	0.188		0.002	0.017	mg/kg	B221770	S220837
2208060-13	Se	SE	dry	6.82		0.169	0.338	mg/kg	B221842	S220875
2208060-13	Se Unk A F1	SE	dry	≤ 0.002	U	0.002	0.017	mg/kg	B221769	S220837
2208060-13	Se Unk A F2	SE	dry	≤ 0.002	U	0.002	0.017	mg/kg	B221770	S220837
2208060-13	Se(F1)	SE	dry	0.383		0.027	0.166	mg/kg	B221798	S220842
2208060-13	Se(F2)	SE	dry	2.32		0.047	0.166	mg/kg	B221808	S220842
2208060-13	Se(F3)	SE	dry	3.22		0.037	0.166	mg/kg	B221826	S220849
2208060-13	Se(F4)	SE	dry	0.161	J	0.024	0.166	mg/kg	B221830	S220851
2208060-13	Se(F5)	SE	dry	≤ 0.010	U	0.010	0.104	mg/kg	B221863	S220865
2208060-13	Se(IV) F1	SE	dry	0.122		0.004	0.040	mg/kg	B221769	S220837
2208060-13	Se(IV) F2	SE	dry	1.20		0.004	0.040	mg/kg	B221770	S220837
2208060-13	Se(VI) F1	SE	dry	0.151		0.004	0.042	mg/kg	B221769	S220837
2208060-13	Se(VI) F2	SE	dry	≤ 0.004	U	0.004	0.042	mg/kg	B221770	S220837
2208060-13	SeCN F1	SE	dry	≤ 0.002	U	0.002	0.017	mg/kg	B221769	S220837
2208060-13	SeCN F2	SE	dry	0.504		0.002	0.017	mg/kg	B221770	S220837
2208060-13	SeMet F1	SE	dry	≤ 0.002	U	0.002	0.017	mg/kg	B221769	S220837
2208060-13	SeMet F2	SE	dry	≤ 0.002	U	0.002	0.017	mg/kg	B221770	S220837
2208060-13	SeSO ₃ F1	SE	dry	≤ 0.004	U	0.004	0.042	mg/kg	B221769	S220837
2208060-13	SeSO ₃ F2	SE	dry	≤ 0.004	U	0.004	0.042	mg/kg	B221770	S220837
2208060-13	Unk Se Sp F1	SE	dry	≤ 0.004	U	0.004	0.040	mg/kg	B221769	S220837
2208060-13	Unk Se Sp F2	SE	dry	0.114		0.004	0.040	mg/kg	B221770	S220837



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKMD_BRYOSE-2_2022-07-26_N</i>										
2208060-14	%TS	SE	NA	23.10		0.03	0.10	%	B221848	N/A
2208060-14	DMS ₂ O F1	SE	dry	0.020	J	0.005	0.035	mg/kg	B221769	S220837
2208060-14	DMS ₂ O F2	SE	dry	0.018	J	0.005	0.035	mg/kg	B221770	S220837
2208060-14	MeSe(IV) F1	SE	dry	0.024	J	0.005	0.035	mg/kg	B221769	S220837
2208060-14	MeSe(IV) F2	SE	dry	0.416		0.005	0.035	mg/kg	B221770	S220837
2208060-14	Se	SE	dry	15.2		0.404	0.808	mg/kg	B221842	S220875
2208060-14	Se Unk A F1	SE	dry	≤ 0.005	U	0.005	0.035	mg/kg	B221769	S220837
2208060-14	Se Unk A F2	SE	dry	≤ 0.005	U	0.005	0.035	mg/kg	B221770	S220837
2208060-14	Se(F1)	SE	dry	0.861		0.056	0.346	mg/kg	B221798	S220842
2208060-14	Se(F2)	SE	dry	5.83		0.097	0.346	mg/kg	B221808	S220842
2208060-14	Se(F3)	SE	dry	7.36		0.078	0.346	mg/kg	B221826	S220849
2208060-14	Se(F4)	SE	dry	0.222	J	0.050	0.346	mg/kg	B221830	S220851
2208060-14	Se(F5)	SE	dry	≤ 0.022	U	0.022	0.216	mg/kg	B221863	S220865
2208060-14	Se(IV) F1	SE	dry	0.146		0.008	0.084	mg/kg	B221769	S220837
2208060-14	Se(IV) F2	SE	dry	3.25		0.008	0.084	mg/kg	B221770	S220837
2208060-14	Se(VI) F1	SE	dry	0.389		0.009	0.089	mg/kg	B221769	S220837
2208060-14	Se(VI) F2	SE	dry	≤ 0.009	U	0.009	0.089	mg/kg	B221770	S220837
2208060-14	SeCN F1	SE	dry	≤ 0.003	U	0.003	0.035	mg/kg	B221769	S220837
2208060-14	SeCN F2	SE	dry	1.42		0.003	0.035	mg/kg	B221770	S220837
2208060-14	SeMet F1	SE	dry	≤ 0.005	U	0.005	0.035	mg/kg	B221769	S220837
2208060-14	SeMet F2	SE	dry	≤ 0.005	U	0.005	0.035	mg/kg	B221770	S220837
2208060-14	SeSO ₃ F1	SE	dry	≤ 0.009	U	0.009	0.089	mg/kg	B221769	S220837
2208060-14	SeSO ₃ F2	SE	dry	≤ 0.009	U	0.009	0.089	mg/kg	B221770	S220837
2208060-14	Unk Se Sp F1	SE	dry	≤ 0.008	U	0.008	0.084	mg/kg	B221769	S220837
2208060-14	Unk Se Sp F2	SE	dry	0.275		0.008	0.084	mg/kg	B221770	S220837



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKMD_BRYOSE-3_2022-07-26_N</i>										
2208060-15	%TS	SE	NA	53.92		0.009	0.03	%	B221848	N/A
2208060-15	DMS ₂ O F1	SE	dry	0.007	J	0.002	0.015	mg/kg	B221769	S220837
2208060-15	DMS ₂ O F2	SE	dry	≤ 0.002	U	0.002	0.015	mg/kg	B221770	S220837
2208060-15	MeSe(IV) F1	SE	dry	0.017		0.002	0.015	mg/kg	B221769	S220837
2208060-15	MeSe(IV) F2	SE	dry	0.622		0.002	0.015	mg/kg	B221770	S220837
2208060-15	Se	SE	dry	6.81		0.153	0.306	mg/kg	B221842	S220875
2208060-15	Se Unk A F1	SE	dry	≤ 0.002	U	0.002	0.015	mg/kg	B221769	S220837
2208060-15	Se Unk A F2	SE	dry	≤ 0.002	U	0.002	0.015	mg/kg	B221770	S220837
2208060-15	Se(F1)	SE	dry	0.364		0.024	0.148	mg/kg	B221798	S220842
2208060-15	Se(F2)	SE	dry	4.27		0.042	0.148	mg/kg	B221808	S220842
2208060-15	Se(F3)	SE	dry	7.27		0.033	0.148	mg/kg	B221826	S220849
2208060-15	Se(F4)	SE	dry	0.413		0.021	0.148	mg/kg	B221830	S220851
2208060-15	Se(F5)	SE	dry	0.039	J	0.009	0.093	mg/kg	B221863	S220865
2208060-15	Se(IV) F1	SE	dry	0.149		0.004	0.036	mg/kg	B221769	S220837
2208060-15	Se(IV) F2	SE	dry	1.80		0.004	0.036	mg/kg	B221770	S220837
2208060-15	Se(VI) F1	SE	dry	0.082		0.004	0.038	mg/kg	B221769	S220837
2208060-15	Se(VI) F2	SE	dry	≤ 0.004	U	0.004	0.038	mg/kg	B221770	S220837
2208060-15	SeCN F1	SE	dry	≤ 0.001	U	0.001	0.015	mg/kg	B221769	S220837
2208060-15	SeCN F2	SE	dry	0.848		0.001	0.015	mg/kg	B221770	S220837
2208060-15	SeMet F1	SE	dry	≤ 0.002	U	0.002	0.015	mg/kg	B221769	S220837
2208060-15	SeMet F2	SE	dry	≤ 0.002	U	0.002	0.015	mg/kg	B221770	S220837
2208060-15	SeSO ₃ F1	SE	dry	≤ 0.004	U	0.004	0.038	mg/kg	B221769	S220837
2208060-15	SeSO ₃ F2	SE	dry	0.016	J	0.004	0.038	mg/kg	B221770	S220837
2208060-15	Unk Se Sp F1	SE	dry	≤ 0.004	U	0.004	0.036	mg/kg	B221769	S220837
2208060-15	Unk Se Sp F2	SE	dry	0.280		0.004	0.036	mg/kg	B221770	S220837



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_GATEDP_SE-1_2022-07-25_N</i>										
2208060-16	%TS	SE	NA	33.92		0.01	0.04	%	B221848	N/A
2208060-16	DMS ₂ O F1	SE	dry	0.009	J	0.003	0.023	mg/kg	B221769	S220837
2208060-16	DMS ₂ O F2	SE	dry	0.011	J	0.003	0.023	mg/kg	B221770	S220837
2208060-16	MeSe(IV) F1	SE	dry	0.045		0.003	0.023	mg/kg	B221769	S220837
2208060-16	MeSe(IV) F2	SE	dry	0.444		0.003	0.023	mg/kg	B221770	S220837
2208060-16	Se	SE	dry	10.6		0.219	0.439	mg/kg	B221842	S220875
2208060-16	Se Unk A F1	SE	dry	≤ 0.003	U	0.003	0.023	mg/kg	B221769	S220837
2208060-16	Se Unk A F2	SE	dry	≤ 0.003	U	0.003	0.023	mg/kg	B221770	S220837
2208060-16	Se(F1)	SE	dry	0.573		0.038	0.231	mg/kg	B221798	S220842
2208060-16	Se(F2)	SE	dry	3.50		0.065	0.231	mg/kg	B221808	S220842
2208060-16	Se(F3)	SE	dry	5.69		0.052	0.231	mg/kg	B221826	S220849
2208060-16	Se(F4)	SE	dry	0.163	J	0.033	0.231	mg/kg	B221830	S220851
2208060-16	Se(F5)	SE	dry	0.024	J	0.014	0.145	mg/kg	B221863	S220865
2208060-16	Se(IV) F1	SE	dry	0.214		0.006	0.056	mg/kg	B221769	S220837
2208060-16	Se(IV) F2	SE	dry	1.64		0.006	0.056	mg/kg	B221770	S220837
2208060-16	Se(VI) F1	SE	dry	≤ 0.006	U	0.006	0.059	mg/kg	B221769	S220837
2208060-16	Se(VI) F2	SE	dry	≤ 0.006	U	0.006	0.059	mg/kg	B221770	S220837
2208060-16	SeCN F1	SE	dry	≤ 0.002	U	0.002	0.023	mg/kg	B221769	S220837
2208060-16	SeCN F2	SE	dry	0.521		0.002	0.023	mg/kg	B221770	S220837
2208060-16	SeMet F1	SE	dry	≤ 0.003	U	0.003	0.023	mg/kg	B221769	S220837
2208060-16	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.023	mg/kg	B221770	S220837
2208060-16	SeSO ₃ F1	SE	dry	≤ 0.006	U	0.006	0.059	mg/kg	B221769	S220837
2208060-16	SeSO ₃ F2	SE	dry	0.040	J	0.006	0.059	mg/kg	B221770	S220837
2208060-16	Unk Se Sp F1	SE	dry	0.023	J	0.006	0.056	mg/kg	B221769	S220837
2208060-16	Unk Se Sp F2	SE	dry	0.328		0.006	0.056	mg/kg	B221770	S220837



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKUT_SE-1_2022-07-26_N</i>										
2208060-17	%TS	SE	NA	57.93		0.007	0.02	%	B221848	N/A
2208060-17	DMS ₂ O F1	SE	dry	0.003	J	0.002	0.013	mg/kg	B221769	S220837
2208060-17	DMS ₂ O F2	SE	dry	0.005	J	0.002	0.013	mg/kg	B221770	S220837
2208060-17	MeSe(IV) F1	SE	dry	0.008	J	0.002	0.013	mg/kg	B221769	S220837
2208060-17	MeSe(IV) F2	SE	dry	0.246		0.002	0.013	mg/kg	B221770	S220837
2208060-17	Se	SE	dry	3.26		0.142	0.284	mg/kg	B221842	S220875
2208060-17	Se Unk A F1	SE	dry	≤ 0.002	U	0.002	0.013	mg/kg	B221769	S220837
2208060-17	Se Unk A F2	SE	dry	≤ 0.002	U	0.002	0.013	mg/kg	B221770	S220837
2208060-17	Se(F1)	SE	dry	0.314		0.022	0.135	mg/kg	B221798	S220842
2208060-17	Se(F2)	SE	dry	2.01		0.038	0.135	mg/kg	B221808	S220842
2208060-17	Se(F3)	SE	dry	2.67		0.030	0.135	mg/kg	B221826	S220849
2208060-17	Se(F4)	SE	dry	0.391		0.019	0.135	mg/kg	B221830	S220851
2208060-17	Se(F5)	SE	dry	0.032	J	0.008	0.084	mg/kg	B221863	S220865
2208060-17	Se(IV) F1	SE	dry	0.145		0.003	0.033	mg/kg	B221769	S220837
2208060-17	Se(IV) F2	SE	dry	0.986		0.003	0.033	mg/kg	B221770	S220837
2208060-17	Se(VI) F1	SE	dry	0.087		0.003	0.034	mg/kg	B221769	S220837
2208060-17	Se(VI) F2	SE	dry	≤ 0.003	U	0.003	0.034	mg/kg	B221770	S220837
2208060-17	SeCN F1	SE	dry	≤ 0.001	U	0.001	0.013	mg/kg	B221769	S220837
2208060-17	SeCN F2	SE	dry	0.409		0.001	0.013	mg/kg	B221770	S220837
2208060-17	SeMet F1	SE	dry	≤ 0.002	U	0.002	0.013	mg/kg	B221769	S220837
2208060-17	SeMet F2	SE	dry	≤ 0.002	U	0.002	0.013	mg/kg	B221770	S220837
2208060-17	SeSO ₃ F1	SE	dry	≤ 0.003	U	0.003	0.034	mg/kg	B221769	S220837
2208060-17	SeSO ₃ F2	SE	dry	0.005	J	0.003	0.034	mg/kg	B221770	S220837
2208060-17	Unk Se Sp F1	SE	dry	≤ 0.003	U	0.003	0.033	mg/kg	B221769	S220837
2208060-17	Unk Se Sp F2	SE	dry	0.079		0.003	0.033	mg/kg	B221770	S220837



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKUT_SE-2_2022-07-26_N</i>										
2208060-18	%TS	SE	NA	71.12		0.008	0.03	%	B221848	N/A
2208060-18	DMS ₂ O F1	SE	dry	≤ 0.002	U	0.002	0.011	mg/kg	B221769	S220837
2208060-18	DMS ₂ O F2	SE	dry	≤ 0.002	U	0.002	0.011	mg/kg	B221770	S220837
2208060-18	MeSe(IV) F1	SE	dry	0.004	J	0.002	0.011	mg/kg	B221769	S220837
2208060-18	MeSe(IV) F2	SE	dry	0.156		0.002	0.011	mg/kg	B221770	S220837
2208060-18	Se	SE	dry	2.10		0.119	0.238	mg/kg	B221842	S220875
2208060-18	Se Unk A F1	SE	dry	≤ 0.002	U	0.002	0.011	mg/kg	B221769	S220837
2208060-18	Se Unk A F2	SE	dry	≤ 0.002	U	0.002	0.011	mg/kg	B221770	S220837
2208060-18	Se(F1)	SE	dry	0.183		0.018	0.112	mg/kg	B221798	S220842
2208060-18	Se(F2)	SE	dry	0.970		0.032	0.112	mg/kg	B221808	S220842
2208060-18	Se(F3)	SE	dry	0.991		0.025	0.112	mg/kg	B221826	S220849
2208060-18	Se(F4)	SE	dry	0.444		0.016	0.112	mg/kg	B221830	S220851
2208060-18	Se(F5)	SE	dry	0.038	J	0.007	0.070	mg/kg	B221863	S220865
2208060-18	Se(IV) F1	SE	dry	0.104		0.003	0.027	mg/kg	B221769	S220837
2208060-18	Se(IV) F2	SE	dry	0.492		0.003	0.027	mg/kg	B221770	S220837
2208060-18	Se(VI) F1	SE	dry	0.048		0.003	0.029	mg/kg	B221769	S220837
2208060-18	Se(VI) F2	SE	dry	≤ 0.003	U	0.003	0.029	mg/kg	B221770	S220837
2208060-18	SeCN F1	SE	dry	≤ 0.001	U	0.001	0.011	mg/kg	B221769	S220837
2208060-18	SeCN F2	SE	dry	0.096		0.001	0.011	mg/kg	B221770	S220837
2208060-18	SeMet F1	SE	dry	≤ 0.002	U	0.002	0.011	mg/kg	B221769	S220837
2208060-18	SeMet F2	SE	dry	≤ 0.002	U	0.002	0.011	mg/kg	B221770	S220837
2208060-18	SeSO ₃ F1	SE	dry	≤ 0.003	U	0.003	0.029	mg/kg	B221769	S220837
2208060-18	SeSO ₃ F2	SE	dry	≤ 0.003	U	0.003	0.029	mg/kg	B221770	S220837
2208060-18	Unk Se Sp F1	SE	dry	≤ 0.003	U	0.003	0.027	mg/kg	B221769	S220837
2208060-18	Unk Se Sp F2	SE	dry	0.051		0.003	0.027	mg/kg	B221770	S220837



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKUT_SE-3_2022-07-26_N</i>										
2208060-19	%TS	SE	NA	62.59		0.006	0.02	%	B221848	N/A
2208060-19	DMS ₂ O F1	SE	dry	≤ 0.002	U	0.002	0.013	mg/kg	B221769	S220837
2208060-19	DMS ₂ O F2	SE	dry	≤ 0.002	U	0.002	0.013	mg/kg	B221770	S220837
2208060-19	MeSe(IV) F1	SE	dry	0.003	J	0.002	0.013	mg/kg	B221769	S220837
2208060-19	MeSe(IV) F2	SE	dry	0.129		0.002	0.013	mg/kg	B221770	S220837
2208060-19	Se	SE	dry	2.87		0.096	0.193	mg/kg	B221842	S220875
2208060-19	Se Unk A F1	SE	dry	≤ 0.002	U	0.002	0.013	mg/kg	B221769	S220837
2208060-19	Se Unk A F2	SE	dry	≤ 0.002	U	0.002	0.013	mg/kg	B221770	S220837
2208060-19	Se(F1)	SE	dry	0.231		0.021	0.128	mg/kg	B221798	S220842
2208060-19	Se(F2)	SE	dry	1.08		0.036	0.128	mg/kg	B221808	S220842
2208060-19	Se(F3)	SE	dry	0.909		0.029	0.128	mg/kg	B221826	S220849
2208060-19	Se(F4)	SE	dry	0.460		0.018	0.128	mg/kg	B221830	S220851
2208060-19	Se(F5)	SE	dry	0.042	J	0.008	0.080	mg/kg	B221863	S220865
2208060-19	Se(IV) F1	SE	dry	0.101		0.003	0.031	mg/kg	B221769	S220837
2208060-19	Se(IV) F2	SE	dry	0.597		0.003	0.031	mg/kg	B221770	S220837
2208060-19	Se(VI) F1	SE	dry	0.078		0.003	0.033	mg/kg	B221769	S220837
2208060-19	Se(VI) F2	SE	dry	≤ 0.003	U	0.003	0.033	mg/kg	B221770	S220837
2208060-19	SeCN F1	SE	dry	≤ 0.001	U	0.001	0.013	mg/kg	B221769	S220837
2208060-19	SeCN F2	SE	dry	0.146		0.001	0.013	mg/kg	B221770	S220837
2208060-19	SeMet F1	SE	dry	≤ 0.002	U	0.002	0.013	mg/kg	B221769	S220837
2208060-19	SeMet F2	SE	dry	≤ 0.002	U	0.002	0.013	mg/kg	B221770	S220837
2208060-19	SeSO ₃ F1	SE	dry	≤ 0.003	U	0.003	0.033	mg/kg	B221769	S220837
2208060-19	SeSO ₃ F2	SE	dry	≤ 0.003	U	0.003	0.033	mg/kg	B221770	S220837
2208060-19	Unk Se Sp F1	SE	dry	≤ 0.003	U	0.003	0.031	mg/kg	B221769	S220837
2208060-19	Unk Se Sp F2	SE	dry	0.042		0.003	0.031	mg/kg	B221770	S220837



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKUT_SE-4_2022-07-26_N</i>										
2208060-20	%TS	SE	NA	60.04		0.006	0.02	%	B221848	N/A
2208060-20	DMS ₂ O F1	SE	dry	≤ 0.002	U	0.002	0.013	mg/kg	B221769	S220837
2208060-20	DMS ₂ O F2	SE	dry	≤ 0.002	U	0.002	0.013	mg/kg	B221770	S220837
2208060-20	MeSe(IV) F1	SE	dry	0.005	J	0.002	0.013	mg/kg	B221769	S220837
2208060-20	MeSe(IV) F2	SE	dry	0.109	M	0.002	0.013	mg/kg	B221770	S220837
2208060-20	Se	SE	dry	2.99		0.153	0.306	mg/kg	B221842	S220875
2208060-20	Se Unk A F1	SE	dry	≤ 0.002	U	0.002	0.013	mg/kg	B221769	S220837
2208060-20	Se Unk A F2	SE	dry	≤ 0.002	U	0.002	0.013	mg/kg	B221770	S220837
2208060-20	Se(F1)	SE	dry	0.207		0.022	0.133	mg/kg	B221798	S220842
2208060-20	Se(F2)	SE	dry	1.02	M	0.037	0.133	mg/kg	B221808	S220842
2208060-20	Se(F3)	SE	dry	1.17		0.030	0.133	mg/kg	B221826	S220849
2208060-20	Se(F4)	SE	dry	0.342		0.019	0.133	mg/kg	B221830	S220851
2208060-20	Se(F5)	SE	dry	0.037	J	0.008	0.083	mg/kg	B221863	S220865
2208060-20	Se(IV) F1	SE	dry	0.076		0.003	0.032	mg/kg	B221769	S220837
2208060-20	Se(IV) F2	SE	dry	0.517	M	0.003	0.032	mg/kg	B221770	S220837
2208060-20	Se(VI) F1	SE	dry	0.084		0.003	0.034	mg/kg	B221769	S220837
2208060-20	Se(VI) F2	SE	dry	≤ 0.003	U	0.003	0.034	mg/kg	B221770	S220837
2208060-20	SeCN F1	SE	dry	≤ 0.001	U	0.001	0.013	mg/kg	B221769	S220837
2208060-20	SeCN F2	SE	dry	0.135	M	0.001	0.013	mg/kg	B221770	S220837
2208060-20	SeMet F1	SE	dry	≤ 0.002	U	0.002	0.013	mg/kg	B221769	S220837
2208060-20	SeMet F2	SE	dry	≤ 0.002	U	0.002	0.013	mg/kg	B221770	S220837
2208060-20	SeSO ₃ F1	SE	dry	≤ 0.003	U	0.003	0.034	mg/kg	B221769	S220837
2208060-20	SeSO ₃ F2	SE	dry	≤ 0.003	U	0.003	0.034	mg/kg	B221770	S220837
2208060-20	Unk Se Sp F1	SE	dry	≤ 0.003	U	0.003	0.032	mg/kg	B221769	S220837
2208060-20	Unk Se Sp F2	SE	dry	0.035		0.003	0.032	mg/kg	B221770	S220837



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKUT_SE-5_2022-07-26_N</i>										
2208060-21	%TS	SE	NA	66.77		0.006	0.02	%	B221848	N/A
2208060-21	DMS ₂ O F1	SE	dry	≤ 0.002	U	0.002	0.012	mg/kg	B221769	S220837
2208060-21	DMS ₂ O F2	SE	dry	≤ 0.002	U	0.002	0.012	mg/kg	B221770	S220837
2208060-21	MeSe(IV) F1	SE	dry	0.008	J	0.002	0.012	mg/kg	B221769	S220837
2208060-21	MeSe(IV) F2	SE	dry	0.073		0.002	0.012	mg/kg	B221770	S220837
2208060-21	Se	SE	dry	2.13		0.116	0.232	mg/kg	B221842	S220875
2208060-21	Se Unk A F1	SE	dry	≤ 0.002	U	0.002	0.012	mg/kg	B221769	S220837
2208060-21	Se Unk A F2	SE	dry	≤ 0.002	U	0.002	0.012	mg/kg	B221770	S220837
2208060-21	Se(F1)	SE	dry	0.276		0.019	0.119	mg/kg	B221798	S220842
2208060-21	Se(F2)	SE	dry	0.840		0.034	0.119	mg/kg	B221808	S220842
2208060-21	Se(F3)	SE	dry	0.525		0.027	0.119	mg/kg	B221826	S220849
2208060-21	Se(F4)	SE	dry	0.270		0.017	0.119	mg/kg	B221830	S220851
2208060-21	Se(F5)	SE	dry	0.041	J	0.007	0.074	mg/kg	B221863	S220865
2208060-21	Se(IV) F1	SE	dry	0.168		0.003	0.029	mg/kg	B221769	S220837
2208060-21	Se(IV) F2	SE	dry	0.537		0.003	0.029	mg/kg	B221770	S220837
2208060-21	Se(VI) F1	SE	dry	0.056		0.003	0.031	mg/kg	B221769	S220837
2208060-21	Se(VI) F2	SE	dry	≤ 0.003	U	0.003	0.031	mg/kg	B221770	S220837
2208060-21	SeCN F1	SE	dry	≤ 0.001	U	0.001	0.012	mg/kg	B221769	S220837
2208060-21	SeCN F2	SE	dry	0.073		0.001	0.012	mg/kg	B221770	S220837
2208060-21	SeMet F1	SE	dry	≤ 0.002	U	0.002	0.012	mg/kg	B221769	S220837
2208060-21	SeMet F2	SE	dry	≤ 0.002	U	0.002	0.012	mg/kg	B221770	S220837
2208060-21	SeSO ₃ F1	SE	dry	≤ 0.003	U	0.003	0.031	mg/kg	B221769	S220837
2208060-21	SeSO ₃ F2	SE	dry	≤ 0.003	U	0.003	0.031	mg/kg	B221770	S220837
2208060-21	Unk Se Sp F1	SE	dry	≤ 0.003	U	0.003	0.029	mg/kg	B221769	S220837
2208060-21	Unk Se Sp F2	SE	dry	0.029	J	0.003	0.029	mg/kg	B221770	S220837



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKUT_BRYOSE-1_2022-07-26_N										
2208060-22	%TS	SE	NA	77.50		0.006	0.02	%	B221848	N/A
2208060-22	DMS ₂ O F1	SE	dry	≤ 0.001	U	0.001	0.010	mg/kg	B221769	S220837
2208060-22	DMS ₂ O F2	SE	dry	≤ 0.001	U	0.001	0.010	mg/kg	B221770	S220837
2208060-22	MeSe(IV) F1	SE	dry	≤ 0.001	U	0.001	0.010	mg/kg	B221769	S220837
2208060-22	MeSe(IV) F2	SE	dry	0.013		0.001	0.010	mg/kg	B221770	S220837
2208060-22	Se	SE	dry	1.39		0.111	0.222	mg/kg	B221842	S220875
2208060-22	Se Unk A F1	SE	dry	≤ 0.001	U	0.001	0.010	mg/kg	B221769	S220837
2208060-22	Se Unk A F2	SE	dry	≤ 0.001	U	0.001	0.010	mg/kg	B221770	S220837
2208060-22	Se(F1)	SE	dry	0.082	J	0.016	0.101	mg/kg	B221798	S220842
2208060-22	Se(F2)	SE	dry	0.184		0.028	0.101	mg/kg	B221808	S220842
2208060-22	Se(F3)	SE	dry	0.366		0.023	0.101	mg/kg	B221826	S220849
2208060-22	Se(F4)	SE	dry	0.361		0.015	0.101	mg/kg	B221830	S220851
2208060-22	Se(F5)	SE	dry	0.046	J	0.006	0.063	mg/kg	B221863	S220865
2208060-22	Se(IV) F1	SE	dry	0.015	J	0.002	0.025	mg/kg	B221769	S220837
2208060-22	Se(IV) F2	SE	dry	0.087		0.002	0.025	mg/kg	B221770	S220837
2208060-22	Se(VI) F1	SE	dry	0.034		0.003	0.026	mg/kg	B221769	S220837
2208060-22	Se(VI) F2	SE	dry	≤ 0.003	U	0.003	0.026	mg/kg	B221770	S220837
2208060-22	SeCN F1	SE	dry	≤ 0.001	U	0.001	0.010	mg/kg	B221769	S220837
2208060-22	SeCN F2	SE	dry	0.011		0.001	0.010	mg/kg	B221770	S220837
2208060-22	SeMet F1	SE	dry	≤ 0.001	U	0.001	0.010	mg/kg	B221769	S220837
2208060-22	SeMet F2	SE	dry	≤ 0.001	U	0.001	0.010	mg/kg	B221770	S220837
2208060-22	SeSO ₃ F1	SE	dry	≤ 0.003	U	0.003	0.026	mg/kg	B221769	S220837
2208060-22	SeSO ₃ F2	SE	dry	≤ 0.003	U	0.003	0.026	mg/kg	B221770	S220837
2208060-22	Unk Se Sp F1	SE	dry	≤ 0.002	U	0.002	0.025	mg/kg	B221769	S220837
2208060-22	Unk Se Sp F2	SE	dry	0.006	J	0.002	0.025	mg/kg	B221770	S220837



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKUT_BRYOSE-2_2022-07-26_N										
2208060-23	%TS	SE	NA	32.63		0.02	0.06	%	B221848	N/A
2208060-23	DMS ₂ O F1	SE	dry	≤ 0.003	U	0.003	0.024	mg/kg	B221769	S220837
2208060-23	DMS ₂ O F2	SE	dry	≤ 0.003	U	0.003	0.024	mg/kg	B221770	S220837
2208060-23	MeSe(IV) F1	SE	dry	0.005	J	0.003	0.024	mg/kg	B221769	S220837
2208060-23	MeSe(IV) F2	SE	dry	0.145		0.003	0.024	mg/kg	B221770	S220837
2208060-23	Se	SE	dry	3.56		0.257	0.513	mg/kg	B221842	S220875
2208060-23	Se Unk A F1	SE	dry	≤ 0.003	U	0.003	0.024	mg/kg	B221769	S220837
2208060-23	Se Unk A F2	SE	dry	≤ 0.003	U	0.003	0.024	mg/kg	B221770	S220837
2208060-23	Se(F1)	SE	dry	0.464		0.040	0.244	mg/kg	B221798	S220842
2208060-23	Se(F2)	SE	dry	1.06		0.069	0.244	mg/kg	B221808	S220842
2208060-23	Se(F3)	SE	dry	1.85		0.055	0.244	mg/kg	B221826	S220849
2208060-23	Se(F4)	SE	dry	0.358		0.035	0.244	mg/kg	B221830	S220851
2208060-23	Se(F5)	SE	dry	0.025	J	0.015	0.152	mg/kg	B221863	S220865
2208060-23	Se(IV) F1	SE	dry	0.053	J	0.006	0.059	mg/kg	B221769	S220837
2208060-23	Se(IV) F2	SE	dry	0.394		0.006	0.059	mg/kg	B221770	S220837
2208060-23	Se(VI) F1	SE	dry	0.278		0.006	0.062	mg/kg	B221769	S220837
2208060-23	Se(VI) F2	SE	dry	≤ 0.006	U	0.006	0.062	mg/kg	B221770	S220837
2208060-23	SeCN F1	SE	dry	≤ 0.002	U	0.002	0.024	mg/kg	B221769	S220837
2208060-23	SeCN F2	SE	dry	0.195		0.002	0.024	mg/kg	B221770	S220837
2208060-23	SeMet F1	SE	dry	≤ 0.003	U	0.003	0.024	mg/kg	B221769	S220837
2208060-23	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.024	mg/kg	B221770	S220837
2208060-23	SeSO ₃ F1	SE	dry	≤ 0.006	U	0.006	0.062	mg/kg	B221769	S220837
2208060-23	SeSO ₃ F2	SE	dry	≤ 0.006	U	0.006	0.062	mg/kg	B221770	S220837
2208060-23	Unk Se Sp F1	SE	dry	≤ 0.006	U	0.006	0.059	mg/kg	B221769	S220837
2208060-23	Unk Se Sp F2	SE	dry	0.059	J	0.006	0.059	mg/kg	B221770	S220837



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKUT_BRYOSE-3_2022-07-26_N										
2208060-24	%TS	SE	NA	42.86		0.009	0.03	%	B221848	N/A
2208060-24	DMS ₂ O F1	SE	dry	≤ 0.003	U	0.003	0.018	mg/kg	B221769	S220837
2208060-24	DMS ₂ O F2	SE	dry	0.008	J	0.003	0.018	mg/kg	B221770	S220837
2208060-24	MeSe(IV) F1	SE	dry	0.017	J	0.003	0.018	mg/kg	B221769	S220837
2208060-24	MeSe(IV) F2	SE	dry	0.435		0.003	0.018	mg/kg	B221770	S220837
2208060-24	Se	SE	dry	6.11		0.199	0.398	mg/kg	B221842	S220875
2208060-24	Se Unk A F1	SE	dry	≤ 0.003	U	0.003	0.018	mg/kg	B221769	S220837
2208060-24	Se Unk A F2	SE	dry	≤ 0.003	U	0.003	0.018	mg/kg	B221770	S220837
2208060-24	Se(F1)	SE	dry	0.380		0.030	0.185	mg/kg	B221798	S220842
2208060-24	Se(F2)	SE	dry	1.84		0.052	0.185	mg/kg	B221808	S220842
2208060-24	Se(F3)	SE	dry	3.88		0.042	0.185	mg/kg	B221826	S220849
2208060-24	Se(F4)	SE	dry	0.195		0.027	0.185	mg/kg	B221830	S220851
2208060-24	Se(F5)	SE	dry	0.041	J	0.012	0.115	mg/kg	B221863	S220865
2208060-24	Se(IV) F1	SE	dry	0.169		0.005	0.045	mg/kg	B221769	S220837
2208060-24	Se(IV) F2	SE	dry	0.700		0.005	0.045	mg/kg	B221770	S220837
2208060-24	Se(VI) F1	SE	dry	0.106		0.005	0.047	mg/kg	B221769	S220837
2208060-24	Se(VI) F2	SE	dry	≤ 0.005	U	0.005	0.047	mg/kg	B221770	S220837
2208060-24	SeCN F1	SE	dry	≤ 0.002	U	0.002	0.018	mg/kg	B221769	S220837
2208060-24	SeCN F2	SE	dry	0.296		0.002	0.018	mg/kg	B221770	S220837
2208060-24	SeMet F1	SE	dry	≤ 0.003	U	0.003	0.018	mg/kg	B221769	S220837
2208060-24	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.018	mg/kg	B221770	S220837
2208060-24	SeSO ₃ F1	SE	dry	≤ 0.005	U	0.005	0.047	mg/kg	B221769	S220837
2208060-24	SeSO ₃ F2	SE	dry	≤ 0.005	U	0.005	0.047	mg/kg	B221770	S220837
2208060-24	Unk Se Sp F1	SE	dry	≤ 0.005	U	0.005	0.045	mg/kg	B221769	S220837
2208060-24	Unk Se Sp F2	SE	dry	0.090		0.005	0.045	mg/kg	B221770	S220837



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKDT_SE-1_2022-07-26_N</i>										
2208060-25	%TS	SE	NA	41.26		0.01	0.04	%	B221848	N/A
2208060-25	DMS ₂ O F1	SE	dry	0.007	J	0.003	0.019	mg/kg	B221769	S220837
2208060-25	DMS ₂ O F2	SE	dry	0.006	J	0.003	0.019	mg/kg	B221770	S220837
2208060-25	MeSe(IV) F1	SE	dry	0.020		0.003	0.019	mg/kg	B221769	S220837
2208060-25	MeSe(IV) F2	SE	dry	0.296		0.003	0.019	mg/kg	B221770	S220837
2208060-25	Se	SE	dry	20.1		0.147	0.295	mg/kg	B221842	S220875
2208060-25	Se Unk A F1	SE	dry	≤ 0.003	U	0.003	0.019	mg/kg	B221769	S220837
2208060-25	Se Unk A F2	SE	dry	≤ 0.003	U	0.003	0.019	mg/kg	B221770	S220837
2208060-25	Se(F1)	SE	dry	0.777		0.031	0.192	mg/kg	B221798	S220842
2208060-25	Se(F2)	SE	dry	3.15		0.054	0.192	mg/kg	B221808	S220842
2208060-25	Se(F3)	SE	dry	3.23		0.043	0.192	mg/kg	B221826	S220849
2208060-25	Se(F4)	SE	dry	0.459		0.028	0.192	mg/kg	B221830	S220851
2208060-25	Se(F5)	SE	dry	0.041	J	0.012	0.120	mg/kg	B221863	S220865
2208060-25	Se(IV) F1	SE	dry	0.536		0.005	0.047	mg/kg	B221769	S220837
2208060-25	Se(IV) F2	SE	dry	1.57		0.005	0.047	mg/kg	B221770	S220837
2208060-25	Se(VI) F1	SE	dry	0.125		0.005	0.049	mg/kg	B221769	S220837
2208060-25	Se(VI) F2	SE	dry	≤ 0.005	U	0.005	0.049	mg/kg	B221770	S220837
2208060-25	SeCN F1	SE	dry	≤ 0.002	U	0.002	0.019	mg/kg	B221769	S220837
2208060-25	SeCN F2	SE	dry	0.519		0.002	0.019	mg/kg	B221770	S220837
2208060-25	SeMet F1	SE	dry	≤ 0.003	U	0.003	0.019	mg/kg	B221769	S220837
2208060-25	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.019	mg/kg	B221770	S220837
2208060-25	SeSO ₃ F1	SE	dry	≤ 0.005	U	0.005	0.049	mg/kg	B221769	S220837
2208060-25	SeSO ₃ F2	SE	dry	≤ 0.005	U	0.005	0.049	mg/kg	B221770	S220837
2208060-25	Unk Se Sp F1	SE	dry	≤ 0.005	U	0.005	0.047	mg/kg	B221769	S220837
2208060-25	Unk Se Sp F2	SE	dry	0.159		0.005	0.047	mg/kg	B221770	S220837



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKDT_SE-2_2022-07-26_N										
2208060-26	%TS	SE	NA	53.96		0.007	0.02	%	B221848	N/A
2208060-26	DMS ₂ O F1	SE	dry	0.010	J	0.002	0.015	mg/kg	B221769	S220837
2208060-26	DMS ₂ O F2	SE	dry	≤ 0.002	U	0.002	0.015	mg/kg	B221770	S220837
2208060-26	MeSe(IV) F1	SE	dry	0.012	J	0.002	0.015	mg/kg	B221769	S220837
2208060-26	MeSe(IV) F2	SE	dry	0.213		0.002	0.015	mg/kg	B221770	S220837
2208060-26	Se	SE	dry	7.84		0.154	0.307	mg/kg	B221842	S220875
2208060-26	Se Unk A F1	SE	dry	≤ 0.002	U	0.002	0.015	mg/kg	B221769	S220837
2208060-26	Se Unk A F2	SE	dry	≤ 0.002	U	0.002	0.015	mg/kg	B221770	S220837
2208060-26	Se(F1)	SE	dry	0.429		0.024	0.145	mg/kg	B221798	S220842
2208060-26	Se(F2)	SE	dry	2.04		0.041	0.145	mg/kg	B221808	S220842
2208060-26	Se(F3)	SE	dry	2.99		0.033	0.145	mg/kg	B221826	S220849
2208060-26	Se(F4)	SE	dry	0.327		0.021	0.145	mg/kg	B221830	S220851
2208060-26	Se(F5)	SE	dry	0.020	J	0.009	0.091	mg/kg	B221863	S220865
2208060-26	Se(IV) F1	SE	dry	0.197		0.004	0.035	mg/kg	B221769	S220837
2208060-26	Se(IV) F2	SE	dry	0.854		0.004	0.035	mg/kg	B221770	S220837
2208060-26	Se(VI) F1	SE	dry	0.110		0.004	0.037	mg/kg	B221769	S220837
2208060-26	Se(VI) F2	SE	dry	≤ 0.004	U	0.004	0.037	mg/kg	B221770	S220837
2208060-26	SeCN F1	SE	dry	≤ 0.001	U	0.001	0.015	mg/kg	B221769	S220837
2208060-26	SeCN F2	SE	dry	0.305		0.001	0.015	mg/kg	B221770	S220837
2208060-26	SeMet F1	SE	dry	≤ 0.002	U	0.002	0.015	mg/kg	B221769	S220837
2208060-26	SeMet F2	SE	dry	≤ 0.002	U	0.002	0.015	mg/kg	B221770	S220837
2208060-26	SeSO ₃ F1	SE	dry	≤ 0.004	U	0.004	0.037	mg/kg	B221769	S220837
2208060-26	SeSO ₃ F2	SE	dry	≤ 0.004	U	0.004	0.037	mg/kg	B221770	S220837
2208060-26	Unk Se Sp F1	SE	dry	≤ 0.004	U	0.004	0.035	mg/kg	B221769	S220837
2208060-26	Unk Se Sp F2	SE	dry	0.072		0.004	0.035	mg/kg	B221770	S220837



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKDT_SE-3_2022-07-26_N</i>										
2208060-27	%TS	SE	NA	48.14		0.008	0.03	%	B221848	N/A
2208060-27	DMS ₂ O F1	SE	dry	0.007	J	0.002	0.016	mg/kg	B221769	S220837
2208060-27	DMS ₂ O F2	SE	dry	0.006	J	0.002	0.016	mg/kg	B221770	S220837
2208060-27	MeSe(IV) F1	SE	dry	0.028		0.002	0.016	mg/kg	B221769	S220837
2208060-27	MeSe(IV) F2	SE	dry	0.984		0.002	0.016	mg/kg	B221770	S220837
2208060-27	Se	SE	dry	21.6		0.197	0.394	mg/kg	B221842	S220875
2208060-27	Se Unk A F1	SE	dry	≤ 0.002	U	0.002	0.016	mg/kg	B221769	S220837
2208060-27	Se Unk A F2	SE	dry	≤ 0.002	U	0.002	0.016	mg/kg	B221770	S220837
2208060-27	Se(F1)	SE	dry	0.735		0.027	0.164	mg/kg	B221798	S220842
2208060-27	Se(F2)	SE	dry	7.44		0.046	0.164	mg/kg	B221808	S220842
2208060-27	Se(F3)	SE	dry	6.71		0.037	0.164	mg/kg	B221826	S220849
2208060-27	Se(F4)	SE	dry	0.562		0.024	0.164	mg/kg	B221830	S220851
2208060-27	Se(F5)	SE	dry	0.052	J	0.010	0.102	mg/kg	B221863	S220865
2208060-27	Se(IV) F1	SE	dry	0.455		0.004	0.040	mg/kg	B221769	S220837
2208060-27	Se(IV) F2	SE	dry	3.08		0.004	0.040	mg/kg	B221770	S220837
2208060-27	Se(VI) F1	SE	dry	0.101		0.004	0.042	mg/kg	B221769	S220837
2208060-27	Se(VI) F2	SE	dry	0.024	J	0.004	0.042	mg/kg	B221770	S220837
2208060-27	SeCN F1	SE	dry	≤ 0.002	U	0.002	0.016	mg/kg	B221769	S220837
2208060-27	SeCN F2	SE	dry	1.13		0.002	0.016	mg/kg	B221770	S220837
2208060-27	SeMet F1	SE	dry	≤ 0.002	U	0.002	0.016	mg/kg	B221769	S220837
2208060-27	SeMet F2	SE	dry	≤ 0.002	U	0.002	0.016	mg/kg	B221770	S220837
2208060-27	SeSO ₃ F1	SE	dry	≤ 0.004	U	0.004	0.042	mg/kg	B221769	S220837
2208060-27	SeSO ₃ F2	SE	dry	0.036	J	0.004	0.042	mg/kg	B221770	S220837
2208060-27	Unk Se Sp F1	SE	dry	≤ 0.004	U	0.004	0.040	mg/kg	B221769	S220837
2208060-27	Unk Se Sp F2	SE	dry	0.410		0.004	0.040	mg/kg	B221770	S220837



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKDT_SE-4_2022-07-26_N</i>										
2208060-28	%TS	SE	NA	28.95		0.02	0.05	%	B221848	N/A
2208060-28	DMS ₂ O F1	SE	dry	0.014	J	0.004	0.027	mg/kg	B221769	S220837
2208060-28	DMS ₂ O F2	SE	dry	≤ 0.004	U	0.004	0.027	mg/kg	B221770	S220837
2208060-28	MeSe(IV) F1	SE	dry	0.025	J	0.004	0.027	mg/kg	B221769	S220837
2208060-28	MeSe(IV) F2	SE	dry	0.981		0.004	0.027	mg/kg	B221770	S220837
2208060-28	Se	SE	dry	19.3		0.292	0.585	mg/kg	B221842	S220875
2208060-28	Se Unk A F1	SE	dry	≤ 0.004	U	0.004	0.027	mg/kg	B221769	S220837
2208060-28	Se Unk A F2	SE	dry	≤ 0.004	U	0.004	0.027	mg/kg	B221770	S220837
2208060-28	Se(F1)	SE	dry	0.651		0.045	0.275	mg/kg	B221798	S220842
2208060-28	Se(F2)	SE	dry	9.34		0.077	0.275	mg/kg	B221808	S220842
2208060-28	Se(F3)	SE	dry	6.28		0.062	0.275	mg/kg	B221826	S220849
2208060-28	Se(F4)	SE	dry	0.309		0.040	0.275	mg/kg	B221830	S220851
2208060-28	Se(F5)	SE	dry	0.039	J	0.017	0.172	mg/kg	B221863	S220865
2208060-28	Se(IV) F1	SE	dry	0.352		0.007	0.067	mg/kg	B221769	S220837
2208060-28	Se(IV) F2	SE	dry	4.41		0.007	0.067	mg/kg	B221770	S220837
2208060-28	Se(VI) F1	SE	dry	≤ 0.007	U	0.007	0.070	mg/kg	B221769	S220837
2208060-28	Se(VI) F2	SE	dry	≤ 0.007	U	0.007	0.070	mg/kg	B221770	S220837
2208060-28	SeCN F1	SE	dry	≤ 0.003	U	0.003	0.027	mg/kg	B221769	S220837
2208060-28	SeCN F2	SE	dry	1.81		0.003	0.027	mg/kg	B221770	S220837
2208060-28	SeMet F1	SE	dry	≤ 0.004	U	0.004	0.027	mg/kg	B221769	S220837
2208060-28	SeMet F2	SE	dry	≤ 0.004	U	0.004	0.027	mg/kg	B221770	S220837
2208060-28	SeSO ₃ F1	SE	dry	≤ 0.007	U	0.007	0.070	mg/kg	B221769	S220837
2208060-28	SeSO ₃ F2	SE	dry	0.038	J	0.007	0.070	mg/kg	B221770	S220837
2208060-28	Unk Se Sp F1	SE	dry	≤ 0.007	U	0.007	0.067	mg/kg	B221769	S220837
2208060-28	Unk Se Sp F2	SE	dry	0.759		0.007	0.067	mg/kg	B221770	S220837



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKDT_SE-5_2022-07-26_N</i>										
2208060-29	%TS	SE	NA	63.15		0.008	0.03	%	B221848	N/A
2208060-29	DMS ₂ O F1	SE	dry	≤ 0.002	U	0.002	0.013	mg/kg	B221769	S220837
2208060-29	DMS ₂ O F2	SE	dry	0.003	J	0.002	0.013	mg/kg	B221770	S220837
2208060-29	MeSe(IV) F1	SE	dry	0.006	J	0.002	0.013	mg/kg	B221769	S220837
2208060-29	MeSe(IV) F2	SE	dry	0.149		0.002	0.013	mg/kg	B221770	S220837
2208060-29	Se	SE	dry	4.47		0.129	0.258	mg/kg	B221842	S220875
2208060-29	Se Unk A F1	SE	dry	≤ 0.002	U	0.002	0.013	mg/kg	B221769	S220837
2208060-29	Se Unk A F2	SE	dry	≤ 0.002	U	0.002	0.013	mg/kg	B221770	S220837
2208060-29	Se(F1)	SE	dry	0.180		0.020	0.126	mg/kg	B221798	S220842
2208060-29	Se(F2)	SE	dry	1.61		0.035	0.126	mg/kg	B221808	S220842
2208060-29	Se(F3)	SE	dry	1.51		0.028	0.126	mg/kg	B221826	S220849
2208060-29	Se(F4)	SE	dry	0.454		0.018	0.126	mg/kg	B221830	S220851
2208060-29	Se(F5)	SE	dry	0.039	J	0.008	0.079	mg/kg	B221863	S220865
2208060-29	Se(IV) F1	SE	dry	0.085		0.003	0.031	mg/kg	B221769	S220837
2208060-29	Se(IV) F2	SE	dry	0.720		0.003	0.031	mg/kg	B221770	S220837
2208060-29	Se(VI) F1	SE	dry	0.026	J	0.003	0.032	mg/kg	B221769	S220837
2208060-29	Se(VI) F2	SE	dry	≤ 0.003	U	0.003	0.032	mg/kg	B221770	S220837
2208060-29	SeCN F1	SE	dry	≤ 0.001	U	0.001	0.013	mg/kg	B221769	S220837
2208060-29	SeCN F2	SE	dry	0.259		0.001	0.013	mg/kg	B221770	S220837
2208060-29	SeMet F1	SE	dry	≤ 0.002	U	0.002	0.013	mg/kg	B221769	S220837
2208060-29	SeMet F2	SE	dry	≤ 0.002	U	0.002	0.013	mg/kg	B221770	S220837
2208060-29	SeSO ₃ F1	SE	dry	≤ 0.003	U	0.003	0.032	mg/kg	B221769	S220837
2208060-29	SeSO ₃ F2	SE	dry	≤ 0.003	U	0.003	0.032	mg/kg	B221770	S220837
2208060-29	Unk Se Sp F1	SE	dry	≤ 0.003	U	0.003	0.031	mg/kg	B221769	S220837
2208060-29	Unk Se Sp F2	SE	dry	0.102		0.003	0.031	mg/kg	B221770	S220837



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKDT_SE-6_2022-07-26_N</i>										
2208060-30	%TS	SE	NA	33.61		0.01	0.05	%	B221848	N/A
2208060-30	DMS ₂ O F1	SE	dry	0.006	J	0.003	0.024	mg/kg	B221769	S220837
2208060-30	DMS ₂ O F2	SE	dry	0.008	J	0.003	0.024	mg/kg	B221770	S220837
2208060-30	MeSe(IV) F1	SE	dry	0.027		0.003	0.024	mg/kg	B221769	S220837
2208060-30	MeSe(IV) F2	SE	dry	1.03		0.003	0.024	mg/kg	B221770	S220837
2208060-30	Se	SE	dry	22.4		0.257	0.514	mg/kg	B221842	S220875
2208060-30	Se Unk A F1	SE	dry	≤ 0.003	U	0.003	0.024	mg/kg	B221769	S220837
2208060-30	Se Unk A F2	SE	dry	≤ 0.003	U	0.003	0.024	mg/kg	B221770	S220837
2208060-30	Se(F1)	SE	dry	0.819		0.038	0.237	mg/kg	B221798	S220842
2208060-30	Se(F2)	SE	dry	10.9		0.067	0.237	mg/kg	B221808	S220842
2208060-30	Se(F3)	SE	dry	5.59		0.053	0.237	mg/kg	B221826	S220849
2208060-30	Se(F4)	SE	dry	0.378		0.034	0.237	mg/kg	B221830	S220851
2208060-30	Se(F5)	SE	dry	0.045	J	0.015	0.148	mg/kg	B221863	S220865
2208060-30	Se(IV) F1	SE	dry	0.551		0.006	0.058	mg/kg	B221769	S220837
2208060-30	Se(IV) F2	SE	dry	6.18		0.006	0.058	mg/kg	B221770	S220837
2208060-30	Se(VI) F1	SE	dry	0.009	J	0.006	0.061	mg/kg	B221769	S220837
2208060-30	Se(VI) F2	SE	dry	0.053	J	0.006	0.061	mg/kg	B221770	S220837
2208060-30	SeCN F1	SE	dry	≤ 0.002	U	0.002	0.024	mg/kg	B221769	S220837
2208060-30	SeCN F2	SE	dry	1.72		0.002	0.024	mg/kg	B221770	S220837
2208060-30	SeMet F1	SE	dry	≤ 0.003	U	0.003	0.024	mg/kg	B221769	S220837
2208060-30	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.024	mg/kg	B221770	S220837
2208060-30	SeSO ₃ F1	SE	dry	≤ 0.006	U	0.006	0.061	mg/kg	B221769	S220837
2208060-30	SeSO ₃ F2	SE	dry	0.042	J	0.006	0.061	mg/kg	B221770	S220837
2208060-30	Unk Se Sp F1	SE	dry	0.014	J	0.006	0.058	mg/kg	B221769	S220837
2208060-30	Unk Se Sp F2	SE	dry	0.836		0.006	0.058	mg/kg	B221770	S220837



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKDT_SE-7_2022-07-26_N</i>										
2208060-31	%TS	SE	NA	66.60		0.007	0.02	%	B221848	N/A
2208060-31	DMS ₂ O F1	SE	dry	≤ 0.002	U	0.002	0.012	mg/kg	B221769	S220837
2208060-31	DMS ₂ O F2	SE	dry	≤ 0.002	U	0.002	0.012	mg/kg	B221770	S220837
2208060-31	MeSe(IV) F1	SE	dry	0.006	J	0.002	0.012	mg/kg	B221769	S220837
2208060-31	MeSe(IV) F2	SE	dry	0.067		0.002	0.012	mg/kg	B221770	S220837
2208060-31	Se	SE	dry	2.34		0.118	0.236	mg/kg	B221842	S220875
2208060-31	Se Unk A F1	SE	dry	≤ 0.002	U	0.002	0.012	mg/kg	B221769	S220837
2208060-31	Se Unk A F2	SE	dry	≤ 0.002	U	0.002	0.012	mg/kg	B221770	S220837
2208060-31	Se(F1)	SE	dry	0.190		0.019	0.119	mg/kg	B221798	S220842
2208060-31	Se(F2)	SE	dry	0.874		0.034	0.119	mg/kg	B221808	S220842
2208060-31	Se(F3)	SE	dry	1.01		0.027	0.119	mg/kg	B221826	S220849
2208060-31	Se(F4)	SE	dry	0.220		0.017	0.119	mg/kg	B221830	S220851
2208060-31	Se(F5)	SE	dry	0.018	J	0.007	0.075	mg/kg	B221863	S220865
2208060-31	Se(IV) F1	SE	dry	0.101		0.003	0.029	mg/kg	B221769	S220837
2208060-31	Se(IV) F2	SE	dry	0.527		0.003	0.029	mg/kg	B221770	S220837
2208060-31	Se(VI) F1	SE	dry	0.056		0.003	0.031	mg/kg	B221769	S220837
2208060-31	Se(VI) F2	SE	dry	≤ 0.003	U	0.003	0.031	mg/kg	B221770	S220837
2208060-31	SeCN F1	SE	dry	≤ 0.001	U	0.001	0.012	mg/kg	B221769	S220837
2208060-31	SeCN F2	SE	dry	0.084		0.001	0.012	mg/kg	B221770	S220837
2208060-31	SeMet F1	SE	dry	≤ 0.002	U	0.002	0.012	mg/kg	B221769	S220837
2208060-31	SeMet F2	SE	dry	≤ 0.002	U	0.002	0.012	mg/kg	B221770	S220837
2208060-31	SeSO ₃ F1	SE	dry	≤ 0.003	U	0.003	0.031	mg/kg	B221769	S220837
2208060-31	SeSO ₃ F2	SE	dry	≤ 0.003	U	0.003	0.031	mg/kg	B221770	S220837
2208060-31	Unk Se Sp F1	SE	dry	≤ 0.003	U	0.003	0.029	mg/kg	B221769	S220837
2208060-31	Unk Se Sp F2	SE	dry	0.027	J	0.003	0.029	mg/kg	B221770	S220837



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKDT_BRYOSE-1_2022-07-26_N										
2208060-32	%TS	SE	NA	27.86		0.02	0.06	%	B221848	N/A
2208060-32	DMS ₂ O F1	SE	dry	≤ 0.004	U	0.004	0.028	mg/kg	B221769	S220837
2208060-32	DMS ₂ O F2	SE	dry	≤ 0.004	U	0.004	0.028	mg/kg	B221770	S220837
2208060-32	MeSe(IV) F1	SE	dry	0.013	J	0.004	0.028	mg/kg	B221769	S220837
2208060-32	MeSe(IV) F2	SE	dry	0.229		0.004	0.028	mg/kg	B221770	S220837
2208060-32	Se	SE	dry	9.81		0.313	0.627	mg/kg	B221842	S220875
2208060-32	Se Unk A F1	SE	dry	≤ 0.004	U	0.004	0.028	mg/kg	B221769	S220837
2208060-32	Se Unk A F2	SE	dry	≤ 0.004	U	0.004	0.028	mg/kg	B221770	S220837
2208060-32	Se(F1)	SE	dry	0.828		0.046	0.280	mg/kg	B221798	S220842
2208060-32	Se(F2)	SE	dry	3.06		0.079	0.280	mg/kg	B221808	S220842
2208060-32	Se(F3)	SE	dry	4.00		0.063	0.280	mg/kg	B221826	S220849
2208060-32	Se(F4)	SE	dry	0.244	J	0.040	0.280	mg/kg	B221830	S220851
2208060-32	Se(F5)	SE	dry	0.026	J	0.018	0.175	mg/kg	B221863	S220865
2208060-32	Se(IV) F1	SE	dry	0.246		0.007	0.068	mg/kg	B221769	S220837
2208060-32	Se(IV) F2	SE	dry	1.55		0.007	0.068	mg/kg	B221770	S220837
2208060-32	Se(VI) F1	SE	dry	0.329		0.007	0.072	mg/kg	B221769	S220837
2208060-32	Se(VI) F2	SE	dry	≤ 0.007	U	0.007	0.072	mg/kg	B221770	S220837
2208060-32	SeCN F1	SE	dry	≤ 0.003	U	0.003	0.028	mg/kg	B221769	S220837
2208060-32	SeCN F2	SE	dry	0.643		0.003	0.028	mg/kg	B221770	S220837
2208060-32	SeMet F1	SE	dry	≤ 0.004	U	0.004	0.028	mg/kg	B221769	S220837
2208060-32	SeMet F2	SE	dry	≤ 0.004	U	0.004	0.028	mg/kg	B221770	S220837
2208060-32	SeSO ₃ F1	SE	dry	≤ 0.007	U	0.007	0.072	mg/kg	B221769	S220837
2208060-32	SeSO ₃ F2	SE	dry	≤ 0.007	U	0.007	0.072	mg/kg	B221770	S220837
2208060-32	Unk Se Sp F1	SE	dry	≤ 0.007	U	0.007	0.068	mg/kg	B221769	S220837
2208060-32	Unk Se Sp F2	SE	dry	0.138		0.007	0.068	mg/kg	B221770	S220837



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKDT_BRYOSE-2_2022-07-26_N										
2208060-33	%TS	SE	NA	29.00		0.02	0.06	%	B221848	N/A
2208060-33	DMS ₂ O F1	SE	dry	≤ 0.004	U	0.004	0.027	mg/kg	B221769	S220837
2208060-33	DMS ₂ O F2	SE	dry	0.017	J	0.004	0.027	mg/kg	B221770	S220837
2208060-33	MeSe(IV) F1	SE	dry	0.015	J	0.004	0.027	mg/kg	B221769	S220837
2208060-33	MeSe(IV) F2	SE	dry	0.291		0.004	0.027	mg/kg	B221770	S220837
2208060-33	Se	SE	dry	10.3		0.235	0.469	mg/kg	B221842	S220875
2208060-33	Se Unk A F1	SE	dry	≤ 0.004	U	0.004	0.027	mg/kg	B221769	S220837
2208060-33	Se Unk A F2	SE	dry	≤ 0.004	U	0.004	0.027	mg/kg	B221770	S220837
2208060-33	Se(F1)	SE	dry	0.932		0.044	0.271	mg/kg	B221798	S220842
2208060-33	Se(F2)	SE	dry	4.41		0.076	0.271	mg/kg	B221808	S220842
2208060-33	Se(F3)	SE	dry	3.60		0.061	0.271	mg/kg	B221826	S220849
2208060-33	Se(F4)	SE	dry	0.149	J	0.039	0.271	mg/kg	B221830	S220851
2208060-33	Se(F5)	SE	dry	≤ 0.017	U	0.017	0.169	mg/kg	B221863	S220865
2208060-33	Se(IV) F1	SE	dry	0.339		0.007	0.066	mg/kg	B221769	S220837
2208060-33	Se(IV) F2	SE	dry	2.23		0.007	0.066	mg/kg	B221770	S220837
2208060-33	Se(VI) F1	SE	dry	0.293		0.007	0.069	mg/kg	B221769	S220837
2208060-33	Se(VI) F2	SE	dry	≤ 0.007	U	0.007	0.069	mg/kg	B221770	S220837
2208060-33	SeCN F1	SE	dry	≤ 0.003	U	0.003	0.027	mg/kg	B221769	S220837
2208060-33	SeCN F2	SE	dry	0.785		0.003	0.027	mg/kg	B221770	S220837
2208060-33	SeMet F1	SE	dry	≤ 0.004	U	0.004	0.027	mg/kg	B221769	S220837
2208060-33	SeMet F2	SE	dry	≤ 0.004	U	0.004	0.027	mg/kg	B221770	S220837
2208060-33	SeSO ₃ F1	SE	dry	≤ 0.007	U	0.007	0.069	mg/kg	B221769	S220837
2208060-33	SeSO ₃ F2	SE	dry	0.039	J	0.007	0.069	mg/kg	B221770	S220837
2208060-33	Unk Se Sp F1	SE	dry	≤ 0.007	U	0.007	0.066	mg/kg	B221769	S220837
2208060-33	Unk Se Sp F2	SE	dry	0.248		0.007	0.066	mg/kg	B221770	S220837



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKDT_BRYOSE-3_2022-07-26_N										
2208060-34	%TS	SE	NA	67.39		0.007	0.02	%	B221848	N/A
2208060-34	DMS ₂ O F1	SE	dry	≤ 0.002	U	0.002	0.011	mg/kg	B221769	S220837
2208060-34	DMS ₂ O F2	SE	dry	0.003	J	0.002	0.011	mg/kg	B221770	S220837
2208060-34	MeSe(IV) F1	SE	dry	0.005	J	0.002	0.011	mg/kg	B221769	S220837
2208060-34	MeSe(IV) F2	SE	dry	0.065		0.002	0.011	mg/kg	B221770	S220837
2208060-34	Se	SE	dry	2.38		0.129	0.258	mg/kg	B221842	S220875
2208060-34	Se Unk A F1	SE	dry	≤ 0.002	U	0.002	0.011	mg/kg	B221769	S220837
2208060-34	Se Unk A F2	SE	dry	≤ 0.002	U	0.002	0.011	mg/kg	B221770	S220837
2208060-34	Se(F1)	SE	dry	0.183		0.019	0.114	mg/kg	B221798	S220842
2208060-34	Se(F2)	SE	dry	0.705		0.032	0.114	mg/kg	B221808	S220842
2208060-34	Se(F3)	SE	dry	1.33		0.026	0.114	mg/kg	B221826	S220849
2208060-34	Se(F4)	SE	dry	0.326		0.016	0.114	mg/kg	B221830	S220851
2208060-34	Se(F5)	SE	dry	0.033	J	0.007	0.071	mg/kg	B221863	S220865
2208060-34	Se(IV) F1	SE	dry	0.069		0.003	0.028	mg/kg	B221769	S220837
2208060-34	Se(IV) F2	SE	dry	0.370		0.003	0.028	mg/kg	B221770	S220837
2208060-34	Se(VI) F1	SE	dry	0.061		0.003	0.029	mg/kg	B221769	S220837
2208060-34	Se(VI) F2	SE	dry	≤ 0.003	U	0.003	0.029	mg/kg	B221770	S220837
2208060-34	SeCN F1	SE	dry	≤ 0.001	U	0.001	0.011	mg/kg	B221769	S220837
2208060-34	SeCN F2	SE	dry	0.118		0.001	0.011	mg/kg	B221770	S220837
2208060-34	SeMet F1	SE	dry	≤ 0.002	U	0.002	0.011	mg/kg	B221769	S220837
2208060-34	SeMet F2	SE	dry	≤ 0.002	U	0.002	0.011	mg/kg	B221770	S220837
2208060-34	SeSO ₃ F1	SE	dry	≤ 0.003	U	0.003	0.029	mg/kg	B221769	S220837
2208060-34	SeSO ₃ F2	SE	dry	≤ 0.003	U	0.003	0.029	mg/kg	B221770	S220837
2208060-34	Unk Se Sp F1	SE	dry	≤ 0.003	U	0.003	0.028	mg/kg	B221769	S220837
2208060-34	Unk Se Sp F2	SE	dry	0.027	J	0.003	0.028	mg/kg	B221770	S220837



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCK_SE-1_2022-07-27_N										
2208060-35	%TS	SE	NA	58.95		0.005	0.02	%	B221848	N/A
2208060-35	DMS ₂ O F1	SE	dry	≤ 0.002	U	0.002	0.014	mg/kg	B221769	S220837
2208060-35	DMS ₂ O F2	SE	dry	≤ 0.002	U	0.002	0.014	mg/kg	B221770	S220837
2208060-35	MeSe(IV) F1	SE	dry	0.014	J	0.002	0.014	mg/kg	B221769	S220837
2208060-35	MeSe(IV) F2	SE	dry	0.063		0.002	0.014	mg/kg	B221770	S220837
2208060-35	Se	SE	dry	2.45		0.132	0.264	mg/kg	B221842	S220875
2208060-35	Se Unk A F1	SE	dry	≤ 0.002	U	0.002	0.014	mg/kg	B221769	S220837
2208060-35	Se Unk A F2	SE	dry	≤ 0.002	U	0.002	0.014	mg/kg	B221770	S220837
2208060-35	Se(F1)	SE	dry	0.255		0.022	0.135	mg/kg	B221798	S220842
2208060-35	Se(F2)	SE	dry	0.582		0.038	0.135	mg/kg	B221808	S220842
2208060-35	Se(F3)	SE	dry	1.15		0.030	0.135	mg/kg	B221826	S220849
2208060-35	Se(F4)	SE	dry	0.119	J	0.019	0.135	mg/kg	B221830	S220851
2208060-35	Se(F5)	SE	dry	0.014	J	0.008	0.084	mg/kg	B221863	S220865
2208060-35	Se(IV) F1	SE	dry	0.064		0.003	0.033	mg/kg	B221769	S220837
2208060-35	Se(IV) F2	SE	dry	0.151		0.003	0.033	mg/kg	B221770	S220837
2208060-35	Se(VI) F1	SE	dry	0.099		0.003	0.035	mg/kg	B221769	S220837
2208060-35	Se(VI) F2	SE	dry	≤ 0.003	U	0.003	0.035	mg/kg	B221770	S220837
2208060-35	SeCN F1	SE	dry	≤ 0.001	U	0.001	0.014	mg/kg	B221769	S220837
2208060-35	SeCN F2	SE	dry	0.092		0.001	0.014	mg/kg	B221770	S220837
2208060-35	SeMet F1	SE	dry	≤ 0.002	U	0.002	0.014	mg/kg	B221769	S220837
2208060-35	SeMet F2	SE	dry	≤ 0.002	U	0.002	0.014	mg/kg	B221770	S220837
2208060-35	SeSO ₃ F1	SE	dry	≤ 0.003	U	0.003	0.035	mg/kg	B221769	S220837
2208060-35	SeSO ₃ F2	SE	dry	≤ 0.003	U	0.003	0.035	mg/kg	B221770	S220837
2208060-35	Unk Se Sp F1	SE	dry	0.005	J	0.003	0.033	mg/kg	B221769	S220837
2208060-35	Unk Se Sp F2	SE	dry	0.048		0.003	0.033	mg/kg	B221770	S220837



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKUC_SE-1_2022-07-27_N										
2208060-36	%TS	SE	NA	43.40		0.01	0.04	%	B221848	N/A
2208060-36	DMS ₂ O F1	SE	dry	0.011	J	0.002	0.018	mg/kg	B221769	S220837
2208060-36	DMS ₂ O F2	SE	dry	0.005	J	0.002	0.018	mg/kg	B221770	S220837
2208060-36	MeSe(IV) F1	SE	dry	0.020		0.002	0.018	mg/kg	B221769	S220837
2208060-36	MeSe(IV) F2	SE	dry	0.491		0.002	0.018	mg/kg	B221770	S220837
2208060-36	Se	SE	dry	8.78		0.198	0.396	mg/kg	B221842	S220875
2208060-36	Se Unk A F1	SE	dry	≤ 0.002	U	0.002	0.018	mg/kg	B221769	S220837
2208060-36	Se Unk A F2	SE	dry	≤ 0.002	U	0.002	0.018	mg/kg	B221770	S220837
2208060-36	Se(F1)	SE	dry	0.314		0.029	0.182	mg/kg	B221798	S220842
2208060-36	Se(F2)	SE	dry	2.53		0.051	0.182	mg/kg	B221808	S220842
2208060-36	Se(F3)	SE	dry	4.10		0.041	0.182	mg/kg	B221826	S220849
2208060-36	Se(F4)	SE	dry	0.626		0.026	0.182	mg/kg	B221830	S220851
2208060-36	Se(F5)	SE	dry	0.054	J	0.011	0.113	mg/kg	B221863	S220865
2208060-36	Se(IV) F1	SE	dry	0.180		0.004	0.044	mg/kg	B221769	S220837
2208060-36	Se(IV) F2	SE	dry	0.785		0.004	0.044	mg/kg	B221770	S220837
2208060-36	Se(VI) F1	SE	dry	0.018	J	0.005	0.047	mg/kg	B221769	S220837
2208060-36	Se(VI) F2	SE	dry	≤ 0.005	U	0.005	0.047	mg/kg	B221770	S220837
2208060-36	SeCN F1	SE	dry	≤ 0.002	U	0.002	0.018	mg/kg	B221769	S220837
2208060-36	SeCN F2	SE	dry	0.429		0.002	0.018	mg/kg	B221770	S220837
2208060-36	SeMet F1	SE	dry	≤ 0.002	U	0.002	0.018	mg/kg	B221769	S220837
2208060-36	SeMet F2	SE	dry	≤ 0.002	U	0.002	0.018	mg/kg	B221770	S220837
2208060-36	SeSO ₃ F1	SE	dry	≤ 0.005	U	0.005	0.047	mg/kg	B221769	S220837
2208060-36	SeSO ₃ F2	SE	dry	0.013	J	0.005	0.047	mg/kg	B221770	S220837
2208060-36	Unk Se Sp F1	SE	dry	≤ 0.004	U	0.004	0.044	mg/kg	B221769	S220837
2208060-36	Unk Se Sp F2	SE	dry	0.226		0.004	0.044	mg/kg	B221770	S220837



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKUC_SE-2_2022-07-27_N										
2208060-37	%TS	SE	NA	34.43		0.01	0.05	%	B221848	N/A
2208060-37	DMS ₂ O F1	SE	dry	≤ 0.003	U	0.003	0.023	mg/kg	B221769	S220837
2208060-37	DMS ₂ O F2	SE	dry	0.008	J	0.003	0.023	mg/kg	B221770	S220837
2208060-37	MeSe(IV) F1	SE	dry	0.017	J	0.003	0.023	mg/kg	B221769	S220837
2208060-37	MeSe(IV) F2	SE	dry	0.599		0.003	0.023	mg/kg	B221770	S220837
2208060-37	Se	SE	dry	10.7		0.231	0.462	mg/kg	B221842	S220875
2208060-37	Se Unk A F1	SE	dry	≤ 0.003	U	0.003	0.023	mg/kg	B221769	S220837
2208060-37	Se Unk A F2	SE	dry	≤ 0.003	U	0.003	0.023	mg/kg	B221770	S220837
2208060-37	Se(F1)	SE	dry	0.477		0.037	0.227	mg/kg	B221798	S220842
2208060-37	Se(F2)	SE	dry	2.86		0.064	0.227	mg/kg	B221808	S220842
2208060-37	Se(F3)	SE	dry	5.77		0.051	0.227	mg/kg	B221826	S220849
2208060-37	Se(F4)	SE	dry	0.040	J	0.033	0.227	mg/kg	B221830	S220851
2208060-37	Se(F5)	SE	dry	≤ 0.014	U	0.014	0.142	mg/kg	B221863	S220865
2208060-37	Se(IV) F1	SE	dry	0.300		0.006	0.055	mg/kg	B221769	S220837
2208060-37	Se(IV) F2	SE	dry	0.787		0.006	0.055	mg/kg	B221770	S220837
2208060-37	Se(VI) F1	SE	dry	0.018	J	0.006	0.058	mg/kg	B221769	S220837
2208060-37	Se(VI) F2	SE	dry	0.027	J	0.006	0.058	mg/kg	B221770	S220837
2208060-37	SeCN F1	SE	dry	≤ 0.002	U	0.002	0.023	mg/kg	B221769	S220837
2208060-37	SeCN F2	SE	dry	0.394		0.002	0.023	mg/kg	B221770	S220837
2208060-37	SeMet F1	SE	dry	≤ 0.003	U	0.003	0.023	mg/kg	B221769	S220837
2208060-37	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.023	mg/kg	B221770	S220837
2208060-37	SeSO ₃ F1	SE	dry	≤ 0.006	U	0.006	0.058	mg/kg	B221769	S220837
2208060-37	SeSO ₃ F2	SE	dry	≤ 0.006	U	0.006	0.058	mg/kg	B221770	S220837
2208060-37	Unk Se Sp F1	SE	dry	≤ 0.006	U	0.006	0.055	mg/kg	B221769	S220837
2208060-37	Unk Se Sp F2	SE	dry	0.215		0.006	0.055	mg/kg	B221770	S220837



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKUC_SE-3_2022-07-27_N										
2208060-38	%TS	SE	NA	25.82		0.01	0.04	%	B221848	N/A
2208060-38	DMS ₂ O F1	SE	dry	0.010	J	0.004	0.030	mg/kg	B221769	S220837
2208060-38	DMS ₂ O F2	SE	dry	0.012	J	0.004	0.030	mg/kg	B221770	S220837
2208060-38	MeSe(IV) F1	SE	dry	0.032		0.004	0.030	mg/kg	B221769	S220837
2208060-38	MeSe(IV) F2	SE	dry	1.08		0.004	0.030	mg/kg	B221770	S220837
2208060-38	Se	SE	dry	11.8		0.353	0.707	mg/kg	B221842	S220875
2208060-38	Se Unk A F1	SE	dry	≤ 0.004	U	0.004	0.030	mg/kg	B221769	S220837
2208060-38	Se Unk A F2	SE	dry	≤ 0.004	U	0.004	0.030	mg/kg	B221770	S220837
2208060-38	Se(F1)	SE	dry	0.606		0.049	0.301	mg/kg	B221798	S220842
2208060-38	Se(F2)	SE	dry	4.53		0.085	0.301	mg/kg	B221808	S220842
2208060-38	Se(F3)	SE	dry	13.9		0.068	0.301	mg/kg	B221826	S220849
2208060-38	Se(F4)	SE	dry	≤ 0.043	U	0.043	0.301	mg/kg	B221830	S220851
2208060-38	Se(F5)	SE	dry	≤ 0.019	U	0.019	0.188	mg/kg	B221863	S220865
2208060-38	Se(IV) F1	SE	dry	0.301		0.007	0.073	mg/kg	B221769	S220837
2208060-38	Se(IV) F2	SE	dry	1.27		0.007	0.073	mg/kg	B221770	S220837
2208060-38	Se(VI) F1	SE	dry	0.050	J	0.008	0.077	mg/kg	B221769	S220837
2208060-38	Se(VI) F2	SE	dry	≤ 0.008	U	0.008	0.077	mg/kg	B221770	S220837
2208060-38	SeCN F1	SE	dry	≤ 0.003	U	0.003	0.030	mg/kg	B221769	S220837
2208060-38	SeCN F2	SE	dry	0.816		0.003	0.030	mg/kg	B221770	S220837
2208060-38	SeMet F1	SE	dry	≤ 0.004	U	0.004	0.030	mg/kg	B221769	S220837
2208060-38	SeMet F2	SE	dry	≤ 0.004	U	0.004	0.030	mg/kg	B221770	S220837
2208060-38	SeSO ₃ F1	SE	dry	≤ 0.008	U	0.008	0.077	mg/kg	B221769	S220837
2208060-38	SeSO ₃ F2	SE	dry	0.041	J	0.008	0.077	mg/kg	B221770	S220837
2208060-38	Unk Se Sp F1	SE	dry	≤ 0.007	U	0.007	0.073	mg/kg	B221769	S220837
2208060-38	Unk Se Sp F2	SE	dry	0.344		0.007	0.073	mg/kg	B221770	S220837



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKUC_BRYOSE-1_2022-07-27_N										
2208060-39	%TS	SE	NA	39.69		0.01	0.04	%	B221848	N/A
2208060-39	DMS ₂ O F1	SE	dry	≤ 0.003	U	0.003	0.020	mg/kg	B221769	S220837
2208060-39	DMS ₂ O F2	SE	dry	≤ 0.003	U	0.003	0.020	mg/kg	B221770	S220837
2208060-39	MeSe(IV) F1	SE	dry	0.010	J	0.003	0.020	mg/kg	B221769	S220837
2208060-39	MeSe(IV) F2	SE	dry	0.087		0.003	0.020	mg/kg	B221770	S220837
2208060-39	Se	SE	dry	2.35		0.190	0.380	mg/kg	B221842	S220875
2208060-39	Se Unk A F1	SE	dry	≤ 0.003	U	0.003	0.020	mg/kg	B221769	S220837
2208060-39	Se Unk A F2	SE	dry	≤ 0.003	U	0.003	0.020	mg/kg	B221770	S220837
2208060-39	Se(F1)	SE	dry	0.221		0.032	0.200	mg/kg	B221798	S220842
2208060-39	Se(F2)	SE	dry	0.508		0.056	0.200	mg/kg	B221808	S220842
2208060-39	Se(F3)	SE	dry	1.18		0.045	0.200	mg/kg	B221826	S220849
2208060-39	Se(F4)	SE	dry	≤ 0.029	U	0.029	0.200	mg/kg	B221830	S220851
2208060-39	Se(F5)	SE	dry	≤ 0.012	U	0.012	0.125	mg/kg	B221863	S220865
2208060-39	Se(IV) F1	SE	dry	0.038	J	0.005	0.049	mg/kg	B221769	S220837
2208060-39	Se(IV) F2	SE	dry	0.122		0.005	0.049	mg/kg	B221770	S220837
2208060-39	Se(VI) F1	SE	dry	0.123		0.005	0.051	mg/kg	B221769	S220837
2208060-39	Se(VI) F2	SE	dry	≤ 0.005	U	0.005	0.051	mg/kg	B221770	S220837
2208060-39	SeCN F1	SE	dry	≤ 0.002	U	0.002	0.020	mg/kg	B221769	S220837
2208060-39	SeCN F2	SE	dry	0.052		0.002	0.020	mg/kg	B221770	S220837
2208060-39	SeMet F1	SE	dry	≤ 0.003	U	0.003	0.020	mg/kg	B221769	S220837
2208060-39	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.020	mg/kg	B221770	S220837
2208060-39	SeSO ₃ F1	SE	dry	≤ 0.005	U	0.005	0.051	mg/kg	B221769	S220837
2208060-39	SeSO ₃ F2	SE	dry	≤ 0.005	U	0.005	0.051	mg/kg	B221770	S220837
2208060-39	Unk Se Sp F1	SE	dry	≤ 0.005	U	0.005	0.049	mg/kg	B221769	S220837
2208060-39	Unk Se Sp F2	SE	dry	0.048	J	0.005	0.049	mg/kg	B221770	S220837



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKUC_BRYOSE-2_2022-07-27_N										
2208060-40	%TS	SE	NA	60.31		0.008	0.03	%	B221848	N/A
2208060-40	DMS ₂ O F1	SE	dry	≤ 0.002	U	0.002	0.013	mg/kg	B221769	S220837
2208060-40	DMS ₂ O F2	SE	dry	≤ 0.002	U	0.002	0.013	mg/kg	B221770	S220837
2208060-40	MeSe(IV) F1	SE	dry	0.005	J	0.002	0.013	mg/kg	B221769	S220837
2208060-40	MeSe(IV) F2	SE	dry	0.037		0.002	0.013	mg/kg	B221770	S220837
2208060-40	Se	SE	dry	1.57		0.122	0.245	mg/kg	B221842	S220875
2208060-40	Se Unk A F1	SE	dry	≤ 0.002	U	0.002	0.013	mg/kg	B221769	S220837
2208060-40	Se Unk A F2	SE	dry	≤ 0.002	U	0.002	0.013	mg/kg	B221770	S220837
2208060-40	Se(F1)	SE	dry	0.124	J	0.021	0.130	mg/kg	B221798	S220842
2208060-40	Se(F2)	SE	dry	0.265		0.037	0.130	mg/kg	B221808	S220842
2208060-40	Se(F3)	SE	dry	0.676		0.029	0.130	mg/kg	B221826	S220849
2208060-40	Se(F4)	SE	dry	≤ 0.019	U	0.019	0.130	mg/kg	B221830	S220851
2208060-40	Se(F5)	SE	dry	≤ 0.008	U	0.008	0.081	mg/kg	B221863	S220865
2208060-40	Se(IV) F1	SE	dry	0.014	J	0.003	0.032	mg/kg	B221769	S220837
2208060-40	Se(IV) F2	SE	dry	0.079		0.003	0.032	mg/kg	B221770	S220837
2208060-40	Se(VI) F1	SE	dry	0.074		0.003	0.033	mg/kg	B221769	S220837
2208060-40	Se(VI) F2	SE	dry	≤ 0.003	U	0.003	0.033	mg/kg	B221770	S220837
2208060-40	SeCN F1	SE	dry	≤ 0.001	U	0.001	0.013	mg/kg	B221769	S220837
2208060-40	SeCN F2	SE	dry	0.034		0.001	0.013	mg/kg	B221770	S220837
2208060-40	SeMet F1	SE	dry	≤ 0.002	U	0.002	0.013	mg/kg	B221769	S220837
2208060-40	SeMet F2	SE	dry	≤ 0.002	U	0.002	0.013	mg/kg	B221770	S220837
2208060-40	SeSO ₃ F1	SE	dry	≤ 0.003	U	0.003	0.033	mg/kg	B221769	S220837
2208060-40	SeSO ₃ F2	SE	dry	≤ 0.003	U	0.003	0.033	mg/kg	B221770	S220837
2208060-40	Unk Se Sp F1	SE	dry	≤ 0.003	U	0.003	0.032	mg/kg	B221769	S220837
2208060-40	Unk Se Sp F2	SE	dry	0.023	J	0.003	0.032	mg/kg	B221770	S220837



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKUC_BRYOSE-3_2022-07-27_N</i>										
2208060-41	%TS	SE	NA	51.62		0.01	0.03	%	B221848	N/A
2208060-41	DMS ₂ O F1	SE	dry	≤ 0.002	U	0.002	0.015	mg/kg	B221769	S220837
2208060-41	DMS ₂ O F2	SE	dry	≤ 0.002	U	0.002	0.015	mg/kg	B221770	S220837
2208060-41	MeSe(IV) F1	SE	dry	0.007	J	0.002	0.015	mg/kg	B221769	S220837
2208060-41	MeSe(IV) F2	SE	dry	0.071		0.002	0.015	mg/kg	B221770	S220837
2208060-41	Se	SE	dry	1.82		0.152	0.305	mg/kg	B221842	S220875
2208060-41	Se Unk A F1	SE	dry	≤ 0.002	U	0.002	0.015	mg/kg	B221769	S220837
2208060-41	Se Unk A F2	SE	dry	≤ 0.002	U	0.002	0.015	mg/kg	B221770	S220837
2208060-41	Se(F1)	SE	dry	0.204		0.024	0.150	mg/kg	B221798	S220842
2208060-41	Se(F2)	SE	dry	0.446		0.042	0.150	mg/kg	B221808	S220842
2208060-41	Se(F3)	SE	dry	0.940		0.034	0.150	mg/kg	B221826	S220849
2208060-41	Se(F4)	SE	dry	≤ 0.022	U	0.022	0.150	mg/kg	B221830	S220851
2208060-41	Se(F5)	SE	dry	0.010	J	0.009	0.094	mg/kg	B221863	S220865
2208060-41	Se(IV) F1	SE	dry	0.042		0.004	0.036	mg/kg	B221769	S220837
2208060-41	Se(IV) F2	SE	dry	0.141		0.004	0.036	mg/kg	B221770	S220837
2208060-41	Se(VI) F1	SE	dry	0.090		0.004	0.038	mg/kg	B221769	S220837
2208060-41	Se(VI) F2	SE	dry	≤ 0.004	U	0.004	0.038	mg/kg	B221770	S220837
2208060-41	SeCN F1	SE	dry	≤ 0.001	U	0.001	0.015	mg/kg	B221769	S220837
2208060-41	SeCN F2	SE	dry	0.068		0.001	0.015	mg/kg	B221770	S220837
2208060-41	SeMet F1	SE	dry	≤ 0.002	U	0.002	0.015	mg/kg	B221769	S220837
2208060-41	SeMet F2	SE	dry	≤ 0.002	U	0.002	0.015	mg/kg	B221770	S220837
2208060-41	SeSO ₃ F1	SE	dry	≤ 0.004	U	0.004	0.038	mg/kg	B221769	S220837
2208060-41	SeSO ₃ F2	SE	dry	≤ 0.004	U	0.004	0.038	mg/kg	B221770	S220837
2208060-41	Unk Se Sp F1	SE	dry	≤ 0.004	U	0.004	0.036	mg/kg	B221769	S220837
2208060-41	Unk Se Sp F2	SE	dry	0.036	J	0.004	0.036	mg/kg	B221770	S220837



Accuracy & Precision Summary

Batch: B221769
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221769-DUP1	Duplicate, (2208060-02)						
		DMSeO F1	0.004		0.004	mg/kg	2% 25
		MeSe(IV) F1	0.012		0.011	mg/kg	11% 25
		Se Unk A F1	ND		ND	mg/kg	N/C 25
		Se(IV) F1	0.146		0.121	mg/kg	19% 25
		Se(VI) F1	0.044		0.042	mg/kg	5% 25
		SeCN F1	ND		ND	mg/kg	N/C 25
		SeMet F1	ND		ND	mg/kg	N/C 25
		SeSO3 F1	ND		ND	mg/kg	N/C 25
		Unk Se Sp F1	ND		ND	mg/kg	N/C 25
B221769-PS1	Post Spike, (2208060-02)						
		Se(IV) F1	0.146	3.658	3.860	mg/kg	102% 75-125
		Se(VI) F1	0.044	3.807	3.852	mg/kg	100% 75-125
		SeCN F1	ND	1.465	1.385	mg/kg	95% 75-125
		SeMet F1	ND	1.476	1.549	mg/kg	105% 75-125
B221769-DUP2	Duplicate, (2208060-14)						
		DMSeO F1	0.020		0.020	mg/kg	2% 25
		MeSe(IV) F1	0.024		0.024	mg/kg	0.4% 25
		Se Unk A F1	ND		ND	mg/kg	N/C 25
		Se(IV) F1	0.146		0.173	mg/kg	17% 25
		Se(VI) F1	0.389		0.403	mg/kg	3% 25
		SeCN F1	ND		ND	mg/kg	N/C 25
		SeMet F1	ND		ND	mg/kg	N/C 25
		SeSO3 F1	ND		ND	mg/kg	N/C 25
		Unk Se Sp F1	ND		ND	mg/kg	N/C 25



Accuracy & Precision Summary

Batch: B221769
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221769-DUP6	Duplicate, Analytical (2208060-14)						
	DMS ₂ O F1	0.020		0.021	mg/kg		2% 25
	MeSe(IV) F1	0.024		0.031	mg/kg		24% 25
	Se Unk A F1	ND		ND	mg/kg		N/C 25
	Se(IV) F1	0.146		0.149	mg/kg		2% 25
	Se(VI) F1	0.389		0.411	mg/kg		6% 25
	SeCN F1	ND		ND	mg/kg		N/C 25
	SeMet F1	ND		ND	mg/kg		N/C 25
	SeSO ₃ F1	ND		ND	mg/kg		N/C 25
	Unk Se Sp F1	ND		ND	mg/kg		N/C 25
B221769-DUP3	Duplicate, (2208060-20)						
	DMS ₂ O F1	ND		0.003	mg/kg		N/C 25
	MeSe(IV) F1	0.005		0.007	mg/kg		46% 25
	Se Unk A F1	ND		ND	mg/kg		N/C 25
	Se(IV) F1	0.076		0.101	mg/kg		29% 25
	Se(VI) F1	0.084		0.082	mg/kg		2% 25
	SeCN F1	ND		ND	mg/kg		N/C 25
	SeMet F1	ND		ND	mg/kg		N/C 25
	SeSO ₃ F1	ND		ND	mg/kg		N/C 25
	Unk Se Sp F1	ND		ND	mg/kg		N/C 25
B221769-PS3	Post Spike, (2208060-20)						
	Se(IV) F1	0.076	3.263	3.371	mg/kg	101% 75-125	
	Se(VI) F1	0.084	3.397	3.481	mg/kg	100% 75-125	
	SeCN F1	ND	1.307	1.226	mg/kg	94% 75-125	
	SeMet F1	ND	1.317	1.359	mg/kg	103% 75-125	



Accuracy & Precision Summary

Batch: B221769
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221769-DUP4	Duplicate, (2208060-23)						
	DMSeO F1	ND		ND	mg/kg		N/C 25
	MeSe(IV) F1	0.005		0.007	mg/kg		31% 25
	Se Unk A F1	ND		ND	mg/kg		N/C 25
	Se(IV) F1	0.053		0.048	mg/kg		9% 25
	Se(VI) F1	0.278		0.310	mg/kg		11% 25
	SeCN F1	ND		ND	mg/kg		N/C 25
	SeMet F1	ND		ND	mg/kg		N/C 25
	SeSO3 F1	ND		ND	mg/kg		N/C 25
Unk Se Sp F1	ND		ND	mg/kg		N/C 25	
B221769-PS4	Post Spike, (2208060-23)						
	Se(IV) F1	0.053	5.973	6.135	mg/kg	102% 75-125	
	Se(VI) F1	0.278	6.217	6.407	mg/kg	99% 75-125	
	SeCN F1	ND	2.392	2.148	mg/kg	90% 75-125	
B221769-PS5	Post Spike, (2208060-32)						
	Se(IV) F1	0.246	6.870	7.031	mg/kg	99% 75-125	
	Se(VI) F1	0.329	7.150	7.235	mg/kg	97% 75-125	
	SeCN F1	ND	2.751	2.457	mg/kg	89% 75-125	
B221769-DUP5	Duplicate, (2208060-33)						
	DMSeO F1	ND		0.005	mg/kg		N/C 25
	MeSe(IV) F1	0.015		0.015	mg/kg		0.7% 25
	Se Unk A F1	ND		ND	mg/kg		N/C 25
	Se(IV) F1	0.339		0.361	mg/kg		6% 25
	Se(VI) F1	0.293		0.284	mg/kg		3% 25
	SeCN F1	ND		ND	mg/kg		N/C 25
	SeMet F1	ND		ND	mg/kg		N/C 25
	SeSO3 F1	ND		ND	mg/kg		N/C 25
Unk Se Sp F1	ND		ND	mg/kg		N/C 25	



Accuracy & Precision Summary

Batch: B221770
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221770-DUP1	Duplicate, (2208060-02)						
	DMS ₂ O F2	ND		ND	mg/kg		N/C 25
	MeSe(IV) F2	0.066		0.131	mg/kg		66% 25
	Se Unk A F2	ND		ND	mg/kg		N/C 25
	Se(IV) F2	0.365		0.499	mg/kg		31% 25
	Se(VI) F2	0.007		0.010	mg/kg		32% 25
	SeCN F2	0.089		0.101	mg/kg		13% 25
	SeMet F2	ND		ND	mg/kg		N/C 25
	SeSO ₃ F2	ND		ND	mg/kg		N/C 25
	Unk Se Sp F2	0.061		0.086	mg/kg		33% 25
B221770-PS1	Post Spike, (2208060-02)						
	Se(IV) F2	0.365	3.658	3.990	mg/kg	99% 75-125	
	Se(VI) F2	0.007	3.807	3.765	mg/kg	99% 75-125	
	SeCN F2	0.089	1.465	1.454	mg/kg	93% 75-125	
	SeMet F2	ND	1.476	1.511	mg/kg	102% 75-125	
B221770-PS2	Post Spike, (2208060-02)						
	Se(IV) F2	0.365	3.684	5.047	mg/kg	127% 75-125	
	Se(VI) F2	0.007	3.835	3.778	mg/kg	98% 75-125	
	SeCN F2	0.089	1.475	1.989	mg/kg	129% 75-125	
	SeMet F2	ND	1.487	1.571	mg/kg	106% 75-125	
B221770-DUP2	Duplicate, (2208060-14)						
	DMS ₂ O F2	0.018		0.017	mg/kg		6% 25
	MeSe(IV) F2	0.416		0.352	mg/kg		16% 25
	Se Unk A F2	ND		ND	mg/kg		N/C 25
	Se(IV) F2	3.252		2.721	mg/kg		18% 25
	Se(VI) F2	ND		ND	mg/kg		N/C 25
	SeCN F2	1.418		1.238	mg/kg		14% 25
	SeMet F2	ND		ND	mg/kg		N/C 25
	SeSO ₃ F2	ND		ND	mg/kg		N/C 25
	Unk Se Sp F2	0.275		0.252	mg/kg		9% 25



Accuracy & Precision Summary

Batch: B221770
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221770-DUP3	Duplicate, (2208060-20)						
	DMS ₂ O F2	ND		ND	mg/kg		N/C 25
	MeSe(IV) F2	0.109		0.193	mg/kg		55% 25
	Se Unk A F2	ND		ND	mg/kg		N/C 25
	Se(IV) F2	0.517		0.694	mg/kg		29% 25
	Se(VI) F2	ND		ND	mg/kg		N/C 25
	SeCN F2	0.135		0.228	mg/kg		51% 25
	SeMet F2	ND		ND	mg/kg		N/C 25
	SeSO ₃ F2	ND		ND	mg/kg		N/C 25
	Unk Se Sp F2	0.035		0.067	mg/kg		63% 25
B221770-PS3	Post Spike, (2208060-20)						
	Se(IV) F2	0.517	3.263	3.708	mg/kg	98% 75-125	
	Se(VI) F2	ND	3.397	3.330	mg/kg	98% 75-125	
	SeCN F2	0.135	1.307	1.359	mg/kg	94% 75-125	
	SeMet F2	ND	1.317	1.291	mg/kg	98% 75-125	
B221770-DUP4	Duplicate, (2208060-23)						
	DMS ₂ O F2	ND		ND	mg/kg		N/C 25
	MeSe(IV) F2	0.145		0.143	mg/kg		0.9% 25
	Se Unk A F2	ND		ND	mg/kg		N/C 25
	Se(IV) F2	0.394		0.395	mg/kg		0.05% 25
	Se(VI) F2	ND		ND	mg/kg		N/C 25
	SeCN F2	0.195		0.208	mg/kg		7% 25
	SeMet F2	ND		ND	mg/kg		N/C 25
	SeSO ₃ F2	ND		ND	mg/kg		N/C 25
	Unk Se Sp F2	0.059		0.061	mg/kg		2% 25
B221770-PS4	Post Spike, (2208060-23)						
	Se(IV) F2	0.394	5.973	6.162	mg/kg	97% 75-125	
	Se(VI) F2	ND	6.217	5.879	mg/kg	95% 75-125	
	SeCN F2	0.195	2.392	2.416	mg/kg	93% 75-125	
	SeMet F2	ND	2.410	2.363	mg/kg	98% 75-125	



Accuracy & Precision Summary

Batch: B221770
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221770-PS5	Post Spike, (2208060-32)						
	Se(IV) F2	1.549	6.870	8.077	mg/kg	95% 75-125	
	Se(VI) F2	ND	7.150	6.637	mg/kg	93% 75-125	
	SeCN F2	0.643	2.751	3.090	mg/kg	89% 75-125	
	SeMet F2	ND	2.772	2.762	mg/kg	100% 75-125	
B221770-DUP5	Duplicate, (2208060-33)						
	DMSeO F2	0.017		0.017	mg/kg		0.4% 25
	MeSe(IV) F2	0.291		0.295	mg/kg		1% 25
	Se Unk A F2	ND		ND	mg/kg		N/C 25
	Se(IV) F2	2.226		2.352	mg/kg		6% 25
	Se(VI) F2	ND		ND	mg/kg		N/C 25
	SeCN F2	0.785		0.749	mg/kg		5% 25
	SeMet F2	ND		ND	mg/kg		N/C 25
	SeSO3 F2	0.039		0.017	mg/kg		80% 25
	Unk Se Sp F2	0.248		0.220	mg/kg		12% 25



Accuracy & Precision Summary

Batch: B221798
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221798-PS1	Post Spike, (2208060-01) Se(F1)	0.264	40.49	38.58	mg/kg	95% 75-125	
B221798-PS2	Post Spike, (2208060-01) Se(F1)	0.264	40.49	40.14	mg/kg	98% 75-125	
B221798-DUP1	Duplicate, (2208060-02) Se(F1)	0.338		0.268	mg/kg		23% 25
B221798-PS3	Post Spike, (2208060-11) Se(F1)	0.922	68.45	68.70	mg/kg	99% 75-125	
B221798-PS4	Post Spike, (2208060-11) Se(F1)	0.922	68.45	69.88	mg/kg	101% 75-125	
B221798-DUP2	Duplicate, (2208060-14) Se(F1)	0.861		0.809	mg/kg		6% 25
B221798-DUP3	Duplicate, (2208060-20) Se(F1)	0.207		0.243	mg/kg		16% 25
B221798-PS5	Post Spike, (2208060-21) Se(F1)	0.276	29.78	30.12	mg/kg	100% 75-125	
B221798-PS6	Post Spike, (2208060-21) Se(F1)	0.276	29.78	29.65	mg/kg	99% 75-125	
B221798-DUP4	Duplicate, (2208060-23) Se(F1)	0.464		0.446	mg/kg		4% 25
B221798-PS7	Post Spike, (2208060-31) Se(F1)	0.190	29.84	30.02	mg/kg	100% 75-125	



Accuracy & Precision Summary

Batch: B221798
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221798-PS8	Post Spike, (2208060-31) Se(F1)	0.190	29.84	30.13	mg/kg	100% 75-125	
B221798-DUP5	Duplicate, (2208060-33) Se(F1)	0.932		0.964	mg/kg		3% 25
B221798-PS9	Post Spike, (2208060-41) Se(F1)	0.204	37.41	37.55	mg/kg	100% 75-125	
B221798-PSA	Post Spike, (2208060-41) Se(F1)	0.204	37.41	37.83	mg/kg	101% 75-125	



Accuracy & Precision Summary

Batch: B221808
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221808-PS1	Post Spike, (2208060-01) Se(F2)	1.199	40.49	41.19	mg/kg	99% 75-125	
B221808-PS2	Post Spike, (2208060-01) Se(F2)	1.199	40.49	41.82	mg/kg	100% 75-125	
B221808-DUP1	Duplicate, (2208060-02) Se(F2)	0.775		0.994	mg/kg		25% 25
B221808-PS3	Post Spike, (2208060-11) Se(F2)	5.173	68.45	73.44	mg/kg	100% 75-125	
B221808-PS4	Post Spike, (2208060-11) Se(F2)	5.173	68.45	73.34	mg/kg	100% 75-125	
B221808-DUP2	Duplicate, (2208060-14) Se(F2)	5.826		5.229	mg/kg		11% 25
B221808-DUP3	Duplicate, (2208060-20) Se(F2)	1.015		1.349	mg/kg		28% 25
B221808-PS5	Post Spike, (2208060-21) Se(F2)	0.840	29.78	30.62	mg/kg	100% 75-125	
B221808-PS6	Post Spike, (2208060-21) Se(F2)	0.840	29.78	32.25	mg/kg	105% 75-125	
B221808-DUP4	Duplicate, (2208060-23) Se(F2)	1.062		0.996	mg/kg		6% 25
B221808-PS7	Post Spike, (2208060-31) Se(F2)	0.874	29.84	30.41	mg/kg	99% 75-125	



Accuracy & Precision Summary

Batch: B221808
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221808-PS8	Post Spike, (2208060-31) Se(F2)	0.874	29.84	30.63	mg/kg	100% 75-125	
B221808-DUP5	Duplicate, (2208060-33) Se(F2)	4.412		4.140	mg/kg		6% 25
B221808-PS9	Post Spike, (2208060-41) Se(F2)	0.446	37.41	38.09	mg/kg	101% 75-125	
B221808-PSA	Post Spike, (2208060-41) Se(F2)	0.446	37.41	38.01	mg/kg	100% 75-125	



Accuracy & Precision Summary

Batch: B221826
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221826-PS1	Post Spike, (2208060-01) Se(F3)	2.677	40.49	40.94	mg/kg	94% 75-125	
B221826-PS2	Post Spike, (2208060-01) Se(F3)	2.677	40.49	41.95	mg/kg	97% 75-125	
B221826-DUP1	Duplicate, (2208060-02) Se(F3)	2.067		1.741	mg/kg		17% 25
B221826-PS3	Post Spike, (2208060-11) Se(F3)	6.633	68.45	68.72	mg/kg	91% 75-125	
B221826-PS4	Post Spike, (2208060-11) Se(F3)	6.633	68.45	69.29	mg/kg	92% 75-125	
B221826-DUP2	Duplicate, (2208060-14) Se(F3)	7.358		6.319	mg/kg		15% 25
B221826-DUP3	Duplicate, (2208060-20) Se(F3)	1.172		1.496	mg/kg		24% 25
B221826-PS5	Post Spike, (2208060-21) Se(F3)	0.525	29.78	32.39	mg/kg	107% 75-125	
B221826-PS6	Post Spike, (2208060-21) Se(F3)	0.525	29.78	27.98	mg/kg	92% 75-125	
B221826-DUP4	Duplicate, (2208060-23) Se(F3)	1.850		2.103	mg/kg		13% 25
B221826-PS7	Post Spike, (2208060-31) Se(F3)	1.014	29.84	27.00	mg/kg	87% 75-125	



Accuracy & Precision Summary

Batch: B221826
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221826-PS8	Post Spike, (2208060-31) Se(F3)	1.014	29.84	28.80	mg/kg	93% 75-125	
B221826-DUP5	Duplicate, (2208060-33) Se(F3)	3.598		4.130	mg/kg		14% 25
B221826-PS9	Post Spike, (2208060-41) Se(F3)	0.940	37.41	36.13	mg/kg	94% 75-125	
B221826-PSA	Post Spike, (2208060-41) Se(F3)	0.940	37.41	35.60	mg/kg	93% 75-125	



Accuracy & Precision Summary

Batch: B221830
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221830-PS1	Post Spike, (2208060-01) Se(F4)	0.162	40.49	38.51	mg/kg	95% 75-125	
B221830-PS2	Post Spike, (2208060-01) Se(F4)	0.162	40.49	37.93	mg/kg	93% 75-125	
B221830-DUP1	Duplicate, (2208060-02) Se(F4)	0.073		0.055	mg/kg		27% 25
B221830-PS3	Post Spike, (2208060-11) Se(F4)	0.494	68.45	63.82	mg/kg	93% 75-125	
B221830-PS4	Post Spike, (2208060-11) Se(F4)	0.494	68.45	63.43	mg/kg	92% 75-125	
B221830-DUP2	Duplicate, (2208060-14) Se(F4)	0.222		0.221	mg/kg		0.3% 25
B221830-DUP3	Duplicate, (2208060-20) Se(F4)	0.342		0.369	mg/kg		8% 25
B221830-PS5	Post Spike, (2208060-21) Se(F4)	0.270	29.78	28.53	mg/kg	95% 75-125	
B221830-PS6	Post Spike, (2208060-21) Se(F4)	0.270	29.78	27.65	mg/kg	92% 75-125	
B221830-DUP4	Duplicate, (2208060-23) Se(F4)	0.358		0.202	mg/kg		56% 25
B221830-PS7	Post Spike, (2208060-31) Se(F4)	0.220	29.84	28.16	mg/kg	94% 75-125	



Accuracy & Precision Summary

Batch: B221830
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221830-PS8	Post Spike, (2208060-31) Se(F4)	0.220	29.84	27.69	mg/kg	92% 75-125	
B221830-DUP5	Duplicate, (2208060-33) Se(F4)	0.149		0.149	mg/kg		0.08% 25
B221830-PS9	Post Spike, (2208060-41) Se(F4)	ND	37.41	34.77	mg/kg	93% 75-125	
B221830-PSA	Post Spike, (2208060-41) Se(F4)	ND	37.41	34.26	mg/kg	92% 75-125	



Accuracy & Precision Summary

Batch: B221842
Lab Matrix: Soil/Sediment
Method: EPA 6020B Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221842-BS1	Blank Spike, (2152010) Se		50.00	51.03	mg/kg	102% 75-125	
B221842-BS2	Blank Spike, (2152010) Se		50.00	49.51	mg/kg	99% 75-125	
B221842-BS3	Blank Spike, (2152010) Se		50.00	50.48	mg/kg	101% 75-125	
B221842-DUP1	Duplicate, (2208060-01) Se	4.120		4.522	mg/kg		9% 30
B221842-MS1	Matrix Spike, (2208060-01) Se	4.120	81.05	84.35	mg/kg	99% 70-130	
B221842-MSD1	Matrix Spike Duplicate, (2208060-01) Se	4.120	68.77	77.37	mg/kg	107% 70-130	7% 30
B221842-DUP2	Duplicate, (2208060-10) Se	30.02		28.26	mg/kg		6% 30
B221842-MS2	Matrix Spike, (2208060-10) Se	30.02	206.0	238.1	mg/kg	101% 70-130	
B221842-MSD2	Matrix Spike Duplicate, (2208060-10) Se	30.02	196.9	214.9	mg/kg	94% 70-130	7% 30
B221842-DUP3	Duplicate, (2208060-20) Se	2.988		2.875	mg/kg		4% 30
B221842-MS3	Matrix Spike, (2208060-20) Se	2.988	81.12	82.81	mg/kg	98% 70-130	



Accuracy & Precision Summary

Batch: B221842
Lab Matrix: Soil/Sediment
Method: EPA 6020B Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221842-MSD3	Matrix Spike Duplicate, (2208060-20) Se	2.988	70.79	74.59	mg/kg	101% 70-130	3% 30
B221842-DUP4	Duplicate, (2208060-30) Se	22.45		22.47	mg/kg		0.09% 30
B221842-MS4	Matrix Spike, (2208060-30) Se	22.45	136.9	152.7	mg/kg	95% 70-130	
B221842-MSD4	Matrix Spike Duplicate, (2208060-30) Se	22.45	109.7	127.4	mg/kg	96% 70-130	0.6% 30
B221842-DUP5	Duplicate, (2208060-41) Se	1.824		2.099	mg/kg		14% 30
B221842-MS5	Matrix Spike, (2208060-41) Se	1.824	65.50	65.48	mg/kg	97% 70-130	
B221842-MSD5	Matrix Spike Duplicate, (2208060-41) Se	1.824	83.76	82.32	mg/kg	96% 70-130	1% 30
B221842-SRM1	Reference Material (2224038, CRM052-50G Loamy Clay) Se		54.40	61.37	mg/kg	113% 75-125	
B221842-SRM2	Reference Material (2224038, CRM052-50G Loamy Clay) Se		54.40	59.47	mg/kg	109% 75-125	
B221842-SRM3	Reference Material (2224038, CRM052-50G Loamy Clay) Se		54.40	61.04	mg/kg	112% 75-125	



Accuracy & Precision Summary

Batch: B221848
Lab Matrix: Soil/Sediment
Method: SOP BAL-0501

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221848-DUP1	Duplicate, (2208060-05) %TS	46.41		46.47	%		0.1% 15
B221848-DUP2	Duplicate, (2208060-13) %TS	47.78		47.76	%		0.04% 15
B221848-DUP3	Duplicate, (2208060-19) %TS	62.59		62.87	%		0.4% 15
B221848-DUP4	Duplicate, (2208060-24) %TS	42.86		44.21	%		3% 15
B221848-DUP5	Duplicate, (2208060-38) %TS	25.82		24.94	%		3% 15



Accuracy & Precision Summary

Batch: B221863
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221863-BS1	Blank Spike, (2152010) Se(F5)		25.00	29.37	mg/kg	117% 75-125	
B221863-BS2	Blank Spike, (2152010) Se(F5)		25.00	22.76	mg/kg	91% 75-125	
B221863-BS3	Blank Spike, (2152010) Se(F5)		25.00	23.00	mg/kg	92% 75-125	
B221863-DUP1	Duplicate, (2208060-02) Se(F5)	0.011		ND	mg/kg		N/C 25
B221863-PS1	Post Spike, (2208060-02) Se(F5)	0.011	23.33	20.04	mg/kg	86% 75-125	
B221863-PS2	Post Spike, (2208060-02) Se(F5)	0.011	23.33	21.77	mg/kg	93% 75-125	
B221863-DUP2	Duplicate, (2208060-14) Se(F5)	ND		ND	mg/kg		N/C 25
B221863-PS3	Post Spike, (2208060-14) Se(F5)	ND	54.00	47.42	mg/kg	88% 75-125	
B221863-PS4	Post Spike, (2208060-14) Se(F5)	ND	54.00	48.05	mg/kg	89% 75-125	
B221863-DUP3	Duplicate, (2208060-20) Se(F5)	0.037		0.033	mg/kg		10% 25
B221863-PS5	Post Spike, (2208060-20) Se(F5)	0.037	20.81	18.98	mg/kg	91% 75-125	



Accuracy & Precision Summary

Batch: B221863
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B221863-PS6	Post Spike, (2208060-20) Se(F5)	0.037	20.81	18.30	mg/kg	88% 75-125	
B221863-DUP4	Duplicate, (2208060-23) Se(F5)	0.025		0.017	mg/kg		41% 25
B221863-PS7	Post Spike, (2208060-23) Se(F5)	0.025	38.09	32.47	mg/kg	85% 75-125	
B221863-PS8	Post Spike, (2208060-23) Se(F5)	0.025	38.09	35.21	mg/kg	92% 75-125	
B221863-DUP5	Duplicate, (2208060-33) Se(F5)	ND		0.027	mg/kg		N/C 25
B221863-PS9	Post Spike, (2208060-33) Se(F5)	ND	42.34	36.62	mg/kg	86% 75-125	
B221863-PSA	Post Spike, (2208060-33) Se(F5)	ND	42.34	38.62	mg/kg	91% 75-125	



Method Blanks & Reporting Limits

Batch: B221769
Matrix: Soil/Sediment
Method: In-House
Analyte: DMSeO F1

Sample	Result	Units	
B221769-BLK1	0.00	mg/kg	
B221769-BLK2	0.00	mg/kg	
B221769-BLK3	0.00	mg/kg	
B221769-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.001
Limit:	0.008		MRL: 0.008

Analyte: MeSe(IV) F1

Sample	Result	Units	
B221769-BLK1	0.00	mg/kg	
B221769-BLK2	0.00	mg/kg	
B221769-BLK3	0.00	mg/kg	
B221769-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.001
Limit:	0.008		MRL: 0.008

Analyte: Se Unk A F1

Sample	Result	Units	
B221769-BLK1	0.00	mg/kg	
B221769-BLK2	0.00	mg/kg	
B221769-BLK3	0.00	mg/kg	
B221769-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.001
Limit:	0.008		MRL: 0.008



Method Blanks & Reporting Limits

Analyte: Se(IV) F1

Sample	Result	Units	
B221769-BLK1	0.00	mg/kg	
B221769-BLK2	0.00	mg/kg	
B221769-BLK3	0.00	mg/kg	
B221769-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.020		MRL: 0.020

Analyte: Se(VI) F1

Sample	Result	Units	
B221769-BLK1	0.00	mg/kg	
B221769-BLK2	0.00	mg/kg	
B221769-BLK3	0.00	mg/kg	
B221769-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.020		MRL: 0.020

Analyte: SeCN F1

Sample	Result	Units	
B221769-BLK1	0.00	mg/kg	
B221769-BLK2	0.00	mg/kg	
B221769-BLK3	0.00	mg/kg	
B221769-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.0008
Limit:	0.008		MRL: 0.008

Analyte: SeMet F1

Sample	Result	Units	
B221769-BLK1	0.00	mg/kg	
B221769-BLK2	0.00	mg/kg	
B221769-BLK3	0.00	mg/kg	
B221769-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.001
Limit:	0.008		MRL: 0.008



Method Blanks & Reporting Limits

Analyte: SeSO3 F1

Sample	Result	Units	
B221769-BLK1	0.00	mg/kg	
B221769-BLK2	0.00	mg/kg	
B221769-BLK3	0.00	mg/kg	
B221769-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.020		MRL: 0.020

Analyte: Unk Se Sp F1

Sample	Result	Units	
B221769-BLK1	0.00	mg/kg	
B221769-BLK2	0.00	mg/kg	
B221769-BLK3	0.00	mg/kg	
B221769-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.020		MRL: 0.020



Method Blanks & Reporting Limits

Batch: B221770
Matrix: Soil/Sediment
Method: In-House
Analyte: DMSeO F2

Sample	Result	Units	
B221770-BLK1	0.00	mg/kg	
B221770-BLK2	0.00	mg/kg	
B221770-BLK3	0.00	mg/kg	
B221770-BLK4	0.00	mg/kg	
Average: 0.000			MDL: 0.001
Limit: 0.008			MRL: 0.008

Analyte: MeSe(IV) F2

Sample	Result	Units	
B221770-BLK1	0.00	mg/kg	
B221770-BLK2	0.00	mg/kg	
B221770-BLK3	0.00	mg/kg	
B221770-BLK4	0.00	mg/kg	
Average: 0.000			MDL: 0.001
Limit: 0.008			MRL: 0.008

Analyte: Se(IV) F2

Sample	Result	Units	
B221770-BLK1	0.00	mg/kg	
B221770-BLK2	0.00	mg/kg	
B221770-BLK3	0.00	mg/kg	
B221770-BLK4	0.00	mg/kg	
Average: 0.000			MDL: 0.002
Limit: 0.020			MRL: 0.020



Method Blanks & Reporting Limits

Analyte: Se(VI) F2

Sample	Result	Units	
B221770-BLK1	0.00	mg/kg	
B221770-BLK2	0.00	mg/kg	
B221770-BLK3	0.00	mg/kg	
B221770-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.020		MRL: 0.020

Analyte: SeCN F2

Sample	Result	Units	
B221770-BLK1	0.00	mg/kg	
B221770-BLK2	0.00	mg/kg	
B221770-BLK3	0.00	mg/kg	
B221770-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.0008
Limit:	0.008		MRL: 0.008

Analyte: SeMet F2

Sample	Result	Units	
B221770-BLK1	0.00	mg/kg	
B221770-BLK2	0.00	mg/kg	
B221770-BLK3	0.00	mg/kg	
B221770-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.001
Limit:	0.008		MRL: 0.008

Analyte: SeSO3 F2

Sample	Result	Units	
B221770-BLK1	0.00	mg/kg	
B221770-BLK2	0.00	mg/kg	
B221770-BLK3	0.00	mg/kg	
B221770-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.020		MRL: 0.020



Method Blanks & Reporting Limits

Analyte: Unk Se Sp F2

Sample	Result	Units	
B221770-BLK1	0.00	mg/kg	
B221770-BLK2	0.00	mg/kg	
B221770-BLK3	0.00	mg/kg	
B221770-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.020		MRL: 0.020

Analyte: Se Unk A F2

Sample	Result	Units	
B221770-BLK1			
B221770-BLK2	0.00	mg/kg	
B221770-BLK3	0.00	mg/kg	
B221770-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.001
Limit:	0.008		MRL: 0.008



Method Blanks & Reporting Limits

Batch: B221798
Matrix: Soil/Sediment
Method: In-House
Analyte: Se(F1)

Sample	Result	Units	
B221798-BLK1	0.009	mg/kg	
B221798-BLK2	0.008	mg/kg	
B221798-BLK3	0.011	mg/kg	
B221798-BLK4	0.009	mg/kg	
Average:	0.009		MDL: 0.013
Limit:	0.080		MRL: 0.080



Method Blanks & Reporting Limits

Batch: B221808
Matrix: Soil/Sediment
Method: In-House
Analyte: Se(F2)

Sample	Result	Units	
B221808-BLK1	0.013	mg/kg	
B221808-BLK2	0.014	mg/kg	
B221808-BLK3	0.012	mg/kg	
B221808-BLK4	0.018	mg/kg	
Average:	0.014		MDL: 0.022
Limit:	0.080		MRL: 0.080



Method Blanks & Reporting Limits

Batch: B221826
Matrix: Soil/Sediment
Method: In-House
Analyte: Se(F3)

Sample	Result	Units	
B221826-BLK1	0.010	mg/kg	
B221826-BLK2	0.007	mg/kg	
B221826-BLK3	0.005	mg/kg	
B221826-BLK4	0.0005	mg/kg	
Average:	0.006		MDL: 0.018
Limit:	0.080		MRL: 0.080



Method Blanks & Reporting Limits

Batch: B221830
Matrix: Soil/Sediment
Method: In-House
Analyte: Se(F4)

Sample	Result	Units	
B221830-BLK1	0.004	mg/kg	
B221830-BLK2	0.006	mg/kg	
B221830-BLK3	-0.0002	mg/kg	
B221830-BLK4	0.001	mg/kg	
Average:	0.003		MDL: 0.012
Limit:	0.080		MRL: 0.080



Method Blanks & Reporting Limits

Batch: B221842
Matrix: Soil/Sediment
Method: EPA 6020B Mod
Analyte: Se

Sample	Result	Units
B221842-BLK1	0.011	mg/kg
B221842-BLK2	0.010	mg/kg
B221842-BLK3	0.003	mg/kg
B221842-BLK4	0.003	mg/kg

Average: 0.007
Limit: 0.190

MDL: 0.095
MRL: 0.190



Method Blanks & Reporting Limits

Batch: B221848
Matrix: Soil/Sediment
Method: SOP BAL-0501
Analyte: %TS

Sample	Result	Units
B221848-BLK1	-0.16	%
B221848-BLK2	-0.18	%
B221848-BLK3	-0.16	%

Average: -0.17
Limit: 0.10

MDL: 0.03
MRL: 0.10



Method Blanks & Reporting Limits

Batch: B221863
Matrix: Soil/Sediment
Method: In-House
Analyte: Se(F5)

Sample	Result	Units	
B221863-BLK1	-0.001	mg/kg	
B221863-BLK2	-0.0006	mg/kg	
B221863-BLK3	-0.001	mg/kg	
B221863-BLK4	-0.0007	mg/kg	
Average:	-0.001		MDL: 0.005
Limit:	0.050		MRL: 0.050



Sample Containers

Lab ID: 2208060-01			Report Matrix: SE			Collected: 07/26/2022		
Sample: RG_BOCKRD_SE-1_2022-07-26_N			Sample Type: Sample + Sum			Received: 08/04/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided - TM	60 mL	na	NONE	NA	<2	Cooler 2 - 2208060	
Lab ID: 2208060-02			Report Matrix: SE			Collected: 07/26/2022		
Sample: RG_BOCKRD_SE-2_2022-07-26_N			Sample Type: Sample + Sum			Received: 08/04/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided - TM	60 mL	na	NONE	NA	<2	Cooler 2 - 2208060	
Lab ID: 2208060-03			Report Matrix: SE			Collected: 07/26/2022		
Sample: RG_BOCKRD_SE-3_2022-07-26_N			Sample Type: Sample + Sum			Received: 08/04/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided - TM	60 mL	na	NONE	NA	<2	Cooler 2 - 2208060	
Lab ID: 2208060-04			Report Matrix: SE			Collected: 07/25/2022		
Sample: RG_GATE_SE-1_2022-07-25_N			Sample Type: Sample + Sum			Received: 08/04/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided - TM	60 mL	na	NONE	NA	<2	Cooler 2 - 2208060	
Lab ID: 2208060-05			Report Matrix: SE			Collected: 07/25/2022		
Sample: RG_GATE_SE-2_2022-07-25_N			Sample Type: Sample + Sum			Received: 08/04/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided - TM	60 mL	na	NONE	NA	<2	Cooler 2 - 2208060	



Sample Containers

Lab ID: 2208060-06			Report Matrix: SE			Collected: 07/25/2022		
Sample: RG_GATE_SE-3_2022-07-25_N			Sample Type: Sample + Sum			Received: 08/04/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided - TM	60 mL	na	NONE	NA	<2	Cooler 2 - 2208060	
Lab ID: 2208060-07			Report Matrix: SE			Collected: 07/25/2022		
Sample: RG_BOCK_SE-1_2022-07-25_N			Sample Type: Sample + Sum			Received: 08/04/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided - TM	60 mL	na	NONE	NA	<2	Cooler 2 - 2208060	
Lab ID: 2208060-08			Report Matrix: SE			Collected: 07/25/2022		
Sample: RG_BOCK_SE-2_2022-07-25_N			Sample Type: Sample + Sum			Received: 08/04/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided - TM	60 mL	na	NONE	NA	<2	Cooler 2 - 2208060	
Lab ID: 2208060-09			Report Matrix: SE			Collected: 07/25/2022		
Sample: RG_BOCK_SE-3_2022-07-25_N			Sample Type: Sample + Sum			Received: 08/04/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided - TM	60 mL	na	NONE	NA	<2	Cooler 2 - 2208060	
Lab ID: 2208060-10			Report Matrix: SE			Collected: 07/26/2022		
Sample: RG_ERCKMD_SE-1_2022-07-26_N			Sample Type: Sample + Sum			Received: 08/04/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided - TM	60 mL	na	NONE	NA	<2	Cooler 2 - 2208060	



Sample Containers

Lab ID: 2208060-11
Sample: RG_ERCKMD_SE-2_2022-07-26_N
Report Matrix: SE
Sample Type: Sample + Sum
Collected: 07/26/2022
Received: 08/04/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	60 mL	na	NONE	NA	<2	Cooler 2 - 2208060

Lab ID: 2208060-12
Sample: RG_ERCKMD_SE-3_2022-07-26_N
Report Matrix: SE
Sample Type: Sample + Sum
Collected: 07/26/2022
Received: 08/04/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	60 mL	na	NONE	NA	<2	Cooler 2 - 2208060

Lab ID: 2208060-13
Sample: RG_ERCKMD_BRYOSE-1_2022-07-26_N
Report Matrix: SE
Sample Type: Sample + Sum
Collected: 07/26/2022
Received: 08/04/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	60 mL	na	NONE	NA	<2	Cooler 2 - 2208060

Lab ID: 2208060-14
Sample: RG_ERCKMD_BRYOSE-2_2022-07-26_N
Report Matrix: SE
Sample Type: Sample + Sum
Collected: 07/26/2022
Received: 08/04/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	60 mL	na	NONE	NA	<2	Cooler 2 - 2208060



Sample Containers

Lab ID: 2208060-15

Sample:

RG_ERCKMD_BRYOSE-3_2022-07-26_N

Report Matrix: SE

Sample Type: Sample + Sum

Collected: 07/26/2022

Received: 08/04/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	60 mL	na	NONE	NA	<2	Cooler 2 - 2208060

Lab ID: 2208060-16

Sample:

RG_GATEDP_SE-1_2022-07-25_N

Report Matrix: SE

Sample Type: Sample + Sum

Collected: 07/25/2022

Received: 08/04/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	60 mL	na	NONE	NA	<2	Cooler 2 - 2208060

Lab ID: 2208060-17

Sample:

RG_ERCKUT_SE-1_2022-07-26_N

Report Matrix: SE

Sample Type: Sample + Sum

Collected: 07/26/2022

Received: 08/04/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	60 mL	na	NONE	NA	<2	Cooler 2 - 2208060

Lab ID: 2208060-18

Sample:

RG_ERCKUT_SE-2_2022-07-26_N

Report Matrix: SE

Sample Type: Sample + Sum

Collected: 07/26/2022

Received: 08/04/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	60 mL	na	NONE	NA	<2	Cooler 2 - 2208060



Sample Containers

Lab ID: 2208060-19

Sample:

RG_ERCKUT_SE-3_2022-07-26_N

Report Matrix: SE

Sample Type: Sample + Sum

Collected: 07/26/2022

Received: 08/04/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	60 mL	na	NONE	NA	<2	Cooler 2 - 2208060

Lab ID: 2208060-20

Sample:

RG_ERCKUT_SE-4_2022-07-26_N

Report Matrix: SE

Sample Type: Sample + Sum

Collected: 07/26/2022

Received: 08/04/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	60 mL	na	NONE	NA	<2	Cooler 2 - 2208060

Lab ID: 2208060-21

Sample:

RG_ERCKUT_SE-5_2022-07-26_N

Report Matrix: SE

Sample Type: Sample + Sum

Collected: 07/26/2022

Received: 08/04/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	60 mL	na	NONE	NA	<2	Cooler 2 - 2208060

Lab ID: 2208060-22

Sample:

RG_ERCKUT_EVO_2022-07-26_N

Report Matrix: SE

Sample Type: Sample + Sum

Collected: 07/26/2022

Received: 08/04/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	60 mL	na	NONE	NA	<2	Cooler 2 - 2208060



Sample Containers

Lab ID: 2208060-23

Sample:

RG_ERCKUT_BRYOSE-2_2022-07-2 6_N

Report Matrix: SE

Sample Type: Sample + Sum

Collected: 07/26/2022

Received: 08/04/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	60 mL	na	NONE	NA	<2	Cooler 2 - 2208060

Lab ID: 2208060-24

Sample:

RG_ERCKUT_BRYOSE-3_2022-07-2 6_N

Report Matrix: SE

Sample Type: Sample + Sum

Collected: 07/26/2022

Received: 08/04/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	60 mL	na	NONE	NA	<2	Cooler 2 - 2208060

Lab ID: 2208060-25

Sample:

RG_ERCKDT_SE-1_2022-07-26_N

Report Matrix: SE

Sample Type: Sample + Sum

Collected: 07/26/2022

Received: 08/04/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	60 mL	na	NONE	NA	<2	Cooler 2 - 2208060

Lab ID: 2208060-26

Sample:

RG_ERCKDT_SE-2_2022-07-26_N

Report Matrix: SE

Sample Type: Sample + Sum

Collected: 07/26/2022

Received: 08/04/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	60 mL	na	NONE	NA	<2	Cooler 2 - 2208060



Sample Containers

Lab ID: 2208060-27 Sample: RG_ERCKDT_SE-3_2022-07-26_N	Report Matrix: SE Sample Type: Sample + Sum	Collected: 07/26/2022 Received: 08/04/2022					
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	60 mL	na	NONE	NA	<2	Cooler 2 - 2208060
Lab ID: 2208060-28 Sample: RG_ERCKDT_SE-4_2022-07-26_N	Report Matrix: SE Sample Type: Sample + Sum	Collected: 07/26/2022 Received: 08/04/2022					
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	60 mL	na	NONE	NA	<2	Cooler 2 - 2208060
Lab ID: 2208060-29 Sample: RG_ERCKDT_SE-5_2022-07-26_N	Report Matrix: SE Sample Type: Sample + Sum	Collected: 07/26/2022 Received: 08/04/2022					
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	60 mL	na	NONE	NA	<2	Cooler 2 - 2208060
Lab ID: 2208060-30 Sample: RG_ERCKDT_SE-6_2022-07-26_N	Report Matrix: SE Sample Type: Sample + Sum	Collected: 07/26/2022 Received: 08/04/2022					
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	60 mL	na	NONE	NA	<2	Cooler 2 - 2208060
Lab ID: 2208060-31 Sample: RG_ERCKDT_SE-7_2022-07-26_N	Report Matrix: SE Sample Type: Sample + Sum	Collected: 07/26/2022 Received: 08/04/2022					
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	60 mL	na	NONE	NA	<2	Cooler 2 - 2208060



Sample Containers

Lab ID: 2208060-32

Sample:

RG_ERCKDT_BRYOSE-1_2022-07-2 6_N

Report Matrix: SE

Sample Type: Sample + Sum

Collected: 07/26/2022

Received: 08/04/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	60 mL	na	NONE	NA	<2	Cooler 2 - 2208060

Lab ID: 2208060-33

Sample:

RG_ERCKDT_BRYOSE-2_2022-07-2 6_N

Report Matrix: SE

Sample Type: Sample + Sum

Collected: 07/26/2022

Received: 08/04/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	60 mL	na	NONE	NA	<2	Cooler 2 - 2208060

Lab ID: 2208060-34

Sample:

RG_ERCKDT_BRYOSE-3_2022-07-2 6_N

Report Matrix: SE

Sample Type: Sample + Sum

Collected: 07/26/2022

Received: 08/04/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	60 mL	na	NONE	NA	<2	Cooler 2 - 2208060

Lab ID: 2208060-35

Sample:

RG_ERCK_SE-1_2022-07-27_N

Report Matrix: SE

Sample Type: Sample + Sum

Collected: 07/27/2022

Received: 08/04/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	60 mL	na	NONE	NA	<2	Cooler 2 - 2208060



Sample Containers

Lab ID: 2208060-36

Report Matrix: SE

Collected: 07/27/2022

Sample:

Sample Type: Sample + Sum

Received: 08/04/2022

RG_ERCKUC_SE-1_2022-07-27_N

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	60 mL	na	NONE	NA	<2	Cooler 2 - 2208060

Lab ID: 2208060-37

Report Matrix: SE

Collected: 07/27/2022

Sample:

Sample Type: Sample + Sum

Received: 08/04/2022

RG_ERCKUC_SE-2_2022-07-27_N

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	60 mL	na	NONE	NA	<2	Cooler 2 - 2208060

Lab ID: 2208060-38

Report Matrix: SE

Collected: 07/27/2022

Sample:

Sample Type: Sample + Sum

Received: 08/04/2022

RG_ERCKUC_SE-3_2022-07-27_N

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	60 mL	na	NONE	NA	<2	Cooler 2 - 2208060

Lab ID: 2208060-39

Report Matrix: SE

Collected: 07/27/2022

Sample:

Sample Type: Sample + Sum

Received: 08/04/2022

RG_ERCKUC_BRYOSE-1_2022-07-27_N

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	60 mL	na	NONE	NA	<2	Cooler 2 - 2208060



Sample Containers

Lab ID: 2208060-40

Sample:

RG_ERCKUC_BRYOSE-2_2022-07-27_N

Report Matrix: SE

Sample Type: Sample + Sum

Collected: 07/27/2022

Received: 08/04/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	60 mL	na	NONE	NA	<2	Cooler 2 - 2208060

Lab ID: 2208060-41

Sample:

RG_ERCKUC_BRYOSE-3_2022-07-27_N

Report Matrix: SE

Sample Type: Sample + Sum

Collected: 07/27/2022

Received: 08/04/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided - TM	60 mL	na	NONE	NA	<2	Cooler 2 - 2208060

Shipping Containers

Cooler 2 - 2208060

Received: August 4, 2022 7:00

Tracking No: PAPS#RWHV95301 via Courier

Coolant Type: Ice

Temperature: 4.4 °C

Description: Styrofoam Cooler

Damaged in transit? No

Returned to client? No

Comments: IR#:2

Custody seals present? No

Custody seals intact? No

COC present? Yes

COC ID:

JULY EVO LAEMP 2022

TURNAROUND TIME:

RUSH

PROJECT/CLIENT INFO

LABORATORY

Facility Name / Job# Regional effects program

Lab Name Brooks Applied Labs

Project Manager Mike Pope

Lab Contact Ben Wozniak

Email mike.pope@teck.com

Email Ben@brooksapplied.com

Address 421 Pine Avenue

Address 18804 North Creek Parkway

City

Sparwood

Province BC

City Bothell

Province WA

Postal Code

VOB 2G0

Country Canada

Postal Code 98011

Country United S

Phone Number 250-425-8202

Phone Number (206) 753-6158

SAMPLE DETAILS

ANALYSIS REQUESTED

Sample ID

Sample Location

Field Matrix

Hazardous Material (Yes/No)

Date

Time (24hr)

G=Grab
C=Comp

Of Cont.

Selenium sequential extraction

Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.
RG_BOCKRD_SE-1_LAEMP_EVO_2022-07-26_N	RG BOCKRD	SE	N	7/26/2022	14:30	G	1
RG_BOCKRD_SE-2_LAEMP_EVO_2022-07-26_N	RG BOCKRD	SE	N	7/26/2022	14:35	G	1
RG_BOCKRD_SE-3_LAEMP_EVO_2022-07-26_N	RG BOCKRD	SE	N	7/26/2022	14:40	G	1
RG_GATE_SE-1_LAEMP_EVO_2022-07-25_N	RG_GATE	SE	N	7/25/2022	10:00	G	1
RG_GATE_SE-2_LAEMP_EVO_2022-07-25_N	RG_GATE	SE	N	7/25/2022	10:05	G	1
RG_GATE_SE-3_LAEMP_EVO_2022-07-25_N	RG_GATE	SE	N	7/25/2022	10:10	G	1
RG_BOCK_SE-1_LAEMP_EVO_2022-07-25_N	RG BOCK	SE	N	7/25/2022	14:00	G	1
RG_BOCK_SE-2_LAEMP_EVO_2022-07-25_N	RG BOCK	SE	N	7/25/2022	14:05	G	1
RG_BOCK_SE-3_LAEMP_EVO_2022-07-25_N	RG BOCK	SE	N	7/25/2022	14:10	G	1

PROPERTY	ANALYSIS	Excel	PDF	EDD
N				
NONE				
Selenium sequential extraction				

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS

RELINQUISHED BY/AFFILIATION

DATE/TIME

ACCEPTED BY/AFFILIATION

PO: VPO00847032

Robin Valteau

July 28, 2022

UKW/BAL

8/14/22 7.00

NB OF BOTTLES RETURNED/DESCRIPTION

Regular (default)

Priority (2-3 business days) - 50% surcharge X

Emergency (1 Business Day) - 100% surcharge

For Emergency <1 Day, ASAP or Weekend - Contact ALS

Sampler's Name

Robin Valteau

Mobile #

416-970-7535

Sampler's Signature

Date/Time

July 28, 2022

Brooks Sed's

COC ID:	JULY EVO LAEMP 2022				TURNAROUND TIME:	RUSH						
PROJECT/CLIENT INFO					LABORATORY							
Facility Name / Job#	Regional effects program				Lab Name	Brooks Applied Labs			Excel	PDF	EDD	
Project Manager	Mike Pope				Lab Contact	Ben Wozniak						
Email	mike.pope@teck.com				Email	Ben@brooksapplied.com			mike.pope@teck.com	X	X	
Address	421 Pine Avenue				Address	18804 North Creek Parkway			tecklab@equanline.com	X	X	
City	Sparwood		Province	BC	City	Bothell		Province	WA	howton@minnow.ca	X	X
Postal Code	VOB 2G0		Country	Canada	Postal Code	98011		Country	United S	jesstra.rizzo@teck.com	X	X
Phone Number	250-425-8202				Phone Number	(206) 753-6158			tyler.zimmerman@minnow.ca	X	X	

SAMPLE DETAILS								ANALYSIS REQUESTED				
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	PK	N	OTHER	ANALYSIS	
✓ RG_ERCKMD_SE-1_LAEMP_EVO_2022-07-26_N	RG_ERCKMD	SE	N	7/26/2022	13:30	G	1				Selenium sequential extraction	
✓ RG_ERCKMD_SE-2_LAEMP_EVO_2022-07-26_N	RG_ERCKMD	SE	N	7/26/2022	13:35	G	1				X	
✓ RG_ERCKMD_SE-3_LAEMP_EVO_2022-07-26_N	RG_ERCKMD	SE	N	7/26/2022	13:40	G	1				X	
✓ RG_ERCKMD_BRYOSE-1_LAEMP_EVO_2022-07-26_N	RG_ERCKMD	SE	N	7/26/2022	13:30	G	1				X	
✓ RG_ERCKMD_BRYOSE-2_LAEMP_EVO_2022-07-26_N	RG_ERCKMD	SE	N	7/26/2022	13:35	G	1				X	
✓ RG_ERCKMD_BRYOSE-3_LAEMP_EVO_2022-07-26_N	RG_ERCKMD	SE	N	7/26/2022	13:40	G	1				X	
✓ RG_GATEDP_SE-1_LAEMP_EVO_2022-07-25_N	RG_GATEDP	SE	N	7/25/2022	12:30	G	1				X	

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE	ACCEPTED BY/AFFILIATION
PO: VPO00847032	Robin Valleau	July 28, 2022	UW IBAL 8/19/22 7:00

NB OF BOTTLES RETURNED/DESCRIPTION	Sampler's Name	Robin Valleau	Mobile #	416-970-7535
Regular (default)	Sampler's Signature		Date/Time	July 28, 2022
Priority (2-3 business days) - 50% surcharge X				
Emergency (1 Business Day) - 100% surcharge				
For Emergency <1 Day, ASAP or Weekend - Contact ALS				

COC ID: **JULY EVO LAEMP 2022**

TURNAROUND TIME: **RUSH**

PROJECT/CLIENT INFO				LABORATORY			
Facility Name / Job#	Regional effects program			Lab Name	Brooks Applied Labs		
Project Manager	Mike Pope			Lab Contact	Ben Wozniak		
Email	mike.pope@teck.com			Email	Ben@brooksapplied.com		
Address	421 Pine Avenue			Address	18804 North Creek Parkway Suite 100		
City	Sparwood	Province	BC	City	Bothell	Province	WA
Postal Code	V0B 2G0	Country	Canada	Postal Code	98011	Country	United S
Phone Number	250-425-8202			Phone Number	(206) 753-6158		

SAMPLE DETAILS								ANALYSIS REQUESTED									
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	TEL	N	OTHER	NOISE	ASBESTOS	Selenium sequential extraction	Other	Other	Other	Other
RG_ERCKUT_SE-1_LAEMP_EVO_2022-07-26_N	RG_ERCKUT	SE	N	7/26/2022	10:00	G	1						X				
RG_ERCKUT_SE-2_LAEMP_EVO_2022-07-26_N	RG_ERCKUT	SE	N	7/26/2022	10:05	G	1						X				
RG_ERCKUT_SE-3_LAEMP_EVO_2022-07-26_N	RG_ERCKUT	SE	N	7/26/2022	10:10	G	1						X				
RG_ERCKUT_SE-4_LAEMP_EVO_2022-07-26_N	RG_ERCKUT	SE	N	7/26/2022	10:15	G	1						X				
RG_ERCKUT_SE-5_LAEMP_EVO_2022-07-26_N	RG_ERCKUT	SE	N	7/26/2022	10:20	G	1						X				
RG_ERCKUT_BRYOSE-1_LAEMP_EVO_2022-07-26_N	RG_ERCKUT	SE	N	7/26/2022	10:00	G	1						X				
RG_ERCKUT_BRYOSE-2_LAEMP_EVO_2022-07-26_N	RG_ERCKUT	SE	N	7/26/2022	10:05	G	1						X				
RG_ERCKUT_BRYOSE-3_LAEMP_EVO_2022-07-26_N	RG_ERCKUT	SE	N	7/26/2022	10:10	G	1						X				

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
PO: VPO00847032	Robin Valleu	July 28, 2022	Uw IBAC 8/19/22 JWS

NB OF BOTTLES RETURNED/DESCRIPTION	Sampler's Name	Mobile #
Regular (default)	Robin Valleu	416-970-7535
Priority (2-3 business days) - 50% surcharge X		
Emergency (1 Business Day) - 100% surcharge		
For Emergency <1 Day, ASAP or Weekend - Contact ALS		

COC ID: **JULY EVO LAEMP 2022**

TURNAROUND TIME:

RUSH

PROJECT/CLIENT INFO				LABORATORY			
Facility Name / Job#	Regional effects program			Lab Name	Brooks Applied Labs		
Project Manager	Mike Pope			Lab Contact	Ben Wozniak		
Email	mike.pope@teck.com			Email	Ben@brooksapplied.com		
Address	421 Pine Avenue			Address	18804 North Creek Parkway		
City	Sparwood	Province	BC	City	Bothell	Province	WA
Postal Code	V0B 2G0	Country	Canada	Postal Code	98011	Country	United S
Phone Number	250-425-8202			Phone Number	(206) 753-6158		

SAMPLE DETAILS								ANALYSIS REQUESTED							
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS REQUESTED	ANALYSIS REQUESTED	ANALYSIS REQUESTED	ANALYSIS REQUESTED	ANALYSIS REQUESTED	ANALYSIS REQUESTED	ANALYSIS REQUESTED	ANALYSIS REQUESTED
RG_ERCKDT_SE-1_LAEMP_EVO_2022-07-26_N	RG_ERCKDT	SE	N	7/26/2022	11:30	G	1	Selenium sequential extraction							
RG_ERCKDT_SE-2_LAEMP_EVO_2022-07-26_N	RG_ERCKDT	SE	N	7/26/2022	11:35	G	1	X							
RG_ERCKDT_SE-3_LAEMP_EVO_2022-07-26_N	RG_ERCKDT	SE	N	7/26/2022	11:40	G	1	X							
RG_ERCKDT_SE-4_LAEMP_EVO_2022-07-26_N	RG_ERCKDT	SE	N	7/26/2022	11:45	G	1	X							
RG_ERCKDT_SE-5_LAEMP_EVO_2022-07-26_N	RG_ERCKDT	SE	N	7/26/2022	11:50	G	1	X							
RG_ERCKDT_SE-6_LAEMP_EVO_2022-07-26_N	RG_ERCKDT	SE	N	7/26/2022	11:55	G	1	X							
RG_ERCKDT_SE-7_LAEMP_EVO_2022-07-26_N	RG_ERCKDT	SE	N	7/26/2022	12:00	G	1	X							
RG_ERCKDT_BRYOSE-1_LAEMP_EVO_2022-07-26_N	RG_ERCKDT	SE	N	7/26/2022	11:30	G	1	X							
RG_ERCKDT_BRYOSE-2_LAEMP_EVO_2022-07-26_N	RG_ERCKDT	SE	N	7/26/2022	11:35	G	1	X							
RG_ERCKDT_BRYOSE-3_LAEMP_EVO_2022-07-26_N	RG_ERCKDT	SE	N	7/26/2022	11:40	G	1	X							

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE	ACCEPTED BY/AFFILIATION	DATE
PO: VPO00847032	Robin Valleau	July 28, 2022	UKW / BAC	8/19/22 7:00

NB OF BOTTLES RETURNED-DESCRIPTION	Sampler's Name	Mobile #
Regular (default)	Robin Valleau	416-970-7535
Priority (2-3 business days) - 50% surcharge X		
Emergency (1 Business Day) - 100% surcharge		
For Emergency <1 Day, ASAP or Weekend - Contact ALS	Sampler's Signature	Date/Time
		July 28, 2022

COC ID: **JULY EVO LAEMP 2022**

TURNAROUND TIME: **RUSH**

PROJECT/CLIENT INFO				LABORATORY			
Facility Name / Job#	Regional effects program			Lab Name	Brooks Applied Labs		
Project Manager	Mike Pope			Lab Contact	Ben Wozniak		
Email	mike.pope@teck.com			Email	Ben@brooksapplied.com		
Address	421 Pine Avenue			Address	18804 North Creek Parkway		
City	Sparwood	Province	BC	City	Bothell	Province	WA
Postal Code	VOB 2G0	Country	Canada	Postal Code	98011	Country	United S
Phone Number	250-425-8202			Phone Number	(206) 753-6158		

SAMPLE DETAILS								ANALYSIS REQUESTED													
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	As	N	NOX	NO2	NO3	SO2	CO	CO2	PM10	PM2.5	PM10 & PM2.5	PM10 & PM2.5	PM10 & PM2.5	
RG_ERCK_SE-1_LAEMP_EVO_2022-07-27_N	RG ERCK	SE	N	7/27/2022	10:00	G	1														
RG_ERCKUC_SE-1_LAEMP_EVO_2022-07-27_N	RG ERCKUC	SE	N	7/27/2022	8:30	G	1														
RG_ERCKUC_SE-2_LAEMP_EVO_2022-07-27_N	RG ERCKUC	SE	N	7/27/2022	8:35	G	1														
RG_ERCKUC_SE-3_LAEMP_EVO_2022-07-27_N	RG ERCKUC	SE	N	7/27/2022	8:40	G	1														
RG_ERCKUC_BRYOSE-1_LAEMP_EVO_2022-07-27_N	RG ERCKUC	SE	N	7/27/2022	8:30	G	1														
RG_ERCKUC_BRYOSE-2_LAEMP_EVO_2022-07-27_N	RG ERCKUC	SE	N	7/27/2022	8:35	G	1														
RG_ERCKUC_BRYOSE-3_LAEMP_EVO_2022-07-27_N	RG ERCKUC	SE	N	7/27/2022	8:40	G	1														

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
PO: VPO00847032	Robin Valleau	July 28, 2022	<i>CPW IBM</i> 8/14/22 7:00

NB OF BOTTLES RETURNED/DESCRIPTION	Sampler's Name	Mobile #
Regular (default)	Robin Valleau	416-970-7535
Priority (2-3 business days) - 50% surcharge X		
Emergency (1 Business Day) - 100% surcharge		
For Emergency <1 Day, ASAP or Weekend - Contact ALS	Sampler's Signature	Date/Time
		July 28, 2022

Confidential

STRAIGHT BILL OF LADING
NOT NEGOTIABLE

RW HOT SHOT SERVICE INC.

250-425-7447
24 Hour Hot Shot Service

BAL Final Report 2208060_R1
No. 95301

Sparwood, BC
Terrace, BC
Red Deer, AB

Vancouver, BC
Calgary, AB
Montreal, QC

Prince George, BC
Edmonton, AB
Spokane, WA

Elkford, BC
Ft. McMurray, AB
Shelby, MT

Tumbler Ridge, BC
Hinton, AB
Gillette, WY

INVOICE TO		DATE	
BILL OF LADING #		PURCHASE ORDER NUMBER	
SHIPPER (FROM)		CONSIGNEE (TO)	
STREET		STREET	
CITY/PROVINCE		POSTAL CODE	POSTAL CODE
SPECIAL INSTRUCTIONS			
PACKAGES	DESCRIPTION OF ARTICLES AND SPECIAL MARKS	WEIGHT (Subject to Correction)	FREIGHT CHARGES SHIPPER TO CHECK
3		100 LBS	<input type="checkbox"/> PREPAID <input type="checkbox"/> COLLECT If not indicated, shipping will automatically move collect.
PAPS# RWHV95301			FEE
			WAITING
			XPU
			CHARGES
			FSC
			US
			SUB TOTAL
DRIVER'S SIGNATURE - PICK UP BY		PICK UP TIME	DRIVER'S SIGNATURE - DELIVERY BY
			8:15pm
UNIT #		DECLARED VALUATION: Maximum liability of carrier is \$2.00 per lb. (\$4.41 per kilogram) unless declared valuation states otherwise.	
		\$	
SHIPPING PRINT		CONSIGNEE PRINT	DATE
		Shayne	Aug 3/22
SHIPPER SIGN		CONSIGNEE SIGN	TIME
			8:15pm
		NUMBER OF PIECES RECEIVED	
		7	
GST # 864540398RT0001			

NOTICE OF CLAIM: (a) No carrier is liable for loss, damage or delay of any goods under the Bill of Lading unless notice, therefore setting out particulars of the origin, destination and date of shipment of the goods and the estimated amount claimed, is received by the carrier within sixty (60) days after the delivery of the goods, or in the case of failure to make delivery within nine (9) months from the date of shipment. (b) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. (c) The point of origin on the date specified from the consignor mentioned herein, the property herein described in apparent good order, except as noted (contents and condition of contents of package unknown) marked consigned and destined as indicated below, which the carrier agrees to carry and to deliver to the consignee at the said destination, subject to the rates and classification in effect on the date of shipment. It is mutually agreed, as to each carrier of all or any of the goods over all or any portion of the route to destination, and as to each party of any time interested in all or any of the goods, that every service to be performed hereunder shall be subject to the conditions standard Bill of Lading, in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. Printed or written including conditions set aside by the standard Bill of Lading, in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. The Contract for the carriage of the goods listed in the Bill of Lading is governed by regulation in force in the jurisdiction at the time and place of shipment and is subject to the conditions set out in such conditions.

Cooler ID: Cooler 2

COC (Y/N)

Temperature: 4.9

IR: 2-122

Coolant Type: Ice Blue Ice Ambient

Notes:

Sampling Locations:

Sample Types:

Container Types:

Opened By: WUW

Date: 8/4/22

	PG	SIE	SIE	EU					
T/D	SP	T/D	SP	T/D	SP	T/D	SP	T/D	SP
	4oz jar	4oz jar	60mc plates						

Effective 7/29/20



COPY



2208060

Revision 004

Confidential

STRAIGHT BILL OF LADING
NOT NEGOTIABLE

RW HOT SHOT SERVICE INC.

250-425-7447
24 Hour Hot Shot Service

BAL Final Report 2208060_R1
No. 95301

Sparwood, BC
Terrace, BC
Red Deer, AB

Vancouver, BC
Calgary, AB
Montreal, QC

Prince George, BC
Edmonton, AB
Spokane, WA

Elkford, BC
Ft. McMurray, AB
Shelby, MT

Tumbler Ridge, BC
Hinton, AB
Gillette, WY

INVOICE TO			DATE		
BILL OF LADING #		PURCHASE ORDER NUMBER			
SHIPPER (FROM)		CONSIGNEE (TO)			
STREET		STREET			
CITY/PROVINCE		POSTAL CODE		CITY/PROVINCE	
SPECIAL INSTRUCTIONS					FREIGHT CHARGES SHIPPER TO CHECK <input type="checkbox"/> PREPAID <input type="checkbox"/> COLLECT <small>If not indicated, shipping will automatically move collect.</small>
PACKAGES	DESCRIPTION OF ARTICLES AND SPECIAL MARKS	WEIGHT (Subject to Correction)			
		100 LBS			
<h2>PAPS# RWHV95301</h2>					FEES
					WAITING
					XPU
					CHARGES
					FSC
US	SUB TOTAL				
UNIT #	DECLARED VALUATION: Maximum liability of carrier is \$2.00 per lb. (\$4.41 per kilogram) unless declared valuation states otherwise.				\$
DRIVER'S SIGNATURE - PICK UP BY		PICK UP TIME	DRIVER'S SIGNATURE - DELIVERY BY		FINISH TIME
			Shayne		8:15pm
<small>NOTICE OF CLAIM: (a) No carrier is liable for loss, damage or delay of any goods under the Bill of Lading unless notice, therefore setting out particulars of the origin, destination and date of shipment of the goods and the estimated amount claimed, is received at the point of origin on the date specified in the bill of lading. (b) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. (c) The carrier agrees to carry and to deliver to the consignee at the said destination, subject to the rates and classification in effect on the date of shipment as indicated below, which the carrier agrees to carry and to deliver to the consignee at the said destination, subject to the rates and classification in effect on the date of shipment as indicated below, which the carrier agrees to carry and to deliver to the consignee at the said destination, and as to each party of any time interested in all or any of the goods, that every service to be performed hereunder shall be subject to the conditions standard Bill of Lading, in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. Printed or written, including conditions set aside by the standard Bill of Lading in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. Printed or written, including conditions set aside by the standard Bill of Lading in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. Printed or written, including conditions set aside by the standard Bill of Lading in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. Printed or written, including conditions set aside by the standard Bill of Lading in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns.</small>					
SHIPPER PRINT		CONSIGNEE PRINT		DATE	
SHIPPER * SIGN		CONSIGNEE SIGN		TIME	
WHITE: Office YELLOW: Carrier PINK: Consignee GOLDENROAD: Shipper			GST # 864540398RT0001		NUMBER OF PIECES RECEIVED

Cooler ID: COOURY

COC(Y/N)

Temperature: -1.0

IR: 1

Coolant Type: (Ice) Blue Ice Ambient

Notes:

Sampling Locations:

Sample Types:

Container Types:

Opened By: ERB

WL	LL	RG	EV	GH
(T/D)	(SP)	(T/D)	(SP)	(T/D)
40ml	125ml	125ml	60ml	60ml
glass	Plastic	Plastic	Plastic	Plastic

Date: 8/4/22

Revision 004

Effective 7/29/20



Confidential

STRAIGHT BILL OF LADING
NOT NEGOTIABLE

RW HOT SHOT SERVICE INC.

250-425-7447
24 Hour Hot Shot Service

BAL Final Report 2208060_R1
No. 95301

Sparwood, BC
Terrace, BC
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Vancouver, BC
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Montreal, QC

Prince George, BC
Edmonton, AB
Spokane, WA

Elkford, BC
Ft. McMurray, AB
Shelby, MT

Tumbler Ridge, BC
Hinton, AB
Gillette, WY

INVOICE TO		DATE	
BILL OF LADING #		PURCHASE ORDER NUMBER	
SHIPPER (FROM)		CONSIGNEE (TO)	
STREET		STREET	
CITY/PROVINCE		POSTAL CODE	CITY/PROVINCE
SPECIAL INSTRUCTIONS		FREIGHT CHARGES	
PACKAGES	DESCRIPTION OF ARTICLES AND SPECIAL MARKS	WEIGHT (Subject to Correction)	SHIPPER TO CHECK
			<input type="checkbox"/> PREPAID <input type="checkbox"/> COLLECT
			If not indicated, shipping will automatically move collect
			FEE
			WAITING
			XPU
			CHARGES
			FSC
			US
			SUB TOTAL
			GST
			TOTAL \$
			IF AT OWNER'S RISK, WRITE ORD HERE
UNIT #	DECLARED VALUATION: Maximum liability of carrier is \$2.00 per lb. (\$4.41 per kilogram) unless declared valuation states otherwise.	\$	
DRIVER'S SIGNATURE - PICK UP BY	PICK UP TIME	DRIVER'S SIGNATURE - DELIVERY BY	FINISH TIME
		Shayne	8:15pm
<small>NOTICE OF CLAIM: (a) No carrier is liable for loss, damage or delay of any goods under the Bill of Lading unless notice therefor setting out particulars of the origin, destination and date of shipment of the goods and the estimated amount claimed in respect of such loss, damage or delay is given in writing to the originating carrier or the delivering carrier within sixty (60) days after the delivery of the goods, or in the case of failure to make delivery within nine (9) months from the date of shipment. (b) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. (c) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. (d) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. (e) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. (f) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. (g) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. (h) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. (i) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. (j) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. (k) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. (l) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. (m) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. (n) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. (o) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. (p) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. (q) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. (r) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. (s) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. (t) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. (u) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. (v) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. (w) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. (x) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. (y) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. (z) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill.</small>			
SHIPPER PRINT	CONSIGNEE PRINT	DATE	
SHIPPER SIGN	CONSIGNEE SIGN	TIME	
WHITE: Office		YELLOW: Carrier	
PINK: Consignee		GOLDENROAD: Shipper	
GST # 864540398RT0001		NUMBER OF PIECES RECEIVED	

PAPS# RWHV95301

DATE: Aug 12 2022
TIME: 8:15pm
7

Cooler ID: COOLERY3

COC (Y/N) Temperature: U

IR: 1

Coolant Type: Ice Blue Ice Ambient

Notes:

Sampling Locations:

RG	EV	GH	EV
T/D	T/D	T/D	T/D
SP	SP	SP	SP
40ml	40ml	40ml	40ml
Glass	Glass	Glass	STOP Vol. file

Sample Types:

Container Types:

Opened By: ERH

Date: 8/4/22

Effective 7/29/20

COPY

Revision 004

From: [Hillary Quinn-Austin](#)
To: [Jeremy Maute](#)
Cc: [Robin Valleau](#); [Julia Hermanson](#)
Subject: Lab Reports Reissue - Change of sample names
Date: Thursday, March 2, 2023 3:47:43 PM
Attachments: [image002.png](#)
[2206053_2203057_Teck Reissue REP EVO LAEMP 2022 MAY Brooks 2022-05-20.xlsm](#)
[2208060_Teck Reissue SED EVO LAEMP 2022-JULY BROOKS.xls](#)

Hi Jeremy,

We would like the following reports reissued with new samples names:

- o 2208060
- o 2206053
- o 2206057

Please see the attached COCs with new sample names.

Thank you,
Hillary

Hillary Quinn-Austin (she/her)

Aquatic Scientist, M.Sc.



Minnow Aquatic
Environmental Services

Minnow Environmental Inc. (A Trinity Consultants Company)

102 Centennial Square, Sparwood BC V0B 2G0

Cell 613-620-3778

Teck		Page 1 of 5										Print COC			
COC ID:		JULY EVO LAEMP 2022				TURNAROUND TIME:				RUSH					
PROJECT/CLIENT INFO						LABORATORY									
Facility Name / Job# Regional effects program						Lab Name Brooks Applied Labs						Excel	PDF	EDD	
Project Manager Mike Pope						Lab Contact Ben Wozniak						mike.pope@teck.ca	x	x	x
Email mike.pope@teck.com						Email Ben@brooksapplied.com						teckcaol@equival			x
Address 421 Pine Avenue						Address 18804 North Creek Parkway						lbauran@minnou.c	x	x	x
City Sparwood						Province BC		City Bothell		Province WA		jozica.rity@teck.c	x	x	x
Postal Code V0B 2G0						Country Canada		Postal Code 98011		Country United		tylor.mehler@min	x	x	x
Phone Number 250-425-8202						Phone Number (206) 753-6158									
SAMPLE DETAILS						ANALYSIS REQUESTED									
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	Selenium sequential extraction							
RG_BOCKRD_SE-1_2022-07-26_M	RG_BOCKRD	SE	N	7/26/2022	14:30	G	1	X							
RG_BOCKRD_SE-2_2022-07-26_M	RG_BOCKRD	SE	N	7/26/2022	14:35	G	1	X							
RG_BOCKRD_SE-3_2022-07-26_M	RG_BOCKRD	SE	N	7/26/2022	14:40	G	1	X							
RG_GATE_SE-1_2022-07-25_M	RG_GATE	SE	N	7/25/2022	10:00	G	1	X							
RG_GATE_SE-2_2022-07-25_M	RG_GATE	SE	N	7/25/2022	10:05	G	1	X							
RG_GATE_SE-3_2022-07-25_M	RG_GATE	SE	N	7/25/2022	10:10	G	1	X							
RG_BOCK_SE-1_2022-07-25_M	RG_BOCK	SE	N	7/25/2022	14:00	G	1	X							
RG_BOCK_SE-2_2022-07-25_M	RG_BOCK	SE	N	7/25/2022	14:05	G	1	X							
RG_BOCK_SE-3_2022-07-25_M	RG_BOCK	SE	N	7/25/2022	14:10	G	1	X							
ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS			RELINQUISHED BY/AFFILIATION			DATE/TIME		ACCEPTED BY/AFFILIATION							
PO: VPO00847032			Robin Valleau			July 28, 2022									
NB OF BOTTLES RETURNED/DESCRIPTION															
Regular (default)															
Priority (2-3 business days) - 50% surcharge			X												
Emergency (1 Business Day) - 100% surcharge															
For Emergency <1 Day, ASAP or Weekend - Contact ALS															
			Sampler's Name			Robin Valleau		Mobile #		416-970-7535					
			Sampler's Signature					Date/Time		July 28, 2022					

Teck		Page 2 of 3						Print COC																																																																																																																																			
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Project Manager		Mike Pope			Lab Contact		Ben Wozniak		mike.pope@teck.ca	➔	➔	➔																																																																																																																															
Email		mike.pope@teck.com			Email		Ben@brooksapplied.com		teckcoal@equinor.com	➔	➔	➔																																																																																																																															
Address		421 Pine Avenue			Address		18804 North Creek Parkway		lbauran@minnau.com	➔	➔	➔																																																																																																																															
City		Sparwood		Province	BC	City		Bothell	Province	WA	jezrica.rita@teck.ca	➔	➔	➔																																																																																																																													
Postal Code		V0B 2G0		Country	Canada	Postal Code		98011	Country	United	tyler.mohler@minnau.com	➔	➔	➔																																																																																																																													
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						<small>Followed - P: P10, L: L4, P1: P10 & L4, M: None</small>																																																																																																																																					
						<table border="1"> <tr> <td>FILE</td> <td>N</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>PREP</td> <td>None</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>ANALYSIS</td> <td>Selenium sequential extraction</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>						FILE	N														PREP	None														ANALYSIS	Selenium sequential extraction																																																																																																
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Teck		Page 3 of 5										Print COC				
COC ID:		JULY EVO LAEMP 2022					TURNAROUND TIME:			RUSH						
PROJECT/CLIENT INFO						LABORATORY										
Facility Name / Job#		Regional effects program				Lab Name		Brooks Applied Labs					Excel	PDF	EDD	
Project Manager		Mike Pope				Lab Contact		Ben Wozniak								
Email		mike.pope@teck.com				Email		Ben@brooksapplied.com		mike.pope@teck.c			✓	✓	✓	
Address		421 Pine Avenue				Address		18804 North Creek Parkway		teckcoal@equiand						
						Address		Suite 100		lbauren@minnuo.c			✓	✓	✓	
City		Sparwood		Province	BC	City		Bothell	Province	WA	jazzica.ritz@teck.c			✓	✓	✓
Postal Code		V0B 2G0		Country	Canada	Postal Code		98011	Country	United	tylor.mohler@minnuo.ca			✓	✓	✓
Phone Number		250-425-8202				Phone Number		(206) 753-6158								
SAMPLE DETAILS						ANALYSIS REQUESTED										
						Filtered - 0: Field, 1: Lab, 2: 2-10 h Lab, 3: Mass										
						None										
						Selenium sequential extraction										
						G=Grab C=Comp # Of Cont.										
Sample ID		Sample Location		Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G	C	# Of Cont.						
RG_ERCKUT_SE-1_2022-07-26_N		RG_ERCKUT		SE	N	7/26/2022	10:00	G		1	X					
RG_ERCKUT_SE-2_2022-07-26_N		RG_ERCKUT		SE	N	7/26/2022	10:05	G		1	X					
RG_ERCKUT_SE-3_2022-07-26_N		RG_ERCKUT		SE	N	7/26/2022	10:10	G		1	X					
RG_ERCKUT_SE-4_2022-07-26_N		RG_ERCKUT		SE	N	7/26/2022	10:15	G		1	X					
RG_ERCKUT_SE-5_2022-07-26_N		RG_ERCKUT		SE	N	7/26/2022	10:20	G		1	X					
RG_ERCKUT_BRYOSE-1_2022-07-26_N		RG_ERCKUT		SE	N	7/26/2022	10:00	G		1	X					
RG_ERCKUT_BRYOSE-2_2022-07-26_N		RG_ERCKUT		SE	N	7/26/2022	10:05	G		1	X					
RG_ERCKUT_BRYOSE-3_2022-07-26_N		RG_ERCKUT		SE	N	7/26/2022	10:10	G		1	X					
ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS						RELINQUISHED BY/AFFILIATION			DATE/TIME		ACCEPTED BY/AFFILIATION					
PO: YPO00847032						Robin Valleau			July 28, 2022							
NB OF BOTTLES RETURNED/DESCRIPTION																
Regular (default)																
Priority (2-3 business days) - 50% surcharge						X			Sampler's Name		Robin Valleau		Mobile #		416-970-7535	
Emergency (1 Business Day) - 100% surcharge									Sampler's Signature				Date/Time		July 28, 2022	
For Emergency < 1 Day, ASAP or Weekend - Contact ALS																

Teck		Page 4 of 5 Print COC									
COC ID:		JULY EVO LAEMP 2022				TURNAROUND TIME:		RUSH			
PROJECT/CLIENT INFO						LABORATORY					
Facility Name / Job#		Regional effects program				Lab Name		Brooks Applied Labs			
Project Manager		Mike Pope				Lab Contact		Ben Wozniak			
Email		mike.pope@teck.com				Email		Ben@brooksapplied.com			
Address		421 Pine Avenue				Address		18804 North Creek Parkway			
City		Sparwood		Province		BC		City		Bothell	
Postal Code		V0B 2G0		Country		Canada		Postal Code		98011	
Phone Number		250-425-8202				Phone Number		(206) 753-6158			
SAMPLE DETAILS						ANALYSIS REQUESTED					
Sample ID		Sample Location		Field Matrix	Horiz/ous Material (Year/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS	
RG_ERCKDT_SE-1_2022-07-26_N		RG_ERCKDT		SE	N	7/26/2022	11:30	G	1	Selenium sequential extraction	
RG_ERCKDT_SE-2_2022-07-26_N		RG_ERCKDT		SE	N	7/26/2022	11:35	G	1	X	
RG_ERCKDT_SE-3_2022-07-26_N		RG_ERCKDT		SE	N	7/26/2022	11:40	G	1	X	
RG_ERCKDT_SE-4_2022-07-26_N		RG_ERCKDT		SE	N	7/26/2022	11:45	G	1	X	
RG_ERCKDT_SE-5_2022-07-26_N		RG_ERCKDT		SE	N	7/26/2022	11:50	G	1	X	
RG_ERCKDT_SE-6_2022-07-26_N		RG_ERCKDT		SE	N	7/26/2022	11:55	G	1	X	
RG_ERCKDT_SE-7_2022-07-26_N		RG_ERCKDT		SE	N	7/26/2022	12:00	G	1	X	
RG_ERCKDT_BRYOSE-1_2022-07-26_N		RG_ERCKDT		SE	N	7/26/2022	11:30	G	1	X	
RG_ERCKDT_BRYOSE-2_2022-07-26_N		RG_ERCKDT		SE	N	7/26/2022	11:35	G	1	X	
RG_ERCKDT_BRYOSE-3_2022-07-26_N		RG_ERCKDT		SE	N	7/26/2022	11:40	G	1	X	
ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS				RELINQUISHED BY/AFFILIATION		DATE/TIME		ACCEPTED BY/AFFILIATION			
PO: YPO00847032				Robin Valleau		July 28, 2022					
NB OF BOTTLES RETURNED/DESCRIPTION											
Regular (default)											
Priority (2-3 business days) - 50% surcharge				X							
Emergency (1 Business Day) - 100% surcharge											
For Emergency <1 Day, ASAP or Weekend - Contact ALS											
Sampler's Name		Robin Valleau				Mobile #		416-970-7535			
Sampler's Signature						Date/Time		July 28, 2022			

Teck		Page 5 of 5				Print COC	
COC ID:		JULY EVO LAEMP 2022		TURNAROUND TIME:		RUSH	
PROJECT/CLIENT INFO				LABORATORY			
Facility Name / Job#		Regional effects program		Lab Name		Brooks Applied Labs	
Project Manager		Mike Pope		Lab Contact		Ben Wozniak	
Email		mike.pope@teck.com		Email		Ben@brooksupplied.com	
Address		421 Pine Avenue		Address		18804 North Creek Parkway	
City		Sparwood		City		Bothell	
Postal Code		V0B 2G0		Postal Code		98011	
Phone Number		250-425-8202		Phone Number		(206) 753-6158	
SAMPLE DETAILS				ANALYSIS REQUESTED			
Sample ID		Sample Location		Field Matrix	Field	Date	Time (24hr)
RG_ERCK_SE-1_2022-07-27_M		RG_ERCK		SE	N	7/27/2022	10:00
RG_ERCKUC_SE-1_2022-07-27_M		RG_ERCKUC		SE	N	7/27/2022	8:30
RG_ERCKUC_SE-2_2022-07-27_M		RG_ERCKUC		SE	N	7/27/2022	8:35
RG_ERCKUC_SE-3_2022-07-27_M		RG_ERCKUC		SE	N	7/27/2022	8:40
RG_ERCKUC_BRYOSE-1_2022-07-27_M		RG_ERCKUC		SE	N	7/27/2022	8:30
RG_ERCKUC_BRYOSE-2_2022-07-27_M		RG_ERCKUC		SE	N	7/27/2022	8:35
RG_ERCKUC_BRYOSE-3_2022-07-27_M		RG_ERCKUC		SE	N	7/27/2022	8:40
ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS				RELINQUISHED BY/AFFILIATION		DATE/TIME	
PO: VPO00847032				Robin Valleau		July 28, 2022	
NB OF BOTTLES RETURNED/DESCRIPTION				ACCEPTED BY/AFFILIATION			
Regular (default)				SAMPLER'S NAME		ROBIN VALLEAU	
Priority (2-3 business days) - 50% surcharge				SAMPLER'S SIGNATURE		MOBILE #	
Emergency (1 Business Day) - 100% surcharge						416-970-7535	
For Emergency <1 Day, ASAP or Weekend - Contact ALS						DATE/TIME	
						July 28, 2022	



18804 North Creek Parkway, Ste 100, Bothell, WA 98011 • USA • T: 206 632 6206 F: 206 632 6017 • info@brooksapplied.com

December 9, 2022

Teck Resources Limited - Vancouver
 Mike Pope
 421 Pine Avenue
 Sparwood, B.C. CANADA V0B2G0
mike.pope@teck.com

Re: Regional Effects Program

Dear Mike Pope,

On October 6, 2022, Brooks Applied Labs (BAL) received ninety (90) solid samples at an acceptable temperature of -2.5 °C.

The sediment fractions described in the table below were not present in the sample shipment. These items were described on the associated COC forms with requested analyses.

Sample Fractions Not Present in Sample Shipment

Laboratory ID	Sample ID	Date/Time Collected
2210048-04	RG_FOUKI_SESeSp-3_2022-09-13_N	09/13/2022 10:45
2210048-14	RG_SCOUTDS_SESeSp-2_2022-09-14_N	09/14/2022 09:20

BAL will be unable to report results for 2210048-04 and 2210048-14.

The client made a request to amend the field ID for 2210048-52. Since the field ID listed on the COC form is not used for reporting 2210048-52, please refer to the **Sample ID** cross reference table for identification.

Sample ID Cross Reference Table

Laboratory ID	Sample ID (on COC form)	Sample ID used for Reporting (per client request)
2210048-52	RG_MICOMP_SESeSp-52022-09-18_N	RG_MICOMP_SESeSp-5_2022-09-18_N

Each solid sample was logged-in for the analysis of total recoverable Se, Se sequential extraction, and total solids.

The sediments were wet and the water overlaying the sediments in the containers was decanted before the sediments were stored frozen. After receipt, all solid samples were stored in accordance with BAL SOPs.

Percent Total Solids (SOP BAL-0501)

An aliquot of each solid was measured into a pre-weighed vessel, dried in an oven at 105°C overnight, weighed again, and the percent of dried solid material was calculated.

Batch B222342 (%TS)

%TS results were used to dry-weight correct results for the remaining analytical parameters.

Batch B222353 (%TS)

%TS results were used to dry-weight correct results for the remaining analytical parameters.

Batch B222355 (%TS)

%TS results were used to dry-weight correct results for the remaining analytical parameters.

Total Recoverable Se (EPA 3050b MOD)

An aliquot of each solid was digested via modified EPA Method 3050B, using additions of concentrated nitric acid, hydrogen peroxide, and hydrochloric acid. The resulting digests were analyzed for Se content via inductively coupled plasma triple quadrupole mass spectrometry (ICP-QQQ-MS). The ICP-QQQ-MS instrumentation uses advanced interference removal techniques to ensure accuracy of the sample results. For more information, please visit the *Interference Reduction Technology* section on our website, brooksapplied.com.

Poor mass balance was observed in several samples when the total selenium results (EPA 3050b MOD) were compared to the corresponding selenium selective sequential extraction (SSE) results. Re-analyses confirmed original results, suggesting sample heterogeneity in the sediments. Consequently, no additional corrective actions are necessary. Results for these samples are reported from batches B222340, B222344, B222380, and B222504.

Batch B222340 (Total Recoverable Se)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the Sample Results page for sample-specific MDLs, MRLs, and other details.

Batch B222344 (Total Recoverable Se)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the Sample Results page for sample-specific MDLs, MRLs, and other details.

Batch B222380 (Total Recoverable Se)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the Sample Results page for sample-specific MDLs, MRLs, and other details.

Batch B222504 (Total Recoverable Se)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the Sample Results page for sample-specific MDLs, MRLs, and other details.

Se Selective Sequential Extraction (SSE)

An aliquot of each solid was extracted in accordance with BAL's in-house five-step selective sequential extraction for Se. The samples were extracted with a series of reagents designed to target the following fractions:

SSE Fraction	Fraction Description
F1	Se present as salt (e.g., SeO_4^{-2} , MeSe(IV) , SeCN)
F2	Weakly adsorbed Se (e.g., SeO_4^{-2} , SeO_3^{-2} , SeCN , MeSe(IV))
F3	Amorphous and crystalline Se (e.g., S_2Se , Se^0)
F4	Selenides (e.g., HgSe , PbSe , CdSe , ZnSe)
F5	Residual Se

All resulting SSE fractions were directly analyzed for Se via inductively coupled plasma triple quadrupole mass spectrometry (ICP-QQQ-MS) and have been reported as Se(F1), Se(F2), Se(F3), Se(F4), and Se(F5) according to the corresponding extraction step (see table above).

Batch B222330 (SSE F1)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

Batch B222332 (SSE F1)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

Batch B222333 (SSE F1)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

Batch B222399 (SSE F2)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

Batch B222400 (SSE F2)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

Batch B222434 (SSE F2)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

The relative percent difference (RPD) for selenium (Se(F2)) in the laboratory duplicate sample B222434-DUP2 was greater than the control limit of 25%, at 30%. The (Se(F2)) result for the source sample

(2210048-80) should be considered estimated due to poor precision and has been qualified (**M**) to reflect this discrepancy.

Batch B222405 (SSE F3)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

The relative percent difference (RPD) for selenium ($Se(F3)$) in the laboratory duplicate sample B222405-DUP1 was greater than the control limit of 25%, at 29%. Secondary criteria were met (*i.e.*, *avg result* $\leq 5x$ the MRL and results within two MRL values). No qualification of data was necessary.

Batch B222438 (SSE F3)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

Batch B222498 (SSE F3)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

Batch B222421 (SSE F4)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

The relative percent difference (RPD) for selenium ($Se(F4)$) in the laboratory duplicate B222421-DUP3 was greater than the control limit of 25%, at 115%. The ($Se(F4)$) result for the source sample (2210048-27) should be considered estimated due to poor precision and has been qualified (**M**).

Batch B222485 (SSE F4)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

The RPD for selenium ($Se(F4)$) in the laboratory duplicate B222485-DUP3 was greater than the control limit of 25%, at 27%. Secondary criteria were met (*i.e.*, *avg result* $\leq 5x$ the MRL and results within two MRL values). No qualification of data was necessary.

Batch B222514 (SSE F4)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

The RPD for selenium ($Se(F4)$) in the laboratory duplicate B222514-DUP2 was greater than the control limit of 25%, at 36%. Secondary criteria were met (*i.e.*, *avg result* $\leq 5x$ the MRL and results within two MRL values). No qualification of data was necessary.

Batch B222447 (SSE F5)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

Batch B222495 (SSE F5)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

Batch B222533 (SSE F5)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

Se Speciation for the SSE

Fractions F1 and F2 of the SSE were also analyzed for individual Se species via ion chromatography inductively coupled plasma collision reaction cell mass spectrometry (IC-ICP-CRC-MS). Selenium species were chromatographically separated on an ion exchange column and then quantified using inductively coupled plasma collision reaction cell mass spectrometry (ICP-CRC-MS); for more information on this determinative technique, please visit the *Interference Reduction Technology* section on our website. The chromatographic method applied for the analyses provides greater retention of methylseleninic acid and selenomethionine, allowing for more definitive quantitation of these species.

Selenium speciation for these SSE fractions was defined as dissolved selenite [*Se(IV)*], selenate [*Se(VI)*], selenocyanate [*SeCN*], methylseleninic acid [*MeSe(IV)*], selenomethionine [*SeMet*], selenosulfate [*SeSO₃*], and dimethylselenoxide [*DMSeO*]. Methaneselenonic acid [*MeSe(VI)*] is reported under *Se Unk A*. The total concentration of any remaining unidentified Se-containing species detected in each sample has also been reported as [*Unk Se Sp*].

DMS₂SeO elutes early in the chromatographic run due to the nature of the molecule and the applied chromatographic separation method. Since this species elutes near the dead volume, additional Se species may coelute. Alternate methods can be applied, upon client request, to increase the separation of DMS₂SeO from potentially co-eluting Se species.

Batch B222343 (Selenium Speciation on SSE F1)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

Batch B222345 (Selenium Speciation on SSE F1)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

Batch B222346 (Selenium Speciation on SSE F1)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

Batch B222348 (Selenium Speciation on SSE F2)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the Sample Results page for sample-specific MDLs, MRLs, and other details.

Batch B222350 (Selenium Speciation on SSE F2)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the Sample Results page for sample-specific MDLs, MRLs, and other details.

Chromatographic interference, as indicated by an elevated baseline, or co-eluting peak, was observed for methylseleninic acid [*MeSe(IV)*] in 2210048-50. Due to potential bias, the affected result has been qualified as estimated (**J-1**).

Batch B222351 (Selenium Speciation on SSE F2)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the Sample Results page for sample-specific MDLs, MRLs, and other details.

The relative percent difference (RPD) for selenium (*MeSe(IV) F2*) in the laboratory duplicate B222351-DUP2 was greater than the control limit of 25%, at 43%. The (*MeSe(IV) F2*) result for the source sample (2210048-80) should be considered estimated due to poor precision and has been qualified (**M**).

In instances when a matrix spike/matrix spike duplicate (MS/MSD) set was spiked at a level less than the native sample concentration, the recoveries and the RPD were not considered valid indicators of data quality. In such instances, the recoveries of the blank spikes (BS) and/or standard reference materials (SRM) demonstrate the accuracy of the applied methods. When the spiking level was less than 25% of the native sample concentration, the spike recovery was not reported (NR) and the RPD of the MS/MSD set was not calculated (N/C).

Except for concentration qualifiers and items noted above, all data were reported without qualification. Except for the RPD outliers described above, all associated quality control sample results met the acceptance criteria.

BAL verifies that the reported results of all analyses for which the laboratory is accredited meet the requirements of the accrediting body, unless otherwise noted in the report narrative. For more information regarding accreditations please see the *Report Information* and *Batch Summary* pages. This report must be used in its entirety for interpretation of results.

Please feel free to contact us if you have any questions regarding this report.

Sincerely,



Jeremy Maute
Senior Project Manager
Jeremy@brooksapplied.com



Report Information

General Disclaimers

Test results are based solely upon the sample submitted to Brooks Applied Labs in the condition it was received. This report shall not be reproduced or copied, except in full, without written approval of the laboratory. Brooks Applied Labs is not responsible for the consequences arising from the use of a partial report.

Laboratory Accreditation

BAL maintains accreditation with various state and national agencies for select test methods. For a current list of BAL accreditations, please visit our website at <http://www.brooksapplied.com/resources/certificates-permits/>. The reported analyte/matrix/method combination shall be considered outside BAL's scopes of accreditation unless otherwise identified as ISO, TNI, or ISO,TNI in the tables. It is the responsibility of the client to verify whether a specific accreditation is required for the intended data use.

ISO: ISO/IEC 17025:2017 accredited test method. Issued by ANSI National Accreditation Board (ANAB), #ADE-1447.02

TNI: NELAP accredited test method. Issued by the State of Florida Department of Health, #E87982.

ISO,TNI: Test method is accredited under both the ISO/IEC 17025:2017 and NELAP accreditations referenced above.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

AR	as received	MS	matrix spike
BAL	Brooks Applied Labs	MSD	matrix spike duplicate
BLK	method blank	ND	non-detect
BS	blank spike	NR	non-reportable
CAL	calibration standard	N/C	not calculated
CCB	continuing calibration blank	PS	post preparation spike
CCV	continuing calibration verification	REC	percent recovery
COC	chain of custody record	RPD	relative percent difference
D	dissolved fraction	SCV	secondary calibration verification
DUP	duplicate	SOP	standard operating procedure
IBL	instrument blank	SRM	reference material
ICV	initial calibration verification	T	total fraction
MDL	method detection limit	TR	total recoverable fraction
MRL	method reporting limit		

Definition of Data Qualifiers

E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Please see narrative for explanation.
J	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1	Estimated value. A full explanation is presented in the narrative.
M	Duplicate precision (RPD) was not within acceptance criteria. Please see narrative for explanation.
N	Spike recovery was not within acceptance criteria. Please see narrative for explanation.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.
Z	Holding time and/or preservation requirements not established for this method; however, BAL recommendations for holding time were not followed. Please see narrative for explanation.



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
RG_FOUKI_SESeSp-1_2022-09-13_N	2210048-01	SE	Sample	09/13/2022	10/06/2022
RG_FOUKI_SESeSp-2_2022-09-13_N	2210048-02	SE	Sample	09/13/2022	10/06/2022
RG_FOUKI_SESeSp-3_2022-09-13_N	2210048-03	SE	Sample	09/13/2022	10/06/2022
RG_FOUKI_SESeSp-3_2022-09-13_N	2210048-04	SE	Sample	09/13/2022	10/06/2022
RG_FOUKI_SESeSp-4_2022-09-13_N	2210048-05	SE	Sample	09/13/2022	10/06/2022
RG_FOUKI_SESeSp-5_2022-09-13_N	2210048-06	SE	Sample	09/13/2022	10/06/2022
RG_FRDSCC1_SESeSp-1_2022-09-19_N	2210048-07	SE	Sample	09/19/2022	10/06/2022
RG_FRDSCC1_SESeSp-2_2022-09-19_N	2210048-08	SE	Sample	09/19/2022	10/06/2022
RG_FRDSCC1_SESeSp-3_2022-09-19_N	2210048-09	SE	Sample	09/19/2022	10/06/2022
RG_FRDSCC1_SESeSp-4_2022-09-19_N	2210048-10	SE	Sample	09/19/2022	10/06/2022
RG_FRDSCC1_SESeSp-5_2022-09-19_N	2210048-11	SE	Sample	09/19/2022	10/06/2022
RG_SCOUTDS_SESeSp-1_2022-09-13_N	2210048-12	SE	Sample	09/13/2022	10/06/2022
RG_SCOUTDS_SESeSp-2_2022-09-14_N	2210048-13	SE	Sample	09/14/2022	10/06/2022
RG_SCOUTDS_SESeSp-2_2022-09-14_N	2210048-14	SE	Sample	09/14/2022	10/06/2022
RG_SCOUTDS_SESeSp-3_2022-09-14_N	2210048-15	SE	Sample	09/14/2022	10/06/2022
RG_SCOUTDS_SESeSp-4_2022-09-14_N	2210048-16	SE	Sample	09/14/2022	10/06/2022
RG_SCOUTDS_SESeSp-5_2022-09-14_N	2210048-17	SE	Sample	09/14/2022	10/06/2022
RG_GRASSY_SESeSp-1_2022-09-16_N	2210048-18	SE	Sample	09/16/2022	10/06/2022
RG_GRASSY_SESeSp-2_2022-09-16_N	2210048-19	SE	Sample	09/16/2022	10/06/2022
RG_GRASSY_SESeSp-3_2022-09-16_N	2210048-20	SE	Sample	09/16/2022	10/06/2022
RG_GRASSY_SESeSp-4_2022-09-16_N	2210048-21	SE	Sample	09/16/2022	10/06/2022



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
RG_GRASSY_SESeSp-5_2022-09-16_N	2210048-22	SE	Sample	09/16/2022	10/06/2022
RG_UFR1_SESeSp-1_2022-09-19_N	2210048-23	SE	Sample	09/19/2022	10/06/2022
RG_UFR1_SESeSp-2_2022-09-19_N	2210048-24	SE	Sample	09/19/2022	10/06/2022
RG_UFR1_SESeSp-3_2022-09-19_N	2210048-25	SE	Sample	09/19/2022	10/06/2022
RG_UFR1_SESeSp-4_2022-09-19_N	2210048-26	SE	Sample	09/19/2022	10/06/2022
RG_UFR1_SESeSp-5_2022-09-19_N	2210048-27	SE	Sample	09/19/2022	10/06/2022
RG_WED_SESeSp-1_2022-09-19_N	2210048-28	SE	Sample	09/19/2022	10/06/2022
RG_WED_SESeSp-2_2022-09-19_N	2210048-29	SE	Sample	09/19/2022	10/06/2022
RG_WED_SESeSp-3_2022-09-19_N	2210048-30	SE	Sample	09/19/2022	10/06/2022
RG_WED_SESeSp-4_2022-09-19_N	2210048-31	SE	Sample	09/19/2022	10/06/2022
RG_WED_SESeSp-5_2022-09-19_N	2210048-32	SE	Sample	09/19/2022	10/06/2022
RG_FOUCL_SESeSp-1_2022-09-16_N	2210048-33	SE	Sample	09/16/2022	10/06/2022
RG_FOUCL_SESeSp-2_2022-09-16_N	2210048-34	SE	Sample	09/16/2022	10/06/2022
RG_FOUCL_SESeSp-3_2022-09-16_N	2210048-35	SE	Sample	09/16/2022	10/06/2022
RG_FOUCL_SESeSp-4_2022-09-16_N	2210048-36	SE	Sample	09/16/2022	10/06/2022
RG_FOUCL_SESeSp-5_2022-09-16_N	2210048-37	SE	Sample	09/16/2022	10/06/2022
RG_FOBCP_SESeSp-1_2022-09-14_N	2210048-38	SE	Sample	09/14/2022	10/06/2022
RG_FOBCP_SESeSp-2_2022-09-14_N	2210048-39	SE	Sample	09/14/2022	10/06/2022
RG_FOBCP_SESeSp-3_2022-09-14_N	2210048-40	SE	Sample	09/14/2022	10/06/2022
RG_FOBCP_SESeSp-4_2022-09-15_N	2210048-41	SE	Sample	09/15/2022	10/06/2022
RG_FOBCP_SESeSp-5_2022-09-15_N	2210048-42	SE	Sample	09/15/2022	10/06/2022
RG_FO22_SESeSp-1_2022-09-09_N	2210048-43	SE	Sample	09/09/2022	10/06/2022
RG_FO22_SESeSp-2_2022-09-09_N	2210048-44	SE	Sample	09/09/2022	10/06/2022
RG_FO22_SESeSp-3_2022-09-09_N	2210048-45	SE	Sample	09/09/2022	10/06/2022
RG_FO22_SESeSp-4_2022-09-09_N	2210048-46	SE	Sample	09/09/2022	10/06/2022
RG_FO22_SESeSp-5_2022-09-09_N	2210048-47	SE	Sample	09/09/2022	10/06/2022



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
RG_MICOMP_SESeSp-1_2022-09-18_N	2210048-48	SE	Sample	09/18/2022	10/06/2022
RG_MICOMP_SESeSp-2_2022-09-18_N	2210048-49	SE	Sample	09/18/2022	10/06/2022
RG_MICOMP_SESeSp-3_2022-09-18_N	2210048-50	SE	Sample	09/18/2022	10/06/2022
RG_MICOMP_SESeSp-4_2022-09-18_N	2210048-51	SE	Sample	09/18/2022	10/06/2022
RG_MICOMP_SESeSp-5_2022-09-18_N	2210048-52	SE	Sample	09/18/2022	10/06/2022
RG_ERCKMD_SESeSp-1_2022-09-20_N	2210048-53	SE	Sample	09/20/2022	10/06/2022
RG_ERCKMD_SESeSp-2_2022-09-20_N	2210048-54	SE	Sample	09/20/2022	10/06/2022
RG_ERCKMD_SESeSp-3_2022-09-20_N	2210048-55	SE	Sample	09/20/2022	10/06/2022
RG_ERCKMD_SESeSp-4_2022-09-20_N	2210048-56	SE	Sample	09/20/2022	10/06/2022
RG_ERCKMD_SESeSp-5_2022-09-20_N	2210048-57	SE	Sample	09/20/2022	10/06/2022
RG_MI3_SESeSp-1_2022-09-12_N	2210048-58	SE	Sample	09/12/2022	10/06/2022
RG_MI3_SESeSp-2_2022-09-12_N	2210048-59	SE	Sample	09/12/2022	10/06/2022
RG_MI3_SESeSp-3_2022-09-12_N	2210048-60	SE	Sample	09/12/2022	10/06/2022
RG_MI3_SESeSp-4_2022-09-12_N	2210048-61	SE	Sample	09/12/2022	10/06/2022
RG_MI3_SESeSp-5_2022-09-12_N	2210048-62	SE	Sample	09/12/2022	10/06/2022
RG_ERCK_SESeSp-1_2022-09-14_N	2210048-63	SE	Sample	09/14/2022	10/06/2022
RG_ERCK_SESeSp-2_2022-09-14_N	2210048-64	SE	Sample	09/14/2022	10/06/2022
RG_ERCK_SESeSp-3_2022-09-14_N	2210048-65	SE	Sample	09/14/2022	10/06/2022
RG_ERCK_SESeSp-4_2022-09-14_N	2210048-66	SE	Sample	09/14/2022	10/06/2022
RG_ERCK_SESeSp-5_2022-09-14_N	2210048-67	SE	Sample	09/14/2022	10/06/2022
RG_ERCKUT_SESeSp-1_2022-09-15_N	2210048-68	SE	Sample	09/15/2022	10/06/2022
RG_ERCKUT_SESeSp-2_2022-09-16_N	2210048-69	SE	Sample	09/16/2022	10/06/2022
RG_ERCKUT_SESeSp-3_2022-09-16_N	2210048-70	SE	Sample	09/16/2022	10/06/2022
RG_ERCKUT_SESeSp-4_2022-09-16_N	2210048-71	SE	Sample	09/16/2022	10/06/2022



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
RG_ERCKUT_SESeSp-5_2022-09-16_N	2210048-72	SE	Sample	09/16/2022	10/06/2022
RG_MIDER_SESeSp-1_2022-09-12_N	2210048-73	SE	Sample	09/12/2022	10/06/2022
RG_MIDER_SESeSp-2_2022-09-12_N	2210048-74	SE	Sample	09/12/2022	10/06/2022
RG_MIDER_SESeSp-3_2022-09-12_N	2210048-75	SE	Sample	09/12/2022	10/06/2022
RG_MIDER_SESeSp-4_2022-09-12_N	2210048-76	SE	Sample	09/12/2022	10/06/2022
RG_MIDER_SESeSp-5_2022-09-12_N	2210048-77	SE	Sample	09/12/2022	10/06/2022
RG_LIDSL_SESeSp-1_2022-09-13_N	2210048-78	SE	Sample	09/13/2022	10/06/2022
RG_LIDSL_SESeSp-2_2022-09-13_N	2210048-79	SE	Sample	09/13/2022	10/06/2022
RG_LIDSL_SESeSp-3_2022-09-14_N	2210048-80	SE	Sample	09/14/2022	10/06/2022
RG_LIDSL_SESeSp-4_2022-09-14_N	2210048-81	SE	Sample	09/14/2022	10/06/2022
RG_LIDSL_SESeSp-5_2022-09-14_N	2210048-82	SE	Sample	09/14/2022	10/06/2022
RG_LILC3_SESeSp-1_2022-09-12_N	2210048-83	SE	Sample	09/12/2022	10/06/2022
RG_LILC3_SESeSp-2_2022-09-12_N	2210048-84	SE	Sample	09/12/2022	10/06/2022
RG_LILC3_SESeSp-3_2022-09-12_N	2210048-85	SE	Sample	09/12/2022	10/06/2022
RG_LILC3_SESeSp-4_2022-09-12_N	2210048-86	SE	Sample	09/12/2022	10/06/2022
RG_LILC3_SESeSp-5_2022-09-12_N	2210048-87	SE	Sample	09/12/2022	10/06/2022
RG_ERCKDT_SESeSp-1_2022-09-19_N	2210048-88	SE	Sample	09/19/2022	10/06/2022
RG_ERCKDT_SESeSp-2_2022-09-19_N	2210048-89	SE	Sample	09/19/2022	10/06/2022
RG_ERCKDT_SESeSp-3_2022-09-19_N	2210048-90	SE	Sample	09/19/2022	10/06/2022
RG_ERCKDT_SESeSp-4_2022-09-19_N	2210048-91	SE	Sample	09/19/2022	10/06/2022
RG_ERCKDT_SESeSp-5_2022-09-19_N	2210048-92	SE	Sample	09/19/2022	10/06/2022



Batch Summary

Analyte	Lab Matrix	Method	Accred.	Prepared	Analyzed	Batch	Sequence
%TS	Soil/Sediment	SOP BAL-0501	ISO	10/07/22	10/10/22	B222342	N/A
%TS	Soil/Sediment	SOP BAL-0501	ISO	10/07/22	10/11/22	B222353	N/A
%TS	Soil/Sediment	SOP BAL-0501	ISO	10/10/22	10/12/22	B222355	N/A
DMS ₆ O F1	Soil/Sediment	In-House		10/11/22	10/11/22	B222343	S221055
DMS ₆ O F1	Soil/Sediment	In-House		10/11/22	10/12/22	B222345	S221055
DMS ₆ O F1	Soil/Sediment	In-House		10/12/22	10/27/22	B222346	S221126
DMS ₆ O F2	Soil/Sediment	In-House		10/10/22	10/15/22	B222348	S221078
DMS ₆ O F2	Soil/Sediment	In-House		10/10/22	10/15/22	B222350	S221078
DMS ₆ O F2	Soil/Sediment	In-House		10/12/22	10/17/22	B222351	S221078
MeSe(IV) F1	Soil/Sediment	In-House		10/11/22	10/11/22	B222343	S221055
MeSe(IV) F1	Soil/Sediment	In-House		10/11/22	10/12/22	B222345	S221055
MeSe(IV) F1	Soil/Sediment	In-House		10/12/22	10/27/22	B222346	S221126
MeSe(IV) F2	Soil/Sediment	In-House		10/10/22	10/15/22	B222348	S221078
MeSe(IV) F2	Soil/Sediment	In-House		10/10/22	10/15/22	B222350	S221078
MeSe(IV) F2	Soil/Sediment	In-House		10/12/22	10/17/22	B222351	S221078
Se	Soil/Sediment	EPA 6020B Mod	ISO,TNI	10/11/22	10/13/22	B222344	S221071
Se	Soil/Sediment	EPA 6020B Mod	ISO,TNI	10/10/22	10/14/22	B222340	S221079
Se	Soil/Sediment	EPA 6020B Mod	ISO,TNI	10/17/22	10/19/22	B222380	S221099
Se	Soil/Sediment	EPA 6020B Mod	ISO,TNI	10/19/22	10/20/22	B222504	S221103
Se Unk A F1	Soil/Sediment	In-House		10/11/22	10/11/22	B222343	S221055
Se Unk A F1	Soil/Sediment	In-House		10/11/22	10/12/22	B222345	S221055
Se Unk A F1	Soil/Sediment	In-House		10/12/22	10/27/22	B222346	S221126
Se Unk A F2	Soil/Sediment	In-House		10/10/22	10/15/22	B222348	S221078
Se Unk A F2	Soil/Sediment	In-House		10/10/22	10/15/22	B222350	S221078
Se Unk A F2	Soil/Sediment	In-House		10/12/22	10/17/22	B222351	S221078
Se(F1)	Soil/Sediment	In-House		10/10/22	10/13/22	B222330	S221069
Se(F1)	Soil/Sediment	In-House		10/10/22	10/13/22	B222332	S221069
Se(F1)	Soil/Sediment	In-House		10/12/22	10/13/22	B222333	S221077
Se(F2)	Soil/Sediment	In-House		10/10/22	10/12/22	B222399	S221077
Se(F2)	Soil/Sediment	In-House		10/10/22	10/12/22	B222400	S221077
Se(F2)	Soil/Sediment	In-House		10/12/22	10/14/22	B222434	S221079
Se(F3)	Soil/Sediment	In-House		10/10/22	10/13/22	B222405	S221077
Se(F3)	Soil/Sediment	In-House		10/10/22	10/18/22	B222438	S221088
Se(F3)	Soil/Sediment	In-House		10/12/22	10/20/22	B222498	S221103
Se(F4)	Soil/Sediment	In-House		10/10/22	10/14/22	B222421	S221079
Se(F4)	Soil/Sediment	In-House		10/10/22	10/19/22	B222485	S221095
Se(F4)	Soil/Sediment	In-House		10/12/22	10/21/22	B222514	S221108
Se(F5)	Soil/Sediment	In-House		10/10/22	10/18/22	B222447	S221088



Batch Summary

Analyte	Lab Matrix	Method	Accred.	Prepared	Analyzed	Batch	Sequence
Se(F5)	Soil/Sediment	In-House		10/10/22	10/20/22	B222495	S221103
Se(F5)	Soil/Sediment	In-House		10/21/22	10/25/22	B222533	S221119
Se(IV) F1	Soil/Sediment	In-House		10/11/22	10/11/22	B222343	S221055
Se(IV) F1	Soil/Sediment	In-House		10/11/22	10/12/22	B222345	S221055
Se(IV) F1	Soil/Sediment	In-House		10/12/22	10/27/22	B222346	S221126
Se(IV) F2	Soil/Sediment	In-House		10/10/22	10/15/22	B222348	S221078
Se(IV) F2	Soil/Sediment	In-House		10/10/22	10/15/22	B222350	S221078
Se(IV) F2	Soil/Sediment	In-House		10/12/22	10/17/22	B222351	S221078
Se(VI) F1	Soil/Sediment	In-House		10/11/22	10/11/22	B222343	S221055
Se(VI) F1	Soil/Sediment	In-House		10/11/22	10/12/22	B222345	S221055
Se(VI) F1	Soil/Sediment	In-House		10/12/22	10/27/22	B222346	S221126
Se(VI) F2	Soil/Sediment	In-House		10/10/22	10/15/22	B222348	S221078
Se(VI) F2	Soil/Sediment	In-House		10/10/22	10/15/22	B222350	S221078
Se(VI) F2	Soil/Sediment	In-House		10/12/22	10/17/22	B222351	S221078
SeCN F1	Soil/Sediment	In-House		10/11/22	10/11/22	B222343	S221055
SeCN F1	Soil/Sediment	In-House		10/11/22	10/12/22	B222345	S221055
SeCN F1	Soil/Sediment	In-House		10/12/22	10/27/22	B222346	S221126
SeCN F2	Soil/Sediment	In-House		10/10/22	10/15/22	B222348	S221078
SeCN F2	Soil/Sediment	In-House		10/10/22	10/15/22	B222350	S221078
SeCN F2	Soil/Sediment	In-House		10/12/22	10/17/22	B222351	S221078
SeMet F1	Soil/Sediment	In-House		10/11/22	10/11/22	B222343	S221055
SeMet F1	Soil/Sediment	In-House		10/11/22	10/12/22	B222345	S221055
SeMet F1	Soil/Sediment	In-House		10/12/22	10/27/22	B222346	S221126
SeMet F2	Soil/Sediment	In-House		10/10/22	10/15/22	B222348	S221078
SeMet F2	Soil/Sediment	In-House		10/10/22	10/15/22	B222350	S221078
SeMet F2	Soil/Sediment	In-House		10/12/22	10/17/22	B222351	S221078
SeSO3 F1	Soil/Sediment	In-House		10/11/22	10/11/22	B222343	S221055
SeSO3 F1	Soil/Sediment	In-House		10/11/22	10/12/22	B222345	S221055
SeSO3 F1	Soil/Sediment	In-House		10/12/22	10/27/22	B222346	S221126
SeSO3 F2	Soil/Sediment	In-House		10/10/22	10/15/22	B222348	S221078
SeSO3 F2	Soil/Sediment	In-House		10/10/22	10/15/22	B222350	S221078
SeSO3 F2	Soil/Sediment	In-House		10/12/22	10/17/22	B222351	S221078
Unk Se Sp F1	Soil/Sediment	In-House		10/11/22	10/11/22	B222343	S221055
Unk Se Sp F1	Soil/Sediment	In-House		10/11/22	10/12/22	B222345	S221055
Unk Se Sp F1	Soil/Sediment	In-House		10/12/22	10/27/22	B222346	S221126
Unk Se Sp F2	Soil/Sediment	In-House		10/10/22	10/15/22	B222348	S221078
Unk Se Sp F2	Soil/Sediment	In-House		10/10/22	10/15/22	B222350	S221078
Unk Se Sp F2	Soil/Sediment	In-House		10/12/22	10/17/22	B222351	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_FOUKI_SESeSp-1_2022-09-13_N</i>										
2210048-01	%TS	SE	NA	50.33		0.01	0.03	%	B222342	N/A
2210048-01	DMS ₂ O F1	SE	dry	0.006	J	0.002	0.015	mg/kg	B222343	S221055
2210048-01	DMS ₂ O F2	SE	dry	≤ 0.004	U	0.004	0.015	mg/kg	B222348	S221078
2210048-01	MeSe(IV) F1	SE	dry	0.004	J	0.002	0.015	mg/kg	B222343	S221055
2210048-01	MeSe(IV) F2	SE	dry	0.058		0.004	0.015	mg/kg	B222348	S221078
2210048-01	Se	SE	dry	2.68		0.126	0.253	mg/kg	B222340	S221079
2210048-01	Se Unk A F1	SE	dry	≤ 0.002	U	0.002	0.015	mg/kg	B222343	S221055
2210048-01	Se Unk A F2	SE	dry	≤ 0.004	U	0.004	0.015	mg/kg	B222348	S221078
2210048-01	Se(F1)	SE	dry	0.251		0.030	0.153	mg/kg	B222330	S221069
2210048-01	Se(F2)	SE	dry	0.808		0.036	0.153	mg/kg	B222399	S221077
2210048-01	Se(F3)	SE	dry	1.00		0.042	0.153	mg/kg	B222405	S221077
2210048-01	Se(F4)	SE	dry	0.222		0.020	0.153	mg/kg	B222421	S221079
2210048-01	Se(F5)	SE	dry	0.037	J	0.008	0.076	mg/kg	B222447	S221088
2210048-01	Se(IV) F1	SE	dry	0.200		0.008	0.037	mg/kg	B222343	S221055
2210048-01	Se(IV) F2	SE	dry	0.474		0.005	0.037	mg/kg	B222348	S221078
2210048-01	Se(VI) F1	SE	dry	≤ 0.009	U	0.009	0.039	mg/kg	B222343	S221055
2210048-01	Se(VI) F2	SE	dry	≤ 0.004	U	0.004	0.039	mg/kg	B222348	S221078
2210048-01	SeCN F1	SE	dry	≤ 0.002	U	0.002	0.015	mg/kg	B222343	S221055
2210048-01	SeCN F2	SE	dry	0.097		0.002	0.015	mg/kg	B222348	S221078
2210048-01	SeMet F1	SE	dry	≤ 0.002	U	0.002	0.015	mg/kg	B222343	S221055
2210048-01	SeMet F2	SE	dry	≤ 0.004	U	0.004	0.015	mg/kg	B222348	S221078
2210048-01	SeSO ₃ F1	SE	dry	≤ 0.009	U	0.009	0.039	mg/kg	B222343	S221055
2210048-01	SeSO ₃ F2	SE	dry	≤ 0.004	U	0.004	0.039	mg/kg	B222348	S221078
2210048-01	Unk Se Sp F1	SE	dry	≤ 0.008	U	0.008	0.037	mg/kg	B222343	S221055
2210048-01	Unk Se Sp F2	SE	dry	0.048		0.005	0.037	mg/kg	B222348	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_FOUKI_SESeSp-2_2022-09-13_N										
2210048-02	%TS	SE	NA	53.26		0.009	0.03	%	B222342	N/A
2210048-02	DMS ₂ O F1	SE	dry	≤ 0.002	U	0.002	0.014	mg/kg	B222343	S221055
2210048-02	DMS ₂ O F2	SE	dry	≤ 0.003	U	0.003	0.014	mg/kg	B222348	S221078
2210048-02	MeSe(IV) F1	SE	dry	0.004	J	0.002	0.014	mg/kg	B222343	S221055
2210048-02	MeSe(IV) F2	SE	dry	0.025		0.003	0.014	mg/kg	B222348	S221078
2210048-02	Se	SE	dry	1.73		0.177	0.354	mg/kg	B222340	S221079
2210048-02	Se Unk A F1	SE	dry	≤ 0.002	U	0.002	0.014	mg/kg	B222343	S221055
2210048-02	Se Unk A F2	SE	dry	≤ 0.003	U	0.003	0.014	mg/kg	B222348	S221078
2210048-02	Se(F1)	SE	dry	0.174		0.027	0.139	mg/kg	B222330	S221069
2210048-02	Se(F2)	SE	dry	0.412		0.033	0.139	mg/kg	B222399	S221077
2210048-02	Se(F3)	SE	dry	0.636		0.038	0.139	mg/kg	B222405	S221077
2210048-02	Se(F4)	SE	dry	0.165		0.018	0.139	mg/kg	B222421	S221079
2210048-02	Se(F5)	SE	dry	0.017	J	0.007	0.069	mg/kg	B222447	S221088
2210048-02	Se(IV) F1	SE	dry	0.067		0.008	0.034	mg/kg	B222343	S221055
2210048-02	Se(IV) F2	SE	dry	0.218		0.004	0.034	mg/kg	B222348	S221078
2210048-02	Se(VI) F1	SE	dry	0.049		0.008	0.036	mg/kg	B222343	S221055
2210048-02	Se(VI) F2	SE	dry	≤ 0.004	U	0.004	0.036	mg/kg	B222348	S221078
2210048-02	SeCN F1	SE	dry	≤ 0.001	U	0.001	0.014	mg/kg	B222343	S221055
2210048-02	SeCN F2	SE	dry	0.057		0.002	0.014	mg/kg	B222348	S221078
2210048-02	SeMet F1	SE	dry	≤ 0.002	U	0.002	0.014	mg/kg	B222343	S221055
2210048-02	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.014	mg/kg	B222348	S221078
2210048-02	SeSO ₃ F1	SE	dry	≤ 0.008	U	0.008	0.036	mg/kg	B222343	S221055
2210048-02	SeSO ₃ F2	SE	dry	≤ 0.004	U	0.004	0.036	mg/kg	B222348	S221078
2210048-02	Unk Se Sp F1	SE	dry	≤ 0.008	U	0.008	0.034	mg/kg	B222343	S221055
2210048-02	Unk Se Sp F2	SE	dry	0.029	J	0.004	0.034	mg/kg	B222348	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_FOUKI_SESeSp-3_2022-09-13_N</i>										
2210048-03	%TS	SE	NA	25.42		0.02	0.06	%	B222342	N/A
2210048-03	DMS ₂ O F1	SE	dry	0.016	J	0.003	0.029	mg/kg	B222343	S221055
2210048-03	DMS ₂ O F2	SE	dry	≤ 0.007	U	0.007	0.029	mg/kg	B222348	S221078
2210048-03	MeSe(IV) F1	SE	dry	0.010	J	0.003	0.029	mg/kg	B222343	S221055
2210048-03	MeSe(IV) F2	SE	dry	0.117		0.007	0.029	mg/kg	B222348	S221078
2210048-03	Se	SE	dry	5.24		0.260	0.520	mg/kg	B222340	S221079
2210048-03	Se Unk A F1	SE	dry	≤ 0.003	U	0.003	0.029	mg/kg	B222343	S221055
2210048-03	Se Unk A F2	SE	dry	≤ 0.007	U	0.007	0.029	mg/kg	B222348	S221078
2210048-03	Se(F1)	SE	dry	0.541		0.056	0.291	mg/kg	B222330	S221069
2210048-03	Se(F2)	SE	dry	1.92		0.069	0.291	mg/kg	B222399	S221077
2210048-03	Se(F3)	SE	dry	2.00		0.080	0.291	mg/kg	B222405	S221077
2210048-03	Se(F4)	SE	dry	0.145	J	0.038	0.291	mg/kg	B222421	S221079
2210048-03	Se(F5)	SE	dry	0.020	J	0.015	0.146	mg/kg	B222447	S221088
2210048-03	Se(IV) F1	SE	dry	0.364		0.016	0.071	mg/kg	B222343	S221055
2210048-03	Se(IV) F2	SE	dry	0.819		0.009	0.071	mg/kg	B222348	S221078
2210048-03	Se(VI) F1	SE	dry	≤ 0.017	U	0.017	0.075	mg/kg	B222343	S221055
2210048-03	Se(VI) F2	SE	dry	≤ 0.008	U	0.008	0.075	mg/kg	B222348	S221078
2210048-03	SeCN F1	SE	dry	≤ 0.003	U	0.003	0.029	mg/kg	B222343	S221055
2210048-03	SeCN F2	SE	dry	0.369		0.004	0.029	mg/kg	B222348	S221078
2210048-03	SeMet F1	SE	dry	≤ 0.003	U	0.003	0.029	mg/kg	B222343	S221055
2210048-03	SeMet F2	SE	dry	≤ 0.007	U	0.007	0.029	mg/kg	B222348	S221078
2210048-03	SeSO ₃ F1	SE	dry	≤ 0.017	U	0.017	0.075	mg/kg	B222343	S221055
2210048-03	SeSO ₃ F2	SE	dry	≤ 0.008	U	0.008	0.075	mg/kg	B222348	S221078
2210048-03	Unk Se Sp F1	SE	dry	≤ 0.016	U	0.016	0.071	mg/kg	B222343	S221055
2210048-03	Unk Se Sp F2	SE	dry	0.129		0.009	0.071	mg/kg	B222348	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_FOUKI_SESeSp-4_2022-09-13_N</i>										
2210048-05	%TS	SE	NA	42.54		0.01	0.04	%	B222342	N/A
2210048-05	DMS ₂ O F1	SE	dry	0.011	J	0.002	0.016	mg/kg	B222343	S221055
2210048-05	DMS ₂ O F2	SE	dry	≤ 0.004	U	0.004	0.016	mg/kg	B222348	S221078
2210048-05	MeSe(IV) F1	SE	dry	0.003	J	0.002	0.016	mg/kg	B222343	S221055
2210048-05	MeSe(IV) F2	SE	dry	0.084		0.004	0.016	mg/kg	B222348	S221078
2210048-05	Se	SE	dry	3.57		0.206	0.413	mg/kg	B222340	S221079
2210048-05	Se Unk A F1	SE	dry	≤ 0.002	U	0.002	0.016	mg/kg	B222343	S221055
2210048-05	Se Unk A F2	SE	dry	≤ 0.004	U	0.004	0.016	mg/kg	B222348	S221078
2210048-05	Se(F1)	SE	dry	0.336		0.030	0.155	mg/kg	B222330	S221069
2210048-05	Se(F2)	SE	dry	1.12		0.037	0.155	mg/kg	B222399	S221077
2210048-05	Se(F3)	SE	dry	1.35		0.043	0.155	mg/kg	B222405	S221077
2210048-05	Se(F4)	SE	dry	0.127	J	0.020	0.155	mg/kg	B222421	S221079
2210048-05	Se(F5)	SE	dry	0.020	J	0.008	0.078	mg/kg	B222447	S221088
2210048-05	Se(IV) F1	SE	dry	0.247		0.008	0.038	mg/kg	B222343	S221055
2210048-05	Se(IV) F2	SE	dry	0.584		0.005	0.038	mg/kg	B222348	S221078
2210048-05	Se(VI) F1	SE	dry	≤ 0.009	U	0.009	0.040	mg/kg	B222343	S221055
2210048-05	Se(VI) F2	SE	dry	≤ 0.004	U	0.004	0.040	mg/kg	B222348	S221078
2210048-05	SeCN F1	SE	dry	≤ 0.002	U	0.002	0.016	mg/kg	B222343	S221055
2210048-05	SeCN F2	SE	dry	0.204		0.002	0.016	mg/kg	B222348	S221078
2210048-05	SeMet F1	SE	dry	≤ 0.002	U	0.002	0.016	mg/kg	B222343	S221055
2210048-05	SeMet F2	SE	dry	≤ 0.004	U	0.004	0.016	mg/kg	B222348	S221078
2210048-05	SeSO ₃ F1	SE	dry	≤ 0.009	U	0.009	0.040	mg/kg	B222343	S221055
2210048-05	SeSO ₃ F2	SE	dry	≤ 0.004	U	0.004	0.040	mg/kg	B222348	S221078
2210048-05	Unk Se Sp F1	SE	dry	≤ 0.008	U	0.008	0.038	mg/kg	B222343	S221055
2210048-05	Unk Se Sp F2	SE	dry	0.063		0.005	0.038	mg/kg	B222348	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_FOUKI_SESeSp-5_2022-09-13_N</i>										
2210048-06	%TS	SE	NA	36.54		0.06	0.20	%	B222342	N/A
2210048-06	DMS ₂ O F1	SE	dry	0.014	J	0.002	0.020	mg/kg	B222343	S221055
2210048-06	DMS ₂ O F2	SE	dry	≤ 0.005	U	0.005	0.020	mg/kg	B222348	S221078
2210048-06	MeSe(IV) F1	SE	dry	0.008	J	0.002	0.020	mg/kg	B222343	S221055
2210048-06	MeSe(IV) F2	SE	dry	0.115		0.005	0.020	mg/kg	B222348	S221078
2210048-06	Se	SE	dry	4.27		0.235	0.469	mg/kg	B222340	S221079
2210048-06	Se Unk A F1	SE	dry	≤ 0.002	U	0.002	0.020	mg/kg	B222343	S221055
2210048-06	Se Unk A F2	SE	dry	≤ 0.005	U	0.005	0.020	mg/kg	B222348	S221078
2210048-06	Se(F1)	SE	dry	0.338		0.039	0.201	mg/kg	B222330	S221069
2210048-06	Se(F2)	SE	dry	1.56		0.048	0.201	mg/kg	B222399	S221077
2210048-06	Se(F3)	SE	dry	1.80		0.055	0.201	mg/kg	B222405	S221077
2210048-06	Se(F4)	SE	dry	0.269		0.026	0.201	mg/kg	B222421	S221079
2210048-06	Se(F5)	SE	dry	0.035	J	0.010	0.100	mg/kg	B222447	S221088
2210048-06	Se(IV) F1	SE	dry	0.242		0.011	0.049	mg/kg	B222343	S221055
2210048-06	Se(IV) F2	SE	dry	0.755		0.006	0.049	mg/kg	B222348	S221078
2210048-06	Se(VI) F1	SE	dry	≤ 0.011	U	0.011	0.051	mg/kg	B222343	S221055
2210048-06	Se(VI) F2	SE	dry	≤ 0.006	U	0.006	0.051	mg/kg	B222348	S221078
2210048-06	SeCN F1	SE	dry	≤ 0.002	U	0.002	0.020	mg/kg	B222343	S221055
2210048-06	SeCN F2	SE	dry	0.333		0.003	0.020	mg/kg	B222348	S221078
2210048-06	SeMet F1	SE	dry	≤ 0.002	U	0.002	0.020	mg/kg	B222343	S221055
2210048-06	SeMet F2	SE	dry	≤ 0.005	U	0.005	0.020	mg/kg	B222348	S221078
2210048-06	SeSO ₃ F1	SE	dry	≤ 0.011	U	0.011	0.051	mg/kg	B222343	S221055
2210048-06	SeSO ₃ F2	SE	dry	≤ 0.006	U	0.006	0.051	mg/kg	B222348	S221078
2210048-06	Unk Se Sp F1	SE	dry	≤ 0.011	U	0.011	0.049	mg/kg	B222343	S221055
2210048-06	Unk Se Sp F2	SE	dry	0.119		0.006	0.049	mg/kg	B222348	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_FRDSCC1_SESeSp-1_2022-09-19_N</i>										
2210048-07	%TS	SE	NA	69.60		0.007	0.02	%	B222342	N/A
2210048-07	DMSeO F1	SE	dry	≤ 0.001	U	0.001	0.009	mg/kg	B222343	S221055
2210048-07	DMSeO F2	SE	dry	≤ 0.002	U	0.002	0.009	mg/kg	B222348	S221078
2210048-07	MeSe(IV) F1	SE	dry	≤ 0.001	U	0.001	0.009	mg/kg	B222343	S221055
2210048-07	MeSe(IV) F2	SE	dry	0.011		0.002	0.009	mg/kg	B222348	S221078
2210048-07	Se	SE	dry	0.942		0.129	0.258	mg/kg	B222340	S221079
2210048-07	Se Unk A F1	SE	dry	≤ 0.001	U	0.001	0.009	mg/kg	B222343	S221055
2210048-07	Se Unk A F2	SE	dry	≤ 0.002	U	0.002	0.009	mg/kg	B222348	S221078
2210048-07	Se(F1)	SE	dry	0.077	J	0.017	0.090	mg/kg	B222330	S221069
2210048-07	Se(F2)	SE	dry	0.317		0.021	0.090	mg/kg	B222399	S221077
2210048-07	Se(F3)	SE	dry	0.279		0.025	0.090	mg/kg	B222405	S221077
2210048-07	Se(F4)	SE	dry	0.236		0.012	0.090	mg/kg	B222421	S221079
2210048-07	Se(F5)	SE	dry	0.022	J	0.004	0.045	mg/kg	B222447	S221088
2210048-07	Se(IV) F1	SE	dry	0.026		0.005	0.022	mg/kg	B222343	S221055
2210048-07	Se(IV) F2	SE	dry	0.123		0.003	0.022	mg/kg	B222348	S221078
2210048-07	Se(VI) F1	SE	dry	0.024		0.005	0.023	mg/kg	B222343	S221055
2210048-07	Se(VI) F2	SE	dry	≤ 0.003	U	0.003	0.023	mg/kg	B222348	S221078
2210048-07	SeCN F1	SE	dry	≤ 0.0009	U	0.0009	0.009	mg/kg	B222343	S221055
2210048-07	SeCN F2	SE	dry	0.020		0.001	0.009	mg/kg	B222348	S221078
2210048-07	SeMet F1	SE	dry	≤ 0.001	U	0.001	0.009	mg/kg	B222343	S221055
2210048-07	SeMet F2	SE	dry	≤ 0.002	U	0.002	0.009	mg/kg	B222348	S221078
2210048-07	SeSO3 F1	SE	dry	≤ 0.005	U	0.005	0.023	mg/kg	B222343	S221055
2210048-07	SeSO3 F2	SE	dry	≤ 0.003	U	0.003	0.023	mg/kg	B222348	S221078
2210048-07	Unk Se Sp F1	SE	dry	≤ 0.005	U	0.005	0.022	mg/kg	B222343	S221055
2210048-07	Unk Se Sp F2	SE	dry	0.013	J	0.003	0.022	mg/kg	B222348	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_FRDSCC1_SESeSp-2_2022-09-19_N</i>										
2210048-08	%TS	SE	NA	74.51		0.007	0.02	%	B222342	N/A
2210048-08	DMSeO F1	SE	dry	≤ 0.001	U	0.001	0.010	mg/kg	B222343	S221055
2210048-08	DMSeO F2	SE	dry	≤ 0.002	U	0.002	0.010	mg/kg	B222348	S221078
2210048-08	MeSe(IV) F1	SE	dry	≤ 0.001	U	0.001	0.010	mg/kg	B222343	S221055
2210048-08	MeSe(IV) F2	SE	dry	0.004	J	0.002	0.010	mg/kg	B222348	S221078
2210048-08	Se	SE	dry	0.784		0.114	0.228	mg/kg	B222340	S221079
2210048-08	Se Unk A F1	SE	dry	≤ 0.001	U	0.001	0.010	mg/kg	B222343	S221055
2210048-08	Se Unk A F2	SE	dry	≤ 0.002	U	0.002	0.010	mg/kg	B222348	S221078
2210048-08	Se(F1)	SE	dry	0.057	J	0.019	0.099	mg/kg	B222330	S221069
2210048-08	Se(F2)	SE	dry	0.218		0.024	0.099	mg/kg	B222399	S221077
2210048-08	Se(F3)	SE	dry	0.216		0.027	0.099	mg/kg	B222405	S221077
2210048-08	Se(F4)	SE	dry	0.224		0.013	0.099	mg/kg	B222421	S221079
2210048-08	Se(F5)	SE	dry	0.023	J	0.005	0.050	mg/kg	B222447	S221088
2210048-08	Se(IV) F1	SE	dry	0.026		0.005	0.024	mg/kg	B222343	S221055
2210048-08	Se(IV) F2	SE	dry	0.127		0.003	0.024	mg/kg	B222348	S221078
2210048-08	Se(VI) F1	SE	dry	0.024	J	0.006	0.025	mg/kg	B222343	S221055
2210048-08	Se(VI) F2	SE	dry	≤ 0.003	U	0.003	0.025	mg/kg	B222348	S221078
2210048-08	SeCN F1	SE	dry	≤ 0.001	U	0.001	0.010	mg/kg	B222343	S221055
2210048-08	SeCN F2	SE	dry	0.009	J	0.001	0.010	mg/kg	B222348	S221078
2210048-08	SeMet F1	SE	dry	≤ 0.001	U	0.001	0.010	mg/kg	B222343	S221055
2210048-08	SeMet F2	SE	dry	≤ 0.002	U	0.002	0.010	mg/kg	B222348	S221078
2210048-08	SeSO3 F1	SE	dry	≤ 0.006	U	0.006	0.025	mg/kg	B222343	S221055
2210048-08	SeSO3 F2	SE	dry	≤ 0.003	U	0.003	0.025	mg/kg	B222348	S221078
2210048-08	Unk Se Sp F1	SE	dry	≤ 0.005	U	0.005	0.024	mg/kg	B222343	S221055
2210048-08	Unk Se Sp F2	SE	dry	0.005	J	0.003	0.024	mg/kg	B222348	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_FRDSCC1_SESeSp-3_2022-09-19_N</i>										
2210048-09	%TS	SE	NA	70.65		0.007	0.02	%	B222342	N/A
2210048-09	DMSeO F1	SE	dry	≤ 0.001	U	0.001	0.010	mg/kg	B222343	S221055
2210048-09	DMSeO F2	SE	dry	≤ 0.002	U	0.002	0.010	mg/kg	B222348	S221078
2210048-09	MeSe(IV) F1	SE	dry	≤ 0.001	U	0.001	0.010	mg/kg	B222343	S221055
2210048-09	MeSe(IV) F2	SE	dry	0.007	J	0.002	0.010	mg/kg	B222348	S221078
2210048-09	Se	SE	dry	0.792		0.113	0.225	mg/kg	B222340	S221079
2210048-09	Se Unk A F1	SE	dry	≤ 0.001	U	0.001	0.010	mg/kg	B222343	S221055
2210048-09	Se Unk A F2	SE	dry	≤ 0.002	U	0.002	0.010	mg/kg	B222348	S221078
2210048-09	Se(F1)	SE	dry	0.067	J	0.019	0.100	mg/kg	B222330	S221069
2210048-09	Se(F2)	SE	dry	0.215		0.024	0.100	mg/kg	B222399	S221077
2210048-09	Se(F3)	SE	dry	0.228		0.028	0.100	mg/kg	B222405	S221077
2210048-09	Se(F4)	SE	dry	0.218		0.013	0.100	mg/kg	B222421	S221079
2210048-09	Se(F5)	SE	dry	0.025	J	0.005	0.050	mg/kg	B222447	S221088
2210048-09	Se(IV) F1	SE	dry	0.026		0.005	0.024	mg/kg	B222343	S221055
2210048-09	Se(IV) F2	SE	dry	0.106		0.003	0.024	mg/kg	B222348	S221078
2210048-09	Se(VI) F1	SE	dry	0.024	J	0.006	0.026	mg/kg	B222343	S221055
2210048-09	Se(VI) F2	SE	dry	≤ 0.003	U	0.003	0.026	mg/kg	B222348	S221078
2210048-09	SeCN F1	SE	dry	≤ 0.001	U	0.001	0.010	mg/kg	B222343	S221055
2210048-09	SeCN F2	SE	dry	0.010	J	0.002	0.010	mg/kg	B222348	S221078
2210048-09	SeMet F1	SE	dry	≤ 0.001	U	0.001	0.010	mg/kg	B222343	S221055
2210048-09	SeMet F2	SE	dry	≤ 0.002	U	0.002	0.010	mg/kg	B222348	S221078
2210048-09	SeSO3 F1	SE	dry	≤ 0.006	U	0.006	0.026	mg/kg	B222343	S221055
2210048-09	SeSO3 F2	SE	dry	≤ 0.003	U	0.003	0.026	mg/kg	B222348	S221078
2210048-09	Unk Se Sp F1	SE	dry	≤ 0.005	U	0.005	0.024	mg/kg	B222343	S221055
2210048-09	Unk Se Sp F2	SE	dry	0.009	J	0.003	0.024	mg/kg	B222348	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_FRDSCC1_SESeSp-4_2022-09-19_N</i>										
2210048-10	%TS	SE	NA	69.77		0.006	0.02	%	B222342	N/A
2210048-10	DMS ₂ O F1	SE	dry	≤ 0.001	U	0.001	0.010	mg/kg	B222343	S221055
2210048-10	DMS ₂ O F2	SE	dry	≤ 0.002	U	0.002	0.010	mg/kg	B222348	S221078
2210048-10	MeSe(IV) F1	SE	dry	≤ 0.001	U	0.001	0.010	mg/kg	B222343	S221055
2210048-10	MeSe(IV) F2	SE	dry	0.009	J	0.002	0.010	mg/kg	B222348	S221078
2210048-10	Se	SE	dry	0.918		0.122	0.244	mg/kg	B222340	S221079
2210048-10	Se Unk A F1	SE	dry	≤ 0.001	U	0.001	0.010	mg/kg	B222343	S221055
2210048-10	Se Unk A F2	SE	dry	≤ 0.002	U	0.002	0.010	mg/kg	B222348	S221078
2210048-10	Se(F1)	SE	dry	0.104	J	0.020	0.104	mg/kg	B222330	S221069
2210048-10	Se(F2)	SE	dry	0.316		0.025	0.104	mg/kg	B222399	S221077
2210048-10	Se(F3)	SE	dry	0.265		0.029	0.104	mg/kg	B222405	S221077
2210048-10	Se(F4)	SE	dry	0.196		0.014	0.104	mg/kg	B222421	S221079
2210048-10	Se(F5)	SE	dry	0.027	J	0.005	0.052	mg/kg	B222447	S221088
2210048-10	Se(IV) F1	SE	dry	0.055		0.006	0.025	mg/kg	B222343	S221055
2210048-10	Se(IV) F2	SE	dry	0.176		0.003	0.025	mg/kg	B222348	S221078
2210048-10	Se(VI) F1	SE	dry	0.024	J	0.006	0.027	mg/kg	B222343	S221055
2210048-10	Se(VI) F2	SE	dry	≤ 0.003	U	0.003	0.027	mg/kg	B222348	S221078
2210048-10	SeCN F1	SE	dry	≤ 0.001	U	0.001	0.010	mg/kg	B222343	S221055
2210048-10	SeCN F2	SE	dry	0.014		0.002	0.010	mg/kg	B222348	S221078
2210048-10	SeMet F1	SE	dry	≤ 0.001	U	0.001	0.010	mg/kg	B222343	S221055
2210048-10	SeMet F2	SE	dry	≤ 0.002	U	0.002	0.010	mg/kg	B222348	S221078
2210048-10	SeSO ₃ F1	SE	dry	≤ 0.006	U	0.006	0.027	mg/kg	B222343	S221055
2210048-10	SeSO ₃ F2	SE	dry	≤ 0.003	U	0.003	0.027	mg/kg	B222348	S221078
2210048-10	Unk Se Sp F1	SE	dry	≤ 0.006	U	0.006	0.025	mg/kg	B222343	S221055
2210048-10	Unk Se Sp F2	SE	dry	0.008	J	0.003	0.025	mg/kg	B222348	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_FRDSCC1_SESeSp-5_2022-09-19_N</i>										
2210048-11	%TS	SE	NA	71.76		0.007	0.02	%	B222342	N/A
2210048-11	DMS ₂ O F1	SE	dry	≤ 0.001	U	0.001	0.010	mg/kg	B222343	S221055
2210048-11	DMS ₂ O F2	SE	dry	≤ 0.002	U	0.002	0.010	mg/kg	B222348	S221078
2210048-11	MeSe(IV) F1	SE	dry	≤ 0.001	U	0.001	0.010	mg/kg	B222343	S221055
2210048-11	MeSe(IV) F2	SE	dry	0.004	J	0.002	0.010	mg/kg	B222348	S221078
2210048-11	Se	SE	dry	1.10		0.122	0.243	mg/kg	B222340	S221079
2210048-11	Se Unk A F1	SE	dry	≤ 0.001	U	0.001	0.010	mg/kg	B222343	S221055
2210048-11	Se Unk A F2	SE	dry	≤ 0.002	U	0.002	0.010	mg/kg	B222348	S221078
2210048-11	Se(F1)	SE	dry	0.069	J	0.019	0.098	mg/kg	B222330	S221069
2210048-11	Se(F2)	SE	dry	0.268		0.023	0.098	mg/kg	B222399	S221077
2210048-11	Se(F3)	SE	dry	0.259		0.027	0.098	mg/kg	B222405	S221077
2210048-11	Se(F4)	SE	dry	0.198		0.013	0.098	mg/kg	B222421	S221079
2210048-11	Se(F5)	SE	dry	0.024	J	0.005	0.049	mg/kg	B222447	S221088
2210048-11	Se(IV) F1	SE	dry	0.038		0.005	0.024	mg/kg	B222343	S221055
2210048-11	Se(IV) F2	SE	dry	0.122		0.003	0.024	mg/kg	B222348	S221078
2210048-11	Se(VI) F1	SE	dry	0.008	J	0.006	0.025	mg/kg	B222343	S221055
2210048-11	Se(VI) F2	SE	dry	≤ 0.003	U	0.003	0.025	mg/kg	B222348	S221078
2210048-11	SeCN F1	SE	dry	≤ 0.001	U	0.001	0.010	mg/kg	B222343	S221055
2210048-11	SeCN F2	SE	dry	0.010	J	0.001	0.010	mg/kg	B222348	S221078
2210048-11	SeMet F1	SE	dry	≤ 0.001	U	0.001	0.010	mg/kg	B222343	S221055
2210048-11	SeMet F2	SE	dry	≤ 0.002	U	0.002	0.010	mg/kg	B222348	S221078
2210048-11	SeSO ₃ F1	SE	dry	≤ 0.006	U	0.006	0.025	mg/kg	B222343	S221055
2210048-11	SeSO ₃ F2	SE	dry	≤ 0.003	U	0.003	0.025	mg/kg	B222348	S221078
2210048-11	Unk Se Sp F1	SE	dry	≤ 0.005	U	0.005	0.024	mg/kg	B222343	S221055
2210048-11	Unk Se Sp F2	SE	dry	0.006	J	0.003	0.024	mg/kg	B222348	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_SCOUTDS_SESeSp-1_2022-09-13_N</i>										
2210048-12	%TS	SE	NA	54.48		0.007	0.02	%	B222342	N/A
2210048-12	DMSeO F1	SE	dry	0.008	J	0.001	0.013	mg/kg	B222343	S221055
2210048-12	DMSeO F2	SE	dry	≤ 0.003	U	0.003	0.013	mg/kg	B222348	S221078
2210048-12	MeSe(IV) F1	SE	dry	0.004	J	0.001	0.013	mg/kg	B222343	S221055
2210048-12	MeSe(IV) F2	SE	dry	0.057		0.003	0.013	mg/kg	B222348	S221078
2210048-12	Se	SE	dry	2.24		0.139	0.278	mg/kg	B222340	S221079
2210048-12	Se Unk A F1	SE	dry	≤ 0.001	U	0.001	0.013	mg/kg	B222343	S221055
2210048-12	Se Unk A F2	SE	dry	≤ 0.003	U	0.003	0.013	mg/kg	B222348	S221078
2210048-12	Se(F1)	SE	dry	0.205		0.025	0.128	mg/kg	B222330	S221069
2210048-12	Se(F2)	SE	dry	1.03		0.030	0.128	mg/kg	B222399	S221077
2210048-12	Se(F3)	SE	dry	0.848		0.035	0.128	mg/kg	B222405	S221077
2210048-12	Se(F4)	SE	dry	0.194		0.017	0.128	mg/kg	B222421	S221079
2210048-12	Se(F5)	SE	dry	0.014	J	0.006	0.064	mg/kg	B222447	S221088
2210048-12	Se(IV) F1	SE	dry	0.164		0.007	0.031	mg/kg	B222343	S221055
2210048-12	Se(IV) F2	SE	dry	0.399		0.004	0.031	mg/kg	B222348	S221078
2210048-12	Se(VI) F1	SE	dry	≤ 0.007	U	0.007	0.033	mg/kg	B222343	S221055
2210048-12	Se(VI) F2	SE	dry	0.005	J	0.004	0.033	mg/kg	B222348	S221078
2210048-12	SeCN F1	SE	dry	≤ 0.001	U	0.001	0.013	mg/kg	B222343	S221055
2210048-12	SeCN F2	SE	dry	0.112		0.002	0.013	mg/kg	B222348	S221078
2210048-12	SeMet F1	SE	dry	≤ 0.001	U	0.001	0.013	mg/kg	B222343	S221055
2210048-12	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.013	mg/kg	B222348	S221078
2210048-12	SeSO3 F1	SE	dry	≤ 0.007	U	0.007	0.033	mg/kg	B222343	S221055
2210048-12	SeSO3 F2	SE	dry	≤ 0.004	U	0.004	0.033	mg/kg	B222348	S221078
2210048-12	Unk Se Sp F1	SE	dry	≤ 0.007	U	0.007	0.031	mg/kg	B222343	S221055
2210048-12	Unk Se Sp F2	SE	dry	0.059		0.004	0.031	mg/kg	B222348	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_SCOUTDS_SESeSp-2_2022-09-14_N</i>										
2210048-13	%TS	SE	NA	37.33		0.01	0.04	%	B222342	N/A
2210048-13	DMSeO F1	SE	dry	0.012	J	0.002	0.020	mg/kg	B222343	S221055
2210048-13	DMSeO F2	SE	dry	≤ 0.005	U	0.005	0.020	mg/kg	B222348	S221078
2210048-13	MeSe(IV) F1	SE	dry	0.005	J	0.002	0.020	mg/kg	B222343	S221055
2210048-13	MeSe(IV) F2	SE	dry	0.118		0.005	0.020	mg/kg	B222348	S221078
2210048-13	Se	SE	dry	4.43		0.252	0.504	mg/kg	B222340	S221079
2210048-13	Se Unk A F1	SE	dry	≤ 0.002	U	0.002	0.020	mg/kg	B222343	S221055
2210048-13	Se Unk A F2	SE	dry	≤ 0.005	U	0.005	0.020	mg/kg	B222348	S221078
2210048-13	Se(F1)	SE	dry	0.398		0.038	0.197	mg/kg	B222330	S221069
2210048-13	Se(F2)	SE	dry	1.99		0.047	0.197	mg/kg	B222399	S221077
2210048-13	Se(F3)	SE	dry	1.84		0.054	0.197	mg/kg	B222405	S221077
2210048-13	Se(F4)	SE	dry	0.126	J	0.026	0.197	mg/kg	B222421	S221079
2210048-13	Se(F5)	SE	dry	≤ 0.010	U	0.010	0.098	mg/kg	B222447	S221088
2210048-13	Se(IV) F1	SE	dry	0.265		0.011	0.048	mg/kg	B222343	S221055
2210048-13	Se(IV) F2	SE	dry	0.647		0.006	0.048	mg/kg	B222348	S221078
2210048-13	Se(VI) F1	SE	dry	≤ 0.011	U	0.011	0.050	mg/kg	B222343	S221055
2210048-13	Se(VI) F2	SE	dry	≤ 0.006	U	0.006	0.050	mg/kg	B222348	S221078
2210048-13	SeCN F1	SE	dry	≤ 0.002	U	0.002	0.020	mg/kg	B222343	S221055
2210048-13	SeCN F2	SE	dry	0.283		0.003	0.020	mg/kg	B222348	S221078
2210048-13	SeMet F1	SE	dry	≤ 0.002	U	0.002	0.020	mg/kg	B222343	S221055
2210048-13	SeMet F2	SE	dry	≤ 0.005	U	0.005	0.020	mg/kg	B222348	S221078
2210048-13	SeSO3 F1	SE	dry	≤ 0.011	U	0.011	0.050	mg/kg	B222343	S221055
2210048-13	SeSO3 F2	SE	dry	≤ 0.006	U	0.006	0.050	mg/kg	B222348	S221078
2210048-13	Unk Se Sp F1	SE	dry	≤ 0.011	U	0.011	0.048	mg/kg	B222343	S221055
2210048-13	Unk Se Sp F2	SE	dry	0.108		0.006	0.048	mg/kg	B222348	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_SCOUTDS_SESeSp-3_2022-09-14_N</i>										
2210048-15	%TS	SE	NA	47.40		0.007	0.02	%	B222342	N/A
2210048-15	DMSeO F1	SE	dry	0.007	J	0.002	0.014	mg/kg	B222343	S221055
2210048-15	DMSeO F2	SE	dry	≤ 0.003	U	0.003	0.014	mg/kg	B222348	S221078
2210048-15	MeSe(IV) F1	SE	dry	0.003	J	0.002	0.014	mg/kg	B222343	S221055
2210048-15	MeSe(IV) F2	SE	dry	0.069		0.003	0.014	mg/kg	B222348	S221078
2210048-15	Se	SE	dry	3.12		0.157	0.314	mg/kg	B222340	S221079
2210048-15	Se Unk A F1	SE	dry	≤ 0.002	U	0.002	0.014	mg/kg	B222343	S221055
2210048-15	Se Unk A F2	SE	dry	≤ 0.003	U	0.003	0.014	mg/kg	B222348	S221078
2210048-15	Se(F1)	SE	dry	0.244		0.027	0.138	mg/kg	B222330	S221069
2210048-15	Se(F2)	SE	dry	1.18		0.033	0.138	mg/kg	B222399	S221077
2210048-15	Se(F3)	SE	dry	1.10		0.038	0.138	mg/kg	B222405	S221077
2210048-15	Se(F4)	SE	dry	0.230		0.018	0.138	mg/kg	B222421	S221079
2210048-15	Se(F5)	SE	dry	0.017	J	0.007	0.069	mg/kg	B222447	S221088
2210048-15	Se(IV) F1	SE	dry	0.196		0.007	0.034	mg/kg	B222343	S221055
2210048-15	Se(IV) F2	SE	dry	0.433		0.004	0.034	mg/kg	B222348	S221078
2210048-15	Se(VI) F1	SE	dry	≤ 0.008	U	0.008	0.035	mg/kg	B222343	S221055
2210048-15	Se(VI) F2	SE	dry	≤ 0.004	U	0.004	0.035	mg/kg	B222348	S221078
2210048-15	SeCN F1	SE	dry	≤ 0.001	U	0.001	0.014	mg/kg	B222343	S221055
2210048-15	SeCN F2	SE	dry	0.127		0.002	0.014	mg/kg	B222348	S221078
2210048-15	SeMet F1	SE	dry	≤ 0.002	U	0.002	0.014	mg/kg	B222343	S221055
2210048-15	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.014	mg/kg	B222348	S221078
2210048-15	SeSO3 F1	SE	dry	≤ 0.008	U	0.008	0.035	mg/kg	B222343	S221055
2210048-15	SeSO3 F2	SE	dry	≤ 0.004	U	0.004	0.035	mg/kg	B222348	S221078
2210048-15	Unk Se Sp F1	SE	dry	≤ 0.007	U	0.007	0.034	mg/kg	B222343	S221055
2210048-15	Unk Se Sp F2	SE	dry	0.062		0.004	0.034	mg/kg	B222348	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_SCOUTDS_SESeSp-4_2022-09-14_N</i>										
2210048-16	%TS	SE	NA	50.25		0.007	0.02	%	B222342	N/A
2210048-16	DMSeO F1	SE	dry	0.005	J	0.002	0.016	mg/kg	B222343	S221055
2210048-16	DMSeO F2	SE	dry	≤ 0.004	U	0.004	0.016	mg/kg	B222348	S221078
2210048-16	MeSe(IV) F1	SE	dry	0.003	J	0.002	0.016	mg/kg	B222343	S221055
2210048-16	MeSe(IV) F2	SE	dry	0.039		0.004	0.016	mg/kg	B222348	S221078
2210048-16	Se	SE	dry	2.53		0.157	0.314	mg/kg	B222340	S221079
2210048-16	Se Unk A F1	SE	dry	≤ 0.002	U	0.002	0.016	mg/kg	B222343	S221055
2210048-16	Se Unk A F2	SE	dry	≤ 0.004	U	0.004	0.016	mg/kg	B222348	S221078
2210048-16	Se(F1)	SE	dry	0.225		0.031	0.158	mg/kg	B222330	S221069
2210048-16	Se(F2)	SE	dry	0.802		0.038	0.158	mg/kg	B222399	S221077
2210048-16	Se(F3)	SE	dry	0.928		0.044	0.158	mg/kg	B222405	S221077
2210048-16	Se(F4)	SE	dry	0.162		0.021	0.158	mg/kg	B222421	S221079
2210048-16	Se(F5)	SE	dry	0.015	J	0.008	0.079	mg/kg	B222447	S221088
2210048-16	Se(IV) F1	SE	dry	0.099		0.009	0.039	mg/kg	B222343	S221055
2210048-16	Se(IV) F2	SE	dry	0.317		0.005	0.039	mg/kg	B222348	S221078
2210048-16	Se(VI) F1	SE	dry	0.065		0.009	0.041	mg/kg	B222343	S221055
2210048-16	Se(VI) F2	SE	dry	0.007	J	0.004	0.041	mg/kg	B222348	S221078
2210048-16	SeCN F1	SE	dry	≤ 0.002	U	0.002	0.016	mg/kg	B222343	S221055
2210048-16	SeCN F2	SE	dry	0.078		0.002	0.016	mg/kg	B222348	S221078
2210048-16	SeMet F1	SE	dry	≤ 0.002	U	0.002	0.016	mg/kg	B222343	S221055
2210048-16	SeMet F2	SE	dry	≤ 0.004	U	0.004	0.016	mg/kg	B222348	S221078
2210048-16	SeSO3 F1	SE	dry	≤ 0.009	U	0.009	0.041	mg/kg	B222343	S221055
2210048-16	SeSO3 F2	SE	dry	≤ 0.004	U	0.004	0.041	mg/kg	B222348	S221078
2210048-16	Unk Se Sp F1	SE	dry	≤ 0.009	U	0.009	0.039	mg/kg	B222343	S221055
2210048-16	Unk Se Sp F2	SE	dry	0.036	J	0.005	0.039	mg/kg	B222348	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_SCOUTDS_SESeSp-5_2022-09-14_N</i>										
2210048-17	%TS	SE	NA	55.63		0.008	0.03	%	B222342	N/A
2210048-17	DMSeO F1	SE	dry	0.005	J	0.001	0.012	mg/kg	B222343	S221055
2210048-17	DMSeO F2	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222348	S221078
2210048-17	MeSe(IV) F1	SE	dry	0.005	J	0.001	0.012	mg/kg	B222343	S221055
2210048-17	MeSe(IV) F2	SE	dry	0.055		0.003	0.012	mg/kg	B222348	S221078
2210048-17	Se	SE	dry	2.55		0.168	0.335	mg/kg	B222340	S221079
2210048-17	Se Unk A F1	SE	dry	≤ 0.001	U	0.001	0.012	mg/kg	B222343	S221055
2210048-17	Se Unk A F2	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222348	S221078
2210048-17	Se(F1)	SE	dry	0.220		0.024	0.121	mg/kg	B222330	S221069
2210048-17	Se(F2)	SE	dry	0.951		0.029	0.121	mg/kg	B222399	S221077
2210048-17	Se(F3)	SE	dry	0.918		0.033	0.121	mg/kg	B222405	S221077
2210048-17	Se(F4)	SE	dry	0.252		0.016	0.121	mg/kg	B222421	S221079
2210048-17	Se(F5)	SE	dry	0.017	J	0.006	0.061	mg/kg	B222447	S221088
2210048-17	Se(IV) F1	SE	dry	0.156		0.007	0.030	mg/kg	B222343	S221055
2210048-17	Se(IV) F2	SE	dry	0.421		0.004	0.030	mg/kg	B222348	S221078
2210048-17	Se(VI) F1	SE	dry	≤ 0.007	U	0.007	0.031	mg/kg	B222343	S221055
2210048-17	Se(VI) F2	SE	dry	≤ 0.003	U	0.003	0.031	mg/kg	B222348	S221078
2210048-17	SeCN F1	SE	dry	≤ 0.001	U	0.001	0.012	mg/kg	B222343	S221055
2210048-17	SeCN F2	SE	dry	0.102		0.002	0.012	mg/kg	B222348	S221078
2210048-17	SeMet F1	SE	dry	≤ 0.001	U	0.001	0.012	mg/kg	B222343	S221055
2210048-17	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222348	S221078
2210048-17	SeSO3 F1	SE	dry	≤ 0.007	U	0.007	0.031	mg/kg	B222343	S221055
2210048-17	SeSO3 F2	SE	dry	≤ 0.003	U	0.003	0.031	mg/kg	B222348	S221078
2210048-17	Unk Se Sp F1	SE	dry	≤ 0.007	U	0.007	0.030	mg/kg	B222343	S221055
2210048-17	Unk Se Sp F2	SE	dry	0.046		0.004	0.030	mg/kg	B222348	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_GRASSY_SESeSp-1_2022-09-16_N</i>										
2210048-18	%TS	SE	NA	66.16		0.006	0.02	%	B222342	N/A
2210048-18	DMSeO F1	SE	dry	0.002	J	0.001	0.011	mg/kg	B222343	S221055
2210048-18	DMSeO F2	SE	dry	≤ 0.002	U	0.002	0.011	mg/kg	B222348	S221078
2210048-18	MeSe(IV) F1	SE	dry	≤ 0.001	U	0.001	0.011	mg/kg	B222343	S221055
2210048-18	MeSe(IV) F2	SE	dry	0.023		0.002	0.011	mg/kg	B222348	S221078
2210048-18	Se	SE	dry	1.61		0.118	0.237	mg/kg	B222340	S221079
2210048-18	Se Unk A F1	SE	dry	≤ 0.001	U	0.001	0.011	mg/kg	B222343	S221055
2210048-18	Se Unk A F2	SE	dry	≤ 0.002	U	0.002	0.011	mg/kg	B222348	S221078
2210048-18	Se(F1)	SE	dry	0.296		0.021	0.107	mg/kg	B222330	S221069
2210048-18	Se(F2)	SE	dry	0.642		0.025	0.107	mg/kg	B222399	S221077
2210048-18	Se(F3)	SE	dry	0.390		0.030	0.107	mg/kg	B222405	S221077
2210048-18	Se(F4)	SE	dry	0.206		0.014	0.107	mg/kg	B222421	S221079
2210048-18	Se(F5)	SE	dry	0.016	J	0.005	0.054	mg/kg	B222447	S221088
2210048-18	Se(IV) F1	SE	dry	0.202		0.006	0.026	mg/kg	B222343	S221055
2210048-18	Se(IV) F2	SE	dry	0.398		0.003	0.026	mg/kg	B222348	S221078
2210048-18	Se(VI) F1	SE	dry	0.045		0.006	0.027	mg/kg	B222343	S221055
2210048-18	Se(VI) F2	SE	dry	≤ 0.003	U	0.003	0.027	mg/kg	B222348	S221078
2210048-18	SeCN F1	SE	dry	≤ 0.001	U	0.001	0.011	mg/kg	B222343	S221055
2210048-18	SeCN F2	SE	dry	0.023		0.002	0.011	mg/kg	B222348	S221078
2210048-18	SeMet F1	SE	dry	≤ 0.001	U	0.001	0.011	mg/kg	B222343	S221055
2210048-18	SeMet F2	SE	dry	≤ 0.002	U	0.002	0.011	mg/kg	B222348	S221078
2210048-18	SeSO3 F1	SE	dry	≤ 0.006	U	0.006	0.027	mg/kg	B222343	S221055
2210048-18	SeSO3 F2	SE	dry	≤ 0.003	U	0.003	0.027	mg/kg	B222348	S221078
2210048-18	Unk Se Sp F1	SE	dry	≤ 0.006	U	0.006	0.026	mg/kg	B222343	S221055
2210048-18	Unk Se Sp F2	SE	dry	0.012	J	0.003	0.026	mg/kg	B222348	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_GRASSY_SESeSp-2_2022-09-16_N										
2210048-19	%TS	SE	NA	59.96		0.006	0.02	%	B222342	N/A
2210048-19	DMSeO F1	SE	dry	≤ 0.001	U	0.001	0.013	mg/kg	B222343	S221055
2210048-19	DMSeO F2	SE	dry	≤ 0.003	U	0.003	0.013	mg/kg	B222348	S221078
2210048-19	MeSe(IV) F1	SE	dry	≤ 0.001	U	0.001	0.013	mg/kg	B222343	S221055
2210048-19	MeSe(IV) F2	SE	dry	0.072		0.003	0.013	mg/kg	B222348	S221078
2210048-19	Se	SE	dry	3.01		0.108	0.217	mg/kg	B222340	S221079
2210048-19	Se Unk A F1	SE	dry	≤ 0.001	U	0.001	0.013	mg/kg	B222343	S221055
2210048-19	Se Unk A F2	SE	dry	≤ 0.003	U	0.003	0.013	mg/kg	B222348	S221078
2210048-19	Se(F1)	SE	dry	0.260		0.025	0.126	mg/kg	B222330	S221069
2210048-19	Se(F2)	SE	dry	1.40		0.030	0.126	mg/kg	B222399	S221077
2210048-19	Se(F3)	SE	dry	0.876		0.035	0.126	mg/kg	B222405	S221077
2210048-19	Se(F4)	SE	dry	0.265		0.017	0.126	mg/kg	B222421	S221079
2210048-19	Se(F5)	SE	dry	0.027	J	0.006	0.063	mg/kg	B222447	S221088
2210048-19	Se(IV) F1	SE	dry	0.171		0.007	0.031	mg/kg	B222343	S221055
2210048-19	Se(IV) F2	SE	dry	0.642		0.004	0.031	mg/kg	B222348	S221078
2210048-19	Se(VI) F1	SE	dry	0.054		0.007	0.032	mg/kg	B222343	S221055
2210048-19	Se(VI) F2	SE	dry	≤ 0.004	U	0.004	0.032	mg/kg	B222348	S221078
2210048-19	SeCN F1	SE	dry	≤ 0.001	U	0.001	0.013	mg/kg	B222343	S221055
2210048-19	SeCN F2	SE	dry	0.160		0.002	0.013	mg/kg	B222348	S221078
2210048-19	SeMet F1	SE	dry	≤ 0.001	U	0.001	0.013	mg/kg	B222343	S221055
2210048-19	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.013	mg/kg	B222348	S221078
2210048-19	SeSO3 F1	SE	dry	≤ 0.007	U	0.007	0.032	mg/kg	B222343	S221055
2210048-19	SeSO3 F2	SE	dry	≤ 0.004	U	0.004	0.032	mg/kg	B222348	S221078
2210048-19	Unk Se Sp F1	SE	dry	≤ 0.007	U	0.007	0.031	mg/kg	B222343	S221055
2210048-19	Unk Se Sp F2	SE	dry	0.044		0.004	0.031	mg/kg	B222348	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_GRASSY_SESeSp-3_2022-09-16_N</i>										
2210048-20	%TS	SE	NA	64.16		0.006	0.02	%	B222342	N/A
2210048-20	DMSeO F1	SE	dry	≤ 0.001	U	0.001	0.012	mg/kg	B222343	S221055
2210048-20	DMSeO F2	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222348	S221078
2210048-20	MeSe(IV) F1	SE	dry	0.002	J	0.001	0.012	mg/kg	B222343	S221055
2210048-20	MeSe(IV) F2	SE	dry	0.016		0.003	0.012	mg/kg	B222348	S221078
2210048-20	Se	SE	dry	1.68		0.145	0.289	mg/kg	B222340	S221079
2210048-20	Se Unk A F1	SE	dry	≤ 0.001	U	0.001	0.012	mg/kg	B222343	S221055
2210048-20	Se Unk A F2	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222348	S221078
2210048-20	Se(F1)	SE	dry	0.301		0.023	0.118	mg/kg	B222330	S221069
2210048-20	Se(F2)	SE	dry	0.650		0.028	0.118	mg/kg	B222399	S221077
2210048-20	Se(F3)	SE	dry	0.323		0.033	0.118	mg/kg	B222405	S221077
2210048-20	Se(F4)	SE	dry	0.265		0.016	0.118	mg/kg	B222421	S221079
2210048-20	Se(F5)	SE	dry	0.025	J	0.006	0.059	mg/kg	B222447	S221088
2210048-20	Se(IV) F1	SE	dry	0.194		0.006	0.029	mg/kg	B222343	S221055
2210048-20	Se(IV) F2	SE	dry	0.408		0.004	0.029	mg/kg	B222348	S221078
2210048-20	Se(VI) F1	SE	dry	0.054		0.007	0.030	mg/kg	B222343	S221055
2210048-20	Se(VI) F2	SE	dry	≤ 0.003	U	0.003	0.030	mg/kg	B222348	S221078
2210048-20	SeCN F1	SE	dry	≤ 0.001	U	0.001	0.012	mg/kg	B222343	S221055
2210048-20	SeCN F2	SE	dry	0.016		0.002	0.012	mg/kg	B222348	S221078
2210048-20	SeMet F1	SE	dry	≤ 0.001	U	0.001	0.012	mg/kg	B222343	S221055
2210048-20	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222348	S221078
2210048-20	SeSO3 F1	SE	dry	≤ 0.007	U	0.007	0.030	mg/kg	B222343	S221055
2210048-20	SeSO3 F2	SE	dry	≤ 0.003	U	0.003	0.030	mg/kg	B222348	S221078
2210048-20	Unk Se Sp F1	SE	dry	≤ 0.006	U	0.006	0.029	mg/kg	B222343	S221055
2210048-20	Unk Se Sp F2	SE	dry	0.009	J	0.004	0.029	mg/kg	B222348	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_GRASSY_SESeSp-4_2022-09-16_N</i>										
2210048-21	%TS	SE	NA	50.81		0.008	0.03	%	B222342	N/A
2210048-21	DMSeO F1	SE	dry	0.005	J	0.002	0.015	mg/kg	B222343	S221055
2210048-21	DMSeO F2	SE	dry	≤ 0.003	U	0.003	0.015	mg/kg	B222348	S221078
2210048-21	MeSe(IV) F1	SE	dry	0.003	J	0.002	0.015	mg/kg	B222343	S221055
2210048-21	MeSe(IV) F2	SE	dry	0.069		0.003	0.015	mg/kg	B222348	S221078
2210048-21	Se	SE	dry	3.31		0.154	0.308	mg/kg	B222340	S221079
2210048-21	Se Unk A F1	SE	dry	≤ 0.002	U	0.002	0.015	mg/kg	B222343	S221055
2210048-21	Se Unk A F2	SE	dry	≤ 0.003	U	0.003	0.015	mg/kg	B222348	S221078
2210048-21	Se(F1)	SE	dry	0.462		0.029	0.151	mg/kg	B222330	S221069
2210048-21	Se(F2)	SE	dry	1.13		0.036	0.151	mg/kg	B222399	S221077
2210048-21	Se(F3)	SE	dry	0.795		0.041	0.151	mg/kg	B222405	S221077
2210048-21	Se(F4)	SE	dry	0.236		0.020	0.151	mg/kg	B222421	S221079
2210048-21	Se(F5)	SE	dry	0.022	J	0.008	0.075	mg/kg	B222447	S221088
2210048-21	Se(IV) F1	SE	dry	0.334		0.008	0.037	mg/kg	B222343	S221055
2210048-21	Se(IV) F2	SE	dry	0.611		0.005	0.037	mg/kg	B222348	S221078
2210048-21	Se(VI) F1	SE	dry	0.085		0.009	0.039	mg/kg	B222343	S221055
2210048-21	Se(VI) F2	SE	dry	≤ 0.004	U	0.004	0.039	mg/kg	B222348	S221078
2210048-21	SeCN F1	SE	dry	≤ 0.002	U	0.002	0.015	mg/kg	B222343	S221055
2210048-21	SeCN F2	SE	dry	0.072		0.002	0.015	mg/kg	B222348	S221078
2210048-21	SeMet F1	SE	dry	≤ 0.002	U	0.002	0.015	mg/kg	B222343	S221055
2210048-21	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.015	mg/kg	B222348	S221078
2210048-21	SeSO3 F1	SE	dry	≤ 0.009	U	0.009	0.039	mg/kg	B222343	S221055
2210048-21	SeSO3 F2	SE	dry	≤ 0.004	U	0.004	0.039	mg/kg	B222348	S221078
2210048-21	Unk Se Sp F1	SE	dry	≤ 0.008	U	0.008	0.037	mg/kg	B222343	S221055
2210048-21	Unk Se Sp F2	SE	dry	0.040		0.005	0.037	mg/kg	B222348	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_GRASSY_SESeSp-5_2022-09-16_N</i>										
2210048-22	%TS	SE	NA	70.06		0.005	0.02	%	B222342	N/A
2210048-22	DMSeO F1	SE	dry	≤ 0.001	U	0.001	0.011	mg/kg	B222343	S221055
2210048-22	DMSeO F2	SE	dry	≤ 0.003	U	0.003	0.011	mg/kg	B222348	S221078
2210048-22	MeSe(IV) F1	SE	dry	0.002	J	0.001	0.011	mg/kg	B222343	S221055
2210048-22	MeSe(IV) F2	SE	dry	0.028		0.003	0.011	mg/kg	B222348	S221078
2210048-22	Se	SE	dry	1.72		0.082	0.164	mg/kg	B222340	S221079
2210048-22	Se Unk A F1	SE	dry	≤ 0.001	U	0.001	0.011	mg/kg	B222343	S221055
2210048-22	Se Unk A F2	SE	dry	≤ 0.003	U	0.003	0.011	mg/kg	B222348	S221078
2210048-22	Se(F1)	SE	dry	0.232		0.021	0.111	mg/kg	B222330	S221069
2210048-22	Se(F2)	SE	dry	0.709		0.026	0.111	mg/kg	B222399	S221077
2210048-22	Se(F3)	SE	dry	0.438		0.030	0.111	mg/kg	B222405	S221077
2210048-22	Se(F4)	SE	dry	0.291		0.015	0.111	mg/kg	B222421	S221079
2210048-22	Se(F5)	SE	dry	0.013	J	0.006	0.055	mg/kg	B222447	S221088
2210048-22	Se(IV) F1	SE	dry	0.155		0.006	0.027	mg/kg	B222343	S221055
2210048-22	Se(IV) F2	SE	dry	0.405		0.003	0.027	mg/kg	B222348	S221078
2210048-22	Se(VI) F1	SE	dry	0.044		0.006	0.028	mg/kg	B222343	S221055
2210048-22	Se(VI) F2	SE	dry	≤ 0.003	U	0.003	0.028	mg/kg	B222348	S221078
2210048-22	SeCN F1	SE	dry	≤ 0.001	U	0.001	0.011	mg/kg	B222343	S221055
2210048-22	SeCN F2	SE	dry	0.027		0.002	0.011	mg/kg	B222348	S221078
2210048-22	SeMet F1	SE	dry	≤ 0.001	U	0.001	0.011	mg/kg	B222343	S221055
2210048-22	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.011	mg/kg	B222348	S221078
2210048-22	SeSO3 F1	SE	dry	≤ 0.006	U	0.006	0.028	mg/kg	B222343	S221055
2210048-22	SeSO3 F2	SE	dry	≤ 0.003	U	0.003	0.028	mg/kg	B222348	S221078
2210048-22	Unk Se Sp F1	SE	dry	≤ 0.006	U	0.006	0.027	mg/kg	B222343	S221055
2210048-22	Unk Se Sp F2	SE	dry	0.015	J	0.003	0.027	mg/kg	B222348	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_UFR1_SESeSp-1_2022-09-19_N</i>										
2210048-23	%TS	SE	NA	74.00		0.006	0.02	%	B222342	N/A
2210048-23	DMS ₂ O F1	SE	dry	≤ 0.001	U	0.001	0.010	mg/kg	B222343	S221055
2210048-23	DMS ₂ O F2	SE	dry	≤ 0.002	U	0.002	0.010	mg/kg	B222348	S221078
2210048-23	MeSe(IV) F1	SE	dry	≤ 0.001	U	0.001	0.010	mg/kg	B222343	S221055
2210048-23	MeSe(IV) F2	SE	dry	0.004	J	0.002	0.010	mg/kg	B222348	S221078
2210048-23	Se	SE	dry	0.832		0.088	0.176	mg/kg	B222340	S221079
2210048-23	Se Unk A F1	SE	dry	≤ 0.001	U	0.001	0.010	mg/kg	B222343	S221055
2210048-23	Se Unk A F2	SE	dry	≤ 0.002	U	0.002	0.010	mg/kg	B222348	S221078
2210048-23	Se(F1)	SE	dry	0.022	J	0.019	0.100	mg/kg	B222330	S221069
2210048-23	Se(F2)	SE	dry	0.158		0.024	0.100	mg/kg	B222399	S221077
2210048-23	Se(F3)	SE	dry	0.303		0.028	0.100	mg/kg	B222405	S221077
2210048-23	Se(F4)	SE	dry	0.218		0.013	0.100	mg/kg	B222421	S221079
2210048-23	Se(F5)	SE	dry	0.030	J	0.005	0.050	mg/kg	B222447	S221088
2210048-23	Se(IV) F1	SE	dry	0.008	J	0.005	0.024	mg/kg	B222343	S221055
2210048-23	Se(IV) F2	SE	dry	0.061		0.003	0.024	mg/kg	B222348	S221078
2210048-23	Se(VI) F1	SE	dry	≤ 0.006	U	0.006	0.026	mg/kg	B222343	S221055
2210048-23	Se(VI) F2	SE	dry	≤ 0.003	U	0.003	0.026	mg/kg	B222348	S221078
2210048-23	SeCN F1	SE	dry	≤ 0.001	U	0.001	0.010	mg/kg	B222343	S221055
2210048-23	SeCN F2	SE	dry	0.010	J	0.002	0.010	mg/kg	B222348	S221078
2210048-23	SeMet F1	SE	dry	≤ 0.001	U	0.001	0.010	mg/kg	B222343	S221055
2210048-23	SeMet F2	SE	dry	≤ 0.002	U	0.002	0.010	mg/kg	B222348	S221078
2210048-23	SeSO ₃ F1	SE	dry	≤ 0.006	U	0.006	0.026	mg/kg	B222343	S221055
2210048-23	SeSO ₃ F2	SE	dry	≤ 0.003	U	0.003	0.026	mg/kg	B222348	S221078
2210048-23	Unk Se Sp F1	SE	dry	≤ 0.005	U	0.005	0.024	mg/kg	B222343	S221055
2210048-23	Unk Se Sp F2	SE	dry	0.010	J	0.003	0.024	mg/kg	B222348	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_UFR1_SESeSp-2_2022-09-19_N										
2210048-24	%TS	SE	NA	56.94		0.006	0.02	%	B222342	N/A
2210048-24	DMS ₂ O F1	SE	dry	≤ 0.002	U	0.002	0.013	mg/kg	B222343	S221055
2210048-24	DMS ₂ O F2	SE	dry	≤ 0.003	U	0.003	0.013	mg/kg	B222348	S221078
2210048-24	MeSe(IV) F1	SE	dry	≤ 0.002	U	0.002	0.013	mg/kg	B222343	S221055
2210048-24	MeSe(IV) F2	SE	dry	0.026		0.003	0.013	mg/kg	B222348	S221078
2210048-24	Se	SE	dry	1.08		0.137	0.274	mg/kg	B222340	S221079
2210048-24	Se Unk A F1	SE	dry	≤ 0.002	U	0.002	0.013	mg/kg	B222343	S221055
2210048-24	Se Unk A F2	SE	dry	≤ 0.003	U	0.003	0.013	mg/kg	B222348	S221078
2210048-24	Se(F1)	SE	dry	≤ 0.026	U	0.026	0.134	mg/kg	B222330	S221069
2210048-24	Se(F2)	SE	dry	0.433		0.032	0.134	mg/kg	B222399	S221077
2210048-24	Se(F3)	SE	dry	0.467		0.037	0.134	mg/kg	B222405	S221077
2210048-24	Se(F4)	SE	dry	0.165		0.018	0.134	mg/kg	B222421	S221079
2210048-24	Se(F5)	SE	dry	0.023	J	0.007	0.067	mg/kg	B222447	S221088
2210048-24	Se(IV) F1	SE	dry	0.009	J	0.007	0.033	mg/kg	B222343	S221055
2210048-24	Se(IV) F2	SE	dry	0.113		0.004	0.033	mg/kg	B222348	S221078
2210048-24	Se(VI) F1	SE	dry	≤ 0.008	U	0.008	0.034	mg/kg	B222343	S221055
2210048-24	Se(VI) F2	SE	dry	≤ 0.004	U	0.004	0.034	mg/kg	B222348	S221078
2210048-24	SeCN F1	SE	dry	≤ 0.001	U	0.001	0.013	mg/kg	B222343	S221055
2210048-24	SeCN F2	SE	dry	0.038		0.002	0.013	mg/kg	B222348	S221078
2210048-24	SeMet F1	SE	dry	≤ 0.002	U	0.002	0.013	mg/kg	B222343	S221055
2210048-24	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.013	mg/kg	B222348	S221078
2210048-24	SeSO ₃ F1	SE	dry	≤ 0.008	U	0.008	0.034	mg/kg	B222343	S221055
2210048-24	SeSO ₃ F2	SE	dry	≤ 0.004	U	0.004	0.034	mg/kg	B222348	S221078
2210048-24	Unk Se Sp F1	SE	dry	≤ 0.007	U	0.007	0.033	mg/kg	B222343	S221055
2210048-24	Unk Se Sp F2	SE	dry	0.046		0.004	0.033	mg/kg	B222348	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_UFR1_SESeSp-3_2022-09-19_N</i>										
2210048-25	%TS	SE	NA	58.41		0.007	0.02	%	B222342	N/A
2210048-25	DMS ₂ O F1	SE	dry	≤ 0.002	U	0.002	0.014	mg/kg	B222343	S221055
2210048-25	DMS ₂ O F2	SE	dry	≤ 0.003	U	0.003	0.014	mg/kg	B222348	S221078
2210048-25	MeSe(IV) F1	SE	dry	≤ 0.002	U	0.002	0.014	mg/kg	B222343	S221055
2210048-25	MeSe(IV) F2	SE	dry	0.028		0.003	0.014	mg/kg	B222348	S221078
2210048-25	Se	SE	dry	1.40		0.104	0.208	mg/kg	B222340	S221079
2210048-25	Se Unk A F1	SE	dry	≤ 0.002	U	0.002	0.014	mg/kg	B222343	S221055
2210048-25	Se Unk A F2	SE	dry	≤ 0.003	U	0.003	0.014	mg/kg	B222348	S221078
2210048-25	Se(F1)	SE	dry	≤ 0.027	U	0.027	0.137	mg/kg	B222330	S221069
2210048-25	Se(F2)	SE	dry	0.404		0.033	0.137	mg/kg	B222399	S221077
2210048-25	Se(F3)	SE	dry	0.654		0.038	0.137	mg/kg	B222405	S221077
2210048-25	Se(F4)	SE	dry	0.172		0.018	0.137	mg/kg	B222421	S221079
2210048-25	Se(F5)	SE	dry	0.031	J	0.007	0.068	mg/kg	B222447	S221088
2210048-25	Se(IV) F1	SE	dry	≤ 0.007	U	0.007	0.033	mg/kg	B222343	S221055
2210048-25	Se(IV) F2	SE	dry	0.102		0.004	0.033	mg/kg	B222348	S221078
2210048-25	Se(VI) F1	SE	dry	≤ 0.008	U	0.008	0.035	mg/kg	B222343	S221055
2210048-25	Se(VI) F2	SE	dry	≤ 0.004	U	0.004	0.035	mg/kg	B222348	S221078
2210048-25	SeCN F1	SE	dry	≤ 0.001	U	0.001	0.014	mg/kg	B222343	S221055
2210048-25	SeCN F2	SE	dry	0.039		0.002	0.014	mg/kg	B222348	S221078
2210048-25	SeMet F1	SE	dry	≤ 0.002	U	0.002	0.014	mg/kg	B222343	S221055
2210048-25	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.014	mg/kg	B222348	S221078
2210048-25	SeSO ₃ F1	SE	dry	≤ 0.008	U	0.008	0.035	mg/kg	B222343	S221055
2210048-25	SeSO ₃ F2	SE	dry	≤ 0.004	U	0.004	0.035	mg/kg	B222348	S221078
2210048-25	Unk Se Sp F1	SE	dry	≤ 0.007	U	0.007	0.033	mg/kg	B222343	S221055
2210048-25	Unk Se Sp F2	SE	dry	0.024	J	0.004	0.033	mg/kg	B222348	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_UFR1_SESeSp-4_2022-09-19_N</i>										
2210048-26	%TS	SE	NA	68.89		0.006	0.02	%	B222342	N/A
2210048-26	DMS ₂ O F1	SE	dry	≤ 0.001	U	0.001	0.011	mg/kg	B222343	S221055
2210048-26	DMS ₂ O F2	SE	dry	≤ 0.003	U	0.003	0.011	mg/kg	B222348	S221078
2210048-26	MeSe(IV) F1	SE	dry	≤ 0.001	U	0.001	0.011	mg/kg	B222343	S221055
2210048-26	MeSe(IV) F2	SE	dry	0.009	J	0.003	0.011	mg/kg	B222348	S221078
2210048-26	Se	SE	dry	0.727		0.079	0.158	mg/kg	B222340	S221079
2210048-26	Se Unk A F1	SE	dry	≤ 0.001	U	0.001	0.011	mg/kg	B222343	S221055
2210048-26	Se Unk A F2	SE	dry	≤ 0.003	U	0.003	0.011	mg/kg	B222348	S221078
2210048-26	Se(F1)	SE	dry	≤ 0.022	U	0.022	0.112	mg/kg	B222330	S221069
2210048-26	Se(F2)	SE	dry	0.158		0.027	0.112	mg/kg	B222399	S221077
2210048-26	Se(F3)	SE	dry	0.253		0.031	0.112	mg/kg	B222405	S221077
2210048-26	Se(F4)	SE	dry	0.259		0.015	0.112	mg/kg	B222421	S221079
2210048-26	Se(F5)	SE	dry	0.023	J	0.006	0.056	mg/kg	B222447	S221088
2210048-26	Se(IV) F1	SE	dry	0.007	J	0.006	0.027	mg/kg	B222343	S221055
2210048-26	Se(IV) F2	SE	dry	0.063		0.003	0.027	mg/kg	B222348	S221078
2210048-26	Se(VI) F1	SE	dry	≤ 0.006	U	0.006	0.029	mg/kg	B222343	S221055
2210048-26	Se(VI) F2	SE	dry	≤ 0.003	U	0.003	0.029	mg/kg	B222348	S221078
2210048-26	SeCN F1	SE	dry	≤ 0.001	U	0.001	0.011	mg/kg	B222343	S221055
2210048-26	SeCN F2	SE	dry	0.012		0.002	0.011	mg/kg	B222348	S221078
2210048-26	SeMet F1	SE	dry	≤ 0.001	U	0.001	0.011	mg/kg	B222343	S221055
2210048-26	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.011	mg/kg	B222348	S221078
2210048-26	SeSO ₃ F1	SE	dry	≤ 0.006	U	0.006	0.029	mg/kg	B222343	S221055
2210048-26	SeSO ₃ F2	SE	dry	≤ 0.003	U	0.003	0.029	mg/kg	B222348	S221078
2210048-26	Unk Se Sp F1	SE	dry	≤ 0.006	U	0.006	0.027	mg/kg	B222343	S221055
2210048-26	Unk Se Sp F2	SE	dry	0.005	J	0.003	0.027	mg/kg	B222348	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_UFR1_SESeSp-5_2022-09-19_N</i>										
2210048-27	%TS	SE	NA	64.46		0.007	0.02	%	B222342	N/A
2210048-27	DMS ₂ O F1	SE	dry	≤ 0.001	U	0.001	0.011	mg/kg	B222343	S221055
2210048-27	DMS ₂ O F2	SE	dry	≤ 0.003	U	0.003	0.011	mg/kg	B222348	S221078
2210048-27	MeSe(IV) F1	SE	dry	0.002	J	0.001	0.011	mg/kg	B222343	S221055
2210048-27	MeSe(IV) F2	SE	dry	0.012		0.003	0.011	mg/kg	B222348	S221078
2210048-27	Se	SE	dry	0.835		0.094	0.188	mg/kg	B222340	S221079
2210048-27	Se Unk A F1	SE	dry	≤ 0.001	U	0.001	0.011	mg/kg	B222343	S221055
2210048-27	Se Unk A F2	SE	dry	≤ 0.003	U	0.003	0.011	mg/kg	B222348	S221078
2210048-27	Se(F1)	SE	dry	0.025	J	0.022	0.115	mg/kg	B222330	S221069
2210048-27	Se(F2)	SE	dry	0.253		0.027	0.115	mg/kg	B222399	S221077
2210048-27	Se(F3)	SE	dry	0.343		0.032	0.115	mg/kg	B222405	S221077
2210048-27	Se(F4)	SE	dry	0.624	M	0.015	0.115	mg/kg	B222421	S221079
2210048-27	Se(F5)	SE	dry	0.053	J	0.006	0.057	mg/kg	B222447	S221088
2210048-27	Se(IV) F1	SE	dry	0.010	J	0.006	0.028	mg/kg	B222343	S221055
2210048-27	Se(IV) F2	SE	dry	0.102		0.003	0.028	mg/kg	B222348	S221078
2210048-27	Se(VI) F1	SE	dry	≤ 0.007	U	0.007	0.029	mg/kg	B222343	S221055
2210048-27	Se(VI) F2	SE	dry	≤ 0.003	U	0.003	0.029	mg/kg	B222348	S221078
2210048-27	SeCN F1	SE	dry	≤ 0.001	U	0.001	0.011	mg/kg	B222343	S221055
2210048-27	SeCN F2	SE	dry	0.021		0.002	0.011	mg/kg	B222348	S221078
2210048-27	SeMet F1	SE	dry	≤ 0.001	U	0.001	0.011	mg/kg	B222343	S221055
2210048-27	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.011	mg/kg	B222348	S221078
2210048-27	SeSO ₃ F1	SE	dry	≤ 0.007	U	0.007	0.029	mg/kg	B222343	S221055
2210048-27	SeSO ₃ F2	SE	dry	≤ 0.003	U	0.003	0.029	mg/kg	B222348	S221078
2210048-27	Unk Se Sp F1	SE	dry	≤ 0.006	U	0.006	0.028	mg/kg	B222343	S221055
2210048-27	Unk Se Sp F2	SE	dry	0.023	J	0.003	0.028	mg/kg	B222348	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_WED_SESeSp-1_2022-09-19_N										
2210048-28	%TS	SE	NA	37.43		0.01	0.04	%	B222342	N/A
2210048-28	DMS ₂ O F1	SE	dry	0.047		0.002	0.021	mg/kg	B222343	S221055
2210048-28	DMS ₂ O F2	SE	dry	≤ 0.005	U	0.005	0.021	mg/kg	B222348	S221078
2210048-28	MeSe(IV) F1	SE	dry	0.025		0.002	0.021	mg/kg	B222343	S221055
2210048-28	MeSe(IV) F2	SE	dry	0.701		0.005	0.021	mg/kg	B222348	S221078
2210048-28	Se	SE	dry	21.5		0.135	0.270	mg/kg	B222340	S221079
2210048-28	Se Unk A F1	SE	dry	≤ 0.002	U	0.002	0.021	mg/kg	B222343	S221055
2210048-28	Se Unk A F2	SE	dry	≤ 0.005	U	0.005	0.021	mg/kg	B222348	S221078
2210048-28	Se(F1)	SE	dry	1.16		0.041	0.209	mg/kg	B222330	S221069
2210048-28	Se(F2)	SE	dry	7.67		0.050	0.209	mg/kg	B222399	S221077
2210048-28	Se(F3)	SE	dry	8.28		0.058	0.209	mg/kg	B222405	S221077
2210048-28	Se(F4)	SE	dry	0.324		0.027	0.209	mg/kg	B222421	S221079
2210048-28	Se(F5)	SE	dry	0.043	J	0.010	0.105	mg/kg	B222447	S221088
2210048-28	Se(IV) F1	SE	dry	0.738		0.011	0.051	mg/kg	B222343	S221055
2210048-28	Se(IV) F2	SE	dry	2.51		0.006	0.051	mg/kg	B222348	S221078
2210048-28	Se(VI) F1	SE	dry	≤ 0.012	U	0.012	0.054	mg/kg	B222343	S221055
2210048-28	Se(VI) F2	SE	dry	≤ 0.006	U	0.006	0.054	mg/kg	B222348	S221078
2210048-28	SeCN F1	SE	dry	≤ 0.002	U	0.002	0.021	mg/kg	B222343	S221055
2210048-28	SeCN F2	SE	dry	1.04		0.003	0.021	mg/kg	B222348	S221078
2210048-28	SeMet F1	SE	dry	≤ 0.002	U	0.002	0.021	mg/kg	B222343	S221055
2210048-28	SeMet F2	SE	dry	≤ 0.005	U	0.005	0.021	mg/kg	B222348	S221078
2210048-28	SeSO ₃ F1	SE	dry	≤ 0.012	U	0.012	0.054	mg/kg	B222343	S221055
2210048-28	SeSO ₃ F2	SE	dry	0.020	J	0.006	0.054	mg/kg	B222348	S221078
2210048-28	Unk Se Sp F1	SE	dry	≤ 0.011	U	0.011	0.051	mg/kg	B222343	S221055
2210048-28	Unk Se Sp F2	SE	dry	0.588		0.006	0.051	mg/kg	B222348	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_WED_SESeSp-2_2022-09-19_N										
2210048-29	%TS	SE	NA	34.83		0.01	0.05	%	B222342	N/A
2210048-29	DMS ₂ O F1	SE	dry	0.059		0.002	0.022	mg/kg	B222343	S221055
2210048-29	DMS ₂ O F2	SE	dry	≤ 0.005	U	0.005	0.022	mg/kg	B222348	S221078
2210048-29	MeSe(IV) F1	SE	dry	0.021	J	0.002	0.022	mg/kg	B222343	S221055
2210048-29	MeSe(IV) F2	SE	dry	0.510		0.005	0.022	mg/kg	B222348	S221078
2210048-29	Se	SE	dry	13.9		0.146	0.293	mg/kg	B222340	S221079
2210048-29	Se Unk A F1	SE	dry	≤ 0.002	U	0.002	0.022	mg/kg	B222343	S221055
2210048-29	Se Unk A F2	SE	dry	≤ 0.005	U	0.005	0.022	mg/kg	B222348	S221078
2210048-29	Se(F1)	SE	dry	0.747		0.043	0.220	mg/kg	B222330	S221069
2210048-29	Se(F2)	SE	dry	4.92		0.052	0.220	mg/kg	B222399	S221077
2210048-29	Se(F3)	SE	dry	6.55		0.060	0.220	mg/kg	B222405	S221077
2210048-29	Se(F4)	SE	dry	0.215	J	0.029	0.220	mg/kg	B222421	S221079
2210048-29	Se(F5)	SE	dry	0.015	J	0.011	0.110	mg/kg	B222447	S221088
2210048-29	Se(IV) F1	SE	dry	0.440		0.012	0.054	mg/kg	B222343	S221055
2210048-29	Se(IV) F2	SE	dry	1.40		0.007	0.054	mg/kg	B222348	S221078
2210048-29	Se(VI) F1	SE	dry	≤ 0.012	U	0.012	0.056	mg/kg	B222343	S221055
2210048-29	Se(VI) F2	SE	dry	≤ 0.006	U	0.006	0.056	mg/kg	B222348	S221078
2210048-29	SeCN F1	SE	dry	≤ 0.002	U	0.002	0.022	mg/kg	B222343	S221055
2210048-29	SeCN F2	SE	dry	0.817		0.003	0.022	mg/kg	B222348	S221078
2210048-29	SeMet F1	SE	dry	≤ 0.002	U	0.002	0.022	mg/kg	B222343	S221055
2210048-29	SeMet F2	SE	dry	≤ 0.005	U	0.005	0.022	mg/kg	B222348	S221078
2210048-29	SeSO ₃ F1	SE	dry	≤ 0.012	U	0.012	0.056	mg/kg	B222343	S221055
2210048-29	SeSO ₃ F2	SE	dry	0.021	J	0.006	0.056	mg/kg	B222348	S221078
2210048-29	Unk Se Sp F1	SE	dry	≤ 0.012	U	0.012	0.054	mg/kg	B222343	S221055
2210048-29	Unk Se Sp F2	SE	dry	0.264		0.007	0.054	mg/kg	B222348	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_WED_SESeSp-3_2022-09-19_N										
2210048-30	%TS	SE	NA	47.00		0.009	0.03	%	B222342	N/A
2210048-30	DMS ₂ O F1	SE	dry	0.053		0.002	0.017	mg/kg	B222343	S221055
2210048-30	DMS ₂ O F2	SE	dry	≤ 0.004	U	0.004	0.017	mg/kg	B222348	S221078
2210048-30	MeSe(IV) F1	SE	dry	0.018		0.002	0.017	mg/kg	B222343	S221055
2210048-30	MeSe(IV) F2	SE	dry	0.493		0.004	0.017	mg/kg	B222348	S221078
2210048-30	Se	SE	dry	12.5		0.170	0.340	mg/kg	B222340	S221079
2210048-30	Se Unk A F1	SE	dry	≤ 0.002	U	0.002	0.017	mg/kg	B222343	S221055
2210048-30	Se Unk A F2	SE	dry	0.010	J	0.004	0.017	mg/kg	B222348	S221078
2210048-30	Se(F1)	SE	dry	0.770		0.033	0.169	mg/kg	B222330	S221069
2210048-30	Se(F2)	SE	dry	5.89		0.040	0.169	mg/kg	B222399	S221077
2210048-30	Se(F3)	SE	dry	5.01		0.047	0.169	mg/kg	B222405	S221077
2210048-30	Se(F4)	SE	dry	0.217		0.022	0.169	mg/kg	B222421	S221079
2210048-30	Se(F5)	SE	dry	0.027	J	0.008	0.085	mg/kg	B222447	S221088
2210048-30	Se(IV) F1	SE	dry	0.534		0.009	0.041	mg/kg	B222343	S221055
2210048-30	Se(IV) F2	SE	dry	2.08		0.005	0.041	mg/kg	B222348	S221078
2210048-30	Se(VI) F1	SE	dry	≤ 0.010	U	0.010	0.043	mg/kg	B222343	S221055
2210048-30	Se(VI) F2	SE	dry	0.012	J	0.005	0.043	mg/kg	B222348	S221078
2210048-30	SeCN F1	SE	dry	≤ 0.002	U	0.002	0.017	mg/kg	B222343	S221055
2210048-30	SeCN F2	SE	dry	0.905		0.003	0.017	mg/kg	B222348	S221078
2210048-30	SeMet F1	SE	dry	≤ 0.002	U	0.002	0.017	mg/kg	B222343	S221055
2210048-30	SeMet F2	SE	dry	≤ 0.004	U	0.004	0.017	mg/kg	B222348	S221078
2210048-30	SeSO ₃ F1	SE	dry	≤ 0.010	U	0.010	0.043	mg/kg	B222343	S221055
2210048-30	SeSO ₃ F2	SE	dry	0.016	J	0.005	0.043	mg/kg	B222348	S221078
2210048-30	Unk Se Sp F1	SE	dry	≤ 0.009	U	0.009	0.041	mg/kg	B222343	S221055
2210048-30	Unk Se Sp F2	SE	dry	0.324		0.005	0.041	mg/kg	B222348	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_WED_SESeSp-4_2022-09-19_N										
2210048-31	%TS	SE	NA	52.91		0.008	0.03	%	B222342	N/A
2210048-31	DMS ₂ O F1	SE	dry	0.009	J	0.002	0.014	mg/kg	B222343	S221055
2210048-31	DMS ₂ O F2	SE	dry	≤ 0.003	U	0.003	0.014	mg/kg	B222348	S221078
2210048-31	MeSe(IV) F1	SE	dry	0.005	J	0.002	0.014	mg/kg	B222343	S221055
2210048-31	MeSe(IV) F2	SE	dry	0.251		0.003	0.014	mg/kg	B222348	S221078
2210048-31	Se	SE	dry	5.89		0.110	0.220	mg/kg	B222340	S221079
2210048-31	Se Unk A F1	SE	dry	≤ 0.002	U	0.002	0.014	mg/kg	B222343	S221055
2210048-31	Se Unk A F2	SE	dry	≤ 0.003	U	0.003	0.014	mg/kg	B222348	S221078
2210048-31	Se(F1)	SE	dry	0.375		0.027	0.141	mg/kg	B222330	S221069
2210048-31	Se(F2)	SE	dry	3.17		0.034	0.141	mg/kg	B222399	S221077
2210048-31	Se(F3)	SE	dry	2.17		0.039	0.141	mg/kg	B222405	S221077
2210048-31	Se(F4)	SE	dry	0.193		0.019	0.141	mg/kg	B222421	S221079
2210048-31	Se(F5)	SE	dry	0.022	J	0.007	0.071	mg/kg	B222447	S221088
2210048-31	Se(IV) F1	SE	dry	0.315		0.008	0.034	mg/kg	B222343	S221055
2210048-31	Se(IV) F2	SE	dry	1.40		0.004	0.034	mg/kg	B222348	S221078
2210048-31	Se(VI) F1	SE	dry	≤ 0.008	U	0.008	0.036	mg/kg	B222343	S221055
2210048-31	Se(VI) F2	SE	dry	0.011	J	0.004	0.036	mg/kg	B222348	S221078
2210048-31	SeCN F1	SE	dry	≤ 0.001	U	0.001	0.014	mg/kg	B222343	S221055
2210048-31	SeCN F2	SE	dry	0.318		0.002	0.014	mg/kg	B222348	S221078
2210048-31	SeMet F1	SE	dry	≤ 0.002	U	0.002	0.014	mg/kg	B222343	S221055
2210048-31	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.014	mg/kg	B222348	S221078
2210048-31	SeSO ₃ F1	SE	dry	≤ 0.008	U	0.008	0.036	mg/kg	B222343	S221055
2210048-31	SeSO ₃ F2	SE	dry	0.008	J	0.004	0.036	mg/kg	B222348	S221078
2210048-31	Unk Se Sp F1	SE	dry	≤ 0.008	U	0.008	0.034	mg/kg	B222343	S221055
2210048-31	Unk Se Sp F2	SE	dry	0.119		0.004	0.034	mg/kg	B222348	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_WED_SESeSp-5_2022-09-19_N										
2210048-32	%TS	SE	NA	45.13		0.01	0.04	%	B222342	N/A
2210048-32	DMS ₂ O F1	SE	dry	0.010	J	0.002	0.016	mg/kg	B222343	S221055
2210048-32	DMS ₂ O F2	SE	dry	≤ 0.004	U	0.004	0.016	mg/kg	B222348	S221078
2210048-32	MeSe(IV) F1	SE	dry	0.016	J	0.002	0.016	mg/kg	B222343	S221055
2210048-32	MeSe(IV) F2	SE	dry	0.292		0.004	0.016	mg/kg	B222348	S221078
2210048-32	Se	SE	dry	7.39		0.167	0.334	mg/kg	B222340	S221079
2210048-32	Se Unk A F1	SE	dry	≤ 0.002	U	0.002	0.016	mg/kg	B222343	S221055
2210048-32	Se Unk A F2	SE	dry	≤ 0.004	U	0.004	0.016	mg/kg	B222348	S221078
2210048-32	Se(F1)	SE	dry	0.628		0.032	0.163	mg/kg	B222330	S221069
2210048-32	Se(F2)	SE	dry	4.56		0.039	0.163	mg/kg	B222399	S221077
2210048-32	Se(F3)	SE	dry	2.67		0.045	0.163	mg/kg	B222405	S221077
2210048-32	Se(F4)	SE	dry	0.323		0.021	0.163	mg/kg	B222421	S221079
2210048-32	Se(F5)	SE	dry	0.032	J	0.008	0.082	mg/kg	B222447	S221088
2210048-32	Se(IV) F1	SE	dry	0.446		0.009	0.040	mg/kg	B222343	S221055
2210048-32	Se(IV) F2	SE	dry	1.79		0.005	0.040	mg/kg	B222348	S221078
2210048-32	Se(VI) F1	SE	dry	≤ 0.009	U	0.009	0.042	mg/kg	B222343	S221055
2210048-32	Se(VI) F2	SE	dry	0.011	J	0.005	0.042	mg/kg	B222348	S221078
2210048-32	SeCN F1	SE	dry	≤ 0.002	U	0.002	0.016	mg/kg	B222343	S221055
2210048-32	SeCN F2	SE	dry	0.635		0.002	0.016	mg/kg	B222348	S221078
2210048-32	SeMet F1	SE	dry	≤ 0.002	U	0.002	0.016	mg/kg	B222343	S221055
2210048-32	SeMet F2	SE	dry	≤ 0.004	U	0.004	0.016	mg/kg	B222348	S221078
2210048-32	SeSO ₃ F1	SE	dry	≤ 0.009	U	0.009	0.042	mg/kg	B222343	S221055
2210048-32	SeSO ₃ F2	SE	dry	0.015	J	0.005	0.042	mg/kg	B222348	S221078
2210048-32	Unk Se Sp F1	SE	dry	≤ 0.009	U	0.009	0.040	mg/kg	B222343	S221055
2210048-32	Unk Se Sp F2	SE	dry	0.245		0.005	0.040	mg/kg	B222348	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_FOUCL_SESeSp-1_2022-09-16_N</i>										
2210048-33	%TS	SE	NA	59.86		0.006	0.02	%	B222342	N/A
2210048-33	DMS ₂ O F1	SE	dry	0.005	J	0.001	0.012	mg/kg	B222343	S221055
2210048-33	DMS ₂ O F2	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222348	S221078
2210048-33	MeSe(IV) F1	SE	dry	0.003	J	0.001	0.012	mg/kg	B222343	S221055
2210048-33	MeSe(IV) F2	SE	dry	0.055		0.003	0.012	mg/kg	B222348	S221078
2210048-33	Se	SE	dry	1.89		0.139	0.278	mg/kg	B222340	S221079
2210048-33	Se Unk A F1	SE	dry	≤ 0.001	U	0.001	0.012	mg/kg	B222343	S221055
2210048-33	Se Unk A F2	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222348	S221078
2210048-33	Se(F1)	SE	dry	0.155		0.023	0.121	mg/kg	B222330	S221069
2210048-33	Se(F2)	SE	dry	0.797		0.029	0.121	mg/kg	B222399	S221077
2210048-33	Se(F3)	SE	dry	0.582		0.033	0.121	mg/kg	B222405	S221077
2210048-33	Se(F4)	SE	dry	0.192		0.016	0.121	mg/kg	B222421	S221079
2210048-33	Se(F5)	SE	dry	0.016	J	0.006	0.060	mg/kg	B222447	S221088
2210048-33	Se(IV) F1	SE	dry	0.103		0.007	0.029	mg/kg	B222343	S221055
2210048-33	Se(IV) F2	SE	dry	0.336		0.004	0.029	mg/kg	B222348	S221078
2210048-33	Se(VI) F1	SE	dry	≤ 0.007	U	0.007	0.031	mg/kg	B222343	S221055
2210048-33	Se(VI) F2	SE	dry	0.005	J	0.003	0.031	mg/kg	B222348	S221078
2210048-33	SeCN F1	SE	dry	≤ 0.001	U	0.001	0.012	mg/kg	B222343	S221055
2210048-33	SeCN F2	SE	dry	0.082		0.002	0.012	mg/kg	B222348	S221078
2210048-33	SeMet F1	SE	dry	≤ 0.001	U	0.001	0.012	mg/kg	B222343	S221055
2210048-33	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222348	S221078
2210048-33	SeSO ₃ F1	SE	dry	≤ 0.007	U	0.007	0.031	mg/kg	B222343	S221055
2210048-33	SeSO ₃ F2	SE	dry	≤ 0.003	U	0.003	0.031	mg/kg	B222348	S221078
2210048-33	Unk Se Sp F1	SE	dry	≤ 0.007	U	0.007	0.029	mg/kg	B222343	S221055
2210048-33	Unk Se Sp F2	SE	dry	0.036		0.004	0.029	mg/kg	B222348	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_FOUCL_SESeSp-2_2022-09-16_N</i>										
2210048-34	%TS	SE	NA	60.38		0.007	0.02	%	B222342	N/A
2210048-34	DMS ₂ O F1	SE	dry	0.009	J	0.001	0.013	mg/kg	B222343	S221055
2210048-34	DMS ₂ O F2	SE	dry	≤ 0.003	U	0.003	0.013	mg/kg	B222348	S221078
2210048-34	MeSe(IV) F1	SE	dry	0.008	J	0.001	0.013	mg/kg	B222343	S221055
2210048-34	MeSe(IV) F2	SE	dry	0.083		0.003	0.013	mg/kg	B222348	S221078
2210048-34	Se	SE	dry	2.16		0.133	0.267	mg/kg	B222340	S221079
2210048-34	Se Unk A F1	SE	dry	≤ 0.001	U	0.001	0.013	mg/kg	B222343	S221055
2210048-34	Se Unk A F2	SE	dry	≤ 0.003	U	0.003	0.013	mg/kg	B222348	S221078
2210048-34	Se(F1)	SE	dry	0.189		0.026	0.132	mg/kg	B222330	S221069
2210048-34	Se(F2)	SE	dry	1.04		0.031	0.132	mg/kg	B222399	S221077
2210048-34	Se(F3)	SE	dry	0.824		0.036	0.132	mg/kg	B222405	S221077
2210048-34	Se(F4)	SE	dry	0.177		0.017	0.132	mg/kg	B222421	S221079
2210048-34	Se(F5)	SE	dry	0.010	J	0.007	0.066	mg/kg	B222447	S221088
2210048-34	Se(IV) F1	SE	dry	0.111		0.007	0.032	mg/kg	B222343	S221055
2210048-34	Se(IV) F2	SE	dry	0.428		0.004	0.032	mg/kg	B222348	S221078
2210048-34	Se(VI) F1	SE	dry	≤ 0.008	U	0.008	0.034	mg/kg	B222343	S221055
2210048-34	Se(VI) F2	SE	dry	0.005	J	0.004	0.034	mg/kg	B222348	S221078
2210048-34	SeCN F1	SE	dry	≤ 0.001	U	0.001	0.013	mg/kg	B222343	S221055
2210048-34	SeCN F2	SE	dry	0.126		0.002	0.013	mg/kg	B222348	S221078
2210048-34	SeMet F1	SE	dry	≤ 0.001	U	0.001	0.013	mg/kg	B222343	S221055
2210048-34	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.013	mg/kg	B222348	S221078
2210048-34	SeSO ₃ F1	SE	dry	≤ 0.008	U	0.008	0.034	mg/kg	B222343	S221055
2210048-34	SeSO ₃ F2	SE	dry	≤ 0.004	U	0.004	0.034	mg/kg	B222348	S221078
2210048-34	Unk Se Sp F1	SE	dry	≤ 0.007	U	0.007	0.032	mg/kg	B222343	S221055
2210048-34	Unk Se Sp F2	SE	dry	0.062		0.004	0.032	mg/kg	B222348	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_FOUCL_SESeSp-3_2022-09-16_N</i>										
2210048-35	%TS	SE	NA	62.02		0.006	0.02	%	B222342	N/A
2210048-35	DMSeO F1	SE	dry	≤ 0.001	U	0.001	0.012	mg/kg	B222343	S221055
2210048-35	DMSeO F2	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222348	S221078
2210048-35	MeSe(IV) F1	SE	dry	≤ 0.001	U	0.001	0.012	mg/kg	B222343	S221055
2210048-35	MeSe(IV) F2	SE	dry	0.015		0.003	0.012	mg/kg	B222348	S221078
2210048-35	Se	SE	dry	1.12		0.135	0.271	mg/kg	B222340	S221079
2210048-35	Se Unk A F1	SE	dry	≤ 0.001	U	0.001	0.012	mg/kg	B222343	S221055
2210048-35	Se Unk A F2	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222348	S221078
2210048-35	Se(F1)	SE	dry	0.080	J	0.024	0.123	mg/kg	B222330	S221069
2210048-35	Se(F2)	SE	dry	0.365		0.029	0.123	mg/kg	B222399	S221077
2210048-35	Se(F3)	SE	dry	0.425		0.034	0.123	mg/kg	B222405	S221077
2210048-35	Se(F4)	SE	dry	0.188		0.016	0.123	mg/kg	B222421	S221079
2210048-35	Se(F5)	SE	dry	0.026	J	0.006	0.062	mg/kg	B222447	S221088
2210048-35	Se(IV) F1	SE	dry	0.035		0.007	0.030	mg/kg	B222343	S221055
2210048-35	Se(IV) F2	SE	dry	0.165		0.004	0.030	mg/kg	B222348	S221078
2210048-35	Se(VI) F1	SE	dry	0.016	J	0.007	0.032	mg/kg	B222343	S221055
2210048-35	Se(VI) F2	SE	dry	≤ 0.003	U	0.003	0.032	mg/kg	B222348	S221078
2210048-35	SeCN F1	SE	dry	≤ 0.001	U	0.001	0.012	mg/kg	B222343	S221055
2210048-35	SeCN F2	SE	dry	0.027		0.002	0.012	mg/kg	B222348	S221078
2210048-35	SeMet F1	SE	dry	≤ 0.001	U	0.001	0.012	mg/kg	B222343	S221055
2210048-35	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222348	S221078
2210048-35	SeSO3 F1	SE	dry	≤ 0.007	U	0.007	0.032	mg/kg	B222343	S221055
2210048-35	SeSO3 F2	SE	dry	≤ 0.003	U	0.003	0.032	mg/kg	B222348	S221078
2210048-35	Unk Se Sp F1	SE	dry	≤ 0.007	U	0.007	0.030	mg/kg	B222343	S221055
2210048-35	Unk Se Sp F2	SE	dry	0.022	J	0.004	0.030	mg/kg	B222348	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_FOUCL_SESeSp-4_2022-09-16_N</i>										
2210048-36	%TS	SE	NA	61.67		0.01	0.04	%	B222353	N/A
2210048-36	DMS ₂ O F1	SE	dry	≤ 0.001	U	0.001	0.013	mg/kg	B222345	S221055
2210048-36	DMS ₂ O F2	SE	dry	≤ 0.003	U	0.003	0.013	mg/kg	B222350	S221078
2210048-36	MeSe(IV) F1	SE	dry	≤ 0.001	U	0.001	0.013	mg/kg	B222345	S221055
2210048-36	MeSe(IV) F2	SE	dry	0.060		0.003	0.013	mg/kg	B222350	S221078
2210048-36	Se	SE	dry	2.14		0.101	0.202	mg/kg	B222344	S221071
2210048-36	Se Unk A F1	SE	dry	≤ 0.001	U	0.001	0.013	mg/kg	B222345	S221055
2210048-36	Se Unk A F2	SE	dry	≤ 0.003	U	0.003	0.013	mg/kg	B222350	S221078
2210048-36	Se(F1)	SE	dry	0.111	J	0.053	0.127	mg/kg	B222332	S221069
2210048-36	Se(F2)	SE	dry	0.645		0.024	0.127	mg/kg	B222400	S221077
2210048-36	Se(F3)	SE	dry	0.872		0.006	0.064	mg/kg	B222438	S221088
2210048-36	Se(F4)	SE	dry	0.177		0.013	0.127	mg/kg	B222485	S221095
2210048-36	Se(F5)	SE	dry	0.031	J	0.029	0.159	mg/kg	B222495	S221103
2210048-36	Se(IV) F1	SE	dry	0.076		0.007	0.031	mg/kg	B222345	S221055
2210048-36	Se(IV) F2	SE	dry	0.277		0.004	0.031	mg/kg	B222350	S221078
2210048-36	Se(VI) F1	SE	dry	≤ 0.007	U	0.007	0.033	mg/kg	B222345	S221055
2210048-36	Se(VI) F2	SE	dry	≤ 0.004	U	0.004	0.033	mg/kg	B222350	S221078
2210048-36	SeCN F1	SE	dry	≤ 0.001	U	0.001	0.013	mg/kg	B222345	S221055
2210048-36	SeCN F2	SE	dry	0.071		0.002	0.013	mg/kg	B222350	S221078
2210048-36	SeMet F1	SE	dry	≤ 0.001	U	0.001	0.013	mg/kg	B222345	S221055
2210048-36	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.013	mg/kg	B222350	S221078
2210048-36	SeSO ₃ F1	SE	dry	≤ 0.007	U	0.007	0.033	mg/kg	B222345	S221055
2210048-36	SeSO ₃ F2	SE	dry	≤ 0.004	U	0.004	0.033	mg/kg	B222350	S221078
2210048-36	Unk Se Sp F1	SE	dry	≤ 0.007	U	0.007	0.031	mg/kg	B222345	S221055
2210048-36	Unk Se Sp F2	SE	dry	0.026	J	0.004	0.031	mg/kg	B222350	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_FOUCL_SESeSp-5_2022-09-16_N</i>										
2210048-37	%TS	SE	NA	70.19		0.01	0.03	%	B222353	N/A
2210048-37	DMS ₂ O F1	SE	dry	≤ 0.001	U	0.001	0.011	mg/kg	B222345	S221055
2210048-37	DMS ₂ O F2	SE	dry	≤ 0.002	U	0.002	0.011	mg/kg	B222350	S221078
2210048-37	MeSe(IV) F1	SE	dry	≤ 0.001	U	0.001	0.011	mg/kg	B222345	S221055
2210048-37	MeSe(IV) F2	SE	dry	0.021		0.002	0.011	mg/kg	B222350	S221078
2210048-37	Se	SE	dry	1.33		0.135	0.269	mg/kg	B222344	S221071
2210048-37	Se Unk A F1	SE	dry	≤ 0.001	U	0.001	0.011	mg/kg	B222345	S221055
2210048-37	Se Unk A F2	SE	dry	≤ 0.002	U	0.002	0.011	mg/kg	B222350	S221078
2210048-37	Se(F1)	SE	dry	0.071	J	0.045	0.106	mg/kg	B222332	S221069
2210048-37	Se(F2)	SE	dry	0.324		0.020	0.106	mg/kg	B222400	S221077
2210048-37	Se(F3)	SE	dry	0.434		0.005	0.053	mg/kg	B222438	S221088
2210048-37	Se(F4)	SE	dry	0.154		0.011	0.106	mg/kg	B222485	S221095
2210048-37	Se(F5)	SE	dry	≤ 0.025	U	0.025	0.133	mg/kg	B222495	S221103
2210048-37	Se(IV) F1	SE	dry	0.044		0.006	0.026	mg/kg	B222345	S221055
2210048-37	Se(IV) F2	SE	dry	0.152		0.003	0.026	mg/kg	B222350	S221078
2210048-37	Se(VI) F1	SE	dry	≤ 0.006	U	0.006	0.027	mg/kg	B222345	S221055
2210048-37	Se(VI) F2	SE	dry	≤ 0.003	U	0.003	0.027	mg/kg	B222350	S221078
2210048-37	SeCN F1	SE	dry	≤ 0.001	U	0.001	0.011	mg/kg	B222345	S221055
2210048-37	SeCN F2	SE	dry	0.024		0.002	0.011	mg/kg	B222350	S221078
2210048-37	SeMet F1	SE	dry	≤ 0.001	U	0.001	0.011	mg/kg	B222345	S221055
2210048-37	SeMet F2	SE	dry	≤ 0.002	U	0.002	0.011	mg/kg	B222350	S221078
2210048-37	SeSO ₃ F1	SE	dry	≤ 0.006	U	0.006	0.027	mg/kg	B222345	S221055
2210048-37	SeSO ₃ F2	SE	dry	≤ 0.003	U	0.003	0.027	mg/kg	B222350	S221078
2210048-37	Unk Se Sp F1	SE	dry	≤ 0.006	U	0.006	0.026	mg/kg	B222345	S221055
2210048-37	Unk Se Sp F2	SE	dry	0.009	J	0.003	0.026	mg/kg	B222350	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_FOBCP_SESeSp-1_2022-09-14_N</i>										
2210048-38	%TS	SE	NA	64.48		0.008	0.03	%	B222353	N/A
2210048-38	DMS ₂ O F1	SE	dry	≤ 0.001	U	0.001	0.012	mg/kg	B222345	S221055
2210048-38	DMS ₂ O F2	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222350	S221078
2210048-38	MeSe(IV) F1	SE	dry	≤ 0.001	U	0.001	0.012	mg/kg	B222345	S221055
2210048-38	MeSe(IV) F2	SE	dry	0.046		0.003	0.012	mg/kg	B222350	S221078
2210048-38	Se	SE	dry	2.32		0.134	0.267	mg/kg	B222344	S221071
2210048-38	Se Unk A F1	SE	dry	≤ 0.001	U	0.001	0.012	mg/kg	B222345	S221055
2210048-38	Se Unk A F2	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222350	S221078
2210048-38	Se(F1)	SE	dry	0.170		0.048	0.115	mg/kg	B222332	S221069
2210048-38	Se(F2)	SE	dry	0.683		0.022	0.115	mg/kg	B222400	S221077
2210048-38	Se(F3)	SE	dry	0.911		0.006	0.058	mg/kg	B222438	S221088
2210048-38	Se(F4)	SE	dry	0.172		0.012	0.115	mg/kg	B222485	S221095
2210048-38	Se(F5)	SE	dry	≤ 0.027	U	0.027	0.144	mg/kg	B222495	S221103
2210048-38	Se(IV) F1	SE	dry	0.090		0.006	0.028	mg/kg	B222345	S221055
2210048-38	Se(IV) F2	SE	dry	0.282		0.003	0.028	mg/kg	B222350	S221078
2210048-38	Se(VI) F1	SE	dry	0.038		0.007	0.030	mg/kg	B222345	S221055
2210048-38	Se(VI) F2	SE	dry	≤ 0.003	U	0.003	0.030	mg/kg	B222350	S221078
2210048-38	SeCN F1	SE	dry	≤ 0.001	U	0.001	0.012	mg/kg	B222345	S221055
2210048-38	SeCN F2	SE	dry	0.078		0.002	0.012	mg/kg	B222350	S221078
2210048-38	SeMet F1	SE	dry	≤ 0.001	U	0.001	0.012	mg/kg	B222345	S221055
2210048-38	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222350	S221078
2210048-38	SeSO ₃ F1	SE	dry	≤ 0.007	U	0.007	0.030	mg/kg	B222345	S221055
2210048-38	SeSO ₃ F2	SE	dry	≤ 0.003	U	0.003	0.030	mg/kg	B222350	S221078
2210048-38	Unk Se Sp F1	SE	dry	≤ 0.006	U	0.006	0.028	mg/kg	B222345	S221055
2210048-38	Unk Se Sp F2	SE	dry	0.021	J	0.003	0.028	mg/kg	B222350	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_FOBCP_SESeSp-2_2022-09-14_N</i>										
2210048-39	%TS	SE	NA	74.33		0.006	0.02	%	B222353	N/A
2210048-39	DMS ₂ O F1	SE	dry	≤ 0.001	U	0.001	0.011	mg/kg	B222345	S221055
2210048-39	DMS ₂ O F2	SE	dry	≤ 0.002	U	0.002	0.011	mg/kg	B222350	S221078
2210048-39	MeSe(IV) F1	SE	dry	≤ 0.001	U	0.001	0.011	mg/kg	B222345	S221055
2210048-39	MeSe(IV) F2	SE	dry	0.011	J	0.002	0.011	mg/kg	B222350	S221078
2210048-39	Se	SE	dry	1.13		0.102	0.205	mg/kg	B222344	S221071
2210048-39	Se Unk A F1	SE	dry	≤ 0.001	U	0.001	0.011	mg/kg	B222345	S221055
2210048-39	Se Unk A F2	SE	dry	≤ 0.002	U	0.002	0.011	mg/kg	B222350	S221078
2210048-39	Se(F1)	SE	dry	0.087	J	0.044	0.106	mg/kg	B222332	S221069
2210048-39	Se(F2)	SE	dry	0.257		0.020	0.106	mg/kg	B222400	S221077
2210048-39	Se(F3)	SE	dry	0.395		0.005	0.053	mg/kg	B222438	S221088
2210048-39	Se(F4)	SE	dry	0.226		0.011	0.106	mg/kg	B222485	S221095
2210048-39	Se(F5)	SE	dry	≤ 0.024	U	0.024	0.132	mg/kg	B222495	S221103
2210048-39	Se(IV) F1	SE	dry	0.027		0.006	0.026	mg/kg	B222345	S221055
2210048-39	Se(IV) F2	SE	dry	0.154		0.003	0.026	mg/kg	B222350	S221078
2210048-39	Se(VI) F1	SE	dry	0.030		0.006	0.027	mg/kg	B222345	S221055
2210048-39	Se(VI) F2	SE	dry	≤ 0.003	U	0.003	0.027	mg/kg	B222350	S221078
2210048-39	SeCN F1	SE	dry	≤ 0.001	U	0.001	0.011	mg/kg	B222345	S221055
2210048-39	SeCN F2	SE	dry	0.015		0.002	0.011	mg/kg	B222350	S221078
2210048-39	SeMet F1	SE	dry	≤ 0.001	U	0.001	0.011	mg/kg	B222345	S221055
2210048-39	SeMet F2	SE	dry	≤ 0.002	U	0.002	0.011	mg/kg	B222350	S221078
2210048-39	SeSO ₃ F1	SE	dry	≤ 0.006	U	0.006	0.027	mg/kg	B222345	S221055
2210048-39	SeSO ₃ F2	SE	dry	≤ 0.003	U	0.003	0.027	mg/kg	B222350	S221078
2210048-39	Unk Se Sp F1	SE	dry	≤ 0.006	U	0.006	0.026	mg/kg	B222345	S221055
2210048-39	Unk Se Sp F2	SE	dry	0.006	J	0.003	0.026	mg/kg	B222350	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_FOBCP_SESeSp-3_2022-09-14_N</i>										
2210048-40	%TS	SE	NA	75.29		0.008	0.03	%	B222353	N/A
2210048-40	DMS ₂ O F1	SE	dry	≤ 0.001	U	0.001	0.010	mg/kg	B222345	S221055
2210048-40	DMS ₂ O F2	SE	dry	≤ 0.002	U	0.002	0.010	mg/kg	B222350	S221078
2210048-40	MeSe(IV) F1	SE	dry	≤ 0.001	U	0.001	0.010	mg/kg	B222345	S221055
2210048-40	MeSe(IV) F2	SE	dry	0.008	J	0.002	0.010	mg/kg	B222350	S221078
2210048-40	Se	SE	dry	0.942		0.112	0.225	mg/kg	B222344	S221071
2210048-40	Se Unk A F1	SE	dry	≤ 0.001	U	0.001	0.010	mg/kg	B222345	S221055
2210048-40	Se Unk A F2	SE	dry	≤ 0.002	U	0.002	0.010	mg/kg	B222350	S221078
2210048-40	Se(F1)	SE	dry	0.076	J	0.040	0.095	mg/kg	B222332	S221069
2210048-40	Se(F2)	SE	dry	0.249		0.018	0.095	mg/kg	B222400	S221077
2210048-40	Se(F3)	SE	dry	0.333		0.005	0.048	mg/kg	B222438	S221088
2210048-40	Se(F4)	SE	dry	0.253		0.010	0.095	mg/kg	B222485	S221095
2210048-40	Se(F5)	SE	dry	≤ 0.022	U	0.022	0.119	mg/kg	B222495	S221103
2210048-40	Se(IV) F1	SE	dry	0.025		0.005	0.023	mg/kg	B222345	S221055
2210048-40	Se(IV) F2	SE	dry	0.155		0.003	0.023	mg/kg	B222350	S221078
2210048-40	Se(VI) F1	SE	dry	0.022	J	0.005	0.024	mg/kg	B222345	S221055
2210048-40	Se(VI) F2	SE	dry	≤ 0.003	U	0.003	0.024	mg/kg	B222350	S221078
2210048-40	SeCN F1	SE	dry	≤ 0.001	U	0.001	0.010	mg/kg	B222345	S221055
2210048-40	SeCN F2	SE	dry	0.011		0.001	0.010	mg/kg	B222350	S221078
2210048-40	SeMet F1	SE	dry	≤ 0.001	U	0.001	0.010	mg/kg	B222345	S221055
2210048-40	SeMet F2	SE	dry	≤ 0.002	U	0.002	0.010	mg/kg	B222350	S221078
2210048-40	SeSO ₃ F1	SE	dry	≤ 0.005	U	0.005	0.024	mg/kg	B222345	S221055
2210048-40	SeSO ₃ F2	SE	dry	≤ 0.003	U	0.003	0.024	mg/kg	B222350	S221078
2210048-40	Unk Se Sp F1	SE	dry	≤ 0.005	U	0.005	0.023	mg/kg	B222345	S221055
2210048-40	Unk Se Sp F2	SE	dry	≤ 0.003	U	0.003	0.023	mg/kg	B222350	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_FOBCP_SESeSp-4_2022-09-15_N</i>										
2210048-41	%TS	SE	NA	76.62		0.008	0.03	%	B222353	N/A
2210048-41	DMS ₂ O F1	SE	dry	≤ 0.001	U	0.001	0.010	mg/kg	B222345	S221055
2210048-41	DMS ₂ O F2	SE	dry	≤ 0.002	U	0.002	0.010	mg/kg	B222350	S221078
2210048-41	MeSe(IV) F1	SE	dry	≤ 0.001	U	0.001	0.010	mg/kg	B222345	S221055
2210048-41	MeSe(IV) F2	SE	dry	0.006	J	0.002	0.010	mg/kg	B222350	S221078
2210048-41	Se	SE	dry	1.08		0.119	0.239	mg/kg	B222344	S221071
2210048-41	Se Unk A F1	SE	dry	≤ 0.001	U	0.001	0.010	mg/kg	B222345	S221055
2210048-41	Se Unk A F2	SE	dry	≤ 0.002	U	0.002	0.010	mg/kg	B222350	S221078
2210048-41	Se(F1)	SE	dry	0.053	J	0.043	0.103	mg/kg	B222332	S221069
2210048-41	Se(F2)	SE	dry	0.232		0.019	0.103	mg/kg	B222400	S221077
2210048-41	Se(F3)	SE	dry	0.288		0.005	0.052	mg/kg	B222438	S221088
2210048-41	Se(F4)	SE	dry	0.298		0.010	0.103	mg/kg	B222485	S221095
2210048-41	Se(F5)	SE	dry	≤ 0.024	U	0.024	0.129	mg/kg	B222495	S221103
2210048-41	Se(IV) F1	SE	dry	0.026		0.006	0.025	mg/kg	B222345	S221055
2210048-41	Se(IV) F2	SE	dry	0.150		0.003	0.025	mg/kg	B222350	S221078
2210048-41	Se(VI) F1	SE	dry	0.019	J	0.006	0.026	mg/kg	B222345	S221055
2210048-41	Se(VI) F2	SE	dry	≤ 0.003	U	0.003	0.026	mg/kg	B222350	S221078
2210048-41	SeCN F1	SE	dry	≤ 0.001	U	0.001	0.010	mg/kg	B222345	S221055
2210048-41	SeCN F2	SE	dry	0.008	J	0.002	0.010	mg/kg	B222350	S221078
2210048-41	SeMet F1	SE	dry	≤ 0.001	U	0.001	0.010	mg/kg	B222345	S221055
2210048-41	SeMet F2	SE	dry	≤ 0.002	U	0.002	0.010	mg/kg	B222350	S221078
2210048-41	SeSO ₃ F1	SE	dry	≤ 0.006	U	0.006	0.026	mg/kg	B222345	S221055
2210048-41	SeSO ₃ F2	SE	dry	≤ 0.003	U	0.003	0.026	mg/kg	B222350	S221078
2210048-41	Unk Se Sp F1	SE	dry	≤ 0.006	U	0.006	0.025	mg/kg	B222345	S221055
2210048-41	Unk Se Sp F2	SE	dry	≤ 0.003	U	0.003	0.025	mg/kg	B222350	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_FOBCP_SESeSp-5_2022-09-15_N</i>										
2210048-42	%TS	SE	NA	70.75		0.008	0.03	%	B222353	N/A
2210048-42	DMS ₂ O F1	SE	dry	≤ 0.001	U	0.001	0.010	mg/kg	B222345	S221055
2210048-42	DMS ₂ O F2	SE	dry	≤ 0.002	U	0.002	0.010	mg/kg	B222350	S221078
2210048-42	MeSe(IV) F1	SE	dry	≤ 0.001	U	0.001	0.010	mg/kg	B222345	S221055
2210048-42	MeSe(IV) F2	SE	dry	0.035		0.002	0.010	mg/kg	B222350	S221078
2210048-42	Se	SE	dry	2.32		0.093	0.187	mg/kg	B222344	S221071
2210048-42	Se Unk A F1	SE	dry	≤ 0.001	U	0.001	0.010	mg/kg	B222345	S221055
2210048-42	Se Unk A F2	SE	dry	≤ 0.002	U	0.002	0.010	mg/kg	B222350	S221078
2210048-42	Se(F1)	SE	dry	0.099		0.041	0.097	mg/kg	B222332	S221069
2210048-42	Se(F2)	SE	dry	0.596		0.018	0.097	mg/kg	B222400	S221077
2210048-42	Se(F3)	SE	dry	0.874		0.005	0.049	mg/kg	B222438	S221088
2210048-42	Se(F4)	SE	dry	0.195		0.010	0.097	mg/kg	B222485	S221095
2210048-42	Se(F5)	SE	dry	≤ 0.022	U	0.022	0.121	mg/kg	B222495	S221103
2210048-42	Se(IV) F1	SE	dry	0.054		0.005	0.024	mg/kg	B222345	S221055
2210048-42	Se(IV) F2	SE	dry	0.254		0.003	0.024	mg/kg	B222350	S221078
2210048-42	Se(VI) F1	SE	dry	0.024	J	0.006	0.025	mg/kg	B222345	S221055
2210048-42	Se(VI) F2	SE	dry	≤ 0.003	U	0.003	0.025	mg/kg	B222350	S221078
2210048-42	SeCN F1	SE	dry	≤ 0.001	U	0.001	0.010	mg/kg	B222345	S221055
2210048-42	SeCN F2	SE	dry	0.063		0.001	0.010	mg/kg	B222350	S221078
2210048-42	SeMet F1	SE	dry	≤ 0.001	U	0.001	0.010	mg/kg	B222345	S221055
2210048-42	SeMet F2	SE	dry	≤ 0.002	U	0.002	0.010	mg/kg	B222350	S221078
2210048-42	SeSO ₃ F1	SE	dry	≤ 0.006	U	0.006	0.025	mg/kg	B222345	S221055
2210048-42	SeSO ₃ F2	SE	dry	≤ 0.003	U	0.003	0.025	mg/kg	B222350	S221078
2210048-42	Unk Se Sp F1	SE	dry	≤ 0.005	U	0.005	0.024	mg/kg	B222345	S221055
2210048-42	Unk Se Sp F2	SE	dry	0.016	J	0.003	0.024	mg/kg	B222350	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_FO22_SESeSp-1_2022-09-09_N										
2210048-43	%TS	SE	NA	74.26		0.008	0.03	%	B222353	N/A
2210048-43	DMS ₂ O F1	SE	dry	≤ 0.001	U	0.001	0.011	mg/kg	B222345	S221055
2210048-43	DMS ₂ O F2	SE	dry	≤ 0.002	U	0.002	0.011	mg/kg	B222350	S221078
2210048-43	MeSe(IV) F1	SE	dry	0.006	J	0.001	0.011	mg/kg	B222345	S221055
2210048-43	MeSe(IV) F2	SE	dry	0.029		0.002	0.011	mg/kg	B222350	S221078
2210048-43	Se	SE	dry	1.45		0.090	0.179	mg/kg	B222344	S221071
2210048-43	Se Unk A F1	SE	dry	≤ 0.001	U	0.001	0.011	mg/kg	B222345	S221055
2210048-43	Se Unk A F2	SE	dry	≤ 0.002	U	0.002	0.011	mg/kg	B222350	S221078
2210048-43	Se(F1)	SE	dry	0.100	J	0.045	0.107	mg/kg	B222332	S221069
2210048-43	Se(F2)	SE	dry	0.549		0.020	0.107	mg/kg	B222400	S221077
2210048-43	Se(F3)	SE	dry	0.340		0.005	0.054	mg/kg	B222438	S221088
2210048-43	Se(F4)	SE	dry	0.191		0.011	0.107	mg/kg	B222485	S221095
2210048-43	Se(F5)	SE	dry	≤ 0.025	U	0.025	0.134	mg/kg	B222495	S221103
2210048-43	Se(IV) F1	SE	dry	0.055		0.006	0.026	mg/kg	B222345	S221055
2210048-43	Se(IV) F2	SE	dry	0.277		0.003	0.026	mg/kg	B222350	S221078
2210048-43	Se(VI) F1	SE	dry	0.007	J	0.006	0.028	mg/kg	B222345	S221055
2210048-43	Se(VI) F2	SE	dry	≤ 0.003	U	0.003	0.028	mg/kg	B222350	S221078
2210048-43	SeCN F1	SE	dry	≤ 0.001	U	0.001	0.011	mg/kg	B222345	S221055
2210048-43	SeCN F2	SE	dry	0.042		0.002	0.011	mg/kg	B222350	S221078
2210048-43	SeMet F1	SE	dry	≤ 0.001	U	0.001	0.011	mg/kg	B222345	S221055
2210048-43	SeMet F2	SE	dry	≤ 0.002	U	0.002	0.011	mg/kg	B222350	S221078
2210048-43	SeSO ₃ F1	SE	dry	≤ 0.006	U	0.006	0.028	mg/kg	B222345	S221055
2210048-43	SeSO ₃ F2	SE	dry	≤ 0.003	U	0.003	0.028	mg/kg	B222350	S221078
2210048-43	Unk Se Sp F1	SE	dry	≤ 0.006	U	0.006	0.026	mg/kg	B222345	S221055
2210048-43	Unk Se Sp F2	SE	dry	0.015	J	0.003	0.026	mg/kg	B222350	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_FO22_SESeSp-2_2022-09-09_N										
2210048-44	%TS	SE	NA	62.27		0.01	0.03	%	B222353	N/A
2210048-44	DMS ₂ O F1	SE	dry	≤ 0.001	U	0.001	0.012	mg/kg	B222345	S221055
2210048-44	DMS ₂ O F2	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222350	S221078
2210048-44	MeSe(IV) F1	SE	dry	0.004	J	0.001	0.012	mg/kg	B222345	S221055
2210048-44	MeSe(IV) F2	SE	dry	0.088		0.003	0.012	mg/kg	B222350	S221078
2210048-44	Se	SE	dry	3.08		0.115	0.231	mg/kg	B222344	S221071
2210048-44	Se Unk A F1	SE	dry	≤ 0.001	U	0.001	0.012	mg/kg	B222345	S221055
2210048-44	Se Unk A F2	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222350	S221078
2210048-44	Se(F1)	SE	dry	0.163		0.050	0.119	mg/kg	B222332	S221069
2210048-44	Se(F2)	SE	dry	1.29		0.022	0.119	mg/kg	B222400	S221077
2210048-44	Se(F3)	SE	dry	0.827		0.006	0.059	mg/kg	B222438	S221088
2210048-44	Se(F4)	SE	dry	0.162		0.012	0.119	mg/kg	B222485	S221095
2210048-44	Se(F5)	SE	dry	≤ 0.027	U	0.027	0.148	mg/kg	B222495	S221103
2210048-44	Se(IV) F1	SE	dry	0.111		0.006	0.029	mg/kg	B222345	S221055
2210048-44	Se(IV) F2	SE	dry	0.588		0.004	0.029	mg/kg	B222350	S221078
2210048-44	Se(VI) F1	SE	dry	≤ 0.007	U	0.007	0.030	mg/kg	B222345	S221055
2210048-44	Se(VI) F2	SE	dry	≤ 0.003	U	0.003	0.030	mg/kg	B222350	S221078
2210048-44	SeCN F1	SE	dry	≤ 0.001	U	0.001	0.012	mg/kg	B222345	S221055
2210048-44	SeCN F2	SE	dry	0.152		0.002	0.012	mg/kg	B222350	S221078
2210048-44	SeMet F1	SE	dry	≤ 0.001	U	0.001	0.012	mg/kg	B222345	S221055
2210048-44	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222350	S221078
2210048-44	SeSO ₃ F1	SE	dry	≤ 0.007	U	0.007	0.030	mg/kg	B222345	S221055
2210048-44	SeSO ₃ F2	SE	dry	≤ 0.003	U	0.003	0.030	mg/kg	B222350	S221078
2210048-44	Unk Se Sp F1	SE	dry	≤ 0.006	U	0.006	0.029	mg/kg	B222345	S221055
2210048-44	Unk Se Sp F2	SE	dry	0.053		0.004	0.029	mg/kg	B222350	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_FO22_SESeSp-3_2022-09-09_N										
2210048-45	%TS	SE	NA	66.79		0.007	0.02	%	B222353	N/A
2210048-45	DMS ₂ O F1	SE	dry	≤ 0.001	U	0.001	0.012	mg/kg	B222345	S221055
2210048-45	DMS ₂ O F2	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222350	S221078
2210048-45	MeSe(IV) F1	SE	dry	0.003	J	0.001	0.012	mg/kg	B222345	S221055
2210048-45	MeSe(IV) F2	SE	dry	0.048		0.003	0.012	mg/kg	B222350	S221078
2210048-45	Se	SE	dry	1.59		0.094	0.187	mg/kg	B222344	S221071
2210048-45	Se Unk A F1	SE	dry	≤ 0.001	U	0.001	0.012	mg/kg	B222345	S221055
2210048-45	Se Unk A F2	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222350	S221078
2210048-45	Se(F1)	SE	dry	0.153		0.050	0.119	mg/kg	B222332	S221069
2210048-45	Se(F2)	SE	dry	0.812		0.022	0.119	mg/kg	B222400	S221077
2210048-45	Se(F3)	SE	dry	0.575		0.006	0.060	mg/kg	B222438	S221088
2210048-45	Se(F4)	SE	dry	0.185		0.012	0.119	mg/kg	B222485	S221095
2210048-45	Se(F5)	SE	dry	≤ 0.028	U	0.028	0.149	mg/kg	B222495	S221103
2210048-45	Se(IV) F1	SE	dry	0.078		0.006	0.029	mg/kg	B222345	S221055
2210048-45	Se(IV) F2	SE	dry	0.413		0.004	0.029	mg/kg	B222350	S221078
2210048-45	Se(VI) F1	SE	dry	0.031	J	0.007	0.031	mg/kg	B222345	S221055
2210048-45	Se(VI) F2	SE	dry	≤ 0.003	U	0.003	0.031	mg/kg	B222350	S221078
2210048-45	SeCN F1	SE	dry	≤ 0.001	U	0.001	0.012	mg/kg	B222345	S221055
2210048-45	SeCN F2	SE	dry	0.064		0.002	0.012	mg/kg	B222350	S221078
2210048-45	SeMet F1	SE	dry	≤ 0.001	U	0.001	0.012	mg/kg	B222345	S221055
2210048-45	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222350	S221078
2210048-45	SeSO ₃ F1	SE	dry	≤ 0.007	U	0.007	0.031	mg/kg	B222345	S221055
2210048-45	SeSO ₃ F2	SE	dry	≤ 0.003	U	0.003	0.031	mg/kg	B222350	S221078
2210048-45	Unk Se Sp F1	SE	dry	≤ 0.006	U	0.006	0.029	mg/kg	B222345	S221055
2210048-45	Unk Se Sp F2	SE	dry	0.018	J	0.004	0.029	mg/kg	B222350	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_FO22_SESeSp-4_2022-09-09_N										
2210048-46	%TS	SE	NA	69.84		0.01	0.03	%	B222353	N/A
2210048-46	DMS ₂ O F1	SE	dry	≤ 0.001	U	0.001	0.011	mg/kg	B222345	S221055
2210048-46	DMS ₂ O F2	SE	dry	≤ 0.002	U	0.002	0.011	mg/kg	B222350	S221078
2210048-46	MeSe(IV) F1	SE	dry	≤ 0.001	U	0.001	0.011	mg/kg	B222345	S221055
2210048-46	MeSe(IV) F2	SE	dry	0.027		0.002	0.011	mg/kg	B222350	S221078
2210048-46	Se	SE	dry	1.33		0.099	0.198	mg/kg	B222344	S221071
2210048-46	Se Unk A F1	SE	dry	≤ 0.001	U	0.001	0.011	mg/kg	B222345	S221055
2210048-46	Se Unk A F2	SE	dry	≤ 0.002	U	0.002	0.011	mg/kg	B222350	S221078
2210048-46	Se(F1)	SE	dry	0.134		0.045	0.107	mg/kg	B222332	S221069
2210048-46	Se(F2)	SE	dry	0.677		0.020	0.107	mg/kg	B222400	S221077
2210048-46	Se(F3)	SE	dry	0.415		0.005	0.053	mg/kg	B222438	S221088
2210048-46	Se(F4)	SE	dry	0.295		0.011	0.107	mg/kg	B222485	S221095
2210048-46	Se(F5)	SE	dry	≤ 0.025	U	0.025	0.134	mg/kg	B222495	S221103
2210048-46	Se(IV) F1	SE	dry	0.075		0.006	0.026	mg/kg	B222345	S221055
2210048-46	Se(IV) F2	SE	dry	0.400		0.003	0.026	mg/kg	B222350	S221078
2210048-46	Se(VI) F1	SE	dry	0.025	J	0.006	0.027	mg/kg	B222345	S221055
2210048-46	Se(VI) F2	SE	dry	≤ 0.003	U	0.003	0.027	mg/kg	B222350	S221078
2210048-46	SeCN F1	SE	dry	≤ 0.001	U	0.001	0.011	mg/kg	B222345	S221055
2210048-46	SeCN F2	SE	dry	0.035		0.002	0.011	mg/kg	B222350	S221078
2210048-46	SeMet F1	SE	dry	≤ 0.001	U	0.001	0.011	mg/kg	B222345	S221055
2210048-46	SeMet F2	SE	dry	≤ 0.002	U	0.002	0.011	mg/kg	B222350	S221078
2210048-46	SeSO ₃ F1	SE	dry	≤ 0.006	U	0.006	0.027	mg/kg	B222345	S221055
2210048-46	SeSO ₃ F2	SE	dry	≤ 0.003	U	0.003	0.027	mg/kg	B222350	S221078
2210048-46	Unk Se Sp F1	SE	dry	≤ 0.006	U	0.006	0.026	mg/kg	B222345	S221055
2210048-46	Unk Se Sp F2	SE	dry	0.011	J	0.003	0.026	mg/kg	B222350	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_FO22_SESeSp-5_2022-09-09_N										
2210048-47	%TS	SE	NA	71.85		0.008	0.03	%	B222353	N/A
2210048-47	DMS ₂ O F1	SE	dry	≤ 0.001	U	0.001	0.011	mg/kg	B222345	S221055
2210048-47	DMS ₂ O F2	SE	dry	≤ 0.002	U	0.002	0.011	mg/kg	B222350	S221078
2210048-47	MeSe(IV) F1	SE	dry	≤ 0.001	U	0.001	0.011	mg/kg	B222345	S221055
2210048-47	MeSe(IV) F2	SE	dry	0.029		0.002	0.011	mg/kg	B222350	S221078
2210048-47	Se	SE	dry	1.27		0.104	0.208	mg/kg	B222344	S221071
2210048-47	Se Unk A F1	SE	dry	≤ 0.001	U	0.001	0.011	mg/kg	B222345	S221055
2210048-47	Se Unk A F2	SE	dry	≤ 0.002	U	0.002	0.011	mg/kg	B222350	S221078
2210048-47	Se(F1)	SE	dry	0.102	J	0.044	0.106	mg/kg	B222332	S221069
2210048-47	Se(F2)	SE	dry	0.603		0.020	0.106	mg/kg	B222400	S221077
2210048-47	Se(F3)	SE	dry	0.333		0.005	0.053	mg/kg	B222438	S221088
2210048-47	Se(F4)	SE	dry	0.219		0.011	0.106	mg/kg	B222485	S221095
2210048-47	Se(F5)	SE	dry	≤ 0.025	U	0.025	0.133	mg/kg	B222495	S221103
2210048-47	Se(IV) F1	SE	dry	0.072		0.006	0.026	mg/kg	B222345	S221055
2210048-47	Se(IV) F2	SE	dry	0.316		0.003	0.026	mg/kg	B222350	S221078
2210048-47	Se(VI) F1	SE	dry	≤ 0.006	U	0.006	0.027	mg/kg	B222345	S221055
2210048-47	Se(VI) F2	SE	dry	≤ 0.003	U	0.003	0.027	mg/kg	B222350	S221078
2210048-47	SeCN F1	SE	dry	≤ 0.001	U	0.001	0.011	mg/kg	B222345	S221055
2210048-47	SeCN F2	SE	dry	0.036		0.002	0.011	mg/kg	B222350	S221078
2210048-47	SeMet F1	SE	dry	≤ 0.001	U	0.001	0.011	mg/kg	B222345	S221055
2210048-47	SeMet F2	SE	dry	≤ 0.002	U	0.002	0.011	mg/kg	B222350	S221078
2210048-47	SeSO ₃ F1	SE	dry	≤ 0.006	U	0.006	0.027	mg/kg	B222345	S221055
2210048-47	SeSO ₃ F2	SE	dry	≤ 0.003	U	0.003	0.027	mg/kg	B222350	S221078
2210048-47	Unk Se Sp F1	SE	dry	≤ 0.006	U	0.006	0.026	mg/kg	B222345	S221055
2210048-47	Unk Se Sp F2	SE	dry	0.014	J	0.003	0.026	mg/kg	B222350	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_MICOMP_SESeSp-1_2022-09-18_N</i>										
2210048-48	%TS	SE	NA	70.63		0.007	0.02	%	B222353	N/A
2210048-48	DMS ₂ O F1	SE	dry	≤ 0.001	U	0.001	0.011	mg/kg	B222345	S221055
2210048-48	DMS ₂ O F2	SE	dry	≤ 0.003	U	0.003	0.011	mg/kg	B222350	S221078
2210048-48	MeSe(IV) F1	SE	dry	0.021		0.001	0.011	mg/kg	B222345	S221055
2210048-48	MeSe(IV) F2	SE	dry	0.089		0.003	0.011	mg/kg	B222350	S221078
2210048-48	Se	SE	dry	1.74		0.134	0.269	mg/kg	B222344	S221071
2210048-48	Se Unk A F1	SE	dry	≤ 0.001	U	0.001	0.011	mg/kg	B222345	S221055
2210048-48	Se Unk A F2	SE	dry	≤ 0.003	U	0.003	0.011	mg/kg	B222350	S221078
2210048-48	Se(F1)	SE	dry	0.255		0.047	0.112	mg/kg	B222332	S221069
2210048-48	Se(F2)	SE	dry	1.07		0.021	0.112	mg/kg	B222400	S221077
2210048-48	Se(F3)	SE	dry	0.492		0.006	0.056	mg/kg	B222438	S221088
2210048-48	Se(F4)	SE	dry	0.242		0.011	0.112	mg/kg	B222485	S221095
2210048-48	Se(F5)	SE	dry	≤ 0.026	U	0.026	0.140	mg/kg	B222495	S221103
2210048-48	Se(IV) F1	SE	dry	0.168		0.006	0.027	mg/kg	B222345	S221055
2210048-48	Se(IV) F2	SE	dry	0.355		0.003	0.027	mg/kg	B222350	S221078
2210048-48	Se(VI) F1	SE	dry	≤ 0.006	U	0.006	0.029	mg/kg	B222345	S221055
2210048-48	Se(VI) F2	SE	dry	≤ 0.003	U	0.003	0.029	mg/kg	B222350	S221078
2210048-48	SeCN F1	SE	dry	≤ 0.001	U	0.001	0.011	mg/kg	B222345	S221055
2210048-48	SeCN F2	SE	dry	0.068		0.002	0.011	mg/kg	B222350	S221078
2210048-48	SeMet F1	SE	dry	≤ 0.001	U	0.001	0.011	mg/kg	B222345	S221055
2210048-48	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.011	mg/kg	B222350	S221078
2210048-48	SeSO ₃ F1	SE	dry	0.007	J	0.006	0.029	mg/kg	B222345	S221055
2210048-48	SeSO ₃ F2	SE	dry	≤ 0.003	U	0.003	0.029	mg/kg	B222350	S221078
2210048-48	Unk Se Sp F1	SE	dry	≤ 0.006	U	0.006	0.027	mg/kg	B222345	S221055
2210048-48	Unk Se Sp F2	SE	dry	0.068		0.003	0.027	mg/kg	B222350	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_MICOMP_SESeSp-2_2022-09-18_N</i>										
2210048-49	%TS	SE	NA	63.12		0.009	0.03	%	B222353	N/A
2210048-49	DMS ₂ O F1	SE	dry	≤ 0.001	U	0.001	0.011	mg/kg	B222345	S221055
2210048-49	DMS ₂ O F2	SE	dry	≤ 0.003	U	0.003	0.011	mg/kg	B222350	S221078
2210048-49	MeSe(IV) F1	SE	dry	0.005	J	0.001	0.011	mg/kg	B222345	S221055
2210048-49	MeSe(IV) F2	SE	dry	0.045		0.003	0.011	mg/kg	B222350	S221078
2210048-49	Se	SE	dry	1.27		0.125	0.249	mg/kg	B222344	S221071
2210048-49	Se Unk A F1	SE	dry	≤ 0.001	U	0.001	0.011	mg/kg	B222345	S221055
2210048-49	Se Unk A F2	SE	dry	≤ 0.003	U	0.003	0.011	mg/kg	B222350	S221078
2210048-49	Se(F1)	SE	dry	0.092	J	0.045	0.108	mg/kg	B222332	S221069
2210048-49	Se(F2)	SE	dry	0.648		0.020	0.108	mg/kg	B222400	S221077
2210048-49	Se(F3)	SE	dry	0.513		0.005	0.054	mg/kg	B222438	S221088
2210048-49	Se(F4)	SE	dry	0.193		0.011	0.108	mg/kg	B222485	S221095
2210048-49	Se(F5)	SE	dry	≤ 0.025	U	0.025	0.136	mg/kg	B222495	S221103
2210048-49	Se(IV) F1	SE	dry	0.030		0.006	0.026	mg/kg	B222345	S221055
2210048-49	Se(IV) F2	SE	dry	0.251		0.003	0.026	mg/kg	B222350	S221078
2210048-49	Se(VI) F1	SE	dry	≤ 0.006	U	0.006	0.028	mg/kg	B222345	S221055
2210048-49	Se(VI) F2	SE	dry	≤ 0.003	U	0.003	0.028	mg/kg	B222350	S221078
2210048-49	SeCN F1	SE	dry	≤ 0.001	U	0.001	0.011	mg/kg	B222345	S221055
2210048-49	SeCN F2	SE	dry	0.075		0.002	0.011	mg/kg	B222350	S221078
2210048-49	SeMet F1	SE	dry	≤ 0.001	U	0.001	0.011	mg/kg	B222345	S221055
2210048-49	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.011	mg/kg	B222350	S221078
2210048-49	SeSO ₃ F1	SE	dry	≤ 0.006	U	0.006	0.028	mg/kg	B222345	S221055
2210048-49	SeSO ₃ F2	SE	dry	≤ 0.003	U	0.003	0.028	mg/kg	B222350	S221078
2210048-49	Unk Se Sp F1	SE	dry	≤ 0.006	U	0.006	0.026	mg/kg	B222345	S221055
2210048-49	Unk Se Sp F2	SE	dry	0.029		0.003	0.026	mg/kg	B222350	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_MICOMP_SESeSp-3_2022-09-18_N</i>										
2210048-50	%TS	SE	NA	44.65		0.01	0.04	%	B222353	N/A
2210048-50	DMS ₂ O F1	SE	dry	0.013	J	0.002	0.017	mg/kg	B222345	S221055
2210048-50	DMS ₂ O F2	SE	dry	≤ 0.004	U	0.004	0.017	mg/kg	B222350	S221078
2210048-50	MeSe(IV) F1	SE	dry	0.013	J	0.002	0.017	mg/kg	B222345	S221055
2210048-50	MeSe(IV) F2	SE	dry	0.139	J-1	0.004	0.017	mg/kg	B222350	S221078
2210048-50	Se	SE	dry	4.81		0.157	0.315	mg/kg	B222344	S221071
2210048-50	Se Unk A F1	SE	dry	≤ 0.002	U	0.002	0.017	mg/kg	B222345	S221055
2210048-50	Se Unk A F2	SE	dry	≤ 0.004	U	0.004	0.017	mg/kg	B222350	S221078
2210048-50	Se(F1)	SE	dry	0.337		0.073	0.174	mg/kg	B222332	S221069
2210048-50	Se(F2)	SE	dry	1.56		0.033	0.174	mg/kg	B222400	S221077
2210048-50	Se(F3)	SE	dry	0.734		0.009	0.087	mg/kg	B222438	S221088
2210048-50	Se(F4)	SE	dry	0.238		0.017	0.174	mg/kg	B222485	S221095
2210048-50	Se(F5)	SE	dry	≤ 0.040	U	0.040	0.218	mg/kg	B222495	S221103
2210048-50	Se(IV) F1	SE	dry	0.082		0.009	0.042	mg/kg	B222345	S221055
2210048-50	Se(IV) F2	SE	dry	0.458		0.005	0.042	mg/kg	B222350	S221078
2210048-50	Se(VI) F1	SE	dry	≤ 0.010	U	0.010	0.045	mg/kg	B222345	S221055
2210048-50	Se(VI) F2	SE	dry	≤ 0.005	U	0.005	0.045	mg/kg	B222350	S221078
2210048-50	SeCN F1	SE	dry	≤ 0.002	U	0.002	0.017	mg/kg	B222345	S221055
2210048-50	SeCN F2	SE	dry	0.229		0.003	0.017	mg/kg	B222350	S221078
2210048-50	SeMet F1	SE	dry	≤ 0.002	U	0.002	0.017	mg/kg	B222345	S221055
2210048-50	SeMet F2	SE	dry	≤ 0.004	U	0.004	0.017	mg/kg	B222350	S221078
2210048-50	SeSO ₃ F1	SE	dry	≤ 0.010	U	0.010	0.045	mg/kg	B222345	S221055
2210048-50	SeSO ₃ F2	SE	dry	≤ 0.005	U	0.005	0.045	mg/kg	B222350	S221078
2210048-50	Unk Se Sp F1	SE	dry	0.048		0.009	0.042	mg/kg	B222345	S221055
2210048-50	Unk Se Sp F2	SE	dry	0.129		0.005	0.042	mg/kg	B222350	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_MICOMP_SESeSp-4_2022-09-18_N</i>										
2210048-51	%TS	SE	NA	58.27		0.01	0.03	%	B222353	N/A
2210048-51	DMS ₂ O F1	SE	dry	0.020		0.001	0.013	mg/kg	B222345	S221055
2210048-51	DMS ₂ O F2	SE	dry	≤ 0.003	U	0.003	0.013	mg/kg	B222350	S221078
2210048-51	MeSe(IV) F1	SE	dry	0.012	J	0.001	0.013	mg/kg	B222345	S221055
2210048-51	MeSe(IV) F2	SE	dry	0.172		0.003	0.013	mg/kg	B222350	S221078
2210048-51	Se	SE	dry	2.86		0.134	0.267	mg/kg	B222344	S221071
2210048-51	Se Unk A F1	SE	dry	≤ 0.001	U	0.001	0.013	mg/kg	B222345	S221055
2210048-51	Se Unk A F2	SE	dry	≤ 0.003	U	0.003	0.013	mg/kg	B222350	S221078
2210048-51	Se(F1)	SE	dry	0.243		0.053	0.126	mg/kg	B222332	S221069
2210048-51	Se(F2)	SE	dry	1.78		0.024	0.126	mg/kg	B222400	S221077
2210048-51	Se(F3)	SE	dry	0.898		0.006	0.063	mg/kg	B222438	S221088
2210048-51	Se(F4)	SE	dry	0.199		0.013	0.126	mg/kg	B222485	S221095
2210048-51	Se(F5)	SE	dry	≤ 0.029	U	0.029	0.157	mg/kg	B222495	S221103
2210048-51	Se(IV) F1	SE	dry	0.129		0.007	0.031	mg/kg	B222345	S221055
2210048-51	Se(IV) F2	SE	dry	0.509		0.004	0.031	mg/kg	B222350	S221078
2210048-51	Se(VI) F1	SE	dry	≤ 0.007	U	0.007	0.032	mg/kg	B222345	S221055
2210048-51	Se(VI) F2	SE	dry	≤ 0.004	U	0.004	0.032	mg/kg	B222350	S221078
2210048-51	SeCN F1	SE	dry	≤ 0.001	U	0.001	0.013	mg/kg	B222345	S221055
2210048-51	SeCN F2	SE	dry	0.233		0.002	0.013	mg/kg	B222350	S221078
2210048-51	SeMet F1	SE	dry	≤ 0.001	U	0.001	0.013	mg/kg	B222345	S221055
2210048-51	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.013	mg/kg	B222350	S221078
2210048-51	SeSO ₃ F1	SE	dry	≤ 0.007	U	0.007	0.032	mg/kg	B222345	S221055
2210048-51	SeSO ₃ F2	SE	dry	≤ 0.004	U	0.004	0.032	mg/kg	B222350	S221078
2210048-51	Unk Se Sp F1	SE	dry	≤ 0.007	U	0.007	0.031	mg/kg	B222345	S221055
2210048-51	Unk Se Sp F2	SE	dry	0.086		0.004	0.031	mg/kg	B222350	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_MICOMP_SESeSp-5_2022-09-18_N</i>										
2210048-52	%TS	SE	NA	68.02		0.008	0.03	%	B222353	N/A
2210048-52	DMS ₂ O F1	SE	dry	≤ 0.001	U	0.001	0.010	mg/kg	B222345	S221055
2210048-52	DMS ₂ O F2	SE	dry	≤ 0.002	U	0.002	0.010	mg/kg	B222350	S221078
2210048-52	MeSe(IV) F1	SE	dry	0.009	J	0.001	0.010	mg/kg	B222345	S221055
2210048-52	MeSe(IV) F2	SE	dry	0.064		0.002	0.010	mg/kg	B222350	S221078
2210048-52	Se	SE	dry	1.85		0.090	0.181	mg/kg	B222344	S221071
2210048-52	Se Unk A F1	SE	dry	≤ 0.001	U	0.001	0.010	mg/kg	B222345	S221055
2210048-52	Se Unk A F2	SE	dry	≤ 0.002	U	0.002	0.010	mg/kg	B222350	S221078
2210048-52	Se(F1)	SE	dry	0.176		0.043	0.103	mg/kg	B222332	S221069
2210048-52	Se(F2)	SE	dry	1.01		0.019	0.103	mg/kg	B222400	S221077
2210048-52	Se(F3)	SE	dry	0.626		0.005	0.051	mg/kg	B222438	S221088
2210048-52	Se(F4)	SE	dry	0.361		0.010	0.103	mg/kg	B222485	S221095
2210048-52	Se(F5)	SE	dry	≤ 0.024	U	0.024	0.128	mg/kg	B222495	S221103
2210048-52	Se(IV) F1	SE	dry	0.126		0.006	0.025	mg/kg	B222345	S221055
2210048-52	Se(IV) F2	SE	dry	0.368		0.003	0.025	mg/kg	B222350	S221078
2210048-52	Se(VI) F1	SE	dry	≤ 0.006	U	0.006	0.026	mg/kg	B222345	S221055
2210048-52	Se(VI) F2	SE	dry	≤ 0.003	U	0.003	0.026	mg/kg	B222350	S221078
2210048-52	SeCN F1	SE	dry	≤ 0.001	U	0.001	0.010	mg/kg	B222345	S221055
2210048-52	SeCN F2	SE	dry	0.098		0.002	0.010	mg/kg	B222350	S221078
2210048-52	SeMet F1	SE	dry	≤ 0.001	U	0.001	0.010	mg/kg	B222345	S221055
2210048-52	SeMet F2	SE	dry	≤ 0.002	U	0.002	0.010	mg/kg	B222350	S221078
2210048-52	SeSO ₃ F1	SE	dry	≤ 0.006	U	0.006	0.026	mg/kg	B222345	S221055
2210048-52	SeSO ₃ F2	SE	dry	≤ 0.003	U	0.003	0.026	mg/kg	B222350	S221078
2210048-52	Unk Se Sp F1	SE	dry	≤ 0.006	U	0.006	0.025	mg/kg	B222345	S221055
2210048-52	Unk Se Sp F2	SE	dry	0.095		0.003	0.025	mg/kg	B222350	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKMD_SESeSp-1_2022-09-20_N</i>										
2210048-53	%TS	SE	NA	26.66		0.02	0.08	%	B222353	N/A
2210048-53	DMS ₂ O F1	SE	dry	0.079		0.003	0.030	mg/kg	B222345	S221055
2210048-53	DMS ₂ O F2	SE	dry	0.022	J	0.007	0.030	mg/kg	B222350	S221078
2210048-53	MeSe(IV) F1	SE	dry	0.036		0.003	0.030	mg/kg	B222345	S221055
2210048-53	MeSe(IV) F2	SE	dry	0.922		0.007	0.030	mg/kg	B222350	S221078
2210048-53	Se	SE	dry	30.9		0.281	0.561	mg/kg	B222344	S221071
2210048-53	Se Unk A F1	SE	dry	≤ 0.003	U	0.003	0.030	mg/kg	B222345	S221055
2210048-53	Se Unk A F2	SE	dry	0.018	J	0.007	0.030	mg/kg	B222350	S221078
2210048-53	Se(F1)	SE	dry	0.725		0.125	0.298	mg/kg	B222332	S221069
2210048-53	Se(F2)	SE	dry	19.5		0.056	0.298	mg/kg	B222400	S221077
2210048-53	Se(F3)	SE	dry	12.1		0.015	0.149	mg/kg	B222438	S221088
2210048-53	Se(F4)	SE	dry	0.582		0.030	0.298	mg/kg	B222485	S221095
2210048-53	Se(F5)	SE	dry	≤ 0.069	U	0.069	0.373	mg/kg	B222495	S221103
2210048-53	Se(IV) F1	SE	dry	0.428		0.016	0.073	mg/kg	B222345	S221055
2210048-53	Se(IV) F2	SE	dry	9.53		0.009	0.073	mg/kg	B222350	S221078
2210048-53	Se(VI) F1	SE	dry	≤ 0.017	U	0.017	0.076	mg/kg	B222345	S221055
2210048-53	Se(VI) F2	SE	dry	0.034	J	0.008	0.076	mg/kg	B222350	S221078
2210048-53	SeCN F1	SE	dry	≤ 0.003	U	0.003	0.030	mg/kg	B222345	S221055
2210048-53	SeCN F2	SE	dry	1.66		0.004	0.030	mg/kg	B222350	S221078
2210048-53	SeMet F1	SE	dry	≤ 0.003	U	0.003	0.030	mg/kg	B222345	S221055
2210048-53	SeMet F2	SE	dry	≤ 0.007	U	0.007	0.030	mg/kg	B222350	S221078
2210048-53	SeSO ₃ F1	SE	dry	≤ 0.017	U	0.017	0.076	mg/kg	B222345	S221055
2210048-53	SeSO ₃ F2	SE	dry	0.016	J	0.008	0.076	mg/kg	B222350	S221078
2210048-53	Unk Se Sp F1	SE	dry	≤ 0.016	U	0.016	0.073	mg/kg	B222345	S221055
2210048-53	Unk Se Sp F2	SE	dry	0.949		0.009	0.073	mg/kg	B222350	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKMD_SESeSp-2_2022-09-20_N</i>										
2210048-54	%TS	SE	NA	45.17		0.01	0.05	%	B222353	N/A
2210048-54	DMS ₂ O F1	SE	dry	0.020		0.002	0.017	mg/kg	B222345	S221055
2210048-54	DMS ₂ O F2	SE	dry	≤ 0.004	U	0.004	0.017	mg/kg	B222350	S221078
2210048-54	MeSe(IV) F1	SE	dry	0.020		0.002	0.017	mg/kg	B222345	S221055
2210048-54	MeSe(IV) F2	SE	dry	0.483		0.004	0.017	mg/kg	B222350	S221078
2210048-54	Se	SE	dry	16.2		0.208	0.415	mg/kg	B222344	S221071
2210048-54	Se Unk A F1	SE	dry	≤ 0.002	U	0.002	0.017	mg/kg	B222345	S221055
2210048-54	Se Unk A F2	SE	dry	≤ 0.004	U	0.004	0.017	mg/kg	B222350	S221078
2210048-54	Se(F1)	SE	dry	0.886		0.073	0.175	mg/kg	B222332	S221069
2210048-54	Se(F2)	SE	dry	7.52		0.033	0.175	mg/kg	B222400	S221077
2210048-54	Se(F3)	SE	dry	4.19		0.009	0.087	mg/kg	B222438	S221088
2210048-54	Se(F4)	SE	dry	0.371		0.017	0.175	mg/kg	B222485	S221095
2210048-54	Se(F5)	SE	dry	≤ 0.040	U	0.040	0.218	mg/kg	B222495	S221103
2210048-54	Se(IV) F1	SE	dry	0.623		0.009	0.043	mg/kg	B222345	S221055
2210048-54	Se(IV) F2	SE	dry	4.05		0.005	0.043	mg/kg	B222350	S221078
2210048-54	Se(VI) F1	SE	dry	≤ 0.010	U	0.010	0.045	mg/kg	B222345	S221055
2210048-54	Se(VI) F2	SE	dry	0.012	J	0.005	0.045	mg/kg	B222350	S221078
2210048-54	SeCN F1	SE	dry	≤ 0.002	U	0.002	0.017	mg/kg	B222345	S221055
2210048-54	SeCN F2	SE	dry	0.800		0.003	0.017	mg/kg	B222350	S221078
2210048-54	SeMet F1	SE	dry	≤ 0.002	U	0.002	0.017	mg/kg	B222345	S221055
2210048-54	SeMet F2	SE	dry	≤ 0.004	U	0.004	0.017	mg/kg	B222350	S221078
2210048-54	SeSO ₃ F1	SE	dry	≤ 0.010	U	0.010	0.045	mg/kg	B222345	S221055
2210048-54	SeSO ₃ F2	SE	dry	≤ 0.005	U	0.005	0.045	mg/kg	B222350	S221078
2210048-54	Unk Se Sp F1	SE	dry	≤ 0.009	U	0.009	0.043	mg/kg	B222345	S221055
2210048-54	Unk Se Sp F2	SE	dry	0.237		0.005	0.043	mg/kg	B222350	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKMD_SESeSp-3_2022-09-20_N</i>										
2210048-55	%TS	SE	NA	33.62		0.02	0.05	%	B222353	N/A
2210048-55	DMS ₂ O F1	SE	dry	0.017	J	0.003	0.023	mg/kg	B222345	S221055
2210048-55	DMS ₂ O F2	SE	dry	0.009	J	0.005	0.023	mg/kg	B222350	S221078
2210048-55	MeSe(IV) F1	SE	dry	0.006	J	0.003	0.023	mg/kg	B222345	S221055
2210048-55	MeSe(IV) F2	SE	dry	0.600		0.005	0.023	mg/kg	B222350	S221078
2210048-55	Se	SE	dry	16.4		0.210	0.419	mg/kg	B222344	S221071
2210048-55	Se Unk A F1	SE	dry	≤ 0.003	U	0.003	0.023	mg/kg	B222345	S221055
2210048-55	Se Unk A F2	SE	dry	0.014	J	0.005	0.023	mg/kg	B222350	S221078
2210048-55	Se(F1)	SE	dry	0.833		0.098	0.233	mg/kg	B222332	S221069
2210048-55	Se(F2)	SE	dry	5.91		0.044	0.233	mg/kg	B222400	S221077
2210048-55	Se(F3)	SE	dry	6.70		0.012	0.117	mg/kg	B222438	S221088
2210048-55	Se(F4)	SE	dry	0.362		0.023	0.233	mg/kg	B222485	S221095
2210048-55	Se(F5)	SE	dry	≤ 0.054	U	0.054	0.292	mg/kg	B222495	S221103
2210048-55	Se(IV) F1	SE	dry	0.419		0.013	0.057	mg/kg	B222345	S221055
2210048-55	Se(IV) F2	SE	dry	2.15		0.007	0.057	mg/kg	B222350	S221078
2210048-55	Se(VI) F1	SE	dry	0.164		0.013	0.060	mg/kg	B222345	S221055
2210048-55	Se(VI) F2	SE	dry	0.009	J	0.007	0.060	mg/kg	B222350	S221078
2210048-55	SeCN F1	SE	dry	≤ 0.002	U	0.002	0.023	mg/kg	B222345	S221055
2210048-55	SeCN F2	SE	dry	0.979		0.003	0.023	mg/kg	B222350	S221078
2210048-55	SeMet F1	SE	dry	≤ 0.003	U	0.003	0.023	mg/kg	B222345	S221055
2210048-55	SeMet F2	SE	dry	≤ 0.005	U	0.005	0.023	mg/kg	B222350	S221078
2210048-55	SeSO ₃ F1	SE	dry	≤ 0.013	U	0.013	0.060	mg/kg	B222345	S221055
2210048-55	SeSO ₃ F2	SE	dry	0.018	J	0.007	0.060	mg/kg	B222350	S221078
2210048-55	Unk Se Sp F1	SE	dry	≤ 0.013	U	0.013	0.057	mg/kg	B222345	S221055
2210048-55	Unk Se Sp F2	SE	dry	0.149		0.007	0.057	mg/kg	B222350	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKMD_SESeSp-4_2022-09-20_N</i>										
2210048-56	%TS	SE	NA	38.05		0.01	0.04	%	B222353	N/A
2210048-56	DMS ₂ O F1	SE	dry	0.017	J	0.002	0.017	mg/kg	B222345	S221055
2210048-56	DMS ₂ O F2	SE	dry	0.010	J	0.004	0.017	mg/kg	B222350	S221078
2210048-56	MeSe(IV) F1	SE	dry	0.010	J	0.002	0.017	mg/kg	B222345	S221055
2210048-56	MeSe(IV) F2	SE	dry	0.337		0.004	0.017	mg/kg	B222350	S221078
2210048-56	Se	SE	dry	15.8		0.193	0.387	mg/kg	B222344	S221071
2210048-56	Se Unk A F1	SE	dry	≤ 0.002	U	0.002	0.017	mg/kg	B222345	S221055
2210048-56	Se Unk A F2	SE	dry	0.007	J	0.004	0.017	mg/kg	B222350	S221078
2210048-56	Se(F1)	SE	dry	0.457		0.071	0.169	mg/kg	B222332	S221069
2210048-56	Se(F2)	SE	dry	7.23		0.032	0.169	mg/kg	B222400	S221077
2210048-56	Se(F3)	SE	dry	6.06		0.008	0.085	mg/kg	B222438	S221088
2210048-56	Se(F4)	SE	dry	0.491		0.017	0.169	mg/kg	B222485	S221095
2210048-56	Se(F5)	SE	dry	≤ 0.039	U	0.039	0.212	mg/kg	B222495	S221103
2210048-56	Se(IV) F1	SE	dry	0.187		0.009	0.041	mg/kg	B222345	S221055
2210048-56	Se(IV) F2	SE	dry	3.89		0.005	0.041	mg/kg	B222350	S221078
2210048-56	Se(VI) F1	SE	dry	0.167		0.010	0.043	mg/kg	B222345	S221055
2210048-56	Se(VI) F2	SE	dry	0.007	J	0.005	0.043	mg/kg	B222350	S221078
2210048-56	SeCN F1	SE	dry	≤ 0.002	U	0.002	0.017	mg/kg	B222345	S221055
2210048-56	SeCN F2	SE	dry	0.953		0.003	0.017	mg/kg	B222350	S221078
2210048-56	SeMet F1	SE	dry	≤ 0.002	U	0.002	0.017	mg/kg	B222345	S221055
2210048-56	SeMet F2	SE	dry	≤ 0.004	U	0.004	0.017	mg/kg	B222350	S221078
2210048-56	SeSO ₃ F1	SE	dry	≤ 0.010	U	0.010	0.043	mg/kg	B222345	S221055
2210048-56	SeSO ₃ F2	SE	dry	≤ 0.005	U	0.005	0.043	mg/kg	B222350	S221078
2210048-56	Unk Se Sp F1	SE	dry	≤ 0.009	U	0.009	0.041	mg/kg	B222345	S221055
2210048-56	Unk Se Sp F2	SE	dry	0.099		0.005	0.041	mg/kg	B222350	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKMD_SESeSp-5_2022-09-20_N</i>										
2210048-57	%TS	SE	NA	24.66		0.02	0.08	%	B222353	N/A
2210048-57	DMSeO F1	SE	dry	0.079		0.003	0.030	mg/kg	B222345	S221055
2210048-57	DMSeO F2	SE	dry	0.033		0.007	0.030	mg/kg	B222350	S221078
2210048-57	MeSe(IV) F1	SE	dry	0.032		0.003	0.030	mg/kg	B222345	S221055
2210048-57	MeSe(IV) F2	SE	dry	0.984		0.007	0.030	mg/kg	B222350	S221078
2210048-57	Se	SE	dry	49.3		0.243	0.486	mg/kg	B222344	S221071
2210048-57	Se Unk A F1	SE	dry	≤ 0.003	U	0.003	0.030	mg/kg	B222345	S221055
2210048-57	Se Unk A F2	SE	dry	0.023	J	0.007	0.030	mg/kg	B222350	S221078
2210048-57	Se(F1)	SE	dry	1.06		0.127	0.303	mg/kg	B222332	S221069
2210048-57	Se(F2)	SE	dry	29.4		0.057	0.303	mg/kg	B222400	S221077
2210048-57	Se(F3)	SE	dry	15.3		0.015	0.152	mg/kg	B222438	S221088
2210048-57	Se(F4)	SE	dry	0.355		0.030	0.303	mg/kg	B222485	S221095
2210048-57	Se(F5)	SE	dry	≤ 0.070	U	0.070	0.379	mg/kg	B222495	S221103
2210048-57	Se(IV) F1	SE	dry	0.734		0.016	0.074	mg/kg	B222345	S221055
2210048-57	Se(IV) F2	SE	dry	17.6		0.009	0.074	mg/kg	B222350	S221078
2210048-57	Se(VI) F1	SE	dry	0.031	J	0.017	0.078	mg/kg	B222345	S221055
2210048-57	Se(VI) F2	SE	dry	0.055	J	0.009	0.078	mg/kg	B222350	S221078
2210048-57	SeCN F1	SE	dry	≤ 0.003	U	0.003	0.030	mg/kg	B222345	S221055
2210048-57	SeCN F2	SE	dry	2.66		0.005	0.030	mg/kg	B222350	S221078
2210048-57	SeMet F1	SE	dry	≤ 0.003	U	0.003	0.030	mg/kg	B222345	S221055
2210048-57	SeMet F2	SE	dry	≤ 0.007	U	0.007	0.030	mg/kg	B222350	S221078
2210048-57	SeSO3 F1	SE	dry	≤ 0.017	U	0.017	0.078	mg/kg	B222345	S221055
2210048-57	SeSO3 F2	SE	dry	0.021	J	0.009	0.078	mg/kg	B222350	S221078
2210048-57	Unk Se Sp F1	SE	dry	≤ 0.016	U	0.016	0.074	mg/kg	B222345	S221055
2210048-57	Unk Se Sp F2	SE	dry	0.432		0.009	0.074	mg/kg	B222350	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_MI3_SESeSp-1_2022-09-12_N										
2210048-58	%TS	SE	NA	19.01		0.04	0.12	%	B222353	N/A
2210048-58	DMS ₂ O F1	SE	dry	≤ 0.004	U	0.004	0.035	mg/kg	B222345	S221055
2210048-58	DMS ₂ O F2	SE	dry	≤ 0.008	U	0.008	0.035	mg/kg	B222350	S221078
2210048-58	MeSe(IV) F1	SE	dry	≤ 0.004	U	0.004	0.035	mg/kg	B222345	S221055
2210048-58	MeSe(IV) F2	SE	dry	0.083		0.008	0.035	mg/kg	B222350	S221078
2210048-58	Se	SE	dry	2.46		0.323	0.646	mg/kg	B222344	S221071
2210048-58	Se Unk A F1	SE	dry	≤ 0.004	U	0.004	0.035	mg/kg	B222345	S221055
2210048-58	Se Unk A F2	SE	dry	≤ 0.008	U	0.008	0.035	mg/kg	B222350	S221078
2210048-58	Se(F1)	SE	dry	0.255	J	0.145	0.345	mg/kg	B222332	S221069
2210048-58	Se(F2)	SE	dry	1.27		0.065	0.345	mg/kg	B222400	S221077
2210048-58	Se(F3)	SE	dry	0.446		0.017	0.173	mg/kg	B222438	S221088
2210048-58	Se(F4)	SE	dry	≤ 0.035	U	0.035	0.345	mg/kg	B222485	S221095
2210048-58	Se(F5)	SE	dry	≤ 0.080	U	0.080	0.432	mg/kg	B222495	S221103
2210048-58	Se(IV) F1	SE	dry	0.025	J	0.019	0.084	mg/kg	B222345	S221055
2210048-58	Se(IV) F2	SE	dry	0.332		0.010	0.084	mg/kg	B222350	S221078
2210048-58	Se(VI) F1	SE	dry	≤ 0.020	U	0.020	0.089	mg/kg	B222345	S221055
2210048-58	Se(VI) F2	SE	dry	≤ 0.010	U	0.010	0.089	mg/kg	B222350	S221078
2210048-58	SeCN F1	SE	dry	≤ 0.003	U	0.003	0.035	mg/kg	B222345	S221055
2210048-58	SeCN F2	SE	dry	0.155		0.005	0.035	mg/kg	B222350	S221078
2210048-58	SeMet F1	SE	dry	≤ 0.004	U	0.004	0.035	mg/kg	B222345	S221055
2210048-58	SeMet F2	SE	dry	≤ 0.008	U	0.008	0.035	mg/kg	B222350	S221078
2210048-58	SeSO ₃ F1	SE	dry	≤ 0.020	U	0.020	0.089	mg/kg	B222345	S221055
2210048-58	SeSO ₃ F2	SE	dry	≤ 0.010	U	0.010	0.089	mg/kg	B222350	S221078
2210048-58	Unk Se Sp F1	SE	dry	≤ 0.019	U	0.019	0.084	mg/kg	B222345	S221055
2210048-58	Unk Se Sp F2	SE	dry	0.084	J	0.010	0.084	mg/kg	B222350	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_MI3_SESeSp-2_2022-09-12_N										
2210048-59	%TS	SE	NA	25.37		0.03	0.09	%	B222353	N/A
2210048-59	DMS ₂ O F1	SE	dry	≤ 0.004	U	0.004	0.032	mg/kg	B222345	S221055
2210048-59	DMS ₂ O F2	SE	dry	≤ 0.007	U	0.007	0.032	mg/kg	B222350	S221078
2210048-59	MeSe(IV) F1	SE	dry	≤ 0.004	U	0.004	0.032	mg/kg	B222345	S221055
2210048-59	MeSe(IV) F2	SE	dry	0.089		0.007	0.032	mg/kg	B222350	S221078
2210048-59	Se	SE	dry	3.00		0.297	0.593	mg/kg	B222344	S221071
2210048-59	Se Unk A F1	SE	dry	≤ 0.004	U	0.004	0.032	mg/kg	B222345	S221055
2210048-59	Se Unk A F2	SE	dry	≤ 0.007	U	0.007	0.032	mg/kg	B222350	S221078
2210048-59	Se(F1)	SE	dry	0.178	J	0.132	0.315	mg/kg	B222332	S221069
2210048-59	Se(F2)	SE	dry	1.50		0.059	0.315	mg/kg	B222400	S221077
2210048-59	Se(F3)	SE	dry	0.728		0.016	0.158	mg/kg	B222438	S221088
2210048-59	Se(F4)	SE	dry	0.071	J	0.032	0.315	mg/kg	B222485	S221095
2210048-59	Se(F5)	SE	dry	≤ 0.073	U	0.073	0.394	mg/kg	B222495	S221103
2210048-59	Se(IV) F1	SE	dry	0.041	J	0.017	0.077	mg/kg	B222345	S221055
2210048-59	Se(IV) F2	SE	dry	0.442		0.009	0.077	mg/kg	B222350	S221078
2210048-59	Se(VI) F1	SE	dry	≤ 0.018	U	0.018	0.081	mg/kg	B222345	S221055
2210048-59	Se(VI) F2	SE	dry	≤ 0.009	U	0.009	0.081	mg/kg	B222350	S221078
2210048-59	SeCN F1	SE	dry	≤ 0.003	U	0.003	0.032	mg/kg	B222345	S221055
2210048-59	SeCN F2	SE	dry	0.186		0.005	0.032	mg/kg	B222350	S221078
2210048-59	SeMet F1	SE	dry	≤ 0.004	U	0.004	0.032	mg/kg	B222345	S221055
2210048-59	SeMet F2	SE	dry	≤ 0.007	U	0.007	0.032	mg/kg	B222350	S221078
2210048-59	SeSO ₃ F1	SE	dry	≤ 0.018	U	0.018	0.081	mg/kg	B222345	S221055
2210048-59	SeSO ₃ F2	SE	dry	≤ 0.009	U	0.009	0.081	mg/kg	B222350	S221078
2210048-59	Unk Se Sp F1	SE	dry	≤ 0.017	U	0.017	0.077	mg/kg	B222345	S221055
2210048-59	Unk Se Sp F2	SE	dry	0.136		0.009	0.077	mg/kg	B222350	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_MI3_SESeSp-3_2022-09-12_N										
2210048-60	%TS	SE	NA	28.80		0.02	0.08	%	B222353	N/A
2210048-60	DMS ₂ O F1	SE	dry	≤ 0.003	U	0.003	0.028	mg/kg	B222345	S221055
2210048-60	DMS ₂ O F2	SE	dry	≤ 0.006	U	0.006	0.028	mg/kg	B222350	S221078
2210048-60	MeSe(IV) F1	SE	dry	≤ 0.003	U	0.003	0.028	mg/kg	B222345	S221055
2210048-60	MeSe(IV) F2	SE	dry	0.129		0.006	0.028	mg/kg	B222350	S221078
2210048-60	Se	SE	dry	2.93		0.201	0.402	mg/kg	B222344	S221071
2210048-60	Se Unk A F1	SE	dry	≤ 0.003	U	0.003	0.028	mg/kg	B222345	S221055
2210048-60	Se Unk A F2	SE	dry	≤ 0.006	U	0.006	0.028	mg/kg	B222350	S221078
2210048-60	Se(F1)	SE	dry	0.197	J	0.117	0.280	mg/kg	B222332	S221069
2210048-60	Se(F2)	SE	dry	≤ 0.052	U	0.052	0.280	mg/kg	B222400	S221077
2210048-60	Se(F3)	SE	dry	0.807		0.014	0.140	mg/kg	B222438	S221088
2210048-60	Se(F4)	SE	dry	0.089	J	0.028	0.280	mg/kg	B222485	S221095
2210048-60	Se(F5)	SE	dry	≤ 0.065	U	0.065	0.350	mg/kg	B222495	S221103
2210048-60	Se(IV) F1	SE	dry	0.034	J	0.015	0.068	mg/kg	B222345	S221055
2210048-60	Se(IV) F2	SE	dry	0.492		0.008	0.068	mg/kg	B222350	S221078
2210048-60	Se(VI) F1	SE	dry	≤ 0.016	U	0.016	0.072	mg/kg	B222345	S221055
2210048-60	Se(VI) F2	SE	dry	≤ 0.008	U	0.008	0.072	mg/kg	B222350	S221078
2210048-60	SeCN F1	SE	dry	≤ 0.003	U	0.003	0.028	mg/kg	B222345	S221055
2210048-60	SeCN F2	SE	dry	0.169		0.004	0.028	mg/kg	B222350	S221078
2210048-60	SeMet F1	SE	dry	≤ 0.003	U	0.003	0.028	mg/kg	B222345	S221055
2210048-60	SeMet F2	SE	dry	≤ 0.006	U	0.006	0.028	mg/kg	B222350	S221078
2210048-60	SeSO ₃ F1	SE	dry	≤ 0.016	U	0.016	0.072	mg/kg	B222345	S221055
2210048-60	SeSO ₃ F2	SE	dry	≤ 0.008	U	0.008	0.072	mg/kg	B222350	S221078
2210048-60	Unk Se Sp F1	SE	dry	0.018	J	0.015	0.068	mg/kg	B222345	S221055
2210048-60	Unk Se Sp F2	SE	dry	0.120		0.008	0.068	mg/kg	B222350	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_MI3_SESeSp-4_2022-09-12_N										
2210048-61	%TS	SE	NA	55.80		0.01	0.04	%	B222353	N/A
2210048-61	DMS ₂ O F1	SE	dry	≤ 0.001	U	0.001	0.013	mg/kg	B222345	S221055
2210048-61	DMS ₂ O F2	SE	dry	≤ 0.003	U	0.003	0.013	mg/kg	B222350	S221078
2210048-61	MeSe(IV) F1	SE	dry	0.007	J	0.001	0.013	mg/kg	B222345	S221055
2210048-61	MeSe(IV) F2	SE	dry	0.049		0.003	0.013	mg/kg	B222350	S221078
2210048-61	Se	SE	dry	1.22		0.160	0.321	mg/kg	B222344	S221071
2210048-61	Se Unk A F1	SE	dry	≤ 0.001	U	0.001	0.013	mg/kg	B222345	S221055
2210048-61	Se Unk A F2	SE	dry	≤ 0.003	U	0.003	0.013	mg/kg	B222350	S221078
2210048-61	Se(F1)	SE	dry	0.075	J	0.054	0.129	mg/kg	B222332	S221069
2210048-61	Se(F2)	SE	dry	0.592		0.024	0.129	mg/kg	B222400	S221077
2210048-61	Se(F3)	SE	dry	0.379		0.006	0.065	mg/kg	B222438	S221088
2210048-61	Se(F4)	SE	dry	0.198		0.013	0.129	mg/kg	B222485	S221095
2210048-61	Se(F5)	SE	dry	≤ 0.030	U	0.030	0.162	mg/kg	B222495	S221103
2210048-61	Se(IV) F1	SE	dry	0.029	J	0.007	0.032	mg/kg	B222345	S221055
2210048-61	Se(IV) F2	SE	dry	0.185		0.004	0.032	mg/kg	B222350	S221078
2210048-61	Se(VI) F1	SE	dry	≤ 0.007	U	0.007	0.033	mg/kg	B222345	S221055
2210048-61	Se(VI) F2	SE	dry	≤ 0.004	U	0.004	0.033	mg/kg	B222350	S221078
2210048-61	SeCN F1	SE	dry	≤ 0.001	U	0.001	0.013	mg/kg	B222345	S221055
2210048-61	SeCN F2	SE	dry	0.060		0.002	0.013	mg/kg	B222350	S221078
2210048-61	SeMet F1	SE	dry	≤ 0.001	U	0.001	0.013	mg/kg	B222345	S221055
2210048-61	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.013	mg/kg	B222350	S221078
2210048-61	SeSO ₃ F1	SE	dry	≤ 0.007	U	0.007	0.033	mg/kg	B222345	S221055
2210048-61	SeSO ₃ F2	SE	dry	≤ 0.004	U	0.004	0.033	mg/kg	B222350	S221078
2210048-61	Unk Se Sp F1	SE	dry	≤ 0.007	U	0.007	0.032	mg/kg	B222345	S221055
2210048-61	Unk Se Sp F2	SE	dry	0.032	J	0.004	0.032	mg/kg	B222350	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_MI3_SESeSp-5_2022-09-12_N										
2210048-62	%TS	SE	NA	20.62		0.03	0.09	%	B222353	N/A
2210048-62	DMSeO F1	SE	dry	≤ 0.004	U	0.004	0.039	mg/kg	B222345	S221055
2210048-62	DMSeO F2	SE	dry	≤ 0.009	U	0.009	0.039	mg/kg	B222350	S221078
2210048-62	MeSe(IV) F1	SE	dry	≤ 0.004	U	0.004	0.039	mg/kg	B222345	S221055
2210048-62	MeSe(IV) F2	SE	dry	0.081		0.009	0.039	mg/kg	B222350	S221078
2210048-62	Se	SE	dry	2.49		0.259	0.518	mg/kg	B222344	S221071
2210048-62	Se Unk A F1	SE	dry	≤ 0.004	U	0.004	0.039	mg/kg	B222345	S221055
2210048-62	Se Unk A F2	SE	dry	≤ 0.009	U	0.009	0.039	mg/kg	B222350	S221078
2210048-62	Se(F1)	SE	dry	0.330	J	0.161	0.386	mg/kg	B222332	S221069
2210048-62	Se(F2)	SE	dry	1.30		0.072	0.386	mg/kg	B222400	S221077
2210048-62	Se(F3)	SE	dry	0.554		0.019	0.193	mg/kg	B222438	S221088
2210048-62	Se(F4)	SE	dry	0.048	J	0.039	0.386	mg/kg	B222485	S221095
2210048-62	Se(F5)	SE	dry	≤ 0.089	U	0.089	0.482	mg/kg	B222495	S221103
2210048-62	Se(IV) F1	SE	dry	0.044	J	0.021	0.094	mg/kg	B222345	S221055
2210048-62	Se(IV) F2	SE	dry	0.373		0.012	0.094	mg/kg	B222350	S221078
2210048-62	Se(VI) F1	SE	dry	≤ 0.022	U	0.022	0.099	mg/kg	B222345	S221055
2210048-62	Se(VI) F2	SE	dry	≤ 0.011	U	0.011	0.099	mg/kg	B222350	S221078
2210048-62	SeCN F1	SE	dry	≤ 0.004	U	0.004	0.039	mg/kg	B222345	S221055
2210048-62	SeCN F2	SE	dry	0.158		0.006	0.039	mg/kg	B222350	S221078
2210048-62	SeMet F1	SE	dry	≤ 0.004	U	0.004	0.039	mg/kg	B222345	S221055
2210048-62	SeMet F2	SE	dry	≤ 0.009	U	0.009	0.039	mg/kg	B222350	S221078
2210048-62	SeSO3 F1	SE	dry	≤ 0.022	U	0.022	0.099	mg/kg	B222345	S221055
2210048-62	SeSO3 F2	SE	dry	≤ 0.011	U	0.011	0.099	mg/kg	B222350	S221078
2210048-62	Unk Se Sp F1	SE	dry	0.043	J	0.021	0.094	mg/kg	B222345	S221055
2210048-62	Unk Se Sp F2	SE	dry	0.068	J	0.012	0.094	mg/kg	B222350	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCK_SESeSp-1_2022-09-14_N										
2210048-63	%TS	SE	NA	49.16		0.01	0.04	%	B222353	N/A
2210048-63	DMS ₂ O F1	SE	dry	≤ 0.002	U	0.002	0.015	mg/kg	B222345	S221055
2210048-63	DMS ₂ O F2	SE	dry	0.006	J	0.004	0.015	mg/kg	B222350	S221078
2210048-63	MeSe(IV) F1	SE	dry	0.030		0.002	0.015	mg/kg	B222345	S221055
2210048-63	MeSe(IV) F2	SE	dry	0.296		0.004	0.015	mg/kg	B222350	S221078
2210048-63	Se	SE	dry	9.47		0.126	0.253	mg/kg	B222344	S221071
2210048-63	Se Unk A F1	SE	dry	≤ 0.002	U	0.002	0.015	mg/kg	B222345	S221055
2210048-63	Se Unk A F2	SE	dry	≤ 0.004	U	0.004	0.015	mg/kg	B222350	S221078
2210048-63	Se(F1)	SE	dry	0.377		0.064	0.154	mg/kg	B222332	S221069
2210048-63	Se(F2)	SE	dry	2.52		0.029	0.154	mg/kg	B222400	S221077
2210048-63	Se(F3)	SE	dry	2.36		0.008	0.077	mg/kg	B222438	S221088
2210048-63	Se(F4)	SE	dry	0.113	J	0.015	0.154	mg/kg	B222485	S221095
2210048-63	Se(F5)	SE	dry	≤ 0.036	U	0.036	0.192	mg/kg	B222495	S221103
2210048-63	Se(IV) F1	SE	dry	0.152		0.008	0.037	mg/kg	B222345	S221055
2210048-63	Se(IV) F2	SE	dry	0.734		0.005	0.037	mg/kg	B222350	S221078
2210048-63	Se(VI) F1	SE	dry	≤ 0.009	U	0.009	0.039	mg/kg	B222345	S221055
2210048-63	Se(VI) F2	SE	dry	≤ 0.004	U	0.004	0.039	mg/kg	B222350	S221078
2210048-63	SeCN F1	SE	dry	≤ 0.002	U	0.002	0.015	mg/kg	B222345	S221055
2210048-63	SeCN F2	SE	dry	0.320		0.002	0.015	mg/kg	B222350	S221078
2210048-63	SeMet F1	SE	dry	≤ 0.002	U	0.002	0.015	mg/kg	B222345	S221055
2210048-63	SeMet F2	SE	dry	≤ 0.004	U	0.004	0.015	mg/kg	B222350	S221078
2210048-63	SeSO ₃ F1	SE	dry	≤ 0.009	U	0.009	0.039	mg/kg	B222345	S221055
2210048-63	SeSO ₃ F2	SE	dry	0.007	J	0.004	0.039	mg/kg	B222350	S221078
2210048-63	Unk Se Sp F1	SE	dry	0.012	J	0.008	0.037	mg/kg	B222345	S221055
2210048-63	Unk Se Sp F2	SE	dry	0.178		0.005	0.037	mg/kg	B222350	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCK_SESeSp-2_2022-09-14_N										
2210048-64	%TS	SE	NA	56.72		0.01	0.04	%	B222353	N/A
2210048-64	DMS ₂ O F1	SE	dry	≤ 0.001	U	0.001	0.013	mg/kg	B222345	S221055
2210048-64	DMS ₂ O F2	SE	dry	≤ 0.003	U	0.003	0.013	mg/kg	B222350	S221078
2210048-64	MeSe(IV) F1	SE	dry	0.005	J	0.001	0.013	mg/kg	B222345	S221055
2210048-64	MeSe(IV) F2	SE	dry	0.093		0.003	0.013	mg/kg	B222350	S221078
2210048-64	Se	SE	dry	2.53		0.098	0.196	mg/kg	B222344	S221071
2210048-64	Se Unk A F1	SE	dry	≤ 0.001	U	0.001	0.013	mg/kg	B222345	S221055
2210048-64	Se Unk A F2	SE	dry	≤ 0.003	U	0.003	0.013	mg/kg	B222350	S221078
2210048-64	Se(F1)	SE	dry	0.252		0.053	0.126	mg/kg	B222332	S221069
2210048-64	Se(F2)	SE	dry	0.704		0.024	0.126	mg/kg	B222400	S221077
2210048-64	Se(F3)	SE	dry	0.910		0.006	0.063	mg/kg	B222438	S221088
2210048-64	Se(F4)	SE	dry	0.180		0.013	0.126	mg/kg	B222485	S221095
2210048-64	Se(F5)	SE	dry	≤ 0.029	U	0.029	0.158	mg/kg	B222495	S221103
2210048-64	Se(IV) F1	SE	dry	0.132		0.007	0.031	mg/kg	B222345	S221055
2210048-64	Se(IV) F2	SE	dry	0.263		0.004	0.031	mg/kg	B222350	S221078
2210048-64	Se(VI) F1	SE	dry	0.053		0.007	0.032	mg/kg	B222345	S221055
2210048-64	Se(VI) F2	SE	dry	≤ 0.004	U	0.004	0.032	mg/kg	B222350	S221078
2210048-64	SeCN F1	SE	dry	≤ 0.001	U	0.001	0.013	mg/kg	B222345	S221055
2210048-64	SeCN F2	SE	dry	0.064		0.002	0.013	mg/kg	B222350	S221078
2210048-64	SeMet F1	SE	dry	≤ 0.001	U	0.001	0.013	mg/kg	B222345	S221055
2210048-64	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.013	mg/kg	B222350	S221078
2210048-64	SeSO ₃ F1	SE	dry	≤ 0.007	U	0.007	0.032	mg/kg	B222345	S221055
2210048-64	SeSO ₃ F2	SE	dry	≤ 0.004	U	0.004	0.032	mg/kg	B222350	S221078
2210048-64	Unk Se Sp F1	SE	dry	≤ 0.007	U	0.007	0.031	mg/kg	B222345	S221055
2210048-64	Unk Se Sp F2	SE	dry	0.026	J	0.004	0.031	mg/kg	B222350	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCK_SESeSp-3_2022-09-14_N										
2210048-65	%TS	SE	NA	53.03		0.01	0.04	%	B222353	N/A
2210048-65	DMS ₂ O F1	SE	dry	≤ 0.002	U	0.002	0.015	mg/kg	B222345	S221055
2210048-65	DMS ₂ O F2	SE	dry	≤ 0.003	U	0.003	0.015	mg/kg	B222350	S221078
2210048-65	MeSe(IV) F1	SE	dry	0.005	J	0.002	0.015	mg/kg	B222345	S221055
2210048-65	MeSe(IV) F2	SE	dry	0.057		0.003	0.015	mg/kg	B222350	S221078
2210048-65	Se	SE	dry	2.92		0.121	0.243	mg/kg	B222344	S221071
2210048-65	Se Unk A F1	SE	dry	≤ 0.002	U	0.002	0.015	mg/kg	B222345	S221055
2210048-65	Se Unk A F2	SE	dry	≤ 0.003	U	0.003	0.015	mg/kg	B222350	S221078
2210048-65	Se(F1)	SE	dry	0.201		0.063	0.150	mg/kg	B222332	S221069
2210048-65	Se(F2)	SE	dry	0.583		0.028	0.150	mg/kg	B222400	S221077
2210048-65	Se(F3)	SE	dry	1.85		0.008	0.075	mg/kg	B222438	S221088
2210048-65	Se(F4)	SE	dry	0.128	J	0.015	0.150	mg/kg	B222485	S221095
2210048-65	Se(F5)	SE	dry	≤ 0.035	U	0.035	0.188	mg/kg	B222495	S221103
2210048-65	Se(IV) F1	SE	dry	0.043		0.008	0.037	mg/kg	B222345	S221055
2210048-65	Se(IV) F2	SE	dry	0.166		0.005	0.037	mg/kg	B222350	S221078
2210048-65	Se(VI) F1	SE	dry	0.096		0.009	0.038	mg/kg	B222345	S221055
2210048-65	Se(VI) F2	SE	dry	0.005	J	0.004	0.038	mg/kg	B222350	S221078
2210048-65	SeCN F1	SE	dry	≤ 0.002	U	0.002	0.015	mg/kg	B222345	S221055
2210048-65	SeCN F2	SE	dry	0.101		0.002	0.015	mg/kg	B222350	S221078
2210048-65	SeMet F1	SE	dry	≤ 0.002	U	0.002	0.015	mg/kg	B222345	S221055
2210048-65	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.015	mg/kg	B222350	S221078
2210048-65	SeSO ₃ F1	SE	dry	≤ 0.009	U	0.009	0.038	mg/kg	B222345	S221055
2210048-65	SeSO ₃ F2	SE	dry	≤ 0.004	U	0.004	0.038	mg/kg	B222350	S221078
2210048-65	Unk Se Sp F1	SE	dry	≤ 0.008	U	0.008	0.037	mg/kg	B222345	S221055
2210048-65	Unk Se Sp F2	SE	dry	0.019	J	0.005	0.037	mg/kg	B222350	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCK_SESeSp-4_2022-09-14_N										
2210048-66	%TS	SE	NA	55.03		0.01	0.03	%	B222353	N/A
2210048-66	DMS ₂ O F1	SE	dry	≤ 0.002	U	0.002	0.014	mg/kg	B222345	S221055
2210048-66	DMS ₂ O F2	SE	dry	≤ 0.003	U	0.003	0.014	mg/kg	B222350	S221078
2210048-66	MeSe(IV) F1	SE	dry	0.007	J	0.002	0.014	mg/kg	B222345	S221055
2210048-66	MeSe(IV) F2	SE	dry	0.062		0.003	0.014	mg/kg	B222350	S221078
2210048-66	Se	SE	dry	2.76		0.137	0.274	mg/kg	B222344	S221071
2210048-66	Se Unk A F1	SE	dry	≤ 0.002	U	0.002	0.014	mg/kg	B222345	S221055
2210048-66	Se Unk A F2	SE	dry	≤ 0.003	U	0.003	0.014	mg/kg	B222350	S221078
2210048-66	Se(F1)	SE	dry	0.228		0.058	0.139	mg/kg	B222332	S221069
2210048-66	Se(F2)	SE	dry	0.602		0.026	0.139	mg/kg	B222400	S221077
2210048-66	Se(F3)	SE	dry	1.15		0.007	0.070	mg/kg	B222438	S221088
2210048-66	Se(F4)	SE	dry	0.091	J	0.014	0.139	mg/kg	B222485	S221095
2210048-66	Se(F5)	SE	dry	≤ 0.032	U	0.032	0.174	mg/kg	B222495	S221103
2210048-66	Se(IV) F1	SE	dry	0.048		0.008	0.034	mg/kg	B222345	S221055
2210048-66	Se(IV) F2	SE	dry	0.169		0.004	0.034	mg/kg	B222350	S221078
2210048-66	Se(VI) F1	SE	dry	0.083		0.008	0.036	mg/kg	B222345	S221055
2210048-66	Se(VI) F2	SE	dry	≤ 0.004	U	0.004	0.036	mg/kg	B222350	S221078
2210048-66	SeCN F1	SE	dry	≤ 0.001	U	0.001	0.014	mg/kg	B222345	S221055
2210048-66	SeCN F2	SE	dry	0.106		0.002	0.014	mg/kg	B222350	S221078
2210048-66	SeMet F1	SE	dry	≤ 0.002	U	0.002	0.014	mg/kg	B222345	S221055
2210048-66	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.014	mg/kg	B222350	S221078
2210048-66	SeSO ₃ F1	SE	dry	≤ 0.008	U	0.008	0.036	mg/kg	B222345	S221055
2210048-66	SeSO ₃ F2	SE	dry	≤ 0.004	U	0.004	0.036	mg/kg	B222350	S221078
2210048-66	Unk Se Sp F1	SE	dry	≤ 0.008	U	0.008	0.034	mg/kg	B222345	S221055
2210048-66	Unk Se Sp F2	SE	dry	0.023	J	0.004	0.034	mg/kg	B222350	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCK_SESeSp-5_2022-09-14_N										
2210048-67	%TS	SE	NA	58.44		0.01	0.04	%	B222353	N/A
2210048-67	DMS ₂ O F1	SE	dry	≤ 0.001	U	0.001	0.013	mg/kg	B222345	S221055
2210048-67	DMS ₂ O F2	SE	dry	≤ 0.003	U	0.003	0.013	mg/kg	B222350	S221078
2210048-67	MeSe(IV) F1	SE	dry	0.008	J	0.001	0.013	mg/kg	B222345	S221055
2210048-67	MeSe(IV) F2	SE	dry	0.062		0.003	0.013	mg/kg	B222350	S221078
2210048-67	Se	SE	dry	3.57		0.134	0.269	mg/kg	B222344	S221071
2210048-67	Se Unk A F1	SE	dry	≤ 0.001	U	0.001	0.013	mg/kg	B222345	S221055
2210048-67	Se Unk A F2	SE	dry	≤ 0.003	U	0.003	0.013	mg/kg	B222350	S221078
2210048-67	Se(F1)	SE	dry	0.245		0.056	0.133	mg/kg	B222332	S221069
2210048-67	Se(F2)	SE	dry	0.733		0.025	0.133	mg/kg	B222400	S221077
2210048-67	Se(F3)	SE	dry	1.78		0.007	0.066	mg/kg	B222438	S221088
2210048-67	Se(F4)	SE	dry	0.148		0.013	0.133	mg/kg	B222485	S221095
2210048-67	Se(F5)	SE	dry	≤ 0.031	U	0.031	0.166	mg/kg	B222495	S221103
2210048-67	Se(IV) F1	SE	dry	0.053		0.007	0.032	mg/kg	B222345	S221055
2210048-67	Se(IV) F2	SE	dry	0.198		0.004	0.032	mg/kg	B222350	S221078
2210048-67	Se(VI) F1	SE	dry	0.092		0.008	0.034	mg/kg	B222345	S221055
2210048-67	Se(VI) F2	SE	dry	≤ 0.004	U	0.004	0.034	mg/kg	B222350	S221078
2210048-67	SeCN F1	SE	dry	≤ 0.001	U	0.001	0.013	mg/kg	B222345	S221055
2210048-67	SeCN F2	SE	dry	0.155		0.002	0.013	mg/kg	B222350	S221078
2210048-67	SeMet F1	SE	dry	≤ 0.001	U	0.001	0.013	mg/kg	B222345	S221055
2210048-67	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.013	mg/kg	B222350	S221078
2210048-67	SeSO ₃ F1	SE	dry	≤ 0.008	U	0.008	0.034	mg/kg	B222345	S221055
2210048-67	SeSO ₃ F2	SE	dry	≤ 0.004	U	0.004	0.034	mg/kg	B222350	S221078
2210048-67	Unk Se Sp F1	SE	dry	≤ 0.007	U	0.007	0.032	mg/kg	B222345	S221055
2210048-67	Unk Se Sp F2	SE	dry	0.027	J	0.004	0.032	mg/kg	B222350	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKUT_SESeSp-1_2022-09-15_N</i>										
2210048-68	%TS	SE	NA	64.07		0.009	0.03	%	B222353	N/A
2210048-68	DMS ₂ O F1	SE	dry	≤ 0.001	U	0.001	0.012	mg/kg	B222345	S221055
2210048-68	DMS ₂ O F2	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222350	S221078
2210048-68	MeSe(IV) F1	SE	dry	≤ 0.001	U	0.001	0.012	mg/kg	B222345	S221055
2210048-68	MeSe(IV) F2	SE	dry	0.087		0.003	0.012	mg/kg	B222350	S221078
2210048-68	Se	SE	dry	2.37		0.127	0.254	mg/kg	B222344	S221071
2210048-68	Se Unk A F1	SE	dry	≤ 0.001	U	0.001	0.012	mg/kg	B222345	S221055
2210048-68	Se Unk A F2	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222350	S221078
2210048-68	Se(F1)	SE	dry	0.157		0.051	0.122	mg/kg	B222332	S221069
2210048-68	Se(F2)	SE	dry	0.914		0.023	0.122	mg/kg	B222400	S221077
2210048-68	Se(F3)	SE	dry	0.951		0.006	0.061	mg/kg	B222438	S221088
2210048-68	Se(F4)	SE	dry	0.153		0.012	0.122	mg/kg	B222485	S221095
2210048-68	Se(F5)	SE	dry	≤ 0.028	U	0.028	0.152	mg/kg	B222495	S221103
2210048-68	Se(IV) F1	SE	dry	0.042		0.007	0.030	mg/kg	B222345	S221055
2210048-68	Se(IV) F2	SE	dry	0.399		0.004	0.030	mg/kg	B222350	S221078
2210048-68	Se(VI) F1	SE	dry	0.079		0.007	0.031	mg/kg	B222345	S221055
2210048-68	Se(VI) F2	SE	dry	≤ 0.003	U	0.003	0.031	mg/kg	B222350	S221078
2210048-68	SeCN F1	SE	dry	≤ 0.001	U	0.001	0.012	mg/kg	B222345	S221055
2210048-68	SeCN F2	SE	dry	0.106		0.002	0.012	mg/kg	B222350	S221078
2210048-68	SeMet F1	SE	dry	≤ 0.001	U	0.001	0.012	mg/kg	B222345	S221055
2210048-68	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222350	S221078
2210048-68	SeSO ₃ F1	SE	dry	≤ 0.007	U	0.007	0.031	mg/kg	B222345	S221055
2210048-68	SeSO ₃ F2	SE	dry	≤ 0.003	U	0.003	0.031	mg/kg	B222350	S221078
2210048-68	Unk Se Sp F1	SE	dry	≤ 0.007	U	0.007	0.030	mg/kg	B222345	S221055
2210048-68	Unk Se Sp F2	SE	dry	0.016	J	0.004	0.030	mg/kg	B222350	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKUT_SESeSp-2_2022-09-16_N										
2210048-69	%TS	SE	NA	64.05		0.01	0.03	%	B222353	N/A
2210048-69	DMS ₂ O F1	SE	dry	≤ 0.001	U	0.001	0.012	mg/kg	B222345	S221055
2210048-69	DMS ₂ O F2	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222350	S221078
2210048-69	MeSe(IV) F1	SE	dry	0.008	J	0.001	0.012	mg/kg	B222345	S221055
2210048-69	MeSe(IV) F2	SE	dry	0.153		0.003	0.012	mg/kg	B222350	S221078
2210048-69	Se	SE	dry	4.75		0.109	0.218	mg/kg	B222344	S221071
2210048-69	Se Unk A F1	SE	dry	≤ 0.001	U	0.001	0.012	mg/kg	B222345	S221055
2210048-69	Se Unk A F2	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222350	S221078
2210048-69	Se(F1)	SE	dry	0.355		0.052	0.124	mg/kg	B222332	S221069
2210048-69	Se(F2)	SE	dry	2.04		0.023	0.124	mg/kg	B222400	S221077
2210048-69	Se(F3)	SE	dry	1.35		0.006	0.062	mg/kg	B222438	S221088
2210048-69	Se(F4)	SE	dry	0.452		0.012	0.124	mg/kg	B222485	S221095
2210048-69	Se(F5)	SE	dry	0.039	J	0.029	0.155	mg/kg	B222495	S221103
2210048-69	Se(IV) F1	SE	dry	0.239		0.007	0.030	mg/kg	B222345	S221055
2210048-69	Se(IV) F2	SE	dry	1.07		0.004	0.030	mg/kg	B222350	S221078
2210048-69	Se(VI) F1	SE	dry	0.035		0.007	0.032	mg/kg	B222345	S221055
2210048-69	Se(VI) F2	SE	dry	0.005	J	0.003	0.032	mg/kg	B222350	S221078
2210048-69	SeCN F1	SE	dry	≤ 0.001	U	0.001	0.012	mg/kg	B222345	S221055
2210048-69	SeCN F2	SE	dry	0.200		0.002	0.012	mg/kg	B222350	S221078
2210048-69	SeMet F1	SE	dry	≤ 0.001	U	0.001	0.012	mg/kg	B222345	S221055
2210048-69	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222350	S221078
2210048-69	SeSO ₃ F1	SE	dry	≤ 0.007	U	0.007	0.032	mg/kg	B222345	S221055
2210048-69	SeSO ₃ F2	SE	dry	0.005	J	0.003	0.032	mg/kg	B222350	S221078
2210048-69	Unk Se Sp F1	SE	dry	≤ 0.007	U	0.007	0.030	mg/kg	B222345	S221055
2210048-69	Unk Se Sp F2	SE	dry	0.041		0.004	0.030	mg/kg	B222350	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKUT_SESeSp-3_2022-09-16_N</i>										
2210048-70	%TS	SE	NA	48.94		0.01	0.03	%	B222355	N/A
2210048-70	DMS ₂ O F1	SE	dry	≤ 0.002	U	0.002	0.014	mg/kg	B222345	S221055
2210048-70	DMS ₂ O F2	SE	dry	≤ 0.003	U	0.003	0.014	mg/kg	B222350	S221078
2210048-70	MeSe(IV) F1	SE	dry	≤ 0.002	U	0.002	0.014	mg/kg	B222345	S221055
2210048-70	MeSe(IV) F2	SE	dry	0.269		0.003	0.014	mg/kg	B222350	S221078
2210048-70	Se	SE	dry	4.52		0.156	0.313	mg/kg	B222380	S221099
2210048-70	Se Unk A F1	SE	dry	≤ 0.002	U	0.002	0.014	mg/kg	B222345	S221055
2210048-70	Se Unk A F2	SE	dry	≤ 0.003	U	0.003	0.014	mg/kg	B222350	S221078
2210048-70	Se(F1)	SE	dry	0.211		0.060	0.144	mg/kg	B222332	S221069
2210048-70	Se(F2)	SE	dry	2.01		0.027	0.144	mg/kg	B222400	S221077
2210048-70	Se(F3)	SE	dry	2.10		0.007	0.072	mg/kg	B222438	S221088
2210048-70	Se(F4)	SE	dry	0.424		0.014	0.144	mg/kg	B222485	S221095
2210048-70	Se(F5)	SE	dry	≤ 0.033	U	0.033	0.180	mg/kg	B222495	S221103
2210048-70	Se(IV) F1	SE	dry	0.048		0.008	0.035	mg/kg	B222345	S221055
2210048-70	Se(IV) F2	SE	dry	0.794		0.004	0.035	mg/kg	B222350	S221078
2210048-70	Se(VI) F1	SE	dry	0.088		0.008	0.037	mg/kg	B222345	S221055
2210048-70	Se(VI) F2	SE	dry	0.005	J	0.004	0.037	mg/kg	B222350	S221078
2210048-70	SeCN F1	SE	dry	≤ 0.001	U	0.001	0.014	mg/kg	B222345	S221055
2210048-70	SeCN F2	SE	dry	0.273		0.002	0.014	mg/kg	B222350	S221078
2210048-70	SeMet F1	SE	dry	≤ 0.002	U	0.002	0.014	mg/kg	B222345	S221055
2210048-70	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.014	mg/kg	B222350	S221078
2210048-70	SeSO ₃ F1	SE	dry	≤ 0.008	U	0.008	0.037	mg/kg	B222345	S221055
2210048-70	SeSO ₃ F2	SE	dry	≤ 0.004	U	0.004	0.037	mg/kg	B222350	S221078
2210048-70	Unk Se Sp F1	SE	dry	≤ 0.008	U	0.008	0.035	mg/kg	B222345	S221055
2210048-70	Unk Se Sp F2	SE	dry	0.039		0.004	0.035	mg/kg	B222350	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKUT_SESeSp-4_2022-09-16_N										
2210048-71	%TS	SE	NA	52.08		0.01	0.04	%	B222355	N/A
2210048-71	DMS ₂ O F1	SE	dry	≤ 0.003	U	0.003	0.015	mg/kg	B222346	S221126
2210048-71	DMS ₂ O F2	SE	dry	0.018		0.003	0.015	mg/kg	B222351	S221078
2210048-71	MeSe(IV) F1	SE	dry	0.035		0.003	0.015	mg/kg	B222346	S221126
2210048-71	MeSe(IV) F2	SE	dry	1.06		0.003	0.015	mg/kg	B222351	S221078
2210048-71	Se	SE	dry	18.7		0.175	0.349	mg/kg	B222504	S221103
2210048-71	Se Unk A F1	SE	dry	≤ 0.003	U	0.003	0.015	mg/kg	B222346	S221126
2210048-71	Se Unk A F2	SE	dry	0.011	J	0.003	0.015	mg/kg	B222351	S221078
2210048-71	Se(F1)	SE	dry	0.995		0.033	0.147	mg/kg	B222333	S221077
2210048-71	Se(F2)	SE	dry	8.93		0.030	0.147	mg/kg	B222434	S221079
2210048-71	Se(F3)	SE	dry	4.77		0.017	0.147	mg/kg	B222498	S221103
2210048-71	Se(F4)	SE	dry	1.15		0.020	0.147	mg/kg	B222514	S221108
2210048-71	Se(F5)	SE	dry	0.179	J	0.020	0.183	mg/kg	B222533	S221119
2210048-71	Se(IV) F1	SE	dry	0.765		0.004	0.036	mg/kg	B222346	S221126
2210048-71	Se(IV) F2	SE	dry	4.89		0.004	0.036	mg/kg	B222351	S221078
2210048-71	Se(VI) F1	SE	dry	0.017	J	0.004	0.038	mg/kg	B222346	S221126
2210048-71	Se(VI) F2	SE	dry	0.021	J	0.004	0.038	mg/kg	B222351	S221078
2210048-71	SeCN F1	SE	dry	≤ 0.002	U	0.002	0.015	mg/kg	B222346	S221126
2210048-71	SeCN F2	SE	dry	1.31		0.002	0.015	mg/kg	B222351	S221078
2210048-71	SeMet F1	SE	dry	≤ 0.003	U	0.003	0.015	mg/kg	B222346	S221126
2210048-71	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.015	mg/kg	B222351	S221078
2210048-71	SeSO ₃ F1	SE	dry	≤ 0.004	U	0.004	0.038	mg/kg	B222346	S221126
2210048-71	SeSO ₃ F2	SE	dry	0.030	J	0.004	0.038	mg/kg	B222351	S221078
2210048-71	Unk Se Sp F1	SE	dry	0.032	J	0.004	0.036	mg/kg	B222346	S221126
2210048-71	Unk Se Sp F2	SE	dry	0.307		0.004	0.036	mg/kg	B222351	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKUT_SESeSp-5_2022-09-16_N										
2210048-72	%TS	SE	NA	32.00		0.02	0.05	%	B222355	N/A
2210048-72	DMS ₂ O F1	SE	dry	0.012	J	0.006	0.025	mg/kg	B222346	S221126
2210048-72	DMS ₂ O F2	SE	dry	0.012	J	0.006	0.025	mg/kg	B222351	S221078
2210048-72	MeSe(IV) F1	SE	dry	0.028		0.006	0.025	mg/kg	B222346	S221126
2210048-72	MeSe(IV) F2	SE	dry	2.24		0.006	0.025	mg/kg	B222351	S221078
2210048-72	Se	SE	dry	58.6		0.314	0.627	mg/kg	B222380	S221099
2210048-72	Se Unk A F1	SE	dry	≤ 0.006	U	0.006	0.025	mg/kg	B222346	S221126
2210048-72	Se Unk A F2	SE	dry	0.024	J	0.006	0.025	mg/kg	B222351	S221078
2210048-72	Se(F1)	SE	dry	1.26		0.056	0.250	mg/kg	B222333	S221077
2210048-72	Se(F2)	SE	dry	26.0		0.052	0.250	mg/kg	B222434	S221079
2210048-72	Se(F3)	SE	dry	16.6		0.030	0.250	mg/kg	B222498	S221103
2210048-72	Se(F4)	SE	dry	1.29		0.034	0.250	mg/kg	B222514	S221108
2210048-72	Se(F5)	SE	dry	0.250	J	0.034	0.313	mg/kg	B222533	S221119
2210048-72	Se(IV) F1	SE	dry	1.13		0.008	0.061	mg/kg	B222346	S221126
2210048-72	Se(IV) F2	SE	dry	14.9		0.008	0.061	mg/kg	B222351	S221078
2210048-72	Se(VI) F1	SE	dry	0.027	J	0.007	0.064	mg/kg	B222346	S221126
2210048-72	Se(VI) F2	SE	dry	0.068		0.007	0.064	mg/kg	B222351	S221078
2210048-72	SeCN F1	SE	dry	≤ 0.004	U	0.004	0.025	mg/kg	B222346	S221126
2210048-72	SeCN F2	SE	dry	3.52		0.004	0.025	mg/kg	B222351	S221078
2210048-72	SeMet F1	SE	dry	≤ 0.006	U	0.006	0.025	mg/kg	B222346	S221126
2210048-72	SeMet F2	SE	dry	≤ 0.006	U	0.006	0.025	mg/kg	B222351	S221078
2210048-72	SeSO ₃ F1	SE	dry	≤ 0.007	U	0.007	0.064	mg/kg	B222346	S221126
2210048-72	SeSO ₃ F2	SE	dry	0.063	J	0.007	0.064	mg/kg	B222351	S221078
2210048-72	Unk Se Sp F1	SE	dry	≤ 0.008	U	0.008	0.061	mg/kg	B222346	S221126
2210048-72	Unk Se Sp F2	SE	dry	0.668		0.008	0.061	mg/kg	B222351	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_MIDER_SESeSp-1_2022-09-12_N</i>										
2210048-73	%TS	SE	NA	15.42		0.02	0.08	%	B222355	N/A
2210048-73	DMS ₂ O F1	SE	dry	≤ 0.010	U	0.010	0.045	mg/kg	B222346	S221126
2210048-73	DMS ₂ O F2	SE	dry	≤ 0.010	U	0.010	0.045	mg/kg	B222351	S221078
2210048-73	MeSe(IV) F1	SE	dry	0.043	J	0.010	0.045	mg/kg	B222346	S221126
2210048-73	MeSe(IV) F2	SE	dry	0.642		0.010	0.045	mg/kg	B222351	S221078
2210048-73	Se	SE	dry	13.0		0.514	1.03	mg/kg	B222380	S221099
2210048-73	Se Unk A F1	SE	dry	≤ 0.010	U	0.010	0.045	mg/kg	B222346	S221126
2210048-73	Se Unk A F2	SE	dry	≤ 0.010	U	0.010	0.045	mg/kg	B222351	S221078
2210048-73	Se(F1)	SE	dry	1.79		0.101	0.450	mg/kg	B222333	S221077
2210048-73	Se(F2)	SE	dry	6.17		0.093	0.450	mg/kg	B222434	S221079
2210048-73	Se(F3)	SE	dry	1.54		0.053	0.450	mg/kg	B222498	S221103
2210048-73	Se(F4)	SE	dry	0.185	J	0.062	0.450	mg/kg	B222514	S221108
2210048-73	Se(F5)	SE	dry	0.076	J	0.062	0.563	mg/kg	B222533	S221119
2210048-73	Se(IV) F1	SE	dry	0.730		0.014	0.110	mg/kg	B222346	S221126
2210048-73	Se(IV) F2	SE	dry	2.10		0.014	0.110	mg/kg	B222351	S221078
2210048-73	Se(VI) F1	SE	dry	≤ 0.013	U	0.013	0.115	mg/kg	B222346	S221126
2210048-73	Se(VI) F2	SE	dry	≤ 0.013	U	0.013	0.115	mg/kg	B222351	S221078
2210048-73	SeCN F1	SE	dry	0.304		0.007	0.045	mg/kg	B222346	S221126
2210048-73	SeCN F2	SE	dry	1.17		0.007	0.045	mg/kg	B222351	S221078
2210048-73	SeMet F1	SE	dry	≤ 0.010	U	0.010	0.045	mg/kg	B222346	S221126
2210048-73	SeMet F2	SE	dry	≤ 0.010	U	0.010	0.045	mg/kg	B222351	S221078
2210048-73	SeSO ₃ F1	SE	dry	0.014	J	0.013	0.115	mg/kg	B222346	S221126
2210048-73	SeSO ₃ F2	SE	dry	≤ 0.013	U	0.013	0.115	mg/kg	B222351	S221078
2210048-73	Unk Se Sp F1	SE	dry	0.080	J	0.014	0.110	mg/kg	B222346	S221126
2210048-73	Unk Se Sp F2	SE	dry	0.481		0.014	0.110	mg/kg	B222351	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_MIDER_SESeSp-2_2022-09-12_N</i>										
2210048-74	%TS	SE	NA	64.95		0.006	0.02	%	B222355	N/A
2210048-74	DMS ₂ O F1	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222346	S221126
2210048-74	DMS ₂ O F2	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222351	S221078
2210048-74	MeSe(IV) F1	SE	dry	0.006	J	0.003	0.012	mg/kg	B222346	S221126
2210048-74	MeSe(IV) F2	SE	dry	0.048		0.003	0.012	mg/kg	B222351	S221078
2210048-74	Se	SE	dry	1.15		0.154	0.307	mg/kg	B222380	S221099
2210048-74	Se Unk A F1	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222346	S221126
2210048-74	Se Unk A F2	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222351	S221078
2210048-74	Se(F1)	SE	dry	0.049	J	0.027	0.118	mg/kg	B222333	S221077
2210048-74	Se(F2)	SE	dry	0.456		0.024	0.118	mg/kg	B222434	S221079
2210048-74	Se(F3)	SE	dry	0.232		0.014	0.118	mg/kg	B222498	S221103
2210048-74	Se(F4)	SE	dry	0.143		0.016	0.118	mg/kg	B222514	S221108
2210048-74	Se(F5)	SE	dry	0.082	J	0.016	0.148	mg/kg	B222533	S221119
2210048-74	Se(IV) F1	SE	dry	0.046		0.004	0.029	mg/kg	B222346	S221126
2210048-74	Se(IV) F2	SE	dry	0.180		0.004	0.029	mg/kg	B222351	S221078
2210048-74	Se(VI) F1	SE	dry	≤ 0.003	U	0.003	0.030	mg/kg	B222346	S221126
2210048-74	Se(VI) F2	SE	dry	≤ 0.003	U	0.003	0.030	mg/kg	B222351	S221078
2210048-74	SeCN F1	SE	dry	≤ 0.002	U	0.002	0.012	mg/kg	B222346	S221126
2210048-74	SeCN F2	SE	dry	0.040		0.002	0.012	mg/kg	B222351	S221078
2210048-74	SeMet F1	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222346	S221126
2210048-74	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222351	S221078
2210048-74	SeSO ₃ F1	SE	dry	≤ 0.003	U	0.003	0.030	mg/kg	B222346	S221126
2210048-74	SeSO ₃ F2	SE	dry	≤ 0.003	U	0.003	0.030	mg/kg	B222351	S221078
2210048-74	Unk Se Sp F1	SE	dry	≤ 0.004	U	0.004	0.029	mg/kg	B222346	S221126
2210048-74	Unk Se Sp F2	SE	dry	0.037		0.004	0.029	mg/kg	B222351	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_MIDER_SESeSp-3_2022-09-12_N</i>										
2210048-75	%TS	SE	NA	52.77		0.006	0.02	%	B222355	N/A
2210048-75	DMS ₂ O F1	SE	dry	≤ 0.003	U	0.003	0.014	mg/kg	B222346	S221126
2210048-75	DMS ₂ O F2	SE	dry	≤ 0.003	U	0.003	0.014	mg/kg	B222351	S221078
2210048-75	MeSe(IV) F1	SE	dry	0.034		0.003	0.014	mg/kg	B222346	S221126
2210048-75	MeSe(IV) F2	SE	dry	0.262		0.003	0.014	mg/kg	B222351	S221078
2210048-75	Se	SE	dry	5.40		0.172	0.344	mg/kg	B222380	S221099
2210048-75	Se Unk A F1	SE	dry	≤ 0.003	U	0.003	0.014	mg/kg	B222346	S221126
2210048-75	Se Unk A F2	SE	dry	≤ 0.003	U	0.003	0.014	mg/kg	B222351	S221078
2210048-75	Se(F1)	SE	dry	0.422		0.032	0.144	mg/kg	B222333	S221077
2210048-75	Se(F2)	SE	dry	1.97		0.030	0.144	mg/kg	B222434	S221079
2210048-75	Se(F3)	SE	dry	0.826		0.017	0.144	mg/kg	B222498	S221103
2210048-75	Se(F4)	SE	dry	0.171		0.020	0.144	mg/kg	B222514	S221108
2210048-75	Se(F5)	SE	dry	0.056	J	0.020	0.180	mg/kg	B222533	S221119
2210048-75	Se(IV) F1	SE	dry	0.325		0.004	0.035	mg/kg	B222346	S221126
2210048-75	Se(IV) F2	SE	dry	1.12		0.004	0.035	mg/kg	B222351	S221078
2210048-75	Se(VI) F1	SE	dry	0.008	J	0.004	0.037	mg/kg	B222346	S221126
2210048-75	Se(VI) F2	SE	dry	0.007	J	0.004	0.037	mg/kg	B222351	S221078
2210048-75	SeCN F1	SE	dry	≤ 0.002	U	0.002	0.014	mg/kg	B222346	S221126
2210048-75	SeCN F2	SE	dry	0.241		0.002	0.014	mg/kg	B222351	S221078
2210048-75	SeMet F1	SE	dry	≤ 0.003	U	0.003	0.014	mg/kg	B222346	S221126
2210048-75	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.014	mg/kg	B222351	S221078
2210048-75	SeSO ₃ F1	SE	dry	≤ 0.004	U	0.004	0.037	mg/kg	B222346	S221126
2210048-75	SeSO ₃ F2	SE	dry	≤ 0.004	U	0.004	0.037	mg/kg	B222351	S221078
2210048-75	Unk Se Sp F1	SE	dry	≤ 0.004	U	0.004	0.035	mg/kg	B222346	S221126
2210048-75	Unk Se Sp F2	SE	dry	0.169		0.004	0.035	mg/kg	B222351	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_MIDER_SESeSp-4_2022-09-12_N</i>										
2210048-76	%TS	SE	NA	47.23		0.01	0.03	%	B222355	N/A
2210048-76	DMS ₂ O F1	SE	dry	≤ 0.004	U	0.004	0.016	mg/kg	B222346	S221126
2210048-76	DMS ₂ O F2	SE	dry	≤ 0.004	U	0.004	0.016	mg/kg	B222351	S221078
2210048-76	MeSe(IV) F1	SE	dry	≤ 0.004	U	0.004	0.016	mg/kg	B222346	S221126
2210048-76	MeSe(IV) F2	SE	dry	0.096		0.004	0.016	mg/kg	B222351	S221078
2210048-76	Se	SE	dry	2.41		0.218	0.436	mg/kg	B222380	S221099
2210048-76	Se Unk A F1	SE	dry	≤ 0.004	U	0.004	0.016	mg/kg	B222346	S221126
2210048-76	Se Unk A F2	SE	dry	≤ 0.004	U	0.004	0.016	mg/kg	B222351	S221078
2210048-76	Se(F1)	SE	dry	0.081	J	0.036	0.159	mg/kg	B222333	S221077
2210048-76	Se(F2)	SE	dry	0.835		0.033	0.159	mg/kg	B222434	S221079
2210048-76	Se(F3)	SE	dry	0.472		0.019	0.159	mg/kg	B222498	S221103
2210048-76	Se(F4)	SE	dry	0.088	J	0.022	0.159	mg/kg	B222514	S221108
2210048-76	Se(F5)	SE	dry	0.043	J	0.022	0.199	mg/kg	B222533	S221119
2210048-76	Se(IV) F1	SE	dry	0.051		0.005	0.039	mg/kg	B222346	S221126
2210048-76	Se(IV) F2	SE	dry	0.298		0.005	0.039	mg/kg	B222351	S221078
2210048-76	Se(VI) F1	SE	dry	≤ 0.004	U	0.004	0.041	mg/kg	B222346	S221126
2210048-76	Se(VI) F2	SE	dry	0.005	J	0.004	0.041	mg/kg	B222351	S221078
2210048-76	SeCN F1	SE	dry	≤ 0.002	U	0.002	0.016	mg/kg	B222346	S221126
2210048-76	SeCN F2	SE	dry	0.120		0.002	0.016	mg/kg	B222351	S221078
2210048-76	SeMet F1	SE	dry	≤ 0.004	U	0.004	0.016	mg/kg	B222346	S221126
2210048-76	SeMet F2	SE	dry	≤ 0.004	U	0.004	0.016	mg/kg	B222351	S221078
2210048-76	SeSO ₃ F1	SE	dry	≤ 0.004	U	0.004	0.041	mg/kg	B222346	S221126
2210048-76	SeSO ₃ F2	SE	dry	≤ 0.004	U	0.004	0.041	mg/kg	B222351	S221078
2210048-76	Unk Se Sp F1	SE	dry	≤ 0.005	U	0.005	0.039	mg/kg	B222346	S221126
2210048-76	Unk Se Sp F2	SE	dry	0.099		0.005	0.039	mg/kg	B222351	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_MIDER_SESeSp-5_2022-09-12_N</i>										
2210048-77	%TS	SE	NA	18.50		0.03	0.09	%	B222355	N/A
2210048-77	DMS ₂ O F1	SE	dry	0.029	J	0.010	0.043	mg/kg	B222346	S221126
2210048-77	DMS ₂ O F2	SE	dry	≤ 0.010	U	0.010	0.043	mg/kg	B222351	S221078
2210048-77	MeSe(IV) F1	SE	dry	0.033	J	0.010	0.043	mg/kg	B222346	S221126
2210048-77	MeSe(IV) F2	SE	dry	0.956		0.010	0.043	mg/kg	B222351	S221078
2210048-77	Se	SE	dry	17.7		0.448	0.895	mg/kg	B222380	S221099
2210048-77	Se Unk A F1	SE	dry	≤ 0.010	U	0.010	0.043	mg/kg	B222346	S221126
2210048-77	Se Unk A F2	SE	dry	≤ 0.010	U	0.010	0.043	mg/kg	B222351	S221078
2210048-77	Se(F1)	SE	dry	1.55		0.096	0.429	mg/kg	B222333	S221077
2210048-77	Se(F2)	SE	dry	6.64		0.088	0.429	mg/kg	B222434	S221079
2210048-77	Se(F3)	SE	dry	1.89		0.051	0.429	mg/kg	B222498	S221103
2210048-77	Se(F4)	SE	dry	0.193	J	0.059	0.429	mg/kg	B222514	S221108
2210048-77	Se(F5)	SE	dry	0.169	J	0.059	0.536	mg/kg	B222533	S221119
2210048-77	Se(IV) F1	SE	dry	0.952		0.013	0.105	mg/kg	B222346	S221126
2210048-77	Se(IV) F2	SE	dry	1.93		0.013	0.105	mg/kg	B222351	S221078
2210048-77	Se(VI) F1	SE	dry	0.024	J	0.012	0.110	mg/kg	B222346	S221126
2210048-77	Se(VI) F2	SE	dry	≤ 0.012	U	0.012	0.110	mg/kg	B222351	S221078
2210048-77	SeCN F1	SE	dry	0.034	J	0.006	0.043	mg/kg	B222346	S221126
2210048-77	SeCN F2	SE	dry	1.38		0.006	0.043	mg/kg	B222351	S221078
2210048-77	SeMet F1	SE	dry	≤ 0.010	U	0.010	0.043	mg/kg	B222346	S221126
2210048-77	SeMet F2	SE	dry	≤ 0.010	U	0.010	0.043	mg/kg	B222351	S221078
2210048-77	SeSO ₃ F1	SE	dry	≤ 0.012	U	0.012	0.110	mg/kg	B222346	S221126
2210048-77	SeSO ₃ F2	SE	dry	0.017	J	0.012	0.110	mg/kg	B222351	S221078
2210048-77	Unk Se Sp F1	SE	dry	0.051	J	0.013	0.105	mg/kg	B222346	S221126
2210048-77	Unk Se Sp F2	SE	dry	0.644		0.013	0.105	mg/kg	B222351	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_LIDSL_SESeSp-1_2022-09-13_N</i>										
2210048-78	%TS	SE	NA	52.82		0.009	0.03	%	B222355	N/A
2210048-78	DMS ₂ O F1	SE	dry	≤ 0.003	U	0.003	0.014	mg/kg	B222346	S221126
2210048-78	DMS ₂ O F2	SE	dry	≤ 0.003	U	0.003	0.014	mg/kg	B222351	S221078
2210048-78	MeSe(IV) F1	SE	dry	0.004	J	0.003	0.014	mg/kg	B222346	S221126
2210048-78	MeSe(IV) F2	SE	dry	0.052		0.003	0.014	mg/kg	B222351	S221078
2210048-78	Se	SE	dry	3.28		0.175	0.350	mg/kg	B222380	S221099
2210048-78	Se Unk A F1	SE	dry	≤ 0.003	U	0.003	0.014	mg/kg	B222346	S221126
2210048-78	Se Unk A F2	SE	dry	≤ 0.003	U	0.003	0.014	mg/kg	B222351	S221078
2210048-78	Se(F1)	SE	dry	0.076	J	0.032	0.140	mg/kg	B222333	S221077
2210048-78	Se(F2)	SE	dry	0.680		0.029	0.140	mg/kg	B222434	S221079
2210048-78	Se(F3)	SE	dry	0.958		0.017	0.140	mg/kg	B222498	S221103
2210048-78	Se(F4)	SE	dry	0.146		0.019	0.140	mg/kg	B222514	S221108
2210048-78	Se(F5)	SE	dry	0.043	J	0.019	0.176	mg/kg	B222533	S221119
2210048-78	Se(IV) F1	SE	dry	0.073		0.004	0.034	mg/kg	B222346	S221126
2210048-78	Se(IV) F2	SE	dry	0.275		0.004	0.034	mg/kg	B222351	S221078
2210048-78	Se(VI) F1	SE	dry	0.005	J	0.004	0.036	mg/kg	B222346	S221126
2210048-78	Se(VI) F2	SE	dry	≤ 0.004	U	0.004	0.036	mg/kg	B222351	S221078
2210048-78	SeCN F1	SE	dry	≤ 0.002	U	0.002	0.014	mg/kg	B222346	S221126
2210048-78	SeCN F2	SE	dry	0.121		0.002	0.014	mg/kg	B222351	S221078
2210048-78	SeMet F1	SE	dry	≤ 0.003	U	0.003	0.014	mg/kg	B222346	S221126
2210048-78	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.014	mg/kg	B222351	S221078
2210048-78	SeSO ₃ F1	SE	dry	≤ 0.004	U	0.004	0.036	mg/kg	B222346	S221126
2210048-78	SeSO ₃ F2	SE	dry	≤ 0.004	U	0.004	0.036	mg/kg	B222351	S221078
2210048-78	Unk Se Sp F1	SE	dry	≤ 0.004	U	0.004	0.034	mg/kg	B222346	S221126
2210048-78	Unk Se Sp F2	SE	dry	0.026	J	0.004	0.034	mg/kg	B222351	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_LIDSL_SESeSp-2_2022-09-13_N										
2210048-79	%TS	SE	NA	51.87		0.008	0.03	%	B222355	N/A
2210048-79	DMS ₂ O F1	SE	dry	≤ 0.004	U	0.004	0.015	mg/kg	B222346	S221126
2210048-79	DMS ₂ O F2	SE	dry	≤ 0.004	U	0.004	0.015	mg/kg	B222351	S221078
2210048-79	MeSe(IV) F1	SE	dry	≤ 0.004	U	0.004	0.015	mg/kg	B222346	S221126
2210048-79	MeSe(IV) F2	SE	dry	0.201		0.004	0.015	mg/kg	B222351	S221078
2210048-79	Se	SE	dry	8.37		0.199	0.398	mg/kg	B222380	S221099
2210048-79	Se Unk A F1	SE	dry	≤ 0.004	U	0.004	0.015	mg/kg	B222346	S221126
2210048-79	Se Unk A F2	SE	dry	≤ 0.004	U	0.004	0.015	mg/kg	B222351	S221078
2210048-79	Se(F1)	SE	dry	0.179		0.034	0.151	mg/kg	B222333	S221077
2210048-79	Se(F2)	SE	dry	1.43		0.031	0.151	mg/kg	B222434	S221079
2210048-79	Se(F3)	SE	dry	1.69		0.018	0.151	mg/kg	B222498	S221103
2210048-79	Se(F4)	SE	dry	0.170		0.021	0.151	mg/kg	B222514	S221108
2210048-79	Se(F5)	SE	dry	0.055	J	0.021	0.189	mg/kg	B222533	S221119
2210048-79	Se(IV) F1	SE	dry	0.173		0.005	0.037	mg/kg	B222346	S221126
2210048-79	Se(IV) F2	SE	dry	0.522		0.005	0.037	mg/kg	B222351	S221078
2210048-79	Se(VI) F1	SE	dry	≤ 0.004	U	0.004	0.039	mg/kg	B222346	S221126
2210048-79	Se(VI) F2	SE	dry	≤ 0.004	U	0.004	0.039	mg/kg	B222351	S221078
2210048-79	SeCN F1	SE	dry	≤ 0.002	U	0.002	0.015	mg/kg	B222346	S221126
2210048-79	SeCN F2	SE	dry	0.208		0.002	0.015	mg/kg	B222351	S221078
2210048-79	SeMet F1	SE	dry	≤ 0.004	U	0.004	0.015	mg/kg	B222346	S221126
2210048-79	SeMet F2	SE	dry	≤ 0.004	U	0.004	0.015	mg/kg	B222351	S221078
2210048-79	SeSO ₃ F1	SE	dry	≤ 0.004	U	0.004	0.039	mg/kg	B222346	S221126
2210048-79	SeSO ₃ F2	SE	dry	≤ 0.004	U	0.004	0.039	mg/kg	B222351	S221078
2210048-79	Unk Se Sp F1	SE	dry	≤ 0.005	U	0.005	0.037	mg/kg	B222346	S221126
2210048-79	Unk Se Sp F2	SE	dry	0.063		0.005	0.037	mg/kg	B222351	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_LIDSL_SESeSp-3_2022-09-14_N										
2210048-80	%TS	SE	NA	36.01		0.01	0.05	%	B222355	N/A
2210048-80	DMS ₂ O F1	SE	dry	≤ 0.005	U	0.005	0.022	mg/kg	B222346	S221126
2210048-80	DMS ₂ O F2	SE	dry	0.013	J	0.005	0.022	mg/kg	B222351	S221078
2210048-80	MeSe(IV) F1	SE	dry	0.007	J	0.005	0.022	mg/kg	B222346	S221126
2210048-80	MeSe(IV) F2	SE	dry	0.300	M	0.005	0.022	mg/kg	B222351	S221078
2210048-80	Se	SE	dry	7.06		0.279	0.559	mg/kg	B222380	S221099
2210048-80	Se Unk A F1	SE	dry	≤ 0.005	U	0.005	0.022	mg/kg	B222346	S221126
2210048-80	Se Unk A F2	SE	dry	≤ 0.005	U	0.005	0.022	mg/kg	B222351	S221078
2210048-80	Se(F1)	SE	dry	0.089	J	0.050	0.224	mg/kg	B222333	S221077
2210048-80	Se(F2)	SE	dry	1.75	M	0.046	0.224	mg/kg	B222434	S221079
2210048-80	Se(F3)	SE	dry	2.66		0.027	0.224	mg/kg	B222498	S221103
2210048-80	Se(F4)	SE	dry	0.196	J	0.031	0.224	mg/kg	B222514	S221108
2210048-80	Se(F5)	SE	dry	0.044	J	0.031	0.280	mg/kg	B222533	S221119
2210048-80	Se(IV) F1	SE	dry	0.063		0.007	0.055	mg/kg	B222346	S221126
2210048-80	Se(IV) F2	SE	dry	0.535		0.007	0.055	mg/kg	B222351	S221078
2210048-80	Se(VI) F1	SE	dry	0.019	J	0.006	0.057	mg/kg	B222346	S221126
2210048-80	Se(VI) F2	SE	dry	≤ 0.006	U	0.006	0.057	mg/kg	B222351	S221078
2210048-80	SeCN F1	SE	dry	≤ 0.003	U	0.003	0.022	mg/kg	B222346	S221126
2210048-80	SeCN F2	SE	dry	0.291		0.003	0.022	mg/kg	B222351	S221078
2210048-80	SeMet F1	SE	dry	≤ 0.005	U	0.005	0.022	mg/kg	B222346	S221126
2210048-80	SeMet F2	SE	dry	≤ 0.005	U	0.005	0.022	mg/kg	B222351	S221078
2210048-80	SeSO ₃ F1	SE	dry	≤ 0.006	U	0.006	0.057	mg/kg	B222346	S221126
2210048-80	SeSO ₃ F2	SE	dry	≤ 0.006	U	0.006	0.057	mg/kg	B222351	S221078
2210048-80	Unk Se Sp F1	SE	dry	≤ 0.007	U	0.007	0.055	mg/kg	B222346	S221126
2210048-80	Unk Se Sp F2	SE	dry	0.091		0.007	0.055	mg/kg	B222351	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_LIDSL_SESeSp-4_2022-09-14_N</i>										
2210048-81	%TS	SE	NA	44.75		0.01	0.04	%	B222355	N/A
2210048-81	DMSeO F1	SE	dry	≤ 0.004	U	0.004	0.018	mg/kg	B222346	S221126
2210048-81	DMSeO F2	SE	dry	≤ 0.004	U	0.004	0.018	mg/kg	B222351	S221078
2210048-81	MeSe(IV) F1	SE	dry	0.006	J	0.004	0.018	mg/kg	B222346	S221126
2210048-81	MeSe(IV) F2	SE	dry	0.191		0.004	0.018	mg/kg	B222351	S221078
2210048-81	Se	SE	dry	5.38		0.203	0.406	mg/kg	B222380	S221099
2210048-81	Se Unk A F1	SE	dry	≤ 0.004	U	0.004	0.018	mg/kg	B222346	S221126
2210048-81	Se Unk A F2	SE	dry	≤ 0.004	U	0.004	0.018	mg/kg	B222351	S221078
2210048-81	Se(F1)	SE	dry	0.090	J	0.040	0.177	mg/kg	B222333	S221077
2210048-81	Se(F2)	SE	dry	1.05		0.036	0.177	mg/kg	B222434	S221079
2210048-81	Se(F3)	SE	dry	1.73		0.021	0.177	mg/kg	B222498	S221103
2210048-81	Se(F4)	SE	dry	0.228		0.024	0.177	mg/kg	B222514	S221108
2210048-81	Se(F5)	SE	dry	0.095	J	0.024	0.221	mg/kg	B222533	S221119
2210048-81	Se(IV) F1	SE	dry	0.074		0.005	0.043	mg/kg	B222346	S221126
2210048-81	Se(IV) F2	SE	dry	0.390		0.005	0.043	mg/kg	B222351	S221078
2210048-81	Se(VI) F1	SE	dry	0.006	J	0.005	0.045	mg/kg	B222346	S221126
2210048-81	Se(VI) F2	SE	dry	≤ 0.005	U	0.005	0.045	mg/kg	B222351	S221078
2210048-81	SeCN F1	SE	dry	≤ 0.003	U	0.003	0.018	mg/kg	B222346	S221126
2210048-81	SeCN F2	SE	dry	0.169		0.003	0.018	mg/kg	B222351	S221078
2210048-81	SeMet F1	SE	dry	≤ 0.004	U	0.004	0.018	mg/kg	B222346	S221126
2210048-81	SeMet F2	SE	dry	≤ 0.004	U	0.004	0.018	mg/kg	B222351	S221078
2210048-81	SeSO3 F1	SE	dry	≤ 0.005	U	0.005	0.045	mg/kg	B222346	S221126
2210048-81	SeSO3 F2	SE	dry	≤ 0.005	U	0.005	0.045	mg/kg	B222351	S221078
2210048-81	Unk Se Sp F1	SE	dry	≤ 0.005	U	0.005	0.043	mg/kg	B222346	S221126
2210048-81	Unk Se Sp F2	SE	dry	0.056		0.005	0.043	mg/kg	B222351	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_LIDSL_SESeSp-5_2022-09-14_N</i>										
2210048-82	%TS	SE	NA	33.12		0.01	0.04	%	B222355	N/A
2210048-82	DMS ₂ O F1	SE	dry	≤ 0.005	U	0.005	0.024	mg/kg	B222346	S221126
2210048-82	DMS ₂ O F2	SE	dry	≤ 0.005	U	0.005	0.024	mg/kg	B222351	S221078
2210048-82	MeSe(IV) F1	SE	dry	0.009	J	0.005	0.024	mg/kg	B222346	S221126
2210048-82	MeSe(IV) F2	SE	dry	0.168		0.005	0.024	mg/kg	B222351	S221078
2210048-82	Se	SE	dry	6.43		0.271	0.542	mg/kg	B222380	S221099
2210048-82	Se Unk A F1	SE	dry	≤ 0.005	U	0.005	0.024	mg/kg	B222346	S221126
2210048-82	Se Unk A F2	SE	dry	≤ 0.005	U	0.005	0.024	mg/kg	B222351	S221078
2210048-82	Se(F1)	SE	dry	0.196	J	0.053	0.238	mg/kg	B222333	S221077
2210048-82	Se(F2)	SE	dry	1.81		0.049	0.238	mg/kg	B222434	S221079
2210048-82	Se(F3)	SE	dry	1.75		0.028	0.238	mg/kg	B222498	S221103
2210048-82	Se(F4)	SE	dry	0.125	J	0.033	0.238	mg/kg	B222514	S221108
2210048-82	Se(F5)	SE	dry	≤ 0.033	U	0.033	0.297	mg/kg	B222533	S221119
2210048-82	Se(IV) F1	SE	dry	0.160		0.007	0.058	mg/kg	B222346	S221126
2210048-82	Se(IV) F2	SE	dry	0.706		0.007	0.058	mg/kg	B222351	S221078
2210048-82	Se(VI) F1	SE	dry	≤ 0.007	U	0.007	0.061	mg/kg	B222346	S221126
2210048-82	Se(VI) F2	SE	dry	≤ 0.007	U	0.007	0.061	mg/kg	B222351	S221078
2210048-82	SeCN F1	SE	dry	≤ 0.004	U	0.004	0.024	mg/kg	B222346	S221126
2210048-82	SeCN F2	SE	dry	0.319		0.004	0.024	mg/kg	B222351	S221078
2210048-82	SeMet F1	SE	dry	≤ 0.005	U	0.005	0.024	mg/kg	B222346	S221126
2210048-82	SeMet F2	SE	dry	≤ 0.005	U	0.005	0.024	mg/kg	B222351	S221078
2210048-82	SeSO ₃ F1	SE	dry	≤ 0.007	U	0.007	0.061	mg/kg	B222346	S221126
2210048-82	SeSO ₃ F2	SE	dry	≤ 0.007	U	0.007	0.061	mg/kg	B222351	S221078
2210048-82	Unk Se Sp F1	SE	dry	≤ 0.007	U	0.007	0.058	mg/kg	B222346	S221126
2210048-82	Unk Se Sp F2	SE	dry	0.072		0.007	0.058	mg/kg	B222351	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_LILC3_SESeSp-1_2022-09-12_N</i>										
2210048-83	%TS	SE	NA	20.17		0.03	0.09	%	B222355	N/A
2210048-83	DMS ₂ O F1	SE	dry	≤ 0.009	U	0.009	0.039	mg/kg	B222346	S221126
2210048-83	DMS ₂ O F2	SE	dry	≤ 0.009	U	0.009	0.039	mg/kg	B222351	S221078
2210048-83	MeSe(IV) F1	SE	dry	0.013	J	0.009	0.039	mg/kg	B222346	S221126
2210048-83	MeSe(IV) F2	SE	dry	0.198		0.009	0.039	mg/kg	B222351	S221078
2210048-83	Se	SE	dry	6.75		0.472	0.944	mg/kg	B222380	S221099
2210048-83	Se Unk A F1	SE	dry	≤ 0.009	U	0.009	0.039	mg/kg	B222346	S221126
2210048-83	Se Unk A F2	SE	dry	≤ 0.009	U	0.009	0.039	mg/kg	B222351	S221078
2210048-83	Se(F1)	SE	dry	0.549		0.087	0.386	mg/kg	B222333	S221077
2210048-83	Se(F2)	SE	dry	3.22		0.080	0.386	mg/kg	B222434	S221079
2210048-83	Se(F3)	SE	dry	3.40		0.046	0.386	mg/kg	B222498	S221103
2210048-83	Se(F4)	SE	dry	≤ 0.053	U	0.053	0.386	mg/kg	B222514	S221108
2210048-83	Se(F5)	SE	dry	≤ 0.053	U	0.053	0.482	mg/kg	B222533	S221119
2210048-83	Se(IV) F1	SE	dry	0.276		0.012	0.094	mg/kg	B222346	S221126
2210048-83	Se(IV) F2	SE	dry	1.70		0.012	0.094	mg/kg	B222351	S221078
2210048-83	Se(VI) F1	SE	dry	≤ 0.011	U	0.011	0.099	mg/kg	B222346	S221126
2210048-83	Se(VI) F2	SE	dry	≤ 0.011	U	0.011	0.099	mg/kg	B222351	S221078
2210048-83	SeCN F1	SE	dry	≤ 0.006	U	0.006	0.039	mg/kg	B222346	S221126
2210048-83	SeCN F2	SE	dry	0.732		0.006	0.039	mg/kg	B222351	S221078
2210048-83	SeMet F1	SE	dry	≤ 0.009	U	0.009	0.039	mg/kg	B222346	S221126
2210048-83	SeMet F2	SE	dry	≤ 0.009	U	0.009	0.039	mg/kg	B222351	S221078
2210048-83	SeSO ₃ F1	SE	dry	≤ 0.011	U	0.011	0.099	mg/kg	B222346	S221126
2210048-83	SeSO ₃ F2	SE	dry	≤ 0.011	U	0.011	0.099	mg/kg	B222351	S221078
2210048-83	Unk Se Sp F1	SE	dry	0.092	J	0.012	0.094	mg/kg	B222346	S221126
2210048-83	Unk Se Sp F2	SE	dry	0.109		0.012	0.094	mg/kg	B222351	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_LILC3_SESeSp-2_2022-09-12_N</i>										
2210048-84	%TS	SE	NA	18.32		0.03	0.10	%	B222355	N/A
2210048-84	DMS ₂ O F1	SE	dry	≤ 0.010	U	0.010	0.042	mg/kg	B222346	S221126
2210048-84	DMS ₂ O F2	SE	dry	≤ 0.010	U	0.010	0.042	mg/kg	B222351	S221078
2210048-84	MeSe(IV) F1	SE	dry	0.027	J	0.010	0.042	mg/kg	B222346	S221126
2210048-84	MeSe(IV) F2	SE	dry	0.447		0.010	0.042	mg/kg	B222351	S221078
2210048-84	Se	SE	dry	22.1		0.564	1.13	mg/kg	B222380	S221099
2210048-84	Se Unk A F1	SE	dry	≤ 0.010	U	0.010	0.042	mg/kg	B222346	S221126
2210048-84	Se Unk A F2	SE	dry	≤ 0.010	U	0.010	0.042	mg/kg	B222351	S221078
2210048-84	Se(F1)	SE	dry	1.20		0.095	0.424	mg/kg	B222333	S221077
2210048-84	Se(F2)	SE	dry	5.70		0.087	0.424	mg/kg	B222434	S221079
2210048-84	Se(F3)	SE	dry	6.04		0.050	0.424	mg/kg	B222498	S221103
2210048-84	Se(F4)	SE	dry	0.149	J	0.058	0.424	mg/kg	B222514	S221108
2210048-84	Se(F5)	SE	dry	≤ 0.058	U	0.058	0.530	mg/kg	B222533	S221119
2210048-84	Se(IV) F1	SE	dry	0.921		0.013	0.103	mg/kg	B222346	S221126
2210048-84	Se(IV) F2	SE	dry	3.44		0.013	0.103	mg/kg	B222351	S221078
2210048-84	Se(VI) F1	SE	dry	≤ 0.012	U	0.012	0.109	mg/kg	B222346	S221126
2210048-84	Se(VI) F2	SE	dry	0.018	J	0.012	0.109	mg/kg	B222351	S221078
2210048-84	SeCN F1	SE	dry	≤ 0.006	U	0.006	0.042	mg/kg	B222346	S221126
2210048-84	SeCN F2	SE	dry	1.23		0.006	0.042	mg/kg	B222351	S221078
2210048-84	SeMet F1	SE	dry	≤ 0.010	U	0.010	0.042	mg/kg	B222346	S221126
2210048-84	SeMet F2	SE	dry	≤ 0.010	U	0.010	0.042	mg/kg	B222351	S221078
2210048-84	SeSO ₃ F1	SE	dry	≤ 0.012	U	0.012	0.109	mg/kg	B222346	S221126
2210048-84	SeSO ₃ F2	SE	dry	≤ 0.012	U	0.012	0.109	mg/kg	B222351	S221078
2210048-84	Unk Se Sp F1	SE	dry	0.065	J	0.013	0.103	mg/kg	B222346	S221126
2210048-84	Unk Se Sp F2	SE	dry	0.207		0.013	0.103	mg/kg	B222351	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_LILC3_SESeSp-3_2022-09-12_N</i>										
2210048-85	%TS	SE	NA	14.68		0.03	0.10	%	B222355	N/A
2210048-85	DMS ₂ O F1	SE	dry	≤ 0.012	U	0.012	0.053	mg/kg	B222346	S221126
2210048-85	DMS ₂ O F2	SE	dry	≤ 0.012	U	0.012	0.053	mg/kg	B222351	S221078
2210048-85	MeSe(IV) F1	SE	dry	0.021	J	0.012	0.053	mg/kg	B222346	S221126
2210048-85	MeSe(IV) F2	SE	dry	0.112		0.012	0.053	mg/kg	B222351	S221078
2210048-85	Se	SE	dry	14.7		0.768	1.54	mg/kg	B222380	S221099
2210048-85	Se Unk A F1	SE	dry	≤ 0.012	U	0.012	0.053	mg/kg	B222346	S221126
2210048-85	Se Unk A F2	SE	dry	≤ 0.012	U	0.012	0.053	mg/kg	B222351	S221078
2210048-85	Se(F1)	SE	dry	0.740		0.119	0.528	mg/kg	B222333	S221077
2210048-85	Se(F2)	SE	dry	2.23		0.109	0.528	mg/kg	B222434	S221079
2210048-85	Se(F3)	SE	dry	3.36		0.063	0.528	mg/kg	B222498	S221103
2210048-85	Se(F4)	SE	dry	0.122	J	0.073	0.528	mg/kg	B222514	S221108
2210048-85	Se(F5)	SE	dry	≤ 0.073	U	0.073	0.660	mg/kg	B222533	S221119
2210048-85	Se(IV) F1	SE	dry	0.167		0.016	0.129	mg/kg	B222346	S221126
2210048-85	Se(IV) F2	SE	dry	1.10		0.016	0.129	mg/kg	B222351	S221078
2210048-85	Se(VI) F1	SE	dry	0.164		0.015	0.135	mg/kg	B222346	S221126
2210048-85	Se(VI) F2	SE	dry	≤ 0.015	U	0.015	0.135	mg/kg	B222351	S221078
2210048-85	SeCN F1	SE	dry	≤ 0.008	U	0.008	0.053	mg/kg	B222346	S221126
2210048-85	SeCN F2	SE	dry	0.607		0.008	0.053	mg/kg	B222351	S221078
2210048-85	SeMet F1	SE	dry	≤ 0.012	U	0.012	0.053	mg/kg	B222346	S221126
2210048-85	SeMet F2	SE	dry	≤ 0.012	U	0.012	0.053	mg/kg	B222351	S221078
2210048-85	SeSO ₃ F1	SE	dry	≤ 0.015	U	0.015	0.135	mg/kg	B222346	S221126
2210048-85	SeSO ₃ F2	SE	dry	≤ 0.015	U	0.015	0.135	mg/kg	B222351	S221078
2210048-85	Unk Se Sp F1	SE	dry	0.071	J	0.016	0.129	mg/kg	B222346	S221126
2210048-85	Unk Se Sp F2	SE	dry	0.077	J	0.016	0.129	mg/kg	B222351	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_LILC3_SESeSp-4_2022-09-12_N										
2210048-86	%TS	SE	NA	22.97		0.02	0.07	%	B222355	N/A
2210048-86	DMS ₂ O F1	SE	dry	≤ 0.008	U	0.008	0.034	mg/kg	B222346	S221126
2210048-86	DMS ₂ O F2	SE	dry	≤ 0.008	U	0.008	0.034	mg/kg	B222351	S221078
2210048-86	MeSe(IV) F1	SE	dry	0.014	J	0.008	0.034	mg/kg	B222346	S221126
2210048-86	MeSe(IV) F2	SE	dry	0.279		0.008	0.034	mg/kg	B222351	S221078
2210048-86	Se	SE	dry	11.3		0.367	0.733	mg/kg	B222380	S221099
2210048-86	Se Unk A F1	SE	dry	≤ 0.008	U	0.008	0.034	mg/kg	B222346	S221126
2210048-86	Se Unk A F2	SE	dry	≤ 0.008	U	0.008	0.034	mg/kg	B222351	S221078
2210048-86	Se(F1)	SE	dry	0.464		0.076	0.338	mg/kg	B222333	S221077
2210048-86	Se(F2)	SE	dry	3.79		0.070	0.338	mg/kg	B222434	S221079
2210048-86	Se(F3)	SE	dry	4.00		0.040	0.338	mg/kg	B222498	S221103
2210048-86	Se(F4)	SE	dry	0.131	J	0.046	0.338	mg/kg	B222514	S221108
2210048-86	Se(F5)	SE	dry	≤ 0.046	U	0.046	0.422	mg/kg	B222533	S221119
2210048-86	Se(IV) F1	SE	dry	0.330		0.010	0.082	mg/kg	B222346	S221126
2210048-86	Se(IV) F2	SE	dry	1.76		0.010	0.082	mg/kg	B222351	S221078
2210048-86	Se(VI) F1	SE	dry	≤ 0.010	U	0.010	0.087	mg/kg	B222346	S221126
2210048-86	Se(VI) F2	SE	dry	≤ 0.010	U	0.010	0.087	mg/kg	B222351	S221078
2210048-86	SeCN F1	SE	dry	≤ 0.005	U	0.005	0.034	mg/kg	B222346	S221126
2210048-86	SeCN F2	SE	dry	0.658		0.005	0.034	mg/kg	B222351	S221078
2210048-86	SeMet F1	SE	dry	≤ 0.008	U	0.008	0.034	mg/kg	B222346	S221126
2210048-86	SeMet F2	SE	dry	≤ 0.008	U	0.008	0.034	mg/kg	B222351	S221078
2210048-86	SeSO ₃ F1	SE	dry	≤ 0.010	U	0.010	0.087	mg/kg	B222346	S221126
2210048-86	SeSO ₃ F2	SE	dry	≤ 0.010	U	0.010	0.087	mg/kg	B222351	S221078
2210048-86	Unk Se Sp F1	SE	dry	0.028	J	0.010	0.082	mg/kg	B222346	S221126
2210048-86	Unk Se Sp F2	SE	dry	0.143		0.010	0.082	mg/kg	B222351	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_LILC3_SESeSp-5_2022-09-12_N										
2210048-87	%TS	SE	NA	25.77		0.02	0.06	%	B222355	N/A
2210048-87	DMS ₂ O F1	SE	dry	≤ 0.006	U	0.006	0.028	mg/kg	B222346	S221126
2210048-87	DMS ₂ O F2	SE	dry	≤ 0.006	U	0.006	0.028	mg/kg	B222351	S221078
2210048-87	MeSe(IV) F1	SE	dry	0.011	J	0.006	0.028	mg/kg	B222346	S221126
2210048-87	MeSe(IV) F2	SE	dry	0.269		0.006	0.028	mg/kg	B222351	S221078
2210048-87	Se	SE	dry	11.7		0.384	0.767	mg/kg	B222380	S221099
2210048-87	Se Unk A F1	SE	dry	≤ 0.006	U	0.006	0.028	mg/kg	B222346	S221126
2210048-87	Se Unk A F2	SE	dry	0.012	J	0.006	0.028	mg/kg	B222351	S221078
2210048-87	Se(F1)	SE	dry	0.519		0.062	0.276	mg/kg	B222333	S221077
2210048-87	Se(F2)	SE	dry	3.27		0.057	0.276	mg/kg	B222434	S221079
2210048-87	Se(F3)	SE	dry	4.34		0.033	0.276	mg/kg	B222498	S221103
2210048-87	Se(F4)	SE	dry	0.163	J	0.038	0.276	mg/kg	B222514	S221108
2210048-87	Se(F5)	SE	dry	0.045	J	0.038	0.345	mg/kg	B222533	S221119
2210048-87	Se(IV) F1	SE	dry	0.325		0.008	0.067	mg/kg	B222346	S221126
2210048-87	Se(IV) F2	SE	dry	1.57		0.008	0.067	mg/kg	B222351	S221078
2210048-87	Se(VI) F1	SE	dry	≤ 0.008	U	0.008	0.071	mg/kg	B222346	S221126
2210048-87	Se(VI) F2	SE	dry	0.009	J	0.008	0.071	mg/kg	B222351	S221078
2210048-87	SeCN F1	SE	dry	≤ 0.004	U	0.004	0.028	mg/kg	B222346	S221126
2210048-87	SeCN F2	SE	dry	0.697		0.004	0.028	mg/kg	B222351	S221078
2210048-87	SeMet F1	SE	dry	≤ 0.006	U	0.006	0.028	mg/kg	B222346	S221126
2210048-87	SeMet F2	SE	dry	≤ 0.006	U	0.006	0.028	mg/kg	B222351	S221078
2210048-87	SeSO ₃ F1	SE	dry	≤ 0.008	U	0.008	0.071	mg/kg	B222346	S221126
2210048-87	SeSO ₃ F2	SE	dry	0.009	J	0.008	0.071	mg/kg	B222351	S221078
2210048-87	Unk Se Sp F1	SE	dry	0.038	J	0.008	0.067	mg/kg	B222346	S221126
2210048-87	Unk Se Sp F2	SE	dry	0.148		0.008	0.067	mg/kg	B222351	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKDT_SESeSp-1_2022-09-19_N</i>										
2210048-88	%TS	SE	NA	36.20		0.02	0.05	%	B222355	N/A
2210048-88	DMS ₂ O F1	SE	dry	0.030		0.005	0.021	mg/kg	B222346	S221126
2210048-88	DMS ₂ O F2	SE	dry	0.010	J	0.005	0.021	mg/kg	B222351	S221078
2210048-88	MeSe(IV) F1	SE	dry	0.015	J	0.005	0.021	mg/kg	B222346	S221126
2210048-88	MeSe(IV) F2	SE	dry	0.790		0.005	0.021	mg/kg	B222351	S221078
2210048-88	Se	SE	dry	32.0		0.290	0.581	mg/kg	B222380	S221099
2210048-88	Se Unk A F1	SE	dry	≤ 0.005	U	0.005	0.021	mg/kg	B222346	S221126
2210048-88	Se Unk A F2	SE	dry	0.021	J	0.005	0.021	mg/kg	B222351	S221078
2210048-88	Se(F1)	SE	dry	1.18		0.048	0.213	mg/kg	B222333	S221077
2210048-88	Se(F2)	SE	dry	11.0		0.044	0.213	mg/kg	B222434	S221079
2210048-88	Se(F3)	SE	dry	8.72		0.025	0.213	mg/kg	B222498	S221103
2210048-88	Se(F4)	SE	dry	0.653		0.029	0.213	mg/kg	B222514	S221108
2210048-88	Se(F5)	SE	dry	0.118	J	0.029	0.266	mg/kg	B222533	S221119
2210048-88	Se(IV) F1	SE	dry	1.05		0.006	0.052	mg/kg	B222346	S221126
2210048-88	Se(IV) F2	SE	dry	8.62		0.006	0.052	mg/kg	B222351	S221078
2210048-88	Se(VI) F1	SE	dry	0.008	J	0.006	0.055	mg/kg	B222346	S221126
2210048-88	Se(VI) F2	SE	dry	0.027	J	0.006	0.055	mg/kg	B222351	S221078
2210048-88	SeCN F1	SE	dry	≤ 0.003	U	0.003	0.021	mg/kg	B222346	S221126
2210048-88	SeCN F2	SE	dry	1.52		0.003	0.021	mg/kg	B222351	S221078
2210048-88	SeMet F1	SE	dry	≤ 0.005	U	0.005	0.021	mg/kg	B222346	S221126
2210048-88	SeMet F2	SE	dry	≤ 0.005	U	0.005	0.021	mg/kg	B222351	S221078
2210048-88	SeSO ₃ F1	SE	dry	≤ 0.006	U	0.006	0.055	mg/kg	B222346	S221126
2210048-88	SeSO ₃ F2	SE	dry	0.010	J	0.006	0.055	mg/kg	B222351	S221078
2210048-88	Unk Se Sp F1	SE	dry	≤ 0.006	U	0.006	0.052	mg/kg	B222346	S221126
2210048-88	Unk Se Sp F2	SE	dry	0.317		0.006	0.052	mg/kg	B222351	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKDT_SESeSp-2_2022-09-19_N										
2210048-89	%TS	SE	NA	30.45		0.02	0.06	%	B222355	N/A
2210048-89	DMS ₂ O F1	SE	dry	0.010	J	0.006	0.025	mg/kg	B222346	S221126
2210048-89	DMS ₂ O F2	SE	dry	0.015	J	0.006	0.025	mg/kg	B222351	S221078
2210048-89	MeSe(IV) F1	SE	dry	0.022	J	0.006	0.025	mg/kg	B222346	S221126
2210048-89	MeSe(IV) F2	SE	dry	1.14		0.006	0.025	mg/kg	B222351	S221078
2210048-89	Se	SE	dry	31.7		0.295	0.590	mg/kg	B222380	S221099
2210048-89	Se Unk A F1	SE	dry	≤ 0.006	U	0.006	0.025	mg/kg	B222346	S221126
2210048-89	Se Unk A F2	SE	dry	0.017	J	0.006	0.025	mg/kg	B222351	S221078
2210048-89	Se(F1)	SE	dry	1.78		0.057	0.252	mg/kg	B222333	S221077
2210048-89	Se(F2)	SE	dry	11.9		0.052	0.252	mg/kg	B222434	S221079
2210048-89	Se(F3)	SE	dry	9.51		0.030	0.252	mg/kg	B222498	S221103
2210048-89	Se(F4)	SE	dry	0.416		0.035	0.252	mg/kg	B222514	S221108
2210048-89	Se(F5)	SE	dry	0.079	J	0.035	0.315	mg/kg	B222533	S221119
2210048-89	Se(IV) F1	SE	dry	1.54		0.008	0.062	mg/kg	B222346	S221126
2210048-89	Se(IV) F2	SE	dry	7.59		0.008	0.062	mg/kg	B222351	S221078
2210048-89	Se(VI) F1	SE	dry	0.009	J	0.007	0.065	mg/kg	B222346	S221126
2210048-89	Se(VI) F2	SE	dry	0.022	J	0.007	0.065	mg/kg	B222351	S221078
2210048-89	SeCN F1	SE	dry	≤ 0.004	U	0.004	0.025	mg/kg	B222346	S221126
2210048-89	SeCN F2	SE	dry	1.93		0.004	0.025	mg/kg	B222351	S221078
2210048-89	SeMet F1	SE	dry	≤ 0.006	U	0.006	0.025	mg/kg	B222346	S221126
2210048-89	SeMet F2	SE	dry	≤ 0.006	U	0.006	0.025	mg/kg	B222351	S221078
2210048-89	SeSO ₃ F1	SE	dry	≤ 0.007	U	0.007	0.065	mg/kg	B222346	S221126
2210048-89	SeSO ₃ F2	SE	dry	0.028	J	0.007	0.065	mg/kg	B222351	S221078
2210048-89	Unk Se Sp F1	SE	dry	≤ 0.008	U	0.008	0.062	mg/kg	B222346	S221126
2210048-89	Unk Se Sp F2	SE	dry	0.472		0.008	0.062	mg/kg	B222351	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKDT_SESeSp-3_2022-09-19_N</i>										
2210048-90	%TS	SE	NA	43.43		0.01	0.04	%	B222355	N/A
2210048-90	DMS ₂ O F1	SE	dry	0.015	J	0.004	0.018	mg/kg	B222346	S221126
2210048-90	DMS ₂ O F2	SE	dry	0.008	J	0.004	0.018	mg/kg	B222351	S221078
2210048-90	MeSe(IV) F1	SE	dry	0.014	J	0.004	0.018	mg/kg	B222346	S221126
2210048-90	MeSe(IV) F2	SE	dry	0.847		0.004	0.018	mg/kg	B222351	S221078
2210048-90	Se	SE	dry	23.1		0.221	0.441	mg/kg	B222380	S221099
2210048-90	Se Unk A F1	SE	dry	≤ 0.004	U	0.004	0.018	mg/kg	B222346	S221126
2210048-90	Se Unk A F2	SE	dry	0.013	J	0.004	0.018	mg/kg	B222351	S221078
2210048-90	Se(F1)	SE	dry	0.826		0.040	0.179	mg/kg	B222333	S221077
2210048-90	Se(F2)	SE	dry	7.56		0.037	0.179	mg/kg	B222434	S221079
2210048-90	Se(F3)	SE	dry	6.43		0.021	0.179	mg/kg	B222498	S221103
2210048-90	Se(F4)	SE	dry	0.530		0.025	0.179	mg/kg	B222514	S221108
2210048-90	Se(F5)	SE	dry	0.081	J	0.025	0.224	mg/kg	B222533	S221119
2210048-90	Se(IV) F1	SE	dry	0.724		0.005	0.044	mg/kg	B222346	S221126
2210048-90	Se(IV) F2	SE	dry	4.20		0.005	0.044	mg/kg	B222351	S221078
2210048-90	Se(VI) F1	SE	dry	0.008	J	0.005	0.046	mg/kg	B222346	S221126
2210048-90	Se(VI) F2	SE	dry	0.020	J	0.005	0.046	mg/kg	B222351	S221078
2210048-90	SeCN F1	SE	dry	≤ 0.003	U	0.003	0.018	mg/kg	B222346	S221126
2210048-90	SeCN F2	SE	dry	1.30		0.003	0.018	mg/kg	B222351	S221078
2210048-90	SeMet F1	SE	dry	≤ 0.004	U	0.004	0.018	mg/kg	B222346	S221126
2210048-90	SeMet F2	SE	dry	≤ 0.004	U	0.004	0.018	mg/kg	B222351	S221078
2210048-90	SeSO ₃ F1	SE	dry	≤ 0.005	U	0.005	0.046	mg/kg	B222346	S221126
2210048-90	SeSO ₃ F2	SE	dry	0.014	J	0.005	0.046	mg/kg	B222351	S221078
2210048-90	Unk Se Sp F1	SE	dry	≤ 0.005	U	0.005	0.044	mg/kg	B222346	S221126
2210048-90	Unk Se Sp F2	SE	dry	0.314		0.005	0.044	mg/kg	B222351	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKDT_SESeSp-4_2022-09-19_N										
2210048-91	%TS	SE	NA	27.47		0.02	0.07	%	B222355	N/A
2210048-91	DMS ₂ O F1	SE	dry	≤ 0.007	U	0.007	0.028	mg/kg	B222346	S221126
2210048-91	DMS ₂ O F2	SE	dry	0.016	J	0.007	0.028	mg/kg	B222351	S221078
2210048-91	MeSe(IV) F1	SE	dry	0.033		0.007	0.028	mg/kg	B222346	S221126
2210048-91	MeSe(IV) F2	SE	dry	1.16		0.007	0.028	mg/kg	B222351	S221078
2210048-91	Se	SE	dry	42.2		0.340	0.680	mg/kg	B222380	S221099
2210048-91	Se Unk A F1	SE	dry	≤ 0.007	U	0.007	0.028	mg/kg	B222346	S221126
2210048-91	Se Unk A F2	SE	dry	0.017	J	0.007	0.028	mg/kg	B222351	S221078
2210048-91	Se(F1)	SE	dry	1.69		0.063	0.281	mg/kg	B222333	S221077
2210048-91	Se(F2)	SE	dry	13.0		0.058	0.281	mg/kg	B222434	S221079
2210048-91	Se(F3)	SE	dry	10.1		0.033	0.281	mg/kg	B222498	S221103
2210048-91	Se(F4)	SE	dry	0.370		0.039	0.281	mg/kg	B222514	S221108
2210048-91	Se(F5)	SE	dry	0.065	J	0.039	0.352	mg/kg	B222533	S221119
2210048-91	Se(IV) F1	SE	dry	1.43		0.008	0.069	mg/kg	B222346	S221126
2210048-91	Se(IV) F2	SE	dry	8.97		0.008	0.069	mg/kg	B222351	S221078
2210048-91	Se(VI) F1	SE	dry	0.023	J	0.008	0.072	mg/kg	B222346	S221126
2210048-91	Se(VI) F2	SE	dry	0.032	J	0.008	0.072	mg/kg	B222351	S221078
2210048-91	SeCN F1	SE	dry	≤ 0.004	U	0.004	0.028	mg/kg	B222346	S221126
2210048-91	SeCN F2	SE	dry	1.96		0.004	0.028	mg/kg	B222351	S221078
2210048-91	SeMet F1	SE	dry	≤ 0.007	U	0.007	0.028	mg/kg	B222346	S221126
2210048-91	SeMet F2	SE	dry	≤ 0.007	U	0.007	0.028	mg/kg	B222351	S221078
2210048-91	SeSO ₃ F1	SE	dry	≤ 0.008	U	0.008	0.072	mg/kg	B222346	S221126
2210048-91	SeSO ₃ F2	SE	dry	0.024	J	0.008	0.072	mg/kg	B222351	S221078
2210048-91	Unk Se Sp F1	SE	dry	≤ 0.008	U	0.008	0.069	mg/kg	B222346	S221126
2210048-91	Unk Se Sp F2	SE	dry	0.435		0.008	0.069	mg/kg	B222351	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKDT_SESeSp-5_2022-09-19_N</i>										
2210048-92	%TS	SE	NA	34.45		0.01	0.05	%	B222355	N/A
2210048-92	DMS ₂ O F1	SE	dry	0.048		0.005	0.023	mg/kg	B222346	S221126
2210048-92	DMS ₂ O F2	SE	dry	0.013	J	0.005	0.023	mg/kg	B222351	S221078
2210048-92	MeSe(IV) F1	SE	dry	0.026		0.005	0.023	mg/kg	B222346	S221126
2210048-92	MeSe(IV) F2	SE	dry	0.976		0.005	0.023	mg/kg	B222351	S221078
2210048-92	Se	SE	dry	36.1		0.219	0.437	mg/kg	B222380	S221099
2210048-92	Se Unk A F1	SE	dry	≤ 0.005	U	0.005	0.023	mg/kg	B222346	S221126
2210048-92	Se Unk A F2	SE	dry	0.014	J	0.005	0.023	mg/kg	B222351	S221078
2210048-92	Se(F1)	SE	dry	1.50		0.051	0.226	mg/kg	B222333	S221077
2210048-92	Se(F2)	SE	dry	13.1		0.047	0.226	mg/kg	B222434	S221079
2210048-92	Se(F3)	SE	dry	9.71		0.027	0.226	mg/kg	B222498	S221103
2210048-92	Se(F4)	SE	dry	0.492		0.031	0.226	mg/kg	B222514	S221108
2210048-92	Se(F5)	SE	dry	0.062	J	0.031	0.283	mg/kg	B222533	S221119
2210048-92	Se(IV) F1	SE	dry	1.24		0.007	0.055	mg/kg	B222346	S221126
2210048-92	Se(IV) F2	SE	dry	8.75		0.007	0.055	mg/kg	B222351	S221078
2210048-92	Se(VI) F1	SE	dry	0.024	J	0.006	0.058	mg/kg	B222346	S221126
2210048-92	Se(VI) F2	SE	dry	0.035	J	0.006	0.058	mg/kg	B222351	S221078
2210048-92	SeCN F1	SE	dry	≤ 0.003	U	0.003	0.023	mg/kg	B222346	S221126
2210048-92	SeCN F2	SE	dry	1.65		0.003	0.023	mg/kg	B222351	S221078
2210048-92	SeMet F1	SE	dry	≤ 0.005	U	0.005	0.023	mg/kg	B222346	S221126
2210048-92	SeMet F2	SE	dry	≤ 0.005	U	0.005	0.023	mg/kg	B222351	S221078
2210048-92	SeSO ₃ F1	SE	dry	≤ 0.006	U	0.006	0.058	mg/kg	B222346	S221126
2210048-92	SeSO ₃ F2	SE	dry	0.021	J	0.006	0.058	mg/kg	B222351	S221078
2210048-92	Unk Se Sp F1	SE	dry	≤ 0.007	U	0.007	0.055	mg/kg	B222346	S221126
2210048-92	Unk Se Sp F2	SE	dry	0.463		0.007	0.055	mg/kg	B222351	S221078



Accuracy & Precision Summary

Batch: B222330
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222330-PS1	Post Spike, (2210048-01) Se(F1)	0.251	38.20	38.75	mg/kg	101% 75-125	
B222330-PS2	Post Spike, (2210048-01) Se(F1)	0.251	38.20	38.05	mg/kg	99% 75-125	
B222330-DUP1	Duplicate, (2210048-07) Se(F1)	0.077		0.070	mg/kg		9% 25
B222330-PS3	Post Spike, (2210048-11) Se(F1)	0.069	24.43	25.90	mg/kg	106% 75-125	
B222330-PS4	Post Spike, (2210048-11) Se(F1)	0.069	24.43	24.97	mg/kg	102% 75-125	
B222330-DUP2	Duplicate, (2210048-18) Se(F1)	0.296		0.301	mg/kg		2% 25
B222330-PS5	Post Spike, (2210048-21) Se(F1)	0.462	37.63	38.46	mg/kg	101% 75-125	
B222330-PS6	Post Spike, (2210048-21) Se(F1)	0.462	37.63	38.09	mg/kg	100% 75-125	
B222330-DUP3	Duplicate, (2210048-27) Se(F1)	0.025		0.028	mg/kg		13% 25
B222330-PS7	Post Spike, (2210048-31) Se(F1)	0.375	35.31	35.50	mg/kg	99% 75-125	
B222330-PS8	Post Spike, (2210048-31) Se(F1)	0.375	35.31	36.40	mg/kg	102% 75-125	



Accuracy & Precision Summary

Batch: B222330
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222330-DUP4	Duplicate, (2210048-35) Se(F1)	0.080		0.080	mg/kg		0.5% 25



Accuracy & Precision Summary

Batch: B222332
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222332-DUP1	Duplicate, (2210048-37) Se(F1)	0.071		0.073	mg/kg		2% 25
B222332-PS1	Post Spike, (2210048-41) Se(F1)	0.053	25.75	27.84	mg/kg	108% 75-125	
B222332-PS2	Post Spike, (2210048-41) Se(F1)	0.053	25.75	25.91	mg/kg	100% 75-125	
B222332-DUP2	Duplicate, (2210048-51) Se(F1)	0.243		0.232	mg/kg		5% 25
B222332-PS3	Post Spike, (2210048-51) Se(F1)	0.243	31.49	31.91	mg/kg	101% 75-125	
B222332-PS4	Post Spike, (2210048-51) Se(F1)	0.243	31.49	32.21	mg/kg	102% 75-125	
B222332-DUP3	Duplicate, (2210048-54) Se(F1)	0.886		0.874	mg/kg		1% 25
B222332-PS5	Post Spike, (2210048-61) Se(F1)	0.075	32.37	33.27	mg/kg	103% 75-125	
B222332-PS6	Post Spike, (2210048-61) Se(F1)	0.075	32.37	33.16	mg/kg	102% 75-125	
B222332-DUP4	Duplicate, (2210048-66) Se(F1)	0.228		0.220	mg/kg		4% 25
B222332-PS7	Post Spike, (2210048-70) Se(F1)	0.211	36.07	36.91	mg/kg	102% 75-125	



Accuracy & Precision Summary

Batch: B222332
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222332-PS8	Post Spike, (2210048-70) Se(F1)	0.211	36.07	36.68	mg/kg	101% 75-125	



Accuracy & Precision Summary

Batch: B222333
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222333-DUP1	Duplicate, (2210048-71) Se(F1)	0.995		1.040	mg/kg		4% 25
B222333-PS1	Post Spike, (2210048-71) Se(F1)	0.995	36.69	37.88	mg/kg	101% 75-125	
B222333-PS2	Post Spike, (2210048-71) Se(F1)	0.995	36.69	35.10	mg/kg	93% 75-125	
B222333-DUP2	Duplicate, (2210048-80) Se(F1)	0.089		0.088	mg/kg		1% 25
B222333-PS3	Post Spike, (2210048-81) Se(F1)	0.090	44.16	41.04	mg/kg	93% 75-125	
B222333-PS4	Post Spike, (2210048-81) Se(F1)	0.090	44.16	41.90	mg/kg	95% 75-125	
B222333-DUP3	Duplicate, (2210048-90) Se(F1)	0.826		0.836	mg/kg		1% 25
B222333-PS5	Post Spike, (2210048-91) Se(F1)	1.694	70.34	68.28	mg/kg	95% 75-125	
B222333-PS6	Post Spike, (2210048-91) Se(F1)	1.694	70.34	68.61	mg/kg	95% 75-125	
B222333-PS7	Post Spike, (2210049-01) Se(F1)	0.657	62.06	59.32	mg/kg	95% 75-125	
B222333-PS8	Post Spike, (2210049-01) Se(F1)	0.657	62.06	58.75	mg/kg	94% 75-125	



Accuracy & Precision Summary

Batch: B222333
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222333-DUP4	Duplicate, (2210049-07) Se(F1)	1.295		1.213	mg/kg		7% 25



Accuracy & Precision Summary

Batch: B222340
Lab Matrix: Soil/Sediment
Method: EPA 6020B Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222340-BS1	Blank Spike, (2152010) Se		50.00	51.20	mg/kg	102% 75-125	
B222340-BS2	Blank Spike, (2152010) Se		50.00	49.57	mg/kg	99% 75-125	
B222340-SRM1	Reference Material (2224038, CRM052-50G Loamy Clay) Se		54.40	58.93	mg/kg	108% 75-125	
B222340-SRM2	Reference Material (2224038, CRM052-50G Loamy Clay) Se		54.40	61.32	mg/kg	113% 75-125	
B222340-DUP1	Duplicate, (2210048-10) Se	0.918		0.934	mg/kg		2% 30
B222340-MS1	Matrix Spike, (2210048-10) Se	0.918	69.37	66.98	mg/kg	95% 70-130	
B222340-MSD1	Matrix Spike Duplicate, (2210048-10) Se	0.918	65.20	63.14	mg/kg	95% 70-130	0.2% 30
B222340-DUP2	Duplicate, (2210048-20) Se	1.679		1.754	mg/kg		4% 30
B222340-MS2	Matrix Spike, (2210048-20) Se	1.679	76.32	77.17	mg/kg	99% 70-130	
B222340-MSD2	Matrix Spike Duplicate, (2210048-20) Se	1.679	67.42	69.71	mg/kg	101% 70-130	2% 30
B222340-DUP3	Duplicate, (2210048-30) Se	12.49		11.78	mg/kg		6% 30



Accuracy & Precision Summary

Batch: B222340
Lab Matrix: Soil/Sediment
Method: EPA 6020B Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222340-MS3	Matrix Spike, (2210048-30) Se	12.49	94.96	108.0	mg/kg	101% 70-130	
B222340-MSD3	Matrix Spike Duplicate, (2210048-30) Se	12.49	97.73	109.9	mg/kg	100% 70-130	0.8% 30
B222340-DUP4	Duplicate, (2210048-35) Se	1.116		1.064	mg/kg		5% 30
B222340-MS4	Matrix Spike, (2210048-35) Se	1.116	79.85	79.64	mg/kg	98% 70-130	
B222340-MSD4	Matrix Spike Duplicate, (2210048-35) Se	1.116	74.55	75.44	mg/kg	100% 70-130	1% 30



Accuracy & Precision Summary

Batch: B222342
Lab Matrix: Soil/Sediment
Method: SOP BAL-0501

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222342-DUP1	Duplicate, (2210048-07) %TS	69.60		69.30	%		0.4% 15
B222342-DUP2	Duplicate, (2210048-20) %TS	64.16		64.19	%		0.06% 15
B222342-DUP3	Duplicate, (2210048-31) %TS	52.91		52.94	%		0.05% 15
B222342-DUP4	Duplicate, (2210048-35) %TS	62.02		63.03	%		2% 15



Accuracy & Precision Summary

Batch: B222343
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222343-DUP1	Duplicate, (2210048-07)						
	DMS ₂ O F1	ND		ND	mg/kg		N/C 25
	MeSe(IV) F1	ND		ND	mg/kg		N/C 25
	Se Unk A F1	ND		ND	mg/kg		N/C 25
	Se(IV) F1	0.026		0.032	mg/kg		19% 25
	Se(VI) F1	0.024		0.026	mg/kg		6% 25
	SeCN F1	ND		ND	mg/kg		N/C 25
	SeMet F1	ND		ND	mg/kg		N/C 25
	SeSO ₃ F1	ND		ND	mg/kg		N/C 25
	Unk Se Sp F1	ND		ND	mg/kg		N/C 25
B222343-PS1	Post Spike, (2210048-07)						
	Se(IV) F1	0.026	2.193	2.064	mg/kg	93% 75-125	
	Se(VI) F1	0.024	2.282	2.105	mg/kg	91% 75-125	
	SeCN F1	ND	0.8781	0.790	mg/kg	90% 75-125	
	SeMet F1	ND	0.8848	0.815	mg/kg	92% 75-125	
B222343-DUP2	Duplicate, (2210048-18)						
	DMS ₂ O F1	0.002		ND	mg/kg		N/C 25
	MeSe(IV) F1	ND		ND	mg/kg		N/C 25
	Se Unk A F1	ND		ND	mg/kg		N/C 25
	Se(IV) F1	0.202		0.189	mg/kg		6% 25
	Se(VI) F1	0.045		0.048	mg/kg		7% 25
	SeCN F1	ND		ND	mg/kg		N/C 25
	SeMet F1	ND		ND	mg/kg		N/C 25
	SeSO ₃ F1	ND		ND	mg/kg		N/C 25
	Unk Se Sp F1	ND		ND	mg/kg		N/C 25
B222343-PS2	Post Spike, (2210048-18)						
	Se(IV) F1	0.202	2.629	2.642	mg/kg	93% 75-125	
	Se(VI) F1	0.045	2.736	2.548	mg/kg	91% 75-125	
	SeCN F1	ND	1.053	0.929	mg/kg	88% 75-125	
	SeMet F1	ND	1.061	0.937	mg/kg	88% 75-125	



Accuracy & Precision Summary

Batch: B222343
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222343-DUP3	Duplicate, (2210048-27)						
	DMS ₂ O F1	ND		ND	mg/kg		N/C 25
	MeSe(IV) F1	0.002		0.002	mg/kg		3% 25
	Se Unk A F1	ND		ND	mg/kg		N/C 25
	Se(IV) F1	0.010		0.010	mg/kg		0.8% 25
	Se(VI) F1	ND		ND	mg/kg		N/C 25
	SeCN F1	ND		ND	mg/kg		N/C 25
	SeMet F1	ND		ND	mg/kg		N/C 25
	SeSO ₃ F1	ND		ND	mg/kg		N/C 25
	Unk Se Sp F1	ND		ND	mg/kg		N/C 25
B222343-PS3	Post Spike, (2210048-27)						
	Se(IV) F1	0.010	2.809	2.598	mg/kg	92% 75-125	
	Se(VI) F1	ND	2.924	2.692	mg/kg	92% 75-125	
	SeCN F1	ND	1.125	0.986	mg/kg	88% 75-125	
	SeMet F1	ND	1.134	1.035	mg/kg	91% 75-125	
B222343-DUP4	Duplicate, (2210048-35)						
	DMS ₂ O F1	ND		ND	mg/kg		N/C 25
	MeSe(IV) F1	ND		ND	mg/kg		N/C 25
	Se Unk A F1	ND		ND	mg/kg		N/C 25
	Se(IV) F1	0.035		0.032	mg/kg		7% 25
	Se(VI) F1	0.016		0.017	mg/kg		6% 25
	SeCN F1	ND		ND	mg/kg		N/C 25
	SeMet F1	ND		ND	mg/kg		N/C 25
	SeSO ₃ F1	ND		ND	mg/kg		N/C 25
	Unk Se Sp F1	ND		ND	mg/kg		N/C 25
B222343-PS4	Post Spike, (2210048-35)						
	Se(IV) F1	0.035	3.021	2.884	mg/kg	94% 75-125	
	Se(VI) F1	0.016	3.144	2.954	mg/kg	93% 75-125	
	SeCN F1	ND	1.210	1.085	mg/kg	90% 75-125	
	SeMet F1	ND	1.219	1.120	mg/kg	92% 75-125	



Accuracy & Precision Summary

Batch: B222344
Lab Matrix: Soil/Sediment
Method: EPA 6020B Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222344-BS1	Blank Spike, (2152010) Se		50.00	55.00	mg/kg	110% 75-125	
B222344-BS2	Blank Spike, (2152010) Se		50.00	54.33	mg/kg	109% 75-125	
B222344-SRM1	Reference Material (2224038, CRM052-50G Loamy Clay) Se		54.40	67.11	mg/kg	123% 75-125	
B222344-SRM2	Reference Material (2224038, CRM052-50G Loamy Clay) Se		54.40	65.58	mg/kg	121% 75-125	
B222344-DUP1	Duplicate, (2210048-36) Se	2.139		2.212	mg/kg		3% 30
B222344-MS1	Matrix Spike, (2210048-36) Se	2.139	53.09	60.50	mg/kg	110% 70-130	
B222344-MSD1	Matrix Spike Duplicate, (2210048-36) Se	2.139	51.24	61.34	mg/kg	116% 70-130	5% 30
B222344-DUP5	Duplicate, (2210048-46) Se	1.333		1.506	mg/kg		12% 30
B222344-MS5	Matrix Spike, (2210048-46) Se	1.333	52.44	46.27	mg/kg	86% 70-130	
B222344-MSD5	Matrix Spike Duplicate, (2210048-46) Se	1.333	50.79	43.99	mg/kg	84% 70-130	2% 30
B222344-DUP6	Duplicate, (2210048-56) Se	15.76		18.48	mg/kg		16% 30



Accuracy & Precision Summary

Batch: B222344
Lab Matrix: Soil/Sediment
Method: EPA 6020B Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222344-MS6	Matrix Spike, (2210048-56) Se	15.76	98.84	102.6	mg/kg	88% 70-130	
B222344-MSD6	Matrix Spike Duplicate, (2210048-56) Se	15.76	102.3	105.0	mg/kg	87% 70-130	0.7% 30
B222344-DUP4	Duplicate, (2210048-66) Se	2.762		2.821	mg/kg		2% 30
B222344-MS4	Matrix Spike, (2210048-66) Se	2.762	67.20	76.70	mg/kg	110% 70-130	
B222344-MSD4	Matrix Spike Duplicate, (2210048-66) Se	2.762	75.48	85.85	mg/kg	110% 70-130	0.06% 30



Accuracy & Precision Summary

Batch: B222345
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222345-DUP1	Duplicate, (2210048-37)						
	DMS ₂ O F1	ND		ND	mg/kg		N/C 25
	MeSe(IV) F1	ND		ND	mg/kg		N/C 25
	Se Unk A F1	ND		ND	mg/kg		N/C 25
	Se(IV) F1	0.044		0.044	mg/kg		0.7% 25
	Se(VI) F1	ND		ND	mg/kg		N/C 25
	SeCN F1	ND		ND	mg/kg		N/C 25
	SeMet F1	ND		ND	mg/kg		N/C 25
	SeSO ₃ F1	ND		ND	mg/kg		N/C 25
	Unk Se Sp F1	ND		ND	mg/kg		N/C 25
B222345-PS1	Post Spike, (2210048-37)						
	Se(IV) F1	0.044	2.609	2.362	mg/kg	89% 75-125	
	Se(VI) F1	ND	2.715	2.402	mg/kg	88% 75-125	
	SeCN F1	ND	1.045	0.879	mg/kg	84% 75-125	
	SeMet F1	ND	1.053	0.916	mg/kg	87% 75-125	
B222345-DUP2	Duplicate, (2210048-51)						
	DMS ₂ O F1	0.020		0.019	mg/kg		4% 25
	MeSe(IV) F1	0.012		0.012	mg/kg		4% 25
	Se Unk A F1	ND		ND	mg/kg		N/C 25
	Se(IV) F1	0.129		0.128	mg/kg		0.7% 25
	Se(VI) F1	ND		ND	mg/kg		N/C 25
	SeCN F1	ND		ND	mg/kg		N/C 25
	SeMet F1	ND		ND	mg/kg		N/C 25
	SeSO ₃ F1	ND		ND	mg/kg		N/C 25
	Unk Se Sp F1	ND		ND	mg/kg		N/C 25
B222345-PS2	Post Spike, (2210048-51)						
	Se(IV) F1	0.129	3.086	2.812	mg/kg	87% 75-125	
	Se(VI) F1	ND	3.212	2.769	mg/kg	86% 75-125	
	SeCN F1	ND	1.236	0.982	mg/kg	79% 75-125	
	SeMet F1	ND	1.245	1.107	mg/kg	89% 75-125	



Accuracy & Precision Summary

Batch: B222345
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222345-DUP3	Duplicate, (2210048-54)						
	DMS ₂ O F1	0.020		0.024	mg/kg		15% 25
	MeSe(IV) F1	0.020		0.019	mg/kg		2% 25
	Se Unk A F1	ND		ND	mg/kg		N/C 25
	Se(IV) F1	0.623		0.637	mg/kg		2% 25
	Se(VI) F1	ND		ND	mg/kg		N/C 25
	SeCN F1	ND		ND	mg/kg		N/C 25
	SeMet F1	ND		ND	mg/kg		N/C 25
	SeSO ₃ F1	ND		ND	mg/kg		N/C 25
Unk Se Sp F1	ND		ND	mg/kg		N/C 25	
B222345-PS3	Post Spike, (2210048-54)						
	Se(IV) F1	0.623	4.278	4.259	mg/kg	85% 75-125	
	Se(VI) F1	ND	4.453	3.705	mg/kg	83% 75-125	
	SeCN F1	ND	1.713	1.372	mg/kg	80% 75-125	
SeMet F1	ND	1.726	1.428	mg/kg	83% 75-125		
B222345-DUP4	Duplicate, (2210048-66)						
	DMS ₂ O F1	ND		ND	mg/kg		N/C 25
	MeSe(IV) F1	0.007		0.007	mg/kg		1% 25
	Se Unk A F1	ND		ND	mg/kg		N/C 25
	Se(IV) F1	0.048		0.054	mg/kg		11% 25
	Se(VI) F1	0.083		0.090	mg/kg		8% 25
	SeCN F1	ND		ND	mg/kg		N/C 25
	SeMet F1	ND		ND	mg/kg		N/C 25
	SeSO ₃ F1	ND		ND	mg/kg		N/C 25
Unk Se Sp F1	ND		ND	mg/kg		N/C 25	
B222345-PS4	Post Spike, (2210048-66)						
	Se(IV) F1	0.048	3.412	3.109	mg/kg	90% 75-125	
	Se(VI) F1	0.083	3.551	3.128	mg/kg	86% 75-125	
	SeCN F1	ND	1.366	1.062	mg/kg	78% 75-125	
SeMet F1	ND	1.377	1.215	mg/kg	88% 75-125		



Accuracy & Precision Summary

Batch: B222346
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222346-DUP1	Duplicate, (2210048-71)						
	DMSeO F1	ND		ND	mg/kg		N/C 25
	MeSe(IV) F1	0.035		0.022	mg/kg		46% 25
	Se Unk A F1	ND		ND	mg/kg		N/C 25
	Se(IV) F1	0.765		0.799	mg/kg		4% 25
	Se(VI) F1	0.017		0.014	mg/kg		22% 25
	SeCN F1	ND		ND	mg/kg		N/C 25
	SeMet F1	ND		ND	mg/kg		N/C 25
	SeSO3 F1	ND		ND	mg/kg		N/C 25
Unk Se Sp F1	0.032		0.038	mg/kg		17% 25	
B222346-PS1	Post Spike, (2210048-71)						
	Se(IV) F1	0.765	3.596	4.169	mg/kg	95% 75-125	
	Se(VI) F1	0.017	3.742	3.565	mg/kg	95% 75-125	
	SeCN F1	ND	1.440	1.336	mg/kg	93% 75-125	
SeMet F1	ND	1.451	1.460	mg/kg	101% 75-125		
B222346-DUP2	Duplicate, (2210048-80)						
	DMSeO F1	ND		ND	mg/kg		N/C 25
	MeSe(IV) F1	0.007		0.008	mg/kg		17% 25
	Se Unk A F1	ND		ND	mg/kg		N/C 25
	Se(IV) F1	0.063		0.067	mg/kg		6% 25
	Se(VI) F1	0.019		0.015	mg/kg		24% 25
	SeCN F1	ND		ND	mg/kg		N/C 25
	SeMet F1	ND		ND	mg/kg		N/C 25
	SeSO3 F1	ND		ND	mg/kg		N/C 25
Unk Se Sp F1	ND		ND	mg/kg		N/C 25	
B222346-PS2	Post Spike, (2210048-80)						
	Se(IV) F1	0.063	5.482	5.376	mg/kg	97% 75-125	
	Se(VI) F1	0.019	5.705	5.485	mg/kg	96% 75-125	
	SeCN F1	ND	2.195	1.971	mg/kg	90% 75-125	
SeMet F1	ND	2.212	2.179	mg/kg	98% 75-125		



Accuracy & Precision Summary

Batch: B222346
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222346-DUP3	Duplicate, (2210048-90)						
	DMSeO F1	0.015		0.016	mg/kg		7% 25
	MeSe(IV) F1	0.014		0.011	mg/kg		19% 25
	Se Unk A F1	ND		ND	mg/kg		N/C 25
	Se(IV) F1	0.724		0.773	mg/kg		6% 25
	Se(VI) F1	0.008		0.010	mg/kg		13% 25
	SeCN F1	ND		ND	mg/kg		N/C 25
	SeMet F1	ND		ND	mg/kg		N/C 25
	SeSO3 F1	ND		ND	mg/kg		N/C 25
Unk Se Sp F1	ND		ND	mg/kg		N/C 25	
B222346-PS3	Post Spike, (2210048-90)						
	Se(IV) F1	0.724	4.393	4.857	mg/kg	94% 75-125	
	Se(VI) F1	0.008	4.573	4.296	mg/kg	94% 75-125	
	SeCN F1	ND	1.759	1.581	mg/kg	90% 75-125	
SeMet F1	ND	1.773	1.707	mg/kg	96% 75-125		
B222346-DUP4	Duplicate, (2210049-07)						
	DMSeO F1	ND		ND	mg/kg		N/C 25
	MeSe(IV) F1	0.033		0.012	mg/kg		96% 25
	Se Unk A F1	ND		ND	mg/kg		N/C 25
	Se(IV) F1	1.074		1.141	mg/kg		6% 25
	Se(VI) F1	0.021		0.020	mg/kg		3% 25
	SeCN F1	ND		0.004	mg/kg		N/C 25
	SeMet F1	ND		ND	mg/kg		N/C 25
	SeSO3 F1	ND		ND	mg/kg		N/C 25
Unk Se Sp F1	ND		ND	mg/kg		N/C 25	
B222346-PS4	Post Spike, (2210049-07)						
	Se(IV) F1	1.074	3.700	4.665	mg/kg	97% 75-125	
	Se(VI) F1	0.021	3.851	3.715	mg/kg	96% 75-125	
	SeCN F1	ND	1.481	1.380	mg/kg	93% 75-125	
SeMet F1	ND	1.493	1.450	mg/kg	97% 75-125		



Accuracy & Precision Summary

Batch: B222348
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222348-DUP1	Duplicate, (2210048-07)						
	DMSeO F2	ND		ND	mg/kg		N/C 25
	MeSe(IV) F2	0.011		0.014	mg/kg		23% 25
	Se Unk A F2	ND		ND	mg/kg		N/C 25
	Se(IV) F2	0.123		0.154	mg/kg		22% 25
	Se(VI) F2	ND		ND	mg/kg		N/C 25
	SeCN F2	0.020		0.023	mg/kg		14% 25
	SeMet F2	ND		ND	mg/kg		N/C 25
	SeSO3 F2	ND		ND	mg/kg		N/C 25
Unk Se Sp F2	0.013		0.018	mg/kg		29% 25	
B222348-PS1	Post Spike, (2210048-07)						
	Se(IV) F2	0.123	2.193	2.074	mg/kg	89% 75-125	
	Se(VI) F2	ND	2.282	2.016	mg/kg	88% 75-125	
	SeCN F2	0.020	0.8781	0.837	mg/kg	93% 75-125	
SeMet F2	ND	0.8848	0.802	mg/kg	91% 75-125		
B222348-DUP2	Duplicate, (2210048-18)						
	DMSeO F2	ND		ND	mg/kg		N/C 25
	MeSe(IV) F2	0.023		0.019	mg/kg		18% 25
	Se Unk A F2	ND		ND	mg/kg		N/C 25
	Se(IV) F2	0.398		0.392	mg/kg		2% 25
	Se(VI) F2	ND		ND	mg/kg		N/C 25
	SeCN F2	0.023		0.022	mg/kg		5% 25
	SeMet F2	ND		ND	mg/kg		N/C 25
	SeSO3 F2	ND		ND	mg/kg		N/C 25
Unk Se Sp F2	0.012		0.009	mg/kg		29% 25	
B222348-PS2	Post Spike, (2210048-18)						
	Se(IV) F2	0.398	2.629	2.703	mg/kg	88% 75-125	
	Se(VI) F2	ND	2.736	2.385	mg/kg	87% 75-125	
	SeCN F2	0.023	1.053	0.996	mg/kg	92% 75-125	
SeMet F2	ND	1.061	0.950	mg/kg	90% 75-125		



Accuracy & Precision Summary

Batch: B222348
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222348-DUP3	Duplicate, (2210048-27)						
	DMSeO F2	ND		ND	mg/kg		N/C 25
	MeSe(IV) F2	0.012		0.012	mg/kg		3% 25
	Se Unk A F2	ND		ND	mg/kg		N/C 25
	Se(IV) F2	0.102		0.086	mg/kg		17% 25
	Se(VI) F2	ND		ND	mg/kg		N/C 25
	SeCN F2	0.021		0.017	mg/kg		20% 25
	SeMet F2	ND		ND	mg/kg		N/C 25
	SeSO3 F2	ND		ND	mg/kg		N/C 25
	Unk Se Sp F2	0.023		0.021	mg/kg		9% 25
B222348-PS3	Post Spike, (2210048-27)						
	Se(IV) F2	0.102	2.840	2.568	mg/kg	87% 75-125	
	Se(VI) F2	ND	2.956	2.525	mg/kg	85% 75-125	
	SeCN F2	0.021	1.137	1.068	mg/kg	92% 75-125	
	SeMet F2	ND	1.146	1.008	mg/kg	88% 75-125	
B222348-DUP4	Duplicate, (2210048-35)						
	DMSeO F2	ND		ND	mg/kg		N/C 25
	MeSe(IV) F2	0.015		0.015	mg/kg		5% 25
	Se Unk A F2	ND		ND	mg/kg		N/C 25
	Se(IV) F2	0.165		0.145	mg/kg		13% 25
	Se(VI) F2	ND		ND	mg/kg		N/C 25
	SeCN F2	0.027		0.026	mg/kg		2% 25
	SeMet F2	ND		ND	mg/kg		N/C 25
	SeSO3 F2	ND		ND	mg/kg		N/C 25
	Unk Se Sp F2	0.022		0.016	mg/kg		32% 25
B222348-PS4	Post Spike, (2210048-35)						
	Se(IV) F2	0.165	3.021	2.889	mg/kg	90% 75-125	
	Se(VI) F2	ND	3.144	2.790	mg/kg	89% 75-125	
	SeCN F2	0.027	1.210	1.153	mg/kg	93% 75-125	
	SeMet F2	ND	1.219	1.143	mg/kg	94% 75-125	



Accuracy & Precision Summary

Batch: B222350
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222350-DUP1	Duplicate, (2210048-37)						
	DMS ₂ O F2	ND		ND	mg/kg		N/C 25
	MeSe(IV) F2	0.021		0.021	mg/kg		0.6% 25
	Se Unk A F2	ND		ND	mg/kg		N/C 25
	Se(IV) F2	0.152		0.151	mg/kg		0.8% 25
	Se(VI) F2	ND		ND	mg/kg		N/C 25
	SeCN F2	0.024		0.027	mg/kg		12% 25
	SeMet F2	ND		ND	mg/kg		N/C 25
	SeSO ₃ F2	ND		ND	mg/kg		N/C 25
	Unk Se Sp F2	0.009		0.010	mg/kg		17% 25
B222350-PS1	Post Spike, (2210048-37)						
	Se(IV) F2	0.152	2.609	2.542	mg/kg	92% 75-125	
	Se(VI) F2	ND	2.715	2.455	mg/kg	90% 75-125	
	SeCN F2	0.024	1.045	1.019	mg/kg	95% 75-125	
	SeMet F2	ND	1.053	0.998	mg/kg	95% 75-125	
B222350-DUP2	Duplicate, (2210048-51)						
	DMS ₂ O F2	ND		ND	mg/kg		N/C 25
	MeSe(IV) F2	0.172		0.135	mg/kg		24% 25
	Se Unk A F2	ND		ND	mg/kg		N/C 25
	Se(IV) F2	0.509		0.430	mg/kg		17% 25
	Se(VI) F2	ND		ND	mg/kg		N/C 25
	SeCN F2	0.233		0.199	mg/kg		16% 25
	SeMet F2	ND		ND	mg/kg		N/C 25
	SeSO ₃ F2	ND		ND	mg/kg		N/C 25
	Unk Se Sp F2	0.086		0.091	mg/kg		6% 25
B222350-PS2	Post Spike, (2210048-51)						
	Se(IV) F2	0.509	3.086	3.143	mg/kg	85% 75-125	
	Se(VI) F2	ND	3.212	2.712	mg/kg	84% 75-125	
	SeCN F2	0.233	1.236	1.333	mg/kg	89% 75-125	
	SeMet F2	ND	1.245	1.130	mg/kg	91% 75-125	



Accuracy & Precision Summary

Batch: B222350
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222350-DUP3	Duplicate, (2210048-54)						
	DMS ₂ O F2	ND		ND	mg/kg		N/C 25
	MeSe(IV) F2	0.483		0.492	mg/kg		2% 25
	Se Unk A F2	ND		ND	mg/kg		N/C 25
	Se(IV) F2	4.055		4.203	mg/kg		4% 25
	Se(VI) F2	0.012		0.006	mg/kg		58% 25
	SeCN F2	0.800		0.838	mg/kg		5% 25
	SeMet F2	ND		ND	mg/kg		N/C 25
	SeSO ₃ F2	ND		ND	mg/kg		N/C 25
	Unk Se Sp F2	0.237		0.247	mg/kg		4% 25
B222350-PS3	Post Spike, (2210048-54)						
	Se(IV) F2	4.055	4.278	7.695	mg/kg	85% 75-125	
	Se(VI) F2	0.012	4.453	3.869	mg/kg	87% 75-125	
	SeCN F2	0.800	1.713	2.303	mg/kg	88% 75-125	
	SeMet F2	ND	1.726	1.613	mg/kg	93% 75-125	
B222350-DUP4	Duplicate, (2210048-66)						
	DMS ₂ O F2	ND		ND	mg/kg		N/C 25
	MeSe(IV) F2	0.062		0.065	mg/kg		6% 25
	Se Unk A F2	ND		ND	mg/kg		N/C 25
	Se(IV) F2	0.169		0.173	mg/kg		2% 25
	Se(VI) F2	ND		ND	mg/kg		N/C 25
	SeCN F2	0.106		0.101	mg/kg		5% 25
	SeMet F2	ND		ND	mg/kg		N/C 25
	SeSO ₃ F2	ND		ND	mg/kg		N/C 25
	Unk Se Sp F2	0.023		0.024	mg/kg		7% 25
B222350-PS4	Post Spike, (2210048-66)						
	Se(IV) F2	0.169	3.412	3.101	mg/kg	86% 75-125	
	Se(VI) F2	ND	3.551	3.045	mg/kg	86% 75-125	
	SeCN F2	0.106	1.366	1.344	mg/kg	91% 75-125	
	SeMet F2	ND	1.377	1.261	mg/kg	92% 75-125	



Accuracy & Precision Summary

Batch: B222351
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222351-DUP1	Duplicate, (2210048-71)						
	DMSeO F2	0.018		0.021	mg/kg		13% 25
	MeSe(IV) F2	1.055		1.117	mg/kg		6% 25
	Se Unk A F2	0.011		0.013	mg/kg		14% 25
	Se(IV) F2	4.893		4.860	mg/kg		0.7% 25
	Se(VI) F2	0.021		0.024	mg/kg		13% 25
	SeCN F2	1.314		1.406	mg/kg		7% 25
	SeMet F2	ND		ND	mg/kg		N/C 25
	SeSO3 F2	0.030		0.030	mg/kg		2% 25
Unk Se Sp F2	0.307		0.302	mg/kg		2% 25	
B222351-PS1	Post Spike, (2210048-71)						
	Se(IV) F2	4.893	3.596	7.713	mg/kg	78% 75-125	
	Se(VI) F2	0.021	3.742	3.120	mg/kg	83% 75-125	
	SeCN F2	1.314	1.440	2.556	mg/kg	86% 75-125	
SeMet F2	ND	1.451	1.304	mg/kg	90% 75-125		
B222351-DUP2	Duplicate, (2210048-80)						
	DMSeO F2	0.013		0.006	mg/kg		74% 25
	MeSe(IV) F2	0.300		0.194	mg/kg		43% 25
	Se Unk A F2	ND		ND	mg/kg		N/C 25
	Se(IV) F2	0.535		0.473	mg/kg		12% 25
	Se(VI) F2	ND		ND	mg/kg		N/C 25
	SeCN F2	0.291		0.248	mg/kg		16% 25
	SeMet F2	ND		ND	mg/kg		N/C 25
	SeSO3 F2	ND		ND	mg/kg		N/C 25
Unk Se Sp F2	0.091		0.079	mg/kg		15% 25	
B222351-PS2	Post Spike, (2210048-80)						
	Se(IV) F2	0.535	5.482	5.424	mg/kg	89% 75-125	
	Se(VI) F2	ND	5.705	5.001	mg/kg	88% 75-125	
	SeCN F2	0.291	2.195	2.326	mg/kg	93% 75-125	
SeMet F2	ND	2.212	2.038	mg/kg	92% 75-125		



Accuracy & Precision Summary

Batch: B222351
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222351-DUP3	Duplicate, (2210048-90)						
	DMSeO F2	0.008		0.005	mg/kg		42% 25
	MeSe(IV) F2	0.847		0.861	mg/kg		2% 25
	Se Unk A F2	0.013		0.013	mg/kg		0.04% 25
	Se(IV) F2	4.204		4.393	mg/kg		4% 25
	Se(VI) F2	0.020		0.010	mg/kg		70% 25
	SeCN F2	1.304		1.418	mg/kg		8% 25
	SeMet F2	ND		ND	mg/kg		N/C 25
	SeSO3 F2	0.014		0.019	mg/kg		28% 25
Unk Se Sp F2	0.314		0.304	mg/kg		3% 25	
B222351-PS3	Post Spike, (2210048-90)						
	Se(IV) F2	4.204	4.393	8.098	mg/kg	89% 75-125	
	Se(VI) F2	0.020	4.573	4.101	mg/kg	89% 75-125	
	SeCN F2	1.304	1.759	2.950	mg/kg	94% 75-125	
SeMet F2	ND	1.773	1.732	mg/kg	98% 75-125		
B222351-DUP4	Duplicate, (2210049-07)						
	DMSeO F2	ND		ND	mg/kg		N/C 25
	MeSe(IV) F2	0.305		0.296	mg/kg		3% 25
	Se Unk A F2	0.005		ND	mg/kg		N/C 25
	Se(IV) F2	3.174		3.136	mg/kg		1% 25
	Se(VI) F2	0.019		0.018	mg/kg		6% 25
	SeCN F2	0.353		0.327	mg/kg		8% 25
	SeMet F2	ND		ND	mg/kg		N/C 25
	SeSO3 F2	0.013		0.012	mg/kg		9% 25
Unk Se Sp F2	0.174		0.144	mg/kg		19% 25	
B222351-PS4	Post Spike, (2210049-07)						
	Se(IV) F2	3.174	3.700	6.455	mg/kg	89% 75-125	
	Se(VI) F2	0.019	3.851	3.407	mg/kg	88% 75-125	
	SeCN F2	0.353	1.481	1.746	mg/kg	94% 75-125	
SeMet F2	ND	1.493	1.440	mg/kg	96% 75-125		



Accuracy & Precision Summary

Batch: B222353
Lab Matrix: Soil/Sediment
Method: SOP BAL-0501

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222353-DUP1	Duplicate, (2210048-36) %TS	61.67		62.75	%		2% 15
B222353-DUP2	Duplicate, (2210048-46) %TS	69.84		71.16	%		2% 15
B222353-DUP3	Duplicate, (2210048-56) %TS	38.05		37.91	%		0.3% 15
B222353-DUP4	Duplicate, (2210048-66) %TS	55.03		56.59	%		3% 15



Accuracy & Precision Summary

Batch: B222355
Lab Matrix: Soil/Sediment
Method: SOP BAL-0501

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222355-DUP1	Duplicate, (2210048-72) %TS	32.00		34.05	%		6% 15
B222355-DUP2	Duplicate, (2210048-81) %TS	44.75		45.51	%		2% 15
B222355-DUP3	Duplicate, (2210048-92) %TS	34.45		35.57	%		3% 15



Accuracy & Precision Summary

Batch: B222380
Lab Matrix: Soil/Sediment
Method: EPA 6020B Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222380-BS1	Blank Spike, (2152010) Se		50.00	53.08	mg/kg	106% 75-125	
B222380-BS2	Blank Spike, (2152010) Se		50.00	54.31	mg/kg	109% 75-125	
B222380-SRM1	Reference Material (2224038, CRM052-50G Loamy Clay) Se		54.40	64.60	mg/kg	119% 75-125	
B222380-SRM2	Reference Material (2224038, CRM052-50G Loamy Clay) Se		54.40	67.61	mg/kg	124% 75-125	
B222380-DUP1	Duplicate, (2210048-76) Se	2.408		2.364	mg/kg		2% 30
B222380-MS1	Matrix Spike, (2210048-76) Se	2.408	100.5	112.1	mg/kg	109% 70-130	
B222380-MSD1	Matrix Spike Duplicate, (2210048-76) Se	2.408	89.63	98.11	mg/kg	107% 70-130	2% 30
B222380-DUP2	Duplicate, (2210048-91) Se	42.24		42.11	mg/kg		0.3% 30
B222380-MS2	Matrix Spike, (2210048-91) Se	42.24	214.4	267.5	mg/kg	105% 70-130	
B222380-MSD2	Matrix Spike Duplicate, (2210048-91) Se	42.24	170.1	223.5	mg/kg	107% 70-130	1% 30
B222380-DUP3	Duplicate, (2210049-05) Se	16.97		20.34	mg/kg		18% 30



Accuracy & Precision Summary

Batch: B222380
Lab Matrix: Soil/Sediment
Method: EPA 6020B Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222380-MS3	Matrix Spike, (2210049-05) Se	16.97	235.7	268.7	mg/kg	107% 70-130	
B222380-MSD3	Matrix Spike Duplicate, (2210049-05) Se	16.97	263.3	295.7	mg/kg	106% 70-130	0.8% 30



Accuracy & Precision Summary

Batch: B222399
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222399-DUP1	Duplicate, (2210048-07) Se(F2)	0.317		0.334	mg/kg		5% 25
B222399-PS1	Post Spike, (2210048-07) Se(F2)	0.317	22.73	25.20	mg/kg	109% 75-125	
B222399-PS2	Post Spike, (2210048-07) Se(F2)	0.317	22.73	25.52	mg/kg	111% 75-125	
B222399-DUP2	Duplicate, (2210048-18) Se(F2)	0.642		0.745	mg/kg		15% 25
B222399-PS3	Post Spike, (2210048-18) Se(F2)	0.642	26.83	30.73	mg/kg	112% 75-125	
B222399-PS4	Post Spike, (2210048-18) Se(F2)	0.642	26.83	30.83	mg/kg	113% 75-125	
B222399-DUP3	Duplicate, (2210048-27) Se(F2)	0.253		0.246	mg/kg		3% 25
B222399-PS5	Post Spike, (2210048-27) Se(F2)	0.253	28.67	32.82	mg/kg	114% 75-125	
B222399-PS6	Post Spike, (2210048-27) Se(F2)	0.253	28.67	33.69	mg/kg	117% 75-125	
B222399-DUP4	Duplicate, (2210048-35) Se(F2)	0.365		0.326	mg/kg		11% 25
B222399-PS7	Post Spike, (2210048-35) Se(F2)	0.365	30.83	35.95	mg/kg	115% 75-125	



Accuracy & Precision Summary

Batch: B222399
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222399-PS8	Post Spike, (2210048-35) Se(F2)	0.365	30.83	34.69	mg/kg	111% 75-125	



Accuracy & Precision Summary

Batch: B222400
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222400-DUP1	Duplicate, (2210048-37) Se(F2)	0.324		0.295	mg/kg		10% 25
B222400-PS1	Post Spike, (2210048-37) Se(F2)	0.324	26.62	29.82	mg/kg	111% 75-125	
B222400-PS2	Post Spike, (2210048-37) Se(F2)	0.324	26.62	29.40	mg/kg	109% 75-125	
B222400-DUP2	Duplicate, (2210048-51) Se(F2)	1.779		1.482	mg/kg		18% 25
B222400-PS3	Post Spike, (2210048-51) Se(F2)	1.779	31.49	36.35	mg/kg	110% 75-125	
B222400-PS4	Post Spike, (2210048-51) Se(F2)	1.779	31.49	35.91	mg/kg	108% 75-125	
B222400-PS5	Post Spike, (2210048-53) Se(F2)	19.46	74.60	101.5	mg/kg	110% 75-125	
B222400-PS6	Post Spike, (2210048-53) Se(F2)	19.46	74.60	101.6	mg/kg	110% 75-125	
B222400-DUP3	Duplicate, (2210048-54) Se(F2)	7.518		7.895	mg/kg		5% 25
B222400-DUP4	Duplicate, (2210048-66) Se(F2)	0.602		0.618	mg/kg		3% 25
B222400-PS7	Post Spike, (2210048-66) Se(F2)	0.602	34.81	38.51	mg/kg	109% 75-125	



Accuracy & Precision Summary

Batch: B222400
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222400-PS8	Post Spike, (2210048-66) Se(F2)	0.602	34.81	38.40	mg/kg	109% 75-125	



Accuracy & Precision Summary

Batch: B222405
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222405-PS1	Post Spike, (2210048-01) Se(F3)	1.000	38.20	33.99	mg/kg	86% 75-125	
B222405-PS2	Post Spike, (2210048-01) Se(F3)	1.000	38.20	33.71	mg/kg	86% 75-125	
B222405-DUP1	Duplicate, (2210048-07) Se(F3)	0.279		0.375	mg/kg		29% 25
B222405-PS3	Post Spike, (2210048-11) Se(F3)	0.259	24.43	21.79	mg/kg	88% 75-125	
B222405-PS4	Post Spike, (2210048-11) Se(F3)	0.259	24.43	21.82	mg/kg	88% 75-125	
B222405-DUP2	Duplicate, (2210048-18) Se(F3)	0.390		0.352	mg/kg		10% 25
B222405-PS5	Post Spike, (2210048-21) Se(F3)	0.795	37.63	34.57	mg/kg	90% 75-125	
B222405-PS6	Post Spike, (2210048-21) Se(F3)	0.795	37.63	34.55	mg/kg	90% 75-125	
B222405-DUP3	Duplicate, (2210048-27) Se(F3)	0.343		0.281	mg/kg		20% 25
B222405-PS7	Post Spike, (2210048-31) Se(F3)	2.165	35.31	33.86	mg/kg	90% 75-125	
B222405-PS8	Post Spike, (2210048-31) Se(F3)	2.165	35.31	35.40	mg/kg	94% 75-125	



Accuracy & Precision Summary

Batch: B222405
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222405-DUP4	Duplicate, (2210048-35) Se(F3)	0.425		0.355	mg/kg		18% 25



Accuracy & Precision Summary

Batch: B222421
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222421-PS1	Post Spike, (2210048-01) Se(F4)	0.222	38.20	36.55	mg/kg	95% 75-125	
B222421-PS2	Post Spike, (2210048-01) Se(F4)	0.222	38.20	36.90	mg/kg	96% 75-125	
B222421-DUP1	Duplicate, (2210048-07) Se(F4)	0.236		0.195	mg/kg		19% 25
B222421-PS3	Post Spike, (2210048-11) Se(F4)	0.198	24.43	23.10	mg/kg	94% 75-125	
B222421-PS4	Post Spike, (2210048-11) Se(F4)	0.198	24.43	23.45	mg/kg	95% 75-125	
B222421-DUP2	Duplicate, (2210048-18) Se(F4)	0.206		0.183	mg/kg		12% 25
B222421-PS5	Post Spike, (2210048-21) Se(F4)	0.236	37.63	34.40	mg/kg	91% 75-125	
B222421-PS6	Post Spike, (2210048-21) Se(F4)	0.236	37.63	35.92	mg/kg	95% 75-125	
B222421-DUP3	Duplicate, (2210048-27) Se(F4)	0.624		0.170	mg/kg		115% 25
B222421-PS7	Post Spike, (2210048-31) Se(F4)	0.193	35.31	34.58	mg/kg	97% 75-125	
B222421-PS8	Post Spike, (2210048-31) Se(F4)	0.193	35.31	33.62	mg/kg	95% 75-125	



Accuracy & Precision Summary

Batch: B222421
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222421-DUP4	Duplicate, (2210048-35) Se(F4)	0.188		0.209	mg/kg		10% 25



Accuracy & Precision Summary

Batch: B222434
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222434-DUP1	Duplicate, (2210048-71) Se(F2)	8.925		8.795	mg/kg		1% 25
B222434-PS1	Post Spike, (2210048-71) Se(F2)	8.925	36.69	43.00	mg/kg	93% 75-125	
B222434-PS2	Post Spike, (2210048-71) Se(F2)	8.925	36.69	42.67	mg/kg	92% 75-125	
B222434-DUP2	Duplicate, (2210048-80) Se(F2)	1.748		1.290	mg/kg		30% 25
B222434-PS3	Post Spike, (2210048-81) Se(F2)	1.053	44.16	41.94	mg/kg	93% 75-125	
B222434-PS4	Post Spike, (2210048-81) Se(F2)	1.053	44.16	40.74	mg/kg	90% 75-125	
B222434-DUP3	Duplicate, (2210048-90) Se(F2)	7.557		7.899	mg/kg		4% 25
B222434-PS5	Post Spike, (2210048-91) Se(F2)	12.99	70.34	75.85	mg/kg	89% 75-125	
B222434-PS6	Post Spike, (2210048-91) Se(F2)	12.99	70.34	76.35	mg/kg	90% 75-125	
B222434-PS7	Post Spike, (2210049-01) Se(F2)	10.20	62.06	67.97	mg/kg	93% 75-125	
B222434-PS8	Post Spike, (2210049-01) Se(F2)	10.20	62.06	68.79	mg/kg	94% 75-125	



Accuracy & Precision Summary

Batch: B222434
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222434-DUP4	Duplicate, (2210049-07) Se(F2)	4.303		4.450	mg/kg		3% 25



Accuracy & Precision Summary

Batch: B222438
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222438-DUP1	Duplicate, (2210048-37) Se(F3)	0.434		0.356	mg/kg		20% 25
B222438-PS1	Post Spike, (2210048-41) Se(F3)	0.288	12.88	14.91	mg/kg	114% 75-125	
B222438-PS2	Post Spike, (2210048-41) Se(F3)	0.288	12.88	11.42	mg/kg	86% 75-125	
B222438-DUP2	Duplicate, (2210048-51) Se(F3)	0.898		0.705	mg/kg		24% 25
B222438-PS3	Post Spike, (2210048-51) Se(F3)	0.898	15.75	15.30	mg/kg	91% 75-125	
B222438-PS4	Post Spike, (2210048-51) Se(F3)	0.898	15.75	15.05	mg/kg	90% 75-125	
B222438-DUP3	Duplicate, (2210048-54) Se(F3)	4.189		4.303	mg/kg		3% 25
B222438-PS5	Post Spike, (2210048-61) Se(F3)	0.379	16.18	14.01	mg/kg	84% 75-125	
B222438-PS6	Post Spike, (2210048-61) Se(F3)	0.379	16.18	13.56	mg/kg	81% 75-125	
B222438-DUP4	Duplicate, (2210048-66) Se(F3)	1.151		1.140	mg/kg		1% 25
B222438-PS7	Post Spike, (2210048-70) Se(F3)	2.099	18.04	17.52	mg/kg	85% 75-125	



Accuracy & Precision Summary

Batch: B222438
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222438-PS8	Post Spike, (2210048-70) Se(F3)	2.099	18.04	17.55	mg/kg	86% 75-125	



Accuracy & Precision Summary

Batch: B222447
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222447-BS1	Blank Spike, (2152010) Se(F5)		25.00	22.01	mg/kg	88% 75-125	
B222447-BS2	Blank Spike, (2152010) Se(F5)		25.00	23.19	mg/kg	93% 75-125	
B222447-PS1	Post Spike, (2210048-01) Se(F5)	0.037	23.87	22.64	mg/kg	95% 75-125	
B222447-PS2	Post Spike, (2210048-01) Se(F5)	0.037	23.87	22.02	mg/kg	92% 75-125	
B222447-DUP1	Duplicate, (2210048-07) Se(F5)	0.022		0.032	mg/kg		37% 25
B222447-PS3	Post Spike, (2210048-11) Se(F5)	0.024	15.27	13.97	mg/kg	91% 75-125	
B222447-PS4	Post Spike, (2210048-11) Se(F5)	0.024	15.27	14.67	mg/kg	96% 75-125	
B222447-DUP2	Duplicate, (2210048-18) Se(F5)	0.016		0.048	mg/kg		102% 25
B222447-PS5	Post Spike, (2210048-21) Se(F5)	0.022	23.52	21.98	mg/kg	93% 75-125	
B222447-PS6	Post Spike, (2210048-21) Se(F5)	0.022	23.52	21.78	mg/kg	93% 75-125	
B222447-DUP3	Duplicate, (2210048-27) Se(F5)	0.053		0.036	mg/kg		38% 25



Accuracy & Precision Summary

Batch: B222447
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222447-PS7	Post Spike, (2210048-31) Se(F5)	0.022	22.07	19.33	mg/kg	87% 75-125	
B222447-PS8	Post Spike, (2210048-31) Se(F5)	0.022	22.07	20.80	mg/kg	94% 75-125	
B222447-DUP4	Duplicate, (2210048-35) Se(F5)	0.026		0.033	mg/kg		23% 25



Accuracy & Precision Summary

Batch: B222485
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222485-DUP1	Duplicate, (2210048-37) Se(F4)	0.154		0.171	mg/kg		11% 25
B222485-PS1	Post Spike, (2210048-41) Se(F4)	0.298	25.75	25.63	mg/kg	98% 75-125	
B222485-PS2	Post Spike, (2210048-41) Se(F4)	0.298	25.75	26.77	mg/kg	103% 75-125	
B222485-DUP2	Duplicate, (2210048-51) Se(F4)	0.199		0.243	mg/kg		20% 25
B222485-PS3	Post Spike, (2210048-51) Se(F4)	0.199	31.49	29.99	mg/kg	95% 75-125	
B222485-PS4	Post Spike, (2210048-51) Se(F4)	0.199	31.49	30.77	mg/kg	97% 75-125	
B222485-DUP3	Duplicate, (2210048-54) Se(F4)	0.371		0.282	mg/kg		27% 25
B222485-PS5	Post Spike, (2210048-61) Se(F4)	0.198	32.37	31.18	mg/kg	96% 75-125	
B222485-PS6	Post Spike, (2210048-61) Se(F4)	0.198	32.37	31.05	mg/kg	95% 75-125	
B222485-DUP4	Duplicate, (2210048-66) Se(F4)	0.091		0.080	mg/kg		13% 25
B222485-PS7	Post Spike, (2210048-70) Se(F4)	0.424	36.07	38.20	mg/kg	105% 75-125	



Accuracy & Precision Summary

Batch: B222485
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222485-PS8	Post Spike, (2210048-70) Se(F4)	0.424	36.07	37.82	mg/kg	104% 75-125	



Accuracy & Precision Summary

Batch: B222495
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222495-BS1	Blank Spike, (2152010) Se(F5)		25.00	21.40	mg/kg	86% 75-125	
B222495-BS2	Blank Spike, (2152010) Se(F5)		25.00	22.05	mg/kg	88% 75-125	
B222495-DUP1	Duplicate, (2210048-37) Se(F5)	ND		ND	mg/kg		N/C 25
B222495-PS1	Post Spike, (2210048-41) Se(F5)	ND	32.19	28.65	mg/kg	89% 75-125	
B222495-PS2	Post Spike, (2210048-41) Se(F5)	ND	32.19	29.17	mg/kg	91% 75-125	
B222495-DUP2	Duplicate, (2210048-51) Se(F5)	ND		0.033	mg/kg		N/C 25
B222495-PS3	Post Spike, (2210048-51) Se(F5)	ND	39.36	34.87	mg/kg	89% 75-125	
B222495-PS4	Post Spike, (2210048-51) Se(F5)	ND	39.36	35.22	mg/kg	89% 75-125	
B222495-DUP3	Duplicate, (2210048-54) Se(F5)	ND		ND	mg/kg		N/C 25
B222495-PS5	Post Spike, (2210048-61) Se(F5)	ND	40.46	36.18	mg/kg	89% 75-125	
B222495-PS6	Post Spike, (2210048-61) Se(F5)	ND	40.46	35.86	mg/kg	89% 75-125	



Accuracy & Precision Summary

Batch: B222495
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222495-DUP4	Duplicate, (2210048-66) Se(F5)	ND		ND	mg/kg		N/C 25
B222495-PS7	Post Spike, (2210048-70) Se(F5)	ND	45.09	41.35	mg/kg	92% 75-125	
B222495-PS8	Post Spike, (2210048-70) Se(F5)	ND	45.09	40.55	mg/kg	90% 75-125	



Accuracy & Precision Summary

Batch: B222498
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222498-DUP1	Duplicate, (2210048-71) Se(F3)	4.769		5.414	mg/kg		13% 25
B222498-DUP2	Duplicate, (2210048-80) Se(F3)	2.656		2.359	mg/kg		12% 25
B222498-PS1	Post Spike, (2210048-81) Se(F3)	1.732	44.16	41.14	mg/kg	89% 75-125	
B222498-PS2	Post Spike, (2210048-81) Se(F3)	1.732	44.16	39.93	mg/kg	86% 75-125	
B222498-DUP3	Duplicate, (2210048-90) Se(F3)	6.428		6.697	mg/kg		4% 25
B222498-PS3	Post Spike, (2210048-91) Se(F3)	10.06	70.34	71.03	mg/kg	87% 75-125	
B222498-PS4	Post Spike, (2210048-91) Se(F3)	10.06	70.34	71.96	mg/kg	88% 75-125	
B222498-PS5	Post Spike, (2210049-01) Se(F3)	7.360	62.06	61.48	mg/kg	87% 75-125	
B222498-PS6	Post Spike, (2210049-01) Se(F3)	7.360	62.06	58.25	mg/kg	82% 75-125	
B222498-DUP4	Duplicate, (2210049-07) Se(F3)	5.783		5.972	mg/kg		3% 25
B222498-PS7	Post Spike, (2210049-11) Se(F3)	0.497	27.02	23.91	mg/kg	87% 75-125	



Accuracy & Precision Summary

Batch: B222498
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222498-PS8	Post Spike, (2210049-11) Se(F3)	0.497	27.02	24.00	mg/kg	87% 75-125	



Accuracy & Precision Summary

Batch: B222504
Lab Matrix: Soil/Sediment
Method: EPA 6020B Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222504-BS1	Blank Spike, (2152010) Se		50.00	45.29	mg/kg	91% 75-125	
B222504-SRM1	Reference Material (2224038, CRM052-50G Loamy Clay) Se		54.40	51.58	mg/kg	95% 75-125	
B222504-DUP1	Duplicate, (2210048-71) Se	18.75		21.11	mg/kg		12% 30
B222504-MS1	Matrix Spike, (2210048-71) Se	18.75	87.69	98.61	mg/kg	91% 70-130	
B222504-MSD1	Matrix Spike Duplicate, (2210048-71) Se	18.75	89.34	96.65	mg/kg	87% 70-130	4% 30



Accuracy & Precision Summary

Batch: B222514
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222514-DUP1	Duplicate, (2210048-71) Se(F4)	1.147		0.996	mg/kg		14% 25
B222514-DUP2	Duplicate, (2210048-80) Se(F4)	0.196		0.282	mg/kg		36% 25
B222514-PS1	Post Spike, (2210048-81) Se(F4)	0.228	44.16	45.97	mg/kg	104% 75-125	
B222514-PS2	Post Spike, (2210048-81) Se(F4)	0.228	44.16	46.74	mg/kg	105% 75-125	
B222514-DUP3	Duplicate, (2210048-90) Se(F4)	0.530		0.472	mg/kg		12% 25
B222514-PS3	Post Spike, (2210048-91) Se(F4)	0.370	70.34	74.69	mg/kg	106% 75-125	
B222514-PS4	Post Spike, (2210048-91) Se(F4)	0.370	70.34	75.76	mg/kg	107% 75-125	
B222514-PS5	Post Spike, (2210049-01) Se(F4)	0.336	62.06	61.82	mg/kg	99% 75-125	
B222514-PS6	Post Spike, (2210049-01) Se(F4)	0.336	62.06	66.49	mg/kg	107% 75-125	
B222514-DUP4	Duplicate, (2210049-07) Se(F4)	0.208		0.233	mg/kg		11% 25
B222514-PS7	Post Spike, (2210049-11) Se(F4)	0.286	27.02	27.92	mg/kg	102% 75-125	



Accuracy & Precision Summary

Batch: B222514
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222514-PS8	Post Spike, (2210049-11) Se(F4)	0.286	27.02	29.29	mg/kg	107% 75-125	



Accuracy & Precision Summary

Batch: B222533
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222533-BS1	Blank Spike, (2152010) Se(F5)		25.00	25.37	mg/kg	101% 75-125	
B222533-BS2	Blank Spike, (2152010) Se(F5)		25.00	26.22	mg/kg	105% 75-125	
B222533-DUP1	Duplicate, (2210048-71) Se(F5)	0.179		0.113	mg/kg		45% 25
B222533-PS1	Post Spike, (2210048-71) Se(F5)	0.179	45.86	43.65	mg/kg	95% 75-125	
B222533-PS2	Post Spike, (2210048-71) Se(F5)	0.179	45.86	45.33	mg/kg	98% 75-125	
B222533-DUP2	Duplicate, (2210048-80) Se(F5)	0.044		0.054	mg/kg		21% 25
B222533-PS3	Post Spike, (2210048-81) Se(F5)	0.095	55.20	54.36	mg/kg	98% 75-125	
B222533-PS4	Post Spike, (2210048-81) Se(F5)	0.095	55.20	54.61	mg/kg	99% 75-125	
B222533-DUP3	Duplicate, (2210048-90) Se(F5)	0.081		0.073	mg/kg		10% 25
B222533-PS5	Post Spike, (2210048-91) Se(F5)	0.065	87.93	87.64	mg/kg	100% 75-125	
B222533-PS6	Post Spike, (2210048-91) Se(F5)	0.065	87.93	88.56	mg/kg	101% 75-125	



Accuracy & Precision Summary

Batch: B222533
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222533-PS7	Post Spike, (2210049-01) Se(F5)	0.076	77.58	76.24	mg/kg	98% 75-125	
B222533-PS8	Post Spike, (2210049-01) Se(F5)	0.076	77.58	78.10	mg/kg	101% 75-125	
B222533-DUP4	Duplicate, (2210049-07) Se(F5)	0.056		0.049	mg/kg		14% 25



Method Blanks & Reporting Limits

Batch: B222330
Matrix: Soil/Sediment
Method: In-House
Analyte: Se(F1)

Sample	Result	Units	
B222330-BLK1	0.010	mg/kg	
B222330-BLK2	0.006	mg/kg	
B222330-BLK3	0.003	mg/kg	
B222330-BLK4	0.004	mg/kg	
Average:	0.006		MDL: 0.016
Limit:	0.080		MRL: 0.080



Method Blanks & Reporting Limits

Batch: B222332
Matrix: Soil/Sediment
Method: In-House
Analyte: Se(F1)

Sample	Result	Units	
B222332-BLK1	0.017	mg/kg	
B222332-BLK2	0.015	mg/kg	
B222332-BLK3	0.0008	mg/kg	
B222332-BLK4	0.013	mg/kg	
Average:	0.011		MDL: 0.034
Limit:	0.080		MRL: 0.080



Method Blanks & Reporting Limits

Batch: B222333
Matrix: Soil/Sediment
Method: In-House
Analyte: Se(F1)

Sample	Result	Units	
B222333-BLK1	-0.014	mg/kg	
B222333-BLK2	-0.015	mg/kg	
B222333-BLK3	-0.014	mg/kg	
B222333-BLK4	-0.016	mg/kg	
Average:	-0.015		MDL: 0.018
Limit:	0.080		MRL: 0.080



Method Blanks & Reporting Limits

Batch: B222340
Matrix: Soil/Sediment
Method: EPA 6020B Mod
Analyte: Se

Sample	Result	Units	
B222340-BLK1	0.006	mg/kg	
B222340-BLK2	0.019	mg/kg	
B222340-BLK3	0.004	mg/kg	
B222340-BLK4	0.007	mg/kg	
Average:	0.009		MDL: 0.095
Limit:	0.190		MRL: 0.190



Method Blanks & Reporting Limits

Batch: B222342
Matrix: Soil/Sediment
Method: SOP BAL-0501
Analyte: %TS

Sample	Result	Units	
B222342-BLK1	-0.08	%	
B222342-BLK2	-0.10	%	
	Average: -0.09		MDL: 0.03
	Limit: 0.10		MRL: 0.10



Method Blanks & Reporting Limits

Batch: B222343
Matrix: Soil/Sediment
Method: In-House
Analyte: DMSeO F1

Sample	Result	Units	
B222343-BLK1	0.00	mg/kg	
B222343-BLK2	0.00	mg/kg	
B222343-BLK3	0.00	mg/kg	
B222343-BLK4	0.00	mg/kg	
Average: 0.000			MDL: 0.0009
Limit: 0.008			MRL: 0.008

Analyte: MeSe(IV) F1

Sample	Result	Units	
B222343-BLK1	0.00	mg/kg	
B222343-BLK2	0.00	mg/kg	
B222343-BLK3	0.00	mg/kg	
B222343-BLK4	0.00	mg/kg	
Average: 0.000			MDL: 0.0009
Limit: 0.008			MRL: 0.008

Analyte: Se Unk A F1

Sample	Result	Units	
B222343-BLK1	0.00	mg/kg	
B222343-BLK2	0.00	mg/kg	
B222343-BLK3	0.00	mg/kg	
B222343-BLK4	0.00	mg/kg	
Average: 0.000			MDL: 0.0009
Limit: 0.008			MRL: 0.008



Method Blanks & Reporting Limits

Analyte: Se(IV) F1

Sample	Result	Units	
B222343-BLK1	0.00	mg/kg	
B222343-BLK2	0.00	mg/kg	
B222343-BLK3	0.00	mg/kg	
B222343-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.004
Limit:	0.020		MRL: 0.020

Analyte: Se(VI) F1

Sample	Result	Units	
B222343-BLK1	0.00	mg/kg	
B222343-BLK2	0.00	mg/kg	
B222343-BLK3	0.00	mg/kg	
B222343-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.005
Limit:	0.020		MRL: 0.020

Analyte: SeCN F1

Sample	Result	Units	
B222343-BLK1	0.00	mg/kg	
B222343-BLK2	0.00	mg/kg	
B222343-BLK3	0.00	mg/kg	
B222343-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.0008
Limit:	0.008		MRL: 0.008

Analyte: SeMet F1

Sample	Result	Units	
B222343-BLK1	0.00	mg/kg	
B222343-BLK2	0.00	mg/kg	
B222343-BLK3	0.00	mg/kg	
B222343-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.0009
Limit:	0.008		MRL: 0.008



Method Blanks & Reporting Limits

Analyte: SeSO3 F1

Sample	Result	Units	
B222343-BLK1	0.00	mg/kg	
B222343-BLK2	0.00	mg/kg	
B222343-BLK3	0.00	mg/kg	
B222343-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.005
Limit:	0.020		MRL: 0.020

Analyte: Unk Se Sp F1

Sample	Result	Units	
B222343-BLK1	0.00	mg/kg	
B222343-BLK2	0.00	mg/kg	
B222343-BLK3	0.00	mg/kg	
B222343-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.004
Limit:	0.020		MRL: 0.020



Method Blanks & Reporting Limits

Batch: B222344
Matrix: Soil/Sediment
Method: EPA 6020B Mod
Analyte: Se

Sample	Result	Units
B222344-BLK1	0.003	mg/kg
B222344-BLK2	-0.005	mg/kg
B222344-BLK3	-0.007	mg/kg
B222344-BLK4	-0.0005	mg/kg

Average: -0.002
Limit: 0.190

MDL: 0.095
MRL: 0.190



Method Blanks & Reporting Limits

Batch: B222345
Matrix: Soil/Sediment
Method: In-House
Analyte: DMSeO F1

Sample	Result	Units	
B222345-BLK1	0.00	mg/kg	
B222345-BLK2	0.00	mg/kg	
B222345-BLK3	0.00	mg/kg	
B222345-BLK4	0.00	mg/kg	
Average: 0.000			MDL: 0.0009
Limit: 0.008			MRL: 0.008

Analyte: MeSe(IV) F1

Sample	Result	Units	
B222345-BLK1	0.00	mg/kg	
B222345-BLK2	0.00	mg/kg	
B222345-BLK3	0.00	mg/kg	
B222345-BLK4	0.00	mg/kg	
Average: 0.000			MDL: 0.0009
Limit: 0.008			MRL: 0.008

Analyte: Se Unk A F1

Sample	Result	Units	
B222345-BLK1	0.00	mg/kg	
B222345-BLK2	0.00	mg/kg	
B222345-BLK3	0.00	mg/kg	
B222345-BLK4	0.00	mg/kg	
Average: 0.000			MDL: 0.0009
Limit: 0.008			MRL: 0.008



Method Blanks & Reporting Limits

Analyte: Se(IV) F1

Sample	Result	Units	
B222345-BLK1	0.00	mg/kg	
B222345-BLK2	0.00	mg/kg	
B222345-BLK3	0.00	mg/kg	
B222345-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.004
Limit:	0.020		MRL: 0.020

Analyte: Se(VI) F1

Sample	Result	Units	
B222345-BLK1	0.00	mg/kg	
B222345-BLK2	0.00	mg/kg	
B222345-BLK3	0.00	mg/kg	
B222345-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.005
Limit:	0.020		MRL: 0.020

Analyte: SeCN F1

Sample	Result	Units	
B222345-BLK1	0.00	mg/kg	
B222345-BLK2	0.00	mg/kg	
B222345-BLK3	0.00	mg/kg	
B222345-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.0008
Limit:	0.008		MRL: 0.008

Analyte: SeMet F1

Sample	Result	Units	
B222345-BLK1	0.00	mg/kg	
B222345-BLK2	0.00	mg/kg	
B222345-BLK3	0.00	mg/kg	
B222345-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.0009
Limit:	0.008		MRL: 0.008



Method Blanks & Reporting Limits

Analyte: SeSO3 F1

Sample	Result	Units	
B222345-BLK1	0.00	mg/kg	
B222345-BLK2	0.00	mg/kg	
B222345-BLK3	0.00	mg/kg	
B222345-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.005
Limit:	0.020		MRL: 0.020

Analyte: Unk Se Sp F1

Sample	Result	Units	
B222345-BLK1	0.00	mg/kg	
B222345-BLK2	0.00	mg/kg	
B222345-BLK3	0.00	mg/kg	
B222345-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.004
Limit:	0.020		MRL: 0.020



Method Blanks & Reporting Limits

Batch: B222346
Matrix: Soil/Sediment
Method: In-House
Analyte: DMSeO F1

Sample	Result	Units	
B222346-BLK1	0.00	mg/kg	
B222346-BLK2	0.00	mg/kg	
B222346-BLK3	0.00	mg/kg	
B222346-BLK4	0.00	mg/kg	
Average: 0.000			MDL: 0.002
Limit: 0.008			MRL: 0.008

Analyte: MeSe(IV) F1

Sample	Result	Units	
B222346-BLK1	0.00	mg/kg	
B222346-BLK2	0.00	mg/kg	
B222346-BLK3	0.00	mg/kg	
B222346-BLK4	0.00	mg/kg	
Average: 0.000			MDL: 0.002
Limit: 0.008			MRL: 0.008

Analyte: Se Unk A F1

Sample	Result	Units	
B222346-BLK1	0.00	mg/kg	
B222346-BLK2	0.00	mg/kg	
B222346-BLK3	0.00	mg/kg	
B222346-BLK4	0.00	mg/kg	
Average: 0.000			MDL: 0.002
Limit: 0.008			MRL: 0.008



Method Blanks & Reporting Limits

Analyte: Se(IV) F1

Sample	Result	Units	
B222346-BLK1	0.00	mg/kg	
B222346-BLK2	0.00	mg/kg	
B222346-BLK3	0.00	mg/kg	
B222346-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.020		MRL: 0.020

Analyte: Se(VI) F1

Sample	Result	Units	
B222346-BLK1	0.00	mg/kg	
B222346-BLK2	0.00	mg/kg	
B222346-BLK3	0.00	mg/kg	
B222346-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.020		MRL: 0.020

Analyte: SeCN F1

Sample	Result	Units	
B222346-BLK1	0.00	mg/kg	
B222346-BLK2	0.00	mg/kg	
B222346-BLK3	0.00	mg/kg	
B222346-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.001
Limit:	0.008		MRL: 0.008

Analyte: SeMet F1

Sample	Result	Units	
B222346-BLK1	0.00	mg/kg	
B222346-BLK2	0.00	mg/kg	
B222346-BLK3	0.00	mg/kg	
B222346-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.008		MRL: 0.008



Method Blanks & Reporting Limits

Analyte: SeSO3 F1

Sample	Result	Units	
B222346-BLK1	0.00	mg/kg	
B222346-BLK2	0.00	mg/kg	
B222346-BLK3	0.00	mg/kg	
B222346-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.020		MRL: 0.020

Analyte: Unk Se Sp F1

Sample	Result	Units	
B222346-BLK1	0.00	mg/kg	
B222346-BLK2	0.00	mg/kg	
B222346-BLK3	0.00	mg/kg	
B222346-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.020		MRL: 0.020



Method Blanks & Reporting Limits

Batch: B222348
Matrix: Soil/Sediment
Method: In-House
Analyte: DMSeO F2

Sample	Result	Units	
B222348-BLK1	0.00	mg/kg	
B222348-BLK2	0.00	mg/kg	
B222348-BLK3	0.00	mg/kg	
B222348-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.008		MRL: 0.008

Analyte: MeSe(IV) F2

Sample	Result	Units	
B222348-BLK1	0.00	mg/kg	
B222348-BLK2	0.00	mg/kg	
B222348-BLK3	0.00	mg/kg	
B222348-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.008		MRL: 0.008

Analyte: Se Unk A F2

Sample	Result	Units	
B222348-BLK1	0.00	mg/kg	
B222348-BLK2	0.00	mg/kg	
B222348-BLK3	0.00	mg/kg	
B222348-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.008		MRL: 0.008



Method Blanks & Reporting Limits

Analyte: Se(IV) F2

Sample	Result	Units	
B222348-BLK1	0.00	mg/kg	
B222348-BLK2	0.00	mg/kg	
B222348-BLK3	0.00	mg/kg	
B222348-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.020		MRL: 0.020

Analyte: Se(VI) F2

Sample	Result	Units	
B222348-BLK1	0.00	mg/kg	
B222348-BLK2	0.00	mg/kg	
B222348-BLK3	0.00	mg/kg	
B222348-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.020		MRL: 0.020

Analyte: SeCN F2

Sample	Result	Units	
B222348-BLK1	0.00	mg/kg	
B222348-BLK2	0.00	mg/kg	
B222348-BLK3	0.00	mg/kg	
B222348-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.001
Limit:	0.008		MRL: 0.008

Analyte: SeMet F2

Sample	Result	Units	
B222348-BLK1	0.00	mg/kg	
B222348-BLK2	0.00	mg/kg	
B222348-BLK3	0.00	mg/kg	
B222348-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.008		MRL: 0.008



Method Blanks & Reporting Limits

Analyte: SeSO3 F2

Sample	Result	Units	
B222348-BLK1	0.00	mg/kg	
B222348-BLK2	0.00	mg/kg	
B222348-BLK3	0.00	mg/kg	
B222348-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.020		MRL: 0.020

Analyte: Unk Se Sp F2

Sample	Result	Units	
B222348-BLK1	0.00	mg/kg	
B222348-BLK2	0.00	mg/kg	
B222348-BLK3	0.00	mg/kg	
B222348-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.020		MRL: 0.020



Method Blanks & Reporting Limits

Batch: B222350
Matrix: Soil/Sediment
Method: In-House
Analyte: DMSeO F2

Sample	Result	Units	
B222350-BLK1	0.00	mg/kg	
B222350-BLK2	0.00	mg/kg	
B222350-BLK3	0.00	mg/kg	
B222350-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.008		MRL: 0.008

Analyte: MeSe(IV) F2

Sample	Result	Units	
B222350-BLK1	0.00	mg/kg	
B222350-BLK2	0.00	mg/kg	
B222350-BLK3	0.00	mg/kg	
B222350-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.008		MRL: 0.008

Analyte: Se Unk A F2

Sample	Result	Units	
B222350-BLK1	0.00	mg/kg	
B222350-BLK2	0.00	mg/kg	
B222350-BLK3	0.00	mg/kg	
B222350-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.008		MRL: 0.008



Method Blanks & Reporting Limits

Analyte: Se(IV) F2

Sample	Result	Units	
B222350-BLK1	0.00	mg/kg	
B222350-BLK2	0.00	mg/kg	
B222350-BLK3	0.00	mg/kg	
B222350-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.020		MRL: 0.020

Analyte: Se(VI) F2

Sample	Result	Units	
B222350-BLK1	0.00	mg/kg	
B222350-BLK2	0.00	mg/kg	
B222350-BLK3	0.00	mg/kg	
B222350-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.020		MRL: 0.020

Analyte: SeCN F2

Sample	Result	Units	
B222350-BLK1	0.00	mg/kg	
B222350-BLK2	0.00	mg/kg	
B222350-BLK3	0.00	mg/kg	
B222350-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.001
Limit:	0.008		MRL: 0.008

Analyte: SeMet F2

Sample	Result	Units	
B222350-BLK1	0.00	mg/kg	
B222350-BLK2	0.00	mg/kg	
B222350-BLK3	0.00	mg/kg	
B222350-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.008		MRL: 0.008



Method Blanks & Reporting Limits

Analyte: SeSO3 F2

Sample	Result	Units	
B222350-BLK1	0.00	mg/kg	
B222350-BLK2	0.00	mg/kg	
B222350-BLK3	0.00	mg/kg	
B222350-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.020		MRL: 0.020

Analyte: Unk Se Sp F2

Sample	Result	Units	
B222350-BLK1	0.00	mg/kg	
B222350-BLK2	0.00	mg/kg	
B222350-BLK3	0.00	mg/kg	
B222350-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.020		MRL: 0.020



Method Blanks & Reporting Limits

Batch: B222351
Matrix: Soil/Sediment
Method: In-House
Analyte: DMSeO F2

Sample	Result	Units	
B222351-BLK1	0.00	mg/kg	
B222351-BLK2	0.00	mg/kg	
B222351-BLK3	0.00	mg/kg	
B222351-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.008		MRL: 0.008

Analyte: MeSe(IV) F2

Sample	Result	Units	
B222351-BLK1	0.00	mg/kg	
B222351-BLK2	0.00	mg/kg	
B222351-BLK3	0.00	mg/kg	
B222351-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.008		MRL: 0.008

Analyte: Se Unk A F2

Sample	Result	Units	
B222351-BLK1	0.00	mg/kg	
B222351-BLK2	0.00	mg/kg	
B222351-BLK3	0.00	mg/kg	
B222351-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.008		MRL: 0.008



Method Blanks & Reporting Limits

Analyte: Se(IV) F2

Sample	Result	Units	
B222351-BLK1	0.00	mg/kg	
B222351-BLK2	0.00	mg/kg	
B222351-BLK3	0.00	mg/kg	
B222351-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.020		MRL: 0.020

Analyte: Se(VI) F2

Sample	Result	Units	
B222351-BLK1	0.00	mg/kg	
B222351-BLK2	0.00	mg/kg	
B222351-BLK3	0.00	mg/kg	
B222351-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.020		MRL: 0.020

Analyte: SeCN F2

Sample	Result	Units	
B222351-BLK1	0.00	mg/kg	
B222351-BLK2	0.00	mg/kg	
B222351-BLK3	0.00	mg/kg	
B222351-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.001
Limit:	0.008		MRL: 0.008

Analyte: SeMet F2

Sample	Result	Units	
B222351-BLK1	0.00	mg/kg	
B222351-BLK2	0.00	mg/kg	
B222351-BLK3	0.00	mg/kg	
B222351-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.008		MRL: 0.008



Method Blanks & Reporting Limits

Analyte: SeSO3 F2

Sample	Result	Units	
B222351-BLK1	0.00	mg/kg	
B222351-BLK2	0.00	mg/kg	
B222351-BLK3	0.00	mg/kg	
B222351-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.020		MRL: 0.020

Analyte: Unk Se Sp F2

Sample	Result	Units	
B222351-BLK1	0.00	mg/kg	
B222351-BLK2	0.00	mg/kg	
B222351-BLK3	0.00	mg/kg	
B222351-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.020		MRL: 0.020



Method Blanks & Reporting Limits

Batch: B222353
Matrix: Soil/Sediment
Method: SOP BAL-0501
Analyte: %TS

Sample	Result	Units	
B222353-BLK1	-0.05	%	
B222353-BLK2	-0.07	%	
Average:	-0.06		MDL: 0.03
Limit:	0.10		MRL: 0.10



Method Blanks & Reporting Limits

Batch: B222355
Matrix: Soil/Sediment
Method: SOP BAL-0501
Analyte: %TS

Sample	Result	Units	
B222355-BLK1	-0.11	%	
B222355-BLK2	-0.04	%	
	Average: -0.08		MDL: 0.03
	Limit: 0.08		MRL: 0.08



Method Blanks & Reporting Limits

Batch: B222380
Matrix: Soil/Sediment
Method: EPA 6020B Mod
Analyte: Se

Sample	Result	Units	
B222380-BLK1	-0.005	mg/kg	
B222380-BLK2	-0.006	mg/kg	
B222380-BLK3	-0.006	mg/kg	
B222380-BLK4	-0.003	mg/kg	
Average:	-0.005		MDL: 0.095
Limit:	0.190		MRL: 0.190



Method Blanks & Reporting Limits

Batch: B222399
Matrix: Soil/Sediment
Method: In-House
Analyte: Se(F2)

Sample	Result	Units	
B222399-BLK1	-0.014	mg/kg	
B222399-BLK2	-0.013	mg/kg	
B222399-BLK3	-0.009	mg/kg	
B222399-BLK4	-0.010	mg/kg	
Average:	-0.011		MDL: 0.019
Limit:	0.080		MRL: 0.080



Method Blanks & Reporting Limits

Batch: B222400
Matrix: Soil/Sediment
Method: In-House
Analyte: Se(F2)

Sample	Result	Units	
B222400-BLK1	0.002	mg/kg	
B222400-BLK2	0.005	mg/kg	
B222400-BLK3	0.009	mg/kg	
B222400-BLK4	0.007	mg/kg	
Average:	0.006		MDL: 0.015
Limit:	0.080		MRL: 0.080



Method Blanks & Reporting Limits

Batch: B222405
Matrix: Soil/Sediment
Method: In-House
Analyte: Se(F3)

Sample	Result	Units	
B222405-BLK1	-0.009	mg/kg	
B222405-BLK2	-0.011	mg/kg	
B222405-BLK3	-0.013	mg/kg	
B222405-BLK4	-0.003	mg/kg	
Average:	-0.009		MDL: 0.022
Limit:	0.080		MRL: 0.080



Method Blanks & Reporting Limits

Batch: B222421
Matrix: Soil/Sediment
Method: In-House
Analyte: Se(F4)

Sample	Result	Units	
B222421-BLK1	0.006	mg/kg	
B222421-BLK2	0.004	mg/kg	
B222421-BLK3	0.0007	mg/kg	
B222421-BLK4	0.002	mg/kg	
Average:	0.003		MDL: 0.010
Limit:	0.080		MRL: 0.080



Method Blanks & Reporting Limits

Batch: B222434
Matrix: Soil/Sediment
Method: In-House
Analyte: Se(F2)

Sample	Result	Units	
B222434-BLK1	0.011	mg/kg	
B222434-BLK2	0.005	mg/kg	
B222434-BLK3	0.003	mg/kg	
B222434-BLK4	0.005	mg/kg	
Average:	0.006		MDL: 0.016
Limit:	0.080		MRL: 0.080



Method Blanks & Reporting Limits

Batch: B222438
Matrix: Soil/Sediment
Method: In-House
Analyte: Se(F3)

Sample	Result	Units	
B222438-BLK1	-0.0009	mg/kg	
B222438-BLK2	-0.001	mg/kg	
B222438-BLK3	-0.001	mg/kg	
B222438-BLK4	-0.001	mg/kg	
Average:	-0.001		MDL: 0.004
Limit:	0.040		MRL: 0.040



Method Blanks & Reporting Limits

Batch: B222447
Matrix: Soil/Sediment
Method: In-House
Analyte: Se(F5)

Sample	Result	Units	
B222447-BLK1	-0.0001	mg/kg	
B222447-BLK2	0.0003	mg/kg	
B222447-BLK3	-0.001	mg/kg	
B222447-BLK4	-0.0007	mg/kg	
Average:	0.000		MDL: 0.005
Limit:	0.050		MRL: 0.050



Method Blanks & Reporting Limits

Batch: B222485
Matrix: Soil/Sediment
Method: In-House
Analyte: Se(F4)

Sample	Result	Units	
B222485-BLK1	-0.001	mg/kg	
B222485-BLK2	-0.002	mg/kg	
B222485-BLK3	0.002	mg/kg	
B222485-BLK4	-0.003	mg/kg	
Average:	-0.001		MDL: 0.008
Limit:	0.080		MRL: 0.080



Method Blanks & Reporting Limits

Batch: B222495
Matrix: Soil/Sediment
Method: In-House
Analyte: Se(F5)

Sample	Result	Units	
B222495-BLK1	0.003	mg/kg	
B222495-BLK2	0.008	mg/kg	
B222495-BLK3	0.010	mg/kg	
B222495-BLK4	0.001	mg/kg	
Average:	0.006		MDL: 0.018
Limit:	0.100		MRL: 0.100



Method Blanks & Reporting Limits

Batch: B222498
Matrix: Soil/Sediment
Method: In-House
Analyte: Se(F3)

Sample	Result	Units	
B222498-BLK1	0.002	mg/kg	
B222498-BLK2	0.0004	mg/kg	
B222498-BLK3	0.005	mg/kg	
B222498-BLK4	-0.0006	mg/kg	
Average:	0.002		MDL: 0.010
Limit:	0.080		MRL: 0.080



Method Blanks & Reporting Limits

Batch: B222504
Matrix: Soil/Sediment
Method: EPA 6020B Mod
Analyte: Se

Sample	Result	Units
B222504-BLK1	0.004	mg/kg
B222504-BLK2	0.003	mg/kg
B222504-BLK3	0.001	mg/kg
B222504-BLK4	0.001	mg/kg

Average: 0.002
Limit: 0.190

MDL: 0.095
MRL: 0.190



Method Blanks & Reporting Limits

Batch: B222514
Matrix: Soil/Sediment
Method: In-House
Analyte: Se(F4)

Sample	Result	Units	
B222514-BLK1	0.002	mg/kg	
B222514-BLK2	-0.005	mg/kg	
B222514-BLK3	-0.002	mg/kg	
B222514-BLK4	-0.003	mg/kg	
Average:	-0.002		MDL: 0.011
Limit:	0.080		MRL: 0.080



Method Blanks & Reporting Limits

Batch: B222533
Matrix: Soil/Sediment
Method: In-House
Analyte: Se(F5)

Sample	Result	Units	
B222533-BLK1	0.007	mg/kg	
B222533-BLK2	0.006	mg/kg	
B222533-BLK3	0.006	mg/kg	
B222533-BLK4	0.003	mg/kg	
Average:	0.006		MDL: 0.011
Limit:	0.100		MRL: 0.100



Sample Containers

Lab ID: 2210048-01			Report Matrix: SE			Collected: 09/13/2022	
Sample: RG_FOUKI_SESeSp-1_2022-09-13_N			Sample Type: Sample + Sum			Received: 10/06/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	2 oz	na	none	na	na	Cooler 3 - 2210048
Lab ID: 2210048-02			Report Matrix: SE			Collected: 09/13/2022	
Sample: RG_FOUKI_SESeSp-2_2022-09-13_N			Sample Type: Sample + Sum			Received: 10/06/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	2 oz	na	none	na	na	Cooler 3 - 2210048
Lab ID: 2210048-03			Report Matrix: SE			Collected: 09/13/2022	
Sample: RG_FOUKI_SESeSp-3_2022-09-13_N			Sample Type: Sample + Sum			Received: 10/06/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	2 oz	na	none	na	na	Cooler 3 - 2210048
Lab ID: 2210048-04			Report Matrix: SE			Collected: 09/13/2022	
Sample: RG_FOUKI_SESeSp-3_2022-09-13_N			Sample Type: Sample + Sum			Received: 10/06/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	2 oz	na	none	na	na	Cooler 3 - 2210048
Lab ID: 2210048-05			Report Matrix: SE			Collected: 09/13/2022	
Sample: RG_FOUKI_SESeSp-4_2022-09-13_N			Sample Type: Sample + Sum			Received: 10/06/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	2 oz	na	none	na	na	Cooler 3 - 2210048
Lab ID: 2210048-06			Report Matrix: SE			Collected: 09/13/2022	
Sample: RG_FOUKI_SESeSp-5_2022-09-13_N			Sample Type: Sample + Sum			Received: 10/06/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	2 oz	na	none	na	na	Cooler 3 - 2210048



Sample Containers

Lab ID: 2210048-07 Sample: RG_FRDSCC1_SESeSp-1_2022-09-19_N	Report Matrix: SE Sample Type: Sample + Sum	Collected: 09/19/2022 Received: 10/06/2022
Des Container Size Lot	Preservation P-Lot	pH Ship. Cont.
A Client-Provided 2 oz na	none na	na Cooler 3 - 2210048
Lab ID: 2210048-08 Sample: RG_FRDSCC1_SESeSp-2_2022-09-19_N	Report Matrix: SE Sample Type: Sample + Sum	Collected: 09/19/2022 Received: 10/06/2022
Des Container Size Lot	Preservation P-Lot	pH Ship. Cont.
A Client-Provided 2 oz na	none na	na Cooler 3 - 2210048
Lab ID: 2210048-09 Sample: RG_FRDSCC1_SESeSp-3_2022-09-19_N	Report Matrix: SE Sample Type: Sample + Sum	Collected: 09/19/2022 Received: 10/06/2022
Des Container Size Lot	Preservation P-Lot	pH Ship. Cont.
A Client-Provided 2 oz na	none na	na Cooler 3 - 2210048
Lab ID: 2210048-10 Sample: RG_FRDSCC1_SESeSp-4_2022-09-19_N	Report Matrix: SE Sample Type: Sample + Sum	Collected: 09/19/2022 Received: 10/06/2022
Des Container Size Lot	Preservation P-Lot	pH Ship. Cont.
A Client-Provided 2 oz na	none na	na Cooler 3 - 2210048
Lab ID: 2210048-11 Sample: RG_FRDSCC1_SESeSp-5_2022-09-19_N	Report Matrix: SE Sample Type: Sample + Sum	Collected: 09/19/2022 Received: 10/06/2022
Des Container Size Lot	Preservation P-Lot	pH Ship. Cont.
A Client-Provided 2 oz na	none na	na Cooler 3 - 2210048
Lab ID: 2210048-12 Sample: RG_SCOUTDS_SESeSp-1_2022-09-13_N	Report Matrix: SE Sample Type: Sample + Sum	Collected: 09/13/2022 Received: 10/06/2022
Des Container Size Lot	Preservation P-Lot	pH Ship. Cont.
A Client-Provided 2 oz na	none na	na Cooler 3 - 2210048



Sample Containers

Lab ID: 2210048-13			Report Matrix: SE			Collected: 09/14/2022	
Sample: RG_SCOUTDS_SESeSp-2_2022-09-14_N			Sample Type: Sample + Sum			Received: 10/06/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	2 oz	na	none	na	na	Cooler 3 - 2210048
Lab ID: 2210048-14			Report Matrix: SE			Collected: 09/14/2022	
Sample: RG_SCOUTDS_SESeSp-2_2022-09-14_N			Sample Type: Sample + Sum			Received: 10/06/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	2 oz	na	none	na	na	Cooler 3 - 2210048
Lab ID: 2210048-15			Report Matrix: SE			Collected: 09/14/2022	
Sample: RG_SCOUTDS_SESeSp-3_2022-09-14_N			Sample Type: Sample + Sum			Received: 10/06/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	2 oz	na	none	na	na	Cooler 3 - 2210048
Lab ID: 2210048-16			Report Matrix: SE			Collected: 09/14/2022	
Sample: RG_SCOUTDS_SESeSp-4_2022-09-14_N			Sample Type: Sample + Sum			Received: 10/06/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	2 oz	na	none	na	na	Cooler 3 - 2210048
Lab ID: 2210048-17			Report Matrix: SE			Collected: 09/14/2022	
Sample: RG_SCOUTDS_SESeSp-5_2022-09-14_N			Sample Type: Sample + Sum			Received: 10/06/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	2 oz	na	none	na	na	Cooler 3 - 2210048
Lab ID: 2210048-18			Report Matrix: SE			Collected: 09/16/2022	
Sample: RG_GRASSY_SESeSp-1_2022-09-16_N			Sample Type: Sample + Sum			Received: 10/06/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	2 oz	na	none	na	na	Cooler 3 - 2210048



Sample Containers

Lab ID: 2210048-19			Report Matrix: SE			Collected: 09/16/2022	
Sample: RG_GRASSY_SESeSp-2_2022-09-16_N			Sample Type: Sample + Sum			Received: 10/06/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	2 oz	na	none	na	na	Cooler 3 - 2210048
Lab ID: 2210048-20			Report Matrix: SE			Collected: 09/16/2022	
Sample: RG_GRASSY_SESeSp-3_2022-09-16_N			Sample Type: Sample + Sum			Received: 10/06/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	2 oz	na	none	na	na	Cooler 3 - 2210048
Lab ID: 2210048-21			Report Matrix: SE			Collected: 09/16/2022	
Sample: RG_GRASSY_SESeSp-4_2022-09-16_N			Sample Type: Sample + Sum			Received: 10/06/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	2 oz	na	none	na	na	Cooler 3 - 2210048
Lab ID: 2210048-22			Report Matrix: SE			Collected: 09/16/2022	
Sample: RG_GRASSY_SESeSp-5_2022-09-16_N			Sample Type: Sample + Sum			Received: 10/06/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	2 oz	na	none	na	na	Cooler 3 - 2210048
Lab ID: 2210048-23			Report Matrix: SE			Collected: 09/19/2022	
Sample: RG_UFR1_SESeSp-1_2022-09-19_N			Sample Type: Sample + Sum			Received: 10/06/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	2 oz	na	none	na	na	Cooler 3 - 2210048
Lab ID: 2210048-24			Report Matrix: SE			Collected: 09/19/2022	
Sample: RG_UFR1_SESeSp-2_2022-09-19_N			Sample Type: Sample + Sum			Received: 10/06/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	2 oz	na	none	na	na	Cooler 3 - 2210048



Sample Containers

Lab ID: 2210048-25			Report Matrix: SE			Collected: 09/19/2022		
Sample: RG_UFR1_SESeSp-3_2022-09-19_N			Sample Type: Sample + Sum			Received: 10/06/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided	2 oz	na	none	na	na	Cooler 3 - 2210048	
Lab ID: 2210048-26			Report Matrix: SE			Collected: 09/19/2022		
Sample: RG_UFR1_SESeSp-4_2022-09-19_N			Sample Type: Sample + Sum			Received: 10/06/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided	2 oz	na	none	na	na	Cooler 3 - 2210048	
Lab ID: 2210048-27			Report Matrix: SE			Collected: 09/19/2022		
Sample: RG_UFR1_SESeSp-5_2022-09-19_N			Sample Type: Sample + Sum			Received: 10/06/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided	2 oz	na	none	na	na	Cooler 3 - 2210048	
Lab ID: 2210048-28			Report Matrix: SE			Collected: 09/19/2022		
Sample: RG_WED_SESeSp-1_2022-09-19_N			Sample Type: Sample + Sum			Received: 10/06/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided	2 oz	na	none	na	na	Cooler 3 - 2210048	
Lab ID: 2210048-29			Report Matrix: SE			Collected: 09/19/2022		
Sample: RG_WED_SESeSp-2_2022-09-19_N			Sample Type: Sample + Sum			Received: 10/06/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided	2 oz	na	none	na	na	Cooler 3 - 2210048	
Lab ID: 2210048-30			Report Matrix: SE			Collected: 09/19/2022		
Sample: RG_WED_SESeSp-3_2022-09-19_N			Sample Type: Sample + Sum			Received: 10/06/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided	2 oz	na	none	na	na	Cooler 3 - 2210048	



Sample Containers

Lab ID: 2210048-31	Report Matrix: SE	Collected: 09/19/2022
Sample: RG_WED_SESeSp-4_2022-09-19_N	Sample Type: Sample + Sum	Received: 10/06/2022
Des Container Size Lot Preservation P-Lot pH Ship. Cont.		
A Client-Provided 2 oz na none na na Cooler 3 - 2210048		
Lab ID: 2210048-32	Report Matrix: SE	Collected: 09/19/2022
Sample: RG_WED_SESeSp-5_2022-09-19_N	Sample Type: Sample + Sum	Received: 10/06/2022
Des Container Size Lot Preservation P-Lot pH Ship. Cont.		
A Client-Provided 2 oz na none na na Cooler 3 - 2210048		
Lab ID: 2210048-33	Report Matrix: SE	Collected: 09/16/2022
Sample: RG_FOUCL_SESeSp-1_2022-09-16_N	Sample Type: Sample + Sum	Received: 10/06/2022
Des Container Size Lot Preservation P-Lot pH Ship. Cont.		
A Client-Provided 2 oz na none na na Cooler 3 - 2210048		
Lab ID: 2210048-34	Report Matrix: SE	Collected: 09/16/2022
Sample: RG_FOUCL_SESeSp-2_2022-09-16_N	Sample Type: Sample + Sum	Received: 10/06/2022
Des Container Size Lot Preservation P-Lot pH Ship. Cont.		
A Client-Provided 2 oz na none na na Cooler 3 - 2210048		
Lab ID: 2210048-35	Report Matrix: SE	Collected: 09/16/2022
Sample: RG_FOUCL_SESeSp-3_2022-09-16_N	Sample Type: Sample + Sum	Received: 10/06/2022
Des Container Size Lot Preservation P-Lot pH Ship. Cont.		
A Client-Provided 2 oz na none na na Cooler 3 - 2210048		
Lab ID: 2210048-36	Report Matrix: SE	Collected: 09/16/2022
Sample: RG_FOUCL_SESeSp-4_2022-09-16_N	Sample Type: Sample + Sum	Received: 10/06/2022
Des Container Size Lot Preservation P-Lot pH Ship. Cont.		
A Client-Provided 2 oz na none na na Cooler 3 - 2210048		



Sample Containers

Lab ID: 2210048-37
Sample: RG_FOUCL_SESeSp-5_2022-09-16_N
Report Matrix: SE
Sample Type: Sample + Sum
Collected: 09/16/2022
Received: 10/06/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	2 oz	na	none	na	na	Cooler 3 - 2210048

Lab ID: 2210048-38
Sample: RG_FOBCP_SESeSp-1_2022-09-14_N
Report Matrix: SE
Sample Type: Sample + Sum
Collected: 09/14/2022
Received: 10/06/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	2 oz	na	none	na	na	Cooler 3 - 2210048

Lab ID: 2210048-39
Sample: RG_FOBCP_SESeSp-2_2022-09-14_N
Report Matrix: SE
Sample Type: Sample + Sum
Collected: 09/14/2022
Received: 10/06/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	2 oz	na	none	na	na	Cooler 3 - 2210048

Lab ID: 2210048-40
Sample: RG_FOBCP_SESeSp-3_2022-09-14_N
Report Matrix: SE
Sample Type: Sample + Sum
Collected: 09/14/2022
Received: 10/06/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	2 oz	na	none	na	na	Cooler 3 - 2210048

Lab ID: 2210048-41
Sample: RG_FOBCP_SESeSp-4_2022-09-15_N
Report Matrix: SE
Sample Type: Sample + Sum
Collected: 09/15/2022
Received: 10/06/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	2 oz	na	none	na	na	Cooler 3 - 2210048



Sample Containers

Lab ID: 2210048-42
Sample: RG_FOBCP_SESeSp-5_2022-09-15_N
Report Matrix: SE
Sample Type: Sample + Sum
Collected: 09/15/2022
Received: 10/06/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	2 oz	na	none	na	na	Cooler 3 - 2210048

Lab ID: 2210048-43
Sample: RG_FO22_SESeSp-1_2022-09-09_N
Report Matrix: SE
Sample Type: Sample + Sum
Collected: 09/09/2022
Received: 10/06/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	2 oz	na	none	na	na	Cooler 3 - 2210048

Lab ID: 2210048-44
Sample: RG_FO22_SESeSp-2_2022-09-09_N
Report Matrix: SE
Sample Type: Sample + Sum
Collected: 09/09/2022
Received: 10/06/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	2 oz	na	none	na	na	Cooler 3 - 2210048

Lab ID: 2210048-45
Sample: RG_FO22_SESeSp-3_2022-09-09_N
Report Matrix: SE
Sample Type: Sample + Sum
Collected: 09/09/2022
Received: 10/06/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	2 oz	na	none	na	na	Cooler 3 - 2210048

Lab ID: 2210048-46
Sample: RG_FO22_SESeSp-4_2022-09-09_N
Report Matrix: SE
Sample Type: Sample + Sum
Collected: 09/09/2022
Received: 10/06/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	2 oz	na	none	na	na	Cooler 3 - 2210048



Sample Containers

Lab ID: 2210048-47
Sample: RG_FO22_SESeSp-5_2022-09-09_N
Des **Container** **Size** **Lot** **Preservation** **P-Lot** **Collected:** 09/09/2022
A Client-Provided 2 oz na none na **Received:** 10/06/2022
na **pH** **Ship. Cont.**
na Cooler 3 -
2210048

Lab ID: 2210048-48
Sample: RG_MICOMP_SESeSp-1_2022-09-18_N
Des **Container** **Size** **Lot** **Preservation** **P-Lot** **Collected:** 09/18/2022
A Client-Provided 2 oz na none na **Received:** 10/06/2022
na **pH** **Ship. Cont.**
na Cooler 3 -
2210048

Lab ID: 2210048-49
Sample: RG_MICOMP_SESeSp-2_2022-09-18_N
Des **Container** **Size** **Lot** **Preservation** **P-Lot** **Collected:** 09/18/2022
A Client-Provided 2 oz na none na **Received:** 10/06/2022
na **pH** **Ship. Cont.**
na Cooler 3 -
2210048

Lab ID: 2210048-50
Sample: RG_MICOMP_SESeSp-3_2022-09-18_N
Des **Container** **Size** **Lot** **Preservation** **P-Lot** **Collected:** 09/18/2022
A Client-Provided 2 oz na none na **Received:** 10/06/2022
na **pH** **Ship. Cont.**
na Cooler 3 -
2210048

Lab ID: 2210048-51
Sample: RG_MICOMP_SESeSp-4_2022-09-18_N
Des **Container** **Size** **Lot** **Preservation** **P-Lot** **Collected:** 09/18/2022
A Client-Provided 2 oz na none na **Received:** 10/06/2022
na **pH** **Ship. Cont.**
na Cooler 3 -
2210048



Sample Containers

Lab ID: 2210048-52
Sample: RG_MICOMP_SESeSp-5_2022-09-18_N
Report Matrix: SE
Sample Type: Sample + Sum
Collected: 09/18/2022
Received: 10/06/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	2 oz	na	none	na	na	Cooler 3 - 2210048

Lab ID: 2210048-53
Sample: RG_ERCKMD_SESeSp-1_2022-09-20_N
Report Matrix: SE
Sample Type: Sample + Sum
Collected: 09/20/2022
Received: 10/06/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	2 oz	na	none	na	na	Cooler 3 - 2210048

Lab ID: 2210048-54
Sample: RG_ERCKMD_SESeSp-2_2022-09-20_N
Report Matrix: SE
Sample Type: Sample + Sum
Collected: 09/20/2022
Received: 10/06/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	2 oz	na	none	na	na	Cooler 3 - 2210048

Lab ID: 2210048-55
Sample: RG_ERCKMD_SESeSp-3_2022-09-20_N
Report Matrix: SE
Sample Type: Sample + Sum
Collected: 09/20/2022
Received: 10/06/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	2 oz	na	none	na	na	Cooler 3 - 2210048

Lab ID: 2210048-56
Sample: RG_ERCKMD_SESeSp-4_2022-09-20_N
Report Matrix: SE
Sample Type: Sample + Sum
Collected: 09/20/2022
Received: 10/06/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	2 oz	na	none	na	na	Cooler 3 - 2210048



Sample Containers

Lab ID: 2210048-57
Sample: RG_ERCKMD_SESeSp-5_2022-09-20_N
Report Matrix: SE
Sample Type: Sample + Sum
Collected: 09/20/2022
Received: 10/06/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	2 oz	na	none	na	na	Cooler 3 - 2210048

Lab ID: 2210048-58
Sample: RG_MI3_SESeSp-1_2022-09-12_N
Report Matrix: SE
Sample Type: Sample + Sum
Collected: 09/12/2022
Received: 10/06/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	2 oz	na	none	na	na	Cooler 3 - 2210048

Lab ID: 2210048-59
Sample: RG_MI3_SESeSp-2_2022-09-12_N
Report Matrix: SE
Sample Type: Sample + Sum
Collected: 09/12/2022
Received: 10/06/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	2 oz	na	none	na	na	Cooler 3 - 2210048

Lab ID: 2210048-60
Sample: RG_MI3_SESeSp-3_2022-09-12_N
Report Matrix: SE
Sample Type: Sample + Sum
Collected: 09/12/2022
Received: 10/06/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	2 oz	na	none	na	na	Cooler 3 - 2210048

Lab ID: 2210048-61
Sample: RG_MI3_SESeSp-4_2022-09-12_N
Report Matrix: SE
Sample Type: Sample + Sum
Collected: 09/12/2022
Received: 10/06/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	2 oz	na	none	na	na	Cooler 3 - 2210048



Sample Containers

Lab ID: 2210048-62
Sample: RG_MI3_SESeSp-5_2022-09-12_N
Report Matrix: SE
Sample Type: Sample + Sum
Collected: 09/12/2022
Received: 10/06/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	2 oz	na	none	na	na	Cooler 3 - 2210048

Lab ID: 2210048-63
Sample: RG_ERCK_SESeSp-1_2022-09-14_N
Report Matrix: SE
Sample Type: Sample + Sum
Collected: 09/14/2022
Received: 10/06/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	2 oz	na	none	na	na	Cooler 3 - 2210048

Lab ID: 2210048-64
Sample: RG_ERCK_SESeSp-2_2022-09-14_N
Report Matrix: SE
Sample Type: Sample + Sum
Collected: 09/14/2022
Received: 10/06/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	2 oz	na	none	na	na	Cooler 3 - 2210048

Lab ID: 2210048-65
Sample: RG_ERCK_SESeSp-3_2022-09-14_N
Report Matrix: SE
Sample Type: Sample + Sum
Collected: 09/14/2022
Received: 10/06/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	2 oz	na	none	na	na	Cooler 3 - 2210048

Lab ID: 2210048-66
Sample: RG_ERCK_SESeSp-4_2022-09-14_N
Report Matrix: SE
Sample Type: Sample + Sum
Collected: 09/14/2022
Received: 10/06/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	2 oz	na	none	na	na	Cooler 3 - 2210048



Sample Containers

Lab ID: 2210048-67
Sample: RG_ERCK_SESeSp-5_2022-09-14_N
Des Container **Size** **Lot** **Preservation** **P-Lot** **Collected:** 09/14/2022
A Client-Provided 2 oz na none na **Received:** 10/06/2022
na na na na na **pH** **Ship. Cont.**
na Cooler 3 -
2210048

Lab ID: 2210048-68
Sample: RG_ERCKUT_SESeSp-1_2022-09-15_N
Des Container **Size** **Lot** **Preservation** **P-Lot** **Collected:** 09/15/2022
A Client-Provided 2 oz na none na **Received:** 10/06/2022
na na na na na **pH** **Ship. Cont.**
na Cooler 3 -
2210048

Lab ID: 2210048-69
Sample: RG_ERCKUT_SESeSp-2_2022-09-16_N
Des Container **Size** **Lot** **Preservation** **P-Lot** **Collected:** 09/16/2022
A Client-Provided 2 oz na none na **Received:** 10/06/2022
na na na na na **pH** **Ship. Cont.**
na Cooler 3 -
2210048

Lab ID: 2210048-70
Sample: RG_ERCKUT_SESeSp-3_2022-09-16_N
Des Container **Size** **Lot** **Preservation** **P-Lot** **Collected:** 09/16/2022
A Client-Provided 2 oz na none na **Received:** 10/06/2022
na na na na na **pH** **Ship. Cont.**
na Cooler 3 -
2210048

Lab ID: 2210048-71
Sample: RG_ERCKUT_SESeSp-4_2022-09-16_N
Des Container **Size** **Lot** **Preservation** **P-Lot** **Collected:** 09/16/2022
A Client-Provided 2 oz na none na **Received:** 10/06/2022
na na na na na **pH** **Ship. Cont.**
na Cooler 3 -
2210048



Sample Containers

Lab ID: 2210048-72
Sample: RG_ERCKUT_SESeSp-5_2022-09-16_N
Report Matrix: SE
Sample Type: Sample + Sum
Collected: 09/16/2022
Received: 10/06/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	2 oz	na	none	na	na	Cooler 3 - 2210048

Lab ID: 2210048-73
Sample: RG_MIDER_SESeSp-1_2022-09-12_N
Report Matrix: SE
Sample Type: Sample + Sum
Collected: 09/12/2022
Received: 10/06/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	2 oz	na	none	na	na	Cooler 3 - 2210048

Lab ID: 2210048-74
Sample: RG_MIDER_SESeSp-2_2022-09-12_N
Report Matrix: SE
Sample Type: Sample + Sum
Collected: 09/12/2022
Received: 10/06/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	2 oz	na	none	na	na	Cooler 3 - 2210048

Lab ID: 2210048-75
Sample: RG_MIDER_SESeSp-3_2022-09-12_N
Report Matrix: SE
Sample Type: Sample + Sum
Collected: 09/12/2022
Received: 10/06/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	2 oz	na	none	na	na	Cooler 3 - 2210048

Lab ID: 2210048-76
Sample: RG_MIDER_SESeSp-4_2022-09-12_N
Report Matrix: SE
Sample Type: Sample + Sum
Collected: 09/12/2022
Received: 10/06/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	2 oz	na	none	na	na	Cooler 3 - 2210048



Sample Containers

Lab ID: 2210048-77 Sample: RG_MIDER_SESeSp-5_2022-09-12_N	Report Matrix: SE Sample Type: Sample + Sum	Collected: 09/12/2022 Received: 10/06/2022
Des Container Size Lot Preservation P-Lot pH Ship. Cont.		
A Client-Provided 2 oz na none na na Cooler 3 - 2210048		
Lab ID: 2210048-78 Sample: RG_LIDSL_SESeSp-1_2022-09-13_N	Report Matrix: SE Sample Type: Sample + Sum	Collected: 09/13/2022 Received: 10/06/2022
Des Container Size Lot Preservation P-Lot pH Ship. Cont.		
A Client-Provided 2 oz na none na na Cooler 3 - 2210048		
Lab ID: 2210048-79 Sample: RG_LIDSL_SESeSp-2_2022-09-13_N	Report Matrix: SE Sample Type: Sample + Sum	Collected: 09/13/2022 Received: 10/06/2022
Des Container Size Lot Preservation P-Lot pH Ship. Cont.		
A Client-Provided 2 oz na none na na Cooler 3 - 2210048		
Lab ID: 2210048-80 Sample: RG_LIDSL_SESeSp-3_2022-09-14_N	Report Matrix: SE Sample Type: Sample + Sum	Collected: 09/14/2022 Received: 10/06/2022
Des Container Size Lot Preservation P-Lot pH Ship. Cont.		
A Client-Provided 2 oz na none na na Cooler 3 - 2210048		
Lab ID: 2210048-81 Sample: RG_LIDSL_SESeSp-4_2022-09-14_N	Report Matrix: SE Sample Type: Sample + Sum	Collected: 09/14/2022 Received: 10/06/2022
Des Container Size Lot Preservation P-Lot pH Ship. Cont.		
A Client-Provided 2 oz na none na na Cooler 3 - 2210048		



Sample Containers

Lab ID: 2210048-82
Sample: RG_LIDSL_SESeSp-5_2022-09-14_N
Des **Container** **Size** **Lot** **Preservation** **P-Lot** **Collected:** 09/14/2022
A Client-Provided 2 oz na none na **Received:** 10/06/2022
na **pH** **Ship. Cont.**
na Cooler 3 -
2210048

Lab ID: 2210048-83
Sample: RG_LILC3_SESeSp-1_2022-09-12_N
Des **Container** **Size** **Lot** **Preservation** **P-Lot** **Collected:** 09/12/2022
A Client-Provided 2 oz na none na **Received:** 10/06/2022
na **pH** **Ship. Cont.**
na Cooler 3 -
2210048

Lab ID: 2210048-84
Sample: RG_LILC3_SESeSp-2_2022-09-12_N
Des **Container** **Size** **Lot** **Preservation** **P-Lot** **Collected:** 09/12/2022
A Client-Provided 2 oz na none na **Received:** 10/06/2022
na **pH** **Ship. Cont.**
na Cooler 3 -
2210048

Lab ID: 2210048-85
Sample: RG_LILC3_SESeSp-3_2022-09-12_N
Des **Container** **Size** **Lot** **Preservation** **P-Lot** **Collected:** 09/12/2022
A Client-Provided 2 oz na none na **Received:** 10/06/2022
na **pH** **Ship. Cont.**
na Cooler 3 -
2210048

Lab ID: 2210048-86
Sample: RG_LILC3_SESeSp-4_2022-09-12_N
Des **Container** **Size** **Lot** **Preservation** **P-Lot** **Collected:** 09/12/2022
A Client-Provided 2 oz na none na **Received:** 10/06/2022
na **pH** **Ship. Cont.**
na Cooler 3 -
2210048



Sample Containers

Lab ID: 2210048-87
Sample: RG_LILC3_SESeSp-5_2022-09-12_N
Des Container **Size** **Lot** **Preservation** **P-Lot** **Collected:** 09/12/2022
A Client-Provided 2 oz na none na **Received:** 10/06/2022
na na na na na **pH** **Ship. Cont.**
na Cooler 3 -
2210048

Lab ID: 2210048-88
Sample: RG_ERCKDT_SESeSp-1_2022-09-19_N
Des Container **Size** **Lot** **Preservation** **P-Lot** **Collected:** 09/19/2022
A Client-Provided 2 oz na none na **Received:** 10/06/2022
na na na na na **pH** **Ship. Cont.**
na Cooler 3 -
2210048

Lab ID: 2210048-89
Sample: RG_ERCKDT_SESeSp-2_2022-09-19_N
Des Container **Size** **Lot** **Preservation** **P-Lot** **Collected:** 09/19/2022
A Client-Provided 2 oz na none na **Received:** 10/06/2022
na na na na na **pH** **Ship. Cont.**
na Cooler 3 -
2210048

Lab ID: 2210048-90
Sample: RG_ERCKDT_SESeSp-3_2022-09-19_N
Des Container **Size** **Lot** **Preservation** **P-Lot** **Collected:** 09/19/2022
A Client-Provided 2 oz na none na **Received:** 10/06/2022
na na na na na **pH** **Ship. Cont.**
na Cooler 3 -
2210048

Lab ID: 2210048-91
Sample: RG_ERCKDT_SESeSp-4_2022-09-19_N
Des Container **Size** **Lot** **Preservation** **P-Lot** **Collected:** 09/19/2022
A Client-Provided 2 oz na none na **Received:** 10/06/2022
na na na na na **pH** **Ship. Cont.**
na Cooler 3 -
2210048



Sample Containers

Lab ID: 2210048-92	Report Matrix: SE	Collected: 09/19/2022					
Sample: RG_ERCKDT_SESeSp-5_2022-09-19_N	Sample Type: Sample + Sum	Received: 10/06/2022					
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	2 oz	na	none	na	na	Cooler 3 - 2210048

Shipping Containers

Cooler 3 - 2210048

Received: October 6, 2022 6:57
Tracking No: RWHV95592 via Courier
Coolant Type: Blue Ice
Temperature: -2.5 °C

Description: Large Cooler
Damaged in transit? No
Returned to client? No
Comments: IR#2

Custody seals present? No
Custody seals intact? No
COC present? Yes



COC ID: **REP_RAEMP-LAEMP_PandC_2022-09_Brooks** TURNAROUND TIME: 2-3 Business Days RUSH: Priority

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name / Job#	Regional Effects Program			Lab Name	Brooks Applied Labs			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Mike Pope			Lab Contact	Ben Wozniak			Email 1:	AquaSci.Lab@Teck.com	X	X	X
Email	mike.pope@teck.com			Email	Ben@brooksupplied.com			Email 2:	teckcoal@equisonline.com			X
Address	421 Pine Avenue			Address	13751 Lake City Way			Email 3:	Teck.Lab.Results@teck.com	X	X	X
					Suite 108			Email 4:	lbwron@minnow.ca	X	X	X
City	Sparwood	Province	BC	City	Seattle	Province	WA	Email 5:	Tyler.Mehler@minnow.ca	X	X	X
Postal Code	VOB 2G0	Country	Canada	Postal Code	98125	Country	United Stat	Email 6:	Jessica.Ritz@Teck.com	X	X	X
Phone Number	1-250-425-8247			Phone Number	(206) 753-6158			PO number	VPO00847032			

SAMPLE DETAILS								ANALYSIS REQUESTED												
Sample ID	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com p	# Of Cont.	PRESEV.	Brooks_Se_Speciation											
RG_FOUKI_SESeSp-1_2022-09-13_N	RG_FOUKI	SE	N	13-Sep-22	10:00	G	1	N												
RG_FOUKI_SESeSp-2_2022-09-13_N	RG_FOUKI	SE	N	13-Sep-22	10:15	G	1	N												
RG_FOUKI_SESeSp-3_2022-09-13_N	RG_FOUKI	SE	N	13-Sep-22	10:30	G	1													
RG_FOUKI_SESeSp-3_2022-09-13_N	RG_FOUKI	SE	N	13-Sep-22	10:45	G	1													
RG_FOUKI_SESeSp-4_2022-09-13_N	RG_FOUKI	SE	N	13-Sep-22	11:00	G	1													
RG_FOUKI_SESeSp-5_2022-09-13_N	RG_FOUKI	SE	N	13-Sep-22	11:15	G	1													
RG_FRDSCC1_SESeSp-1_2022-09-19_N	RG_FRDSCC1	SE	N	19-Sep-22	10:00	G	1													
RG_FRDSCC1_SESeSp-2_2022-09-19_N	RG_FRDSCC1	SE	N	19-Sep-22	10:30	G	1													
RG_FRDSCC1_SESeSp-3_2022-09-19_N	RG_FRDSCC1	SE	N	19-Sep-22	10:40	G	1													
RG_FRDSCC1_SESeSp-4_2022-09-19_N	RG_FRDSCC1	SE	N	19-Sep-22	10:50	G	1													
RG_FRDSCC1_SESeSp-5_2022-09-19_N	RG_FRDSCC1	SE	N	19-Sep-22	11:00	G	1													

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
Samples under this COC should be considered Privileged and Confidential	Alex McClymont	September 30, 2022	ERL/BAL	10/6/22 6:57

SERVICE REQUEST (rush - subject to availability)				
Regular (default)				
Priority (2-3 business days) - 50% surcharge	X	Sampler's Name	Alex McClymont	Mobile #
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature		Date/Time
For Emergency <1 Day, ASAP or Weekend - Contact ALS				September 30, 2022



COC ID: **REP_RAEMP-LAEMP_PandC_2022-09_Brooks**

TURNAROUND TIME:

2-3 Business Days

RUSH: **Priority**

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name / Job#	Regional Effects Program			Lab Name	Brooks Applied Labs			Report Format / Distribution		Excel	PDF	EDD
Project Manager	Mike Pope			Lab Contact	Ben Wozniak			Email 1:	AquaSciLab@Teck.com	X	X	X
Email	mike.pope@teck.com			Email	Ben@brooksupplied.com			Email 2:	teckcoal@equisonline.com			X
Address	421 Pine Avenue			Address	13751 Lake City Way			Email 3:	Teck.Lab.Results@teck.com	X	X	X
					Suite 108			Email 4:	lbowron@minnow.ca	X	X	X
City	Sparwood	Provinc	BC	City	Seattle	Provinc	WA	Email 5:	Tyler.Mehler@minnow.ca	X	X	X
Postal Code	V0B 2G0	Country	Canada	Postal Code	98125	Country	United Stat	Email 6:	Jessica.Ritz@Teck.com	X	X	X
Phone Number	1-250-425-8247			Phone Number	(206) 753-6158			PO number	VPO00847032			

SAMPLE DETAILS								ANALYSIS REQUESTED																		
Sample ID	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com p	# Of Cont.	FIG.	RESERV.	Brooks_Se_Speciation																
RG_SCOUTDS_SESeSp-1_2022-09-13_N	RG_SCOUTDS	SE	N	13-Sep-22	9:00	G	1	N	N																	
RG_SCOUTDS_SESeSp-2_2022-09-14_N	RG_SCOUTDS	SE	N	14-Sep-22	9:10	G	1	N	N																	
RG_SCOUTDS_SESeSp-2_2022-09-14_N	RG_SCOUTDS	SE	N	14-Sep-22	9:20	G	1	N	N																	
RG_SCOUTDS_SESeSp-3_2022-09-14_N	RG_SCOUTDS	SE	N	14-Sep-22	9:30	G	1	N	N																	
RG_SCOUTDS_SESeSp-4_2022-09-14_N	RG_SCOUTDS	SE	N	14-Sep-22	9:40	G	1	N	N																	
RG_SCOUTDS_SESeSp-5_2022-09-14_N	RG_SCOUTDS	SE	N	14-Sep-22	9:50	G	1	N	N																	
RG_GRASSY_SESeSp-1_2022-09-16_N	RG_GRASSY	SE	N	16-Sep-22	11:30	G	1	N	N																	
RG_GRASSY_SESeSp-2_2022-09-16_N	RG_GRASSY	SE	N	16-Sep-22	11:40	G	1	N	N																	
RG_GRASSY_SESeSp-3_2022-09-16_N	RG_GRASSY	SE	N	16-Sep-22	11:50	G	1	N	N																	
RG_GRASSY_SESeSp-4_2022-09-16_N	RG_GRASSY	SE	N	16-Sep-22	12:00	G	1	N	N																	
RG_GRASSY_SESeSp-5_2022-09-16_N	RG_GRASSY	SE	N	16-Sep-22	12:10	G	1	N	N																	

ADDITIONAL COMMENTS/SPECIAL INSTRUCIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
Samples under this COC should be considered Privileged and Confidential	Alex McClymont	September 30, 2022	ERL/BAL	10/6/22 6:57

SERVICE REQUEST (rush - subject to availability)				
Regular (default)				
Priority (2-3 business days) - 50% surcharge	X	Sampler's Name	Alex McClymont	Mobile # 780-293-6750
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature		Date/Time September 30, 2022
For Emergency <1 Day, ASAP or Weekend - Contact ALS				



COC ID:	REP_RAEMP- LAEMP_PandC_2022-09_Brooks	TURNAROUND TIME:	2-3 Business Days	RUSH:	Priority
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PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name / Job#	Regional Effects Program			Lab Name	Brooks Applied Labs			Report Format / Distribution	Excel	PDF	EDD	
Project Manager	Mike Pope			Lab Contact	Ben Wozniak			Email 1:	AquaSciLab@Teck.com	X	X	X
Email	mike.pope@teck.com			Email	Ben@brooksapplied.com			Email 2:	teckcoat@equisonline.com			X
Address	421 Pine Avenue			Address	13751 Lake City Way			Email 3:	Teck.Lab.Results@teck.com	X	X	X
				Suite	108			Email 4:	lbrown@minnow.ca	X	X	X
City	Sparwood	Province	BC	City	Seattle	Province	WA	Email 5:	Tyler.Mehler@minnow.ca	X	X	X
Postal Code	V0B 2G0	Country	Canada	Postal Code	98125	Country	United States	Email 6:	Jessica.Ritz@Teck.com	X	X	X
Phone Number	1-250-425-8247			Phone Number	(206) 753-6158			PO number	VPO0847032			

SAMPLE DETAILS								ANALYSIS REQUESTED						
Sample ID	Sample Location (sys_loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com p	# Of Cont.	Brooks_Se_Speciation	PHIL	PRE-SERV.	ANALYSIS	OTHER	OTHER	OTHER
RG_UFR1_SESeSp-1_2022-09-19_N	RG_UFR1	SE	N	19-Sep-22	10:00	G	1	1	N	N				
RG_UFR1_SESeSp-2_2022-09-19_N	RG_UFR1	SE	N	19-Sep-22	10:15	G	1	1	N	N				
RG_UFR1_SESeSp-3_2022-09-19_N	RG_UFR1	SE	N	19-Sep-22	10:30	G	1	1						
RG_UFR1_SESeSp-4_2022-09-19_N	RG_UFR1	SE	N	19-Sep-22	10:45	G	1	1						
RG_UFR1_SESeSp-5_2022-09-19_N	RG_UFR1	SE	N	19-Sep-22	11:00	G	1	1						
RG_WED_SESeSp-1_2022-09-19_N	RG_WED	SE	N	19-Sep-22	1:00	G	1	1						
RG_WED_SESeSp-2_2022-09-19_N	RG_WED	SE	N	19-Sep-22	1:15	G	1	1						
RG_WED_SESeSp-3_2022-09-19_N	RG_WED	SE	N	19-Sep-22	1:30	G	1	1						
RG_WED_SESeSp-4_2022-09-19_N	RG_WED	SE	N	19-Sep-22	1:45	G	1	1						
RG_WED_SESeSp-5_2022-09-19_N	RG_WED	SE	N	19-Sep-22	2:00	G	1	1						

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
Samples under this COC should be considered Privileged and Confidential	Alex McClymont	September 30, 2022	ERL/DAL	10/6/22 6:57

SERVICE REQUEST (rush - subject to availability)				
Regular (default)				
Priority (2-3 business days) - 50% surcharge	X	Sampler's Name	Alex McClymont	Mobile #
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature		Date/Time
For Emergency <1 Day, ASAP or Weekend - Contact ALS				September 30, 2022



Confidential

COC ID: REP_RAEMP-LAEMP_PandC_2022-09_Brooks	TURNAROUND TIME: 2-3 Business Days	RUSH: Priority
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PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name / Job#	Regional Effects Program			Lab Name	Brooks Applied Labs			Report Format / Distribution	Excel	PDF	EDD	
Project Manager	Mike Pope			Lab Contact	Ben Wozniak			Email 1:	AquaSci.Lab@Teck.com	X	X	X
Email	mike.pope@teck.com			Email	Ben@brooksupplied.com			Email 2:	teckcoal@equisonline.com			X
Address	421 Pine Avenue			Address	13751 Lake City Way			Email 3:	Teck.Lab.Results@teck.com	X	X	X
City	Sparwood	Province	BC	City	Seattle	Province	WA	Email 4:	lbrown@minnow.ca	X	X	X
Postal Code	V0B 2G0	Country	Canada	Postal Code	98125	Country	United Stat	Email 5:	Tyler.Mehler@minnow.ca	X	X	X
Phone Number	1-250-425-8247			Phone Number	(206) 753-6158			PO number	VPO00847032			

SAMPLE DETAILS								ANALYSIS REQUESTED														
Sample ID	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com	# Of Cont.	PH	PRESERV.	ANALYSIS	Brooks_Se_Speciation											
RG_FOUCL_SESeSp-1_2022-09-16_N	RG_FOUCL	SE	N	16-Sep-22	8:00	G	1															
RG_FOUCL_SESeSp-2_2022-09-16_N	RG_FOUCL	SE	N	16-Sep-22	8:10	G	1															
RG_FOUCL_SESeSp-3_2022-09-16_N	RG_FOUCL	SE	N	16-Sep-22	8:20	G	1															
RG_FOUCL_SESeSp-4_2022-09-16_N	RG_FOUCL	SE	N	16-Sep-22	8:30	G	1															
RG_FOUCL_SESeSp-5_2022-09-16_N	RG_FOUCL	SE	N	16-Sep-22	8:40	G	1															
RG_FOBCP_SESeSp-1_2022-09-14_N	RG_FOBCP	SE	N	14-Sep-22	12:10	G	1															
RG_FOBCP_SESeSp-2_2022-09-14_N	RG_FOBCP	SE	N	14-Sep-22	12:20	G	1															
RG_FOBCP_SESeSp-3_2022-09-14_N	RG_FOBCP	SE	N	14-Sep-22	12:30	G	1															
RG_FOBCP_SESeSp-4_2022-09-15_N	RG_FOBCP	SE	N	15-Sep-22	8:15	G	1															
RG_FOBCP_SESeSp-5_2022-09-15_N	RG_FOBCP	SE	N	15-Sep-22	8:30	G	1															

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
Samples under this COC should be considered Privileged and Confidential	Alex McClymont	September 30, 2022	ERL/BAL	10/6/22 6:57

SERVICE REQUEST (rush - subject to availability)	Sampler's Name	Sampler's Signature	Mobile #	Date/Time
<input type="checkbox"/> Regular (default) <input checked="" type="checkbox"/> Priority (2-3 business days) - 50% surcharge <input type="checkbox"/> Emergency (1 Business Day) - 100% surcharge For Emergency <1 Day, ASAP or Weekend - Contact ALS	Alex McClymont		780-293-6750	September 30, 2022

COC ID:	REP_RAEMP- LAEMP_PandC_2022-09_Brooks	TURNAROUND TIME:	2-3 Business Days	RUSH: Priority
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PROJECT/CLIENT INFO			LABORATORY				OTHER INFO				
Facility Name / Job#	Regional Effects Program		Lab Name	Brooks Applied Labs		Report Format / Distribution	Excel	PDF	EDD		
Project Manager	Mike Pope		Lab Contact	Ben Wozniak		Email 1:	AquaSciLab@Teck.com	X	X	X	
Email	mike.pope@teck.com		Email	Ben@brooksapplied.com		Email 2:	teckcoal@equisonline.com			X	
Address	421 Pine Avenue		Address	13751 Lake City Way		Email 3:	Teck.Lab.Results@teck.com	X	X	X	
City	Sparwood	Province	BC	City	Seattle	Province	WA	Email 4:	lbrown@minnow.ca	X	X
Postal Code	V0B 2G0	Country	Canada	Postal Code	98125	Country	United Stat	Email 5:	Tyler.Mehlen@minnow.ca	X	X
Phone Number	1-250-425-8247		Phone Number	(206) 753-6158		PO number	VPO00847032				

SAMPLE DETAILS								ANALYSIS REQUESTED																					
Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com p	# Of Cont.	PH	PRESPRY	ANALYSIS	Filtered - R: Field, L: Lab, FL: Field & Lab, N: None																		
RG_FO22_SESeSp-1_2022-09-09_N	RG_FO22	SE	N	9-Sep-22	11:00	G	1			Brooks_Se_Speciation																			
RG_FO22_SESeSp-2_2022-09-09_N	RG_FO22	SE	N	9-Sep-22	11:10	G	1																						
RG_FO22_SESeSp-3_2022-09-09_N	RG_FO22	SE	N	9-Sep-22	11:20	G	1																						
RG_FO22_SESeSp-4_2022-09-09_N	RG_FO22	SE	N	9-Sep-22	11:30	G	1																						
RG_FO22_SESeSp-5_2022-09-09_N	RG_FO22	SE	N	9-Sep-22	11:40	G	1																						
RG_MICOMP_SESeSp-1_2022-09-18_N	RG_MICOMP	SE	N	18-Sep-22	15:00	G	1																						
RG_MICOMP_SESeSp-2_2022-09-18_N	RG_MICOMP	SE	N	18-Sep-22	14:45	G	1																						
RG_MICOMP_SESeSp-3_2022-09-18_N	RG_MICOMP	SE	N	18-Sep-22	14:15	G	1																						
RG_MICOMP_SESeSp-4_2022-09-18_N	RG_MICOMP	SE	N	18-Sep-22	11:00	G	1																						
RG_MICOMP_SESeSp-52022-09-18_N	RG_MICOMP	SE	N	18-Sep-22	10:30	G	1																						

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS		RELINQUISHED BY/AFFILIATION		DATE/TIME	ACCEPTED BY/AFFILIATION		DATE/TIME
Samples under this COC should be considered Privileged and Confidential		Alex McClymont		September 30, 2022	ERL/BAL		10/6/22 6:57

SERVICE REQUEST (rush - subject to availability)			
Regular (default)	Priority (2-3 business days) - 50% surcharge	X	Emergency (1 Business Day) - 100% surcharge
For Emergency <1 Day, ASAP or Weekend - Contact ALS			
Sampler's Name	Alex McClymont	Mobile #	780-293-6750
Sampler's Signature		Date/Time	September 30, 2022

COC ID:	REP_RAEMP-LAEMP_PandC_2022-09_Brooks	TURNAROUND TIME:	2-3 Business Days	RUSH:	Priority
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PROJECT/CLIENT INFO			LABORATORY				OTHER INFO				
Facility Name / Job#	Regional Effects Program		Lab Name	Brooks Applied Labs		Report Format / Distribution	Excel	PDF	EDD		
Project Manager	Mike Pope		Lab Contact	Ben Wozniak		Email 1:	AquaSciLab@Teck.com	X	X	X	
Email	mike.pope@teck.com		Email	Ben@brooksapplied.com		Email 2:	teckcoal@equisonline.com			X	
Address	421 Pine Avenue		Address	13751 Lake City Way		Email 3:	Teck.Lab.Results@teck.com	X	X	X	
				Suite 108		Email 4:	lbowron@minnow.ca	X	X	X	
City	Sparwood	Provinc	BC	City	Seattle	Province	WA	Email 5:	Tyler.Mehler@minnow.ca	X	X
Postal Code	V0B 2G0	Country	Canada	Postal Code	98125	Country	United Stat	Email 6:	Jessica.Ritz@Teck.com	X	X
Phone Number	1-250-425-8247		Phone Number	(206) 753-6158		PO number	VPO00847032				

SAMPLE DETAILS								ANALYSIS REQUESTED																				
Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com p	# Of Cont.	ERL	PRESERV.	Brooks_Se_Speciation																		
RG_ERCKMD_SESeSp-1_2022-09-20_N	RG_ERCKMD	SE	N	20-Sep-22	13:00	G	1	N	N																			
RG_ERCKMD_SESeSp-2_2022-09-20_N	RG_ERCKMD	SE	N	20-Sep-22	13:15	G	1	N	N																			
RG_ERCKMD_SESeSp-3_2022-09-20_N	RG_ERCKMD	SE	N	20-Sep-22	13:30	G	1	N	N																			
RG_ERCKMD_SESeSp-4_2022-09-20_N	RG_ERCKMD	SE	N	20-Sep-22	13:45	G	1	N	N																			
RG_ERCKMD_SESeSp-5_2022-09-20_N	RG_ERCKMD	SE	N	20-Sep-22	14:00	G	1	N	N																			
RG_MI3_SESeSp-1_2022-09-12_N	RG_MI3	SE	N	12-Sep-22	8:00	G	1	N	N																			
RG_MI3_SESeSp-2_2022-09-12_N	RG_MI3	SE	N	12-Sep-22	9:00	G	1	N	N																			
RG_MI3_SESeSp-3_2022-09-12_N	RG_MI3	SE	N	12-Sep-22	10:00	G	1	N	N																			
RG_MI3_SESeSp-4_2022-09-12_N	RG_MI3	SE	N	12-Sep-22	11:00	G	1	N	N																			
RG_MI3_SESeSp-5_2022-09-12_N	RG_MI3	SE	N	12-Sep-22	12:00	G	1	N	N																			

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
Samples under this COC should be considered Privileged and Confidential	Alex McClymont	September 30, 2022	ERL / BAL	10/6/22 6:57

SERVICE REQUEST (rush - subject to availability)				
Regular (default)	Sampler's Name	Alex McClymont	Mobile #	780-293-6750
Priority (2-3 business days) - 50% surcharge X				
Emergency (1 Business Day) - 100% surcharge	Sampler's Signature		Date/Time	September 30, 2022
For Emergency <1 Day, ASAP or Weekend - Contact ALS				

COC ID:	REP_RAEMP- LAEMP_PandC_2022-09_Brooks	TURNAROUND TIME:	2-3 Business Days	RUSH:	Priority
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PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name / Job#	Regional Effects Program			Lab Name	Brooks Applied Labs			Report Format / Distribution	Excel	PDF	EDD	
Project Manager	Mike Pope			Lab Contact	Ben Wozniak			Email 1:	AquaSciLab@Teck.com	X	X	X
Email	mike.pope@teck.com			Email	Ben@brooksupplied.com			Email 2:	teckcoal@equisonline.com			X
Address	421 Pine Avenue			Address	13751 Lake City Way			Email 3:	Teck.Lab.Results@teck.com	X	X	X
City	Sparwood	Province	BC	Address	Suite 108			Email 4:	lpowron@minnow.ca	X	X	X
Postal Code	V0B 2G0	Country	Canada	City	Seattle	Province	WA	Email 5:	Tyler.Mehler@minnow.ca	X	X	X
Phone Number	1-250-425-8247			Postal Code	98125	Country	United States	Email 6:	Jessica.Ritz@Teck.com	X	X	X
				Phone Number	(206) 753-6158			PO number	VPO00847032			

SAMPLE DETAILS								ANALYSIS REQUESTED															
Sample ID	Sample Location (sys_loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com p	# Of Cont.	Brooks_Se_Speciation															
RG_ERCK_SESeSp-1_2022-09-14_N	RG_ERCK	SE	N	14-Sep-22	10:30	G	1	1															
RG_ERCK_SESeSp-2_2022-09-14_N	RG_ERCK	SE	N	14-Sep-22	10:45	G	1	1															
RG_ERCK_SESeSp-3_2022-09-14_N	RG_ERCK	SE	N	14-Sep-22	10:55	G	1	1															
RG_ERCK_SESeSp-4_2022-09-14_N	RG_ERCK	SE	N	14-Sep-22	11:05	G	1	1															
RG_ERCK_SESeSp-5_2022-09-14_N	RG_ERCK	SE	N	14-Sep-22	11:15	G	1	1															
RG_ERCKUT_SESeSp-1_2022-09-15_N	RG_ERCKUT	SE	N	15-Sep-22	14:35	G	1	1															
RG_ERCKUT_SESeSp-2_2022-09-16_N	RG_ERCKUT	SE	N	16-Sep-22	14:45	G	1	1															
RG_ERCKUT_SESeSp-3_2022-09-16_N	RG_ERCKUT	SE	N	16-Sep-22	14:55	G	1	1															
RG_ERCKUT_SESeSp-4_2022-09-16_N	RG_ERCKUT	SE	N	16-Sep-22	15:05	G	1	1															
RG_ERCKUT_SESeSp-5_2022-09-16_N	RG_ERCKUT	SE	N	16-Sep-22	15:15	G	1	1															

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
Samples under this COC should be considered Privileged and Confidential	Alex McClymont	September 30, 2022	ERC / BAL	10/6/22 6:57

SERVICE REQUEST (rush - subject to availability)				
Regular (default)				
Priority (2-3 business days) - 50% surcharge	X	Sampler's Name	Alex McClymont	Mobile #
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature		Date/Time
For Emergency <1 Day, ASAP or Weekend - Contact ALS				September 30, 2022

Confidential



COC ID:	REP_RAEMP-LAEMP_PandC_2022-09_Brooks		TURNAROUND TIME:	2-3 Business Days		RUSH: Priority
PROJECT/CLIENT INFO			LABORATORY			OTHER INFO
Facility Name / Job#	Regional Effects Program		Lab Name	Brooks Applied Labs		Report Format / Distribution
Project Manager	Mike Pope		Lab Contact	Ben Wozniak		Excel PDF EDD
Email	mike.pope@teck.com		Email	Ben@brooksapplied.com		X X X
Address	421 Pine Avenue		Address	13751 Lake City Way		X X X
			Address	Suite 108		X X X
City	Sparwood	Provinc	City	Seattle	Province	WA
Postal Code	V0B 2G0	Country	Postal Code	98125	Country	United Stat
Phone Number	1-250-425-8247		Phone Number	(206) 753-6158		PO number
						VPO00847032

Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com p	# Of Cont.	ANALYSIS REQUESTED														
								FIL	RESERV.	ANALYSIS	Brooks_Se_Speciation											
RG_MIDER_SESeSp-1_2022-09-12_N	RG_MIDER	SE	N	12-Sep-22	13:00	G	1	1														
RG_MIDER_SESeSp-2_2022-09-12_N	RG_MIDER	SE	N	12-Sep-22	15:43	G	1	1														
RG_MIDER_SESeSp-3_2022-09-12_N	RG_MIDER	SE	N	12-Sep-22	15:00	G	1	1														
RG_MIDER_SESeSp-4_2022-09-12_N	RG_MIDER	SE	N	12-Sep-22	14:00	G	1	1														
RG_MIDER_SESeSp-5_2022-09-12_N	RG_MIDER	SE	N	12-Sep-22	14:15	G	1	1														
RG_LIDSL_SESeSp-1_2022-09-13_N	RG_LIDSL	SE	N	13-Sep-22	9:00	G	1	1														
RG_LIDSL_SESeSp-2_2022-09-13_N	RG_LIDSL	SE	N	13-Sep-22	9:15	G	1	1														
RG_LIDSL_SESeSp-3_2022-09-14_N	RG_LIDSL	SE	N	14-Sep-22	9:30	G	1	1														
RG_LIDSL_SESeSp-4_2022-09-14_N	RG_LIDSL	SE	N	14-Sep-22	9:45	G	1	1														
RG_LIDSL_SESeSp-5_2022-09-14_N	RG_LIDSL	SE	N	14-Sep-22	10:00	G	1	1														

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
Samples under this COC should be considered Privileged and Confidential	Alex McClymont	September 30, 2022	ERL / BAL	6:57 10/6/22

SERVICE REQUEST (rush - subject to availability)				
Regular (default)	Sampler's Name	Alex McClymont	Mobile #	780-293-6750
Priority (2-3 business days) - 50% surcharge X	Sampler's Signature		Date/Time	September 30, 2022
Emergency (1 Business Day) - 100% surcharge				
For Emergency <1 Day, ASAP or Weekend - Contact ALS				

COC ID:	REP_RAEMP- LAEMP_PandC_2022-09_Brooks	TURNAROUND TIME:	2-3 Business Days	RUSH:	Priority
PROJECT/CLIENT INFO		LABORATORY		OTHER INFO	
Facility Name / Job#	Regional Effects Program	Lab Name	Brooks Applied Labs	Report Format / Distribution	Excel PDF EDD
Project Manager	Mike Pope	Lab Contact	Ben Wozniak	Email 1:	AquaSciLab@Teck.com X X X
Email	mike.pope@teck.com	Email	Ben@brooksupplied.com	Email 2:	teckcoal@equisonline.com X X X
Address	421 Pine Avenue	Address	13751 Lake City Way Suite 108	Email 3:	Teck.Lab.Results@teck.com X X X
City	Sparwood	City	Seattle	Email 4:	lbowron@minnow.ca X X X
Province	BC	Province	WA	Email 5:	Tyler.Mehler@minnow.ca X X X
Postal Code	V0B 2G0	Postal Code	98125	Email 6:	Jessica.Ritz@Teck.com X X X
Country	Canada	Country	United States	PO number	VPO00847032
Phone Number	1-250-425-8247	Phone Number	(206) 753-6158		

SAMPLE DETAILS								ANALYSIS REQUESTED									
Sample ID	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com p	# Of Cont.	THL	PRESERV	ANALYSIS	Brooks_Se_Speciation						
RG_LILC3_SESeSp-1_2022-09-12_N	RG_LILC3	SE	N	12-Sep-22	14:15	G	1	1									
RG_LILC3_SESeSp-2_2022-09-12_N	RG_LILC3	SE	N	12-Sep-22	14:30	G	1	1									
RG_LILC3_SESeSp-3_2022-09-12_N	RG_LILC3	SE	N	12-Sep-22	14:45	G	1	1									
RG_LILC3_SESeSp-4_2022-09-12_N	RG_LILC3	SE	N	12-Sep-22	15:00	G	1	1									
RG_LILC3_SESeSp-5_2022-09-12_N	RG_LILC3	SE	N	12-Sep-22	15:15	G	1	1									
RG_ERCKDT_SESeSp-1_2022-09-19_N	RG_ERCKDT	SE	N	19-Sep-22	10:00	G	1	1									
RG_ERCKDT_SESeSp-2_2022-09-19_N	RG_ERCKDT	SE	N	19-Sep-22	10:30	G	1	1									
RG_ERCKDT_SESeSp-3_2022-09-19_N	RG_ERCKDT	SE	N	19-Sep-22	11:00	G	1	1									
RG_ERCKDT_SESeSp-4_2022-09-19_N	RG_ERCKDT	SE	N	19-Sep-22	11:30	G	1	1									
RG_ERCKDT_SESeSp-5_2022-09-19_N	RG_ERCKDT	SE	N	19-Sep-22	12:00	G	1	1									

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
Samples under this COC should be considered Privileged and Confidential	Alex McClymont	September 30, 2022	ERL / BAL	10/6/22 6:57

SERVICE REQUEST (rush - subject to availability)				
Regular (default)	Sampler's Name	Alex McClymont	Mobile #	780-293-6750
Priority (2-3 business days) - 50% surcharge X	Sampler's Signature		Date/Time	September 30, 2022
Emergency (1 Business Day) - 100% surcharge				
For Emergency <1 Day, ASAP or Weekend - Contact ALS				

Confidential

STRAIGHT BILL OF LADING
NOT NEGOTIABLE

W HOT SHOT SERVICE INC.

250-425-7447
24 Hour Hot Shot Service

BAL Final Report 2210048
No. 95592

Sparwood, BC
Terrace, BC
Red Deer, AB

Vancouver, BC
Calgary, AB
Montreal, QC

Prince George, BC
Edmonton, AB
Spokane, WA

Elkford, BC
Ft. McMurray, AB
Shelby, MT

Tumbler Ridge, BC
Hinton, AB
Gillette, WY

INVOICE TO LAP		DATE Oct 11 / 22	
BILL OF LADING # DA1506		PURCHASE ORDER NUMBER	
SHIPPER (FROM) 2000 10th Street NE		CONSIGNEE (TO) 1791 Lake City way NE	
STREET		STREET	
CITY/PROVINCE Edmonton, AB		CITY/PROVINCE Edmonton, AB	
POSTAL CODE		POSTAL CODE	
SPECIAL INSTRUCTIONS AND to pick up at KW Duck Spar			
PACKAGES	DESCRIPTION OF ARTICLES AND SPECIAL MARKS	WEIGHT (Subject to Correction)	FREIGHT CHARGES SHIPPER TO CHECK
		13.7 lbs	<input type="checkbox"/> PREPAID <input type="checkbox"/> COLLECT If not indicated, shipping will automatically move collect.
			FEE _____
			WAITING _____
			XPU _____
			CHARGES _____
			FSC _____
			US _____
			SUB TOTAL _____
			GST _____
			TOTAL \$ _____
UNIT #	DECLARED VALUATION: Maximum liability of carrier is \$2.00 per lb. (\$4.41 per kilogram) unless declared valuation states otherwise	\$	IF AT OWNER'S RISK, WRITE ORD HERE: _____
DRIVER'S SIGNATURE - PICK UP BY M. [Signature]	PICK UP TIME	DRIVER'S SIGNATURE - DELIVERY BY [Signature]	FINISH TIME
NOTICE OF CLAIM: (a) No carrier is liable for loss, damage or delay of any goods under the Bill of Lading unless notice, in writing, setting out particulars of the origin, destination and date of shipment of the goods and the estimated amount claimed in respect of such loss, damage or delay is given in writing to the originating carrier or the delivering carrier within sixty (60) days after the delivery of the goods, or in the case of failure to make delivery, within nine (9) months from the date of shipment. (b) The first stevedore of the claim must be filed within nine (9) months from the date of shipment, together with a copy of the paid freight bill. RECEIVED at the point of origin on the date specified from the consignor mentioned herein, the property herein described in apparent good order, except as noted (contents and condition of packages unexamined) marked, consigned and delivered as indicated below, which the carrier agrees to carry and to deliver to the consignee at the said destination, subject to the rates and classification in effect on the date of shipment. It is mutually agreed, as to each carrier of all or any of the goods, and as to each party of any time interested in all or any of the goods, that every service to be performed hereunder shall be subject to the conditions standard Bill of Lading in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. Printed in reverse, including conditions set aside by the standard Bill of Lading in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. The Contract for the carriage of the goods listed in the Bill of Lading is governed by regulation in force in the jurisdiction at the time and place of shipment and is subject to the conditions set out in such conditions.			
SHIPPER PRINT LCD	CONSIGNEE PRINT Slava	DATE Oct 5	TIME 4
SHIPPER SIGN	CONSIGNEE SIGN		
WHITE: Office	YELLOW: Carrier	PINK: Consignee	GOLDENROAD: Shipper
GST # 864540398RT0001			NUMBER OF PIECES RECEIVED ▲

Cooler ID: **Cooler J**

COC(Y/N)

Temperature: **-2.5**

IR: **2**

Coolant Type: Ice **Blue Ice** Ambient

Notes:

Sampling Locations:

EV LC RG

Sample Types:

T/D	SP	T/D	SP	T/D	SP	T/D	SP	T/D	SP
	12.5 mL Plastic		12.5 mL Plastic	Soil					
				20g Plastic					

Container Types:

Opened By: **ERL**

Date: **10/6/22**

Effective 7/29/20

CC



STRAIGHT BILL OF LADING
NOT NEGOTIABLE

W HOT SHOT SERVICE INC.
250-425-7447
24 Hour Hot Shot Service

No. 95592
BAL Final Report 2210048

Confidential

Sparwood, BC
Terrace, BC
Red Deer, AB

Vancouver, BC
Calgary, AB
Montreal, QC

Prince George, BC
Edmonton, AB
Spokane, WA

Elkford, BC
Ft. McMurray, AB
Shelby, MT

Tumbler Ridge, BC
Hinton, AB
Gillette, WY

INVOICE TO		DATE	
BILL OF LADING #		PURCHASE ORDER NUMBER	
SHIPPER (FROM)		CONSIGNEE (TO)	
STREET		STREET	
CITY/PROVINCE		CITY/PROVINCE	
POSTAL CODE		POSTAL CODE	
SPECIAL INSTRUCTIONS			
PACKAGES		DESCRIPTION OF ARTICLES AND SPECIAL MARKS	
WEIGHT (Subject to Correction)		FREIGHT CHARGES SHIPPER TO CHECK	
		<input type="checkbox"/> PREPAID <input type="checkbox"/> COLLECT If not indicated, shipping will automatically move collect.	
		FEE _____	
		WAITING _____	
		XPU _____	
		CHARGES _____	
		FSC _____	
		US _____	
		SUB TOTAL _____	
		GST _____	
UNIT #		DECLARED VALUATION: Maximum liability of carrier is \$2.00 per lb. (\$4.41 per kilogram) unless declared valuation states otherwise.	
DRIVER'S SIGNATURE - PICK UP BY		DRIVER'S SIGNATURE - DELIVERY BY	
PICK UP TIME		FINISH TIME	
NOTICE OF CLAIM: (a) No carrier is liable for loss, damage or delay of any goods under the Bill of Lading unless notice therefor setting out particulars of the origin, destination and date of shipment of the goods and the estimated amount claimed in respect of such loss, damage or delay is given in writing to the originating carrier or the delivering carrier within sixty (60) days after the delivery of the goods, in the case of failure to make delivery, within nine (9) months from the date of shipment. (b) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. RECEIVED at the point of origin on the date specified from the consignee mentioned herein, the property herein described in apparent good order, except as noted (contents and condition of container of package unknown), marked, consigned and defined as indicated below, which the carrier agrees to carry and to deliver to the consignee at the said destination subject to the rates and classification in effect on the date of shipment, all the conditions standard Bill of Lading, in power at the date of issuing, which are hereto agreed by the consignor and acceptor for himself and his assigns. Printed or written including conditions set aside by the standard Bill of Lading in power at the date of issuing, which are hereby agreed by the consignee, are accepted for himself and his assigns. The Contract for the carriage of the goods listed in the Bill of Lading is governed by regulation in force in the jurisdiction at the time and place of shipment and is subject to the conditions set out in such conditions.			
SHIPPER PRINT		CONSIGNEE PRINT	
SHIPPER SIGN		CONSIGNEE SIGN	
WHITE: Office		YELLOW: Carrier	
PINK: Consignee		GOLDENROAD: Shipper	
GST # 864540398RT0001		NUMBER OF PIECES RECEIVED	

Cooler ID: cooler 4

Coolant Type: Ice

Blue Ice

Ambient

COC (Y/N)

Temperature: 0.6°C

IR: R-IR-1

Notes:

Sampling Locations: RG

Sample Types:

T/D	SP	T/D	SP	T/D	SP	T/D	SP	T/D	SP
Soil									

Container Types:

20ZJAA HDPE

Opened By: ERL

15ml Cent

Date: 10/6/22

Effective 7/29/20

Revision 004

COPY



18804 North Creek Parkway, Ste 100, Bothell, WA 98011 • USA • T: 206 632 6206 F: 206 632 6017 • info@brooksapplied.com

December 15, 2022

Teck Resources Limited - Vancouver
 Mike Pope
 421 Pine Avenue
 Sparwood, B.C. CANADA V0B2G0
mike.pope@teck.com

Re: Regional Effects Program

Dear Mike Pope,

On October 6, 2022, Brooks Applied Labs (BAL) received forty-three (43) solid samples at an acceptable temperature of 0.6 °C.

Date/Time Collected values listed on the chain-of-custody (COC) forms received with the sample shipment did not exactly match the corresponding **Date/Time Collected** values on the container labels for several samples. The discrepancies are described in the table below.

Date/Time Collected Value Agreement Issues

Laboratory ID	Sample ID	Date/Time Collected (on COC form received with the sample shipment)	Date/Time Collected (on container label)
2210049-06	RG_GATE_SESeSp-1_2022-09-15_N	09/15/2022 14:00	09/15/2022 10:00
2210049-07	RG_GATE_SESeSp-2_2022-09-15_N	09/15/2022 14:30	09/15/2022 11:00
2210049-08	RG_GATE_SESeSp-3_2022-09-15_N	09/15/2022 15:00	09/15/2022 12:00
2210049-09	RG_MI25_SESeSp-1_2022-09-15_N	09/15/2022 09:15	09/15/2022 11:25
2210049-10	RG_MI25_SESeSp-2_2022-09-15_N	09/15/2022 09:30	09/15/2022 10:50
2210049-11	RG_MI25_SESeSp-3_2022-09-15_N	09/15/2022 09:45	09/15/2022 09:50
2210049-36	RG_MIDBO_SESeSp-3_2022-09-13_N	09/13/2022 14:15	09/13/2022 15:15

Per client request, the samples described in the table above were logged in using the **Date/Time Collected** values on the container labels (column 4 in the above table).

Each solid sample was logged-in for the analysis of total recoverable Se, Se sequential extraction, and total solids.

The sediments were wet and the water overlaying the sediments in the containers was decanted before the sediments were stored frozen. After receipt, all solid samples were stored in accordance with BAL SOPs.

Percent Total Solids (SOP BAL-0501)

An aliquot of each solid was measured into a pre-weighed vessel, dried in an oven at 105°C overnight, weighed again, and the percentage of dried solid material was calculated.

Batch B222335 (%TS)

%TS results were used to dry-weight correct results for the remaining analytical parameters.

Total Recoverable Se (EPA 3050b MOD)

An aliquot of each solid was digested via modified EPA Method 3050B, using additions of concentrated nitric acid, hydrogen peroxide, and hydrochloric acid. The resulting digests were analyzed for Se content via inductively coupled plasma triple quadrupole mass spectrometry (ICP-QQQ-MS). The ICP-QQQ-MS instrumentation uses advanced interference removal techniques to ensure accuracy of the sample results. For more information, please visit the *Interference Reduction Technology* section on our website, brooksapplied.com.

Batch B222380 (Total Recoverable Se)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the Sample Results page for sample-specific MDLs, MRLs, and other details.

Batch B222388 (Total Recoverable Se)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the Sample Results page for sample-specific MDLs, MRLs, and other details.

Se Selective Sequential Extraction (SSE)

An aliquot of each solid was extracted in accordance with BAL's in-house five-step selective sequential extraction for Se. The samples were extracted with a series of reagents designed to target the following fractions:

SSE Fraction	Fraction Description
F1	Se present as salt (e.g., SeO_4^{2-} , MeSe(IV) , SeCN)
F2	Weakly adsorbed Se (e.g., SeO_4^{2-} , SeO_3^{2-} , SeCN , MeSe(IV))
F3	Amorphous and crystalline Se (e.g., S_2Se , Se^0)
F4	Selenides (e.g., HgSe , PbSe , CdSe , ZnSe)
F5	Residual Se

All resulting SSE fractions were directly analyzed for Se via inductively coupled plasma triple quadrupole mass spectrometry (ICP-QQQ-MS) and have been reported as Se(F1), Se(F2), Se(F3), Se(F4), and Se(F5) according to the corresponding extraction step (see table above).

Batch B222333 (SSE F1)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

Batch B222425 (SSE F1)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

Batch B222434 (SSE F2)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

Batch B222435 (SSE F2)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

The relative percent difference (RPD) for selenium (Se(F2)) in the laboratory duplicate sample B222435-DUP4 was greater than the control limit of 25%, at 27%. Secondary criteria were met (*i.e.*, *avg result* \leq *5x the MRL and results within two MRL values*). No qualification of data was necessary.

Batch B222498 (SSE F3)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

Batch B222530 (SSE F3)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

Batch B222514 (SSE F4)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

Batch B222544 (SSE F4)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

The RPD values for selenium (Se(F4)) were greater than the control limit of 25% in the laboratory duplicate samples B222544-DUP2 and B222544-DUP3. Secondary criteria were met (*i.e.*, *avg result* \leq *5x the MRL and results within two MRL values*). No qualification of data was necessary.

Batch B222533 (SSE F5)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

Batch B222555 (SSE F5)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

The RPD for selenium (*Se(F5)*) in the laboratory duplicate sample B222555-DUP1 was greater than the control limit of 25%, at 38%. Secondary criteria were met (*i.e.*, *avg result* \leq *5x the MRL and results within two MRL values*). No qualification of data was necessary.

Se Speciation for the SSE

Fractions F1 and F2 of the SSE were also analyzed for individual Se species via ion chromatography inductively coupled plasma collision reaction cell mass spectrometry (IC-ICP-CRC-MS). Selenium species were chromatographically separated on an ion exchange column and then quantified using inductively coupled plasma collision reaction cell mass spectrometry (ICP-CRC-MS); for more information on this determinative technique, please visit the *Interference Reduction Technology* section on our website. The chromatographic method applied for the analyses provides greater retention of methylseleninic acid and selenomethionine, allowing for more definitive quantitation of these species.

Selenium speciation for these SSE fractions was defined as dissolved selenite [*Se(IV)*], selenate [*Se(VI)*], selenocyanate [*SeCN*], methylseleninic acid [*MeSe(IV)*], selenomethionine [*SeMet*], selenosulfate [*SeSO₃*], and dimethylselenoxide [*DMeSeO*]. Methaneselenonic acid [*MeSe(VI)*] is reported under *Se Unk A*. The total concentration of any remaining unidentified Se-containing species detected in each sample has also been reported as [*Unk Se Sp*].

DMeSeO elutes early in the chromatographic run due to the nature of the molecule and the applied chromatographic separation method. Since this species elutes near the dead volume, additional Se species may coelute. Alternate methods can be applied, upon client request, to increase the separation of DMeSeO from potentially co-eluting Se species.

Batch B222346 (Selenium Speciation on SSE F1)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

The relative percent difference (RPD) for selenium (*MeSe(IV) F1*) in the laboratory duplicate B222346-DUP4 was greater than the control limit of 25%, at 96%. Secondary criteria were met (*i.e.*, *avg result* \leq *5x the MRL and results within two MRL values*). No qualification of data was necessary.

Batch B222347(Selenium Speciation on SSE F1)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

Post spikes are employed on SSE samples as they are prepared for the instrument in the selenium speciation analytical runs. The post spike recoveries for (*SeCN F1*) in B222347-PS2 (70%), B222347-PS3 (74%), and B222347-PS4 (69%) were less than the lower control limit of 75%. The (*SeCN F1*) results for the source samples (2210049-25, 2210049-33, and 2210049-39, respectively) should be considered estimated, and have been qualified (**N**) due to the spike recovery outliers.

Batch B222351 (Selenium Speciation on SSE F2)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the Sample Results page for sample-specific MDLs, MRLs, and other details.

RPD values for selenium (*MeSe(IV) F2*) were greater than the control limit of 25% in the laboratory duplicate sample B222351-DUP3. Secondary criteria were met (*i.e.*, *avg result* \leq *5x the MRL and results within two MRL values*). No qualification of data was necessary.

Batch B222352 (Selenium Speciation on SSE F2)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the Sample Results page for sample-specific MDLs, MRLs, and other details.

The RPD values for (*Se(IV) F2*), (*SeCN F2*), and (*MeSe(IV) F2*) in the laboratory duplicate B222352-DUP2 were greater than the control limit of 25%, at 34%, 30%, and 47%, respectively. The (*Se(IV) F2*), (*SeCN F2*), and (*MeSe(IV) F2*) results for the source sample (2210049-25) should be considered estimated due to poor precision and have been qualified (**M**).

Chromatographic interference, as indicated by an elevated baseline, or co-eluting peak, was observed for selenomethionine (*SeMet F2*) in 2210049-38. Due to potential bias, the affected result has been qualified as estimated (**J-1**).

In instances when a matrix spike/matrix spike duplicate (MS/MSD) set was spiked at a level less than the native sample concentration, the recoveries and the RPD were not considered valid indicators of data quality. In such instances, the recoveries of the blank spikes (BS) and/or standard reference materials (SRM) demonstrate the accuracy of the applied methods. When the spiking level was less than 25% of the native sample concentration, the spike recovery was not reported (NR) and the RPD of the MS/MSD set was not calculated (N/C).

Except for concentration qualifiers and items noted above, all data were reported without qualification. Except for the laboratory duplicate RPD outliers and post spike recovery outliers described above, all associated quality control sample results met the acceptance criteria.

BAL verifies that the reported results of all analyses for which the laboratory is accredited meet the requirements of the accrediting body, unless otherwise noted in the report narrative. For more information regarding accreditations please see the *Report Information* and *Batch Summary* pages. This report must be used in its entirety for interpretation of results.

Please feel free to contact us if you have any questions regarding this report.

Sincerely,



Jeremy Maute
Senior Project Manager
Jeremy@brooksapplied.com



Report Information

General Disclaimers

Test results are based solely upon the sample submitted to Brooks Applied Labs in the condition it was received. This report shall not be reproduced or copied, except in full, without written approval of the laboratory. Brooks Applied Labs is not responsible for the consequences arising from the use of a partial report.

Laboratory Accreditation

BAL maintains accreditation with various state and national agencies for select test methods. For a current list of BAL accreditations, please visit our website at <http://www.brooksapplied.com/resources/certificates-permits/>. The reported analyte/matrix/method combination shall be considered outside BAL's scopes of accreditation unless otherwise identified as ISO, TNI, or ISO,TNI in the tables. It is the responsibility of the client to verify whether a specific accreditation is required for the intended data use.

ISO: ISO/IEC 17025:2017 accredited test method. Issued by ANSI National Accreditation Board (ANAB), #ADE-1447.02

TNI: NELAP accredited test method. Issued by the State of Florida Department of Health, #E87982.

ISO,TNI: Test method is accredited under both the ISO/IEC 17025:2017 and NELAP accreditations referenced above.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

AR	as received	MS	matrix spike
BAL	Brooks Applied Labs	MSD	matrix spike duplicate
BLK	method blank	ND	non-detect
BS	blank spike	NR	non-reportable
CAL	calibration standard	N/C	not calculated
CCB	continuing calibration blank	PS	post preparation spike
CCV	continuing calibration verification	REC	percent recovery
COC	chain of custody record	RPD	relative percent difference
D	dissolved fraction	SCV	secondary calibration verification
DUP	duplicate	SOP	standard operating procedure
IBL	instrument blank	SRM	reference material
ICV	initial calibration verification	T	total fraction
MDL	method detection limit	TR	total recoverable fraction
MRL	method reporting limit		

Definition of Data Qualifiers

E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Please see narrative for explanation.
J	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1	Estimated value. A full explanation is presented in the narrative.
M	Duplicate precision (RPD) was not within acceptance criteria. Please see narrative for explanation.
N	Spike recovery was not within acceptance criteria. Please see narrative for explanation.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.
Z	Holding time and/or preservation requirements not established for this method; however, BAL recommendations for holding time were not followed. Please see narrative for explanation.



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
RG_ERCKDT_SESeSp-6_2022-09-19_N	2210049-01	SE	Sample	09/19/2022	10/06/2022
RG_ERCKDT_SESeSp-7_2022-09-19_N	2210049-02	SE	Sample	09/19/2022	10/06/2022
RG_LCUT_SESeSp-1_2022-09-15_N	2210049-03	SE	Sample	09/15/2022	10/06/2022
RG_LCUT_SESeSp-2_2022-09-15_N	2210049-04	SE	Sample	09/15/2022	10/06/2022
RG_LCUT_SESeSp-3_2022-09-15_N	2210049-05	SE	Sample	09/15/2022	10/06/2022
RG_GATE_SESeSp-1_2022-09-15_N	2210049-06	SE	Sample	09/15/2022	10/06/2022
RG_GATE_SESeSp-2_2022-09-15_N	2210049-07	SE	Sample	09/15/2022	10/06/2022
RG_GATE_SESeSp-3_2022-09-15_N	2210049-08	SE	Sample	09/15/2022	10/06/2022
RG_MI25_SESeSp-1_2022-09-15_N	2210049-09	SE	Sample	09/15/2022	10/06/2022
RG_MI25_SESeSp-2_2022-09-15_N	2210049-10	SE	Sample	09/15/2022	10/06/2022
RG_MI25_SESeSp-3_2022-09-15_N	2210049-11	SE	Sample	09/15/2022	10/06/2022
RG_BOCKRD_SESeSp-1_2022-09-20_N	2210049-12	SE	Sample	09/20/2022	10/06/2022
RG_BOCKRD_SESeSp-2_2022-09-20_N	2210049-13	SE	Sample	09/20/2022	10/06/2022
RG_BOCKRD_SESeSp-3_2022-09-20_N	2210049-14	SE	Sample	09/20/2022	10/06/2022
RG_MP1_SESeSp-1_2022-09-12_N	2210049-15	SE	Sample	09/12/2022	10/06/2022
RG_MP1_SESeSp-2_2022-09-12_N	2210049-16	SE	Sample	09/12/2022	10/06/2022
RG_MP1_SESeSp-3_2022-09-12_N	2210049-17	SE	Sample	09/12/2022	10/06/2022
RG_FOUNGD_SESeSp-1_2022-09-15_N	2210049-18	SE	Sample	09/15/2022	10/06/2022
RG_FOUNGD_SESeSp-2_2022-09-15_N	2210049-19	SE	Sample	09/15/2022	10/06/2022
RG_FOUNGD_SESeSp-3_2022-09-15_N	2210049-20	SE	Sample	09/15/2022	10/06/2022
RG_ERCKUC_SESeSp-1_2022-09-14_N	2210049-21	SE	Sample	09/14/2022	10/06/2022
RG_ERCKUC_SESeSp-2_2022-09-14_N	2210049-22	SE	Sample	09/14/2022	10/06/2022
RG_ERCKUC_SESeSp-3_2022-09-14_N	2210049-23	SE	Sample	09/14/2022	10/06/2022
RG_BOCK_SESeSp-1_2022-09-15_N	2210049-24	SE	Sample	09/15/2022	10/06/2022



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
RG_BOCK_SESeSp-2_2022-09-15_N	2210049-25	SE	Sample	09/15/2022	10/06/2022
RG_BOCK_SESeSp-3_2022-09-15_N	2210049-26	SE	Sample	09/15/2022	10/06/2022
RG_ALUSM_SESeSp-1_2022-09-18_N	2210049-27	SE	Sample	09/18/2022	10/06/2022
RG_ALUSM_SESeSp-2_2022-09-18_N	2210049-28	SE	Sample	09/18/2022	10/06/2022
RG_ALUSM_SESeSp-3_2022-09-18_N	2210049-29	SE	Sample	09/18/2022	10/06/2022
RG_MIDGA_SESeSp-1_2022-09-18_N	2210049-30	SE	Sample	09/18/2022	10/06/2022
RG_MIDGA_SESeSp-2_2022-09-18_N	2210049-31	SE	Sample	09/18/2022	10/06/2022
RG_MIDGA_SESeSp-3_2022-09-18_N	2210049-32	SE	Sample	09/18/2022	10/06/2022
RG_GATEDP_SESeSp-1_2022-09-15_N	2210049-33	SE	Sample	09/15/2022	10/06/2022
RG_MIDBO_SESeSp-1_2022-09-13_N	2210049-34	SE	Sample	09/13/2022	10/06/2022
RG_MIDBO_SESeSp-2_2022-09-13_N	2210049-35	SE	Sample	09/13/2022	10/06/2022
RG_MIDBO_SESeSp-3_2022-09-13_N	2210049-36	SE	Sample	09/13/2022	10/06/2022
RG_RIVER_SESeSp-1_2022-09-14_N	2210049-37	SE	Sample	09/14/2022	10/06/2022
RG_RIVER_SESeSp-5_2022-09-15_N	2210049-38	SE	Sample	09/15/2022	10/06/2022
RG_RIVER_SESeSp-1_2022-09-14_N	2210049-39	SE	Sample	09/14/2022	10/06/2022
RG_RIVER_SESeSp-2_2022-09-18_N	2210049-40	SE	Sample	09/18/2022	10/06/2022
RG_RIVER_SESeSp-5_2022-09-18_N	2210049-41	SE	Sample	09/18/2022	10/06/2022
RG_RIVER_SESeSp-2_2022-09-12_N	2210049-42	SE	Sample	09/12/2022	10/06/2022
RG_RIVER_SESeSp-6_2022-09-19_N	2210049-43	SE	Sample	09/19/2022	10/06/2022



Batch Summary

Analyte	Lab Matrix	Method	Accred.	Prepared	Analyzed	Batch	Sequence
%TS	Soil/Sediment	SOP BAL-0501	ISO	10/06/22	10/07/22	B222335	N/A
DMS ₆ O F1	Soil/Sediment	In-House		10/12/22	10/19/22	B222347	S221078
DMS ₆ O F1	Soil/Sediment	In-House		10/12/22	10/27/22	B222346	S221126
DMS ₆ O F2	Soil/Sediment	In-House		10/12/22	10/18/22	B222351	S221078
DMS ₆ O F2	Soil/Sediment	In-House		10/12/22	10/18/22	B222352	S221078
MeSe(IV) F1	Soil/Sediment	In-House		10/12/22	10/19/22	B222347	S221078
MeSe(IV) F1	Soil/Sediment	In-House		10/12/22	10/27/22	B222346	S221126
MeSe(IV) F2	Soil/Sediment	In-House		10/12/22	10/18/22	B222351	S221078
MeSe(IV) F2	Soil/Sediment	In-House		10/12/22	10/18/22	B222352	S221078
Se	Soil/Sediment	EPA 6020B Mod	ISO,TNI	10/14/22	10/19/22	B222388	S221088
Se	Soil/Sediment	EPA 6020B Mod	ISO,TNI	10/17/22	10/19/22	B222380	S221099
Se Unk A F1	Soil/Sediment	In-House		10/12/22	10/19/22	B222347	S221078
Se Unk A F1	Soil/Sediment	In-House		10/12/22	10/27/22	B222346	S221126
Se Unk A F2	Soil/Sediment	In-House		10/12/22	10/18/22	B222351	S221078
Se Unk A F2	Soil/Sediment	In-House		10/12/22	10/18/22	B222352	S221078
Se(F1)	Soil/Sediment	In-House		10/12/22	10/13/22	B222333	S221077
Se(F1)	Soil/Sediment	In-House		10/12/22	10/13/22	B222425	S221077
Se(F2)	Soil/Sediment	In-House		10/12/22	10/15/22	B222434	S221079
Se(F2)	Soil/Sediment	In-House		10/12/22	10/15/22	B222435	S221079
Se(F2)	Soil/Sediment	In-House		10/12/22	10/17/22	B222434	S221083
Se(F3)	Soil/Sediment	In-House		10/12/22	10/20/22	B222498	S221103
Se(F3)	Soil/Sediment	In-House		10/12/22	10/21/22	B222530	S221108
Se(F4)	Soil/Sediment	In-House		10/12/22	10/21/22	B222514	S221108
Se(F4)	Soil/Sediment	In-House		10/12/22	10/25/22	B222544	S221119
Se(F5)	Soil/Sediment	In-House		10/21/22	10/25/22	B222533	S221119
Se(F5)	Soil/Sediment	In-House		10/25/22	10/26/22	B222555	S221124
Se(IV) F1	Soil/Sediment	In-House		10/12/22	10/19/22	B222347	S221078
Se(IV) F1	Soil/Sediment	In-House		10/12/22	10/27/22	B222346	S221126
Se(IV) F2	Soil/Sediment	In-House		10/12/22	10/18/22	B222351	S221078
Se(IV) F2	Soil/Sediment	In-House		10/12/22	10/18/22	B222352	S221078
Se(VI) F1	Soil/Sediment	In-House		10/12/22	10/19/22	B222347	S221078
Se(VI) F1	Soil/Sediment	In-House		10/12/22	10/27/22	B222346	S221126
Se(VI) F2	Soil/Sediment	In-House		10/12/22	10/18/22	B222351	S221078
Se(VI) F2	Soil/Sediment	In-House		10/12/22	10/18/22	B222352	S221078
SeCN F1	Soil/Sediment	In-House		10/12/22	10/19/22	B222347	S221078
SeCN F1	Soil/Sediment	In-House		10/12/22	10/27/22	B222346	S221126
SeCN F2	Soil/Sediment	In-House		10/12/22	10/18/22	B222351	S221078
SeCN F2	Soil/Sediment	In-House		10/12/22	10/18/22	B222352	S221078



Batch Summary

Analyte	Lab Matrix	Method	Accred.	Prepared	Analyzed	Batch	Sequence
SeMet F1	Soil/Sediment	In-House		10/12/22	10/19/22	B222347	S221078
SeMet F1	Soil/Sediment	In-House		10/12/22	10/27/22	B222346	S221126
SeMet F2	Soil/Sediment	In-House		10/12/22	10/18/22	B222351	S221078
SeMet F2	Soil/Sediment	In-House		10/12/22	10/18/22	B222352	S221078
SeSO3 F1	Soil/Sediment	In-House		10/12/22	10/19/22	B222347	S221078
SeSO3 F1	Soil/Sediment	In-House		10/12/22	10/27/22	B222346	S221126
SeSO3 F2	Soil/Sediment	In-House		10/12/22	10/18/22	B222351	S221078
SeSO3 F2	Soil/Sediment	In-House		10/12/22	10/18/22	B222352	S221078
Unk Se Sp F1	Soil/Sediment	In-House		10/12/22	10/19/22	B222347	S221078
Unk Se Sp F1	Soil/Sediment	In-House		10/12/22	10/27/22	B222346	S221126
Unk Se Sp F2	Soil/Sediment	In-House		10/12/22	10/18/22	B222351	S221078
Unk Se Sp F2	Soil/Sediment	In-House		10/12/22	10/18/22	B222352	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKDT_SESeSp-6_2022-09-19_N</i>										
2210049-01	%TS	SE	NA	32.29		0.03	0.10	%	B222335	N/A
2210049-01	DMS ₂ O F1	SE	dry	≤ 0.006	U	0.006	0.025	mg/kg	B222346	S221126
2210049-01	DMS ₂ O F2	SE	dry	0.007	J	0.006	0.025	mg/kg	B222351	S221078
2210049-01	MeSe(IV) F1	SE	dry	0.019	J	0.006	0.025	mg/kg	B222346	S221126
2210049-01	MeSe(IV) F2	SE	dry	1.02		0.006	0.025	mg/kg	B222351	S221078
2210049-01	Se	SE	dry	24.0		0.348	0.695	mg/kg	B222380	S221099
2210049-01	Se Unk A F1	SE	dry	≤ 0.006	U	0.006	0.025	mg/kg	B222346	S221126
2210049-01	Se Unk A F2	SE	dry	0.013	J	0.006	0.025	mg/kg	B222351	S221078
2210049-01	Se(F1)	SE	dry	0.657		0.056	0.248	mg/kg	B222333	S221077
2210049-01	Se(F2)	SE	dry	10.2		0.051	0.248	mg/kg	B222434	S221079
2210049-01	Se(F3)	SE	dry	7.36		0.029	0.248	mg/kg	B222498	S221103
2210049-01	Se(F4)	SE	dry	0.336		0.034	0.248	mg/kg	B222514	S221108
2210049-01	Se(F5)	SE	dry	0.076	J	0.034	0.310	mg/kg	B222533	S221119
2210049-01	Se(IV) F1	SE	dry	0.574		0.007	0.061	mg/kg	B222346	S221126
2210049-01	Se(IV) F2	SE	dry	5.43		0.007	0.061	mg/kg	B222351	S221078
2210049-01	Se(VI) F1	SE	dry	≤ 0.007	U	0.007	0.064	mg/kg	B222346	S221126
2210049-01	Se(VI) F2	SE	dry	0.017	J	0.007	0.064	mg/kg	B222351	S221078
2210049-01	SeCN F1	SE	dry	≤ 0.004	U	0.004	0.025	mg/kg	B222346	S221126
2210049-01	SeCN F2	SE	dry	1.67		0.004	0.025	mg/kg	B222351	S221078
2210049-01	SeMet F1	SE	dry	≤ 0.006	U	0.006	0.025	mg/kg	B222346	S221126
2210049-01	SeMet F2	SE	dry	≤ 0.006	U	0.006	0.025	mg/kg	B222351	S221078
2210049-01	SeSO ₃ F1	SE	dry	≤ 0.007	U	0.007	0.064	mg/kg	B222346	S221126
2210049-01	SeSO ₃ F2	SE	dry	0.049	J	0.007	0.064	mg/kg	B222351	S221078
2210049-01	Unk Se Sp F1	SE	dry	≤ 0.007	U	0.007	0.061	mg/kg	B222346	S221126
2210049-01	Unk Se Sp F2	SE	dry	0.378		0.007	0.061	mg/kg	B222351	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKDT_SESeSp-7_2022-09-19_N</i>										
2210049-02	%TS	SE	NA	28.18		0.05	0.16	%	B222335	N/A
2210049-02	DMS ₂ O F1	SE	dry	0.079		0.007	0.028	mg/kg	B222346	S221126
2210049-02	DMS ₂ O F2	SE	dry	0.011	J	0.007	0.028	mg/kg	B222351	S221078
2210049-02	MeSe(IV) F1	SE	dry	0.038		0.007	0.028	mg/kg	B222346	S221126
2210049-02	MeSe(IV) F2	SE	dry	1.57		0.007	0.028	mg/kg	B222351	S221078
2210049-02	Se	SE	dry	47.1		0.407	0.814	mg/kg	B222380	S221099
2210049-02	Se Unk A F1	SE	dry	≤ 0.007	U	0.007	0.028	mg/kg	B222346	S221126
2210049-02	Se Unk A F2	SE	dry	0.020	J	0.007	0.028	mg/kg	B222351	S221078
2210049-02	Se(F1)	SE	dry	0.893		0.063	0.281	mg/kg	B222333	S221077
2210049-02	Se(F2)	SE	dry	17.9		0.058	0.281	mg/kg	B222434	S221079
2210049-02	Se(F3)	SE	dry	14.7		0.033	0.281	mg/kg	B222498	S221103
2210049-02	Se(F4)	SE	dry	0.837		0.039	0.281	mg/kg	B222514	S221108
2210049-02	Se(F5)	SE	dry	0.109	J	0.039	0.352	mg/kg	B222533	S221119
2210049-02	Se(IV) F1	SE	dry	0.643		0.008	0.069	mg/kg	B222346	S221126
2210049-02	Se(IV) F2	SE	dry	11.9		0.008	0.069	mg/kg	B222351	S221078
2210049-02	Se(VI) F1	SE	dry	0.022	J	0.008	0.072	mg/kg	B222346	S221126
2210049-02	Se(VI) F2	SE	dry	≤ 0.008	U	0.008	0.072	mg/kg	B222351	S221078
2210049-02	SeCN F1	SE	dry	≤ 0.004	U	0.004	0.028	mg/kg	B222346	S221126
2210049-02	SeCN F2	SE	dry	1.69		0.004	0.028	mg/kg	B222351	S221078
2210049-02	SeMet F1	SE	dry	≤ 0.007	U	0.007	0.028	mg/kg	B222346	S221126
2210049-02	SeMet F2	SE	dry	≤ 0.007	U	0.007	0.028	mg/kg	B222351	S221078
2210049-02	SeSO ₃ F1	SE	dry	≤ 0.008	U	0.008	0.072	mg/kg	B222346	S221126
2210049-02	SeSO ₃ F2	SE	dry	0.090		0.008	0.072	mg/kg	B222351	S221078
2210049-02	Unk Se Sp F1	SE	dry	≤ 0.008	U	0.008	0.069	mg/kg	B222346	S221126
2210049-02	Unk Se Sp F2	SE	dry	0.608		0.008	0.069	mg/kg	B222351	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_LCUT_SESeSp-1_2022-09-15_N</i>										
2210049-03	%TS	SE	NA	13.40		0.06	0.19	%	B222335	N/A
2210049-03	DMS ₂ O F1	SE	dry	≤ 0.012	U	0.012	0.054	mg/kg	B222346	S221126
2210049-03	DMS ₂ O F2	SE	dry	≤ 0.012	U	0.012	0.054	mg/kg	B222351	S221078
2210049-03	MeSe(IV) F1	SE	dry	≤ 0.012	U	0.012	0.054	mg/kg	B222346	S221126
2210049-03	MeSe(IV) F2	SE	dry	0.224		0.012	0.054	mg/kg	B222351	S221078
2210049-03	Se	SE	dry	10.9		0.630	1.26	mg/kg	B222380	S221099
2210049-03	Se Unk A F1	SE	dry	≤ 0.012	U	0.012	0.054	mg/kg	B222346	S221126
2210049-03	Se Unk A F2	SE	dry	≤ 0.012	U	0.012	0.054	mg/kg	B222351	S221078
2210049-03	Se(F1)	SE	dry	0.569		0.121	0.539	mg/kg	B222333	S221077
2210049-03	Se(F2)	SE	dry	2.16		0.111	0.539	mg/kg	B222434	S221079
2210049-03	Se(F3)	SE	dry	2.88		0.064	0.539	mg/kg	B222498	S221103
2210049-03	Se(F4)	SE	dry	0.092	J	0.074	0.539	mg/kg	B222514	S221108
2210049-03	Se(F5)	SE	dry	0.081	J	0.074	0.673	mg/kg	B222533	S221119
2210049-03	Se(IV) F1	SE	dry	0.112	J	0.016	0.131	mg/kg	B222346	S221126
2210049-03	Se(IV) F2	SE	dry	0.794		0.016	0.131	mg/kg	B222351	S221078
2210049-03	Se(VI) F1	SE	dry	0.109	J	0.015	0.138	mg/kg	B222346	S221126
2210049-03	Se(VI) F2	SE	dry	≤ 0.015	U	0.015	0.138	mg/kg	B222351	S221078
2210049-03	SeCN F1	SE	dry	≤ 0.008	U	0.008	0.054	mg/kg	B222346	S221126
2210049-03	SeCN F2	SE	dry	0.579		0.008	0.054	mg/kg	B222351	S221078
2210049-03	SeMet F1	SE	dry	≤ 0.012	U	0.012	0.054	mg/kg	B222346	S221126
2210049-03	SeMet F2	SE	dry	≤ 0.012	U	0.012	0.054	mg/kg	B222351	S221078
2210049-03	SeSO ₃ F1	SE	dry	≤ 0.015	U	0.015	0.138	mg/kg	B222346	S221126
2210049-03	SeSO ₃ F2	SE	dry	≤ 0.015	U	0.015	0.138	mg/kg	B222351	S221078
2210049-03	Unk Se Sp F1	SE	dry	0.070	J	0.016	0.131	mg/kg	B222346	S221126
2210049-03	Unk Se Sp F2	SE	dry	0.086	J	0.016	0.131	mg/kg	B222351	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_LCUT_SESeSp-2_2022-09-15_N</i>										
2210049-04	%TS	SE	NA	20.33		0.04	0.14	%	B222335	N/A
2210049-04	DMS ₂ O F1	SE	dry	≤ 0.009	U	0.009	0.039	mg/kg	B222346	S221126
2210049-04	DMS ₂ O F2	SE	dry	≤ 0.009	U	0.009	0.039	mg/kg	B222351	S221078
2210049-04	MeSe(IV) F1	SE	dry	≤ 0.009	U	0.009	0.039	mg/kg	B222346	S221126
2210049-04	MeSe(IV) F2	SE	dry	0.323		0.009	0.039	mg/kg	B222351	S221078
2210049-04	Se	SE	dry	14.6		0.388	0.776	mg/kg	B222380	S221099
2210049-04	Se Unk A F1	SE	dry	≤ 0.009	U	0.009	0.039	mg/kg	B222346	S221126
2210049-04	Se Unk A F2	SE	dry	≤ 0.009	U	0.009	0.039	mg/kg	B222351	S221078
2210049-04	Se(F1)	SE	dry	0.462		0.088	0.390	mg/kg	B222333	S221077
2210049-04	Se(F2)	SE	dry	2.64		0.080	0.390	mg/kg	B222434	S221079
2210049-04	Se(F3)	SE	dry	3.75		0.046	0.390	mg/kg	B222498	S221103
2210049-04	Se(F4)	SE	dry	0.095	J	0.054	0.390	mg/kg	B222514	S221108
2210049-04	Se(F5)	SE	dry	≤ 0.054	U	0.054	0.487	mg/kg	B222533	S221119
2210049-04	Se(IV) F1	SE	dry	0.151		0.012	0.095	mg/kg	B222346	S221126
2210049-04	Se(IV) F2	SE	dry	1.05		0.012	0.095	mg/kg	B222351	S221078
2210049-04	Se(VI) F1	SE	dry	0.061	J	0.011	0.100	mg/kg	B222346	S221126
2210049-04	Se(VI) F2	SE	dry	≤ 0.011	U	0.011	0.100	mg/kg	B222351	S221078
2210049-04	SeCN F1	SE	dry	≤ 0.006	U	0.006	0.039	mg/kg	B222346	S221126
2210049-04	SeCN F2	SE	dry	0.855		0.006	0.039	mg/kg	B222351	S221078
2210049-04	SeMet F1	SE	dry	≤ 0.009	U	0.009	0.039	mg/kg	B222346	S221126
2210049-04	SeMet F2	SE	dry	≤ 0.009	U	0.009	0.039	mg/kg	B222351	S221078
2210049-04	SeSO ₃ F1	SE	dry	≤ 0.011	U	0.011	0.100	mg/kg	B222346	S221126
2210049-04	SeSO ₃ F2	SE	dry	0.019	J	0.011	0.100	mg/kg	B222351	S221078
2210049-04	Unk Se Sp F1	SE	dry	0.036	J	0.012	0.095	mg/kg	B222346	S221126
2210049-04	Unk Se Sp F2	SE	dry	0.156		0.012	0.095	mg/kg	B222351	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_LCUT_SESeSp-3_2022-09-15_N</i>										
2210049-05	%TS	SE	NA	22.92		0.04	0.13	%	B222335	N/A
2210049-05	DMS ₂ O F1	SE	dry	≤ 0.008	U	0.008	0.034	mg/kg	B222346	S221126
2210049-05	DMS ₂ O F2	SE	dry	0.028	J	0.008	0.034	mg/kg	B222351	S221078
2210049-05	MeSe(IV) F1	SE	dry	0.012	J	0.008	0.034	mg/kg	B222346	S221126
2210049-05	MeSe(IV) F2	SE	dry	0.931		0.008	0.034	mg/kg	B222351	S221078
2210049-05	Se	SE	dry	17.0		0.316	0.632	mg/kg	B222380	S221099
2210049-05	Se Unk A F1	SE	dry	≤ 0.008	U	0.008	0.034	mg/kg	B222346	S221126
2210049-05	Se Unk A F2	SE	dry	0.016	J	0.008	0.034	mg/kg	B222351	S221078
2210049-05	Se(F1)	SE	dry	0.423		0.076	0.339	mg/kg	B222333	S221077
2210049-05	Se(F2)	SE	dry	5.08		0.070	0.339	mg/kg	B222434	S221079
2210049-05	Se(F3)	SE	dry	6.95		0.040	0.339	mg/kg	B222498	S221103
2210049-05	Se(F4)	SE	dry	0.264	J	0.047	0.339	mg/kg	B222514	S221108
2210049-05	Se(F5)	SE	dry	0.058	J	0.047	0.424	mg/kg	B222533	S221119
2210049-05	Se(IV) F1	SE	dry	0.318		0.010	0.083	mg/kg	B222346	S221126
2210049-05	Se(IV) F2	SE	dry	1.75		0.010	0.083	mg/kg	B222351	S221078
2210049-05	Se(VI) F1	SE	dry	≤ 0.010	U	0.010	0.087	mg/kg	B222346	S221126
2210049-05	Se(VI) F2	SE	dry	0.016	J	0.010	0.087	mg/kg	B222351	S221078
2210049-05	SeCN F1	SE	dry	≤ 0.005	U	0.005	0.034	mg/kg	B222346	S221126
2210049-05	SeCN F2	SE	dry	0.941		0.005	0.034	mg/kg	B222351	S221078
2210049-05	SeMet F1	SE	dry	≤ 0.008	U	0.008	0.034	mg/kg	B222346	S221126
2210049-05	SeMet F2	SE	dry	≤ 0.008	U	0.008	0.034	mg/kg	B222351	S221078
2210049-05	SeSO ₃ F1	SE	dry	≤ 0.010	U	0.010	0.087	mg/kg	B222346	S221126
2210049-05	SeSO ₃ F2	SE	dry	0.019	J	0.010	0.087	mg/kg	B222351	S221078
2210049-05	Unk Se Sp F1	SE	dry	≤ 0.010	U	0.010	0.083	mg/kg	B222346	S221126
2210049-05	Unk Se Sp F2	SE	dry	0.283		0.010	0.083	mg/kg	B222351	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_GATE_SESeSp-1_2022-09-15_N										
2210049-06	%TS	SE	NA	48.52		0.02	0.06	%	B222335	N/A
2210049-06	DMS ₂ O F1	SE	dry	≤ 0.004	U	0.004	0.016	mg/kg	B222346	S221126
2210049-06	DMS ₂ O F2	SE	dry	≤ 0.004	U	0.004	0.016	mg/kg	B222351	S221078
2210049-06	MeSe(IV) F1	SE	dry	0.027		0.004	0.016	mg/kg	B222346	S221126
2210049-06	MeSe(IV) F2	SE	dry	0.388		0.004	0.016	mg/kg	B222351	S221078
2210049-06	Se	SE	dry	15.9		0.207	0.415	mg/kg	B222380	S221099
2210049-06	Se Unk A F1	SE	dry	≤ 0.004	U	0.004	0.016	mg/kg	B222346	S221126
2210049-06	Se Unk A F2	SE	dry	≤ 0.004	U	0.004	0.016	mg/kg	B222351	S221078
2210049-06	Se(F1)	SE	dry	1.15		0.035	0.157	mg/kg	B222333	S221077
2210049-06	Se(F2)	SE	dry	4.94		0.032	0.157	mg/kg	B222434	S221079
2210049-06	Se(F3)	SE	dry	6.74		0.019	0.157	mg/kg	B222498	S221103
2210049-06	Se(F4)	SE	dry	0.205		0.022	0.157	mg/kg	B222514	S221108
2210049-06	Se(F5)	SE	dry	0.060	J	0.022	0.196	mg/kg	B222533	S221119
2210049-06	Se(IV) F1	SE	dry	0.991		0.005	0.038	mg/kg	B222346	S221126
2210049-06	Se(IV) F2	SE	dry	3.50		0.005	0.038	mg/kg	B222351	S221078
2210049-06	Se(VI) F1	SE	dry	0.021	J	0.004	0.040	mg/kg	B222346	S221126
2210049-06	Se(VI) F2	SE	dry	0.022	J	0.004	0.040	mg/kg	B222351	S221078
2210049-06	SeCN F1	SE	dry	0.006	J	0.002	0.016	mg/kg	B222346	S221126
2210049-06	SeCN F2	SE	dry	0.415		0.002	0.016	mg/kg	B222351	S221078
2210049-06	SeMet F1	SE	dry	≤ 0.004	U	0.004	0.016	mg/kg	B222346	S221126
2210049-06	SeMet F2	SE	dry	≤ 0.004	U	0.004	0.016	mg/kg	B222351	S221078
2210049-06	SeSO ₃ F1	SE	dry	≤ 0.004	U	0.004	0.040	mg/kg	B222346	S221126
2210049-06	SeSO ₃ F2	SE	dry	0.019	J	0.004	0.040	mg/kg	B222351	S221078
2210049-06	Unk Se Sp F1	SE	dry	≤ 0.005	U	0.005	0.038	mg/kg	B222346	S221126
2210049-06	Unk Se Sp F2	SE	dry	0.214		0.005	0.038	mg/kg	B222351	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_GATE_SESeSp-2_2022-09-15_N										
2210049-07	%TS	SE	NA	51.37		0.01	0.05	%	B222335	N/A
2210049-07	DMS ₂ O F1	SE	dry	≤ 0.003	U	0.003	0.015	mg/kg	B222346	S221126
2210049-07	DMS ₂ O F2	SE	dry	≤ 0.003	U	0.003	0.015	mg/kg	B222351	S221078
2210049-07	MeSe(IV) F1	SE	dry	0.033		0.003	0.015	mg/kg	B222346	S221126
2210049-07	MeSe(IV) F2	SE	dry	0.305		0.003	0.015	mg/kg	B222351	S221078
2210049-07	Se	SE	dry	14.5		0.144	0.289	mg/kg	B222380	S221099
2210049-07	Se Unk A F1	SE	dry	≤ 0.003	U	0.003	0.015	mg/kg	B222346	S221126
2210049-07	Se Unk A F2	SE	dry	0.005	J	0.003	0.015	mg/kg	B222351	S221078
2210049-07	Se(F1)	SE	dry	1.29		0.034	0.151	mg/kg	B222333	S221077
2210049-07	Se(F2)	SE	dry	4.30		0.031	0.151	mg/kg	B222434	S221079
2210049-07	Se(F3)	SE	dry	5.78		0.018	0.151	mg/kg	B222498	S221103
2210049-07	Se(F4)	SE	dry	0.208		0.021	0.151	mg/kg	B222514	S221108
2210049-07	Se(F5)	SE	dry	0.056	J	0.021	0.189	mg/kg	B222533	S221119
2210049-07	Se(IV) F1	SE	dry	1.07		0.005	0.037	mg/kg	B222346	S221126
2210049-07	Se(IV) F2	SE	dry	3.17		0.005	0.037	mg/kg	B222351	S221078
2210049-07	Se(VI) F1	SE	dry	0.021	J	0.004	0.039	mg/kg	B222346	S221126
2210049-07	Se(VI) F2	SE	dry	0.019	J	0.004	0.039	mg/kg	B222351	S221078
2210049-07	SeCN F1	SE	dry	≤ 0.002	U	0.002	0.015	mg/kg	B222346	S221126
2210049-07	SeCN F2	SE	dry	0.353		0.002	0.015	mg/kg	B222351	S221078
2210049-07	SeMet F1	SE	dry	≤ 0.003	U	0.003	0.015	mg/kg	B222346	S221126
2210049-07	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.015	mg/kg	B222351	S221078
2210049-07	SeSO ₃ F1	SE	dry	≤ 0.004	U	0.004	0.039	mg/kg	B222346	S221126
2210049-07	SeSO ₃ F2	SE	dry	0.013	J	0.004	0.039	mg/kg	B222351	S221078
2210049-07	Unk Se Sp F1	SE	dry	≤ 0.005	U	0.005	0.037	mg/kg	B222346	S221126
2210049-07	Unk Se Sp F2	SE	dry	0.174		0.005	0.037	mg/kg	B222351	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_GATE_SESeSp-3_2022-09-15_N										
2210049-08	%TS	SE	NA	49.87		0.02	0.06	%	B222335	N/A
2210049-08	DMS ₂ O F1	SE	dry	≤ 0.004	U	0.004	0.016	mg/kg	B222346	S221126
2210049-08	DMS ₂ O F2	SE	dry	≤ 0.004	U	0.004	0.016	mg/kg	B222351	S221078
2210049-08	MeSe(IV) F1	SE	dry	0.018		0.004	0.016	mg/kg	B222346	S221126
2210049-08	MeSe(IV) F2	SE	dry	0.322		0.004	0.016	mg/kg	B222351	S221078
2210049-08	Se	SE	dry	13.9		0.201	0.401	mg/kg	B222380	S221099
2210049-08	Se Unk A F1	SE	dry	≤ 0.004	U	0.004	0.016	mg/kg	B222346	S221126
2210049-08	Se Unk A F2	SE	dry	≤ 0.004	U	0.004	0.016	mg/kg	B222351	S221078
2210049-08	Se(F1)	SE	dry	1.01		0.035	0.156	mg/kg	B222333	S221077
2210049-08	Se(F2)	SE	dry	4.16		0.032	0.156	mg/kg	B222434	S221079
2210049-08	Se(F3)	SE	dry	5.34		0.018	0.156	mg/kg	B222498	S221103
2210049-08	Se(F4)	SE	dry	0.197		0.021	0.156	mg/kg	B222514	S221108
2210049-08	Se(F5)	SE	dry	0.039	J	0.021	0.194	mg/kg	B222533	S221119
2210049-08	Se(IV) F1	SE	dry	0.930		0.005	0.038	mg/kg	B222346	S221126
2210049-08	Se(IV) F2	SE	dry	2.56		0.005	0.038	mg/kg	B222351	S221078
2210049-08	Se(VI) F1	SE	dry	0.019	J	0.004	0.040	mg/kg	B222346	S221126
2210049-08	Se(VI) F2	SE	dry	0.019	J	0.004	0.040	mg/kg	B222351	S221078
2210049-08	SeCN F1	SE	dry	≤ 0.002	U	0.002	0.016	mg/kg	B222346	S221126
2210049-08	SeCN F2	SE	dry	0.379		0.002	0.016	mg/kg	B222351	S221078
2210049-08	SeMet F1	SE	dry	≤ 0.004	U	0.004	0.016	mg/kg	B222346	S221126
2210049-08	SeMet F2	SE	dry	≤ 0.004	U	0.004	0.016	mg/kg	B222351	S221078
2210049-08	SeSO ₃ F1	SE	dry	≤ 0.004	U	0.004	0.040	mg/kg	B222346	S221126
2210049-08	SeSO ₃ F2	SE	dry	0.021	J	0.004	0.040	mg/kg	B222351	S221078
2210049-08	Unk Se Sp F1	SE	dry	≤ 0.005	U	0.005	0.038	mg/kg	B222346	S221126
2210049-08	Unk Se Sp F2	SE	dry	0.165		0.005	0.038	mg/kg	B222351	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_MI25_SESeSp-1_2022-09-15_N</i>										
2210049-09	%TS	SE	NA	63.19		0.01	0.04	%	B222335	N/A
2210049-09	DMS ₂ O F1	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222346	S221126
2210049-09	DMS ₂ O F2	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222351	S221078
2210049-09	MeSe(IV) F1	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222346	S221126
2210049-09	MeSe(IV) F2	SE	dry	0.012	J	0.003	0.012	mg/kg	B222351	S221078
2210049-09	Se	SE	dry	1.04		0.134	0.267	mg/kg	B222380	S221099
2210049-09	Se Unk A F1	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222346	S221126
2210049-09	Se Unk A F2	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222351	S221078
2210049-09	Se(F1)	SE	dry	≤ 0.026	U	0.026	0.116	mg/kg	B222333	S221077
2210049-09	Se(F2)	SE	dry	0.228		0.024	0.116	mg/kg	B222434	S221079
2210049-09	Se(F3)	SE	dry	0.486		0.014	0.116	mg/kg	B222498	S221103
2210049-09	Se(F4)	SE	dry	0.184		0.016	0.116	mg/kg	B222514	S221108
2210049-09	Se(F5)	SE	dry	0.064	J	0.016	0.145	mg/kg	B222533	S221119
2210049-09	Se(IV) F1	SE	dry	0.006	J	0.003	0.028	mg/kg	B222346	S221126
2210049-09	Se(IV) F2	SE	dry	0.104		0.003	0.028	mg/kg	B222351	S221078
2210049-09	Se(VI) F1	SE	dry	≤ 0.003	U	0.003	0.030	mg/kg	B222346	S221126
2210049-09	Se(VI) F2	SE	dry	≤ 0.003	U	0.003	0.030	mg/kg	B222351	S221078
2210049-09	SeCN F1	SE	dry	≤ 0.002	U	0.002	0.012	mg/kg	B222346	S221126
2210049-09	SeCN F2	SE	dry	0.016		0.002	0.012	mg/kg	B222351	S221078
2210049-09	SeMet F1	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222346	S221126
2210049-09	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222351	S221078
2210049-09	SeSO ₃ F1	SE	dry	≤ 0.003	U	0.003	0.030	mg/kg	B222346	S221126
2210049-09	SeSO ₃ F2	SE	dry	≤ 0.003	U	0.003	0.030	mg/kg	B222351	S221078
2210049-09	Unk Se Sp F1	SE	dry	≤ 0.003	U	0.003	0.028	mg/kg	B222346	S221126
2210049-09	Unk Se Sp F2	SE	dry	0.008	J	0.003	0.028	mg/kg	B222351	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_MI25_SESeSp-2_2022-09-15_N</i>										
2210049-10	%TS	SE	NA	66.80		0.02	0.05	%	B222335	N/A
2210049-10	DMS ₂ O F1	SE	dry	≤ 0.003	U	0.003	0.011	mg/kg	B222346	S221126
2210049-10	DMS ₂ O F2	SE	dry	≤ 0.003	U	0.003	0.011	mg/kg	B222351	S221078
2210049-10	MeSe(IV) F1	SE	dry	≤ 0.003	U	0.003	0.011	mg/kg	B222346	S221126
2210049-10	MeSe(IV) F2	SE	dry	0.006	J	0.003	0.011	mg/kg	B222351	S221078
2210049-10	Se	SE	dry	0.995		0.126	0.253	mg/kg	B222380	S221099
2210049-10	Se Unk A F1	SE	dry	≤ 0.003	U	0.003	0.011	mg/kg	B222346	S221126
2210049-10	Se Unk A F2	SE	dry	≤ 0.003	U	0.003	0.011	mg/kg	B222351	S221078
2210049-10	Se(F1)	SE	dry	≤ 0.025	U	0.025	0.112	mg/kg	B222333	S221077
2210049-10	Se(F2)	SE	dry	0.149		0.023	0.112	mg/kg	B222434	S221083
2210049-10	Se(F3)	SE	dry	0.383		0.013	0.112	mg/kg	B222498	S221103
2210049-10	Se(F4)	SE	dry	0.191		0.015	0.112	mg/kg	B222514	S221108
2210049-10	Se(F5)	SE	dry	0.059	J	0.015	0.140	mg/kg	B222533	S221119
2210049-10	Se(IV) F1	SE	dry	0.004	J	0.003	0.027	mg/kg	B222346	S221126
2210049-10	Se(IV) F2	SE	dry	0.088		0.003	0.027	mg/kg	B222351	S221078
2210049-10	Se(VI) F1	SE	dry	≤ 0.003	U	0.003	0.029	mg/kg	B222346	S221126
2210049-10	Se(VI) F2	SE	dry	≤ 0.003	U	0.003	0.029	mg/kg	B222351	S221078
2210049-10	SeCN F1	SE	dry	≤ 0.002	U	0.002	0.011	mg/kg	B222346	S221126
2210049-10	SeCN F2	SE	dry	0.015		0.002	0.011	mg/kg	B222351	S221078
2210049-10	SeMet F1	SE	dry	≤ 0.003	U	0.003	0.011	mg/kg	B222346	S221126
2210049-10	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.011	mg/kg	B222351	S221078
2210049-10	SeSO ₃ F1	SE	dry	≤ 0.003	U	0.003	0.029	mg/kg	B222346	S221126
2210049-10	SeSO ₃ F2	SE	dry	≤ 0.003	U	0.003	0.029	mg/kg	B222351	S221078
2210049-10	Unk Se Sp F1	SE	dry	≤ 0.003	U	0.003	0.027	mg/kg	B222346	S221126
2210049-10	Unk Se Sp F2	SE	dry	≤ 0.003	U	0.003	0.027	mg/kg	B222351	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_MI25_SESeSp-3_2022-09-15_N										
2210049-11	%TS	SE	NA	65.39		0.01	0.04	%	B222335	N/A
2210049-11	DMS ₂ O F1	SE	dry	≤ 0.002	U	0.002	0.011	mg/kg	B222346	S221126
2210049-11	DMS ₂ O F2	SE	dry	≤ 0.002	U	0.002	0.011	mg/kg	B222351	S221078
2210049-11	MeSe(IV) F1	SE	dry	≤ 0.002	U	0.002	0.011	mg/kg	B222346	S221126
2210049-11	MeSe(IV) F2	SE	dry	0.005	J	0.002	0.011	mg/kg	B222351	S221078
2210049-11	Se	SE	dry	1.04		0.117	0.233	mg/kg	B222380	S221099
2210049-11	Se Unk A F1	SE	dry	≤ 0.002	U	0.002	0.011	mg/kg	B222346	S221126
2210049-11	Se Unk A F2	SE	dry	≤ 0.002	U	0.002	0.011	mg/kg	B222351	S221078
2210049-11	Se(F1)	SE	dry	≤ 0.024	U	0.024	0.108	mg/kg	B222333	S221077
2210049-11	Se(F2)	SE	dry	0.194		0.022	0.108	mg/kg	B222434	S221079
2210049-11	Se(F3)	SE	dry	0.497		0.013	0.108	mg/kg	B222498	S221103
2210049-11	Se(F4)	SE	dry	0.286		0.015	0.108	mg/kg	B222514	S221108
2210049-11	Se(F5)	SE	dry	0.073	J	0.015	0.135	mg/kg	B222533	S221119
2210049-11	Se(IV) F1	SE	dry	0.006	J	0.003	0.026	mg/kg	B222346	S221126
2210049-11	Se(IV) F2	SE	dry	0.104		0.003	0.026	mg/kg	B222351	S221078
2210049-11	Se(VI) F1	SE	dry	≤ 0.003	U	0.003	0.028	mg/kg	B222346	S221126
2210049-11	Se(VI) F2	SE	dry	≤ 0.003	U	0.003	0.028	mg/kg	B222351	S221078
2210049-11	SeCN F1	SE	dry	≤ 0.002	U	0.002	0.011	mg/kg	B222346	S221126
2210049-11	SeCN F2	SE	dry	0.015		0.002	0.011	mg/kg	B222351	S221078
2210049-11	SeMet F1	SE	dry	≤ 0.002	U	0.002	0.011	mg/kg	B222346	S221126
2210049-11	SeMet F2	SE	dry	≤ 0.002	U	0.002	0.011	mg/kg	B222351	S221078
2210049-11	SeSO ₃ F1	SE	dry	≤ 0.003	U	0.003	0.028	mg/kg	B222346	S221126
2210049-11	SeSO ₃ F2	SE	dry	≤ 0.003	U	0.003	0.028	mg/kg	B222351	S221078
2210049-11	Unk Se Sp F1	SE	dry	≤ 0.003	U	0.003	0.026	mg/kg	B222346	S221126
2210049-11	Unk Se Sp F2	SE	dry	0.007	J	0.003	0.026	mg/kg	B222351	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_BOCKRD_SESeSp-1_2022-09-20_N</i>										
2210049-12	%TS	SE	NA	53.84		0.01	0.04	%	B222335	N/A
2210049-12	DMS ₂ O F1	SE	dry	≤ 0.003	U	0.003	0.013	mg/kg	B222346	S221126
2210049-12	DMS ₂ O F2	SE	dry	≤ 0.003	U	0.003	0.013	mg/kg	B222351	S221078
2210049-12	MeSe(IV) F1	SE	dry	0.005	J	0.003	0.013	mg/kg	B222346	S221126
2210049-12	MeSe(IV) F2	SE	dry	0.126		0.003	0.013	mg/kg	B222351	S221078
2210049-12	Se	SE	dry	4.87		0.158	0.317	mg/kg	B222388	S221088
2210049-12	Se Unk A F1	SE	dry	≤ 0.003	U	0.003	0.013	mg/kg	B222346	S221126
2210049-12	Se Unk A F2	SE	dry	0.004	J	0.003	0.013	mg/kg	B222351	S221078
2210049-12	Se(F1)	SE	dry	0.168		0.028	0.126	mg/kg	B222333	S221077
2210049-12	Se(F2)	SE	dry	1.25		0.026	0.126	mg/kg	B222434	S221079
2210049-12	Se(F3)	SE	dry	2.36		0.015	0.126	mg/kg	B222498	S221103
2210049-12	Se(F4)	SE	dry	0.146		0.017	0.126	mg/kg	B222514	S221108
2210049-12	Se(F5)	SE	dry	0.039	J	0.017	0.158	mg/kg	B222533	S221119
2210049-12	Se(IV) F1	SE	dry	0.144		0.004	0.031	mg/kg	B222346	S221126
2210049-12	Se(IV) F2	SE	dry	0.699		0.004	0.031	mg/kg	B222351	S221078
2210049-12	Se(VI) F1	SE	dry	0.022	J	0.004	0.032	mg/kg	B222346	S221126
2210049-12	Se(VI) F2	SE	dry	0.009	J	0.004	0.032	mg/kg	B222351	S221078
2210049-12	SeCN F1	SE	dry	≤ 0.002	U	0.002	0.013	mg/kg	B222346	S221126
2210049-12	SeCN F2	SE	dry	0.151		0.002	0.013	mg/kg	B222351	S221078
2210049-12	SeMet F1	SE	dry	≤ 0.003	U	0.003	0.013	mg/kg	B222346	S221126
2210049-12	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.013	mg/kg	B222351	S221078
2210049-12	SeSO ₃ F1	SE	dry	≤ 0.004	U	0.004	0.032	mg/kg	B222346	S221126
2210049-12	SeSO ₃ F2	SE	dry	≤ 0.004	U	0.004	0.032	mg/kg	B222351	S221078
2210049-12	Unk Se Sp F1	SE	dry	≤ 0.004	U	0.004	0.031	mg/kg	B222346	S221126
2210049-12	Unk Se Sp F2	SE	dry	0.045		0.004	0.031	mg/kg	B222351	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_BOCKRD_SESeSp-2_2022-09-20_N</i>										
2210049-13	%TS	SE	NA	47.68		0.01	0.04	%	B222335	N/A
2210049-13	DMS ₂ O F1	SE	dry	0.007	J	0.004	0.016	mg/kg	B222346	S221126
2210049-13	DMS ₂ O F2	SE	dry	≤ 0.004	U	0.004	0.016	mg/kg	B222351	S221078
2210049-13	MeSe(IV) F1	SE	dry	0.006	J	0.004	0.016	mg/kg	B222346	S221126
2210049-13	MeSe(IV) F2	SE	dry	0.341		0.004	0.016	mg/kg	B222351	S221078
2210049-13	Se	SE	dry	5.28		0.170	0.340	mg/kg	B222388	S221088
2210049-13	Se Unk A F1	SE	dry	≤ 0.004	U	0.004	0.016	mg/kg	B222346	S221126
2210049-13	Se Unk A F2	SE	dry	0.006	J	0.004	0.016	mg/kg	B222351	S221078
2210049-13	Se(F1)	SE	dry	0.154	J	0.035	0.155	mg/kg	B222333	S221077
2210049-13	Se(F2)	SE	dry	1.25		0.032	0.155	mg/kg	B222434	S221079
2210049-13	Se(F3)	SE	dry	3.67		0.018	0.155	mg/kg	B222498	S221103
2210049-13	Se(F4)	SE	dry	0.063	J	0.021	0.155	mg/kg	B222514	S221108
2210049-13	Se(F5)	SE	dry	≤ 0.021	U	0.021	0.194	mg/kg	B222533	S221119
2210049-13	Se(IV) F1	SE	dry	0.152		0.005	0.038	mg/kg	B222346	S221126
2210049-13	Se(IV) F2	SE	dry	0.514		0.005	0.038	mg/kg	B222351	S221078
2210049-13	Se(VI) F1	SE	dry	0.005	J	0.004	0.040	mg/kg	B222346	S221126
2210049-13	Se(VI) F2	SE	dry	0.008	J	0.004	0.040	mg/kg	B222351	S221078
2210049-13	SeCN F1	SE	dry	≤ 0.002	U	0.002	0.016	mg/kg	B222346	S221126
2210049-13	SeCN F2	SE	dry	0.177		0.002	0.016	mg/kg	B222351	S221078
2210049-13	SeMet F1	SE	dry	≤ 0.004	U	0.004	0.016	mg/kg	B222346	S221126
2210049-13	SeMet F2	SE	dry	≤ 0.004	U	0.004	0.016	mg/kg	B222351	S221078
2210049-13	SeSO ₃ F1	SE	dry	≤ 0.004	U	0.004	0.040	mg/kg	B222346	S221126
2210049-13	SeSO ₃ F2	SE	dry	0.009	J	0.004	0.040	mg/kg	B222351	S221078
2210049-13	Unk Se Sp F1	SE	dry	≤ 0.005	U	0.005	0.038	mg/kg	B222346	S221126
2210049-13	Unk Se Sp F2	SE	dry	0.081		0.005	0.038	mg/kg	B222351	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_BOCKRD_SESeSp-3_2022-09-20_N</i>										
2210049-14	%TS	SE	NA	53.13		0.02	0.06	%	B222335	N/A
2210049-14	DMS ₂ O F1	SE	dry	≤ 0.003	U	0.003	0.014	mg/kg	B222347	S221078
2210049-14	DMS ₂ O F2	SE	dry	≤ 0.003	U	0.003	0.014	mg/kg	B222352	S221078
2210049-14	MeSe(IV) F1	SE	dry	0.008	J	0.003	0.014	mg/kg	B222347	S221078
2210049-14	MeSe(IV) F2	SE	dry	0.082		0.003	0.014	mg/kg	B222352	S221078
2210049-14	Se	SE	dry	3.36		0.183	0.365	mg/kg	B222388	S221088
2210049-14	Se Unk A F1	SE	dry	≤ 0.003	U	0.003	0.014	mg/kg	B222347	S221078
2210049-14	Se Unk A F2	SE	dry	≤ 0.003	U	0.003	0.014	mg/kg	B222352	S221078
2210049-14	Se(F1)	SE	dry	0.179		0.039	0.141	mg/kg	B222425	S221077
2210049-14	Se(F2)	SE	dry	0.786		0.073	0.150	mg/kg	B222435	S221079
2210049-14	Se(F3)	SE	dry	2.32		0.047	0.141	mg/kg	B222530	S221108
2210049-14	Se(F4)	SE	dry	0.073	J	0.014	0.141	mg/kg	B222544	S221119
2210049-14	Se(F5)	SE	dry	≤ 0.046	U	0.046	0.177	mg/kg	B222555	S221124
2210049-14	Se(IV) F1	SE	dry	0.112		0.004	0.034	mg/kg	B222347	S221078
2210049-14	Se(IV) F2	SE	dry	0.373		0.004	0.034	mg/kg	B222352	S221078
2210049-14	Se(VI) F1	SE	dry	0.032	J	0.004	0.036	mg/kg	B222347	S221078
2210049-14	Se(VI) F2	SE	dry	0.006	J	0.004	0.036	mg/kg	B222352	S221078
2210049-14	SeCN F1	SE	dry	≤ 0.002	U	0.002	0.014	mg/kg	B222347	S221078
2210049-14	SeCN F2	SE	dry	0.123		0.002	0.014	mg/kg	B222352	S221078
2210049-14	SeMet F1	SE	dry	≤ 0.003	U	0.003	0.014	mg/kg	B222347	S221078
2210049-14	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.014	mg/kg	B222352	S221078
2210049-14	SeSO ₃ F1	SE	dry	≤ 0.004	U	0.004	0.036	mg/kg	B222347	S221078
2210049-14	SeSO ₃ F2	SE	dry	≤ 0.004	U	0.004	0.036	mg/kg	B222352	S221078
2210049-14	Unk Se Sp F1	SE	dry	≤ 0.004	U	0.004	0.034	mg/kg	B222347	S221078
2210049-14	Unk Se Sp F2	SE	dry	0.061		0.004	0.034	mg/kg	B222352	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_MP1_SESeSp-1_2022-09-12_N</i>										
2210049-15	%TS	SE	NA	62.32		0.009	0.03	%	B222335	N/A
2210049-15	DMS ₂ O F1	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222347	S221078
2210049-15	DMS ₂ O F2	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222352	S221078
2210049-15	MeSe(IV) F1	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222347	S221078
2210049-15	MeSe(IV) F2	SE	dry	0.061		0.003	0.012	mg/kg	B222352	S221078
2210049-15	Se	SE	dry	2.48		0.145	0.290	mg/kg	B222388	S221088
2210049-15	Se Unk A F1	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222347	S221078
2210049-15	Se Unk A F2	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222352	S221078
2210049-15	Se(F1)	SE	dry	0.312		0.033	0.119	mg/kg	B222425	S221077
2210049-15	Se(F2)	SE	dry	0.884		0.062	0.126	mg/kg	B222435	S221079
2210049-15	Se(F3)	SE	dry	1.20		0.039	0.119	mg/kg	B222530	S221108
2210049-15	Se(F4)	SE	dry	0.230		0.012	0.119	mg/kg	B222544	S221119
2210049-15	Se(F5)	SE	dry	0.044	J	0.039	0.148	mg/kg	B222555	S221124
2210049-15	Se(IV) F1	SE	dry	0.257		0.004	0.029	mg/kg	B222347	S221078
2210049-15	Se(IV) F2	SE	dry	0.513		0.004	0.029	mg/kg	B222352	S221078
2210049-15	Se(VI) F1	SE	dry	≤ 0.003	U	0.003	0.030	mg/kg	B222347	S221078
2210049-15	Se(VI) F2	SE	dry	0.004	J	0.003	0.030	mg/kg	B222352	S221078
2210049-15	SeCN F1	SE	dry	≤ 0.002	U	0.002	0.012	mg/kg	B222347	S221078
2210049-15	SeCN F2	SE	dry	0.118		0.002	0.012	mg/kg	B222352	S221078
2210049-15	SeMet F1	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222347	S221078
2210049-15	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222352	S221078
2210049-15	SeSO ₃ F1	SE	dry	≤ 0.003	U	0.003	0.030	mg/kg	B222347	S221078
2210049-15	SeSO ₃ F2	SE	dry	0.004	J	0.003	0.030	mg/kg	B222352	S221078
2210049-15	Unk Se Sp F1	SE	dry	≤ 0.004	U	0.004	0.029	mg/kg	B222347	S221078
2210049-15	Unk Se Sp F2	SE	dry	0.045		0.004	0.029	mg/kg	B222352	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_MP1_SESeSp-2_2022-09-12_N</i>										
2210049-16	%TS	SE	NA	58.14		0.01	0.04	%	B222335	N/A
2210049-16	DMS ₂ O F1	SE	dry	≤ 0.003	U	0.003	0.013	mg/kg	B222347	S221078
2210049-16	DMS ₂ O F2	SE	dry	≤ 0.003	U	0.003	0.013	mg/kg	B222352	S221078
2210049-16	MeSe(IV) F1	SE	dry	≤ 0.003	U	0.003	0.013	mg/kg	B222347	S221078
2210049-16	MeSe(IV) F2	SE	dry	0.040		0.003	0.013	mg/kg	B222352	S221078
2210049-16	Se	SE	dry	2.02		0.123	0.247	mg/kg	B222388	S221088
2210049-16	Se Unk A F1	SE	dry	≤ 0.003	U	0.003	0.013	mg/kg	B222347	S221078
2210049-16	Se Unk A F2	SE	dry	≤ 0.003	U	0.003	0.013	mg/kg	B222352	S221078
2210049-16	Se(F1)	SE	dry	0.140		0.036	0.130	mg/kg	B222425	S221077
2210049-16	Se(F2)	SE	dry	0.582		0.067	0.138	mg/kg	B222435	S221079
2210049-16	Se(F3)	SE	dry	0.801		0.043	0.130	mg/kg	B222530	S221108
2210049-16	Se(F4)	SE	dry	0.178		0.013	0.130	mg/kg	B222544	S221119
2210049-16	Se(F5)	SE	dry	0.063	J	0.042	0.162	mg/kg	B222555	S221124
2210049-16	Se(IV) F1	SE	dry	0.113		0.004	0.032	mg/kg	B222347	S221078
2210049-16	Se(IV) F2	SE	dry	0.300		0.004	0.032	mg/kg	B222352	S221078
2210049-16	Se(VI) F1	SE	dry	≤ 0.004	U	0.004	0.033	mg/kg	B222347	S221078
2210049-16	Se(VI) F2	SE	dry	≤ 0.004	U	0.004	0.033	mg/kg	B222352	S221078
2210049-16	SeCN F1	SE	dry	≤ 0.002	U	0.002	0.013	mg/kg	B222347	S221078
2210049-16	SeCN F2	SE	dry	0.074		0.002	0.013	mg/kg	B222352	S221078
2210049-16	SeMet F1	SE	dry	≤ 0.003	U	0.003	0.013	mg/kg	B222347	S221078
2210049-16	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.013	mg/kg	B222352	S221078
2210049-16	SeSO ₃ F1	SE	dry	≤ 0.004	U	0.004	0.033	mg/kg	B222347	S221078
2210049-16	SeSO ₃ F2	SE	dry	≤ 0.004	U	0.004	0.033	mg/kg	B222352	S221078
2210049-16	Unk Se Sp F1	SE	dry	≤ 0.004	U	0.004	0.032	mg/kg	B222347	S221078
2210049-16	Unk Se Sp F2	SE	dry	0.024	J	0.004	0.032	mg/kg	B222352	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_MP1_SESeSp-3_2022-09-12_N</i>										
2210049-17	%TS	SE	NA	70.45		0.009	0.03	%	B222335	N/A
2210049-17	DMS ₂ O F1	SE	dry	≤ 0.003	U	0.003	0.011	mg/kg	B222347	S221078
2210049-17	DMS ₂ O F2	SE	dry	≤ 0.003	U	0.003	0.011	mg/kg	B222352	S221078
2210049-17	MeSe(IV) F1	SE	dry	≤ 0.003	U	0.003	0.011	mg/kg	B222347	S221078
2210049-17	MeSe(IV) F2	SE	dry	0.025		0.003	0.011	mg/kg	B222352	S221078
2210049-17	Se	SE	dry	1.76		0.120	0.240	mg/kg	B222388	S221088
2210049-17	Se Unk A F1	SE	dry	≤ 0.003	U	0.003	0.011	mg/kg	B222347	S221078
2210049-17	Se Unk A F2	SE	dry	≤ 0.003	U	0.003	0.011	mg/kg	B222352	S221078
2210049-17	Se(F1)	SE	dry	0.088	J	0.030	0.109	mg/kg	B222425	S221077
2210049-17	Se(F2)	SE	dry	0.450		0.056	0.116	mg/kg	B222435	S221079
2210049-17	Se(F3)	SE	dry	0.521		0.036	0.109	mg/kg	B222530	S221108
2210049-17	Se(F4)	SE	dry	0.241		0.011	0.109	mg/kg	B222544	S221119
2210049-17	Se(F5)	SE	dry	0.046	J	0.035	0.136	mg/kg	B222555	S221124
2210049-17	Se(IV) F1	SE	dry	0.091		0.003	0.027	mg/kg	B222347	S221078
2210049-17	Se(IV) F2	SE	dry	0.273		0.003	0.027	mg/kg	B222352	S221078
2210049-17	Se(VI) F1	SE	dry	≤ 0.003	U	0.003	0.028	mg/kg	B222347	S221078
2210049-17	Se(VI) F2	SE	dry	0.004	J	0.003	0.028	mg/kg	B222352	S221078
2210049-17	SeCN F1	SE	dry	≤ 0.002	U	0.002	0.011	mg/kg	B222347	S221078
2210049-17	SeCN F2	SE	dry	0.032		0.002	0.011	mg/kg	B222352	S221078
2210049-17	SeMet F1	SE	dry	≤ 0.003	U	0.003	0.011	mg/kg	B222347	S221078
2210049-17	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.011	mg/kg	B222352	S221078
2210049-17	SeSO ₃ F1	SE	dry	≤ 0.003	U	0.003	0.028	mg/kg	B222347	S221078
2210049-17	SeSO ₃ F2	SE	dry	≤ 0.003	U	0.003	0.028	mg/kg	B222352	S221078
2210049-17	Unk Se Sp F1	SE	dry	≤ 0.003	U	0.003	0.027	mg/kg	B222347	S221078
2210049-17	Unk Se Sp F2	SE	dry	0.014	J	0.003	0.027	mg/kg	B222352	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_FOUNGD_SESeSp-1_2022-09-15_N</i>										
2210049-18	%TS	SE	NA	65.39		0.008	0.03	%	B222335	N/A
2210049-18	DMS ₂ O F1	SE	dry	≤ 0.002	U	0.002	0.011	mg/kg	B222347	S221078
2210049-18	DMS ₂ O F2	SE	dry	≤ 0.002	U	0.002	0.011	mg/kg	B222352	S221078
2210049-18	MeSe(IV) F1	SE	dry	≤ 0.002	U	0.002	0.011	mg/kg	B222347	S221078
2210049-18	MeSe(IV) F2	SE	dry	0.020		0.002	0.011	mg/kg	B222352	S221078
2210049-18	Se	SE	dry	0.986		0.126	0.252	mg/kg	B222388	S221088
2210049-18	Se Unk A F1	SE	dry	≤ 0.002	U	0.002	0.011	mg/kg	B222347	S221078
2210049-18	Se Unk A F2	SE	dry	≤ 0.002	U	0.002	0.011	mg/kg	B222352	S221078
2210049-18	Se(F1)	SE	dry	0.058	J	0.030	0.108	mg/kg	B222425	S221077
2210049-18	Se(F2)	SE	dry	0.350		0.056	0.115	mg/kg	B222435	S221079
2210049-18	Se(F3)	SE	dry	0.432		0.036	0.108	mg/kg	B222530	S221108
2210049-18	Se(F4)	SE	dry	0.173		0.011	0.108	mg/kg	B222544	S221119
2210049-18	Se(F5)	SE	dry	0.044	J	0.035	0.135	mg/kg	B222555	S221124
2210049-18	Se(IV) F1	SE	dry	0.047		0.003	0.026	mg/kg	B222347	S221078
2210049-18	Se(IV) F2	SE	dry	0.198		0.003	0.026	mg/kg	B222352	S221078
2210049-18	Se(VI) F1	SE	dry	0.014	J	0.003	0.028	mg/kg	B222347	S221078
2210049-18	Se(VI) F2	SE	dry	≤ 0.003	U	0.003	0.028	mg/kg	B222352	S221078
2210049-18	SeCN F1	SE	dry	≤ 0.002	U	0.002	0.011	mg/kg	B222347	S221078
2210049-18	SeCN F2	SE	dry	0.030		0.002	0.011	mg/kg	B222352	S221078
2210049-18	SeMet F1	SE	dry	≤ 0.002	U	0.002	0.011	mg/kg	B222347	S221078
2210049-18	SeMet F2	SE	dry	≤ 0.002	U	0.002	0.011	mg/kg	B222352	S221078
2210049-18	SeSO ₃ F1	SE	dry	≤ 0.003	U	0.003	0.028	mg/kg	B222347	S221078
2210049-18	SeSO ₃ F2	SE	dry	≤ 0.003	U	0.003	0.028	mg/kg	B222352	S221078
2210049-18	Unk Se Sp F1	SE	dry	≤ 0.003	U	0.003	0.026	mg/kg	B222347	S221078
2210049-18	Unk Se Sp F2	SE	dry	0.013	J	0.003	0.026	mg/kg	B222352	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_FOUNGD_SESeSp-2_2022-09-15_N</i>										
2210049-19	%TS	SE	NA	67.75		0.009	0.03	%	B222335	N/A
2210049-19	DMS ₂ O F1	SE	dry	≤ 0.003	U	0.003	0.011	mg/kg	B222347	S221078
2210049-19	DMS ₂ O F2	SE	dry	≤ 0.003	U	0.003	0.011	mg/kg	B222352	S221078
2210049-19	MeSe(IV) F1	SE	dry	≤ 0.003	U	0.003	0.011	mg/kg	B222347	S221078
2210049-19	MeSe(IV) F2	SE	dry	0.026		0.003	0.011	mg/kg	B222352	S221078
2210049-19	Se	SE	dry	1.30		0.154	0.308	mg/kg	B222388	S221088
2210049-19	Se Unk A F1	SE	dry	≤ 0.003	U	0.003	0.011	mg/kg	B222347	S221078
2210049-19	Se Unk A F2	SE	dry	≤ 0.003	U	0.003	0.011	mg/kg	B222352	S221078
2210049-19	Se(F1)	SE	dry	0.132		0.031	0.113	mg/kg	B222425	S221077
2210049-19	Se(F2)	SE	dry	0.441		0.059	0.120	mg/kg	B222435	S221079
2210049-19	Se(F3)	SE	dry	0.460		0.037	0.113	mg/kg	B222530	S221108
2210049-19	Se(F4)	SE	dry	0.187		0.011	0.113	mg/kg	B222544	S221119
2210049-19	Se(F5)	SE	dry	0.057	J	0.037	0.141	mg/kg	B222555	S221124
2210049-19	Se(IV) F1	SE	dry	0.115		0.003	0.027	mg/kg	B222347	S221078
2210049-19	Se(IV) F2	SE	dry	0.280		0.003	0.027	mg/kg	B222352	S221078
2210049-19	Se(VI) F1	SE	dry	0.014	J	0.003	0.029	mg/kg	B222347	S221078
2210049-19	Se(VI) F2	SE	dry	≤ 0.003	U	0.003	0.029	mg/kg	B222352	S221078
2210049-19	SeCN F1	SE	dry	≤ 0.002	U	0.002	0.011	mg/kg	B222347	S221078
2210049-19	SeCN F2	SE	dry	0.030		0.002	0.011	mg/kg	B222352	S221078
2210049-19	SeMet F1	SE	dry	≤ 0.003	U	0.003	0.011	mg/kg	B222347	S221078
2210049-19	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.011	mg/kg	B222352	S221078
2210049-19	SeSO ₃ F1	SE	dry	≤ 0.003	U	0.003	0.029	mg/kg	B222347	S221078
2210049-19	SeSO ₃ F2	SE	dry	≤ 0.003	U	0.003	0.029	mg/kg	B222352	S221078
2210049-19	Unk Se Sp F1	SE	dry	≤ 0.003	U	0.003	0.027	mg/kg	B222347	S221078
2210049-19	Unk Se Sp F2	SE	dry	0.015	J	0.003	0.027	mg/kg	B222352	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_FOUNGD_SESeSp-3_2022-09-15_N</i>										
2210049-20	%TS	SE	NA	66.36		0.009	0.03	%	B222335	N/A
2210049-20	DMS ₂ O F1	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222347	S221078
2210049-20	DMS ₂ O F2	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222352	S221078
2210049-20	MeSe(IV) F1	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222347	S221078
2210049-20	MeSe(IV) F2	SE	dry	0.025		0.003	0.012	mg/kg	B222352	S221078
2210049-20	Se	SE	dry	1.41		0.135	0.270	mg/kg	B222388	S221088
2210049-20	Se Unk A F1	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222347	S221078
2210049-20	Se Unk A F2	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222352	S221078
2210049-20	Se(F1)	SE	dry	0.125		0.032	0.116	mg/kg	B222425	S221077
2210049-20	Se(F2)	SE	dry	0.514		0.060	0.124	mg/kg	B222435	S221079
2210049-20	Se(F3)	SE	dry	0.472		0.039	0.116	mg/kg	B222530	S221108
2210049-20	Se(F4)	SE	dry	0.171		0.012	0.116	mg/kg	B222544	S221119
2210049-20	Se(F5)	SE	dry	≤ 0.038	U	0.038	0.145	mg/kg	B222555	S221124
2210049-20	Se(IV) F1	SE	dry	0.130		0.003	0.028	mg/kg	B222347	S221078
2210049-20	Se(IV) F2	SE	dry	0.336		0.003	0.028	mg/kg	B222352	S221078
2210049-20	Se(VI) F1	SE	dry	0.012	J	0.003	0.030	mg/kg	B222347	S221078
2210049-20	Se(VI) F2	SE	dry	0.005	J	0.003	0.030	mg/kg	B222352	S221078
2210049-20	SeCN F1	SE	dry	≤ 0.002	U	0.002	0.012	mg/kg	B222347	S221078
2210049-20	SeCN F2	SE	dry	0.050		0.002	0.012	mg/kg	B222352	S221078
2210049-20	SeMet F1	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222347	S221078
2210049-20	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222352	S221078
2210049-20	SeSO ₃ F1	SE	dry	≤ 0.003	U	0.003	0.030	mg/kg	B222347	S221078
2210049-20	SeSO ₃ F2	SE	dry	≤ 0.003	U	0.003	0.030	mg/kg	B222352	S221078
2210049-20	Unk Se Sp F1	SE	dry	≤ 0.003	U	0.003	0.028	mg/kg	B222347	S221078
2210049-20	Unk Se Sp F2	SE	dry	0.022	J	0.003	0.028	mg/kg	B222352	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKUC_SESeSp-1_2022-09-14_N										
2210049-21	%TS	SE	NA	18.56		0.04	0.13	%	B222335	N/A
2210049-21	DMS ₂ O F1	SE	dry	≤ 0.010	U	0.010	0.043	mg/kg	B222347	S221078
2210049-21	DMS ₂ O F2	SE	dry	0.026	J	0.010	0.043	mg/kg	B222352	S221078
2210049-21	MeSe(IV) F1	SE	dry	0.019	J	0.010	0.043	mg/kg	B222347	S221078
2210049-21	MeSe(IV) F2	SE	dry	2.65		0.010	0.043	mg/kg	B222352	S221078
2210049-21	Se	SE	dry	66.7		0.483	0.966	mg/kg	B222388	S221088
2210049-21	Se Unk A F1	SE	dry	≤ 0.010	U	0.010	0.043	mg/kg	B222347	S221078
2210049-21	Se Unk A F2	SE	dry	0.059		0.010	0.043	mg/kg	B222352	S221078
2210049-21	Se(F1)	SE	dry	0.745		0.118	0.430	mg/kg	B222425	S221077
2210049-21	Se(F2)	SE	dry	10.9		0.223	0.457	mg/kg	B222435	S221079
2210049-21	Se(F3)	SE	dry	29.1		0.142	0.430	mg/kg	B222530	S221108
2210049-21	Se(F4)	SE	dry	0.342	J	0.043	0.430	mg/kg	B222544	S221119
2210049-21	Se(F5)	SE	dry	≤ 0.140	U	0.140	0.538	mg/kg	B222555	S221124
2210049-21	Se(IV) F1	SE	dry	0.682		0.013	0.105	mg/kg	B222347	S221078
2210049-21	Se(IV) F2	SE	dry	3.94		0.013	0.105	mg/kg	B222352	S221078
2210049-21	Se(VI) F1	SE	dry	0.039	J	0.012	0.110	mg/kg	B222347	S221078
2210049-21	Se(VI) F2	SE	dry	≤ 0.012	U	0.012	0.110	mg/kg	B222352	S221078
2210049-21	SeCN F1	SE	dry	≤ 0.006	U	0.006	0.043	mg/kg	B222347	S221078
2210049-21	SeCN F2	SE	dry	1.95		0.006	0.043	mg/kg	B222352	S221078
2210049-21	SeMet F1	SE	dry	≤ 0.010	U	0.010	0.043	mg/kg	B222347	S221078
2210049-21	SeMet F2	SE	dry	≤ 0.010	U	0.010	0.043	mg/kg	B222352	S221078
2210049-21	SeSO ₃ F1	SE	dry	≤ 0.012	U	0.012	0.110	mg/kg	B222347	S221078
2210049-21	SeSO ₃ F2	SE	dry	0.013	J	0.012	0.110	mg/kg	B222352	S221078
2210049-21	Unk Se Sp F1	SE	dry	≤ 0.013	U	0.013	0.105	mg/kg	B222347	S221078
2210049-21	Unk Se Sp F2	SE	dry	0.603		0.013	0.105	mg/kg	B222352	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKUC_SESeSp-2_2022-09-14_N										
2210049-22	%TS	SE	NA	23.09		0.04	0.12	%	B222335	N/A
2210049-22	DMS ₂ O F1	SE	dry	≤ 0.008	U	0.008	0.033	mg/kg	B222347	S221078
2210049-22	DMS ₂ O F2	SE	dry	0.033	J	0.008	0.033	mg/kg	B222352	S221078
2210049-22	MeSe(IV) F1	SE	dry	0.037		0.008	0.033	mg/kg	B222347	S221078
2210049-22	MeSe(IV) F2	SE	dry	4.43		0.008	0.033	mg/kg	B222352	S221078
2210049-22	Se	SE	dry	49.4		0.492	0.984	mg/kg	B222388	S221088
2210049-22	Se Unk A F1	SE	dry	≤ 0.008	U	0.008	0.033	mg/kg	B222347	S221078
2210049-22	Se Unk A F2	SE	dry	0.089		0.008	0.033	mg/kg	B222352	S221078
2210049-22	Se(F1)	SE	dry	1.52		0.092	0.334	mg/kg	B222425	S221077
2210049-22	Se(F2)	SE	dry	21.2		0.173	0.355	mg/kg	B222435	S221079
2210049-22	Se(F3)	SE	dry	25.8		0.111	0.334	mg/kg	B222530	S221108
2210049-22	Se(F4)	SE	dry	0.734		0.033	0.334	mg/kg	B222544	S221119
2210049-22	Se(F5)	SE	dry	≤ 0.109	U	0.109	0.418	mg/kg	B222555	S221124
2210049-22	Se(IV) F1	SE	dry	1.10		0.010	0.081	mg/kg	B222347	S221078
2210049-22	Se(IV) F2	SE	dry	9.19		0.010	0.081	mg/kg	B222352	S221078
2210049-22	Se(VI) F1	SE	dry	0.195		0.009	0.086	mg/kg	B222347	S221078
2210049-22	Se(VI) F2	SE	dry	0.055	J	0.009	0.086	mg/kg	B222352	S221078
2210049-22	SeCN F1	SE	dry	≤ 0.005	U	0.005	0.033	mg/kg	B222347	S221078
2210049-22	SeCN F2	SE	dry	3.98		0.005	0.033	mg/kg	B222352	S221078
2210049-22	SeMet F1	SE	dry	≤ 0.008	U	0.008	0.033	mg/kg	B222347	S221078
2210049-22	SeMet F2	SE	dry	≤ 0.008	U	0.008	0.033	mg/kg	B222352	S221078
2210049-22	SeSO ₃ F1	SE	dry	≤ 0.009	U	0.009	0.086	mg/kg	B222347	S221078
2210049-22	SeSO ₃ F2	SE	dry	0.088		0.009	0.086	mg/kg	B222352	S221078
2210049-22	Unk Se Sp F1	SE	dry	≤ 0.010	U	0.010	0.081	mg/kg	B222347	S221078
2210049-22	Unk Se Sp F2	SE	dry	1.07		0.010	0.081	mg/kg	B222352	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKUC_SESeSp-3_2022-09-14_N										
2210049-23	%TS	SE	NA	26.74		0.03	0.11	%	B222335	N/A
2210049-23	DMS ₂ O F1	SE	dry	≤ 0.006	U	0.006	0.027	mg/kg	B222347	S221078
2210049-23	DMS ₂ O F2	SE	dry	0.023	J	0.006	0.027	mg/kg	B222352	S221078
2210049-23	MeSe(IV) F1	SE	dry	0.012	J	0.006	0.027	mg/kg	B222347	S221078
2210049-23	MeSe(IV) F2	SE	dry	2.20		0.006	0.027	mg/kg	B222352	S221078
2210049-23	Se	SE	dry	26.1		0.390	0.781	mg/kg	B222388	S221088
2210049-23	Se Unk A F1	SE	dry	≤ 0.006	U	0.006	0.027	mg/kg	B222347	S221078
2210049-23	Se Unk A F2	SE	dry	0.043		0.006	0.027	mg/kg	B222352	S221078
2210049-23	Se(F1)	SE	dry	0.572		0.075	0.274	mg/kg	B222425	S221077
2210049-23	Se(F2)	SE	dry	8.60		0.142	0.291	mg/kg	B222435	S221079
2210049-23	Se(F3)	SE	dry	15.3		0.091	0.274	mg/kg	B222530	S221108
2210049-23	Se(F4)	SE	dry	0.420		0.027	0.274	mg/kg	B222544	S221119
2210049-23	Se(F5)	SE	dry	0.123	J	0.089	0.342	mg/kg	B222555	S221124
2210049-23	Se(IV) F1	SE	dry	0.354		0.008	0.067	mg/kg	B222347	S221078
2210049-23	Se(IV) F2	SE	dry	3.38		0.008	0.067	mg/kg	B222352	S221078
2210049-23	Se(VI) F1	SE	dry	0.175		0.008	0.070	mg/kg	B222347	S221078
2210049-23	Se(VI) F2	SE	dry	0.033	J	0.008	0.070	mg/kg	B222352	S221078
2210049-23	SeCN F1	SE	dry	≤ 0.004	U	0.004	0.027	mg/kg	B222347	S221078
2210049-23	SeCN F2	SE	dry	1.55		0.004	0.027	mg/kg	B222352	S221078
2210049-23	SeMet F1	SE	dry	≤ 0.006	U	0.006	0.027	mg/kg	B222347	S221078
2210049-23	SeMet F2	SE	dry	≤ 0.006	U	0.006	0.027	mg/kg	B222352	S221078
2210049-23	SeSO ₃ F1	SE	dry	≤ 0.008	U	0.008	0.070	mg/kg	B222347	S221078
2210049-23	SeSO ₃ F2	SE	dry	0.048	J	0.008	0.070	mg/kg	B222352	S221078
2210049-23	Unk Se Sp F1	SE	dry	≤ 0.008	U	0.008	0.067	mg/kg	B222347	S221078
2210049-23	Unk Se Sp F2	SE	dry	0.375		0.008	0.067	mg/kg	B222352	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_BOCK_SESeSp-1_2022-09-15_N										
2210049-24	%TS	SE	NA	45.27		0.01	0.04	%	B222335	N/A
2210049-24	DMS ₂ O F1	SE	dry	≤ 0.004	U	0.004	0.017	mg/kg	B222347	S221078
2210049-24	DMS ₂ O F2	SE	dry	≤ 0.004	U	0.004	0.017	mg/kg	B222352	S221078
2210049-24	MeSe(IV) F1	SE	dry	0.009	J	0.004	0.017	mg/kg	B222347	S221078
2210049-24	MeSe(IV) F2	SE	dry	0.995		0.004	0.017	mg/kg	B222352	S221078
2210049-24	Se	SE	dry	18.1		0.213	0.425	mg/kg	B222388	S221088
2210049-24	Se Unk A F1	SE	dry	≤ 0.004	U	0.004	0.017	mg/kg	B222347	S221078
2210049-24	Se Unk A F2	SE	dry	0.020		0.004	0.017	mg/kg	B222352	S221078
2210049-24	Se(F1)	SE	dry	0.520		0.046	0.168	mg/kg	B222425	S221077
2210049-24	Se(F2)	SE	dry	4.07		0.087	0.178	mg/kg	B222435	S221079
2210049-24	Se(F3)	SE	dry	9.25		0.056	0.168	mg/kg	B222530	S221108
2210049-24	Se(F4)	SE	dry	0.229		0.017	0.168	mg/kg	B222544	S221119
2210049-24	Se(F5)	SE	dry	0.066	J	0.054	0.210	mg/kg	B222555	S221124
2210049-24	Se(IV) F1	SE	dry	0.452		0.005	0.041	mg/kg	B222347	S221078
2210049-24	Se(IV) F2	SE	dry	1.87		0.005	0.041	mg/kg	B222352	S221078
2210049-24	Se(VI) F1	SE	dry	0.031	J	0.005	0.043	mg/kg	B222347	S221078
2210049-24	Se(VI) F2	SE	dry	0.026	J	0.005	0.043	mg/kg	B222352	S221078
2210049-24	SeCN F1	SE	dry	≤ 0.003	U	0.003	0.017	mg/kg	B222347	S221078
2210049-24	SeCN F2	SE	dry	0.600		0.003	0.017	mg/kg	B222352	S221078
2210049-24	SeMet F1	SE	dry	≤ 0.004	U	0.004	0.017	mg/kg	B222347	S221078
2210049-24	SeMet F2	SE	dry	≤ 0.004	U	0.004	0.017	mg/kg	B222352	S221078
2210049-24	SeSO ₃ F1	SE	dry	≤ 0.005	U	0.005	0.043	mg/kg	B222347	S221078
2210049-24	SeSO ₃ F2	SE	dry	0.022	J	0.005	0.043	mg/kg	B222352	S221078
2210049-24	Unk Se Sp F1	SE	dry	≤ 0.005	U	0.005	0.041	mg/kg	B222347	S221078
2210049-24	Unk Se Sp F2	SE	dry	0.376		0.005	0.041	mg/kg	B222352	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_BOCK_SESeSp-2_2022-09-15_N										
2210049-25	%TS	SE	NA	44.93		0.01	0.04	%	B222335	N/A
2210049-25	DMS ₂ O F1	SE	dry	≤ 0.004	U	0.004	0.016	mg/kg	B222347	S221078
2210049-25	DMS ₂ O F2	SE	dry	≤ 0.004	U	0.004	0.016	mg/kg	B222352	S221078
2210049-25	MeSe(IV) F1	SE	dry	0.015	J	0.004	0.016	mg/kg	B222347	S221078
2210049-25	MeSe(IV) F2	SE	dry	1.52	M	0.004	0.016	mg/kg	B222352	S221078
2210049-25	Se	SE	dry	19.9		0.188	0.377	mg/kg	B222388	S221088
2210049-25	Se Unk A F1	SE	dry	≤ 0.004	U	0.004	0.016	mg/kg	B222347	S221078
2210049-25	Se Unk A F2	SE	dry	0.028		0.004	0.016	mg/kg	B222352	S221078
2210049-25	Se(F1)	SE	dry	0.549		0.044	0.159	mg/kg	B222425	S221077
2210049-25	Se(F2)	SE	dry	5.50		0.083	0.169	mg/kg	B222435	S221079
2210049-25	Se(F3)	SE	dry	11.7		0.053	0.159	mg/kg	B222530	S221108
2210049-25	Se(F4)	SE	dry	0.213		0.016	0.159	mg/kg	B222544	S221119
2210049-25	Se(F5)	SE	dry	≤ 0.052	U	0.052	0.199	mg/kg	B222555	S221124
2210049-25	Se(IV) F1	SE	dry	0.390		0.005	0.039	mg/kg	B222347	S221078
2210049-25	Se(IV) F2	SE	dry	2.49	M	0.005	0.039	mg/kg	B222352	S221078
2210049-25	Se(VI) F1	SE	dry	0.029	J	0.004	0.041	mg/kg	B222347	S221078
2210049-25	Se(VI) F2	SE	dry	0.032	J	0.004	0.041	mg/kg	B222352	S221078
2210049-25	SeCN F1	SE	dry	≤ 0.002	N U	0.002	0.016	mg/kg	B222347	S221078
2210049-25	SeCN F2	SE	dry	0.937	M	0.002	0.016	mg/kg	B222352	S221078
2210049-25	SeMet F1	SE	dry	≤ 0.004	U	0.004	0.016	mg/kg	B222347	S221078
2210049-25	SeMet F2	SE	dry	≤ 0.004	U	0.004	0.016	mg/kg	B222352	S221078
2210049-25	SeSO ₃ F1	SE	dry	≤ 0.004	U	0.004	0.041	mg/kg	B222347	S221078
2210049-25	SeSO ₃ F2	SE	dry	0.026	J	0.004	0.041	mg/kg	B222352	S221078
2210049-25	Unk Se Sp F1	SE	dry	≤ 0.005	U	0.005	0.039	mg/kg	B222347	S221078
2210049-25	Unk Se Sp F2	SE	dry	0.491		0.005	0.039	mg/kg	B222352	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_BOCK_SESeSp-3_2022-09-15_N										
2210049-26	%TS	SE	NA	46.52		0.01	0.05	%	B222335	N/A
2210049-26	DMS ₂ O F1	SE	dry	≤ 0.003	U	0.003	0.015	mg/kg	B222347	S221078
2210049-26	DMS ₂ O F2	SE	dry	0.006	J	0.003	0.015	mg/kg	B222352	S221078
2210049-26	MeSe(IV) F1	SE	dry	0.041		0.003	0.015	mg/kg	B222347	S221078
2210049-26	MeSe(IV) F2	SE	dry	0.989		0.003	0.015	mg/kg	B222352	S221078
2210049-26	Se	SE	dry	24.0		0.222	0.444	mg/kg	B222388	S221088
2210049-26	Se Unk A F1	SE	dry	≤ 0.003	U	0.003	0.015	mg/kg	B222347	S221078
2210049-26	Se Unk A F2	SE	dry	0.014	J	0.003	0.015	mg/kg	B222352	S221078
2210049-26	Se(F1)	SE	dry	1.44		0.041	0.150	mg/kg	B222425	S221077
2210049-26	Se(F2)	SE	dry	6.49		0.078	0.160	mg/kg	B222435	S221079
2210049-26	Se(F3)	SE	dry	13.1		0.050	0.150	mg/kg	B222530	S221108
2210049-26	Se(F4)	SE	dry	0.321		0.015	0.150	mg/kg	B222544	S221119
2210049-26	Se(F5)	SE	dry	0.052	J	0.049	0.188	mg/kg	B222555	S221124
2210049-26	Se(IV) F1	SE	dry	1.26		0.005	0.037	mg/kg	B222347	S221078
2210049-26	Se(IV) F2	SE	dry	3.56		0.005	0.037	mg/kg	B222352	S221078
2210049-26	Se(VI) F1	SE	dry	0.015	J	0.004	0.039	mg/kg	B222347	S221078
2210049-26	Se(VI) F2	SE	dry	0.045		0.004	0.039	mg/kg	B222352	S221078
2210049-26	SeCN F1	SE	dry	0.007	J	0.002	0.015	mg/kg	B222347	S221078
2210049-26	SeCN F2	SE	dry	1.01		0.002	0.015	mg/kg	B222352	S221078
2210049-26	SeMet F1	SE	dry	≤ 0.003	U	0.003	0.015	mg/kg	B222347	S221078
2210049-26	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.015	mg/kg	B222352	S221078
2210049-26	SeSO ₃ F1	SE	dry	≤ 0.004	U	0.004	0.039	mg/kg	B222347	S221078
2210049-26	SeSO ₃ F2	SE	dry	0.035	J	0.004	0.039	mg/kg	B222352	S221078
2210049-26	Unk Se Sp F1	SE	dry	≤ 0.005	U	0.005	0.037	mg/kg	B222347	S221078
2210049-26	Unk Se Sp F2	SE	dry	0.572		0.005	0.037	mg/kg	B222352	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ALUSM_SESeSp-1_2022-09-18_N										
2210049-27	%TS	SE	NA	63.82		0.009	0.03	%	B222335	N/A
2210049-27	DMS ₂ O F1	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222347	S221078
2210049-27	DMS ₂ O F2	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222352	S221078
2210049-27	MeSe(IV) F1	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222347	S221078
2210049-27	MeSe(IV) F2	SE	dry	0.021		0.003	0.012	mg/kg	B222352	S221078
2210049-27	Se	SE	dry	0.800		0.109	0.219	mg/kg	B222388	S221088
2210049-27	Se Unk A F1	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222347	S221078
2210049-27	Se Unk A F2	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222352	S221078
2210049-27	Se(F1)	SE	dry	≤ 0.032	U	0.032	0.116	mg/kg	B222425	S221077
2210049-27	Se(F2)	SE	dry	0.259		0.060	0.123	mg/kg	B222435	S221079
2210049-27	Se(F3)	SE	dry	0.313		0.038	0.116	mg/kg	B222530	S221108
2210049-27	Se(F4)	SE	dry	0.121		0.012	0.116	mg/kg	B222544	S221119
2210049-27	Se(F5)	SE	dry	≤ 0.038	U	0.038	0.145	mg/kg	B222555	S221124
2210049-27	Se(IV) F1	SE	dry	0.021	J	0.003	0.028	mg/kg	B222347	S221078
2210049-27	Se(IV) F2	SE	dry	0.151		0.003	0.028	mg/kg	B222352	S221078
2210049-27	Se(VI) F1	SE	dry	≤ 0.003	U	0.003	0.030	mg/kg	B222347	S221078
2210049-27	Se(VI) F2	SE	dry	≤ 0.003	U	0.003	0.030	mg/kg	B222352	S221078
2210049-27	SeCN F1	SE	dry	≤ 0.002	U	0.002	0.012	mg/kg	B222347	S221078
2210049-27	SeCN F2	SE	dry	0.028		0.002	0.012	mg/kg	B222352	S221078
2210049-27	SeMet F1	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222347	S221078
2210049-27	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222352	S221078
2210049-27	SeSO ₃ F1	SE	dry	≤ 0.003	U	0.003	0.030	mg/kg	B222347	S221078
2210049-27	SeSO ₃ F2	SE	dry	≤ 0.003	U	0.003	0.030	mg/kg	B222352	S221078
2210049-27	Unk Se Sp F1	SE	dry	≤ 0.003	U	0.003	0.028	mg/kg	B222347	S221078
2210049-27	Unk Se Sp F2	SE	dry	0.023	J	0.003	0.028	mg/kg	B222352	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ALUSM_SESeSp-2_2022-09-18_N										
2210049-28	%TS	SE	NA	61.73		0.009	0.03	%	B222335	N/A
2210049-28	DMS ₂ O F1	SE	dry	≤ 0.003	U	0.003	0.013	mg/kg	B222347	S221078
2210049-28	DMS ₂ O F2	SE	dry	≤ 0.003	U	0.003	0.013	mg/kg	B222352	S221078
2210049-28	MeSe(IV) F1	SE	dry	≤ 0.003	U	0.003	0.013	mg/kg	B222347	S221078
2210049-28	MeSe(IV) F2	SE	dry	0.019		0.003	0.013	mg/kg	B222352	S221078
2210049-28	Se	SE	dry	0.837		0.129	0.258	mg/kg	B222388	S221088
2210049-28	Se Unk A F1	SE	dry	≤ 0.003	U	0.003	0.013	mg/kg	B222347	S221078
2210049-28	Se Unk A F2	SE	dry	≤ 0.003	U	0.003	0.013	mg/kg	B222352	S221078
2210049-28	Se(F1)	SE	dry	≤ 0.036	U	0.036	0.129	mg/kg	B222425	S221077
2210049-28	Se(F2)	SE	dry	0.281		0.067	0.137	mg/kg	B222435	S221079
2210049-28	Se(F3)	SE	dry	0.293		0.043	0.129	mg/kg	B222530	S221108
2210049-28	Se(F4)	SE	dry	0.092	J	0.013	0.129	mg/kg	B222544	S221119
2210049-28	Se(F5)	SE	dry	≤ 0.042	U	0.042	0.162	mg/kg	B222555	S221124
2210049-28	Se(IV) F1	SE	dry	0.028	J	0.004	0.032	mg/kg	B222347	S221078
2210049-28	Se(IV) F2	SE	dry	0.146		0.004	0.032	mg/kg	B222352	S221078
2210049-28	Se(VI) F1	SE	dry	≤ 0.004	U	0.004	0.033	mg/kg	B222347	S221078
2210049-28	Se(VI) F2	SE	dry	≤ 0.004	U	0.004	0.033	mg/kg	B222352	S221078
2210049-28	SeCN F1	SE	dry	≤ 0.002	U	0.002	0.013	mg/kg	B222347	S221078
2210049-28	SeCN F2	SE	dry	0.024		0.002	0.013	mg/kg	B222352	S221078
2210049-28	SeMet F1	SE	dry	≤ 0.003	U	0.003	0.013	mg/kg	B222347	S221078
2210049-28	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.013	mg/kg	B222352	S221078
2210049-28	SeSO ₃ F1	SE	dry	≤ 0.004	U	0.004	0.033	mg/kg	B222347	S221078
2210049-28	SeSO ₃ F2	SE	dry	≤ 0.004	U	0.004	0.033	mg/kg	B222352	S221078
2210049-28	Unk Se Sp F1	SE	dry	≤ 0.004	U	0.004	0.032	mg/kg	B222347	S221078
2210049-28	Unk Se Sp F2	SE	dry	0.018	J	0.004	0.032	mg/kg	B222352	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ALUSM_SESeSp-3_2022-09-18_N										
2210049-29	%TS	SE	NA	63.28		0.009	0.03	%	B222335	N/A
2210049-29	DMS ₂ O F1	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222347	S221078
2210049-29	DMS ₂ O F2	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222352	S221078
2210049-29	MeSe(IV) F1	SE	dry	0.004	J	0.003	0.012	mg/kg	B222347	S221078
2210049-29	MeSe(IV) F2	SE	dry	0.023		0.003	0.012	mg/kg	B222352	S221078
2210049-29	Se	SE	dry	0.766		0.161	0.323	mg/kg	B222388	S221088
2210049-29	Se Unk A F1	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222347	S221078
2210049-29	Se Unk A F2	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222352	S221078
2210049-29	Se(F1)	SE	dry	≤ 0.033	U	0.033	0.121	mg/kg	B222425	S221077
2210049-29	Se(F2)	SE	dry	0.233		0.063	0.129	mg/kg	B222435	S221079
2210049-29	Se(F3)	SE	dry	0.263		0.040	0.121	mg/kg	B222530	S221108
2210049-29	Se(F4)	SE	dry	0.084	J	0.012	0.121	mg/kg	B222544	S221119
2210049-29	Se(F5)	SE	dry	≤ 0.039	U	0.039	0.151	mg/kg	B222555	S221124
2210049-29	Se(IV) F1	SE	dry	0.013	J	0.004	0.029	mg/kg	B222347	S221078
2210049-29	Se(IV) F2	SE	dry	0.106		0.004	0.029	mg/kg	B222352	S221078
2210049-29	Se(VI) F1	SE	dry	≤ 0.003	U	0.003	0.031	mg/kg	B222347	S221078
2210049-29	Se(VI) F2	SE	dry	≤ 0.003	U	0.003	0.031	mg/kg	B222352	S221078
2210049-29	SeCN F1	SE	dry	≤ 0.002	U	0.002	0.012	mg/kg	B222347	S221078
2210049-29	SeCN F2	SE	dry	0.025		0.002	0.012	mg/kg	B222352	S221078
2210049-29	SeMet F1	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222347	S221078
2210049-29	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222352	S221078
2210049-29	SeSO ₃ F1	SE	dry	≤ 0.003	U	0.003	0.031	mg/kg	B222347	S221078
2210049-29	SeSO ₃ F2	SE	dry	≤ 0.003	U	0.003	0.031	mg/kg	B222352	S221078
2210049-29	Unk Se Sp F1	SE	dry	≤ 0.004	U	0.004	0.029	mg/kg	B222347	S221078
2210049-29	Unk Se Sp F2	SE	dry	0.021	J	0.004	0.029	mg/kg	B222352	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_MIDGA_SESeSp-1_2022-09-18_N</i>										
2210049-30	%TS	SE	NA	49.36		0.01	0.04	%	B222335	N/A
2210049-30	DMS ₂ O F1	SE	dry	≤ 0.004	U	0.004	0.015	mg/kg	B222347	S221078
2210049-30	DMS ₂ O F2	SE	dry	≤ 0.004	U	0.004	0.015	mg/kg	B222352	S221078
2210049-30	MeSe(IV) F1	SE	dry	0.041		0.004	0.015	mg/kg	B222347	S221078
2210049-30	MeSe(IV) F2	SE	dry	0.350		0.004	0.015	mg/kg	B222352	S221078
2210049-30	Se	SE	dry	7.26		0.202	0.404	mg/kg	B222388	S221088
2210049-30	Se Unk A F1	SE	dry	≤ 0.004	U	0.004	0.015	mg/kg	B222347	S221078
2210049-30	Se Unk A F2	SE	dry	≤ 0.004	U	0.004	0.015	mg/kg	B222352	S221078
2210049-30	Se(F1)	SE	dry	0.711		0.043	0.155	mg/kg	B222425	S221077
2210049-30	Se(F2)	SE	dry	2.90		0.080	0.165	mg/kg	B222435	S221079
2210049-30	Se(F3)	SE	dry	2.92		0.051	0.155	mg/kg	B222530	S221108
2210049-30	Se(F4)	SE	dry	0.191		0.015	0.155	mg/kg	B222544	S221119
2210049-30	Se(F5)	SE	dry	0.077	J	0.050	0.194	mg/kg	B222555	S221124
2210049-30	Se(IV) F1	SE	dry	0.563		0.005	0.038	mg/kg	B222347	S221078
2210049-30	Se(IV) F2	SE	dry	1.26		0.005	0.038	mg/kg	B222352	S221078
2210049-30	Se(VI) F1	SE	dry	0.006	J	0.004	0.040	mg/kg	B222347	S221078
2210049-30	Se(VI) F2	SE	dry	0.012	J	0.004	0.040	mg/kg	B222352	S221078
2210049-30	SeCN F1	SE	dry	≤ 0.002	U	0.002	0.015	mg/kg	B222347	S221078
2210049-30	SeCN F2	SE	dry	0.328		0.002	0.015	mg/kg	B222352	S221078
2210049-30	SeMet F1	SE	dry	≤ 0.004	U	0.004	0.015	mg/kg	B222347	S221078
2210049-30	SeMet F2	SE	dry	≤ 0.004	U	0.004	0.015	mg/kg	B222352	S221078
2210049-30	SeSO ₃ F1	SE	dry	≤ 0.004	U	0.004	0.040	mg/kg	B222347	S221078
2210049-30	SeSO ₃ F2	SE	dry	0.013	J	0.004	0.040	mg/kg	B222352	S221078
2210049-30	Unk Se Sp F1	SE	dry	≤ 0.005	U	0.005	0.038	mg/kg	B222347	S221078
2210049-30	Unk Se Sp F2	SE	dry	0.323		0.005	0.038	mg/kg	B222352	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_MIDGA_SESeSp-2_2022-09-18_N</i>										
2210049-31	%TS	SE	NA	45.75		0.02	0.06	%	B222335	N/A
2210049-31	DMS ₂ O F1	SE	dry	≤ 0.004	U	0.004	0.016	mg/kg	B222347	S221078
2210049-31	DMS ₂ O F2	SE	dry	≤ 0.004	U	0.004	0.016	mg/kg	B222352	S221078
2210049-31	MeSe(IV) F1	SE	dry	0.020		0.004	0.016	mg/kg	B222347	S221078
2210049-31	MeSe(IV) F2	SE	dry	0.399		0.004	0.016	mg/kg	B222352	S221078
2210049-31	Se	SE	dry	7.15		0.166	0.332	mg/kg	B222388	S221088
2210049-31	Se Unk A F1	SE	dry	≤ 0.004	U	0.004	0.016	mg/kg	B222347	S221078
2210049-31	Se Unk A F2	SE	dry	≤ 0.004	U	0.004	0.016	mg/kg	B222352	S221078
2210049-31	Se(F1)	SE	dry	0.609		0.045	0.164	mg/kg	B222425	S221077
2210049-31	Se(F2)	SE	dry	2.75		0.085	0.175	mg/kg	B222435	S221079
2210049-31	Se(F3)	SE	dry	3.00		0.054	0.164	mg/kg	B222530	S221108
2210049-31	Se(F4)	SE	dry	0.216		0.016	0.164	mg/kg	B222544	S221119
2210049-31	Se(F5)	SE	dry	≤ 0.053	U	0.053	0.206	mg/kg	B222555	S221124
2210049-31	Se(IV) F1	SE	dry	0.319		0.005	0.040	mg/kg	B222347	S221078
2210049-31	Se(IV) F2	SE	dry	1.12		0.005	0.040	mg/kg	B222352	S221078
2210049-31	Se(VI) F1	SE	dry	≤ 0.005	U	0.005	0.042	mg/kg	B222347	S221078
2210049-31	Se(VI) F2	SE	dry	0.011	J	0.005	0.042	mg/kg	B222352	S221078
2210049-31	SeCN F1	SE	dry	≤ 0.002	U	0.002	0.016	mg/kg	B222347	S221078
2210049-31	SeCN F2	SE	dry	0.439		0.002	0.016	mg/kg	B222352	S221078
2210049-31	SeMet F1	SE	dry	≤ 0.004	U	0.004	0.016	mg/kg	B222347	S221078
2210049-31	SeMet F2	SE	dry	≤ 0.004	U	0.004	0.016	mg/kg	B222352	S221078
2210049-31	SeSO ₃ F1	SE	dry	≤ 0.005	U	0.005	0.042	mg/kg	B222347	S221078
2210049-31	SeSO ₃ F2	SE	dry	0.013	J	0.005	0.042	mg/kg	B222352	S221078
2210049-31	Unk Se Sp F1	SE	dry	≤ 0.005	U	0.005	0.040	mg/kg	B222347	S221078
2210049-31	Unk Se Sp F2	SE	dry	0.363		0.005	0.040	mg/kg	B222352	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_MIDGA_SESeSp-3_2022-09-18_N</i>										
2210049-32	%TS	SE	NA	29.88		0.03	0.11	%	B222335	N/A
2210049-32	DMS ₂ O F1	SE	dry	≤ 0.006	U	0.006	0.026	mg/kg	B222347	S221078
2210049-32	DMS ₂ O F2	SE	dry	≤ 0.006	U	0.006	0.026	mg/kg	B222352	S221078
2210049-32	MeSe(IV) F1	SE	dry	0.032		0.006	0.026	mg/kg	B222347	S221078
2210049-32	MeSe(IV) F2	SE	dry	0.860		0.006	0.026	mg/kg	B222352	S221078
2210049-32	Se	SE	dry	15.1		0.301	0.602	mg/kg	B222388	S221088
2210049-32	Se Unk A F1	SE	dry	≤ 0.006	U	0.006	0.026	mg/kg	B222347	S221078
2210049-32	Se Unk A F2	SE	dry	0.014	J	0.006	0.026	mg/kg	B222352	S221078
2210049-32	Se(F1)	SE	dry	0.929		0.072	0.263	mg/kg	B222425	S221077
2210049-32	Se(F2)	SE	dry	6.00		0.136	0.280	mg/kg	B222435	S221079
2210049-32	Se(F3)	SE	dry	5.14		0.087	0.263	mg/kg	B222530	S221108
2210049-32	Se(F4)	SE	dry	0.198	J	0.026	0.263	mg/kg	B222544	S221119
2210049-32	Se(F5)	SE	dry	≤ 0.086	U	0.086	0.329	mg/kg	B222555	S221124
2210049-32	Se(IV) F1	SE	dry	0.391		0.008	0.064	mg/kg	B222347	S221078
2210049-32	Se(IV) F2	SE	dry	2.13		0.008	0.064	mg/kg	B222352	S221078
2210049-32	Se(VI) F1	SE	dry	≤ 0.007	U	0.007	0.067	mg/kg	B222347	S221078
2210049-32	Se(VI) F2	SE	dry	≤ 0.007	U	0.007	0.067	mg/kg	B222352	S221078
2210049-32	SeCN F1	SE	dry	≤ 0.004	U	0.004	0.026	mg/kg	B222347	S221078
2210049-32	SeCN F2	SE	dry	0.921		0.004	0.026	mg/kg	B222352	S221078
2210049-32	SeMet F1	SE	dry	≤ 0.006	U	0.006	0.026	mg/kg	B222347	S221078
2210049-32	SeMet F2	SE	dry	≤ 0.006	U	0.006	0.026	mg/kg	B222352	S221078
2210049-32	SeSO ₃ F1	SE	dry	≤ 0.007	U	0.007	0.067	mg/kg	B222347	S221078
2210049-32	SeSO ₃ F2	SE	dry	0.047	J	0.007	0.067	mg/kg	B222352	S221078
2210049-32	Unk Se Sp F1	SE	dry	≤ 0.008	U	0.008	0.064	mg/kg	B222347	S221078
2210049-32	Unk Se Sp F2	SE	dry	0.590		0.008	0.064	mg/kg	B222352	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_GATEDP_SESeSp-1_2022-09-15_N</i>										
2210049-33	%TS	SE	NA	56.89		0.009	0.03	%	B222335	N/A
2210049-33	DMS ₂ O F1	SE	dry	≤ 0.003	U	0.003	0.013	mg/kg	B222347	S221078
2210049-33	DMS ₂ O F2	SE	dry	≤ 0.003	U	0.003	0.013	mg/kg	B222352	S221078
2210049-33	MeSe(IV) F1	SE	dry	0.008	J	0.003	0.013	mg/kg	B222347	S221078
2210049-33	MeSe(IV) F2	SE	dry	0.149		0.003	0.013	mg/kg	B222352	S221078
2210049-33	Se	SE	dry	4.99		0.181	0.361	mg/kg	B222388	S221088
2210049-33	Se Unk A F1	SE	dry	≤ 0.003	U	0.003	0.013	mg/kg	B222347	S221078
2210049-33	Se Unk A F2	SE	dry	≤ 0.003	U	0.003	0.013	mg/kg	B222352	S221078
2210049-33	Se(F1)	SE	dry	0.231		0.036	0.131	mg/kg	B222425	S221077
2210049-33	Se(F2)	SE	dry	1.10		0.068	0.139	mg/kg	B222435	S221079
2210049-33	Se(F3)	SE	dry	2.71		0.043	0.131	mg/kg	B222530	S221108
2210049-33	Se(F4)	SE	dry	0.090	J	0.013	0.131	mg/kg	B222544	S221119
2210049-33	Se(F5)	SE	dry	≤ 0.042	U	0.042	0.163	mg/kg	B222555	S221124
2210049-33	Se(IV) F1	SE	dry	0.163		0.004	0.032	mg/kg	B222347	S221078
2210049-33	Se(IV) F2	SE	dry	0.511		0.004	0.032	mg/kg	B222352	S221078
2210049-33	Se(VI) F1	SE	dry	0.039		0.004	0.033	mg/kg	B222347	S221078
2210049-33	Se(VI) F2	SE	dry	0.011	J	0.004	0.033	mg/kg	B222352	S221078
2210049-33	SeCN F1	SE	dry	≤ 0.002	N U	0.002	0.013	mg/kg	B222347	S221078
2210049-33	SeCN F2	SE	dry	0.151		0.002	0.013	mg/kg	B222352	S221078
2210049-33	SeMet F1	SE	dry	≤ 0.003	U	0.003	0.013	mg/kg	B222347	S221078
2210049-33	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.013	mg/kg	B222352	S221078
2210049-33	SeSO ₃ F1	SE	dry	≤ 0.004	U	0.004	0.033	mg/kg	B222347	S221078
2210049-33	SeSO ₃ F2	SE	dry	0.006	J	0.004	0.033	mg/kg	B222352	S221078
2210049-33	Unk Se Sp F1	SE	dry	≤ 0.004	U	0.004	0.032	mg/kg	B222347	S221078
2210049-33	Unk Se Sp F2	SE	dry	0.081		0.004	0.032	mg/kg	B222352	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_MIDBO_SESeSp-1_2022-09-13_N</i>										
2210049-34	%TS	SE	NA	19.72		0.05	0.17	%	B222335	N/A
2210049-34	DMS ₂ O F1	SE	dry	≤ 0.009	U	0.009	0.038	mg/kg	B222347	S221078
2210049-34	DMS ₂ O F2	SE	dry	≤ 0.009	U	0.009	0.038	mg/kg	B222352	S221078
2210049-34	MeSe(IV) F1	SE	dry	0.108		0.009	0.038	mg/kg	B222347	S221078
2210049-34	MeSe(IV) F2	SE	dry	0.754		0.009	0.038	mg/kg	B222352	S221078
2210049-34	Se	SE	dry	12.6		0.425	0.850	mg/kg	B222388	S221088
2210049-34	Se Unk A F1	SE	dry	≤ 0.009	U	0.009	0.038	mg/kg	B222347	S221078
2210049-34	Se Unk A F2	SE	dry	≤ 0.009	U	0.009	0.038	mg/kg	B222352	S221078
2210049-34	Se(F1)	SE	dry	1.62		0.104	0.378	mg/kg	B222425	S221077
2210049-34	Se(F2)	SE	dry	6.21		0.196	0.401	mg/kg	B222435	S221079
2210049-34	Se(F3)	SE	dry	2.58		0.125	0.378	mg/kg	B222530	S221108
2210049-34	Se(F4)	SE	dry	0.162	J	0.038	0.378	mg/kg	B222544	S221119
2210049-34	Se(F5)	SE	dry	≤ 0.123	U	0.123	0.472	mg/kg	B222555	S221124
2210049-34	Se(IV) F1	SE	dry	0.921		0.011	0.092	mg/kg	B222347	S221078
2210049-34	Se(IV) F2	SE	dry	2.22		0.011	0.092	mg/kg	B222352	S221078
2210049-34	Se(VI) F1	SE	dry	0.015	J	0.011	0.097	mg/kg	B222347	S221078
2210049-34	Se(VI) F2	SE	dry	≤ 0.011	U	0.011	0.097	mg/kg	B222352	S221078
2210049-34	SeCN F1	SE	dry	0.022	J	0.006	0.038	mg/kg	B222347	S221078
2210049-34	SeCN F2	SE	dry	0.989		0.006	0.038	mg/kg	B222352	S221078
2210049-34	SeMet F1	SE	dry	≤ 0.009	U	0.009	0.038	mg/kg	B222347	S221078
2210049-34	SeMet F2	SE	dry	≤ 0.009	U	0.009	0.038	mg/kg	B222352	S221078
2210049-34	SeSO ₃ F1	SE	dry	0.019	J	0.011	0.097	mg/kg	B222347	S221078
2210049-34	SeSO ₃ F2	SE	dry	≤ 0.011	U	0.011	0.097	mg/kg	B222352	S221078
2210049-34	Unk Se Sp F1	SE	dry	0.035	J	0.011	0.092	mg/kg	B222347	S221078
2210049-34	Unk Se Sp F2	SE	dry	0.732		0.011	0.092	mg/kg	B222352	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_MIDBO_SESeSp-2_2022-09-13_N</i>										
2210049-35	%TS	SE	NA	17.77		0.04	0.12	%	B222335	N/A
2210049-35	DMS ₂ O F1	SE	dry	≤ 0.010	U	0.010	0.043	mg/kg	B222347	S221078
2210049-35	DMS ₂ O F2	SE	dry	≤ 0.010	U	0.010	0.043	mg/kg	B222352	S221078
2210049-35	MeSe(IV) F1	SE	dry	0.092		0.010	0.043	mg/kg	B222347	S221078
2210049-35	MeSe(IV) F2	SE	dry	0.495		0.010	0.043	mg/kg	B222352	S221078
2210049-35	Se	SE	dry	10.0		0.530	1.06	mg/kg	B222388	S221088
2210049-35	Se Unk A F1	SE	dry	≤ 0.010	U	0.010	0.043	mg/kg	B222347	S221078
2210049-35	Se Unk A F2	SE	dry	≤ 0.010	U	0.010	0.043	mg/kg	B222352	S221078
2210049-35	Se(F1)	SE	dry	1.54		0.117	0.427	mg/kg	B222425	S221077
2210049-35	Se(F2)	SE	dry	4.46		0.222	0.454	mg/kg	B222435	S221079
2210049-35	Se(F3)	SE	dry	2.01		0.141	0.427	mg/kg	B222530	S221108
2210049-35	Se(F4)	SE	dry	0.176	J	0.043	0.427	mg/kg	B222544	S221119
2210049-35	Se(F5)	SE	dry	≤ 0.139	U	0.139	0.534	mg/kg	B222555	S221124
2210049-35	Se(IV) F1	SE	dry	0.857		0.013	0.104	mg/kg	B222347	S221078
2210049-35	Se(IV) F2	SE	dry	1.62		0.013	0.104	mg/kg	B222352	S221078
2210049-35	Se(VI) F1	SE	dry	≤ 0.012	U	0.012	0.109	mg/kg	B222347	S221078
2210049-35	Se(VI) F2	SE	dry	≤ 0.012	U	0.012	0.109	mg/kg	B222352	S221078
2210049-35	SeCN F1	SE	dry	0.021	J	0.006	0.043	mg/kg	B222347	S221078
2210049-35	SeCN F2	SE	dry	0.708		0.006	0.043	mg/kg	B222352	S221078
2210049-35	SeMet F1	SE	dry	≤ 0.010	U	0.010	0.043	mg/kg	B222347	S221078
2210049-35	SeMet F2	SE	dry	≤ 0.010	U	0.010	0.043	mg/kg	B222352	S221078
2210049-35	SeSO ₃ F1	SE	dry	≤ 0.012	U	0.012	0.109	mg/kg	B222347	S221078
2210049-35	SeSO ₃ F2	SE	dry	≤ 0.012	U	0.012	0.109	mg/kg	B222352	S221078
2210049-35	Unk Se Sp F1	SE	dry	≤ 0.013	U	0.013	0.104	mg/kg	B222347	S221078
2210049-35	Unk Se Sp F2	SE	dry	0.577		0.013	0.104	mg/kg	B222352	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_MIDBO_SESeSp-3_2022-09-13_N</i>										
2210049-36	%TS	SE	NA	42.01		0.01	0.05	%	B222335	N/A
2210049-36	DMS ₂ O F1	SE	dry	≤ 0.004	U	0.004	0.019	mg/kg	B222347	S221078
2210049-36	DMS ₂ O F2	SE	dry	≤ 0.004	U	0.004	0.019	mg/kg	B222352	S221078
2210049-36	MeSe(IV) F1	SE	dry	0.031		0.004	0.019	mg/kg	B222347	S221078
2210049-36	MeSe(IV) F2	SE	dry	0.267		0.004	0.019	mg/kg	B222352	S221078
2210049-36	Se	SE	dry	4.29		0.216	0.431	mg/kg	B222388	S221088
2210049-36	Se Unk A F1	SE	dry	≤ 0.004	U	0.004	0.019	mg/kg	B222347	S221078
2210049-36	Se Unk A F2	SE	dry	0.006	J	0.004	0.019	mg/kg	B222352	S221078
2210049-36	Se(F1)	SE	dry	0.563		0.052	0.188	mg/kg	B222425	S221077
2210049-36	Se(F2)	SE	dry	2.09		0.098	0.200	mg/kg	B222435	S221079
2210049-36	Se(F3)	SE	dry	1.26		0.062	0.188	mg/kg	B222530	S221108
2210049-36	Se(F4)	SE	dry	0.245		0.019	0.188	mg/kg	B222544	S221119
2210049-36	Se(F5)	SE	dry	≤ 0.061	U	0.061	0.235	mg/kg	B222555	S221124
2210049-36	Se(IV) F1	SE	dry	0.370		0.006	0.046	mg/kg	B222347	S221078
2210049-36	Se(IV) F2	SE	dry	0.858		0.006	0.046	mg/kg	B222352	S221078
2210049-36	Se(VI) F1	SE	dry	≤ 0.005	U	0.005	0.048	mg/kg	B222347	S221078
2210049-36	Se(VI) F2	SE	dry	≤ 0.005	U	0.005	0.048	mg/kg	B222352	S221078
2210049-36	SeCN F1	SE	dry	≤ 0.003	U	0.003	0.019	mg/kg	B222347	S221078
2210049-36	SeCN F2	SE	dry	0.326		0.003	0.019	mg/kg	B222352	S221078
2210049-36	SeMet F1	SE	dry	≤ 0.004	U	0.004	0.019	mg/kg	B222347	S221078
2210049-36	SeMet F2	SE	dry	≤ 0.004	U	0.004	0.019	mg/kg	B222352	S221078
2210049-36	SeSO ₃ F1	SE	dry	≤ 0.005	U	0.005	0.048	mg/kg	B222347	S221078
2210049-36	SeSO ₃ F2	SE	dry	≤ 0.005	U	0.005	0.048	mg/kg	B222352	S221078
2210049-36	Unk Se Sp F1	SE	dry	≤ 0.006	U	0.006	0.046	mg/kg	B222347	S221078
2210049-36	Unk Se Sp F2	SE	dry	0.280		0.006	0.046	mg/kg	B222352	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_RIVER_SESeSp-1_2022-09-14_N										
2210049-37	%TS	SE	NA	50.32		0.02	0.05	%	B222335	N/A
2210049-37	DMS ₂ O F1	SE	dry	≤ 0.003	U	0.003	0.014	mg/kg	B222347	S221078
2210049-37	DMS ₂ O F2	SE	dry	≤ 0.003	U	0.003	0.014	mg/kg	B222352	S221078
2210049-37	MeSe(IV) F1	SE	dry	0.060		0.003	0.014	mg/kg	B222347	S221078
2210049-37	MeSe(IV) F2	SE	dry	0.424		0.003	0.014	mg/kg	B222352	S221078
2210049-37	Se	SE	dry	6.02		0.143	0.286	mg/kg	B222388	S221088
2210049-37	Se Unk A F1	SE	dry	0.014	J	0.003	0.014	mg/kg	B222347	S221078
2210049-37	Se Unk A F2	SE	dry	0.014	J	0.003	0.014	mg/kg	B222352	S221078
2210049-37	Se(F1)	SE	dry	0.587		0.038	0.139	mg/kg	B222425	S221077
2210049-37	Se(F2)	SE	dry	3.20		0.072	0.148	mg/kg	B222435	S221079
2210049-37	Se(F3)	SE	dry	2.94		0.046	0.139	mg/kg	B222530	S221108
2210049-37	Se(F4)	SE	dry	0.116	J	0.014	0.139	mg/kg	B222544	S221119
2210049-37	Se(F5)	SE	dry	≤ 0.045	U	0.045	0.174	mg/kg	B222555	S221124
2210049-37	Se(IV) F1	SE	dry	0.327		0.004	0.034	mg/kg	B222347	S221078
2210049-37	Se(IV) F2	SE	dry	1.32		0.004	0.034	mg/kg	B222352	S221078
2210049-37	Se(VI) F1	SE	dry	≤ 0.004	U	0.004	0.036	mg/kg	B222347	S221078
2210049-37	Se(VI) F2	SE	dry	≤ 0.004	U	0.004	0.036	mg/kg	B222352	S221078
2210049-37	SeCN F1	SE	dry	≤ 0.002	U	0.002	0.014	mg/kg	B222347	S221078
2210049-37	SeCN F2	SE	dry	0.427		0.002	0.014	mg/kg	B222352	S221078
2210049-37	SeMet F1	SE	dry	≤ 0.003	U	0.003	0.014	mg/kg	B222347	S221078
2210049-37	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.014	mg/kg	B222352	S221078
2210049-37	SeSO ₃ F1	SE	dry	≤ 0.004	U	0.004	0.036	mg/kg	B222347	S221078
2210049-37	SeSO ₃ F2	SE	dry	0.011	J	0.004	0.036	mg/kg	B222352	S221078
2210049-37	Unk Se Sp F1	SE	dry	≤ 0.004	U	0.004	0.034	mg/kg	B222347	S221078
2210049-37	Unk Se Sp F2	SE	dry	0.415		0.004	0.034	mg/kg	B222352	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_RIVER_SESeSp-5_2022-09-15_N										
2210049-38	%TS	SE	NA	33.54		0.02	0.06	%	B222335	N/A
2210049-38	DMS ₂ O F1	SE	dry	≤ 0.005	U	0.005	0.022	mg/kg	B222347	S221078
2210049-38	DMS ₂ O F2	SE	dry	≤ 0.005	U	0.005	0.022	mg/kg	B222352	S221078
2210049-38	MeSe(IV) F1	SE	dry	0.033		0.005	0.022	mg/kg	B222347	S221078
2210049-38	MeSe(IV) F2	SE	dry	2.51		0.005	0.022	mg/kg	B222352	S221078
2210049-38	Se	SE	dry	50.1		0.316	0.633	mg/kg	B222388	S221088
2210049-38	Se Unk A F1	SE	dry	≤ 0.005	U	0.005	0.022	mg/kg	B222347	S221078
2210049-38	Se Unk A F2	SE	dry	0.040		0.005	0.022	mg/kg	B222352	S221078
2210049-38	Se(F1)	SE	dry	1.14		0.059	0.215	mg/kg	B222425	S221077
2210049-38	Se(F2)	SE	dry	25.3		0.112	0.228	mg/kg	B222435	S221079
2210049-38	Se(F3)	SE	dry	17.9		0.071	0.215	mg/kg	B222530	S221108
2210049-38	Se(F4)	SE	dry	1.18		0.022	0.215	mg/kg	B222544	S221119
2210049-38	Se(F5)	SE	dry	0.203	J	0.070	0.269	mg/kg	B222555	S221124
2210049-38	Se(IV) F1	SE	dry	0.887		0.006	0.052	mg/kg	B222347	S221078
2210049-38	Se(IV) F2	SE	dry	17.1		0.006	0.052	mg/kg	B222352	S221078
2210049-38	Se(VI) F1	SE	dry	0.020	J	0.006	0.055	mg/kg	B222347	S221078
2210049-38	Se(VI) F2	SE	dry	0.060		0.006	0.055	mg/kg	B222352	S221078
2210049-38	SeCN F1	SE	dry	0.007	J	0.003	0.022	mg/kg	B222347	S221078
2210049-38	SeCN F2	SE	dry	3.65		0.003	0.022	mg/kg	B222352	S221078
2210049-38	SeMet F1	SE	dry	≤ 0.005	U	0.005	0.022	mg/kg	B222347	S221078
2210049-38	SeMet F2	SE	dry	≤ 0.005	J-1 U	0.005	0.022	mg/kg	B222352	S221078
2210049-38	SeSO ₃ F1	SE	dry	≤ 0.006	U	0.006	0.055	mg/kg	B222347	S221078
2210049-38	SeSO ₃ F2	SE	dry	0.075		0.006	0.055	mg/kg	B222352	S221078
2210049-38	Unk Se Sp F1	SE	dry	≤ 0.006	U	0.006	0.052	mg/kg	B222347	S221078
2210049-38	Unk Se Sp F2	SE	dry	0.612		0.006	0.052	mg/kg	B222352	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_RIVER_SESeSp-1_2022-09-14_N										
2210049-39	%TS	SE	NA	64.57		0.009	0.03	%	B222335	N/A
2210049-39	DMS ₂ O F1	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222347	S221078
2210049-39	DMS ₂ O F2	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222352	S221078
2210049-39	MeSe(IV) F1	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222347	S221078
2210049-39	MeSe(IV) F2	SE	dry	0.043		0.003	0.012	mg/kg	B222352	S221078
2210049-39	Se	SE	dry	2.22		0.127	0.254	mg/kg	B222388	S221088
2210049-39	Se Unk A F1	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222347	S221078
2210049-39	Se Unk A F2	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222352	S221078
2210049-39	Se(F1)	SE	dry	0.109	J	0.032	0.117	mg/kg	B222425	S221077
2210049-39	Se(F2)	SE	dry	0.756		0.061	0.124	mg/kg	B222435	S221079
2210049-39	Se(F3)	SE	dry	0.943		0.039	0.117	mg/kg	B222530	S221108
2210049-39	Se(F4)	SE	dry	0.168		0.012	0.117	mg/kg	B222544	S221119
2210049-39	Se(F5)	SE	dry	≤ 0.038	U	0.038	0.146	mg/kg	B222555	S221124
2210049-39	Se(IV) F1	SE	dry	0.114		0.004	0.028	mg/kg	B222347	S221078
2210049-39	Se(IV) F2	SE	dry	0.344		0.004	0.028	mg/kg	B222352	S221078
2210049-39	Se(VI) F1	SE	dry	≤ 0.003	U	0.003	0.030	mg/kg	B222347	S221078
2210049-39	Se(VI) F2	SE	dry	≤ 0.003	U	0.003	0.030	mg/kg	B222352	S221078
2210049-39	SeCN F1	SE	dry	≤ 0.002	N U	0.002	0.012	mg/kg	B222347	S221078
2210049-39	SeCN F2	SE	dry	0.088		0.002	0.012	mg/kg	B222352	S221078
2210049-39	SeMet F1	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222347	S221078
2210049-39	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222352	S221078
2210049-39	SeSO ₃ F1	SE	dry	≤ 0.003	U	0.003	0.030	mg/kg	B222347	S221078
2210049-39	SeSO ₃ F2	SE	dry	≤ 0.003	U	0.003	0.030	mg/kg	B222352	S221078
2210049-39	Unk Se Sp F1	SE	dry	≤ 0.004	U	0.004	0.028	mg/kg	B222347	S221078
2210049-39	Unk Se Sp F2	SE	dry	0.026	J	0.004	0.028	mg/kg	B222352	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_RIVER_SESeSp-2_2022-09-18_N										
2210049-40	%TS	SE	NA	63.27		0.01	0.03	%	B222335	N/A
2210049-40	DMS ₂ O F1	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222347	S221078
2210049-40	DMS ₂ O F2	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222352	S221078
2210049-40	MeSe(IV) F1	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222347	S221078
2210049-40	MeSe(IV) F2	SE	dry	0.021		0.003	0.012	mg/kg	B222352	S221078
2210049-40	Se	SE	dry	0.826		0.143	0.286	mg/kg	B222388	S221088
2210049-40	Se Unk A F1	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222347	S221078
2210049-40	Se Unk A F2	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222352	S221078
2210049-40	Se(F1)	SE	dry	≤ 0.033	U	0.033	0.122	mg/kg	B222425	S221077
2210049-40	Se(F2)	SE	dry	0.332		0.063	0.129	mg/kg	B222435	S221079
2210049-40	Se(F3)	SE	dry	0.317		0.040	0.122	mg/kg	B222530	S221108
2210049-40	Se(F4)	SE	dry	0.092	J	0.012	0.122	mg/kg	B222544	S221119
2210049-40	Se(F5)	SE	dry	≤ 0.039	U	0.039	0.152	mg/kg	B222555	S221124
2210049-40	Se(IV) F1	SE	dry	0.032		0.004	0.030	mg/kg	B222347	S221078
2210049-40	Se(IV) F2	SE	dry	0.171		0.004	0.030	mg/kg	B222352	S221078
2210049-40	Se(VI) F1	SE	dry	0.004	J	0.003	0.031	mg/kg	B222347	S221078
2210049-40	Se(VI) F2	SE	dry	≤ 0.003	U	0.003	0.031	mg/kg	B222352	S221078
2210049-40	SeCN F1	SE	dry	≤ 0.002	U	0.002	0.012	mg/kg	B222347	S221078
2210049-40	SeCN F2	SE	dry	0.033		0.002	0.012	mg/kg	B222352	S221078
2210049-40	SeMet F1	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222347	S221078
2210049-40	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222352	S221078
2210049-40	SeSO ₃ F1	SE	dry	≤ 0.003	U	0.003	0.031	mg/kg	B222347	S221078
2210049-40	SeSO ₃ F2	SE	dry	≤ 0.003	U	0.003	0.031	mg/kg	B222352	S221078
2210049-40	Unk Se Sp F1	SE	dry	≤ 0.004	U	0.004	0.030	mg/kg	B222347	S221078
2210049-40	Unk Se Sp F2	SE	dry	0.020	J	0.004	0.030	mg/kg	B222352	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_RIVER_SESeSp-5_2022-09-18_N										
2210049-41	%TS	SE	NA	63.48		0.009	0.03	%	B222335	N/A
2210049-41	DMS ₂ O F1	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222347	S221078
2210049-41	DMS ₂ O F2	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222352	S221078
2210049-41	MeSe(IV) F1	SE	dry	0.009	J	0.003	0.012	mg/kg	B222347	S221078
2210049-41	MeSe(IV) F2	SE	dry	0.112		0.003	0.012	mg/kg	B222352	S221078
2210049-41	Se	SE	dry	2.50		0.161	0.322	mg/kg	B222388	S221088
2210049-41	Se Unk A F1	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222347	S221078
2210049-41	Se Unk A F2	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222352	S221078
2210049-41	Se(F1)	SE	dry	0.178		0.034	0.124	mg/kg	B222425	S221077
2210049-41	Se(F2)	SE	dry	1.15		0.064	0.132	mg/kg	B222435	S221079
2210049-41	Se(F3)	SE	dry	0.777		0.041	0.124	mg/kg	B222530	S221108
2210049-41	Se(F4)	SE	dry	0.202		0.012	0.124	mg/kg	B222544	S221119
2210049-41	Se(F5)	SE	dry	0.046	J	0.040	0.155	mg/kg	B222555	S221124
2210049-41	Se(IV) F1	SE	dry	0.155		0.004	0.030	mg/kg	B222347	S221078
2210049-41	Se(IV) F2	SE	dry	0.554		0.004	0.030	mg/kg	B222352	S221078
2210049-41	Se(VI) F1	SE	dry	0.004	J	0.003	0.032	mg/kg	B222347	S221078
2210049-41	Se(VI) F2	SE	dry	≤ 0.003	U	0.003	0.032	mg/kg	B222352	S221078
2210049-41	SeCN F1	SE	dry	≤ 0.002	U	0.002	0.012	mg/kg	B222347	S221078
2210049-41	SeCN F2	SE	dry	0.140		0.002	0.012	mg/kg	B222352	S221078
2210049-41	SeMet F1	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222347	S221078
2210049-41	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.012	mg/kg	B222352	S221078
2210049-41	SeSO ₃ F1	SE	dry	≤ 0.003	U	0.003	0.032	mg/kg	B222347	S221078
2210049-41	SeSO ₃ F2	SE	dry	≤ 0.003	U	0.003	0.032	mg/kg	B222352	S221078
2210049-41	Unk Se Sp F1	SE	dry	≤ 0.004	U	0.004	0.030	mg/kg	B222347	S221078
2210049-41	Unk Se Sp F2	SE	dry	0.103		0.004	0.030	mg/kg	B222352	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_RIVER_SESeSp-2_2022-09-12_N										
2210049-42	%TS	SE	NA	66.40		0.007	0.02	%	B222335	N/A
2210049-42	DMS ₂ O F1	SE	dry	≤ 0.003	U	0.003	0.011	mg/kg	B222347	S221078
2210049-42	DMS ₂ O F2	SE	dry	≤ 0.003	U	0.003	0.011	mg/kg	B222352	S221078
2210049-42	MeSe(IV) F1	SE	dry	0.005	J	0.003	0.011	mg/kg	B222347	S221078
2210049-42	MeSe(IV) F2	SE	dry	0.059		0.003	0.011	mg/kg	B222352	S221078
2210049-42	Se	SE	dry	0.954		0.147	0.295	mg/kg	B222388	S221088
2210049-42	Se Unk A F1	SE	dry	≤ 0.003	U	0.003	0.011	mg/kg	B222347	S221078
2210049-42	Se Unk A F2	SE	dry	≤ 0.003	U	0.003	0.011	mg/kg	B222352	S221078
2210049-42	Se(F1)	SE	dry	0.060	J	0.030	0.109	mg/kg	B222425	S221077
2210049-42	Se(F2)	SE	dry	0.506		0.056	0.115	mg/kg	B222435	S221079
2210049-42	Se(F3)	SE	dry	0.327		0.036	0.109	mg/kg	B222530	S221108
2210049-42	Se(F4)	SE	dry	0.162		0.011	0.109	mg/kg	B222544	S221119
2210049-42	Se(F5)	SE	dry	0.048	J	0.035	0.136	mg/kg	B222555	S221124
2210049-42	Se(IV) F1	SE	dry	0.052		0.003	0.026	mg/kg	B222347	S221078
2210049-42	Se(IV) F2	SE	dry	0.222		0.003	0.026	mg/kg	B222352	S221078
2210049-42	Se(VI) F1	SE	dry	≤ 0.003	U	0.003	0.028	mg/kg	B222347	S221078
2210049-42	Se(VI) F2	SE	dry	≤ 0.003	U	0.003	0.028	mg/kg	B222352	S221078
2210049-42	SeCN F1	SE	dry	≤ 0.002	U	0.002	0.011	mg/kg	B222347	S221078
2210049-42	SeCN F2	SE	dry	0.046		0.002	0.011	mg/kg	B222352	S221078
2210049-42	SeMet F1	SE	dry	≤ 0.003	U	0.003	0.011	mg/kg	B222347	S221078
2210049-42	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.011	mg/kg	B222352	S221078
2210049-42	SeSO ₃ F1	SE	dry	≤ 0.003	U	0.003	0.028	mg/kg	B222347	S221078
2210049-42	SeSO ₃ F2	SE	dry	≤ 0.003	U	0.003	0.028	mg/kg	B222352	S221078
2210049-42	Unk Se Sp F1	SE	dry	≤ 0.003	U	0.003	0.026	mg/kg	B222347	S221078
2210049-42	Unk Se Sp F2	SE	dry	0.051		0.003	0.026	mg/kg	B222352	S221078



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_RIVER_SESeSp-6_2022-09-19_N										
2210049-43	%TS	SE	NA	35.67		0.02	0.07	%	B222335	N/A
2210049-43	DMS ₂ O F1	SE	dry	≤ 0.005	U	0.005	0.022	mg/kg	B222347	S221078
2210049-43	DMS ₂ O F2	SE	dry	0.009	J	0.005	0.022	mg/kg	B222352	S221078
2210049-43	MeSe(IV) F1	SE	dry	0.022	J	0.005	0.022	mg/kg	B222347	S221078
2210049-43	MeSe(IV) F2	SE	dry	1.20		0.005	0.022	mg/kg	B222352	S221078
2210049-43	Se	SE	dry	25.3		0.270	0.541	mg/kg	B222388	S221088
2210049-43	Se Unk A F1	SE	dry	≤ 0.005	U	0.005	0.022	mg/kg	B222347	S221078
2210049-43	Se Unk A F2	SE	dry	0.014	J	0.005	0.022	mg/kg	B222352	S221078
2210049-43	Se(F1)	SE	dry	0.764		0.062	0.225	mg/kg	B222425	S221077
2210049-43	Se(F2)	SE	dry	9.91		0.116	0.239	mg/kg	B222435	S221079
2210049-43	Se(F3)	SE	dry	7.36		0.074	0.225	mg/kg	B222530	S221108
2210049-43	Se(F4)	SE	dry	0.374		0.022	0.225	mg/kg	B222544	S221119
2210049-43	Se(F5)	SE	dry	0.096	J	0.073	0.281	mg/kg	B222555	S221124
2210049-43	Se(IV) F1	SE	dry	0.544		0.007	0.055	mg/kg	B222347	S221078
2210049-43	Se(IV) F2	SE	dry	6.00		0.007	0.055	mg/kg	B222352	S221078
2210049-43	Se(VI) F1	SE	dry	0.009	J	0.006	0.058	mg/kg	B222347	S221078
2210049-43	Se(VI) F2	SE	dry	0.030	J	0.006	0.058	mg/kg	B222352	S221078
2210049-43	SeCN F1	SE	dry	0.004	J	0.003	0.022	mg/kg	B222347	S221078
2210049-43	SeCN F2	SE	dry	1.74		0.003	0.022	mg/kg	B222352	S221078
2210049-43	SeMet F1	SE	dry	≤ 0.005	U	0.005	0.022	mg/kg	B222347	S221078
2210049-43	SeMet F2	SE	dry	≤ 0.005	U	0.005	0.022	mg/kg	B222352	S221078
2210049-43	SeSO ₃ F1	SE	dry	≤ 0.006	U	0.006	0.058	mg/kg	B222347	S221078
2210049-43	SeSO ₃ F2	SE	dry	0.031	J	0.006	0.058	mg/kg	B222352	S221078
2210049-43	Unk Se Sp F1	SE	dry	≤ 0.007	U	0.007	0.055	mg/kg	B222347	S221078
2210049-43	Unk Se Sp F2	SE	dry	0.515		0.007	0.055	mg/kg	B222352	S221078



Accuracy & Precision Summary

Batch: B222333
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222333-DUP3	Duplicate, (2210048-90) Se(F1)	0.826		0.836	mg/kg		1% 25
B222333-PS5	Post Spike, (2210048-91) Se(F1)	1.694	70.34	68.28	mg/kg	95% 75-125	
B222333-PS6	Post Spike, (2210048-91) Se(F1)	1.694	70.34	68.61	mg/kg	95% 75-125	
B222333-PS7	Post Spike, (2210049-01) Se(F1)	0.657	62.06	59.32	mg/kg	95% 75-125	
B222333-PS8	Post Spike, (2210049-01) Se(F1)	0.657	62.06	58.75	mg/kg	94% 75-125	
B222333-DUP4	Duplicate, (2210049-07) Se(F1)	1.295		1.213	mg/kg		7% 25



Accuracy & Precision Summary

Batch: B222335
Lab Matrix: Soil/Sediment
Method: SOP BAL-0501

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222335-DUP1	Duplicate, (2210049-01) %TS	32.29		31.69	%		2% 15
B222335-DUP2	Duplicate, (2210049-11) %TS	65.39		72.32	%		10% 15
B222335-DUP3	Duplicate, (2210049-21) %TS	18.56		19.33	%		4% 15
B222335-DUP4	Duplicate, (2210049-31) %TS	45.75		44.42	%		3% 15
B222335-DUP5	Duplicate, (2210049-41) %TS	63.48		62.39	%		2% 15



Accuracy & Precision Summary

Batch: B222346
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222346-DUP3	Duplicate, (2210048-90)						
	DMSeO F1	0.015		0.016	mg/kg		7% 25
	MeSe(IV) F1	0.014		0.011	mg/kg		19% 25
	Se Unk A F1	ND		ND	mg/kg		N/C 25
	Se(IV) F1	0.724		0.773	mg/kg		6% 25
	Se(VI) F1	0.008		0.010	mg/kg		13% 25
	SeCN F1	ND		ND	mg/kg		N/C 25
	SeMet F1	ND		ND	mg/kg		N/C 25
	SeSO3 F1	ND		ND	mg/kg		N/C 25
	Unk Se Sp F1	ND		ND	mg/kg		N/C 25
B222346-PS3	Post Spike, (2210048-90)						
	Se(IV) F1	0.724	4.393	4.857	mg/kg	94% 75-125	
	Se(VI) F1	0.008	4.573	4.296	mg/kg	94% 75-125	
	SeCN F1	ND	1.759	1.581	mg/kg	90% 75-125	
	SeMet F1	ND	1.773	1.707	mg/kg	96% 75-125	
B222346-DUP4	Duplicate, (2210049-07)						
	DMSeO F1	ND		ND	mg/kg		N/C 25
	MeSe(IV) F1	0.033		0.012	mg/kg		96% 25
	Se Unk A F1	ND		ND	mg/kg		N/C 25
	Se(IV) F1	1.074		1.141	mg/kg		6% 25
	Se(VI) F1	0.021		0.020	mg/kg		3% 25
	SeCN F1	ND		0.004	mg/kg		N/C 25
	SeMet F1	ND		ND	mg/kg		N/C 25
	SeSO3 F1	ND		ND	mg/kg		N/C 25
	Unk Se Sp F1	ND		ND	mg/kg		N/C 25
B222346-PS4	Post Spike, (2210049-07)						
	Se(IV) F1	1.074	3.700	4.665	mg/kg	97% 75-125	
	Se(VI) F1	0.021	3.851	3.715	mg/kg	96% 75-125	
	SeCN F1	ND	1.481	1.380	mg/kg	93% 75-125	
	SeMet F1	ND	1.493	1.450	mg/kg	97% 75-125	



Accuracy & Precision Summary

Batch: B222347
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222347-DUP1	Duplicate, (2210049-19)						
	DMS ₂ O F1	ND		ND	mg/kg		N/C 25
	MeSe(IV) F1	ND		ND	mg/kg		N/C 25
	Se Unk A F1	ND		ND	mg/kg		N/C 25
	Se(IV) F1	0.115		0.112	mg/kg		3% 25
	Se(VI) F1	0.014		0.013	mg/kg		8% 25
	SeCN F1	ND		ND	mg/kg		N/C 25
	SeMet F1	ND		ND	mg/kg		N/C 25
	SeSO ₃ F1	ND		ND	mg/kg		N/C 25
	Unk Se Sp F1	ND		ND	mg/kg		N/C 25
B222347-PS1	Post Spike, (2210049-19)						
	Se(IV) F1	0.115	2.764	2.810	mg/kg	98% 75-125	
	Se(VI) F1	0.014	2.877	2.661	mg/kg	92% 75-125	
	SeCN F1	ND	1.107	0.879	mg/kg	79% 75-125	
	SeMet F1	ND	1.115	1.034	mg/kg	93% 75-125	
B222347-DUP2	Duplicate, (2210049-25)						
	DMS ₂ O F1	ND		ND	mg/kg		N/C 25
	MeSe(IV) F1	0.015		0.013	mg/kg		12% 25
	Se Unk A F1	ND		ND	mg/kg		N/C 25
	Se(IV) F1	0.390		0.387	mg/kg		0.8% 25
	Se(VI) F1	0.029		0.008	mg/kg		112% 25
	SeCN F1	ND		ND	mg/kg		N/C 25
	SeMet F1	ND		ND	mg/kg		N/C 25
	SeSO ₃ F1	ND		ND	mg/kg		N/C 25
	Unk Se Sp F1	ND		ND	mg/kg		N/C 25
B222347-PS2	Post Spike, (2210049-25)						
	Se(IV) F1	0.390	3.900	4.248	mg/kg	99% 75-125	
	Se(VI) F1	0.029	4.060	3.709	mg/kg	91% 75-125	
	SeCN F1	ND	1.562	1.097	mg/kg	70% 75-125	
	SeMet F1	ND	1.574	1.424	mg/kg	90% 75-125	



Accuracy & Precision Summary

Batch: B222347
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222347-DUP3	Duplicate, (2210049-33)						
	DMS ₂ O F1	ND		ND	mg/kg		N/C 25
	MeSe(IV) F1	0.008		0.010	mg/kg		16% 25
	Se Unk A F1	ND		ND	mg/kg		N/C 25
	Se(IV) F1	0.163		0.165	mg/kg		2% 25
	Se(VI) F1	0.039		ND	mg/kg		N/C 25
	SeCN F1	ND		ND	mg/kg		N/C 25
	SeMet F1	ND		ND	mg/kg		N/C 25
	SeSO ₃ F1	ND		ND	mg/kg		N/C 25
	Unk Se Sp F1	ND		ND	mg/kg		N/C 25
B222347-PS3	Post Spike, (2210049-33)						
	Se(IV) F1	0.163	3.202	3.184	mg/kg	94% 75-125	
	Se(VI) F1	0.039	3.333	3.007	mg/kg	89% 75-125	
	SeCN F1	ND	1.282	0.954	mg/kg	74% 75-125	
	SeMet F1	ND	1.292	1.152	mg/kg	89% 75-125	
B222347-DUP4	Duplicate, (2210049-39)						
	DMS ₂ O F1	ND		ND	mg/kg		N/C 25
	MeSe(IV) F1	ND		ND	mg/kg		N/C 25
	Se Unk A F1	ND		ND	mg/kg		N/C 25
	Se(IV) F1	0.114		0.106	mg/kg		7% 25
	Se(VI) F1	ND		0.005	mg/kg		N/C 25
	SeCN F1	ND		ND	mg/kg		N/C 25
	SeMet F1	ND		ND	mg/kg		N/C 25
	SeSO ₃ F1	ND		ND	mg/kg		N/C 25
	Unk Se Sp F1	ND		ND	mg/kg		N/C 25
B222347-PS4	Post Spike, (2210049-39)						
	Se(IV) F1	0.114	2.859	2.862	mg/kg	96% 75-125	
	Se(VI) F1	ND	2.976	2.624	mg/kg	88% 75-125	
	SeCN F1	ND	1.145	0.792	mg/kg	69% 75-125	
	SeMet F1	ND	1.154	0.995	mg/kg	86% 75-125	



Accuracy & Precision Summary

Batch: B222351
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222351-DUP3	Duplicate, (2210048-90)						
	DMSeO F2	0.008		0.005	mg/kg		42% 25
	MeSe(IV) F2	0.847		0.861	mg/kg		2% 25
	Se Unk A F2	0.013		0.013	mg/kg		0.04% 25
	Se(IV) F2	4.204		4.393	mg/kg		4% 25
	Se(VI) F2	0.020		0.010	mg/kg		70% 25
	SeCN F2	1.304		1.418	mg/kg		8% 25
	SeMet F2	ND		ND	mg/kg		N/C 25
	SeSO3 F2	0.014		0.019	mg/kg		28% 25
Unk Se Sp F2	0.314		0.304	mg/kg		3% 25	
B222351-PS3	Post Spike, (2210048-90)						
	Se(IV) F2	4.204	4.393	8.098	mg/kg	89% 75-125	
	Se(VI) F2	0.020	4.573	4.101	mg/kg	89% 75-125	
	SeCN F2	1.304	1.759	2.950	mg/kg	94% 75-125	
SeMet F2	ND	1.773	1.732	mg/kg	98% 75-125		
B222351-DUP4	Duplicate, (2210049-07)						
	DMSeO F2	ND		ND	mg/kg		N/C 25
	MeSe(IV) F2	0.305		0.296	mg/kg		3% 25
	Se Unk A F2	0.005		ND	mg/kg		N/C 25
	Se(IV) F2	3.174		3.136	mg/kg		1% 25
	Se(VI) F2	0.019		0.018	mg/kg		6% 25
	SeCN F2	0.353		0.327	mg/kg		8% 25
	SeMet F2	ND		ND	mg/kg		N/C 25
	SeSO3 F2	0.013		0.012	mg/kg		9% 25
Unk Se Sp F2	0.174		0.144	mg/kg		19% 25	
B222351-PS4	Post Spike, (2210049-07)						
	Se(IV) F2	3.174	3.700	6.455	mg/kg	89% 75-125	
	Se(VI) F2	0.019	3.851	3.407	mg/kg	88% 75-125	
	SeCN F2	0.353	1.481	1.746	mg/kg	94% 75-125	
SeMet F2	ND	1.493	1.440	mg/kg	96% 75-125		



Accuracy & Precision Summary

Batch: B222352
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222352-DUP1	Duplicate, (2210049-19)						
	DMSeO F2	ND		ND	mg/kg		N/C 25
	MeSe(IV) F2	0.026		0.022	mg/kg		14% 25
	Se Unk A F2	ND		ND	mg/kg		N/C 25
	Se(IV) F2	0.280		0.275	mg/kg		2% 25
	Se(VI) F2	ND		ND	mg/kg		N/C 25
	SeCN F2	0.030		0.028	mg/kg		7% 25
	SeMet F2	ND		ND	mg/kg		N/C 25
	SeSO3 F2	ND		ND	mg/kg		N/C 25
Unk Se Sp F2	0.015		0.013	mg/kg		20% 25	
B222352-PS1	Post Spike, (2210049-19)						
	Se(IV) F2	0.280	2.764	2.700	mg/kg	88% 75-125	
	Se(VI) F2	ND	2.877	2.524	mg/kg	88% 75-125	
	SeCN F2	0.030	1.107	1.071	mg/kg	94% 75-125	
SeMet F2	ND	1.115	1.005	mg/kg	90% 75-125		
B222352-DUP2	Duplicate, (2210049-25)						
	DMSeO F2	ND		ND	mg/kg		N/C 25
	MeSe(IV) F2	1.523		0.942	mg/kg		47% 25
	Se Unk A F2	0.028		0.030	mg/kg		8% 25
	Se(IV) F2	2.493		1.770	mg/kg		34% 25
	Se(VI) F2	0.032		0.031	mg/kg		2% 25
	SeCN F2	0.937		0.689	mg/kg		30% 25
	SeMet F2	ND		ND	mg/kg		N/C 25
	SeSO3 F2	0.026		0.027	mg/kg		5% 25
Unk Se Sp F2	0.491		0.402	mg/kg		20% 25	
B222352-PS2	Post Spike, (2210049-25)						
	Se(IV) F2	2.493	3.900	5.983	mg/kg	89% 75-125	
	Se(VI) F2	0.032	4.060	3.768	mg/kg	92% 75-125	
	SeCN F2	0.937	1.562	2.465	mg/kg	98% 75-125	
SeMet F2	ND	1.574	1.584	mg/kg	101% 75-125		



Accuracy & Precision Summary

Batch: B222352
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222352-DUP3	Duplicate, (2210049-33)						
	DMSeO F2	ND		ND	mg/kg		N/C 25
	MeSe(IV) F2	0.149		0.136	mg/kg		9% 25
	Se Unk A F2	ND		ND	mg/kg		N/C 25
	Se(IV) F2	0.511		0.518	mg/kg		1% 25
	Se(VI) F2	0.011		0.009	mg/kg		21% 25
	SeCN F2	0.151		0.165	mg/kg		9% 25
	SeMet F2	ND		ND	mg/kg		N/C 25
	SeSO3 F2	0.006		0.007	mg/kg		4% 25
	Unk Se Sp F2	0.081		0.082	mg/kg		2% 25
B222352-PS3	Post Spike, (2210049-33)						
	Se(IV) F2	0.511	3.202	3.333	mg/kg	88% 75-125	
	Se(VI) F2	0.011	3.333	2.947	mg/kg	88% 75-125	
	SeCN F2	0.151	1.282	1.363	mg/kg	95% 75-125	
	SeMet F2	ND	1.292	1.187	mg/kg	92% 75-125	
B222352-DUP4	Duplicate, (2210049-39)						
	DMSeO F2	ND		ND	mg/kg		N/C 25
	MeSe(IV) F2	0.043		0.042	mg/kg		3% 25
	Se Unk A F2	ND		ND	mg/kg		N/C 25
	Se(IV) F2	0.344		0.335	mg/kg		3% 25
	Se(VI) F2	ND		ND	mg/kg		N/C 25
	SeCN F2	0.088		0.081	mg/kg		8% 25
	SeMet F2	ND		ND	mg/kg		N/C 25
	SeSO3 F2	ND		ND	mg/kg		N/C 25
	Unk Se Sp F2	0.026		0.026	mg/kg		3% 25
B222352-PS4	Post Spike, (2210049-39)						
	Se(IV) F2	0.344	2.859	2.797	mg/kg	86% 75-125	
	Se(VI) F2	ND	2.976	2.533	mg/kg	85% 75-125	
	SeCN F2	0.088	1.145	1.148	mg/kg	93% 75-125	
	SeMet F2	ND	1.154	1.057	mg/kg	92% 75-125	



Accuracy & Precision Summary

Batch: B222380
Lab Matrix: Soil/Sediment
Method: EPA 6020B Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222380-BS1	Blank Spike, (2152010) Se		50.00	53.08	mg/kg	106% 75-125	
B222380-BS2	Blank Spike, (2152010) Se		50.00	54.31	mg/kg	109% 75-125	
B222380-SRM1	Reference Material (2224038, CRM052-50G Loamy Clay) Se		54.40	64.60	mg/kg	119% 75-125	
B222380-SRM2	Reference Material (2224038, CRM052-50G Loamy Clay) Se		54.40	67.61	mg/kg	124% 75-125	
B222380-DUP3	Duplicate, (2210049-05) Se	16.97		20.34	mg/kg		18% 30
B222380-MS3	Matrix Spike, (2210049-05) Se	16.97	235.7	268.7	mg/kg	107% 70-130	
B222380-MSD3	Matrix Spike Duplicate, (2210049-05) Se	16.97	263.3	295.7	mg/kg	106% 70-130	0.8% 30
B222380-DUP4	Duplicate, (2210049-11) Se	1.042		1.008	mg/kg		3% 30
B222380-MS4	Matrix Spike, (2210049-11) Se	1.042	70.21	73.54	mg/kg	103% 70-130	
B222380-MSD4	Matrix Spike Duplicate, (2210049-11) Se	1.042	70.76	74.59	mg/kg	104% 70-130	0.7% 30



Accuracy & Precision Summary

Batch: B222388
Lab Matrix: Soil/Sediment
Method: EPA 6020B Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222388-BS1	Blank Spike, (2152010) Se		50.00	49.27	mg/kg	99% 75-125	
B222388-BS2	Blank Spike, (2152010) Se		50.00	48.99	mg/kg	98% 75-125	
B222388-SRM1	Reference Material (2224038, CRM052-50G Loamy Clay) Se		54.40	64.09	mg/kg	118% 75-125	
B222388-SRM2	Reference Material (2224038, CRM052-50G Loamy Clay) Se		54.40	55.12	mg/kg	101% 75-125	
B222388-DUP1	Duplicate, (2210049-18) Se	0.986		1.077	mg/kg		9% 30
B222388-MS1	Matrix Spike, (2210049-18) Se	0.986	72.67	69.26	mg/kg	94% 70-130	
B222388-MSD1	Matrix Spike Duplicate, (2210049-18) Se	0.986	68.91	67.99	mg/kg	97% 70-130	3% 30
B222388-DUP2	Duplicate, (2210049-33) Se	4.985		5.269	mg/kg		6% 30
B222388-MS2	Matrix Spike, (2210049-33) Se	4.985	76.09	77.36	mg/kg	95% 70-130	
B222388-MSD2	Matrix Spike Duplicate, (2210049-33) Se	4.985	70.95	75.62	mg/kg	100% 70-130	5% 30
B222388-DUP3	Duplicate, (2210049-39) Se	2.221		2.113	mg/kg		5% 30



Accuracy & Precision Summary

Batch: B222388
Lab Matrix: Soil/Sediment
Method: EPA 6020B Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222388-MS3	Matrix Spike, (2210049-39) Se	2.221	68.57	68.08	mg/kg	96% 70-130	
B222388-MSD3	Matrix Spike Duplicate, (2210049-39) Se	2.221	79.79	78.88	mg/kg	96% 70-130	0.03% 30
B222388-DUP4	Duplicate, (2210049-43) Se	25.35		23.27	mg/kg		9% 30
B222388-MS4	Matrix Spike, (2210049-43) Se	25.35	157.8	176.0	mg/kg	95% 70-130	
B222388-MSD4	Matrix Spike Duplicate, (2210049-43) Se	25.35	157.4	175.9	mg/kg	96% 70-130	0.2% 30



Accuracy & Precision Summary

Batch: B222425
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222425-DUP1	Duplicate, (2210049-19) Se(F1)	0.132		0.114	mg/kg		15% 25
B222425-PS1	Post Spike, (2210049-21) Se(F1)	0.745	107.5	104.5	mg/kg	97% 75-125	
B222425-PS2	Post Spike, (2210049-21) Se(F1)	0.745	107.5	103.1	mg/kg	95% 75-125	
B222425-DUP2	Duplicate, (2210049-25) Se(F1)	0.549		0.438	mg/kg		22% 25
B222425-PS3	Post Spike, (2210049-31) Se(F1)	0.609	41.11	39.76	mg/kg	95% 75-125	
B222425-PS4	Post Spike, (2210049-31) Se(F1)	0.609	41.11	41.13	mg/kg	99% 75-125	
B222425-DUP3	Duplicate, (2210049-33) Se(F1)	0.231		0.207	mg/kg		11% 25
B222425-DUP4	Duplicate, (2210049-39) Se(F1)	0.109		0.118	mg/kg		8% 25
B222425-PS5	Post Spike, (2210049-41) Se(F1)	0.178	31.00	29.78	mg/kg	95% 75-125	
B222425-PS6	Post Spike, (2210049-41) Se(F1)	0.178	31.00	29.77	mg/kg	95% 75-125	
B222425-PS7	Post Spike, (2210049-43) Se(F1)	0.764	56.13	54.38	mg/kg	96% 75-125	



Accuracy & Precision Summary

Batch: B222425
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222425-PS8	Post Spike, (2210049-43) Se(F1)	0.764	56.13	54.14	mg/kg	95% 75-125	



Accuracy & Precision Summary

Batch: B222434
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222434-DUP3	Duplicate, (2210048-90) Se(F2)	7.557		7.899	mg/kg		4% 25
B222434-PS5	Post Spike, (2210048-91) Se(F2)	12.99	70.34	75.85	mg/kg	89% 75-125	
B222434-PS6	Post Spike, (2210048-91) Se(F2)	12.99	70.34	76.35	mg/kg	90% 75-125	
B222434-PS7	Post Spike, (2210049-01) Se(F2)	10.20	62.06	67.97	mg/kg	93% 75-125	
B222434-PS8	Post Spike, (2210049-01) Se(F2)	10.20	62.06	68.79	mg/kg	94% 75-125	
B222434-DUP4	Duplicate, (2210049-07) Se(F2)	4.303		4.450	mg/kg		3% 25



Accuracy & Precision Summary

Batch: B222435
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222435-DUP1	Duplicate, (2210049-19) Se(F2)	0.441		0.391	mg/kg		12% 25
B222435-PS1	Post Spike, (2210049-21) Se(F2)	10.92	107.5	102.9	mg/kg	86% 75-125	
B222435-PS2	Post Spike, (2210049-21) Se(F2)	10.92	107.5	104.5	mg/kg	87% 75-125	
B222435-DUP2	Duplicate, (2210049-25) Se(F2)	5.498		4.338	mg/kg		24% 25
B222435-PS3	Post Spike, (2210049-31) Se(F2)	2.753	41.11	36.43	mg/kg	82% 75-125	
B222435-PS4	Post Spike, (2210049-31) Se(F2)	2.753	41.11	35.50	mg/kg	80% 75-125	
B222435-DUP3	Duplicate, (2210049-33) Se(F2)	1.097		1.087	mg/kg		1% 25
B222435-DUP4	Duplicate, (2210049-39) Se(F2)	0.756		0.578	mg/kg		27% 25
B222435-PS5	Post Spike, (2210049-41) Se(F2)	1.146	31.00	26.53	mg/kg	82% 75-125	
B222435-PS6	Post Spike, (2210049-41) Se(F2)	1.146	31.00	28.46	mg/kg	88% 75-125	
B222435-PS7	Post Spike, (2210049-43) Se(F2)	9.913	56.13	59.74	mg/kg	89% 75-125	



Accuracy & Precision Summary

Batch: B222435
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222435-PS8	Post Spike, (2210049-43) Se(F2)	9.913	56.13	61.17	mg/kg	91% 75-125	



Accuracy & Precision Summary

Batch: B222498
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222498-DUP3	Duplicate, (2210048-90) Se(F3)	6.428		6.697	mg/kg		4% 25
B222498-PS5	Post Spike, (2210049-01) Se(F3)	7.360	62.06	61.48	mg/kg	87% 75-125	
B222498-PS6	Post Spike, (2210049-01) Se(F3)	7.360	62.06	58.25	mg/kg	82% 75-125	
B222498-DUP4	Duplicate, (2210049-07) Se(F3)	5.783		5.972	mg/kg		3% 25
B222498-PS7	Post Spike, (2210049-11) Se(F3)	0.497	27.02	23.91	mg/kg	87% 75-125	
B222498-PS8	Post Spike, (2210049-11) Se(F3)	0.497	27.02	24.00	mg/kg	87% 75-125	



Accuracy & Precision Summary

Batch: B222514
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222514-DUP3	Duplicate, (2210048-90) Se(F4)	0.530		0.472	mg/kg		12% 25
B222514-PS5	Post Spike, (2210049-01) Se(F4)	0.336	62.06	61.82	mg/kg	99% 75-125	
B222514-PS6	Post Spike, (2210049-01) Se(F4)	0.336	62.06	66.49	mg/kg	107% 75-125	
B222514-DUP4	Duplicate, (2210049-07) Se(F4)	0.208		0.233	mg/kg		11% 25
B222514-PS7	Post Spike, (2210049-11) Se(F4)	0.286	27.02	27.92	mg/kg	102% 75-125	
B222514-PS8	Post Spike, (2210049-11) Se(F4)	0.286	27.02	29.29	mg/kg	107% 75-125	



Accuracy & Precision Summary

Batch: B222530
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222530-DUP1	Duplicate, (2210049-19) Se(F3)	0.460		0.418	mg/kg		10% 25
B222530-PS1	Post Spike, (2210049-21) Se(F3)	29.13	107.5	133.8	mg/kg	97% 75-125	
B222530-PS2	Post Spike, (2210049-21) Se(F3)	29.13	107.5	112.9	mg/kg	78% 75-125	
B222530-DUP2	Duplicate, (2210049-25) Se(F3)	11.75		13.37	mg/kg		13% 25
B222530-PS3	Post Spike, (2210049-31) Se(F3)	3.004	41.11	37.10	mg/kg	83% 75-125	
B222530-PS4	Post Spike, (2210049-31) Se(F3)	3.004	41.11	40.03	mg/kg	90% 75-125	
B222530-DUP3	Duplicate, (2210049-33) Se(F3)	2.712		3.119	mg/kg		14% 25
B222530-DUP4	Duplicate, (2210049-39) Se(F3)	0.943		1.136	mg/kg		19% 25
B222530-PS5	Post Spike, (2210049-41) Se(F3)	0.777	31.00	27.11	mg/kg	85% 75-125	
B222530-PS6	Post Spike, (2210049-41) Se(F3)	0.777	31.00	30.12	mg/kg	95% 75-125	
B222530-PS7	Post Spike, (2210049-43) Se(F3)	7.360	56.13	58.52	mg/kg	91% 75-125	



Accuracy & Precision Summary

Batch: B222530
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222530-PS8	Post Spike, (2210049-43) Se(F3)	7.360	56.13	59.42	mg/kg	93% 75-125	



Accuracy & Precision Summary

Batch: B222533
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222533-BS1	Blank Spike, (2152010) Se(F5)		25.00	25.37	mg/kg	101% 75-125	
B222533-BS2	Blank Spike, (2152010) Se(F5)		25.00	26.22	mg/kg	105% 75-125	
B222533-DUP3	Duplicate, (2210048-90) Se(F5)	0.081		0.073	mg/kg		10% 25
B222533-PS5	Post Spike, (2210048-91) Se(F5)	0.065	87.93	87.64	mg/kg	100% 75-125	
B222533-PS6	Post Spike, (2210048-91) Se(F5)	0.065	87.93	88.56	mg/kg	101% 75-125	
B222533-PS7	Post Spike, (2210049-01) Se(F5)	0.076	77.58	76.24	mg/kg	98% 75-125	
B222533-PS8	Post Spike, (2210049-01) Se(F5)	0.076	77.58	78.10	mg/kg	101% 75-125	
B222533-DUP4	Duplicate, (2210049-07) Se(F5)	0.056		0.049	mg/kg		14% 25



Accuracy & Precision Summary

Batch: B222544
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222544-DUP1	Duplicate, (2210049-19) Se(F4)	0.187		0.212	mg/kg		12% 25
B222544-PS1	Post Spike, (2210049-21) Se(F4)	0.342	107.5	96.74	mg/kg	90% 75-125	
B222544-PS2	Post Spike, (2210049-21) Se(F4)	0.342	107.5	91.71	mg/kg	85% 75-125	
B222544-DUP2	Duplicate, (2210049-25) Se(F4)	0.213		0.287	mg/kg		30% 25
B222544-PS3	Post Spike, (2210049-31) Se(F4)	0.216	41.11	33.82	mg/kg	82% 75-125	
B222544-PS4	Post Spike, (2210049-31) Se(F4)	0.216	41.11	35.35	mg/kg	85% 75-125	
B222544-DUP3	Duplicate, (2210049-33) Se(F4)	0.090		0.120	mg/kg		28% 25
B222544-DUP4	Duplicate, (2210049-39) Se(F4)	0.168		0.183	mg/kg		9% 25
B222544-PS5	Post Spike, (2210049-41) Se(F4)	0.202	31.00	25.71	mg/kg	82% 75-125	
B222544-PS6	Post Spike, (2210049-41) Se(F4)	0.202	31.00	26.56	mg/kg	85% 75-125	
B222544-PS7	Post Spike, (2210049-43) Se(F4)	0.374	56.13	48.58	mg/kg	86% 75-125	



Accuracy & Precision Summary

Batch: B222544
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222544-PS8	Post Spike, (2210049-43) Se(F4)	0.374	56.13	47.14	mg/kg	83% 75-125	



Accuracy & Precision Summary

Batch: B222555
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222555-BS1	Blank Spike, (2152010) Se(F5)		25.00	22.48	mg/kg	90% 75-125	
B222555-BS2	Blank Spike, (2152010) Se(F5)		25.00	22.85	mg/kg	91% 75-125	
B222555-DUP1	Duplicate, (2210049-19) Se(F5)	0.057		0.039	mg/kg		38% 25
B222555-PS1	Post Spike, (2210049-21) Se(F5)	ND	134.4	126.9	mg/kg	94% 75-125	
B222555-PS2	Post Spike, (2210049-21) Se(F5)	ND	134.4	126.4	mg/kg	94% 75-125	
B222555-DUP2	Duplicate, (2210049-25) Se(F5)	ND		0.061	mg/kg		N/C 25
B222555-PS3	Post Spike, (2210049-31) Se(F5)	ND	51.38	49.44	mg/kg	96% 75-125	
B222555-PS4	Post Spike, (2210049-31) Se(F5)	ND	51.38	48.09	mg/kg	94% 75-125	
B222555-DUP3	Duplicate, (2210049-33) Se(F5)	ND		ND	mg/kg		N/C 25
B222555-DUP4	Duplicate, (2210049-39) Se(F5)	ND		ND	mg/kg		N/C 25
B222555-PS5	Post Spike, (2210049-41) Se(F5)	0.046	38.75	36.30	mg/kg	94% 75-125	



Accuracy & Precision Summary

Batch: B222555
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222555-PS6	Post Spike, (2210049-41) Se(F5)	0.046	38.75	37.09	mg/kg	96% 75-125	
B222555-PS7	Post Spike, (2210049-43) Se(F5)	0.096	70.17	66.88	mg/kg	95% 75-125	
B222555-PS8	Post Spike, (2210049-43) Se(F5)	0.096	70.17	66.20	mg/kg	94% 75-125	



Method Blanks & Reporting Limits

Batch: B222333
Matrix: Soil/Sediment
Method: In-House
Analyte: Se(F1)

Sample	Result	Units	
B222333-BLK1	-0.014	mg/kg	
B222333-BLK2	-0.015	mg/kg	
B222333-BLK3	-0.014	mg/kg	
B222333-BLK4	-0.016	mg/kg	
Average:	-0.015		MDL: 0.018
Limit:	0.080		MRL: 0.080



Method Blanks & Reporting Limits

Batch: B222335
Matrix: Soil/Sediment
Method: SOP BAL-0501
Analyte: %TS

Sample	Result	Units
B222335-BLK1	-0.03	%
B222335-BLK2	-0.13	%
B222335-BLK3	-0.10	%

Average: -0.09
Limit: 0.10

MDL: 0.03
MRL: 0.10



Method Blanks & Reporting Limits

Batch: B222346
Matrix: Soil/Sediment
Method: In-House
Analyte: DMSeO F1

Sample	Result	Units	
B222346-BLK1	0.00	mg/kg	
B222346-BLK2	0.00	mg/kg	
B222346-BLK3	0.00	mg/kg	
B222346-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.008		MRL: 0.008

Analyte: MeSe(IV) F1

Sample	Result	Units	
B222346-BLK1	0.00	mg/kg	
B222346-BLK2	0.00	mg/kg	
B222346-BLK3	0.00	mg/kg	
B222346-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.008		MRL: 0.008

Analyte: Se Unk A F1

Sample	Result	Units	
B222346-BLK1	0.00	mg/kg	
B222346-BLK2	0.00	mg/kg	
B222346-BLK3	0.00	mg/kg	
B222346-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.008		MRL: 0.008



Method Blanks & Reporting Limits

Analyte: Se(IV) F1

Sample	Result	Units	
B222346-BLK1	0.00	mg/kg	
B222346-BLK2	0.00	mg/kg	
B222346-BLK3	0.00	mg/kg	
B222346-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.020		MRL: 0.020

Analyte: Se(VI) F1

Sample	Result	Units	
B222346-BLK1	0.00	mg/kg	
B222346-BLK2	0.00	mg/kg	
B222346-BLK3	0.00	mg/kg	
B222346-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.020		MRL: 0.020

Analyte: SeCN F1

Sample	Result	Units	
B222346-BLK1	0.00	mg/kg	
B222346-BLK2	0.00	mg/kg	
B222346-BLK3	0.00	mg/kg	
B222346-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.001
Limit:	0.008		MRL: 0.008

Analyte: SeMet F1

Sample	Result	Units	
B222346-BLK1	0.00	mg/kg	
B222346-BLK2	0.00	mg/kg	
B222346-BLK3	0.00	mg/kg	
B222346-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.008		MRL: 0.008



Method Blanks & Reporting Limits

Analyte: SeSO3 F1

Sample	Result	Units	
B222346-BLK1	0.00	mg/kg	
B222346-BLK2	0.00	mg/kg	
B222346-BLK3	0.00	mg/kg	
B222346-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.020		MRL: 0.020

Analyte: Unk Se Sp F1

Sample	Result	Units	
B222346-BLK1	0.00	mg/kg	
B222346-BLK2	0.00	mg/kg	
B222346-BLK3	0.00	mg/kg	
B222346-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.020		MRL: 0.020



Method Blanks & Reporting Limits

Batch: B222347
Matrix: Soil/Sediment
Method: In-House
Analyte: DMSeO F1

Sample	Result	Units	
B222347-BLK1	0.00	mg/kg	
B222347-BLK2	0.00	mg/kg	
B222347-BLK3	0.00	mg/kg	
B222347-BLK4	0.00	mg/kg	
Average: 0.000			MDL: 0.002
Limit: 0.008			MRL: 0.008

Analyte: MeSe(IV) F1

Sample	Result	Units	
B222347-BLK1	0.00	mg/kg	
B222347-BLK2	0.00	mg/kg	
B222347-BLK3	0.00	mg/kg	
B222347-BLK4	0.00	mg/kg	
Average: 0.000			MDL: 0.002
Limit: 0.008			MRL: 0.008

Analyte: Se Unk A F1

Sample	Result	Units	
B222347-BLK1	0.00	mg/kg	
B222347-BLK2	0.00	mg/kg	
B222347-BLK3	0.00	mg/kg	
B222347-BLK4	0.00	mg/kg	
Average: 0.000			MDL: 0.002
Limit: 0.008			MRL: 0.008



Method Blanks & Reporting Limits

Analyte: Se(IV) F1

Sample	Result	Units	
B222347-BLK1	0.00	mg/kg	
B222347-BLK2	0.00	mg/kg	
B222347-BLK3	0.00	mg/kg	
B222347-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.020		MRL: 0.020

Analyte: Se(VI) F1

Sample	Result	Units	
B222347-BLK1	0.00	mg/kg	
B222347-BLK2	0.00	mg/kg	
B222347-BLK3	0.00	mg/kg	
B222347-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.020		MRL: 0.020

Analyte: SeCN F1

Sample	Result	Units	
B222347-BLK1	0.00	mg/kg	
B222347-BLK2	0.00	mg/kg	
B222347-BLK3	0.00	mg/kg	
B222347-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.001
Limit:	0.008		MRL: 0.008

Analyte: SeMet F1

Sample	Result	Units	
B222347-BLK1	0.00	mg/kg	
B222347-BLK2	0.00	mg/kg	
B222347-BLK3	0.00	mg/kg	
B222347-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.008		MRL: 0.008



Method Blanks & Reporting Limits

Analyte: SeSO3 F1

Sample	Result	Units	
B222347-BLK1	0.00	mg/kg	
B222347-BLK2	0.00	mg/kg	
B222347-BLK3	0.00	mg/kg	
B222347-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.020		MRL: 0.020

Analyte: Unk Se Sp F1

Sample	Result	Units	
B222347-BLK1	0.00	mg/kg	
B222347-BLK2	0.00	mg/kg	
B222347-BLK3	0.00	mg/kg	
B222347-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.020		MRL: 0.020



Method Blanks & Reporting Limits

Batch: B222351
Matrix: Soil/Sediment
Method: In-House
Analyte: DMSeO F2

Sample	Result	Units	
B222351-BLK1	0.00	mg/kg	
B222351-BLK2	0.00	mg/kg	
B222351-BLK3	0.00	mg/kg	
B222351-BLK4	0.00	mg/kg	
Average: 0.000			MDL: 0.002
Limit: 0.008			MRL: 0.008

Analyte: MeSe(IV) F2

Sample	Result	Units	
B222351-BLK1	0.00	mg/kg	
B222351-BLK2	0.00	mg/kg	
B222351-BLK3	0.00	mg/kg	
B222351-BLK4	0.00	mg/kg	
Average: 0.000			MDL: 0.002
Limit: 0.008			MRL: 0.008

Analyte: Se Unk A F2

Sample	Result	Units	
B222351-BLK1	0.00	mg/kg	
B222351-BLK2	0.00	mg/kg	
B222351-BLK3	0.00	mg/kg	
B222351-BLK4	0.00	mg/kg	
Average: 0.000			MDL: 0.002
Limit: 0.008			MRL: 0.008



Method Blanks & Reporting Limits

Analyte: Se(IV) F2

Sample	Result	Units	
B222351-BLK1	0.00	mg/kg	
B222351-BLK2	0.00	mg/kg	
B222351-BLK3	0.00	mg/kg	
B222351-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.020		MRL: 0.020

Analyte: Se(VI) F2

Sample	Result	Units	
B222351-BLK1	0.00	mg/kg	
B222351-BLK2	0.00	mg/kg	
B222351-BLK3	0.00	mg/kg	
B222351-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.020		MRL: 0.020

Analyte: SeCN F2

Sample	Result	Units	
B222351-BLK1	0.00	mg/kg	
B222351-BLK2	0.00	mg/kg	
B222351-BLK3	0.00	mg/kg	
B222351-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.001
Limit:	0.008		MRL: 0.008

Analyte: SeMet F2

Sample	Result	Units	
B222351-BLK1	0.00	mg/kg	
B222351-BLK2	0.00	mg/kg	
B222351-BLK3	0.00	mg/kg	
B222351-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.008		MRL: 0.008



Method Blanks & Reporting Limits

Analyte: SeSO3 F2

Sample	Result	Units	
B222351-BLK1	0.00	mg/kg	
B222351-BLK2	0.00	mg/kg	
B222351-BLK3	0.00	mg/kg	
B222351-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.020		MRL: 0.020

Analyte: Unk Se Sp F2

Sample	Result	Units	
B222351-BLK1	0.00	mg/kg	
B222351-BLK2	0.00	mg/kg	
B222351-BLK3	0.00	mg/kg	
B222351-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.020		MRL: 0.020



Method Blanks & Reporting Limits

Batch: B222352
Matrix: Soil/Sediment
Method: In-House
Analyte: DMSeO F2

Sample	Result	Units	
B222352-BLK1	0.00	mg/kg	
B222352-BLK2	0.00	mg/kg	
B222352-BLK3	0.00	mg/kg	
B222352-BLK4	0.00	mg/kg	
Average: 0.000			MDL: 0.002
Limit: 0.008			MRL: 0.008

Analyte: MeSe(IV) F2

Sample	Result	Units	
B222352-BLK1	0.00	mg/kg	
B222352-BLK2	0.00	mg/kg	
B222352-BLK3	0.00	mg/kg	
B222352-BLK4	0.00	mg/kg	
Average: 0.000			MDL: 0.002
Limit: 0.008			MRL: 0.008

Analyte: Se Unk A F2

Sample	Result	Units	
B222352-BLK1	0.00	mg/kg	
B222352-BLK2	0.00	mg/kg	
B222352-BLK3	0.00	mg/kg	
B222352-BLK4	0.00	mg/kg	
Average: 0.000			MDL: 0.002
Limit: 0.008			MRL: 0.008



Method Blanks & Reporting Limits

Analyte: Se(IV) F2

Sample	Result	Units	
B222352-BLK1	0.00	mg/kg	
B222352-BLK2	0.00	mg/kg	
B222352-BLK3	0.00	mg/kg	
B222352-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.020		MRL: 0.020

Analyte: Se(VI) F2

Sample	Result	Units	
B222352-BLK1	0.00	mg/kg	
B222352-BLK2	0.00	mg/kg	
B222352-BLK3	0.00	mg/kg	
B222352-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.020		MRL: 0.020

Analyte: SeCN F2

Sample	Result	Units	
B222352-BLK1	0.00	mg/kg	
B222352-BLK2	0.00	mg/kg	
B222352-BLK3	0.00	mg/kg	
B222352-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.001
Limit:	0.008		MRL: 0.008

Analyte: SeMet F2

Sample	Result	Units	
B222352-BLK1	0.00	mg/kg	
B222352-BLK2	0.00	mg/kg	
B222352-BLK3	0.00	mg/kg	
B222352-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.008		MRL: 0.008



Method Blanks & Reporting Limits

Analyte: SeSO3 F2

Sample	Result	Units	
B222352-BLK1	0.00	mg/kg	
B222352-BLK2	0.00	mg/kg	
B222352-BLK3	0.00	mg/kg	
B222352-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.020		MRL: 0.020

Analyte: Unk Se Sp F2

Sample	Result	Units	
B222352-BLK1	0.00	mg/kg	
B222352-BLK2	0.00	mg/kg	
B222352-BLK3	0.00	mg/kg	
B222352-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.020		MRL: 0.020



Method Blanks & Reporting Limits

Batch: B222380
Matrix: Soil/Sediment
Method: EPA 6020B Mod
Analyte: Se

Sample	Result	Units	
B222380-BLK1	-0.005	mg/kg	
B222380-BLK2	-0.006	mg/kg	
B222380-BLK3	-0.006	mg/kg	
B222380-BLK4	-0.003	mg/kg	
Average:	-0.005		MDL: 0.095
Limit:	0.190		MRL: 0.190



Method Blanks & Reporting Limits

Batch: B222388
Matrix: Soil/Sediment
Method: EPA 6020B Mod
Analyte: Se

Sample	Result	Units	
B222388-BLK1	0.004	mg/kg	
B222388-BLK2	0.001	mg/kg	
B222388-BLK3	0.0002	mg/kg	
B222388-BLK4	-0.004	mg/kg	
Average:	0.000		MDL: 0.095
Limit:	0.190		MRL: 0.190



Method Blanks & Reporting Limits

Batch: B222425
Matrix: Soil/Sediment
Method: In-House
Analyte: Se(F1)

Sample	Result	Units	
B222425-BLK1	-0.005	mg/kg	
B222425-BLK2	-0.013	mg/kg	
B222425-BLK3	-0.008	mg/kg	
B222425-BLK4	-0.013	mg/kg	
Average:	-0.010		MDL: 0.022
Limit:	0.080		MRL: 0.080



Method Blanks & Reporting Limits

Batch: B222434
Matrix: Soil/Sediment
Method: In-House
Analyte: Se(F2)

Sample	Result	Units	
B222434-BLK1	0.011	mg/kg	
B222434-BLK2	0.005	mg/kg	
B222434-BLK3	0.003	mg/kg	
B222434-BLK4	0.005	mg/kg	
Average:	0.006		MDL: 0.016
Limit:	0.080		MRL: 0.080



Method Blanks & Reporting Limits

Batch: B222435
Matrix: Soil/Sediment
Method: In-House
Analyte: Se(F2)

Sample	Result	Units	
B222435-BLK1	0.029	mg/kg	
B222435-BLK2	0.016	mg/kg	
B222435-BLK3	0.016	mg/kg	
B222435-BLK4	0.011	mg/kg	
Average:	0.018		MDL: 0.042
Limit:	0.085		MRL: 0.085



Method Blanks & Reporting Limits

Batch: B222498
Matrix: Soil/Sediment
Method: In-House
Analyte: Se(F3)

Sample	Result	Units
B222498-BLK1	0.002	mg/kg
B222498-BLK2	0.0004	mg/kg
B222498-BLK3	0.005	mg/kg
B222498-BLK4	-0.0006	mg/kg

Average: 0.002
Limit: 0.080

MDL: 0.010
MRL: 0.080



Method Blanks & Reporting Limits

Batch: B222514
Matrix: Soil/Sediment
Method: In-House
Analyte: Se(F4)

Sample	Result	Units	
B222514-BLK1	0.002	mg/kg	
B222514-BLK2	-0.005	mg/kg	
B222514-BLK3	-0.002	mg/kg	
B222514-BLK4	-0.003	mg/kg	
Average:	-0.002		MDL: 0.011
Limit:	0.080		MRL: 0.080



Method Blanks & Reporting Limits

Batch: B222530
Matrix: Soil/Sediment
Method: In-House
Analyte: Se(F3)

Sample	Result	Units	
B222530-BLK1	0.009	mg/kg	
B222530-BLK2	0.017	mg/kg	
B222530-BLK3	0.010	mg/kg	
B222530-BLK4	0.004	mg/kg	
Average:	0.010		MDL: 0.026
Limit:	0.080		MRL: 0.080



Method Blanks & Reporting Limits

Batch: B222533
Matrix: Soil/Sediment
Method: In-House
Analyte: Se(F5)

Sample	Result	Units	
B222533-BLK1	0.007	mg/kg	
B222533-BLK2	0.006	mg/kg	
B222533-BLK3	0.006	mg/kg	
B222533-BLK4	0.003	mg/kg	
Average:	0.006		MDL: 0.011
Limit:	0.100		MRL: 0.100



Method Blanks & Reporting Limits

Batch: B222544
Matrix: Soil/Sediment
Method: In-House
Analyte: Se(F4)

Sample	Result	Units	
B222544-BLK1	0.005	mg/kg	
B222544-BLK2	0.002	mg/kg	
B222544-BLK3	0.002	mg/kg	
B222544-BLK4	0.003	mg/kg	
Average:	0.003		MDL: 0.008
Limit:	0.080		MRL: 0.080



Method Blanks & Reporting Limits

Batch: B222555
Matrix: Soil/Sediment
Method: In-House
Analyte: Se(F5)

Sample	Result	Units	
B222555-BLK1	0.015	mg/kg	
B222555-BLK2	0.002	mg/kg	
B222555-BLK3	0.0008	mg/kg	
B222555-BLK4	-0.0006	mg/kg	
Average:	0.004		MDL: 0.026
Limit:	0.100		MRL: 0.100



Sample Containers

Lab ID: 2210049-01 Sample: RG_ERCKDT_SESeSp-6_2022-09-19_N	Report Matrix: SE Sample Type: Sample + Sum	Collected: 09/19/2022 Received: 10/06/2022
Des Container Size Lot Preservation P-Lot	pH Ship. Cont.	
A Client-Provided 2 oz na none na	na Cooler 4 - 2210049	
Lab ID: 2210049-02 Sample: RG_ERCKDT_SESeSp-7_2022-09-19_N	Report Matrix: SE Sample Type: Sample + Sum	Collected: 09/19/2022 Received: 10/06/2022
Des Container Size Lot Preservation P-Lot	pH Ship. Cont.	
A Client-Provided 2 oz na none na	na Cooler 4 - 2210049	
Lab ID: 2210049-03 Sample: RG_LCUT_SESeSp-1_2022-09-15_N	Report Matrix: SE Sample Type: Sample + Sum	Collected: 09/15/2022 Received: 10/06/2022
Des Container Size Lot Preservation P-Lot	pH Ship. Cont.	
A Client-Provided 2 oz na none na	na Cooler 4 - 2210049	
Lab ID: 2210049-04 Sample: RG_LCUT_SESeSp-2_2022-09-15_N	Report Matrix: SE Sample Type: Sample + Sum	Collected: 09/15/2022 Received: 10/06/2022
Des Container Size Lot Preservation P-Lot	pH Ship. Cont.	
A Client-Provided 2 oz na none na	na Cooler 4 - 2210049	
Lab ID: 2210049-05 Sample: RG_LCUT_SESeSp-3_2022-09-15_N	Report Matrix: SE Sample Type: Sample + Sum	Collected: 09/15/2022 Received: 10/06/2022
Des Container Size Lot Preservation P-Lot	pH Ship. Cont.	
A Client-Provided 2 oz na none na	na Cooler 4 - 2210049	



Sample Containers

Lab ID: 2210049-06
Sample: RG_GATE_SESeSp-1_2022-09-15_N
Des **Container** **Size** **Lot** **Preservation** **P-Lot** **Collected:** 09/15/2022
A Client-Provided 2 oz na none na **Received:** 10/06/2022
na **pH** **Ship. Cont.**
na Cooler 4 -
2210049

Lab ID: 2210049-07
Sample: RG_GATE_SESeSp-2_2022-09-15_N
Des **Container** **Size** **Lot** **Preservation** **P-Lot** **Collected:** 09/15/2022
A Client-Provided 2 oz na none na **Received:** 10/06/2022
na **pH** **Ship. Cont.**
na Cooler 4 -
2210049

Lab ID: 2210049-08
Sample: RG_GATE_SESeSp-3_2022-09-15_N
Des **Container** **Size** **Lot** **Preservation** **P-Lot** **Collected:** 09/15/2022
A Client-Provided 2 oz na none na **Received:** 10/06/2022
na **pH** **Ship. Cont.**
na Cooler 4 -
2210049

Lab ID: 2210049-09
Sample: RG_MI25_SESeSp-1_2022-09-15_N
Des **Container** **Size** **Lot** **Preservation** **P-Lot** **Collected:** 09/15/2022
A Client-Provided 2 oz na none na **Received:** 10/06/2022
na **pH** **Ship. Cont.**
na Cooler 4 -
2210049

Lab ID: 2210049-10
Sample: RG_MI25_SESeSp-2_2022-09-15_N
Des **Container** **Size** **Lot** **Preservation** **P-Lot** **Collected:** 09/15/2022
A Client-Provided 2 oz na none na **Received:** 10/06/2022
na **pH** **Ship. Cont.**
na Cooler 4 -
2210049



Sample Containers

Lab ID: 2210049-11	Report Matrix: SE	Collected: 09/15/2022
Sample: RG_MI25_SESeSp-3_2022-09-15_N	Sample Type: Sample + Sum	Received: 10/06/2022
Des Container Size Lot Preservation P-Lot	pH Ship. Cont.	
A Client-Provided 2 oz na none na	na Cooler 4 -	2210049

Lab ID: 2210049-12	Report Matrix: SE	Collected: 09/20/2022
Sample: RG_BOCKRD_SESeSp-1_2022-09-20_N	Sample Type: Sample + Sum	Received: 10/06/2022
Des Container Size Lot Preservation P-Lot	pH Ship. Cont.	
A Client-Provided 2 oz na none na	na Cooler 4 -	2210049

Lab ID: 2210049-13	Report Matrix: SE	Collected: 09/20/2022
Sample: RG_BOCKRD_SESeSp-2_2022-09-20_N	Sample Type: Sample + Sum	Received: 10/06/2022
Des Container Size Lot Preservation P-Lot	pH Ship. Cont.	
A Client-Provided 2 oz na none na	na Cooler 4 -	2210049

Lab ID: 2210049-14	Report Matrix: SE	Collected: 09/20/2022
Sample: RG_BOCKRD_SESeSp-3_2022-09-20_N	Sample Type: Sample + Sum	Received: 10/06/2022
Des Container Size Lot Preservation P-Lot	pH Ship. Cont.	
A Client-Provided 2 oz na none na	na Cooler 4 -	2210049

Lab ID: 2210049-15	Report Matrix: SE	Collected: 09/12/2022
Sample: RG_MP1_SESeSp-1_2022-09-12_N	Sample Type: Sample + Sum	Received: 10/06/2022
Des Container Size Lot Preservation P-Lot	pH Ship. Cont.	
A Client-Provided 2 oz na none na	na Cooler 4 -	2210049

Lab ID: 2210049-16	Report Matrix: SE	Collected: 09/12/2022
Sample: RG_MP1_SESeSp-2_2022-09-12_N	Sample Type: Sample + Sum	Received: 10/06/2022
Des Container Size Lot Preservation P-Lot	pH Ship. Cont.	
A Client-Provided 2 oz na none na	na Cooler 4 -	2210049



Sample Containers

Lab ID: 2210049-17			Report Matrix: SE			Collected: 09/12/2022		
Sample: RG_MP1_SESeSp-3_2022-09-12_N			Sample Type: Sample + Sum			Received: 10/06/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided	2 oz	na	none	na	na	Cooler 4 - 2210049	
Lab ID: 2210049-18			Report Matrix: SE			Collected: 09/15/2022		
Sample: RG_FOUNGD_SESeSp-1_2022-09-15_N			Sample Type: Sample + Sum			Received: 10/06/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided	2 oz	na	none	na	na	Cooler 4 - 2210049	
Lab ID: 2210049-19			Report Matrix: SE			Collected: 09/15/2022		
Sample: RG_FOUNGD_SESeSp-2_2022-09-15_N			Sample Type: Sample + Sum			Received: 10/06/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided	2 oz	na	none	na	na	Cooler 4 - 2210049	
Lab ID: 2210049-20			Report Matrix: SE			Collected: 09/15/2022		
Sample: RG_FOUNGD_SESeSp-3_2022-09-15_N			Sample Type: Sample + Sum			Received: 10/06/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided	2 oz	na	none	na	na	Cooler 4 - 2210049	
Lab ID: 2210049-21			Report Matrix: SE			Collected: 09/14/2022		
Sample: RG_ERCKUC_SESeSp-1_2022-09-14_N			Sample Type: Sample + Sum			Received: 10/06/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided	2 oz	na	none	na	na	Cooler 4 - 2210049	
Lab ID: 2210049-22			Report Matrix: SE			Collected: 09/14/2022		
Sample: RG_ERCKUC_SESeSp-2_2022-09-14_N			Sample Type: Sample + Sum			Received: 10/06/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Client-Provided	2 oz	na	none	na	na	Cooler 4 - 2210049	



Sample Containers

Lab ID: 2210049-23			Report Matrix: SE			Collected: 09/14/2022	
Sample: RG_ERCKUC_SESeSp-3_2022-09-14_N			Sample Type: Sample + Sum			Received: 10/06/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	2 oz	na	none	na	na	Cooler 4 - 2210049
Lab ID: 2210049-24			Report Matrix: SE			Collected: 09/15/2022	
Sample: RG_BOCK_SESeSp-1_2022-09-15_N			Sample Type: Sample + Sum			Received: 10/06/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	2 oz	na	none	na	na	Cooler 4 - 2210049
Lab ID: 2210049-25			Report Matrix: SE			Collected: 09/15/2022	
Sample: RG_BOCK_SESeSp-2_2022-09-15_N			Sample Type: Sample + Sum			Received: 10/06/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	2 oz	na	none	na	na	Cooler 4 - 2210049
Lab ID: 2210049-26			Report Matrix: SE			Collected: 09/15/2022	
Sample: RG_BOCK_SESeSp-3_2022-09-15_N			Sample Type: Sample + Sum			Received: 10/06/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	2 oz	na	none	na	na	Cooler 4 - 2210049
Lab ID: 2210049-27			Report Matrix: SE			Collected: 09/18/2022	
Sample: RG_ALUSM_SESeSp-1_2022-09-18_N			Sample Type: Sample + Sum			Received: 10/06/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	2 oz	na	none	na	na	Cooler 4 - 2210049
Lab ID: 2210049-28			Report Matrix: SE			Collected: 09/18/2022	
Sample: RG_ALUSM_SESeSp-2_2022-09-18_N			Sample Type: Sample + Sum			Received: 10/06/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	2 oz	na	none	na	na	Cooler 4 - 2210049



Sample Containers

Lab ID: 2210049-29			Report Matrix: SE			Collected: 09/18/2022	
Sample: RG_ALUSM_SESeSp-3_2022-09-18_N			Sample Type: Sample + Sum			Received: 10/06/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	2 oz	na	none	na	na	Cooler 4 - 2210049
Lab ID: 2210049-30			Report Matrix: SE			Collected: 09/18/2022	
Sample: RG_MIDGA_SESeSp-1_2022-09-18_N			Sample Type: Sample + Sum			Received: 10/06/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	2 oz	na	none	na	na	Cooler 4 - 2210049
Lab ID: 2210049-31			Report Matrix: SE			Collected: 09/18/2022	
Sample: RG_MIDGA_SESeSp-2_2022-09-18_N			Sample Type: Sample + Sum			Received: 10/06/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	2 oz	na	none	na	na	Cooler 4 - 2210049
Lab ID: 2210049-32			Report Matrix: SE			Collected: 09/18/2022	
Sample: RG_MIDGA_SESeSp-3_2022-09-18_N			Sample Type: Sample + Sum			Received: 10/06/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	2 oz	na	none	na	na	Cooler 4 - 2210049
Lab ID: 2210049-33			Report Matrix: SE			Collected: 09/15/2022	
Sample: RG_GATEDP_SESeSp-1_2022-09-15_N			Sample Type: Sample + Sum			Received: 10/06/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	2 oz	na	none	na	na	Cooler 4 - 2210049
Lab ID: 2210049-34			Report Matrix: SE			Collected: 09/13/2022	
Sample: RG_MIDBO_SESeSp-1_2022-09-13_N			Sample Type: Sample + Sum			Received: 10/06/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	2 oz	na	none	na	na	Cooler 4 - 2210049



Sample Containers

Lab ID: 2210049-35 Sample: RG_MIDBO_SESeSp-2_2022-09-13_N	Report Matrix: SE Sample Type: Sample + Sum	Collected: 09/13/2022 Received: 10/06/2022
Des Container Size Lot Preservation P-Lot pH Ship. Cont.		
A Client-Provided 2 oz na none na na Cooler 4 - 2210049		
Lab ID: 2210049-36 Sample: RG_MIDBO_SESeSp-3_2022-09-13_N	Report Matrix: SE Sample Type: Sample + Sum	Collected: 09/13/2022 Received: 10/06/2022
Des Container Size Lot Preservation P-Lot pH Ship. Cont.		
A Client-Provided 2 oz na none na na Cooler 4 - 2210049		
Lab ID: 2210049-37 Sample: RG_RIVER_SESeSp-1_2022-09-14_N	Report Matrix: SE Sample Type: Sample + Sum	Collected: 09/14/2022 Received: 10/06/2022
Des Container Size Lot Preservation P-Lot pH Ship. Cont.		
A Client-Provided 2 oz na none na na Cooler 4 - 2210049		
Lab ID: 2210049-38 Sample: RG_RIVER_SESeSp-5_2022-09-15_N	Report Matrix: SE Sample Type: Sample + Sum	Collected: 09/15/2022 Received: 10/06/2022
Des Container Size Lot Preservation P-Lot pH Ship. Cont.		
A Client-Provided 2 oz na none na na Cooler 4 - 2210049		
Lab ID: 2210049-39 Sample: RG_RIVER_SESeSp-1_2022-09-14_N	Report Matrix: SE Sample Type: Sample + Sum	Collected: 09/14/2022 Received: 10/06/2022
Des Container Size Lot Preservation P-Lot pH Ship. Cont.		
A Client-Provided 2 oz na none na na Cooler 4 - 2210049		
Lab ID: 2210049-40 Sample: RG_RIVER_SESeSp-2_2022-09-18_N	Report Matrix: SE Sample Type: Sample + Sum	Collected: 09/18/2022 Received: 10/06/2022
Des Container Size Lot Preservation P-Lot pH Ship. Cont.		
A Client-Provided 2 oz na none na na Cooler 4 - 2210049		



Sample Containers

Lab ID: 2210049-41	Report Matrix: SE	Collected: 09/18/2022
Sample: RG_RIVER_SESeSp-5_2022-09-18_N	Sample Type: Sample + Sum	Received: 10/06/2022
Des Container Size Lot Preservation P-Lot pH Ship. Cont.		
A Client-Provided 2 oz na none na na Cooler 4 - 2210049		
Lab ID: 2210049-42	Report Matrix: SE	Collected: 09/12/2022
Sample: RG_RIVER_SESeSp-2_2022-09-12_N	Sample Type: Sample + Sum	Received: 10/06/2022
Des Container Size Lot Preservation P-Lot pH Ship. Cont.		
A Client-Provided 2 oz na none na na Cooler 4 - 2210049		
Lab ID: 2210049-43	Report Matrix: SE	Collected: 09/19/2022
Sample: RG_RIVER_SESeSp-6_2022-09-19_N	Sample Type: Sample + Sum	Received: 10/06/2022
Des Container Size Lot Preservation P-Lot pH Ship. Cont.		
A Client-Provided 2 oz na none na na Cooler 4 - 2210049		

Shipping Containers

Cooler 4 - 2210049

Received: October 6, 2022 6:57
Tracking No: RWHV95592 via Courier
Coolant Type: Blue Ice
Temperature: 0.6 °C

Description: Large Cooler
Damaged in transit? No
Returned to client? No
Comments: IR#1

Custody seals present? No
Custody seals intact? No
COC present? Yes

COC ID:	REP_RAEMP- LAEMP_PandC_2022-09_Brooks	TURNAROUND TIME:	2-3 Business Days	RUSH:	Priority
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PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name / Job#	Regional Effects Program			Lab Name	Brooks Applied Labs			Report Format / Distribution	Excel	PDF	EDD	
Project Manager	Mike Pope			Lab Contact	Ben Wozniak			Email 1:	AquaSciLab@Teck.com	X	X	X
Email	mike.pope@teck.com			Email	Ben@brooksapplied.com			Email 2:	teckcoal@equisonline.com			X
Address	421 Pine Avenue			Address	13751 Lake City Way			Email 3:	Teck.Lab.Results@teck.com	X	X	X
					Suite 108			Email 4:	lbowron@minnow.ca	X	X	X
City	Sparwood	Province	BC	City	Seattle	Province	WA	Email 5:	Tyler.Mehler@minnow.ca	X	X	X
Postal Code	V0B 2G0	Country	Canada	Postal Code	98125	Country	United States	Email 6:	Jessica.Ritz@Teck.com	X	X	X
Phone Number	1-250-425-8247			Phone Number	(206) 753-6158			PO number	VPO00847032			

SAMPLE DETAILS								ANALYSIS REQUESTED									
Sample ID	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com p	# Of Cont.	PH	PRESERV.	ANALYSIS							
RG_MI25_SESeSp-3_2022-09-15_N	RG_MI25	SE	N	15-Sep-22	9:45	G	1	Z	Z	Brooks_Se_Speciation							
RG_BOCKRD_SESeSp-1_2022-09-20_N	RG_BOCKRD	SE	N	20-Sep-22	11:10	G	1										
RG_BOCKRD_SESeSp-2_2022-09-20_N	RG_BOCKRD	SE	N	20-Sep-22	11:20	G	1										
RG_BOCKRD_SESeSp-3_2022-09-20_N	RG_BOCKRD	SE	N	20-Sep-22	11:30	G	1										
RG_MP1_SESeSp-1_2022-09-12_N	RG_MP1	SE	N	12-Sep-22	9:00	G	1										
RG_MP1_SESeSp-2_2022-09-12_N	RG_MP1	SE	N	12-Sep-22	10:00	G	1										
RG_MP1_SESeSp-3_2022-09-12_N	RG_MP1	SE	N	12-Sep-22	11:00	G	1										
RG_FOUNGD_SESeSp-1_2022-09-15_N	RG_FOUNGD	SE	N	15-Sep-22	10:45	G	1										
RG_FOUNGD_SESeSp-2_2022-09-15_N	RG_FOUNGD	SE	N	15-Sep-22	11:00	G	1										
RG_FOUNGD_SESeSp-3_2022-09-15_N	RG_FOUNGD	SE	N	15-Sep-22	11:30	G	1										

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
Samples under this COC should be considered Privileged and Confidential	Alex McClymont	September 30, 2022	ERL / BAL	10/6/22 6:57

SERVICE REQUEST (rush - subject to availability)				
Regular (default)				
Priority (2-3 business days) - 50% surcharge	X	Sampler's Name	Alex McClymont	Mobile #
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature		Date/Time
For Emergency <1 Day, ASAP or Weekend - Contact ALS				780-293-6750
				September 30, 2022

COC ID:	REP_RAEMP-LAEMP_PandC_2022-09_Brooks	TURNAROUND TIME:	2-3 Business Days	RUSH:	Priority
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PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name / Job#	Regional Effects Program			Lab Name	Brooks Applied Labs			Report Format / Distribution	Excel	PDF	EDD	
Project Manager	Mike Pope			Lab Contact	Ben Wozniak			Email 1:	AguaSciLab@Teck.com	X	X	X
Email	mike.pope@teck.com			Email	Ben@brooksapplied.com			Email 2:	teckcoal@equisonline.com			X
Address	421 Pine Avenue			Address	13751 Lake City Way			Email 3:	Teck.Lab.Results@teck.com	X	X	X
					Suite 108			Email 4:	jbowron@minnow.ca	X	X	X
City	Sparwood	Province	BC	City	Seattle	Province	WA	Email 5:	Tylor.Mehler@minnow.ca	X	X	X
Postal Code	V0B 2G0	Country	Canada	Postal Code	98125	Country	United States	Email 6:	Jessica.Ritz@Teck.com	X	X	X
Phone Number	1-250-425-8247			Phone Number	(206) 753-6158			PO number	VPO00847032			

SAMPLE DETAILS								ANALYSIS REQUESTED														
Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com p	# Of Cont.	Brooks_Se_Speciation	As	Bi	Co	Cr	Cu	Fe	Mn	Ni	Pb	Se	Sr	V	Zn	
RG_ERCKUC_SESeSp-1_2022-09-14_N	RG_ERCKUC	SE	N	14-Sep-22	13:00	G	1	1														
RG_ERCKUC_SESeSp-2_2022-09-14_N	RG_ERCKUC	SE	N	14-Sep-22	14:00	G	1	1														
RG_ERCKUC_SESeSp-3_2022-09-14_N	RG_ERCKUC	SE	N	14-Sep-22	15:00	G	1	1														
RG_BOCK_SESeSp-1_2022-09-15_N	RG_BOCK	SE	N	15-Sep-22	13:00	G	1	1														
RG_BOCK_SESeSp-2_2022-09-15_N	RG_BOCK	SE	N	15-Sep-22	14:00	G	1	1														
RG_BOCK_SESeSp-3_2022-09-15_N	RG_BOCK	SE	N	15-Sep-22	15:00	G	1	1														
RG_ALUSM_SESeSp-1_2022-09-18_N	RG_ALUSM	SE	N	18-Sep-22	10:30	G	1	1														
RG_ALUSM_SESeSp-2_2022-09-18_N	RG_ALUSM	SE	N	18-Sep-22	11:00	G	1	1														
RG_ALUSM_SESeSp-3_2022-09-18_N	RG_ALUSM	SE	N	18-Sep-22	12:00	G	1	1														
RG_MIDGA_SESeSp-1_2022-09-18_N	RG_MIDGA	SE	N	18-Sep-22	10:00	G	1	1														

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
Samples under this COC should be considered Privileged and Confidential	Alex McClymont	September 30, 2022	ERL / BAL	10/6/22 6:57

SERVICE REQUEST (rush - subject to availability)				
Regular (default)	Sampler's Name	Alex McClymont	Mobile #	780-293-6750
Priority (2-3 business days) - 50% surcharge X	Sampler's Signature		Date/Time	September 30, 2022
Emergency (1 Business Day) - 100% surcharge				
For Emergency <1 Day, ASAP or Weekend - Contact ALS				



COC ID:	REP_RAEMP- LAEMP_PandC_2022-09_Brooks	TURNAROUND TIME:	2-3 Business Days	RUSH: Priority
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PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name / Job#	Regional Effects Program			Lab Name	Brooks Applied Labs			Report Format / Distribution	Excel	PDF	EDD	
Project Manager	Mike Pope			Lab Contact	Ben Wozniak			Email 1:	AquaSci.Lab@Teck.com	X	X	X
Email	mike.pope@teck.com			Email	Ben@brooksapplied.com			Email 2:	teckcoal@equisonline.com			X
Address	421 Pine Avenue			Address	13751 Lake City Way Suite 108			Email 3:	Teck.Lab.Results@teck.com	X	X	X
City	Sparwood	Province	BC	City	Seattle	Province	WA	Email 4:	lbowron@minnow.ca	X	X	X
Postal Code	V0B 2G0	Country	Canada	Postal Code	98125	Country	United Stat	Email 5:	Tyler.Mehler@minnow.ca	X	X	X
Phone Number	1-250-425-8247			Phone Number	(206) 753-6158			PO number	VPO00847032			

SAMPLE DETAILS								ANALYSIS REQUESTED														
Sample ID	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Com p	# Of Cont.	FB	PRESERV.	ANALYSIS	Brooks_Se_Speciation											
RG_RIVER_SESeSp-5_2022-09-18_N	RG_RIVER	SE	N	18-Sep-22	12:00	G	1				1											
RG_RIVER_SESeSp-2_2022-09-12_N	RG_RIVER	SE	N	12-Sep-22	15:43	G	1				1											
RG_RIVER_SESeSp-6_2022-09-19_N	RG_RIVER	SE	N	19-Sep-22	12:20	G	1				1											

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
Samples under this COC should be considered Privileged and Confidential	Alex McClymont	September 30, 2022	ERL / DAL	10/6/22 6:57

SERVICE REQUEST (rush - subject to availability)				
Regular (default)				
Priority (2-3 business days) - 50% surcharge	X	Sampler's Name	Alex McClymont	Mobile #
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature		Date/Time
For Emergency <1 Day, ASAP or Weekend - Contact ALS				September 30, 2022

Confidential

STRAIGHT BILL OF LADING
NOT NEGOTIABLE

W HOT SHOT SERVICE INC.

250-425-7447
24 Hour Hot Shot Service

BAL Final Report 2210049
No. 95592

Sparwood, BC
Terrace, BC
Red Deer, AB

Vancouver, BC
Calgary, AB
Montreal, QC

Prince George, BC
Edmonton, AB
Spokane, WA

Elkford, BC
Ft. McMurray, AB
Shelby, MT

Tumbler Ridge, BC
Hinton, AB
Gillette, WY

INVOICE TO LAP		DATE 01/11/22	
BILL OF LADING # DA1506		PURCHASE ORDER NUMBER	
SHIPPER (FROM) 2000 10th Street NE		CONSIGNEE (TO) 1791 Lake City way NE	
STREET		STREET	
CITY/PROVINCE Edmonton, AB		CITY/PROVINCE Edmonton, AB	
POSTAL CODE		POSTAL CODE	
SPECIAL INSTRUCTIONS AND to pick up at KW Duck Spar			
PACKAGES	DESCRIPTION OF ARTICLES AND SPECIAL MARKS	WEIGHT (Subject to Correction)	FREIGHT CHARGES SHIPPER TO CHECK
		13.4 lbs	<input type="checkbox"/> PREPAID <input type="checkbox"/> COLLECT If not indicated, shipping will automatically move collect.
			FEE _____
			WAITING _____
			XPU _____
			CHARGES _____
			FSC _____
			US _____
			SUB TOTAL _____
			GST _____
			TOTAL \$ _____
UNIT #	DECLARED VALUATION: Maximum liability of carrier is \$2.00 per lb. (\$4.41 per kilogram) unless declared valuation states otherwise	\$	IF AT OWNER'S RISK, WRITE ORD HERE: _____
DRIVER'S SIGNATURE - PICK UP BY M. [Signature]	PICK UP TIME	DRIVER'S SIGNATURE - DELIVERY BY [Signature]	FINISH TIME
NOTICE OF CLAIM: (a) No carrier is liable for loss, damage or delay of any goods under the Bill of Lading unless notice, in writing, setting out particulars of the origin, destination and date of shipment of the goods and the estimated amount claimed in respect of such loss, damage or delay is given in writing to the originating carrier or the delivering carrier within sixty (60) days after the delivery of the goods, or in the case of failure to make delivery, within nine (9) months from the date of shipment. (b) The first claimant of the claim must be filed within nine (9) months from the date of shipment, together with a copy of the paid freight bill RECEIVED at the point of origin on the date specified from the consignor mentioned herein; the property herein described in apparent good order, except as noted (contents and condition of packages unknown) marked, consigned and delivered, as indicated below, which the carrier agrees to carry and to deliver to the consignee at the said destination, subject to the rates and classification in effect on the date of shipment. It is mutually agreed, as to each carrier of all or any of the goods, and as to each party of any time interested in all or any of the goods, that every service to be performed hereunder shall be subject to the conditions standard Bill of Lading in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. Printed or written, including conditions set aside by the standard Bill of Lading, in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. The Contract for the carriage of the goods listed in the Bill of Lading is governed by regulation in force in the jurisdiction at the time and place of shipment and is subject to the conditions set out in such conditions.			
SHIPPER PRINT LCD	CONSIGNEE PRINT Slava	DATE Oct 5	TIME 4
SHIPPER SIGN	CONSIGNEE SIGN		
WHITE: Office	YELLOW: Carrier	PINK: Consignee	GOLDENROAD: Shipper
GST # 864540398RT0001			NUMBER OF PIECES RECEIVED ▲

Cooler ID: **Cooler J**

COC(Y/N)

Temperature: **-2.5**

IR: **2**

Coolant Type: Ice **Blue Ice** Ambient

Notes:

Sampling Locations:

EV		LC		RG					
T/D	SP	T/D	SP	T/D	SP	T/D	SP	T/D	SP
	12.5 mL Plastic		12.5 mL Plastic		Soil 20g Plastic				

Sample Types:

Container Types:

Opened By: **ERL**

Date: **10/6/22**

Effective 7/29/20



STRAIGHT BILL OF LADING
NOT NEGOTIABLE

Confidential

W HOT SHOT SERVICE INC.

250-425-7447
24 Hour Hot Shot Service

No. 95592
BAL Final Report 2210049

Sparwood, BC
Terrace, BC
Red Deer, AB

Vancouver, BC
Calgary, AB
Montreal, QC

Prince George, BC
Edmonton, AB
Spokane, WA

Elkford, BC
Ft. McMurray, AB
Shelby, MT

Tumbler Ridge, BC
Hinton, AB
Gillette, WY

INVOICE TO		DATE	
BILL OF LADING #		PURCHASE ORDER NUMBER	
SHIPPER (FROM)		CONSIGNEE (TO)	
STREET		STREET	
CITY/PROVINCE		POSTAL CODE	CITY/PROVINCE
POSTAL CODE		POSTAL CODE	
SPECIAL INSTRUCTIONS			
PACKAGES	DESCRIPTION OF ARTICLES AND SPECIAL MARKS	WEIGHT (Subject to Correction)	FREIGHT CHARGES SHIPPER TO CHECK <input type="checkbox"/> PREPAID <input type="checkbox"/> COLLECT <small>If not indicated, shipping will automatically move collect.</small> FEE _____ WAITING _____ XPU _____ CHARGES _____ FSC _____ US _____ SUB TOTAL _____ GST _____ TOTAL \$ _____ <small>IF AT OWNER'S RISK, WRITE ORD HERE</small>
UNIT #	DECLARED VALUATION: Maximum liability of carrier is \$2.00 per lb. (\$4.41 per kilogram) unless declared valuation states otherwise.		
DRIVER'S SIGNATURE - PICK UP BY	PICK UP TIME	DRIVER'S SIGNATURE - DELIVERY BY	FINISH TIME
<small>NOTICE OF CLAIM: (a) No carrier is liable for loss, damage or delay of any goods under the Bill of Lading unless notice therefor setting out particulars of the origin, destination and date of shipment of the goods and the estimated amount claimed respect of such loss, damage or delay is given in writing to the originating carrier or the delivering carrier within sixty (60) days after the delivery of the goods, or in the case of failure to make delivery, within nine (9) months from the date of shipment. (b) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. (c) RECEIVED at the point of origin on the date specified from the consignee mentioned herein, the property herein described in apparent good order, except as noted (contents and condition of container of package unknown), marked, consigned and defined as indicated below, which the carrier agrees to carry and to deliver to the consignee at the said destination subject to the rates and classification in effect on the date of shipment, all the conditions standard Bill of Lading, in power at the date of issuing, which are hereby agreed by the consignor and acceptor for himself and his assigns. Printed or written including conditions set aside by the standard Bill of Lading in power at the date of issuing, which are hereby agreed by the consignee, are accepted for himself and his assigns. The Contract for the carriage of the goods listed in the Bill of Lading is governed by regulation in force in the jurisdiction at the time and place of shipment and is subject to the conditions set out in such conditions.</small>			
SHIPPER PRINT	SHIPPER SIGN	CONSIGNEE PRINT	CONSIGNEE SIGN
DATE		TIME	

WHITE: Office YELLOW: Carrier PINK: Consignee GOLDENROAD: Shipper GST # 864540398RT0001 NUMBER OF PIECES RECEIVED ▲

Cooler ID: cooler 4

COC (Y/N)

Temperature: 0.6°C

IR: R-IR-1

Coolant Type: Ice Blue Ice Ambient

Notes:

Sampling Locations: RG

Sample Types:

Container Types:

Opened By: ERL

T/D	SP	T/D	SP	T/D	SP	T/D	SP	T/D	SP
Soil									
2oz JAR									
HDPE									

15ml
Cent

Date: 10/6/22

Effective 7/29/20

Revision 004

COPY



18804 North Creek Parkway, Ste 100, Bothell, WA 98011 • USA • T: 206 632 6206 F: 206 632 6017 • info@brooksapplied.com

February 2, 2023

Teck Resources Limited - Vancouver
 Mike Pope
 421 Pine Avenue
 Sparwood, B.C. CANADA V0B2G0
mike.pope@teck.com

Re: Regional Effects Program

Dear Mike Pope,

On November 10, 2022, Brooks Applied Labs (BAL) received thirty (30) solid samples at an acceptable temperature of 1.6 °C.

Sample ID values provided on the chain-of-custody (COC) forms did not exactly match the corresponding **Sample ID** values listed on containers. The discrepancies are described in the table below.

Laboratory ID	Sample ID (on COC form)	Sample ID (on container label)
2211152-01	RG_ERCKUT_SE-1_LAEMP_EVO_2022-10_N	RG_ERCKUT_SE-1_2022-10_N
2211152-02	RG_ERCKUT_SE-2_LAEMP_EVO_2022-10_N	RG_ERCKUT_SE-2_2022-10_N
2211152-03	RG_ERCKUT_SE-3_LAEMP_EVO_2022-11_N	RG_ERCKUT_SE_3_2022-11_N
2211152-04	RG_ERCKUT_SE-4_LAEMP_EVO_2022-11_N	RG_ERCKUT_SE_4_2022-11_N
2211152-05	RG_ERCKUT_SE-5_LAEMP_EVO_2022-11_N	RG_ERCKUT_SE_5_2022-11_N
2211152-06	RG_ERCKUT_BRYOSE-1_LAEMP_EVO_2022-10_N	RG_ERCKUT_BRYOSE-1_2022-10_N
2211152-07	RG_ERCKUT_BRYOSE-2_LAEMP_EVO_2022-11_N	RG_ERCKUT_BRYOSE_2_2022-11_N
2211152-08	RG_ERCKUT_BRYOSE-3_LAEMP_EVO_2022-11_N	RG_ERCKUT_BRYOSE_3_2022-11_N
2211152-09	RG_ERCKDT_SE-1_LAEMP_EVO_2022-10_N	RG_ERCKDT_SE-1_2022-10_N
2211152-10	RG_ERCKDT_SE-2_LAEMP_EVO_2022-10_N	RG_ERCKDT_SE-2_2022-10_N
2211152-11	RG_ERCKDT_SE-3_LAEMP_EVO_2022-10_N	RG_ERCKDT_SE-3_2022-10_N
2211152-12	RG_ERCKDT_SE-4_LAEMP_EVO_2022-10_N	RG_ERCKDT_SE-4_2022-10_N
2211152-13	RG_ERCKDT_SE-5_LAEMP_EVO_2022-10_N	RG_ERCKDT_SE-5_LAEMP_EVO_2022-10_N
2211152-14	RG_ERCKDT_SE-6_LAEMP_EVO_2022-10_N	RG_ERCKDT_SE-6_2022-10_N
2211152-15	RG_ERCKDT_SE-7_LAEMP_EVO_2022-10_N	RG_ERCKDT_SE-7_2022-10_N
2211152-16	RG_ERCKDT_BRYOSE-1_LAEMP_EVO_2022-10_N	RG_ERCKDT_BRYOSE-1_2022-10_N
2211152-17	RG_ERCKDT_BRYOSE-2_LAEMP_EVO_2022-10_N	RG_ERCKDT_BRYOSE-2_2022-10_N
2211152-18	RG_ERCKDT_BRYOSE-3_LAEMP_EVO_2022-10_N	RG_ERCKDT_BRYOSE-3_2022-10_N
2211152-19	RG_ERCKMD_SE-1_LAEMP_EVO_2022-10_N	RG_ERCKMD_SE-1_2022-10_N
2211152-20	RG_ERCKMD_SE-2_LAEMP_EVO_2022-10_N	RG_ERCKMD_SE-2_2022-10_N
2211152-21	RG_ERCKMD_SE-3_LAEMP_EVO_2022-10_N	RG_ERCKMD_SE-3_2022-10_N
2211152-22	RG_ERCKMD_BRYOSE-1_LAEMP_EVO_2022-10_N	RG_ERCKMD_BRYOSE-1_2022-10_N
2211152-23	RG_ERCKMD_BRYOSE-2_LAEMP_EVO_2022-10_N	RG_ERCKMD_BRYOSE-2_2022-10_N
2211152-24	RG_ERCKMD_BRYOSE-3_LAEMP_EVO_2022-10_N	RG_ERCKMD_BRYOSE-3_2022-10_N
2211152-25	RG_BOCK_SE-1_LAEMP_EVO_2022-11_N	RG_BOCK_SE-1_2022-11-03_N
2211152-26	RG_BOCK_SE-1_LAEMP_EVO_2022-11_N	RG_BOCK_SE-2_2022-11_N
2211152-27	RG_BOCK_SE-1_LAEMP_EVO_2022-11_N	RG_BOCK_SE-3_2022-11_N
2211152-29	RG_MI3_SE-1_LAEMP_EVO_2022-11_N	RG_MI3_SE-1_2022-11_N
2211152-30	RG_MI3_SE-2_LAEMP_EVO_2022-11_N	RG_MI3_SE-2_2022-11_N

Per client request, the samples described in the table above were logged in and reported using the **Sample ID** values on the COC forms (*column 2 in the table above*).

Each solid sample was logged-in for the analysis of total recoverable Se, Se sequential extraction, and total solids.

No analyses were requested on the COC forms for samples 2211152-17 (*RG_ERCKDT_BRYOSE-2_LAEMP_EVO_2022-10_N*) and 2211152-18 (*RG_ERCKDT_BRYOSE-3_LAEMP_EVO_2022-10_N*). Per client request, 2211152-17 and 2211152-18 were logged in for (total recoverable Se, Se sequential extraction, and total solids).

The sediments were wet and the water overlaying the sediments in the containers was decanted before the sediments were stored frozen. After receipt, all solid samples were stored in accordance with BAL SOPs.

Percent Total Solids (SOP BAL-0501)

An aliquot of each solid was measured into a pre-weighed vessel, dried in an oven at 105°C overnight, weighed again, and the percent of dried solid material was calculated.

Batch B222795 (%TS)

%TS results were used to dry-weight correct results for the remaining analytical parameters.

Total Recoverable Se (EPA 3050b MOD)

An aliquot of each solid was digested via modified EPA Method 3050B, using additions of concentrated nitric acid, hydrogen peroxide, and hydrochloric acid. The resulting digests were analyzed for Se content via inductively coupled plasma triple quadrupole mass spectrometry (ICP-QQQ-MS). The ICP-QQQ-MS instrumentation uses advanced interference removal techniques to ensure accuracy of the sample results. For more information, please visit the *Interference Reduction Technology* section on our website, brooksapplied.com.

Batch B222830 Total Recoverable Se)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the Sample Results page for sample-specific MDLs, MRLs, and other details.

The relative percent difference (RPD) for selenium (Se) in the laboratory duplicate sample B222830-DUP3 was greater than the control limit of 25%, at 35%. Secondary criteria were met (*i.e., avg result ≤ 5x the MRL and results within two MRL values*). No qualification of data was necessary.

Se Selective Sequential Extraction (SSE)

An aliquot of each solid was extracted in accordance with BAL's in-house five-step selective sequential extraction for Se. The samples were extracted with a series of reagents designed to target the following selenium fractions (see table below).

SSE Fraction	Fraction Description
F1	Se present as salt (<i>e.g., SeO₄⁻², MeSe(IV), SeCN</i>)
F2	Weakly adsorbed Se (<i>e.g., SeO₄⁻², SeO₃⁻², SeCN, MeSe(IV)</i>)
F3	Amorphous and crystalline Se (<i>e.g., S₂Se, Se⁰</i>)
F4	Selenides (<i>e.g., HgSe, PbSe, CdSe, ZnSe</i>)
F5	Residual Se

All resulting SSE fractions were directly analyzed for Se via inductively coupled plasma triple quadrupole mass spectrometry (ICP-QQQ-MS) and have been reported as Se(F1), Se(F2), Se(F3), Se(F4), and Se(F5) according to the corresponding extraction step (see table above).

Batch B222791 (SSE F1)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

Batch B222798 (SSE F2)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

Batch B222799 (SSE F3)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

Batch B222800 (SSE F4)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

Batch B222801 (SSE F5)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

Se Speciation for the SSE

Fractions F1 and F2 of the SSE were also analyzed for individual Se species via ion chromatography inductively coupled plasma collision reaction cell mass spectrometry (IC-ICP-CRC-MS). Selenium species were chromatographically separated on an ion exchange column and then quantified using inductively coupled plasma collision reaction cell mass spectrometry (ICP-CRC-MS); for more information on this determinative technique, please visit the *Interference Reduction Technology* section on our website. The chromatographic method applied for the analyses provides greater retention of methylseleninic acid and selenomethionine, allowing for more definitive quantitation of these species.

Selenium speciation for these SSE fractions was defined as dissolved selenite [*Se(IV)*], selenate [*Se(VI)*], selenocyanate [*SeCN*], methylseleninic acid [*MeSe(IV)*], selenomethionine [*SeMet*], selenosulfate [*SeSO₃*], and dimethylselenoxide [*DMSeO*]. Methaneselenonic acid [*MeSe(VI)*] is reported under *Se Unk A*. The total concentration of any remaining unidentified Se-containing species detected in each sample has also been reported as [*Unk Se Sp*].

DMS₂SeO elutes early in the chromatographic run due to the nature of the molecule and the applied chromatographic separation method. Since this species elutes near the dead volume, additional Se species may coelute. Alternate methods can be applied, upon client request, to increase the separation of DMS₂SeO from potentially co-eluting Se species.

Batch B222772 (Selenium Speciation on SSE F1)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

The RPD value for selenomethionine (*SeMet F1*) in the laboratory duplicate sample B222772-DUP4 was greater than the control limit of 25%, at 37%. Secondary criteria were met (*i.e.*, *avg result* $\leq 5 \times$ *the MRL and results within two MRL values*). No qualification of data was necessary.

Selenomethionine (*SeMet F1*) was detected in client sample 2211152-28. 2211152-28 was analyzed with selenomethionine spike in B222772-PS4, and the small peak for selenomethionine was confirmed. With the confirmation, selenium speciation results for 2211152-28 are reported from the initial injection in batch B222772.

Batch B222773 (Selenium Speciation on SSE F2)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

In instances when a matrix spike/matrix spike duplicate (MS/MSD) set was spiked at a level less than the native sample concentration, the recoveries and the RPD were not considered valid indicators of data quality. In such instances, the recoveries of the blank spikes (BS) and/or standard reference materials (SRM) demonstrate the accuracy of the applied methods. When the spiking level was less than 25% of the native sample concentration, the spike recovery was not reported (NR) and the RPD of the MS/MSD set was not calculated (N/C).

Except for concentration qualifiers, all data were reported without qualification. All associated quality control sample results met the acceptance criteria.

BAL verifies that the reported results of all analyses for which the laboratory is accredited meet the requirements of the accrediting body, unless otherwise noted in the report narrative. For more information regarding accreditations please see the *Report Information* and *Batch Summary* pages. This report must be used in its entirety for interpretation of results.

Please feel free to contact us if you have any questions regarding this report.

Sincerely,



Jeremy Maute

Senior Project Manager

Jeremy@brooksapplied.com



Report Information

General Disclaimers

Test results are based solely upon the sample submitted to Brooks Applied Labs in the condition it was received. This report shall not be reproduced or copied, except in full, without written approval of the laboratory. Brooks Applied Labs is not responsible for the consequences arising from the use of a partial report.

Laboratory Accreditation

BAL maintains accreditation with various state and national agencies for select test methods. For a current list of BAL accreditations, please visit our website at <http://www.brooksapplied.com/resources/certificates-permits/>. The reported analyte/matrix/method combination shall be considered outside BAL's scopes of accreditation unless otherwise identified as ISO, TNI, or ISO,TNI in the tables. It is the responsibility of the client to verify whether a specific accreditation is required for the intended data use.

ISO: ISO/IEC 17025:2017 accredited test method. Issued by ANSI National Accreditation Board (ANAB), #ADE-1447.02

TNI: NELAP accredited test method. Issued by the State of Florida Department of Health, #E87982.

ISO,TNI: Test method is accredited under both the ISO/IEC 17025:2017 and NELAP accreditations referenced above.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

AR	as received	MS	matrix spike
BAL	Brooks Applied Labs	MSD	matrix spike duplicate
BLK	method blank	ND	non-detect
BS	blank spike	NR	non-reportable
CAL	calibration standard	N/C	not calculated
CCB	continuing calibration blank	PS	post preparation spike
CCV	continuing calibration verification	REC	percent recovery
COC	chain of custody record	RPD	relative percent difference
D	dissolved fraction	SCV	secondary calibration verification
DUP	duplicate	SOP	standard operating procedure
IBL	instrument blank	SRM	reference material
ICV	initial calibration verification	T	total fraction
MDL	method detection limit	TR	total recoverable fraction
MRL	method reporting limit		

Definition of Data Qualifiers

E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Please see narrative for explanation.
J	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1	Estimated value. A full explanation is presented in the narrative.
M	Duplicate precision (RPD) was not within acceptance criteria. Please see narrative for explanation.
N	Spike recovery was not within acceptance criteria. Please see narrative for explanation.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.
Z	Holding time and/or preservation requirements not established for this method; however, BAL recommendations for holding time were not followed. Please see narrative for explanation.



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
RG_ERCKUT_SE-1_LAEMP_EVO_2 022-10_N	2211152-01	SE	Sample	10/31/2022	11/10/2022
RG_ERCKUT_SE-2_LAEMP_EVO_2 022-10_N	2211152-02	SE	Sample	10/31/2022	11/10/2022
RG_ERCKUT_SE-3_LAEMP_EVO_2 022-11_N	2211152-03	SE	Sample	11/01/2022	11/10/2022
RG_ERCKUT_SE-4_LAEMP_EVO_2 022-11_N	2211152-04	SE	Sample	11/01/2022	11/10/2022
RG_ERCKUT_SE-5_LAEMP_EVO_2 022-11_N	2211152-05	SE	Sample	11/01/2022	11/10/2022
RG_ERCKUT_BRYOSE-1_LAEMP_ EVO_2022-10_N	2211152-06	SE	Sample	10/31/2022	11/10/2022
RG_ERCKUT_BRYOSE-2_LAEMP_ EVO_2022-11_N	2211152-07	SE	Sample	11/01/2022	11/10/2022
RG_ERCKUT_BRYOSE-3_LAEMP_ EVO_2022-11_N	2211152-08	SE	Sample	11/01/2022	11/10/2022
RG_ERCKDT_SE-1_LAEMP_EVO_2 022-10_N	2211152-09	SE	Sample	10/31/2022	11/10/2022
RG_ERCKDT_SE-2_LAEMP_EVO_2 022-10_N	2211152-10	SE	Sample	10/31/2022	11/10/2022
RG_ERCKDT_SE-3_LAEMP_EVO_2 022-10_N	2211152-11	SE	Sample	10/31/2022	11/10/2022
RG_ERCKDT_SE-4_LAEMP_EVO_2 022-10_N	2211152-12	SE	Sample	10/31/2022	11/10/2022
RG_ERCKDT_SE-5_LAEMP_EVO_2 022-10_N	2211152-13	SE	Sample	10/31/2022	11/10/2022
RG_ERCKDT_SE-6_LAEMP_EVO_2 022-10_N	2211152-14	SE	Sample	10/31/2022	11/10/2022
RG_ERCKDT_SE-7_LAEMP_EVO_2 022-10_N	2211152-15	SE	Sample	10/31/2022	11/10/2022
RG_ERCKDT_BRYOSE-1_LAEMP_ EVO_2022-10_N	2211152-16	SE	Sample	10/31/2022	11/10/2022
RG_ERCKDT_BRYOSE-2_LAEMP_ EVO_2022-10_N	2211152-17	SE	Sample	10/31/2022	11/10/2022
RG_ERCKDT_BRYOSE-3_LAEMP_ EVO_2022-10_N	2211152-18	SE	Sample	10/31/2022	11/10/2022
RG_ERCKMD_SE-1_LAEMP_EVO_2022-10_N	2211152-19	SE	Sample	10/31/2022	11/10/2022
RG_ERCKMD_SE-2_LAEMP_EVO_2022-10_N	2211152-20	SE	Sample	10/31/2022	11/10/2022
RG_ERCKMD_SE-3_LAEMP_EVO_2022-10_N	2211152-21	SE	Sample	10/31/2022	11/10/2022



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
RG_ERCKMD_BRYOSE-1_LAEMP_EVO_2022-10_N	2211152-22	SE	Sample	10/31/2022	11/10/2022
RG_ERCKMD_BRYOSE-2_LAEMP_EVO_2022-10_N	2211152-23	SE	Sample	10/31/2022	11/10/2022
RG_ERCKMD_BRYOSE-3_LAEMP_EVO_2022-10_N	2211152-24	SE	Sample	10/31/2022	11/10/2022
RG_BOCK_SE-1_LAEMP_EVO_2022-11_N	2211152-25	SE	Sample	11/03/2022	11/10/2022
RG_BOCK_SE-1_LAEMP_EVO_2022-11_N	2211152-26	SE	Sample	11/03/2022	11/10/2022
RG_BOCK_SE-1_LAEMP_EVO_2022-11_N	2211152-27	SE	Sample	11/03/2022	11/10/2022
RG_BOCKRD_SE-1_LAEMP_EVO_2022-11_N	2211152-28	SE	Sample	11/03/2022	11/10/2022
RG_MI3_SE-1_LAEMP_EVO_2022-11_N	2211152-29	SE	Sample	11/02/2022	11/10/2022
RG_MI3_SE-2_LAEMP_EVO_2022-11_N	2211152-30	SE	Sample	11/02/2022	11/10/2022



Batch Summary

Analyte	Lab Matrix	Method	Accred.	Prepared	Analyzed	Batch	Sequence
%TS	Biota	SOP BAL-0501	ISO	11/16/22	11/18/22	B222795	N/A
DMS ₂ O F1	Soil/Sediment	In-House		11/14/22	11/16/22	B222772	S221205
DMS ₂ O F2	Soil/Sediment	In-House		11/14/22	11/16/22	B222773	S221205
MeSe(IV) F1	Soil/Sediment	In-House		11/14/22	11/16/22	B222772	S221205
MeSe(IV) F2	Soil/Sediment	In-House		11/14/22	11/16/22	B222773	S221205
Se	Soil/Sediment	EPA 6020B Mod	ISO,TNI	11/22/22	11/24/22	B222830	S221239
Se Unk A F1	Soil/Sediment	In-House		11/14/22	11/16/22	B222772	S221205
Se Unk A F2	Soil/Sediment	In-House		11/14/22	11/16/22	B222773	S221205
Se(F1)	Soil/Sediment	In-House		11/14/22	11/15/22	B222791	S221204
Se(F2)	Soil/Sediment	In-House		11/14/22	11/16/22	B222798	S221212
Se(F3)	Soil/Sediment	In-House		11/14/22	11/17/22	B222799	S221220
Se(F4)	Soil/Sediment	In-House		11/14/22	11/17/22	B222800	S221220
Se(F5)	Soil/Sediment	In-House		11/21/22	11/23/22	B222801	S221239
Se(IV) F1	Soil/Sediment	In-House		11/14/22	11/16/22	B222772	S221205
Se(IV) F2	Soil/Sediment	In-House		11/14/22	11/16/22	B222773	S221205
Se(VI) F1	Soil/Sediment	In-House		11/14/22	11/16/22	B222772	S221205
Se(VI) F2	Soil/Sediment	In-House		11/14/22	11/16/22	B222773	S221205
SeCN F1	Soil/Sediment	In-House		11/14/22	11/16/22	B222772	S221205
SeCN F2	Soil/Sediment	In-House		11/14/22	11/16/22	B222773	S221205
SeMet F1	Soil/Sediment	In-House		11/14/22	11/16/22	B222772	S221205
SeMet F2	Soil/Sediment	In-House		11/14/22	11/16/22	B222773	S221205
SeSO ₃ F1	Soil/Sediment	In-House		11/14/22	11/16/22	B222772	S221205
SeSO ₃ F2	Soil/Sediment	In-House		11/14/22	11/16/22	B222773	S221205
Unk Se Sp F1	Soil/Sediment	In-House		11/14/22	11/16/22	B222772	S221205
Unk Se Sp F2	Soil/Sediment	In-House		11/14/22	11/16/22	B222773	S221205



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKUT_SE-1_LAEMP_EVO_2022-10_N</i>										
2211152-01	%TS	SE	NA	29.99		0.02	0.06	%	B222795	N/A
2211152-01	DMSeO F1	SE	dry	0.006	J	0.003	0.026	mg/kg	B222772	S221205
2211152-01	DMSeO F2	SE	dry	0.024	J	0.003	0.026	mg/kg	B222773	S221205
2211152-01	MeSe(IV) F1	SE	dry	0.076		0.003	0.026	mg/kg	B222772	S221205
2211152-01	MeSe(IV) F2	SE	dry	2.16		0.003	0.026	mg/kg	B222773	S221205
2211152-01	Se	SE	dry	41.3		0.278	0.555	mg/kg	B222830	S221239
2211152-01	Se Unk A F1	SE	dry	≤ 0.003	U	0.003	0.026	mg/kg	B222772	S221205
2211152-01	Se Unk A F2	SE	dry	≤ 0.003	U	0.003	0.026	mg/kg	B222773	S221205
2211152-01	Se(F1)	SE	dry	1.96		0.149	0.311	mg/kg	B222791	S221204
2211152-01	Se(F2)	SE	dry	20.5		0.026	0.261	mg/kg	B222798	S221212
2211152-01	Se(F3)	SE	dry	15.5		0.196	0.392	mg/kg	B222799	S221220
2211152-01	Se(F4)	SE	dry	1.25		0.088	0.261	mg/kg	B222800	S221220
2211152-01	Se(F5)	SE	dry	0.078	J	0.036	0.327	mg/kg	B222801	S221239
2211152-01	Se(IV) F1	SE	dry	1.24		0.044	0.088	mg/kg	B222772	S221205
2211152-01	Se(IV) F2	SE	dry	8.78		0.023	0.064	mg/kg	B222773	S221205
2211152-01	Se(VI) F1	SE	dry	0.069		0.026	0.067	mg/kg	B222772	S221205
2211152-01	Se(VI) F2	SE	dry	0.042	J	0.026	0.067	mg/kg	B222773	S221205
2211152-01	SeCN F1	SE	dry	≤ 0.005	U	0.005	0.026	mg/kg	B222772	S221205
2211152-01	SeCN F2	SE	dry	3.02		0.005	0.026	mg/kg	B222773	S221205
2211152-01	SeMet F1	SE	dry	≤ 0.003	U	0.003	0.026	mg/kg	B222772	S221205
2211152-01	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.026	mg/kg	B222773	S221205
2211152-01	SeSO3 F1	SE	dry	≤ 0.026	U	0.026	0.067	mg/kg	B222772	S221205
2211152-01	SeSO3 F2	SE	dry	0.070		0.026	0.067	mg/kg	B222773	S221205
2211152-01	Unk Se Sp F1	SE	dry	≤ 0.044	U	0.044	0.088	mg/kg	B222772	S221205
2211152-01	Unk Se Sp F2	SE	dry	1.59		0.023	0.064	mg/kg	B222773	S221205



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKUT_SE-2_LAEMP_EVO_2022-10_N										
2211152-02	%TS	SE	NA	37.64		0.01	0.04	%	B222795	N/A
2211152-02	DMS ₂ O F1	SE	dry	≤ 0.002	U	0.002	0.021	mg/kg	B222772	S221205
2211152-02	DMS ₂ O F2	SE	dry	0.008	J	0.002	0.021	mg/kg	B222773	S221205
2211152-02	MeSe(IV) F1	SE	dry	0.012	J	0.002	0.021	mg/kg	B222772	S221205
2211152-02	MeSe(IV) F2	SE	dry	0.280		0.002	0.021	mg/kg	B222773	S221205
2211152-02	Se	SE	dry	7.44		0.206	0.412	mg/kg	B222830	S221239
2211152-02	Se Unk A F1	SE	dry	≤ 0.002	U	0.002	0.021	mg/kg	B222772	S221205
2211152-02	Se Unk A F2	SE	dry	≤ 0.002	U	0.002	0.021	mg/kg	B222773	S221205
2211152-02	Se(F1)	SE	dry	0.343		0.121	0.252	mg/kg	B222791	S221204
2211152-02	Se(F2)	SE	dry	3.24		0.021	0.212	mg/kg	B222798	S221212
2211152-02	Se(F3)	SE	dry	4.00		0.159	0.318	mg/kg	B222799	S221220
2211152-02	Se(F4)	SE	dry	0.355		0.072	0.212	mg/kg	B222800	S221220
2211152-02	Se(F5)	SE	dry	≤ 0.029	U	0.029	0.265	mg/kg	B222801	S221239
2211152-02	Se(IV) F1	SE	dry	0.139		0.036	0.072	mg/kg	B222772	S221205
2211152-02	Se(IV) F2	SE	dry	0.929		0.019	0.052	mg/kg	B222773	S221205
2211152-02	Se(VI) F1	SE	dry	≤ 0.021	U	0.021	0.054	mg/kg	B222772	S221205
2211152-02	Se(VI) F2	SE	dry	≤ 0.021	U	0.021	0.054	mg/kg	B222773	S221205
2211152-02	SeCN F1	SE	dry	≤ 0.004	U	0.004	0.021	mg/kg	B222772	S221205
2211152-02	SeCN F2	SE	dry	0.680		0.004	0.021	mg/kg	B222773	S221205
2211152-02	SeMet F1	SE	dry	≤ 0.002	U	0.002	0.021	mg/kg	B222772	S221205
2211152-02	SeMet F2	SE	dry	≤ 0.002	U	0.002	0.021	mg/kg	B222773	S221205
2211152-02	SeSO ₃ F1	SE	dry	≤ 0.021	U	0.021	0.054	mg/kg	B222772	S221205
2211152-02	SeSO ₃ F2	SE	dry	≤ 0.021	U	0.021	0.054	mg/kg	B222773	S221205
2211152-02	Unk Se Sp F1	SE	dry	≤ 0.036	U	0.036	0.072	mg/kg	B222772	S221205
2211152-02	Unk Se Sp F2	SE	dry	0.280		0.019	0.052	mg/kg	B222773	S221205



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKUT_SE-3_LAEMP_EVO_2022-11_N										
2211152-03	%TS	SE	NA	43.73		0.01	0.04	%	B222795	N/A
2211152-03	DMS ₂ O F1	SE	dry	≤ 0.002	U	0.002	0.017	mg/kg	B222772	S221205
2211152-03	DMS ₂ O F2	SE	dry	0.016	J	0.002	0.017	mg/kg	B222773	S221205
2211152-03	MeSe(IV) F1	SE	dry	0.028		0.002	0.017	mg/kg	B222772	S221205
2211152-03	MeSe(IV) F2	SE	dry	0.695		0.002	0.017	mg/kg	B222773	S221205
2211152-03	Se	SE	dry	10.8		0.186	0.372	mg/kg	B222830	S221239
2211152-03	Se Unk A F1	SE	dry	≤ 0.002	U	0.002	0.017	mg/kg	B222772	S221205
2211152-03	Se Unk A F2	SE	dry	≤ 0.002	U	0.002	0.017	mg/kg	B222773	S221205
2211152-03	Se(F1)	SE	dry	0.599		0.097	0.203	mg/kg	B222791	S221204
2211152-03	Se(F2)	SE	dry	5.12		0.017	0.171	mg/kg	B222798	S221212
2211152-03	Se(F3)	SE	dry	4.78		0.128	0.256	mg/kg	B222799	S221220
2211152-03	Se(F4)	SE	dry	0.625		0.058	0.171	mg/kg	B222800	S221220
2211152-03	Se(F5)	SE	dry	0.052	J	0.023	0.213	mg/kg	B222801	S221239
2211152-03	Se(IV) F1	SE	dry	0.279		0.029	0.058	mg/kg	B222772	S221205
2211152-03	Se(IV) F2	SE	dry	2.00		0.015	0.042	mg/kg	B222773	S221205
2211152-03	Se(VI) F1	SE	dry	0.136		0.017	0.044	mg/kg	B222772	S221205
2211152-03	Se(VI) F2	SE	dry	≤ 0.017	U	0.017	0.044	mg/kg	B222773	S221205
2211152-03	SeCN F1	SE	dry	≤ 0.003	U	0.003	0.017	mg/kg	B222772	S221205
2211152-03	SeCN F2	SE	dry	0.709		0.003	0.017	mg/kg	B222773	S221205
2211152-03	SeMet F1	SE	dry	≤ 0.002	U	0.002	0.017	mg/kg	B222772	S221205
2211152-03	SeMet F2	SE	dry	≤ 0.002	U	0.002	0.017	mg/kg	B222773	S221205
2211152-03	SeSO ₃ F1	SE	dry	≤ 0.017	U	0.017	0.044	mg/kg	B222772	S221205
2211152-03	SeSO ₃ F2	SE	dry	0.024	J	0.017	0.044	mg/kg	B222773	S221205
2211152-03	Unk Se Sp F1	SE	dry	≤ 0.029	U	0.029	0.058	mg/kg	B222772	S221205
2211152-03	Unk Se Sp F2	SE	dry	0.299		0.015	0.042	mg/kg	B222773	S221205



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKUT_SE-4_LAEMP_EVO_2022-11_N										
2211152-04	%TS	SE	NA	64.05		0.008	0.03	%	B222795	N/A
2211152-04	DMS ₂ O F1	SE	dry	≤ 0.001	U	0.001	0.012	mg/kg	B222772	S221205
2211152-04	DMS ₂ O F2	SE	dry	≤ 0.001	U	0.001	0.012	mg/kg	B222773	S221205
2211152-04	MeSe(IV) F1	SE	dry	0.005	J	0.001	0.012	mg/kg	B222772	S221205
2211152-04	MeSe(IV) F2	SE	dry	0.119		0.001	0.012	mg/kg	B222773	S221205
2211152-04	Se	SE	dry	2.63		0.133	0.265	mg/kg	B222830	S221239
2211152-04	Se Unk A F1	SE	dry	≤ 0.001	U	0.001	0.012	mg/kg	B222772	S221205
2211152-04	Se Unk A F2	SE	dry	≤ 0.001	U	0.001	0.012	mg/kg	B222773	S221205
2211152-04	Se(F1)	SE	dry	0.283		0.067	0.141	mg/kg	B222791	S221204
2211152-04	Se(F2)	SE	dry	1.36		0.012	0.119	mg/kg	B222798	S221212
2211152-04	Se(F3)	SE	dry	1.01		0.089	0.178	mg/kg	B222799	S221220
2211152-04	Se(F4)	SE	dry	0.503		0.040	0.119	mg/kg	B222800	S221220
2211152-04	Se(F5)	SE	dry	0.031	J	0.016	0.148	mg/kg	B222801	S221239
2211152-04	Se(IV) F1	SE	dry	0.153		0.020	0.040	mg/kg	B222772	S221205
2211152-04	Se(IV) F2	SE	dry	0.674		0.010	0.029	mg/kg	B222773	S221205
2211152-04	Se(VI) F1	SE	dry	0.057		0.012	0.030	mg/kg	B222772	S221205
2211152-04	Se(VI) F2	SE	dry	≤ 0.012	U	0.012	0.030	mg/kg	B222773	S221205
2211152-04	SeCN F1	SE	dry	≤ 0.002	U	0.002	0.012	mg/kg	B222772	S221205
2211152-04	SeCN F2	SE	dry	0.113		0.002	0.012	mg/kg	B222773	S221205
2211152-04	SeMet F1	SE	dry	≤ 0.001	U	0.001	0.012	mg/kg	B222772	S221205
2211152-04	SeMet F2	SE	dry	≤ 0.001	U	0.001	0.012	mg/kg	B222773	S221205
2211152-04	SeSO ₃ F1	SE	dry	≤ 0.012	U	0.012	0.030	mg/kg	B222772	S221205
2211152-04	SeSO ₃ F2	SE	dry	≤ 0.012	U	0.012	0.030	mg/kg	B222773	S221205
2211152-04	Unk Se Sp F1	SE	dry	≤ 0.020	U	0.020	0.040	mg/kg	B222772	S221205
2211152-04	Unk Se Sp F2	SE	dry	0.058		0.010	0.029	mg/kg	B222773	S221205



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKUT_SE-5_LAEMP_EVO_2022-11_N										
2211152-05	%TS	SE	NA	56.40		0.01	0.03	%	B222795	N/A
2211152-05	DMS ₂ O F1	SE	dry	≤ 0.001	U	0.001	0.013	mg/kg	B222772	S221205
2211152-05	DMS ₂ O F2	SE	dry	≤ 0.001	U	0.001	0.013	mg/kg	B222773	S221205
2211152-05	MeSe(IV) F1	SE	dry	0.010	J	0.001	0.013	mg/kg	B222772	S221205
2211152-05	MeSe(IV) F2	SE	dry	0.311		0.001	0.013	mg/kg	B222773	S221205
2211152-05	Se	SE	dry	5.19		0.133	0.265	mg/kg	B222830	S221239
2211152-05	Se Unk A F1	SE	dry	≤ 0.001	U	0.001	0.013	mg/kg	B222772	S221205
2211152-05	Se Unk A F2	SE	dry	≤ 0.001	U	0.001	0.013	mg/kg	B222773	S221205
2211152-05	Se(F1)	SE	dry	0.364		0.076	0.158	mg/kg	B222791	S221204
2211152-05	Se(F2)	SE	dry	3.02		0.013	0.133	mg/kg	B222798	S221212
2211152-05	Se(F3)	SE	dry	2.06		0.100	0.200	mg/kg	B222799	S221220
2211152-05	Se(F4)	SE	dry	0.679		0.045	0.133	mg/kg	B222800	S221220
2211152-05	Se(F5)	SE	dry	0.047	J	0.018	0.166	mg/kg	B222801	S221239
2211152-05	Se(IV) F1	SE	dry	0.199		0.022	0.045	mg/kg	B222772	S221205
2211152-05	Se(IV) F2	SE	dry	1.31		0.012	0.032	mg/kg	B222773	S221205
2211152-05	Se(VI) F1	SE	dry	0.067		0.013	0.034	mg/kg	B222772	S221205
2211152-05	Se(VI) F2	SE	dry	≤ 0.013	U	0.013	0.034	mg/kg	B222773	S221205
2211152-05	SeCN F1	SE	dry	≤ 0.003	U	0.003	0.013	mg/kg	B222772	S221205
2211152-05	SeCN F2	SE	dry	0.425		0.003	0.013	mg/kg	B222773	S221205
2211152-05	SeMet F1	SE	dry	≤ 0.001	U	0.001	0.013	mg/kg	B222772	S221205
2211152-05	SeMet F2	SE	dry	≤ 0.001	U	0.001	0.013	mg/kg	B222773	S221205
2211152-05	SeSO ₃ F1	SE	dry	≤ 0.013	U	0.013	0.034	mg/kg	B222772	S221205
2211152-05	SeSO ₃ F2	SE	dry	≤ 0.013	U	0.013	0.034	mg/kg	B222773	S221205
2211152-05	Unk Se Sp F1	SE	dry	≤ 0.022	U	0.022	0.045	mg/kg	B222772	S221205
2211152-05	Unk Se Sp F2	SE	dry	0.174		0.012	0.032	mg/kg	B222773	S221205



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKUT_BRYOSE-1_LAEMP_EVO_2022-10_N</i>										
2211152-06	%TS	SE	NA	73.68		0.007	0.02	%	B222795	N/A
2211152-06	DMS ₂ O F1	SE	dry	≤ 0.001	U	0.001	0.010	mg/kg	B222772	S221205
2211152-06	DMS ₂ O F2	SE	dry	≤ 0.001	U	0.001	0.010	mg/kg	B222773	S221205
2211152-06	MeSe(IV) F1	SE	dry	≤ 0.001	U	0.001	0.010	mg/kg	B222772	S221205
2211152-06	MeSe(IV) F2	SE	dry	0.021		0.001	0.010	mg/kg	B222773	S221205
2211152-06	Se	SE	dry	1.19		0.109	0.218	mg/kg	B222830	S221239
2211152-06	Se Unk A F1	SE	dry	≤ 0.001	U	0.001	0.010	mg/kg	B222772	S221205
2211152-06	Se Unk A F2	SE	dry	≤ 0.001	U	0.001	0.010	mg/kg	B222773	S221205
2211152-06	Se(F1)	SE	dry	0.097	J	0.058	0.121	mg/kg	B222791	S221204
2211152-06	Se(F2)	SE	dry	0.475		0.010	0.102	mg/kg	B222798	S221212
2211152-06	Se(F3)	SE	dry	0.404		0.076	0.152	mg/kg	B222799	S221220
2211152-06	Se(F4)	SE	dry	0.537		0.034	0.102	mg/kg	B222800	S221220
2211152-06	Se(F5)	SE	dry	0.041	J	0.014	0.127	mg/kg	B222801	S221239
2211152-06	Se(IV) F1	SE	dry	0.022	J	0.017	0.034	mg/kg	B222772	S221205
2211152-06	Se(IV) F2	SE	dry	0.236		0.009	0.025	mg/kg	B222773	S221205
2211152-06	Se(VI) F1	SE	dry	0.048		0.010	0.026	mg/kg	B222772	S221205
2211152-06	Se(VI) F2	SE	dry	≤ 0.010	U	0.010	0.026	mg/kg	B222773	S221205
2211152-06	SeCN F1	SE	dry	≤ 0.002	U	0.002	0.010	mg/kg	B222772	S221205
2211152-06	SeCN F2	SE	dry	0.034		0.002	0.010	mg/kg	B222773	S221205
2211152-06	SeMet F1	SE	dry	≤ 0.001	U	0.001	0.010	mg/kg	B222772	S221205
2211152-06	SeMet F2	SE	dry	≤ 0.001	U	0.001	0.010	mg/kg	B222773	S221205
2211152-06	SeSO ₃ F1	SE	dry	≤ 0.010	U	0.010	0.026	mg/kg	B222772	S221205
2211152-06	SeSO ₃ F2	SE	dry	≤ 0.010	U	0.010	0.026	mg/kg	B222773	S221205
2211152-06	Unk Se Sp F1	SE	dry	≤ 0.017	U	0.017	0.034	mg/kg	B222772	S221205
2211152-06	Unk Se Sp F2	SE	dry	0.018	J	0.009	0.025	mg/kg	B222773	S221205



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKUT_BRYOSE-2_LAEMP_EVO_2022-11_N</i>										
2211152-07	%TS	SE	NA	74.39		0.007	0.02	%	B222795	N/A
2211152-07	DMS ₂ O F1	SE	dry	≤ 0.001	U	0.001	0.010	mg/kg	B222772	S221205
2211152-07	DMS ₂ O F2	SE	dry	≤ 0.001	U	0.001	0.010	mg/kg	B222773	S221205
2211152-07	MeSe(IV) F1	SE	dry	≤ 0.001	U	0.001	0.010	mg/kg	B222772	S221205
2211152-07	MeSe(IV) F2	SE	dry	0.011		0.001	0.010	mg/kg	B222773	S221205
2211152-07	Se	SE	dry	1.16		0.092	0.184	mg/kg	B222830	S221239
2211152-07	Se Unk A F1	SE	dry	≤ 0.001	U	0.001	0.010	mg/kg	B222772	S221205
2211152-07	Se Unk A F2	SE	dry	≤ 0.001	U	0.001	0.010	mg/kg	B222773	S221205
2211152-07	Se(F1)	SE	dry	0.138		0.059	0.123	mg/kg	B222791	S221204
2211152-07	Se(F2)	SE	dry	0.333		0.010	0.104	mg/kg	B222798	S221212
2211152-07	Se(F3)	SE	dry	0.391		0.078	0.156	mg/kg	B222799	S221220
2211152-07	Se(F4)	SE	dry	0.592		0.035	0.104	mg/kg	B222800	S221220
2211152-07	Se(F5)	SE	dry	0.027	J	0.014	0.130	mg/kg	B222801	S221239
2211152-07	Se(IV) F1	SE	dry	≤ 0.018	U	0.018	0.035	mg/kg	B222772	S221205
2211152-07	Se(IV) F2	SE	dry	0.195		0.009	0.025	mg/kg	B222773	S221205
2211152-07	Se(VI) F1	SE	dry	0.081		0.010	0.027	mg/kg	B222772	S221205
2211152-07	Se(VI) F2	SE	dry	≤ 0.010	U	0.010	0.027	mg/kg	B222773	S221205
2211152-07	SeCN F1	SE	dry	≤ 0.002	U	0.002	0.010	mg/kg	B222772	S221205
2211152-07	SeCN F2	SE	dry	0.017		0.002	0.010	mg/kg	B222773	S221205
2211152-07	SeMet F1	SE	dry	≤ 0.001	U	0.001	0.010	mg/kg	B222772	S221205
2211152-07	SeMet F2	SE	dry	≤ 0.001	U	0.001	0.010	mg/kg	B222773	S221205
2211152-07	SeSO ₃ F1	SE	dry	≤ 0.010	U	0.010	0.027	mg/kg	B222772	S221205
2211152-07	SeSO ₃ F2	SE	dry	≤ 0.010	U	0.010	0.027	mg/kg	B222773	S221205
2211152-07	Unk Se Sp F1	SE	dry	≤ 0.018	U	0.018	0.035	mg/kg	B222772	S221205
2211152-07	Unk Se Sp F2	SE	dry	0.010	J	0.009	0.025	mg/kg	B222773	S221205



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKUT_BRYOSE-3_LAEMP_EVO_2022-11_N</i>										
2211152-08	%TS	SE	NA	16.75		0.03	0.10	%	B222795	N/A
2211152-08	DMS ₂ O F1	SE	dry	≤ 0.005	U	0.005	0.047	mg/kg	B222772	S221205
2211152-08	DMS ₂ O F2	SE	dry	≤ 0.005	U	0.005	0.047	mg/kg	B222773	S221205
2211152-08	MeSe(IV) F1	SE	dry	0.041	J	0.005	0.047	mg/kg	B222772	S221205
2211152-08	MeSe(IV) F2	SE	dry	0.836		0.005	0.047	mg/kg	B222773	S221205
2211152-08	Se	SE	dry	9.71		0.432	0.864	mg/kg	B222830	S221239
2211152-08	Se Unk A F1	SE	dry	≤ 0.005	U	0.005	0.047	mg/kg	B222772	S221205
2211152-08	Se Unk A F2	SE	dry	≤ 0.005	U	0.005	0.047	mg/kg	B222773	S221205
2211152-08	Se(F1)	SE	dry	1.27		0.265	0.553	mg/kg	B222791	S221204
2211152-08	Se(F2)	SE	dry	4.85		0.047	0.466	mg/kg	B222798	S221212
2211152-08	Se(F3)	SE	dry	5.98		0.350	0.699	mg/kg	B222799	S221220
2211152-08	Se(F4)	SE	dry	0.552		0.157	0.466	mg/kg	B222800	S221220
2211152-08	Se(F5)	SE	dry	≤ 0.064	U	0.064	0.583	mg/kg	B222801	S221239
2211152-08	Se(IV) F1	SE	dry	0.186		0.079	0.157	mg/kg	B222772	S221205
2211152-08	Se(IV) F2	SE	dry	1.32		0.041	0.114	mg/kg	B222773	S221205
2211152-08	Se(VI) F1	SE	dry	0.739		0.047	0.119	mg/kg	B222772	S221205
2211152-08	Se(VI) F2	SE	dry	≤ 0.047	U	0.047	0.119	mg/kg	B222773	S221205
2211152-08	SeCN F1	SE	dry	≤ 0.009	U	0.009	0.047	mg/kg	B222772	S221205
2211152-08	SeCN F2	SE	dry	0.730		0.009	0.047	mg/kg	B222773	S221205
2211152-08	SeMet F1	SE	dry	≤ 0.005	U	0.005	0.047	mg/kg	B222772	S221205
2211152-08	SeMet F2	SE	dry	≤ 0.005	U	0.005	0.047	mg/kg	B222773	S221205
2211152-08	SeSO ₃ F1	SE	dry	≤ 0.047	U	0.047	0.119	mg/kg	B222772	S221205
2211152-08	SeSO ₃ F2	SE	dry	≤ 0.047	U	0.047	0.119	mg/kg	B222773	S221205
2211152-08	Unk Se Sp F1	SE	dry	≤ 0.079	U	0.079	0.157	mg/kg	B222772	S221205
2211152-08	Unk Se Sp F2	SE	dry	0.363		0.041	0.114	mg/kg	B222773	S221205



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKDT_SE-1_LAEMP_EVO_2022-10_N</i>										
2211152-09	%TS	SE	NA	31.38		0.02	0.06	%	B222795	N/A
2211152-09	DMS ₂ O F1	SE	dry	0.013	J	0.002	0.024	mg/kg	B222772	S221205
2211152-09	DMS ₂ O F2	SE	dry	0.022	J	0.002	0.024	mg/kg	B222773	S221205
2211152-09	MeSe(IV) F1	SE	dry	0.058		0.002	0.024	mg/kg	B222772	S221205
2211152-09	MeSe(IV) F2	SE	dry	0.912		0.002	0.024	mg/kg	B222773	S221205
2211152-09	Se	SE	dry	26.6		0.268	0.535	mg/kg	B222830	S221239
2211152-09	Se Unk A F1	SE	dry	≤ 0.002	U	0.002	0.024	mg/kg	B222772	S221205
2211152-09	Se Unk A F2	SE	dry	≤ 0.002	U	0.002	0.024	mg/kg	B222773	S221205
2211152-09	Se(F1)	SE	dry	1.35		0.136	0.284	mg/kg	B222791	S221204
2211152-09	Se(F2)	SE	dry	14.9		0.024	0.239	mg/kg	B222798	S221212
2211152-09	Se(F3)	SE	dry	11.6		0.180	0.359	mg/kg	B222799	S221220
2211152-09	Se(F4)	SE	dry	0.661		0.081	0.239	mg/kg	B222800	S221220
2211152-09	Se(F5)	SE	dry	0.063	J	0.033	0.299	mg/kg	B222801	S221239
2211152-09	Se(IV) F1	SE	dry	0.881		0.040	0.081	mg/kg	B222772	S221205
2211152-09	Se(IV) F2	SE	dry	8.93		0.021	0.058	mg/kg	B222773	S221205
2211152-09	Se(VI) F1	SE	dry	0.058	J	0.024	0.061	mg/kg	B222772	S221205
2211152-09	Se(VI) F2	SE	dry	0.039	J	0.024	0.061	mg/kg	B222773	S221205
2211152-09	SeCN F1	SE	dry	≤ 0.005	U	0.005	0.024	mg/kg	B222772	S221205
2211152-09	SeCN F2	SE	dry	1.83		0.005	0.024	mg/kg	B222773	S221205
2211152-09	SeMet F1	SE	dry	≤ 0.002	U	0.002	0.024	mg/kg	B222772	S221205
2211152-09	SeMet F2	SE	dry	≤ 0.002	U	0.002	0.024	mg/kg	B222773	S221205
2211152-09	SeSO ₃ F1	SE	dry	≤ 0.024	U	0.024	0.061	mg/kg	B222772	S221205
2211152-09	SeSO ₃ F2	SE	dry	0.030	J	0.024	0.061	mg/kg	B222773	S221205
2211152-09	Unk Se Sp F1	SE	dry	≤ 0.040	U	0.040	0.081	mg/kg	B222772	S221205
2211152-09	Unk Se Sp F2	SE	dry	1.00		0.021	0.058	mg/kg	B222773	S221205



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKDT_SE-2_LAEMP_EVO_2022-10_N</i>										
2211152-10	%TS	SE	NA	29.49		0.02	0.06	%	B222795	N/A
2211152-10	DMS ₂ O F1	SE	dry	0.015	J	0.003	0.026	mg/kg	B222772	S221205
2211152-10	DMS ₂ O F2	SE	dry	0.019	J	0.003	0.026	mg/kg	B222773	S221205
2211152-10	MeSe(IV) F1	SE	dry	0.060		0.003	0.026	mg/kg	B222772	S221205
2211152-10	MeSe(IV) F2	SE	dry	0.886		0.003	0.026	mg/kg	B222773	S221205
2211152-10	Se	SE	dry	29.3		0.228	0.456	mg/kg	B222830	S221239
2211152-10	Se Unk A F1	SE	dry	≤ 0.003	U	0.003	0.026	mg/kg	B222772	S221205
2211152-10	Se Unk A F2	SE	dry	≤ 0.003	U	0.003	0.026	mg/kg	B222773	S221205
2211152-10	Se(F1)	SE	dry	1.64		0.145	0.303	mg/kg	B222791	S221204
2211152-10	Se(F2)	SE	dry	15.4		0.026	0.255	mg/kg	B222798	S221212
2211152-10	Se(F3)	SE	dry	11.0		0.191	0.383	mg/kg	B222799	S221220
2211152-10	Se(F4)	SE	dry	0.869		0.086	0.255	mg/kg	B222800	S221220
2211152-10	Se(F5)	SE	dry	0.045	J	0.035	0.319	mg/kg	B222801	S221239
2211152-10	Se(IV) F1	SE	dry	0.983		0.043	0.086	mg/kg	B222772	S221205
2211152-10	Se(IV) F2	SE	dry	9.19		0.022	0.062	mg/kg	B222773	S221205
2211152-10	Se(VI) F1	SE	dry	0.059	J	0.026	0.065	mg/kg	B222772	S221205
2211152-10	Se(VI) F2	SE	dry	0.044	J	0.026	0.065	mg/kg	B222773	S221205
2211152-10	SeCN F1	SE	dry	≤ 0.005	U	0.005	0.026	mg/kg	B222772	S221205
2211152-10	SeCN F2	SE	dry	1.76		0.005	0.026	mg/kg	B222773	S221205
2211152-10	SeMet F1	SE	dry	≤ 0.003	U	0.003	0.026	mg/kg	B222772	S221205
2211152-10	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.026	mg/kg	B222773	S221205
2211152-10	SeSO ₃ F1	SE	dry	≤ 0.026	U	0.026	0.065	mg/kg	B222772	S221205
2211152-10	SeSO ₃ F2	SE	dry	0.036	J	0.026	0.065	mg/kg	B222773	S221205
2211152-10	Unk Se Sp F1	SE	dry	≤ 0.043	U	0.043	0.086	mg/kg	B222772	S221205
2211152-10	Unk Se Sp F2	SE	dry	0.932		0.022	0.062	mg/kg	B222773	S221205



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKDT_SE-3_LAEMP_EVO_2022-10_N										
2211152-11	%TS	SE	NA	31.28		0.01	0.05	%	B222795	N/A
2211152-11	DMS ₂ O F1	SE	dry	≤ 0.002	U	0.002	0.024	mg/kg	B222772	S221205
2211152-11	DMS ₂ O F2	SE	dry	≤ 0.002	U	0.002	0.024	mg/kg	B222773	S221205
2211152-11	MeSe(IV) F1	SE	dry	0.036		0.002	0.024	mg/kg	B222772	S221205
2211152-11	MeSe(IV) F2	SE	dry	0.661		0.002	0.024	mg/kg	B222773	S221205
2211152-11	Se	SE	dry	16.6		0.198	0.396	mg/kg	B222830	S221239
2211152-11	Se Unk A F1	SE	dry	≤ 0.002	U	0.002	0.024	mg/kg	B222772	S221205
2211152-11	Se Unk A F2	SE	dry	0.012	J	0.002	0.024	mg/kg	B222773	S221205
2211152-11	Se(F1)	SE	dry	1.15		0.138	0.287	mg/kg	B222791	S221204
2211152-11	Se(F2)	SE	dry	10.1		0.024	0.242	mg/kg	B222798	S221212
2211152-11	Se(F3)	SE	dry	7.26		0.181	0.363	mg/kg	B222799	S221220
2211152-11	Se(F4)	SE	dry	0.537		0.082	0.242	mg/kg	B222800	S221220
2211152-11	Se(F5)	SE	dry	0.044	J	0.033	0.302	mg/kg	B222801	S221239
2211152-11	Se(IV) F1	SE	dry	0.752		0.041	0.082	mg/kg	B222772	S221205
2211152-11	Se(IV) F2	SE	dry	4.79		0.021	0.059	mg/kg	B222773	S221205
2211152-11	Se(VI) F1	SE	dry	≤ 0.024	U	0.024	0.062	mg/kg	B222772	S221205
2211152-11	Se(VI) F2	SE	dry	0.027	J	0.024	0.062	mg/kg	B222773	S221205
2211152-11	SeCN F1	SE	dry	≤ 0.005	U	0.005	0.024	mg/kg	B222772	S221205
2211152-11	SeCN F2	SE	dry	1.67		0.005	0.024	mg/kg	B222773	S221205
2211152-11	SeMet F1	SE	dry	≤ 0.002	U	0.002	0.024	mg/kg	B222772	S221205
2211152-11	SeMet F2	SE	dry	≤ 0.002	U	0.002	0.024	mg/kg	B222773	S221205
2211152-11	SeSO ₃ F1	SE	dry	≤ 0.024	U	0.024	0.062	mg/kg	B222772	S221205
2211152-11	SeSO ₃ F2	SE	dry	0.030	J	0.024	0.062	mg/kg	B222773	S221205
2211152-11	Unk Se Sp F1	SE	dry	≤ 0.041	U	0.041	0.082	mg/kg	B222772	S221205
2211152-11	Unk Se Sp F2	SE	dry	1.03		0.021	0.059	mg/kg	B222773	S221205



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKDT_SE-4_LAEMP_EVO_2022-10_N</i>										
2211152-12	%TS	SE	NA	31.98		0.01	0.04	%	B222795	N/A
2211152-12	DMS ₂ O F1	SE	dry	≤ 0.002	U	0.002	0.024	mg/kg	B222772	S221205
2211152-12	DMS ₂ O F2	SE	dry	≤ 0.002	U	0.002	0.024	mg/kg	B222773	S221205
2211152-12	MeSe(IV) F1	SE	dry	0.025		0.002	0.024	mg/kg	B222772	S221205
2211152-12	MeSe(IV) F2	SE	dry	0.723		0.002	0.024	mg/kg	B222773	S221205
2211152-12	Se	SE	dry	18.5		0.203	0.406	mg/kg	B222830	S221239
2211152-12	Se Unk A F1	SE	dry	≤ 0.002	U	0.002	0.024	mg/kg	B222772	S221205
2211152-12	Se Unk A F2	SE	dry	≤ 0.002	U	0.002	0.024	mg/kg	B222773	S221205
2211152-12	Se(F1)	SE	dry	1.12		0.137	0.287	mg/kg	B222791	S221204
2211152-12	Se(F2)	SE	dry	11.9		0.024	0.241	mg/kg	B222798	S221212
2211152-12	Se(F3)	SE	dry	7.16		0.181	0.362	mg/kg	B222799	S221220
2211152-12	Se(F4)	SE	dry	0.744		0.081	0.241	mg/kg	B222800	S221220
2211152-12	Se(F5)	SE	dry	0.090	J	0.033	0.302	mg/kg	B222801	S221239
2211152-12	Se(IV) F1	SE	dry	0.703		0.041	0.081	mg/kg	B222772	S221205
2211152-12	Se(IV) F2	SE	dry	6.31		0.021	0.059	mg/kg	B222773	S221205
2211152-12	Se(VI) F1	SE	dry	≤ 0.024	U	0.024	0.062	mg/kg	B222772	S221205
2211152-12	Se(VI) F2	SE	dry	≤ 0.024	U	0.024	0.062	mg/kg	B222773	S221205
2211152-12	SeCN F1	SE	dry	≤ 0.005	U	0.005	0.024	mg/kg	B222772	S221205
2211152-12	SeCN F2	SE	dry	2.01		0.005	0.024	mg/kg	B222773	S221205
2211152-12	SeMet F1	SE	dry	≤ 0.002	U	0.002	0.024	mg/kg	B222772	S221205
2211152-12	SeMet F2	SE	dry	≤ 0.002	U	0.002	0.024	mg/kg	B222773	S221205
2211152-12	SeSO ₃ F1	SE	dry	≤ 0.024	U	0.024	0.062	mg/kg	B222772	S221205
2211152-12	SeSO ₃ F2	SE	dry	0.026	J	0.024	0.062	mg/kg	B222773	S221205
2211152-12	Unk Se Sp F1	SE	dry	≤ 0.041	U	0.041	0.081	mg/kg	B222772	S221205
2211152-12	Unk Se Sp F2	SE	dry	1.12		0.021	0.059	mg/kg	B222773	S221205



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKDT_SE-5_LAEMP_EVO_2022-10_N</i>										
2211152-13	%TS	SE	NA	33.64		0.01	0.04	%	B222795	N/A
2211152-13	DMS ₂ O F1	SE	dry	≤ 0.002	U	0.002	0.022	mg/kg	B222772	S221205
2211152-13	DMS ₂ O F2	SE	dry	≤ 0.002	U	0.002	0.022	mg/kg	B222773	S221205
2211152-13	MeSe(IV) F1	SE	dry	0.026		0.002	0.022	mg/kg	B222772	S221205
2211152-13	MeSe(IV) F2	SE	dry	0.761		0.002	0.022	mg/kg	B222773	S221205
2211152-13	Se	SE	dry	19.8		0.235	0.469	mg/kg	B222830	S221239
2211152-13	Se Unk A F1	SE	dry	≤ 0.002	U	0.002	0.022	mg/kg	B222772	S221205
2211152-13	Se Unk A F2	SE	dry	0.009	J	0.002	0.022	mg/kg	B222773	S221205
2211152-13	Se(F1)	SE	dry	1.07		0.126	0.264	mg/kg	B222791	S221204
2211152-13	Se(F2)	SE	dry	12.3		0.022	0.222	mg/kg	B222798	S221212
2211152-13	Se(F3)	SE	dry	7.60		0.167	0.333	mg/kg	B222799	S221220
2211152-13	Se(F4)	SE	dry	0.537		0.075	0.222	mg/kg	B222800	S221220
2211152-13	Se(F5)	SE	dry	0.051	J	0.031	0.278	mg/kg	B222801	S221239
2211152-13	Se(IV) F1	SE	dry	0.686		0.038	0.075	mg/kg	B222772	S221205
2211152-13	Se(IV) F2	SE	dry	6.55		0.019	0.054	mg/kg	B222773	S221205
2211152-13	Se(VI) F1	SE	dry	≤ 0.022	U	0.022	0.057	mg/kg	B222772	S221205
2211152-13	Se(VI) F2	SE	dry	0.030	J	0.022	0.057	mg/kg	B222773	S221205
2211152-13	SeCN F1	SE	dry	≤ 0.004	U	0.004	0.022	mg/kg	B222772	S221205
2211152-13	SeCN F2	SE	dry	2.04		0.004	0.022	mg/kg	B222773	S221205
2211152-13	SeMet F1	SE	dry	≤ 0.002	U	0.002	0.022	mg/kg	B222772	S221205
2211152-13	SeMet F2	SE	dry	≤ 0.002	U	0.002	0.022	mg/kg	B222773	S221205
2211152-13	SeSO ₃ F1	SE	dry	≤ 0.022	U	0.022	0.057	mg/kg	B222772	S221205
2211152-13	SeSO ₃ F2	SE	dry	0.036	J	0.022	0.057	mg/kg	B222773	S221205
2211152-13	Unk Se Sp F1	SE	dry	≤ 0.038	U	0.038	0.075	mg/kg	B222772	S221205
2211152-13	Unk Se Sp F2	SE	dry	1.16		0.019	0.054	mg/kg	B222773	S221205



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKDT_SE-6_LAEMP_EVO_2022-10_N										
2211152-14	%TS	SE	NA	31.53		0.01	0.04	%	B222795	N/A
2211152-14	DMS ₂ O F1	SE	dry	≤ 0.003	U	0.003	0.025	mg/kg	B222772	S221205
2211152-14	DMS ₂ O F2	SE	dry	≤ 0.003	U	0.003	0.025	mg/kg	B222773	S221205
2211152-14	MeSe(IV) F1	SE	dry	0.031		0.003	0.025	mg/kg	B222772	S221205
2211152-14	MeSe(IV) F2	SE	dry	0.578		0.003	0.025	mg/kg	B222773	S221205
2211152-14	Se	SE	dry	14.1		0.209	0.417	mg/kg	B222830	S221239
2211152-14	Se Unk A F1	SE	dry	≤ 0.003	U	0.003	0.025	mg/kg	B222772	S221205
2211152-14	Se Unk A F2	SE	dry	≤ 0.003	U	0.003	0.025	mg/kg	B222773	S221205
2211152-14	Se(F1)	SE	dry	0.951		0.142	0.297	mg/kg	B222791	S221204
2211152-14	Se(F2)	SE	dry	8.28		0.025	0.250	mg/kg	B222798	S221212
2211152-14	Se(F3)	SE	dry	5.94		0.188	0.376	mg/kg	B222799	S221220
2211152-14	Se(F4)	SE	dry	0.552		0.085	0.250	mg/kg	B222800	S221220
2211152-14	Se(F5)	SE	dry	0.067	J	0.034	0.313	mg/kg	B222801	S221239
2211152-14	Se(IV) F1	SE	dry	0.502		0.042	0.085	mg/kg	B222772	S221205
2211152-14	Se(IV) F2	SE	dry	3.87		0.022	0.061	mg/kg	B222773	S221205
2211152-14	Se(VI) F1	SE	dry	≤ 0.025	U	0.025	0.064	mg/kg	B222772	S221205
2211152-14	Se(VI) F2	SE	dry	≤ 0.025	U	0.025	0.064	mg/kg	B222773	S221205
2211152-14	SeCN F1	SE	dry	≤ 0.005	U	0.005	0.025	mg/kg	B222772	S221205
2211152-14	SeCN F2	SE	dry	1.44		0.005	0.025	mg/kg	B222773	S221205
2211152-14	SeMet F1	SE	dry	≤ 0.003	U	0.003	0.025	mg/kg	B222772	S221205
2211152-14	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.025	mg/kg	B222773	S221205
2211152-14	SeSO ₃ F1	SE	dry	≤ 0.025	U	0.025	0.064	mg/kg	B222772	S221205
2211152-14	SeSO ₃ F2	SE	dry	≤ 0.025	U	0.025	0.064	mg/kg	B222773	S221205
2211152-14	Unk Se Sp F1	SE	dry	≤ 0.042	U	0.042	0.085	mg/kg	B222772	S221205
2211152-14	Unk Se Sp F2	SE	dry	0.793		0.022	0.061	mg/kg	B222773	S221205



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKDT_SE-7_LAEMP_EVO_2022-10_N</i>										
2211152-15	%TS	SE	NA	33.71		0.01	0.04	%	B222795	N/A
2211152-15	DMS ₂ O F1	SE	dry	≤ 0.002	U	0.002	0.023	mg/kg	B222772	S221205
2211152-15	DMS ₂ O F2	SE	dry	≤ 0.002	U	0.002	0.023	mg/kg	B222773	S221205
2211152-15	MeSe(IV) F1	SE	dry	0.028		0.002	0.023	mg/kg	B222772	S221205
2211152-15	MeSe(IV) F2	SE	dry	0.584		0.002	0.023	mg/kg	B222773	S221205
2211152-15	Se	SE	dry	14.3		0.217	0.434	mg/kg	B222830	S221239
2211152-15	Se Unk A F1	SE	dry	≤ 0.002	U	0.002	0.023	mg/kg	B222772	S221205
2211152-15	Se Unk A F2	SE	dry	0.007	J	0.002	0.023	mg/kg	B222773	S221205
2211152-15	Se(F1)	SE	dry	0.852		0.131	0.274	mg/kg	B222791	S221204
2211152-15	Se(F2)	SE	dry	8.14		0.023	0.231	mg/kg	B222798	S221212
2211152-15	Se(F3)	SE	dry	5.43		0.173	0.346	mg/kg	B222799	S221220
2211152-15	Se(F4)	SE	dry	0.400		0.078	0.231	mg/kg	B222800	S221220
2211152-15	Se(F5)	SE	dry	≤ 0.032	U	0.032	0.289	mg/kg	B222801	S221239
2211152-15	Se(IV) F1	SE	dry	0.447		0.039	0.078	mg/kg	B222772	S221205
2211152-15	Se(IV) F2	SE	dry	3.80		0.020	0.056	mg/kg	B222773	S221205
2211152-15	Se(VI) F1	SE	dry	≤ 0.023	U	0.023	0.059	mg/kg	B222772	S221205
2211152-15	Se(VI) F2	SE	dry	≤ 0.023	U	0.023	0.059	mg/kg	B222773	S221205
2211152-15	SeCN F1	SE	dry	≤ 0.005	U	0.005	0.023	mg/kg	B222772	S221205
2211152-15	SeCN F2	SE	dry	1.38		0.005	0.023	mg/kg	B222773	S221205
2211152-15	SeMet F1	SE	dry	≤ 0.002	U	0.002	0.023	mg/kg	B222772	S221205
2211152-15	SeMet F2	SE	dry	≤ 0.002	U	0.002	0.023	mg/kg	B222773	S221205
2211152-15	SeSO ₃ F1	SE	dry	≤ 0.023	U	0.023	0.059	mg/kg	B222772	S221205
2211152-15	SeSO ₃ F2	SE	dry	≤ 0.023	U	0.023	0.059	mg/kg	B222773	S221205
2211152-15	Unk Se Sp F1	SE	dry	≤ 0.039	U	0.039	0.078	mg/kg	B222772	S221205
2211152-15	Unk Se Sp F2	SE	dry	0.777		0.020	0.056	mg/kg	B222773	S221205



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKDT_BRYOSE-1_LAEMP_EVO_2022-10_N</i>										
2211152-16	%TS	SE	NA	29.02		0.009	0.03	%	B222795	N/A
2211152-16	DMS ₂ O F1	SE	dry	0.020	J	0.003	0.027	mg/kg	B222772	S221205
2211152-16	DMS ₂ O F2	SE	dry	0.024	J	0.003	0.027	mg/kg	B222773	S221205
2211152-16	MeSe(IV) F1	SE	dry	0.086		0.003	0.027	mg/kg	B222772	S221205
2211152-16	MeSe(IV) F2	SE	dry	0.717		0.003	0.027	mg/kg	B222773	S221205
2211152-16	Se	SE	dry	31.2		0.216	0.431	mg/kg	B222830	S221239
2211152-16	Se Unk A F1	SE	dry	≤ 0.003	U	0.003	0.027	mg/kg	B222772	S221205
2211152-16	Se Unk A F2	SE	dry	≤ 0.003	U	0.003	0.027	mg/kg	B222773	S221205
2211152-16	Se(F1)	SE	dry	1.24		0.152	0.318	mg/kg	B222791	S221204
2211152-16	Se(F2)	SE	dry	16.6		0.027	0.268	mg/kg	B222798	S221212
2211152-16	Se(F3)	SE	dry	12.8		0.201	0.402	mg/kg	B222799	S221220
2211152-16	Se(F4)	SE	dry	0.742		0.090	0.268	mg/kg	B222800	S221220
2211152-16	Se(F5)	SE	dry	≤ 0.037	U	0.037	0.335	mg/kg	B222801	S221239
2211152-16	Se(IV) F1	SE	dry	0.622		0.045	0.090	mg/kg	B222772	S221205
2211152-16	Se(IV) F2	SE	dry	11.2		0.023	0.065	mg/kg	B222773	S221205
2211152-16	Se(VI) F1	SE	dry	0.034	J	0.027	0.069	mg/kg	B222772	S221205
2211152-16	Se(VI) F2	SE	dry	0.028	J	0.027	0.069	mg/kg	B222773	S221205
2211152-16	SeCN F1	SE	dry	≤ 0.005	U	0.005	0.027	mg/kg	B222772	S221205
2211152-16	SeCN F2	SE	dry	2.15		0.005	0.027	mg/kg	B222773	S221205
2211152-16	SeMet F1	SE	dry	≤ 0.003	U	0.003	0.027	mg/kg	B222772	S221205
2211152-16	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.027	mg/kg	B222773	S221205
2211152-16	SeSO ₃ F1	SE	dry	≤ 0.027	U	0.027	0.069	mg/kg	B222772	S221205
2211152-16	SeSO ₃ F2	SE	dry	≤ 0.027	U	0.027	0.069	mg/kg	B222773	S221205
2211152-16	Unk Se Sp F1	SE	dry	≤ 0.045	U	0.045	0.090	mg/kg	B222772	S221205
2211152-16	Unk Se Sp F2	SE	dry	0.733		0.023	0.065	mg/kg	B222773	S221205



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKDT_BRYOSE-2_LAEMP_EVO_2022-10_N</i>										
2211152-17	%TS	SE	NA	30.38		0.01	0.04	%	B222795	N/A
2211152-17	DMS ₂ O F1	SE	dry	≤ 0.003	U	0.003	0.026	mg/kg	B222772	S221205
2211152-17	DMS ₂ O F2	SE	dry	≤ 0.003	U	0.003	0.026	mg/kg	B222773	S221205
2211152-17	MeSe(IV) F1	SE	dry	0.035		0.003	0.026	mg/kg	B222772	S221205
2211152-17	MeSe(IV) F2	SE	dry	0.362		0.003	0.026	mg/kg	B222773	S221205
2211152-17	Se	SE	dry	15.8		0.231	0.462	mg/kg	B222830	S221239
2211152-17	Se Unk A F1	SE	dry	≤ 0.003	U	0.003	0.026	mg/kg	B222772	S221205
2211152-17	Se Unk A F2	SE	dry	≤ 0.003	U	0.003	0.026	mg/kg	B222773	S221205
2211152-17	Se(F1)	SE	dry	1.13		0.148	0.310	mg/kg	B222791	S221204
2211152-17	Se(F2)	SE	dry	7.71		0.026	0.261	mg/kg	B222798	S221212
2211152-17	Se(F3)	SE	dry	5.81		0.196	0.391	mg/kg	B222799	S221220
2211152-17	Se(F4)	SE	dry	0.657		0.088	0.261	mg/kg	B222800	S221220
2211152-17	Se(F5)	SE	dry	≤ 0.036	U	0.036	0.326	mg/kg	B222801	S221239
2211152-17	Se(IV) F1	SE	dry	0.681		0.044	0.088	mg/kg	B222772	S221205
2211152-17	Se(IV) F2	SE	dry	4.66		0.023	0.064	mg/kg	B222773	S221205
2211152-17	Se(VI) F1	SE	dry	0.115		0.026	0.067	mg/kg	B222772	S221205
2211152-17	Se(VI) F2	SE	dry	≤ 0.026	U	0.026	0.067	mg/kg	B222773	S221205
2211152-17	SeCN F1	SE	dry	≤ 0.005	U	0.005	0.026	mg/kg	B222772	S221205
2211152-17	SeCN F2	SE	dry	0.942		0.005	0.026	mg/kg	B222773	S221205
2211152-17	SeMet F1	SE	dry	≤ 0.003	U	0.003	0.026	mg/kg	B222772	S221205
2211152-17	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.026	mg/kg	B222773	S221205
2211152-17	SeSO ₃ F1	SE	dry	≤ 0.026	U	0.026	0.067	mg/kg	B222772	S221205
2211152-17	SeSO ₃ F2	SE	dry	≤ 0.026	U	0.026	0.067	mg/kg	B222773	S221205
2211152-17	Unk Se Sp F1	SE	dry	≤ 0.044	U	0.044	0.088	mg/kg	B222772	S221205
2211152-17	Unk Se Sp F2	SE	dry	0.317		0.023	0.064	mg/kg	B222773	S221205



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKDT_BRYOSE-3_LAEMP_EVO_2022-10_N</i>										
2211152-18	%TS	SE	NA	11.82		0.06	0.21	%	B222795	N/A
2211152-18	DMS ₂ O F1	SE	dry	≤ 0.007	U	0.007	0.065	mg/kg	B222772	S221205
2211152-18	DMS ₂ O F2	SE	dry	≤ 0.007	U	0.007	0.065	mg/kg	B222773	S221205
2211152-18	MeSe(IV) F1	SE	dry	0.023	J	0.007	0.065	mg/kg	B222772	S221205
2211152-18	MeSe(IV) F2	SE	dry	0.358		0.007	0.065	mg/kg	B222773	S221205
2211152-18	Se	SE	dry	18.2		0.536	1.07	mg/kg	B222830	S221239
2211152-18	Se Unk A F1	SE	dry	≤ 0.007	U	0.007	0.065	mg/kg	B222772	S221205
2211152-18	Se Unk A F2	SE	dry	≤ 0.007	U	0.007	0.065	mg/kg	B222773	S221205
2211152-18	Se(F1)	SE	dry	1.55		0.370	0.772	mg/kg	B222791	S221204
2211152-18	Se(F2)	SE	dry	6.66		0.065	0.650	mg/kg	B222798	S221212
2211152-18	Se(F3)	SE	dry	6.95		0.488	0.975	mg/kg	B222799	S221220
2211152-18	Se(F4)	SE	dry	0.461	J	0.219	0.650	mg/kg	B222800	S221220
2211152-18	Se(F5)	SE	dry	≤ 0.089	U	0.089	0.813	mg/kg	B222801	S221239
2211152-18	Se(IV) F1	SE	dry	0.396		0.110	0.219	mg/kg	B222772	S221205
2211152-18	Se(IV) F2	SE	dry	3.00		0.057	0.158	mg/kg	B222773	S221205
2211152-18	Se(VI) F1	SE	dry	0.483		0.065	0.167	mg/kg	B222772	S221205
2211152-18	Se(VI) F2	SE	dry	≤ 0.065	U	0.065	0.167	mg/kg	B222773	S221205
2211152-18	SeCN F1	SE	dry	≤ 0.013	U	0.013	0.065	mg/kg	B222772	S221205
2211152-18	SeCN F2	SE	dry	1.15		0.013	0.065	mg/kg	B222773	S221205
2211152-18	SeMet F1	SE	dry	≤ 0.007	U	0.007	0.065	mg/kg	B222772	S221205
2211152-18	SeMet F2	SE	dry	≤ 0.007	U	0.007	0.065	mg/kg	B222773	S221205
2211152-18	SeSO ₃ F1	SE	dry	≤ 0.065	U	0.065	0.167	mg/kg	B222772	S221205
2211152-18	SeSO ₃ F2	SE	dry	≤ 0.065	U	0.065	0.167	mg/kg	B222773	S221205
2211152-18	Unk Se Sp F1	SE	dry	≤ 0.110	U	0.110	0.219	mg/kg	B222772	S221205
2211152-18	Unk Se Sp F2	SE	dry	0.435		0.057	0.158	mg/kg	B222773	S221205



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKMD_SE-1_LAEMP_EVO_2022-10_N</i>										
2211152-19	%TS	SE	NA	23.53		0.02	0.06	%	B222795	N/A
2211152-19	DMS ₂ O F1	SE	dry	0.044		0.003	0.033	mg/kg	B222772	S221205
2211152-19	DMS ₂ O F2	SE	dry	0.015	J	0.003	0.033	mg/kg	B222773	S221205
2211152-19	MeSe(IV) F1	SE	dry	0.046		0.003	0.033	mg/kg	B222772	S221205
2211152-19	MeSe(IV) F2	SE	dry	0.859		0.003	0.033	mg/kg	B222773	S221205
2211152-19	Se	SE	dry	28.7		0.285	0.570	mg/kg	B222830	S221239
2211152-19	Se Unk A F1	SE	dry	≤ 0.003	U	0.003	0.033	mg/kg	B222772	S221205
2211152-19	Se Unk A F2	SE	dry	0.022	J	0.003	0.033	mg/kg	B222773	S221205
2211152-19	Se(F1)	SE	dry	1.10		0.188	0.392	mg/kg	B222791	S221204
2211152-19	Se(F2)	SE	dry	17.0		0.033	0.330	mg/kg	B222798	S221212
2211152-19	Se(F3)	SE	dry	12.3		0.248	0.496	mg/kg	B222799	S221220
2211152-19	Se(F4)	SE	dry	0.894		0.112	0.330	mg/kg	B222800	S221220
2211152-19	Se(F5)	SE	dry	0.055	J	0.045	0.413	mg/kg	B222801	S221239
2211152-19	Se(IV) F1	SE	dry	0.549		0.056	0.112	mg/kg	B222772	S221205
2211152-19	Se(IV) F2	SE	dry	9.70		0.029	0.081	mg/kg	B222773	S221205
2211152-19	Se(VI) F1	SE	dry	≤ 0.033	U	0.033	0.085	mg/kg	B222772	S221205
2211152-19	Se(VI) F2	SE	dry	0.034	J	0.033	0.085	mg/kg	B222773	S221205
2211152-19	SeCN F1	SE	dry	≤ 0.007	U	0.007	0.033	mg/kg	B222772	S221205
2211152-19	SeCN F2	SE	dry	2.03		0.007	0.033	mg/kg	B222773	S221205
2211152-19	SeMet F1	SE	dry	≤ 0.003	U	0.003	0.033	mg/kg	B222772	S221205
2211152-19	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.033	mg/kg	B222773	S221205
2211152-19	SeSO ₃ F1	SE	dry	≤ 0.033	U	0.033	0.085	mg/kg	B222772	S221205
2211152-19	SeSO ₃ F2	SE	dry	≤ 0.033	U	0.033	0.085	mg/kg	B222773	S221205
2211152-19	Unk Se Sp F1	SE	dry	≤ 0.056	U	0.056	0.112	mg/kg	B222772	S221205
2211152-19	Unk Se Sp F2	SE	dry	1.15		0.029	0.081	mg/kg	B222773	S221205



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKMD_SE-2_LAEMP_EVO_2022-10_N										
2211152-20	%TS	SE	NA	22.31		0.01	0.05	%	B222795	N/A
2211152-20	DMS ₂ O F1	SE	dry	0.034	J	0.004	0.035	mg/kg	B222772	S221205
2211152-20	DMS ₂ O F2	SE	dry	0.022	J	0.004	0.035	mg/kg	B222773	S221205
2211152-20	MeSe(IV) F1	SE	dry	0.036		0.004	0.035	mg/kg	B222772	S221205
2211152-20	MeSe(IV) F2	SE	dry	0.599		0.004	0.035	mg/kg	B222773	S221205
2211152-20	Se	SE	dry	25.3		0.296	0.593	mg/kg	B222830	S221239
2211152-20	Se Unk A F1	SE	dry	≤ 0.004	U	0.004	0.035	mg/kg	B222772	S221205
2211152-20	Se Unk A F2	SE	dry	≤ 0.004	U	0.004	0.035	mg/kg	B222773	S221205
2211152-20	Se(F1)	SE	dry	0.917		0.201	0.420	mg/kg	B222791	S221204
2211152-20	Se(F2)	SE	dry	15.4		0.035	0.353	mg/kg	B222798	S221212
2211152-20	Se(F3)	SE	dry	13.7		0.265	0.530	mg/kg	B222799	S221220
2211152-20	Se(F4)	SE	dry	1.09		0.119	0.353	mg/kg	B222800	S221220
2211152-20	Se(F5)	SE	dry	0.060	J	0.049	0.442	mg/kg	B222801	S221239
2211152-20	Se(IV) F1	SE	dry	0.420		0.060	0.119	mg/kg	B222772	S221205
2211152-20	Se(IV) F2	SE	dry	9.39		0.031	0.086	mg/kg	B222773	S221205
2211152-20	Se(VI) F1	SE	dry	0.172		0.035	0.091	mg/kg	B222772	S221205
2211152-20	Se(VI) F2	SE	dry	≤ 0.035	U	0.035	0.091	mg/kg	B222773	S221205
2211152-20	SeCN F1	SE	dry	≤ 0.007	U	0.007	0.035	mg/kg	B222772	S221205
2211152-20	SeCN F2	SE	dry	2.17		0.007	0.035	mg/kg	B222773	S221205
2211152-20	SeMet F1	SE	dry	≤ 0.004	U	0.004	0.035	mg/kg	B222772	S221205
2211152-20	SeMet F2	SE	dry	≤ 0.004	U	0.004	0.035	mg/kg	B222773	S221205
2211152-20	SeSO ₃ F1	SE	dry	≤ 0.035	U	0.035	0.091	mg/kg	B222772	S221205
2211152-20	SeSO ₃ F2	SE	dry	≤ 0.035	U	0.035	0.091	mg/kg	B222773	S221205
2211152-20	Unk Se Sp F1	SE	dry	≤ 0.060	U	0.060	0.119	mg/kg	B222772	S221205
2211152-20	Unk Se Sp F2	SE	dry	0.502		0.031	0.086	mg/kg	B222773	S221205



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKMD_SE-3_LAEMP_EVO_2022-10_N										
2211152-21	%TS	SE	NA	15.69		0.02	0.08	%	B222795	N/A
2211152-21	DMS ₂ O F1	SE	dry	0.053		0.005	0.048	mg/kg	B222772	S221205
2211152-21	DMS ₂ O F2	SE	dry	0.034	J	0.005	0.048	mg/kg	B222773	S221205
2211152-21	MeSe(IV) F1	SE	dry	0.034	J	0.005	0.048	mg/kg	B222772	S221205
2211152-21	MeSe(IV) F2	SE	dry	0.687		0.005	0.048	mg/kg	B222773	S221205
2211152-21	Se	SE	dry	27.5		0.412	0.824	mg/kg	B222830	S221239
2211152-21	Se Unk A F1	SE	dry	≤ 0.005	U	0.005	0.048	mg/kg	B222772	S221205
2211152-21	Se Unk A F2	SE	dry	≤ 0.005	U	0.005	0.048	mg/kg	B222773	S221205
2211152-21	Se(F1)	SE	dry	1.24		0.275	0.575	mg/kg	B222791	S221204
2211152-21	Se(F2)	SE	dry	15.6		0.048	0.484	mg/kg	B222798	S221212
2211152-21	Se(F3)	SE	dry	14.9		0.363	0.726	mg/kg	B222799	S221220
2211152-21	Se(F4)	SE	dry	1.02		0.163	0.484	mg/kg	B222800	S221220
2211152-21	Se(F5)	SE	dry	≤ 0.067	U	0.067	0.605	mg/kg	B222801	S221239
2211152-21	Se(IV) F1	SE	dry	0.607		0.082	0.163	mg/kg	B222772	S221205
2211152-21	Se(IV) F2	SE	dry	10.3		0.042	0.118	mg/kg	B222773	S221205
2211152-21	Se(VI) F1	SE	dry	0.284		0.048	0.124	mg/kg	B222772	S221205
2211152-21	Se(VI) F2	SE	dry	≤ 0.048	U	0.048	0.124	mg/kg	B222773	S221205
2211152-21	SeCN F1	SE	dry	≤ 0.010	U	0.010	0.048	mg/kg	B222772	S221205
2211152-21	SeCN F2	SE	dry	2.21		0.010	0.048	mg/kg	B222773	S221205
2211152-21	SeMet F1	SE	dry	≤ 0.005	U	0.005	0.048	mg/kg	B222772	S221205
2211152-21	SeMet F2	SE	dry	≤ 0.005	U	0.005	0.048	mg/kg	B222773	S221205
2211152-21	SeSO ₃ F1	SE	dry	≤ 0.048	U	0.048	0.124	mg/kg	B222772	S221205
2211152-21	SeSO ₃ F2	SE	dry	≤ 0.048	U	0.048	0.124	mg/kg	B222773	S221205
2211152-21	Unk Se Sp F1	SE	dry	≤ 0.082	U	0.082	0.163	mg/kg	B222772	S221205
2211152-21	Unk Se Sp F2	SE	dry	0.636		0.042	0.118	mg/kg	B222773	S221205



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKMD_BRYOSE-1_LAEMP_EVO_2022-10_N</i>										
2211152-22	%TS	SE	NA	22.89		0.01	0.05	%	B222795	N/A
2211152-22	DMS ₂ O F1	SE	dry	0.017	J	0.003	0.035	mg/kg	B222772	S221205
2211152-22	DMS ₂ O F2	SE	dry	≤ 0.003	U	0.003	0.035	mg/kg	B222773	S221205
2211152-22	MeSe(IV) F1	SE	dry	0.064		0.003	0.035	mg/kg	B222772	S221205
2211152-22	MeSe(IV) F2	SE	dry	0.379		0.003	0.035	mg/kg	B222773	S221205
2211152-22	Se	SE	dry	22.9		0.277	0.554	mg/kg	B222830	S221239
2211152-22	Se Unk A F1	SE	dry	≤ 0.003	U	0.003	0.035	mg/kg	B222772	S221205
2211152-22	Se Unk A F2	SE	dry	≤ 0.003	U	0.003	0.035	mg/kg	B222773	S221205
2211152-22	Se(F1)	SE	dry	1.76		0.198	0.414	mg/kg	B222791	S221204
2211152-22	Se(F2)	SE	dry	12.7		0.035	0.348	mg/kg	B222798	S221212
2211152-22	Se(F3)	SE	dry	8.47		0.261	0.523	mg/kg	B222799	S221220
2211152-22	Se(F4)	SE	dry	0.486		0.118	0.348	mg/kg	B222800	S221220
2211152-22	Se(F5)	SE	dry	0.068	J	0.048	0.435	mg/kg	B222801	S221239
2211152-22	Se(IV) F1	SE	dry	0.975		0.059	0.118	mg/kg	B222772	S221205
2211152-22	Se(IV) F2	SE	dry	5.81		0.030	0.085	mg/kg	B222773	S221205
2211152-22	Se(VI) F1	SE	dry	0.223		0.035	0.089	mg/kg	B222772	S221205
2211152-22	Se(VI) F2	SE	dry	≤ 0.035	U	0.035	0.089	mg/kg	B222773	S221205
2211152-22	SeCN F1	SE	dry	≤ 0.007	U	0.007	0.035	mg/kg	B222772	S221205
2211152-22	SeCN F2	SE	dry	1.11		0.007	0.035	mg/kg	B222773	S221205
2211152-22	SeMet F1	SE	dry	≤ 0.003	U	0.003	0.035	mg/kg	B222772	S221205
2211152-22	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.035	mg/kg	B222773	S221205
2211152-22	SeSO ₃ F1	SE	dry	≤ 0.035	U	0.035	0.089	mg/kg	B222772	S221205
2211152-22	SeSO ₃ F2	SE	dry	≤ 0.035	U	0.035	0.089	mg/kg	B222773	S221205
2211152-22	Unk Se Sp F1	SE	dry	≤ 0.059	U	0.059	0.118	mg/kg	B222772	S221205
2211152-22	Unk Se Sp F2	SE	dry	0.375		0.030	0.085	mg/kg	B222773	S221205



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKMD_BRYOSE-2_LAEMP_EVO_2022-10_N</i>										
2211152-23	%TS	SE	NA	14.60		0.03	0.12	%	B222795	N/A
2211152-23	DMS ₂ O F1	SE	dry	0.013	J	0.005	0.053	mg/kg	B222772	S221205
2211152-23	DMS ₂ O F2	SE	dry	0.050	J	0.005	0.053	mg/kg	B222773	S221205
2211152-23	MeSe(IV) F1	SE	dry	0.033	J	0.005	0.053	mg/kg	B222772	S221205
2211152-23	MeSe(IV) F2	SE	dry	0.460		0.005	0.053	mg/kg	B222773	S221205
2211152-23	Se	SE	dry	17.0		0.417	0.835	mg/kg	B222830	S221239
2211152-23	Se Unk A F1	SE	dry	≤ 0.005	U	0.005	0.053	mg/kg	B222772	S221205
2211152-23	Se Unk A F2	SE	dry	≤ 0.005	U	0.005	0.053	mg/kg	B222773	S221205
2211152-23	Se(F1)	SE	dry	1.07		0.303	0.632	mg/kg	B222791	S221204
2211152-23	Se(F2)	SE	dry	10.4		0.053	0.532	mg/kg	B222798	S221212
2211152-23	Se(F3)	SE	dry	13.5		0.399	0.798	mg/kg	B222799	S221220
2211152-23	Se(F4)	SE	dry	0.867		0.180	0.532	mg/kg	B222800	S221220
2211152-23	Se(F5)	SE	dry	≤ 0.073	U	0.073	0.665	mg/kg	B222801	S221239
2211152-23	Se(IV) F1	SE	dry	0.160	J	0.090	0.180	mg/kg	B222772	S221205
2211152-23	Se(IV) F2	SE	dry	5.98		0.047	0.130	mg/kg	B222773	S221205
2211152-23	Se(VI) F1	SE	dry	0.545		0.053	0.136	mg/kg	B222772	S221205
2211152-23	Se(VI) F2	SE	dry	≤ 0.053	U	0.053	0.136	mg/kg	B222773	S221205
2211152-23	SeCN F1	SE	dry	≤ 0.011	U	0.011	0.053	mg/kg	B222772	S221205
2211152-23	SeCN F2	SE	dry	2.13		0.011	0.053	mg/kg	B222773	S221205
2211152-23	SeMet F1	SE	dry	≤ 0.005	U	0.005	0.053	mg/kg	B222772	S221205
2211152-23	SeMet F2	SE	dry	≤ 0.005	U	0.005	0.053	mg/kg	B222773	S221205
2211152-23	SeSO ₃ F1	SE	dry	≤ 0.053	U	0.053	0.136	mg/kg	B222772	S221205
2211152-23	SeSO ₃ F2	SE	dry	≤ 0.053	U	0.053	0.136	mg/kg	B222773	S221205
2211152-23	Unk Se Sp F1	SE	dry	≤ 0.090	U	0.090	0.180	mg/kg	B222772	S221205
2211152-23	Unk Se Sp F2	SE	dry	0.470		0.047	0.130	mg/kg	B222773	S221205



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKMD_BRYOSE-3_LAEMP_EVO_2022-10_N</i>										
2211152-24	%TS	SE	NA	43.87		0.008	0.03	%	B222795	N/A
2211152-24	DMS ₂ O F1	SE	dry	0.005	J	0.002	0.018	mg/kg	B222772	S221205
2211152-24	DMS ₂ O F2	SE	dry	0.008	J	0.002	0.018	mg/kg	B222773	S221205
2211152-24	MeSe(IV) F1	SE	dry	0.012	J	0.002	0.018	mg/kg	B222772	S221205
2211152-24	MeSe(IV) F2	SE	dry	0.189		0.002	0.018	mg/kg	B222773	S221205
2211152-24	Se	SE	dry	7.47		0.176	0.352	mg/kg	B222830	S221239
2211152-24	Se Unk A F1	SE	dry	≤ 0.002	U	0.002	0.018	mg/kg	B222772	S221205
2211152-24	Se Unk A F2	SE	dry	≤ 0.002	U	0.002	0.018	mg/kg	B222773	S221205
2211152-24	Se(F1)	SE	dry	0.310		0.103	0.214	mg/kg	B222791	S221204
2211152-24	Se(F2)	SE	dry	3.42		0.018	0.180	mg/kg	B222798	S221212
2211152-24	Se(F3)	SE	dry	4.20		0.135	0.271	mg/kg	B222799	S221220
2211152-24	Se(F4)	SE	dry	0.412		0.061	0.180	mg/kg	B222800	S221220
2211152-24	Se(F5)	SE	dry	0.034	J	0.025	0.226	mg/kg	B222801	S221239
2211152-24	Se(IV) F1	SE	dry	0.112		0.030	0.061	mg/kg	B222772	S221205
2211152-24	Se(IV) F2	SE	dry	1.90		0.016	0.044	mg/kg	B222773	S221205
2211152-24	Se(VI) F1	SE	dry	0.074		0.018	0.046	mg/kg	B222772	S221205
2211152-24	Se(VI) F2	SE	dry	≤ 0.018	U	0.018	0.046	mg/kg	B222773	S221205
2211152-24	SeCN F1	SE	dry	≤ 0.004	U	0.004	0.018	mg/kg	B222772	S221205
2211152-24	SeCN F2	SE	dry	0.583		0.004	0.018	mg/kg	B222773	S221205
2211152-24	SeMet F1	SE	dry	≤ 0.002	U	0.002	0.018	mg/kg	B222772	S221205
2211152-24	SeMet F2	SE	dry	≤ 0.002	U	0.002	0.018	mg/kg	B222773	S221205
2211152-24	SeSO ₃ F1	SE	dry	≤ 0.018	U	0.018	0.046	mg/kg	B222772	S221205
2211152-24	SeSO ₃ F2	SE	dry	≤ 0.018	U	0.018	0.046	mg/kg	B222773	S221205
2211152-24	Unk Se Sp F1	SE	dry	≤ 0.030	U	0.030	0.061	mg/kg	B222772	S221205
2211152-24	Unk Se Sp F2	SE	dry	0.140		0.016	0.044	mg/kg	B222773	S221205



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_BOCK_SE-1_LAEMP_EVO_2022-11_N</i>										
2211152-25	%TS	SE	NA	43.83		0.006	0.02	%	B222795	N/A
2211152-25	DMS ₂ O F1	SE	dry	0.018	J	0.002	0.018	mg/kg	B222772	S221205
2211152-25	DMS ₂ O F2	SE	dry	0.016	J	0.002	0.018	mg/kg	B222773	S221205
2211152-25	MeSe(IV) F1	SE	dry	0.016	J	0.002	0.018	mg/kg	B222772	S221205
2211152-25	MeSe(IV) F2	SE	dry	0.568		0.002	0.018	mg/kg	B222773	S221205
2211152-25	Se	SE	dry	15.6		0.193	0.387	mg/kg	B222830	S221239
2211152-25	Se Unk A F1	SE	dry	≤ 0.002	U	0.002	0.018	mg/kg	B222772	S221205
2211152-25	Se Unk A F2	SE	dry	≤ 0.002	U	0.002	0.018	mg/kg	B222773	S221205
2211152-25	Se(F1)	SE	dry	0.682		0.100	0.208	mg/kg	B222791	S221204
2211152-25	Se(F2)	SE	dry	4.40		0.018	0.175	mg/kg	B222798	S221212
2211152-25	Se(F3)	SE	dry	11.0		0.131	0.263	mg/kg	B222799	S221220
2211152-25	Se(F4)	SE	dry	0.336		0.059	0.175	mg/kg	B222800	S221220
2211152-25	Se(F5)	SE	dry	0.044	J	0.024	0.219	mg/kg	B222801	S221239
2211152-25	Se(IV) F1	SE	dry	0.377		0.030	0.059	mg/kg	B222772	S221205
2211152-25	Se(IV) F2	SE	dry	1.36		0.015	0.043	mg/kg	B222773	S221205
2211152-25	Se(VI) F1	SE	dry	0.103		0.018	0.045	mg/kg	B222772	S221205
2211152-25	Se(VI) F2	SE	dry	≤ 0.018	U	0.018	0.045	mg/kg	B222773	S221205
2211152-25	SeCN F1	SE	dry	≤ 0.004	U	0.004	0.018	mg/kg	B222772	S221205
2211152-25	SeCN F2	SE	dry	0.616		0.004	0.018	mg/kg	B222773	S221205
2211152-25	SeMet F1	SE	dry	≤ 0.002	U	0.002	0.018	mg/kg	B222772	S221205
2211152-25	SeMet F2	SE	dry	≤ 0.002	U	0.002	0.018	mg/kg	B222773	S221205
2211152-25	SeSO ₃ F1	SE	dry	≤ 0.018	U	0.018	0.045	mg/kg	B222772	S221205
2211152-25	SeSO ₃ F2	SE	dry	0.020	J	0.018	0.045	mg/kg	B222773	S221205
2211152-25	Unk Se Sp F1	SE	dry	≤ 0.030	U	0.030	0.059	mg/kg	B222772	S221205
2211152-25	Unk Se Sp F2	SE	dry	0.416		0.015	0.043	mg/kg	B222773	S221205



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_BOCK_SE-1_LAEMP_EVO_2022-11_N										
2211152-26	%TS	SE	NA	48.96		0.005	0.02	%	B222795	N/A
2211152-26	DMS ₂ O F1	SE	dry	0.011	J	0.002	0.016	mg/kg	B222772	S221205
2211152-26	DMS ₂ O F2	SE	dry	0.006	J	0.002	0.016	mg/kg	B222773	S221205
2211152-26	MeSe(IV) F1	SE	dry	0.019		0.002	0.016	mg/kg	B222772	S221205
2211152-26	MeSe(IV) F2	SE	dry	0.324		0.002	0.016	mg/kg	B222773	S221205
2211152-26	Se	SE	dry	13.8		0.161	0.323	mg/kg	B222830	S221239
2211152-26	Se Unk A F1	SE	dry	≤ 0.002	U	0.002	0.016	mg/kg	B222772	S221205
2211152-26	Se Unk A F2	SE	dry	≤ 0.002	U	0.002	0.016	mg/kg	B222773	S221205
2211152-26	Se(F1)	SE	dry	0.860		0.089	0.186	mg/kg	B222791	S221204
2211152-26	Se(F2)	SE	dry	3.80		0.016	0.157	mg/kg	B222798	S221212
2211152-26	Se(F3)	SE	dry	9.15		0.117	0.235	mg/kg	B222799	S221220
2211152-26	Se(F4)	SE	dry	0.506		0.053	0.157	mg/kg	B222800	S221220
2211152-26	Se(F5)	SE	dry	0.150	J	0.022	0.196	mg/kg	B222801	S221239
2211152-26	Se(IV) F1	SE	dry	0.551		0.026	0.053	mg/kg	B222772	S221205
2211152-26	Se(IV) F2	SE	dry	1.29		0.014	0.038	mg/kg	B222773	S221205
2211152-26	Se(VI) F1	SE	dry	0.095		0.016	0.040	mg/kg	B222772	S221205
2211152-26	Se(VI) F2	SE	dry	0.017	J	0.016	0.040	mg/kg	B222773	S221205
2211152-26	SeCN F1	SE	dry	≤ 0.003	U	0.003	0.016	mg/kg	B222772	S221205
2211152-26	SeCN F2	SE	dry	0.495		0.003	0.016	mg/kg	B222773	S221205
2211152-26	SeMet F1	SE	dry	≤ 0.002	U	0.002	0.016	mg/kg	B222772	S221205
2211152-26	SeMet F2	SE	dry	≤ 0.002	U	0.002	0.016	mg/kg	B222773	S221205
2211152-26	SeSO ₃ F1	SE	dry	≤ 0.016	U	0.016	0.040	mg/kg	B222772	S221205
2211152-26	SeSO ₃ F2	SE	dry	≤ 0.016	U	0.016	0.040	mg/kg	B222773	S221205
2211152-26	Unk Se Sp F1	SE	dry	≤ 0.026	U	0.026	0.053	mg/kg	B222772	S221205
2211152-26	Unk Se Sp F2	SE	dry	0.358		0.014	0.038	mg/kg	B222773	S221205



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_BOCK_SE-1_LAEMP_EVO_2022-11_N										
2211152-27	%TS	SE	NA	42.07		0.007	0.02	%	B222795	N/A
2211152-27	DMS ₂ O F1	SE	dry	0.020		0.002	0.018	mg/kg	B222772	S221205
2211152-27	DMS ₂ O F2	SE	dry	0.011	J	0.002	0.018	mg/kg	B222773	S221205
2211152-27	MeSe(IV) F1	SE	dry	0.032		0.002	0.018	mg/kg	B222772	S221205
2211152-27	MeSe(IV) F2	SE	dry	0.459		0.002	0.018	mg/kg	B222773	S221205
2211152-27	Se	SE	dry	18.2		0.194	0.387	mg/kg	B222830	S221239
2211152-27	Se Unk A F1	SE	dry	≤ 0.002	U	0.002	0.018	mg/kg	B222772	S221205
2211152-27	Se Unk A F2	SE	dry	≤ 0.002	U	0.002	0.018	mg/kg	B222773	S221205
2211152-27	Se(F1)	SE	dry	1.26		0.105	0.218	mg/kg	B222791	S221204
2211152-27	Se(F2)	SE	dry	5.24		0.018	0.184	mg/kg	B222798	S221212
2211152-27	Se(F3)	SE	dry	12.1		0.138	0.276	mg/kg	B222799	S221220
2211152-27	Se(F4)	SE	dry	0.455		0.062	0.184	mg/kg	B222800	S221220
2211152-27	Se(F5)	SE	dry	0.039	J	0.025	0.230	mg/kg	B222801	S221239
2211152-27	Se(IV) F1	SE	dry	0.833		0.031	0.062	mg/kg	B222772	S221205
2211152-27	Se(IV) F2	SE	dry	1.69		0.016	0.045	mg/kg	B222773	S221205
2211152-27	Se(VI) F1	SE	dry	0.099		0.018	0.047	mg/kg	B222772	S221205
2211152-27	Se(VI) F2	SE	dry	0.028	J	0.018	0.047	mg/kg	B222773	S221205
2211152-27	SeCN F1	SE	dry	≤ 0.004	U	0.004	0.018	mg/kg	B222772	S221205
2211152-27	SeCN F2	SE	dry	0.709		0.004	0.018	mg/kg	B222773	S221205
2211152-27	SeMet F1	SE	dry	≤ 0.002	U	0.002	0.018	mg/kg	B222772	S221205
2211152-27	SeMet F2	SE	dry	≤ 0.002	U	0.002	0.018	mg/kg	B222773	S221205
2211152-27	SeSO ₃ F1	SE	dry	≤ 0.018	U	0.018	0.047	mg/kg	B222772	S221205
2211152-27	SeSO ₃ F2	SE	dry	≤ 0.018	U	0.018	0.047	mg/kg	B222773	S221205
2211152-27	Unk Se Sp F1	SE	dry	≤ 0.031	U	0.031	0.062	mg/kg	B222772	S221205
2211152-27	Unk Se Sp F2	SE	dry	0.506		0.016	0.045	mg/kg	B222773	S221205



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_BOCKRD_SE-1_LAEMP_EVO_2022-11_N</i>										
2211152-28	%TS	SE	NA	39.75		0.006	0.02	%	B222795	N/A
2211152-28	DMS ₂ O F1	SE	dry	0.011	J	0.002	0.019	mg/kg	B222772	S221205
2211152-28	DMS ₂ O F2	SE	dry	0.013	J	0.002	0.019	mg/kg	B222773	S221205
2211152-28	MeSe(IV) F1	SE	dry	0.045		0.002	0.019	mg/kg	B222772	S221205
2211152-28	MeSe(IV) F2	SE	dry	0.498		0.002	0.019	mg/kg	B222773	S221205
2211152-28	Se	SE	dry	18.4		0.198	0.397	mg/kg	B222830	S221239
2211152-28	Se Unk A F1	SE	dry	≤ 0.002	U	0.002	0.019	mg/kg	B222772	S221205
2211152-28	Se Unk A F2	SE	dry	≤ 0.002	U	0.002	0.019	mg/kg	B222773	S221205
2211152-28	Se(F1)	SE	dry	1.55		0.109	0.228	mg/kg	B222791	S221204
2211152-28	Se(F2)	SE	dry	9.72		0.019	0.192	mg/kg	B222798	S221212
2211152-28	Se(F3)	SE	dry	10.9		0.144	0.288	mg/kg	B222799	S221220
2211152-28	Se(F4)	SE	dry	0.562		0.065	0.192	mg/kg	B222800	S221220
2211152-28	Se(F5)	SE	dry	0.079	J	0.026	0.240	mg/kg	B222801	S221239
2211152-28	Se(IV) F1	SE	dry	0.771		0.032	0.065	mg/kg	B222772	S221205
2211152-28	Se(IV) F2	SE	dry	5.04		0.017	0.047	mg/kg	B222773	S221205
2211152-28	Se(VI) F1	SE	dry	0.190		0.019	0.049	mg/kg	B222772	S221205
2211152-28	Se(VI) F2	SE	dry	0.036	J	0.019	0.049	mg/kg	B222773	S221205
2211152-28	SeCN F1	SE	dry	≤ 0.004	U	0.004	0.019	mg/kg	B222772	S221205
2211152-28	SeCN F2	SE	dry	0.731		0.004	0.019	mg/kg	B222773	S221205
2211152-28	SeMet F1	SE	dry	0.035		0.002	0.019	mg/kg	B222772	S221205
2211152-28	SeMet F2	SE	dry	≤ 0.002	U	0.002	0.019	mg/kg	B222773	S221205
2211152-28	SeSO ₃ F1	SE	dry	≤ 0.019	U	0.019	0.049	mg/kg	B222772	S221205
2211152-28	SeSO ₃ F2	SE	dry	0.046	J	0.019	0.049	mg/kg	B222773	S221205
2211152-28	Unk Se Sp F1	SE	dry	0.046	J	0.032	0.065	mg/kg	B222772	S221205
2211152-28	Unk Se Sp F2	SE	dry	0.669		0.017	0.047	mg/kg	B222773	S221205



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_MI3_SE-1_LAEMP_EVO_2022-11_N										
2211152-29	%TS	SE	NA	34.72		0.01	0.04	%	B222795	N/A
2211152-29	DMS ₂ O F1	SE	dry	≤ 0.002	U	0.002	0.022	mg/kg	B222772	S221205
2211152-29	DMS ₂ O F2	SE	dry	≤ 0.002	U	0.002	0.022	mg/kg	B222773	S221205
2211152-29	MeSe(IV) F1	SE	dry	≤ 0.002	U	0.002	0.022	mg/kg	B222772	S221205
2211152-29	MeSe(IV) F2	SE	dry	0.054		0.002	0.022	mg/kg	B222773	S221205
2211152-29	Se	SE	dry	1.46		0.192	0.385	mg/kg	B222830	S221239
2211152-29	Se Unk A F1	SE	dry	≤ 0.002	U	0.002	0.022	mg/kg	B222772	S221205
2211152-29	Se Unk A F2	SE	dry	≤ 0.002	U	0.002	0.022	mg/kg	B222773	S221205
2211152-29	Se(F1)	SE	dry	0.145	J	0.127	0.265	mg/kg	B222791	S221204
2211152-29	Se(F2)	SE	dry	0.943		0.022	0.223	mg/kg	B222798	S221212
2211152-29	Se(F3)	SE	dry	0.659		0.167	0.335	mg/kg	B222799	S221220
2211152-29	Se(F4)	SE	dry	0.104	J	0.075	0.223	mg/kg	B222800	S221220
2211152-29	Se(F5)	SE	dry	≤ 0.031	U	0.031	0.279	mg/kg	B222801	S221239
2211152-29	Se(IV) F1	SE	dry	≤ 0.038	U	0.038	0.075	mg/kg	B222772	S221205
2211152-29	Se(IV) F2	SE	dry	0.202		0.020	0.054	mg/kg	B222773	S221205
2211152-29	Se(VI) F1	SE	dry	≤ 0.022	U	0.022	0.057	mg/kg	B222772	S221205
2211152-29	Se(VI) F2	SE	dry	≤ 0.022	U	0.022	0.057	mg/kg	B222773	S221205
2211152-29	SeCN F1	SE	dry	≤ 0.004	U	0.004	0.022	mg/kg	B222772	S221205
2211152-29	SeCN F2	SE	dry	0.094		0.004	0.022	mg/kg	B222773	S221205
2211152-29	SeMet F1	SE	dry	≤ 0.002	U	0.002	0.022	mg/kg	B222772	S221205
2211152-29	SeMet F2	SE	dry	≤ 0.002	U	0.002	0.022	mg/kg	B222773	S221205
2211152-29	SeSO ₃ F1	SE	dry	≤ 0.022	U	0.022	0.057	mg/kg	B222772	S221205
2211152-29	SeSO ₃ F2	SE	dry	≤ 0.022	U	0.022	0.057	mg/kg	B222773	S221205
2211152-29	Unk Se Sp F1	SE	dry	≤ 0.038	U	0.038	0.075	mg/kg	B222772	S221205
2211152-29	Unk Se Sp F2	SE	dry	0.136		0.020	0.054	mg/kg	B222773	S221205



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_MI3_SE-2_LAEMP_EVO_2022-11_N</i>										
2211152-30	%TS	SE	NA	22.36		0.02	0.08	%	B222795	N/A
2211152-30	DMS ₂ O F1	SE	dry	≤ 0.003	U	0.003	0.035	mg/kg	B222772	S221205
2211152-30	DMS ₂ O F2	SE	dry	≤ 0.003	U	0.003	0.035	mg/kg	B222773	S221205
2211152-30	MeSe(IV) F1	SE	dry	0.009	J	0.003	0.035	mg/kg	B222772	S221205
2211152-30	MeSe(IV) F2	SE	dry	0.085		0.003	0.035	mg/kg	B222773	S221205
2211152-30	Se	SE	dry	2.48		0.366	0.732	mg/kg	B222830	S221239
2211152-30	Se Unk A F1	SE	dry	≤ 0.003	U	0.003	0.035	mg/kg	B222772	S221205
2211152-30	Se Unk A F2	SE	dry	≤ 0.003	U	0.003	0.035	mg/kg	B222773	S221205
2211152-30	Se(F1)	SE	dry	0.307	J	0.197	0.412	mg/kg	B222791	S221204
2211152-30	Se(F2)	SE	dry	1.61		0.035	0.347	mg/kg	B222798	S221212
2211152-30	Se(F3)	SE	dry	0.842		0.260	0.520	mg/kg	B222799	S221220
2211152-30	Se(F4)	SE	dry	0.200	J	0.117	0.347	mg/kg	B222800	S221220
2211152-30	Se(F5)	SE	dry	≤ 0.048	U	0.048	0.433	mg/kg	B222801	S221239
2211152-30	Se(IV) F1	SE	dry	≤ 0.059	U	0.059	0.117	mg/kg	B222772	S221205
2211152-30	Se(IV) F2	SE	dry	0.351		0.030	0.085	mg/kg	B222773	S221205
2211152-30	Se(VI) F1	SE	dry	≤ 0.035	U	0.035	0.089	mg/kg	B222772	S221205
2211152-30	Se(VI) F2	SE	dry	≤ 0.035	U	0.035	0.089	mg/kg	B222773	S221205
2211152-30	SeCN F1	SE	dry	≤ 0.007	U	0.007	0.035	mg/kg	B222772	S221205
2211152-30	SeCN F2	SE	dry	0.155		0.007	0.035	mg/kg	B222773	S221205
2211152-30	SeMet F1	SE	dry	≤ 0.003	U	0.003	0.035	mg/kg	B222772	S221205
2211152-30	SeMet F2	SE	dry	≤ 0.003	U	0.003	0.035	mg/kg	B222773	S221205
2211152-30	SeSO ₃ F1	SE	dry	≤ 0.035	U	0.035	0.089	mg/kg	B222772	S221205
2211152-30	SeSO ₃ F2	SE	dry	≤ 0.035	U	0.035	0.089	mg/kg	B222773	S221205
2211152-30	Unk Se Sp F1	SE	dry	≤ 0.059	U	0.059	0.117	mg/kg	B222772	S221205
2211152-30	Unk Se Sp F2	SE	dry	0.202		0.030	0.085	mg/kg	B222773	S221205



Accuracy & Precision Summary

Batch: B222772
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222772-DUP1	Duplicate, (2211152-02)						
	DMS ₂ O F1	ND		ND	mg/kg		N/C 25
	MeSe(IV) F1	0.012		0.012	mg/kg		0.6% 25
	Se Unk A F1	ND		ND	mg/kg		N/C 25
	Se(IV) F1	0.139		0.142	mg/kg		2% 25
	Se(VI) F1	ND		ND	mg/kg		N/C 25
	SeCN F1	ND		ND	mg/kg		N/C 25
	SeMet F1	ND		ND	mg/kg		N/C 25
	SeSO ₃ F1	ND		ND	mg/kg		N/C 25
	Unk Se Sp F1	ND		ND	mg/kg		N/C 25
B222772-PS1	Post Spike, (2211152-02)						
	Se(IV) F1	0.139	5.201	5.291	mg/kg	99% 75-125	
	Se(VI) F1	ND	5.413	5.336	mg/kg	99% 75-125	
	SeCN F1	ND	2.082	2.020	mg/kg	97% 75-125	
	SeMet F1	ND	2.098	2.176	mg/kg	104% 75-125	
B222772-DUP2	Duplicate, (2211152-11)						
	DMS ₂ O F1	ND		ND	mg/kg		N/C 25
	MeSe(IV) F1	0.036		0.033	mg/kg		7% 25
	Se Unk A F1	ND		ND	mg/kg		N/C 25
	Se(IV) F1	0.752		0.755	mg/kg		0.3% 25
	Se(VI) F1	ND		ND	mg/kg		N/C 25
	SeCN F1	ND		ND	mg/kg		N/C 25
	SeMet F1	ND		ND	mg/kg		N/C 25
	SeSO ₃ F1	ND		ND	mg/kg		N/C 25
	Unk Se Sp F1	ND		ND	mg/kg		N/C 25
B222772-PS2	Post Spike, (2211152-11)						
	Se(IV) F1	0.752	5.928	6.495	mg/kg	97% 75-125	
	Se(VI) F1	ND	6.170	6.034	mg/kg	98% 75-125	
	SeCN F1	ND	2.374	2.289	mg/kg	96% 75-125	
	SeMet F1	ND	2.392	2.472	mg/kg	103% 75-125	



Accuracy & Precision Summary

Batch: B222772
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222772-DUP3	Duplicate, (2211152-21)						
	DMS ₂ O F1	0.053		0.055	mg/kg		4% 25
	MeSe(IV) F1	0.034		0.034	mg/kg		2% 25
	Se Unk A F1	ND		ND	mg/kg		N/C 25
	Se(IV) F1	0.607		0.616	mg/kg		1% 25
	Se(VI) F1	0.284		0.272	mg/kg		5% 25
	SeCN F1	ND		ND	mg/kg		N/C 25
	SeMet F1	ND		ND	mg/kg		N/C 25
	SeSO ₃ F1	ND		ND	mg/kg		N/C 25
	Unk Se Sp F1	ND		ND	mg/kg		N/C 25
B222772-PS3	Post Spike, (2211152-21)						
	Se(IV) F1	0.607	11.87	11.80	mg/kg	94% 75-125	
	Se(VI) F1	0.284	12.35	11.89	mg/kg	94% 75-125	
	SeCN F1	ND	4.751	4.369	mg/kg	92% 75-125	
	SeMet F1	ND	4.787	4.522	mg/kg	94% 75-125	
B222772-DUP4	Duplicate, (2211152-28)						
	DMS ₂ O F1	0.011		0.010	mg/kg		6% 25
	MeSe(IV) F1	0.045		0.053	mg/kg		17% 25
	Se Unk A F1	ND		ND	mg/kg		N/C 25
	Se(IV) F1	0.771		0.810	mg/kg		5% 25
	Se(VI) F1	0.190		0.189	mg/kg		0.3% 25
	SeCN F1	ND		ND	mg/kg		N/C 25
	SeMet F1	0.035		0.050	mg/kg		37% 25
	SeSO ₃ F1	ND		ND	mg/kg		N/C 25
	Unk Se Sp F1	0.046		0.043	mg/kg		5% 25
B222772-PS4	Post Spike, (2211152-28)						
	Se(IV) F1	0.771	4.702	5.173	mg/kg	94% 75-125	
	Se(VI) F1	0.190	4.894	4.749	mg/kg	93% 75-125	
	SeCN F1	ND	1.883	1.747	mg/kg	93% 75-125	
	SeMet F1	0.035	1.897	1.858	mg/kg	96% 75-125	



Accuracy & Precision Summary

Batch: B222773
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222773-DUP1	Duplicate, (2211152-02)						
	DMSeO F2	0.008		0.011	mg/kg		36% 25
	MeSe(IV) F2	0.280		0.263	mg/kg		6% 25
	Se Unk A F2	ND		ND	mg/kg		N/C 25
	Se(IV) F2	0.929		0.828	mg/kg		11% 25
	Se(VI) F2	ND		ND	mg/kg		N/C 25
	SeCN F2	0.680		0.639	mg/kg		6% 25
	SeMet F2	ND		ND	mg/kg		N/C 25
	SeSO3 F2	ND		ND	mg/kg		N/C 25
Unk Se Sp F2	0.280		0.271	mg/kg		3% 25	
B222773-PS1	Post Spike, (2211152-02)						
	Se(IV) F2	0.929	5.201	5.699	mg/kg	92% 75-125	
	Se(VI) F2	ND	5.413	4.944	mg/kg	91% 75-125	
	SeCN F2	0.680	2.082	2.611	mg/kg	93% 75-125	
SeMet F2	ND	2.098	1.995	mg/kg	95% 75-125		
B222773-DUP2	Duplicate, (2211152-11)						
	DMSeO F2	ND		ND	mg/kg		N/C 25
	MeSe(IV) F2	0.661		0.621	mg/kg		6% 25
	Se Unk A F2	0.012		0.012	mg/kg		3% 25
	Se(IV) F2	4.786		4.496	mg/kg		6% 25
	Se(VI) F2	0.027		0.027	mg/kg		1% 25
	SeCN F2	1.671		1.622	mg/kg		3% 25
	SeMet F2	ND		ND	mg/kg		N/C 25
	SeSO3 F2	0.030		0.028	mg/kg		6% 25
Unk Se Sp F2	1.033		0.947	mg/kg		9% 25	
B222773-PS2	Post Spike, (2211152-11)						
	Se(IV) F2	4.786	5.928	10.27	mg/kg	92% 75-125	
	Se(VI) F2	0.027	6.170	5.370	mg/kg	87% 75-125	
	SeCN F2	1.671	2.374	3.829	mg/kg	91% 75-125	
SeMet F2	ND	2.392	2.229	mg/kg	93% 75-125		



Accuracy & Precision Summary

Batch: B222773
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222773-DUP3	Duplicate, (2211152-21)						
	DMSeO F2	0.034		0.029	mg/kg		16% 25
	MeSe(IV) F2	0.687		0.807	mg/kg		16% 25
	Se Unk A F2	ND		ND	mg/kg		N/C 25
	Se(IV) F2	10.26		11.09	mg/kg		8% 25
	Se(VI) F2	ND		ND	mg/kg		N/C 25
	SeCN F2	2.213		2.553	mg/kg		14% 25
	SeMet F2	ND		ND	mg/kg		N/C 25
	SeSO3 F2	ND		ND	mg/kg		N/C 25
	Unk Se Sp F2	0.636		0.675	mg/kg		6% 25
B222773-PS3	Post Spike, (2211152-21)						
	Se(IV) F2	10.26	11.87	21.09	mg/kg	91% 75-125	
	Se(VI) F2	ND	12.35	11.49	mg/kg	93% 75-125	
	SeCN F2	2.213	4.751	6.605	mg/kg	92% 75-125	
	SeMet F2	ND	4.787	4.742	mg/kg	99% 75-125	
B222773-DUP4	Duplicate, (2211152-28)						
	DMSeO F2	0.013		0.014	mg/kg		6% 25
	MeSe(IV) F2	0.498		0.492	mg/kg		1% 25
	Se Unk A F2	ND		ND	mg/kg		N/C 25
	Se(IV) F2	5.039		5.136	mg/kg		2% 25
	Se(VI) F2	0.036		0.038	mg/kg		6% 25
	SeCN F2	0.731		0.729	mg/kg		0.2% 25
	SeMet F2	ND		ND	mg/kg		N/C 25
	SeSO3 F2	0.046		0.043	mg/kg		5% 25
	Unk Se Sp F2	0.669		0.695	mg/kg		4% 25
B222773-PS4	Post Spike, (2211152-28)						
	Se(IV) F2	5.039	4.702	9.493	mg/kg	95% 75-125	
	Se(VI) F2	0.036	4.894	4.576	mg/kg	93% 75-125	
	SeCN F2	0.731	1.883	2.445	mg/kg	91% 75-125	
	SeMet F2	ND	1.897	1.870	mg/kg	99% 75-125	



Accuracy & Precision Summary

Batch: B222791
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222791-PS1	Post Spike, (2210396-13) Se(F1)	ND	193.7	212.2	mg/kg	110% 75-125	
B222791-PS2	Post Spike, (2210396-13) Se(F1)	ND	193.7	212.8	mg/kg	110% 75-125	
B222791-PS3	Post Spike, (2211152-01) Se(F1)	1.963	65.37	72.37	mg/kg	108% 75-125	
B222791-PS4	Post Spike, (2211152-01) Se(F1)	1.963	65.37	72.12	mg/kg	107% 75-125	
B222791-DUP1	Duplicate, (2211152-02) Se(F1)	0.343		0.272	mg/kg		23% 25
B222791-DUP2	Duplicate, (2211152-11) Se(F1)	1.154		1.287	mg/kg		11% 25
B222791-PS5	Post Spike, (2211152-11) Se(F1)	1.154	60.49	66.61	mg/kg	108% 75-125	
B222791-PS6	Post Spike, (2211152-11) Se(F1)	1.154	60.49	66.83	mg/kg	109% 75-125	
B222791-DUP3	Duplicate, (2211152-21) Se(F1)	1.239		1.292	mg/kg		4% 25
B222791-PS7	Post Spike, (2211152-21) Se(F1)	1.239	121.1	130.3	mg/kg	107% 75-125	
B222791-PS8	Post Spike, (2211152-21) Se(F1)	1.239	121.1	130.4	mg/kg	107% 75-125	



Accuracy & Precision Summary

Batch: B222791
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222791-DUP4	Duplicate, (2211152-28) Se(F1)	1.551		1.637	mg/kg		5% 25



Accuracy & Precision Summary

Batch: B222795
Lab Matrix: Biota
Method: SOP BAL-0501

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222795-DUP1	Duplicate, (2211152-17) %TS	30.38		29.69	%		2% 15
B222795-DUP2	Duplicate, (2211152-23) %TS	14.60		14.45	%		1% 15
B222795-DUP3	Duplicate, (2211152-27) %TS	42.07		43.31	%		3% 15



Accuracy & Precision Summary

Batch: B222798
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222798-PS1	Post Spike, (2210396-13) Se(F2)	1.101	193.7	193.4	mg/kg	99% 75-125	
B222798-PS2	Post Spike, (2210396-13) Se(F2)	1.101	193.7	198.2	mg/kg	102% 75-125	
B222798-PS3	Post Spike, (2211152-01) Se(F2)	20.53	65.37	84.19	mg/kg	97% 75-125	
B222798-PS4	Post Spike, (2211152-01) Se(F2)	20.53	65.37	81.32	mg/kg	93% 75-125	
B222798-DUP1	Duplicate, (2211152-02) Se(F2)	3.243		3.226	mg/kg		0.5% 25
B222798-DUP2	Duplicate, (2211152-11) Se(F2)	10.14		10.04	mg/kg		1% 25
B222798-PS5	Post Spike, (2211152-11) Se(F2)	10.14	60.49	69.45	mg/kg	98% 75-125	
B222798-PS6	Post Spike, (2211152-11) Se(F2)	10.14	60.49	71.16	mg/kg	101% 75-125	
B222798-DUP3	Duplicate, (2211152-21) Se(F2)	15.62		18.03	mg/kg		14% 25
B222798-PS7	Post Spike, (2211152-21) Se(F2)	15.62	121.1	134.4	mg/kg	98% 75-125	
B222798-PS8	Post Spike, (2211152-21) Se(F2)	15.62	121.1	135.8	mg/kg	99% 75-125	



Accuracy & Precision Summary

Batch: B222798
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222798-DUP4	Duplicate, (2211152-28) Se(F2)	9.723		8.527	mg/kg		13% 25



Accuracy & Precision Summary

Batch: B222799
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222799-DUP1	Duplicate, (2211152-02) Se(F3)	4.004		3.857	mg/kg		4% 25
B222799-PS1	Post Spike, (2211152-02) Se(F3)	4.004	53.07	55.18	mg/kg	96% 75-125	
B222799-PS2	Post Spike, (2211152-02) Se(F3)	4.004	53.07	64.41	mg/kg	114% 75-125	
B222799-DUP2	Duplicate, (2211152-11) Se(F3)	7.265		7.047	mg/kg		3% 25
B222799-PS3	Post Spike, (2211152-11) Se(F3)	7.265	60.49	64.74	mg/kg	95% 75-125	
B222799-PS4	Post Spike, (2211152-11) Se(F3)	7.265	60.49	64.39	mg/kg	94% 75-125	
B222799-DUP3	Duplicate, (2211152-21) Se(F3)	14.94		17.35	mg/kg		15% 25
B222799-PS5	Post Spike, (2211152-21) Se(F3)	14.94	121.1	129.3	mg/kg	94% 75-125	
B222799-PS6	Post Spike, (2211152-21) Se(F3)	14.94	121.1	131.2	mg/kg	96% 75-125	
B222799-DUP4	Duplicate, (2211152-28) Se(F3)	10.90		11.09	mg/kg		2% 25
B222799-PS7	Post Spike, (2211152-28) Se(F3)	10.90	47.98	55.45	mg/kg	93% 75-125	



Accuracy & Precision Summary

Batch: B222799
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222799-PS8	Post Spike, (2211152-28) Se(F3)	10.90	47.98	54.29	mg/kg	90% 75-125	



Accuracy & Precision Summary

Batch: B222800
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222800-DUP1	Duplicate, (2211152-02) Se(F4)	0.355		0.336	mg/kg		5% 25
B222800-PS1	Post Spike, (2211152-02) Se(F4)	0.355	53.07	52.89	mg/kg	99% 75-125	
B222800-PS2	Post Spike, (2211152-02) Se(F4)	0.355	53.07	54.15	mg/kg	101% 75-125	
B222800-DUP2	Duplicate, (2211152-11) Se(F4)	0.537		0.551	mg/kg		2% 25
B222800-PS3	Post Spike, (2211152-11) Se(F4)	0.537	60.49	59.54	mg/kg	98% 75-125	
B222800-PS4	Post Spike, (2211152-11) Se(F4)	0.537	60.49	61.04	mg/kg	100% 75-125	
B222800-DUP3	Duplicate, (2211152-21) Se(F4)	1.025		1.076	mg/kg		5% 25
B222800-PS5	Post Spike, (2211152-21) Se(F4)	1.025	121.1	123.0	mg/kg	101% 75-125	
B222800-PS6	Post Spike, (2211152-21) Se(F4)	1.025	121.1	120.1	mg/kg	98% 75-125	
B222800-DUP4	Duplicate, (2211152-28) Se(F4)	0.562		0.573	mg/kg		2% 25
B222800-PS7	Post Spike, (2211152-28) Se(F4)	0.562	47.98	46.77	mg/kg	96% 75-125	



Accuracy & Precision Summary

Batch: B222800
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222800-PS8	Post Spike, (2211152-28) Se(F4)	0.562	47.98	48.42	mg/kg	100% 75-125	



Accuracy & Precision Summary

Batch: B222801
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222801-BS1	Blank Spike, (2152010) Se(F5)		25.00	22.36	mg/kg	89% 75-125	
B222801-BS2	Blank Spike, (2152010) Se(F5)		25.00	22.84	mg/kg	91% 75-125	
B222801-DUP1	Duplicate, (2211152-02) Se(F5)	ND		ND	mg/kg		N/C 25
B222801-PS1	Post Spike, (2211152-02) Se(F5)	ND	66.34	60.16	mg/kg	91% 75-125	
B222801-PS2	Post Spike, (2211152-02) Se(F5)	ND	66.34	58.81	mg/kg	89% 75-125	
B222801-DUP2	Duplicate, (2211152-11) Se(F5)	0.044		ND	mg/kg		N/C 25
B222801-PS3	Post Spike, (2211152-11) Se(F5)	0.044	75.62	66.67	mg/kg	88% 75-125	
B222801-PS4	Post Spike, (2211152-11) Se(F5)	0.044	75.62	66.94	mg/kg	88% 75-125	
B222801-DUP3	Duplicate, (2211152-21) Se(F5)	ND		0.069	mg/kg		N/C 25
B222801-PS5	Post Spike, (2211152-21) Se(F5)	ND	151.3	133.1	mg/kg	88% 75-125	
B222801-PS6	Post Spike, (2211152-21) Se(F5)	ND	151.3	134.7	mg/kg	89% 75-125	



Accuracy & Precision Summary

Batch: B222801
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222801-DUP4	Duplicate, (2211152-28) Se(F5)	0.079		0.066	mg/kg		18% 25
B222801-PS7	Post Spike, (2211152-28) Se(F5)	0.079	59.98	51.04	mg/kg	85% 75-125	
B222801-PS8	Post Spike, (2211152-28) Se(F5)	0.079	59.98	51.15	mg/kg	85% 75-125	



Accuracy & Precision Summary

Batch: B222830
Lab Matrix: Soil/Sediment
Method: EPA 6020B Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222830-BS1	Blank Spike, (2152010) Se		50.00	42.78	mg/kg	86% 75-125	
B222830-BS2	Blank Spike, (2152010) Se		50.00	44.21	mg/kg	88% 75-125	
B222830-SRM1	Reference Material (2224038, CRM052-50G Loamy Clay) Se		54.40	50.94	mg/kg	94% 75-125	
B222830-SRM2	Reference Material (2224038, CRM052-50G Loamy Clay) Se		54.40	49.12	mg/kg	90% 75-125	
B222830-DUP1	Duplicate, (2211152-09) Se	26.58		25.96	mg/kg		2% 30
B222830-MS1	Matrix Spike, (2211152-09) Se	26.58	147.0	149.7	mg/kg	84% 70-130	
B222830-MSD1	Matrix Spike Duplicate, (2211152-09) Se	26.58	143.3	141.9	mg/kg	80% 70-130	4% 30
B222830-DUP2	Duplicate, (2211152-19) Se	28.67		28.34	mg/kg		1% 30
B222830-MS2	Matrix Spike, (2211152-19) Se	28.67	152.1	154.5	mg/kg	83% 70-130	
B222830-MSD2	Matrix Spike Duplicate, (2211152-19) Se	28.67	149.4	142.7	mg/kg	76% 70-130	8% 30
B222830-DUP3	Duplicate, (2211152-30) Se	2.480		1.750	mg/kg		35% 30



Accuracy & Precision Summary

Batch: B222830
Lab Matrix: Soil/Sediment
Method: EPA 6020B Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222830-MS3	Matrix Spike, (2211152-30) Se	2.480	184.5	151.3	mg/kg	81% 70-130	
B222830-MSD3	Matrix Spike Duplicate, (2211152-30) Se	2.480	165.3	128.0	mg/kg	76% 70-130	6% 30



Method Blanks & Reporting Limits

Batch: B222772
Matrix: Soil/Sediment
Method: In-House
Analyte: DMSeO F1

Sample	Result	Units	
B222772-BLK1	0.00	mg/kg	
B222772-BLK2	0.00	mg/kg	
B222772-BLK3	0.00	mg/kg	
B222772-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.0008
Limit:	0.008		MRL: 0.008

Analyte: MeSe(IV) F1

Sample	Result	Units	
B222772-BLK1	0.00	mg/kg	
B222772-BLK2	0.00	mg/kg	
B222772-BLK3	0.00	mg/kg	
B222772-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.0008
Limit:	0.008		MRL: 0.008

Analyte: Se Unk A F1

Sample	Result	Units	
B222772-BLK1	0.00	mg/kg	
B222772-BLK2	0.00	mg/kg	
B222772-BLK3	0.00	mg/kg	
B222772-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.0008
Limit:	0.008		MRL: 0.008



Method Blanks & Reporting Limits

Analyte: Se(IV) F1

Sample	Result	Units	
B222772-BLK1	0.0008	mg/kg	
B222772-BLK2	0.008	mg/kg	
B222772-BLK3	0.002	mg/kg	
B222772-BLK4	0.001	mg/kg	
Average:	0.003		MDL: 0.014
Limit:	0.027		MRL: 0.027

Analyte: Se(VI) F1

Sample	Result	Units	
B222772-BLK1	0.00	mg/kg	
B222772-BLK2	0.00	mg/kg	
B222772-BLK3	0.00	mg/kg	
B222772-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.008
Limit:	0.020		MRL: 0.020

Analyte: SeCN F1

Sample	Result	Units	
B222772-BLK1	0.00	mg/kg	
B222772-BLK2	0.00	mg/kg	
B222772-BLK3	0.00	mg/kg	
B222772-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.008		MRL: 0.008

Analyte: SeMet F1

Sample	Result	Units	
B222772-BLK1	0.00	mg/kg	
B222772-BLK2	0.00	mg/kg	
B222772-BLK3	0.00	mg/kg	
B222772-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.0008
Limit:	0.008		MRL: 0.008



Method Blanks & Reporting Limits

Analyte: SeSO3 F1

Sample	Result	Units	
B222772-BLK1	0.00	mg/kg	
B222772-BLK2	0.00	mg/kg	
B222772-BLK3	0.00	mg/kg	
B222772-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.008
Limit:	0.020		MRL: 0.020

Analyte: Unk Se Sp F1

Sample	Result	Units	
B222772-BLK1	0.00	mg/kg	
B222772-BLK2	0.00	mg/kg	
B222772-BLK3	0.00	mg/kg	
B222772-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.014
Limit:	0.027		MRL: 0.027



Method Blanks & Reporting Limits

Batch: B222773
Matrix: Soil/Sediment
Method: In-House
Analyte: DMSeO F2

Sample	Result	Units	
B222773-BLK1	0.00	mg/kg	
B222773-BLK2	0.00	mg/kg	
B222773-BLK3	0.00	mg/kg	
B222773-BLK4	0.00	mg/kg	
Average: 0.000			MDL: 0.0008
Limit: 0.008			MRL: 0.008

Analyte: MeSe(IV) F2

Sample	Result	Units	
B222773-BLK1	0.00	mg/kg	
B222773-BLK2	0.00	mg/kg	
B222773-BLK3	0.00	mg/kg	
B222773-BLK4	0.00	mg/kg	
Average: 0.000			MDL: 0.0008
Limit: 0.008			MRL: 0.008

Analyte: Se Unk A F2

Sample	Result	Units	
B222773-BLK1	0.00	mg/kg	
B222773-BLK2	0.00	mg/kg	
B222773-BLK3	0.00	mg/kg	
B222773-BLK4	0.00	mg/kg	
Average: 0.000			MDL: 0.0008
Limit: 0.008			MRL: 0.008



Method Blanks & Reporting Limits

Analyte: Se(IV) F2

Sample	Result	Units	
B222773-BLK1	0.00	mg/kg	
B222773-BLK2	0.00	mg/kg	
B222773-BLK3	0.00	mg/kg	
B222773-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.007
Limit:	0.020		MRL: 0.020

Analyte: Se(VI) F2

Sample	Result	Units	
B222773-BLK1	0.00	mg/kg	
B222773-BLK2	0.00	mg/kg	
B222773-BLK3	0.00	mg/kg	
B222773-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.008
Limit:	0.020		MRL: 0.020

Analyte: SeCN F2

Sample	Result	Units	
B222773-BLK1	0.00	mg/kg	
B222773-BLK2	0.00	mg/kg	
B222773-BLK3	0.00	mg/kg	
B222773-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.008		MRL: 0.008

Analyte: SeMet F2

Sample	Result	Units	
B222773-BLK1	0.00	mg/kg	
B222773-BLK2	0.00	mg/kg	
B222773-BLK3	0.00	mg/kg	
B222773-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.0008
Limit:	0.008		MRL: 0.008



Method Blanks & Reporting Limits

Analyte: SeSO3 F2

Sample	Result	Units	
B222773-BLK1	0.00	mg/kg	
B222773-BLK2	0.00	mg/kg	
B222773-BLK3	0.00	mg/kg	
B222773-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.008
Limit:	0.020		MRL: 0.020

Analyte: Unk Se Sp F2

Sample	Result	Units	
B222773-BLK1	0.00	mg/kg	
B222773-BLK2	0.00	mg/kg	
B222773-BLK3	0.00	mg/kg	
B222773-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.007
Limit:	0.020		MRL: 0.020



Method Blanks & Reporting Limits

Batch: B222791
Matrix: Soil/Sediment
Method: In-House
Analyte: Se(F1)

Sample	Result	Units	
B222791-BLK1	0.027	mg/kg	
B222791-BLK2	0.036	mg/kg	
B222791-BLK3	0.024	mg/kg	
B222791-BLK4	0.023	mg/kg	
Average:	0.028		MDL: 0.046
Limit:	0.095		MRL: 0.095



Method Blanks & Reporting Limits

Batch: B222795
Matrix: Biota
Method: SOP BAL-0501
Analyte: %TS

Sample	Result	Units	
B222795-BLK1	-0.13	%	
B222795-BLK2	-0.27	%	
	Average: -0.20		MDL: 0.03
	Limit: 0.09		MRL: 0.09



Method Blanks & Reporting Limits

Batch: B222798
Matrix: Soil/Sediment
Method: In-House
Analyte: Se(F2)

Sample	Result	Units	
B222798-BLK1	0.023	mg/kg	
B222798-BLK2	0.010	mg/kg	
B222798-BLK3	0.013	mg/kg	
B222798-BLK4	0.014	mg/kg	
Average:	0.015		MDL: 0.008
Limit:	0.080		MRL: 0.080



Method Blanks & Reporting Limits

Batch: B222799
Matrix: Soil/Sediment
Method: In-House
Analyte: Se(F3)

Sample	Result	Units	
B222799-BLK1	0.041	mg/kg	
B222799-BLK2	0.037	mg/kg	
B222799-BLK3	0.033	mg/kg	
B222799-BLK4	0.021	mg/kg	
Average:	0.033		MDL: 0.060
Limit:	0.120		MRL: 0.120



Method Blanks & Reporting Limits

Batch: B222800
Matrix: Soil/Sediment
Method: In-House
Analyte: Se(F4)

Sample	Result	Units	
B222800-BLK1	0.012	mg/kg	
B222800-BLK2	0.012	mg/kg	
B222800-BLK3	0.010	mg/kg	
B222800-BLK4	0.020	mg/kg	
Average:	0.014		MDL: 0.027
Limit:	0.080		MRL: 0.080



Method Blanks & Reporting Limits

Batch: B222801
Matrix: Soil/Sediment
Method: In-House
Analyte: Se(F5)

Sample	Result	Units	
B222801-BLK1	0.004	mg/kg	
B222801-BLK2	0.006	mg/kg	
B222801-BLK3	0.0004	mg/kg	
B222801-BLK4	0.001	mg/kg	
Average:	0.003		MDL: 0.011
Limit:	0.100		MRL: 0.100



Method Blanks & Reporting Limits

Batch: B222830
Matrix: Soil/Sediment
Method: EPA 6020B Mod
Analyte: Se

Sample	Result	Units	
B222830-BLK1	0.011	mg/kg	
B222830-BLK2	0.008	mg/kg	
B222830-BLK3	0.006	mg/kg	
B222830-BLK4	0.005	mg/kg	
Average:	0.008		MDL: 0.095
Limit:	0.190		MRL: 0.190



Sample Containers

Lab ID: 2211152-01			Report Matrix: SE			Collected: 10/31/2022		
Sample: RG_ERCKUT_SE-1_LAEMP_EVO_2022-10_N			Sample Type: Sample + Sum			Received: 11/10/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	zClient-Provided - TM	4 oz	na	none	n/a	n/a	Cooler 8 - 2211152	
Lab ID: 2211152-02			Report Matrix: SE			Collected: 10/31/2022		
Sample: RG_ERCKUT_SE-2_LAEMP_EVO_2022-10_N			Sample Type: Sample + Sum			Received: 11/10/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	zClient-Provided - TM	4 oz	na	none	n/a	n/a	Cooler 8 - 2211152	
Lab ID: 2211152-03			Report Matrix: SE			Collected: 11/01/2022		
Sample: RG_ERCKUT_SE-3_LAEMP_EVO_2022-11_N			Sample Type: Sample + Sum			Received: 11/10/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	zClient-Provided - TM	4 oz	na	none	n/a	n/a	Cooler 8 - 2211152	
Lab ID: 2211152-04			Report Matrix: SE			Collected: 11/01/2022		
Sample: RG_ERCKUT_SE-4_LAEMP_EVO_2022-11_N			Sample Type: Sample + Sum			Received: 11/10/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	zClient-Provided - TM	4 oz	na	none	n/a	n/a	Cooler 8 - 2211152	
Lab ID: 2211152-05			Report Matrix: SE			Collected: 11/01/2022		
Sample: RG_ERCKUT_SE-5_LAEMP_EVO_2022-11_N			Sample Type: Sample + Sum			Received: 11/10/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	zClient-Provided - TM	4 oz	na	none	n/a	n/a	Cooler 8 - 2211152	



Sample Containers

Lab ID: 2211152-06			Report Matrix: SE			Collected: 10/31/2022		
Sample: RG_ERCKUT_BRYOSE-1_LAEMP_EVO_2022-10_N			Sample Type: Sample + Sum			Received: 11/10/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	zClient-Provided - TM	4 oz	na	none	n/a	n/a	Cooler 8 - 2211152	
Lab ID: 2211152-07			Report Matrix: SE			Collected: 11/01/2022		
Sample: RG_ERCKUT_BRYOSE-2_LAEMP_EVO_2022-11_N			Sample Type: Sample + Sum			Received: 11/10/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	zClient-Provided - TM	4 oz	na	none	n/a	n/a	Cooler 8 - 2211152	
Lab ID: 2211152-08			Report Matrix: SE			Collected: 11/01/2022		
Sample: RG_ERCKUT_BRYOSE-3_LAEMP_EVO_2022-11_N			Sample Type: Sample + Sum			Received: 11/10/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	zClient-Provided - TM	4 oz	na	none	n/a	n/a	Cooler 8 - 2211152	
Lab ID: 2211152-09			Report Matrix: SE			Collected: 10/31/2022		
Sample: RG_ERCKDT_SE-1_LAEMP_EVO_2022-10_N			Sample Type: Sample + Sum			Received: 11/10/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	zClient-Provided - TM	4 oz	na	none	n/a	n/a	Cooler 8 - 2211152	
Lab ID: 2211152-10			Report Matrix: SE			Collected: 10/31/2022		
Sample: RG_ERCKDT_SE-2_LAEMP_EVO_2022-10_N			Sample Type: Sample + Sum			Received: 11/10/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	zClient-Provided - TM	4 oz	na	none	n/a	n/a	Cooler 8 - 2211152	



Sample Containers

Lab ID: 2211152-11			Report Matrix: SE			Collected: 10/31/2022		
Sample: RG_ERCKDT_SE-3_LAEMP_EVO_2022-10_N			Sample Type: Sample + Sum			Received: 11/10/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	zClient-Provided - TM	4 oz	na	none	n/a	n/a	Cooler 8 - 2211152	
Lab ID: 2211152-12			Report Matrix: SE			Collected: 10/31/2022		
Sample: RG_ERCKDT_SE-4_LAEMP_EVO_2022-10_N			Sample Type: Sample + Sum			Received: 11/10/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	zClient-Provided - TM	4 oz	na	none	n/a	n/a	Cooler 8 - 2211152	
Lab ID: 2211152-13			Report Matrix: SE			Collected: 10/31/2022		
Sample: RG_ERCKDT_SE-5_LAEMP_EVO_2022-10_N			Sample Type: Sample + Sum			Received: 11/10/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	zClient-Provided - TM	4 oz	na	none	n/a	n/a	Cooler 8 - 2211152	
Lab ID: 2211152-14			Report Matrix: SE			Collected: 10/31/2022		
Sample: RG_ERCKDT_SE-6_LAEMP_EVO_2022-10_N			Sample Type: Sample + Sum			Received: 11/10/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	zClient-Provided - TM	4 oz	na	none	n/a	n/a	Cooler 8 - 2211152	
Lab ID: 2211152-15			Report Matrix: SE			Collected: 10/31/2022		
Sample: RG_ERCKDT_SE-7_LAEMP_EVO_2022-10_N			Sample Type: Sample + Sum			Received: 11/10/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	zClient-Provided - TM	4 oz	na	none	n/a	n/a	Cooler 8 - 2211152	



Sample Containers

Lab ID: 2211152-16

Sample:

RG_ERCKDT_BRYOSE-1_LAEMP_EVO_2022-10_N

Report Matrix: SE

Sample Type: Sample + Sum

Collected: 10/31/2022

Received: 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	zClient-Provided - TM	4 oz	na	none	n/a	n/a	Cooler 8 - 2211152

Lab ID: 2211152-17

Sample:

RG_ERCKDT_BRYOSE-2_LAEMP_EVO_2022-10_N

Report Matrix: SE

Sample Type: Sample + Sum

Collected: 10/31/2022

Received: 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	zClient-Provided - TM	4 oz	na	none	n/a	n/a	Cooler 8 - 2211152

Lab ID: 2211152-18

Sample:

RG_ERCKDT_BRYOSE-3_LAEMP_EVO_2022-10_N

Report Matrix: SE

Sample Type: Sample + Sum

Collected: 10/31/2022

Received: 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	zClient-Provided - TM	4 oz	na	none	n/a	n/a	Cooler 8 - 2211152

Lab ID: 2211152-19

Sample:

RG_ERCKMD_SE-1_LAEMP_EVO_2022-10_N

Report Matrix: SE

Sample Type: Sample + Sum

Collected: 10/31/2022

Received: 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	zClient-Provided - TM	4 oz	na	none	n/a	n/a	Cooler 8 - 2211152

Lab ID: 2211152-20

Sample:

RG_ERCKMD_SE-2_LAEMP_EVO_2022-10_N

Report Matrix: SE

Sample Type: Sample + Sum

Collected: 10/31/2022

Received: 11/10/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	zClient-Provided - TM	4 oz	na	none	n/a	n/a	Cooler 8 - 2211152



Sample Containers

Lab ID: 2211152-21			Report Matrix: SE			Collected: 10/31/2022		
Sample: RG_ERCKMD_SE-3_LAEMP_EVO_2022-10_N			Sample Type: Sample + Sum			Received: 11/10/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	zClient-Provided - TM	4 oz	na	none	n/a	n/a	Cooler 8 - 2211152	
Lab ID: 2211152-22			Report Matrix: SE			Collected: 10/31/2022		
Sample: RG_ERCKMD_BRYOSE-1_LAEMP_EVO_2022-10_N			Sample Type: Sample + Sum			Received: 11/10/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	zClient-Provided - TM	4 oz	na	none	n/a	n/a	Cooler 8 - 2211152	
Lab ID: 2211152-23			Report Matrix: SE			Collected: 10/31/2022		
Sample: RG_ERCKMD_BRYOSE-2_LAEMP_EVO_2022-10_N			Sample Type: Sample + Sum			Received: 11/10/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	zClient-Provided - TM	4 oz	na	none	n/a	n/a	Cooler 8 - 2211152	
Lab ID: 2211152-24			Report Matrix: SE			Collected: 10/31/2022		
Sample: RG_ERCKMD_BRYOSE-3_LAEMP_EVO_2022-10_N			Sample Type: Sample + Sum			Received: 11/10/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	zClient-Provided - TM	4 oz	na	none	n/a	n/a	Cooler 8 - 2211152	
Lab ID: 2211152-25			Report Matrix: SE			Collected: 11/03/2022		
Sample: RG_BOCK_SE-1_LAEMP_EVO_2022-11_N			Sample Type: Sample + Sum			Received: 11/10/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	zClient-Provided - TM	4 oz	na	none	n/a	n/a	Cooler 8 - 2211152	



Sample Containers

Lab ID: 2211152-26			Report Matrix: SE			Collected: 11/03/2022		
Sample: RG_BOCK_SE-1_LAEMP_EVO_2022-11_N			Sample Type: Sample + Sum			Received: 11/10/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	zClient-Provided - TM	4 oz	na	none	n/a	n/a	Cooler 8 - 2211152	
Lab ID: 2211152-27			Report Matrix: SE			Collected: 11/03/2022		
Sample: RG_BOCK_SE-1_LAEMP_EVO_2022-11_N			Sample Type: Sample + Sum			Received: 11/10/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	zClient-Provided - TM	4 oz	na	none	n/a	n/a	Cooler 8 - 2211152	
Lab ID: 2211152-28			Report Matrix: SE			Collected: 11/03/2022		
Sample: RG_BOCKRD_SE-1_LAEMP_EVO_2022-11_N			Sample Type: Sample + Sum			Received: 11/10/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	zClient-Provided - TM	4 oz	na	none	n/a	n/a	Cooler 8 - 2211152	
Lab ID: 2211152-29			Report Matrix: SE			Collected: 11/02/2022		
Sample: RG_MI3_SE-1_LAEMP_EVO_2022-11_N			Sample Type: Sample + Sum			Received: 11/10/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	zClient-Provided - TM	4 oz	na	none	n/a	n/a	Cooler 8 - 2211152	
Lab ID: 2211152-30			Report Matrix: SE			Collected: 11/02/2022		
Sample: RG_MI3_SE-2_LAEMP_EVO_2022-11_N			Sample Type: Sample + Sum			Received: 11/10/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	zClient-Provided - TM	4 oz	na	none	n/a	n/a	Cooler 8 - 2211152	



Shipping Containers

Cooler 8 - 2211152

Received: November 10, 2022 7:19
Tracking No: RWHV 89560 via Courier
Coolant Type: Blue Ice
Temperature: 1.6 °C

Description: Styrofoam Cooler
Damaged in transit? No
Returned to client? No
Comments: R-IR-2

Custody seals present? No
Custody seals intact? No
COC present? Yes

COC ID: **EVO LAEMP NOV 2022** TURNAROUND TIME: RUSH

PROJECT/CLIENT INFO				LABORATORY				
Facility Name / Job#	Regional Effects Program			Lab Name	Brooks Applied Labs			
Project Manager	Mike Pope			Lab Contact	Ben Wozniak			
Email	mike.pope@teck.com			Email	Ben@brooksapplied.com			
Address	421 Pine Avenue			Address	18804 North Creek Parkway			
City	Sparwood		Province	BC	City	Bothell	Province	WA
Postal Code	VOB 2G0		Country	Canada	Postal Code	98011	Country	United States
Phone Number	250-425-8202			Phone Number	(206) 753-6158			

SAMPLE DETAILS								ANALYSIS REQUESTED					
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	PH	PRECIP.	ANALYSIS	Excel	PDF	EDD
RG_ERCKUT_SE-1_LAEMP_EVO_2022-10_N	RG_ERCKUT	SE	N	10/31/2022	14:30	G	1	N	NONE	Selenium sequential extraction	X	X	X
RG_ERCKUT_SE-2_LAEMP_EVO_2022-10_N	RG_ERCKUT	SE	N	10/31/2022	14:35	G	1				X	X	X
RG_ERCKUT_SE-3_LAEMP_EVO_2022-11_N	RG_ERCKUT	SE	N	11/1/2022	9:00	G	1				X	X	X
RG_ERCKUT_SE-4_LAEMP_EVO_2022-11_N	RG_ERCKUT	SE	N	11/1/2022	9:05	G	1				X	X	X
RG_ERCKUT_SE-5_LAEMP_EVO_2022-11_N	RG_ERCKUT	SE	N	11/1/2022	9:10	G	1				X	X	X
RG_ERCKUT_BRYOSE-1_LAEMP_EVO_2022-10_N	RG_ERCKUT	SE	N	10/31/2022	14:40	G	1				X	X	X
RG_ERCKUT_BRYOSE-2_LAEMP_EVO_2022-11_N	RG_ERCKUT	SE	N	11/1/2022	9:20	G	1				X	X	X
RG_ERCKUT_BRYOSE-3_LAEMP_EVO_2022-11_N	RG_ERCKUT	SE	N	11/1/2022	9:30	G	1				X	X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
VPO00847032	Alex McClymont	November 8, 2022	VF/BAZ 11/10/22 7:19

NO OF BOTTLES RETURNED/DESCRIPTION	Sampler's Name	Mobile #	Date/Time
Regular (default)	Alex McClymont	780-293-6750	November 8, 2022
Priority (2-3 business days) - 50% surcharge X			
Emergency (1 Business Day) - 100% surcharge			
For Emergency <1 Day, ASAP or Weekend - Contact ALS			

COC ID: **EVO LAEMP NOV 2022** TURNAROUND TIME: RUSH

PROJECT/CLIENT INFO				LABORATORY				
Facility Name / Job#	Regional effects program			Lab Name	Brooks Applied Labs			
Project Manager	Mike Pope			Lab Contact	Ben Wozniak			
Email	mike.pope@teck.com			Email	Ben@brooksapplied.com			
Address	421 Pine Avenue			Address	18804 North Creek Parkway			
City	Sparwood		Province	BC		City	Suite 100	
Postal Code	VOB 2G0		Country	Canada		Postal Code	98011	
Phone Number	250-425-8202			Phone Number	(206) 753-6158			

SAMPLE DETAILS								ANALYSIS REQUESTED							
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	FR	N	ANALYSIS	Excel	PDF	EDD		
RG_ERCKDT_SE-1_LAEMP_EVO_2022-10_N	RG_ERCKDT	SE	N	10/31/2022	12:30	G	1			Selenium sequential extraction	X	X	X		
RG_ERCKDT_SE-2_LAEMP_EVO_2022-10_N	RG_ERCKDT	SE	N	10/31/2022	12:35	G	1			X					
RG_ERCKDT_SE-3_LAEMP_EVO_2022-10_N	RG_ERCKDT	SE	N	10/31/2022	12:40	G	1			X					
RG_ERCKDT_SE-4_LAEMP_EVO_2022-10_N	RG_ERCKDT	SE	N	10/31/2022	12:45	G	1			X					
RG_ERCKDT_SE-5_LAEMP_EVO_2022-10_N	RG_ERCKDT	SE	N	10/31/2022	12:50	G	1			X					
RG_ERCKDT_SE-6_LAEMP_EVO_2022-10_N	RG_ERCKDT	SE	N	10/31/2022	12:55	G	1			X					
RG_ERCKDT_SE-7_LAEMP_EVO_2022-10_N	RG_ERCKDT	SE	N	10/31/2022	13:00	G	1			X					
RG_ERCKDT_BRYOSE-1_LAEMP_EVO_2022-10_N	RG_ERCKDT	SE	N	10/31/2022	13:05	G	1			X					
RG_ERCKDT_BRYOSE-2_LAEMP_EVO_2022-10_N	RG_ERCKDT	SE	N	10/31/2022	13:10	G	1								
RG_ERCKDT_BRYOSE-3_LAEMP_EVO_2022-10_N	RG_ERCKDT	SE	N	10/31/2022	13:15	G	1								

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
VPO00847032	Alex McClymont	November 8, 2022	VF 13 AZ 11/10/22 7:19

NB OF BOTTLES RETURNED/DESCRIPTION			
Regular (default)		Sampler's Name	Alex McClymont
Priority (2-3 business days) - 50% surcharge	X	Sampler's Signature	
Emergency (1 Business Day) - 100% surcharge		Mobile #	780-293-6750
For Emergency <1 Day, ASAP or Weekend - Contact ALS		Date/Time	November 8, 2022

COC ID:		EVO LAEMP NOV 2022				TURNAROUND TIME:		RUSH				
PROJECT/CLIENT INFO						LABORATORY						
Facility Name / Job#	Regional effects program				Lab Name	Brooks Applied Labs			Excel	PDF	EDD	
Project Manager	Mike Pope				Lab Contact	Ben Wozniak			mike.pope@teck.com	x	x	x
Email	mike.pope@teck.com				Email	Ben@brooksupplied.com			teckcoal@equisonline.com	x	x	x
Address	421 Pine Avenue				Address	18804 North Creek Parkway			lbrown@minnow.ca	x	x	x
						Suite 100			jessica.ritz@teck.com	x	x	x
City	Sparwood		Province	BC	City	Bothell	Province	WA	robin.valleau@minnow.ca	x	x	x
Postal Code	V0B 2G0		Country	Canada	Postal Code	98011	Country	United States	hillary.quinn-austin@minnow.ca	x	x	x
Phone Number	250-425-8202				Phone Number	(206) 753-6158						

SAMPLE DETAILS								ANALYSIS REQUESTED						
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	Selenium sequential extraction						
RG_ERCKMD_SE-1_LAEMP_EVO_2022-10_N	RG_ERCKMD	SE	N	10/31/2022	12:30	G	1	X						
RG_ERCKMD_SE-2_LAEMP_EVO_2022-10_N	RG_ERCKMD	SE	N	10/31/2022	12:35	G	1	X						
RG_ERCKMD_SE-3_LAEMP_EVO_2022-10_N	RG_ERCKMD	SE	N	10/31/2022	12:40	G	1	X						
RG_ERCKMD_BRYOSE-1_LAEMP_EVO_2022-10_N	RG_ERCKMD	SE	N	10/31/2022	13:05	G	1	X						
RG_ERCKMD_BRYOSE-2_LAEMP_EVO_2022-10_N	RG_ERCKMD	SE	N	10/31/2022	13:10	G	1	X						
RG_ERCKMD_BRYOSE-3_LAEMP_EVO_2022-10_N	RG_ERCKMD	SE	N	10/31/2022	13:15	G	1	X						
RG_BOCK_SE-1_LAEMP_EVO_2022-11_N	RG_BOCK	SE	N	11/3/2022	9:20	G	1	X						
RG_BOCK_SE-1_LAEMP_EVO_2022-11_N	RG_BOCK	SE	N	11/3/2022	9:25	G	1	X						
RG_BOCK_SE-1_LAEMP_EVO_2022-11_N	RG_BOCK	SE	N	11/3/2022	9:30	G	1	X						
RG_BOCKRD_SE-1_LAEMP_EVO_2022-11_N	RG_BOCKRD	SE	N	11/3/2022	9:35	G	1	X						

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
VPO00847032	Alex McClymont	November 8, 2022	VF/BAL 11/10/22 7:19

NB OF BOTTLES RETURNED/DESCRIPTION	Sampler's Name	Mobile #	Date/Time
Regular (default)	Alex McClymont	780-293-6750	November 8, 2022
Priority (2-3 business days) - 50% surcharge X			
Emergency (1 Business Day) - 100% surcharge			
For Emergency <1 Day, ASAP or Weekend - Contact ALS			

COC ID: **EVO LAEMP NOV 2022** TURNAROUND TIME: RUSH

PROJECT/CLIENT INFO				LABORATORY				
Facility Name / Job#	Regional effects program			Lab Name	Brooks Applied Labs			
Project Manager	Mike Pope			Lab Contact	Ben Wozniak			
Email	mike.pope@teck.com			Email	Ben@brooksupplied.com			
Address	421 Pine Avenue			Address	18804 North Creek Parkway			
					Suite 100			
City	Sparwood		Province	BC		City	Bothell	
Postal Code	V0B 2G0		Country	Canada		Postal Code	98011	
Phone Number	250-425-8202			Phone Number	(206) 753-6158			

Excel PDF EDD
 mike.pope@teck.com
 teckcoal@equisonline.com
 lbowron@minnow.ca
 jessica.ritz@teck.com
 robin.valleau@minnow.ca
 hillary.quinn-austin@minnow.ca

SAMPLE DETAILS									ANALYSIS REQUESTED													
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.															
RG_MI3_SE-1_LAEMP_EVO_2022-11_N	RG_MI3	SE	N	11/2/2022	9:05	G	1															
RG_MI3_SE-2_LAEMP_EVO_2022-11_N	RG_MI3	SE	N	11/2/2022	9:10	G	1															

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
VPO00847032	Alex McClymont	November 8, 2022	UF-13A2 11/10/22 7:19

NB OF BOTTLES RETURNED/DESCRIPTION	Sampler's Name	Mobile #	Sampler's Signature	Date/Time
Regular (default)	Alex McClymont	780-293-6750		November 8, 2022
Priority (2-3 business days) - 50% surcharge X				
Emergency (1 Business Day) - 100% surcharge				
For Emergency <1 Day, ASAP or Weekend - Contact ALS				

Confidential

STRAIGHT BILL OF LADING
NOT NEGOTIABLE

RW HOT SHOT SERVICE INC.

250-425-7447
24 Hour Hot Shot Service

BAL Final Report 2211152
No. 89560

Sparwood, BC
Terrace, BC
Red Deer, AB

Vancouver, BC
Calgary, AB
Montreal, QC

Prince George, BC
Edmonton, AB
Spokane, WA

Elkford, BC
Ft. McMurray, AB
Shelby, MT

Tumbler Ridge, BC
Hinton, AB
Gillette, WY

INVOICE TO		DATE	
BILL OF LADING #		PURCHASE ORDER NUMBER	
SHIPPER (FROM)		CONSIGNEE (TO)	
STREET		STREET	
CITY/PROVINCE	POSTAL CODE	CITY/PROVINCE	POSTAL CODE
SPECIAL INSTRUCTIONS		FREIGHT CHARGES	
PACKAGES	DESCRIPTION OF ARTICLES AND SPECIAL MARKS	WEIGHT (Subject to Correction)	SHIPPER TO CHECK
5	ROCKERS	185 lbs	<input type="checkbox"/> PREPAID <input type="checkbox"/> COLLECT
RW 81560			IF NOT INDICATED, SHIPPING WILL AUTOMATICALLY MOVE COLLECT
UNIT #			FEE
DECLARED VALUATION: Maximum liability of carrier is \$2.00 per lb. (\$4.41 per kilogram) unless declared valuation states otherwise.			WAITING
DRIVER'S SIGNATURE - PICK UP BY			XPU
DRIVER'S SIGNATURE - DELIVERY BY			CHARGES
PICK UP TIME			FSC
FINISH TIME			US
NOTICE OF CLAIM: (a) No carrier is liable for loss, damage or delay of any goods under the Bill of Lading unless notice, therefor setting out particulars of the origin, destination and date of shipment of the goods and the estimated amount claimed in respect of such loss, damage or delay is given in writing to the originating carrier or the delivering carrier within sixty (60) days after the delivery of the goods, or in the case of failure to make delivery within nine (9) months from the date of shipment (b) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill RECEIVED at the point of origin on the date specified from the consignee mentioned herein, the property herein described, in apparent good order, except as noted, contents and condition of contents or package unknown, marked, consigned and destined as indicated below, which the carrier agrees to carry and to deliver to the consignee at the said destination, subject to the rates and classification in effect on the date of shipment. It is mutually agreed, as to each carrier of all or any of the goods over all or any portion of the route to destination, and as to each party, of any time interested in all or any of the goods, that every service to be performed hereunder shall be subject to all the conditions standard Bill of Lading, in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. Printed or written, including conditions set aside by the standard Bill of Lading, in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. The Contract for the carriage of the goods listed in the Bill of Lading is governed by regulation in force in the jurisdiction at the time and place of shipment and is subject to the conditions set out in such conditions.			SUB TOTAL
SHIPPER PRINT			GST
SHIPPER SIGN			TOTAL \$
CONSIGNEE PRINT			IF AT OWNER'S RISK, WRITE ORU HERE
CONSIGNEE SIGN			DATE
WHITE: Office YELLOW: Carrier PINK: Consignee GOLDENROAD: Shipper			TIME
GST # 864540398RT001			NUMBER OF PIECES RECEIVED

Cooler ID: Cooler 8

COC(Y/N)

Temperature: 1.6 C

IR: R-IR-2

Coolant Type: Ice Blue Ice Ambient

Notes:

Sampling Locations:

Sample Types:

Container Types:

Opened By: VF

Date:

11/10/22

RG	Git.								
T/D	T/D	SP	T/D	SP	T/D	SP	T/D	SP	T/D
125 Glass	125 Plastic	50E							
400 Juf									

Effective 7/29/20

COPY

Revision 004



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February 10, 2023

Teck Resources Limited - Vancouver
 Mike Pope
 421 Pine Avenue
 Sparwood, B.C. CANADA V0B2G0
mike.pope@teck.com

Re: Regional Effects Program

Dear Mike Pope,

On December 9, 2022, Brooks Applied Labs (BAL) received twenty-five (25) solid samples at an acceptable temperature of -2.4 °C.

Sample ID values provided on the chain-of-custody (COC) forms did not exactly match the corresponding **Sample ID** values listed on containers. The discrepancies are described in the table below.

Laboratory ID	Sample ID (on COC form)	Sample ID (on container label)
2212159-01	RG_ERCKUT_SE-1_LAEMP_EVO_2022-12_N	RG_ERCKUT_SE-1_2022-12_N
2212159-02	RG_ERCKUT_SE-2_LAEMP_EVO_2022-12_N	RG_ERCKUT_SE-2_2022-12_N
2212159-03	RG_ERCKUT_SE-3_LAEMP_EVO_2022-12_N	RG_ERCKUT_SE-3_2022-12_N
2212159-04	RG_ERCKUT_SE-4_LAEMP_EVO_2022-12_N	RG_ERCKUT_SE-4_2022-12_N
2212159-05	RG_ERCKUT_SE-5_LAEMP_EVO_2022-12_N	RG_ERCKUT_SE-5_2022-12_N
2212159-06	RG_ERCKUT_BRYOSE-1_LAEMP_EVO_2022-12_N	RG_ERCKUT_BRYOSE-1_2022-12_N
2212159-07	RG_ERCKUT_BRYOSE-2_LAEMP_EVO_2022-12_N	RG_ERCKUT_BRYOSE-2_2022-12_N
2212159-08	RG_ERCKUT_BRYOSE-3_LAEMP_EVO_2022-12_N	RG_ERCKUT_BRYOSE-3_2022-12_N
2212159-09	RG_ERCKDT_SE-1_LAEMP_EVO_2022-12_N	RG_ERCKDT_SE-1_2022-12_N
2212159-10	RG_ERCKDT_SE-2_LAEMP_EVO_2022-12_N	RG_ERCKDT_SE-2_2022-12_N
2212159-11	RG_ERCKDT_SE-3_LAEMP_EVO_2022-12_N	RG_ERCKDT_SE-3_2022-12_N
2212159-12	RG_ERCKDT_SE-4_LAEMP_EVO_2022-12_N	RG_ERCKDT_SE-4_2022-12_N
2212159-13	RG_ERCKDT_SE-5_LAEMP_EVO_2022-12_N	RG_ERCKDT_SE-5_2022-12_N
2212159-14	RG_ERCKDT_SE-6_LAEMP_EVO_2022-12_N	RG_ERCKDT_SE-6_2022-12_N
2212159-15	RG_ERCKDT_SE-7_LAEMP_EVO_2022-12_N	RG_ERCKDT_SE-7_2022-12_N
2212159-16	RG_ERCKDT_BRYOSE-1_LAEMP_EVO_2022-12_N	RG_ERCKDT_BRYOSE-1_2022-12_N
2212159-17	RG_ERCKDT_BRYOSE-2_LAEMP_EVO_2022-12_N	RG_ERCKDT_BRYOSE-2_2022-12_N
2212159-18	RG_ERCKDT_BRYOSE-3_LAEMP_EVO_2022-12_N	RG_ERCKDT_BRYOSE-3_2022-12_N
2212159-19	RG_ERCKMD_SE-1_LAEMP_EVO_2022-12_N	RG_ERCKMD_SE-1_2022-12_N
2212159-20	RG_ERCKMD_SE-2_LAEMP_EVO_2022-12_N	RG_ERCKMD_SE-2_2022-12_N
2212159-21	RG_ERCKMD_SE-3_LAEMP_EVO_2022-12_N	RG_ERCKMD_SE-3_2022-12_N
2212159-22	RG_ERCKMD_BRYOSE-1_LAEMP_EVO_2022-12_N	RG_ERCKMD_BRYOSE-1_2022-12_N
2212159-23	RG_ERCKMD_BRYOSE-2_LAEMP_EVO_2022-12_N	RG_ERCKMD_BRYOSE-2_2022-12_N
2212159-24	RG_ERCKMD_BRYOSE-3_LAEMP_EVO_2022-12_N	RG_ERCKMD_BRYOSE-3_2022-12_N
2212159-25	RG_BOCKRD_SE-1_LAEMP_EVO_2022-12_N	RG_BOCKRD_SE-1_2022-12_N

Per client request, the samples described in the table above were logged in and reported using the **Sample ID** values on the COC forms (*column 2 in the table above*).

Each solid sample was logged-in for the analysis of total recoverable Se, Se sequential extraction, and total solids.

The sediments were wet and the water overlaying the sediments in the containers was decanted before the sediments were stored frozen. After receipt, all solid samples were stored in accordance with BAL SOPs.

Percent Total Solids (SOP BAL-0501)

An aliquot of each solid was measured into a pre-weighed vessel, dried in an oven at 105°C overnight, weighed again, and the percent of dried solid material was calculated.

Batch B223015 (%TS)

%TS results were used to dry-weight correct results for the remaining analytical parameters.

Total Recoverable Se (EPA 3050b MOD)

An aliquot of each solid was digested via modified EPA Method 3050B, using additions of concentrated nitric acid, hydrogen peroxide, and hydrochloric acid. The resulting digests were analyzed for Se content via inductively coupled plasma triple quadrupole mass spectrometry (ICP-QQQ-MS). The ICP-QQQ-MS instrumentation uses advanced interference removal techniques to ensure accuracy of the sample results. For more information, please visit the *Interference Reduction Technology* section on our website, brooksapplied.com.

Batch B223019 Total Recoverable Se)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the Sample Results page for sample-specific MDLs, MRLs, and other details.

Se Selective Sequential Extraction (SSE)

An aliquot of each solid was extracted in accordance with BAL's in-house five-step selective sequential extraction for Se. The samples were extracted with a series of reagents designed to target the following selenium fractions (see table below).

SSE Fraction	Fraction Description
F1	Se present as salt (e.g., SeO_4^{2-} , MeSe(IV) , SeCN)
F2	Weakly adsorbed Se (e.g., SeO_4^{2-} , SeO_3^{2-} , SeCN , MeSe(IV))
F3	Amorphous and crystalline Se (e.g., S_2Se , Se^0)
F4	Selenides (e.g., HgSe , PbSe , CdSe , ZnSe)
F5	Residual Se

All resulting SSE fractions were directly analyzed for Se via inductively coupled plasma triple quadrupole mass spectrometry (ICP-QQQ-MS) and have been reported as Se(F1), Se(F2), Se(F3), Se(F4), and Se(F5) according to the corresponding extraction step (see table above).

Batch B223024 (SSE F1)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

Batch B223025 (SSE F2)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

Batch B223026 (SSE F3)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

Batch B223027(SSE F4)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

The relative percent difference (RPD) for selenium (*Se(F4)*) in the laboratory duplicate sample B223027-DUP1 was greater than the control limit of 25%, at 48%. The selenium (*Se(F4)*) RPD values were elevated in the laboratory duplicate samples B223027-DUP2 and B223027-DUP3 (40% and 66%, respectively). In each case, secondary criteria were met (*i.e., avg result ≤ 5x the MRL and results within two MRL values*). No qualification of data was necessary.

Batch B223028 (SSE F5)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

Se Speciation for the SSE

Fractions F1 and F2 of the SSE were also analyzed for individual Se species via ion chromatography inductively coupled plasma collision reaction cell mass spectrometry (IC-ICP-CRC-MS). Selenium species were chromatographically separated on an ion exchange column and then quantified using inductively coupled plasma collision reaction cell mass spectrometry (ICP-CRC-MS); for more information on this determinative technique, please visit the *Interference Reduction Technology* section on our website. The chromatographic method applied for the analyses provides greater retention of methylseleninic acid and selenomethionine, allowing for more definitive quantitation of these species.

Selenium speciation for these SSE fractions was defined as dissolved selenite [*Se(IV)*], selenate [*Se(VI)*], selenocyanate [*SeCN*], methylseleninic acid [*MeSe(IV)*], selenomethionine [*SeMet*], selenosulfate [*SeSO₃*], and dimethylselenoxide [*DMSeO*]. Methaneselenonic acid [*MeSe(VI)*] is reported under *Se Unk A*. The total concentration of any remaining unidentified Se-containing species detected in each sample has also been reported as [*Unk Se Sp*].

DMS₂SeO elutes early in the chromatographic run due to the nature of the molecule and the applied chromatographic separation method. Since this species elutes near the dead volume, additional Se species may coelute. Alternate methods can be applied, upon client request, to increase the separation of DMS₂SeO from potentially co-eluting Se species.

Batch B223051 (Selenium Speciation on SSE F1)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

Batch B223052 (Selenium Speciation on SSE F2)

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOPs and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the Sample Results page for sample-specific MDLs, MRLs, and other details.

In instances when a matrix spike/matrix spike duplicate (MS/MSD) set was spiked at a level less than the native sample concentration, the recoveries and the RPD were not considered valid indicators of data quality. In such instances, the recoveries of the blank spikes (BS) and/or standard reference materials (SRM) demonstrate the accuracy of the applied methods. When the spiking level was less than 25% of the native sample concentration, the spike recovery was not reported (NR) and the RPD of the MS/MSD set was not calculated (N/C).

Except for concentration qualifiers, all data were reported without qualification. All associated quality control sample results met the acceptance criteria.

BAL verifies that the reported results of all analyses for which the laboratory is accredited meet the requirements of the accrediting body, unless otherwise noted in the report narrative. For more information regarding accreditations please see the *Report Information* and *Batch Summary* pages. This report must be used in its entirety for interpretation of results.

Please feel free to contact us if you have any questions regarding this report.

Sincerely,



Jeremy Maute
Senior Project Manager
Jeremy@brooksapplied.com



Report Information

General Disclaimers

Test results are based solely upon the sample submitted to Brooks Applied Labs in the condition it was received. This report shall not be reproduced or copied, except in full, without written approval of the laboratory. Brooks Applied Labs is not responsible for the consequences arising from the use of a partial report.

Laboratory Accreditation

BAL maintains accreditation with various state and national agencies for select test methods. For a current list of BAL accreditations, please visit our website at <http://www.brooksapplied.com/resources/certificates-permits/>. The reported analyte/matrix/method combination shall be considered outside BAL's scopes of accreditation unless otherwise identified as ISO, TNI, or ISO,TNI in the tables. It is the responsibility of the client to verify whether a specific accreditation is required for the intended data use.

ISO: ISO/IEC 17025:2017 accredited test method. Issued by ANSI National Accreditation Board (ANAB), #ADE-1447.02

TNI: NELAP accredited test method. Issued by the State of Florida Department of Health, #E87982.

ISO,TNI: Test method is accredited under both the ISO/IEC 17025:2017 and NELAP accreditations referenced above.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

AR	as received	MS	matrix spike
BAL	Brooks Applied Labs	MSD	matrix spike duplicate
BLK	method blank	ND	non-detect
BS	blank spike	NR	non-reportable
CAL	calibration standard	N/C	not calculated
CCB	continuing calibration blank	PS	post preparation spike
CCV	continuing calibration verification	REC	percent recovery
COC	chain of custody record	RPD	relative percent difference
D	dissolved fraction	SCV	secondary calibration verification
DUP	duplicate	SOP	standard operating procedure
IBL	instrument blank	SRM	reference material
ICV	initial calibration verification	T	total fraction
MDL	method detection limit	TR	total recoverable fraction
MRL	method reporting limit		

Definition of Data Qualifiers

E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Please see narrative for explanation.
J	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1	Estimated value. A full explanation is presented in the narrative.
M	Duplicate precision (RPD) was not within acceptance criteria. Please see narrative for explanation.
N	Spike recovery was not within acceptance criteria. Please see narrative for explanation.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.
Z	Holding time and/or preservation requirements not established for this method; however, BAL recommendations for holding time were not followed. Please see narrative for explanation.



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
RG_ERCKUT_SE-1_LAEMP_EVO_2 022-12_N	2212159-01	SE	Sample	11/29/2022	12/09/2022
RG_ERCKUT_SE-2_LAEMP_EVO_2 022-12_N	2212159-02	SE	Sample	11/29/2022	12/09/2022
RG_ERCKUT_SE-3_LAEMP_EVO_2 022-12_N	2212159-03	SE	Sample	11/29/2022	12/09/2022
RG_ERCKUT_SE-4_LAEMP_EVO_2 022-12_N	2212159-04	SE	Sample	11/29/2022	12/09/2022
RG_ERCKUT_SE-5_LAEMP_EVO_2 022-12_N	2212159-05	SE	Sample	11/29/2022	12/09/2022
RG_ERCKUT_BRYOSE-1_LAEMP_ EVO_2022-12_N	2212159-06	SE	Sample	11/29/2022	12/09/2022
RG_ERCKUT_BRYOSE-2_LAEMP_ EVO_2022-12_N	2212159-07	SE	Sample	11/29/2022	12/09/2022
RG_ERCKUT_BRYOSE-3_LAEMP_ EVO_2022-12_N	2212159-08	SE	Sample	11/29/2022	12/09/2022
RG_ERCKDT_SE-1_LAEMP_EVO_2 022-12_N	2212159-09	SE	Sample	11/28/2022	12/09/2022
RG_ERCKDT_SE-2_LAEMP_EVO_2 022-12_N	2212159-10	SE	Sample	11/28/2022	12/09/2022
RG_ERCKDT_SE-3_LAEMP_EVO_2 022-12_N	2212159-11	SE	Sample	11/28/2022	12/09/2022
RG_ERCKDT_SE-4_LAEMP_EVO_2 022-12_N	2212159-12	SE	Sample	11/28/2022	12/09/2022
RG_ERCKDT_SE-5_LAEMP_EVO_2 022-12_N	2212159-13	SE	Sample	11/28/2022	12/09/2022
RG_ERCKDT_SE-6_LAEMP_EVO_2 022-12_N	2212159-14	SE	Sample	11/28/2022	12/09/2022
RG_ERCKDT_SE-7_LAEMP_EVO_2 022-12_N	2212159-15	SE	Sample	11/28/2022	12/09/2022
RG_ERCKDT_BRYOSE-1_LAEMP_ EVO_2022-12_N	2212159-16	SE	Sample	11/28/2022	12/09/2022
RG_ERCKDT_BRYOSE-2_LAEMP_ EVO_2022-12_N	2212159-17	SE	Sample	11/28/2022	12/09/2022
RG_ERCKDT_BRYOSE-3_LAEMP_ EVO_2022-12_N	2212159-18	SE	Sample	11/28/2022	12/09/2022
RG_ERCKMD_SE-1_LAEMP_EVO_2022-12_N	2212159-19	SE	Sample	11/28/2022	12/09/2022
RG_ERCKMD_SE-2_LAEMP_EVO_2022-12_N	2212159-20	SE	Sample	11/28/2022	12/09/2022
RG_ERCKMD_SE-3_LAEMP_EVO_2022-12_N	2212159-21	SE	Sample	11/28/2022	12/09/2022



Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
RG_ERCKMD_BRYOSE-1_LAEMP_EVO_2022-12_N	2212159-22	SE	Sample	11/28/2022	12/09/2022
RG_ERCKMD_BRYOSE-2_LAEMP_EVO_2022-12_N	2212159-23	SE	Sample	11/28/2022	12/09/2022
RG_ERCKMD_BRYOSE-3_LAEMP_EVO_2022-12_N	2212159-24	SE	Sample	11/28/2022	12/09/2022
RG_BOCKRD_SE-1_LAEMP_EVO_2022-12_N	2212159-25	SE	Sample	11/29/2022	12/09/2022



Batch Summary

Analyte	Lab Matrix	Method	Accred.	Prepared	Analyzed	Batch	Sequence
%TS	Biota	SOP BAL-0501	ISO	12/09/22	12/10/22	B223015	N/A
DMS ₂ O F1	Soil/Sediment	In-House		12/12/22	12/14/22	B223051	S221302
DMS ₂ O F2	Soil/Sediment	In-House		12/12/22	12/14/22	B223052	S221303
MeSe(IV) F1	Soil/Sediment	In-House		12/12/22	12/14/22	B223051	S221302
MeSe(IV) F2	Soil/Sediment	In-House		12/12/22	12/14/22	B223052	S221303
Se	Soil/Sediment	EPA 6020B Mod	ISO,TNI	12/12/22	12/13/22	B223019	S221298
Se Unk A F1	Soil/Sediment	In-House		12/12/22	12/14/22	B223051	S221302
Se Unk A F2	Soil/Sediment	In-House		12/12/22	12/14/22	B223052	S221303
Se(F1)	Soil/Sediment	In-House		12/12/22	12/14/22	B223024	S221300
Se(F2)	Soil/Sediment	In-House		12/12/22	12/14/22	B223025	S221310
Se(F3)	Soil/Sediment	In-House		12/12/22	12/16/22	B223026	S221311
Se(F4)	Soil/Sediment	In-House		12/12/22	12/17/22	B223027	S221323
Se(F5)	Soil/Sediment	In-House		12/19/22	12/20/22	B223028	S221322
Se(IV) F1	Soil/Sediment	In-House		12/12/22	12/14/22	B223051	S221302
Se(IV) F2	Soil/Sediment	In-House		12/12/22	12/14/22	B223052	S221303
Se(VI) F1	Soil/Sediment	In-House		12/12/22	12/14/22	B223051	S221302
Se(VI) F2	Soil/Sediment	In-House		12/12/22	12/14/22	B223052	S221303
SeCN F1	Soil/Sediment	In-House		12/12/22	12/14/22	B223051	S221302
SeCN F2	Soil/Sediment	In-House		12/12/22	12/14/22	B223052	S221303
SeMet F1	Soil/Sediment	In-House		12/12/22	12/14/22	B223051	S221302
SeMet F2	Soil/Sediment	In-House		12/12/22	12/14/22	B223052	S221303
SeSO ₃ F1	Soil/Sediment	In-House		12/12/22	12/14/22	B223051	S221302
SeSO ₃ F2	Soil/Sediment	In-House		12/12/22	12/14/22	B223052	S221303
Unk Se Sp F1	Soil/Sediment	In-House		12/12/22	12/14/22	B223051	S221302
Unk Se Sp F2	Soil/Sediment	In-House		12/12/22	12/14/22	B223052	S221303



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKUT_SE-1_LAEMP_EVO_2022-12_N</i>										
2212159-01	%TS	SE	NA	37.13		0.02	0.05	%	B223015	N/A
2212159-01	DMSeO F1	SE	dry	≤ 0.008	U	0.008	0.021	mg/kg	B223051	S221302
2212159-01	DMSeO F2	SE	dry	0.016	J	0.008	0.021	mg/kg	B223052	S221303
2212159-01	MeSe(IV) F1	SE	dry	0.026		0.008	0.021	mg/kg	B223051	S221302
2212159-01	MeSe(IV) F2	SE	dry	0.708		0.008	0.021	mg/kg	B223052	S221303
2212159-01	Se	SE	dry	12.7		0.252	0.504	mg/kg	B223019	S221298
2212159-01	Se Unk A F1	SE	dry	≤ 0.008	U	0.008	0.021	mg/kg	B223051	S221302
2212159-01	Se Unk A F2	SE	dry	≤ 0.008	U	0.008	0.021	mg/kg	B223052	S221303
2212159-01	Se(F1)	SE	dry	0.681		0.021	0.207	mg/kg	B223024	S221300
2212159-01	Se(F2)	SE	dry	5.35		0.027	0.207	mg/kg	B223025	S221310
2212159-01	Se(F3)	SE	dry	5.72		0.081	0.207	mg/kg	B223026	S221311
2212159-01	Se(F4)	SE	dry	0.465		0.054	0.207	mg/kg	B223027	S221323
2212159-01	Se(F5)	SE	dry	≤ 0.115	U	0.115	0.258	mg/kg	B223028	S221322
2212159-01	Se(IV) F1	SE	dry	0.353		0.026	0.052	mg/kg	B223051	S221302
2212159-01	Se(IV) F2	SE	dry	1.86		0.026	0.052	mg/kg	B223052	S221303
2212159-01	Se(VI) F1	SE	dry	0.166		0.037	0.075	mg/kg	B223051	S221302
2212159-01	Se(VI) F2	SE	dry	≤ 0.037	U	0.037	0.075	mg/kg	B223052	S221303
2212159-01	SeCN F1	SE	dry	≤ 0.005	U	0.005	0.021	mg/kg	B223051	S221302
2212159-01	SeCN F2	SE	dry	0.890		0.005	0.021	mg/kg	B223052	S221303
2212159-01	SeMet F1	SE	dry	0.017	J	0.008	0.021	mg/kg	B223051	S221302
2212159-01	SeMet F2	SE	dry	≤ 0.008	U	0.008	0.021	mg/kg	B223052	S221303
2212159-01	SeSO3 F1	SE	dry	≤ 0.037	U	0.037	0.075	mg/kg	B223051	S221302
2212159-01	SeSO3 F2	SE	dry	≤ 0.037	U	0.037	0.075	mg/kg	B223052	S221303
2212159-01	Unk Se Sp F1	SE	dry	≤ 0.026	U	0.026	0.052	mg/kg	B223051	S221302
2212159-01	Unk Se Sp F2	SE	dry	0.416		0.026	0.052	mg/kg	B223052	S221303



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKUT_SE-2_LAEMP_EVO_2022-12_N</i>										
2212159-02	%TS	SE	NA	38.16		0.02	0.05	%	B223015	N/A
2212159-02	DMS ₂ O F1	SE	dry	≤ 0.007	U	0.007	0.019	mg/kg	B223051	S221302
2212159-02	DMS ₂ O F2	SE	dry	0.008	J	0.007	0.019	mg/kg	B223052	S221303
2212159-02	MeSe(IV) F1	SE	dry	0.013	J	0.007	0.019	mg/kg	B223051	S221302
2212159-02	MeSe(IV) F2	SE	dry	0.274		0.007	0.019	mg/kg	B223052	S221303
2212159-02	Se	SE	dry	7.91		0.237	0.473	mg/kg	B223019	S221298
2212159-02	Se Unk A F1	SE	dry	≤ 0.007	U	0.007	0.019	mg/kg	B223051	S221302
2212159-02	Se Unk A F2	SE	dry	≤ 0.007	U	0.007	0.019	mg/kg	B223052	S221303
2212159-02	Se(F1)	SE	dry	0.287		0.019	0.191	mg/kg	B223024	S221300
2212159-02	Se(F2)	SE	dry	2.40		0.025	0.191	mg/kg	B223025	S221310
2212159-02	Se(F3)	SE	dry	3.43		0.075	0.191	mg/kg	B223026	S221311
2212159-02	Se(F4)	SE	dry	0.426		0.050	0.191	mg/kg	B223027	S221323
2212159-02	Se(F5)	SE	dry	≤ 0.106	U	0.106	0.238	mg/kg	B223028	S221322
2212159-02	Se(IV) F1	SE	dry	0.108		0.024	0.048	mg/kg	B223051	S221302
2212159-02	Se(IV) F2	SE	dry	0.917		0.024	0.048	mg/kg	B223052	S221303
2212159-02	Se(VI) F1	SE	dry	0.066	J	0.035	0.069	mg/kg	B223051	S221302
2212159-02	Se(VI) F2	SE	dry	≤ 0.035	U	0.035	0.069	mg/kg	B223052	S221303
2212159-02	SeCN F1	SE	dry	≤ 0.005	U	0.005	0.019	mg/kg	B223051	S221302
2212159-02	SeCN F2	SE	dry	0.464		0.005	0.019	mg/kg	B223052	S221303
2212159-02	SeMet F1	SE	dry	0.020		0.007	0.019	mg/kg	B223051	S221302
2212159-02	SeMet F2	SE	dry	≤ 0.007	U	0.007	0.019	mg/kg	B223052	S221303
2212159-02	SeSO ₃ F1	SE	dry	≤ 0.035	U	0.035	0.069	mg/kg	B223051	S221302
2212159-02	SeSO ₃ F2	SE	dry	≤ 0.035	U	0.035	0.069	mg/kg	B223052	S221303
2212159-02	Unk Se Sp F1	SE	dry	≤ 0.024	U	0.024	0.048	mg/kg	B223051	S221302
2212159-02	Unk Se Sp F2	SE	dry	0.166		0.024	0.048	mg/kg	B223052	S221303



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKUT_SE-3_LAEMP_EVO_2022-12_N</i>										
2212159-03	%TS	SE	NA	55.83		0.01	0.03	%	B223015	N/A
2212159-03	DMS ₂ O F1	SE	dry	≤ 0.005	U	0.005	0.014	mg/kg	B223051	S221302
2212159-03	DMS ₂ O F2	SE	dry	≤ 0.005	U	0.005	0.014	mg/kg	B223052	S221303
2212159-03	MeSe(IV) F1	SE	dry	0.006	J	0.005	0.014	mg/kg	B223051	S221302
2212159-03	MeSe(IV) F2	SE	dry	0.149		0.005	0.014	mg/kg	B223052	S221303
2212159-03	Se	SE	dry	4.00		0.165	0.330	mg/kg	B223019	S221298
2212159-03	Se Unk A F1	SE	dry	≤ 0.005	U	0.005	0.014	mg/kg	B223051	S221302
2212159-03	Se Unk A F2	SE	dry	≤ 0.005	U	0.005	0.014	mg/kg	B223052	S221303
2212159-03	Se(F1)	SE	dry	0.209		0.014	0.138	mg/kg	B223024	S221300
2212159-03	Se(F2)	SE	dry	1.29		0.018	0.138	mg/kg	B223025	S221310
2212159-03	Se(F3)	SE	dry	1.98		0.054	0.138	mg/kg	B223026	S221311
2212159-03	Se(F4)	SE	dry	0.391		0.036	0.138	mg/kg	B223027	S221323
2212159-03	Se(F5)	SE	dry	0.254		0.077	0.173	mg/kg	B223028	S221322
2212159-03	Se(IV) F1	SE	dry	0.103		0.017	0.035	mg/kg	B223051	S221302
2212159-03	Se(IV) F2	SE	dry	0.549		0.017	0.035	mg/kg	B223052	S221303
2212159-03	Se(VI) F1	SE	dry	0.090		0.025	0.050	mg/kg	B223051	S221302
2212159-03	Se(VI) F2	SE	dry	≤ 0.025	U	0.025	0.050	mg/kg	B223052	S221303
2212159-03	SeCN F1	SE	dry	≤ 0.003	U	0.003	0.014	mg/kg	B223051	S221302
2212159-03	SeCN F2	SE	dry	0.180		0.003	0.014	mg/kg	B223052	S221303
2212159-03	SeMet F1	SE	dry	≤ 0.005	U	0.005	0.014	mg/kg	B223051	S221302
2212159-03	SeMet F2	SE	dry	≤ 0.005	U	0.005	0.014	mg/kg	B223052	S221303
2212159-03	SeSO ₃ F1	SE	dry	≤ 0.025	U	0.025	0.050	mg/kg	B223051	S221302
2212159-03	SeSO ₃ F2	SE	dry	≤ 0.025	U	0.025	0.050	mg/kg	B223052	S221303
2212159-03	Unk Se Sp F1	SE	dry	≤ 0.017	U	0.017	0.035	mg/kg	B223051	S221302
2212159-03	Unk Se Sp F2	SE	dry	0.081		0.017	0.035	mg/kg	B223052	S221303



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKUT_SE-4_LAEMP_EVO_2022-12_N</i>										
2212159-04	%TS	SE	NA	50.93		0.03	0.09	%	B223015	N/A
2212159-04	DMS ₂ O F1	SE	dry	≤ 0.005	U	0.005	0.014	mg/kg	B223051	S221302
2212159-04	DMS ₂ O F2	SE	dry	≤ 0.005	U	0.005	0.014	mg/kg	B223052	S221303
2212159-04	MeSe(IV) F1	SE	dry	0.010	J	0.005	0.014	mg/kg	B223051	S221302
2212159-04	MeSe(IV) F2	SE	dry	0.234		0.005	0.014	mg/kg	B223052	S221303
2212159-04	Se	SE	dry	6.37		0.176	0.353	mg/kg	B223019	S221298
2212159-04	Se Unk A F1	SE	dry	≤ 0.005	U	0.005	0.014	mg/kg	B223051	S221302
2212159-04	Se Unk A F2	SE	dry	≤ 0.005	U	0.005	0.014	mg/kg	B223052	S221303
2212159-04	Se(F1)	SE	dry	0.359		0.014	0.144	mg/kg	B223024	S221300
2212159-04	Se(F2)	SE	dry	2.19		0.019	0.144	mg/kg	B223025	S221310
2212159-04	Se(F3)	SE	dry	2.35		0.057	0.144	mg/kg	B223026	S221311
2212159-04	Se(F4)	SE	dry	0.553		0.038	0.144	mg/kg	B223027	S221323
2212159-04	Se(F5)	SE	dry	0.093	J	0.080	0.180	mg/kg	B223028	S221322
2212159-04	Se(IV) F1	SE	dry	0.218		0.018	0.036	mg/kg	B223051	S221302
2212159-04	Se(IV) F2	SE	dry	1.01		0.018	0.036	mg/kg	B223052	S221303
2212159-04	Se(VI) F1	SE	dry	0.095		0.026	0.052	mg/kg	B223051	S221302
2212159-04	Se(VI) F2	SE	dry	≤ 0.026	U	0.026	0.052	mg/kg	B223052	S221303
2212159-04	SeCN F1	SE	dry	≤ 0.004	U	0.004	0.014	mg/kg	B223051	S221302
2212159-04	SeCN F2	SE	dry	0.309		0.004	0.014	mg/kg	B223052	S221303
2212159-04	SeMet F1	SE	dry	≤ 0.005	U	0.005	0.014	mg/kg	B223051	S221302
2212159-04	SeMet F2	SE	dry	≤ 0.005	U	0.005	0.014	mg/kg	B223052	S221303
2212159-04	SeSO ₃ F1	SE	dry	≤ 0.026	U	0.026	0.052	mg/kg	B223051	S221302
2212159-04	SeSO ₃ F2	SE	dry	≤ 0.026	U	0.026	0.052	mg/kg	B223052	S221303
2212159-04	Unk Se Sp F1	SE	dry	≤ 0.018	U	0.018	0.036	mg/kg	B223051	S221302
2212159-04	Unk Se Sp F2	SE	dry	0.116		0.018	0.036	mg/kg	B223052	S221303



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKUT_SE-5_LAEMP_EVO_2022-12_N</i>										
2212159-05	%TS	SE	NA	55.02		0.03	0.09	%	B223015	N/A
2212159-05	DMS ₂ O F1	SE	dry	≤ 0.006	U	0.006	0.014	mg/kg	B223051	S221302
2212159-05	DMS ₂ O F2	SE	dry	≤ 0.006	U	0.006	0.014	mg/kg	B223052	S221303
2212159-05	MeSe(IV) F1	SE	dry	≤ 0.006	U	0.006	0.014	mg/kg	B223051	S221302
2212159-05	MeSe(IV) F2	SE	dry	0.161		0.006	0.014	mg/kg	B223052	S221303
2212159-05	Se	SE	dry	4.09		0.154	0.308	mg/kg	B223019	S221298
2212159-05	Se Unk A F1	SE	dry	≤ 0.006	U	0.006	0.014	mg/kg	B223051	S221302
2212159-05	Se Unk A F2	SE	dry	≤ 0.006	U	0.006	0.014	mg/kg	B223052	S221303
2212159-05	Se(F1)	SE	dry	0.366		0.014	0.144	mg/kg	B223024	S221300
2212159-05	Se(F2)	SE	dry	1.52		0.019	0.144	mg/kg	B223025	S221310
2212159-05	Se(F3)	SE	dry	1.61		0.057	0.144	mg/kg	B223026	S221311
2212159-05	Se(F4)	SE	dry	0.411		0.038	0.144	mg/kg	B223027	S221323
2212159-05	Se(F5)	SE	dry	0.102	J	0.080	0.180	mg/kg	B223028	S221322
2212159-05	Se(IV) F1	SE	dry	0.267		0.018	0.036	mg/kg	B223051	S221302
2212159-05	Se(IV) F2	SE	dry	0.818		0.018	0.036	mg/kg	B223052	S221303
2212159-05	Se(VI) F1	SE	dry	0.065		0.026	0.052	mg/kg	B223051	S221302
2212159-05	Se(VI) F2	SE	dry	≤ 0.026	U	0.026	0.052	mg/kg	B223052	S221303
2212159-05	SeCN F1	SE	dry	≤ 0.004	U	0.004	0.014	mg/kg	B223051	S221302
2212159-05	SeCN F2	SE	dry	0.125		0.004	0.014	mg/kg	B223052	S221303
2212159-05	SeMet F1	SE	dry	≤ 0.006	U	0.006	0.014	mg/kg	B223051	S221302
2212159-05	SeMet F2	SE	dry	≤ 0.006	U	0.006	0.014	mg/kg	B223052	S221303
2212159-05	SeSO ₃ F1	SE	dry	≤ 0.026	U	0.026	0.052	mg/kg	B223051	S221302
2212159-05	SeSO ₃ F2	SE	dry	≤ 0.026	U	0.026	0.052	mg/kg	B223052	S221303
2212159-05	Unk Se Sp F1	SE	dry	≤ 0.018	U	0.018	0.036	mg/kg	B223051	S221302
2212159-05	Unk Se Sp F2	SE	dry	0.073		0.018	0.036	mg/kg	B223052	S221303



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKUT_BRYOSE-1_LAEMP_EVO_2022-12_N</i>										
2212159-06	%TS	SE	NA	54.19		0.03	0.09	%	B223015	N/A
2212159-06	DMS ₂ O F1	SE	dry	≤ 0.006	U	0.006	0.015	mg/kg	B223051	S221302
2212159-06	DMS ₂ O F2	SE	dry	≤ 0.006	U	0.006	0.015	mg/kg	B223052	S221303
2212159-06	MeSe(IV) F1	SE	dry	≤ 0.006	U	0.006	0.015	mg/kg	B223051	S221302
2212159-06	MeSe(IV) F2	SE	dry	0.037		0.006	0.015	mg/kg	B223052	S221303
2212159-06	Se	SE	dry	2.59		0.149	0.298	mg/kg	B223019	S221298
2212159-06	Se Unk A F1	SE	dry	≤ 0.006	U	0.006	0.015	mg/kg	B223051	S221302
2212159-06	Se Unk A F2	SE	dry	≤ 0.006	U	0.006	0.015	mg/kg	B223052	S221303
2212159-06	Se(F1)	SE	dry	0.122	J	0.015	0.147	mg/kg	B223024	S221300
2212159-06	Se(F2)	SE	dry	0.484		0.019	0.147	mg/kg	B223025	S221310
2212159-06	Se(F3)	SE	dry	1.26		0.058	0.147	mg/kg	B223026	S221311
2212159-06	Se(F4)	SE	dry	0.465		0.039	0.147	mg/kg	B223027	S221323
2212159-06	Se(F5)	SE	dry	0.129	J	0.082	0.184	mg/kg	B223028	S221322
2212159-06	Se(IV) F1	SE	dry	0.030	J	0.018	0.037	mg/kg	B223051	S221302
2212159-06	Se(IV) F2	SE	dry	0.260		0.018	0.037	mg/kg	B223052	S221303
2212159-06	Se(VI) F1	SE	dry	0.093		0.027	0.053	mg/kg	B223051	S221302
2212159-06	Se(VI) F2	SE	dry	≤ 0.027	U	0.027	0.053	mg/kg	B223052	S221303
2212159-06	SeCN F1	SE	dry	≤ 0.004	U	0.004	0.015	mg/kg	B223051	S221302
2212159-06	SeCN F2	SE	dry	0.063		0.004	0.015	mg/kg	B223052	S221303
2212159-06	SeMet F1	SE	dry	≤ 0.006	U	0.006	0.015	mg/kg	B223051	S221302
2212159-06	SeMet F2	SE	dry	≤ 0.006	U	0.006	0.015	mg/kg	B223052	S221303
2212159-06	SeSO ₃ F1	SE	dry	≤ 0.027	U	0.027	0.053	mg/kg	B223051	S221302
2212159-06	SeSO ₃ F2	SE	dry	≤ 0.027	U	0.027	0.053	mg/kg	B223052	S221303
2212159-06	Unk Se Sp F1	SE	dry	≤ 0.018	U	0.018	0.037	mg/kg	B223051	S221302
2212159-06	Unk Se Sp F2	SE	dry	0.026	J	0.018	0.037	mg/kg	B223052	S221303



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKUT_BRYOSE-2_LAEMP_EVO_2022-12_N										
2212159-07	%TS	SE	NA	18.25		0.08	0.28	%	B223015	N/A
2212159-07	DMS ₂ O F1	SE	dry	≤ 0.016	U	0.016	0.042	mg/kg	B223051	S221302
2212159-07	DMS ₂ O F2	SE	dry	0.040	J	0.016	0.042	mg/kg	B223052	S221303
2212159-07	MeSe(IV) F1	SE	dry	0.137		0.016	0.042	mg/kg	B223051	S221302
2212159-07	MeSe(IV) F2	SE	dry	3.22		0.016	0.042	mg/kg	B223052	S221303
2212159-07	Se	SE	dry	30.7		0.430	0.861	mg/kg	B223019	S221298
2212159-07	Se Unk A F1	SE	dry	≤ 0.016	U	0.016	0.042	mg/kg	B223051	S221302
2212159-07	Se Unk A F2	SE	dry	0.050		0.016	0.042	mg/kg	B223052	S221303
2212159-07	Se(F1)	SE	dry	1.45		0.042	0.423	mg/kg	B223024	S221300
2212159-07	Se(F2)	SE	dry	14.3		0.056	0.423	mg/kg	B223025	S221310
2212159-07	Se(F3)	SE	dry	15.9		0.167	0.423	mg/kg	B223026	S221311
2212159-07	Se(F4)	SE	dry	0.654		0.111	0.423	mg/kg	B223027	S221323
2212159-07	Se(F5)	SE	dry	≤ 0.235	U	0.235	0.529	mg/kg	B223028	S221322
2212159-07	Se(IV) F1	SE	dry	0.872		0.053	0.106	mg/kg	B223051	S221302
2212159-07	Se(IV) F2	SE	dry	5.63		0.053	0.106	mg/kg	B223052	S221303
2212159-07	Se(VI) F1	SE	dry	0.264		0.077	0.153	mg/kg	B223051	S221302
2212159-07	Se(VI) F2	SE	dry	≤ 0.077	U	0.077	0.153	mg/kg	B223052	S221303
2212159-07	SeCN F1	SE	dry	≤ 0.011	U	0.011	0.042	mg/kg	B223051	S221302
2212159-07	SeCN F2	SE	dry	1.97		0.011	0.042	mg/kg	B223052	S221303
2212159-07	SeMet F1	SE	dry	≤ 0.016	U	0.016	0.042	mg/kg	B223051	S221302
2212159-07	SeMet F2	SE	dry	≤ 0.016	U	0.016	0.042	mg/kg	B223052	S221303
2212159-07	SeSO ₃ F1	SE	dry	≤ 0.077	U	0.077	0.153	mg/kg	B223051	S221302
2212159-07	SeSO ₃ F2	SE	dry	≤ 0.077	U	0.077	0.153	mg/kg	B223052	S221303
2212159-07	Unk Se Sp F1	SE	dry	≤ 0.053	U	0.053	0.106	mg/kg	B223051	S221302
2212159-07	Unk Se Sp F2	SE	dry	0.918		0.053	0.106	mg/kg	B223052	S221303



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKUT_BRYOSE-3_LAEMP_EVO_2022-12_N</i>										
2212159-08	%TS	SE	NA	66.95		0.01	0.05	%	B223015	N/A
2212159-08	DMS ₂ O F1	SE	dry	≤ 0.004	U	0.004	0.011	mg/kg	B223051	S221302
2212159-08	DMS ₂ O F2	SE	dry	≤ 0.004	U	0.004	0.011	mg/kg	B223052	S221303
2212159-08	MeSe(IV) F1	SE	dry	≤ 0.004	U	0.004	0.011	mg/kg	B223051	S221302
2212159-08	MeSe(IV) F2	SE	dry	0.011	J	0.004	0.011	mg/kg	B223052	S221303
2212159-08	Se	SE	dry	1.30		0.121	0.242	mg/kg	B223019	S221298
2212159-08	Se Unk A F1	SE	dry	≤ 0.004	U	0.004	0.011	mg/kg	B223051	S221302
2212159-08	Se Unk A F2	SE	dry	≤ 0.004	U	0.004	0.011	mg/kg	B223052	S221303
2212159-08	Se(F1)	SE	dry	0.077	J	0.011	0.112	mg/kg	B223024	S221300
2212159-08	Se(F2)	SE	dry	0.227		0.015	0.112	mg/kg	B223025	S221310
2212159-08	Se(F3)	SE	dry	0.501		0.044	0.112	mg/kg	B223026	S221311
2212159-08	Se(F4)	SE	dry	0.382		0.029	0.112	mg/kg	B223027	S221323
2212159-08	Se(F5)	SE	dry	≤ 0.062	U	0.062	0.139	mg/kg	B223028	S221322
2212159-08	Se(IV) F1	SE	dry	≤ 0.014	U	0.014	0.028	mg/kg	B223051	S221302
2212159-08	Se(IV) F2	SE	dry	0.114		0.014	0.028	mg/kg	B223052	S221303
2212159-08	Se(VI) F1	SE	dry	0.059		0.020	0.040	mg/kg	B223051	S221302
2212159-08	Se(VI) F2	SE	dry	≤ 0.020	U	0.020	0.040	mg/kg	B223052	S221303
2212159-08	SeCN F1	SE	dry	≤ 0.003	U	0.003	0.011	mg/kg	B223051	S221302
2212159-08	SeCN F2	SE	dry	0.030		0.003	0.011	mg/kg	B223052	S221303
2212159-08	SeMet F1	SE	dry	≤ 0.004	U	0.004	0.011	mg/kg	B223051	S221302
2212159-08	SeMet F2	SE	dry	≤ 0.004	U	0.004	0.011	mg/kg	B223052	S221303
2212159-08	SeSO ₃ F1	SE	dry	≤ 0.020	U	0.020	0.040	mg/kg	B223051	S221302
2212159-08	SeSO ₃ F2	SE	dry	≤ 0.020	U	0.020	0.040	mg/kg	B223052	S221303
2212159-08	Unk Se Sp F1	SE	dry	≤ 0.014	U	0.014	0.028	mg/kg	B223051	S221302
2212159-08	Unk Se Sp F2	SE	dry	≤ 0.014	U	0.014	0.028	mg/kg	B223052	S221303



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKDT_SE-1_LAEMP_EVO_2022-12_N</i>										
2212159-09	%TS	SE	NA	23.02		0.04	0.12	%	B223015	N/A
2212159-09	DMS ₂ O F1	SE	dry	≤ 0.013	U	0.013	0.034	mg/kg	B223051	S221302
2212159-09	DMS ₂ O F2	SE	dry	≤ 0.013	U	0.013	0.034	mg/kg	B223052	S221303
2212159-09	MeSe(IV) F1	SE	dry	0.025	J	0.013	0.034	mg/kg	B223051	S221302
2212159-09	MeSe(IV) F2	SE	dry	0.464		0.013	0.034	mg/kg	B223052	S221303
2212159-09	Se	SE	dry	20.8		0.388	0.775	mg/kg	B223019	S221298
2212159-09	Se Unk A F1	SE	dry	≤ 0.013	U	0.013	0.034	mg/kg	B223051	S221302
2212159-09	Se Unk A F2	SE	dry	≤ 0.013	U	0.013	0.034	mg/kg	B223052	S221303
2212159-09	Se(F1)	SE	dry	1.03		0.034	0.341	mg/kg	B223024	S221300
2212159-09	Se(F2)	SE	dry	6.85		0.045	0.341	mg/kg	B223025	S221310
2212159-09	Se(F3)	SE	dry	9.91		0.134	0.341	mg/kg	B223026	S221311
2212159-09	Se(F4)	SE	dry	0.391		0.090	0.341	mg/kg	B223027	S221323
2212159-09	Se(F5)	SE	dry	≤ 0.190	U	0.190	0.426	mg/kg	B223028	S221322
2212159-09	Se(IV) F1	SE	dry	0.756		0.043	0.085	mg/kg	B223051	S221302
2212159-09	Se(IV) F2	SE	dry	3.34		0.043	0.085	mg/kg	B223052	S221303
2212159-09	Se(VI) F1	SE	dry	0.159		0.062	0.124	mg/kg	B223051	S221302
2212159-09	Se(VI) F2	SE	dry	≤ 0.062	U	0.062	0.124	mg/kg	B223052	S221303
2212159-09	SeCN F1	SE	dry	≤ 0.009	U	0.009	0.034	mg/kg	B223051	S221302
2212159-09	SeCN F2	SE	dry	1.18		0.009	0.034	mg/kg	B223052	S221303
2212159-09	SeMet F1	SE	dry	≤ 0.013	U	0.013	0.034	mg/kg	B223051	S221302
2212159-09	SeMet F2	SE	dry	≤ 0.013	U	0.013	0.034	mg/kg	B223052	S221303
2212159-09	SeSO ₃ F1	SE	dry	≤ 0.062	U	0.062	0.124	mg/kg	B223051	S221302
2212159-09	SeSO ₃ F2	SE	dry	≤ 0.062	U	0.062	0.124	mg/kg	B223052	S221303
2212159-09	Unk Se Sp F1	SE	dry	≤ 0.043	U	0.043	0.085	mg/kg	B223051	S221302
2212159-09	Unk Se Sp F2	SE	dry	0.419		0.043	0.085	mg/kg	B223052	S221303



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKDT_SE-2_LAEMP_EVO_2022-12_N										
2212159-10	%TS	SE	NA	32.33		0.05	0.18	%	B223015	N/A
2212159-10	DMS ₂ O F1	SE	dry	≤ 0.009	U	0.009	0.024	mg/kg	B223051	S221302
2212159-10	DMS ₂ O F2	SE	dry	0.014	J	0.009	0.024	mg/kg	B223052	S221303
2212159-10	MeSe(IV) F1	SE	dry	0.035		0.009	0.024	mg/kg	B223051	S221302
2212159-10	MeSe(IV) F2	SE	dry	0.667		0.009	0.024	mg/kg	B223052	S221303
2212159-10	Se	SE	dry	27.4		0.271	0.542	mg/kg	B223019	S221298
2212159-10	Se Unk A F1	SE	dry	≤ 0.009	U	0.009	0.024	mg/kg	B223051	S221302
2212159-10	Se Unk A F2	SE	dry	≤ 0.009	U	0.009	0.024	mg/kg	B223052	S221303
2212159-10	Se(F1)	SE	dry	1.26		0.024	0.238	mg/kg	B223024	S221300
2212159-10	Se(F2)	SE	dry	12.1		0.031	0.238	mg/kg	B223025	S221310
2212159-10	Se(F3)	SE	dry	10.4		0.094	0.238	mg/kg	B223026	S221311
2212159-10	Se(F4)	SE	dry	0.487		0.062	0.238	mg/kg	B223027	S221323
2212159-10	Se(F5)	SE	dry	0.198	J	0.132	0.297	mg/kg	B223028	S221322
2212159-10	Se(IV) F1	SE	dry	0.875		0.030	0.059	mg/kg	B223051	S221302
2212159-10	Se(IV) F2	SE	dry	7.44		0.030	0.059	mg/kg	B223052	S221303
2212159-10	Se(VI) F1	SE	dry	0.112		0.043	0.086	mg/kg	B223051	S221302
2212159-10	Se(VI) F2	SE	dry	≤ 0.043	U	0.043	0.086	mg/kg	B223052	S221303
2212159-10	SeCN F1	SE	dry	≤ 0.006	U	0.006	0.024	mg/kg	B223051	S221302
2212159-10	SeCN F2	SE	dry	1.60		0.006	0.024	mg/kg	B223052	S221303
2212159-10	SeMet F1	SE	dry	0.018	J	0.009	0.024	mg/kg	B223051	S221302
2212159-10	SeMet F2	SE	dry	≤ 0.009	U	0.009	0.024	mg/kg	B223052	S221303
2212159-10	SeSO ₃ F1	SE	dry	≤ 0.043	U	0.043	0.086	mg/kg	B223051	S221302
2212159-10	SeSO ₃ F2	SE	dry	≤ 0.043	U	0.043	0.086	mg/kg	B223052	S221303
2212159-10	Unk Se Sp F1	SE	dry	≤ 0.030	U	0.030	0.059	mg/kg	B223051	S221302
2212159-10	Unk Se Sp F2	SE	dry	0.854		0.030	0.059	mg/kg	B223052	S221303



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKDT_SE-3_LAEMP_EVO_2022-12_N</i>										
2212159-11	%TS	SE	NA	34.47		0.02	0.06	%	B223015	N/A
2212159-11	DMS ₂ O F1	SE	dry	≤ 0.009	U	0.009	0.022	mg/kg	B223051	S221302
2212159-11	DMS ₂ O F2	SE	dry	≤ 0.009	U	0.009	0.022	mg/kg	B223052	S221303
2212159-11	MeSe(IV) F1	SE	dry	0.016	J	0.009	0.022	mg/kg	B223051	S221302
2212159-11	MeSe(IV) F2	SE	dry	0.354		0.009	0.022	mg/kg	B223052	S221303
2212159-11	Se	SE	dry	13.3		0.268	0.537	mg/kg	B223019	S221298
2212159-11	Se Unk A F1	SE	dry	≤ 0.009	U	0.009	0.022	mg/kg	B223051	S221302
2212159-11	Se Unk A F2	SE	dry	≤ 0.009	U	0.009	0.022	mg/kg	B223052	S221303
2212159-11	Se(F1)	SE	dry	0.914		0.022	0.224	mg/kg	B223024	S221300
2212159-11	Se(F2)	SE	dry	4.84		0.029	0.224	mg/kg	B223025	S221310
2212159-11	Se(F3)	SE	dry	5.23		0.088	0.224	mg/kg	B223026	S221311
2212159-11	Se(F4)	SE	dry	0.318		0.059	0.224	mg/kg	B223027	S221323
2212159-11	Se(F5)	SE	dry	≤ 0.125	U	0.125	0.281	mg/kg	B223028	S221322
2212159-11	Se(IV) F1	SE	dry	0.734		0.028	0.056	mg/kg	B223051	S221302
2212159-11	Se(IV) F2	SE	dry	2.82		0.028	0.056	mg/kg	B223052	S221303
2212159-11	Se(VI) F1	SE	dry	0.092		0.041	0.081	mg/kg	B223051	S221302
2212159-11	Se(VI) F2	SE	dry	≤ 0.041	U	0.041	0.081	mg/kg	B223052	S221303
2212159-11	SeCN F1	SE	dry	≤ 0.006	U	0.006	0.022	mg/kg	B223051	S221302
2212159-11	SeCN F2	SE	dry	0.714		0.006	0.022	mg/kg	B223052	S221303
2212159-11	SeMet F1	SE	dry	0.010	J	0.009	0.022	mg/kg	B223051	S221302
2212159-11	SeMet F2	SE	dry	≤ 0.009	U	0.009	0.022	mg/kg	B223052	S221303
2212159-11	SeSO ₃ F1	SE	dry	≤ 0.041	U	0.041	0.081	mg/kg	B223051	S221302
2212159-11	SeSO ₃ F2	SE	dry	≤ 0.041	U	0.041	0.081	mg/kg	B223052	S221303
2212159-11	Unk Se Sp F1	SE	dry	≤ 0.028	U	0.028	0.056	mg/kg	B223051	S221302
2212159-11	Unk Se Sp F2	SE	dry	0.323		0.028	0.056	mg/kg	B223052	S221303



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKDT_SE-4_LAEMP_EVO_2022-12_N</i>										
2212159-12	%TS	SE	NA	32.53		0.03	0.11	%	B223015	N/A
2212159-12	DMS ₂ O F1	SE	dry	≤ 0.009	U	0.009	0.024	mg/kg	B223051	S221302
2212159-12	DMS ₂ O F2	SE	dry	≤ 0.009	U	0.009	0.024	mg/kg	B223052	S221303
2212159-12	MeSe(IV) F1	SE	dry	0.034		0.009	0.024	mg/kg	B223051	S221302
2212159-12	MeSe(IV) F2	SE	dry	0.776		0.009	0.024	mg/kg	B223052	S221303
2212159-12	Se	SE	dry	21.0		0.269	0.539	mg/kg	B223019	S221298
2212159-12	Se Unk A F1	SE	dry	≤ 0.009	U	0.009	0.024	mg/kg	B223051	S221302
2212159-12	Se Unk A F2	SE	dry	≤ 0.009	U	0.009	0.024	mg/kg	B223052	S221303
2212159-12	Se(F1)	SE	dry	1.30		0.024	0.238	mg/kg	B223024	S221300
2212159-12	Se(F2)	SE	dry	9.32		0.031	0.238	mg/kg	B223025	S221310
2212159-12	Se(F3)	SE	dry	7.93		0.094	0.238	mg/kg	B223026	S221311
2212159-12	Se(F4)	SE	dry	0.404		0.062	0.238	mg/kg	B223027	S221323
2212159-12	Se(F5)	SE	dry	0.133	J	0.132	0.297	mg/kg	B223028	S221322
2212159-12	Se(IV) F1	SE	dry	0.948		0.030	0.059	mg/kg	B223051	S221302
2212159-12	Se(IV) F2	SE	dry	5.25		0.030	0.059	mg/kg	B223052	S221303
2212159-12	Se(VI) F1	SE	dry	0.094		0.043	0.086	mg/kg	B223051	S221302
2212159-12	Se(VI) F2	SE	dry	≤ 0.043	U	0.043	0.086	mg/kg	B223052	S221303
2212159-12	SeCN F1	SE	dry	≤ 0.006	U	0.006	0.024	mg/kg	B223051	S221302
2212159-12	SeCN F2	SE	dry	1.41		0.006	0.024	mg/kg	B223052	S221303
2212159-12	SeMet F1	SE	dry	0.018	J	0.009	0.024	mg/kg	B223051	S221302
2212159-12	SeMet F2	SE	dry	≤ 0.009	U	0.009	0.024	mg/kg	B223052	S221303
2212159-12	SeSO ₃ F1	SE	dry	≤ 0.043	U	0.043	0.086	mg/kg	B223051	S221302
2212159-12	SeSO ₃ F2	SE	dry	≤ 0.043	U	0.043	0.086	mg/kg	B223052	S221303
2212159-12	Unk Se Sp F1	SE	dry	≤ 0.030	U	0.030	0.059	mg/kg	B223051	S221302
2212159-12	Unk Se Sp F2	SE	dry	0.878		0.030	0.059	mg/kg	B223052	S221303



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKDT_SE-5_LAEMP_EVO_2022-12_N</i>										
2212159-13	%TS	SE	NA	31.29		0.04	0.15	%	B223015	N/A
2212159-13	DMS ₂ O F1	SE	dry	≤ 0.009	U	0.009	0.022	mg/kg	B223051	S221302
2212159-13	DMS ₂ O F2	SE	dry	≤ 0.009	U	0.009	0.022	mg/kg	B223052	S221303
2212159-13	MeSe(IV) F1	SE	dry	0.027		0.009	0.022	mg/kg	B223051	S221302
2212159-13	MeSe(IV) F2	SE	dry	0.513		0.009	0.022	mg/kg	B223052	S221303
2212159-13	Se	SE	dry	16.9		0.276	0.552	mg/kg	B223019	S221298
2212159-13	Se Unk A F1	SE	dry	≤ 0.009	U	0.009	0.022	mg/kg	B223051	S221302
2212159-13	Se Unk A F2	SE	dry	≤ 0.009	U	0.009	0.022	mg/kg	B223052	S221303
2212159-13	Se(F1)	SE	dry	0.907		0.022	0.224	mg/kg	B223024	S221300
2212159-13	Se(F2)	SE	dry	6.88		0.029	0.224	mg/kg	B223025	S221310
2212159-13	Se(F3)	SE	dry	6.40		0.088	0.224	mg/kg	B223026	S221311
2212159-13	Se(F4)	SE	dry	0.551		0.059	0.224	mg/kg	B223027	S221323
2212159-13	Se(F5)	SE	dry	0.139	J	0.124	0.280	mg/kg	B223028	S221322
2212159-13	Se(IV) F1	SE	dry	0.729		0.028	0.056	mg/kg	B223051	S221302
2212159-13	Se(IV) F2	SE	dry	3.56		0.028	0.056	mg/kg	B223052	S221303
2212159-13	Se(VI) F1	SE	dry	0.083		0.041	0.081	mg/kg	B223051	S221302
2212159-13	Se(VI) F2	SE	dry	≤ 0.041	U	0.041	0.081	mg/kg	B223052	S221303
2212159-13	SeCN F1	SE	dry	≤ 0.006	U	0.006	0.022	mg/kg	B223051	S221302
2212159-13	SeCN F2	SE	dry	1.11		0.006	0.022	mg/kg	B223052	S221303
2212159-13	SeMet F1	SE	dry	0.026		0.009	0.022	mg/kg	B223051	S221302
2212159-13	SeMet F2	SE	dry	≤ 0.009	U	0.009	0.022	mg/kg	B223052	S221303
2212159-13	SeSO ₃ F1	SE	dry	≤ 0.041	U	0.041	0.081	mg/kg	B223051	S221302
2212159-13	SeSO ₃ F2	SE	dry	≤ 0.041	U	0.041	0.081	mg/kg	B223052	S221303
2212159-13	Unk Se Sp F1	SE	dry	≤ 0.028	U	0.028	0.056	mg/kg	B223051	S221302
2212159-13	Unk Se Sp F2	SE	dry	0.551		0.028	0.056	mg/kg	B223052	S221303



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKDT_SE-6_LAEMP_EVO_2022-12_N										
2212159-14	%TS	SE	NA	29.75		0.06	0.19	%	B223015	N/A
2212159-14	DMS ₂ O F1	SE	dry	≤ 0.010	U	0.010	0.026	mg/kg	B223051	S221302
2212159-14	DMS ₂ O F2	SE	dry	0.013	J	0.010	0.026	mg/kg	B223052	S221303
2212159-14	MeSe(IV) F1	SE	dry	0.035		0.010	0.026	mg/kg	B223051	S221302
2212159-14	MeSe(IV) F2	SE	dry	0.661		0.010	0.026	mg/kg	B223052	S221303
2212159-14	Se	SE	dry	24.4		0.316	0.632	mg/kg	B223019	S221298
2212159-14	Se Unk A F1	SE	dry	≤ 0.010	U	0.010	0.026	mg/kg	B223051	S221302
2212159-14	Se Unk A F2	SE	dry	≤ 0.010	U	0.010	0.026	mg/kg	B223052	S221303
2212159-14	Se(F1)	SE	dry	0.595		0.026	0.260	mg/kg	B223024	S221300
2212159-14	Se(F2)	SE	dry	9.92		0.034	0.260	mg/kg	B223025	S221310
2212159-14	Se(F3)	SE	dry	10.2		0.102	0.260	mg/kg	B223026	S221311
2212159-14	Se(F4)	SE	dry	0.378		0.068	0.260	mg/kg	B223027	S221323
2212159-14	Se(F5)	SE	dry	≤ 0.145	U	0.145	0.325	mg/kg	B223028	S221322
2212159-14	Se(IV) F1	SE	dry	0.361		0.032	0.065	mg/kg	B223051	S221302
2212159-14	Se(IV) F2	SE	dry	5.07		0.032	0.065	mg/kg	B223052	S221303
2212159-14	Se(VI) F1	SE	dry	≤ 0.047	U	0.047	0.094	mg/kg	B223051	S221302
2212159-14	Se(VI) F2	SE	dry	≤ 0.047	U	0.047	0.094	mg/kg	B223052	S221303
2212159-14	SeCN F1	SE	dry	≤ 0.006	U	0.006	0.026	mg/kg	B223051	S221302
2212159-14	SeCN F2	SE	dry	1.32		0.006	0.026	mg/kg	B223052	S221303
2212159-14	SeMet F1	SE	dry	0.035		0.010	0.026	mg/kg	B223051	S221302
2212159-14	SeMet F2	SE	dry	≤ 0.010	U	0.010	0.026	mg/kg	B223052	S221303
2212159-14	SeSO ₃ F1	SE	dry	≤ 0.047	U	0.047	0.094	mg/kg	B223051	S221302
2212159-14	SeSO ₃ F2	SE	dry	≤ 0.047	U	0.047	0.094	mg/kg	B223052	S221303
2212159-14	Unk Se Sp F1	SE	dry	≤ 0.032	U	0.032	0.065	mg/kg	B223051	S221302
2212159-14	Unk Se Sp F2	SE	dry	1.11		0.032	0.065	mg/kg	B223052	S221303



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKDT_SE-7_LAEMP_EVO_2022-12_N</i>										
2212159-15	%TS	SE	NA	32.46		0.03	0.11	%	B223015	N/A
2212159-15	DMS ₂ O F1	SE	dry	≤ 0.009	U	0.009	0.025	mg/kg	B223051	S221302
2212159-15	DMS ₂ O F2	SE	dry	≤ 0.009	U	0.009	0.025	mg/kg	B223052	S221303
2212159-15	MeSe(IV) F1	SE	dry	0.021	J	0.009	0.025	mg/kg	B223051	S221302
2212159-15	MeSe(IV) F2	SE	dry	0.517		0.009	0.025	mg/kg	B223052	S221303
2212159-15	Se	SE	dry	18.0		0.260	0.520	mg/kg	B223019	S221298
2212159-15	Se Unk A F1	SE	dry	≤ 0.009	U	0.009	0.025	mg/kg	B223051	S221302
2212159-15	Se Unk A F2	SE	dry	≤ 0.009	U	0.009	0.025	mg/kg	B223052	S221303
2212159-15	Se(F1)	SE	dry	0.394		0.025	0.247	mg/kg	B223024	S221300
2212159-15	Se(F2)	SE	dry	7.63		0.032	0.247	mg/kg	B223025	S221310
2212159-15	Se(F3)	SE	dry	7.28		0.097	0.247	mg/kg	B223026	S221311
2212159-15	Se(F4)	SE	dry	0.355		0.065	0.247	mg/kg	B223027	S221323
2212159-15	Se(F5)	SE	dry	≤ 0.138	U	0.138	0.309	mg/kg	B223028	S221322
2212159-15	Se(IV) F1	SE	dry	0.252		0.031	0.062	mg/kg	B223051	S221302
2212159-15	Se(IV) F2	SE	dry	3.71		0.031	0.062	mg/kg	B223052	S221303
2212159-15	Se(VI) F1	SE	dry	≤ 0.045	U	0.045	0.090	mg/kg	B223051	S221302
2212159-15	Se(VI) F2	SE	dry	≤ 0.045	U	0.045	0.090	mg/kg	B223052	S221303
2212159-15	SeCN F1	SE	dry	≤ 0.006	U	0.006	0.025	mg/kg	B223051	S221302
2212159-15	SeCN F2	SE	dry	1.35		0.006	0.025	mg/kg	B223052	S221303
2212159-15	SeMet F1	SE	dry	0.020	J	0.009	0.025	mg/kg	B223051	S221302
2212159-15	SeMet F2	SE	dry	≤ 0.009	U	0.009	0.025	mg/kg	B223052	S221303
2212159-15	SeSO ₃ F1	SE	dry	≤ 0.045	U	0.045	0.090	mg/kg	B223051	S221302
2212159-15	SeSO ₃ F2	SE	dry	≤ 0.045	U	0.045	0.090	mg/kg	B223052	S221303
2212159-15	Unk Se Sp F1	SE	dry	≤ 0.031	U	0.031	0.062	mg/kg	B223051	S221302
2212159-15	Unk Se Sp F2	SE	dry	0.838		0.031	0.062	mg/kg	B223052	S221303



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKDT_BRYOSE-1_LAEMP_EVO_2022-12_N										
2212159-16	%TS	SE	NA	40.19		0.04	0.12	%	B223015	N/A
2212159-16	DMS ₂ O F1	SE	dry	≤ 0.007	U	0.007	0.017	mg/kg	B223051	S221302
2212159-16	DMS ₂ O F2	SE	dry	≤ 0.007	U	0.007	0.017	mg/kg	B223052	S221303
2212159-16	MeSe(IV) F1	SE	dry	0.009	J	0.007	0.017	mg/kg	B223051	S221302
2212159-16	MeSe(IV) F2	SE	dry	0.132		0.007	0.017	mg/kg	B223052	S221303
2212159-16	Se	SE	dry	7.08		0.226	0.451	mg/kg	B223019	S221298
2212159-16	Se Unk A F1	SE	dry	≤ 0.007	U	0.007	0.017	mg/kg	B223051	S221302
2212159-16	Se Unk A F2	SE	dry	≤ 0.007	U	0.007	0.017	mg/kg	B223052	S221303
2212159-16	Se(F1)	SE	dry	0.229		0.017	0.173	mg/kg	B223024	S221300
2212159-16	Se(F2)	SE	dry	2.06		0.023	0.173	mg/kg	B223025	S221310
2212159-16	Se(F3)	SE	dry	3.28		0.068	0.173	mg/kg	B223026	S221311
2212159-16	Se(F4)	SE	dry	0.404		0.045	0.173	mg/kg	B223027	S221323
2212159-16	Se(F5)	SE	dry	≤ 0.096	U	0.096	0.216	mg/kg	B223028	S221322
2212159-16	Se(IV) F1	SE	dry	0.115		0.022	0.043	mg/kg	B223051	S221302
2212159-16	Se(IV) F2	SE	dry	1.16		0.022	0.043	mg/kg	B223052	S221303
2212159-16	Se(VI) F1	SE	dry	0.089		0.031	0.063	mg/kg	B223051	S221302
2212159-16	Se(VI) F2	SE	dry	≤ 0.031	U	0.031	0.063	mg/kg	B223052	S221303
2212159-16	SeCN F1	SE	dry	≤ 0.004	U	0.004	0.017	mg/kg	B223051	S221302
2212159-16	SeCN F2	SE	dry	0.378		0.004	0.017	mg/kg	B223052	S221303
2212159-16	SeMet F1	SE	dry	≤ 0.007	U	0.007	0.017	mg/kg	B223051	S221302
2212159-16	SeMet F2	SE	dry	≤ 0.007	U	0.007	0.017	mg/kg	B223052	S221303
2212159-16	SeSO ₃ F1	SE	dry	≤ 0.031	U	0.031	0.063	mg/kg	B223051	S221302
2212159-16	SeSO ₃ F2	SE	dry	≤ 0.031	U	0.031	0.063	mg/kg	B223052	S221303
2212159-16	Unk Se Sp F1	SE	dry	≤ 0.022	U	0.022	0.043	mg/kg	B223051	S221302
2212159-16	Unk Se Sp F2	SE	dry	0.143		0.022	0.043	mg/kg	B223052	S221303



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKDT_BRYOSE-2_LAEMP_EVO_2022-12_N										
2212159-17	%TS	SE	NA	32.34		0.03	0.09	%	B223015	N/A
2212159-17	DMS ₂ O F1	SE	dry	≤ 0.009	U	0.009	0.023	mg/kg	B223051	S221302
2212159-17	DMS ₂ O F2	SE	dry	0.014	J	0.009	0.023	mg/kg	B223052	S221303
2212159-17	MeSe(IV) F1	SE	dry	0.047		0.009	0.023	mg/kg	B223051	S221302
2212159-17	MeSe(IV) F2	SE	dry	0.877		0.009	0.023	mg/kg	B223052	S221303
2212159-17	Se	SE	dry	33.5		0.269	0.537	mg/kg	B223019	S221298
2212159-17	Se Unk A F1	SE	dry	≤ 0.009	U	0.009	0.023	mg/kg	B223051	S221302
2212159-17	Se Unk A F2	SE	dry	≤ 0.009	U	0.009	0.023	mg/kg	B223052	S221303
2212159-17	Se(F1)	SE	dry	1.81		0.023	0.231	mg/kg	B223024	S221300
2212159-17	Se(F2)	SE	dry	14.8		0.030	0.231	mg/kg	B223025	S221310
2212159-17	Se(F3)	SE	dry	9.65		0.091	0.231	mg/kg	B223026	S221311
2212159-17	Se(F4)	SE	dry	0.434		0.061	0.231	mg/kg	B223027	S221323
2212159-17	Se(F5)	SE	dry	≤ 0.128	U	0.128	0.288	mg/kg	B223028	S221322
2212159-17	Se(IV) F1	SE	dry	1.56		0.029	0.058	mg/kg	B223051	S221302
2212159-17	Se(IV) F2	SE	dry	10.9		0.029	0.058	mg/kg	B223052	S221303
2212159-17	Se(VI) F1	SE	dry	0.109		0.042	0.084	mg/kg	B223051	S221302
2212159-17	Se(VI) F2	SE	dry	≤ 0.042	U	0.042	0.084	mg/kg	B223052	S221303
2212159-17	SeCN F1	SE	dry	≤ 0.006	U	0.006	0.023	mg/kg	B223051	S221302
2212159-17	SeCN F2	SE	dry	1.44		0.006	0.023	mg/kg	B223052	S221303
2212159-17	SeMet F1	SE	dry	0.026		0.009	0.023	mg/kg	B223051	S221302
2212159-17	SeMet F2	SE	dry	≤ 0.009	U	0.009	0.023	mg/kg	B223052	S221303
2212159-17	SeSO ₃ F1	SE	dry	≤ 0.042	U	0.042	0.084	mg/kg	B223051	S221302
2212159-17	SeSO ₃ F2	SE	dry	≤ 0.042	U	0.042	0.084	mg/kg	B223052	S221303
2212159-17	Unk Se Sp F1	SE	dry	≤ 0.029	U	0.029	0.058	mg/kg	B223051	S221302
2212159-17	Unk Se Sp F2	SE	dry	0.953		0.029	0.058	mg/kg	B223052	S221303



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKDT_BRYOSE-3_LAEMP_EVO_2022-12_N										
2212159-18	%TS	SE	NA	71.05		0.01	0.04	%	B223015	N/A
2212159-18	DMS ₂ O F1	SE	dry	≤ 0.004	U	0.004	0.011	mg/kg	B223051	S221302
2212159-18	DMS ₂ O F2	SE	dry	≤ 0.004	U	0.004	0.011	mg/kg	B223052	S221303
2212159-18	MeSe(IV) F1	SE	dry	≤ 0.004	U	0.004	0.011	mg/kg	B223051	S221302
2212159-18	MeSe(IV) F2	SE	dry	0.060		0.004	0.011	mg/kg	B223052	S221303
2212159-18	Se	SE	dry	2.91		0.117	0.234	mg/kg	B223019	S221298
2212159-18	Se Unk A F1	SE	dry	≤ 0.004	U	0.004	0.011	mg/kg	B223051	S221302
2212159-18	Se Unk A F2	SE	dry	≤ 0.004	U	0.004	0.011	mg/kg	B223052	S221303
2212159-18	Se(F1)	SE	dry	0.210		0.011	0.110	mg/kg	B223024	S221300
2212159-18	Se(F2)	SE	dry	0.939		0.014	0.110	mg/kg	B223025	S221310
2212159-18	Se(F3)	SE	dry	1.51		0.043	0.110	mg/kg	B223026	S221311
2212159-18	Se(F4)	SE	dry	0.277		0.029	0.110	mg/kg	B223027	S221323
2212159-18	Se(F5)	SE	dry	≤ 0.061	U	0.061	0.138	mg/kg	B223028	S221322
2212159-18	Se(IV) F1	SE	dry	0.140		0.014	0.028	mg/kg	B223051	S221302
2212159-18	Se(IV) F2	SE	dry	0.642		0.014	0.028	mg/kg	B223052	S221303
2212159-18	Se(VI) F1	SE	dry	0.027	J	0.020	0.040	mg/kg	B223051	S221302
2212159-18	Se(VI) F2	SE	dry	≤ 0.020	U	0.020	0.040	mg/kg	B223052	S221303
2212159-18	SeCN F1	SE	dry	≤ 0.003	U	0.003	0.011	mg/kg	B223051	S221302
2212159-18	SeCN F2	SE	dry	0.126		0.003	0.011	mg/kg	B223052	S221303
2212159-18	SeMet F1	SE	dry	≤ 0.004	U	0.004	0.011	mg/kg	B223051	S221302
2212159-18	SeMet F2	SE	dry	≤ 0.004	U	0.004	0.011	mg/kg	B223052	S221303
2212159-18	SeSO ₃ F1	SE	dry	≤ 0.020	U	0.020	0.040	mg/kg	B223051	S221302
2212159-18	SeSO ₃ F2	SE	dry	≤ 0.020	U	0.020	0.040	mg/kg	B223052	S221303
2212159-18	Unk Se Sp F1	SE	dry	≤ 0.014	U	0.014	0.028	mg/kg	B223051	S221302
2212159-18	Unk Se Sp F2	SE	dry	0.057		0.014	0.028	mg/kg	B223052	S221303



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKMD_SE-1_LAEMP_EVO_2022-12_N</i>										
2212159-19	%TS	SE	NA	24.40		0.04	0.12	%	B223015	N/A
2212159-19	DMS ₂ O F1	SE	dry	≤ 0.012	U	0.012	0.032	mg/kg	B223051	S221302
2212159-19	DMS ₂ O F2	SE	dry	0.026	J	0.012	0.032	mg/kg	B223052	S221303
2212159-19	MeSe(IV) F1	SE	dry	0.052		0.012	0.032	mg/kg	B223051	S221302
2212159-19	MeSe(IV) F2	SE	dry	0.709		0.012	0.032	mg/kg	B223052	S221303
2212159-19	Se	SE	dry	30.9		0.354	0.709	mg/kg	B223019	S221298
2212159-19	Se Unk A F1	SE	dry	≤ 0.012	U	0.012	0.032	mg/kg	B223051	S221302
2212159-19	Se Unk A F2	SE	dry	≤ 0.012	U	0.012	0.032	mg/kg	B223052	S221303
2212159-19	Se(F1)	SE	dry	0.913		0.032	0.325	mg/kg	B223024	S221300
2212159-19	Se(F2)	SE	dry	14.7		0.043	0.325	mg/kg	B223025	S221310
2212159-19	Se(F3)	SE	dry	12.2		0.128	0.325	mg/kg	B223026	S221311
2212159-19	Se(F4)	SE	dry	0.440		0.085	0.325	mg/kg	B223027	S221323
2212159-19	Se(F5)	SE	dry	≤ 0.181	U	0.181	0.406	mg/kg	B223028	S221322
2212159-19	Se(IV) F1	SE	dry	0.699		0.041	0.081	mg/kg	B223051	S221302
2212159-19	Se(IV) F2	SE	dry	9.41		0.041	0.081	mg/kg	B223052	S221303
2212159-19	Se(VI) F1	SE	dry	≤ 0.059	U	0.059	0.118	mg/kg	B223051	S221302
2212159-19	Se(VI) F2	SE	dry	≤ 0.059	U	0.059	0.118	mg/kg	B223052	S221303
2212159-19	SeCN F1	SE	dry	≤ 0.008	U	0.008	0.032	mg/kg	B223051	S221302
2212159-19	SeCN F2	SE	dry	1.62		0.008	0.032	mg/kg	B223052	S221303
2212159-19	SeMet F1	SE	dry	≤ 0.012	U	0.012	0.032	mg/kg	B223051	S221302
2212159-19	SeMet F2	SE	dry	≤ 0.012	U	0.012	0.032	mg/kg	B223052	S221303
2212159-19	SeSO ₃ F1	SE	dry	≤ 0.059	U	0.059	0.118	mg/kg	B223051	S221302
2212159-19	SeSO ₃ F2	SE	dry	≤ 0.059	U	0.059	0.118	mg/kg	B223052	S221303
2212159-19	Unk Se Sp F1	SE	dry	≤ 0.041	U	0.041	0.081	mg/kg	B223051	S221302
2212159-19	Unk Se Sp F2	SE	dry	1.24		0.041	0.081	mg/kg	B223052	S221303



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKMD_SE-2_LAEMP_EVO_2022-12_N										
2212159-20	%TS	SE	NA	30.44		0.03	0.11	%	B223015	N/A
2212159-20	DMS ₂ O F1	SE	dry	0.012	J	0.009	0.023	mg/kg	B223051	S221302
2212159-20	DMS ₂ O F2	SE	dry	0.010	J	0.009	0.023	mg/kg	B223052	S221303
2212159-20	MeSe(IV) F1	SE	dry	0.067		0.009	0.023	mg/kg	B223051	S221302
2212159-20	MeSe(IV) F2	SE	dry	0.826		0.009	0.023	mg/kg	B223052	S221303
2212159-20	Se	SE	dry	30.5		0.286	0.571	mg/kg	B223019	S221298
2212159-20	Se Unk A F1	SE	dry	≤ 0.009	U	0.009	0.023	mg/kg	B223051	S221302
2212159-20	Se Unk A F2	SE	dry	≤ 0.009	U	0.009	0.023	mg/kg	B223052	S221303
2212159-20	Se(F1)	SE	dry	1.01		0.023	0.232	mg/kg	B223024	S221300
2212159-20	Se(F2)	SE	dry	13.2		0.030	0.232	mg/kg	B223025	S221310
2212159-20	Se(F3)	SE	dry	12.4		0.091	0.232	mg/kg	B223026	S221311
2212159-20	Se(F4)	SE	dry	0.446		0.061	0.232	mg/kg	B223027	S221323
2212159-20	Se(F5)	SE	dry	0.132	J	0.129	0.290	mg/kg	B223028	S221322
2212159-20	Se(IV) F1	SE	dry	0.728		0.029	0.058	mg/kg	B223051	S221302
2212159-20	Se(IV) F2	SE	dry	8.43		0.029	0.058	mg/kg	B223052	S221303
2212159-20	Se(VI) F1	SE	dry	≤ 0.042	U	0.042	0.084	mg/kg	B223051	S221302
2212159-20	Se(VI) F2	SE	dry	0.045	J	0.042	0.084	mg/kg	B223052	S221303
2212159-20	SeCN F1	SE	dry	0.008	J	0.006	0.023	mg/kg	B223051	S221302
2212159-20	SeCN F2	SE	dry	2.01		0.006	0.023	mg/kg	B223052	S221303
2212159-20	SeMet F1	SE	dry	0.024		0.009	0.023	mg/kg	B223051	S221302
2212159-20	SeMet F2	SE	dry	≤ 0.009	U	0.009	0.023	mg/kg	B223052	S221303
2212159-20	SeSO ₃ F1	SE	dry	≤ 0.042	U	0.042	0.084	mg/kg	B223051	S221302
2212159-20	SeSO ₃ F2	SE	dry	≤ 0.042	U	0.042	0.084	mg/kg	B223052	S221303
2212159-20	Unk Se Sp F1	SE	dry	≤ 0.029	U	0.029	0.058	mg/kg	B223051	S221302
2212159-20	Unk Se Sp F2	SE	dry	0.864		0.029	0.058	mg/kg	B223052	S221303



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_ERCKMD_SE-3_LAEMP_EVO_2022-12_N										
2212159-21	%TS	SE	NA	30.15		0.04	0.14	%	B223015	N/A
2212159-21	DMS ₂ O F1	SE	dry	≤ 0.010	U	0.010	0.027	mg/kg	B223051	S221302
2212159-21	DMS ₂ O F2	SE	dry	≤ 0.010	U	0.010	0.027	mg/kg	B223052	S221303
2212159-21	MeSe(IV) F1	SE	dry	0.031		0.010	0.027	mg/kg	B223051	S221302
2212159-21	MeSe(IV) F2	SE	dry	0.605		0.010	0.027	mg/kg	B223052	S221303
2212159-21	Se	SE	dry	23.4		0.292	0.585	mg/kg	B223019	S221298
2212159-21	Se Unk A F1	SE	dry	≤ 0.010	U	0.010	0.027	mg/kg	B223051	S221302
2212159-21	Se Unk A F2	SE	dry	≤ 0.010	U	0.010	0.027	mg/kg	B223052	S221303
2212159-21	Se(F1)	SE	dry	0.818		0.027	0.265	mg/kg	B223024	S221300
2212159-21	Se(F2)	SE	dry	8.37		0.035	0.265	mg/kg	B223025	S221310
2212159-21	Se(F3)	SE	dry	11.0		0.104	0.265	mg/kg	B223026	S221311
2212159-21	Se(F4)	SE	dry	0.521		0.070	0.265	mg/kg	B223027	S221323
2212159-21	Se(F5)	SE	dry	≤ 0.147	U	0.147	0.331	mg/kg	B223028	S221322
2212159-21	Se(IV) F1	SE	dry	0.535		0.033	0.066	mg/kg	B223051	S221302
2212159-21	Se(IV) F2	SE	dry	5.03		0.033	0.066	mg/kg	B223052	S221303
2212159-21	Se(VI) F1	SE	dry	0.150		0.048	0.096	mg/kg	B223051	S221302
2212159-21	Se(VI) F2	SE	dry	≤ 0.048	U	0.048	0.096	mg/kg	B223052	S221303
2212159-21	SeCN F1	SE	dry	≤ 0.007	U	0.007	0.027	mg/kg	B223051	S221302
2212159-21	SeCN F2	SE	dry	1.48		0.007	0.027	mg/kg	B223052	S221303
2212159-21	SeMet F1	SE	dry	≤ 0.010	U	0.010	0.027	mg/kg	B223051	S221302
2212159-21	SeMet F2	SE	dry	≤ 0.010	U	0.010	0.027	mg/kg	B223052	S221303
2212159-21	SeSO ₃ F1	SE	dry	≤ 0.048	U	0.048	0.096	mg/kg	B223051	S221302
2212159-21	SeSO ₃ F2	SE	dry	≤ 0.048	U	0.048	0.096	mg/kg	B223052	S221303
2212159-21	Unk Se Sp F1	SE	dry	≤ 0.033	U	0.033	0.066	mg/kg	B223051	S221302
2212159-21	Unk Se Sp F2	SE	dry	0.525		0.033	0.066	mg/kg	B223052	S221303



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKMD_BRYOSE-1_LAEMP_EVO_2022-12_N</i>										
2212159-22	%TS	SE	NA	61.35		0.01	0.04	%	B223015	N/A
2212159-22	DMS ₂ O F1	SE	dry	≤ 0.005	U	0.005	0.013	mg/kg	B223051	S221302
2212159-22	DMS ₂ O F2	SE	dry	≤ 0.005	U	0.005	0.013	mg/kg	B223052	S221303
2212159-22	MeSe(IV) F1	SE	dry	0.007	J	0.005	0.013	mg/kg	B223051	S221302
2212159-22	MeSe(IV) F2	SE	dry	0.128		0.005	0.013	mg/kg	B223052	S221303
2212159-22	Se	SE	dry	6.66		0.138	0.277	mg/kg	B223019	S221298
2212159-22	Se Unk A F1	SE	dry	≤ 0.005	U	0.005	0.013	mg/kg	B223051	S221302
2212159-22	Se Unk A F2	SE	dry	≤ 0.005	U	0.005	0.013	mg/kg	B223052	S221303
2212159-22	Se(F1)	SE	dry	0.428		0.013	0.130	mg/kg	B223024	S221300
2212159-22	Se(F2)	SE	dry	2.00		0.017	0.130	mg/kg	B223025	S221310
2212159-22	Se(F3)	SE	dry	2.75		0.051	0.130	mg/kg	B223026	S221311
2212159-22	Se(F4)	SE	dry	0.245		0.034	0.130	mg/kg	B223027	S221323
2212159-22	Se(F5)	SE	dry	≤ 0.072	U	0.072	0.162	mg/kg	B223028	S221322
2212159-22	Se(IV) F1	SE	dry	0.343		0.016	0.032	mg/kg	B223051	S221302
2212159-22	Se(IV) F2	SE	dry	1.28		0.016	0.032	mg/kg	B223052	S221303
2212159-22	Se(VI) F1	SE	dry	0.036	J	0.024	0.047	mg/kg	B223051	S221302
2212159-22	Se(VI) F2	SE	dry	≤ 0.024	U	0.024	0.047	mg/kg	B223052	S221303
2212159-22	SeCN F1	SE	dry	≤ 0.003	U	0.003	0.013	mg/kg	B223051	S221302
2212159-22	SeCN F2	SE	dry	0.302		0.003	0.013	mg/kg	B223052	S221303
2212159-22	SeMet F1	SE	dry	≤ 0.005	U	0.005	0.013	mg/kg	B223051	S221302
2212159-22	SeMet F2	SE	dry	≤ 0.005	U	0.005	0.013	mg/kg	B223052	S221303
2212159-22	SeSO ₃ F1	SE	dry	≤ 0.024	U	0.024	0.047	mg/kg	B223051	S221302
2212159-22	SeSO ₃ F2	SE	dry	≤ 0.024	U	0.024	0.047	mg/kg	B223052	S221303
2212159-22	Unk Se Sp F1	SE	dry	≤ 0.016	U	0.016	0.032	mg/kg	B223051	S221302
2212159-22	Unk Se Sp F2	SE	dry	0.122		0.016	0.032	mg/kg	B223052	S221303



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKMD_BRYOSE-2_LAEMP_EVO_2022-12_N</i>										
2212159-23	%TS	SE	NA	34.84		0.02	0.08	%	B223015	N/A
2212159-23	DMS ₂ O F1	SE	dry	≤ 0.008	U	0.008	0.022	mg/kg	B223051	S221302
2212159-23	DMS ₂ O F2	SE	dry	≤ 0.008	U	0.008	0.022	mg/kg	B223052	S221303
2212159-23	MeSe(IV) F1	SE	dry	0.014	J	0.008	0.022	mg/kg	B223051	S221302
2212159-23	MeSe(IV) F2	SE	dry	0.193		0.008	0.022	mg/kg	B223052	S221303
2212159-23	Se	SE	dry	13.1		0.249	0.499	mg/kg	B223019	S221298
2212159-23	Se Unk A F1	SE	dry	≤ 0.008	U	0.008	0.022	mg/kg	B223051	S221302
2212159-23	Se Unk A F2	SE	dry	≤ 0.008	U	0.008	0.022	mg/kg	B223052	S221303
2212159-23	Se(F1)	SE	dry	0.289		0.022	0.215	mg/kg	B223024	S221300
2212159-23	Se(F2)	SE	dry	3.89		0.028	0.215	mg/kg	B223025	S221310
2212159-23	Se(F3)	SE	dry	6.90		0.085	0.215	mg/kg	B223026	S221311
2212159-23	Se(F4)	SE	dry	0.235		0.057	0.215	mg/kg	B223027	S221323
2212159-23	Se(F5)	SE	dry	≤ 0.120	U	0.120	0.269	mg/kg	B223028	S221322
2212159-23	Se(IV) F1	SE	dry	0.078		0.027	0.054	mg/kg	B223051	S221302
2212159-23	Se(IV) F2	SE	dry	2.15		0.027	0.054	mg/kg	B223052	S221303
2212159-23	Se(VI) F1	SE	dry	0.120		0.039	0.078	mg/kg	B223051	S221302
2212159-23	Se(VI) F2	SE	dry	≤ 0.039	U	0.039	0.078	mg/kg	B223052	S221303
2212159-23	SeCN F1	SE	dry	≤ 0.005	U	0.005	0.022	mg/kg	B223051	S221302
2212159-23	SeCN F2	SE	dry	0.757		0.005	0.022	mg/kg	B223052	S221303
2212159-23	SeMet F1	SE	dry	≤ 0.008	U	0.008	0.022	mg/kg	B223051	S221302
2212159-23	SeMet F2	SE	dry	≤ 0.008	U	0.008	0.022	mg/kg	B223052	S221303
2212159-23	SeSO ₃ F1	SE	dry	≤ 0.039	U	0.039	0.078	mg/kg	B223051	S221302
2212159-23	SeSO ₃ F2	SE	dry	≤ 0.039	U	0.039	0.078	mg/kg	B223052	S221303
2212159-23	Unk Se Sp F1	SE	dry	≤ 0.027	U	0.027	0.054	mg/kg	B223051	S221302
2212159-23	Unk Se Sp F2	SE	dry	0.214		0.027	0.054	mg/kg	B223052	S221303



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<i>RG_ERCKMD_BRYOSE-3_LAEMP_EVO_2022-12_N</i>										
2212159-24	%TS	SE	NA	30.08		0.03	0.10	%	B223015	N/A
2212159-24	DMS ₂ O F1	SE	dry	≤ 0.010	U	0.010	0.025	mg/kg	B223051	S221302
2212159-24	DMS ₂ O F2	SE	dry	≤ 0.010	U	0.010	0.025	mg/kg	B223052	S221303
2212159-24	MeSe(IV) F1	SE	dry	0.018	J	0.010	0.025	mg/kg	B223051	S221302
2212159-24	MeSe(IV) F2	SE	dry	0.167		0.010	0.025	mg/kg	B223052	S221303
2212159-24	Se	SE	dry	14.1		0.302	0.604	mg/kg	B223019	S221298
2212159-24	Se Unk A F1	SE	dry	≤ 0.010	U	0.010	0.025	mg/kg	B223051	S221302
2212159-24	Se Unk A F2	SE	dry	≤ 0.010	U	0.010	0.025	mg/kg	B223052	S221303
2212159-24	Se(F1)	SE	dry	0.318		0.025	0.255	mg/kg	B223024	S221300
2212159-24	Se(F2)	SE	dry	4.22		0.033	0.255	mg/kg	B223025	S221310
2212159-24	Se(F3)	SE	dry	5.91		0.100	0.255	mg/kg	B223026	S221311
2212159-24	Se(F4)	SE	dry	0.291		0.067	0.255	mg/kg	B223027	S221323
2212159-24	Se(F5)	SE	dry	0.250	J	0.142	0.318	mg/kg	B223028	S221322
2212159-24	Se(IV) F1	SE	dry	0.067		0.032	0.064	mg/kg	B223051	S221302
2212159-24	Se(IV) F2	SE	dry	2.54		0.032	0.064	mg/kg	B223052	S221303
2212159-24	Se(VI) F1	SE	dry	0.157		0.046	0.092	mg/kg	B223051	S221302
2212159-24	Se(VI) F2	SE	dry	≤ 0.046	U	0.046	0.092	mg/kg	B223052	S221303
2212159-24	SeCN F1	SE	dry	≤ 0.006	U	0.006	0.025	mg/kg	B223051	S221302
2212159-24	SeCN F2	SE	dry	0.802		0.006	0.025	mg/kg	B223052	S221303
2212159-24	SeMet F1	SE	dry	≤ 0.010	U	0.010	0.025	mg/kg	B223051	S221302
2212159-24	SeMet F2	SE	dry	≤ 0.010	U	0.010	0.025	mg/kg	B223052	S221303
2212159-24	SeSO ₃ F1	SE	dry	≤ 0.046	U	0.046	0.092	mg/kg	B223051	S221302
2212159-24	SeSO ₃ F2	SE	dry	≤ 0.046	U	0.046	0.092	mg/kg	B223052	S221303
2212159-24	Unk Se Sp F1	SE	dry	≤ 0.032	U	0.032	0.064	mg/kg	B223051	S221302
2212159-24	Unk Se Sp F2	SE	dry	0.222		0.032	0.064	mg/kg	B223052	S221303



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RG_BOCKRD_SE-1_LAEMP_EVO_2022-12_N										
2212159-25	%TS	SE	NA	36.80		0.03	0.09	%	B223015	N/A
2212159-25	DMS ₂ O F1	SE	dry	≤ 0.007	U	0.007	0.019	mg/kg	B223051	S221302
2212159-25	DMS ₂ O F2	SE	dry	≤ 0.007	U	0.007	0.019	mg/kg	B223052	S221303
2212159-25	MeSe(IV) F1	SE	dry	0.034		0.007	0.019	mg/kg	B223051	S221302
2212159-25	MeSe(IV) F2	SE	dry	0.209		0.007	0.019	mg/kg	B223052	S221303
2212159-25	Se	SE	dry	11.3		0.222	0.444	mg/kg	B223019	S221298
2212159-25	Se Unk A F1	SE	dry	≤ 0.007	U	0.007	0.019	mg/kg	B223051	S221302
2212159-25	Se Unk A F2	SE	dry	≤ 0.007	U	0.007	0.019	mg/kg	B223052	S221303
2212159-25	Se(F1)	SE	dry	0.506		0.019	0.192	mg/kg	B223024	S221300
2212159-25	Se(F2)	SE	dry	3.86		0.025	0.192	mg/kg	B223025	S221310
2212159-25	Se(F3)	SE	dry	4.93		0.076	0.192	mg/kg	B223026	S221311
2212159-25	Se(F4)	SE	dry	0.265		0.050	0.192	mg/kg	B223027	S221323
2212159-25	Se(F5)	SE	dry	≤ 0.107	U	0.107	0.240	mg/kg	B223028	S221322
2212159-25	Se(IV) F1	SE	dry	0.258		0.024	0.048	mg/kg	B223051	S221302
2212159-25	Se(IV) F2	SE	dry	2.37		0.024	0.048	mg/kg	B223052	S221303
2212159-25	Se(VI) F1	SE	dry	≤ 0.035	U	0.035	0.070	mg/kg	B223051	S221302
2212159-25	Se(VI) F2	SE	dry	≤ 0.035	U	0.035	0.070	mg/kg	B223052	S221303
2212159-25	SeCN F1	SE	dry	≤ 0.005	U	0.005	0.019	mg/kg	B223051	S221302
2212159-25	SeCN F2	SE	dry	0.476		0.005	0.019	mg/kg	B223052	S221303
2212159-25	SeMet F1	SE	dry	0.064		0.007	0.019	mg/kg	B223051	S221302
2212159-25	SeMet F2	SE	dry	≤ 0.007	U	0.007	0.019	mg/kg	B223052	S221303
2212159-25	SeSO ₃ F1	SE	dry	≤ 0.035	U	0.035	0.070	mg/kg	B223051	S221302
2212159-25	SeSO ₃ F2	SE	dry	≤ 0.035	U	0.035	0.070	mg/kg	B223052	S221303
2212159-25	Unk Se Sp F1	SE	dry	≤ 0.024	U	0.024	0.048	mg/kg	B223051	S221302
2212159-25	Unk Se Sp F2	SE	dry	0.402		0.024	0.048	mg/kg	B223052	S221303



Accuracy & Precision Summary

Batch: B223015
Lab Matrix: Biota
Method: SOP BAL-0501

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B223015-DUP1	Duplicate, (2212159-02) %TS	38.16		38.19	%		0.09% 15
B223015-DUP2	Duplicate, (2212159-10) %TS	32.33		32.24	%		0.3% 15
B223015-DUP3	Duplicate, (2212159-14) %TS	29.75		29.53	%		0.7% 15



Accuracy & Precision Summary

Batch: B223019
Lab Matrix: Soil/Sediment
Method: EPA 6020B Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B223019-BS1	Blank Spike, (2240063) Se		50.00	50.99	mg/kg	102% 75-125	
B223019-BS2	Blank Spike, (2240063) Se		50.00	49.49	mg/kg	99% 75-125	
B223019-SRM1	Reference Material (2224038, CRM052-50G Loamy Clay) Se		54.40	60.49	mg/kg	111% 75-125	
B223019-SRM2	Reference Material (2224038, CRM052-50G Loamy Clay) Se		54.40	61.01	mg/kg	112% 75-125	
B223019-DUP1	Duplicate, (2212159-01) Se	12.72		12.77	mg/kg		0.4% 30
B223019-MS1	Matrix Spike, (2212159-01) Se	12.72	125.4	139.3	mg/kg	101% 70-130	
B223019-MSD1	Matrix Spike Duplicate, (2212159-01) Se	12.72	125.0	153.0	mg/kg	112% 70-130	11% 30
B223019-DUP2	Duplicate, (2212159-14) Se	24.41		23.69	mg/kg		3% 30
B223019-MS2	Matrix Spike, (2212159-14) Se	24.41	158.4	179.6	mg/kg	98% 70-130	
B223019-MSD2	Matrix Spike Duplicate, (2212159-14) Se	24.41	160.4	187.8	mg/kg	102% 70-130	4% 30
B223019-DUP3	Duplicate, (2212159-25) Se	11.29		11.09	mg/kg		2% 30



Accuracy & Precision Summary

Batch: B223019
Lab Matrix: Soil/Sediment
Method: EPA 6020B Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B223019-MS3	Matrix Spike, (2212159-25) Se	11.29	130.7	140.2	mg/kg	99% 70-130	
B223019-MSD3	Matrix Spike Duplicate, (2212159-25) Se	11.29	116.1	128.2	mg/kg	101% 70-130	2% 30



Accuracy & Precision Summary

Batch: B223024
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B223024-DUP1	Duplicate, (2212159-01) Se(F1)	0.681		0.621	mg/kg		9% 25
B223024-PS1	Post Spike, (2212159-01) Se(F1)	0.681	5.163	5.774	mg/kg	99% 75-125	
B223024-PS2	Post Spike, (2212159-01) Se(F1)	0.681	5.163	5.932	mg/kg	102% 75-125	
B223024-DUP2	Duplicate, (2212159-09) Se(F1)	1.031		1.022	mg/kg		0.9% 25
B223024-PS3	Post Spike, (2212159-09) Se(F1)	1.031	8.528	9.744	mg/kg	102% 75-125	
B223024-PS4	Post Spike, (2212159-09) Se(F1)	1.031	8.528	9.673	mg/kg	101% 75-125	
B223024-DUP3	Duplicate, (2212159-19) Se(F1)	0.913		0.911	mg/kg		0.2% 25
B223024-PS5	Post Spike, (2212159-19) Se(F1)	0.913	8.117	9.269	mg/kg	103% 75-125	
B223024-PS6	Post Spike, (2212159-19) Se(F1)	0.913	8.117	9.303	mg/kg	103% 75-125	



Accuracy & Precision Summary

Batch: B223025
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B223025-DUP1	Duplicate, (2212159-01) Se(F2)	5.353		4.285	mg/kg		22% 25
B223025-PS1	Post Spike, (2212159-01) Se(F2)	5.353	51.63	53.01	mg/kg	92% 75-125	
B223025-PS2	Post Spike, (2212159-01) Se(F2)	5.353	51.63	52.77	mg/kg	92% 75-125	
B223025-DUP2	Duplicate, (2212159-09) Se(F2)	6.853		7.024	mg/kg		2% 25
B223025-PS3	Post Spike, (2212159-09) Se(F2)	6.853	85.28	86.85	mg/kg	94% 75-125	
B223025-PS4	Post Spike, (2212159-09) Se(F2)	6.853	85.28	87.74	mg/kg	95% 75-125	
B223025-DUP3	Duplicate, (2212159-19) Se(F2)	14.73		14.52	mg/kg		1% 25
B223025-PS5	Post Spike, (2212159-19) Se(F2)	14.73	81.17	86.14	mg/kg	88% 75-125	
B223025-PS6	Post Spike, (2212159-19) Se(F2)	14.73	81.17	87.98	mg/kg	90% 75-125	



Accuracy & Precision Summary

Batch: B223026
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B223026-DUP1	Duplicate, (2212159-01) Se(F3)	5.725		5.500	mg/kg		4% 25
B223026-PS1	Post Spike, (2212159-01) Se(F3)	5.725	51.63	53.02	mg/kg	92% 75-125	
B223026-PS2	Post Spike, (2212159-01) Se(F3)	5.725	51.63	54.94	mg/kg	95% 75-125	
B223026-DUP2	Duplicate, (2212159-09) Se(F3)	9.906		10.68	mg/kg		8% 25
B223026-PS3	Post Spike, (2212159-09) Se(F3)	9.906	85.28	88.98	mg/kg	93% 75-125	
B223026-PS4	Post Spike, (2212159-09) Se(F3)	9.906	85.28	89.33	mg/kg	93% 75-125	
B223026-DUP3	Duplicate, (2212159-19) Se(F3)	12.24		12.98	mg/kg		6% 25
B223026-PS5	Post Spike, (2212159-19) Se(F3)	12.24	81.17	84.02	mg/kg	88% 75-125	
B223026-PS6	Post Spike, (2212159-19) Se(F3)	12.24	81.17	89.50	mg/kg	95% 75-125	



Accuracy & Precision Summary

Batch: B223027
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B223027-DUP1	Duplicate, (2212159-01) Se(F4)	0.465		0.286	mg/kg		48% 25
B223027-PS1	Post Spike, (2212159-01) Se(F4)	0.465	51.63	47.91	mg/kg	92% 75-125	
B223027-PS2	Post Spike, (2212159-01) Se(F4)	0.465	51.63	47.42	mg/kg	91% 75-125	
B223027-DUP2	Duplicate, (2212159-09) Se(F4)	0.391		0.584	mg/kg		40% 25
B223027-PS3	Post Spike, (2212159-09) Se(F4)	0.391	85.28	76.02	mg/kg	89% 75-125	
B223027-PS4	Post Spike, (2212159-09) Se(F4)	0.391	85.28	79.33	mg/kg	93% 75-125	
B223027-DUP3	Duplicate, (2212159-19) Se(F4)	0.440		0.222	mg/kg		66% 25
B223027-PS5	Post Spike, (2212159-19) Se(F4)	0.440	81.17	74.30	mg/kg	91% 75-125	
B223027-PS6	Post Spike, (2212159-19) Se(F4)	0.440	81.17	74.22	mg/kg	91% 75-125	



Accuracy & Precision Summary

Batch: B223028
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B223028-BS1	Blank Spike, (2240063) Se(F5)		25.00	24.68	mg/kg	99% 75-125	
B223028-BS2	Blank Spike, (2240063) Se(F5)		25.00	24.56	mg/kg	98% 75-125	
B223028-DUP1	Duplicate, (2212159-01) Se(F5)	ND		ND	mg/kg		N/C 25
B223028-PS1	Post Spike, (2212159-01) Se(F5)	ND	64.54	64.81	mg/kg	100% 75-125	
B223028-PS2	Post Spike, (2212159-01) Se(F5)	ND	64.54	62.86	mg/kg	97% 75-125	
B223028-DUP2	Duplicate, (2212159-09) Se(F5)	ND		0.199	mg/kg		N/C 25
B223028-PS3	Post Spike, (2212159-09) Se(F5)	ND	106.6	101.5	mg/kg	95% 75-125	
B223028-PS4	Post Spike, (2212159-09) Se(F5)	ND	106.6	99.69	mg/kg	94% 75-125	
B223028-DUP3	Duplicate, (2212159-19) Se(F5)	ND		ND	mg/kg		N/C 25
B223028-PS5	Post Spike, (2212159-19) Se(F5)	ND	101.5	97.71	mg/kg	96% 75-125	
B223028-PS6	Post Spike, (2212159-19) Se(F5)	ND	101.5	88.61	mg/kg	87% 75-125	



Accuracy & Precision Summary

Batch: B223051
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B223051-DUP1	Duplicate, (2212159-01)						
	DMSeO F1	ND		ND	mg/kg		N/C 25
	MeSe(IV) F1	0.026		0.028	mg/kg		6% 25
	Se Unk A F1	ND		ND	mg/kg		N/C 25
	Se(IV) F1	0.353		0.361	mg/kg		2% 25
	Se(VI) F1	0.166		0.185	mg/kg		11% 25
	SeCN F1	ND		ND	mg/kg		N/C 25
	SeMet F1	0.017		0.019	mg/kg		11% 25
	SeSO3 F1	ND		ND	mg/kg		N/C 25
Unk Se Sp F1	ND		ND	mg/kg		N/C 25	
B223051-PS1	Post Spike, (2212159-01)						
	Se(IV) F1	0.353	5.060	5.117	mg/kg	94% 75-125	
	Se(VI) F1	0.166	5.266	5.087	mg/kg	93% 75-125	
	SeCN F1	ND	2.026	1.844	mg/kg	91% 75-125	
SeMet F1	0.017	2.041	1.959	mg/kg	95% 75-125		
B223051-DUP2	Duplicate, (2212159-09)						
	DMSeO F1	ND		ND	mg/kg		N/C 25
	MeSe(IV) F1	0.025		0.027	mg/kg		6% 25
	Se Unk A F1	ND		ND	mg/kg		N/C 25
	Se(IV) F1	0.756		0.796	mg/kg		5% 25
	Se(VI) F1	0.159		0.153	mg/kg		4% 25
	SeCN F1	ND		ND	mg/kg		N/C 25
	SeMet F1	ND		ND	mg/kg		N/C 25
	SeSO3 F1	ND		ND	mg/kg		N/C 25
Unk Se Sp F1	ND		ND	mg/kg		N/C 25	
B223051-PS2	Post Spike, (2212159-09)						
	Se(IV) F1	0.756	8.357	8.304	mg/kg	90% 75-125	
	Se(VI) F1	0.159	8.699	7.971	mg/kg	90% 75-125	
	SeCN F1	ND	3.346	2.892	mg/kg	86% 75-125	
SeMet F1	ND	3.372	3.129	mg/kg	93% 75-125		



Accuracy & Precision Summary

Batch: B223051
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B223051-DUP3	Duplicate, (2212159-19)						
	DMS ₂ SeO F1	ND		ND	mg/kg		N/C 25
	MeSe(IV) F1	0.052		0.055	mg/kg		6% 25
	Se Unk A F1	ND		ND	mg/kg		N/C 25
	Se(IV) F1	0.699		0.707	mg/kg		1% 25
	Se(VI) F1	ND		ND	mg/kg		N/C 25
	SeCN F1	ND		ND	mg/kg		N/C 25
	SeMet F1	ND		ND	mg/kg		N/C 25
	SeSO ₃ F1	ND		ND	mg/kg		N/C 25
	Unk Se Sp F1	ND		ND	mg/kg		N/C 25
B223051-PS3	Post Spike, (2212159-19)						
	Se(IV) F1	0.699	7.955	8.244	mg/kg	95% 75-125	
	Se(VI) F1	ND	8.280	7.795	mg/kg	94% 75-125	
	SeCN F1	ND	3.185	2.982	mg/kg	94% 75-125	
	SeMet F1	ND	3.210	3.063	mg/kg	95% 75-125	



Accuracy & Precision Summary

Batch: B223052
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B223052-DUP1	Duplicate, (2212159-01)						
	DMSeO F2	0.016		0.017	mg/kg		9% 25
	MeSe(IV) F2	0.708		0.656	mg/kg		8% 25
	Se Unk A F2	ND		ND	mg/kg		N/C 25
	Se(IV) F2	1.857		1.859	mg/kg		0.09% 25
	Se(VI) F2	ND		ND	mg/kg		N/C 25
	SeCN F2	0.890		0.769	mg/kg		15% 25
	SeMet F2	ND		ND	mg/kg		N/C 25
	SeSO3 F2	ND		ND	mg/kg		N/C 25
Unk Se Sp F2	0.416		0.416	mg/kg		0.2% 25	
B223052-PS1	Post Spike, (2212159-01)						
	Se(IV) F2	1.857	5.060	6.254	mg/kg	87% 75-125	
	Se(VI) F2	ND	5.266	4.695	mg/kg	89% 75-125	
	SeCN F2	0.890	2.026	2.617	mg/kg	85% 75-125	
SeMet F2	ND	2.041	1.847	mg/kg	90% 75-125		
B223052-DUP2	Duplicate, (2212159-09)						
	DMSeO F2	ND		ND	mg/kg		N/C 25
	MeSe(IV) F2	0.464		0.488	mg/kg		5% 25
	Se Unk A F2	ND		ND	mg/kg		N/C 25
	Se(IV) F2	3.339		3.604	mg/kg		8% 25
	Se(VI) F2	ND		ND	mg/kg		N/C 25
	SeCN F2	1.182		1.260	mg/kg		6% 25
	SeMet F2	ND		ND	mg/kg		N/C 25
	SeSO3 F2	ND		ND	mg/kg		N/C 25
Unk Se Sp F2	0.419		0.429	mg/kg		3% 25	
B223052-PS2	Post Spike, (2212159-09)						
	Se(IV) F2	3.339	8.357	11.11	mg/kg	93% 75-125	
	Se(VI) F2	ND	8.699	7.756	mg/kg	89% 75-125	
	SeCN F2	1.182	3.346	4.255	mg/kg	92% 75-125	
SeMet F2	ND	3.372	3.090	mg/kg	92% 75-125		



Accuracy & Precision Summary

Batch: B223052
Lab Matrix: Soil/Sediment
Method: In-House

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B223052-DUP3	Duplicate, (2212159-19)						
	DMS ₂ O F2	0.026		0.022	mg/kg		16% 25
	MeSe(IV) F2	0.709		0.736	mg/kg		4% 25
	Se Unk A F2	ND		ND	mg/kg		N/C 25
	Se(IV) F2	9.406		9.509	mg/kg		1% 25
	Se(VI) F2	ND		ND	mg/kg		N/C 25
	SeCN F2	1.620		1.579	mg/kg		3% 25
	SeMet F2	ND		ND	mg/kg		N/C 25
	SeSO ₃ F2	ND		ND	mg/kg		N/C 25
	Unk Se Sp F2	1.242		1.246	mg/kg		0.3% 25
B223052-PS3	Post Spike, (2212159-19)						
	Se(IV) F2	9.406	7.955	16.83	mg/kg	93% 75-125	
	Se(VI) F2	ND	8.280	7.768	mg/kg	94% 75-125	
	SeCN F2	1.620	3.185	4.491	mg/kg	90% 75-125	
	SeMet F2	ND	3.210	3.010	mg/kg	94% 75-125	



Method Blanks & Reporting Limits

Batch: B223015
Matrix: Biota
Method: SOP BAL-0501
Analyte: %TS

Sample	Result	Units	
B223015-BLK1	-0.12	%	
B223015-BLK2	-0.19	%	
	Average: -0.16		MDL: 0.03
	Limit: 0.10		MRL: 0.10



Method Blanks & Reporting Limits

Batch: B223019
Matrix: Soil/Sediment
Method: EPA 6020B Mod
Analyte: Se

Sample	Result	Units	
B223019-BLK1	-0.002	mg/kg	
B223019-BLK2	-0.012	mg/kg	
B223019-BLK3	-0.005	mg/kg	
B223019-BLK4	-0.010	mg/kg	
Average:	-0.007		MDL: 0.095
Limit:	0.190		MRL: 0.190



Method Blanks & Reporting Limits

Batch: B223024
Matrix: Soil/Sediment
Method: In-House
Analyte: Se(F1)

Sample	Result	Units	
B223024-BLK1	0.002	mg/kg	
B223024-BLK2	-0.0008	mg/kg	
B223024-BLK3	0.002	mg/kg	
B223024-BLK4	0.0006	mg/kg	
Average:	0.001		MDL: 0.008
Limit:	0.080		MRL: 0.080



Method Blanks & Reporting Limits

Batch: B223025
Matrix: Soil/Sediment
Method: In-House
Analyte: Se(F2)

Sample	Result	Units	
B223025-BLK1	-0.004	mg/kg	
B223025-BLK2	-0.001	mg/kg	
B223025-BLK3	0.002	mg/kg	
B223025-BLK4	-0.004	mg/kg	
Average:	-0.002		MDL: 0.010
Limit:	0.080		MRL: 0.080



Method Blanks & Reporting Limits

Batch: B223026
Matrix: Soil/Sediment
Method: In-House
Analyte: Se(F3)

Sample	Result	Units	
B223026-BLK1	0.004	mg/kg	
B223026-BLK2	0.005	mg/kg	
B223026-BLK3	0.020	mg/kg	
B223026-BLK4	0.008	mg/kg	
Average:	0.009		MDL: 0.032
Limit:	0.080		MRL: 0.080



Method Blanks & Reporting Limits

Batch: B223027
Matrix: Soil/Sediment
Method: In-House
Analyte: Se(F4)

Sample	Result	Units	
B223027-BLK1	-0.004	mg/kg	
B223027-BLK2	-0.007	mg/kg	
B223027-BLK3	0.006	mg/kg	
B223027-BLK4	-0.006	mg/kg	
Average:	-0.003		MDL: 0.021
Limit:	0.080		MRL: 0.080



Method Blanks & Reporting Limits

Batch: B223028
Matrix: Soil/Sediment
Method: In-House
Analyte: Se(F5)

Sample	Result	Units	
B223028-BLK1	0.033	mg/kg	
B223028-BLK2	0.028	mg/kg	
B223028-BLK3	0.030	mg/kg	
B223028-BLK4	0.020	mg/kg	
Average:	0.028		MDL: 0.044
Limit:	0.100		MRL: 0.100



Method Blanks & Reporting Limits

Batch: B223051
Matrix: Soil/Sediment
Method: In-House
Analyte: DMSeO F1

Sample	Result	Units	
B223051-BLK1	0.00	mg/kg	
B223051-BLK2	0.00	mg/kg	
B223051-BLK3	0.00	mg/kg	
B223051-BLK4	0.00	mg/kg	
Average: 0.000			MDL: 0.003
Limit: 0.008			MRL: 0.008

Analyte: MeSe(IV) F1

Sample	Result	Units	
B223051-BLK1	0.00	mg/kg	
B223051-BLK2	0.00	mg/kg	
B223051-BLK3	0.00	mg/kg	
B223051-BLK4	0.00	mg/kg	
Average: 0.000			MDL: 0.003
Limit: 0.008			MRL: 0.008

Analyte: Se Unk A F1

Sample	Result	Units	
B223051-BLK1	0.00	mg/kg	
B223051-BLK2	0.00	mg/kg	
B223051-BLK3	0.00	mg/kg	
B223051-BLK4	0.00	mg/kg	
Average: 0.000			MDL: 0.003
Limit: 0.008			MRL: 0.008



Method Blanks & Reporting Limits

Analyte: Se(IV) F1

Sample	Result	Units	
B223051-BLK1	0.00	mg/kg	
B223051-BLK2	0.00	mg/kg	
B223051-BLK3	0.00	mg/kg	
B223051-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.010
Limit:	0.020		MRL: 0.020

Analyte: Se(VI) F1

Sample	Result	Units	
B223051-BLK1	0.00	mg/kg	
B223051-BLK2	0.00	mg/kg	
B223051-BLK3	0.00	mg/kg	
B223051-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.014
Limit:	0.029		MRL: 0.029

Analyte: SeCN F1

Sample	Result	Units	
B223051-BLK1	0.00	mg/kg	
B223051-BLK2	0.00	mg/kg	
B223051-BLK3	0.00	mg/kg	
B223051-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.008		MRL: 0.008

Analyte: SeMet F1

Sample	Result	Units	
B223051-BLK1	0.00	mg/kg	
B223051-BLK2	0.00	mg/kg	
B223051-BLK3	0.00	mg/kg	
B223051-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.003
Limit:	0.008		MRL: 0.008



Method Blanks & Reporting Limits

Analyte: SeSO3 F1

Sample	Result	Units	
B223051-BLK1	0.00	mg/kg	
B223051-BLK2	0.00	mg/kg	
B223051-BLK3	0.00	mg/kg	
B223051-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.014
Limit:	0.029		MRL: 0.029

Analyte: Unk Se Sp F1

Sample	Result	Units	
B223051-BLK1	0.00	mg/kg	
B223051-BLK2	0.00	mg/kg	
B223051-BLK3	0.00	mg/kg	
B223051-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.010
Limit:	0.020		MRL: 0.020



Method Blanks & Reporting Limits

Batch: B223052
Matrix: Soil/Sediment
Method: In-House
Analyte: DMSeO F2

Sample	Result	Units	
B223052-BLK1	0.00	mg/kg	
B223052-BLK2	0.00	mg/kg	
B223052-BLK3	0.00	mg/kg	
B223052-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.003
Limit:	0.008		MRL: 0.008

Analyte: MeSe(IV) F2

Sample	Result	Units	
B223052-BLK1	0.00	mg/kg	
B223052-BLK2	0.00	mg/kg	
B223052-BLK3	0.00	mg/kg	
B223052-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.003
Limit:	0.008		MRL: 0.008

Analyte: Se Unk A F2

Sample	Result	Units	
B223052-BLK1	0.00	mg/kg	
B223052-BLK2	0.00	mg/kg	
B223052-BLK3	0.00	mg/kg	
B223052-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.003
Limit:	0.008		MRL: 0.008



Method Blanks & Reporting Limits

Analyte: Se(IV) F2

Sample	Result	Units	
B223052-BLK1	0.00	mg/kg	
B223052-BLK2	0.00	mg/kg	
B223052-BLK3	0.00	mg/kg	
B223052-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.010
Limit:	0.020		MRL: 0.020

Analyte: Se(VI) F2

Sample	Result	Units	
B223052-BLK1	0.00	mg/kg	
B223052-BLK2	0.00	mg/kg	
B223052-BLK3	0.00	mg/kg	
B223052-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.014
Limit:	0.029		MRL: 0.029

Analyte: SeCN F2

Sample	Result	Units	
B223052-BLK1	0.00	mg/kg	
B223052-BLK2	0.00	mg/kg	
B223052-BLK3	0.00	mg/kg	
B223052-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.002
Limit:	0.008		MRL: 0.008

Analyte: SeMet F2

Sample	Result	Units	
B223052-BLK1	0.00	mg/kg	
B223052-BLK2	0.00	mg/kg	
B223052-BLK3	0.00	mg/kg	
B223052-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.003
Limit:	0.008		MRL: 0.008



Method Blanks & Reporting Limits

Analyte: SeSO3 F2

Sample	Result	Units	
B223052-BLK1	0.00	mg/kg	
B223052-BLK2	0.00	mg/kg	
B223052-BLK3	0.00	mg/kg	
B223052-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.014
Limit:	0.029		MRL: 0.029

Analyte: Unk Se Sp F2

Sample	Result	Units	
B223052-BLK1	0.00	mg/kg	
B223052-BLK2	0.00	mg/kg	
B223052-BLK3	0.00	mg/kg	
B223052-BLK4	0.00	mg/kg	
Average:	0.000		MDL: 0.010
Limit:	0.020		MRL: 0.020



Sample Containers

Lab ID: 2212159-01			Report Matrix: SE			Collected: 11/29/2022		
Sample: RG_ERCKUT_SE-1_LAEMP_EVO_2022-12_N			Sample Type: Sample			Received: 12/09/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	zClient-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212159	
Lab ID: 2212159-02			Report Matrix: SE			Collected: 11/29/2022		
Sample: RG_ERCKUT_SE-2_LAEMP_EVO_2022-12_N			Sample Type: Sample			Received: 12/09/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	zClient-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212159	
Lab ID: 2212159-03			Report Matrix: SE			Collected: 11/29/2022		
Sample: RG_ERCKUT_SE-3_LAEMP_EVO_2022-12_N			Sample Type: Sample			Received: 12/09/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	zClient-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212159	
Lab ID: 2212159-04			Report Matrix: SE			Collected: 11/29/2022		
Sample: RG_ERCKUT_SE-4_LAEMP_EVO_2022-12_N			Sample Type: Sample			Received: 12/09/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	zClient-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212159	
Lab ID: 2212159-05			Report Matrix: SE			Collected: 11/29/2022		
Sample: RG_ERCKUT_SE-5_LAEMP_EVO_2022-12_N			Sample Type: Sample			Received: 12/09/2022		
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	zClient-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212159	



Sample Containers

Lab ID: 2212159-06
Sample: RG_ERCKUT_BRYOSE-1_LAEMP_EVO_2022-12_N
Report Matrix: SE
Sample Type: Sample
Collected: 11/29/2022
Received: 12/09/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	zClient-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212159

Lab ID: 2212159-07
Sample: RG_ERCKUT_BRYOSE-2_LAEMP_EVO_2022-12_N
Report Matrix: SE
Sample Type: Sample
Collected: 11/29/2022
Received: 12/09/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	zClient-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212159

Lab ID: 2212159-08
Sample: RG_ERCKUT_BRYOSE-3_LAEMP_EVO_2022-12_N
Report Matrix: SE
Sample Type: Sample
Collected: 11/29/2022
Received: 12/09/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	zClient-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212159

Lab ID: 2212159-09
Sample: RG_ERCKDT_SE-1_LAEMP_EVO_2022-12_N
Report Matrix: SE
Sample Type: Sample
Collected: 11/28/2022
Received: 12/09/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	zClient-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212159

Lab ID: 2212159-10
Sample: RG_ERCKDT_SE-2_LAEMP_EVO_2022-12_N
Report Matrix: SE
Sample Type: Sample
Collected: 11/28/2022
Received: 12/09/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	zClient-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212159



Sample Containers

Lab ID: 2212159-11	Report Matrix: SE	Collected: 11/28/2022					
Sample: RG_ERCKDT_SE-3_LAEMP_EVO_2022-12_N	Sample Type: Sample	Received: 12/09/2022					
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	zClient-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212159
Lab ID: 2212159-12	Report Matrix: SE	Collected: 11/28/2022					
Sample: RG_ERCKDT_SE-4_LAEMP_EVO_2022-12_N	Sample Type: Sample	Received: 12/09/2022					
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	zClient-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212159
Lab ID: 2212159-13	Report Matrix: SE	Collected: 11/28/2022					
Sample: RG_ERCKDT_SE-5_LAEMP_EVO_2022-12_N	Sample Type: Sample	Received: 12/09/2022					
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	zClient-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212159
Lab ID: 2212159-14	Report Matrix: SE	Collected: 11/28/2022					
Sample: RG_ERCKDT_SE-6_LAEMP_EVO_2022-12_N	Sample Type: Sample	Received: 12/09/2022					
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	zClient-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212159
Lab ID: 2212159-15	Report Matrix: SE	Collected: 11/28/2022					
Sample: RG_ERCKDT_SE-7_LAEMP_EVO_2022-12_N	Sample Type: Sample	Received: 12/09/2022					
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	zClient-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212159



Sample Containers

Lab ID: 2212159-16			Report Matrix: SE			Collected: 11/28/2022	
Sample: RG_ERCKDT_BRYOSE-1_LAEMP_EVO_2022-12_N			Sample Type: Sample			Received: 12/09/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	zClient-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212159
Lab ID: 2212159-17			Report Matrix: SE			Collected: 11/28/2022	
Sample: RG_ERCKDT_BRYOSE-2_LAEMP_EVO_2022-12_N			Sample Type: Sample			Received: 12/09/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	zClient-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212159
Lab ID: 2212159-18			Report Matrix: SE			Collected: 11/28/2022	
Sample: RG_ERCKDT_BRYOSE-3_LAEMP_EVO_2022-12_N			Sample Type: Sample			Received: 12/09/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	zClient-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212159
Lab ID: 2212159-19			Report Matrix: SE			Collected: 11/28/2022	
Sample: RG_ERCKMD_SE-1_LAEMP_EVO_2022-12_N			Sample Type: Sample			Received: 12/09/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	zClient-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212159
Lab ID: 2212159-20			Report Matrix: SE			Collected: 11/28/2022	
Sample: RG_ERCKMD_SE-2_LAEMP_EVO_2022-12_N			Sample Type: Sample			Received: 12/09/2022	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	zClient-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212159



Sample Containers

Lab ID: 2212159-21
Sample: RG_ERCKMD_SE-3_LAEMP_EVO_2022-12_N
Report Matrix: SE
Sample Type: Sample
Collected: 11/28/2022
Received: 12/09/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	zClient-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212159

Lab ID: 2212159-22
Sample: RG_ERCKMD_BRYOSE-1_LAEMP_EVO_2022-12_N
Report Matrix: SE
Sample Type: Sample
Collected: 11/28/2022
Received: 12/09/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	zClient-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212159

Lab ID: 2212159-23
Sample: RG_ERCKMD_BRYOSE-2_LAEMP_EVO_2022-12_N
Report Matrix: SE
Sample Type: Sample
Collected: 11/28/2022
Received: 12/09/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	zClient-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212159

Lab ID: 2212159-24
Sample: RG_ERCKMD_BRYOSE-3_LAEMP_EVO_2022-12_N
Report Matrix: SE
Sample Type: Sample
Collected: 11/28/2022
Received: 12/09/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	zClient-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212159

Lab ID: 2212159-25
Sample: RG_BOCKRD_SE-1_LAEMP_EVO_2022-12_N
Report Matrix: SE
Sample Type: Sample
Collected: 11/29/2022
Received: 12/09/2022

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	zClient-Provided - TM	40mL	na	10% HNO3 (BAL)	2244016	<2	Cooler 4 - 2212159



Shipping Containers

Cooler 4 - 2212159

Received: December 9, 2022 7:07
Tracking No: RWHV97351 via Courier
Coolant Type: Blue Ice
Temperature: -2.4 °C

Description: Cooler 4
Damaged in transit? No
Returned to client? No
Comments: R-IR-2

Custody seals present? No
Custody seals intact? No
COC present? Yes

COC ID: **EVO LAEMP DEC 2022** TURNAROUND TIME: RUSH

PROJECT/CLIENT INFO				LABORATORY			
Facility Name / Job#	Regional Effects Program			Lab Name	Brooks Applied Labs		
Project Manager	Mike Pope			Lab Contact	Ben Wozniak		
Email	mike.pope@teck.com			Email	Ben@brooksapplied.com		
Address	421 Pine Avenue			Address	18804 North Creek Parkway		
City	Sparwood			Address	Suite 100		
Postal Code	V0B 2G0			City	Bothell	Province	WA
Phone Number	250-425-8202			Postal Code	98011	Country	United States
				Province	WA		
				Country	United States		
				Phone Number	(206) 753-6158		VPO00847032

SAMPLE DETAILS								ANALYSIS REQUESTED			
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	PR	PR	CALLS	SELENIUM sequential extraction
RG_ERCKUT_SE-1_LAEMP_EVO_2022-12_N	RG_ERCKUT	SE	N	11/29/2022	9:00	G	1	N	NONE		X
RG_ERCKUT_SE-2_LAEMP_EVO_2022-12_N	RG_ERCKUT	SE	N	11/29/2022	9:05	G	1				X
RG_ERCKUT_SE-3_LAEMP_EVO_2022-12_N	RG_ERCKUT	SE	N	11/29/2022	9:10	G	1				X
RG_ERCKUT_SE-4_LAEMP_EVO_2022-12_N	RG_ERCKUT	SE	N	11/29/2022	9:15	G	1				X
RG_ERCKUT_SE-5_LAEMP_EVO_2022-12_N	RG_ERCKUT	SE	N	11/29/2022	9:20	G	1				X
RG_ERCKUT_BRYOSE-1_LAEMP_EVO_2022-12_N	RG_ERCKUT	SE	N	11/29/2022	9:25	G	1				X
RG_ERCKUT_BRYOSE-2_LAEMP_EVO_2022-12_N	RG_ERCKUT	SE	N	11/29/2022	9:30	G	1				X
RG_ERCKUT_BRYOSE-3_LAEMP_EVO_2022-12_N	RG_ERCKUT	SE	N	11/29/2022	9:35	G	1				X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
VPO00847032	Alex McClymont	December 6, 2022	ERL/BAL 12/4/22 7:07

NB OF BOTTLES RETURNED/DESCRIPTION			
Regular (default)		Sampler's Name	Alex McClymont
Priority (2-3 business days) - 50% surcharge	X	Sampler's Signature	
Emergency (1 Business Day) - 100% surcharge		Mobile #	613-620-3778
For Emergency <1 Day, ASAP or Weekend - Contact ALS		Date/Time	December 6, 2022

COC ID: **EVO LAEMP DEC 2022** TURNAROUND TIME: RUSH

PROJECT/CLIENT INFO				LABORATORY				
Facility Name / Job#	Regional effects program			Lab Name	Brooks Applied Labs			
Project Manager	Mike Pope			Lab Contact	Ben Wozniak			
Email	mike.pope@teck.com			Email	Ben@brooksapplied.com			
Address	421 Pine Avenue			Address	18804 North Creek Parkway			
					Suite 100			
City	Sparwood		Province	BC	City	Bothell	Province	WA
Postal Code	V0B 2G0		Country	Canada	Postal Code	98011	Country	United States
Phone Number	250-425-8202			Phone Number	(206) 753-6158			
					VPO00847032			

SAMPLE DETAILS								ANALYSIS REQUESTED			
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS REQUESTED	ANALYSIS REQUESTED	ANALYSIS REQUESTED	ANALYSIS REQUESTED
RG_ERCKDT_SE-1_LAEMP_EVO_2022-12_N	RG_ERCKDT	SE	N	11/28/2022	13:00	G	1	X			
RG_ERCKDT_SE-2_LAEMP_EVO_2022-12_N	RG_ERCKDT	SE	N	11/28/2022	13:05	G	1	X			
RG_ERCKDT_SE-3_LAEMP_EVO_2022-12_N	RG_ERCKDT	SE	N	11/28/2022	13:10	G	1	X			
RG_ERCKDT_SE-4_LAEMP_EVO_2022-12_N	RG_ERCKDT	SE	N	11/28/2022	13:15	G	1	X			
RG_ERCKDT_SE-5_LAEMP_EVO_2022-12_N	RG_ERCKDT	SE	N	11/28/2022	13:20	G	1	X			
RG_ERCKDT_SE-6_LAEMP_EVO_2022-12_N	RG_ERCKDT	SE	N	11/28/2022	13:25	G	1	X			
RG_ERCKDT_SE-7_LAEMP_EVO_2022-12_N	RG_ERCKDT	SE	N	11/28/2022	13:30	G	1	X			
RG_ERCKDT_BRYOSE-1_LAEMP_EVO_2022-12_N	RG_ERCKDT	SE	N	11/28/2022	13:35	G	1	X			
RG_ERCKDT_BRYOSE-2_LAEMP_EVO_2022-12_N	RG_ERCKDT	SE	N	11/28/2022	13:40	G	1	X			
RG_ERCKDT_BRYOSE-3_LAEMP_EVO_2022-12_N	RG_ERCKDT	SE	N	11/28/2022	13:45	G	1	X			

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
VPO00847032	Alex McClymont	December 6, 2022	ERL/BAL 12/9/22 7:09

NB OF BOTTLES RETURNED/DESCRIPTION			
Regular (default)		Sampler's Name	Alex McClymont
Priority (2-3 business days) - 50% surcharge	X	Mobile #	613-620-3778
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature	
For Emergency <1 Day, ASAP or Weekend - Contact ALS		Date/Time	December 6, 2022

COC ID: **EVO LAEMP DEC 2022** TURNAROUND TIME: RUSH

PROJECT/CLIENT INFO				LABORATORY			
Facility Name / Job#	Regional effects program			Lab Name	Brooks Applied Labs		
Project Manager	Mike Pope			Lab Contact	Ben Wozniak		
Email	mike.pope@teck.com			Email	Ben@brooksapplied.com		
Address	421 Pine Avenue			Address	18804 North Creek Parkway		
City	Sparwood			City	Suite 100		
Postal Code	V0B 2G0			Province	WA		
Phone Number	250-425-8202			Postal Code	98011		
				Country	United States		
				Phone Number	(206) 753-6158		
					VPO00847032		

SAMPLE DETAILS								ANALYSIS REQUESTED								
Sample ID	Sample Location	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	G=Grab C=Comp	# Of Cont.	ANALYSIS	ANALYSIS	ANALYSIS	ANALYSIS	ANALYSIS	ANALYSIS	ANALYSIS	ANALYSIS	
RG_ERCKMD_SE-1_LAEMP_EVO_2022-12_N	RG_ERCKMD	SE	N	11/28/2022	9:30	G	1	Selenium sequential extraction	X							
RG_ERCKMD_SE-2_LAEMP_EVO_2022-12_N	RG_ERCKMD	SE	N	11/28/2022	9:35	G	1		X							
RG_ERCKMD_SE-3_LAEMP_EVO_2022-12_N	RG_ERCKMD	SE	N	11/28/2022	9:40	G	1		X							
RG_ERCKMD_BRYOSE-1_LAEMP_EVO_2022-12_N	RG_ERCKMD	SE	N	11/28/2022	9:45	G	1		X							
RG_ERCKMD_BRYOSE-2_LAEMP_EVO_2022-12_N	RG_ERCKMD	SE	N	11/28/2022	9:50	G	1		X							
RG_ERCKMD_BRYOSE-3_LAEMP_EVO_2022-12_N	RG_ERCKMD	SE	N	11/28/2022	9:55	G	1		X							
RG_BOCKRD_SE-1_LAEMP_EVO_2022-12_N	RG_BOCKRD	SE	N	11/29/2022	12:20	G	1		X							

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION
VPO00847032	Alex McClymont	December 6, 2022	ERL/BAL 12/9/22 7:07

NB OF BOTTLES RETURNED/DESCRIPTION			
Regular (default)	Sampler's Name	Alex McClymont	Mobile # 613-620-3778
Priority (2-3 business days) - 50% surcharge X	Sampler's Signature		Date/Time December 6, 2022
Emergency (1 Business Day) - 100% surcharge			
For Emergency <1 Day, ASAP or Weekend - Contact ALS			

Confidential

Sparwood, BC
Terrace, BC
Red Deer, AB

Vancouver, BC
Calgary, AB
Montreal, QC

Prince George, BC
Edmonton, AB
Spokane, WA

Elkford, BC
Ft. McMurray, AB
Shelby, MT

Tumbler Ridge, BC
Hinton, AB
Gillette, WY

INVOICE TO		DATE	
BILL OF LADING #		PURCHASE ORDER NUMBER	
SHIPPER (FROM)		CONSIGNEE (TO)	
STREET		STREET	
CITY/PROVINCE		CITY/PROVINCE	
POSTAL CODE		POSTAL CODE	
SPECIAL INSTRUCTIONS			FREIGHT CHARGES SHIPPER TO CHECK <input type="checkbox"/> PREPAID <input type="checkbox"/> COLLECT <small>If not indicated, shipping will automatically move collect</small> FEE _____ WAITING _____ XPU _____ CHARGES _____ FSC _____ US _____ SUB TOTAL _____ GST _____ TOTAL \$ _____ IF AT OWNER'S RISK, WRITE ORL HERE _____
PACKAGES	DESCRIPTION OF ARTICLES AND SPECIAL MARKS	WEIGHT (Subject to Correction)	
4	Water samples / coolers	120 lbs	
UNIT #			
DECLARED VALUATION: Maximum liability of carrier is \$2.00 per lb. (\$4.41 per kilogram) unless declared valuation states otherwise.			
SHIPPER'S SIGNATURE			
CONSIGNEE'S SIGNATURE - DELIVERY BY			
FINISH TIME			
<small>NOTICE OF CLAIM: (a) No carrier is liable for loss, damage, or delay of any goods under the Bill of Lading unless notice, therefore setting out particulars of the claim, destination and date of shipment of the goods and the estimated amount claimed, is filed within nine (9) months from the date of shipment together with a copy of the paid freight bill. (b) The final statement of the claim must be filed within nine (9) months from the date of shipment. (c) The claim must be filed with the originator carrier or the delivering carrier within sixty (60) days after the delivery of the goods, in the case of failure to make delivery within nine (9) months from the date of shipment. (d) The claim must be filed with the consignee provided herein, if the property herein consigned, in apparent good order, except as noted. Contents and condition of articles or package unknown, marked, consigned and destined as indicated below, which the carrier agrees to carry and to deliver to the consignee at the said destination, subject to the rates and classification in effect on the date of shipment. It is mutually agreed as to each carrier of all or any of the goods over all or any portion of the route to destination, and as to each party of any time interested in all or any of the goods, that every service to be performed hereunder shall be subject to the conditions of the standard Bill of Lading, in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. Printed or written, including conditions set aside by the standard Bill of Lading, in power at the date of issuing, which are hereby agreed by the consignor and accepted for himself and his assigns. The Contract for the carriage of the goods listed in the Bill of Lading is governed by regulation in force in the jurisdiction at the time and place of shipment and is subject to the conditions set out in such conditions.</small>			
SHIPPER PRINT	CONSIGNEE PRINT	DATE	
SHIPPER SIGN	CONSIGNEE SIGN	TIME	
WHITE: Office	YELLOW: Carrier	PINK: Consignee	
GOLDENROAD: Shipper	GST # 864540398RT0001		
NUMBER OF PIECES RECEIVED			

Cooler ID: COOLER 4 COC(Y/N) Temperature: -2.4 IR: R-IR-2

Coolant Type: Ice Blue Ice Ambient

Notes:

LC		RG		RG soil					
T/D	SP	T/D	SP	T/D	SP	T/D	SP	T/D	SP
	12.5ml Plastic	15ml cent tube	15ml cent tube	2-SP HOPE Jar					

Opened By: ERL Date: 12/9/22

COPY

Effective 7/29/20

EE ERL 12/9/22



Revision 004

BENTHIC TISSUE CHEMISTRY

Trich Analytics Laboratory Reports



TrichAnalytics Inc.

Tissue Microchemistry Analysis Report

Client: Tyler Mehler
Aquatic Scientist
Minnow Environmental
Phone: (250) 595-1627
Email: tyler.mehler@minnow.ca

Date Received: 10 Mar 2022
Date of Analysis: 15 Mar 2022
Final Report Date: 16 Mar 2022
Project No.: 2022-314
Method No.: MET-002.05

Client Project: EVO LAEMP (22-12)

Analytical Request: Composite-Taxa Benthic Invertebrate Tissue (total metals and moisture) - 23 samples.
See chain of custody form provided for sample identification numbers.

Notes:

Analytical results are expressed in parts per million (ppm) dry weight (equivalent to mg/kg).
Samples quantified using DORM-4, NIST-1566b, and NIST-2976 certified reference standards.
Aluminum concentrations above 1,000 ppm are outside linear range of the calibration curve.
RPD values calculated according to the British Columbia Environmental Laboratory Manual (2020) criteria.
Client specific DQO for Selenium accuracy is 90-110% of the certified value; result achieved 110% (ranging from 109-110%).

This report provides the analytical results only for tissue samples noted above as received from the Client.

Reviewed and Approved by Jennie Christensen, PhD, RPBio

[The analytical report shall not be reproduced except in full under the expressed written consent of TrichAnalytics Inc.]

16 Mar 2022

Date

TrichAnalytics Inc.
207-1753 Sean Heights
Saanichton, BC V8M 0B3
www.trichanalytics.com



CALA
Testing
Accreditation No. A4196

Teck Resources
Tissue Analysis Results

			Client ID	RG_ERCK_INV- 01_2022-03-02	RG_ERCK_INV- 02_2022-03-02	RG_ERCK_INV- 03_2022-03-02	RG_ERCKUT_INV- 01_2022-03-03	RG_ERCKUT_INV- 02_2022-03-03
			Lab ID	023	024	025	026	027
			Wet Weight (g)	0.0996	0.1992	0.1362	0.3363	0.2910
			Dry Weight (g)	0.0251	0.0470	0.0292	0.0706	0.0495
			Moisture (%)	74.8	76.4	78.6	79.0	83.0
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.001	0.003	1.6	1.4	1.8	0.673	0.737	
11B	0.068	0.227	5.5	3.9	4.4	3.9	3.2	
23Na	1.1	3.7	6,924	6,747	4,613	4,241	2,947	
24Mg	0.014	0.047	2,931	3,705	2,844	2,161	2,666	
27Al	0.019	0.063	934	892	1,498	404	647	
31P	48	160	17,331	18,756	13,920	14,562	11,221	
39K	2.1	7.0	14,520	12,988	11,600	11,017	6,785	
44Ca	14	47	48,971	70,453	82,115	5,564	8,950	
49Ti	0.083	0.277	54	39	95	19	69	
51V	0.026	0.087	3.1	1.9	2.9	1.2	2.1	
52Cr	0.361	1.2	43	25	43	9.7	22	
55Mn	0.009	0.030	323	225	307	12	15	
57Fe	0.759	2.5	989	954	1,292	295	530	
59Co	0.004	0.013	53	11	12	0.741	0.784	
60Ni	0.038	0.127	76	50	80	18	35	
63Cu	0.005	0.017	15	17	14	40	29	
66Zn	0.433	1.4	263	249	209	215	231	
75As	0.356	1.2	1.5	0.701	0.873	0.978	0.538	
77Se	0.320	1.1	4.9	5.3	6.0	5.2	6.1	
88Sr	0.001	0.003	29	40	50	3.7	5.6	
95Mo	0.004	0.013	1.1	0.730	1.0	0.237	0.280	
107Ag	0.001	0.003	0.236	0.127	0.181	0.103	0.143	
111Cd	0.059	0.197	4.4	0.665	0.678	8.5	5.6	
118Sn	0.018	0.060	1.9	0.928	1.8	1.2	1.8	
121Sb	0.096	0.320	0.686	0.295	0.383	0.223	0.365	
137Ba	0.001	0.003	60	82	129	12	21	
202Hg	0.022	0.073	0.094	0.078	0.070	0.058	0.089	
205Tl	0.001	0.003	0.413	0.079	0.134	0.051	0.053	
208Pb	0.002	0.007	0.788	0.580	0.789	0.247	0.388	
238U	0.001	0.003	0.617	0.406	0.601	0.377	0.404	

Notes:

- ppm = parts per million
- DL = detection limit
- LOQ = limit of quantitation
- < = less than detection limit
- g = grams
- % = percent

Teck Resources
Tissue Analysis Results

			RG_ERCKUT_INV-	RG_ERCKUT_INV-	RG_ERCKUT_INV-	RG_ERCKDT_INV-	RG_ERCKDT_INV-
Client ID			03_2022-03-03	04_2022-03-03	05_2022-03-03	01_2022-03-03	02_2022-03-03
Lab ID			028	029	030	031	032
Wet Weight (g)			0.2404	0.4388	0.2572	0.3306	0.1355
Dry Weight (g)			0.0563	0.0907	0.0475	0.0624	0.0237
Moisture (%)			76.6	79.3	81.5	81.1	82.5
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.001	0.003	0.519	0.734	0.577	0.837	1.6
11B	0.068	0.227	4.8	3.0	2.3	1.7	4.6
23Na	1.1	3.7	3,107	5,698	3,793	3,807	4,260
24Mg	0.014	0.047	2,454	2,088	1,730	1,561	1,814
27Al	0.019	0.063	213	369	313	393	1,750
31P	48	160	16,722	16,382	10,761	9,317	12,108
39K	2.1	7.0	10,963	11,488	9,105	7,924	6,628
44Ca	14	47	6,453	4,619	3,687	3,460	8,486
49Ti	0.083	0.277	25	16	18	35	93
51V	0.026	0.087	0.962	0.957	0.983	1.2	3.5
52Cr	0.361	1.2	7.4	9.3	6.3	5.9	17
55Mn	0.009	0.030	16	14	9.5	170	311
57Fe	0.759	2.5	209	270	226	1,201	1,931
59Co	0.004	0.013	0.402	0.561	0.425	10	14
60Ni	0.038	0.127	11	15	12	21	38
63Cu	0.005	0.017	25	25	30	17	22
66Zn	0.433	1.4	220	232	185	185	235
75As	0.356	1.2	0.826	0.444	1.0	1.1	1.7
77Se	0.320	1.1	5.1	6.0	5.3	23	20
88Sr	0.001	0.003	5.0	3.3	2.9	4.9	9.2
95Mo	0.004	0.013	0.318	0.295	0.264	0.831	1.3
107Ag	0.001	0.003	0.093	0.091	0.117	0.074	0.248
111Cd	0.059	0.197	8.0	7.3	4.2	1.9	1.7
118Sn	0.018	0.060	0.710	0.809	1.0	0.586	1.0
121Sb	0.096	0.320	0.363	0.184	0.211	0.295	2.5
137Ba	0.001	0.003	21	17	11	20	33
202Hg	0.022	0.073	0.076	0.062	0.070	0.063	0.084
205Tl	0.001	0.003	0.059	0.046	0.057	0.174	0.214
208Pb	0.002	0.007	0.195	0.182	0.254	0.783	1.6
238U	0.001	0.003	0.403	0.216	0.309	0.331	0.723

Notes:

- ppm = parts per million
- DL = detection limit
- LOQ = limit of quantitation
- < = less than detection limit
- g = grams
- % = percent

Teck Resources
Tissue Analysis Results

			RG_ERCKDT_INV-	RG_ERCKDT_INV-	RG_ERCKDT_INV-	RG_ERCKDT_INV-	RG_ERCKMD_INV-
Client ID			03_2022-03-03	04_2022-03-03	05_2022-03-03	06_2022-03-03	01_2022-03-03
Lab ID			033	034	035	036	037
Wet Weight (g)			0.2250	0.3141	0.2644	0.1225	0.0803
Dry Weight (g)			0.0417	0.0685	0.0495	0.0230	0.0169
Moisture (%)			81.5	78.2	81.3	81.2	79.0
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.001	0.003	1.3	1.7	1.6	1.3	0.396
11B	0.068	0.227	3.1	2.4	3.2	3.7	0.811
23Na	1.1	3.7	5,496	5,432	6,298	3,614	3,084
24Mg	0.014	0.047	1,580	1,229	2,024	2,043	1,075
27Al	0.019	0.063	417	754	1,023	438	278
31P	48	160	13,110	11,963	11,464	11,752	7,647
39K	2.1	7.0	9,873	7,692	9,021	12,025	5,171
44Ca	14	47	4,715	3,355	5,492	4,783	1,860
49Ti	0.083	0.277	20	38	66	32	4.4
51V	0.026	0.087	1.1	1.4	1.9	1.1	0.426
52Cr	0.361	1.2	6.4	10	11	10	4.4
55Mn	0.009	0.030	251	643	441	780	63
57Fe	0.759	2.5	935	2,073	2,063	1,230	234
59Co	0.004	0.013	13	25	27	21	3.0
60Ni	0.038	0.127	26	33	31	38	9.0
63Cu	0.005	0.017	17	12	24	19	9.1
66Zn	0.433	1.4	232	153	309	403	141
75As	0.356	1.2	1.3	1.6	1.7	1.1	<0.356
77Se	0.320	1.1	27	38	21	17	7.9
88Sr	0.001	0.003	6.3	5.1	7.8	6.1	2.3
95Mo	0.004	0.013	1.3	1.3	1.1	2.2	0.365
107Ag	0.001	0.003	0.233	0.090	0.115	0.140	0.057
111Cd	0.059	0.197	2.1	1.1	3.2	1.9	0.925
118Sn	0.018	0.060	1.1	0.929	0.995	0.807	0.467
121Sb	0.096	0.320	0.695	0.281	0.414	0.433	16
137Ba	0.001	0.003	18	39	41	26	7.4
202Hg	0.022	0.073	0.113	0.067	0.097	0.094	0.051
205Tl	0.001	0.003	0.237	0.113	0.207	0.156	0.091
208Pb	0.002	0.007	1.2	1.1	1.1	0.781	0.316
238U	0.001	0.003	0.503	0.254	0.809	0.453	0.299

Notes:

- ppm = parts per million
- DL = detection limit
- LOQ = limit of quantitation
- < = less than detection limit
- g = grams
- % = percent

Teck Resources
Tissue Analysis Results

			RG_ERCKMD_INV	RG_ERCKMD_INV	RG_ERCKMD_INV	RG_ERCKMD_INV	RG_ERCKDT_INVL
Client ID			02_2022-03-03	03_2022-03-03	04_2022-03-03	05_2022-03-03	UM-06_2022-03-
Lab ID			038	039	040	041	03
Wet Weight (g)			0.3130	0.1147	0.2448	0.3648	0.0111
Dry Weight (g)			0.0623	0.0185	0.0433	0.0621	0.0041
Moisture (%)			80.1	83.9	82.3	83.0	63.1
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.001	0.003	0.396	0.682	0.896	0.851	0.228
11B	0.068	0.227	0.735	2.3	1.6	1.5	0.121
23Na	1.1	3.7	2,921	3,146	5,293	6,575	5,147
24Mg	0.014	0.047	1,189	1,501	1,756	2,425	2,151
27Al	0.019	0.063	66	416	178	146	306
31P	48	160	8,271	8,963	11,955	17,885	11,807
39K	2.1	7.0	6,371	5,207	9,533	9,283	5,517
44Ca	14	47	2,966	5,093	4,632	7,877	9,284
49Ti	0.083	0.277	3.8	12	8.5	8.4	1.9
51V	0.026	0.087	0.252	0.725	0.536	0.575	0.120
52Cr	0.361	1.2	2.9	7.6	4.5	4.2	8.8
55Mn	0.009	0.030	128	323	212	239	16
57Fe	0.759	2.5	343	1,076	633	318	258
59Co	0.004	0.013	6.5	7.6	8.2	7.9	2.5
60Ni	0.038	0.127	9.4	17	20	16	12
63Cu	0.005	0.017	22	13	29	28	14
66Zn	0.433	1.4	267	181	489	615	167
75As	0.356	1.2	<0.356	0.890	0.661	0.426	<0.356
77Se	0.320	1.1	10	6.7	13	12	20
88Sr	0.001	0.003	2.6	6.0	5.7	6.7	14
95Mo	0.004	0.013	0.458	1.1	0.757	0.469	0.478
107Ag	0.001	0.003	0.064	0.087	0.112	0.095	0.110
111Cd	0.059	0.197	0.891	1.2	1.3	1.2	9.5
118Sn	0.018	0.060	0.375	0.792	0.805	0.452	0.215
121Sb	0.096	0.320	0.100	15	0.113	0.155	4.4
137Ba	0.001	0.003	5.0	15	12	11	16
202Hg	0.022	0.073	0.085	0.060	0.120	0.103	0.049
205Tl	0.001	0.003	0.077	0.119	0.145	0.113	0.032
208Pb	0.002	0.007	0.182	0.602	0.468	0.275	0.063
238U	0.001	0.003	0.147	0.157	0.180	0.186	0.021

Notes:

- ppm = parts per million
- DL = detection limit
- LOQ = limit of quantitation
- < = less than detection limit
- g = grams
- % = percent

Teck Resources
Tissue Analysis Results

		Client ID	RG_MIDER_INV- 01_2022-03-02	RG_MIDER_INV- 02_2022-03-02	RG_MIDER_INV- 03_2022-03-02
		Lab ID	043	044	045
		Wet Weight (g)	0.3055	0.3985	0.2403
		Dry Weight (g)	0.0605	0.0788	0.0452
		Moisture (%)	80.2	80.2	81.2
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)
7Li	0.001	0.003	0.359	0.294	0.715
11B	0.068	0.227	1.0	1.1	2.3
23Na	1.1	3.7	4,320	3,382	3,034
24Mg	0.014	0.047	1,182	1,648	1,479
27Al	0.019	0.063	1,122	742	1,995
31P	48	160	11,439	12,556	10,965
39K	2.1	7.0	11,297	8,589	8,082
44Ca	14	47	2,431	4,687	3,830
49Ti	0.083	0.277	44	44	119
51V	0.026	0.087	2.0	1.2	2.7
52Cr	0.361	1.2	8.6	6.2	6.8
55Mn	0.009	0.030	223	63	125
57Fe	0.759	2.5	551	390	898
59Co	0.004	0.013	11	3.5	5.2
60Ni	0.038	0.127	21	12	16
63Cu	0.005	0.017	11	12	9.6
66Zn	0.433	1.4	188	186	146
75As	0.356	1.2	1.4	0.979	1.5
77Se	0.320	1.1	3.6	5.4	4.4
88Sr	0.001	0.003	5.4	7.1	8.0
95Mo	0.004	0.013	0.343	0.352	0.419
107Ag	0.001	0.003	0.064	0.109	0.057
111Cd	0.059	0.197	3.3	4.3	5.6
118Sn	0.018	0.060	0.643	0.492	0.991
121Sb	0.096	0.320	<0.096	<0.096	<0.096
137Ba	0.001	0.003	57	31	68
202Hg	0.022	0.073	0.081	0.068	0.075
205Tl	0.001	0.003	0.066	0.059	0.080
208Pb	0.002	0.007	0.478	0.367	0.835
238U	0.001	0.003	0.060	0.041	0.084

Notes:

ppm = parts per million
DL = detection limit
LOQ = limit of quantitation
< = less than detection limit
g = grams
% = percent

Teck Resources
Tissue QA/QC Relative Percent Difference Results

Client ID		RG_ERCKUT_INV-02_2022-03-03			RG_ERCKDT_INV-01_2022-03-03			RG_ERCKMD_INV-03_2022-03-03		
Lab ID		027			031			039		
Parameter	DL (ppm)	Sample (ppm)	Sample Duplicate (ppm)	RPD (%)	Sample (ppm)	Sample Duplicate (ppm)	RPD (%)	Sample (ppm)	Sample Duplicate (ppm)	RPD (%)
7Li	0.001	0.737	0.633	15	0.837	0.971	15	0.682	0.639	6.5
11B	0.068	3.2	3.0	6.5	1.7	2.0	16	2.3	1.9	19
23Na	1.1	2,947	2,633	11	3,807	3,899	2.4	3,146	2,752	13
24Mg	0.014	2,666	2,741	2.8	1,561	1,373	13	1,501	1,519	1.2
27Al	0.019	647	526	21	393	354	10	416	475	13
31P	48	11,221	10,822	3.6	9,317	10,023	7.3	8,963	8,145	9.6
39K	2.1	6,785	6,746	0.6	7,924	7,707	2.8	5,207	5,067	2.7
44Ca	14	8,950	7,424	19	3,460	3,137	9.8	5,093	6,152	19
49Ti	0.083	69	46	40	35	38	8.2	12	11	8.7
51V	0.026	2.1	1.5	33	1.2	1.4	15	0.725	0.499	37
52Cr	0.361	22	17	26	5.9	5.4	8.8	7.6	7.4	2.7
55Mn	0.009	15	14	6.9	170	135	23	323	291	10
57Fe	0.759	530	387	31	1,201	1,628	30	1,076	1,001	7.2
59Co	0.004	0.784	0.742	5.5	10	8.5	16	7.6	8.0	5.1
60Ni	0.038	35	24	37	21	22	4.7	17	17	0.0
63Cu	0.005	29	26	11	17	15	13	13	13	0.0
66Zn	0.433	231	222	4.0	185	169	9.0	181	192	5.9
75As	0.356	0.538	0.497	-	1.1	1.2	-	0.890	0.846	-
77Se	0.320	6.1	5.7	6.8	23	25	8.3	6.7	6.4	4.6
88Sr	0.001	5.6	5.3	5.5	4.9	4.3	13	6.0	7.1	17
95Mo	0.004	0.280	0.264	5.9	0.831	0.614	30	1.1	0.830	28
107Ag	0.001	0.143	0.098	37	0.074	0.082	10	0.087	0.066	28
111Cd	0.059	5.6	4.8	15	1.9	2.0	5.1	1.2	1.1	8.7
118Sn	0.018	1.8	1.5	18	0.586	0.427	31	0.792	0.814	2.7
121Sb	0.096	0.365	0.323	-	0.295	0.207	-	15	18	18
137Ba	0.001	21	17	21	20	19	5.1	15	16	6.5
202Hg	0.022	0.089	0.070	-	0.063	0.061	-	0.060	0.032	-
205Tl	0.001	0.053	0.045	16	0.174	0.158	9.6	0.119	0.151	24
208Pb	0.002	0.388	0.274	34	0.783	0.829	5.7	0.602	0.513	16
238U	0.001	0.404	0.384	5.1	0.331	0.240	32	0.157	0.167	6.2

Notes:

ppm = parts per million
 RPD = relative percent difference
 DL = detection limit
 < = less than detection limit
 % = percent

Data Quality Objectives:

Laboratory Duplicates - RPD ≤40% for all elements, except Ca and Sr, which are ≤60%
 Minimum DQOs apply to individual samples at concentrations above 10x DL

Teck Resources
Tissue QA/QC Accuracy and Precision Results

Parameter	DL (ppm)	Certified Conc. (ppm)	01			02		
			Mean Estimated Conc. (ppm)	Accuracy (%)	Precision RSD (%)	Mean Estimated Conc. (ppm)	Accuracy (%)	Precision RSD (%)
7Li	0.001	1.21	1.5	122	7.4	1.3	104	7.1
11B	0.068	4.5	5.3	118	3.0	5.1	113	4.2
23Na	1.1	14,000	15,547	111	4.3	15,321	109	2.7
24Mg	0.014	910	1,053	116	7.7	1,053	116	4.5
27Al	0.019	197.2	237	120	13	225	114	10
31P	48	8,000	8,856	111	5.7	9,143	114	4.3
39K	2.1	15,500	16,529	107	8.3	17,293	112	3.9
44Ca	14	2,360	2,892	122	8.9	2,702	114	3.2
49Ti	0.083	12.24	13	106	15	14	118	15
51V	0.026	1.57	1.9	120	12	1.8	113	13
52Cr	0.361	1.87	2.3	122	4.8	2.2	116	6.2
55Mn	0.009	3.17	4.0	126	8.3	3.9	123	4.8
57Fe	0.759	343	409	119	8.3	403	118	4.6
59Co	0.004	0.25	0.324	129	5.9	0.300	120	5.6
60Ni	0.038	1.34	1.7	124	5.4	1.6	122	3.3
63Cu	0.005	15.7	19	121	8.3	19	121	5.3
66Zn	0.433	51.6	61	119	7.7	62	120	7.3
75As	0.356	6.87	7.6	111	4.7	7.8	113	3.7
77Se	0.320	3.45	3.8	109	3.4	3.8	110	0.0
88Sr	0.001	10.1	12	117	7.1	12	115	4.7
95Mo	0.004	0.29	0.340	117	11	0.321	111	5.0
107Ag	0.001	0.0252	0.034	135	4.8	0.030	118	6.0
111Cd	0.059	0.299	0.384	128	3.6	0.371	124	6.4
118Sn	0.018	0.061	0.081	132	9.7	0.066	109	6.5
121Sb	0.096	0.011	0.011	98	0.0	0.010	91	14
137Ba	0.001	8.6	9.7	113	3.1	9.1	106	5.7
202Hg	0.022	0.412	0.492	120	10	0.468	114	8.6
205Tl	0.001	0.0013	-	-	-	-	-	-
208Pb	0.002	0.404	0.507	126	18	0.427	106	8.4
238U	0.001	0.05	0.065	130	20	0.054	108	16

Notes:

ppm = parts per million; % = percent; DL = detection limit; RSD = relative standard deviation

Data Quality Objectives:

Accuracy: DQO of 60 - 140% of the certified values for B, Ti, Ag, Sn, Sb, and Ba.

Accuracy: DQO of 90 - 110% of the certified values for Se.

Accuracy: DQO of 70 - 130% of the certified values for all other elements provided.

Precision: DQO of ≤20% for all elements.

DORM-4 used for all parameters except B, Ti, Sb, Ba, and Al where NIST-1566b was used.


Tl certified concentration from NIST-2976.

Accuracy and precision for Tl are not reported as the certified concentration is too close to the reportable detection limit.

Teck Resources
Sample Group Information

Sample Group ID	Client ID	Lab ID	Date of Analysis		
01	RG_ERCK_INV-01_2022-03-02	023	15 Mar 2022		
	RG_ERCK_INV-02_2022-03-02	024			
	RG_ERCK_INV-03_2022-03-02	025			
	RG_ERCKUT_INV-01_2022-03-03	026			
	RG_ERCKUT_INV-02_2022-03-03	027			
	RG_ERCKUT_INV-03_2022-03-03	028			
	RG_ERCKUT_INV-04_2022-03-03	029			
	RG_ERCKUT_INV-05_2022-03-03	030			
	RG_ERCKDT_INV-01_2022-03-03	031			
	RG_ERCKDT_INV-02_2022-03-03	032			
	RG_ERCKDT_INV-03_2022-03-03	033			
	RG_ERCKDT_INV-04_2022-03-03	034			
	RG_ERCKDT_INV-05_2022-03-03	035			
	RG_ERCKDT_INV-06_2022-03-03	036			
	RG_ERCKMD_INV-01_2022-03-03	037			
	RG_ERCKMD_INV-02_2022-03-03	038			
	02	RG_ERCKMD_INV-03_2022-03-03		039	15 Mar 2022
		RG_ERCKMD_INV-04_2022-03-03		040	
RG_ERCKMD_INV-05_2022-03-03		041			
RG_ERCKDT_INVLUM-06_2022-03-03		042			
RG_MIDER_INV-01_2022-03-02		043			
RG_MIDER_INV-02_2022-03-02		044			
RG_MIDER_INV-03_2022-03-02		045			

*Updated COC EPH 11 Mar 2022

TrichAnalytics Inc. 207-1753 Sean Heights, Saanichton, BC, V8M 0B3 Ph: (250) 532-1084		Chain of Custody (COC) for LA-ICP-MS Analysis	
Invoicing		Reporting (if different from Invoicing)	
Project Number: EVO LAEMP (22-12) (PO 748530)			
Company Name:	Teck Coal Limited	Company Name:	Minnow Environmental
Contact Name:	Mike Pope	Contact Name:	Tyler Mehler
Address:	421 Pine Avenue	Address:	2 Lamb Street
City, Province:	Sparwood, BC	City, Province:	Georgetown, ON
Postal Code:	V0B 2G0	Postal Code:	L7G 2G7
Phone:	250-425-8202	Phone:	250-595-1627
Email:	mike.pope@teck.com	Email:	tyler.mehler@minnow.ca
Sample Analysis Requested			
<i>Trich ID</i>	Sample Identification:	Sample Type:	
		Species	Sample type
<i>023</i>	1 RG_ERCK_INV-01_2022-03-02 ✓	Composite	Composite-taxa benthic invertebrate tissue samples
<i>024</i>	2 RG_ERCK_INV-02_2022-03-02 ✓	Composite	Composite-taxa benthic invertebrate tissue samples
<i>025</i>	3 RG_ERCK_INV-03_2022-03-02 ✓	Composite	Composite-taxa benthic invertebrate tissue samples
<i>026</i>	4 RG_ERCKUT_INV-01_2022-03-03 ✓	Composite	Composite-taxa benthic invertebrate tissue samples
<i>027</i>	5 RG_ERCKUT_INV-02_2022-03-03 ✓	Composite	Composite-taxa benthic invertebrate tissue samples
<i>028</i>	6 RG_ERCKUT_INV-03_2022-03-03 ✓	Composite	Composite-taxa benthic invertebrate tissue samples
<i>029</i>	7 RG_ERCKUT_INV-04_2022-03-03 ✓	Composite	Composite-taxa benthic invertebrate tissue samples
<i>030</i>	8 RG_ERCKUT_INV-05_2022-03-03 ✓	Composite	Composite-taxa benthic invertebrate tissue samples
<i>031</i>	9 RG_ERCKDT_INV-01_2022-03-03 ✓	Composite	Composite-taxa benthic invertebrate tissue samples
<i>032</i>	10 RG_ERCKDT_INV-02_2022-03-03 ✓	Composite	Composite-taxa benthic invertebrate tissue samples
<i>033</i>	11 RG_ERCKDT_INV-03_2022-03-03 ✓	Composite	Composite-taxa benthic invertebrate tissue samples
<i>034</i>	12 RG_ERCKDT_INV-04_2022-03-03 ✓	Composite	Composite-taxa benthic invertebrate tissue samples
<i>035</i>	13 RG_ERCKDT_INV-05_2022-03-03 ✓	Composite	Composite-taxa benthic invertebrate tissue samples
<i>036</i>	14 RG_ERCKDT_INV-06_2022-03-03 ✓	Composite	Composite-taxa benthic invertebrate tissue samples
<i>037</i>	15 RG_ERCKMD_INV-01_2022-03-03 ✓	Composite	Composite-taxa benthic invertebrate tissue samples
<i>038</i>	16 RG_ERCKMD_INV-02_2022-03-03 ✓	Composite	Composite-taxa benthic invertebrate tissue samples
<i>039</i>	17 RG_ERCKMD_INV-03_2022-03-03 ✓	Composite	Composite-taxa benthic invertebrate tissue samples
<i>040</i>	18 RG_ERCKMD_INV-04_2022-03-03 ✓	Composite	Composite-taxa benthic invertebrate tissue samples
<i>041</i>	19 RG_ERCKMD_INV-05_2022-03-03 ✓	Composite	Composite-taxa benthic invertebrate tissue samples
<i>042</i>	20 RG_ERCKDT_INVLUM-06_2022-03-03 ✓	Composite	Composite-taxa benthic invertebrate tissue samples
Sample(s) Released By: Maddy Stokes		Sample(s) Received By: <i>Elliot Howell</i>	
Signature:		Signature: 	
Date Sent: 10-Mar-22		Date Received: <i>11 Mar 2022</i> <i>Proj# 2022-314</i>	
Sample(s) Returned to Client By:		Shipping Conditions:	
		Shipping Container:	
Signature:		Date Sent:	

TrichAnalytics Inc.

207-1753 Sean Heights, Saanichton, BC, V8M 0B3
Ph: (250) 532-1084

Chain of Custody (COC)
for LA-ICP-MS Analysis

Invoicing

Reporting (if different from Invoicing)

Project Number: EVO LAEMP (22-12) (PO 748530)

Company Name:	Teck Coal Limited	Company Name:	Minnow Environmental
Contact Name:	Mike Pope	Contact Name:	Tyler Mehler
Address:	421 Pine Avenue	Address:	2 Lamb Street
City, Province:	Sparwood, BC	City, Province:	Georgetown, ON
Postal Code:	V0B 2G0	Postal Code:	L7G 2G7
Phone:	250-425-8202	Phone:	250-595-1627
Email:	mike.pope@teck.com	Email:	tyler.mehler@minnow.ca

Sample Analysis Requested

Trich ID	Sample Identification:		Sample Type:	
			Species	Sample type
043	21	RG_MIDER_INV-01_2022-03-02 ✓	Composite	Composite-taxa benthic invertebrate tissue samples
044	22	RG_MIDER_INV-02_2022-03-02 ✓	Composite	Composite-taxa benthic invertebrate tissue samples
045	23	RG_MIDER_INV-03_2022-03-02 ✓	Composite	Composite-taxa benthic invertebrate tissue samples
	24			
	25			
	26			
	27			
	28			
	29			
	30			
	31			
	32			
	33			
	34			
	35			
	36			
	37			
	38			
	39			
	40			

Sample(s) Released By: Maddy Stokes	Sample(s) Received By: <i>Elliot Howell</i>
Signature:	Signature: 
Date Sent: 10-Mar-22	Date Received: <i>11 Mar 2022</i> <i>Proj# 2022-314</i>
Sample(s) Returned to Client By:	Shipping Conditions:
	Shipping Container:
Signature:	Date Sent:

TrichAnalytics Inc. 207-1753 Sean Heights, Saanichton, BC, V8M 0B3 Ph: (250) 532-1084		Chain of Custody (COC) for LA-ICP-MS Analysis	
Invoicing		Reporting (if different from Invoicing)	
Project Number: EVO LAEMP (22-12) (PO 748530)			
Company Name:	Teck Coal Limited	Company Name:	Minnow Environmental
Contact Name:	Mike Pope	Contact Name:	Tyler Mehler
Address:	421 Pine Avenue	Address:	2 Lamb Street
City, Province:	Sparwood, BC	City, Province:	Georgetown, ON
Postal Code:	V0B 2G0	Postal Code:	L7G 2G7
Phone:	250-425-8202	Phone:	250-595-1627
Email:	mike.pope@teck.com	Email:	tyler.mehler@minnow.ca
Sample Analysis Requested			
Sample Identification:		Sample Type:	
		Species	Sample type
1	RG_ERCK_INV-01_2022-03-02 ✓	Composite	Composite-taxa benthic invertebrate tissue samples
2	RG_ERCKUT_INV-02_2022-03-03 ✓	Composite	Composite-taxa benthic invertebrate tissue samples
3	RG_ERCKUT_INV-03_2022-03-03 ✓	Composite	Composite-taxa benthic invertebrate tissue samples
4	RG_ERCKUT_INV-04_2022-03-03 ✓	Composite	Composite-taxa benthic invertebrate tissue samples
5	RG_ERCKUT_INV-05_2022-03-03 ✓	Composite	Composite-taxa benthic invertebrate tissue samples
6	RG_ERCKDT_INV-01_2022-03-03 ✓	Composite	Composite-taxa benthic invertebrate tissue samples
7	RG_ERCKDT_INV-02_2022-03-03 ✓	Composite	Composite-taxa benthic invertebrate tissue samples
8	RG_ERCKDT_INV-03_2022-03-03 ✓	Composite	Composite-taxa benthic invertebrate tissue samples
9	RG_ERCKDT_INV-04_2022-03-03 ✓	Composite	Composite-taxa benthic invertebrate tissue samples
10	RG_ERCKDT_INV-05_2022-03-03 ✓	Composite	Composite-taxa benthic invertebrate tissue samples
11	RG_ERCKDT_INV-06_2022-03-03 ✓	Composite	Composite-taxa benthic invertebrate tissue samples
12	RG_ERCKMD_INV-01_2022-03-03 ✓	Composite	Composite-taxa benthic invertebrate tissue samples
13	RG_ERCKMD_INV-02_2022-03-03 ✓	Composite	Composite-taxa benthic invertebrate tissue samples
14	RG_ERCKMD_INV-03_2022-03-03 ✓	Composite	Composite-taxa benthic invertebrate tissue samples
15	RG_ERCKMD_INV-04_2022-03-03 ✓	Composite	Composite-taxa benthic invertebrate tissue samples
16	RG_ERCKMD_INV-05_2022-03-03 ✓	Composite	Composite-taxa benthic invertebrate tissue samples
17	RG_ERCKDT_INVLUM_05_2022-03-03 ✓	Composite	Composite-taxa benthic invertebrate tissue samples
18		Composite	Composite-taxa benthic invertebrate tissue samples
19		Composite	Composite-taxa benthic invertebrate tissue samples
20		Composite	Composite-taxa benthic invertebrate tissue samples
Sample(s) Released By: Maddy Stokes		Sample(s) Received By: <i>Elliot Howell</i>	
Signature: <i>[Signature]</i>		Signature: <i>[Signature]</i>	
Date Sent: 10-Mar-22		Date Received: <i>11 Mar 2022</i> Proj# <i>2022-314</i>	
Sample(s) Returned to Client By:		Shipping Conditions:	
		Shipping Container:	
Signature:		Date Sent:	

*Superseded
 GOR 14 Mar 2022
 (see email communication
 Recd 11 Mar 2022)*

4-2 (two) extra samples labelled "RG_ERCK_INV-02_2022-03-02" and "RG_ERCK_INV-03_2022-03-02"
** extra sample labelled "RG_ERCKUT_INV-01_2022-03-03"*
 Page 1 of 1
3 (three) extra samples labelled "RG_MIDER_INV-(01-03)_2022-03-02"



TrichAnalytics Inc.

Tissue Microchemistry Analysis Report

Client: Tyler Mehler
Aquatic Scientist
Minnow Environmental
Phone: (250) 595-1627
Email: tyler.mehler@minnow.ca

Date Received: 28 Apr 2022
Date of Analysis: 04 May 2022
Final Report Date: 04 May 2022
Project No.: 2022-324
Method No.: MET-002.06

Client Project: EVO LAEMP (22-12)

Analytical Request: Composite-Taxa Benthic Invertebrate Tissue Microchemistry (total metals & moisture) - 17 samples.
See chain of custody form provided for sample identification numbers.

Notes:

Analytical results are expressed in parts per million (ppm) dry weight (equivalent to mg/kg).
Samples quantified using DORM-4, NIST-1566b, and NIST-2976 certified reference standards.
Aluminum concentrations above 1,000 ppm are outside linear range of the calibration curve.
RPD values calculated according to the British Columbia Environmental Laboratory Manual (2020) criteria.
Client specific DQO for Selenium accuracy is 90-110% of the certified value; result achieved 107%.

This report provides the analytical results only for tissue samples noted above as received from the Client.

Reviewed and Approved by Jennie Christensen, PhD, RPBio

[The analytical report shall not be reproduced except in full under the expressed written consent of TrichAnalytics Inc.]

04 May 2022

Date

TrichAnalytics Inc.
207-1753 Sean Heights
Saanichton, BC V8M 0B3
www.trichanalytics.com



CALA
Testing
Accreditation No. A4196

Teck Coal Limited
Tissue Analysis Results

	Client ID	RG_GATE_INV-01_2022-04-21	RG_GATE_INV-02_2022-04-21	RG_GATE_INV-03_2022-04-21	RG_GATEDP_INV-01_2022-04-21	RG_GATEDP_INV-02_2022-04-21	
	Lab ID	119	120	121	122	123	
	Wet Weight (g)	0.3041	0.4531	0.5540	0.1823	0.1893	
	Dry Weight (g)	0.0764	0.0732	0.0994	0.0625	0.0509	
	Moisture (%)	74.9	83.8	82.1	65.7	73.1	
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	
7Li	0.001	0.003	6.5	9.6	6.7	1.4	2.4
11B	0.083	0.277	9.7	20	12	5.3	7.3
23Na	0.897	3.0	4,926	10,973	6,210	2,325	3,109
24Mg	0.059	0.197	3,598	3,601	2,922	2,336	2,843
27Al	0.026	0.087	10,445	18,927	12,093	3,940	5,532
31P	47	157	12,535	9,178	7,702	10,865	11,485
39K	4.4	15	19,951	27,044	18,513	14,984	15,024
44Ca	10	33	13,097	24,511	14,879	17,130	23,985
49Ti	0.198	0.660	1,005	1,383	872	332	483
51V	0.020	0.067	16	31	19	7.3	11
52Cr	0.074	0.247	66	83	42	14	32
55Mn	0.004	0.013	101	147	151	155	85
57Fe	0.370	1.2	6,231	10,422	6,959	1,753	2,480
59Co	0.002	0.007	7.1	9.0	4.2	2.7	5.9
60Ni	0.025	0.083	159	209	145	63	98
63Cu	0.015	0.050	23	25	26	19	19
66Zn	0.316	1.1	279	298	310	222	277
75As	0.349	1.2	4.4	6.7	5.1	5.1	4.8
77Se	0.364	1.2	24	24	30	26	38
88Sr	0.001	0.003	193	314	180	36	51
95Mo	0.028	0.093	1.1	1.4	1.5	1.5	0.849
107Ag	0.001	0.003	0.170	0.231	0.282	0.206	0.192
111Cd	0.076	0.253	4.3	4.6	3.5	1.7	9.2
118Sn	0.012	0.040	0.416	0.815	0.682	0.469	0.630
121Sb	0.003	0.010	0.339	0.679	0.400	0.198	0.212
137Ba	0.086	0.287	23,085	40,423	18,865	1,977	2,539
202Hg	0.018	0.060	0.100	0.109	0.128	0.059	0.128
205Tl	0.001	0.003	0.172	0.314	0.232	0.092	0.183
208Pb	0.001	0.003	2.0	3.8	2.4	1.1	1.6
238U	0.001	0.003	0.452	0.821	0.547	0.279	0.431

Notes:

- ppm = parts per million
- DL = detection limit
- LOQ = limit of quantitation
- < = less than detection limit
- g = grams
- % = percent

Teck Coal Limited
Tissue Analysis Results

			RG_GATEDP_INV- 03_2022-04-21	RG_GATEDP_INV- LUM-02_2022-04- 21	RG_GATEDP_INV- LUM-03_2022-04- 21	RG_BOCK_INV- 01_2022-04-21	RG_BOCK_INV- 02_2022-04-21
Client ID							
Lab ID			124	125	126	127	128
Wet Weight (g)			0.5014	0.0312	0.0050	0.2616	0.1781
Dry Weight (g)			0.0956	0.0172	0.0035	0.0561	0.0372
Moisture (%)			80.9	44.9	30.0	78.6	79.1
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.001	0.003	5.1	2.5	0.880	2.6	2.5
11B	0.083	0.277	8.8	5.6	0.813	6.0	3.4
23Na	0.897	3.0	6,262	2,384	1,771	5,044	5,811
24Mg	0.059	0.197	2,437	2,067	1,401	2,953	2,563
27Al	0.026	0.087	4,859	5,226	445	5,642	2,621
31P	47	157	10,941	9,502	11,558	12,037	13,010
39K	4.4	15	17,463	12,576	12,788	12,318	13,336
44Ca	10	33	17,068	41,093	5,110	18,879	10,889
49Ti	0.198	0.660	428	443	34	465	221
51V	0.020	0.067	11	10	0.922	10	6.0
52Cr	0.074	0.247	22	48	22	45	20
55Mn	0.004	0.013	75	40	23	105	113
57Fe	0.370	1.2	2,493	2,210	668	2,388	1,330
59Co	0.002	0.007	3.2	8.2	2.7	17	8.6
60Ni	0.025	0.083	64	85	47	95	65
63Cu	0.015	0.050	15	8.0	5.4	29	25
66Zn	0.316	1.1	216	295	231	281	204
75As	0.349	1.2	4.2	6.2	5.3	1.4	1.1
77Se	0.364	1.2	11	88	35	18	22
88Sr	0.001	0.003	51	70	13	83	63
95Mo	0.028	0.093	0.717	0.749	0.785	1.1	1.0
107Ag	0.001	0.003	0.147	0.072	0.056	0.168	0.160
111Cd	0.076	0.253	2.7	4.3	4.8	1.4	0.839
118Sn	0.012	0.040	0.545	0.945	0.752	0.994	1.0
121Sb	0.003	0.010	0.240	0.171	0.038	0.240	0.133
137Ba	0.086	0.287	3,618	2,687	484	2,635	1,113
202Hg	0.018	0.060	0.050	0.150	0.139	0.078	0.088
205Tl	0.001	0.003	0.117	0.181	0.227	0.162	0.119
208Pb	0.001	0.003	1.5	1.1	0.118	2.0	0.927
238U	0.001	0.003	0.283	0.439	0.118	0.352	0.251

Notes:

- ppm = parts per million
- DL = detection limit
- LOQ = limit of quantitation
- < = less than detection limit
- g = grams
- % = percent

Teck Coal Limited
Tissue Analysis Results

	Client ID	RG_BOCK_INV-03_2022-04-21	RG_BOCK_INVLU M-01_2022-04-21	EV_BRD_LOT2_IN V-01_2022-04-21	EV_BRD_LOT2_IN V-02_2022-04-21	EV_BRD_LOT2_IN V-03_2022-04-21	
	Lab ID	129	130	131	132	133	
	Wet Weight (g)	0.1685	0.1148	0.0391	0.1588	0.0541	
	Dry Weight (g)	0.0341	0.0397	0.0151	0.0428	0.0178	
	Moisture (%)	79.8	65.4	61.4	73.0	67.1	
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	
7Li	0.001	0.003	2.6	5.3	1.1	1.2	1.0
11B	0.083	0.277	4.9	17	0.961	1.5	1.0
23Na	0.897	3.0	5,284	3,014	5,276	5,258	5,709
24Mg	0.059	0.197	2,600	3,613	5,967	5,005	5,295
27Al	0.026	0.087	3,893	15,948	201	399	376
31P	47	157	12,482	9,257	17,597	15,085	16,313
39K	4.4	15	11,839	11,967	11,356	13,793	11,111
44Ca	10	33	19,428	75,814	7,684	10,576	9,966
49Ti	0.198	0.660	320	1,281	14	29	25
51V	0.020	0.067	7.1	26	1.0	1.7	1.6
52Cr	0.074	0.247	29	75	15	15	22
55Mn	0.004	0.013	101	198	37	35	25
57Fe	0.370	1.2	1,736	4,645	4,105	6,351	3,345
59Co	0.002	0.007	11	11	0.619	1.5	1.2
60Ni	0.025	0.083	67	177	33	51	40
63Cu	0.015	0.050	26	18	21	18	17
66Zn	0.316	1.1	279	670	318	278	262
75As	0.349	1.2	1.1	3.9	1.6	2.8	1.5
77Se	0.364	1.2	17	86	7.2	11	13
88Sr	0.001	0.003	103	211	207	462	363
95Mo	0.028	0.093	1.0	2.4	0.449	0.685	0.349
107Ag	0.001	0.003	0.206	0.303	0.090	0.057	0.049
111Cd	0.076	0.253	1.1	10	5.6	6.1	7.1
118Sn	0.012	0.040	1.4	1.1	0.185	0.257	0.185
121Sb	0.003	0.010	0.168	0.715	0.077	0.097	0.067
137Ba	0.086	0.287	2,418	7,099	22,803	48,561	30,832
202Hg	0.018	0.060	0.113	0.219	0.120	0.116	0.113
205Tl	0.001	0.003	0.146	1.0	0.021	0.032	0.022
208Pb	0.001	0.003	1.2	10	0.175	0.176	0.168
238U	0.001	0.003	0.284	1.4	0.089	0.279	0.124

Notes:

- ppm = parts per million
- DL = detection limit
- LOQ = limit of quantitation
- < = less than detection limit
- g = grams
- % = percent

Teck Coal Limited
Tissue Analysis Results

		Client ID		EV_BRD_LOT2_IN	EV_BRD_LOT2_IN
		VLUM-01_2022-		VLUM-01_2022-	VLUM-02_2022-
		04-21		04-21	04-21
		Lab ID		134	135
		Wet Weight (g)		0.0767	0.0452
		Dry Weight (g)		0.0292	0.0136
		Moisture (%)		61.9	69.9
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)
7Li	0.001	0.003	1.4	2.4	
11B	0.083	0.277	4.4	2.4	
23Na	0.897	3.0	2,276	3,689	
24Mg	0.059	0.197	2,088	1,323	
27Al	0.026	0.087	3,176	1,528	
31P	47	157	8,905	11,160	
39K	4.4	15	9,089	7,375	
44Ca	10	33	32,499	12,174	
49Ti	0.198	0.660	241	120	
51V	0.020	0.067	7.3	3.2	
52Cr	0.074	0.247	14	20	
55Mn	0.004	0.013	99	43	
57Fe	0.370	1.2	14,436	4,599	
59Co	0.002	0.007	5.1	5.7	
60Ni	0.025	0.083	53	43	
63Cu	0.015	0.050	13	15	
66Zn	0.316	1.1	324	261	
75As	0.349	1.2	7.5	12	
77Se	0.364	1.2	55	72	
88Sr	0.001	0.003	4,957	719	
95Mo	0.028	0.093	0.881	0.810	
107Ag	0.001	0.003	0.260	0.055	
111Cd	0.076	0.253	13	18	
118Sn	0.012	0.040	0.513	0.641	
121Sb	0.003	0.010	0.311	0.156	
137Ba	0.086	0.287	410,437	60,436	
202Hg	0.018	0.060	0.103	0.150	
205Tl	0.001	0.003	0.120	0.085	
208Pb	0.001	0.003	0.475	0.349	
238U	0.001	0.003	0.729	0.319	

Notes:

- ppm = parts per million
- DL = detection limit
- LOQ = limit of quantitation
- < = less than detection limit
- g = grams
- % = percent

Teck Coal Limited
Tissue QA/QC Relative Percent Difference Results

Client ID		RG_GATEDP_INV-03_2022-04-21			RG_BOCK_INV-01_2022-04-21		
Lab ID		124			127		
Parameter	DL (ppm)	Sample (ppm)	Sample Duplicate (ppm)	RPD (%)	Sample (ppm)	Sample Duplicate (ppm)	RPD (%)
7Li	0.001	5.1	4.0	24	2.6	2.7	3.8
11B	0.083	8.8	6.6	29	6.0	6.0	0.0
23Na	0.897	6,262	5,879	6.3	5,044	4,863	3.7
24Mg	0.059	2,437	2,225	9.1	2,953	2,687	9.4
27Al	0.026	4,859	3,725	26	5,642	5,866	3.9
31P	47	10,941	9,301	16	12,037	11,267	6.6
39K	4.4	17,463	13,818	23	12,318	11,764	4.6
44Ca	10	17,068	16,735	2.0	18,879	21,131	11
49Ti	0.198	428	301	35	465	435	6.7
51V	0.020	11	8.9	21	10	11	9.5
52Cr	0.074	22	19	15	45	46	2.2
55Mn	0.004	75	56	29	105	98	6.9
57Fe	0.370	2,493	1,933	25	2,388	2,263	5.4
59Co	0.002	3.2	2.6	21	17	15	13
60Ni	0.025	64	49	27	95	95	0.0
63Cu	0.015	15	14	6.9	29	26	11
66Zn	0.316	216	186	15	281	269	4.4
75As	0.349	4.2	2.9	-	1.4	1.3	-
77Se	0.364	11	9.5	15	18	18	0.0
88Sr	0.001	51	40	24	83	91	9.2
95Mo	0.028	0.717	0.528	30	1.1	0.981	11
107Ag	0.001	0.147	0.146	0.7	0.168	0.172	2.4
111Cd	0.076	2.7	2.6	3.8	1.4	1.4	0.0
118Sn	0.012	0.545	0.576	5.5	0.994	0.914	8.4
121Sb	0.003	0.240	0.176	31	0.240	0.233	3.0
137Ba	0.086	3,618	2,575	34	2,635	3,058	15
202Hg	0.018	0.050	0.059	-	0.078	0.078	-
205Tl	0.001	0.117	0.086	31	0.162	0.159	1.9
208Pb	0.001	1.5	1.0	40	2.0	2.3	14
238U	0.001	0.283	0.195	37	0.352	0.369	4.7

Notes:

ppm = parts per million
 RPD = relative percent difference
 DL = detection limit
 < = less than detection limit
 % = percent

Data Quality Objectives:

Laboratory Duplicates - RPD ≤40% for all elements, except Ca and Sr, which are ≤60%
 Minimum DQOs apply to individual samples at concentrations above 10x DL

Teck Coal Limited
Tissue QA/QC Accuracy and Precision Results

Sample Group ID		01			
Parameter	DL (ppm)	Certified Conc. (ppm)	Mean Estimated Conc. (ppm)	Accuracy (%)	Precision RSD (%)
7Li	0.001	1.21	1.2	99	5.9
11B	0.083	4.5	4.8	108	1.8
23Na	0.897	14,000	15,688	112	5.0
24Mg	0.059	910	1,005	110	4.4
27Al	0.026	197.2	210	107	6.2
31P	47	8,000	8,698	109	3.7
39K	4.4	15,500	17,065	110	3.5
44Ca	10	2,360	2,483	105	5.0
49Ti	0.198	12.24	15	124	16
51V	0.020	1.57	1.7	108	9.3
52Cr	0.074	1.87	2.0	109	8.2
55Mn	0.004	3.17	3.5	109	4.4
57Fe	0.370	343	362	105	8.7
59Co	0.002	0.25	0.292	117	7.6
60Ni	0.025	1.34	1.5	113	5.5
63Cu	0.015	15.7	18	112	6.5
66Zn	0.316	51.6	54	104	4.0
75As	0.349	6.87	7.7	112	7.2
77Se	0.364	3.45	3.7	107	7.5
88Sr	0.001	10.1	11	111	7.5
95Mo	0.028	0.29	0.310	107	4.6
107Ag	0.001	0.0252	0.029	114	9.9
111Cd	0.076	0.299	0.322	108	10
118Sn	0.012	0.061	0.063	104	15
121Sb	0.003	0.011	0.011	98	17
137Ba	0.086	8.6	9.0	104	3.3
202Hg	0.018	0.412	0.425	103	5.9
205Tl	0.001	0.0013	-	-	-
208Pb	0.001	0.404	0.410	102	14
238U	0.001	0.05	0.052	105	7.1

Notes:

ppm = parts per million; % = percent; DL = detection limit; RSD = relative standard deviation

Data Quality Objectives:

Accuracy: DQO of 60 - 140% of the certified values for B, Ti, Ag, Sn, Sb, and Ba.

Accuracy: DQO of 90 - 110% of the certified values for Se.

Accuracy: DQO of 70 - 130% of the certified values for all other elements provided.

Precision: DQO of ≤20% for all elements.

DORM-4 used for all parameters except B, Ti, Sb, Ba, and Al where NIST-1566b was used.

Tl certified concentration from NIST-2976.

Accuracy and precision for Tl are not reported as the certified concentration is too close to the reportable detection limit.

Teck Coal Limited
Sample Group Information

Sample Group ID	Client ID	Lab ID	Date of Analysis
01	RG_GATE_INV-01_2022-04-21	119	04 May 2022
	RG_GATE_INV-02_2022-04-21	120	
	RG_GATE_INV-03_2022-04-21	121	
	RG_GATEDP_INV-01_2022-04-21	122	
	RG_GATEDP_INV-02_2022-04-21	123	
	RG_GATEDP_INV-03_2022-04-21	124	
	RG_GATEDP_INVLUM-02_2022-04-21	125	
	RG_GATEDP_INVLUM-03_2022-04-21	126	
	RG_BOCK_INV-01_2022-04-21	127	
	RG_BOCK_INV-02_2022-04-21	128	
	RG_BOCK_INV-03_2022-04-21	129	
	RG_BOCK_INVLUM-01_2022-04-21	130	
	EV_BRD_LOT2_INV-01_2022-04-21	131	
	EV_BRD_LOT2_INV-02_2022-04-21	132	
	EV_BRD_LOT2_INV-03_2022-04-21	133	
	EV_BRD_LOT2_INVLUM-01_2022-04-21	134	
	EV_BRD_LOT2_INVLUM-02_2022-04-21	135	

TrichAnalytics Inc. 207-1753 Sean Heights, Saanichton, BC, V8M 0B3 Ph: (250) 532-1084	Chain of Custody (COC) for LA-ICP-MS Analysis
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Invoicing	Reporting (if different from Invoicing)
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Project Number: EVO LAEMP (22-12) (PO 748530)

Company Name:	Teck Coal Limited	Company Name:	Minnow Environmental
Contact Name:	Mike Pope	Contact Name:	Tyler Mehler
Address:	421 Pine Avenue	Address:	2 Lamb Street
City, Province:	Sparwood, BC	City, Province:	Georgetown, ON
Postal Code:	V0B 2G0	Postal Code:	L7G 2G7
Phone:	250-425-8202	Phone:	250-595-1627
Email:	mike.pope@teck.com	Email:	tyler.mehler@minnow.ca

Sample Analysis Requested

TRICH ID	Sample Identification:		Sample Type:	
			Species	Sample type
119	1	RG_GATE_INV-01_2022-04-2022	Composite	Composite-taxa benthic invertebrate tissue samples
120	2	RG_GATE_INV-02_2022-04-2022 *	Composite	Composite-taxa benthic invertebrate tissue samples
121	3	RG_GATE_INV-03_2022-04-2022 *	Composite	Composite-taxa benthic invertebrate tissue samples
122	4	RG_GATEDP_INV-01_2022-04-2022 *	Composite	Composite-taxa benthic invertebrate tissue samples
123	5	RG_GATEDP_INV-02_2022-04-2022	Composite	Composite-taxa benthic invertebrate tissue samples
124	6	RG_GATEDP_INV-03_2022-04-2022	Composite	Composite-taxa benthic invertebrate tissue samples
125	7	RG_GATEDP_INVLUM-02_2022-04-2022	Lumbriculidae	Taxa-specific benthic invertebrate tissue samples
126	8	RG_GATEDP_INVLUM-03_2022-04-2022	Lumbriculidae	Taxa-specific benthic invertebrate tissue samples
127	9	RG_BOCK_INV-01_2022-04-2022	Composite	Composite-taxa benthic invertebrate tissue samples
128	10	RG_BOCK_INV-02_2022-04-2022	Composite	Composite-taxa benthic invertebrate tissue samples
129	11	RG_BOCK_INV-03_2022-04-2022	Composite	Composite-taxa benthic invertebrate tissue samples
130	12	RG_BOCK_INVLUM-01_2022-04-2022	Lumbriculidae	Taxa-specific benthic invertebrate tissue samples
131	13	EV_BRD_LOT2_INV-01_2022-04-2022	Composite	Composite-taxa benthic invertebrate tissue samples
132	14	EV_BRD_LOT2_INV-02_2022-04-2022	Composite	Composite-taxa benthic invertebrate tissue samples
133	15	EV_BRD_LOT2_INV-03_2022-04-2022	Composite	Composite-taxa benthic invertebrate tissue samples
134	16	EV_BRD_LOT2_INVLUM-01_2022-04-2022	Lumbriculidae	Taxa-specific benthic invertebrate tissue samples
135	17	EV_BRD_LOT2_INVLUM-02_2022-04-2022	Lumbriculidae	Taxa-specific benthic invertebrate tissue samples
	18			
	19			
	20			

Sample(s) Released By: Maddy Stokes	Sample(s) Received By: Alex Wade
Signature:	Signature: 
Date Sent:	Date Received: 29 Apr 2022 (Project #: 2022-324)
Sample(s) Returned to Client By:	Shipping Conditions:
	Shipping Container:
Signature:	Date Sent:

aw
29 Apr 2022 * Sample container ID's read date: "2021-04-21"
 All other sample container IDs read: "2022-04-21" Page 1 of 5



TrichAnalytics Inc.

Tissue Microchemistry Analysis Report

Client: Tyler Mehler Aquatic Scientist Minnow Environmental	Date Received: 03 May 2022
Phone: 250-595-1627	Date of Analysis: 05 May 2022
Email: tyler.mehler@minnow.ca	Final Report Date: 06 May 2022
	Project No.: 2022-329
	Method No.: MET-002.06

Client Project: EVO LAEMP (22-12) PO#818999

Analytical Request: Composite-Taxa Benthic Invertebrate Tissue Microchemistry (total metals & moisture) - 50 samples
See chain of custody form provided for sample identification numbers.

Notes:

Analytical results are expressed in parts per million (ppm) dry weight (equivalent to mg/kg).
Samples quantified using DORM-4, NIST-1566b, and NIST-2976 certified reference standards.
Aluminum concentrations above 1,000 ppm are outside linear range of the calibration curve.
RPD values calculated according to the British Columbia Environmental Laboratory Manual (2020) criteria.
Client-specific DQO for Selenium accuracy is 90-110% of the certified value; result achieved 107% (ranging from 98-110%).

This report provides the analytical results only for tissue samples noted above as received from the Client.

06 May 2022

Reviewed and Approved by Jennie Christensen, PhD, RPBio

Date

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TrichAnalytics Inc.
207-1753 Sean Heights
Saanichton, BC V8M 0B3
www.trichanalytics.com



CALA
Testing
Accreditation No. A4196

Teck Coal Limited
Tissue Analysis Results

			Client ID	RG_ERCKMD_INV_01_LAEMP_EVO_2022-04-26	RG_ERCKMD_INV_02_LAEMP_EVO_2022-04-26	RG_ERCKMD_INV_03_LAEMP_EVO_2022-04-26	RG_ERCKMD_INV_04_LAEMP_EVO_2022-04-27	RG_ERCKMD_INV_05_LAEMP_EVO_2022-04-27
			Lab ID	001	002	003	004	005
			Wet Weight (g)	0.1932	0.1034	0.1569	0.1378	0.1609
			Dry Weight (g)	0.0418	0.0202	0.0326	0.0336	0.0383
			Moisture (%)	78.4	80.5	79.2	75.6	76.2
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.002	0.007	0.436	0.884	0.746	0.558	0.862	
11B	0.065	0.217	1.0	1.9	1.5	0.972	1.3	
23Na	0.780	2.6	3,358	6,029	3,358	3,942	4,587	
24Mg	0.017	0.057	2,058	3,143	2,247	2,647	2,461	
27Al	0.018	0.060	230	376	611	283	678	
31P	47	157	10,197	17,148	11,243	16,146	12,733	
39K	1.3	4.3	9,122	13,005	9,393	10,298	11,105	
44Ca	5.9	20	4,251	9,353	5,439	7,258	5,630	
49Ti	0.114	0.380	14	23	46	18	35	
51V	0.031	0.103	0.533	0.886	1.2	0.834	1.6	
52Cr	0.140	0.467	5.6	14	13	9.7	13	
55Mn	0.005	0.017	115	274	143	270	526	
57Fe	0.474	1.6	316	804	617	995	2,215	
59Co	0.005	0.017	5.3	11	8.2	9.9	18	
60Ni	0.028	0.093	13	28	24	22	32	
63Cu	0.009	0.030	14	25	14	22	22	
66Zn	0.286	0.953	308	357	275	359	288	
75As	0.358	1.2	0.470	0.941	0.793	0.969	1.7	
77Se	0.383	1.3	6.6	10	6.2	13	9.2	
88Sr	0.001	0.003	3.9	9.5	8.4	6.9	7.1	
95Mo	0.005	0.017	0.497	0.497	0.377	0.505	0.572	
107Ag	0.001	0.003	0.056	0.100	0.063	0.120	0.098	
111Cd	0.059	0.197	0.808	0.927	0.781	1.2	1.1	
118Sn	0.015	0.050	0.820	1.3	1.0	0.873	0.946	
121Sb	0.003	0.010	0.055	0.062	0.053	0.055	0.083	
137Ba	0.001	0.003	40	157	254	84	125	
202Hg	0.027	0.090	0.070	0.065	0.056	0.070	0.062	
205Tl	0.001	0.003	0.032	0.048	0.044	0.047	0.076	
208Pb	0.002	0.007	0.118	0.377	0.292	0.297	0.631	
238U	0.001	0.003	0.054	0.113	0.094	0.087	0.130	

Notes:

- ppm = parts per million
- DL = detection limit
- LOQ = limit of quantitation
- < = less than detection limit
- g = grams
- % = percent

Teck Coal Limited
Tissue Analysis Results

			RG_ERCKIG_INV- 01_LAEMP_EVO_ 2022-04-28	RG_ERCKIG_INV- 02_LAEMP_EVO_ 2022-04-28	RG_ERCKIG_INV- 03_LAEMP_EVO_ 2022-04-28	RG_ERCKBR_INV- 01_LAEMP_EVO_ 2022-04-28	RG_ERCKBR_INV- 02_LAEMP_EVO_ 2022-04-28
Client ID							
Lab ID			006	007	008	009	010
Wet Weight (g)			0.1350	0.0718	0.0371	0.2684	0.2218
Dry Weight (g)			0.0297	0.0140	0.0092	0.0587	0.0492
Moisture (%)			78.0	80.5	75.2	78.1	77.8
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.002	0.007	1.0	1.0	0.783	0.881	1.2
11B	0.065	0.217	4.7	1.6	1.7	5.1	8.6
23Na	0.780	2.6	6,677	3,884	2,098	2,909	3,921
24Mg	0.017	0.057	2,224	2,239	2,292	2,224	2,509
27Al	0.018	0.060	302	491	1,375	1,277	1,841
31P	47	157	14,831	11,289	11,448	12,946	14,113
39K	1.3	4.3	22,048	10,689	8,984	16,929	18,229
44Ca	5.9	20	11,486	5,804	11,733	6,033	7,486
49Ti	0.114	0.380	24	27	97	73	113
51V	0.031	0.103	0.890	0.792	2.3	2.5	3.2
52Cr	0.140	0.467	5.2	6.1	43	14	36
55Mn	0.005	0.017	13	24	19	74	70
57Fe	0.474	1.6	253	259	1,041	665	1,064
59Co	0.005	0.017	0.233	0.437	0.906	1.1	1.5
60Ni	0.028	0.093	8.5	8.9	62	22	55
63Cu	0.009	0.030	13	26	21	15	18
66Zn	0.286	0.953	449	261	210	309	213
75As	0.358	1.2	0.844	0.710	0.664	1.2	1.8
77Se	0.383	1.3	27	12	9.6	7.2	7.4
88Sr	0.001	0.003	5.6	4.7	9.0	5.7	7.1
95Mo	0.005	0.017	0.356	0.203	0.580	0.420	0.684
107Ag	0.001	0.003	0.048	0.076	0.041	0.055	0.062
111Cd	0.059	0.197	14	4.3	2.6	6.3	7.3
118Sn	0.015	0.050	0.721	0.881	1.2	0.561	0.861
121Sb	0.003	0.010	0.087	0.102	0.063	0.119	0.165
137Ba	0.001	0.003	31	40	123	55	91
202Hg	0.027	0.090	0.092	0.061	0.048	0.057	0.055
205Tl	0.001	0.003	0.018	0.032	0.058	0.040	0.055
208Pb	0.002	0.007	0.112	0.235	0.290	0.372	0.538
238U	0.001	0.003	0.187	0.235	0.206	0.288	0.291

Notes:

- ppm = parts per million
- DL = detection limit
- LOQ = limit of quantitation
- < = less than detection limit
- g = grams
- % = percent

Teck Coal Limited
Tissue Analysis Results

			RG_ERCKBR_INV- 03_LAEMP_EVO_ 2022-04-28	RG_ERCKBR_INV LUM- 01_LAEMP_EVO_ 2022-04-28	RG_ERCKBR_INV LUM- 02_LAEMP_EVO_ 2022-04-28	RG_ALUSM_INV- 01_LAEMP_EVO_ 2022-04-28	RG_ALUSM_INV- 02_LAEMP_EVO_ 2022-04-28
Client ID							
Lab ID			011	012	013	014	015
Wet Weight (g)			0.3408	0.0096	0.0106	0.5486	0.2634
Dry Weight (g)			0.0758	0.0031	0.0030	0.1125	0.0734
Moisture (%)			77.8	67.7	71.7	79.5	72.1
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.002	0.007	1.1	0.400	0.591	1.3	3.1
11B	0.065	0.217	2.5	0.357	0.546	5.5	3.1
23Na	0.780	2.6	3,898	1,250	5,190	6,398	4,205
24Mg	0.017	0.057	1,732	1,442	1,510	1,274	2,216
27Al	0.018	0.060	1,261	76	118	2,756	3,676
31P	47	157	13,172	14,832	8,686	13,411	15,116
39K	1.3	4.3	12,520	2,865	7,970	14,085	12,015
44Ca	5.9	20	3,866	3,482	2,404	3,216	5,704
49Ti	0.114	0.380	87	4.3	4.9	178	238
51V	0.031	0.103	2.4	0.151	0.303	2.7	3.9
52Cr	0.140	0.467	19	0.955	5.6	13	110
55Mn	0.005	0.017	144	30	8.5	118	68
57Fe	0.474	1.6	1,006	543	140	1,495	3,860
59Co	0.005	0.017	11	21	1.9	1.9	5.6
60Ni	0.028	0.093	37	1.7	5.7	18	144
63Cu	0.009	0.030	17	30	9.6	20	18
66Zn	0.286	0.953	230	3,010	295	197	219
75As	0.358	1.2	1.0	1.2	0.634	1.8	1.5
77Se	0.383	1.3	28	54	8.8	7.3	6.9
88Sr	0.001	0.003	4.4	6.7	3.0	7.5	11
95Mo	0.005	0.017	0.748	0.470	0.119	0.620	0.775
107Ag	0.001	0.003	0.078	1.4	0.078	0.105	0.117
111Cd	0.059	0.197	5.1	14	3.9	2.4	1.5
118Sn	0.015	0.050	0.560	0.545	0.441	0.464	0.440
121Sb	0.003	0.010	0.110	0.055	0.112	0.072	0.062
137Ba	0.001	0.003	41	69	15	102	101
202Hg	0.027	0.090	0.052	0.542	0.058	0.086	0.086
205Tl	0.001	0.003	0.075	0.305	0.046	0.091	0.063
208Pb	0.002	0.007	0.435	0.977	1.8	1.1	0.924
238U	0.001	0.003	0.179	0.057	0.030	0.106	0.079

Notes:

- ppm = parts per million
- DL = detection limit
- LOQ = limit of quantitation
- < = less than detection limit
- g = grams
- % = percent

Teck Coal Limited
Tissue Analysis Results

			RG_ALUSM_INV- 03_LAEMP_EVO_ 2022-04-28	RG_MICOMP_IN V- 01_LAEMP_EVO_ 2022-04-27	RG_MICOMP_IN V- 02_LAEMP_EVO_ 2022-04-28	RG_MICOMP_IN V- 03_LAEMP_EVO_ 2022-04-28	RG_MICOMP_IN V- 04_LAEMP_EVO_ 2022-04-28
Client ID							
Lab ID			016	017	018	019	020
Wet Weight (g)			0.4214	0.0565	0.0570	0.2380	0.2647
Dry Weight (g)			0.1035	0.0172	0.0172	0.0449	0.0552
Moisture (%)			75.4	69.6	69.8	81.1	79.1
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.002	0.007	0.520	0.951	1.1	1.4	0.723
11B	0.065	0.217	2.3	2.4	2.9	3.8	1.8
23Na	0.780	2.6	2,777	3,249	3,142	3,845	3,543
24Mg	0.017	0.057	698	1,309	1,518	1,889	1,159
27Al	0.018	0.060	1,090	3,069	3,990	3,914	2,124
31P	47	157	7,856	12,331	11,365	13,343	11,718
39K	1.3	4.3	9,274	11,241	10,942	12,175	10,704
44Ca	5.9	20	1,593	3,067	4,159	4,875	2,357
49Ti	0.114	0.380	70	127	201	229	119
51V	0.031	0.103	1.3	3.6	6.1	6.5	3.1
52Cr	0.140	0.467	12	23	53	56	30
55Mn	0.005	0.017	64	54	41	107	68
57Fe	0.474	1.6	589	1,191	1,703	1,914	983
59Co	0.005	0.017	1.0	3.8	3.7	4.5	5.0
60Ni	0.028	0.093	16	34	76	94	48
63Cu	0.009	0.030	9.5	22	29	23	20
66Zn	0.286	0.953	93	136	172	210	157
75As	0.358	1.2	0.856	1.1	0.903	1.1	0.818
77Se	0.383	1.3	4.0	9.4	6.4	6.3	7.6
88Sr	0.001	0.003	3.5	6.3	8.0	10	5.7
95Mo	0.005	0.017	0.456	0.424	0.596	1.0	0.725
107Ag	0.001	0.003	0.037	0.171	0.205	0.217	0.154
111Cd	0.059	0.197	0.900	2.4	1.7	3.4	3.0
118Sn	0.015	0.050	0.415	1.3	0.938	0.872	1.3
121Sb	0.003	0.010	0.023	0.072	0.104	0.189	0.087
137Ba	0.001	0.003	52	54	76	127	67
202Hg	0.027	0.090	0.045	0.100	0.098	0.100	0.087
205Tl	0.001	0.003	0.048	0.096	0.080	0.074	0.055
208Pb	0.002	0.007	0.456	0.690	0.751	1.2	0.477
238U	0.001	0.003	0.053	0.080	0.105	0.120	0.062

Notes:

- ppm = parts per million
- DL = detection limit
- LOQ = limit of quantitation
- < = less than detection limit
- g = grams
- % = percent

Teck Coal Limited
Tissue Analysis Results

			RG_MICOMP_IN V- 05_LAEMP_EVO_ 2022-04-28	RG_MIDER_INV- 01_LAEMP_EVO_ 2022-04-25	RG_MIDER_INV- 02_LAEMP_EVO_ 2022-04-25	RG_MIDER_INV- 03_LAEMP_EVO_ 2022-04-25	RG_MIDBO_INV- 01_LAEMP_EVO_ 2022-04-25
Client ID							
Lab ID			021	022	023	024	025
Wet Weight (g)			0.3333	0.0443	0.0623	0.4311	0.2243
Dry Weight (g)			0.0801	0.0146	0.0170	0.1089	0.0466
Moisture (%)			76.0	67.0	72.7	74.7	79.2
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.002	0.007	0.731	0.671	0.869	0.791	2.0
11B	0.065	0.217	2.2	1.9	2.4	2.3	5.7
23Na	0.780	2.6	3,394	4,186	3,789	5,052	2,688
24Mg	0.017	0.057	1,578	1,446	1,539	2,370	1,622
27Al	0.018	0.060	2,118	2,187	2,950	2,503	7,531
31P	47	157	11,836	12,847	12,078	17,534	9,542
39K	1.3	4.3	10,284	13,610	13,043	14,906	10,366
44Ca	5.9	20	3,696	3,183	3,337	8,634	5,678
49Ti	0.114	0.380	119	143	158	164	435
51V	0.031	0.103	3.8	4.1	5.4	5.2	12
52Cr	0.140	0.467	32	39	37	40	96
55Mn	0.005	0.017	42	72	49	52	121
57Fe	0.474	1.6	1,321	1,352	1,571	1,624	3,443
59Co	0.005	0.017	5.2	5.6	3.4	5.5	6.0
60Ni	0.028	0.093	48	57	59	78	150
63Cu	0.009	0.030	18	21	21	25	23
66Zn	0.286	0.953	154	167	140	230	168
75As	0.358	1.2	0.931	1.5	1.3	1.2	1.4
77Se	0.383	1.3	7.7	7.0	5.9	7.2	5.7
88Sr	0.001	0.003	6.9	9.0	7.9	17	13
95Mo	0.005	0.017	0.467	0.526	0.661	0.606	1.2
107Ag	0.001	0.003	0.133	0.127	0.106	0.157	0.190
111Cd	0.059	0.197	4.3	7.5	4.0	5.6	4.0
118Sn	0.015	0.050	0.728	1.6	2.0	0.932	2.1
121Sb	0.003	0.010	0.075	0.078	0.088	0.105	0.197
137Ba	0.001	0.003	70	74	70	88	173
202Hg	0.027	0.090	0.129	0.055	0.040	0.080	0.093
205Tl	0.001	0.003	0.067	0.059	0.067	0.058	0.111
208Pb	0.002	0.007	0.531	0.541	0.673	0.644	1.6
238U	0.001	0.003	0.067	0.077	0.087	0.086	0.174

Notes:

- ppm = parts per million
- DL = detection limit
- LOQ = limit of quantitation
- < = less than detection limit
- g = grams
- % = percent

Teck Coal Limited
Tissue Analysis Results

			RG_MIDBO_INV- 02_LAEMP_EVO_ 2022-04-25	RG_MIDBO_INV- 03_LAEMP_EVO_ 2022-04-25	RG_MIDGA_INV- 01_LAEMP_EVO_ 2022-04-25	RG_MIDGA_INV- 02_LAEMP_EVO_ 2022-04-25	RG_MIDGA_INV- 03_LAEMP_EVO_ 2022-04-25
Client ID							
Lab ID			026	027	028	029	030
Wet Weight (g)			0.3370	0.4342	0.3811	0.1457	0.4542
Dry Weight (g)			0.0770	0.1102	0.0984	0.0320	0.1009
Moisture (%)			77.2	74.6	74.2	78.0	77.8
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.002	0.007	1.0	0.363	2.2	0.921	0.640
11B	0.065	0.217	2.9	0.933	5.0	3.4	1.2
23Na	0.780	2.6	3,897	2,625	4,147	2,700	5,997
24Mg	0.017	0.057	1,585	1,250	2,046	1,572	1,441
27Al	0.018	0.060	2,903	841	5,785	2,593	1,024
31P	47	157	12,143	9,087	10,075	10,948	9,843
39K	1.3	4.3	12,819	8,318	10,709	9,492	10,391
44Ca	5.9	20	3,708	3,898	5,702	4,327	2,743
49Ti	0.114	0.380	170	47	410	155	72
51V	0.031	0.103	5.0	1.6	12	5.7	2.6
52Cr	0.140	0.467	32	13	85	72	64
55Mn	0.005	0.017	107	39	142	87	96
57Fe	0.474	1.6	1,383	487	3,591	1,871	1,208
59Co	0.005	0.017	7.7	2.1	7.5	7.1	5.7
60Ni	0.028	0.093	55	20	130	104	94
63Cu	0.009	0.030	19	15	19	18	15
66Zn	0.286	0.953	199	174	254	237	181
75As	0.358	1.2	1.3	0.521	1.4	0.928	0.619
77Se	0.383	1.3	7.1	4.1	7.1	6.8	6.1
88Sr	0.001	0.003	9.3	6.8	12	13	7.1
95Mo	0.005	0.017	0.467	0.309	0.833	0.442	0.360
107Ag	0.001	0.003	0.131	0.077	0.146	0.157	0.130
111Cd	0.059	0.197	4.5	1.3	6.9	4.4	5.8
118Sn	0.015	0.050	1.1	0.310	0.937	1.2	0.420
121Sb	0.003	0.010	0.086	0.038	0.257	0.122	0.056
137Ba	0.001	0.003	113	50	186	114	89
202Hg	0.027	0.090	0.087	0.062	0.105	0.091	0.084
205Tl	0.001	0.003	0.071	0.036	0.132	0.084	0.067
208Pb	0.002	0.007	0.683	0.209	2.1	0.638	0.328
238U	0.001	0.003	0.091	0.034	0.189	0.107	0.055

Notes:

- ppm = parts per million
- DL = detection limit
- LOQ = limit of quantitation
- < = less than detection limit
- g = grams
- % = percent

Teck Coal Limited
Tissue Analysis Results

			Client ID	RG_MI3_INV- 01_LAEMP_EVO_ 2022-04-25	RG_MI3_INV- 02_LAEMP_EVO_ 2022-04-25	RG_MI3_INV- 03_LAEMP_EVO_ 2022-04-25	RG_ERCKUT_INV- 01_LAEMP_EVO_ 2022-04-26	RG_ERCKUT_INV- 02_LAEMP_EVO_ 2022-04-26
			Lab ID	031	032	033	034	035
			Wet Weight (g)	0.1290	0.0840	0.2912	0.0943	0.1950
			Dry Weight (g)	0.0327	0.0247	0.0518	0.0217	0.0459
			Moisture (%)	74.7	70.6	82.2	77.0	76.5
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.002	0.007	0.685	0.672	1.6	0.676	1.2	
11B	0.065	0.217	1.8	1.7	3.4	0.729	4.3	
23Na	0.780	2.6	3,243	3,224	10,075	3,870	3,742	
24Mg	0.017	0.057	1,312	1,619	1,798	1,630	2,363	
27Al	0.018	0.060	2,010	2,084	3,460	223	1,755	
31P	47	157	9,834	11,821	11,751	10,689	12,155	
39K	1.3	4.3	11,020	10,836	14,273	10,022	13,468	
44Ca	5.9	20	2,643	5,079	4,199	2,959	3,433	
49Ti	0.114	0.380	125	149	219	13	145	
51V	0.031	0.103	3.5	4.4	7.0	0.636	4.3	
52Cr	0.140	0.467	59	44	52	12	38	
55Mn	0.005	0.017	46	55	63	8.8	26	
57Fe	0.474	1.6	1,410	1,177	1,748	266	1,397	
59Co	0.005	0.017	2.6	3.4	3.8	0.496	0.787	
60Ni	0.028	0.093	86	65	74	16	56	
63Cu	0.009	0.030	19	17	20	24	22	
66Zn	0.286	0.953	162	224	175	171	171	
75As	0.358	1.2	0.977	1.1	1.0	<0.358	0.950	
77Se	0.383	1.3	5.9	5.7	5.9	4.8	4.9	
88Sr	0.001	0.003	7.7	11	9.8	2.2	3.7	
95Mo	0.005	0.017	0.771	0.422	0.566	0.134	0.566	
107Ag	0.001	0.003	0.119	0.183	0.235	0.061	0.062	
111Cd	0.059	0.197	6.9	6.8	9.5	1.7	4.4	
118Sn	0.015	0.050	1.5	1.3	1.1	0.591	0.738	
121Sb	0.003	0.010	0.068	0.068	0.119	0.085	0.213	
137Ba	0.001	0.003	76	92	98	6.1	40	
202Hg	0.027	0.090	0.051	0.069	0.085	0.036	0.036	
205Tl	0.001	0.003	0.060	0.074	0.085	0.015	0.034	
208Pb	0.002	0.007	0.481	0.503	0.763	0.159	0.605	
238U	0.001	0.003	0.071	0.064	0.104	0.097	0.298	

Notes:

- ppm = parts per million
- DL = detection limit
- LOQ = limit of quantitation
- < = less than detection limit
- g = grams
- % = percent

Teck Coal Limited
Tissue Analysis Results

			RG_ERCKUT_INV- 03_LAEMP_EVO_ 2022-04-26	RG_ERCKUT_INV- 04_LAEMP_EVO_ 2022-04-26	RG_ERCKUT_INV- 05_LAEMP_EVO_ 2022-04-26	RG_ERCKDT_INV- 01_LAEMP_EVO_ 2022-04-27	RG_ERCKDT_INV- 02_LAEMP_EVO_ 2022-04-27
Client ID							
Lab ID			036	037	038	039	040
Wet Weight (g)			0.2083	0.1352	0.2247	0.4874	0.0974
Dry Weight (g)			0.0480	0.0273	0.0444	0.1176	0.0138
Moisture (%)			77.0	79.8	80.2	75.9	85.8
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.002	0.007	0.985	1.3	0.835	0.670	1.5
11B	0.065	0.217	3.0	3.7	3.1	4.4	2.1
23Na	0.780	2.6	4,161	3,245	3,046	3,015	5,180
24Mg	0.017	0.057	2,395	2,690	1,782	2,041	3,088
27Al	0.018	0.060	1,376	1,416	569	709	1,012
31P	47	157	12,520	11,046	10,223	12,225	13,246
39K	1.3	4.3	11,581	11,076	12,169	16,030	11,379
44Ca	5.9	20	4,500	5,530	2,802	2,694	8,248
49Ti	0.114	0.380	88	94	23	42	73
51V	0.031	0.103	3.4	3.6	1.1	1.7	2.2
52Cr	0.140	0.467	33	47	8.2	17	22
55Mn	0.005	0.017	21	27	15	283	183
57Fe	0.474	1.6	800	1,307	306	1,014	2,097
59Co	0.005	0.017	0.695	2.7	0.321	23	10
60Ni	0.028	0.093	55	91	9.2	32	41
63Cu	0.009	0.030	25	25	26	20	27
66Zn	0.286	0.953	218	183	162	350	314
75As	0.358	1.2	0.717	0.647	0.717	0.682	1.3
77Se	0.383	1.3	5.0	5.5	5.9	33	22
88Sr	0.001	0.003	4.3	5.2	2.9	3.9	8.8
95Mo	0.005	0.017	0.449	0.263	0.197	1.9	0.799
107Ag	0.001	0.003	0.082	0.125	0.135	0.085	0.100
111Cd	0.059	0.197	4.4	3.7	4.3	3.4	1.6
118Sn	0.015	0.050	0.881	0.935	0.448	0.627	1.5
121Sb	0.003	0.010	0.126	0.159	0.142	0.128	0.127
137Ba	0.001	0.003	28	41	22	39	34
202Hg	0.027	0.090	0.036	0.045	<0.027	0.083	0.057
205Tl	0.001	0.003	0.032	0.033	0.022	0.046	0.086
208Pb	0.002	0.007	0.389	0.354	0.243	0.434	0.568
238U	0.001	0.003	0.235	0.297	0.197	0.226	0.260

Notes:

- ppm = parts per million
- DL = detection limit
- LOQ = limit of quantitation
- < = less than detection limit
- g = grams
- % = percent

Teck Coal Limited
Tissue Analysis Results

			RG_ERCKDT_INV- 03_LAEMP_EVO_ 2022-04-27	RG_ERCKDT_INV- 04_LAEMP_EVO_ 2022-04-27	RG_ERCKDT_INV- 05_LAEMP_EVO_ 2022-04-27	RG_ERCKDT_INV- 06_LAEMP_EVO_ 2022-04-27	RG_ERCK_INV- 01_LAEMP_EVO_ 2022-04-28
Client ID							
Lab ID			041	042	043	044	045
Wet Weight (g)			0.2220	0.2704	0.4994	0.3239	0.1382
Dry Weight (g)			0.0488	0.0539	0.1151	0.0707	0.0320
Moisture (%)			78.0	80.1	77.0	78.2	76.8
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.002	0.007	0.945	1.0	0.640	0.839	0.578
11B	0.065	0.217	2.0	1.3	2.4	0.937	0.688
23Na	0.780	2.6	3,175	3,176	3,581	3,736	3,392
24Mg	0.017	0.057	1,705	1,720	1,952	2,258	1,810
27Al	0.018	0.060	790	483	582	364	118
31P	47	157	10,889	10,706	12,784	16,395	13,381
39K	1.3	4.3	8,179	10,759	12,519	17,857	12,414
44Ca	5.9	20	3,058	2,229	2,651	2,819	3,342
49Ti	0.114	0.380	56	28	32	16	4.9
51V	0.031	0.103	1.6	1.1	1.0	0.876	0.387
52Cr	0.140	0.467	15	8.4	6.3	11	6.0
55Mn	0.005	0.017	313	690	593	318	42
57Fe	0.474	1.6	1,396	1,179	1,165	804	171
59Co	0.005	0.017	16	34	20	11	2.7
60Ni	0.028	0.093	34	26	20	22	13
63Cu	0.009	0.030	16	14	15	20	8.1
66Zn	0.286	0.953	205	179	263	291	211
75As	0.358	1.2	0.693	0.774	1.0	0.656	0.529
77Se	0.383	1.3	33	42	30	24	3.7
88Sr	0.001	0.003	4.8	3.0	3.7	2.9	2.9
95Mo	0.005	0.017	1.1	1.1	1.8	0.940	0.258
107Ag	0.001	0.003	0.070	0.059	0.048	0.072	0.052
111Cd	0.059	0.197	1.1	1.6	2.2	2.5	0.224
118Sn	0.015	0.050	0.397	0.379	0.524	0.323	0.341
121Sb	0.003	0.010	0.094	0.131	0.153	0.109	0.044
137Ba	0.001	0.003	27	38	35	18	4.3
202Hg	0.027	0.090	0.068	0.089	0.051	0.070	0.053
205Tl	0.001	0.003	0.059	0.058	0.045	0.040	0.022
208Pb	0.002	0.007	0.396	0.375	0.458	0.241	0.073
238U	0.001	0.003	0.140	0.105	0.128	0.101	0.049

Notes:

- ppm = parts per million
- DL = detection limit
- LOQ = limit of quantitation
- < = less than detection limit
- g = grams
- % = percent

Teck Coal Limited
Tissue Analysis Results

			RG_ERCK_INV- 02_LAEMP_EVO_ 2022-04-28	RG_ERCK_INV- 03_LAEMP_EVO_ 2022-04-28	RG_ERCKUC_INV- 01_LAEMP_EVO_ 2022-04-28	RG_ERCKUC_INV- 02_LAEMP_EVO_ 2022-04-28	RG_ERCKUC_INV- 03_LAEMP_EVO_ 2022-04-28
Client ID							
Lab ID			046	047	048	049	050
Wet Weight (g)			0.1029	0.0745	0.0720	0.1309	0.1381
Dry Weight (g)			0.0185	0.0172	0.0122	0.0363	0.0208
Moisture (%)			82.0	76.9	83.1	72.3	84.9
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.002	0.007	0.570	1.3	1.1	0.488	0.595
11B	0.065	0.217	1.9	3.8	0.679	1.2	1.6
23Na	0.780	2.6	3,129	2,252	6,961	3,021	2,587
24Mg	0.017	0.057	2,737	2,133	2,303	1,361	2,208
27Al	0.018	0.060	168	2,219	131	55	169
31P	47	157	12,322	8,746	16,369	9,825	8,372
39K	1.3	4.3	10,534	8,535	14,479	9,552	8,295
44Ca	5.9	20	11,972	43,182	6,382	2,906	8,480
49Ti	0.114	0.380	11	118	7.3	4.4	10
51V	0.031	0.103	0.854	6.0	0.521	0.295	0.798
52Cr	0.140	0.467	20	93	14	8.6	20
55Mn	0.005	0.017	107	222	52	36	112
57Fe	0.474	1.6	424	2,530	295	178	430
59Co	0.005	0.017	6.2	15	2.7	1.7	4.5
60Ni	0.028	0.093	40	136	22	16	40
63Cu	0.009	0.030	11	5.6	21	11	18
66Zn	0.286	0.953	111	64	180	130	90
75As	0.358	1.2	1.2	0.890	<0.358	0.577	0.686
77Se	0.383	1.3	3.7	3.4	6.2	3.4	4.6
88Sr	0.001	0.003	9.0	26	4.5	2.5	6.5
95Mo	0.005	0.017	0.442	0.430	0.264	0.283	0.823
107Ag	0.001	0.003	0.048	0.035	0.117	0.057	0.059
111Cd	0.059	0.197	0.172	0.224	0.172	0.586	0.258
118Sn	0.015	0.050	1.9	0.742	0.961	0.692	1.6
121Sb	0.003	0.010	0.095	0.140	0.059	0.041	0.078
137Ba	0.001	0.003	19	90	8.2	6.2	20
202Hg	0.027	0.090	<0.027	<0.027	0.038	0.034	<0.027
205Tl	0.001	0.003	0.050	0.067	0.024	0.019	0.021
208Pb	0.002	0.007	0.195	0.614	0.103	0.048	0.109
238U	0.001	0.003	0.118	0.346	0.073	0.044	0.189

Notes:

- ppm = parts per million
- DL = detection limit
- LOQ = limit of quantitation
- < = less than detection limit
- g = grams
- % = percent

Teck Coal Limited
Tissue QA/QC Relative Percent Difference Results

Client ID	RG_ERCKMD_INV- 01_LAEMP_EVO_2022-04-26				RG_ERCKMD_INV- 05_LAEMP_EVO_2022-04-27			RG_ERCKBR_INV- 01_LAEMP_EVO_2022-04-28		
	Lab ID	001			005			009		
Parameter	DL (ppm)	Sample (ppm)	Sample Duplicate (ppm)	RPD (%)	Sample (ppm)	Sample Duplicate (ppm)	RPD (%)	Sample (ppm)	Sample Duplicate (ppm)	RPD (%)
7Li	0.002	0.436	0.368	17	0.862	0.679	24	0.881	0.736	18
11B	0.065	1.0	0.965	3.6	1.3	1.0	26	5.1	4.2	19
23Na	0.780	3,358	2,553	27	4,587	3,779	19	2,909	2,853	1.9
24Mg	0.017	2,058	1,592	26	2,461	2,123	15	2,224	2,220	0.2
27Al	0.018	230	285	21	678	496	31	1,277	916	33
31P	47	10,197	8,776	15	12,733	10,822	16	12,946	13,050	0.8
39K	1.3	9,122	7,085	25	11,105	9,258	18	16,929	17,044	0.7
44Ca	5.9	4,251	4,061	4.6	5,630	4,927	13	6,033	5,271	14
49Ti	0.114	14	19	30	35	29	19	73	55	28
51V	0.031	0.533	0.574	7.4	1.6	1.2	29	2.5	1.9	27
52Cr	0.140	5.6	6.9	21	13	11	17	14	9.4	39
55Mn	0.005	115	112	2.6	526	490	7.1	74	63	16
57Fe	0.474	316	386	20	2,215	1,981	11	665	468	35
59Co	0.005	5.3	4.5	16	18	16	12	1.1	0.751	38
60Ni	0.028	13	13	0.0	32	28	13	22	16	32
63Cu	0.009	14	12	15	22	19	15	15	16	6.5
66Zn	0.286	308	282	8.8	288	261	9.8	309	322	4.1
75As	0.358	0.470	0.590	-	1.7	1.5	-	1.2	1.3	-
77Se	0.383	6.6	6.5	1.5	9.2	8.0	14	7.2	7.1	1.4
88Sr	0.001	3.9	3.7	5.3	7.1	6.3	12	5.7	4.8	17
95Mo	0.005	0.497	0.381	26	0.572	0.534	6.9	0.420	0.374	12
107Ag	0.001	0.056	0.048	15	0.098	0.093	5.2	0.055	0.045	20
111Cd	0.059	0.808	0.635	24	1.1	1.1	0.0	6.3	6.7	6.2
118Sn	0.015	0.820	0.630	26	0.946	0.685	32	0.561	0.460	20
121Sb	0.003	0.055	0.042	27	0.083	0.085	2.4	0.119	0.116	2.6
137Ba	0.001	40	40	0.0	125	121	3.3	55	49	12
202Hg	0.027	0.070	0.062	-	0.062	0.059	-	0.057	0.065	-
205Tl	0.001	0.032	0.027	17	0.076	0.060	24	0.040	0.036	11
208Pb	0.002	0.118	0.143	19	0.631	0.600	5.0	0.372	0.272	31
238U	0.001	0.054	0.055	1.8	0.130	0.104	22	0.288	0.268	7.2

Notes:

- ppm = parts per million
- RPD = relative percent difference
- DL = detection limit
- < = less than detection limit
- % = percent

Data Quality Objectives:

Laboratory Duplicates - RPD ≤40% for all elements, except Ca and Sr, which are ≤60%
Minimum DQOs apply to individual samples at concentrations above 10x DL

Teck Coal Limited
Tissue QA/QC Relative Percent Difference Results

Client ID		RG_MICOMP_INV- 03_LAEMP_EVO_2022-04-28			RG_ERCKDT_INV- 06_LAEMP_EVO_2022-04-27		
Lab ID		019			044		
Parameter	DL (ppm)	Sample (ppm)	Sample Duplicate (ppm)	RPD (%)	Sample (ppm)	Sample Duplicate (ppm)	RPD (%)
7Li	0.002	1.4	1.7	19	0.839	0.687	20
11B	0.065	3.8	4.2	10	0.937	0.533	-
23Na	0.780	3,845	4,121	6.9	3,736	3,040	21
24Mg	0.017	1,889	1,958	3.6	2,258	1,926	16
27Al	0.018	3,914	4,692	18	364	267	31
31P	47	13,343	13,228	0.9	16,395	13,823	17
39K	1.3	12,175	13,102	7.3	17,857	13,947	25
44Ca	5.9	4,875	5,914	19	2,819	2,530	11
49Ti	0.114	229	304	28	16	12	29
51V	0.031	6.5	7.8	18	0.876	0.690	24
52Cr	0.140	56	67	18	11	10	9.5
55Mn	0.005	107	108	0.9	318	244	27
57Fe	0.474	1,914	2,241	16	804	593	30
59Co	0.005	4.5	5.2	14	11	8.4	27
60Ni	0.028	94	100	6.2	22	22	0.0
63Cu	0.009	23	23	0.0	20	20	0.0
66Zn	0.286	210	220	4.7	291	226	25
75As	0.358	1.1	1.3	-	0.656	0.529	-
77Se	0.383	6.3	6.6	4.7	24	26	8.0
88Sr	0.001	10	12	18	2.9	2.9	0.0
95Mo	0.005	1.0	1.1	9.5	0.940	0.793	17
107Ag	0.001	0.217	0.195	11	0.072	0.055	27
111Cd	0.059	3.4	3.6	5.7	2.5	2.3	8.3
118Sn	0.015	0.872	1.0	14	0.323	0.223	37
121Sb	0.003	0.189	0.206	8.6	0.109	0.099	9.6
137Ba	0.001	127	149	16	18	17	5.7
202Hg	0.027	0.100	0.098	-	0.070	0.057	-
205Tl	0.001	0.074	0.088	17	0.040	0.037	7.8
208Pb	0.002	1.2	1.6	29	0.241	0.211	13
238U	0.001	0.120	0.148	21	0.101	0.100	1.0

Notes:

ppm = parts per million
 RPD = relative percent difference
 DL = detection limit
 < = less than detection limit
 % = percent

Data Quality Objectives:

Laboratory Duplicates - RPD ≤40% for all elements, except Ca and Sr, which are ≤60%
 Minimum DQOs apply to individual samples at concentrations above 10x DL

Teck Coal Limited
Tissue QA/QC Accuracy and Precision Results

Sample Group ID			01			02		
Parameter	DL (ppm)	Certified Conc. (ppm)	Mean Estimated Conc. (ppm)	Accuracy (%)	Precision RSD (%)	Mean Estimated Conc. (ppm)	Accuracy (%)	Precision RSD (%)
7Li	0.002	1.21	1.4	116	13	1.4	112	6.6
11B	0.065	4.5	5.2	115	3.2	4.8	106	1.2
23Na	0.780	14,000	14,682	105	4.3	16,243	116	5.9
24Mg	0.017	910	946	104	3.8	1,096	120	6.6
27Al	0.018	197.2	220	112	15	221	112	6.7
31P	47	8,000	8,492	106	4.2	9,229	115	6.2
39K	1.3	15,500	17,051	110	9.4	18,177	117	7.8
44Ca	5.9	2,360	2,454	104	3.2	2,618	111	6.3
49Ti	0.114	12.24	14	118	19	13	106	12
51V	0.031	1.57	1.7	107	11	1.8	112	9.5
52Cr	0.140	1.87	2.2	118	7.2	2.1	113	5.2
55Mn	0.005	3.17	3.5	110	3.7	3.9	124	7.9
57Fe	0.474	343	359	105	4.3	408	119	6.3
59Co	0.005	0.25	0.284	113	4.5	0.303	121	2.9
60Ni	0.028	1.34	1.6	116	5.7	1.6	121	6.8
63Cu	0.009	15.7	18	117	9.1	19	120	2.4
66Zn	0.286	51.6	57	110	4.6	61	119	3.2
75As	0.358	6.87	7.8	114	4.5	7.7	112	3.4
77Se	0.383	3.45	3.8	109	4.0	3.8	110	2.6
88Sr	0.001	10.1	11	107	4.6	11	113	4.8
95Mo	0.005	0.29	0.331	114	3.4	0.341	118	6.5
107Ag	0.001	0.0252	0.029	116	3.8	0.029	115	11
111Cd	0.059	0.299	0.340	114	7.3	0.349	117	11
118Sn	0.015	0.061	0.070	115	15	0.069	112	7.3
121Sb	0.003	0.011	0.014	129	10	0.012	106	9.8
137Ba	0.001	8.6	9.7	113	2.8	9.5	110	4.6
202Hg	0.027	0.412	0.468	114	9.0	0.474	115	2.6
205Tl	0.001	0.0013	-	-	-	-	-	-
208Pb	0.002	0.404	0.400	99	6.5	0.426	105	17
238U	0.001	0.05	0.051	102	2.1	0.056	112	8.3

Notes:

ppm = parts per million; % = percent; DL = detection limit; RSD = relative standard deviation

Data Quality Objectives:

Accuracy: DQO of 60 - 140% of the certified values for B, Ti, Ag, Sn, Sb, and Ba.

Accuracy: DQO of 90 - 110% of the certified values for Se.

Accuracy: DQO of 70 - 130% of the certified values for all other elements provided.

Precision: DQO of ≤20% for all elements.

DORM-4 used for all parameters except B, Ti, Sb, Ba, and Al where NIST-1566b was used.

Tl certified concentration from NIST-2976.

Accuracy and precision for Tl are not reported as the certified concentration is too close to the reportable detection limit.

Teck Coal Limited
Tissue QA/QC Accuracy and Precision Results

Parameter	DL (ppm)	Certified Conc. (ppm)	03			04		
			Mean Estimated Conc. (ppm)	Accuracy (%)	Precision RSD (%)	Mean Estimated Conc. (ppm)	Accuracy (%)	Precision RSD (%)
7Li	0.002	1.21	1.3	109	6.3	1.2	101	6.9
11B	0.065	4.5	4.8	107	2.7	4.8	107	3.9
23Na	0.780	14,000	14,567	104	3.9	14,061	100	2.8
24Mg	0.017	910	978	108	4.2	939	103	2.9
27Al	0.018	197.2	212	108	6.5	191	97	7.6
31P	47	8,000	8,304	104	4.9	8,050	101	3.2
39K	1.3	15,500	15,782	102	4.8	15,833	102	4.1
44Ca	5.9	2,360	2,453	104	4.3	2,405	102	3.3
49Ti	0.114	12.24	13	106	13	12	100	11
51V	0.031	1.57	1.7	106	17	1.5	97	5.5
52Cr	0.140	1.87	2.0	106	7.5	2.0	105	4.6
55Mn	0.005	3.17	3.4	108	5.6	3.5	110	2.4
57Fe	0.474	343	361	105	6.1	360	105	3.4
59Co	0.005	0.25	0.265	106	5.4	0.269	108	2.8
60Ni	0.028	1.34	1.5	112	4.7	1.4	104	0.0
63Cu	0.009	15.7	16	104	5.5	16	104	3.3
66Zn	0.286	51.6	53	102	2.8	54	104	3.9
75As	0.358	6.87	7.2	104	3.2	6.7	98	1.2
77Se	0.383	3.45	3.4	98	4.9	3.6	106	3.7
88Sr	0.001	10.1	10	103	5.5	11	105	5.2
95Mo	0.005	0.29	0.285	98	2.9	0.292	101	4.5
107Ag	0.001	0.0252	0.024	96	7.4	0.026	104	16
111Cd	0.059	0.299	0.304	102	8.8	0.328	110	9.3
118Sn	0.015	0.061	0.073	119	15	0.065	107	18
121Sb	0.003	0.011	0.011	98	19	0.014	126	19
137Ba	0.001	8.6	9.1	106	3.9	8.9	104	4.4
202Hg	0.027	0.412	0.422	102	4.9	0.416	101	7.6
205Tl	0.001	0.0013	-	-	-	-	-	-
208Pb	0.002	0.404	0.430	106	18	0.409	101	11
238U	0.001	0.05	0.052	104	15	0.053	107	14

Notes:

ppm = parts per million; % = percent; DL = detection limit; RSD = relative standard deviation

Data Quality Objectives:

Accuracy: DQO of 60 - 140% of the certified values for B, Ti, Ag, Sn, Sb, and Ba.

Accuracy: DQO of 90 - 110% of the certified values for Se.

Accuracy: DQO of 70 - 130% of the certified values for all other elements provided.

Precision: DQO of $\leq 20\%$ for all elements.

DORM-4 used for all parameters except B, Ti, Sb, Ba, and Al where NIST-1566b was used.

Tl certified concentration from NIST-2976.

Accuracy and precision for Tl are not reported as the certified concentration is too close to the reportable detection limit.

Teck Coal Limited
Tissue QA/QC Accuracy and Precision Results

Parameter	DL (ppm)	Certified Conc. (ppm)	05			06		
			Mean Estimated Conc. (ppm)	Accuracy (%)	Precision RSD (%)	Mean Estimated Conc. (ppm)	Accuracy (%)	Precision RSD (%)
7Li	0.002	1.21	1.3	106	6.5	1.5	124	8.2
11B	0.065	4.5	4.9	108	3.9	4.5	99	3.0
23Na	0.780	14,000	14,725	105	3.0	15,406	110	1.8
24Mg	0.017	910	960	106	6.5	1,079	119	5.1
27Al	0.018	197.2	226	115	6.7	194	98	7.5
31P	47	8,000	8,037	100	4.2	9,173	115	1.2
39K	1.3	15,500	15,811	102	2.9	17,589	114	5.1
44Ca	5.9	2,360	2,352	100	4.1	2,750	116	3.2
49Ti	0.114	12.24	14	118	10	11	89	10
51V	0.031	1.57	1.6	103	9.2	1.9	121	6.4
52Cr	0.140	1.87	2.0	107	6.1	2.2	117	3.8
55Mn	0.005	3.17	3.4	108	3.3	3.7	118	4.9
57Fe	0.474	343	357	104	5.4	407	118	4.2
59Co	0.005	0.25	0.279	112	5.2	0.293	117	3.1
60Ni	0.028	1.34	1.4	108	3.8	1.5	113	2.9
63Cu	0.009	15.7	17	108	4.2	18	116	7.2
66Zn	0.286	51.6	54	104	2.1	60	116	0.7
75As	0.358	6.87	7.1	103	2.2	7.7	113	2.7
77Se	0.383	3.45	3.7	108	3.5	3.7	108	4.1
88Sr	0.001	10.1	11	107	4.1	12	115	4.7
95Mo	0.005	0.29	0.329	114	5.5	0.344	119	5.2
107Ag	0.001	0.0252	0.025	101	5.3	0.033	132	12
111Cd	0.059	0.299	0.342	114	12	0.369	124	7.6
118Sn	0.015	0.061	0.073	119	8.8	0.073	120	12
121Sb	0.003	0.011	0.010	89	18	0.011	104	4.8
137Ba	0.001	8.6	9.2	107	2.8	8.2	96	2.8
202Hg	0.027	0.412	0.464	113	11	0.454	110	3.2
205Tl	0.001	0.0013	-	-	-	-	-	-
208Pb	0.002	0.404	0.418	104	9.9	0.509	126	17
238U	0.001	0.05	0.050	100	7.0	0.059	118	9.2

Notes:

ppm = parts per million; % = percent; DL = detection limit; RSD = relative standard deviation

Data Quality Objectives:

Accuracy: DQO of 60 - 140% of the certified values for B, Ti, Ag, Sn, Sb, and Ba.

Accuracy: DQO of 90 - 110% of the certified values for Se.

Accuracy: DQO of 70 - 130% of the certified values for all other elements provided.

Precision: DQO of ≤20% for all elements.

DORM-4 used for all parameters except B, Ti, Sb, Ba, and Al where NIST-1566b was used.

Tl certified concentration from NIST-2976.

Accuracy and precision for Tl are not reported as the certified concentration is too close to the reportable detection limit.

Teck Coal Limited
Sample Group Information

Sample Group ID	Client ID	Lab ID	Date of Analysis
01	RG_ERCKMD_INV-01_LAEMP_EVO_2022-04-26	001	05 May 2022
	RG_ERCKMD_INV-02_LAEMP_EVO_2022-04-26	002	
	RG_ERCKMD_INV-03_LAEMP_EVO_2022-04-26	003	
	RG_ERCKMD_INV-04_LAEMP_EVO_2022-04-27	004	
	RG_ERCKMD_INV-05_LAEMP_EVO_2022-04-27	005	
	RG_ERCKIG_INV-01_LAEMP_EVO_2022-04-28	006	
	RG_ERCKIG_INV-02_LAEMP_EVO_2022-04-28	007	
	RG_ERCKIG_INV-03_LAEMP_EVO_2022-04-28	008	
02	RG_ERCKBR_INV-01_LAEMP_EVO_2022-04-28	009	05 May 2022
	RG_ERCKBR_INV-02_LAEMP_EVO_2022-04-28	010	
	RG_ERCKBR_INV-03_LAEMP_EVO_2022-04-28	011	
	RG_ERCKBR_INVLUM-01_LAEMP_EVO_2022-04-28	012	
	RG_ERCKBR_INVLUM-02_LAEMP_EVO_2022-04-28	013	
	RG_ALUSM_INV-01_LAEMP_EVO_2022-04-28	014	
	RG_ALUSM_INV-02_LAEMP_EVO_2022-04-28	015	
	RG_ALUSM_INV-03_LAEMP_EVO_2022-04-28	016	
	RG_MICOMP_INV-01_LAEMP_EVO_2022-04-27	017	
03	RG_MICOMP_INV-02_LAEMP_EVO_2022-04-28	018	05 May 2022
	RG_MICOMP_INV-03_LAEMP_EVO_2022-04-28	019	
	RG_MICOMP_INV-04_LAEMP_EVO_2022-04-28	020	
	RG_MICOMP_INV-05_LAEMP_EVO_2022-04-28	021	
	RG_MIDER_INV-01_LAEMP_EVO_2022-04-25	022	
	RG_MIDER_INV-02_LAEMP_EVO_2022-04-25	023	
	RG_MIDER_INV-03_LAEMP_EVO_2022-04-25	024	
	RG_MIDBO_INV-01_LAEMP_EVO_2022-04-25	025	
	RG_MIDBO_INV-02_LAEMP_EVO_2022-04-25	026	
04	RG_MIDBO_INV-03_LAEMP_EVO_2022-04-25	027	05 May 2022
	RG_MIDGA_INV-01_LAEMP_EVO_2022-04-25	028	
	RG_MIDGA_INV-02_LAEMP_EVO_2022-04-25	029	
	RG_MIDGA_INV-03_LAEMP_EVO_2022-04-25	030	
	RG_MI3_INV-01_LAEMP_EVO_2022-04-25	031	
	RG_MI3_INV-02_LAEMP_EVO_2022-04-25	032	
	RG_MI3_INV-03_LAEMP_EVO_2022-04-25	033	
	RG_ERCKUT_INV-01_LAEMP_EVO_2022-04-26	034	
	RG_ERCKUT_INV-02_LAEMP_EVO_2022-04-26	035	
05	RG_ERCKUT_INV-03_LAEMP_EVO_2022-04-26	036	05 May 2022
	RG_ERCKUT_INV-04_LAEMP_EVO_2022-04-26	037	
	RG_ERCKUT_INV-05_LAEMP_EVO_2022-04-26	038	
	RG_ERCKDT_INV-01_LAEMP_EVO_2022-04-27	039	
	RG_ERCKDT_INV-02_LAEMP_EVO_2022-04-27	040	

Teck Coal Limited
Sample Group Information

Sample Group ID	Client ID	Lab ID	Date of Analysis
05	RG_ERCKDT_INV-03_LAEMP_EVO_2022-04-27	041	05 May 2022
	RG_ERCKDT_INV-04_LAEMP_EVO_2022-04-27	042	
	RG_ERCKDT_INV-05_LAEMP_EVO_2022-04-27	043	
06	RG_ERCKDT_INV-06_LAEMP_EVO_2022-04-27	044	05 May 2022
	RG_ERCK_INV-01_LAEMP_EVO_2022-04-28	045	
	RG_ERCK_INV-02_LAEMP_EVO_2022-04-28	046	
	RG_ERCK_INV-03_LAEMP_EVO_2022-04-28	047	
	RG_ERCKUC_INV-01_LAEMP_EVO_2022-04-28	048	
	RG_ERCKUC_INV-02_LAEMP_EVO_2022-04-28	049	
	RG_ERCKUC_INV-03_LAEMP_EVO_2022-04-28	050	

TrichAnalytics Inc.

207-1753 Sean Heights, Saanichton, BC, V8M 0B3
Ph: (250) 532-1084

Chain of Custody (COC)
for LA-ICP-MS Analysis

Invoicing

Reporting (if different from Invoicing)


Project Number: EVO LAEMP (22-12) (PO 748530)

Company Name:	Teck Coal Limited	Company Name:	Minnow Environmental
Contact Name:	Mike Pope	Contact Name:	Tyler Mehler
Address:	421 Pine Avenue	Address:	2 Lamb Street
City, Province:	Sparwood, BC	City, Province:	Georgetown, ON
Postal Code:	V0B 2G0	Postal Code:	L7G 2G7
Phone:	250-425-8202	Phone:	250-595-1627
Email:	mike.pope@teck.com	Email:	tyler.mehler@minnow.ca

Sample Analysis Requested

Sample Identification:		Sample Type:	
TRICH ID		Species	Sample type
001	1 RG_ERCKMD_INV-01_LAEMP_EVO_2022-04-26	Composite	Composite-taxa benthic invertebrate tissue samples
002	2 RG_ERCKMD_INV-02_LAEMP_EVO2022-04-26	Composite	Composite-taxa benthic invertebrate tissue samples
003	3 RG_ERCKMD_INV-03_LAEMP_EVO_2022-04-26	Composite	Composite-taxa benthic invertebrate tissue samples
004	4 RG_ERCKMD_INV-04_LAEMP_EVO_2022-04-27	Composite	Composite-taxa benthic invertebrate tissue samples
005	5 RG_ERCKMD_INV-05_LAEMP_EVO_2022-04-27	Composite	Composite-taxa benthic invertebrate tissue samples
006	6 RG_ERCKIG_INV-01_LAEMP_EVO_2022-04-28	Composite	Composite-taxa benthic invertebrate tissue samples
007	7 RG_ERCKIG_INV-02_LAEMP_EVO_2022-04-28	Composite	Composite-taxa benthic invertebrate tissue samples
008	8 RG_ERCKIG_INV-03_LAEMP_EVO_2022-04-28	Composite	Composite-taxa benthic invertebrate tissue samples
009	9 RG_ERCKBR_INV-01_LAEMP_EVO_2022-04-28	Composite	Composite-taxa benthic invertebrate tissue samples
010	10 RG_ERCKBR_INV-02_LAEMP_EVO_2022-04-28	Composite	Composite-taxa benthic invertebrate tissue samples
011	11 RG_ERCKBR_INV-03_LAEMP_EVO_2022-04-28	Composite	Composite-taxa benthic invertebrate tissue samples
012	12 RG_ERCKBR_INVLUM-01_LAEMP_EVO_2022-04-28	Annelid	Composite-taxa benthic invertebrate tissue samples
013	13 RG_ERCKBR_INVLUM-02_LAEMP_EVO_2022-04-28	Annelid	Composite-taxa benthic invertebrate tissue samples
014	14 RG_ALUSM_INV-01_LAEMP_EVO_2022-04-28	Composite	Composite-taxa benthic invertebrate tissue samples
015	15 RG_ALUSM_INV-02_LAEMP_EVO_2022-04-28	Composite	Composite-taxa benthic invertebrate tissue samples
016	16 RG_ALUSM_INV-03_LAEMP_EVO_2022-04-28	Composite	Composite-taxa benthic invertebrate tissue samples
017	17 RG_MICOMP_INV-01_LAEMP_EVO_2022-04-27	Composite	Composite-taxa benthic invertebrate tissue samples
018	18 RG_MICOMP_INV-02_LAEMP_EVO_2022-04-28	Composite	Composite-taxa benthic invertebrate tissue samples
019	19 RG_MICOMP_INV-03_LAEMP_EVO_2022-04-28	Composite	Composite-taxa benthic invertebrate tissue samples
020	20 RG_MICOMP_INV-04_LAEMP_EVO_2022-04-28	Composite	Composite-taxa benthic invertebrate tissue samples

Sample(s) Released By: Alex McClymont	Sample(s) Received By: Alex Wade
Signature:	Signature: 
Date Sent: 03-May-22	Date Received: 04 May 2022 (Project #: 2022-329)
Sample(s) Returned to Client By:	Shipping Conditions:
	Shipping Container:
Signature:	Date Sent:

TrichAnalytics Inc. 207-1753 Sean Heights, Saanichton, BC, V8M 0B3 Ph: (250) 532-1084		Chain of Custody (COC) for LA-ICP-MS Analysis	
Invoicing		Reporting (if different from Invoicing)	
Project Number: EVO LAEMP (22-12) (PO 748530)			
Company Name:	Teck Coal Limited	Company Name:	Minnow Environmental
Contact Name:	Mike Pope	Contact Name:	Tyler Mehler
Address:	421 Pine Avenue	Address:	2 Lamb Street
City, Province:	Sparwood, BC	City, Province:	Georgetown, ON
Postal Code:	V0B 2G0	Postal Code:	L7G 2G7
Phone:	250-425-8202	Phone:	250-595-1627
Email:	mike.pope@teck.com	Email:	tyler.mehler@minnow.ca
Sample Analysis Requested			
Sample Identification:		Sample Type:	
<i>TRICH ID</i>		Species	Sample type
021	1 RG_MICOMP_INV-05_LAEMP_EVO_2022-04-28	Composite	Composite-taxa benthic invertebrate tissue samples
022	2 RG_MIDER_INV-01_LAEMP_EVO_2022-04-25	Composite	Composite-taxa benthic invertebrate tissue samples
023	3 RG_MIDER_INV-02_LAEMP_EVO_2022-04-25	Composite	Composite-taxa benthic invertebrate tissue samples
024	4 RG_MIDER_INV-03_LAEMP_EVO_2022-04-25	Composite	Composite-taxa benthic invertebrate tissue samples
025	5 RG_MIDBO_INV-01_LAEMP_EVO_2022-04-25	Composite	Composite-taxa benthic invertebrate tissue samples
026	6 RG_MIDBO_INV-02_LAEMP_EVO_2022-04-25	Composite	Composite-taxa benthic invertebrate tissue samples
027	7 RG_MIDBO_INV-03_LAEMP_EVO_2022-04-25	Composite	Composite-taxa benthic invertebrate tissue samples
028	8 RG_MIDGA_INV-01_LAEMP_EVO_2022-04-25	Composite	Composite-taxa benthic invertebrate tissue samples
029	9 RG_MIDGA_INV-02_LAEMP_EVO_2022-04-25	Composite	Composite-taxa benthic invertebrate tissue samples
030	10 RG_MIDGA_INV-03_LAEMP_EVO_2022-04-25	Composite	Composite-taxa benthic invertebrate tissue samples
031	11 RG_MI3_INV-01_LAEMP_EVO_2022-04-25	Composite	Composite-taxa benthic invertebrate tissue samples
032	12 RG_MI3_INV-02_LAEMP_EVO_2022-04-25	Composite	Composite-taxa benthic invertebrate tissue samples
033	13 RG_MI3_INV-03_LAEMP_EVO_2022-04-25	Composite	Composite-taxa benthic invertebrate tissue samples
034	14 RG_ERCKUT_INV-01_LAEMP_EVO_2022-04-26	Composite	Composite-taxa benthic invertebrate tissue samples
035	15 RG_ERCKUT_INV-02_LAEMP_EVO_2022-04-26	Composite	Composite-taxa benthic invertebrate tissue samples
036	16 RG_ERCKUT_INV-03_LAEMP_EVO_2022-04-26	Composite	Composite-taxa benthic invertebrate tissue samples
037	17 RG_ERCKUT_INV-04_LAEMP_EVO_2022-04-26	Composite	Composite-taxa benthic invertebrate tissue samples
038	18 RG_ERCKUT_INV-05_LAEMP_EVO_2022-04-26	Composite	Composite-taxa benthic invertebrate tissue samples
039	19 RG_ERCKDT_INV-01_LAEMP_EVO_2022-04-27	Composite	Composite-taxa benthic invertebrate tissue samples
040	20 RG_ERCKDT_INV-02_LAEMP_EVO_2022-04-27	Composite	Composite-taxa benthic invertebrate tissue samples
Sample(s) Released By: Alex McClymont		Sample(s) Received By: <i>Alex Wade</i>	
Signature:		Signature: 	
Date Sent: 03-May-22		Date Received: <i>04 May 2022 (Project #: 2022-329)</i>	
Sample(s) Returned to Client By:		Shipping Conditions:	
		Shipping Container:	
Signature:		Date Sent:	

Invoicing	Reporting (if different from Invoicing)
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Project Number: EVO LAEMP (22-12) (PO 748530)

Company Name:	Teck Coal Limited	Company Name:	Minnow Environmental
Contact Name:	Mike Pope	Contact Name:	Tyler Mehler
Address:	421 Pine Avenue	Address:	2 Lamb Street
City, Province:	Sparwood, BC	City, Province:	Georgetown, ON
Postal Code:	V0B 2G0	Postal Code:	L7G 2G7
Phone:	250-425-8202	Phone:	250-595-1627
Email:	mike.pope@teck.com	Email:	tyler.mehler@minnow.ca

Sample Analysis Requested

		Sample Identification:	Sample Type:	
			Species	Sample type
<i>TRICH ID</i>	1	RG_ERCKDT_INV-03_LAEMP_EVO_2022-04-27	Composite	Composite-taxa benthic invertebrate tissue samples
<i>041</i>				
	2	RG_ERCKDT_INV-04_LAEMP_EVO_2022-04-27	Composite	Composite-taxa benthic invertebrate tissue samples
<i>042</i>				
	3	RG_ERCKDT_INV-05_LAEMP_EVO_2022-04-27	Composite	Composite-taxa benthic invertebrate tissue samples
<i>043</i>				
	4	RG_ERCKDT_INV-06_LAEMP_EVO_2022-04-27	Composite	Composite-taxa benthic invertebrate tissue samples
<i>044</i>				
	5	RG_ERCK_INV-01_LAEMP_EVO_2022-04-28	Composite	Composite-taxa benthic invertebrate tissue samples
<i>045</i>				
	6	RG_ERCK_INV-02_LAEMP_EVO_2022-04-28	Composite	Composite-taxa benthic invertebrate tissue samples
<i>046</i>				
	7	RG_ERCK_INV-03_LAEMP_EVO_2022-04-28	Composite	Composite-taxa benthic invertebrate tissue samples
<i>047</i>				
	8	RG_ERCKUC_INV-01_LAEMP_EVO_2022-04-28	Composite	Composite-taxa benthic invertebrate tissue samples
<i>048</i>				
	9	RG_ERCKUC_INV-02_LAEMP_EVO_2022-04-28	Composite	Composite-taxa benthic invertebrate tissue samples
<i>049</i>				
	10	RG_ERCKUC_INV-03_LAEMP_EVO_2022-04-28	Composite	Composite-taxa benthic invertebrate tissue samples
<i>050</i>				
	11			
	12			
	13			
	14			
	15			
	16			
	17			
	18			
	19			
	20			

Sample(s) Released By: Alex McClymont	Sample(s) Received By: <i>Alex Wade</i>
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Signature:	Signature:
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Date Sent: 03-May-22	Date Received: <i>04 May 2022 (Project #: 2022-329)</i>
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Sample(s) Returned to Client By:	Shipping Conditions:
	Shipping Container:

Signature:	Date Sent:
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TrichAnalytics Inc.

Tissue Microchemistry Analysis Report

Client: Mike Pope Project Manager Teck Coal Limited	Date Received: 16 May 2022
Phone: (250) 425-8449	Date of Analysis: 20 May 2022
Email: mike.pope@teck.com; jessica.ritz@teck.com; aquascilab@teck.com; tyler.mehler@minnow.ca	Final Report Date: 24 May 2022
	Project No.: 2022-333
	Method No.: MET-002.06

Client Project: EVO_LAEMP Regional Aquatic Effects (PO 818999)

Analytical Request: Composite Benthic Invertebrate Tissue Microchemistry (total metals & moisture) - 66 samples.
See chain of custody form provided for sample identification numbers.

Notes:

Analytical results are expressed in parts per million (ppm) dry weight (equivalent to mg/kg).
Samples quantified using DORM-4, NIST-1566b, and NIST-2976 certified reference standards.
Aluminum concentrations above 1,000 ppm are outside linear range of the calibration curve.
RPD values calculated according to the British Columbia Environmental Laboratory Manual (2020) criteria.
Client specific DQO for Selenium accuracy is 90-110% of the certified value; result achieved 99% (ranging from 92-105%).
The following samples were transferred directly to glass slide as a smear/blob. Sample weights were not recorded and therefore; moisture content is reported as 100.0%: Trich Sample IDs 266, 267, 268, 269, 270, 286, 287, 288, 289, 290, 306, 307, 308, 309, 310, and 316. For sample ID# 289, sample volume was very small and thin, so concentrations provided may not be accurate due to volume issues.

This report provides the analytical results only for tissue samples noted above as received from the Client.

Reviewed and Approved by Jennie Christensen, PhD, RPBio

[The analytical report shall not be reproduced except in full under the expressed written consent of TrichAnalytics Inc.]

24 May 2022

Date

TrichAnalytics Inc.
207-1753 Sean Heights
Saanichton, BC V8M 0B3
www.trichanalytics.com



CALA
Testing
Accreditation No. A4196

Teck Coal Limited
Tissue Analysis Results

			RG_ERCKMD_INV	RG_ERCKMD_INV	RG_ERCKMD_INV	RG_ERCKMD_INV	RG_ERCKMD_INV
Client ID			1_2022-05_NP	2_2022-05_NP	3_2022-05_NP	4_2022-05_NP	5_2022-05_NP
Lab ID			251	252	253	254	255
Wet Weight (g)			0.1559	0.1918	0.1634	0.2126	0.2159
Dry Weight (g)			0.0332	0.0397	0.0280	0.0437	0.0481
Moisture (%)			78.7	79.3	82.9	79.4	77.7
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.011	0.037	0.860	0.598	0.773	0.710	0.617
11B	0.071	0.237	7.9	4.5	1.1	1.9	2.1
23Na	3.4	11	3,790	2,754	3,312	3,298	2,944
24Mg	0.067	0.223	3,508	1,896	2,204	2,434	2,174
27Al	0.043	0.143	429	172	312	160	394
31P	64	213	18,440	13,782	10,946	14,531	13,421
39K	1.7	5.7	21,904	18,222	8,071	15,777	15,406
44Ca	4.1	14	7,780	2,790	4,351	4,714	4,256
49Ti	0.001	0.003	31	9.7	23	7.5	26
51V	0.044	0.147	1.5	0.535	1.1	0.523	1.4
52Cr	0.066	0.220	13	5.2	10	9.0	16
55Mn	0.007	0.023	605	538	142	316	291
57Fe	0.762	2.5	1,000	537	606	593	622
59Co	0.012	0.040	15	8.0	7.6	17	7.4
60Ni	0.001	0.003	37	14	18	19	27
63Cu	0.018	0.060	21	15	21	22	19
66Zn	0.357	1.2	419	427	213	393	273
75As	0.395	1.3	1.2	0.733	0.733	0.659	0.806
77Se	0.385	1.3	9.1	6.4	7.0	7.0	8.0
88Sr	0.001	0.003	6.6	2.9	3.9	3.9	4.0
95Mo	0.001	0.003	4.4	4.3	0.494	2.6	1.7
107Ag	0.001	0.003	0.083	0.030	0.083	0.068	0.053
111Cd	0.166	0.553	3.1	2.6	0.928	2.5	1.8
118Sn	0.041	0.137	2.0	0.432	1.2	0.838	0.395
121Sb	0.005	0.017	0.097	0.073	0.075	0.047	0.062
137Ba	0.001	0.003	48	25	13	20	26
202Hg	0.029	0.097	0.067	0.077	0.038	0.087	0.058
205Tl	0.001	0.003	0.041	0.022	0.042	0.042	0.027
208Pb	0.003	0.010	0.388	0.186	0.393	0.203	0.281
238U	0.001	0.003	0.206	0.124	0.086	0.119	0.125

Notes:

- ppm = parts per million
- DL = detection limit
- LOQ = limit of quantitation
- < = less than detection limit
- g = grams
- % = percent

Teck Coal Limited
Tissue Analysis Results

			RG_ERCKMD_INV	RG_ERCKMD_INV	RG_ERCKMD_INV	RG_ERCKMD_INV	RG_ERCKMD_INV
		Client ID	PERLO-1_2022-	PERLO-2_2022-	PERLO-3_2022-	PERLO-4_2022-	PERLO-5_2022-
		Lab ID	05_NP	05_NP	05_NP	05_NP	05_NP
		Wet Weight (g)	0.1347	0.1398	0.1326	0.1304	0.4237
		Dry Weight (g)	0.0341	0.0342	0.0282	0.0307	0.2308
		Moisture (%)	74.7	75.5	78.7	76.5	45.5
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.011	0.037	0.480	0.561	0.489	0.639	0.723
11B	0.071	0.237	1.8	0.997	0.656	0.865	1.5
23Na	3.4	11	3,584	3,518	2,369	2,927	3,781
24Mg	0.067	0.223	2,240	2,086	1,840	2,308	3,703
27Al	0.043	0.143	203	305	241	258	557
31P	64	213	11,730	10,922	10,308	12,298	18,625
39K	1.7	5.7	9,312	9,568	7,370	8,946	12,145
44Ca	4.1	14	4,444	3,722	3,734	4,124	5,995
49Ti	0.001	0.003	12	19	11	14	38
51V	0.044	0.147	0.773	0.946	0.706	1.1	1.4
52Cr	0.066	0.220	16	16	8.0	15	9.8
55Mn	0.007	0.023	80	123	79	201	145
57Fe	0.762	2.5	465	666	383	1,031	723
59Co	0.012	0.040	6.1	6.6	4.7	9.4	6.5
60Ni	0.001	0.003	26	23	14	23	15
63Cu	0.018	0.060	19	21	17	21	24
66Zn	0.357	1.2	186	137	143	165	223
75As	0.395	1.3	0.879	0.762	0.557	0.938	1.1
77Se	0.385	1.3	5.7	5.1	5.5	6.4	7.2
88Sr	0.001	0.003	3.7	3.5	3.0	4.1	5.8
95Mo	0.001	0.003	0.470	0.541	0.435	0.447	0.611
107Ag	0.001	0.003	0.060	0.064	0.053	0.083	0.083
111Cd	0.166	0.553	1.8	0.870	0.725	0.870	1.2
118Sn	0.041	0.137	0.717	0.550	0.782	0.724	0.818
121Sb	0.005	0.017	0.035	0.047	0.032	0.058	0.061
137Ba	0.001	0.003	10	14	9.6	18	24
202Hg	0.029	0.097	0.038	0.045	0.038	0.032	0.051
205Tl	0.001	0.003	0.025	0.030	0.026	0.041	0.041
208Pb	0.003	0.010	0.140	0.239	0.159	0.412	0.339
238U	0.001	0.003	0.071	0.068	0.061	0.084	0.096

Notes:

- ppm = parts per million
- DL = detection limit
- LOQ = limit of quantitation
- < = less than detection limit
- g = grams
- % = percent

Teck Coal Limited
Tissue Analysis Results

			RG_ERCKMD_INV	RG_ERCKMD_INV	RG_ERCKMD_INV	RG_ERCKMD_INV	RG_ERCKMD_INV
		Client ID	PERLO-6_2022-	PERLO-7_2022-	PERLO-8_2022-	PERLO-9_2022-	PERLO-10_2022-
		Lab ID	05_NP	05_NP	05_NP	05_NP	05_NP
		Wet Weight (g)	261	262	263	264	265
		Dry Weight (g)	0.1922	0.1575	0.1845	0.2012	0.1639
		Moisture (%)	0.0443	0.0381	0.0380	0.0457	0.0438
			77.0	75.8	79.4	77.3	73.3
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.011	0.037	0.258	0.489	0.349	0.262	0.243
11B	0.071	0.237	0.656	1.1	0.682	0.472	0.577
23Na	3.4	11	2,344	3,154	2,445	2,005	2,314
24Mg	0.067	0.223	1,025	1,025	932	839	828
27Al	0.043	0.143	89	172	73	87	119
31P	64	213	9,397	10,146	8,376	8,189	8,490
39K	1.7	5.7	7,445	9,260	6,786	6,442	5,897
44Ca	4.1	14	1,923	2,067	1,846	1,919	1,479
49Ti	0.001	0.003	4.5	9.6	3.8	5.1	5.1
51V	0.044	0.147	0.368	0.554	0.408	0.316	0.389
52Cr	0.066	0.220	6.6	10	6.2	5.8	4.6
55Mn	0.007	0.023	42	75	23	47	37
57Fe	0.762	2.5	175	383	151	226	199
59Co	0.012	0.040	2.0	4.3	1.2	2.0	1.5
60Ni	0.001	0.003	7.2	14	6.7	5.7	5.4
63Cu	0.018	0.060	12	19	16	15	16
66Zn	0.357	1.2	71	106	82	59	59
75As	0.395	1.3	<0.395	0.586	0.410	0.440	0.396
77Se	0.385	1.3	4.6	5.4	4.6	5.1	5.2
88Sr	0.001	0.003	1.5	1.6	1.4	1.4	1.1
95Mo	0.001	0.003	0.259	0.353	0.376	0.282	0.235
107Ag	0.001	0.003	0.045	0.076	0.060	0.060	0.060
111Cd	0.166	0.553	0.286	0.348	0.232	0.203	0.348
118Sn	0.041	0.137	0.355	0.362	0.194	0.214	0.194
121Sb	0.005	0.017	0.058	0.116	0.103	0.074	0.039
137Ba	0.001	0.003	3.7	8.8	3.3	4.4	5.0
202Hg	0.029	0.097	<0.029	<0.029	<0.029	<0.029	<0.029
205Tl	0.001	0.003	0.021	0.044	0.027	0.020	0.017
208Pb	0.003	0.010	0.131	0.492	0.596	0.241	0.113
238U	0.001	0.003	0.026	0.047	0.034	0.042	0.026

Notes:

- ppm = parts per million
- DL = detection limit
- LOQ = limit of quantitation
- < = less than detection limit
- g = grams
- % = percent

Teck Coal Limited
Tissue Analysis Results

			RG_ERCKMD_INV	RG_ERCKMD_INV	RG_ERCKMD_INV	RG_ERCKMD_INV	RG_ERCKMD_INV
Client ID			PERLO-11_2022-	PERLO-12_2022-	PERLO-13_2022-	PERLO-14_2022-	PERLO-15_2022-
Lab ID			05_NP	05_NP	05_NP	05_NP	05_NP
Wet Weight (g)			266	267	268	269	270
Dry Weight (g)			0.0000	0.0000	0.0000	0.0000	0.0000
Moisture (%)			0.0000	0.0000	0.0000	0.0000	0.0000
			100.0	100.0	100.0	100.0	100.0
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.011	0.037	0.979	1.8	1.0	0.812	1.8
11B	0.071	0.237	2.2	9.3	3.2	2.2	7.0
23Na	3.4	11	3,901	8,316	4,306	9,439	4,017
24Mg	0.067	0.223	3,794	9,382	3,195	4,676	7,262
27Al	0.043	0.143	598	2,003	871	1,365	2,516
31P	64	213	13,208	22,182	10,024	6,787	15,606
39K	1.7	5.7	7,763	8,512	7,331	3,462	9,113
44Ca	4.1	14	10,801	26,974	7,800	11,363	15,054
49Ti	0.001	0.003	36	120	57	54	266
51V	0.044	0.147	1.6	3.3	2.0	0.881	5.3
52Cr	0.066	0.220	1.7	1.4	2.4	0.504	2.3
55Mn	0.007	0.023	857	444	527	360	668
57Fe	0.762	2.5	1,982	1,568	2,677	417	2,735
59Co	0.012	0.040	30	24	21	14	41
60Ni	0.001	0.003	27	30	26	15	33
63Cu	0.018	0.060	24	20	18	11	46
66Zn	0.357	1.2	659	679	346	297	686
75As	0.395	1.3	3.6	64	2.4	87	3.4
77Se	0.385	1.3	12	6.9	5.7	4.3	9.8
88Sr	0.001	0.003	11	27	8.5	12	19
95Mo	0.001	0.003	0.690	0.510	0.630	0.270	0.840
107Ag	0.001	0.003	0.137	0.094	0.065	0.079	0.295
111Cd	0.166	0.553	6.8	5.8	2.4	3.4	6.5
118Sn	0.041	0.137	<0.041	0.082	0.065	0.052	0.086
121Sb	0.005	0.017	0.152	0.144	0.130	0.096	0.208
137Ba	0.001	0.003	58	137	61	110	119
202Hg	0.029	0.097	0.154	0.062	0.058	0.062	0.124
205Tl	0.001	0.003	0.065	0.073	0.060	0.034	0.119
208Pb	0.003	0.010	0.721	1.0	0.801	0.837	0.864
238U	0.001	0.003	0.204	0.358	0.162	0.145	0.342

Notes:

- ppm = parts per million
- DL = detection limit
- LOQ = limit of quantitation
- < = less than detection limit
- g = grams
- % = percent

Teck Coal Limited
Tissue Analysis Results

			RG_ERCKDT_INV-	RG_ERCKDT_INV-	RG_ERCKDT_INV-	RG_ERCKDT_INV-	RG_ERCKDT_INV-
Client ID			1_2022-05_NP	2_2022-05_NP	3_2022-05_NP	4_2022-05_NP	5_2022-05_NP
Lab ID			271	272	273	274	275
Wet Weight (g)			0.2479	0.2674	0.1485	0.2357	0.1958
Dry Weight (g)			0.0591	0.0674	0.0247	0.0475	0.0465
Moisture (%)			76.2	74.8	83.4	79.8	76.3
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.011	0.037	0.651	0.683	0.981	0.900	0.663
11B	0.071	0.237	6.7	2.8	9.9	2.6	3.2
23Na	3.4	11	3,200	3,266	4,163	4,618	3,136
24Mg	0.067	0.223	2,485	2,462	2,817	2,855	2,477
27Al	0.043	0.143	428	329	1,148	688	613
31P	64	213	13,771	13,329	11,450	11,073	11,044
39K	1.7	5.7	21,055	13,552	18,083	10,847	12,100
44Ca	4.1	14	4,135	3,389	5,352	5,402	4,877
49Ti	0.001	0.003	28	21	56	49	50
51V	0.044	0.147	1.3	0.906	3.0	2.3	1.6
52Cr	0.066	0.220	9.4	6.5	13	14	9.3
55Mn	0.007	0.023	707	360	875	299	96
57Fe	0.762	2.5	1,011	732	1,963	974	507
59Co	0.012	0.040	13	15	45	17	6.0
60Ni	0.001	0.003	20	18	55	31	18
63Cu	0.018	0.060	18	20	19	19	18
66Zn	0.357	1.2	520	407	427	185	148
75As	0.395	1.3	0.909	0.986	1.5	0.782	1.5
77Se	0.385	1.3	15	31	20	13	10
88Sr	0.001	0.003	5.0	4.5	6.1	6.5	4.1
95Mo	0.001	0.003	2.0	1.6	2.4	0.840	0.780
107Ag	0.001	0.003	0.045	0.069	0.082	0.089	0.069
111Cd	0.166	0.553	5.0	8.6	3.2	4.3	4.6
118Sn	0.041	0.137	0.430	0.570	0.739	0.608	0.578
121Sb	0.005	0.017	0.116	0.104	0.157	0.180	0.112
137Ba	0.001	0.003	48	31	104	33	25
202Hg	0.029	0.097	0.090	0.079	0.101	0.043	0.043
205Tl	0.001	0.003	0.029	0.046	0.063	0.047	0.036
208Pb	0.003	0.010	0.387	0.421	0.959	0.443	0.255
238U	0.001	0.003	0.179	0.234	0.455	0.274	0.207

Notes:

- ppm = parts per million
- DL = detection limit
- LOQ = limit of quantitation
- < = less than detection limit
- g = grams
- % = percent

Teck Coal Limited
Tissue Analysis Results

			RG_ERCKDT_INV	RG_ERCKDT_INV	RG_ERCKDT_INV	RG_ERCKDT_INV	RG_ERCKDT_INV
		Client ID	PERLO-1_2022-	PERLO-2_2022-	PERLO-3_2022-	PERLO-4_2022-	PERLO-5_2022-
		Lab ID	05_NP	05_NP	05_NP	05_NP	05_NP
		Wet Weight (g)	0.1333	0.1267	0.1729	0.1404	0.1226
		Dry Weight (g)	0.0294	0.0265	0.0351	0.0416	0.0260
		Moisture (%)	77.9	79.1	79.7	70.4	78.8
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.011	0.037	0.666	0.680	0.714	0.741	0.639
11B	0.071	0.237	1.4	2.2	1.2	1.8	1.7
23Na	3.4	11	3,086	3,382	3,410	3,713	2,219
24Mg	0.067	0.223	2,893	2,524	2,532	2,909	1,875
27Al	0.043	0.143	287	519	345	572	376
31P	64	213	12,624	10,982	10,249	13,885	9,193
39K	1.7	5.7	8,546	9,527	8,477	10,372	6,579
44Ca	4.1	14	4,035	4,772	4,017	4,155	3,168
49Ti	0.001	0.003	19	43	20	45	27
51V	0.044	0.147	0.743	1.3	0.857	1.3	1.6
52Cr	0.066	0.220	8.8	12	9.5	11	11
55Mn	0.007	0.023	62	101	96	116	60
57Fe	0.762	2.5	533	790	517	539	413
59Co	0.012	0.040	6.0	10	8.0	8.6	4.8
60Ni	0.001	0.003	12	19	17	19	16
63Cu	0.018	0.060	19	26	25	23	16
66Zn	0.357	1.2	178	217	156	227	139
75As	0.395	1.3	1.2	1.4	1.0	1.1	0.748
77Se	0.385	1.3	14	15	15	10	10
88Sr	0.001	0.003	3.3	4.9	3.6	4.0	3.1
95Mo	0.001	0.003	0.420	0.630	0.510	0.510	0.330
107Ag	0.001	0.003	0.069	0.096	0.082	0.086	0.062
111Cd	0.166	0.553	1.4	1.9	2.2	1.8	1.4
118Sn	0.041	0.137	0.680	1.1	0.473	0.127	0.744
121Sb	0.005	0.017	0.050	0.052	0.045	0.067	0.064
137Ba	0.001	0.003	11	17	11	15	11
202Hg	0.029	0.097	0.058	0.061	0.036	0.050	<0.029
205Tl	0.001	0.003	0.040	0.049	0.039	0.038	0.029
208Pb	0.003	0.010	0.186	0.289	0.156	0.217	0.236
238U	0.001	0.003	0.102	0.137	0.107	0.120	0.097

Notes:

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Teck Coal Limited
Tissue Analysis Results

			RG_ERCKDT_INV	RG_ERCKDT_INV	RG_ERCKDT_INV	RG_ERCKDT_INV	RG_ERCKDT_INV
		Client ID	PERLO-6_2022-	PERLO-7_2022-	PERLO-8_2022-	PERLO-9_2022-	PERLO-10_2022-
		Lab ID	05_NP	05_NP	05_NP	05_NP	05_NP
		Wet Weight (g)	0.2378	0.1225	0.0994	0.2256	0.1598
		Dry Weight (g)	0.0449	0.0311	0.0202	0.0400	0.0289
		Moisture (%)	81.1	74.6	79.7	82.3	81.9
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.011	0.037	0.477	0.565	0.643	0.355	0.778
11B	0.071	0.237	1.0	1.1	1.3	1.0	3.1
23Na	3.4	11	2,494	2,937	3,986	1,787	2,612
24Mg	0.067	0.223	1,172	1,224	1,436	958	1,742
27Al	0.043	0.143	188	198	185	180	174
31P	64	213	6,896	8,603	9,830	6,940	9,871
39K	1.7	5.7	5,714	8,611	9,862	5,229	7,633
44Ca	4.1	14	1,989	2,201	2,601	2,060	2,841
49Ti	0.001	0.003	10	14	13	11	19
51V	0.044	0.147	0.447	0.598	0.691	0.525	0.743
52Cr	0.066	0.220	6.0	11	9.5	7.4	12
55Mn	0.007	0.023	55	79	86	43	50
57Fe	0.762	2.5	312	445	406	247	320
59Co	0.012	0.040	3.2	5.0	5.5	3.1	3.1
60Ni	0.001	0.003	9.0	16	16	9.9	14
63Cu	0.018	0.060	15	16	17	13	17
66Zn	0.357	1.2	97	94	115	81	131
75As	0.395	1.3	0.578	0.816	1.0	0.578	0.510
77Se	0.385	1.3	14	15	14	9.0	12
88Sr	0.001	0.003	1.9	1.9	2.6	1.5	2.5
95Mo	0.001	0.003	0.330	0.420	0.510	0.270	0.360
107Ag	0.001	0.003	0.047	0.055	0.065	0.041	0.041
111Cd	0.166	0.553	0.380	0.346	0.346	0.380	0.380
118Sn	0.041	0.137	0.404	0.376	0.363	0.526	1.0
121Sb	0.005	0.017	0.064	0.058	0.057	0.045	0.063
137Ba	0.001	0.003	6.6	8.9	9.9	8.6	9.9
202Hg	0.029	0.097	<0.029	<0.029	<0.029	<0.029	<0.029
205Tl	0.001	0.003	0.046	0.045	0.060	0.025	0.042
208Pb	0.003	0.010	0.838	0.363	0.861	0.200	0.275
238U	0.001	0.003	0.057	0.062	0.078	0.058	0.067

Notes:

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Teck Coal Limited
Tissue Analysis Results

			RG_ERCKDT_INV	RG_ERCKDT_INV	RG_ERCKDT_INV	RG_ERCKDT_INV	RG_ERCKDT_INV
		Client ID	PERLO-11_2022-	PERLO-12_2022-	PERLO-13_2022-	PERLO-14_2022-	PERLO-15_2022-
		Lab ID	05_NP	05_NP	05_NP	05_NP	05_NP
		Wet Weight (g)	286	287	288	289	290
		Dry Weight (g)	0.0000	0.0000	0.0000	0.0000	0.0000
		Moisture (%)	0.0000	0.0000	0.0000	0.0000	0.0000
			100.0	100.0	100.0	100.0	100.0
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.011	0.037	3.2	4.2	4.8	1.2	2.7
11B	0.071	0.237	12	19	24	4.7	21
23Na	3.4	11	4,227	5,077	4,723	10,558	2,147
24Mg	0.067	0.223	10,028	12,940	7,025	4,613	20,707
27Al	0.043	0.143	4,951	6,937	8,830	2,133	3,911
31P	64	213	31,950	27,568	14,660	4,818	46,897
39K	1.7	5.7	11,281	14,849	12,804	4,114	9,395
44Ca	4.1	14	31,278	17,459	18,182	8,974	30,560
49Ti	0.001	0.003	389	648	826	107	260
51V	0.044	0.147	11	15	17	2.7	9.2
52Cr	0.066	0.220	3.1	3.9	5.0	0.724	2.9
55Mn	0.007	0.023	875	962	728	78	1,270
57Fe	0.762	2.5	5,836	6,678	7,463	852	2,820
59Co	0.012	0.040	55	93	50	5.2	42
60Ni	0.001	0.003	37	70	41	5.5	19
63Cu	0.018	0.060	74	51	54	8.2	61
66Zn	0.357	1.2	1,253	723	508	142	1,003
75As	0.395	1.3	6.4	8.1	6.9	94	4.0
77Se	0.385	1.3	21	17	22	3.0	14
88Sr	0.001	0.003	44	22	25	8.7	31
95Mo	0.001	0.003	1.1	1.9	1.6	0.165	1.2
107Ag	0.001	0.003	0.605	0.317	0.407	0.086	0.612
111Cd	0.166	0.553	12	6.4	7.3	1.9	9.9
118Sn	0.041	0.137	0.177	0.246	0.277	0.058	0.147
121Sb	0.005	0.017	0.497	0.632	0.517	0.146	0.369
137Ba	0.001	0.003	157	140	181	101	137
202Hg	0.029	0.097	0.201	0.093	0.131	0.039	0.154
205Tl	0.001	0.003	0.179	0.223	0.248	0.037	0.165
208Pb	0.003	0.010	2.1	2.3	2.7	0.947	1.8
238U	0.001	0.003	0.981	0.762	1.1	0.214	0.648

Notes:

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Teck Coal Limited
Tissue Analysis Results

			RG_ERCKUT_INV- 1_2022-05_NP	RG_ERCKUT_INV- 2_2022-05_NP	RG_ERCKUT_INV- 3_2022-05_NP	RG_ERCKUT_INV- 4_2022-05_NP	RG_ERCKUT_INV- 5_2022-05_NP
Client ID							
Lab ID			291	292	293	294	295
Wet Weight (g)			0.1897	0.2429	0.3004	0.3344	0.6428
Dry Weight (g)			0.0330	0.0523	0.0574	0.0598	0.1450
Moisture (%)			82.6	78.5	80.9	82.1	77.4
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.011	0.037	0.910	0.595	0.879	0.805	0.593
11B	0.071	0.237	2.1	5.5	3.8	3.0	6.3
23Na	3.4	11	5,388	2,843	3,992	4,295	3,963
24Mg	0.067	0.223	2,738	3,875	2,747	2,624	2,333
27Al	0.043	0.143	706	662	748	336	211
31P	64	213	13,877	11,628	12,152	15,533	14,866
39K	1.7	5.7	11,116	11,697	10,001	14,004	11,543
44Ca	4.1	14	5,781	6,975	3,982	5,536	6,545
49Ti	0.001	0.003	51	57	52	28	12
51V	0.044	0.147	1.7	4.3	2.2	1.3	1.4
52Cr	0.066	0.220	23	9.7	17	7.8	5.3
55Mn	0.007	0.023	22	46	14	30	15
57Fe	0.762	2.5	831	472	570	283	174
59Co	0.012	0.040	0.478	0.684	0.311	0.378	0.242
60Ni	0.001	0.003	32	19	23	12	8.7
63Cu	0.018	0.060	23	20	22	31	29
66Zn	0.357	1.2	238	225	179	317	223
75As	0.395	1.3	0.748	0.850	0.799	0.828	1.3
77Se	0.385	1.3	6.7	11	6.8	9.0	6.5
88Sr	0.001	0.003	6.6	5.9	3.5	4.0	3.5
95Mo	0.001	0.003	0.450	0.660	0.315	0.270	0.270
107Ag	0.001	0.003	0.103	0.055	0.076	0.185	0.118
111Cd	0.166	0.553	5.1	6.5	2.9	7.8	7.0
118Sn	0.041	0.137	0.702	0.702	0.692	0.993	0.304
121Sb	0.005	0.017	0.098	0.401	0.117	0.208	0.161
137Ba	0.001	0.003	41	61	17	40	13
202Hg	0.029	0.097	0.050	0.050	0.032	0.115	<0.029
205Tl	0.001	0.003	0.028	0.051	0.035	0.046	0.025
208Pb	0.003	0.010	0.506	0.544	0.228	0.325	0.163
238U	0.001	0.003	0.220	1.1	0.283	0.411	0.239

Notes:

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Teck Coal Limited
Tissue Analysis Results

			RG_ERCKUT_INV	RG_ERCKUT_INV	RG_ERCKUT_INV	RG_ERCKUT_INV	RG_ERCKUT_INV
		Client ID	PERLO-1_2022-	PERLO-2_2022-	PERLO-3_2022-	PERLO-4_2022-	PERLO-5_2022-
		Lab ID	05_NP	05_NP	05_NP	05_NP	05_NP
		Wet Weight (g)	296	297	298	299	300
		Dry Weight (g)	0.1930	0.3486	0.3228	0.1962	0.3041
		Moisture (%)	0.0344	0.0597	0.0604	0.0358	0.0530
			82.2	82.9	81.3	81.8	82.6
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.011	0.037	1.1	0.746	0.567	0.567	0.754
11B	0.071	0.237	4.0	2.3	2.1	2.9	1.7
23Na	3.4	11	5,076	3,914	3,234	3,278	2,760
24Mg	0.067	0.223	3,372	2,729	1,717	2,090	1,654
27Al	0.043	0.143	737	464	399	459	529
31P	64	213	14,621	11,727	10,231	9,901	8,067
39K	1.7	5.7	11,272	9,346	8,323	9,237	6,110
44Ca	4.1	14	6,213	4,542	3,502	3,542	3,188
49Ti	0.001	0.003	53	27	26	34	46
51V	0.044	0.147	2.1	1.3	1.0	1.5	1.3
52Cr	0.066	0.220	18	11	8.2	16	14
55Mn	0.007	0.023	15	11	8.4	10	9.2
57Fe	0.762	2.5	558	355	271	407	386
59Co	0.012	0.040	0.777	0.424	0.317	0.549	0.292
60Ni	0.001	0.003	27	17	9.3	22	16
63Cu	0.018	0.060	27	26	20	21	16
66Zn	0.357	1.2	195	164	127	140	141
75As	0.395	1.3	0.961	0.828	0.928	0.894	0.696
77Se	0.385	1.3	7.6	8.1	5.0	6.1	5.2
88Sr	0.001	0.003	5.3	3.2	2.6	2.7	2.4
95Mo	0.001	0.003	0.240	0.150	0.120	0.240	0.225
107Ag	0.001	0.003	0.126	0.101	0.076	0.105	0.059
111Cd	0.166	0.553	4.4	3.3	2.7	4.2	2.0
118Sn	0.041	0.137	1.2	0.958	0.649	0.674	0.418
121Sb	0.005	0.017	0.148	0.142	0.108	0.179	0.103
137Ba	0.001	0.003	19	10	9.0	10	11
202Hg	0.029	0.097	0.073	0.046	0.046	0.054	0.038
205Tl	0.001	0.003	0.045	0.032	0.030	0.039	0.032
208Pb	0.003	0.010	0.355	0.183	0.128	0.186	0.189
238U	0.001	0.003	0.242	0.190	0.184	0.183	0.126

Notes:

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Teck Coal Limited
Tissue Analysis Results

			RG_ERCKUT_INV PERLO-6_2022- 05_NP	RG_ERCKUT_INV PERLO-7_2022- 05_NP	RG_ERCKUT_INV PERLO-8_2022- 05_NP	RG_ERCKUT_INV PERLO-9_2022- 05_NP	RG_ERCKUT_INV PERLO-10_2022- 05_NP
	Client ID						
	Lab ID		301	302	303	304	305
	Wet Weight (g)		0.2144	0.5105	0.2421	0.2695	0.3401
	Dry Weight (g)		0.0521	0.1079	0.0498	0.0531	0.0776
	Moisture (%)		75.7	78.9	79.4	80.3	77.2
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.011	0.037	0.578	0.351	0.483	0.176	0.388
11B	0.071	0.237	1.8	1.2	2.1	0.581	0.847
23Na	3.4	11	2,887	2,519	3,135	1,349	2,582
24Mg	0.067	0.223	1,389	1,331	1,594	710	1,725
27Al	0.043	0.143	236	92	269	23	106
31P	64	213	9,402	8,835	10,536	4,576	9,930
39K	1.7	5.7	7,345	6,986	8,435	3,441	7,294
44Ca	4.1	14	2,167	2,285	2,925	1,291	2,389
49Ti	0.001	0.003	16	6.4	20	1.2	5.4
51V	0.044	0.147	0.618	0.285	0.750	0.111	0.280
52Cr	0.066	0.220	7.7	4.3	9.2	2.6	6.0
55Mn	0.007	0.023	8.0	5.7	7.8	3.4	5.5
57Fe	0.762	2.5	206	109	236	40	127
59Co	0.012	0.040	0.356	0.143	0.164	0.061	0.167
60Ni	0.001	0.003	9.5	4.4	12	1.6	6.3
63Cu	0.018	0.060	16	14	19	8.2	14
66Zn	0.357	1.2	97	80	115	55	92
75As	0.395	1.3	<0.395	0.464	0.596	<0.395	<0.395
77Se	0.385	1.3	5.5	5.5	6.1	3.5	5.7
88Sr	0.001	0.003	1.6	1.3	2.2	0.785	1.6
95Mo	0.001	0.003	0.105	0.060	0.210	0.060	0.120
107Ag	0.001	0.003	0.050	0.034	0.059	0.017	0.034
111Cd	0.166	0.553	1.1	0.470	2.0	0.181	0.452
118Sn	0.041	0.137	0.295	0.424	0.264	0.095	0.396
121Sb	0.005	0.017	0.083	0.061	0.109	0.039	0.067
137Ba	0.001	0.003	6.5	3.8	7.7	1.8	3.8
202Hg	0.029	0.097	<0.029	<0.029	<0.029	<0.029	<0.029
205Tl	0.001	0.003	0.025	0.020	0.024	0.011	0.019
208Pb	0.003	0.010	0.352	0.127	0.239	0.049	0.099
238U	0.001	0.003	0.083	0.057	0.170	0.027	0.047

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Teck Coal Limited
Tissue Analysis Results

			RG_ERCKUT_INV	RG_ERCKUT_INV	RG_ERCKUT_INV	RG_ERCKUT_INV	RG_ERCKUT_INV
Client ID			PERLO-11_2022-	PERLO-12_2022-	PERLO-13_2022-	PERLO-14_2022-	PERLO-15_2022-
Lab ID			05_NP	05_NP	05_NP	05_NP	05_NP
Wet Weight (g)			306	307	308	309	310
Dry Weight (g)			0.0000	0.0000	0.0000	0.0000	0.0000
Moisture (%)			0.0000	0.0000	0.0000	0.0000	0.0000
			100.0	100.0	100.0	100.0	100.0
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.011	0.037	2.5	2.6	2.0	2.3	2.3
11B	0.071	0.237	13	26	18	24	26
23Na	3.4	11	3,823	5,941	6,243	5,360	5,075
24Mg	0.067	0.223	5,387	8,529	5,667	7,532	11,990
27Al	0.043	0.143	4,200	4,073	2,384	2,906	3,015
31P	64	213	13,592	21,154	13,526	18,562	31,444
39K	1.7	5.7	9,180	14,795	8,949	9,916	11,983
44Ca	4.1	14	8,849	13,661	10,347	11,915	18,408
49Ti	0.001	0.003	199	328	174	206	259
51V	0.044	0.147	6.2	9.9	7.6	8.2	11
52Cr	0.066	0.220	2.5	3.4	2.1	2.6	2.7
55Mn	0.007	0.023	32	34	24	33	39
57Fe	0.762	2.5	920	1,488	972	1,168	1,234
59Co	0.012	0.040	0.759	0.882	0.598	0.751	0.751
60Ni	0.001	0.003	11	19	14	19	20
63Cu	0.018	0.060	42	74	44	78	88
66Zn	0.357	1.2	387	402	433	622	679
75As	0.395	1.3	2.7	6.5	17	7.1	6.0
77Se	0.385	1.3	10	11	7.4	11	12
88Sr	0.001	0.003	11	12	9.7	12	17
95Mo	0.001	0.003	0.450	0.540	0.420	0.510	0.570
107Ag	0.001	0.003	0.288	0.447	0.252	0.555	0.749
111Cd	0.166	0.553	11	23	15	28	37
118Sn	0.041	0.137	0.363	0.167	0.086	0.084	0.163
121Sb	0.005	0.017	0.474	0.710	0.546	0.727	0.833
137Ba	0.001	0.003	61	78	70	87	92
202Hg	0.029	0.097	0.085	0.158	0.093	0.170	0.189
205Tl	0.001	0.003	0.081	0.101	0.062	0.087	0.100
208Pb	0.003	0.010	1.3	0.895	0.664	0.783	0.747
238U	0.001	0.003	0.823	1.1	1.7	1.5	1.7

Notes:

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Teck Coal Limited
Tissue Analysis Results

			RG_ERCKUC_INV- 1_2022-05_NP	RG_ERCKUC_INV- 2_2022-05_NP	RG_ERCKUC_INV- 3_2022-05_NP	RG_ERCKUC_INV- PERLO-1_2022- 05_NP	RG_ERCKUC_INV- PERLO-2_2022- 05_NP
Client ID							
Lab ID			311	312	313	314	315
Wet Weight (g)			0.2381	0.1555	0.3878	0.1765	0.1499
Dry Weight (g)			0.0567	0.0351	0.0825	0.0486	0.0397
Moisture (%)			76.2	77.4	78.7	72.5	73.5
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.011	0.037	0.534	0.512	0.585	0.406	0.205
11B	0.071	0.237	2.2	1.9	2.0	0.926	0.596
23Na	3.4	11	2,933	3,234	3,753	3,040	1,454
24Mg	0.067	0.223	1,814	2,020	3,157	2,121	994
27Al	0.043	0.143	102	51	86	34	27
31P	64	213	11,861	12,251	16,078	12,630	7,001
39K	1.7	5.7	9,776	10,201	12,992	8,571	5,223
44Ca	4.1	14	7,913	10,243	6,269	2,984	1,705
49Ti	0.001	0.003	7.2	3.2	4.4	2.0	2.4
51V	0.044	0.147	0.372	0.195	0.349	0.137	0.114
52Cr	0.066	0.220	7.3	7.0	11	3.6	3.4
55Mn	0.007	0.023	46	60	99	40	12
57Fe	0.762	2.5	193	153	234	94	84
59Co	0.012	0.040	2.4	2.8	2.5	2.2	0.741
60Ni	0.001	0.003	14	14	19	7.0	3.3
63Cu	0.018	0.060	14	15	16	14	11
66Zn	0.357	1.2	106	98	107	110	70
75As	0.395	1.3	0.729	0.861	1.1	0.679	0.497
77Se	0.385	1.3	4.4	5.1	5.1	4.4	4.0
88Sr	0.001	0.003	6.0	9.0	4.8	2.2	1.2
95Mo	0.001	0.003	0.330	0.390	0.525	0.360	0.270
107Ag	0.001	0.003	0.084	0.097	0.067	0.042	0.042
111Cd	0.166	0.553	0.217	0.253	0.289	0.289	<0.166
118Sn	0.041	0.137	0.464	0.395	0.595	0.380	0.237
121Sb	0.005	0.017	0.064	0.047	0.058	0.037	0.033
137Ba	0.001	0.003	9.8	17	9.1	3.4	2.0
202Hg	0.029	0.097	<0.029	<0.029	<0.029	0.031	<0.029
205Tl	0.001	0.003	0.027	0.027	0.027	0.021	0.015
208Pb	0.003	0.010	0.409	0.090	0.069	0.114	0.121
238U	0.001	0.003	0.085	0.097	0.072	0.043	0.025

Notes:

- ppm = parts per million
- DL = detection limit
- LOQ = limit of quantitation
- < = less than detection limit
- g = grams
- % = percent

Teck Coal Limited
Tissue Analysis Results

Client ID	RG_ERCKUC_INV PERLO-3_2022- 05_NP
Lab ID	316
Wet Weight (g)	0.0000
Dry Weight (g)	0.0000
Moisture (%)	100.0

Parameter	DL (ppm)	LOQ (ppm)	(ppm)
7Li	0.011	0.037	0.736
11B	0.071	0.237	5.9
23Na	3.4	11	2,550
24Mg	0.067	0.223	10,471
27Al	0.043	0.143	206
31P	64	213	31,652
39K	1.7	5.7	9,239
44Ca	4.1	14	17,759
49Ti	0.001	0.003	12
51V	0.044	0.147	0.739
52Cr	0.066	0.220	1.2
55Mn	0.007	0.023	286
57Fe	0.762	2.5	394
59Co	0.012	0.040	9.5
60Ni	0.001	0.003	20
63Cu	0.018	0.060	22
66Zn	0.357	1.2	308
75As	0.395	1.3	2.8
77Se	0.385	1.3	7.6
88Sr	0.001	0.003	13
95Mo	0.001	0.003	0.660
107Ag	0.001	0.003	0.234
111Cd	0.166	0.553	1.1
118Sn	0.041	0.137	<0.041
121Sb	0.005	0.017	0.177
137Ba	0.001	0.003	24
202Hg	0.029	0.097	0.081
205Tl	0.001	0.003	0.078
208Pb	0.003	0.010	0.241
238U	0.001	0.003	0.229

Notes:

- ppm = parts per million
- DL = detection limit
- LOQ = limit of quantitation
- < = less than detection limit
- g = grams
- % = percent

Teck Coal Limited
Tissue QA/QC Relative Percent Difference Results

Client ID		RG_ERCKMD_INV-1_2022-05_NP			RG_ERCKMD_INV-5_2022-05_NP			RG_ERCKMD_INVPERLO-9_2022-05_NP		
Lab ID		251			255			264		
Parameter	DL (ppm)	Sample (ppm)	Sample Duplicate (ppm)	RPD (%)	Sample (ppm)	Sample Duplicate (ppm)	RPD (%)	Sample (ppm)	Sample Duplicate (ppm)	RPD (%)
7Li	0.011	0.860	0.878	2.1	0.617	0.601	2.6	0.262	0.293	11
11B	0.071	7.9	6.7	16	2.1	2.8	29	0.472	0.551	-
23Na	3.4	3,790	3,201	17	2,944	2,751	6.8	2,005	2,021	0.8
24Mg	0.067	3,508	3,008	15	2,174	1,879	15	839	891	6.0
27Al	0.043	540	674	22	394	293	29	87	77	12
31P	64	18,440	16,642	10	13,421	12,252	9.1	8,189	7,670	6.5
39K	1.7	21,904	18,842	15	15,406	14,360	7.0	6,442	6,180	4.2
44Ca	4.1	7,780	8,333	6.9	4,256	3,346	24	1,919	1,864	2.9
49Ti	0.001	31	44	35	26	20	26	5.1	4.5	13
51V	0.044	1.5	1.8	18	1.4	1.4	0.0	0.316	0.286	-
52Cr	0.066	13	11	17	16	21	27	5.8	5.9	1.7
55Mn	0.007	605	740	20	291	323	10	47	48	2.1
57Fe	0.762	1,000	1,422	35	622	714	14	226	215	5.0
59Co	0.012	15	14	6.9	7.4	6.8	8.5	2.0	2.2	9.5
60Ni	0.001	37	30	21	27	30	11	5.7	5.6	1.8
63Cu	0.018	21	17	21	19	15	24	15	16	6.5
66Zn	0.357	419	440	4.9	273	355	26	59	75	24
75As	0.395	1.2	1.3	-	0.806	0.615	-	0.440	0.469	-
77Se	0.385	9.1	8.9	2.2	8.0	7.1	12	5.1	5.4	5.7
88Sr	0.001	6.6	7.5	13	4.0	3.1	25	1.4	1.4	0.0
95Mo	0.001	4.4	3.6	20	1.7	2.4	34	0.282	0.353	22
107Ag	0.001	0.083	0.068	20	0.053	0.045	16	0.060	0.060	0.0
111Cd	0.166	3.1	3.2	3.2	1.8	1.9	5.4	0.203	0.261	-
118Sn	0.041	2.0	1.6	22	0.395	0.448	-	0.214	0.244	-
121Sb	0.005	0.097	0.101	4.0	0.062	0.061	1.6	0.074	0.066	11
137Ba	0.001	48	61	24	26	18	36	4.4	4.8	8.7
202Hg	0.029	0.067	0.058	-	0.058	0.077	-	<0.029	0.032	-
205Tl	0.001	0.041	0.042	2.4	0.027	0.027	0.0	0.020	0.026	26
208Pb	0.003	0.388	0.379	2.3	0.281	0.257	8.9	0.241	0.230	4.7
238U	0.001	0.206	0.234	13	0.125	0.100	22	0.042	0.043	2.4

Notes:

ppm = parts per million
 RPD = relative percent difference
 DL = detection limit
 < = less than detection limit
 % = percent

Data Quality Objectives:

Laboratory Duplicates - RPD ≤40% for all elements, except Ca and Sr, which are ≤60%
 Minimum DQOs apply to individual samples at concentrations above 10x DL

Teck Coal Limited
Tissue QA/QC Relative Percent Difference Results

Parameter	Client ID				RG_ERCKDT_INVPERLO-6_2022-			RG_ERCKUT_INV-1_2022-05_NP				
	RG_ERCKDT_INV-2_2022-05_NP				05_NP							
	Lab ID				272			281			291	
	DL (ppm)	Sample (ppm)	Sample Duplicate (ppm)	RPD (%)	Sample (ppm)	Sample Duplicate (ppm)	RPD (%)	Sample (ppm)	Sample Duplicate (ppm)	RPD (%)		
7Li	0.011	0.683	0.720	5.3	0.477	0.585	20	0.910	0.764	17		
11B	0.071	2.8	2.5	11	1.0	1.2	18	2.1	2.1	0.0		
23Na	3.4	3,266	3,451	5.5	2,494	3,260	27	5,388	4,872	10		
24Mg	0.067	2,462	2,318	6.0	1,172	1,419	19	2,738	2,584	5.8		
27Al	0.043	329	452	32	188	170	10	706	692	2.0		
31P	64	13,329	13,455	0.9	6,896	8,733	24	13,877	13,771	0.8		
39K	1.7	13,552	15,483	13	5,714	7,319	25	11,116	8,858	23		
44Ca	4.1	3,389	3,515	3.7	1,989	2,468	22	5,781	4,878	17		
49Ti	0.001	21	31	39	10	14	33	51	41	22		
51V	0.044	0.906	1.2	28	0.447	0.583	26	1.7	2.0	16		
52Cr	0.066	6.5	8.6	28	6.0	7.0	15	23	22	4.4		
55Mn	0.007	360	379	5.1	55	59	7.0	22	19	15		
57Fe	0.762	732	902	21	312	421	30	993	864	14		
59Co	0.012	15	17	13	3.2	3.4	6.1	0.478	0.427	11		
60Ni	0.001	18	22	20	9.0	10	11	32	28	13		
63Cu	0.018	20	20	0.0	15	18	18	23	23	0.0		
66Zn	0.357	407	390	4.3	97	106	8.9	238	252	5.7		
75As	0.395	0.986	0.918	-	0.578	0.918	-	0.748	0.748	-		
77Se	0.385	31	36	15	14	16	13	6.7	6.4	4.6		
88Sr	0.001	4.5	5.5	20	1.9	2.5	27	6.6	4.7	34		
95Mo	0.001	1.6	1.5	6.5	0.330	0.450	31	0.450	0.420	6.9		
107Ag	0.001	0.069	0.062	11	0.047	0.055	16	0.103	0.089	15		
111Cd	0.166	8.6	6.4	29	0.380	0.432	-	5.1	5.2	1.9		
118Sn	0.041	0.570	0.560	1.8	0.404	0.544	-	0.702	0.640	9.2		
121Sb	0.005	0.104	0.090	14	0.064	0.069	7.5	0.098	0.105	6.9		
137Ba	0.001	31	29	6.7	6.6	9.6	37	41	38	7.6		
202Hg	0.029	0.079	0.090	-	<0.029	<0.029	-	0.050	0.058	-		
205Tl	0.001	0.046	0.049	6.3	0.046	0.051	10	0.028	0.030	6.9		
208Pb	0.003	0.421	0.428	1.6	0.838	1.0	18	0.506	0.476	6.1		
238U	0.001	0.234	0.237	1.3	0.057	0.069	19	0.220	0.244	10		

Notes:

- ppm = parts per million
- RPD = relative percent difference
- DL = detection limit
- < = less than detection limit
- % = percent

Data Quality Objectives:

Laboratory Duplicates - RPD ≤40% for all elements, except Ca and Sr, which are ≤60%
Minimum DQOs apply to individual samples at concentrations above 10x DL

Teck Coal Limited
Tissue QA/QC Relative Percent Difference Results

Client ID	RG_ERCKUT_INV-4_2022-05_NP
Lab ID	294

Parameter	DL (ppm)	Sample (ppm)	Sample Duplicate (ppm)	RPD (%)
7Li	0.011	0.805	0.776	3.7
11B	0.071	3.0	2.7	11
23Na	3.4	4,295	4,036	6.2
24Mg	0.067	2,624	2,570	2.1
27Al	0.043	336	351	4.4
31P	64	15,533	13,647	13
39K	1.7	14,004	14,726	5.0
44Ca	4.1	5,536	4,494	21
49Ti	0.001	28	19	38
51V	0.044	1.3	1.5	14
52Cr	0.066	7.8	8.7	11
55Mn	0.007	30	28	6.9
57Fe	0.762	283	284	0.4
59Co	0.012	0.378	0.349	8.0
60Ni	0.001	12	14	15
63Cu	0.018	31	28	10
66Zn	0.357	317	294	7.5
75As	0.395	0.828	0.663	-
77Se	0.385	9.0	8.9	1.1
88Sr	0.001	4.0	3.6	11
95Mo	0.001	0.270	0.300	11
107Ag	0.001	0.185	0.130	35
111Cd	0.166	7.8	7.9	1.3
118Sn	0.041	0.993	0.809	20
121Sb	0.005	0.208	0.213	2.4
137Ba	0.001	40	39	2.5
202Hg	0.029	0.115	0.085	-
205Tl	0.001	0.046	0.046	0.0
208Pb	0.003	0.325	0.364	11
238U	0.001	0.411	0.427	3.8

Notes:

- ppm = parts per million
- RPD = relative percent difference
- DL = detection limit
- < = less than detection limit
- % = percent

Data Quality Objectives:

Laboratory Duplicates - RPD ≤40% for all elements, except Ca and Sr, which are ≤60%
Minimum DQOs apply to individual samples at concentrations above 10x DL

Teck Coal Limited
Tissue QA/QC Accuracy and Precision Results

Parameter	DL (ppm)	Certified Conc. (ppm)	01			02		
			Mean Estimated Conc. (ppm)	Accuracy (%)	Precision RSD (%)	Mean Estimated Conc. (ppm)	Accuracy (%)	Precision RSD (%)
7Li	0.011	1.21	1.2	98	11	1.1	94	4.8
11B	0.071	4.5	4.3	95	2.0	4.5	100	2.4
23Na	3.4	14,000	14,855	106	8.2	13,919	99	6.7
24Mg	0.067	910	952	105	7.1	879	97	13
27Al	0.043	197.2	194	99	6.3	159	81	9.2
31P	64	8,000	8,246	103	5.3	7,750	97	10
39K	1.7	15,500	16,333	105	8.5	14,416	93	2.0
44Ca	4.1	2,360	2,424	103	8.2	2,318	98	7.5
49Ti	0.001	12.24	11	90	0.0	11	86	9.0
51V	0.044	1.57	1.8	116	9.8	1.5	96	18
52Cr	0.066	1.87	2.1	110	8.1	1.9	100	6.9
55Mn	0.007	3.17	3.4	106	5.0	3.2	102	13
57Fe	0.762	343	356	104	4.0	349	102	8.9
59Co	0.012	0.25	0.272	109	4.5	0.248	99	9.5
60Ni	0.001	1.34	1.4	104	8.7	1.4	106	5.9
63Cu	0.018	15.7	17	106	5.4	16	101	8.3
66Zn	0.357	51.6	53	103	7.7	51	99	6.5
75As	0.395	6.87	7.2	105	5.6	6.6	97	3.3
77Se	0.385	3.45	3.6	105	6.0	3.4	97	5.0
88Sr	0.001	10.1	11	107	4.6	10	100	5.5
95Mo	0.001	0.29	0.249	86	14	0.297	102	10
107Ag	0.001	0.0252	0.023	91	0.0	0.024	94	15
111Cd	0.166	0.299	0.334	112	7.2	0.387	129	6.5
118Sn	0.041	0.061	0.067	110	15	0.056	91	13
121Sb	0.005	0.011	0.014	125	3.6	0.010	93	12
137Ba	0.001	8.6	7.9	92	6.2	7.5	87	5.1
202Hg	0.029	0.412	0.395	96	9.7	0.435	106	12
205Tl	0.001	0.0013	-	-	-	-	-	-
208Pb	0.003	0.404	0.508	126	13	0.457	113	11
238U	0.001	0.05	0.059	117	11	0.054	108	18

Notes:

ppm = parts per million; % = percent; DL = detection limit; RSD = relative standard deviation

Data Quality Objectives:

Accuracy: DQO of 60 - 140% of the certified values for B, Ti, Ag, Sn, Sb, and Ba.

Accuracy: DQO of 90 - 110% of the certified values for Se.

Accuracy: DQO of 70 - 130% of the certified values for all other elements provided.

Precision: DQO of ≤20% for all elements.

DORM-4 used for all parameters except B, Ti, Sb, Ba, and Al where NIST-1566b was used.

Tl certified concentration from NIST-2976.

Accuracy and precision for Tl are not reported as the certified concentration is too close to the reportable detection limit.

Teck Coal Limited
Tissue QA/QC Accuracy and Precision Results

Parameter	DL (ppm)	Certified Conc. (ppm)	03			04		
			Mean Estimated Conc. (ppm)	Accuracy (%)	Precision RSD (%)	Mean Estimated Conc. (ppm)	Accuracy (%)	Precision RSD (%)
7Li	0.011	1.21	1.2	96	7.7	1.3	106	6.5
11B	0.071	4.5	4.1	92	3.7	4.1	91	4.7
23Na	3.4	14,000	14,186	101	4.6	14,223	102	4.3
24Mg	0.067	910	856	94	3.4	959	105	8.8
27Al	0.043	197.2	185	94	8.8	186	94	7.5
31P	64	8,000	7,169	90	6.8	7,746	97	4.6
39K	1.7	15,500	14,553	94	1.7	14,962	96	3.2
44Ca	4.1	2,360	2,204	93	4.7	2,364	100	2.0
49Ti	0.001	12.24	12	100	11	11	90	19
51V	0.044	1.57	1.4	92	10	1.2	78	15
52Cr	0.066	1.87	1.8	97	4.6	1.8	96	6.8
55Mn	0.007	3.17	3.2	102	5.6	3.2	100	7.2
57Fe	0.762	343	340	99	3.6	347	101	5.9
59Co	0.012	0.25	0.249	100	6.7	0.253	101	4.3
60Ni	0.001	1.34	1.4	102	6.6	1.3	100	4.1
63Cu	0.018	15.7	16	99	5.7	17	110	4.9
66Zn	0.357	51.6	50	96	2.2	53	102	9.5
75As	0.395	6.87	6.6	96	5.1	6.6	96	6.3
77Se	0.385	3.45	3.2	92	7.3	3.5	101	6.1
88Sr	0.001	10.1	9.7	96	4.6	9.8	97	7.9
95Mo	0.001	0.29	0.291	100	8.6	0.294	101	8.5
107Ag	0.001	0.0252	0.026	102	10	0.029	114	17
111Cd	0.166	0.299	0.273	91	7.2	0.333	111	19
118Sn	0.041	0.061	0.063	103	17	0.053	86	7.0
121Sb	0.005	0.011	0.008	70	6.5	0.014	126	16
137Ba	0.001	8.6	8.2	96	5.7	6.8	79	4.8
202Hg	0.029	0.412	0.424	103	5.0	0.440	107	9.6
205Tl	0.001	0.0013	-	-	-	-	-	-
208Pb	0.003	0.404	0.359	89	16	0.285	71	20
238U	0.001	0.05	0.046	92	10	0.043	86	12

Notes:

ppm = parts per million; % = percent; DL = detection limit; RSD = relative standard deviation

Data Quality Objectives:

Accuracy: DQO of 60 - 140% of the certified values for B, Ti, Ag, Sn, Sb, and Ba.

Accuracy: DQO of 90 - 110% of the certified values for Se.

Accuracy: DQO of 70 - 130% of the certified values for all other elements provided.

Precision: DQO of ≤20% for all elements.

DORM-4 used for all parameters except B, Ti, Sb, Ba, and Al where NIST-1566b was used.

Tl certified concentration from NIST-2976.

Accuracy and precision for Tl are not reported as the certified concentration is too close to the reportable detection limit.

Teck Coal Limited
Sample Group Information

Sample Group ID	Client ID	Lab ID	Date of Analysis
01	RG_ERCKMD_INV-1_2022-05_NP	251	20 May 2022
	RG_ERCKMD_INV-2_2022-05_NP	252	
	RG_ERCKMD_INV-3_2022-05_NP	253	
	RG_ERCKMD_INV-4_2022-05_NP	254	
	RG_ERCKMD_INV-5_2022-05_NP	255	
	RG_ERCKMD_INVPERLO-1_2022-05_NP	256	
	RG_ERCKMD_INVPERLO-2_2022-05_NP	257	
	RG_ERCKMD_INVPERLO-3_2022-05_NP	258	
	RG_ERCKMD_INVPERLO-4_2022-05_NP	259	
	RG_ERCKMD_INVPERLO-5_2022-05_NP	260	
	RG_ERCKMD_INVPERLO-6_2022-05_NP	261	
	RG_ERCKMD_INVPERLO-7_2022-05_NP	262	
	RG_ERCKMD_INVPERLO-8_2022-05_NP	263	
	RG_ERCKMD_INVPERLO-9_2022-05_NP	264	
	RG_ERCKMD_INVPERLO-10_2022-05_NP	265	
	RG_ERCKDT_INV-1_2022-05_NP	271	
	02	RG_ERCKMD_INVPERLO-11_2022-05_NP	
RG_ERCKMD_INVPERLO-12_2022-05_NP		267	
RG_ERCKMD_INVPERLO-13_2022-05_NP		268	
RG_ERCKMD_INVPERLO-14_2022-05_NP		269	
RG_ERCKMD_INVPERLO-15_2022-05_NP		270	
RG_ERCKDT_INVPERLO-11_2022-05_NP		286	
RG_ERCKDT_INVPERLO-12_2022-05_NP		287	
RG_ERCKDT_INVPERLO-13_2022-05_NP		288	
RG_ERCKDT_INVPERLO-14_2022-05_NP		289	
RG_ERCKDT_INVPERLO-15_2022-05_NP		290	
RG_ERCKUT_INVPERLO-11_2022-05_NP		306	
RG_ERCKUT_INVPERLO-12_2022-05_NP		307	
RG_ERCKUT_INVPERLO-13_2022-05_NP		308	
RG_ERCKUT_INVPERLO-14_2022-05_NP		309	
RG_ERCKUT_INVPERLO-15_2022-05_NP		310	
03	RG_ERCKUC_INVPERLO-3_2022-05_NP	316	20 May 2022
	RG_ERCKDT_INV-2_2022-05_NP	272	
	RG_ERCKDT_INV-3_2022-05_NP	273	
	RG_ERCKDT_INV-4_2022-05_NP	274	
	RG_ERCKDT_INV-5_2022-05_NP	275	
	RG_ERCKDT_INVPERLO-1_2022-05_NP	276	
	RG_ERCKDT_INVPERLO-2_2022-05_NP	277	
	RG_ERCKDT_INVPERLO-3_2022-05_NP	278	
RG_ERCKDT_INVPERLO-4_2022-05_NP	279		

Teck Coal Limited
Sample Group Information

Sample Group ID	Client ID	Lab ID	Date of Analysis
03	RG_ERCKDT_INVPERLO-5_2022-05_NP	280	20 May 2022
	RG_ERCKDT_INVPERLO-6_2022-05_NP	281	
	RG_ERCKDT_INVPERLO-7_2022-05_NP	282	
	RG_ERCKDT_INVPERLO-8_2022-05_NP	283	
	RG_ERCKDT_INVPERLO-9_2022-05_NP	284	
	RG_ERCKDT_INVPERLO-10_2022-05_NP	285	
	RG_ERCKUT_INV-1_2022-05_NP	291	
	RG_ERCKUT_INV-2_2022-05_NP	292	
	RG_ERCKUT_INV-3_2022-05_NP	293	
	04	RG_ERCKUT_INV-4_2022-05_NP	
RG_ERCKUT_INV-5_2022-05_NP		295	
RG_ERCKUT_INVPERLO-1_2022-05_NP		296	
RG_ERCKUT_INVPERLO-2_2022-05_NP		297	
RG_ERCKUT_INVPERLO-3_2022-05_NP		298	
RG_ERCKUT_INVPERLO-4_2022-05_NP		299	
RG_ERCKUT_INVPERLO-5_2022-05_NP		300	
RG_ERCKUT_INVPERLO-6_2022-05_NP		301	
RG_ERCKUT_INVPERLO-7_2022-05_NP		302	
RG_ERCKUT_INVPERLO-8_2022-05_NP		303	
RG_ERCKUT_INVPERLO-9_2022-05_NP		304	
RG_ERCKUT_INVPERLO-10_2022-05_NP		305	
RG_ERCKUC_INV-1_2022-05_NP		311	
RG_ERCKUC_INV-2_2022-05_NP		312	
RG_ERCKUC_INV-3_2022-05_NP		313	
RG_ERCKUC_INVPERLO-1_2022-05_NP		314	
RG_ERCKUC_INVPERLO-2_2022-05_NP		315	

COC ID: EVO_LAEMP

TURNAROUND TIME:

RUSH:

PROJECT/CLIENT INFO

LABORATORY

OTHER INFO

Facility Name / Job#	Regional Aquatic Effects	Lab Name	TrichAnalytics Inc	Report Format / Distribution	Excel	PDF	EDD
Project Manager	Mike Pope	Lab Contact	Jennie Christensen	Email 1:	mike.pope@teck.com	X	X
Email	giovanna.diaz@teck.com	Email	jennie.christensen@trichanalytics	Email 2:	jessica.Ritz@teck.com	X	X
Address	421 Pine Ave	Address	207-1753 Sean Heights	Email 3:	teckcan@equisonline.com	X	X
City	Sparwood	City	Saanichton	Email 4:	AquaSciLab@teck.com	X	X
Postal Code	V0B 2G0	Postal Code	V8M 0B3	Email 5:	Tyler.Mehler@minnow.ca	X	X
Country	Canada	Country	Canada	PO number	818999		
Phone Number	250-425-8449	Phone Number					

SAMPLE DETAILS

ANALYSIS REQUESTED

Ember - E Field To Lab, FT, Pdd & Lab, N, Non

Teck ID	Sample ID	Sample Location (sys_loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	Species	Sample Type	ANALYSIS REQUESTED			
									ANALYSIS	PRESERV.	FB.	
251	RG_ERCKMID_INV-1_2022-05_NP ✓	RG_ERCKMID	TA	N	13-May-22 ✓	9:30	BIT	Composite	Number of Containers	X	X	X
252	RG_ERCKMID_INV-2_2022-05_NP ✓	RG_ERCKMID	TA	N	13-May-22 ✓	9:35	BIT	Composite	Metals in Biota by CRC ICPMS (wet and dry)	X	X	X
253	RG_ERCKMID_INV-3_2022-05_NP ✓	RG_ERCKMID	TA	N	13-May-22 ✓	9:40	BIT	Composite	Mercury in Biota by CVAAS (wet, dry & routine)	X	X	X
254	RG_ERCKMID_INV-4_2022-05_NP ✓	RG_ERCKMID	TA	N	13-May-22 ✓	9:45	BIT	Composite	Moisture Content by Gravimetry	X	X	X
255	RG_ERCKMID_INV-5_2022-05_NP ✓	RG_ERCKMID	TA	N	13-May-22 ✓	9:50	BIT	Composite		X	X	X
256	RG_ERCKMID_INVERLO-1_2022-05_NP ✓	RG_ERCKMID	TA	N	13-May-22 ✓	9:55	BIT	Peltoperidita ^e		X	X	X
257	RG_ERCKMID_INVERLO-2_2022-05_NP ✓	RG_ERCKMID	TA	N	13-May-22 ✓	10:00	BIT	Peltoperidita ^e		X	X	X
258	RG_ERCKMID_INVERLO-3_2022-05_NP ✓	RG_ERCKMID	TA	N	13-May-22 ✓	10:05	BIT	Peltoperidita ^e		X	X	X
259	RG_ERCKMID_INVERLO-4_2022-05_NP ✓	RG_ERCKMID	TA	N	13-May-22 ✓	10:10	BIT	Peltoperidita ^e		X	X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS

RELINQUISHED BY/AFFILIATION

DATE/TIME

ACCEPTED BY/AFFILIATION

DATE/TIME

PO 818999	Robyn Vallean	May 15, 2022	
Regular (default)	Sampler's Name	Robyn Vallean	Mobile #
Priority (2-3 business days) - 50% surcharge	Sampler's Signature		416-970-7535
Emergency (1 Business Day) - 100% surcharge			
For Emergency <1 Day, ASAP or Weekend			

Page 1 of 8

Received by: Alex Wade



Project #: 2022-333

PROJECT/CLIENT INFO		EVO_LAEMP		TURNAROUND TIME:		LABORATORY		OTHER INFO	
Facility Name / Job#: Regional Aquatic Effects		COC ID:		RUSH:		Lab Name: Trehanalytics Inc.		Report Format / Distribution	
Project Manager: Mike Pope		EVO_LAEMP				Lab Contact: Jennie Christensen		Email 1: mike.pope@teck.com	
Email: giovanna.diaz@teck.com						Email: jennie.christensen@trehanalytics		Email 2: jessica.ritz@teck.com	
Address: 421 Pine Ave						Address: 207-1753 Sean Heights		Email 3: teckcoal@equisonline.com	
City: Sparwood						City: Saanichon		Email 4: Aquasclab@teck.com	
Postal Code: V0B 2G0						Postal Code: V8M 0B3		Email 5: Tyler.Mehler@minnow.ca	
Province: BC						Country: Canada		X	
Country: Canada						Phone Number		818999	
Phone Number: 250-425-8449						City: Sparwood		Excel	
						Postal Code: V0B 2G0		PDF	
						Country: Canada		EDD	
						Phone Number			
						PO number			
						818999			
						Evoanal - F: Field, L: Lab, R: Field & Lab, N: None			
SAMPLE DETAILS									
Sample ID	Sample Location (sys_loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	Species	Sample Type	ANALYSIS REQUESTED	
260	RG_ERCKMID_INVERLO-5_2022-05_NP	TA	N	13-May-22	10:15	BIT	Peltoperidida e	ANALYSIS	
261	RG_ERCKMID_INVERLO-6_2022-05_NP	TA	N	13-May-22	10:20	BIT	Petropertnari e-without	PRESERV.	
262	RG_ERCKMID_INVERLO-7_2022-05_NP	TA	N	13-May-22	10:35	BIT	Petropertnari e-without	Filt.	
263	RG_ERCKMID_INVERLO-8_2022-05_NP	TA	N	13-May-22	10:30	BIT	Petropertnari e-without	Number of Containers	
264	RG_ERCKMID_INVERLO-9_2022-05_NP	TA	N	13-May-22	10:35	BIT	Petropertnari e-without	Metals in Biota by CRC ICPMS (wet and dry)	
265	RG_ERCKMID_INVERLO-10_2022-05_NP	TA	N	13-May-22	10:40	BIT	Petropertnari e-without	Mercury in Biota by CVAAS (wet, dry & routine)	
266	RG_ERCKMID_INVERLO-11_2022-05_NP	TA	N	13-May-22	10:45	BIT	Pettoperidida e-Just gus	Moisture Content by Gravimetry	
267	RG_ERCKMID_INVERLO-12_2022-05_NP	TA	N	13-May-22	10:50	BIT	Pettoperidida e-Just gus		
268	RG_ERCKMID_INVERLO-13_2022-05_NP	TA	N	13-May-22	10:55	BIT	Pettoperidida e-Just gus		
ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS									
PO 818999									
RELINQUISHED BY/AFFILIATION									
Robin Vallean									
DATE/TIME									
May 15, 2022									
ACCEPTED BY/AFFILIATION									
Robin Vallean									
DATE/TIME									
May 15, 2022									
SERVICE REQUEST (cash - subject to availability)									
Regular (default) X									
Priority (2-3 business days) - 50% surcharge									
Emergency (1 Business Day) - 100% surcharge									
For Emergency <1 Day, ASAP or Weekend									
Sampler's Name		Robin Vallean		Mobile #		416-970-7535			
Sampler's Signature				Date/Time		May 15, 2022			

Page 2 of 8

Received by: Alex Wade



Project #: 2022-333

COC ID: EVO_LAEMP

TURNAROUND TIME:

RUSH:

PROJECT/CLIENT INFO

LABORATORY

OTHER INFO

Facility Name / Job#: Regional Aquatic Effects
 Project Manager: Mike Pope
 Email: giovanna.diaz@teck.com
 Address: 421 Pine Ave

City: Sparwood
 Postal Code: V0B 2G0
 Province: BC
 Country: Canada

Lab Name: TrichAnalytics Inc.
 Lab Contact: Jemie Christensen
 Email: jemie.christensen@trichanalytics.com
 Address: 207-1753 Sean Heights

Report Format / Distribution:
 Email 1: mike.pope@teck.com X X X
 Email 2: jessica.ritz@teck.com X X X
 Email 3: teckcan@equisonline.com X X X
 Email 4: Aquasclab@teck.com X X X
 Email 5: Tyler.Mehler@minnow.ca X X X

SAMPLE DETAILS

ANALYSIS REQUESTED

818999

PO number

Sample ID	Sample Location (sys_loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	Species	Sample Type	ANALYSIS REQUESTED			
								ANALYSIS	PRESERV.	File	
264	RG_ERCKMD_INVPERLO-14_2022-05_NP	RG_ERCKMD	N	13-May-22	9:30	BIT	Peltoperidid ^e	1	X	X	X
270	RG_ERCKMD_INVPERLO-15_2022-05_NP	RG_ERCKMD	N	13-May-22	9:35	BIT	Peltoperidid ^e	1	X	X	X
271	RG_ERCKDT_INV-1_2022-05_NP	RG_ERCKDT	N	12-May-22	14:30	BIT	Composite	1	X	X	X
272	RG_ERCKDT_INV-2_2022-05_NP	RG_ERCKDT	N	12-May-22	14:35	BIT	Composite	1	X	X	X
273	RG_ERCKDT_INV-3_2022-05_NP	RG_ERCKDT	N	12-May-22	14:40	BIT	Composite	1	X	X	X
274	RG_ERCKDT_INV-4_2022-05_NP	RG_ERCKDT	N	12-May-22	14:50	BIT	Composite	1	X	X	X
275	RG_ERCKDT_INV-5_2022-05_NP	RG_ERCKDT	N	12-May-22	14:55	BIT	Composite	1	X	X	X
276	RG_ERCKDT_INVPERLO-1_2022-05_NP	RG_ERCKDT	N	12-May-22	15:00	BIT	Peltoperidid ^e	1	X	X	X
277	RG_ERCKDT_INVPERLO-2_2022-05_NP	RG_ERCKDT	N	12-May-22	15:05	BIT	Peltoperidid ^e	1	X	X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS
 PO 818999

RELINQUISHED BY/AFFILIATION
 Robin Vallean

DATE/TIME
 May 15, 2022

ACCEPTED BY/AFFILIATION

DATE/TIME

SERVICE REQUEST (rush - subject to availability)

Regular (default)

Priority (2-3 business days) - 50% surcharge

Emergency (1 Business Day) - 100% surcharge X

For Emergency <1 Day, ASAP or Weekend

Sampler's Name
 Robin Vallean

Sampler's Signature

Mobile #

416-970-7535

Date/Time

May 15, 2022



COC ID: EVO_LAEMP

TURNAROUND TIME:

RUSH:

PROJECT/CLIENT INFO		LABORATORY		OTHER INFO		
Facility Name / Job#	Regional Aquatic Effects	Lab Name	TrichAnalytics Inc	Report Format / Distribution	Excel	PDF
Project Manager	Mike Pope	Lab Contact	Jennie Christensen	Email 1:	mike.pope@teck.com	X
Email	giovanna.diaz@teck.com	Email	jennie.christensen@trichanalytics	Email 2:	jessica.ritz@teck.com	X
Address	421 Pine Ave	Address	207-1753 Sean Heights	Email 3:	teckcon@equisonline.com	X
City	Sparwood	City	Samichon	Email 4:	AquasLab@teck.com	X
Postal Code	V0B 2G0	Postal Code	V8M 0B3	Email 5:	Tyler.Mehler@minnow.ca	X
Country	Canada	Country	Canada			
Phone Number	250-425-8449	Phone Number		PO number	818999	

CVA ID	Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	Species	Sample Type	ANALYSIS REQUESTED			DATE/TIME	
									ANALYSIS	PRESERV.	File		
278	RG_ERCKDT_INVPERLO-3_2022-05_NP ✓	RG_ERCKDT	TA	N	12-May-22 ✓	15:10	BIT	Peltoperthida ^e	1	X	X	X	May 15, 2022
274	RG_ERCKDT_INVPERLO-4_2022-05_NP ✓	RG_ERCKDT	TA	N	12-May-22 ✓	15:15	BIT	Peltoperthida ^e	1	X	X	X	
280	RG_ERCKDT_INVPERLO-5_2022-05_NP ✓	RG_ERCKDT	TA	N	12-May-22 ✓	15:30	BIT	Peltoperthida ^e	1	X	X	X	
281	RG_ERCKDT_INVPERLO-6_2022-05_NP ✓	RG_ERCKDT	TA	N	12-May-22 ✓	15:25	BIT	Peltoperthida ^e	1	X	X	X	
282	RG_ERCKDT_INVPERLO-7_2022-05_NP ✓	RG_ERCKDT	TA	N	12-May-22 ✓	15:30	BIT	Peltoperthida ^e	1	X	X	X	
283	RG_ERCKDT_INVPERLO-8_2022-05_NP ✓	RG_ERCKDT	TA	N	12-May-22 ✓	15:35	BIT	Peltoperthida ^e	1	X	X	X	
284	RG_ERCKDT_INVPERLO-9_2022-05_NP ✓	RG_ERCKDT	TA	N	12-May-22 ✓	15:40	BIT	Peltoperthida ^e	1	X	X	X	
285	RG_ERCKDT_INVPERLO-10_2022-05_NP ✓	RG_ERCKDT	TA	N	12-May-22 ✓	15:45	BIT	Peltoperthida ^e	1	X	X	X	
286	RG_ERCKDT_INVPERLO-11_2022-05_NP ✓	RG_ERCKDT	TA	N	12-May-22 ✓	15:50	BIT	Peltoperthida ^e	1	X	X	X	

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS		RELINQUISHED BY/AFFILIATION		DATE/TIME	
PO 818999		Robin Vallau		May 15, 2022	

SERVICE REQUEST (rush - subject to availability)			
Regular (default)	Sampler's Name	Robin Vallau	Mobile #
Priority (2-3 business days) - 50% surcharge	Sampler's Signature		Date/Time
Emergency (1 Business Day) - 100% surcharge			
For Emergency <1 Day, ASAP or Weekend			

Page 4 of 8

Received by: Alex Wade

Project #: 2022-333

COC ID: EVO_LAEMP

TURNAROUND TIME:

RUSH:

PROJECT/CLIENT INFO

LABORATORY

OTHER INFO

Facility Name / Job#: Regional Aquatic Effects
 Project Manager: Mike Pope
 Email: giovanna.diaz@teck.com
 Address: 421 Pine Ave
 City: Sparwood
 Postal Code: V0B 2G0
 Phone Number: 250-425-8449

Province: BC
 Country: Canada

Lab Name: TrichAnalytics Inc.
 Lab Contact: Jennie Christensen
 Email: jennie.christensen@trichanalytics.com
 Address: 207-1753 Sean Heights
 City: Saanichon
 Postal Code: V8M 0B3
 Province: BC
 Country: Canada

Report Format / Distribution	Excel	PDF	EDD
Email 1: mike.pope@teck.com	X	X	X
Email 2: jessica.rite@teck.com	X	X	X
Email 3: teccol@equisonline.com	X	X	X
Email 4: AquasLab@teck.com	X	X	X
Email 5: Tyler.Maher@minnow.ca	X	X	X

SAMPLE DETAILS

ANALYSIS REQUESTED

818999

818999

Sample ID

Sample Location (sys loc code)

Field Matrix

Hazardous Material (Yes/No)

Date

Time (24hr)

Species

Sample Type

	ANALYSIS	PRESERV.	File
Number of Containers	X		
Metals in Biota by CRC ICPMS (wet and dry)	X		
Mercury in Biota by CVAAS (wet, dry & routine)	X		
Moisture Content by Gravimetry	X		

294	RG_ERCKDT_INVPERLO-12_2022-05_NP/	RG_ERCKDT	TA	N	12-May-22/	15:55	BIT	Petoperlide ^a	1	X	X	X
298	RG_ERCKDT_INVPERLO-13_2022-05_NP/	RG_ERCKDT	TA	N	12-May-22/	16:00	BIT	Petoperlide ^a	1	X	X	X
299	RG_ERCKDT_INVPERLO-14_2022-05_NP/	RG_ERCKDT	TA	N	12-May-22/	16:05	BIT	Petoperlide ^a	1	X	X	X
290	RG_ERCKDT_INVPERLO-15_2022-05_NP/	RG_ERCKDT	TA	N	12-May-22/	16:10	BIT	Petoperlide ^a	1	X	X	X
291	RG_ERCKUT_INV-1_2022-05_NP/	RG_ERCKUT	TA	N	12-May-22/	16:30	BIT	Composite	1	X	X	X
292	RG_ERCKUT_INV-2_2022-05_NP/	RG_ERCKUT	TA	N	12-May-22/	16:35	BIT	Composite	1	X	X	X
293	RG_ERCKUT_INV-3_2022-05_NP/	RG_ERCKUT	TA	N	12-May-22/	16:40	BIT	Composite	1	X	X	X
294	RG_ERCKUT_INV-4_2022-05_NP/	RG_ERCKUT	TA	N	12-May-22/	16:45	BIT	Composite	1	X	X	X
295	RG_ERCKUT_INV-5_2022-05_NP/	RG_ERCKUT	TA	N	12-May-22/	16:50	BIT	Composite	1	X	X	X

PO 818999

Robyn Vallean

DATE/TIME

ACCEPTED BY/AFFILIATION

DATE/TIME

SERVICE REQUEST (rush - subject to availability)

Regular (default)
 Priority (2-3 business days) - 50% surcharge
 Emergency (1 Business Day) - 100% surcharge X
 For Emergency <1 Day, ASAP or Weekend

Sampler's Name
 Sampler's Signature

Robyn Vallean

DATE/TIME

Mobile #
 Date/Time

416-970-7535
 May 15, 2022

Page 5 of 8

Received by: Alex Uebde



7 May 2022

Project #: 2022-333

COC ID: EVO_LAEMP

TURNAROUND TIME:

RUSH:

PROJECT/CLIENT INFO

LABORATORY

OTHER INFO

Facility Name / Job#: Regional Aquatic Effects
 Project Manager: Mike Pope
 Email: giovanna.diaz@teck.com
 Address: 421 Pine Ave
 City: Sparwood
 Postal Code: V0B 2G0
 Phone Number: 250-425-8449

Lab Name: TrichAnalytics Inc.
 Lab Contact: Jamie Christensen
 Email: jemie.christensen@trichanalytics.com
 Address: 207-1753 Sean Heights
 City: Saanichon
 Postal Code: V8M 0B3
 Province: BC
 Country: Canada
 Phone Number:

Report Format / Distribution	Excel	PDF	EDD
Email 1: mike.pope@teck.com	X	X	X
Email 2: jessica.Ritz@teck.com	X	X	X
Email 3: teckca@equisonline.com	X	X	X
Email 4: AquasLab@teck.com	X	X	X
Email 5: Tyler.Mehner@mimnow.ca	X	X	X

SAMPLE DETAILS

ANALYSIS REQUESTED

818999
 Filtered: P Field, LK Field, EA Field & Lab. N: Non

Veh ID	Sample ID	Sample Location (sys_loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	Species	Sample Type	ANALYSIS			PRESERV.	File
									Number of Containers	Metals in Biota by CRC ICPMS (wet and dry)	Mercury in Biota by CVAAS (wet, dry & routine)		
291	RG_ERCKUT_INVPERLO-1_2022-05_NP/	RG_ERCKUT	TA	N	12-May-22/	10:55	BIT	Peltoperlida ^e	1	X	X	X	
293	RG_ERCKUT_INVPERLO-2_2022-05_NP/	RG_ERCKUT	TA	N	12-May-22/	11:00	BIT	Peltoperlida ^e	1	X	X	X	
296	RG_ERCKUT_INVPERLO-3_2022-05_NP/	RG_ERCKUT	TA	N	12-May-22/	11:05	BIT	Peltoperlida ^e	1	X	X	X	
299	RG_ERCKUT_INVPERLO-4_2022-05_NP/	RG_ERCKUT	TA	N	12-May-22/	11:10	BIT	Peltoperlida ^e	1	X	X	X	
300	RG_ERCKUT_INVPERLO-5_2022-05_NP/	RG_ERCKUT	TA	N	12-May-22/	11:15	BIT	Peltoperlida ^e	1	X	X	X	
301	RG_ERCKUT_INVPERLO-6_2022-05_NP/	RG_ERCKUT	TA	N	12-May-22/	11:20	BIT	Peltoperlida ^e	1	X	X	X	
302	RG_ERCKUT_INVPERLO-7_2022-05_NP/	RG_ERCKUT	TA	N	12-May-22/	11:25	BIT	Peltoperlida ^e	1	X	X	X	
303	RG_ERCKUT_INVPERLO-8_2022-05_NP/	RG_ERCKUT	TA	N	12-May-22/	11:30	BIT	Peltoperlida ^e	1	X	X	X	
304	RG_ERCKUT_INVPERLO-9_2022-05_NP/	RG_ERCKUT	TA	N	12-May-22/	11:35	BIT	Peltoperlida ^e	1	X	X	X	

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS
 PO 818999

RELINQUISHED BY/AFFILIATION
 Robin Vallean

DATE/TIME
 May 15, 2022

ACCEPTED BY/AFFILIATION

DATE/TIME

SERVICE REQUEST (rush - subject to availability)

Regular (default)
 Priority (2-3 business days) - 50% surcharge
 Emergency (1 Business Day) - 100% surcharge
 For Emergency <1 Day, ASAP or Weekend

Sampler's Name
 Sampler's Signature

Robin Vallean

Mobile #

416-970-7535

Date/Time

May 15, 2022

Page 6 of 8

Received by: Alex Wade



17 May 2022

Project #: 2022-333

PROJECT/CLIENT INFO		EVO_LAEMP		TURNAROUND TIME:		LABORATORY		OTHER INFO	
Facility Name / Job#	Regional Aquatic Effects	Lab Name	TrichAnalytics Inc	Report Format / Distribution	Excel	PDF	EDD		
Project Manager	Mike Pope	Lab Contact	Jennie Christensen	Email 1:	mike.pope@teck.com	X	Y	X	
Email	giovanna.diaz@teck.com	Email	jennie.christensen@trichanalytics	Email 2:	jessica.ritz@teck.com	X	X	X	
Address	421 Pine Ave	Address	207-1753 Sean Heights	Email 3:	teckcan@equisonline.com	X	X	X	
City	Sparwood	City	Stamichon	Email 4:	AquasLab@teck.com	X	X	X	
Postal Code	V0B 2G0	Postal Code	V8M 0B3	Email 5:	Tyler.Mehler@minnow.ca	X	Y	X	
Phone Number	250-425-8449	Phone Number		PO number	818999				
SAMPLE DETAILS									
Sample ID	Sample Location (sys_loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	Species	Sample Type	ANALYSIS REQUESTED	DATE/TIME
305	RG_ERCKUT_INVPERLO-10_2022-05_NP /	RG_ERCKUT	N	12-May-22 /	11:40	BIT	peltoperitidae	ANALYSIS Number of Containers Metals in Biota by CRC ICPMS (wet and dry) Mercury in Biota by CVAAS (wet, dry & routine) Moisture Content by Gravimetry	May 15, 2022
306	RG_ERCKUT_INVPERLO-11_2022-05_NP /	RG_ERCKUT	N	12-May-22 /	11:45	BIT	peltoperitidae		
307	RG_ERCKUT_INVPERLO-12_2022-05_NP /	RG_ERCKUT	N	12-May-22 /	11:50	BIT	peltoperitidae		
308	RG_ERCKUT_INVPERLO-13_2022-05_NP /	RG_ERCKUT	N	12-May-22 /	11:55	BIT	peltoperitidae		
309	RG_ERCKUT_INVPERLO-14_2022-05_NP /	RG_ERCKUT	N	12-May-22 /	12:00	HIT	peltoperitidae		
310	RG_ERCKUT_INVPERLO-15_2022-05_NP /	RG_ERCKUT	N	12-May-22 /	12:05	BIT	peltoperitidae		
311	RG_ERCKUT_INV-1_2022-05_NP /	RG_ERCKUT	N	13-May-22 /	13:30	BIT	composite		
312	RG_ERCKUT_INV-2_2022-05_NP /	RG_ERCKUT	N	13-May-22 /	13:35	BIT	composite		
313	RG_ERCKUT_INV-3_2022-05_NP /	RG_ERCKUT	N	13-May-22 /	13:40	BIT	composite		
ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS									
PO 818999									
RELINQUISHED BY/AFFILIATION									
Robin Vallean									
DATE/TIME									
May 15, 2022									
ACCEPTED BY/AFFILIATION									
Robin Vallean									
DATE/TIME									
May 15, 2022									
SERVICE REQUEST (must - subject to availability)									
Regular (default)					Sampler's Name				
Priority (2-3 business days) - 50% surcharge					Robin Vallean				
Emergency (1 Business Day) - 100% surcharge					Sampler's Signature				
For Emergency <1 Day, ASAP or Weekend					Date/Time				
					Mobile #				
					416-970-7535				
					Date/Time				
					May 15, 2022				

Page 7 of 8

Received by: Alex Wade



Project #: 2022-333

May 15, 2022

COC ID: EVO_LAEMP

TURNAROUND TIME:

RUSH:

PROJECT/CLIENT INFO

Facility Name / Job#: Regional Aquatic Effects

Project Manager: Mike Pope

Email: giovanna.diaz@teck.com

Address: 421 Pine Ave

City:

Postal Code:

Phone Number: 250-425-8449

Province: Sparwood

Country: V0B 2G0

LABORATORY

Lab Name: TechAnalytics Inc

Lab Contact: Jennie Christensen

Email: jennie.christensen@trichanalytics

Address: 207-1753 Sean Heights

City:

Postal Code: V8M 0B3

Phone Number:

Province: Samichon

Country: BC

OTHER INFO

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Email 5: Tyler.Mehler@minnow.ca

Excel

PDF

EDD

PO number: 818999

Forward - PE Field, FS Lab, EL, PSEA & Lab N: Non

Sample ID

Sample ID	Sample Location (sys_loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	Species	Sample Type	ANALYSIS REQUESTED			
								ANALYSIS	PRESERV.	FILE	
314	RG_ERCKUC_INVERLO-1_2022-05_NP ✓	RG_ERCKUC	N	13-May-22 ✓	13:45	BIT	peltoperidiae	1	X	X	X
315	RG_ERCKUC_INVERLO-2_2022-05_NP ✓	RG_ERCKUC	N	13-May-22 ✓	13:50	BIT	peltoperidiae	1	X	X	X
316	RG_ERCKUC_INVERLO-3_2022-05_NP ✓	RG_ERCKUC	N	13-May-22 ✓	13:55	BIT	peltoperidiae	1	X	X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS

PO 818999

RELINQUISHED BY/AFFILIATION

Robin Vallean

DATE/TIME

May 15, 2022

ACCEPTED BY/AFFILIATION

Robin Vallean

DATE/TIME

May 15, 2022

SERVICE REQUEST (rush - subject to availability)

Regular (default)

Priority (2-3 business days) - 50% surcharge

Emergency (1 Business Day) - 100% surcharge

For Emergency <1 Day, ASAP or Weekend

Sampler's Name

Robin Vallean

Mobile #

416-970-7535

Sampler's Signature

Date/Time

May 15, 2022

Received by: Alex Wade



Project #: 2022-333

17 May 2022



TrichAnalytics Inc.

Tissue Microchemistry Analysis Report

Client: Mike Pope Project Manager Teck Coal Limited	Date Received: 14 Jun 2022
Phone: (250)-425-8449	Date of Analysis: 20 Jun 2022
Email: mike.pope@teck.com; jessica.ritz@teck.com; teckcoal@equisonline.com; aquascilab@teck.com; tyler.mehler@minnow.ca	Final Report Date: 21 Jun 2022
	Project No.: 2022-344
	Method No.: MET-002.06

Client Project: EVO_LAEMP Regional Aquatic Effects

Analytical Request: Composite Benthic Invertebrate Tissue Microchemistry (total metals & moisture) - 60 samples.
See chain of custody form provided for sample identification numbers.

Notes:

Analytical results are expressed in parts per million (ppm) dry weight (equivalent to mg/kg).
Samples quantified using DORM-4, NIST-1566b, and NIST-2976 certified reference standards.
Aluminum concentrations above 1,000 ppm are outside linear range of the calibration curve.
RPD values calculated according to the British Columbia Environmental Laboratory Manual (2020) criteria.
Client specific DQO for Selenium accuracy is 90-110% of the certified value; result achieved 101% (ranging from 94-108%).

This report provides the analytical results only for tissue samples noted above as received from the Client.

Reviewed and Approved by Jennie Christensen, PhD, RPBio

21 Jun 2022

Date

[The analytical report shall not be reproduced except in full under the expressed written consent of TrichAnalytics Inc.]

TrichAnalytics Inc.
207-1753 Sean Heights
Saanichton, BC V8M 0B3
www.trichanalytics.com



CALA
Testing
Accreditation No. A4196

Teck Coal Limited
Tissue Analysis Results

			RG_ERCKUT_INV- 1_2022-05-31_NP	RG_ERCKUT_INV- 2_2022-05- 31_NP	RG_ERCKUT_INV- 3_2022-05- 31_NP	RG_ERCKUT_INV- 4_2022-05- 31_NP	RG_ERCKUT_INV- 5_2022-05- 31_NP
	Client ID						
	Lab ID		048	049	050	051	052
	Wet Weight (g)		0.2001	0.1381	0.8667	0.3181	0.2946
	Dry Weight (g)		0.0535	0.0415	0.2655	0.0925	0.0931
	Moisture (%)		73.3	69.9	69.4	70.9	68.4
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.016	0.053	0.698	0.702	1.3	0.622	0.988
11B	0.067	0.223	2.7	2.2	4.9	1.7	4.9
23Na	12	40	4,251	4,467	2,813	2,907	3,816
24Mg	0.102	0.340	2,945	1,888	2,098	1,812	2,461
27Al	0.086	0.287	320	129	1,428	396	577
31P	74	247	17,013	15,631	11,640	10,131	13,467
39K	4.3	14	14,088	15,856	13,765	9,928	14,724
44Ca	10	33	5,050	4,496	4,780	3,440	5,520
49Ti	0.001	0.003	19	6.7	85	24	48
51V	0.044	0.147	2.0	0.899	5.8	1.2	2.2
52Cr	0.175	0.583	14	7.6	41	15	11
55Mn	0.012	0.040	19	17	34	20	36
57Fe	1.7	5.7	417	267	1,746	363	446
59Co	0.014	0.047	0.825	0.602	2.2	0.690	0.391
60Ni	0.042	0.140	19	11	56	18	14
63Cu	0.023	0.077	46	33	27	23	29
66Zn	0.259	0.863	227	197	152	151	169
75As	0.380	1.3	1.0	0.476	1.2	0.536	0.566
77Se	0.510	1.7	7.5	5.8	6.0	6.0	6.4
88Sr	0.001	0.003	4.2	5.6	7.8	3.6	5.8
95Mo	0.033	0.110	0.343	0.275	0.595	0.206	0.401
107Ag	0.001	0.003	0.130	0.088	0.131	0.091	0.141
111Cd	0.071	0.237	4.7	6.7	5.0	3.0	8.7
118Sn	0.028	0.093	0.466	0.346	0.307	0.369	0.226
121Sb	0.005	0.017	0.099	0.099	0.218	0.088	0.122
137Ba	0.001	0.003	19	44	48	16	36
202Hg	0.023	0.077	0.046	0.037	0.046	0.042	0.046
205Tl	0.001	0.003	0.027	0.021	0.065	0.023	0.031
208Pb	0.003	0.010	0.302	0.210	1.1	0.198	0.304
238U	0.001	0.003	0.170	0.203	0.407	0.130	0.360

Notes:

- ppm = parts per million
- DL = detection limit
- LOQ = limit of quantitation
- < = less than detection limit
- g = grams
- % = percent

Teck Coal Limited
Tissue Analysis Results

			RG_ERCKMD_INV	RG_ERCKMD_INV	RG_ERCKMD_INV	RG_ERCKMD_INV	RG_ERCKMD_INV
Client ID			1_2022-05-31_NP	2_2022-05-31_NP	3_2022-05-31_NP	4_2022-05-31_NP	5_2022-05-31_NP
Lab ID			053	054	055	056	057
Wet Weight (g)			0.4220	0.4349	0.2418	0.4580	0.2541
Dry Weight (g)			0.1339	0.1055	0.0664	0.0966	0.0730
Moisture (%)			68.3	75.7	72.5	78.9	71.3
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.016	0.053	1.1	0.760	0.506	0.861	0.716
11B	0.067	0.223	5.0	3.8	2.0	5.6	3.3
23Na	12	40	2,516	3,381	2,635	2,963	2,850
24Mg	0.102	0.340	2,541	2,788	1,940	2,229	2,079
27Al	0.086	0.287	930	172	181	170	542
31P	74	247	13,417	14,278	12,009	14,906	13,170
39K	4.3	14	13,098	16,862	11,393	18,503	14,689
44Ca	10	33	14,436	5,315	3,274	4,846	4,932
49Ti	0.001	0.003	51	9.1	9.4	11	38
51V	0.044	0.147	2.8	0.571	0.589	0.656	1.8
52Cr	0.175	0.583	20	5.1	8.4	3.3	9.5
55Mn	0.012	0.040	503	537	340	838	674
57Fe	1.7	5.7	1,258	568	507	872	1,896
59Co	0.014	0.047	12	12	6.4	20	19
60Ni	0.042	0.140	38	18	15	20	27
63Cu	0.023	0.077	21	19	17	19	19
66Zn	0.259	0.863	307	381	276	511	435
75As	0.380	1.3	0.640	0.580	0.387	0.610	1.2
77Se	0.510	1.7	6.7	9.1	8.6	8.0	9.7
88Sr	0.001	0.003	12	5.8	4.0	5.6	5.8
95Mo	0.033	0.110	3.1	5.1	2.9	6.2	9.5
107Ag	0.001	0.003	0.040	0.040	0.035	0.030	0.045
111Cd	0.071	0.237	2.2	3.3	2.0	3.7	1.8
118Sn	0.028	0.093	0.447	0.495	0.341	0.409	0.900
121Sb	0.005	0.017	0.072	0.046	0.032	0.067	0.133
137Ba	0.001	0.003	52	31	28	42	39
202Hg	0.023	0.077	0.051	0.056	0.060	0.097	0.070
205Tl	0.001	0.003	0.056	0.026	0.026	0.031	0.070
208Pb	0.003	0.010	1.3	0.220	0.217	0.431	0.770
238U	0.001	0.003	0.186	0.109	0.084	0.151	0.306

Notes:

- ppm = parts per million
- DL = detection limit
- LOQ = limit of quantitation
- < = less than detection limit
- g = grams
- % = percent

Teck Coal Limited
Tissue Analysis Results

			RG_MIDBO_INV- 1_2022-06-01_NP	RG_MIDBO_INV- 2_2022-06- 01_NP	RG_MIDBO_INV- 3_2022-06- 01_NP	RG_MIDGA_INV- 1_2022-06-01_NP	RG_MIDGA_INV- 2_2022-06- 01_NP
Client ID							
Lab ID			058	059	060	061	062
Wet Weight (g)			0.2777	0.5275	0.5223	1.4586	0.1120
Dry Weight (g)			0.0920	0.1513	0.1458	0.4376	0.0341
Moisture (%)			66.9	71.3	72.1	70.0	69.6
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.016	0.053	1.3	3.0	3.1	1.0	1.7
11B	0.067	0.223	2.7	6.5	5.5	1.5	3.2
23Na	12	40	3,492	5,778	4,319	4,860	3,001
24Mg	0.102	0.340	1,264	1,933	1,781	1,609	1,583
27Al	0.086	0.287	3,038	5,942	6,251	1,213	3,611
31P	74	247	10,924	10,479	12,229	13,397	10,976
39K	4.3	14	11,274	11,005	13,647	9,883	10,755
44Ca	10	33	2,844	5,154	4,156	2,677	3,697
49Ti	0.001	0.003	196	427	376	70	247
51V	0.044	0.147	7.9	16	16	3.3	8.7
52Cr	0.175	0.583	59	186	76	14	99
55Mn	0.012	0.040	61	138	82	56	75
57Fe	1.7	5.7	1,945	5,005	3,524	755	2,491
59Co	0.014	0.047	13	11	13	4.0	9.3
60Ni	0.042	0.140	74	249	93	23	114
63Cu	0.023	0.077	28	29	25	16	29
66Zn	0.259	0.863	245	172	201	181	193
75As	0.380	1.3	1.0	2.4	1.8	0.655	1.3
77Se	0.510	1.7	7.0	6.8	6.4	5.6	7.0
88Sr	0.001	0.003	7.9	16	13	6.7	11
95Mo	0.033	0.110	0.824	2.5	0.641	0.389	1.6
107Ag	0.001	0.003	0.257	0.207	0.181	0.141	0.197
111Cd	0.071	0.237	8.3	6.9	6.6	2.7	8.6
118Sn	0.028	0.093	0.303	0.956	0.523	0.119	1.1
121Sb	0.005	0.017	0.076	0.244	0.166	0.045	0.120
137Ba	0.001	0.003	59	121	79	46	73
202Hg	0.023	0.077	0.083	0.153	0.153	0.097	0.102
205Tl	0.001	0.003	0.119	0.180	0.167	0.058	0.132
208Pb	0.003	0.010	0.904	2.2	1.5	0.465	1.4
238U	0.001	0.003	0.106	0.258	0.216	0.056	0.159

Notes:

- ppm = parts per million
- DL = detection limit
- LOQ = limit of quantitation
- < = less than detection limit
- g = grams
- % = percent

Teck Coal Limited
Tissue Analysis Results

	Client ID	RG_MIDGA_INV- 3_2022-06- 01_NP	RG_GATEDP_INV- 1_2022-06-01_NP	RG_GATEDP_INV- 2_2022-06- 01_NP	RG_GATEDP_INV- 3_2022-06- 01_NP	RG_GATEDP_INV- OLI-3_2022-06- 01_NP	
	Lab ID	063	064	065	066	067	
	Wet Weight (g)	0.0759	0.0320	0.2008	0.0855	0.0854	
	Dry Weight (g)	0.0197	0.0140	0.0684	0.0376	0.0413	
	Moisture (%)	74.0	56.2	65.9	56.0	51.6	
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	
7Li	0.016	0.053	3.8	3.5	2.1	3.3	4.7
11B	0.067	0.223	8.0	7.3	4.9	6.7	11
23Na	12	40	3,373	5,198	4,403	3,075	2,579
24Mg	0.102	0.340	2,234	2,575	2,071	4,482	3,136
27Al	0.086	0.287	8,991	4,108	4,263	4,599	9,102
31P	74	247	12,878	17,613	11,037	14,912	10,311
39K	4.3	14	13,052	16,930	12,687	12,335	12,564
44Ca	10	33	6,496	15,651	16,445	81,996	57,501
49Ti	0.001	0.003	649	279	248	265	586
51V	0.044	0.147	23	9.0	10	9.7	19
52Cr	0.175	0.583	113	18	36	34	86
55Mn	0.012	0.040	137	48	70	107	107
57Fe	1.7	5.7	4,607	2,350	2,192	2,954	4,313
59Co	0.014	0.047	14	3.1	9.8	11	8.4
60Ni	0.042	0.140	152	44	60	73	154
63Cu	0.023	0.077	30	27	21	15	13
66Zn	0.259	0.863	248	243	192	185	223
75As	0.380	1.3	2.2	1.2	1.8	6.8	6.6
77Se	0.510	1.7	8.3	13	8.1	131	50
88Sr	0.001	0.003	26	34	35	116	135
95Mo	0.033	0.110	1.5	0.791	0.738	1.1	1.1
107Ag	0.001	0.003	0.252	0.159	0.181	0.212	0.106
111Cd	0.071	0.237	9.8	3.8	5.2	5.9	5.9
118Sn	0.028	0.093	1.7	0.304	0.356	0.861	0.960
121Sb	0.005	0.017	0.242	0.152	0.114	0.186	0.305
137Ba	0.001	0.003	165	697	273	2,118	5,450
202Hg	0.023	0.077	0.151	0.064	0.103	0.248	0.113
205Tl	0.001	0.003	0.266	0.196	0.200	0.302	0.472
208Pb	0.003	0.010	4.1	1.5	1.2	1.5	2.8
238U	0.001	0.003	0.294	0.233	0.173	0.562	0.584

Notes:

- ppm = parts per million
- DL = detection limit
- LOQ = limit of quantitation
- < = less than detection limit
- g = grams
- % = percent

Teck Coal Limited
Tissue Analysis Results

			RG_ERCKDT_INV- 1_2022-06-01_NP	RG_ERCKDT_INV- 2_2022-06- 01_NP	RG_ERCKDT_INV- 3_2022-06- 01_NP	RG_ERCKDT_INV- 4_2022-06- 01_NP	RG_ERCKDT_INV- 5_2022-06- 01_NP
	Client ID						
	Lab ID		068	069	070	071	072
	Wet Weight (g)		0.2027	0.4262	0.2387	0.2315	0.2405
	Dry Weight (g)		0.0579	0.1128	0.0645	0.0623	0.0608
	Moisture (%)		71.4	73.5	73.0	73.1	74.7
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.016	0.053	0.861	0.937	0.686	0.903	0.397
11B	0.067	0.223	3.3	2.6	2.9	3.5	0.661
23Na	12	40	3,492	3,785	3,419	2,760	2,853
24Mg	0.102	0.340	2,504	2,126	1,941	1,785	1,839
27Al	0.086	0.287	749	1,010	627	895	99
31P	74	247	13,803	13,265	11,769	10,541	11,342
39K	4.3	14	13,439	12,842	11,584	9,931	11,764
44Ca	10	33	5,088	4,540	3,704	2,948	2,568
49Ti	0.001	0.003	40	61	29	69	4.6
51V	0.044	0.147	1.6	2.7	1.9	2.5	0.330
52Cr	0.175	0.583	16	13	29	19	3.9
55Mn	0.012	0.040	627	129	364	175	155
57Fe	1.7	5.7	1,098	1,062	1,241	902	204
59Co	0.014	0.047	34	7.4	17	9.6	6.4
60Ni	0.042	0.140	35	20	47	31	7.7
63Cu	0.023	0.077	20	21	19	13	17
66Zn	0.259	0.863	333	243	224	230	189
75As	0.380	1.3	0.793	0.909	0.793	1.5	0.661
77Se	0.510	1.7	14	17	18	9.3	6.6
88Sr	0.001	0.003	6.2	5.4	4.0	5.6	2.4
95Mo	0.033	0.110	1.7	1.4	1.2	0.870	0.606
107Ag	0.001	0.003	0.050	0.055	0.055	0.045	0.023
111Cd	0.071	0.237	3.8	2.2	4.3	8.0	2.5
118Sn	0.028	0.093	0.476	0.616	0.416	0.294	0.164
121Sb	0.005	0.017	0.091	0.090	0.082	0.129	0.053
137Ba	0.001	0.003	48	34	27	43	13
202Hg	0.023	0.077	0.054	0.054	0.044	0.049	0.037
205Tl	0.001	0.003	0.047	0.072	0.050	0.053	0.026
208Pb	0.003	0.010	0.490	0.520	0.346	0.566	0.130
238U	0.001	0.003	0.118	0.129	0.119	0.124	0.060

Notes:

- ppm = parts per million
- DL = detection limit
- LOQ = limit of quantitation
- < = less than detection limit
- g = grams
- % = percent

Teck Coal Limited
Tissue Analysis Results

			RG_ERCKUC_INV- 1_2022-06- 02_NP 073	RG_ERCKUC_INV- 2_2022-06- 02_NP 074	RG_ERCKUC_INV- 3_2022-06- 02_NP 075	RG_ERCK_INV- 1_2022-06- 02_NP 076	RG_ERCK_INV- 2_2022-06- 02_NP 077
	Client ID						
	Lab ID						
	Wet Weight (g)		0.1073	0.1548	0.3055	0.3122	0.3081
	Dry Weight (g)		0.0366	0.0410	0.0687	0.0801	0.0788
	Moisture (%)		65.9	73.5	77.5	74.3	74.4
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.016	0.053	0.401	0.485	0.635	1.2	0.707
11B	0.067	0.223	0.661	1.9	2.1	4.4	3.1
23Na	12	40	3,753	3,015	3,310	2,866	3,190
24Mg	0.102	0.340	1,645	1,472	2,188	2,117	1,771
27Al	0.086	0.287	41	107	119	614	421
31P	74	247	15,447	11,135	13,282	12,899	11,436
39K	4.3	14	13,626	8,770	13,523	17,474	14,462
44Ca	10	33	3,409	7,253	9,192	9,782	7,622
49Ti	0.001	0.003	2.4	5.8	7.5	28	30
51V	0.044	0.147	0.290	0.462	0.600	1.4	1.3
52Cr	0.175	0.583	8.6	9.1	19	16	14
55Mn	0.012	0.040	32	47	119	352	145
57Fe	1.7	5.7	177	224	358	494	440
59Co	0.014	0.047	1.6	1.8	2.8	7.5	6.9
60Ni	0.042	0.140	13	17	30	48	36
63Cu	0.023	0.077	11	9.7	12	8.7	9.8
66Zn	0.259	0.863	91	106	134	193	143
75As	0.380	1.3	0.463	0.562	0.793	2.1	2.4
77Se	0.510	1.7	3.6	10	4.5	6.5	6.2
88Sr	0.001	0.003	2.0	7.3	6.9	6.7	5.7
95Mo	0.033	0.110	0.211	0.422	1.2	0.448	0.264
107Ag	0.001	0.003	0.035	0.040	0.035	0.040	0.030
111Cd	0.071	0.237	0.385	1.4	0.385	1.2	2.8
118Sn	0.028	0.093	0.370	0.666	0.564	0.738	0.664
121Sb	0.005	0.017	0.022	0.038	0.037	0.106	0.072
137Ba	0.001	0.003	3.8	21	23	55	35
202Hg	0.023	0.077	0.025	0.064	0.029	0.034	0.034
205Tl	0.001	0.003	0.015	0.038	0.023	0.037	0.043
208Pb	0.003	0.010	0.057	0.209	0.170	0.354	0.346
238U	0.001	0.003	0.060	0.149	0.105	0.297	0.201

Notes:

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Teck Coal Limited
Tissue Analysis Results

			Client ID	RG_ERCK_INV- 3_2022-06- 02_NP 078	RG_MI3_INV- 1_2022-06- 02_NP 079	RG_MI3_INV- 2_2022-06- 02_NP 080	RG_MI3_INV- 3_2022-06- 02_NP 081	RG_MIDER_INV- 1_2022-06- 02_NP 082
			Lab ID					
			Wet Weight (g)	0.1731	0.4579	0.1560	0.6761	0.2704
			Dry Weight (g)	0.0436	0.1371	0.0491	0.1983	0.0965
			Moisture (%)	74.8	70.1	68.5	70.7	64.3
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.016	0.053	0.998	0.706	6.6	0.847	2.2	
11B	0.067	0.223	2.8	1.6	15	2.0	4.8	
23Na	12	40	3,670	2,871	2,521	2,922	3,051	
24Mg	0.102	0.340	2,828	983	2,809	1,834	1,474	
27Al	0.086	0.287	89	1,581	14,481	1,530	4,948	
31P	74	247	14,544	8,811	8,483	11,723	9,933	
39K	4.3	14	17,361	9,650	10,787	9,396	10,925	
44Ca	10	33	20,546	1,998	7,476	6,225	3,465	
49Ti	0.001	0.003	7.2	103	1,445	112	638	
51V	0.044	0.147	0.314	3.6	28	2.7	13	
52Cr	0.175	0.583	8.2	54	234	13	164	
55Mn	0.012	0.040	118	45	154	65	80	
57Fe	1.7	5.7	273	1,382	8,003	864	3,845	
59Co	0.014	0.047	2.3	3.5	14	2.1	12	
60Ni	0.042	0.140	17	78	316	19	216	
63Cu	0.023	0.077	14	16	27	18	20	
66Zn	0.259	0.863	200	348	216	313	193	
75As	0.380	1.3	1.1	0.584	2.2	0.739	1.8	
77Se	0.510	1.7	5.5	5.5	6.6	4.6	5.7	
88Sr	0.001	0.003	12	5.7	26	12	13	
95Mo	0.033	0.110	0.559	0.373	0.808	0.435	0.653	
107Ag	0.001	0.003	0.050	0.161	0.176	0.126	0.183	
111Cd	0.071	0.237	0.512	1.8	7.4	1.9	5.5	
118Sn	0.028	0.093	1.1	0.182	1.2	0.327	0.704	
121Sb	0.005	0.017	0.064	0.047	0.371	0.061	0.219	
137Ba	0.001	0.003	46	41	226	91	104	
202Hg	0.023	0.077	0.037	0.116	0.073	0.064	0.058	
205Tl	0.001	0.003	0.022	0.049	0.287	0.052	0.131	
208Pb	0.003	0.010	0.170	0.428	3.1	0.715	1.6	
238U	0.001	0.003	0.243	0.048	0.630	0.051	0.214	

Notes:

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Teck Coal Limited
Tissue Analysis Results

			RG_MIDER_INV- 2_2022-06- 02_NP	RG_MIDER_INV- 3_2022-06- 02_NP	RG_GATE_INV- 1_2022-06- 02_NP	RG_GATE_INV- 2_2022-06- 02_NP	RG_GATE_INV- 3_2022-06- 02_NP
	Client ID						
	Lab ID		083	084	085	086	087
	Wet Weight (g)		0.1900	0.3112	0.3815	0.3963	0.2039
	Dry Weight (g)		0.0650	0.0729	0.1236	0.1229	0.0501
	Moisture (%)		65.8	76.6	67.6	69.0	75.4
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.016	0.053	2.4	1.2	2.1	3.2	4.1
11B	0.067	0.223	4.9	2.6	6.9	7.0	4.9
23Na	12	40	3,116	2,238	2,253	1,985	4,331
24Mg	0.102	0.340	1,628	1,346	2,095	2,616	2,890
27Al	0.086	0.287	6,279	3,257	2,889	7,630	3,930
31P	74	247	10,218	9,035	7,962	8,194	10,213
39K	4.3	14	10,967	8,793	14,113	10,459	12,994
44Ca	10	33	3,632	3,216	24,954	22,226	19,775
49Ti	0.001	0.003	547	295	258	669	388
51V	0.044	0.147	14	6.2	5.8	14	7.3
52Cr	0.175	0.583	226	51	15	40	49
55Mn	0.012	0.040	92	62	66	83	83
57Fe	1.7	5.7	4,741	1,962	4,166	4,769	3,889
59Co	0.014	0.047	15	5.5	3.6	6.8	6.2
60Ni	0.042	0.140	295	76	87	112	119
63Cu	0.023	0.077	25	19	17	20	17
66Zn	0.259	0.863	190	167	256	240	344
75As	0.380	1.3	2.3	1.2	2.7	3.4	2.4
77Se	0.510	1.7	5.8	3.9	21	26	21
88Sr	0.001	0.003	11	8.7	52	105	57
95Mo	0.033	0.110	1.5	0.963	1.7	1.7	1.8
107Ag	0.001	0.003	0.176	0.145	0.082	0.170	0.082
111Cd	0.071	0.237	6.5	5.5	2.3	4.0	2.6
118Sn	0.028	0.093	0.737	0.752	0.373	0.699	0.568
121Sb	0.005	0.017	0.281	0.101	0.234	0.343	0.287
137Ba	0.001	0.003	120	90	1,442	6,201	2,690
202Hg	0.023	0.077	0.080	0.061	0.061	0.129	0.089
205Tl	0.001	0.003	0.153	0.119	0.143	0.243	0.153
208Pb	0.003	0.010	1.5	0.714	0.927	1.9	1.4
238U	0.001	0.003	0.159	0.115	0.341	0.398	0.328

Notes:

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Teck Coal Limited
Tissue Analysis Results

	Client ID	RG_MICOMP_IN	RG_MICOMP_IN	RG_MICOMP_IN	RG_BOCKRD_INV	RG_BOCKRD_INV	
	Lab ID	V-1_2022-06-02_NP	V-2_2022-06-02_NP	V-3_2022-06-02_NP	1_2022-06-03_NP	2_2022-06-03_NP	
	Wet Weight (g)	0.1815	0.4895	0.2502	0.1040	0.0262	
	Dry Weight (g)	0.0546	0.1344	0.0748	0.0230	0.0084	
	Moisture (%)	69.9	72.5	70.1	77.9	67.9	
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	
7Li	0.016	0.053	3.0	0.726	0.776	2.0	1.3
11B	0.067	0.223	6.4	1.3	2.1	4.4	2.4
23Na	12	40	3,138	2,952	2,975	2,917	3,020
24Mg	0.102	0.340	1,706	1,517	1,293	2,381	1,536
27Al	0.086	0.287	5,043	926	1,994	2,291	937
31P	74	247	10,047	12,134	10,652	13,616	10,990
39K	4.3	14	11,638	11,676	10,513	14,833	10,155
44Ca	10	33	3,582	3,348	3,323	22,739	22,979
49Ti	0.001	0.003	441	68	152	208	107
51V	0.044	0.147	9.7	1.7	5.1	4.4	2.6
52Cr	0.175	0.583	54	19	36	22	23
55Mn	0.012	0.040	69	46	43	72	35
57Fe	1.7	5.7	3,719	706	1,536	2,722	2,023
59Co	0.014	0.047	7.4	2.8	8.1	1.9	1.9
60Ni	0.042	0.140	85	29	52	55	41
63Cu	0.023	0.077	17	18	20	22	13
66Zn	0.259	0.863	187	214	216	446	181
75As	0.380	1.3	1.5	0.486	1.1	1.9	1.2
77Se	0.510	1.7	4.7	6.1	5.4	5.0	2.7
88Sr	0.001	0.003	10	7.4	7.1	68	189
95Mo	0.033	0.110	0.653	0.342	0.435	1.3	0.373
107Ag	0.001	0.003	0.120	0.164	0.183	0.069	0.057
111Cd	0.071	0.237	4.7	1.9	4.4	3.2	1.6
118Sn	0.028	0.093	0.619	0.398	0.381	1.3	0.748
121Sb	0.005	0.017	0.174	0.042	0.088	0.149	0.120
137Ba	0.001	0.003	121	56	64	2,544	10,610
202Hg	0.023	0.077	0.086	0.122	0.129	0.122	0.037
205Tl	0.001	0.003	0.129	0.056	0.069	0.095	0.074
208Pb	0.003	0.010	1.4	0.560	0.530	0.679	0.553
238U	0.001	0.003	0.159	0.059	0.075	0.231	0.223

Notes:

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Teck Coal Limited
Tissue Analysis Results

			RG_BOCKRD_INV-	RG_BOCK_INV-	RG_BOCK_INV-	RG_BOCK_INV-	RG_BOCK_INVOL
		Client ID	3_2022-06-	1_2022-06-	2_2022-06-	3_2022-06-	I-1_2022-06-
			03_NP	03_NP	03_NP	03_NP	03_NP
		Lab ID	093	094	095	096	097
		Wet Weight (g)	0.1269	0.4909	0.1889	0.3225	0.3081
		Dry Weight (g)	0.0286	0.1441	0.0624	0.0815	0.0931
		Moisture (%)	77.5	70.6	67.0	74.7	69.8
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.016	0.053	1.1	1.5	5.1	4.6	4.3
11B	0.067	0.223	1.2	5.0	9.1	11	8.5
23Na	12	40	3,515	2,308	2,590	3,255	2,431
24Mg	0.102	0.340	3,382	2,380	4,031	3,533	3,668
27Al	0.086	0.287	536	1,546	7,048	7,305	6,570
31P	74	247	13,455	9,627	10,976	9,001	10,570
39K	4.3	14	9,756	11,228	12,082	15,733	9,275
44Ca	10	33	9,943	10,907	82,367	36,441	37,837
49Ti	0.001	0.003	51	191	832	723	509
51V	0.044	0.147	1.3	4.0	23	16	14
52Cr	0.175	0.583	16	11	23	26	25
55Mn	0.012	0.040	25	105	107	253	79
57Fe	1.7	5.7	655	696	3,446	3,073	2,566
59Co	0.014	0.047	1.5	2.9	9.8	9.6	9.2
60Ni	0.042	0.140	27	61	99	182	83
63Cu	0.023	0.077	18	16	18	25	21
66Zn	0.259	0.863	227	367	223	174	199
75As	0.380	1.3	0.467	2.1	5.1	5.5	5.0
77Se	0.510	1.7	6.7	53	83	73	126
88Sr	0.001	0.003	26	37	207	115	130
95Mo	0.033	0.110	0.435	1.6	2.5	4.6	0.902
107Ag	0.001	0.003	0.050	0.088	0.141	0.234	0.351
111Cd	0.071	0.237	3.9	2.1	2.0	1.3	3.9
118Sn	0.028	0.093	0.476	0.528	2.0	1.1	0.790
121Sb	0.005	0.017	0.061	0.172	0.500	0.466	0.347
137Ba	0.001	0.003	541	824	5,721	2,804	2,933
202Hg	0.023	0.077	0.086	0.141	0.154	0.122	0.275
205Tl	0.001	0.003	0.045	0.185	0.363	0.328	0.346
208Pb	0.003	0.010	0.207	0.809	2.8	2.9	1.6
238U	0.001	0.003	0.126	0.449	1.0	0.968	0.975

Notes:

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Teck Coal Limited
Tissue Analysis Results

			RG_BOCK_INVOL	RG_BOCK_INVOL	RG_ALUSM_INV-	RG_ALUSM_INV-	RG_ALUSM_INV-
Client ID			I-2_2022-06-	I-3_2022-06-	1_2022-06-	2_2022-06-	3_2022-06-
Lab ID			03_NP	03_NP	03_NP	03_NP	03_NP
Wet Weight (g)			0.1333	0.1337	0.2115	0.2781	0.5842
Dry Weight (g)			0.0487	0.0429	0.0615	0.0719	0.1759
Moisture (%)			63.5	67.9	70.9	74.1	69.9
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.016	0.053	4.6	6.6	1.5	2.3	1.3
11B	0.067	0.223	6.8	14	4.5	6.4	3.9
23Na	12	40	3,444	3,173	3,165	2,881	2,540
24Mg	0.102	0.340	3,487	3,419	1,733	1,554	1,097
27Al	0.086	0.287	7,123	14,689	2,687	4,591	3,313
31P	74	247	13,948	10,169	9,408	11,535	7,693
39K	4.3	14	11,920	13,458	9,975	11,729	8,068
44Ca	10	33	51,380	41,495	3,021	3,461	3,385
49Ti	0.001	0.003	495	1,107	235	499	218
51V	0.044	0.147	15	31	4.1	6.2	4.0
52Cr	0.175	0.583	27	52	19	22	28
55Mn	0.012	0.040	63	140	75	62	35
57Fe	1.7	5.7	2,120	5,368	1,470	2,181	1,546
59Co	0.014	0.047	12	11	4.4	2.9	2.2
60Ni	0.042	0.140	95	144	28	31	42
63Cu	0.023	0.077	16	18	21	23	16
66Zn	0.259	0.863	223	163	235	222	171
75As	0.380	1.3	8.8	7.1	1.6	1.8	0.887
77Se	0.510	1.7	128	79	6.0	5.7	5.3
88Sr	0.001	0.003	137	131	7.2	9.1	8.0
95Mo	0.033	0.110	1.5	1.4	0.709	0.870	0.387
107Ag	0.001	0.003	0.151	0.144	0.062	0.103	0.069
111Cd	0.071	0.237	2.1	1.4	2.8	2.6	2.8
118Sn	0.028	0.093	1.1	1.3	0.300	1.2	0.200
121Sb	0.005	0.017	0.386	0.610	0.042	0.078	0.049
137Ba	0.001	0.003	3,808	3,890	75	84	52
202Hg	0.023	0.077	0.311	0.179	0.058	0.061	0.070
205Tl	0.001	0.003	0.459	0.446	0.058	0.074	0.061
208Pb	0.003	0.010	2.2	4.0	0.743	1.5	0.601
238U	0.001	0.003	0.727	0.828	0.096	0.128	0.079

Notes:

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Teck Coal Limited
Tissue Analysis Results

	Client ID	RG_MI25_INV- 1_2022-06- 03_NP	RG_MI25_INV- 2_2022-06- 03_NP	RG_MI25_INV- 3_2022-06- 03_NP	RG_ERCKDT_INV- 6_2022-06- 01_NP	RG_GATE_INVOL I-2_2022-06- 02_NP	
	Lab ID	103	104	105	106	107	
	Wet Weight (g)	0.3077	0.3740	0.9200	0.3244	0.0948	
	Dry Weight (g)	0.0800	0.0810	0.2266	0.0770	0.0380	
	Moisture (%)	74.0	78.3	75.4	76.3	59.9	
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	
7Li	0.016	0.053	0.748	0.648	0.595	1.8	7.3
11B	0.067	0.223	3.1	2.5	2.0	4.7	18
23Na	12	40	3,131	3,260	4,113	2,544	2,677
24Mg	0.102	0.340	2,050	1,324	1,532	2,667	3,886
27Al	0.086	0.287	1,574	1,448	1,223	3,102	15,524
31P	74	247	12,742	12,672	13,987	10,625	10,090
39K	4.3	14	10,831	10,664	12,555	9,883	12,945
44Ca	10	33	2,669	1,393	3,345	8,342	66,644
49Ti	0.001	0.003	95	89	75	296	1,641
51V	0.044	0.147	2.3	2.0	1.7	7.2	40
52Cr	0.175	0.583	13	11	8.9	48	61
55Mn	0.012	0.040	79	78	66	372	94
57Fe	1.7	5.7	1,091	682	705	2,552	7,117
59Co	0.014	0.047	2.0	1.0	1.4	27	6.9
60Ni	0.042	0.140	17	13	12	95	123
63Cu	0.023	0.077	16	14	17	23	26
66Zn	0.259	0.863	166	151	170	212	273
75As	0.380	1.3	1.5	1.0	1.4	1.1	5.5
77Se	0.510	1.7	5.7	4.8	5.2	11	90
88Sr	0.001	0.003	13	4.8	8.8	10	261
95Mo	0.033	0.110	0.709	0.580	0.677	0.967	1.4
107Ag	0.001	0.003	0.062	0.048	0.048	0.069	0.509
111Cd	0.071	0.237	2.3	1.7	2.7	2.2	14
118Sn	0.028	0.093	0.520	0.468	0.387	0.647	1.3
121Sb	0.005	0.017	0.064	0.033	0.029	0.171	0.651
137Ba	0.001	0.003	125	63	45	78	15,382
202Hg	0.023	0.077	0.115	0.083	0.102	0.045	0.391
205Tl	0.001	0.003	0.108	0.077	0.061	0.058	0.467
208Pb	0.003	0.010	0.719	0.405	0.360	0.782	4.5
238U	0.001	0.003	0.095	0.038	0.040	0.227	0.945

Notes:

- ppm = parts per million
- DL = detection limit
- LOQ = limit of quantitation
- < = less than detection limit
- g = grams
- % = percent

Teck Coal Limited
Tissue QA/QC Relative Percent Difference Results

Client ID		RG_ERCKMD_INV-1_2022-05-31_NP			RG_ERCKMD_INV-5_2022-05-31_NP			RG_ERCKDT_INV-2_2022-06-01_NP		
Lab ID		053			057			069		
Parameter	DL (ppm)	Sample (ppm)	Sample Duplicate (ppm)	RPD (%)	Sample (ppm)	Sample Duplicate (ppm)	RPD (%)	Sample (ppm)	Sample Duplicate (ppm)	RPD (%)
7Li	0.016	1.1	1.0	9.5	0.716	0.651	9.5	0.937	0.828	12
11B	0.067	5.0	5.7	13	3.3	3.3	0.0	2.6	2.0	26
23Na	12	2,516	2,573	2.2	2,850	2,768	2.9	3,785	3,699	2.3
24Mg	0.102	2,541	2,722	6.9	2,079	2,261	8.4	2,126	2,160	1.6
27Al	0.086	930	743	22	542	497	8.7	1,010	881	14
31P	74	13,417	13,938	3.8	13,170	12,831	2.6	13,265	12,858	3.1
39K	4.3	13,098	13,916	6.1	14,689	15,358	4.5	12,842	11,893	7.7
44Ca	10	14,436	10,955	27	4,932	5,380	8.7	4,540	4,603	1.4
49Ti	0.001	51	45	13	38	29	27	61	54	12
51V	0.044	2.8	2.0	33	1.8	1.7	5.7	2.7	2.4	12
52Cr	0.175	20	15	29	9.5	8.1	16	13	12	8.0
55Mn	0.012	503	459	9.1	674	709	5.1	129	146	12
57Fe	1.7	1,258	1,318	4.7	1,896	1,934	2.0	1,062	836	24
59Co	0.014	12	12	0.0	19	21	10	7.4	6.4	15
60Ni	0.042	38	34	11	27	25	7.7	20	18	11
63Cu	0.023	21	17	21	19	18	5.4	21	19	10
66Zn	0.259	307	283	8.1	435	399	8.6	243	204	17
75As	0.380	0.640	0.625	-	1.2	1.1	-	0.909	0.793	-
77Se	0.510	6.7	6.8	1.5	9.7	9.0	7.5	17	23	30
88Sr	0.001	12	9.9	19	5.8	6.0	3.4	5.4	4.6	16
95Mo	0.033	3.1	2.9	6.7	9.5	8.3	14	1.4	1.3	7.4
107Ag	0.001	0.040	0.030	29	0.045	0.045	0.0	0.055	0.071	25
111Cd	0.071	2.2	2.3	4.4	1.8	1.8	0.0	2.2	2.3	4.4
118Sn	0.028	0.447	0.455	1.8	0.900	0.924	2.6	0.616	0.421	38
121Sb	0.005	0.072	0.074	2.7	0.133	0.115	15	0.090	0.081	11
137Ba	0.001	52	45	14	39	41	5.0	34	31	9.2
202Hg	0.023	0.051	0.046	-	0.070	0.074	-	0.054	0.049	-
205Tl	0.001	0.056	0.040	33	0.070	0.059	17	0.072	0.063	13
208Pb	0.003	1.3	1.2	8.0	0.770	0.655	16	0.520	0.388	29
238U	0.001	0.186	0.157	17	0.306	0.286	6.8	0.129	0.107	19

Notes:

- ppm = parts per million
- RPD = relative percent difference
- DL = detection limit
- < = less than detection limit
- % = percent

Data Quality Objectives:

Laboratory Duplicates - RPD ≤40% for all elements, except Ca and Sr, which are ≤60%
Minimum DQOs apply to individual samples at concentrations above 10x DL

Teck Coal Limited
Tissue QA/QC Relative Percent Difference Results

Client ID		RG_MI3_INV-1_2022-06-02_NP			RG_MICOMP_INV-2_2022-06-02_NP			RG_BOCK_INV-1_2022-06-03_NP		
Lab ID		079			089			094		
Parameter	DL (ppm)	Sample (ppm)	Sample Duplicate (ppm)	RPD (%)	Sample (ppm)	Sample Duplicate (ppm)	RPD (%)	Sample (ppm)	Sample Duplicate (ppm)	RPD (%)
7Li	0.016	0.706	0.549	25	0.726	0.751	3.4	1.5	1.6	6.5
11B	0.067	1.6	1.4	13	1.3	1.3	0.0	5.0	6.0	18
23Na	12	2,871	3,099	7.6	2,952	3,199	8.0	2,308	1,944	17
24Mg	0.102	983	1,207	21	1,517	1,580	4.1	2,380	2,156	9.9
27Al	0.086	1,581	1,185	29	926	1,090	16	1,546	1,943	23
31P	74	8,811	10,067	13	12,134	12,717	4.7	9,627	9,409	2.3
39K	4.3	9,650	9,594	0.6	11,676	10,588	9.8	11,228	10,181	9.8
44Ca	10	1,998	2,148	7.2	3,348	3,316	1.0	10,907	11,529	5.5
49Ti	0.001	103	72	35	68	70	2.9	191	205	7.1
51V	0.044	3.6	2.6	32	1.7	2.1	21	4.0	4.3	7.2
52Cr	0.175	54	56	3.6	19	22	15	11	12	8.7
55Mn	0.012	45	47	4.3	46	49	6.3	105	96	9.0
57Fe	1.7	1,382	1,560	12	706	723	2.4	696	854	20
59Co	0.014	3.5	3.4	2.9	2.8	2.7	3.6	2.9	2.6	11
60Ni	0.042	78	74	5.3	29	35	19	61	53	14
63Cu	0.023	16	19	17	18	19	5.4	16	14	13
66Zn	0.259	348	286	20	214	238	11	367	301	20
75As	0.380	0.584	0.623	-	0.486	0.739	-	2.1	1.8	-
77Se	0.510	5.5	6.5	17	6.1	5.2	16	53	44	19
88Sr	0.001	5.7	5.5	3.6	7.4	7.4	0.0	37	44	17
95Mo	0.033	0.373	0.342	8.7	0.342	0.311	-	1.6	1.9	17
107Ag	0.001	0.161	0.151	6.4	0.164	0.170	3.6	0.088	0.076	15
111Cd	0.071	1.8	1.6	12	1.9	1.8	5.4	2.1	1.6	27
118Sn	0.028	0.182	0.197	-	0.398	0.441	10	0.528	0.418	23
121Sb	0.005	0.047	0.040	-	0.042	0.043	-	0.172	0.196	13
137Ba	0.001	41	43	4.8	56	71	24	824	840	1.9
202Hg	0.023	0.116	0.098	-	0.122	0.092	-	0.141	0.107	-
205Tl	0.001	0.049	0.041	18	0.056	0.054	3.6	0.185	0.162	13
208Pb	0.003	0.428	0.361	17	0.560	0.563	0.5	0.809	0.792	2.1
238U	0.001	0.048	0.053	9.9	0.059	0.057	3.4	0.449	0.665	39

Notes:

ppm = parts per million
 RPD = relative percent difference
 DL = detection limit
 < = less than detection limit
 % = percent

Data Quality Objectives:

Laboratory Duplicates - RPD ≤40% for all elements, except Ca and Sr, which are ≤60%
 Minimum DQOs apply to individual samples at concentrations above 10x DL

Teck Coal Limited
Tissue QA/QC Accuracy and Precision Results

Parameter	DL (ppm)	Certified Conc. (ppm)	01			02		
			Mean Estimated Conc. (ppm)	Accuracy (%)	Precision RSD (%)	Mean Estimated Conc. (ppm)	Accuracy (%)	Precision RSD (%)
7Li	0.016	1.21	1.2	99	12	1.3	106	10
11B	0.067	4.5	4.5	101	3.3	4.8	107	4.0
23Na	12	14,000	14,125	101	9.3	15,148	108	2.6
24Mg	0.102	910	973	107	7.6	1,010	111	4.3
27Al	0.086	197.2	201	102	5.3	228	116	6.6
31P	74	8,000	8,054	101	8.0	8,047	101	3.5
39K	4.3	15,500	16,089	104	4.6	16,270	105	3.5
44Ca	10	2,360	2,529	107	7.9	2,503	106	1.7
49Ti	0.001	12.24	11	92	9.8	12	98	16
51V	0.044	1.57	1.9	120	16	1.7	110	7.6
52Cr	0.175	1.87	2.2	117	10	2.1	110	4.3
55Mn	0.012	3.17	3.7	116	9.5	3.6	112	5.1
57Fe	1.7	343	383	112	8.6	360	105	2.5
59Co	0.014	0.25	0.312	125	14	0.288	115	5.4
60Ni	0.042	1.34	1.7	125	11	1.5	115	5.8
63Cu	0.023	15.7	18	115	10	18	113	9.2
66Zn	0.259	51.6	55	107	7.7	52	101	6.2
75As	0.380	6.87	7.4	107	9.0	7.0	102	5.6
77Se	0.510	3.45	3.5	100	7.0	3.5	102	3.1
88Sr	0.001	10.1	11	113	7.8	11	107	4.1
95Mo	0.033	0.29	0.293	101	10	0.287	99	10
107Ag	0.001	0.0252	0.031	124	5.3	0.025	98	3.6
111Cd	0.071	0.299	0.380	127	7.7	0.310	104	10
118Sn	0.028	0.061	0.075	123	16	0.063	103	8.0
121Sb	0.005	0.011	0.014	131	15	0.013	118	20
137Ba	0.001	8.6	9.4	110	11	9.8	114	14
202Hg	0.023	0.412	0.461	112	12	0.428	104	8.5
205Tl	0.001	0.0013	-	-	-	-	-	-
208Pb	0.003	0.404	0.499	124	17	0.450	111	14
238U	0.001	0.05	0.057	114	14	0.050	101	5.4

Notes:

ppm = parts per million; % = percent; DL = detection limit; RSD = relative standard deviation

Data Quality Objectives:

Accuracy: DQO of 60 - 140% of the certified values for B, Ti, Ag, Sn, Sb, and Ba.

Accuracy: DQO of 90 - 110% of the certified values for Se.

Accuracy: DQO of 70 - 130% of the certified values for all other elements provided.

Precision: DQO of ≤20% for all elements.

DORM-4 used for all parameters except B, Ti, Sb, Ba, and Al where NIST-1566b was used.

Tl certified concentration from NIST-2976.

Accuracy and precision for Tl are not reported as the certified concentration is too close to the reportable detection limit.

Teck Coal Limited
Tissue QA/QC Accuracy and Precision Results

Parameter	DL (ppm)	Certified Conc. (ppm)	03			04		
			Mean Estimated Conc. (ppm)	Accuracy (%)	Precision RSD (%)	Mean Estimated Conc. (ppm)	Accuracy (%)	Precision RSD (%)
7Li	0.016	1.21	1.3	109	9.9	1.2	99	5.9
11B	0.067	4.5	4.5	99	2.6	4.3	96	2.6
23Na	12	14,000	14,813	106	4.5	13,871	99	4.3
24Mg	0.102	910	924	102	6.5	904	99	11
27Al	0.086	197.2	197	100	1.5	201	102	5.4
31P	74	8,000	7,926	99	6.3	7,707	96	2.8
39K	4.3	15,500	16,368	106	7.3	15,431	100	2.8
44Ca	10	2,360	2,511	106	3.6	2,372	100	3.4
49Ti	0.001	12.24	14	113	6.1	13	103	11
51V	0.044	1.57	1.6	104	18	1.6	99	12
52Cr	0.175	1.87	2.1	110	5.5	1.8	98	6.2
55Mn	0.012	3.17	3.4	108	7.9	3.2	101	4.9
57Fe	1.7	343	366	107	5.8	362	105	3.6
59Co	0.014	0.25	0.275	110	5.0	0.273	109	4.0
60Ni	0.042	1.34	1.5	113	5.5	1.3	98	3.4
63Cu	0.023	15.7	17	110	4.9	16	102	4.4
66Zn	0.259	51.6	53	103	3.4	50	96	2.7
75As	0.380	6.87	7.2	104	3.1	6.9	100	3.0
77Se	0.510	3.45	3.7	108	2.9	3.3	94	4.7
88Sr	0.001	10.1	11	104	6.0	10	100	4.9
95Mo	0.033	0.29	0.308	106	13	0.284	98	12
107Ag	0.001	0.0252	0.029	115	20	0.025	101	17
111Cd	0.071	0.299	0.334	112	13	0.296	99	15
118Sn	0.028	0.061	0.072	118	12	0.059	97	18
121Sb	0.005	0.011	0.012	109	19	0.011	102	11
137Ba	0.001	8.6	8.3	96	4.3	8.9	103	3.9
202Hg	0.023	0.412	0.483	117	5.1	0.421	102	8.6
205Tl	0.001	0.0013	-	-	-	-	-	-
208Pb	0.003	0.404	0.446	110	14	0.413	102	11
238U	0.001	0.05	0.050	99	13	0.049	98	9.0

Notes:

ppm = parts per million; % = percent; DL = detection limit; RSD = relative standard deviation

Data Quality Objectives:

Accuracy: DQO of 60 - 140% of the certified values for B, Ti, Ag, Sn, Sb, and Ba.

Accuracy: DQO of 90 - 110% of the certified values for Se.

Accuracy: DQO of 70 - 130% of the certified values for all other elements provided.

Precision: DQO of ≤20% for all elements.

DORM-4 used for all parameters except B, Ti, Sb, Ba, and Al where NIST-1566b was used.

Tl certified concentration from NIST-2976.

Accuracy and precision for Tl are not reported as the certified concentration is too close to the reportable detection limit.

Teck Coal Limited
Sample Group Information

Sample Group ID	Client ID	Lab ID	Date of Analysis		
01	RG_ERCKUT_INV-1_2022-05-31_NP	048	20 Jun 2022		
	RG_ERCKUT_INV-2_2022-05-31_NP	049			
	RG_ERCKUT_INV-3_2022-05-31_NP	050			
	RG_ERCKUT_INV-4_2022-05-31_NP	051			
	RG_ERCKUT_INV-5_2022-05-31_NP	052			
	RG_ERCKMD_INV-1_2022-05-31_NP	053			
	RG_ERCKMD_INV-2_2022-05-31_NP	054			
	RG_ERCKMD_INV-3_2022-05-31_NP	055			
	RG_ERCKMD_INV-4_2022-05-31_NP	056			
	RG_ERCKMD_INV-5_2022-05-31_NP	057			
	RG_MIDBO_INV-1_2022-06-01_NP	058			
	RG_MIDBO_INV-2_2022-06-01_NP	059			
	RG_MIDBO_INV-3_2022-06-01_NP	060			
	RG_MIDGA_INV-1_2022-06-01_NP	061			
	RG_MIDGA_INV-2_2022-06-01_NP	062			
	RG_MIDGA_INV-3_2022-06-01_NP	063			
	02	RG_GATEDP_INV-1_2022-06-01_NP		064	20 Jun 2022
		RG_GATEDP_INV-2_2022-06-01_NP		065	
		RG_GATEDP_INV-3_2022-06-01_NP		066	
RG_GATEDP_INVOLI-3_2022-06-01_NP		067			
RG_ERCKDT_INV-1_2022-06-01_NP		068			
RG_ERCKDT_INV-2_2022-06-01_NP		069			
RG_ERCKDT_INV-3_2022-06-01_NP		070			
RG_ERCKDT_INV-4_2022-06-01_NP		071			
RG_ERCKDT_INV-5_2022-06-01_NP		072			
RG_ERCKUC_INV-1_2022-06-02_NP		073			
RG_ERCKUC_INV-2_2022-06-02_NP		074			
RG_ERCKUC_INV-3_2022-06-02_NP		075			
RG_ERCK_INV-1_2022-06-02_NP		076			
RG_ERCK_INV-2_2022-06-02_NP		077			
03		RG_ERCK_INV-3_2022-06-02_NP	078	20 Jun 2022	
	RG_MI3_INV-1_2022-06-02_NP	079			
	RG_MI3_INV-2_2022-06-02_NP	080			
	RG_MI3_INV-3_2022-06-02_NP	081			
	RG_MIDER_INV-1_2022-06-02_NP	082			
	RG_MIDER_INV-2_2022-06-02_NP	083			
	RG_MIDER_INV-3_2022-06-02_NP	084			
	RG_GATE_INV-1_2022-06-02_NP	085			
	RG_GATE_INV-2_2022-06-02_NP	086			
	RG_GATE_INV-3_2022-06-02_NP	087			

Teck Coal Limited
Sample Group Information

Sample Group ID	Client ID	Lab ID	Date of Analysis
03	RG_MICOMP_INV-1_2022-06-02_NP	088	20 Jun 2022
	RG_MICOMP_INV-2_2022-06-02_NP	089	
	RG_MICOMP_INV-3_2022-06-02_NP	090	
	RG_BOCKRD_INV-1_2022-06-03_NP	091	
	RG_BOCKRD_INV-2_2022-06-03_NP	092	
	RG_BOCKRD_INV-3_2022-06-03_NP	093	
04	RG_BOCK_INV-1_2022-06-03_NP	094	20 Jun 2022
	RG_BOCK_INV-2_2022-06-03_NP	095	
	RG_BOCK_INV-3_2022-06-03_NP	096	
	RG_BOCK_INVOLI-1_2022-06-03_NP	097	
	RG_BOCK_INVOLI-2_2022-06-03_NP	098	
	RG_BOCK_INVOLI-3_2022-06-03_NP	099	
	RG_ALUSM_INV-1_2022-06-03_NP	100	
	RG_ALUSM_INV-2_2022-06-03_NP	101	
	RG_ALUSM_INV-3_2022-06-03_NP	102	
	RG_MI25_INV-1_2022-06-03_NP	103	
	RG_MI25_INV-2_2022-06-03_NP	104	
	RG_MI25_INV-3_2022-06-03_NP	105	
	RG_ERCKDT_INV-6_2022-06-01_NP	106	
	RG_GATE_INVOLI-2_2022-06-02_NP	107	

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COC ID:		EVO_LAEMP		TURNAROUND TIME:		RUSH:														
PROJECT/CLIENT INFO				LABORATORY				OTHER INFO												
Facility Name / Job#: Regional Aquatic Effects Project Manager: Mike Pope Email: giovanna.diaz@teck.com Address: 421 Pine Ave				Lab Name: TrichAnalytics Inc. Lab Contact: Jennie Christensen Email: jennie.christensen@trichanalytics.com Address: 207-1753 Sean Heights				Report Format / Distribution Email 1: mike.pope@teck.com Email 2: jessica.ritz@teck.com Email 3: teckcoal@equisonline.com Email 4: Aquasclat@teck.com Email 5: Tyler.Mehler@trinnov.ca												
City: Sparwood		Province: BC		City: Saanichon		Province: BC		Excel		PDF		EDD								
Postal Code: V0B 2G0		Country: Canada		Postal Code: V8M 0B3		Country: Canada														
Phone Number: 250-425-8449				Phone Number:				PO number: 818999												
SAMPLE DETAILS																				
Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	Species	Sample Type	ANALYSIS REQUESTED			DATE/TIME									
048	RG_ERCKUT_INV-1_2022-05-31_NP	RG_ERCKUT	N	31-May-22	9:30	BIT	Composite	ANALYSIS	PRESERV.	FIL.	Number of Containers	Metals in Biota by CRC ICPMS (wet and dry)	Mercury in Biota by CVAAS (wet, dry & routine)	Moisture Content by Gravimetry						
049	RG_ERCKUT_INV-2_2022-05-31_NP	RG_ERCKUT	N	31-May-22	9:35	BIT	Composite				1	X	X	X						
050	RG_ERCKUT_INV-3_2022-05-31_NP	RG_ERCKUT	N	31-May-22	9:40	BIT	Composite				1	X	X	X						
051	RG_ERCKUT_INV-4_2022-05-31_NP	RG_ERCKUT	N	31-May-22	9:45	BIT	Composite				1	X	X	X						
052	RG_ERCKUT_INV-5_2022-05-31_NP	RG_ERCKUT	N	31-May-22	9:50	BIT	Composite				1	X	X	X						
053	RG_ERCKMID_INV-1_2022-05-31_NP	RG_ERCKMID	N	31-May-22	13:10	BIT	Composite				1	X	X	X						
054	RG_ERCKMID_INV-2_2022-05-31_NP	RG_ERCKMID	N	31-May-22	13:15	BIT	Composite				1	X	X	X						
055	RG_ERCKMID_INV-3_2022-05-31_NP	RG_ERCKMID	N	31-May-22	13:20	BIT	Composite				1	X	X	X						
056	RG_ERCKMID_INV-4_2022-05-31_NP	RG_ERCKMID	N	31-May-22	13:25	BIT	Composite				1	X	X	X						
ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS													RELINQUISHED BY/AFFILIATION		DATE/TIME					
PO 818999													Robin Vallean		June 6, 2022					
SERVICE REQUEST (rush - subject to availability)													ACCEPTED BY/AFFILIATION		DATE/TIME					
Regular (default)													Garnier & S		15 JUN 2022 / 08:30					
Priority (2-3 business days) - 50% surcharge													Gerlene LaBrie		(Project #: 2022-344)					
Emergency (1 Business Day) - 100% surcharge X																				
For Emergency < 1 Day, ASAP or Weekend																				
SAMPLER INFORMATION													DATE/TIME							
Regular (default)						Robin Vallean						Mobile #		416-970-7535						
Emergency (1 Business Day) - 100% surcharge X						Robin Vallean						Date/Time		June 6, 2022						

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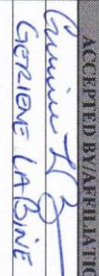
PROJECT/CLIENT INFO		EVO_LAEMP		TURNAROUND TIME:		LABORATORY		OTHER INFO		
Facility Name / Job#	Regional Aquatic Effects	Lab Name	TrichAnalytics Inc.	Report Format / Distribution	Excel	PDF	EDD			
Project Manager	Mike Pope	Lab Contact	Jennie Christensen	Email 1:	mike.pope@teck.com	X	X	X		
Email	giovanna.diaz@teck.com	Email	jennie.christensen@trichanalytics	Email 2:	jessica.rutz@teck.com	X	X	X		
Address	421 Pine Ave	Address	207-1753 Sean Heights	Email 3:	teckcoal@equisonline.com	X	X	X		
City	Sparwood	City	Saanichton	Email 4:	Aquasclat@teck.com	X	X	X		
Postal Code	V0B 2G0	Postal Code	V8M 0B3	Email 5:	Tyler.Mehler@minnow.ca	X	X	X		
Phone Number	250-425-8449	Phone Number		PO number	818999					
SAMPLE DETAILS										
Sample ID	Sample Location (sys loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	Species	Sample Type	ANALYSIS REQUESTED		
057	RG_ERCKMID_INV-5_2022-05-31_NP	TA	N	31-May-22	13:30	BIT	Composite	ANALYSIS	PRESEV.	Fit.
058	RG_MIDBO_INV-1_2022-06-01_NP	TA	N	01-Jun-22	7:30	BIT	Composite	Number of Containers		
059	RG_MIDBO_INV-2_2022-06-01_NP	TA	N	01-Jun-22	7:35	BIT	Composite	Metals in Biota by CRC ICPMS (wet and dry)		
060	RG_MIDBO_INV-3_2022-06-01_NP	TA	N	01-Jun-22	7:40	BIT	Composite	Mercury in Biota by CVAAS (wet, dry & routine)		
061	RG_MIDGA_INV-1_2022-06-01_NP	TA	N	01-Jun-22	8:30	BIT	Composite	Moisture Content by Gravimetry		
062	RG_MIDGA_INV-2_2022-06-01_NP	TA	N	01-Jun-22	8:35	BIT	Composite			
063	RG_MIDGA_INV-3_2022-06-01_NP	TA	N	01-Jun-22	8:40	BIT	Composite			
064	RG_GATEDP_INV-1_2022-06-01_NP	TA	N	01-Jun-22	10:00	BIT	Composite			
065	RG_GATEDP_INV-2_2022-06-01_NP	TA	N	01-Jun-22	10:05	BIT	Composite			
ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS PO 818999 RELINQUISHED BY/AFFILIATION: Robin Vallean DATE/TIME: June 6, 2022 ACCEPTED BY/AFFILIATION: <i>Gerrine LaBorie</i> DATE/TIME: 15 JUN 2022 / 08:30 (Project # 2022-344) Page 2 of 7										
SERVICE REQUEST (rush - subject to availability) Regular (default) Priority (2-3 business days) - 50% surcharge Emergency (1 Business Day) - 100% surcharge X For Emergency <1 Day, ASAP or Weekend										
Sampler's Name	Robin Vallean	Sampler's Signature		Mobile #	416-970-7535	Date/Time	June 6, 2022			

Teck

PROJECT/CLIENT INFO		EVO_LAEMP		TURNAROUND TIME:		LABORATORY		OTHER INFO	
Facility Name / Job#	Regional Aquatic Effects	Lab Name	TrichAnalytics Inc.	Report Format / Distribution	Excel	PDF	EDD		
Project Manager	Mike Pope	Lab Contact	Jennie Christensen	Email 1:	mike.pope@teck.com	X	X	X	
Email	giovanna.diaz@teck.com	Email	jennie.christensen@trichanalytics	Email 2:	jessica.riz@teck.com	X	X	X	
Address	421 Pine Ave	Address	207-1753 Sean Heights	Email 3:	teckcoal@equisonline.com	X	X	X	
City	Sparwood	City	Saanichton	Email 4:	Aquasclab@teck.com	X	X	X	
Postal Code	V0B 2G0	Postal Code	V8M 0B3	Email 5:	Tyler.Melner@grinnow.ca	X	X	X	
Phone Number	250-425-8449	Phone Number		PO number	818999				
SAMPLE DETAILS									
Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	Species	Sample Type	ANALYSIS REQUESTED	
066	RG_GATEDP_INV-3_2022-06-01_NP	RG_GATEDP	N	01-Jun-22	10:10	BIT	Composite	ANALYSIS	PRESERV.
067	RG_GATEDP_INV-3_2022-06-01_NP	RG_GATEDP	N	01-Jun-22	10:15	BIT	Oligochaeta	Number of Containers	Mercury in Biota by CVAAS (wet, dry & routine)
068	RG_ERCKDT_INV-1_2022-06-01_NP	RG_ERCKDT	N	01-Jun-22	11:15	BIT	Composite	Metals in Biota by CRC ICPMS (wet and dry)	Moisture Content by Gravimetry
069	RG_ERCKDT_INV-2_2022-06-01_NP	RG_ERCKDT	N	01-Jun-22	11:20	BIT	Composite		
070	RG_ERCKDT_INV-3_2022-06-01_NP	RG_ERCKDT	N	01-Jun-22	11:25	BIT	Composite		
071	RG_ERCKDT_INV-4_2022-06-01_NP	RG_ERCKDT	N	01-Jun-22	11:30	BIT	Composite		
072	RG_ERCKDT_INV-5_2022-06-01_NP	RG_ERCKDT	N	01-Jun-22	11:35	BIT	Composite		
073	RG_ERCKDT_INV-1_2022-06-02_NP	RG_ERCKDT	N	02-Jun-22	8:00	BIT	Composite		
074	RG_ERCKDT_INV-2_2022-06-02_NP	RG_ERCKDT	N	02-Jun-22	8:05	BIT	Composite		
ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS PO 818999 RELINQUISHED BY/AFFILIATION: Robin Vallean DATE/TIME: June 6, 2022 ACCEPTED BY/AFFILIATION: <i>Gerlene LaBine</i> DATE/TIME: 15 JUN 2022 / 08:30 (Request # 2022-344) Page 3 of 7									
SERVICE REQUEST (rush - subject to availability) Regular (default) _____ Priority (2-3 business days) - 50% surcharge _____ Emergency (1 Business Day) - 100% surcharge <input checked="" type="checkbox"/> _____ For Emergency <1 Day, ASAP or Weekend _____ Sampler's Name: Robin Vallean Sampler's Signature: _____ Mobile #: 416-970-7535 Date/Time: June 6, 2022									

Printed - By Field L, Lab PL, Field & Lab, N/None

Teck

PROJECT/CLIENT INFO		EVO_LAEMP		TURNAROUND TIME:		LABORATORY		OTHER INFO						
Facility Name / Job#	Regional Aquatic Effects	Lab Name	TrichAnalytics Inc.	Report Format / Distribution	Excel	PDF	EDD							
Project Manager	Mike Pope	Lab Contact	Jennie Christensen	Email 1:	mike.pope@teck.com	X	X	X	X					
Email	giovanna.diaz@teck.com	Email	jennie.christensen@trichanalytics	Email 2:	jessica.riz@teck.com	X	X	X	X					
Address	421 Pine Ave	Address	207-1753 Sean Heights	Email 3:	teckcoal@equisonline.com	X	X	X	X					
City	Sparwood	City	Saanichton	Email 4:	AquasClab@teck.com	X	X	X	X					
Postal Code	V0B 2G0	Postal Code	V8M 0B3	Email 5:	Tyler.Mehler@minnow.ca	X	X	X	X					
Phone Number	250-425-8449	Phone Number		PO number	818999	Filtered - E Field, L Lab, BT, Field & Lab, N Home								
SAMPLE DETAILS														
Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	Species	Sample Type	ANALYSIS REQUESTED						
075	RG_ERCKUC_INV-3_2022-06-02_NP	RG_ERCKUC	N	02-Jun-22	8:05	BIT	Composite	ANALYSIS	PRESERV.	Fit.				
076	RG_ERCK_INV-1_2022-06-02_NP	RG_ERCK	N	02-Jun-22	9:00	BIT	Composite	Number of Containers						
077	RG_ERCK_INV-2_2022-06-02_NP	RG_ERCK	N	02-Jun-22	9:05	BIT	Composite	Metals in Biota by CRC ICPMS (wet and dry)						
078	RG_ERCK_INV-3_2022-06-02_NP	RG_ERCK	N	02-Jun-22	9:10	BIT	Composite	Mercury in Biota by CVAAS (wet, dry & routine)						
079	RG_M13_INV-1_2022-06-02_NP	RG_M13	N	02-Jun-22	10:15	BIT	Composite	Moisture Content by Gravimetry						
080	RG_M13_INV-2_2022-06-02_NP	RG_M13	N	02-Jun-22	10:20	BIT	Composite							
081	RG_M13_INV-3_2022-06-02_NP	RG_M13	N	02-Jun-22	10:25	BIT	Composite							
082	RG_MIDER_INV-1_2022-06-02_NP	RG_MIDER	N	02-Jun-22	12:00	BIT	Composite							
083	RG_MIDER_INV-2_2022-06-02_NP	RG_MIDER	N	02-Jun-22	12:05	BIT	Composite							
ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS														
PO 818999					RELINQUISHED BY/AFFILIATION									
					Robyn Vallau									
					DATE/TIME									
					June 6, 2022									
					ACCEPTED BY/AFFILIATION									
					 Gerlene LaBine Project #: 2022-344									
					DATE/TIME									
					15 JUN 2022 / 08:30									
					Page 4 of 7									
SERVICE REQUEST (rush - subject to availability)														
Regular (default)					Sampler's Name					Robyn Vallau				
Priority (2-3 business days) - 50% surcharge					Emergency (1 Business Day) - 100% surcharge					X				
For Emergency <1 Day, ASAP or Weekend					Sampler's Signature					Date/Time				
										416-970-7535				
										June 6, 2022				

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COC ID: EVO_LAEMP

TURNAROUND TIME:

RUSH:

PROJECT/CLIENT INFO		LABORATORY		OTHER INFO	
Facility Name / Job#	Regional Aquatic Effects	Lab Name	TrichAnalytics Inc.	Report Format / Distribution	Excel PDF EDD
Project Manager	Mike Pope	Lab Contact	Jennie Christensen	Email 1:	mike.pope@teck.com X X X
Email	giovanna.diaz@teck.com	Email	jennie.christensen@trichanalytics	Email 2:	jessica.riz@teck.com X X X
Address	421 Pine Ave	Address	207-1753 Sean Heights	Email 3:	teckcoal@equisonline.com X X X
City	Sparwood	City	Saanichion	Email 4:	Aquasclab@teck.com X X X
Postal Code	V0B 2G0	Province	BC	Email 5:	Tyler.Mehle@rminow.ca X X X
Phone Number	250-425-8449	Postal Code	V8M 0B3	PO number	818999
		Country	Canada		

ANALYSIS REQUESTED

ANALYSIS	Number of Containers	Metals in Biota by CRC ICPSMS (wet and dry)	Mercury in Biota by CVAAS (wet, dry & routine)	Moisture Content by Gravimetry
PRESERV.				
Fib.				

Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	Species	Sample Type	DATE/TIME	DATE/TIME
084	RG_MIDDER	TA	N	02-Jun-22	12:10	BIT	Composite	June 6, 2022	
085	RG_GATE_INV-1_2022-06-02_NP	TA	N	02-Jun-22	13:15	BIT	Composite		
086	RG_GATE_INV-2_2022-06-02_NP	TA	N	02-Jun-22	13:20	BIT	Composite		
087	RG_GATE_INV-3_2022-06-02_NP	TA	N	02-Jun-22	13:25	BIT	Composite		
088	RG_MICOMP_INV-1_2022-06-02_NP	TA	N	02-Jun-22	14:50	BIT	Composite		
089	RG_MICOMP_INV-2_2022-06-02_NP	TA	N	02-Jun-22	14:55	BIT	Composite		
090	RG_MICOMP_INV-3_2022-06-02_NP	TA	N	02-Jun-22	15:00	BIT	Composite		
091	RG_BOCKRD_INV-1_2022-06-03_NP	TA	N	03-Jun-22	7:45	BIT	Composite		
092	RG_BOCKRD_INV-2_2022-06-03_NP	TA	N	03-Jun-22	7:50	BIT	Composite		

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS
PO 818999

RELINQUISHED BY/AFFILIATION
Robin Vallean

DATE/TIME
June 6, 2022

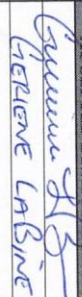
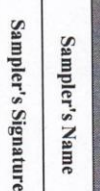
ACCEPTED BY/AFFILIATION
Gerrine LaBine

DATE/TIME
15 JUN 2022 / 08:30
(Project # 2022-344)

SERVICE REQUEST (rush - subject to availability)

Regular (default)	Sampler's Name	Robin Vallean	Mobile #	416-970-7535
Priority (2-3 business days) - 50% surcharge	Sampler's Signature		Date/Time	June 6, 2022
Emergency (1 Business Day) - 100% surcharge				
For Emergency <1 Day, ASAP or Weekend				

Teck

PROJECT/CLIENT INFO		EVO_LAEMP		TURNAROUND TIME:		LABORATORY		OTHER INFO			
Facility Name / Job#	Regional Aquatic Effects	Lab Name	TrichAnalytics Inc.	Report Format / Distribution	Excel	PDF	EDD				
Project Manager	Mike Pope	Lab Contact	Jennie Christensen	Email 1:	mikey.pope@teck.com	X	X	X	X	X	
Email	giovanna.diaz@teck.com	Email	jennie.christensen@trichanalytics	Email 2:	jessica.fite@teck.com	X	X	X	X	X	
Address	421 Pine Ave	Address	207-1753 Sean Heights	Email 3:	teckcoal@equisonline.com	X	X	X	X	X	
City	Sparwood	City	Samichon	Email 4:	Aquasclab@teck.com	X	X	X	X	X	
Postal Code	V0B 2G0	Postal Code	V8M 0B3	Email 5:	Tyler.Mehler@minnow.ca	X	X	X	X	X	
Phone Number	250-425-8449	Phone Number		PO number	818999						
SAMPLE DETAILS											
Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	Species	Sample Type	ANALYSIS REQUESTED			
093	RG_BOCKRD_INV-3_2022-06-03_NP	RG_BOCKRD	N	03-Jun-22	7:55	BIT	Composite	ANALYSIS	PRESERV.	Fib.	
094	RG_BOCK_INV-1_2022-06-03_NP	RG_BOCK	N	03-Jun-22	9:45	BIT	Composite	Number of Containers	Metals in Biota by CRC ICPMS (wet and dry)	Mercury in Biota by CVAAS (wet, dry & routine)	Moisture Content by Gravimetry
095	RG_BOCK_INV-2_2022-06-03_NP	RG_BOCK	N	03-Jun-22	9:55	BIT	Composite	1	X	X	X
096	RG_BOCK_INV-3_2022-06-03_NP	RG_BOCK	N	03-Jun-22	10:05	BIT	Composite	1	X	X	X
097	RG_BOCK_INV-1_2022-06-03_NP	RG_BOCK	N	03-Jun-22	9:50	BIT	Oligochaeta ^e	1	X	X	X
098	RG_BOCK_INV-2_2022-06-03_NP	RG_BOCK	N	03-Jun-22	10:00	BIT	Oligochaeta ^e	1	X	X	X
099	RG_BOCK_INV-3_2022-06-03_NP	RG_BOCK	N	03-Jun-22	10:00	BIT	Oligochaeta ^e	1	X	X	X
100	RG_ALUSM_INV-1_2022-06-03_NP	RG_ALUSM	N	03-Jun-22	12:40	BIT	Composite	1	X	X	X
101	RG_ALUSM_INV-2_2022-06-03_NP	RG_ALUSM	N	03-Jun-22	12:45	BIT	Composite	1	X	X	X
ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS											
PO 818999											
RELINQUISHED BY/AFFILIATION											
Robin Vallean											
DATE/TIME											
June 6, 2022											
ACCEPTED BY/AFFILIATION											
 Signature of Robin Vallean (Signature in Blue) Project # 2022-344)											
DATE/TIME											
15 JUN 2022 / 08:30											
Page 6 of 7											
SERVICE REQUEST (rush - subject to availability)											
Regular (default)											
Priority (2-3 business days) - 50% surcharge											
Emergency (1 Business Day) - 100% surcharge <input checked="" type="checkbox"/>											
For Emergency < 1 Day, ASAP or Weekend											
Sampler's Name			Robin Vallean			Mobile #			416-970-7535		
Sampler's Signature						Date/Time			June 6, 2022		

Teck

COC ID: **EVO_LAEMP**

TURNAROUND TIME:

RUSH:

PROJECT/CLIENT INFO

LABORATORY

OTHER INFO

Facility Name / Job#	Regional Aquatic Effects	Lab Name	TrichAnalytics Inc.	Report Format / Distribution	Excel	PDF	EDD
Project Manager	Mike Pope	Lab Contact	Jennie Christensen	Email 1:	mlke.pope@teck.com	X	X
Email	giovanna.diaz@teck.com	Email	jennie.christensen@trichanalytics	Email 2:	jessica.ritz@teck.com	X	X
Address	421 Pine Ave	Address	207-1753 Sean Heights	Email 3:	teckcoal@equisonline.com	X	X
City	Sparwood	City	Saanichton	Email 4:	Aquasclab@teck.com	X	X
Postal Code	V0B 2G0	Postal Code	V8M 0B3	Email 5:	Tyler.Mehler@minnow.ca	X	X
Phone Number	250-425-8449	Phone Number		PO number	818999		

SAMPLE DETAILS

ANALYSIS REQUESTED

Sample ID	Sample Location (sys loc code)	Field Matrix	Date	Time (24hr)	Species	Sample Type	ANALYSIS			PRESERV.	FIL.	
							Number of Containers	Metals in Biota by CRC ICPMS (wet and dry)	Mercury in Biota by CVAAS (wet, dry & routine)			Moisture Content by Gravimetry
1	RG_ALUSM	TA	03-Jun-22	12:50	BIT	Composite	1	X	X	X		
2	RG_MI25_INV-1_2022-06-03_NP	TA	03-Jun-22	14:45	BIT	Composite	1	X	X	X		
3	RG_MI25_INV-2_2022-06-03_NP	TA	03-Jun-22	14:50	BIT	Composite	1	X	X	X		
4	RG_MI25_INV-3_2022-06-03_NP	TA	03-Jun-22	14:55	BIT	Composite	1	X	X	X		
5	RG_ERCKDT_INV-4_2022-06-01_NP	TA	01-Jun-22	11:40	BIT	Composite	1	X	X	X		
6	RG_GATE_INVOLL-2_2022-06-02_NP	TA	02-Jun-22	13:30	oligochae	Anneid	1	X	X	X		

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS

RELINQUISHED BY/AFFILIATION

DATE/TIME

ACCEPTED BY/AFFILIATION

DATE/TIME

PO 818999	Robin Vallean	June 6, 2022	<i>Robin Vallean</i>	15 JUN 2022 / 09:30
<p>Regular (default)</p> <p>Priority (2-3 business days) - 50% surcharge</p> <p>Emergency (1 Business Day) - 100% surcharge X</p> <p>For Emergency <1 Day, ASAP or Weekend</p>				
Sampler's Name	Robin Vallean	Mobile #	416-970-7535	
Sampler's Signature		Date/Time	June 6, 2022	

This page sent electronically via Email as per Client.

Page 7 of 7.

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PROJECT/CLIENT INFO		EVO_LAEMP		TURNAROUND TIME:		LABORATORY		OTHER INFO	
Facility Name / Job#	Regional Aquatic Effects	Lab Name	TrichAnalytcs Inc.	Report Format / Distribution	Excel	PDF	EDD	RUSH:	
Project Manager	Mike Pope	Lab Contact	Jennie Christensen	Email 1:	mike.pope@teck.com	X	X	X	X
Email	giovanna.diaz@teck.com	Email	jennie.christensen@trichanalytcs	Email 2:	Jessica.Rife@teck.com	X	X	X	X
Address	421 Pine Ave	Address	207-1753 Sean Heights	Email 3:	teckocal@equisonline.com	X	X	X	X
City	Sparwood	City	Seamichon	Email 4:	Aquasclab@teck.com	X	X	X	X
Postal Code	V0B 2G0	Postal Code	V8M 0B3	Email 5:	Tyler.Mehler@minnow.ca	X	X	X	X
Phone Number	250-425-8449	Phone Number		PO number	818999				
SAMPLE DETAILS									
Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	Species	Sample Type	ANALYSIS REQUESTED	ANALYSIS RESULTS
102	RG_ALUSM_INV-3_2022-06-03_NP	TA	N	03-Jun-22	12:50	BIT	Composite	ANALYSIS	
103	RG_M125_INV-1_2022-06-03_NP	TA	N	03-Jun-22	14:45	BIT	Composite	PRESERV.	
104	RG_M125_INV-2_2022-06-03_NP	TA	N	03-Jun-22	14:50	BIT	Composite	FOR.	
105	RG_M125_INV-3_2022-06-03_NP	TA	N	03-Jun-22	14:55	BIT	Composite		
<p><i>Rich Sample</i></p> <p><i>Superseded. GC</i></p> <p><i>15 JUN 2022</i></p>									
ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS									
PO 818999									
RELINQUISHED BY/AFFILIATION									
Robin Vallau									
DATE/TIME									
June 6, 2022									
ACCEPTED BY/AFFILIATION									
<p><i>Geriene LaBine</i></p> <p><i>15 Jun 2022 / 08:30</i></p> <p><i>(Project #: 2022-344)</i></p>									
DATE/TIME									
June 6, 2022									
SERVICE REQUEST (rush - subject to availability)									
Regular (default)									
Priority (2-3 business days) - 50% surcharge									
Emergency (1 Business Day) - 100% surcharge X									
For Emergency <1 Day, ASAP or Weekend									
Sampler's Name		Robin Vallau		Mobile #		416-970-7535			
Sampler's Signature				Date/Time		June 6, 2022			



TrichAnalytics Inc.

Tissue Microchemistry Analysis Report

Client: Mike Pope Project Manager Teck Coal Limited	Date Received: 06 Jul 2022 Date of Analysis: 13 Jul 2022 14 Jul 2022
Phone: 250-425-8449	Final Report Date: 15 Jul 2022
Email: mike.pope@teck.com ; jessica.ritz@teck.com ; teckcoal@equisonline.com ; aquascilab@teck.com ; tyler.mehler@minnow.ca	Project No.: 2022-356 Method No.: MET-002.06

Client Project: EVO LAEMP (PO# 818999)

Analytical Request: Benthic invertebrate tissue microchemistry (total metals & moisture) - 56 samples
See chain of custody form provided for sample identification numbers.

Notes:

Analytical results are expressed in parts per million (ppm) dry weight (equivalent to mg/kg)
Samples quantified using DORM-4, NIST-1566b, and NIST-2976 certified reference standards.
Aluminum concentrations above 1,000 ppm are outside linear range of the calibration curve.
RPD values calculated according to the British Columbia Environmental Laboratory Manual (2020) criteria.
Client specific DQO for Selenium accuracy is 90-110% of the certified value; result achieved 101% (ranged from 94 to 110%).

This report provides the analytical results only for tissue samples noted above as received from the Client.

Reviewed and Approved by Jennie Christensen, PhD, RPBio

15 Jul 2022

Date

[The analytical report shall not be reproduced except in full under the expressed written consent of TrichAnalytics Inc.]

TrichAnalytics Inc.
207-1753 Sean Heights
Saanichton, BC V8M 0B3
www.trichanalytics.com



CALA
Testing
Accreditation No. A4196

Teck Coal Limited
Tissue Analysis Results

			RG_ERCKMD_INV 1_2022-06- 29_NP	RG_ERCKMD_INV 2_2022-06- 29_NP	RG_ERCKMD_INV 3_2022-06- 29_NP	RG_ERCKMD_INV 4_2022-06- 29_NP	RG_ERCKMD_INV 5_2022-06- 29_NP
Client ID			148	149	150	151	152
Lab ID			148	149	150	151	152
Wet Weight (g)			0.4505	0.1492	0.2333	0.3344	0.1559
Dry Weight (g)			0.0856	0.0359	0.0547	0.0695	0.0288
Moisture (%)			81.0	75.9	76.6	79.2	81.5
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.018	0.060	0.734	0.766	0.717	0.623	0.834
11B	0.135	0.450	1.5	2.2	0.767	2.3	2.6
23Na	15	50	3,163	2,803	2,924	3,136	3,183
24Mg	3.7	12	2,455	2,396	2,168	2,542	2,211
27Al	4.2	14	117	171	159	177	432
31P	164	547	13,487	13,087	10,895	12,073	9,740
39K	11	37	11,841	13,321	9,337	14,363	11,656
44Ca	17	57	4,811	5,140	3,220	4,288	6,111
49Ti	0.412	1.4	7.3	11	11	12	28
51V	0.051	0.170	0.352	0.549	0.473	0.644	1.2
52Cr	0.060	0.200	3.0	6.4	3.7	5.9	5.1
55Mn	0.079	0.263	168	257	129	299	290
57Fe	1.9	6.3	290	462	350	629	1,551
59Co	0.015	0.050	4.7	10	6.2	8.7	11
60Ni	0.060	0.200	6.3	17	8.6	12	13
63Cu	0.084	0.280	18	19	17	21	20
66Zn	1.8	6.0	507	521	249	416	358
75As	0.486	1.6	<0.486	<0.486	<0.486	<0.486	0.673
77Se	0.460	1.5	8.2	14	6.6	9.1	7.2
88Sr	0.043	0.143	4.5	5.0	2.8	4.1	6.2
95Mo	0.001	0.003	2.7	2.7	1.3	3.5	2.4
107Ag	0.001	0.003	0.058	0.076	0.052	0.064	0.081
111Cd	0.098	0.327	0.963	2.0	0.832	1.6	1.7
118Sn	0.018	0.060	0.555	0.623	0.337	0.473	0.938
121Sb	0.003	0.010	0.044	0.057	0.040	0.065	0.072
137Ba	1.3	4.3	15	33	14	29	48
202Hg	0.122	0.407	<0.122	<0.122	<0.122	<0.122	<0.122
205Tl	0.001	0.003	0.028	0.032	0.019	0.023	0.039
208Pb	0.003	0.010	0.103	0.128	0.137	0.148	0.322
238U	0.001	0.003	0.065	0.102	0.067	0.121	0.174

Notes:

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Teck Coal Limited
Tissue Analysis Results

			RG_ERCKUT_INV- 1_2022-06- 29_NP	RG_ERCKUT_INV- 2_2022-06- 29_NP	RG_ERCKUT_INV- 3_2022-06- 29_NP	RG_ERCKUT_INV- 4_2022-06- 29_NP	RG_ERCKUT_INV- 5_2022-06- 29_NP
Client ID			153	154	155	156	157
Lab ID			153	154	155	156	157
Wet Weight (g)			0.3620	0.2271	0.5893	0.4021	0.7088
Dry Weight (g)			0.0848	0.0500	0.1397	0.0887	0.1697
Moisture (%)			76.6	78.0	76.3	77.9	76.1
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.018	0.060	0.786	0.597	0.461	0.370	0.584
11B	0.135	0.450	2.8	1.4	2.1	0.736	3.9
23Na	15	50	2,764	2,815	2,661	2,409	3,419
24Mg	3.7	12	3,573	2,123	3,727	2,693	2,713
27Al	4.2	14	1,132	501	221	114	273
31P	164	547	13,092	10,674	13,695	11,228	12,017
39K	11	37	10,630	11,363	9,976	7,128	9,319
44Ca	17	57	5,482	4,633	4,928	4,947	4,471
49Ti	0.412	1.4	142	33	20	5.9	23
51V	0.051	0.170	3.2	1.3	1.1	0.450	1.0
52Cr	0.060	0.200	10	5.6	4.6	3.6	4.5
55Mn	0.079	0.263	20	13	14	6.7	8.1
57Fe	1.9	6.3	556	327	228	129	248
59Co	0.015	0.050	0.579	0.277	0.330	0.140	0.175
60Ni	0.060	0.200	12	6.5	5.8	3.8	4.9
63Cu	0.084	0.280	28	24	22	20	21
66Zn	1.8	6.0	253	246	254	324	176
75As	0.486	1.6	0.512	<0.486	0.539	<0.486	0.741
77Se	0.460	1.5	6.3	6.1	5.9	3.7	6.4
88Sr	0.043	0.143	4.5	3.6	3.2	3.0	2.9
95Mo	0.001	0.003	0.196	0.196	0.174	0.109	0.174
107Ag	0.001	0.003	0.110	0.140	0.076	0.052	0.070
111Cd	0.098	0.327	1.9	1.9	1.6	0.690	1.1
118Sn	0.018	0.060	0.588	0.623	0.866	0.257	0.232
121Sb	0.003	0.010	0.111	0.131	0.093	0.044	0.082
137Ba	1.3	4.3	23	17	16	8.4	12
202Hg	0.122	0.407	<0.122	<0.122	<0.122	<0.122	<0.122
205Tl	0.001	0.003	0.036	0.022	0.018	0.013	0.020
208Pb	0.003	0.010	0.234	0.163	0.114	0.039	0.103
238U	0.001	0.003	0.189	0.124	0.163	0.052	0.110

Notes:

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Teck Coal Limited
Tissue Analysis Results

			RG_ERCKDT_INV- 1_2022-06- 29_NP	RG_ERCKDT_INV- 2_2022-06- 29_NP	RG_ERCKDT_INV- 3_2022-06- 29_NP	RG_ERCKDT_INV- 4_2022-06- 29_NP	RG_ERCKDT_INV- 5_2022-06- 29_NP
Client ID			158	159	160	161	162
Lab ID			158	159	160	161	162
Wet Weight (g)			0.8382	0.4642	0.6153	0.4544	0.4187
Dry Weight (g)			0.1929	0.1364	0.1470	0.1187	0.1004
Moisture (%)			77.0	70.6	76.1	73.9	76.0
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.018	0.060	0.675	0.610	0.604	0.721	0.883
11B	0.135	0.450	2.3	3.4	1.6	1.1	2.7
23Na	15	50	3,388	3,267	2,646	2,500	3,147
24Mg	3.7	12	2,825	1,595	2,269	1,672	3,026
27Al	4.2	14	395	397	438	740	762
31P	164	547	14,349	12,516	10,869	9,115	12,319
39K	11	37	12,219	12,114	9,561	8,182	12,024
44Ca	17	57	3,725	2,674	3,017	2,296	5,713
49Ti	0.412	1.4	26	35	28	55	52
51V	0.051	0.170	1.2	1.4	1.4	1.8	2.0
52Cr	0.060	0.200	4.6	5.1	4.1	17	5.7
55Mn	0.079	0.263	202	193	165	75	152
57Fe	1.9	6.3	481	439	495	558	589
59Co	0.015	0.050	6.8	6.4	14	4.0	5.6
60Ni	0.060	0.200	11	10	9.7	29	11
63Cu	0.084	0.280	22	16	15	14	20
66Zn	1.8	6.0	298	219	209	168	250
75As	0.486	1.6	0.902	0.700	0.579	<0.486	0.970
77Se	0.460	1.5	21	23	16	23	14
88Sr	0.043	0.143	3.9	2.3	2.6	3.4	5.2
95Mo	0.001	0.003	0.457	0.653	0.566	0.457	0.544
107Ag	0.001	0.003	0.087	0.052	0.047	0.038	0.076
111Cd	0.098	0.327	2.5	2.0	1.2	1.0	1.9
118Sn	0.018	0.060	0.306	0.328	0.500	0.252	0.835
121Sb	0.003	0.010	0.082	0.096	0.101	0.061	0.104
137Ba	1.3	4.3	27	24	20	14	25
202Hg	0.122	0.407	<0.122	<0.122	<0.122	<0.122	<0.122
205Tl	0.001	0.003	0.038	0.027	0.027	0.025	0.033
208Pb	0.003	0.010	0.180	0.183	0.227	0.176	0.272
238U	0.001	0.003	0.154	0.138	0.118	0.065	0.141

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Teck Coal Limited
Tissue Analysis Results

			RG_ERCKDT_INV- 6_2022-06- 29_NP	RG_ERCK_INV- 1_2022-06- 30_NP	RG_ERCK_INV- 2_2022-06- 30_NP	RG_ERCK_INV- 3_2022-06- 30_NP	RG_ERCKUC_INV- 1_2022-06- 30_NP
Client ID			29_NP	30_NP	30_NP	30_NP	30_NP
Lab ID			163	164	165	166	167
Wet Weight (g)			0.1547	0.2497	0.1630	0.1623	0.0917
Dry Weight (g)			0.0324	0.0759	0.0396	0.0498	0.0341
Moisture (%)			79.1	69.6	75.7	69.3	62.8
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.018	0.060	1.1	0.435	0.421	0.510	0.338
11B	0.135	0.450	2.6	0.352	0.512	0.576	0.767
23Na	15	50	3,099	2,726	2,686	3,001	2,439
24Mg	3.7	12	2,970	2,158	1,950	1,577	1,340
27Al	4.2	14	1,283	24	76	97	100
31P	164	547	11,780	13,092	13,776	11,685	10,027
39K	11	37	9,595	9,596	8,974	9,740	9,073
44Ca	17	57	6,715	2,763	7,042	4,405	2,911
49Ti	0.412	1.4	103	1.1	4.2	5.2	5.7
51V	0.051	0.170	5.9	0.166	0.325	0.351	0.742
52Cr	0.060	0.200	39	3.0	5.6	4.6	6.0
55Mn	0.079	0.263	186	39	47	28	20
57Fe	1.9	6.3	3,506	74	132	136	143
59Co	0.015	0.050	13	0.777	1.5	1.3	1.3
60Ni	0.060	0.200	65	5.1	9.5	8.8	11
63Cu	0.084	0.280	22	15	11	12	12
66Zn	1.8	6.0	222	157	140	121	113
75As	0.486	1.6	1.3	<0.486	<0.486	0.564	0.620
77Se	0.460	1.5	9.9	8.2	3.9	4.3	4.3
88Sr	0.043	0.143	7.3	1.8	4.1	2.8	1.7
95Mo	0.001	0.003	0.674	0.160	0.183	0.229	0.183
107Ag	0.001	0.003	0.093	0.035	0.052	0.047	0.047
111Cd	0.098	0.327	1.4	0.137	0.246	0.191	0.137
118Sn	0.018	0.060	1.1	0.191	0.600	0.353	0.397
121Sb	0.003	0.010	0.223	0.027	0.033	0.038	0.036
137Ba	1.3	4.3	46	4.3	11	4.5	3.7
202Hg	0.122	0.407	<0.122	<0.122	<0.122	<0.122	<0.122
205Tl	0.001	0.003	0.048	0.006	0.011	0.008	0.008
208Pb	0.003	0.010	0.533	0.032	0.089	0.087	0.058
238U	0.001	0.003	0.176	0.041	0.077	0.060	0.069

Notes:

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Teck Coal Limited
Tissue Analysis Results

			RG_ERCKUC_INV- 2_2022-06- 30_NP	RG_ERCKUC_INV- 3_2022-06- 30_NP	RG_GATE_INV- 1_2022-06- 28_NP	RG_GATE_INV- 2_2022-06- 28_NP	RG_GATE_INV- 3_2022-06- 28_NP
Client ID			30_NP	30_NP	28_NP	28_NP	28_NP
Lab ID			168	169	170	171	172
Wet Weight (g)			0.1382	0.1778	0.3177	0.1745	0.1599
Dry Weight (g)			0.0367	0.0447	0.0811	0.0493	0.0314
Moisture (%)			73.4	74.9	74.5	71.7	80.4
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.018	0.060	0.435	0.655	0.983	1.0	2.1
11B	0.135	0.450	0.608	1.6	2.2	1.4	2.0
23Na	15	50	2,740	3,445	1,843	1,693	3,931
24Mg	3.7	12	1,653	1,826	2,290	1,776	2,575
27Al	4.2	14	92	281	886	850	848
31P	164	547	11,409	12,414	10,063	12,136	11,357
39K	11	37	9,920	13,190	9,941	9,380	12,129
44Ca	17	57	3,783	4,381	8,829	19,882	7,054
49Ti	0.412	1.4	4.6	24	71	77	69
51V	0.051	0.170	0.308	0.902	2.2	2.4	2.3
52Cr	0.060	0.200	2.9	6.7	5.4	8.2	7.3
55Mn	0.079	0.263	24	62	68	21	68
57Fe	1.9	6.3	80	227	738	736	558
59Co	0.015	0.050	1.0	2.4	1.7	0.637	4.7
60Ni	0.060	0.200	6.4	15	47	17	41
63Cu	0.084	0.280	13	17	21	15	19
66Zn	1.8	6.0	128	155	234	188	234
75As	0.486	1.6	<0.486	0.705	0.945	<0.486	0.648
77Se	0.460	1.5	3.8	6.6	40	20	49
88Sr	0.043	0.143	2.8	3.6	20	33	18
95Mo	0.001	0.003	0.183	0.710	1.8	1.3	0.481
107Ag	0.001	0.003	0.041	0.064	0.064	0.073	0.047
111Cd	0.098	0.327	0.109	0.273	0.874	0.915	1.2
118Sn	0.018	0.060	0.554	1.0	0.203	0.405	0.460
121Sb	0.003	0.010	0.043	0.062	0.138	0.119	0.320
137Ba	1.3	4.3	5.2	28	466	832	490
202Hg	0.122	0.407	<0.122	<0.122	<0.122	<0.122	<0.122
205Tl	0.001	0.003	0.007	0.014	0.085	0.046	0.120
208Pb	0.003	0.010	1.6	0.240	0.288	0.313	0.270
238U	0.001	0.003	0.058	0.191	0.150	0.178	0.144

Notes:

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Teck Coal Limited
Tissue Analysis Results

			RG_GATEDP_INV- 1_2022-06- 28_NP	RG_BOCK_INV- 1_2022-06- 28_NP	RG_BOCK_INV- 2_2022-06- 28_NP	RG_BOCK_INV- 3_2022-06- 28_NP	RG_BOCKRD_INV- 1_2022-06- 28_NP
Client ID			28_NP	28_NP	28_NP	28_NP	28_NP
Lab ID			173	174	175	176	177
Wet Weight (g)			0.1642	0.4445	0.1257	0.0629	0.0249
Dry Weight (g)			0.0396	0.1439	0.0221	0.0192	0.0040
Moisture (%)			75.9	67.6	82.4	69.5	83.9
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.018	0.060	4.9	4.5	1.8	2.7	2.9
11B	0.135	0.450	2.1	13	3.4	4.8	5.4
23Na	15	50	2,365	1,986	3,750	2,354	4,008
24Mg	3.7	12	1,835	3,082	2,418	2,020	3,752
27Al	4.2	14	967	11,440	1,240	4,083	2,577
31P	164	547	8,610	8,520	9,062	9,825	15,685
39K	11	37	10,048	9,196	15,237	11,354	14,909
44Ca	17	57	8,307	42,828	10,002	15,865	21,574
49Ti	0.412	1.4	80	984	103	271	217
51V	0.051	0.170	2.1	28	3.1	9.9	7.2
52Cr	0.060	0.200	4.3	14	6.8	6.7	10
55Mn	0.079	0.263	50	118	137	60	63
57Fe	1.9	6.3	435	3,681	666	1,652	3,309
59Co	0.015	0.050	4.7	7.8	5.3	12	2.0
60Ni	0.060	0.200	46	85	96	57	33
63Cu	0.084	0.280	17	27	23	17	22
66Zn	1.8	6.0	568	209	102	167	210
75As	0.486	1.6	0.719	4.7	1.5	5.1	1.8
77Se	0.460	1.5	13	155	77	82	16
88Sr	0.043	0.143	15	147	28	43	647
95Mo	0.001	0.003	0.366	1.6	6.1	1.0	0.939
107Ag	0.001	0.003	0.076	0.515	0.151	0.122	0.145
111Cd	0.098	0.327	5.6	3.8	0.382	1.2	2.0
118Sn	0.018	0.060	0.729	0.797	0.453	0.450	1.5
121Sb	0.003	0.010	0.145	0.713	0.156	0.261	0.192
137Ba	1.3	4.3	618	5,302	1,462	1,242	46,747
202Hg	0.122	0.407	<0.122	0.248	<0.122	0.188	<0.122
205Tl	0.001	0.003	0.070	0.468	0.084	0.222	0.116
208Pb	0.003	0.010	0.362	3.9	0.427	1.2	1.0
238U	0.001	0.003	0.141	0.882	0.339	0.314	0.456

Notes:

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Teck Coal Limited
Tissue Analysis Results

			RG_BOCKRD_INV- 2_2022-06- 28_NP	RG_BOCKRD_INV- 3_2022-06- 28_NP	RG_MI25_INV- 1_2022-06- 30_NP	RG_MI25_INV- 2_2022-06- 30_NP	RG_MI25_INV- 3_2022-06- 30_NP
Client ID			28_NP	28_NP	30_NP	30_NP	30_NP
Lab ID			178	179	180	181	182
Wet Weight (g)			0.1000	0.0255	0.0773	0.1543	0.1079
Dry Weight (g)			0.0285	0.0118	0.0163	0.0367	0.0290
Moisture (%)			71.5	53.7	78.9	76.2	73.1
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.018	0.060	1.9	0.662	0.944	0.407	0.856
11B	0.135	0.450	4.0	1.4	3.3	1.4	3.5
23Na	15	50	3,470	982	3,113	4,289	3,014
24Mg	3.7	12	2,597	2,512	1,530	1,629	1,638
27Al	4.2	14	470	396	1,960	756	1,773
31P	164	547	13,037	13,426	10,742	11,741	12,282
39K	11	37	16,714	15,245	12,040	10,835	13,037
44Ca	17	57	12,925	4,468	3,128	3,192	2,853
49Ti	0.412	1.4	39	28	191	60	166
51V	0.051	0.170	1.4	0.961	3.5	1.4	3.4
52Cr	0.060	0.200	3.9	4.6	14	12	12
55Mn	0.079	0.263	52	23	80	49	107
57Fe	1.9	6.3	1,658	313	1,123	553	1,214
59Co	0.015	0.050	1.6	0.419	1.9	2.0	1.6
60Ni	0.060	0.200	26	8.9	20	17	22
63Cu	0.084	0.280	15	22	18	21	19
66Zn	1.8	6.0	433	148	229	203	219
75As	0.486	1.6	1.2	<0.486	1.6	1.1	1.7
77Se	0.460	1.5	8.7	9.6	9.2	6.8	7.6
88Sr	0.043	0.143	27	9.9	9.4	9.5	9.1
95Mo	0.001	0.003	0.939	0.412	1.0	0.595	0.870
107Ag	0.001	0.003	0.041	0.017	0.106	0.110	0.098
111Cd	0.098	0.327	3.8	1.2	5.0	5.2	3.7
118Sn	0.018	0.060	0.336	0.171	1.1	0.741	0.590
121Sb	0.003	0.010	0.086	0.032	0.031	0.021	0.058
137Ba	1.3	4.3	291	91	130	43	84
202Hg	0.122	0.407	<0.122	<0.122	0.129	<0.122	0.165
205Tl	0.001	0.003	0.053	0.025	0.126	0.079	0.145
208Pb	0.003	0.010	0.154	0.120	0.481	0.215	1.5
238U	0.001	0.003	0.117	0.063	0.087	0.033	0.069

Notes:

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Teck Coal Limited
Tissue Analysis Results

			RG_ALUSM_INV- 1_2022-06- 30_NP	RG_BOCK_INVOL I-1_2022-06- 28_NP	RG_ALUSM_INV- 2_2022-06- 30_NP	RG_ALUSM_INV- 3_2022-06- 30_NP	RG_MIDGA_INV- 1_2022-06- 29_NP
Client ID			30_NP	28_NP	30_NP	30_NP	29_NP
Lab ID			183	184	185	186	187
Wet Weight (g)			0.2660	0.0841	0.2951	0.3262	0.0497
Dry Weight (g)			0.0592	0.0252	0.0615	0.0704	0.0122
Moisture (%)			77.7	70.0	79.2	78.4	75.5
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.018	0.060	1.5	2.2	4.1	0.687	2.5
11B	0.135	0.450	3.5	5.1	12	3.1	6.0
23Na	15	50	3,714	1,272	3,524	3,959	4,469
24Mg	3.7	12	1,677	1,710	2,439	1,875	2,038
27Al	4.2	14	2,280	4,321	7,776	1,309	4,484
31P	164	547	11,878	9,342	11,391	12,733	12,314
39K	11	37	13,400	6,856	15,581	15,967	12,732
44Ca	17	57	2,751	19,553	4,506	3,252	5,762
49Ti	0.412	1.4	252	298	699	112	483
51V	0.051	0.170	3.8	9.0	15	2.9	11
52Cr	0.060	0.200	10	17	31	8.4	43
55Mn	0.079	0.263	64	61	111	108	81
57Fe	1.9	6.3	1,274	1,523	3,856	816	3,003
59Co	0.015	0.050	2.8	10	4.9	3.0	9.0
60Ni	0.060	0.200	17	63	47	14	73
63Cu	0.084	0.280	21	14	32	26	32
66Zn	1.8	6.0	253	135	431	326	319
75As	0.486	1.6	1.4	5.6	1.9	1.1	1.4
77Se	0.460	1.5	5.0	216	5.6	6.0	6.9
88Sr	0.043	0.143	6.8	64	13	6.9	30
95Mo	0.001	0.003	0.725	0.937	0.986	0.522	1.1
107Ag	0.001	0.003	0.106	0.180	0.163	0.136	0.212
111Cd	0.098	0.327	2.3	1.8	3.1	2.2	7.7
118Sn	0.018	0.060	0.498	0.544	0.957	0.755	1.1
121Sb	0.003	0.010	0.047	0.243	0.108	0.042	0.146
137Ba	1.3	4.3	82	2,201	352	176	219
202Hg	0.122	0.407	<0.122	0.228	0.194	<0.122	0.212
205Tl	0.001	0.003	0.087	0.209	0.158	0.068	0.185
208Pb	0.003	0.010	0.579	1.5	2.4	0.608	1.2
238U	0.001	0.003	0.098	0.464	0.317	0.173	0.178

Notes:

- ppm = parts per million
- DL = detection limit
- LOQ = limit of quantitation
- < = less than detection limit
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- % = percent

Teck Coal Limited
Tissue Analysis Results

			RG_MIDGA_INV- 2_2022-06- 29_NP	RG_MIDGA_INV- 3_2022-06- 29_NP	RG_MIDBO_INV- 1_2022-06- 29_NP	RG_MIDBO_INV- 2_2022-06- 29_NP	RG_MIDBO_INV- 3_2022-06- 29_NP
Client ID			188	189	190	191	192
Lab ID			188	189	190	191	192
Wet Weight (g)			0.0410	0.1762	0.1984	0.1257	0.0685
Dry Weight (g)			0.0113	0.0340	0.0409	0.0244	0.0135
Moisture (%)			72.4	80.7	79.4	80.6	80.3
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.018	0.060	0.577	1.6	2.2	2.0	3.8
11B	0.135	0.450	1.4	2.6	5.4	4.0	9.7
23Na	15	50	4,654	5,366	4,524	3,330	3,560
24Mg	3.7	12	1,561	1,727	2,177	1,487	2,142
27Al	4.2	14	577	1,678	5,773	3,274	10,037
31P	164	547	12,496	11,451	13,365	11,941	11,347
39K	11	37	15,919	10,367	14,504	11,520	13,116
44Ca	17	57	2,490	5,510	3,513	3,051	6,533
49Ti	0.412	1.4	45	177	439	240	828
51V	0.051	0.170	1.6	4.8	17	6.4	23
52Cr	0.060	0.200	20	51	48	22	172
55Mn	0.079	0.263	20	95	100	89	114
57Fe	1.9	6.3	659	2,072	3,801	1,638	5,682
59Co	0.015	0.050	9.2	8.7	17	14	17
60Ni	0.060	0.200	34	96	80	39	232
63Cu	0.084	0.280	29	23	39	32	29
66Zn	1.8	6.0	409	378	522	390	343
75As	0.486	1.6	0.858	0.976	1.7	1.2	2.4
77Se	0.460	1.5	6.7	6.9	8.1	6.0	6.8
88Sr	0.043	0.143	4.3	14	11	7.5	21
95Mo	0.001	0.003	0.464	0.667	1.0	0.532	1.1
107Ag	0.001	0.003	0.129	0.197	0.192	0.128	0.238
111Cd	0.098	0.327	11	7.3	16	11	13
118Sn	0.018	0.060	0.945	0.773	0.565	0.543	1.3
121Sb	0.003	0.010	0.023	0.080	0.267	0.103	0.250
137Ba	1.3	4.3	38	127	117	87	207
202Hg	0.122	0.407	0.143	0.179	0.148	0.171	0.237
205Tl	0.001	0.003	0.078	0.108	0.261	0.199	0.281
208Pb	0.003	0.010	0.189	0.641	1.9	0.962	2.7
238U	0.001	0.003	0.039	0.121	0.222	0.138	0.343

Notes:

- ppm = parts per million
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- < = less than detection limit
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- % = percent

Teck Coal Limited
Tissue Analysis Results

			RG_MICOMP_IN V-1_2022-06- 29_NP	RG_MICOMP_IN V-2_2022-06- 29_NP	RG_MICOMP_IN V-3_2022-06- 29_NP	RG_MICOMP_IN V-4_2022-06- 29_NP	RG_MICOMP_IN V-5_2022-06- 29_NP
Client ID							
Lab ID			193	194	195	196	197
Wet Weight (g)			0.1270	0.2827	0.0782	0.1054	0.2019
Dry Weight (g)			0.0359	0.0582	0.0171	0.0258	0.0463
Moisture (%)			71.7	79.4	78.1	75.5	77.1
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.018	0.060	2.6	1.6	4.1	2.7	1.4
11B	0.135	0.450	4.8	3.4	8.9	7.2	2.9
23Na	15	50	4,140	5,050	3,724	2,933	3,758
24Mg	3.7	12	1,975	1,619	2,329	2,118	1,423
27Al	4.2	14	4,503	3,291	9,680	6,467	2,709
31P	164	547	13,155	11,512	12,867	11,378	12,006
39K	11	37	15,087	12,117	14,468	11,490	12,437
44Ca	17	57	3,305	3,769	6,787	5,551	2,107
49Ti	0.412	1.4	276	226	834	527	172
51V	0.051	0.170	9.0	6.2	27	15	5.8
52Cr	0.060	0.200	39	24	294	76	18
55Mn	0.079	0.263	100	81	160	115	108
57Fe	1.9	6.3	2,057	1,656	7,412	4,051	1,543
59Co	0.015	0.050	14	7.8	17	18	8.1
60Ni	0.060	0.200	61	38	336	102	30
63Cu	0.084	0.280	33	27	28	35	24
66Zn	1.8	6.0	472	363	372	414	325
75As	0.486	1.6	1.3	0.915	2.8	1.7	0.976
77Se	0.460	1.5	8.5	6.4	8.6	7.5	7.2
88Sr	0.043	0.143	8.8	11	20	18	6.6
95Mo	0.001	0.003	0.870	0.701	1.1	1.1	0.677
107Ag	0.001	0.003	0.186	0.297	0.285	0.236	0.128
111Cd	0.098	0.327	14	8.1	11	11	4.6
118Sn	0.018	0.060	0.498	0.841	2.2	1.5	0.595
121Sb	0.003	0.010	0.115	0.087	0.367	0.193	0.093
137Ba	1.3	4.3	109	95	242	182	139
202Hg	0.122	0.407	0.269	0.216	0.235	0.237	0.169
205Tl	0.001	0.003	0.206	0.154	0.291	0.238	0.146
208Pb	0.003	0.010	1.2	1.0	3.2	1.8	1.1
238U	0.001	0.003	0.159	0.125	0.364	0.215	0.116

Notes:

- ppm = parts per million
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Teck Coal Limited
Tissue Analysis Results

			RG_M13_INV- 1_2022-06- 29_NP	RG_M13_INV- 2_2022-06- 29_NP	RG_M13_INV- 3_2022-06- 29_NP	RG_MIDER_INV- 1_2022-06- 30_NP	RG_MIDER_INV- 2_2022-06- 30_NP
Client ID							
Lab ID			198	199	200	201	202
Wet Weight (g)			0.3100	0.9596	0.1243	0.1850	0.4066
Dry Weight (g)			0.0661	0.2347	0.0226	0.0414	0.0798
Moisture (%)			78.7	75.5	81.8	77.6	80.4
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.018	0.060	0.230	0.253	1.4	0.468	0.345
11B	0.135	0.450	0.639	0.346	6.8	1.2	1.3
23Na	15	50	3,253	4,985	4,273	4,227	6,665
24Mg	3.7	12	783	1,633	2,014	1,345	1,145
27Al	4.2	14	492	248	4,044	1,170	663
31P	164	547	8,001	13,853	13,110	12,474	10,389
39K	11	37	6,682	9,676	13,059	11,978	10,315
44Ca	17	57	1,409	4,906	4,232	2,682	2,650
49Ti	0.412	1.4	23	9.1	228	70	35
51V	0.051	0.170	1.2	0.609	13	2.5	1.5
52Cr	0.060	0.200	8.2	5.3	26	17	15
55Mn	0.079	0.263	33	27	158	111	70
57Fe	1.9	6.3	333	215	2,006	739	526
59Co	0.015	0.050	2.0	0.659	15	6.1	7.6
60Ni	0.060	0.200	9.6	5.7	39	26	22
63Cu	0.084	0.280	24	21	28	19	16
66Zn	1.8	6.0	164	213	430	324	231
75As	0.486	1.6	<0.486	<0.486	1.6	0.915	1.0
77Se	0.460	1.5	8.9	4.6	7.2	5.5	4.9
88Sr	0.043	0.143	3.1	10	11	7.2	5.1
95Mo	0.001	0.003	0.193	0.266	0.701	0.604	0.338
107Ag	0.001	0.003	0.163	0.157	0.259	0.157	0.169
111Cd	0.098	0.327	0.862	1.8	14	4.6	7.0
118Sn	0.018	0.060	0.110	0.099	1.7	0.397	0.536
121Sb	0.003	0.010	0.022	0.015	0.141	0.041	0.023
137Ba	1.3	4.3	19	20	116	130	42
202Hg	0.122	0.407	<0.122	<0.122	<0.122	<0.122	<0.122
205Tl	0.001	0.003	0.031	0.035	0.304	0.103	0.081
208Pb	0.003	0.010	0.180	0.105	1.5	0.384	0.290
238U	0.001	0.003	0.019	0.008	0.209	0.047	0.038

Notes:

- ppm = parts per million
- DL = detection limit
- LOQ = limit of quantitation
- < = less than detection limit
- g = grams
- % = percent

Teck Coal Limited
Tissue Analysis Results

Client ID	RG_MIDER_INV- 3_2022- 06_30_NP
Lab ID	203
Wet Weight (g)	0.2228
Dry Weight (g)	0.0457
Moisture (%)	79.5

Parameter	DL (ppm)	LOQ (ppm)	(ppm)
7Li	0.018	0.060	0.888
11B	0.135	0.450	2.2
23Na	15	50	3,965
24Mg	3.7	12	1,478
27Al	4.2	14	2,310
31P	164	547	11,048
39K	11	37	10,897
44Ca	17	57	3,099
49Ti	0.412	1.4	120
51V	0.051	0.170	4.2
52Cr	0.060	0.200	13
55Mn	0.079	0.263	86
57Fe	1.9	6.3	1,121
59Co	0.015	0.050	7.7
60Ni	0.060	0.200	24
63Cu	0.084	0.280	24
66Zn	1.8	6.0	265
75As	0.486	1.6	1.3
77Se	0.460	1.5	5.9
88Sr	0.043	0.143	7.3
95Mo	0.001	0.003	0.701
107Ag	0.001	0.003	0.151
111Cd	0.098	0.327	7.4
118Sn	0.018	0.060	1.3
121Sb	0.003	0.010	0.057
137Ba	1.3	4.3	67
202Hg	0.122	0.407	<0.122
205Tl	0.001	0.003	0.139
208Pb	0.003	0.010	0.618
238U	0.001	0.003	0.093

Notes:

- ppm = parts per million
- DL = detection limit
- LOQ = limit of quantitation
- < = less than detection limit
- g = grams
- % = percent

Teck Coal Limited
Tissue QA/QC Relative Percent Difference Results

Client ID		RG_ERCKMD_INV-1_2022-06-29_NP			RG_ERCKDT_INV-3_2022-06-29_NP			RG_ERCK_INV-1_2022-06-30_NP		
Lab ID		148			160			164		
Parameter	DL (ppm)	Sample (ppm)	Sample Duplicate (ppm)	RPD (%)	Sample (ppm)	Sample Duplicate (ppm)	RPD (%)	Sample (ppm)	Sample Duplicate (ppm)	RPD (%)
7Li	0.018	0.734	0.756	3.0	0.604	0.734	19	0.435	0.404	7.4
11B	0.135	1.5	1.0	-	1.6	1.1	-	0.352	0.432	-
23Na	15	3,163	3,446	8.6	2,646	3,502	28	2,726	2,519	7.9
24Mg	3.7	2,455	2,521	2.7	2,269	2,385	5.0	2,158	1,812	17
27Al	4.2	117	152	26	438	366	18	24	40	-
31P	164	13,487	12,385	8.5	10,869	12,986	18	13,092	10,909	18
39K	11	11,841	13,119	10	9,561	11,208	16	9,596	9,053	5.8
44Ca	17	4,811	5,017	4.2	3,017	3,160	4.6	2,763	3,525	24
49Ti	0.412	7.3	8.6	16	28	20	33	1.1	2.7	-
51V	0.051	0.352	0.491	-	1.4	1.1	24	0.166	0.212	-
52Cr	0.060	3.0	3.3	9.5	4.1	4.8	16	3.0	3.8	24
55Mn	0.079	168	144	15	165	216	27	39	34	14
57Fe	1.9	290	305	5.0	495	448	10	74	102	32
59Co	0.015	4.7	5.1	8.2	14	13	7.4	0.777	0.971	22
60Ni	0.060	6.3	6.9	9.1	9.7	10	3.0	5.1	6.4	23
63Cu	0.084	18	24	29	15	19	24	15	13	14
66Zn	1.8	507	416	20	209	242	15	157	151	3.9
75As	0.486	<0.486	<0.486	-	0.579	0.633	-	<0.486	<0.486	-
77Se	0.460	8.2	8.6	4.8	16	17	6.1	8.2	8.8	7.1
88Sr	0.043	4.5	4.3	4.5	2.6	2.7	3.8	1.8	2.3	24
95Mo	0.001	2.7	2.5	7.7	0.566	0.783	32	0.160	0.160	0.0
107Ag	0.001	0.058	0.063	8.3	0.047	0.064	31	0.035	0.041	16
111Cd	0.098	0.963	0.880	-	1.2	1.2	0.0	0.137	0.109	-
118Sn	0.018	0.555	0.565	1.8	0.500	0.475	5.1	0.191	0.263	32
121Sb	0.003	0.044	0.048	8.7	0.101	0.125	21	0.027	0.029	-
137Ba	1.3	15	16	6.5	20	20	0.0	4.3	5.9	-
202Hg	0.122	<0.122	<0.122	-	<0.122	<0.122	-	<0.122	<0.122	-
205Tl	0.001	0.028	0.024	15	0.027	0.029	7.1	0.006	0.006	-
208Pb	0.003	0.103	0.122	17	0.227	0.178	24	0.032	0.035	9.0
238U	0.001	0.065	0.070	7.4	0.118	0.129	8.9	0.041	0.043	4.8

Notes:

- ppm = parts per million
- RPD = relative percent difference
- DL = detection limit
- < = less than detection limit
- % = percent

Data Quality Objectives:

Laboratory Duplicates - RPD ≤40% for all elements, except Ca and Sr, which are ≤60%
Minimum DQOs apply to individual samples at concentrations above 10x DL

Teck Coal Limited
Tissue QA/QC Relative Percent Difference Results

Client ID		RG_BOCK_INV-1_2022-06-28_NP			RG_ALUSM_INV-3_2022-06-30_NP			RG_MICOMP_INV-2_2022-06-29_NP		
Lab ID		174			186			194		
Parameter	DL (ppm)	Sample (ppm)	Sample Duplicate (ppm)	RPD (%)	Sample (ppm)	Sample Duplicate (ppm)	RPD (%)	Sample (ppm)	Sample Duplicate (ppm)	RPD (%)
7Li	0.018	4.5	5.9	27	0.687	0.784	13	1.6	1.1	37
11B	0.135	13	15	14	3.1	3.5	12	3.4	2.6	27
23Na	15	1,986	2,418	20	3,959	3,943	0.4	5,050	5,301	4.8
24Mg	3.7	3,082	3,431	11	1,875	2,023	7.6	1,619	1,715	5.8
27Al	4.2	11,440	12,474	8.6	1,309	1,473	12	3,291	2,294	36
31P	164	8,520	7,525	12	12,733	13,493	5.8	11,512	13,222	14
39K	11	9,196	10,781	16	15,967	16,232	1.6	12,117	12,309	1.6
44Ca	17	42,828	42,677	0.4	3,252	3,783	15	3,769	3,165	17
49Ti	0.412	984	1,132	14	112	138	21	226	161	34
51V	0.051	28	31	10	2.9	3.1	6.7	6.2	5.2	18
52Cr	0.060	14	14	0.0	8.4	10	17	24	22	8.7
55Mn	0.079	118	113	4.3	108	128	17	81	66	20
57Fe	1.9	3,681	3,737	1.5	816	1,086	28	1,656	1,297	24
59Co	0.015	7.8	8.5	8.6	3.0	3.1	3.3	7.8	7.1	9.4
60Ni	0.060	85	86	1.2	14	16	13	38	34	11
63Cu	0.084	27	29	7.1	26	27	3.8	27	26	3.8
66Zn	1.8	209	217	3.8	326	329	0.9	363	336	7.7
75As	0.486	4.7	5.4	-	1.1	1.1	-	0.915	0.793	-
77Se	0.460	155	167	7.5	6.0	5.9	1.7	6.4	6.7	4.6
88Sr	0.043	147	148	0.7	6.9	7.4	7.0	11	11	0.0
95Mo	0.001	1.6	1.7	6.1	0.522	0.609	15	0.701	0.628	11
107Ag	0.001	0.515	0.582	12	0.136	0.129	5.3	0.297	0.221	29
111Cd	0.098	3.8	3.6	5.4	2.2	2.1	4.7	8.1	5.5	38
118Sn	0.018	0.797	0.993	22	0.755	0.697	8.0	0.841	0.736	13
121Sb	0.003	0.713	0.771	7.8	0.042	0.052	21	0.087	0.079	9.6
137Ba	1.3	5,302	5,401	1.8	176	187	6.1	95	84	12
202Hg	0.122	0.248	0.270	-	<0.122	<0.122	-	0.216	0.206	-
205Tl	0.001	0.468	0.534	13	0.068	0.077	12	0.154	0.135	13
208Pb	0.003	3.9	4.1	5.0	0.608	0.638	4.8	1.0	0.861	15
238U	0.001	0.882	0.891	1.0	0.173	0.194	11	0.125	0.089	34

Notes:

- ppm = parts per million
- RPD = relative percent difference
- DL = detection limit
- < = less than detection limit
- % = percent

Data Quality Objectives:

Laboratory Duplicates - RPD ≤40% for all elements, except Ca and Sr, which are ≤60%
Minimum DQOs apply to individual samples at concentrations above 10x DL

Teck Coal Limited
Tissue QA/QC Accuracy and Precision Results

Parameter	DL (ppm)	Certified Conc. (ppm)	Sample Group ID 01			Sample Group ID 02		
			Mean Estimated Conc. (ppm)	Accuracy (%)	Precision RSD (%)	Mean Estimated Conc. (ppm)	Accuracy (%)	Precision RSD (%)
7Li	0.018	1.21	1.1	93	12	1.1	94	7.8
11B	0.135	4.5	4.6	103	3.9	4.3	96	1.9
23Na	15	14,000	14,157	101	4.7	13,467	96	2.6
24Mg	3.7	910	910	100	3.5	895	98	6.8
27Al	4.2	197.2	171	87	4.6	184	94	3.2
31P	164	8,000	8,034	100	4.7	7,844	98	1.9
39K	11	15,500	15,592	101	5.2	15,770	102	5.8
44Ca	17	2,360	2,545	108	3.3	2,430	103	4.9
49Ti	0.412	12.24	11	89	8.2	12	94	8.7
51V	0.051	1.57	1.7	106	9.1	1.7	108	7.2
52Cr	0.060	1.87	1.9	100	2.9	1.7	93	3.1
55Mn	0.079	3.17	3.3	104	7.3	3.2	102	6.0
57Fe	1.9	343	362	106	4.1	356	104	5.3
59Co	0.015	0.25	0.265	106	2.0	0.270	108	4.8
60Ni	0.060	1.34	1.4	108	6.2	1.3	96	6.5
63Cu	0.084	15.7	16	102	8.8	17	110	4.9
66Zn	1.8	51.6	53	103	2.3	51	98	2.9
75As	0.486	6.87	6.9	100	2.4	6.7	98	1.5
77Se	0.460	3.45	3.8	110	0.0	3.6	104	3.4
88Sr	0.043	10.1	11	109	6.4	9.9	98	0.9
95Mo	0.001	0.29	0.305	105	5.0	0.270	93	7.1
107Ag	0.001	0.0252	0.031	125	10	0.024	96	11
111Cd	0.098	0.299	0.326	109	11	0.287	96	11
118Sn	0.018	0.061	0.061	99	7.8	0.060	98	12
121Sb	0.003	0.011	0.010	94	5.3	0.011	104	20
137Ba	1.3	8.6	8.8	102	4.9	7.9	92	4.8
202Hg	0.122	0.412	0.437	106	7.1	0.395	96	10
205Tl	0.001	0.0013	-	-	-	-	-	-
208Pb	0.003	0.404	0.379	94	11	0.408	101	8.2
238U	0.001	0.05	0.050	101	4.1	0.051	102	4.3

Notes:

ppm = parts per million; % = percent; DL = detection limit; RSD = relative standard deviation

Data Quality Objectives:

Accuracy: DQO of 60 - 140% of the certified values for B, Ti, Ag, Sn, Sb, and Ba.

Accuracy: DQO of 90 - 110% of the certified values for Se.

Accuracy: DQO of 70 - 130% of the certified values for all other elements provided.

Precision: DQO of ≤20% for all elements.

DORM-4 used for all parameters except B, Ti, Sb, Ba, and Al where NIST-1566b was used.

Tl certified concentration from NIST-2976.

Accuracy and precision for Tl are not reported as the certified concentration is too close to the reportable detection limit.

Teck Coal Limited
Tissue QA/QC Accuracy and Precision Results

Parameter	DL (ppm)	Certified Conc. (ppm)	03			04		
			Mean Estimated Conc. (ppm)	Accuracy (%)	Precision RSD (%)	Mean Estimated Conc. (ppm)	Accuracy (%)	Precision RSD (%)
7Li	0.018	1.21	1.2	101	12	1.1	90	9.4
11B	0.135	4.5	4.3	95	3.8	4.0	90	2.8
23Na	15	14,000	14,340	102	4.8	12,755	91	8.7
24Mg	3.7	910	952	105	6.2	785	86	9.7
27Al	4.2	197.2	181	92	6.1	173	88	4.0
31P	164	8,000	7,669	96	3.5	7,287	91	9.6
39K	11	15,500	15,625	101	2.7	14,190	92	7.6
44Ca	17	2,360	2,431	103	5.8	2,373	101	17
49Ti	0.412	12.24	13	106	7.7	9.8	80	9.9
51V	0.051	1.57	1.7	111	6.6	1.4	89	8.7
52Cr	0.060	1.87	1.9	103	6.8	1.7	90	12
55Mn	0.079	3.17	3.3	104	13	3.1	96	17
57Fe	1.9	343	350	102	7.6	344	100	15
59Co	0.015	0.25	0.252	101	3.0	0.236	94	6.7
60Ni	0.060	1.34	1.5	109	7.8	1.2	88	11
63Cu	0.084	15.7	17	106	6.9	15	97	5.5
66Zn	1.8	51.6	50	96	6.1	49	96	8.7
75As	0.486	6.87	6.9	100	2.9	6.4	93	5.1
77Se	0.460	3.45	3.4	99	6.6	3.3	94	15
88Sr	0.043	10.1	11	111	4.0	10	102	12
95Mo	0.001	0.29	0.287	99	9.1	0.278	96	5.1
107Ag	0.001	0.0252	0.027	108	14	0.022	86	12
111Cd	0.098	0.299	0.301	101	7.5	0.302	101	18
118Sn	0.018	0.061	0.052	86	15	0.060	98	9.3
121Sb	0.003	0.011	0.008	71	19	0.008	73	8.8
137Ba	1.3	8.6	8.3	96	4.1	7.8	91	2.8
202Hg	0.122	0.412	0.403	98	11	0.311	76	5.0
205Tl	0.001	0.0013	-	-	-	-	-	-
208Pb	0.003	0.404	0.422	104	7.0	0.392	97	15
238U	0.001	0.05	0.051	103	7.4	0.049	98	14

Notes:

ppm = parts per million; % = percent; DL = detection limit; RSD = relative standard deviation

Data Quality Objectives:

Accuracy: DQO of 60 - 140% of the certified values for B, Ti, Ag, Sn, Sb, and Ba.

Accuracy: DQO of 90 - 110% of the certified values for Se.

Accuracy: DQO of 70 - 130% of the certified values for all other elements provided.

Precision: DQO of ≤20% for all elements.

DORM-4 used for all parameters except B, Ti, Sb, Ba, and Al where NIST-1566b was used.

Tl certified concentration from NIST-2976.

Accuracy and precision for Tl are not reported as the certified concentration is too close to the reportable detection limit.

Teck Coal Limited
Tissue QA/QC Accuracy and Precision Results

Sample Group ID		05			
Parameter	DL (ppm)	Certified Conc. (ppm)	Mean Estimated Conc. (ppm)	Accuracy (%)	Precision RSD (%)
7Li	0.018	1.21	1.1	94	11
11B	0.135	4.5	4.5	100	1.9
23Na	15	14,000	14,253	102	4.7
24Mg	3.7	910	918	101	3.2
27Al	4.2	197.2	214	109	10
31P	164	8,000	8,121	102	4.2
39K	11	15,500	16,210	105	4.6
44Ca	17	2,360	2,355	100	5.3
49Ti	0.412	12.24	11	87	20
51V	0.051	1.57	1.6	101	16
52Cr	0.060	1.87	1.8	98	3.0
55Mn	0.079	3.17	3.3	104	9.5
57Fe	1.9	343	328	96	3.6
59Co	0.015	0.25	0.251	100	8.4
60Ni	0.060	1.34	1.3	98	3.4
63Cu	0.084	15.7	16	102	4.4
66Zn	1.8	51.6	51	98	5.2
75As	0.486	6.87	6.8	98	4.1
77Se	0.460	3.45	3.4	100	2.6
88Sr	0.043	10.1	10	100	8.6
95Mo	0.001	0.29	0.285	98	11
107Ag	0.001	0.0252	0.023	91	0.0
111Cd	0.098	0.299	0.296	99	8.3
118Sn	0.018	0.061	0.047	77	19
121Sb	0.003	0.011	0.011	102	18
137Ba	1.3	8.6	8.3	97	5.0
202Hg	0.122	0.412	0.381	92	5.6
205Tl	0.001	0.0013	-	-	-
208Pb	0.003	0.404	0.392	97	16
238U	0.001	0.05	0.048	96	7.7

Notes:

ppm = parts per million; % = percent; DL = detection limit; RSD = relative standard deviation

Data Quality Objectives:

Accuracy: DQO of 60 - 140% of the certified values for B, Ti, Ag, Sn, Sb, and Ba.

Accuracy: DQO of 90 - 110% of the certified values for Se.

Accuracy: DQO of 70 - 130% of the certified values for all other elements provided.

Precision: DQO of $\leq 20\%$ for all elements.

DORM-4 used for all parameters except B, Ti, Sb, Ba, and Al where NIST-1566b was used.

Tl certified concentration from NIST-2976.

Accuracy and precision for Tl are not reported as the certified concentration is too close to the reportable detection limit.

Teck Coal Limited
Sample Group Information

Sample Group ID	Client ID	Lab ID	Date of Analysis		
01	RG_ERCKMD_INV-1_2022-06-29_NP	148	13 Jul 2022		
	RG_ERCKMD_INV-2_2022-06-29_NP	149			
	RG_ERCKMD_INV-3_2022-06-29_NP	150			
	RG_ERCKMD_INV-4_2022-06-29_NP	151			
	RG_ERCKMD_INV-5_2022-06-29_NP	152			
	RG_ERCKUT_INV-1_2022-06-29_NP	153			
	RG_ERCKUT_INV-2_2022-06-29_NP	154			
	RG_ERCKUT_INV-3_2022-06-29_NP	155			
	RG_ERCKUT_INV-4_2022-06-29_NP	156			
	RG_ERCKUT_INV-5_2022-06-29_NP	157			
	RG_ERCKDT_INV-1_2022-06-29_NP	158			
	RG_ERCKDT_INV-2_2022-06-29_NP	159			
	RG_ERCKDT_INV-3_2022-06-29_NP	160			
	RG_ERCKDT_INV-4_2022-06-29_NP	161			
	RG_ERCKDT_INV-5_2022-06-29_NP	162			
	RG_ERCKDT_INV-6_2022-06-29_NP	163			
	02	RG_ERCK_INV-1_2022-06-30_NP		164	13 Jul 2022
		RG_ERCK_INV-2_2022-06-30_NP		165	
RG_ERCK_INV-3_2022-06-30_NP		166			
RG_ERCKUC_INV-1_2022-06-30_NP		167			
RG_ERCKUC_INV-2_2022-06-30_NP		168			
RG_ERCKUC_INV-3_2022-06-30_NP		169			
RG_GATE_INV-1_2022-06-28_NP		170			
RG_GATE_INV-2_2022-06-28_NP		171			
RG_GATE_INV-3_2022-06-28_NP		172			
RG_GATEDP_INV-1_2022-06-28_NP		173			
RG_BOCK_INV-1_2022-06-28_NP		174			
RG_BOCK_INV-2_2022-06-28_NP		175			
RG_BOCK_INV-3_2022-06-28_NP		176			
RG_BOCKRD_INV-1_2022-06-28_NP		177			
RG_BOCKRD_INV-2_2022-06-28_NP		178			
RG_BOCKRD_INV-3_2022-06-28_NP		179			
03		RG_MI25_INV-2_2022-06-30_NP	181	13 Jul 2022	
		RG_MI25_INV-1_2022-06-30_NP	180		
	RG_MI25_INV-3_2022-06-30_NP	182			
	RG_ALUSM_INV-1_2022-06-30_NP	183			
	RG_ALUSM_INV-2_2022-06-30_NP	185			
	RG_ALUSM_INV-3_2022-06-30_NP	186			
	RG_MIDGA_INV-1_2022-06-29_NP	187			
	RG_MIDGA_INV-2_2022-06-29_NP	188			

Teck Coal Limited
Sample Group Information

Sample Group ID	Client ID	Lab ID	Date of Analysis
03	RG_MIDGA_INV-3_2022-06-29_NP	189	13 Jul 2022
04	RG_BOCK_INVOLI-1_2022-06-28_NP	184	14 Jul 2022
05	RG_MIDBO_INV-1_2022-06-29_NP	190	14 Jul 2022
	RG_MIDBO_INV-2_2022-06-29_NP	191	
	RG_MIDBO_INV-3_2022-06-29_NP	192	
	RG_MICOMP_INV-1_2022-06-29_NP	193	
	RG_MICOMP_INV-2_2022-06-29_NP	194	
	RG_MICOMP_INV-3_2022-06-29_NP	195	
	RG_MICOMP_INV-4_2022-06-29_NP	196	
	RG_MICOMP_INV-5_2022-06-29_NP	197	
	RG_MI3_INV-1_2022-06-29_NP	198	
	RG_MI3_INV-2_2022-06-29_NP	199	
	RG_MI3_INV-3_2022-06-29_NP	200	
	RG_MIDER_INV-1_2022-06-30_NP	201	
	RG_MIDER_INV-2_2022-06-30_NP	202	
	RG_MIDER_INV-3_2022-06_30_NP	203	

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COC ID:		EVO_LAEMP		TURNAROUND TIME:		RUSH:					
PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name / Job# Regional Aquatic Effects				Lab Name Trichanalytcs Inc				Report Format / Distribution Excel PDF EDD			
Project Manager Mike Pope				Lab Contact Jennie Christensen				Email 1 mike.pope@teck.com			
Email giovanna.diaz@teck.com				Email jennie.christensen@trichanalytcs				Email 2 jessica.riz@teck.com			
Address 421 Pine Ave				Address 207-1753 Sean Heights				Email 3 tedcoatl@equisonline.com			
City Sparwood				City Saanichton				Email 4 Aguasclab@teck.com			
Postal Code V0B 2G0				Postal Code V8M 0B3				Email 5 Tyler.Mehler@minnow.ca			
Phone Number 250-425-8449				Phone Number				PO number 818999			
SAMPLE DETAILS											
Sample ID	Sample Location (SYS loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	Tissue Type	Tissue Species	Sample Structure	ANALYSIS REQUESTED		Filtered - F; Field L; Lab; FL; Field & Lab; N; None
148	RG_ERCKMID_INV-1_2022-06-29_NP	RC_ERCKMID	N	29-Jun-22	9:30	INV	Composite	Composite	ANALYSIS	PRESERV.	
149	RG_ERCKMID_INV-2_2022-06-29_NP	RC_ERCKMID	N	29-Jun-22	9:35	INV	Composite	Composite	Number of Containers	F	N
150	RG_ERCKMID_INV-3_2022-06-29_NP	RC_ERCKMID	N	29-Jun-22	9:40	INV	Composite	Composite	Metals in Biota by CRC ICPMS (wet and dry)	N	X
151	RG_ERCKMID_INV-4_2022-06-29_NP	RC_ERCKMID	N	29-Jun-22	9:45	INV	Composite	Composite	Mercury in Biota by CVAAS (wet, dry & routine)	F	X
152	RG_ERCKMID_INV-5_2022-06-29_NP	RC_ERCKMID	N	29-Jun-22	9:50	INV	Composite	Composite	Moisture Content by Gravimetry	N	X
153	RG_ERCKCUT_INV-1_2022-06-29_NP	RC_ERCKCUT	N	29-Jun-22	9:55	INV	Composite	Composite		F	N
154	RG_ERCKCUT_INV-2_2022-06-29_NP	RC_ERCKCUT	N	29-Jun-22	10:00	INV	Composite	Composite		F	N
155	RG_ERCKCUT_INV-3_2022-06-29_NP	RC_ERCKCUT	N	29-Jun-22	10:05	INV	Composite	Composite		F	N
156	RG_ERCKCUT_INV-4_2022-06-29_NP	RC_ERCKCUT	N	29-Jun-22	10:10	INV	Composite	Composite		F	N
ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS											
RELINQUISHED BY/AFFILIATION Robin Vallean						DATE/TIME June 30, 2022		ACCEPTED BY/AFFILIATION Alex Weide		DATE/TIME 1452022	
SERVICE REQUEST (rush - subject to availability) Regular (default) X Priority (2-3 business days) - 50% surcharge Emergency (1 Business Day) - 100% surcharge For Emergency < 1 Day, ASAP or Weekend - Contact ALS											
Sampler's Name Robin Vallean				Mobile # 416-970-7535				Date/Time June 30, 2022			
Sampler's Signature				Date/Time				Project # : 2022-356			

Electronically printed COC, add 1452022

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COC ID: **EVO_LAEMP**

TURNAROUND TIME:

RI/SH:

PROJECT/CLIENT INFO

LABORATORY

OTHER INFO

Facility Name / Job# Regional Aquatic Effects
 Project Manager Mike Pope
 Email giovanna.diaz@teck.com
 Address 421 Pine Ave

Lab Name TrichAnalytics Inc
 Lab Contact Jennie Christensen
 Email jennie.christensen@trichanalytics
 Address 207-1753 Sean Heights

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 Email 4: Aquasclab@teck.com X X X
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 Province BC
 Country Canada

City Saanichton
 Postal Code V8M 0B3
 Province BC
 Country Canada

Phone Number 250-425-8449
 Phone Number
 PO number
 8189999
 Fibred - F; Field, L; Lab; FL; Field & Lab; N; None

SAMPLE DETAILS

ANALYSIS REQUESTED

Sample ID	Sample Location (SIS loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	Tissue type	Tissue Species	Sample Structure	ANALYSIS REQUESTED						
									FIL	PRESERV.	Number of Containers	Metals in Biota by CRC ICPMS (wet and dry)	Mercury in Biota by CVAAS (wet, dry & routine)	Moisture Content by Gravimetry	
157	RG_ERCKDT_INV-5_2022-06-29_NP	TA	N	29-Jun-22	10:15	INV	Composite	Composite	1	X	X	X			
158	RG_ERCKDT_INV-1_2022-06-29_NP	TA	N	29-Jun-22	10:20	INV	Composite	Composite	1	X	X	X			
159	RG_ERCKDT_INV-2_2022-06-29_NP	TA	N	29-Jun-22	10:25	INV	Composite	Composite	1	X	X	X			
160	RG_ERCKDT_INV-3_2022-06-29_NP	TA	N	29-Jun-22	10:30	INV	Composite	Composite	1	X	X	X			
161	RG_ERCKDT_INV-4_2022-06-29_NP	TA	N	29-Jun-22	10:35	INV	Composite	Composite	1	X	X	X			
162	RG_ERCKDT_INV-5_2022-06-29_NP	TA	N	29-Jun-22	10:40	INV	Composite	Composite	1	X	X	X			
163	RG_ERCKDT_INV-6_2022-06-29_NP	TA	N	29-Jun-22	10:45	INV	Composite	Composite	1	X	X	X			
164	RG_ERCK_INV-1_2022-06-30_NP	TA	N	30-Jun-22	10:50	INV	Composite	Composite	1	X	X	X			
165	RG_ERCK_INV-2_2022-06-30_NP	TA	N	30-Jun-22	10:55	INV	Composite	Composite	1	X	X	X			

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS

RELINQUISHED BY/AFFILIATION

Robyn Vallean

DATE/TIME
June 30, 2022

ACCEPTED BY/AFFILIATION
Alex Lodge

DATE/TIME
June 30, 2022

SERVICE REQUEST (rush - subject to availability)

Regular (default) X
 Priority (2-3 business days) - 50% surcharge
 Emergency (1 Business Day) - 100% surcharge
 For Emergency <1 Day, ASAP or Weekend - Contact ALS

Sampler's Name
Robyn Vallean

Sampler's Signature

Mobile #

Date/Time

416-970-7535

June 30, 2022

Project #: 2022-356

Teck

COC ID: **EVO_LAEMP**

TURNAROUND TIME:

RUSH:

PROJECT/CLIENT INFO		LABORATORY		OTHER INFO	
Facility Name / Job#	Regional Aquatic Effects	Lab Name	TrichAnalytics Inc.	Report Format / Distribution	Excel PDF EDD
Project Manager	Mike Pope	Lab Contact	Jennie Christensen	Email 1:	mike.pope@teck.com X X X X
	Email: giovanna.diaz@teck.com		Email: jemie.christensen@trichanalytics	Email 2:	jessica.rutz@teck.com X X X X
Address	421 Pine Ave	Address	207-1753 Sean Heights	Email 3:	teckco@equionline.com X X X X
City	Sparrowood	City	Saanichton	Email 4:	Aquasclab@teck.com X X X X
Postal Code	V0B 2G0	Postal Code	V8M 0B3	Email 5:	Tyler.Mehler@mimnow.ca X X X X
Phone Number	250-425-8449	Phone Number		PO number	818999

Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	Tissue type	Tissue Species	Sample Structure	ANALYSIS REQUESTED				
									ANALYSIS	PRESERV.	Fit.	Filter	
166	RG_ERCK_INV_3_2022-06-30_NP	RG_ERCK	N	30-Jun-22	10:55	INV	Composit e	Composit e	1	X	X	X	
167	RG_ERCK_INV_1_2022-06-30_NP	RG_ERCK	N	30-Jun-22	11:00	INV	Composit e	Composit e	1	X	X	X	
168	RG_ERCK_INV_2_2022-06-30_NP	RG_ERCK	N	30-Jun-22	11:05	INV	Composit e	Composit e	1	X	X	X	
169	RG_ERCK_INV_3_2022-06-30_NP	RG_ERCK	N	30-Jun-22	11:10	INV	Composit e	Composit e	1	X	X	X	
170	RG_GATE_INV_1_2022-06-28_NP	RG_GATE	N	28-Jun-22	11:15	INV	Composit e	Composit e	1	X	X	X	
171	RG_GATE_INV_2_2022-06-28_NP	RG_GATE	N	28-Jun-22	11:20	INV	Composit e	Composit e	1	X	X	X	
172	RG_GATE_INV_3_2022-06-28_NP	RG_GATE	N	28-Jun-22	11:25	INV	Composit e	Composit e	1	X	X	X	
173	RG_GATEDP_INV_1_2022-06-28_NP	RG_GATEDP	N	28-Jun-22	11:30	INV	Composit e	Composit e	1	X	X	X	
174	RG_BOCK_INV_1_2022-06-28_NP	RG_GATEDP	N	28-Jun-22	11:35	INV	Composit e	Composit e	1	X	X	X	

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
	Robin Vallean	June 30, 2022	Alex Wade	14 Jul 2022
				Project #: 2022-356

SERVICE REQUEST (rush - subject to availability)		Sampler's Name	Robin Vallean	Mobile #	416-970-7535
Regular (default)	X	Sampler's Signature		Date/Time	June 30, 2022
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge					
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

COC ID:		EVO_LAEMP		TURNAROUND TIME:		RUSH:									
PROJECT/CLIENT INFO				LABORATORY											
Facility Name / Job#		Regional Aquatic Effects		Lab Name		TriChAnalytics Inc									
Project Manager		Mike Pope		Lab Contact		Jennie Christensen									
Email		giovanna.diaz@teck.com		Email		jennie.christensen@trichanalytics									
Address		421 Pine Ave		Address		207-1753 Sean Heights									
City		Sparwood		City		Saanichton									
Postal Code		V0B 2G0		Postal Code		V8M 0B3									
Phone Number		250-425-8449		Phone Number		8189999									
SAMPLE DETAILS				ANALYSIS REQUESTED											
Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	Tissue type	Tissue Species	Sample Structure	ANALYSIS	PRESERV.	Filter				
175	RG_BOCK_INV-2_2022-06-28_NP	RG_BOCK	N	28-Jun-22	11:40	INV	Composite	Composite	Number of Containers						
176	RG_BOCK_INV-3_2022-06-28_NP	RG_BOCK	N	28-Jun-22	11:45	INV	Composite	Composite	Metals in Biota by CRC ICPMS (wet and dry)						
177	RG_BOCKRD_INV-1_2022-06-28_NP	RG_BOCKRD	N	28-Jun-22	11:50	INV	Composite	Composite	Mercury in Biota by CVAAS (wet, dry & routine)						
178	RG_BOCKRD_INV-2_2022-06-28_NP	RG_BOCKRD	N	28-Jun-22	11:55	INV	Composite	Composite	Moisture Content by Gravimetry						
179	RG_BOCKRD_INV-3_2022-06-28_NP	RG_BOCKRD	N	28-Jun-22	12:00	INV	Composite	Composite							
180	RG_INV-1_2022-06-30_NP	RG_M125	N	30-Jun-22	9:00	INV	Composite	Composite							
181	RG_INV-2_2022-06-30_NP	RG_M125	N	30-Jun-22	9:10	INV	Composite	Composite							
182	RG_INV-3_2022-06-30_NP	RG_M125	N	30-Jun-22	9:20	INV	Composite	Composite							
183	RG_ALISM_INV-1_2022-06-30_NP	RG_ALISM	N	30-Jun-22	10:00	INV	Composite	Composite							
184	RG_BOCK_INV-1_2022-06-28_NP	RG_BOCK	N	28-Jun-22	11:40	INV	INVOLI	Composite							
ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS				RELINQUISHED BY/AFFILIATION				DATE/TIME		ACCEPTED BY/AFFILIATION		DATE/TIME			
				Robin Vallean				June 30, 2022		Alex Wade		14 Jun 2022			
												Project #: 2022-356			
SERVICE REQUEST (rush - subject to availability)				Regular (default) X				Priority (2-3 business days) - 50% surcharge		Emergency (1 Business Day) - 100% surcharge		For Emergency <1 Day, ASAP or Weekend - Contact ALS			
Sampler's Name		Robin Vallean		Sampler's Signature		Robin Vallean		Mobile #		416-970-7535		Date/Time		June 30, 2022	

Teck

COC ID:		EVO_LAEMP		TURNAROUND TIME:		RUSH:						
PROJECT/CLIENT INFO				LABORATORY				OTHER INFO				
Facility Name / Job# Regional Aquatic Effects				Lab Name Trichanalytics Inc				Report Format / Distribution				
Project Manager Mike Pope				Lab Contact Jennie Christensen				Email 1: mike.pope@teck.com				
Email giovanna.diaz@teck.com				Email jennie.christensen@trichanalytics				Email 2: jessica.ritz@teck.com				
Address 421 Pine Ave				Address 207-1755 Sean Heights				Email 3: tedcoai@equisonline.com				
City Sparwood				City Sanichon				Email 4: Aquasclub@teck.com				
Postal Code V0B 2G0				Postal Code V8M 0B3				Email 5: Tyler.Mehler@minnow.ca				
Province BC				Province BC				PO number				
Country Canada				Country Canada				818999				
Phone Number 250-425-8449				Phone Number				Filtered - Fi, Field, L, Lab, PL, Field & Lab, N, None				
SAMPLE DETAILS												
Sample ID	Sample Location (Sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	Tissue Type	Tissue Specie	Sample Structure	ANALYSIS REQUESTED	Filter	Preserv.	
185	RG_ALLISM_INV-2_2022-06-30_NP	RG_ALLISM	N	30-Jun-22	9:30	INV	Composite	Composite	Number of Containers	1	X	X
186	RG_ALLISM_INV-3_2022-06-30_NP	RG_ALLISM	N	28-Jun-22	9:40	INV	Composite	Composite	Metals in Biota by CRC IC/PMS (wet and dry)	1	X	X
187	RG_MIDGA_INV-1_2022-06-29_NP	RG_MIDGA	N	29-Jun-22	9:30	INV	Composite	Composite	Mercury in Biota by CVAAS (wet, dry & routine)	1	X	X
188	RG_MIDGA_INV-2_2022-06-29_NP	RG_MIDGA	N	29-Jun-22	9:45	INV	Composite	Composite	Moisture Content by Gravimetry	1	X	X
189	RG_MIDGA_INV-3_2022-06-29_NP	RG_MIDGA	N	29-Jun-22	10:00	INV	Composite	Composite		1	X	X
190	RG_MIDBO_INV-1_2022-06-29_NP	RG_MIDBO	N	29-Jun-22	10:30	INV	Composite	Composite		1	X	X
191	RG_MIDBO_INV-2_2022-06-29_NP	RG_MIDBO	N	29-Jun-22	10:45	INV	Composite	Composite		1	X	X
192	RG_MIDBO_INV-3_2022-06-29_NP	RG_MIDBO	N	29-Jun-22	11:00	INV	Composite	Composite		1	X	X
193	RG_MICOMP_INV-1_2022-06-29_NP	RG_MICOMP	N	29-Jun-22	11:15	INV	Composite	Composite		1	X	X
ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS												
RELINQUISHED BY/AFFILIATION						DATE/TIME						
Robin Vallean						June 30, 2022						
ACCEPTED BY/AFFILIATION						DATE/TIME						
Alex Leede						14 JUN 2022						
PROJECT # : 2022-356												
SERVICE REQUEST (rush - subject to availability)												
Regular (default) X						Priority (2-3 business days) - 50% surcharge						
Emergency (1 Business Day) - 100% surcharge						For Emergency <1 Day, ASAP or Weekend - Contact ALS						
Sampler's Name			Robin Vallean			Mobile #			416-970-7535			
Sampler's Signature						Date/Time			June 30, 2022			

Teck

COC ID:		EVO_LAEMP		TURN/ROUND TIME:		RUSH:									
PROJECT/CLIENT INFO				LABORATORY				OTHER INFO							
Facility Name / Job#: Regional Aquatic Effects Project Manager: Mike Pope Email: govanna.diaz@teck.com Address: 421 Pine Ave				Lab Name: TrichAnalytics Inc. Lab Contact: Jennie Christensen Email: jennie.christensen@trichanalytics.com Address: 207-1755 Sean Heights				Report Format / Distribution: Excel PDF EDD Email 1: mike.pope@teck.com Email 2: jessica.ritz@teck.com Email 3: teckcan@equisonline.com Email 4: AquasolLab@teck.com Email 5: Tyler.Mehler@mimrow.ca							
City: Sparwood		Province: BC		City: Kamichthon		Province: BC		Excel		PDF		EDD			
Postal Code: V0B 2G0		Country: Canada		Postal Code: V8M 0B3		Country: Canada		Phone Number: 250-425-8449		Phone Number: 818999		Filtered: F: Field, L: Lab, FL: Field & Lab, N: None			
SAMPLE DETAILS															
Sample ID	Sample Location (Sys Loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	Tissue Type	Tissue Specimen	Sample Structure	ANALYSIS	PRESERV.	Filter	Number of Containers	Metals in Biota by CRC ICPPMS (wet and dry)	Mercury in Biota by CVAAS (wet, dry & routine)	Moisture Content by Gravimetry
194	RG_MICOMP_INV_2_2022-06-29_NP	TA	N	29-Jun-22	11:30	INV	Composite	Composite	1	X	X	X	X	X	X
195	RG_MICOMP_INV_3_2022-06-29_NP	TA	N	29-Jun-22	11:35	INV	Composite	Composite	1	X	X	X	X	X	X
196	RG_MICOMP_INV_4_2022-06-29_NP	TA	N	29-Jun-22	11:40	INV	Composite	Composite	1	X	X	X	X	X	X
197	RG_MICOMP_INV_5_2022-06-29_NP	TA	N	29-Jun-22	11:50	INV	Composite	Composite	1	X	X	X	X	X	X
198	RG_M13_INV_1_2022-06-29_NP	TA	N	29-Jun-22	8:50	INV	Composite	Composite	1	X	X	X	X	X	X
199	RG_M13_INV_2_2022-06-29_NP	TA	N	29-Jun-22	9:00	INV	Composite	Composite	1	X	X	X	X	X	X
200	RG_M13_INV_3_2022-06-29_NP	TA	N	29-Jun-22	9:20	INV	Composite	Composite	1	X	X	X	X	X	X
201	RG_MIDER_INV_1_2022-06-30_NP	TA	N	30-Jun-22	12:45	INV	Composite	Composite	1	X	X	X	X	X	X
202	RG_MIDER_INV_22_2022-06-30_NP	TA	N	30-Jun-22	13:00	INV	Composite	Composite	1	X	X	X	X	X	X
203	RG_MIDER_INV_3_2022-06-30_NP	TA	N	30-Jun-22	13:30	INV	Composite	Composite	1	X	X	X	X	X	X
ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS															
RELINQUISHED BY/AFFILIATION: Robin Vallean															
DATE/TIME: June 30, 2022															
ACCEPTED BY/AFFILIATION: Alex Wade															
DATE/TIME: 14 Jul 2022															
Project #: 2022-356															
SERVICE REQUEST (rush - subject to availability)															
Regular (default) X															
Priority (2-3 business days) - 50% surcharge															
Emergency (1 Business Day) - 100% surcharge															
For Emergency < 1 Day: ASAP or Weekend - Contact ALS															
Sampler's Name: Robin Vallean				Sampler's Signature:				Mobile #: 416-970-7535		Date/Time: June 30, 2022					



TrichAnalytics Inc.

Tissue Microchemistry Analysis Report

Client: Mike Pope Project Manager Teck Coal Limited	Date Received: 04 Aug 2022
Phone: (250) 425-8449	Date of Analysis: 10 Aug 2022
Email: mike.pope@teck.com; jessica.ritz@teck.com; teckcoal@equisonline.com; aquascilab@teck.com; tyler.mehler@minnow.ca	Final Report Date: 11 Aug 2022
	Project No.: 2022-367
	Method No.: MET-002.06

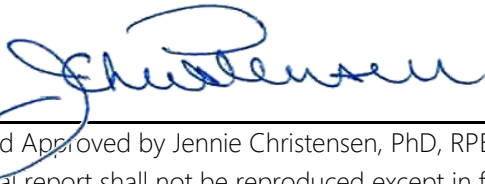
Client Project: EVO_LAEMP_JULY Regional Aquatics Effects (PO 847031)

Analytical Request: Composite Benthic Invertebrate Tissue Microchemistry (total metals & moisture) - 65 samples.
See chain of custody form provided for sample identification numbers.

Notes:

Analytical results are expressed in parts per million (ppm) dry weight (equivalent to mg/kg).
Samples quantified using DORM-4, NIST-1566b, and NIST-2976 certified reference standards.
Aluminum concentrations above 1,000 ppm are outside linear range of the calibration curve.
RPD values calculated according to the British Columbia Environmental Laboratory Manual (2020) criteria.
Client specific DQO for Selenium accuracy is 90-110% of the certified value; result achieved 102% (ranging from 97-107%).

This report provides the analytical results only for tissue samples noted above as received from the Client.



Reviewed and Approved by Jennie Christensen, PhD, RPBio

Date

11 Aug 2022

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TrichAnalytics Inc.
207-1753 Sean Heights
Saanichton, BC V8M 0B3
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CALA
Testing
Accreditation No. A4196

Teck Coal Limited
Tissue Analysis Results

			RG_GATEDP_CO MPOLI- 01_LAEMP_EVO_ 2022-07-25_N	RG_GATEDP_INV OLI- 01_LAEMP_EVO_ 2022-07-25_N	RG_GATEDP_INV- 01_LAEMP_EVO_ 2022-07-26_NP	RG_GATE_INV- 01_LAEMP_EVO_ 2022-07-25_N	RG_GATE_INV- 02_LAEMP_EVO_ 2022-07-25_N
Client ID							
Lab ID			081	082	083	084	085
Wet Weight (g)			0.7860	0.2020	0.0286	0.1254	0.2035
Dry Weight (g)			0.1783	0.0595	0.0098	0.0358	0.0578
Moisture (%)			77.3	70.5	65.7	71.5	71.6
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.018	0.060	2.7	3.5	5.7	1.8	2.0
11B	0.088	0.293	4.1	6.3	12	5.1	1.7
23Na	7.0	23	8,316	2,998	5,432	2,573	4,513
24Mg	0.088	0.293	3,003	2,483	2,830	2,281	2,037
27Al	0.252	0.840	1,518	5,292	3,497	3,392	1,182
31P	82	273	10,733	9,920	11,379	7,958	11,420
39K	5.9	20	12,555	10,361	15,106	13,968	14,583
44Ca	25	83	23,168	31,979	42,583	11,781	4,596
49Ti	0.001	0.003	140	507	306	237	122
51V	0.038	0.127	3.1	10	6.5	6.1	2.5
52Cr	0.196	0.653	7.8	11	37	12	6.7
55Mn	0.013	0.043	35	39	159	57	25
57Fe	2.4	8.0	1,103	2,795	2,222	2,843	945
59Co	0.015	0.050	4.3	9.3	3.7	2.1	2.0
60Ni	0.046	0.153	30	55	101	75	41
63Cu	0.047	0.157	15	12	17	16	19
66Zn	0.822	2.7	164	226	321	292	211
75As	0.445	1.5	3.1	11	1.9	5.0	2.6
77Se	0.461	1.5	27	100	15	21	25
88Sr	0.004	0.013	48	78	81	60	20
95Mo	0.019	0.063	0.337	1.2	1.2	0.630	0.515
107Ag	0.001	0.003	0.089	0.129	0.316	0.080	0.100
111Cd	0.059	0.197	4.9	7.2	5.5	5.4	4.2
118Sn	0.040	0.133	0.247	0.857	1.7	0.918	0.312
121Sb	0.006	0.020	0.116	0.256	0.251	0.194	0.132
137Ba	0.606	2.0	2,824	4,208	4,649	6,049	1,674
202Hg	0.027	0.090	0.063	0.217	0.065	0.074	0.074
205Tl	0.001	0.003	0.127	0.208	0.063	0.130	0.063
208Pb	0.003	0.010	0.408	1.3	0.810	0.719	0.382
238U	0.001	0.003	0.244	1.1	0.460	0.280	0.132

Notes:

- ppm = parts per million
- DL = detection limit
- LOQ = limit of quantitation
- < = less than detection limit
- g = grams
- % = percent

Teck Coal Limited
Tissue Analysis Results

			Client ID	RG_GATE_INV-03_LAEMP_EVO_2022-07-25_N	RG_MIDGA_INV-01_LAEMP_EVO_2022-07-25_N	RG_MIDGA_INV-02_LAEMP_EVO_2022-07-25_N	RG_MIDGA_INV-03_LAEMP_EVO_2022-07-25_N	RG_MIDBO_INV-01_LAEMP_EVO_2022-07-25_N
			Lab ID	086	087	088	089	090
			Wet Weight (g)	0.1384	1.0117	1.3583	0.5600	0.1758
			Dry Weight (g)	0.0406	0.2833	0.2950	0.1624	0.0471
			Moisture (%)	70.7	72.0	78.3	71.0	73.2
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.018	0.060	4.2	2.8	1.8	4.0	1.7	
11B	0.088	0.293	7.1	5.2	1.2	9.8	4.4	
23Na	7.0	23	5,143	3,317	2,845	2,518	2,937	
24Mg	0.088	0.293	3,405	2,045	1,184	2,740	2,167	
27Al	0.252	0.840	5,022	3,578	479	5,996	3,337	
31P	82	273	12,703	10,462	8,795	8,888	10,097	
39K	5.9	20	15,891	11,442	7,562	9,892	10,510	
44Ca	25	83	10,773	7,030	1,926	11,006	5,045	
49Ti	0.001	0.003	508	350	34	533	265	
51V	0.038	0.127	9.3	6.5	0.980	15	7.3	
52Cr	0.196	0.653	18	20	4.8	37	75	
55Mn	0.013	0.043	67	50	29	107	59	
57Fe	2.4	8.0	2,312	1,699	321	2,721	3,150	
59Co	0.015	0.050	3.8	5.2	2.4	9.4	13	
60Ni	0.046	0.153	62	60	18	99	134	
63Cu	0.047	0.157	20	16	11	18	15	
66Zn	0.822	2.7	432	352	178	472	307	
75As	0.445	1.5	1.7	1.5	0.708	2.1	1.7	
77Se	0.461	1.5	26	5.0	4.0	7.3	6.8	
88Sr	0.004	0.013	58	18	4.1	36	13	
95Mo	0.019	0.063	0.977	0.533	0.195	0.668	0.364	
107Ag	0.001	0.003	0.213	0.156	0.093	0.156	0.121	
111Cd	0.059	0.197	3.6	3.3	1.9	5.5	5.6	
118Sn	0.040	0.133	0.503	0.306	0.143	0.338	0.429	
121Sb	0.006	0.020	0.348	0.151	0.029	0.180	0.118	
137Ba	0.606	2.0	3,991	579	88	721	145	
202Hg	0.027	0.090	0.070	0.086	0.065	0.098	0.062	
205Tl	0.001	0.003	0.207	0.077	0.025	0.114	0.106	
208Pb	0.003	0.010	1.3	1.2	0.223	1.9	1.1	
238U	0.001	0.003	0.549	0.197	0.043	0.583	0.240	

Notes:

- ppm = parts per million
- DL = detection limit
- LOQ = limit of quantitation
- < = less than detection limit
- g = grams
- % = percent

Teck Coal Limited
Tissue Analysis Results

			Client ID	RG_MIDBO_INV-02_LAEMP_EVO_2022-07-25_N	RG_MIDBO_INV-03_LAEMP_EVO_2022-07-25_N	RG_MICOMP_IN V-01_LAEMP_EVO_2022-07-25_N	RG_MICOMP_IN V-02_LAEMP_EVO_2022-07-25_N	RG_MICOMP_IN V-03_LAEMP_EVO_2022-07-25_N
			Lab ID	091	092	093	094	095
			Wet Weight (g)	0.6958	0.3335	0.8152	0.4976	0.6227
			Dry Weight (g)	0.1660	0.0743	0.2114	0.1091	0.1529
			Moisture (%)	76.1	77.7	74.1	78.1	75.4
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.018	0.060	1.3	1.3	1.7	0.609	0.903	
11B	0.088	0.293	4.4	5.4	3.5	2.2	2.1	
23Na	7.0	23	2,942	3,830	2,878	2,750	4,723	
24Mg	0.088	0.293	1,962	2,154	1,094	1,377	1,776	
27Al	0.252	0.840	3,032	2,704	1,188	1,289	1,586	
31P	82	273	9,334	10,250	6,826	8,912	10,241	
39K	5.9	20	8,373	10,499	8,225	9,225	10,908	
44Ca	25	83	3,132	6,534	1,661	2,942	2,649	
49Ti	0.001	0.003	295	219	110	135	124	
51V	0.038	0.127	8.4	5.9	3.6	2.8	3.7	
52Cr	0.196	0.653	43	33	18	15	23	
55Mn	0.013	0.043	46	158	48	56	38	
57Fe	2.4	8.0	2,189	1,805	897	915	1,173	
59Co	0.015	0.050	6.9	12	3.2	6.2	2.6	
60Ni	0.046	0.153	78	90	42	31	45	
63Cu	0.047	0.157	16	17	11	14	17	
66Zn	0.822	2.7	242	344	134	281	299	
75As	0.445	1.5	2.0	2.1	0.787	0.877	0.721	
77Se	0.461	1.5	5.9	8.7	3.7	5.2	4.3	
88Sr	0.004	0.013	9.0	16	5.9	6.3	6.6	
95Mo	0.019	0.063	0.506	0.992	0.344	0.243	0.486	
107Ag	0.001	0.003	0.197	0.141	0.136	0.111	0.197	
111Cd	0.059	0.197	2.7	6.7	1.1	5.7	1.7	
118Sn	0.040	0.133	0.312	0.661	0.186	0.350	0.297	
121Sb	0.006	0.020	0.198	0.133	0.168	0.059	0.077	
137Ba	0.606	2.0	121	137	101	71	66	
202Hg	0.027	0.090	0.062	0.062	0.062	0.071	0.093	
205Tl	0.001	0.003	0.081	0.088	0.067	0.061	0.049	
208Pb	0.003	0.010	1.1	1.0	0.913	0.372	0.871	
238U	0.001	0.003	0.156	0.331	0.132	0.090	0.087	

Notes:

- ppm = parts per million
- DL = detection limit
- LOQ = limit of quantitation
- < = less than detection limit
- g = grams
- % = percent

Teck Coal Limited
Tissue Analysis Results

			RG_MICOMP_IN	RG_MICOMP_IN	RG_BOCK_COMP	RG_BOCK_COMP	RG_BOCK_COMP
			V-	V-	OLI-	OLI-	OLI-
Client ID			04_LAEMP_EVO_	05_LAEMP_EVO_	01_LAEMP_EVO_	02_LAEMP_EVO_	03_LAEMP_EVO_
			2022-07-25_N	2022-07-25_N	2022-07-25_N	2022-07-25_N	2022-07-25_N
Lab ID			096	097	098	099	100
Wet Weight (g)			0.9134	0.6201	0.1682	1.2198	0.7699
Dry Weight (g)			0.2728	0.1712	0.0584	0.3583	0.3378
Moisture (%)			70.1	72.4	65.3	70.6	56.1
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.018	0.060	0.855	1.9	3.7	2.7	4.6
11B	0.088	0.293	1.4	2.9	8.9	6.1	16
23Na	7.0	23	3,505	4,776	2,334	3,160	2,062
24Mg	0.088	0.293	1,474	2,316	3,279	2,357	3,597
27Al	0.252	0.840	1,001	752	8,047	4,334	12,650
31P	82	273	9,578	14,213	9,841	6,262	6,982
39K	5.9	20	9,996	15,200	9,908	9,230	9,340
44Ca	25	83	1,982	4,342	52,618	14,853	72,124
49Ti	0.001	0.003	123	59	595	330	926
51V	0.038	0.127	2.6	1.6	13	7.3	22
52Cr	0.196	0.653	18	10	24	8.5	12
55Mn	0.013	0.043	39	74	94	48	110
57Fe	2.4	8.0	756	602	2,466	1,341	3,431
59Co	0.015	0.050	3.7	5.0	12	4.0	8.3
60Ni	0.046	0.153	39	32	86	75	87
63Cu	0.047	0.157	19	13	15	23	20
66Zn	0.822	2.7	270	294	183	128	202
75As	0.445	1.5	0.814	1.4	6.1	1.4	4.7
77Se	0.461	1.5	4.2	6.2	133	39	61
88Sr	0.004	0.013	5.1	9.7	136	43	171
95Mo	0.019	0.063	0.303	0.344	1.3	0.602	1.1
107Ag	0.001	0.003	0.214	0.096	0.180	0.198	0.244
111Cd	0.059	0.197	1.5	3.9	1.8	1.5	2.8
118Sn	0.040	0.133	0.128	0.240	0.447	0.342	0.723
121Sb	0.006	0.020	0.062	0.051	0.345	0.237	0.611
137Ba	0.606	2.0	71	236	4,254	1,404	6,755
202Hg	0.027	0.090	0.067	0.071	0.204	0.063	0.136
205Tl	0.001	0.003	0.031	0.062	0.388	0.189	0.499
208Pb	0.003	0.010	0.467	0.517	1.9	2.7	3.6
238U	0.001	0.003	0.062	0.097	0.784	0.384	0.955

Notes:

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Teck Coal Limited
Tissue Analysis Results

			Client ID	RG_BOCK_INV-01_LAEMP_EVO_2022-07-26_N	RG_BOCK_INVOL I-01_LAEMP_EVO_2022-07-26_N	RG_BOCK_INV-02_LAEMP_EVO_2022-07-26_N	RG_BOCK_INVOL I-02_LAEMP_EVO_2022-07-26_N	RG_BOCK_INV-03_LAEMP_EVO_2022-07-26_N
			Lab ID	101	102	103	104	105
			Wet Weight (g)	0.0618	0.1805	0.0706	0.1549	0.1348
			Dry Weight (g)	0.0269	0.0548	0.0200	0.0410	0.0331
			Moisture (%)	56.5	69.6	71.7	73.5	75.4
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.018	0.060	0.745	4.0	4.1	3.2	2.0	
11B	0.088	0.293	1.5	11	5.8	7.4	6.7	
23Na	7.0	23	1,564	2,872	3,503	2,941	3,286	
24Mg	0.088	0.293	1,617	3,893	3,511	3,016	2,283	
27Al	0.252	0.840	1,048	8,368	4,164	2,503	2,480	
31P	82	273	7,902	9,436	12,544	8,762	8,147	
39K	5.9	20	6,709	9,288	12,915	10,504	12,954	
44Ca	25	83	10,336	69,571	24,564	27,803	17,586	
49Ti	0.001	0.003	68	713	270	473	199	
51V	0.038	0.127	2.1	16	7.4	10	4.5	
52Cr	0.196	0.653	9.1	28	43	25	14	
55Mn	0.013	0.043	29	104	218	74	205	
57Fe	2.4	8.0	444	2,686	1,968	2,412	970	
59Co	0.015	0.050	4.2	11	12	7.6	5.1	
60Ni	0.046	0.153	29	118	149	107	109	
63Cu	0.047	0.157	16	37	32	15	15	
66Zn	0.822	2.7	262	341	248	229	137	
75As	0.445	1.5	0.727	8.1	2.4	4.2	3.0	
77Se	0.461	1.5	6.9	401	157	95	75	
88Sr	0.004	0.013	23	186	61	83	51	
95Mo	0.019	0.063	0.312	2.2	1.6	0.915	4.8	
107Ag	0.001	0.003	0.151	1.1	0.407	0.163	0.116	
111Cd	0.059	0.197	0.748	9.4	1.6	2.2	0.481	
118Sn	0.040	0.133	0.141	0.928	0.725	1.1	0.536	
121Sb	0.006	0.020	0.068	0.563	0.248	0.351	0.174	
137Ba	0.606	2.0	502	5,124	2,057	3,119	1,765	
202Hg	0.027	0.090	0.068	0.414	0.144	0.131	<0.027	
205Tl	0.001	0.003	0.109	0.504	0.269	0.647	0.136	
208Pb	0.003	0.010	0.323	3.4	3.3	4.9	0.900	
238U	0.001	0.003	0.144	1.0	0.587	0.592	0.532	

Notes:

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Teck Coal Limited
Tissue Analysis Results

			RG_BOCK_INVOL I- 03_LAEMP_EVO_ 2022-07-26_N	RG_BOCKRD_INV 01_LAEMP_EVO_ 2022-07-26_N	RG_BOCKRD_INV 02_LAEMP_EVO_ 2022-07-26_N	RG_BOCKRD_INV 03_LAEMP_EVO_ 2022-07-26_N	RG_ERCKUT_INV 01_LAEMP_EVO_ 2022-07-26_N
Client ID							
Lab ID			106	107	108	109	110
Wet Weight (g)			0.1582	0.0674	0.0390	0.0898	0.0769
Dry Weight (g)			0.0491	0.0247	0.0134	0.0185	0.0247
Moisture (%)			69.0	63.4	65.6	79.4	67.9
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.018	0.060	3.1	3.5	1.4	2.2	0.748
11B	0.088	0.293	7.8	26	5.2	6.1	1.1
23Na	7.0	23	2,496	7,182	6,058	6,458	4,541
24Mg	0.088	0.293	2,706	5,432	3,076	4,222	2,531
27Al	0.252	0.840	6,126	5,508	972	2,292	274
31P	82	273	7,607	17,748	14,664	16,750	15,061
39K	5.9	20	8,761	19,459	15,118	14,759	10,109
44Ca	25	83	28,261	135,075	20,542	46,699	6,532
49Ti	0.001	0.003	492	396	74	215	16
51V	0.038	0.127	11	16	2.5	4.9	0.833
52Cr	0.196	0.653	11	63	19	26	13
55Mn	0.013	0.043	60	203	41	57	14
57Fe	2.4	8.0	1,890	20,830	1,514	1,287	390
59Co	0.015	0.050	7.8	7.4	2.2	3.1	0.608
60Ni	0.046	0.153	83	178	45	65	21
63Cu	0.047	0.157	19	30	14	15	27
66Zn	0.822	2.7	242	754	254	386	275
75As	0.445	1.5	4.4	11	1.1	0.894	<0.445
77Se	0.461	1.5	86	13	6.3	14	13
88Sr	0.004	0.013	116	3,178	41	78	7.5
95Mo	0.019	0.063	1.0	1.3	0.846	0.725	0.217
107Ag	0.001	0.003	0.436	0.203	0.052	0.047	0.120
111Cd	0.059	0.197	8.2	8.4	2.0	6.2	3.4
118Sn	0.040	0.133	0.799	0.688	0.708	0.736	0.301
121Sb	0.006	0.020	0.397	0.708	0.123	0.161	0.045
137Ba	0.606	2.0	3,658	233,623	1,349	831	65
202Hg	0.027	0.090	0.168	0.105	0.069	0.064	0.049
205Tl	0.001	0.003	0.360	0.285	0.077	0.139	0.019
208Pb	0.003	0.010	4.0	1.2	0.651	0.642	0.131
238U	0.001	0.003	0.597	1.2	0.213	0.410	0.087

Notes:

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Teck Coal Limited
Tissue Analysis Results

			RG_ERCKUT_INV- 02_LAEMP_EVO_ 2022-07-26_N	RG_ERCKUT_INV- 03_LAEMP_EVO_ 2022-07-26_N	RG_ERCKUT_INV- 04_LAEMP_EVO_ 2022-07-26_N	RG_ERCKUT_INV- 05_LAEMP_EVO_ 2022-07-26_N	RG_ERCKDT_INV- 01_LAEMP_EVO_ 2022-07-26_N
Client ID							
Lab ID			111	112	113	114	115
Wet Weight (g)			0.3559	0.0502	0.1396	0.1206	0.0811
Dry Weight (g)			0.1081	0.0212	0.0457	0.0340	0.0257
Moisture (%)			69.6	57.8	67.3	71.8	68.3
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.018	0.060	0.490	0.571	0.807	0.534	1.2
11B	0.088	0.293	1.8	2.0	1.7	0.731	5.1
23Na	7.0	23	2,871	2,899	3,589	3,126	3,932
24Mg	0.088	0.293	2,605	3,300	3,515	4,016	3,316
27Al	0.252	0.840	541	515	564	194	3,563
31P	82	273	12,897	14,278	15,304	15,160	13,448
39K	5.9	20	8,270	10,337	10,284	9,526	10,648
44Ca	25	83	5,294	3,599	3,997	5,585	7,241
49Ti	0.001	0.003	51	39	35	13	304
51V	0.038	0.127	1.9	1.4	2.2	0.510	8.2
52Cr	0.196	0.653	9.3	12	38	8.6	88
55Mn	0.013	0.043	13	17	18	15	209
57Fe	2.4	8.0	349	440	830	234	3,037
59Co	0.015	0.050	0.433	0.318	1.6	0.214	16
60Ni	0.046	0.153	12	19	61	13	157
63Cu	0.047	0.157	21	24	22	23	15
66Zn	0.822	2.7	225	277	245	236	236
75As	0.445	1.5	<0.445	0.927	0.496	<0.445	1.8
77Se	0.461	1.5	5.0	6.1	6.1	5.4	25
88Sr	0.004	0.013	6.1	3.8	4.3	4.1	10
95Mo	0.019	0.063	0.169	0.242	0.169	0.193	0.834
107Ag	0.001	0.003	0.073	0.078	0.078	0.089	0.063
111Cd	0.059	0.197	1.6	2.8	0.863	1.1	1.7
118Sn	0.040	0.133	0.180	1.2	0.416	0.687	0.430
121Sb	0.006	0.020	0.074	0.095	0.074	0.050	0.267
137Ba	0.606	2.0	111	30	65	20	75
202Hg	0.027	0.090	0.036	0.036	<0.027	<0.027	<0.027
205Tl	0.001	0.003	0.027	0.030	0.024	0.015	0.081
208Pb	0.003	0.010	0.181	0.224	0.235	0.068	0.941
238U	0.001	0.003	0.095	0.157	0.084	0.069	0.281

Notes:

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Teck Coal Limited
Tissue Analysis Results

			RG_ERCKDT_INV- 02_LAEMP_EVO_ 2022-07-26_N	RG_ERCKDT_INV- 03_LAEMP_EVO_ 2022-07-26_N	RG_ERCKDT_INV- 04_LAEMP_EVO_ 2022-07-26_N	RG_ERCKDT_INV- 05_LAEMP_EVO_ 2022-07-26_N	RG_ERCKDT_INV- 06_LAEMP_EVO_ 2022-07-26_N
Client ID							
Lab ID			116	117	118	119	120
Wet Weight (g)			0.0690	0.2803	0.0881	0.1240	0.5902
Dry Weight (g)			0.0193	0.0806	0.0239	0.0392	0.1373
Moisture (%)			72.0	71.2	72.9	68.4	76.7
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.018	0.060	1.2	0.837	1.0	0.402	0.654
11B	0.088	0.293	3.1	2.2	2.8	0.862	1.6
23Na	7.0	23	3,720	3,253	2,788	2,676	2,678
24Mg	0.088	0.293	3,097	2,167	2,068	2,034	2,579
27Al	0.252	0.840	1,302	977	1,531	255	615
31P	82	273	13,921	11,578	10,887	12,604	12,604
39K	5.9	20	9,946	11,853	9,612	10,790	11,369
44Ca	25	83	5,566	3,554	4,429	2,697	3,690
49Ti	0.001	0.003	87	102	142	19	44
51V	0.038	0.127	3.0	2.4	3.4	0.676	1.4
52Cr	0.196	0.653	28	12	14	9.0	12
55Mn	0.013	0.043	122	324	134	106	67
57Fe	2.4	8.0	1,545	943	1,189	280	415
59Co	0.015	0.050	9.4	10	8.7	4.6	3.7
60Ni	0.046	0.153	52	25	28	15	19
63Cu	0.047	0.157	20	19	18	17	18
66Zn	0.822	2.7	172	250	179	178	155
75As	0.445	1.5	0.944	1.1	1.4	0.926	1.2
77Se	0.461	1.5	11	22	11	9.0	8.4
88Sr	0.004	0.013	6.7	4.4	5.6	1.8	2.9
95Mo	0.019	0.063	0.461	0.712	0.580	0.290	0.343
107Ag	0.001	0.003	0.062	0.089	0.069	0.062	0.069
111Cd	0.059	0.197	2.0	2.9	1.2	1.6	1.9
118Sn	0.040	0.133	0.845	0.865	0.794	0.552	0.433
121Sb	0.006	0.020	0.115	0.174	0.122	0.063	0.079
137Ba	0.606	2.0	47	66	37	8.5	22
202Hg	0.027	0.090	<0.027	0.043	0.030	0.043	0.030
205Tl	0.001	0.003	0.035	0.046	0.043	0.017	0.023
208Pb	0.003	0.010	0.489	0.792	0.623	0.205	0.191
238U	0.001	0.003	0.152	0.281	0.159	0.052	0.108

Notes:

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Teck Coal Limited
Tissue Analysis Results

			RG_ERCKMD_INV_01_LAEMP_EVO_2022-07-26_N	RG_ERCKMD_INV_02_LAEMP_EVO_2022-07-26_N	RG_ERCKMD_INV_03_LAEMP_EVO_2022-07-26_N	RG_ERCKMD_INV_04_LAEMP_EVO_2022-07-26_N	RG_ERCKMD_INV_05_LAEMP_EVO_2022-07-26_N
Client ID							
Lab ID			121	122	123	124	125
Wet Weight (g)			0.0085	0.1014	0.0541	0.0484	0.4481
Dry Weight (g)			0.0052	0.0189	0.0143	0.0128	0.1195
Moisture (%)			38.8	81.4	73.6	73.6	73.3
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.018	0.060	1.1	0.547	1.4	0.580	0.290
11B	0.088	0.293	4.0	2.4	1.4	1.5	0.359
23Na	7.0	23	2,224	1,835	3,119	2,180	2,824
24Mg	0.088	0.293	1,908	2,754	1,978	2,321	1,333
27Al	0.252	0.840	2,334	435	642	348	109
31P	82	273	6,849	9,376	9,438	11,546	11,936
39K	5.9	20	6,757	8,238	6,677	8,897	10,197
44Ca	25	83	7,574	6,127	6,088	3,397	1,797
49Ti	0.001	0.003	179	30	66	22	5.5
51V	0.038	0.127	4.7	1.3	2.1	0.984	0.271
52Cr	0.196	0.653	48	16	33	12	6.2
55Mn	0.013	0.043	616	266	145	225	50
57Fe	2.4	8.0	3,133	1,001	1,143	993	223
59Co	0.015	0.050	30	8.5	8.8	7.4	3.0
60Ni	0.046	0.153	109	29	57	24	8.8
63Cu	0.047	0.157	14	17	18	15	9.7
66Zn	0.822	2.7	143	339	158	220	140
75As	0.445	1.5	1.2	0.653	0.490	0.489	<0.445
77Se	0.461	1.5	8.2	7.5	11	7.3	16
88Sr	0.004	0.013	9.0	5.6	8.3	3.1	1.9
95Mo	0.019	0.063	1.0	2.5	0.685	1.1	0.321
107Ag	0.001	0.003	0.048	0.048	0.082	0.023	0.041
111Cd	0.059	0.197	1.3	3.3	6.5	1.5	0.201
118Sn	0.040	0.133	0.308	1.1	0.388	0.492	0.058
121Sb	0.006	0.020	0.282	0.052	0.070	0.040	0.033
137Ba	0.606	2.0	88	39	57	22	7.8
202Hg	0.027	0.090	0.043	0.055	0.061	<0.027	<0.027
205Tl	0.001	0.003	0.070	0.023	0.031	0.018	0.020
208Pb	0.003	0.010	0.874	0.228	0.511	0.211	0.073
238U	0.001	0.003	0.291	0.184	0.138	0.106	0.029

Notes:

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Teck Coal Limited
Tissue Analysis Results

			Client ID	RG_ERCKUC_INV- 01_LAEMP_EVO_ 2022-07-27_N	RG_ERCKUC_INV- 02_LAEMP_EVO_ 2022-07-27_N	RG_ERCKUC_INV- 03_LAEMP_EVO_ 2022-07-27_N	RG_ERCK_INV- 01_LAEMP_EVO_ 2022-07-27_N	RG_ERCK_INV- 02_LAEMP_EVO_ 2022-07-27_N
			Lab ID	126	127	128	129	130
			Wet Weight (g)	0.1161	0.1688	0.0773	0.2122	0.8464
			Dry Weight (g)	0.0513	0.0573	0.0255	0.0562	0.2579
			Moisture (%)	55.8	66.1	67.0	73.5	69.5
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.018	0.060	0.572	0.610	0.301	0.527	0.482	
11B	0.088	0.293	2.9	0.479	0.759	5.0	1.9	
23Na	7.0	23	2,710	2,126	2,704	3,819	3,117	
24Mg	0.088	0.293	2,825	1,094	1,888	2,182	1,505	
27Al	0.252	0.840	194	51	103	292	274	
31P	82	273	8,727	9,431	11,831	12,608	10,692	
39K	5.9	20	11,427	8,618	10,378	16,548	11,565	
44Ca	25	83	58,449	2,836	2,823	4,317	2,533	
49Ti	0.001	0.003	14	3.0	6.0	22	17	
51V	0.038	0.127	0.816	0.214	0.502	0.837	0.642	
52Cr	0.196	0.653	12	4.1	13	8.2	3.4	
55Mn	0.013	0.043	443	47	31	73	54	
57Fe	2.4	8.0	344	129	282	430	194	
59Co	0.015	0.050	15	1.6	1.3	7.8	4.7	
60Ni	0.046	0.153	31	8.5	23	17	9.0	
63Cu	0.047	0.157	9.1	11	14	14	17	
66Zn	0.822	2.7	72	100	143	229	239	
75As	0.445	1.5	0.828	<0.445	<0.445	1.1	<0.445	
77Se	0.461	1.5	5.9	25	6.3	7.5	4.8	
88Sr	0.004	0.013	44	2.0	2.5	4.5	2.6	
95Mo	0.019	0.063	0.750	0.241	0.294	0.321	0.161	
107Ag	0.001	0.003	0.023	0.030	0.045	0.113	0.091	
111Cd	0.059	0.197	0.269	0.134	0.201	4.4	3.3	
118Sn	0.040	0.133	0.215	0.173	0.553	0.173	0.117	
121Sb	0.006	0.020	0.109	0.037	0.037	0.047	0.037	
137Ba	0.606	2.0	97	11	13	33	14	
202Hg	0.027	0.090	<0.027	<0.027	<0.027	0.052	<0.027	
205Tl	0.001	0.003	0.024	0.016	0.009	0.040	0.036	
208Pb	0.003	0.010	0.178	0.062	0.114	0.217	0.165	
238U	0.001	0.003	0.498	0.064	0.085	0.106	0.059	

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Teck Coal Limited
Tissue Analysis Results

			Client ID	RG_ERCK_INV-03_LAEMP_EVO_2022-07-27_N	RG_MI3_INV-01_LAEMP_EVO_2022-07-27_N	RG_MI3_INV-02_LAEMP_EVO_2022-07-27_N	RG_MI3_INV-03_LAEMP_EVO_2022-07-27_N	RG_ERCK_INVOLI-03_LAEMP_EVO_2022-07-27_N
			Lab ID	131	132	133	134	135
			Wet Weight (g)	0.2486	0.3650	0.0951	1.3683	0.0491
			Dry Weight (g)	0.0670	0.0751	0.0270	0.2837	0.0196
			Moisture (%)	73.0	79.4	71.6	79.3	60.1
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.018	0.060	0.760	0.271	0.469	0.335	1.5	
11B	0.088	0.293	2.4	1.1	1.3	1.1	3.9	
23Na	7.0	23	2,576	3,857	6,482	3,187	2,246	
24Mg	0.088	0.293	1,961	1,526	1,752	1,352	2,623	
27Al	0.252	0.840	116	510	639	557	1,696	
31P	82	273	11,168	12,169	15,286	10,294	9,310	
39K	5.9	20	14,789	11,219	16,174	7,272	8,733	
44Ca	25	83	2,789	2,365	2,766	1,871	24,521	
49Ti	0.001	0.003	6.0	38	49	33	128	
51V	0.038	0.127	0.355	0.770	1.3	0.855	4.0	
52Cr	0.196	0.653	6.0	6.1	20	5.8	68	
55Mn	0.013	0.043	193	49	23	44	237	
57Fe	2.4	8.0	190	416	717	453	2,096	
59Co	0.015	0.050	8.2	4.0	3.0	1.8	27	
60Ni	0.046	0.153	18	13	32	11	119	
63Cu	0.047	0.157	6.4	13	24	12	7.3	
66Zn	0.822	2.7	227	198	214	111	84	
75As	0.445	1.5	0.753	1.1	0.749	0.922	6.9	
77Se	0.461	1.5	6.0	4.6	4.3	4.2	31	
88Sr	0.004	0.013	2.4	4.3	5.1	2.9	22	
95Mo	0.019	0.063	0.294	0.321	0.343	0.224	0.870	
107Ag	0.001	0.003	0.015	0.098	0.284	0.101	0.132	
111Cd	0.059	0.197	1.3	2.2	2.6	1.0	1.7	
118Sn	0.040	0.133	0.256	0.446	0.413	0.262	0.964	
121Sb	0.006	0.020	0.129	0.017	0.019	0.024	0.148	
137Ba	0.606	2.0	43	43	30	43	121	
202Hg	0.027	0.090	<0.027	0.049	0.091	0.046	0.078	
205Tl	0.001	0.003	0.015	0.065	0.038	0.049	0.289	
208Pb	0.003	0.010	0.082	0.217	0.203	0.253	1.1	
238U	0.001	0.003	0.178	0.036	0.026	0.036	0.491	

Notes:

- ppm = parts per million
- DL = detection limit
- LOQ = limit of quantitation
- < = less than detection limit
- g = grams
- % = percent

Teck Coal Limited
Tissue Analysis Results

			Client ID	RG_MIDER_INV-01_LAEMP_EVO_2022-07-27_N	RG_MIDER_INV-02_LAEMP_EVO_2022-07-27_N	RG_MIDER_INV-03_LAEMP_EVO_2022-07-27_N	RG_MI25_INV-01_LAEMP_EVO_2022-07-27_N	RG_MI25_INV-02_LAEMP_EVO_2022-07-27_N
			Lab ID	136	137	138	139	140
			Wet Weight (g)	0.6143	1.6269	0.3764	0.0258	0.2099
			Dry Weight (g)	0.1543	0.4948	0.0893	0.0149	0.0886
			Moisture (%)	74.9	69.6	76.3	42.2	57.8
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.018	0.060	0.408	0.200	0.623	2.8	16	
11B	0.088	0.293	1.7	0.678	1.8	8.6	72	
23Na	7.0	23	3,214	4,311	4,115	3,481	2,891	
24Mg	0.088	0.293	1,406	1,854	1,876	2,081	5,494	
27Al	0.252	0.840	856	320	1,246	7,893	46,663	
31P	82	273	9,371	12,554	12,105	12,288	7,062	
39K	5.9	20	8,902	11,571	11,127	13,107	19,534	
44Ca	25	83	2,493	2,719	2,530	2,629	5,948	
49Ti	0.001	0.003	65	20	84	598	4,893	
51V	0.038	0.127	1.9	0.647	2.6	9.6	63	
52Cr	0.196	0.653	13	5.3	22	77	86	
55Mn	0.013	0.043	60	39	48	73	164	
57Fe	2.4	8.0	734	305	1,117	4,280	15,604	
59Co	0.015	0.050	4.8	2.2	8.4	5.6	6.7	
60Ni	0.046	0.153	28	9.4	40	153	138	
63Cu	0.047	0.157	13	14	16	16	28	
66Zn	0.822	2.7	194	130	208	150	191	
75As	0.445	1.5	1.1	0.711	1.5	1.5	7.4	
77Se	0.461	1.5	5.3	3.7	5.3	4.7	6.0	
88Sr	0.004	0.013	5.8	4.5	6.4	13	36	
95Mo	0.019	0.063	0.382	0.211	0.237	0.382	2.7	
107Ag	0.001	0.003	0.120	0.151	0.126	0.227	0.113	
111Cd	0.059	0.197	3.6	1.3	3.6	1.3	3.3	
118Sn	0.040	0.133	0.246	<0.040	0.291	0.224	1.2	
121Sb	0.006	0.020	0.080	0.019	0.079	0.062	0.546	
137Ba	0.606	2.0	53	26	60	80	423	
202Hg	0.027	0.090	0.046	0.052	0.072	0.098	0.075	
205Tl	0.001	0.003	0.074	0.030	0.082	0.199	0.776	
208Pb	0.003	0.010	0.429	0.124	0.522	2.5	9.4	
238U	0.001	0.003	0.087	0.019	0.083	0.136	1.2	

Notes:

- ppm = parts per million
- DL = detection limit
- LOQ = limit of quantitation
- < = less than detection limit
- g = grams
- % = percent

Teck Coal Limited
Tissue Analysis Results

			Client ID	RG_MI25_INV-03_LAEMP_EVO_2022-07-27_N	RG_ALUSM_INV-01_LAEMP_EVO_2022-07-27_N	RG_ALUSM_INV-02_LAEMP_EVO_2022-07-27_N	RG_ALUSM_INV-03_LAEMP_EVO_2022-07-27_N	RG_ERCK_COMP OLI-03_LAEMP_EVO_2022-07-27_N
			Lab ID	141	142	143	144	145
			Wet Weight (g)	0.6597	0.8164	0.4738	0.0492	0.1835
			Dry Weight (g)	0.1576	0.1621	0.1146	0.0159	0.0576
			Moisture (%)	76.1	80.1	75.8	67.7	68.6
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.018	0.060	1.8	0.377	3.5	5.1	2.6	
11B	0.088	0.293	7.7	1.2	8.9	18	7.1	
23Na	7.0	23	3,621	3,407	6,520	3,952	2,957	
24Mg	0.088	0.293	2,165	1,195	2,287	2,796	2,113	
27Al	0.252	0.840	4,921	756	5,615	15,792	6,048	
31P	82	273	11,280	10,738	11,009	13,930	9,844	
39K	5.9	20	10,214	8,854	16,788	14,503	11,045	
44Ca	25	83	2,568	1,552	3,762	6,252	23,303	
49Ti	0.001	0.003	471	53	556	1,342	551	
51V	0.038	0.127	8.8	1.1	14	27	16	
52Cr	0.196	0.653	34	6.5	36	234	155	
55Mn	0.013	0.043	69	57	143	150	245	
57Fe	2.4	8.0	2,350	520	3,097	9,198	4,028	
59Co	0.015	0.050	3.6	1.4	5.0	8.2	22	
60Ni	0.046	0.153	55	10	58	409	259	
63Cu	0.047	0.157	17	12	21	33	12	
66Zn	0.822	2.7	153	166	209	287	90	
75As	0.445	1.5	2.1	0.922	2.3	3.3	3.4	
77Se	0.461	1.5	6.3	5.4	5.4	6.2	23	
88Sr	0.004	0.013	9.0	3.2	16	20	24	
95Mo	0.019	0.063	0.896	0.343	1.5	3.6	1.1	
107Ag	0.001	0.003	0.063	0.044	0.082	0.126	0.107	
111Cd	0.059	0.197	2.5	1.7	2.0	2.5	1.1	
118Sn	0.040	0.133	0.363	0.086	0.418	1.3	0.598	
121Sb	0.006	0.020	0.095	0.028	0.208	0.375	0.255	
137Ba	0.606	2.0	79	57	136	231	127	
202Hg	0.027	0.090	0.085	0.052	0.069	0.052	0.049	
205Tl	0.001	0.003	0.215	0.051	0.401	0.255	0.143	
208Pb	0.003	0.010	1.4	0.308	1.8	3.7	1.6	
238U	0.001	0.003	0.224	0.044	0.449	0.941	0.744	

Notes:

- ppm = parts per million
- DL = detection limit
- LOQ = limit of quantitation
- < = less than detection limit
- g = grams
- % = percent

Teck Coal Limited
Tissue QA/QC Relative Percent Difference Results

Parameter	DL (ppm)	Client ID Lab ID			RG_GATE_INV- 02_LAEMP_EVO_2022-07-25_N			RG_GATE_INV- 03_LAEMP_EVO_2022-07-25_N			RG_GATE_INV- 01_LAEMP_EVO_2022-07-25_N		
		085			089			098					
		Sample (ppm)	Sample Duplicate (ppm)	RPD (%)	Sample (ppm)	Sample Duplicate (ppm)	RPD (%)	Sample (ppm)	Sample Duplicate (ppm)	RPD (%)			
7Li	0.018	2.0	2.3	14	4.0	3.2	22	3.7	4.1	10			
11B	0.088	1.7	1.9	11	9.8	9.2	6.3	8.9	11	21			
23Na	7.0	4,513	5,124	13	2,518	2,346	7.1	2,334	2,464	5.4			
24Mg	0.088	2,037	2,069	1.6	2,740	2,958	7.7	3,279	4,067	22			
27Al	0.252	1,182	1,049	12	5,996	4,694	24	8,047	8,340	3.6			
31P	82	11,420	11,541	1.1	8,888	10,041	12	9,841	9,181	6.9			
39K	5.9	14,583	16,847	14	9,892	11,293	13	9,908	10,687	7.6			
44Ca	25	4,596	4,026	13	11,006	14,836	30	52,618	87,320	50			
49Ti	0.001	122	103	17	533	440	19	595	696	16			
51V	0.038	2.5	2.5	0.0	15	12	22	13	15	14			
52Cr	0.196	6.7	5.2	25	37	41	10	24	26	8.0			
55Mn	0.013	25	23	8.3	107	101	5.8	94	111	17			
57Fe	2.4	945	765	21	2,721	2,657	2.4	2,466	2,786	12			
59Co	0.015	2.0	1.5	29	9.4	11	16	12	11	8.7			
60Ni	0.046	41	46	12	99	114	14	86	97	12			
63Cu	0.047	19	18	5.4	18	20	11	15	15	0.0			
66Zn	0.822	211	202	4.4	472	373	23	183	206	12			
75As	0.445	2.6	3.6	-	2.1	1.8	-	6.1	5.9	3.3			
77Se	0.461	25	23	8.3	7.3	7.4	1.4	133	122	8.6			
88Sr	0.004	20	21	4.9	36	34	5.7	136	197	37			
95Mo	0.019	0.515	0.675	27	0.668	0.465	36	1.3	1.3	0.0			
107Ag	0.001	0.100	0.098	2.0	0.156	0.161	3.2	0.180	0.174	3.4			
111Cd	0.059	4.2	4.4	4.7	5.5	5.0	9.5	1.8	2.1	15			
118Sn	0.040	0.312	0.289	-	0.338	0.312	-	0.447	0.592	28			
121Sb	0.006	0.132	0.134	1.5	0.180	0.209	15	0.345	0.418	19			
137Ba	0.606	1,674	1,910	13	721	930	25	4,254	6,013	34			
202Hg	0.027	0.074	0.074	-	0.098	0.071	-	0.204	0.168	-			
205Tl	0.001	0.063	0.059	6.6	0.114	0.132	15	0.388	0.403	3.8			
208Pb	0.003	0.382	0.332	14	1.9	1.5	24	1.9	2.2	15			
238U	0.001	0.132	0.109	19	0.583	0.533	9.0	0.784	1.1	34			

Notes:

- ppm = parts per million
- RPD = relative percent difference
- DL = detection limit
- < = less than detection limit
- % = percent

Data Quality Objectives:

Laboratory Duplicates - RPD ≤40% for all elements, except Ca and Sr, which are ≤60%
Minimum DQOs apply to individual samples at concentrations above 10x DL

Teck Coal Limited
Tissue QA/QC Relative Percent Difference Results

Client ID		RG_ERCKUT_INV- 04_LAEMP_EVO_2022-07-26_N			RG_ERCKDT_INV- 03_LAEMP_EVO_2022-07-26_N			RG_MI3_INV-03_LAEMP_EVO_2022- 07-27_N		
Lab ID		113			117			134		
Parameter	DL (ppm)	Sample (ppm)	Sample Duplicate (ppm)	RPD (%)	Sample (ppm)	Sample Duplicate (ppm)	RPD (%)	Sample (ppm)	Sample Duplicate (ppm)	RPD (%)
7Li	0.018	0.807	0.729	10	0.837	0.844	0.8	0.335	0.323	3.6
11B	0.088	1.7	1.9	11	2.2	2.4	8.7	1.1	1.5	31
23Na	7.0	3,589	3,535	1.5	3,253	3,546	8.6	3,187	4,707	39
24Mg	0.088	3,515	3,227	8.5	2,167	2,112	2.6	1,352	1,413	4.4
27Al	0.252	564	555	1.6	977	1,250	25	557	607	8.6
31P	82	15,304	14,311	6.7	11,578	14,026	19	10,294	12,276	18
39K	5.9	10,284	9,411	8.9	11,853	13,110	10	7,272	10,318	35
44Ca	25	3,997	4,937	21	3,554	3,633	2.2	1,871	2,119	12
49Ti	0.001	35	34	2.9	102	95	7.1	33	36	8.7
51V	0.038	2.2	1.9	15	2.4	3.2	29	0.855	0.966	12
52Cr	0.196	38	27	34	12	16	29	5.8	6.4	9.8
55Mn	0.013	18	18	0.0	324	267	19	44	59	29
57Fe	2.4	830	740	12	943	1,395	39	453	506	11
59Co	0.015	1.6	1.1	37	10	11	9.5	1.8	2.3	24
60Ni	0.046	61	46	28	25	36	36	11	14	24
63Cu	0.047	22	23	4.4	19	18	5.4	12	11	8.7
66Zn	0.822	245	263	7.1	250	243	2.8	111	128	14
75As	0.445	0.496	0.529	-	1.1	1.3	-	0.922	1.1	-
77Se	0.461	6.1	6.1	0.0	22	25	13	4.2	4.6	-
88Sr	0.004	4.3	5.0	15	4.4	5.6	24	2.9	3.0	3.4
95Mo	0.019	0.169	0.121	-	0.712	0.712	0.0	0.224	0.264	16
107Ag	0.001	0.078	0.099	24	0.089	0.082	8.2	0.101	0.073	32
111Cd	0.059	0.863	0.810	6.3	2.9	3.1	6.7	1.0	1.4	33
118Sn	0.040	0.416	0.428	2.8	0.865	0.766	12	0.262	0.180	-
121Sb	0.006	0.074	0.096	26	0.174	0.142	20	0.024	0.027	-
137Ba	0.606	65	57	13	66	73	10	43	49	13
202Hg	0.027	<0.027	<0.027	-	0.043	0.033	-	0.046	0.052	-
205Tl	0.001	0.024	0.024	0.0	0.046	0.052	12	0.049	0.057	15
208Pb	0.003	0.235	0.231	1.7	0.792	0.555	35	0.253	0.294	15
238U	0.001	0.084	0.083	1.2	0.281	0.270	4.0	0.036	0.041	13

Notes:

ppm = parts per million
 RPD = relative percent difference
 DL = detection limit
 < = less than detection limit
 % = percent

Data Quality Objectives:

Laboratory Duplicates - RPD ≤40% for all elements, except Ca and Sr, which are ≤60%
 Minimum DQOs apply to individual samples at concentrations above 10x DL

Teck Coal Limited
Tissue QA/QC Relative Percent Difference Results

Parameter	DL (ppm)	Sample (ppm)	Sample Duplicate (ppm)	RPD (%)
7Li	0.018	0.200	0.223	11
11B	0.088	0.678	0.805	-
23Na	7.0	4,311	3,404	24
24Mg	0.088	1,854	1,393	28
27Al	0.252	320	416	26
31P	82	12,554	9,619	27
39K	5.9	11,571	9,228	23
44Ca	25	2,719	2,978	9.1
49Ti	0.001	20	25	22
51V	0.038	0.647	0.700	7.9
52Cr	0.196	5.3	4.4	19
55Mn	0.013	39	37	5.3
57Fe	2.4	305	254	18
59Co	0.015	2.2	2.1	4.7
60Ni	0.046	9.4	7.9	17
63Cu	0.047	14	15	6.9
66Zn	0.822	130	176	30
75As	0.445	0.711	0.595	-
77Se	0.461	3.7	3.2	-
88Sr	0.004	4.5	4.7	4.3
95Mo	0.019	0.211	0.158	-
107Ag	0.001	0.151	0.161	6.4
111Cd	0.059	1.3	1.5	14
118Sn	0.040	<0.040	<0.040	-
121Sb	0.006	0.019	0.020	-
137Ba	0.606	26	23	12
202Hg	0.027	0.052	0.052	-
205Tl	0.001	0.030	0.026	14
208Pb	0.003	0.124	0.140	12
238U	0.001	0.019	0.023	19

Notes:

ppm = parts per million
 RPD = relative percent difference
 DL = detection limit
 < = less than detection limit
 % = percent

Data Quality Objectives:

Laboratory Duplicates - RPD ≤40% for all elements, except Ca and Sr, which are ≤60%
 Minimum DQOs apply to individual samples at concentrations above 10x DL

Teck Coal Limited
Tissue QA/QC Accuracy and Precision Results

Parameter	DL (ppm)	Certified Conc. (ppm)	01			02		
			Mean Estimated Conc. (ppm)	Accuracy (%)	Precision RSD (%)	Mean Estimated Conc. (ppm)	Accuracy (%)	Precision RSD (%)
7Li	0.018	1.21	1.2	101	3.7	1.2	102	4.4
11B	0.088	4.5	4.6	102	3.1	4.5	100	4.8
23Na	7.0	14,000	14,512	104	6.1	13,048	93	3.1
24Mg	0.088	910	953	105	2.7	878	96	1.6
27Al	0.252	197.2	181	92	5.8	176	89	4.0
31P	82	8,000	7,960	100	6.0	7,802	98	4.1
39K	5.9	15,500	16,626	107	7.0	15,569	100	3.9
44Ca	25	2,360	2,444	104	1.5	2,284	97	3.2
49Ti	0.001	12.24	13	110	6.7	12	100	6.9
51V	0.038	1.57	1.7	108	5.9	1.7	108	0.0
52Cr	0.196	1.87	2.0	109	5.6	1.9	100	7.2
55Mn	0.013	3.17	3.4	107	4.4	3.0	95	5.4
57Fe	2.4	343	374	109	2.4	334	97	2.3
59Co	0.015	0.25	0.289	116	6.9	0.261	104	6.5
60Ni	0.046	1.34	1.5	113	5.5	1.4	103	6.1
63Cu	0.047	15.7	17	111	3.1	15	96	0.0
66Zn	0.822	51.6	54	104	2.0	50	98	3.3
75As	0.445	6.87	7.0	102	2.8	6.7	98	5.6
77Se	0.461	3.45	3.6	105	9.4	3.5	101	6.6
88Sr	0.004	10.1	11	109	0.0	9.7	96	2.7
95Mo	0.019	0.29	0.320	110	8.8	0.293	101	7.7
107Ag	0.001	0.0252	0.034	135	5.1	0.028	111	9.8
111Cd	0.059	0.299	0.336	112	15	0.309	103	4.4
118Sn	0.040	0.061	0.064	104	17	0.054	88	13
121Sb	0.006	0.011	0.014	124	17	0.008	70	7.5
137Ba	0.606	8.6	8.1	95	3.0	8.7	101	1.5
202Hg	0.027	0.412	0.455	110	5.5	0.421	102	7.9
205Tl	0.001	0.0013	-	-	-	-	-	-
208Pb	0.003	0.404	0.423	105	11	0.400	99	7.3
238U	0.001	0.05	0.050	101	3.6	0.051	102	4.4

Notes:

ppm = parts per million; % = percent; DL = detection limit; RSD = relative standard deviation

Data Quality Objectives:

Accuracy: DQO of 60 - 140% of the certified values for B, Ti, Ag, Sn, Sb, and Ba.

Accuracy: DQO of 90 - 110% of the certified values for Se.

Accuracy: DQO of 70 - 130% of the certified values for all other elements provided.

Precision: DQO of ≤20% for all elements.

DORM-4 used for all parameters except B, Ti, Sb, Ba, and Al where NIST-1566b was used.

Tl certified concentration from NIST-2976.

Accuracy and precision for Tl are not reported as the certified concentration is too close to the reportable detection limit.

Teck Coal Limited
Tissue QA/QC Accuracy and Precision Results

Parameter	DL (ppm)	Certified Conc. (ppm)	03			04		
			Mean Estimated Conc. (ppm)	Accuracy (%)	Precision RSD (%)	Mean Estimated Conc. (ppm)	Accuracy (%)	Precision RSD (%)
7Li	0.018	1.21	1.3	106	3.5	1.2	101	9.0
11B	0.088	4.5	4.6	102	2.8	4.6	102	2.4
23Na	7.0	14,000	13,992	100	5.9	14,413	103	6.9
24Mg	0.088	910	939	103	2.2	980	108	7.6
27Al	0.252	197.2	181	92	6.4	186	94	6.4
31P	82	8,000	8,195	102	3.4	8,292	104	8.6
39K	5.9	15,500	16,310	105	7.1	15,985	103	10
44Ca	25	2,360	2,564	109	6.1	2,562	108	9.9
49Ti	0.001	12.24	10	85	13	12	98	8.3
51V	0.038	1.57	1.5	98	5.8	1.8	117	12
52Cr	0.196	1.87	1.9	102	5.3	2.1	113	5.2
55Mn	0.013	3.17	3.2	102	5.2	3.6	112	11
57Fe	2.4	343	362	106	5.6	382	111	7.5
59Co	0.015	0.25	0.257	103	3.6	0.306	123	9.7
60Ni	0.046	1.34	1.3	98	3.4	1.5	112	9.4
63Cu	0.047	15.7	17	110	4.9	19	120	9.5
66Zn	0.822	51.6	53	104	5.4	56	109	8.8
75As	0.445	6.87	7.1	103	4.4	7.1	103	7.1
77Se	0.461	3.45	3.5	103	5.9	3.5	102	8.5
88Sr	0.004	10.1	11	109	0.0	11	108	12
95Mo	0.019	0.29	0.286	98	3.4	0.317	109	11
107Ag	0.001	0.0252	0.026	103	16	0.027	107	8.3
111Cd	0.059	0.299	0.289	97	9.3	0.341	114	13
118Sn	0.040	0.061	0.060	99	14	0.085	139	8.7
121Sb	0.006	0.011	0.010	87	19	0.011	100	18
137Ba	0.606	8.6	8.1	94	3.0	8.6	100	4.3
202Hg	0.027	0.412	0.459	111	9.4	0.431	105	2.9
205Tl	0.001	0.0013	-	-	-	-	-	-
208Pb	0.003	0.404	0.343	85	9.4	0.472	117	14
238U	0.001	0.05	0.044	88	9.4	0.054	108	9.6

Notes:

ppm = parts per million; % = percent; DL = detection limit; RSD = relative standard deviation

Data Quality Objectives:

Accuracy: DQO of 60 - 140% of the certified values for B, Ti, Ag, Sn, Sb, and Ba.

Accuracy: DQO of 90 - 110% of the certified values for Se.

Accuracy: DQO of 70 - 130% of the certified values for all other elements provided.

Precision: DQO of ≤20% for all elements.

DORM-4 used for all parameters except B, Ti, Sb, Ba, and Al where NIST-1566b was used.

Tl certified concentration from NIST-2976.

Accuracy and precision for Tl are not reported as the certified concentration is too close to the reportable detection limit.

Teck Coal Limited
Tissue QA/QC Accuracy and Precision Results

Parameter	DL (ppm)	Certified Conc. (ppm)	05			06		
			Mean Estimated Conc. (ppm)	Accuracy (%)	Precision RSD (%)	Mean Estimated Conc. (ppm)	Accuracy (%)	Precision RSD (%)
7Li	0.018	1.21	1.2	99	8.3	1.1	94	12
11B	0.088	4.5	4.4	97	3.8	4.2	93	3.1
23Na	7.0	14,000	14,204	102	3.7	13,418	96	3.1
24Mg	0.088	910	847	93	7.1	854	94	2.9
27Al	0.252	197.2	190	96	6.0	187	95	4.4
31P	82	8,000	7,546	94	4.4	7,780	97	5.5
39K	5.9	15,500	16,197	104	5.5	15,294	99	7.7
44Ca	25	2,360	2,360	100	5.2	2,380	101	6.3
49Ti	0.001	12.24	12	95	4.7	12	98	12
51V	0.038	1.57	1.7	106	3.3	1.6	103	11
52Cr	0.196	1.87	1.9	103	2.3	1.9	100	4.8
55Mn	0.013	3.17	3.0	96	3.8	3.1	98	3.5
57Fe	2.4	343	334	98	2.8	344	100	3.5
59Co	0.015	0.25	0.260	104	5.1	0.245	98	5.8
60Ni	0.046	1.34	1.3	98	6.3	1.4	104	7.1
63Cu	0.047	15.7	17	106	3.3	15	97	7.2
66Zn	0.822	51.6	53	103	4.0	52	100	3.5
75As	0.445	6.87	7.0	102	3.1	6.7	98	4.5
77Se	0.461	3.45	3.7	107	3.3	3.5	102	5.1
88Sr	0.004	10.1	10	100	4.8	10	99	6.5
95Mo	0.019	0.29	0.306	105	7.7	0.270	93	5.4
107Ag	0.001	0.0252	0.029	114	19	0.027	108	14
111Cd	0.059	0.299	0.292	98	15	0.310	104	12
118Sn	0.040	0.061	0.063	103	18	0.047	78	11
121Sb	0.006	0.011	0.010	91	12	0.011	100	20
137Ba	0.606	8.6	8.6	100	4.0	8.0	93	6.1
202Hg	0.027	0.412	0.441	107	6.2	0.403	98	8.3
205Tl	0.001	0.0013	-	-	-	-	-	-
208Pb	0.003	0.404	0.354	88	8.2	0.412	102	11
238U	0.001	0.05	0.048	97	5.4	0.048	95	9.2

Notes:

ppm = parts per million; % = percent; DL = detection limit; RSD = relative standard deviation

Data Quality Objectives:

Accuracy: DQO of 60 - 140% of the certified values for B, Ti, Ag, Sn, Sb, and Ba.

Accuracy: DQO of 90 - 110% of the certified values for Se.

Accuracy: DQO of 70 - 130% of the certified values for all other elements provided.

Precision: DQO of ≤20% for all elements.

DORM-4 used for all parameters except B, Ti, Sb, Ba, and Al where NIST-1566b was used.

Tl certified concentration from NIST-2976.

Accuracy and precision for Tl are not reported as the certified concentration is too close to the reportable detection limit.

Teck Coal Limited
Tissue QA/QC Accuracy and Precision Results

Sample Group ID		07			
Parameter	DL (ppm)	Certified Conc. (ppm)	Mean Estimated Conc. (ppm)	Accuracy (%)	Precision RSD (%)
7Li	0.018	1.21	1.2	98	7.1
11B	0.088	4.5	4.3	95	3.5
23Na	7.0	14,000	13,694	98	3.0
24Mg	0.088	910	922	101	8.1
27Al	0.252	197.2	197	100	4.8
31P	82	8,000	7,743	97	2.9
39K	5.9	15,500	15,270	98	3.8
44Ca	25	2,360	2,361	100	2.3
49Ti	0.001	12.24	12	96	11
51V	0.038	1.57	1.7	107	14
52Cr	0.196	1.87	1.9	100	2.9
55Mn	0.013	3.17	3.2	101	6.6
57Fe	2.4	343	355	103	3.9
59Co	0.015	0.25	0.262	105	4.4
60Ni	0.046	1.34	1.5	108	8.9
63Cu	0.047	15.7	16	99	7.3
66Zn	0.822	51.6	50	96	4.8
75As	0.445	6.87	6.6	97	3.3
77Se	0.461	3.45	3.3	97	5.4
88Sr	0.004	10.1	10	102	6.5
95Mo	0.019	0.29	0.261	90	9.1
107Ag	0.001	0.0252	0.027	108	15
111Cd	0.059	0.299	0.299	100	8.8
118Sn	0.040	0.061	0.061	99	14
121Sb	0.006	0.011	0.011	100	16
137Ba	0.606	8.6	8.1	94	3.0
202Hg	0.027	0.412	0.415	101	7.8
205Tl	0.001	0.0013	-	-	-
208Pb	0.003	0.404	0.437	108	7.8
238U	0.001	0.05	0.052	104	7.6

Notes:

ppm = parts per million; % = percent; DL = detection limit; RSD = relative standard deviation

Data Quality Objectives:

Accuracy: DQO of 60 - 140% of the certified values for B, Ti, Ag, Sn, Sb, and Ba.

Accuracy: DQO of 90 - 110% of the certified values for Se.

Accuracy: DQO of 70 - 130% of the certified values for all other elements provided.

Precision: DQO of ≤20% for all elements.

DORM-4 used for all parameters except B, Ti, Sb, Ba, and Al where NIST-1566b was used.

Tl certified concentration from NIST-2976.

Accuracy and precision for Tl are not reported as the certified concentration is too close to the reportable detection limit.

Teck Coal Limited
Sample Group Information

Sample Group ID	Client ID	Lab ID	Date of Analysis
01	RG_GATEDP_COMPOLI-01_LAEMP_EVO_2022-07-25_N	081	10 Aug 2022
	RG_GATEDP_INVOLI-01_LAEMP_EVO_2022-07-25_N	082	
	RG_GATEDP_INV-01_LAEMP_EVO_2022-07-26_NP	083	
	RG_GATE_INV-01_LAEMP_EVO_2022-07-25_N	084	
	RG_GATE_INV-02_LAEMP_EVO_2022-07-25_N	085	
	RG_GATE_INV-03_LAEMP_EVO_2022-07-25_N	086	
	RG_MIDGA_INV-01_LAEMP_EVO_2022-07-25_N	087	
	RG_MIDGA_INV-02_LAEMP_EVO_2022-07-25_N	088	
02	RG_MIDGA_INV-03_LAEMP_EVO_2022-07-25_N	089	10 Aug 2022
	RG_MIDBO_INV-01_LAEMP_EVO_2022-07-25_N	090	
	RG_MIDBO_INV-02_LAEMP_EVO_2022-07-25_N	091	
	RG_MIDBO_INV-03_LAEMP_EVO_2022-07-25_N	092	
	RG_MICOMP_INV-01_LAEMP_EVO_2022-07-25_N	093	
	RG_MICOMP_INV-02_LAEMP_EVO_2022-07-25_N	094	
	RG_MICOMP_INV-03_LAEMP_EVO_2022-07-25_N	095	
	RG_MICOMP_INV-04_LAEMP_EVO_2022-07-25_N	096	
03	RG_MICOMP_INV-05_LAEMP_EVO_2022-07-25_N	097	10 Aug 2022
	RG_BOCK_COMPOLI-01_LAEMP_EVO_2022-07-25_N	098	
	RG_BOCK_COMPOLI-02_LAEMP_EVO_2022-07-25_N	099	
	RG_BOCK_COMPOLI-03_LAEMP_EVO_2022-07-25_N	100	
	RG_BOCK_INV-01_LAEMP_EVO_2022-07-26_N	101	
	RG_BOCK_INVOLI-01_LAEMP_EVO_2022-07-26_N	102	
	RG_BOCK_INV-02_LAEMP_EVO_2022-07-26_N	103	
	RG_BOCK_INVOLI-02_LAEMP_EVO_2022-07-26_N	104	
04	RG_BOCK_INV-03_LAEMP_EVO_2022-07-26_N	105	10 Aug 2022
	RG_BOCK_INVOLI-03_LAEMP_EVO_2022-07-26_N	106	
	RG_BOCKRD_INV-01_LAEMP_EVO_2022-07-26_N	107	
	RG_BOCKRD_INV-02_LAEMP_EVO_2022-07-26_N	108	
	RG_BOCKRD_INV-03_LAEMP_EVO_2022-07-26_N	109	
	RG_ERCKUT_INV-01_LAEMP_EVO_2022-07-26_N	110	
	RG_ERCKUT_INV-02_LAEMP_EVO_2022-07-26_N	111	
	RG_ERCKUT_INV-03_LAEMP_EVO_2022-07-26_N	112	
05	RG_ERCKUT_INV-04_LAEMP_EVO_2022-07-26_N	113	10 Aug 2022
	RG_ERCKUT_INV-05_LAEMP_EVO_2022-07-26_N	114	
	RG_ERCKDT_INV-01_LAEMP_EVO_2022-07-26_N	115	
	RG_ERCKDT_INV-02_LAEMP_EVO_2022-07-26_N	116	
	RG_ERCKDT_INV-03_LAEMP_EVO_2022-07-26_N	117	
	RG_ERCKDT_INV-04_LAEMP_EVO_2022-07-26_N	118	
RG_ERCKDT_INV-05_LAEMP_EVO_2022-07-26_N	119		
	RG_ERCKDT_INV-06_LAEMP_EVO_2022-07-26_N	120	

Teck Coal Limited
Sample Group Information

Sample Group ID	Client ID	Lab ID	Date of Analysis
05	RG_ERCKMD_INV-01_LAEMP_EVO_2022-07-26_N	121	10 Aug 2022
	RG_ERCKMD_INV-02_LAEMP_EVO_2022-07-26_N	122	
	RG_ERCKMD_INV-03_LAEMP_EVO_2022-07-26_N	123	
06	RG_ERCKMD_INV-04_LAEMP_EVO_2022-07-26_N	124	10 Aug 2022
	RG_ERCKMD_INV-05_LAEMP_EVO_2022-07-26_N	125	
	RG_ERCKUC_INV-01_LAEMP_EVO_2022-07-27_N	126	
	RG_ERCKUC_INV-02_LAEMP_EVO_2022-07-27_N	127	
	RG_ERCKUC_INV-03_LAEMP_EVO_2022-07-27_N	128	
	RG_ERCK_INV-01_LAEMP_EVO_2022-07-27_N	129	
	RG_ERCK_INV-02_LAEMP_EVO_2022-07-27_N	130	
	RG_ERCK_INV-03_LAEMP_EVO_2022-07-27_N	131	
	RG_MI3_INV-01_LAEMP_EVO_2022-07-27_N	132	
	RG_MI3_INV-02_LAEMP_EVO_2022-07-27_N	133	
07	RG_MI3_INV-03_LAEMP_EVO_2022-07-27_N	134	10 Aug 2022
	RG_ERCK_INVOLI-03_LAEMP_EVO_2022-07-27_N	135	
	RG_MIDER_INV-01_LAEMP_EVO_2022-07-27_N	136	
	RG_MIDER_INV-02_LAEMP_EVO_2022-07-27_N	137	
	RG_MIDER_INV-03_LAEMP_EVO_2022-07-27_N	138	
	RG_MI25_INV-01_LAEMP_EVO_2022-07-27_N	139	
	RG_MI25_INV-02_LAEMP_EVO_2022-07-27_N	140	
	RG_MI25_INV-03_LAEMP_EVO_2022-07-27_N	141	
	RG_ALUSM_INV-01_LAEMP_EVO_2022-07-27_N	142	
	RG_ALUSM_INV-02_LAEMP_EVO_2022-07-27_N	143	
	RG_ALUSM_INV-03_LAEMP_EVO_2022-07-27_N	144	
	RG_ERCK_COMPOLI-03_LAEMP_EVO_2022-07-27_N	145	

COC ID: EVO_LAEMP_JULY		TURNAROUND TIME:		RUSH:	
PROJECT/CLIENT INFO		LABORATORY		OTHER INFO	
Facility Name / Job# Regional Aquatic Effects		Lab Name TrichAnalytics Inc.		Report Format / Distribution	
Project Manager Mike Pope		Lab Contact Jennie Christensen		Email 1: mike.pope@teck.com	
Email giovanna.diaz@teck.com		Email jennie.christensen@trichanalytics		Email 2: jessica.Riz@teck.com	
Address 421 Pine Ave		Address 207-1753 Sean Heights		Email 3: teckcoal@equisonline.com	
City Sparwood		City Saanichton		Email 4: AquaSciLightteck.com	
Province BC		Province BC		Email 5: Tyler.Mehler@minnow.ca	
Country Canada		Country Canada			
Postal Code V0B 2G0		Postal Code V8M 0B3			
Phone Number 250-425-8449		Phone Number		PO number VPO00847031	

Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	Tissue type	Tissue Species	Sample Structure	ANALYSIS REQUESTED					DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME	
									ANALYSIS	PRESERV.	F	N	F				N
RG_GATEDP_COMPOLI-01_LAEMP_EVO_2022-07-25_N	RG_GATEDP	TA	N	7/25/2022	12:30	COMP OLI	Composite	Composite	1	X	X	X	X	Number of Containers	July 28, 2022	Genevieve Laberge	05 Aug 2022 / 1015
RG_GATEDP_INVOLI-01_LAEMP_EVO_2022-07-25_N	RG_GATEDP	TA	N	7/25/2022	12:35	INVOLI	Composite	Composite	1	X	X	X	X	Metals in Biota by ICPMS (wet and dry)	July 28, 2022	Genevieve Laberge	05 Aug 2022 / 1015
RG_GATEDP_INV-01_LAEMP_EVO_2022-07-26 NP	RG_GATEDP	TA	N	7/26/2022	8:40	INV	Composite	Composite	1	X	X	X	X	Mercury in Biota by CVAAS (wet, dry & routine)	July 28, 2022	Genevieve Laberge	05 Aug 2022 / 1015
RG_GATE_INV-01_LAEMP_EVO_2022-07-25 N	RG_GATE	TA	N	7/25/2022	10:00	INV	Composite	Composite	1	X	X	X	X	Moisture Content by Gravimetry	July 28, 2022	Genevieve Laberge	05 Aug 2022 / 1015
RG_GATE_INV-02_LAEMP_EVO_2022-07-25 N	RG_GATE	TA	N	7/25/2022	10:05	INV	Composite	Composite	1	X	X	X	X		July 28, 2022	Genevieve Laberge	05 Aug 2022 / 1015
RG_GATE_INV-03_LAEMP_EVO_2022-07-25 N	RG_GATE	TA	N	7/25/2022	10:10	INV	Composite	Composite	1	X	X	X	X		July 28, 2022	Genevieve Laberge	05 Aug 2022 / 1015
RG_MIDGA_INV-01_LAEMP_EVO_2022-07-25 N	RG_MIDGA	TA	N	7/25/2022	12:00	INV	Composite	Composite	1	X	X	X	X		July 28, 2022	Genevieve Laberge	05 Aug 2022 / 1015
RG_MIDGA_INV-02_LAEMP_EVO_2022-07-25 N	RG_MIDGA	TA	N	7/25/2022	12:05	INV	Composite	Composite	1	X	X	X	X		July 28, 2022	Genevieve Laberge	05 Aug 2022 / 1015
RG_MIDGA_INV-03_LAEMP_EVO_2022-07-25 N	RG_MIDGA	TA	N	7/25/2022	12:10	INV	Composite	Composite	1	X	X	X	X		July 28, 2022	Genevieve Laberge	05 Aug 2022 / 1015

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS		RELIQUISHED BY/AFFILIATION		DATE/TIME	
Regular (default) X		Robin Valteau		July 28, 2022	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge					
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

SERVICE REQUEST (rush - subject to availability)		Sampler's Name		Mobile #	
Regular (default) X		Robin Valteau		416-970-7535	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge					
For Emergency <1 Day, ASAP or Weekend - Contact ALS					
SAMPLER'S SIGNATURE		Date/Time			
Genevieve Laberge		July 28, 2022			

(page 1 of 7)

TRICHA RTT

COC ID: EVO_LAEMP_JULY

TURNAROUND TIME:

RUSH:

PROJECT/CLIENT INFO

Facility Name / Job# Regional Aquatic Effects
 Project Manager Mike Pope
 Email giovanna.diaz@teck.com
 Address 421 Pine Ave

LABORATORY

Lab Name TrichAnalytics Inc.
 Lab Contact Jennie Christensen
 Email jennie.christensen@trichanalytics
 Address 207-1753 Sean Heights
 City Saanichton Province BC
 Postal Code V8M 0B3 Country Canada
 Phone Number 250-425-8449

OTHER INFO

Report Format / Distribution
 Email 1: mike.pope@teck.com
 Email 2: jessica.Riz@teck.com
 Email 3: teckcoal@equisonline.com
 Email 4: AquaSciLab@teck.com
 Email 5: Tyler.Mehler@minnow.ca
 Excel PDF EDD X X X X X X X X X X X X

SAMPLE DETAILS

ANALYSIS REQUESTED

Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	Tissue type	Tissue Species	Sample Structure	ANALYSIS PRESERV.	Number of Containers	Metals in Biota by CRC ICPMS (wet and dry)	Mercury in Biota by CVAAS (wet, dry & routine)	Moisture Content by Gravimetry	F N F N F N	ACCEPTED BY/AFFILIATION	DATE/TIME
RG_MIDBRO_INV-01_LAEMP_EVO_2022-07-25_N	RG_MIDBO	TA	N	7/25/2022	13:00	INV	Composite	Composite	1	X	X	X				
RG_MIDBRO_INV-02_LAEMP_EVO_2022-07-25_N	RG_MIDBO	TA	N	7/25/2022	13:05	INV	Composite	Composite	1	X	X	X				
RG_MIDBRO_INV-03_LAEMP_EVO_2022-07-25_N	RG_MIDBO	TA	N	7/25/2022	13:10	INV	Composite	Composite	1	X	X	X				
RG_MICOMP_INV-01_LAEMP_EVO_2022-07-25_N	RG_MICOMP	TA	N	7/25/2022	15:30	INV	Composite	Composite	1	X	X	X				
RG_MICOMP_INV-02_LAEMP_EVO_2022-07-25_N	RG_MICOMP	TA	N	7/25/2022	15:35	INV	Composite	Composite	1	X	X	X				
RG_MICOMP_INV-03_LAEMP_EVO_2022-07-25_N	RG_MICOMP	TA	N	7/25/2022	15:40	INV	Composite	Composite	1	X	X	X				
RG_MICOMP_INV-04_LAEMP_EVO_2022-07-25_N	RG_MICOMP	TA	N	7/25/2022	15:45	INV	Composite	Composite	1	X	X	X				
RG_MICOMP_INV-05_LAEMP_EVO_2022-07-25_N	RG_MICOMP	TA	N	7/25/2022	15:50	INV	Composite	Composite	1	X	X	X				

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS

Robyn Valteau
 Robin Valteau
 05 Aug 2022 / 1015
 (Project #: 2022-367)

SERVICE REQUEST (rush - subject to availability)

Regular (default) X
 Priority (2-3 business days) - 50% surcharge
 Emergency (1 Business Day) - 100% surcharge
 For Emergency <1 Day, ASAP or Weekend - Contact ALS

Sampler's Name: Robyn Valteau
 Sampler's Signature: Robyn Valteau

Mobile #: 416-970-7535
 Date/Time: July 28, 2022

(page 2 of 7)

COC ID: EVO_LAEMP_JULY		TURNAROUND TIME:		RUSH:	
PROJECT/CLIENT INFO		LABORATORY		OTHER INFO	
Facility Name / Job# Regional Aquatic Effects		Lab Name TrichAnalytics Inc.		Report Format / Distribution	
Project Manager Mike Pope		Lab Contact Jennie Christensen		Email 1: mike.pope@teck.com	
Email giovanna.diaz@teck.com		Email jennie.christensen@trichanalytics		Email 2: jessica.ritz@teck.com	
Address 421 Pine Ave		Address 207-1753 Sean Heights		Email 3: teckcoal@equisonline.com	
City Sparwood		City Saanichton		Email 4: AquaSci.Lab@teck.com	
Postal Code V0B 2G0		Postal Code V8M 0B3		Email 5: Tyler.Mehler@minnow.ca	
Province BC		Province BC		Excel	
Country Canada		Country Canada		PDF	
Phone Number 250-425-8449		Phone Number		EDD	

Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	Tissue type	Tissue Species	Sample Structure	ANALYSIS REQUESTED					PO number
									F	N	F	N	F	
RG_BOCK_COMPOLI-01_LAEMP_EVO_2022-07-25_N	RG_BOCK	TA	N	7/25/2022	14:00	COMP OLI	Composite	Composite	Meats in Biota by CRC	X	X	X	X	VP000847031
RG_BOCK_COMPOLI-02_LAEMP_EVO_2022-07-25_N	RG_BOCK	TA	N	7/25/2022	14:05	COMP OLI	Composite	Composite	Mercury in Biota by CVAAS (wet, dry & routine)	X	X	X	X	
RG_BOCK_COMPOLI-03_LAEMP_EVO_2022-07-25_N	RG_BOCK	TA	N	7/25/2022	14:10	COMP OLI	Composite	Composite	Moisture Content by Gravimetry	X	X	X	X	
RG_BOCK_INV-01_LAEMP_EVO_2022-07-26_N	RG_BOCK	TA	N	7/26/2022	7:30	INV	Composite	Composite						
RG_BOCK_INVOLI-01_LAEMP_EVO_2022-07-26_N	RG_BOCK	TA	N	7/26/2022	7:35	INVOLI	Composite	Composite						
RG_BOCK_INV-02_LAEMP_EVO_2022-07-26_N	RG_BOCK	TA	N	7/26/2022	7:40	INV	Composite	Composite						
RG_BOCK_INVOLI-02_LAEMP_EVO_2022-07-26_N	RG_BOCK	TA	N	7/26/2022	7:45	INVOLI	Composite	Composite						
RG_BOCK_INV-03_LAEMP_EVO_2022-07-26_N	RG_BOCK	TA	N	7/26/2022	7:50	INV	Composite	Composite						
RG_BOCK_INVOLI-03_LAEMP_EVO_2022-07-26_N	RG_BOCK	TA	N	7/26/2022	7:55	INVOLI	Composite	Composite						

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS		RELINQUISHED BY/AFFILIATION		ACCEPTED BY/AFFILIATION		DATE/TIME	
Regular (default) X		Robin Valteau		Genevieve Labine		05 Aug 2022 / 10:15	
Priority (2-3 business days) - 50% surcharge				Cammie JB		(Project #: 2022-367)	
Emergency (1 Business Day) - 100% surcharge							
For Emergency <1 Day, ASAP or Weekend - Contact ALS							

SERVICE REQUEST (rush - subject to availability)		Sampl'er's Name		Mobile #	
Regular (default) X		Robin Valteau		416-970-7535	
Priority (2-3 business days) - 50% surcharge		Sampl'er's Signature		Date/Time	
Emergency (1 Business Day) - 100% surcharge				July 28, 2022	
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

COC ID: EVO_LAEMP_JULY		TURNAROUND TIME:		RUSH:	
PROJECT/CLIENT INFO		LABORATORY		OTHER INFO	
Facility Name / Job# Regional Aquatic Effects		Lab Name TrichAnalytics Inc.		Report Format / Distribution	
Project Manager Mike Pope		Lab Contact Jennie Christensen		Email 1: mike.pope@teck.com	
Email giovanna.diaz@teck.com		Email jennie.christensen@trichanalytics		Email 2: jessica.riz@teck.com	
Address 421 Pine Ave		Address 207-1753 Sean Heights		Email 3: teckcoal@equisonline.com	
City Sparwood		City Saanichton		Email 4: AquaSciLab@teck.com	
Province BC		Province BC		Email 5: Tyler.Mehler@trinnov.ca	
Postal Code V0B 2G0		Postal Code V8M 0B3		Country Canada	
Phone Number 250-425-8449		Phone Number		PO number VPO00847031	

Sample ID	Sample Location (sys_loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	Tissue type	Tissue Species	Sample Structure	ANALYSIS REQUESTED											
									Number of Containers	ICPMS (wet and dry)	Mercury in Biota by CVAS (wet, dry & routine)	Moisture Content by Gravimetry	F	N	F	N	F	N		
RG_BOCKRD_INV-01_LAEMP_EVO_2022-07-26_N	RG_BOCKRD	TA	N	7/26/2022	14:30	INV	Composite	Composite	1	X	X	X								
RG_BOCKRD_INV-02_LAEMP_EVO_2022-07-26_N	RG_BOCKRD	TA	N	7/26/2022	14:35	INV	Composite	Composite	1	X	X	X								
RG_BOCKRD_INV-03_LAEMP_EVO_2022-07-26_N	RG_BOCKRD	TA	N	7/26/2022	14:40	INV	Composite	Composite	1	X	X	X								
RG_ERCKUT_INV-01_LAEMP_EVO_2022-07-26_N	RG_ERCKUT	TA	N	7/26/2022	10:00	INV	Composite	Composite	1	X	X	X								
RG_ERCKUT_INV-02_LAEMP_EVO_2022-07-26_N	RG_ERCKUT	TA	N	7/26/2022	10:05	INV	Composite	Composite	1	X	X	X								
RG_ERCKUT_INV-03_LAEMP_EVO_2022-07-26_N	RG_ERCKUT	TA	N	7/26/2022	10:10	INV	Composite	Composite	1	X	X	X								
RG_ERCKUT_INV-04_LAEMP_EVO_2022-07-26_N	RG_ERCKUT	TA	N	7/26/2022	10:15	INV	Composite	Composite	1	X	X	X								
RG_ERCKUT_INV-05_LAEMP_EVO_2022-07-26_N	RG_ERCKUT	TA	N	7/26/2022	10:20	INV	Composite	Composite	1	X	X	X								
RG_ERCKDT_INV-01_LAEMP_EVO_2022-07-26_N	RG_ERCKDT	TA	N	7/26/2022	11:30	INV	Composite	Composite	1	X	X	X								
RG_ERCKDT_INV-02_LAEMP_EVO_2022-07-26_N	RG_ERCKDT	TA	N	7/26/2022	11:35	INV	Composite	Composite	1	X	X	X								

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS		RELINQUISHED BY/AFFILIATION		ACCEPTED BY/AFFILIATION		DATE/TIME	
		Robin Vallean		Genevieve Labine		July 28, 2022	
				Genevieve Labine		05 Aug 2022 / 1015	
				Genevieve Labine		(Project # 2022-367)	

SERVICE REQUEST (rush - subject to availability)		Sampler's Name		Mobile #	
Regular (default) X		Robin Vallean		416-970-7535	
Priority (2-3 business days) - 50% surcharge		Sampler's Signature		Date/Time	
Emergency (1 Business Day) - 100% surcharge				July 28, 2022	
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

(page 4 of 7)

COC ID: EVO_LAEMP_JULY		TURNAROUND TIME:		RUSH:	
PROJECT/CLIENT INFO		LABORATORY		OTHER INFO	
Facility Name / Job# Regional Aquatic Effects		Lab Name TrichAnalytics Inc.		Report Format / Distribution	
Project Manager Mike Pope		Lab Contact Jennie Christensen		Email 1: mike.pope@teck.com	
Email giovanna.diaz@teck.com		Email jennie.christensen@trichanalytics		Email 2: jessica.ritz@teck.com	
Address 421 Pine Ave		Address 207-1753 Sean Heights		Email 3: teckcool@equisonline.com	
City Sparwood		City Saanichton		Email 4: AquaSci.Lab@teck.com	
Postal Code V0B 2G0		Postal Code V8M 0B3		Email 5: Tyler.Mehler@minnow.ca	
Phone Number 250-425-8449		Province BC		PO number VPO00847031	
		Country Canada		EPA/MSD, E. Field, L. Lab, E.L. Field, E.L. Field & Lab, N. Name	
		Phone Number			

Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	Tissue type	Tissue Species	Sample Structure	ANALYSIS REQUESTED				DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME	
									F	N	F	N				
RG_ERCKDT_INV-03 LAEMP_EVO_2022-07-26_N	RG_ERCK_DT	TA	N	7/26/2022	11:40	INV	Composite	Composite	1	X	X	X	X			
RG_ERCKDT_INV-04 LAEMP_EVO_2022-07-26_N	RG_ERCK_DT	TA	N	7/26/2022	11:45	INV	Composite	Composite	1	X	X	X	X			
RG_ERCKDT_INV-05 LAEMP_EVO_2022-07-26_N	RG_ERCK_DT	TA	N	7/26/2022	11:50	INV	Composite	Composite	1	X	X	X	X			
RG_ERCKDT_INV-06 LAEMP_EVO_2022-07-26_N	RG_ERCK_DT	TA	N	7/26/2022	11:55	INV	Composite	Composite	1	X	X	X	X			
RG_ERCKMID_INV-01 LAEMP_EVO_2022-07-26_N	RG_ERCKMID	TA	N	7/26/2022	13:30	INV	Composite	Composite	1	X	X	X	X			
RG_ERCKMID_INV-02 LAEMP_EVO_2022-07-26_N	RG_ERCKMID	TA	N	7/26/2022	13:35	INV	Composite	Composite	1	X	X	X	X			
RG_ERCKMID_INV-03 LAEMP_EVO_2022-07-26_N	RG_ERCKMID	TA	N	7/26/2022	13:40	INV	Composite	Composite	1	X	X	X	X			
RG_ERCKMID_INV-04 LAEMP_EVO_2022-07-26_N	RG_ERCKMID	TA	N	7/26/2022	13:45	INV	Composite	Composite	1	X	X	X	X			
RG_ERCKMID_INV-05 LAEMP_EVO_2022-07-26_N	RG_ERCKMID	TA	N	7/26/2022	13:50	INV	Composite	Composite	1	X	X	X	X			

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS		RELINQUISHED BY/AFFILIATION		DATE/TIME	
		Robin Valteau		July 28, 2022	
				Genevieve Labine	
				Gavin RB	
				(Project #: 2022-367)	
				05 Aug 2022 / 1015	

SERVICE REQUEST (rush - subject to availability)		Sampl'er's Name		Mobile #	
Regular (default) <input checked="" type="checkbox"/>		Robin Valteau		416-970-7535	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge					
For Emergency <1 Day, ASAP or Weekend - Contact ALS		Sampl'er's Signature		Date/Time	
				July 28, 2022	

(page 5 of 7)

COC ID: EVO_LAEMP_JULY		TURNAROUND TIME:		RUSH:	
PROJECT/CLIENT INFO		LABORATORY		OTHER INFO	
Facility Name / Job# Regional Aquatic Effects		Lab Name TrichAnalytics Inc.		Report Format / Distribution	
Project Manager Mike Pope		Lab Contact Jennie Christensen		Email 1: mike.pope@teck.com	
Email giovanna.diaz@teck.com		Email jennie.christensen@trichanalytics		Email 2: jessica.riz@teck.com	
Address 421 Pine Ave		Address 207-1753 Sean Heights		Email 3: teckcoal@equisonline.com	
City Sparwood		City Saanichton		Email 4: AquaSciLab@teck.com	
Postal Code V0B 2G0		Postal Code V8M 0B3		Email 5: Tyler.Mehler@minnow.ca	
Province BC		Province BC			
Country Canada		Country Canada			
Phone Number 250-425-8449		Phone Number		PO number VPO00847031	

Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	Tissue type	Tissue Species	Sample Structure	ANALYSIS REQUESTED					DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
									F	N	F	N	F			
RG_ERCKUC_INV-01_LAEMP_EVO_2022-07-27_N	RG_ERCKUC	TA	N	7/27/2022	8:30	INV	Composite	Composite	1	X	X	X	X			
RG_ERCKUC_INV-02_LAEMP_EVO_2022-07-27_N	RG_ERCKUC	TA	N	7/27/2022	8:35	INV	Composite	Composite	1	X	X	X	X			
RG_ERCKUC_INV-03_LAEMP_EVO_2022-07-27_N	RG_ERCKUC	TA	N	7/27/2022	8:40	INV	Composite	Composite	1	X	X	X	X			
RG_ERCK_INV-01_LAEMP_EVO_2022-07-27_N	RG_ERCK	TA	N	7/27/2022	10:00	INV	Composite	Composite	1	X	X	X	X			
RG_ERCK_INV-02_LAEMP_EVO_2022-07-27_N	RG_ERCK	TA	N	7/27/2022	10:05	INV	Composite	Composite	1	X	X	X	X			
RG_ERCK_INV-03_LAEMP_EVO_2022-07-27_N	RG_ERCK	TA	N	7/27/2022	10:10	INV	Composite	Composite	1	X	X	X	X			
RG_M3_INV-01_LAEMP_EVO_2022-07-27_N	RG_M3	TA	N	7/27/2022	12:30	INV	Composite	Composite	1	X	X	X	X			
RG_M3_INV-02_LAEMP_EVO_2022-07-27_N	RG_M3	TA	N	7/27/2022	12:35	INV	Composite	Composite	1	X	X	X	X			
RG_M3_INV-03_LAEMP_EVO_2022-07-27_N	RG_M3	TA	N	7/27/2022	12:40	INV	Composite	Composite	1	X	X	X	X			
RG_ERCK_INV-03_LAEMP_EVO_2022-07-27_N	RG_ERCK	TA	N	7/27/2022	10:15	INVOLI	Composite	Composite	1	X	X	X	X			

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS		RELINQUISHED BY/AFFILIATION		DATE/TIME	
		Robin Valteau		July 28, 2022	
				Gislene LaBine	
				Cecilia R. B. (Signet #: 2022-367)	

SERVICE REQUEST (rush - subject to availability)		Sampler's Name		Mobile #	
Regular (default) <input checked="" type="checkbox"/>		Robin Valteau		416-970-7535	
Priority (2-3 business days) - 50% surcharge		Sampler's Signature		Date/Time	
Emergency (1 Business Day) - 100% surcharge				July 28, 2022	
For Emergency <1 Day, ASAP or Weekend - Contact ALS					



TrichAnalytics Inc.

Tissue Microchemistry Analysis Report

Client: Mike Pope Project Manager Teck Coal Ltd	Date Received: 20 Sep 2022
Phone: (250) 425-8247	Date of Analysis: 28 Sep 2022
Email: aquascilab@teck.com; teckcoal@equisonline.com; teck.lab.results@teck.com; lisa.bowron@minnow.ca; tyler.mehler@minnow.ca jessica.ritz@teck.com	Final Report Date: 06 Oct 2022
	Project No.: 2022-400
	Method No.: MET-002.06

Client Project: REP_LAEMP_EVO_2022-09 Regional Effects Program (PO 818999)

Analytical Request: Composite Benthic Invertebrate Tissue Microchemistry (total metals & moisture) - 49 samples.
See chain of custody form provided for sample identification numbers.

Notes:

Analytical results are expressed in parts per million (ppm) dry weight (equivalent to mg/kg).
Samples quantified using DORM-4, NIST-1566b, and NIST-2976 certified reference standards.
Aluminum concentrations above 1,000 ppm are outside linear range of the calibration curve.
RPD values calculated according to the British Columbia Environmental Laboratory Manual (2020) criteria.
Client specific DQO for Selenium accuracy is 90-110% of the certified value; result achieved 105% (ranging from 96-110%).

This report provides the analytical results only for tissue samples noted above as received from the Client.

Reviewed and Approved by Jennie Christensen, PhD, RPBio

06 Oct 2022

Date

[The analytical report shall not be reproduced except in full under the expressed written consent of TrichAnalytics Inc.]

TrichAnalytics Inc.
207-1753 Sean Heights
Saanichton, BC V8M 0B3
www.trichanalytics.com



CALA
Testing
Accreditation No. A4196

Teck Coal Limited
Tissue Analysis Results

			Client ID	RG_ERCK_INV-1_2022-09-14_N	RG_ERCK_INV-2_2022-09-14_N	RG_ERCK_INV-3_2022-09-14_N	RG_ERCKUT_INV-1_2022-09-16_N	RG_ERCKUT_INV-2_2022-09-16_N
			Lab ID	197	198	199	200	201
			Wet Weight (g)	0.1512	0.1203	0.2215	0.3087	0.4470
			Dry Weight (g)	0.0284	0.0216	0.0379	0.0704	0.0978
			Moisture (%)	81.2	82.0	82.9	77.2	78.1
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.022	0.073	0.605	0.947	0.662	0.733	1.2	
11B	0.052	0.173	0.959	2.5	0.726	1.8	3.6	
23Na	7.2	24	4,833	4,863	4,975	2,822	3,542	
24Mg	0.068	0.227	1,535	2,056	2,151	1,706	2,190	
27Al	0.044	0.147	64	209	64	271	632	
31P	99	330	14,599	15,220	15,538	11,525	12,158	
39K	4.4	15	11,447	13,100	10,286	7,579	10,659	
44Ca	4.6	15	3,393	7,894	4,759	3,667	5,342	
49Ti	0.001	0.003	3.3	9.7	3.6	13	84	
51V	0.045	0.150	0.286	1.4	0.326	0.989	1.9	
52Cr	0.107	0.357	5.3	18	6.9	5.7	22	
55Mn	0.006	0.020	18	45	23	9.9	21	
57Fe	0.888	3.0	123	547	160	189	379	
59Co	0.011	0.037	0.717	2.5	0.579	0.193	1.2	
60Ni	0.001	0.003	7.7	29	12	7.2	33	
63Cu	0.019	0.063	12	11	15	22	25	
66Zn	0.310	1.0	161	152	123	156	189	
75As	0.360	1.2	0.451	0.553	1.0	0.541	0.790	
77Se	0.395	1.3	7.6	6.8	7.0	5.4	6.4	
88Sr	0.001	0.003	3.3	6.8	3.6	3.1	5.7	
95Mo	0.020	0.067	0.174	0.305	0.239	0.196	0.326	
107Ag	0.001	0.003	0.059	0.054	0.049	0.103	0.111	
111Cd	0.091	0.303	0.679	1.8	1.0	2.6	3.3	
118Sn	0.018	0.060	0.758	0.733	1.6	0.696	0.960	
121Sb	0.004	0.013	0.027	0.041	0.036	0.064	0.138	
137Ba	0.012	0.040	6.5	16	4.7	11	22	
202Hg	0.019	0.063	0.024	0.038	<0.019	0.052	0.043	
205Tl	0.001	0.003	0.015	0.035	0.016	0.026	0.052	
208Pb	0.002	0.007	0.081	0.242	0.157	0.123	0.317	
238U	0.001	0.003	0.150	0.238	0.127	0.114	0.161	

Notes:

- ppm = parts per million
- DL = detection limit
- LOQ = limit of quantitation
- < = less than detection limit
- g = grams
- % = percent

Teck Coal Limited
Tissue Analysis Results

			RG_ERCKUT_INV- 3_2022-09-16_N	RG_ERCKUT_INV- 4_2022-09-16_N	RG_ERCKUT_INV- 5_2022-09-16_N	RG_GATE_INV- 1_2022-09-15_N	RG_GATE_INV- 2_2022-09-15_N
Client ID							
Lab ID			202	203	204	205	206
Wet Weight (g)			0.5219	0.8570	0.7717	0.5144	0.3000
Dry Weight (g)			0.1075	0.1813	0.2057	0.1045	0.0612
Moisture (%)			79.4	78.8	73.3	79.7	79.6
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.022	0.073	0.626	0.470	0.416	3.0	3.2
11B	0.052	0.173	2.2	1.3	1.2	4.9	4.2
23Na	7.2	24	2,490	2,264	2,339	5,992	2,999
24Mg	0.068	0.227	1,742	1,317	1,379	2,802	2,185
27Al	0.044	0.147	419	186	176	4,010	3,811
31P	99	330	9,733	9,375	9,569	15,652	11,788
39K	4.4	15	7,572	6,211	6,428	19,082	15,534
44Ca	4.6	15	4,755	2,931	3,307	25,696	18,055
49Ti	0.001	0.003	23	9.3	9.0	288	264
51V	0.045	0.150	1.3	0.736	0.674	9.4	7.9
52Cr	0.107	0.357	6.0	4.7	5.0	22	24
55Mn	0.006	0.020	11	7.1	11	70	67
57Fe	0.888	3.0	247	146	152	3,830	3,311
59Co	0.011	0.037	0.265	0.175	0.151	3.0	2.8
60Ni	0.001	0.003	6.4	4.7	4.7	78	79
63Cu	0.019	0.063	21	16	17	25	21
66Zn	0.310	1.0	144	109	155	236	230
75As	0.360	1.2	0.508	0.451	0.632	3.5	3.8
77Se	0.395	1.3	5.9	4.9	4.5	22	15
88Sr	0.001	0.003	3.4	1.9	1.9	66	47
95Mo	0.020	0.067	0.174	0.130	0.152	1.7	1.2
107Ag	0.001	0.003	0.105	0.065	0.065	0.151	0.103
111Cd	0.091	0.303	3.7	2.0	2.9	9.6	11
118Sn	0.018	0.060	0.939	0.345	0.428	0.587	1.0
121Sb	0.004	0.013	0.081	0.049	0.052	0.171	0.136
137Ba	0.012	0.040	13	6.6	7.4	2,410	1,767
202Hg	0.019	0.063	0.047	0.035	0.038	0.114	0.137
205Tl	0.001	0.003	0.028	0.015	0.015	0.189	0.262
208Pb	0.002	0.007	0.188	0.092	0.105	1.5	1.2
238U	0.001	0.003	0.148	0.097	0.099	0.419	0.299

Notes:

- ppm = parts per million
- DL = detection limit
- LOQ = limit of quantitation
- < = less than detection limit
- g = grams
- % = percent

Teck Coal Limited
Tissue Analysis Results

			Client ID	RG_GATE_INV- 3_2022-09-15_N	RG_GATEDP_INV OLI-1_2022-09- 15_N	RG_GATEDP_CO MPOLI-1_2022- 09-15_N	RG_GATEDP_CO MPNOLI-1_2022- 09-15_N	RG_GATEDP_INV OLI-2_2022-09- 15_N
			Lab ID	207	208	209	210	211
			Wet Weight (g)	0.3849	0.6056	0.5774	0.4322	0.5184
			Dry Weight (g)	0.0700	0.1619	0.1295	0.0935	0.1380
			Moisture (%)	81.8	73.3	77.6	78.4	73.4
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.022	0.073	2.9	3.8	21	17	4.5	
11B	0.052	0.173	3.3	4.0	5.2	3.1	7.8	
23Na	7.2	24	3,392	4,181	6,344	7,435	4,040	
24Mg	0.068	0.227	2,452	2,451	2,728	4,493	2,683	
27Al	0.044	0.147	2,722	3,703	4,172	2,339	6,393	
31P	99	330	12,705	11,528	9,427	10,367	11,155	
39K	4.4	15	16,484	12,484	10,502	9,609	13,355	
44Ca	4.6	15	18,110	53,949	82,105	66,108	76,607	
49Ti	0.001	0.003	190	303	304	175	573	
51V	0.045	0.150	6.0	8.3	9.9	5.1	14	
52Cr	0.107	0.357	17	13	26	13	16	
55Mn	0.006	0.020	73	45	55	35	54	
57Fe	0.888	3.0	3,154	2,459	3,488	1,864	3,506	
59Co	0.011	0.037	2.6	5.5	4.2	1.9	7.6	
60Ni	0.001	0.003	72	48	109	63	54	
63Cu	0.019	0.063	21	9.8	15	9.2	11	
66Zn	0.310	1.0	232	140	145	120	134	
75As	0.360	1.2	4.5	7.1	3.0	1.9	8.4	
77Se	0.395	1.3	19	66	27	8.8	80	
88Sr	0.001	0.003	49	72	137	100	140	
95Mo	0.020	0.067	1.1	1.0	1.6	0.620	1.3	
107Ag	0.001	0.003	0.103	0.103	0.378	0.159	0.130	
111Cd	0.091	0.303	11	4.2	5.9	3.6	4.7	
118Sn	0.018	0.060	0.693	0.736	0.598	0.290	0.836	
121Sb	0.004	0.013	0.119	0.124	0.150	0.094	0.192	
137Ba	0.012	0.040	2,032	2,316	4,493	3,825	4,536	
202Hg	0.019	0.063	0.123	0.142	0.071	0.038	0.170	
205Tl	0.001	0.003	0.230	0.240	0.166	0.112	0.366	
208Pb	0.002	0.007	1.0	1.2	1.2	0.760	2.1	
238U	0.001	0.003	0.240	0.473	1.0	0.421	0.763	

Notes:

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Teck Coal Limited
Tissue Analysis Results

	Client ID	RG_GATEDP_CO MPOLI-2_2022- 09-15_N	RG_GATEDP_CO MPNOLI-2_2022- 09-15_N	RG_GATEDP_INV OLI-3_2022-09- 15_N	RG_GATEDP_CO MPOLI-3_2022- 09-15_N	RG_GATEDP_CO MPNOLI-3_2022- 09-15_N	
	Lab ID	212	213	214	215	216	
	Wet Weight (g)	0.3928	0.5322	0.9040	1.4545	0.9391	
	Dry Weight (g)	0.0835	0.0886	0.2622	0.2390	0.1492	
	Moisture (%)	78.7	83.4	71.0	83.6	84.1	
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	
7Li	0.022	0.073	10	23	4.2	15	34
11B	0.052	0.173	7.0	6.5	6.1	7.6	2.3
23Na	7.2	24	6,489	8,630	2,406	14,647	14,543
24Mg	0.068	0.227	2,719	4,040	3,114	2,047	2,787
27Al	0.044	0.147	6,021	5,851	3,833	6,808	1,465
31P	99	330	10,424	12,888	8,194	10,665	9,776
39K	4.4	15	12,802	15,017	8,159	18,729	16,744
44Ca	4.6	15	52,643	57,887	98,725	46,625	42,410
49Ti	0.001	0.003	475	544	280	508	150
51V	0.045	0.150	13	19	9.8	16	5.3
52Cr	0.107	0.357	18	22	7.0	9.0	8.0
55Mn	0.006	0.020	47	53	65	49	32
57Fe	0.888	3.0	3,173	2,821	2,041	3,131	1,412
59Co	0.011	0.037	5.1	2.8	5.5	5.8	1.7
60Ni	0.001	0.003	70	113	42	105	84
63Cu	0.019	0.063	10	13	7.9	15	13
66Zn	0.310	1.0	123	109	108	109	102
75As	0.360	1.2	4.9	2.3	4.2	4.9	1.7
77Se	0.395	1.3	37	17	39	53	11
88Sr	0.001	0.003	94	97	185	89	63
95Mo	0.020	0.067	0.979	1.4	0.939	1.4	1.0
107Ag	0.001	0.003	0.130	0.286	0.076	0.167	0.119
111Cd	0.091	0.303	3.3	3.3	4.3	5.0	3.6
118Sn	0.018	0.060	0.875	0.435	0.616	0.829	0.167
121Sb	0.004	0.013	0.202	0.214	0.154	0.235	0.100
137Ba	0.012	0.040	3,195	2,900	4,076	3,575	1,782
202Hg	0.019	0.063	0.080	0.052	0.072	0.124	0.049
205Tl	0.001	0.003	0.250	0.239	0.248	0.260	0.084
208Pb	0.002	0.007	1.8	2.2	1.5	2.5	0.739
238U	0.001	0.003	0.657	0.670	0.716	0.648	0.585

Notes:

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Teck Coal Limited
Tissue Analysis Results

			Client ID	RG_MI3_INV- 1_2022-09-12_N	RG_MI3_INV- 2_2022-09-12_N	RG_MI3_INV- 3_2022-09-12_N	RG_MIDBO_INV- 1_2022-09-13_N	RG_MIDBO_INV- 2_2022-09-13_N
			Lab ID	217	218	219	220	221
			Wet Weight (g)	0.5412	0.1719	0.2054	0.3774	0.4465
			Dry Weight (g)	0.1232	0.0354	0.0378	0.0741	0.0869
			Moisture (%)	77.2	79.4	81.6	80.4	80.5
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.022	0.073	0.325	0.370	0.431	2.6	3.4	
11B	0.052	0.173	1.5	1.1	2.5	1.2	1.7	
23Na	7.2	24	5,551	3,530	4,227	3,841	4,630	
24Mg	0.068	0.227	1,702	1,080	1,220	939	1,506	
27Al	0.044	0.147	322	412	267	240	381	
31P	99	330	18,212	12,763	13,746	10,970	15,640	
39K	4.4	15	13,294	11,214	11,746	11,171	14,397	
44Ca	4.6	15	2,945	3,082	4,376	2,844	2,303	
49Ti	0.001	0.003	17	22	35	12	14	
51V	0.045	0.150	0.706	0.832	1.5	0.668	0.987	
52Cr	0.107	0.357	7.9	14	18	6.3	24	
55Mn	0.006	0.020	54	70	63	66	83	
57Fe	0.888	3.0	549	501	692	372	977	
59Co	0.011	0.037	1.8	2.1	2.3	1.0	2.1	
60Ni	0.001	0.003	10	20	27	16	48	
63Cu	0.019	0.063	19	13	16	12	14	
66Zn	0.310	1.0	129	114	114	127	165	
75As	0.360	1.2	1.0	1.1	1.1	0.751	0.955	
77Se	0.395	1.3	14	8.8	8.9	8.1	10	
88Sr	0.001	0.003	4.2	5.9	8.0	5.5	8.6	
95Mo	0.020	0.067	0.458	0.527	0.572	0.366	0.527	
107Ag	0.001	0.003	0.086	0.076	0.092	0.065	0.076	
111Cd	0.091	0.303	2.2	3.3	3.8	1.7	2.9	
118Sn	0.018	0.060	0.483	0.838	1.2	0.573	0.776	
121Sb	0.004	0.013	0.020	0.021	0.026	0.021	0.028	
137Ba	0.012	0.040	28	32	45	107	163	
202Hg	0.019	0.063	0.054	0.041	0.072	0.062	0.057	
205Tl	0.001	0.003	0.060	0.037	0.048	0.027	0.048	
208Pb	0.002	0.007	0.249	0.220	0.395	0.245	0.334	
238U	0.001	0.003	0.026	0.030	0.043	0.048	0.088	

Notes:

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Teck Coal Limited
Tissue Analysis Results

			Client ID	RG_MIDBO_INV- 3_2022-09-13_N	RG_MIDER_INV- 1_2022-09-13_N	RG_MIDER_INV- 2_2022-09-13_N	RG_MIDER_INV- 3_2022-09-13_N	RG_BOCK_INV- 1_2022-09-15_N
			Lab ID	222	223	224	225	226
			Wet Weight (g)	0.3018	0.2507	0.4808	0.3438	0.2142
			Dry Weight (g)	0.0613	0.0505	0.0878	0.0745	0.0349
			Moisture (%)	79.7	79.9	81.7	78.3	83.7
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.022	0.073	0.915	0.367	0.257	0.299	2.3	
11B	0.052	0.173	1.6	1.6	1.6	1.6	2.5	
23Na	7.2	24	4,334	3,449	3,440	3,598	6,475	
24Mg	0.068	0.227	1,302	1,136	1,212	1,163	2,067	
27Al	0.044	0.147	337	487	336	343	1,524	
31P	99	330	16,842	13,535	13,294	14,280	15,217	
39K	4.4	15	13,559	12,335	11,168	11,364	13,460	
44Ca	4.6	15	4,441	4,277	4,934	3,238	26,161	
49Ti	0.001	0.003	18	31	18	21	99	
51V	0.045	0.150	1.0	1.0	0.668	0.725	3.6	
52Cr	0.107	0.357	18	14	5.6	7.3	11	
55Mn	0.006	0.020	58	61	54	58	30	
57Fe	0.888	3.0	604	506	351	332	697	
59Co	0.011	0.037	2.0	2.3	1.7	1.5	1.3	
60Ni	0.001	0.003	33	22	9.7	10	36	
63Cu	0.019	0.063	14	14	16	14	22	
66Zn	0.310	1.0	149	125	127	138	93	
75As	0.360	1.2	0.869	0.837	0.987	0.922	0.751	
77Se	0.395	1.3	11	9.9	9.5	8.7	59	
88Sr	0.001	0.003	7.0	8.6	9.0	6.3	57	
95Mo	0.020	0.067	0.618	0.527	0.504	0.504	0.653	
107Ag	0.001	0.003	0.108	0.076	0.081	0.081	0.178	
111Cd	0.091	0.303	2.9	2.9	3.5	2.6	0.616	
118Sn	0.018	0.060	0.973	0.757	1.3	0.844	0.592	
121Sb	0.004	0.013	0.022	0.019	0.017	0.015	0.076	
137Ba	0.012	0.040	73	51	38	33	842	
202Hg	0.019	0.063	0.052	0.036	0.046	0.052	0.049	
205Tl	0.001	0.003	0.063	0.055	0.044	0.043	0.152	
208Pb	0.002	0.007	0.305	0.245	0.292	0.191	0.763	
238U	0.001	0.003	0.051	0.039	0.033	0.032	0.187	

Notes:

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Teck Coal Limited
Tissue Analysis Results

			Client ID	RG_BOCK_INV- 2_2022-09-15_N	RG_BOCK_INV- 3_2022-09-15_N	RG_ALUSM_INV- 1_2022-09-18_N	RG_ALUSM_INV- 2_2022-09-18_N	RG_ALUSM_INV- 3_2022-09-18_N
			Lab ID	227	228	229	230	231
			Wet Weight (g)	0.1866	0.4388	1.2396	1.0877	0.8687
			Dry Weight (g)	0.0519	0.0917	0.2686	0.2352	0.1995
			Moisture (%)	72.2	79.1	78.3	78.4	77.0
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.022	0.073	3.9	1.4	0.480	1.3	0.288	
11B	0.052	0.173	3.2	0.896	1.3	3.9	1.3	
23Na	7.2	24	4,365	6,692	3,638	5,272	3,348	
24Mg	0.068	0.227	4,728	1,405	920	1,479	1,219	
27Al	0.044	0.147	2,266	389	700	1,914	446	
31P	99	330	10,862	10,411	13,927	14,858	8,918	
39K	4.4	15	9,929	9,077	9,312	14,427	8,714	
44Ca	4.6	15	49,076	12,968	1,520	3,310	1,733	
49Ti	0.001	0.003	151	18	44	78	29	
51V	0.045	0.150	5.1	0.908	1.4	3.1	0.667	
52Cr	0.107	0.357	9.9	4.2	6.3	12	4.0	
55Mn	0.006	0.020	57	13	60	92	67	
57Fe	0.888	3.0	1,109	193	641	1,309	547	
59Co	0.011	0.037	2.0	0.942	1.1	1.7	0.726	
60Ni	0.001	0.003	45	14	7.2	16	4.8	
63Cu	0.019	0.063	38	25	13	14	12	
66Zn	0.310	1.0	69	51	107	135	112	
75As	0.360	1.2	2.2	0.955	0.879	1.7	1.1	
77Se	0.395	1.3	27	50	4.1	6.0	7.2	
88Sr	0.001	0.003	96	23	3.3	5.8	2.4	
95Mo	0.020	0.067	0.962	0.378	0.412	0.595	0.395	
107Ag	0.001	0.003	0.608	0.167	0.070	0.070	0.042	
111Cd	0.091	0.303	1.6	0.410	0.855	1.0	0.624	
118Sn	0.018	0.060	0.457	0.223	0.264	0.517	0.216	
121Sb	0.004	0.013	0.136	0.046	0.021	0.058	0.027	
137Ba	0.012	0.040	1,028	83	30	84	32	
202Hg	0.019	0.063	0.057	0.098	0.067	0.077	0.030	
205Tl	0.001	0.003	0.192	0.234	0.039	0.064	0.023	
208Pb	0.002	0.007	1.7	0.211	0.507	1.2	0.289	
238U	0.001	0.003	0.246	0.050	0.044	0.090	0.030	

Notes:

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Teck Coal Limited
Tissue Analysis Results

			RG_MICOMP_IN	RG_MICOMP_IN	RG_MICOMP_IN	RG_MICOMP_IN	RG_MICOMP_IN
Client ID			V-1_2022-09-	V-2_2022-09-	V-3_2022-09-	V-4_2022-09-	V-5_2022-09-
Lab ID			18_N	18_N	18_N	18_N	18_N
Wet Weight (g)			232	233	234	235	236
Dry Weight (g)			0.5036	0.3888	0.5550	0.6425	0.1789
Moisture (%)			0.1066	0.0726	0.1083	0.1496	0.0357
			78.8	81.3	80.5	76.7	80.0
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.022	0.073	0.516	0.361	0.406	0.354	0.420
11B	0.052	0.173	2.6	1.9	1.9	1.6	2.5
23Na	7.2	24	3,428	2,766	3,437	3,782	3,580
24Mg	0.068	0.227	1,550	1,409	1,225	1,422	1,527
27Al	0.044	0.147	303	227	151	185	272
31P	99	330	11,419	10,185	11,078	12,663	13,540
39K	4.4	15	12,921	8,117	10,745	11,445	12,014
44Ca	4.6	15	2,891	3,236	2,280	2,072	3,414
49Ti	0.001	0.003	14	14	9.6	11	19
51V	0.045	0.150	0.819	0.543	0.388	0.416	0.706
52Cr	0.107	0.357	7.1	5.2	3.5	3.8	17
55Mn	0.006	0.020	49	44	53	60	57
57Fe	0.888	3.0	400	283	267	346	583
59Co	0.011	0.037	0.884	1.1	0.726	0.658	1.6
60Ni	0.001	0.003	17	11	11	12	33
63Cu	0.019	0.063	13	11	9.9	10	14
66Zn	0.310	1.0	158	202	150	158	218
75As	0.360	1.2	0.954	0.626	0.683	0.683	0.997
77Se	0.395	1.3	8.6	8.7	7.7	10	11
88Sr	0.001	0.003	6.2	6.4	4.8	4.3	6.9
95Mo	0.020	0.067	0.273	0.311	0.249	0.298	0.696
107Ag	0.001	0.003	0.115	0.085	0.073	0.073	0.109
111Cd	0.091	0.303	1.7	1.5	1.0	1.0	2.4
118Sn	0.018	0.060	0.466	0.559	0.290	0.271	0.624
121Sb	0.004	0.013	0.027	0.029	0.027	0.028	0.036
137Ba	0.012	0.040	57	41	51	65	56
202Hg	0.019	0.063	0.075	0.035	0.060	0.067	0.062
205Tl	0.001	0.003	0.032	0.031	0.033	0.040	0.044
208Pb	0.002	0.007	0.181	0.113	0.154	0.154	0.168
238U	0.001	0.003	0.047	0.040	0.046	0.063	0.058

Notes:

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Teck Coal Limited
Tissue Analysis Results

			Client ID	RG_MIDGA_INV- 1_2022-09-18_N	RG_MIDGA_INV- 2_2022-09-18_N	RG_MIDGA_INV- 3_2022-09-18_N	RG_ERCKDT_INV- 1_2022-09-19_N	RG_ERCKDT_INV- 2_2022-09-19_N
			Lab ID	237	238	239	240	241
			Wet Weight (g)	0.4647	0.3925	0.5683	0.6267	0.8096
			Dry Weight (g)	0.0915	0.0818	0.1350	0.1414	0.2403
			Moisture (%)	80.3	79.2	76.2	77.4	70.3
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.022	0.073	3.1	4.1	3.2	0.494	0.597	
11B	0.052	0.173	2.5	2.9	0.929	3.3	10	
23Na	7.2	24	4,014	2,602	2,924	2,427	2,041	
24Mg	0.068	0.227	2,008	1,468	1,121	1,747	1,288	
27Al	0.044	0.147	504	321	166	478	1,048	
31P	99	330	13,109	10,561	9,790	8,799	8,557	
39K	4.4	15	13,210	10,104	8,727	7,597	7,181	
44Ca	4.6	15	8,388	3,126	1,882	1,615	2,206	
49Ti	0.001	0.003	39	25	12	47	93	
51V	0.045	0.150	1.2	0.741	0.420	1.0	2.7	
52Cr	0.107	0.357	7.5	4.0	6.7	7.6	5.8	
55Mn	0.006	0.020	64	48	30	61	83	
57Fe	0.888	3.0	681	373	259	272	520	
59Co	0.011	0.037	2.8	1.1	0.716	4.4	4.4	
60Ni	0.001	0.003	35	18	16	13	10	
63Cu	0.019	0.063	12	10	12	11	12	
66Zn	0.310	1.0	303	191	178	104	144	
75As	0.360	1.2	1.4	1.2	0.541	0.413	0.740	
77Se	0.395	1.3	12	7.5	5.4	13	8.1	
88Sr	0.001	0.003	19	5.9	3.2	1.7	2.7	
95Mo	0.020	0.067	0.746	0.398	0.199	0.348	0.373	
107Ag	0.001	0.003	0.115	0.079	0.097	0.038	0.030	
111Cd	0.091	0.303	3.8	1.6	1.1	0.401	1.4	
118Sn	0.018	0.060	0.738	0.493	0.506	0.180	0.351	
121Sb	0.004	0.013	0.050	0.059	0.026	0.064	0.106	
137Ba	0.012	0.040	250	152	95	20	22	
202Hg	0.019	0.063	0.060	0.055	0.065	0.020	0.030	
205Tl	0.001	0.003	0.057	0.032	0.016	0.012	0.030	
208Pb	0.002	0.007	0.236	0.167	0.100	0.127	0.277	
238U	0.001	0.003	0.186	0.060	0.037	0.079	0.118	

Notes:

- ppm = parts per million
- DL = detection limit
- LOQ = limit of quantitation
- < = less than detection limit
- g = grams
- % = percent

Teck Coal Limited
Tissue Analysis Results

			RG_ERCKDT_INV-	RG_ERCKDT_INV-	RG_ERCKDT_INV-	RG_ERCKDT_INV-
Client ID			3_2022-09-19_N	4_2022-09-19_N	5_2022-09-19_N	6_2022-09-19_N
Lab ID			242	243	244	245
Wet Weight (g)			0.4594	0.3901	0.4428	0.5213
Dry Weight (g)			0.1107	0.1069	0.1195	0.1255
Moisture (%)			75.9	72.6	73.0	75.9
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.022	0.073	0.830	0.760	1.2	1.8
11B	0.052	0.173	3.6	2.5	4.5	5.4
23Na	7.2	24	1,955	2,740	2,998	2,282
24Mg	0.068	0.227	2,088	1,896	2,444	2,077
27Al	0.044	0.147	958	749	2,084	3,461
31P	99	330	8,573	9,982	11,425	8,277
39K	4.4	15	6,901	9,318	9,043	8,706
44Ca	4.6	15	3,983	3,165	4,411	3,470
49Ti	0.001	0.003	75	57	192	255
51V	0.045	0.150	2.6	2.3	5.5	7.8
52Cr	0.107	0.357	17	11	23	25
55Mn	0.006	0.020	206	210	345	111
57Fe	0.888	3.0	827	652	1,487	1,932
59Co	0.011	0.037	14	16	28	9.4
60Ni	0.001	0.003	39	26	55	45
63Cu	0.019	0.063	16	18	20	15
66Zn	0.310	1.0	158	178	177	155
75As	0.360	1.2	0.968	0.740	1.4	1.1
77Se	0.395	1.3	6.9	14	11	6.9
88Sr	0.001	0.003	4.0	3.8	7.3	6.9
95Mo	0.020	0.067	0.547	0.721	0.945	0.572
107Ag	0.001	0.003	0.048	0.057	0.073	0.054
111Cd	0.091	0.303	1.7	1.8	3.3	1.5
118Sn	0.018	0.060	0.494	0.247	0.540	0.657
121Sb	0.004	0.013	0.143	0.139	0.270	0.237
137Ba	0.012	0.040	29	29	64	65
202Hg	0.019	0.063	0.035	0.050	0.040	0.040
205Tl	0.001	0.003	0.031	0.025	0.052	0.058
208Pb	0.002	0.007	0.294	0.285	0.652	0.888
238U	0.001	0.003	0.156	0.108	0.247	0.213

Notes:

- ppm = parts per million
- DL = detection limit
- LOQ = limit of quantitation
- < = less than detection limit
- g = grams
- % = percent

Teck Coal Limited
Tissue QA/QC Relative Percent Difference Results

Client ID		RG_ERCK_INV-1_2022-09-14_N			RG_GATE_INV-1_2022-09-15_N			RG_GATEDP_COMPOLI-1_2022-09-15_N		
Lab ID		197			205			209		
Parameter	DL (ppm)	Sample (ppm)	Sample Duplicate (ppm)	RPD (%)	Sample (ppm)	Sample Duplicate (ppm)	RPD (%)	Sample (ppm)	Sample Duplicate (ppm)	RPD (%)
7Li	0.022	0.605	0.477	24	3.0	2.7	11	21	26	21
11B	0.052	0.959	0.881	8.5	4.9	4.7	4.2	5.2	4.4	17
23Na	7.2	4,833	3,682	27	5,992	5,717	4.7	6,344	7,257	13
24Mg	0.068	1,535	1,502	2.2	2,802	2,843	1.5	2,728	2,722	0.2
27Al	0.044	64	51	23	4,010	3,804	5.3	4,172	3,466	19
31P	99	14,599	13,997	4.2	15,652	14,683	6.4	9,427	10,292	8.8
39K	4.4	11,447	8,216	33	19,082	17,177	11	10,502	11,123	5.7
44Ca	4.6	3,393	3,434	1.2	25,696	29,093	12	82,105	78,647	4.3
49Ti	0.001	3.3	2.7	20	288	304	5.4	304	272	11
51V	0.045	0.286	0.202	-	9.4	7.8	19	9.9	8.5	15
52Cr	0.107	5.3	3.8	33	22	25	13	26	26	0.0
55Mn	0.006	18	20	11	70	64	9.0	55	49	12
57Fe	0.888	123	110	11	3,830	3,298	15	3,488	2,690	26
59Co	0.011	0.717	0.621	14	3.0	2.8	6.9	4.2	4.2	0.0
60Ni	0.001	7.7	6.4	18	78	74	5.3	109	99	9.6
63Cu	0.019	12	12	0.0	25	21	17	15	16	6.5
66Zn	0.310	161	162	0.6	236	219	7.5	145	140	3.5
75As	0.360	0.451	<0.360	-	3.5	2.7	-	3.0	3.4	-
77Se	0.395	7.6	7.4	2.7	22	21	4.7	27	25	7.7
88Sr	0.001	3.3	3.2	3.1	66	67	1.5	137	115	18
95Mo	0.020	0.174	0.196	-	1.7	1.3	27	1.6	1.3	21
107Ag	0.001	0.059	0.043	31	0.151	0.130	15	0.378	0.313	19
111Cd	0.091	0.679	0.744	-	9.6	8.8	8.7	5.9	4.7	23
118Sn	0.018	0.758	1.1	37	0.587	0.562	4.4	0.598	0.664	11
121Sb	0.004	0.027	0.021	-	0.171	0.149	14	0.150	0.145	3.4
137Ba	0.012	6.5	5.3	20	2,410	2,409	0.0	4,493	5,085	12
202Hg	0.019	0.024	<0.019	-	0.114	0.132	-	0.071	0.071	-
205Tl	0.001	0.015	0.012	22	0.189	0.172	9.4	0.166	0.160	3.7
208Pb	0.002	0.081	0.056	37	1.5	1.3	14	1.2	1.1	8.7
238U	0.001	0.150	0.123	20	0.419	0.337	22	1.0	0.784	24

Notes:

- ppm = parts per million
- RPD = relative percent difference
- DL = detection limit
- < = less than detection limit
- % = percent

Data Quality Objectives:

Laboratory Duplicates - RPD ≤40% for all elements, except Ca and Sr, which are ≤60%
Minimum DQOs apply to individual samples at concentrations above 10x DL

Teck Coal Limited
Tissue QA/QC Relative Percent Difference Results

Client ID		RG_GATEDP_COMPNOLI-2_2022-09-15_N			RG_MIDER_INV-1_2022-09-13_N		
Lab ID		213			223		
Parameter	DL (ppm)	Sample (ppm)	Sample Duplicate (ppm)	RPD (%)	Sample (ppm)	Sample Duplicate (ppm)	RPD (%)
7Li	0.022	23	25	8.3	0.367	0.299	20
11B	0.052	6.5	7.0	7.4	1.6	1.5	6.5
23Na	7.2	8,630	10,197	17	3,449	3,577	3.6
24Mg	0.068	4,040	3,570	12	1,136	1,240	8.8
27Al	0.044	5,851	6,604	12	487	377	26
31P	99	12,888	10,629	19	13,535	15,128	11
39K	4.4	15,017	16,079	6.8	12,335	12,793	3.6
44Ca	4.6	57,887	63,213	8.8	4,277	4,833	12
49Ti	0.001	544	435	22	31	22	34
51V	0.045	19	16	17	1.0	0.955	4.6
52Cr	0.107	22	24	8.7	14	14	0.0
55Mn	0.006	53	41	26	61	66	7.9
57Fe	0.888	2,821	2,806	0.5	506	466	8.2
59Co	0.011	2.8	2.9	3.5	2.3	2.7	16
60Ni	0.001	113	113	0.0	22	23	4.4
63Cu	0.019	13	13	0.0	14	16	13
66Zn	0.310	109	98	11	125	146	16
75As	0.360	2.3	2.0	-	0.837	0.901	-
77Se	0.395	17	15	13	9.9	12	19
88Sr	0.001	97	97	0.0	8.6	10	15
95Mo	0.020	1.4	1.2	15	0.527	0.595	12
107Ag	0.001	0.286	0.200	35	0.076	0.086	12
111Cd	0.091	3.3	2.8	16	2.9	3.7	24
118Sn	0.018	0.435	0.470	7.7	0.757	0.713	6.0
121Sb	0.004	0.214	0.220	2.8	0.019	0.017	-
137Ba	0.012	2,900	3,200	9.8	51	60	16
202Hg	0.019	0.052	0.041	-	0.036	0.046	-
205Tl	0.001	0.239	0.203	16	0.055	0.061	10
208Pb	0.002	2.2	2.2	0.0	0.245	0.216	13
238U	0.001	0.670	0.533	23	0.039	0.040	2.5

Notes:

ppm = parts per million
 RPD = relative percent difference
 DL = detection limit
 < = less than detection limit
 % = percent

Data Quality Objectives:

Laboratory Duplicates - RPD ≤40% for all elements, except Ca and Sr, which are ≤60%
 Minimum DQOs apply to individual samples at concentrations above 10x DL

Teck Coal Limited
Tissue QA/QC Accuracy and Precision Results

Parameter	DL (ppm)	Certified Conc. (ppm)	01			02		
			Mean Estimated Conc. (ppm)	Accuracy (%)	Precision RSD (%)	Mean Estimated Conc. (ppm)	Accuracy (%)	Precision RSD (%)
7Li	0.022	1.21	1.3	107	12	1.1	94	4.8
11B	0.052	4.5	4.3	95	3.6	4.1	91	5.2
23Na	7.2	14,000	14,071	100	7.1	13,000	93	4.8
24Mg	0.068	910	982	108	6.4	822	90	4.2
27Al	0.044	197.2	196	99	7.0	197	100	2.6
31P	99	8,000	8,753	109	9.8	7,311	91	8.2
39K	4.4	15,500	16,576	107	9.4	14,642	94	2.5
44Ca	4.6	2,360	2,579	109	7.3	2,217	94	5.5
49Ti	0.001	12.24	13	108	6.3	11	92	15
51V	0.045	1.57	1.6	104	5.5	1.5	98	5.8
52Cr	0.107	1.87	2.2	116	7.7	1.8	98	4.9
55Mn	0.006	3.17	3.6	112	9.4	3.0	94	4.4
57Fe	0.888	343	369	108	6.6	327	95	4.4
59Co	0.011	0.25	0.298	119	7.3	0.244	98	3.6
60Ni	0.001	1.34	1.6	116	3.5	1.3	100	6.7
63Cu	0.019	15.7	18	113	9.2	15	97	2.9
66Zn	0.310	51.6	56	108	6.0	48	93	6.5
75As	0.360	6.87	7.6	111	6.3	6.5	95	3.2
77Se	0.395	3.45	3.8	110	4.6	3.3	96	11
88Sr	0.001	10.1	11	111	7.5	9.8	97	1.9
95Mo	0.020	0.29	0.311	107	8.4	0.275	95	5.9
107Ag	0.001	0.0252	0.031	123	7.2	0.023	90	20
111Cd	0.091	0.299	0.349	117	12	0.311	104	8.8
118Sn	0.018	0.061	0.060	98	13	0.056	92	18
121Sb	0.004	0.011	0.010	94	11	0.009	80	12
137Ba	0.012	8.6	7.3	85	2.8	7.7	90	6.3
202Hg	0.019	0.412	0.471	114	4.2	0.413	100	9.4
205Tl	0.001	0.0013	-	-	-	-	-	-
208Pb	0.002	0.404	0.494	122	5.7	0.428	106	9.8
238U	0.001	0.05	0.057	114	7.7	0.048	97	5.6

Notes:

ppm = parts per million; % = percent; DL = detection limit; RSD = relative standard deviation

Data Quality Objectives:

Accuracy: DQO of 60 - 140% of the certified values for B, Ti, Ag, Sn, Sb, and Ba.

Accuracy: DQO of 90 - 110% of the certified values for Se.

Accuracy: DQO of 70 - 130% of the certified values for all other elements provided.

Precision: DQO of ≤20% for all elements.

DORM-4 used for all parameters except B, Ti, Sb, Ba, and Al where NIST-1566b was used.

Tl certified concentration from NIST-2976.

Accuracy and precision for Tl are not reported as the certified concentration is too close to the reportable detection limit.

Teck Coal Limited
Tissue QA/QC Accuracy and Precision Results

Sample Group ID		03			
Parameter	DL (ppm)	Certified Conc. (ppm)	Mean Estimated Conc. (ppm)	Accuracy (%)	Precision RSD (%)
7Li	0.022	1.21	1.2	101	12
11B	0.052	4.5	4.2	94	1.3
23Na	7.2	14,000	14,449	103	5.2
24Mg	0.068	910	942	104	5.5
27Al	0.044	197.2	182	92	2.5
31P	99	8,000	8,551	107	6.2
39K	4.4	15,500	16,212	105	3.9
44Ca	4.6	2,360	2,401	102	5.5
49Ti	0.001	12.24	12	96	15
51V	0.045	1.57	1.8	115	3.9
52Cr	0.107	1.87	2.1	111	2.2
55Mn	0.006	3.17	3.4	106	6.9
57Fe	0.888	343	361	105	5.9
59Co	0.011	0.25	0.263	105	1.5
60Ni	0.001	1.34	1.6	116	5.7
63Cu	0.019	15.7	17	111	5.1
66Zn	0.310	51.6	53	103	6.4
75As	0.360	6.87	7.1	104	3.5
77Se	0.395	3.45	3.7	108	10
88Sr	0.001	10.1	11	109	6.4
95Mo	0.020	0.29	0.323	111	7.7
107Ag	0.001	0.0252	0.026	105	12
111Cd	0.091	0.299	0.296	99	15
118Sn	0.018	0.061	0.078	128	15
121Sb	0.004	0.011	0.014	124	9.9
137Ba	0.012	8.6	8.2	95	3.7
202Hg	0.019	0.412	0.465	113	8.3
205Tl	0.001	0.0013	-	-	-
208Pb	0.002	0.404	0.440	109	11
238U	0.001	0.05	0.054	108	8.1

Notes:

ppm = parts per million; % = percent; DL = detection limit; RSD = relative standard deviation

Data Quality Objectives:

Accuracy: DQO of 60 - 140% of the certified values for B, Ti, Ag, Sn, Sb, and Ba.

Accuracy: DQO of 90 - 110% of the certified values for Se.

Accuracy: DQO of 70 - 130% of the certified values for all other elements provided.

Precision: DQO of ≤20% for all elements.

DORM-4 used for all parameters except B, Ti, Sb, Ba, and Al where NIST-1566b was used.

Tl certified concentration from NIST-2976.

Accuracy and precision for Tl are not reported as the certified concentration is too close to the reportable detection limit.

Teck Coal Limited
Sample Group Information

Sample Group ID	Client ID	Lab ID	Date of Analysis
01	RG_ERCK_INV-1_2022-09-14_N	197	28 Sep 2022
	RG_ERCK_INV-2_2022-09-14_N	198	
	RG_ERCK_INV-3_2022-09-14_N	199	
	RG_ERCKUT_INV-1_2022-09-16_N	200	
	RG_ERCKUT_INV-2_2022-09-16_N	201	
	RG_ERCKUT_INV-3_2022-09-16_N	202	
	RG_ERCKUT_INV-4_2022-09-16_N	203	
	RG_ERCKUT_INV-5_2022-09-16_N	204	
	RG_GATE_INV-1_2022-09-15_N	205	
	RG_GATE_INV-2_2022-09-15_N	206	
	RG_GATE_INV-3_2022-09-15_N	207	
	RG_GATEDP_INVOLI-1_2022-09-15_N	208	
	RG_GATEDP_COMPOLI-1_2022-09-15_N	209	
	RG_GATEDP_COMPNOLI-1_2022-09-15_N	210	
	RG_GATEDP_INVOLI-2_2022-09-15_N	211	
	RG_GATEDP_COMPOLI-2_2022-09-15_N	212	
	02	RG_GATEDP_COMPNOLI-2_2022-09-15_N	
RG_GATEDP_INVOLI-3_2022-09-15_N		214	
RG_GATEDP_COMPOLI-3_2022-09-15_N		215	
RG_GATEDP_COMPNOLI-3_2022-09-15_N		216	
RG_MI3_INV-1_2022-09-12_N		217	
RG_MI3_INV-2_2022-09-12_N		218	
RG_MI3_INV-3_2022-09-12_N		219	
RG_MIDBO_INV-1_2022-09-13_N		220	
RG_MIDBO_INV-2_2022-09-13_N		221	
RG_MIDBO_INV-3_2022-09-13_N		222	
RG_MIDER_INV-1_2022-09-13_N		223	
RG_MIDER_INV-2_2022-09-13_N		224	
RG_MIDER_INV-3_2022-09-13_N		225	
RG_BOCK_INV-1_2022-09-15_N		226	
RG_BOCK_INV-2_2022-09-15_N		227	
RG_BOCK_INV-3_2022-09-15_N		228	
03		RG_ALUSM_INV-1_2022-09-18_N	229
	RG_ALUSM_INV-2_2022-09-18_N	230	
	RG_ALUSM_INV-3_2022-09-18_N	231	
	RG_MICOMP_INV-1_2022-09-18_N	232	
	RG_MICOMP_INV-2_2022-09-18_N	233	
	RG_MICOMP_INV-3_2022-09-18_N	234	
	RG_MICOMP_INV-4_2022-09-18_N	235	
RG_MICOMP_INV-5_2022-09-18_N	236		

Teck Coal Limited
Sample Group Information

Sample Group ID	Client ID	Lab ID	Date of Analysis
03	RG_MIDGA_INV-1_2022-09-18_N	237	28 Sep 2022
	RG_MIDGA_INV-2_2022-09-18_N	238	
	RG_MIDGA_INV-3_2022-09-18_N	239	
	RG_ERCKDT_INV-1_2022-09-19_N	240	
	RG_ERCKDT_INV-2_2022-09-19_N	241	
	RG_ERCKDT_INV-3_2022-09-19_N	242	
	RG_ERCKDT_INV-4_2022-09-19_N	243	
	RG_ERCKDT_INV-5_2022-09-19_N	244	
	RG_ERCKDT_INV-6_2022-09-19_N	245	

REP_LAEMP_EVO_2022-09 TRICH

COC ID:

TURNAROUND TIME:

RUSH:

PROJECT/CLIENT INFO

LABORATORY

OTHER INFO

Facility Name / Job#	Regional Effects Program
Project Manager	Mike Pope
Email	Mike.Pope@teck.com
Address	421 Pine Ave
City	Sparwood
Postal Code	V0B 2G0
Phone Number	250-425-8247
Province	BC
Country	Canada

Lab Name	TrichAnalytics Inc.
Lab Contact	Jennie Christensen
Email	jennie.christensen@trichanalytics.com
Address	207-1753 Sean Heights
City	Saanichton
Postal Code	
Phone Number	
Province	BC

Report Format / Distribution	Excel	PDF	EDD
Email 1:	AquaSciLab@Teck.com	X	X
Email 2:	teckcoal@equisonline.com	X	X
Email 3:	Teck.Lab.Results@teck.com	X	X
Email 4:	Lisa.Bowron@minnow.ca	X	X
Email 5:	Tyler.Mehler@minnow.ca	X	X
Email 6:	Jessica.Ritz@Teck.com	X	X
PO number	YPO00818999		

SAMPLE DETAILS

ANALYSIS REQUESTED

Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	Tissue type	Tissue Species	Sample Structure	Number of Containers	Metals in Biota by CRC (CPMS (wet and dry)	Mercury in Biota by CVAS (wet, dry & routine)	Moisture Content by Gravimetry
197	RG_ERCK_INV-1_2022-09-14_N ✓	TA		14-Sep-22	9:00	INV	Composite	Composite	1	X	X	X
198	RG_ERCK_INV-2_2022-09-14_N ✓	TA		14-Sep-22	10:00	INV	Composite	Composite	1	X	X	X
199	RG_ERCK_INV-3_2022-09-14_N ✓	TA		14-Sep-22	11:00	INV	Composite	Composite	1	X	X	X
200	RG_ERCKUT_INV-1_2022-09-16_N ✓	TA		16-Sep-22	9:00	INV	Composite	Composite	1	X	X	X
201	RG_ERCKUT_INV-2_2022-09-16_N ✓	TA		16-Sep-22	10:00	INV	Composite	Composite	1	X	X	X
202	RG_ERCKUT_INV-3_2022-09-16_N ✓	TA		16-Sep-22	11:00	INV	Composite	Composite	1	X	X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS

Please prioritize these samples over other LAEMP and RAEMP samples

RELINQUISHED BY/AFFILIATION

Jennifer Ings

DATE/TIME

#####

ACCEPTED BY/AFFILIATION

Alex Leude

DATE/TIME

21 Sep 2022 / 13:30

SERVICE REQUEST (rush - subject to availability)

Regular (default)
Priority (2-3 business days) - 50% surcharge
Emergency (1 Business Day) - 100% surcharge
For Emergency <1 Day, ASAP or Weekend

Sampler's Name

Jennifer Ings

Mobile #

5195003444

Sampler's Signature

Jennifer Ings

Date/Time

September 19, 2022

(Project #: 2022-400)

COC ID: REP_LAEMP_EVO_2022-09 TRICH		TURNAROUND TIME:		RUSH:				
PROJECT/CLIENT INFO			LABORATORY			OTHER INFO		
Facility Name / Job#	Regional Effects Program	Lab Name	TrichAnalytics Inc.	Report Format / Distribution	Excel	PDF	EDD	
Project Manager	Mike Pope	Lab Contact	Jemie Christensen	Email 1:	Amara.ash@teck.com			
Email	Mike.Pope@teck.com	Email	jemie.christensen@trichanalytics.com	Email 2:	gocool@trichanalytics.com			
Address	421 Pine Ave	Address	207-1753 Sean Heights	Email 3:	Teck.Lab.8@trichanalytics.com			
City	Sparwood	City	Saanichton	Email 4:	Lisa.flores@trichanalytics.com			
Postal Code	V0B 2G0	Province	BC	Email 5:	Tyler.McNair@trichanalytics.com			
Phone Number	250-425-8247	Country	Canada	Email 6:	Jessica.flinn@teck.com			
SAMPLE DETAILS			ANALYSIS REQUESTED			VPO00818999		
Sample ID	Sample Location (sys loc code)	Field Matrix	Date	Time (24hr)	Tissue type	Tissue Species	Sample Structure	PO number
03	RG_ERCKUT_INV-4_2022-09-16_N ✓	TA	16-Sep-22	12:00	INV	Composite	Composite	
04	RG_ERCKUT_INV-5_2022-09-16_N /	TA	16-Sep-22	13:00	INV	Composite	Composite	
5	RG_GATE_INV-1_2022-09-15_N ✓	TA	15-Sep-22	9:00	INV	Composite	Composite	
06	RG_GATE_INV-2_2022-09-15_N ✓	TA	15-Sep-22	10:00	INV	Composite	Composite	
7	RG_GATE_INV-3_2022-09-15_N /	TA	15-Sep-22	11:00	INV	Composite	Composite	
8	RG_GATEDP_INVOLL-1_2022-09-15_N ✓	TA	15-Sep-22	9:00	INV	INVOLI	Composite	
09	RG_GATEDP_COMPOLL-1_2022-09-15_N ✓	TA	15-Sep-22	9:01	INV	COMPOLI	Composite	
10	RG_GATEDP_COMPNOLL-1_2022-09-15_N ✓	TA	15-Sep-22	9:02	INV	COMPNOLI	Composite	
11	RG_GATEDP_INVOLL-2_2022-09-15_N ✓	TA	15-Sep-22	10:00	INV	INVOLI	Composite	
ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS			RELINQUISHED BY/AFFILIATION			DATE/TIME		
Please prioritize these samples over other LAEMP and RAEMP samples			Jennifer Ings			ACCEPTED BY/AFFILIATION		
						DATE/TIME		
						Alex Woods / 13-30		
						(Project # 2022-400)		
SERVICE REQUEST (rush - subject to availability)			Sampler's Name			Mobile #		
Regular (default)			Jennifer Ings			5195003444		
Priority (2-3 business days) - 50% surcharge			Sampler's Signature			Date/Time		
Emergency (1 Business Day) - 100% surcharge			Jennifer Ings			September 19, 2022		
For Emergency <1 Day, ASAP or Weekend								

COC ID: **REP_LAEMP_EVO_2022-09 TRICH**

TURNAROUND TIME:

RUSH:

PROJECT/CLIENT INFO		LABORATORY		OTHER INFO	
Facility Name / Job#	Regional Effects Program	Lab Name	TrichAnalytics Inc.	Report Format / Distribution	Excel PDF EDD
Project Manager	Mike Pope	Lab Contact	Jennie Christensen	Email 1:	AquaSchlab@Teck.com X
Email	Mike.Pope@teck.com	Email	jennie.christensen@trichanalytics.com	Email 2:	teckcoal@equisonline.com X
Address	421 Pine Ave	Address	207-1753 Sean Heights	Email 3:	Teck.Lab.Results@teck.com X
City	Spartwood	City	Saanichton	Email 4:	Lisa.Bowron@minnow.ca X
Postal Code	V0B 2G0	Province	BC	Email 5:	Tyler.Mehler@minnow.ca X
Phone Number	250-425-8247	Country	Canada	Email 6:	Jessica.Ritz@Teck.com X
Sample ID	RG_GATEDP	Time (24hr)	10:01	PO number	VPO00818999

Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

Sample ID	Sample Location (sys loc code)	Field Matrix	Time (24hr)	Tissue type	Tissue Species	Sample Structure	ANALYSIS REQUESTED		Date/Time	Accepted by/Affiliation	Date/Time
							Number of Containers	Moisture Content by Gravimetry			
212	RG_GATEDP	TA	15-Sep-22	INV	COMPOLI	Composite	1	X	X	X	
213	RG_GATEDP	TA	15-Sep-22	INV	COMPOLI	Composite	1	X	X	X	
214	RG_GATEDP	TA	15-Sep-22	INV	INVOLI	Composite	1	X	X	X	
215	RG_GATEDP	TA	15-Sep-22	INV	COMPOLI	Composite	1	X	X	X	
216	RG_GATEDP	TA	15-Sep-22	INV	COMPOLI	Composite	1	X	X	X	
217	RG_M13	TA	12-Sep-22	INV	Composite	Composite	1	X	X	X	
218	RG_M13	TA	12-Sep-22	INV	Composite	Composite	1	X	X	X	
219	RG_M13	TA	12-Sep-22	INV	Composite	Composite	1	X	X	X	
220	RG_MIDBO	TA	13-Sep-22	INV	Composite	Composite	1	X	X	X	

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS
 Please prioritize these samples over other LAEMP and RAEMP samples

RELINQUISHED BY/AFFILIATION: Jennifer Ings
 DATE/TIME: #####
 ACCEPTED BY/AFFILIATION: Alex Wade
 DATE/TIME: 21 Sep 2022 / 13:30
 (Project #: 2022-400)

Service Request (rush - subject to availability)	Sampler's Name	Jennifer Ings	Mobile #
Regular (default)	Jennifer Ings	Jennifer Ings	5195003444
Priority (2-3 business days) - 50% surcharge			
Emergency (1 Business Day) - 100% surcharge			
For Emergency <1 Day, ASAP or Weekend			

Date/Time: September 19, 2022

COC ID: **REP_LAEMP_EVO_2022-09 TRICH**

TURNAROUND TIME:

RUSH:

PROJECT/CLIENT INFO		LABORATORY		OTHER INFO	
Facility Name / Job#	Regional Effects Program	Lab Name	TrichAnalytics Inc.	Report Format / Distribution	Excel PDF EDD
Project Manager	Mike Pope	Lab Contact	Jennie Christensen	Email 1:	Asures@teck.com
Email	Mike.Pope@teck.com	Email	jennie.christensen@trichanalytics.com	Email 2:	trich@trichanalytics.com
Address	421 Pine Ave	Address	207-1753 Seam Heights	Email 3:	Teck.Lab.Support@teck.com
City	Sparwood	City	Seamichton	Email 4:	Lisa.Brown@trichow.ca
Postal Code	V0B 2G0	Province	BC	Email 5:	Yves.Melton@trichow.ca
Country	Canada	Postal Code		Email 6:	Jessica.Phillips@teck.com
Phone Number	250-425-8247	Phone Number		PO number	VPO00818999

SAMPLE DETAILS

Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	Tissue type	Tissue Species	Sample Structure	ANALYSIS REQUESTED			DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME	
									Number of Containers	Mercury in Blot by CVAS (wet, dry & routine)	Methylene Chloride				
21	RG_MIDBO_INV-2_2022-09-13_N	TA		13-Sep-22	10:00	INV	Composite	Composite	I	X	X	X			
22	RG_MIDBO_INV-3_2022-09-13_N	TA		13-Sep-22	11:00	INV	Composite	Composite	I	X	X	X			
23	RG_MIDER_INV-1_2022-09-13_N	TA		13-Sep-22	9:00	INV	Composite	Composite	I	X	X	X			
24	RG_MIDER_INV-2_2022-09-13_N	TA		13-Sep-22	10:00	INV	Composite	Composite	I	X	X	X			
25	RG_MIDER_INV-3_2022-09-13_N	TA		13-Sep-22	11:00	INV	Composite	Composite	I	X	X	X			
26	RG_BOCK_INV-1_2022-09-15_N	TA		15-Sep-22	9:00	INV	Composite	Composite	I	X	X	X			
27	RG_BOCK_INV-2_2022-09-15_N	TA		15-Sep-22	10:00	INV	Composite	Composite	I	X	X	X			
28	RG_BOCK_INV-3_2022-09-15_N	TA		15-Sep-22	11:00	INV	Composite	Composite	I	X	X	X			
29	RG_ALLISM_INV-1_2022-09-18_N	TA		18-Sep-22	9:00	INV	Composite	Composite	I	X	X	X			

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS			RELINQUISHED BY/AFFILIATION		ACCEPTED BY/AFFILIATION	
Please prioritize these samples over other LAEMP and RAEMP samples			Jennifer Ings		Alex Wade	
					21 Sep 2022 / 13:30	
					(Project #: 2022-400)	

SERVICE REQUEST (rush - subject to availability)		Sampler's Name	Jennifer Ings	Mobile #	5195003444
Regular (default)					
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge					
For Emergency < 1 Day, ASAP or Weekend					
		Sampler's Signature	Jennifer Ings	Date/Time	September 19, 2022

COC ID: **REP_LAEMP_EVO_2022-09 TRICH**

TURNAROUND TIME:

RUSH:

PROJECT/CLIENT INFO		LABORATORY		OTHER INFO	
Facility Name / Job#	Regional Effects Program	Lab Name	TrichAnalytics Inc.	Report Format / Distribution	Excel PDF EDD
Project Manager	Mike Pope	Lab Contact	Jennie Christensen	Email 1:	AquaSciLab@Teck.com X X
Email	Mike.Pope@teck.com	Email	jennie.christensen@trichanalytics	Email 2:	teckcoal@equisonline.com X
Address	421 Pine Ave	Address	207-1753 Seam Heights	Email 3:	Teck.Lab.Results@teck.com X X
City	Spartwood	City	Saanichton	Email 4:	Lisa.Bowron@minnow.ca X X
Postal Code	V0B 2G0	Province	BC	Email 5:	Tyler.Mehler@minnow.ca X X
Phone Number	250-425-8247	Country	Canada	Email 6:	Jessica.Ritz@Teck.com X X

PO number VPO00818999

ANALYSIS REQUESTED

SAMPLE DETAILS

Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	Tissue type	Tissue Species	Sample Structure	ANALYSIS			DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME	
									Number of Containers	Metals in Biotra by CRC (wet, dry & dry)	Mercury in Biotra by CVAAS (wet, dry & dry)				Moisture Content by Gravimetry
30	RG_ALUSM_INV-2_2022-09-18_N ✓	TA		18-Sep-22	10:00	INV	Composite	Composite	1	X	X	X			
31	RG_ALUSM_INV-3_2022-09-18_N ✓	TA		18-Sep-22	11:00	INV	Composite	Composite	1	X	X	X			
32	RG_MICOMP_INV-1_2022-09-18_N ✓	TA		18-Sep-22	9:00	INV	Composite	Composite	1	X	X	X			
33	RG_MICOMP_INV-2_2022-09-18_N ✓	TA		18-Sep-22	10:00	INV	Composite	Composite	1	X	X	X			
34	RG_MICOMP_INV-3_2022-09-18_N ✓	TA		18-Sep-22	11:00	INV	Composite	Composite	1	X	X	X			
35	RG_MICOMP_INV-4_2022-09-18_N ✓	TA		18-Sep-22	12:00	INV	Composite	Composite	1	X	X	X			
36	RG_MICOMP_INV-5_2022-09-18_N ✓	TA		18-Sep-22	13:00	INV	Composite	Composite	1	X	X	X			
37	RG_MIDGA_INV-1_2022-09-18_N ✓	TA		18-Sep-22	9:00	INV	Composite	Composite	1	X	X	X			
38	RG_MIDGA	TA		18-Sep-22	9:00	INV	Composite	Composite	1	X	X	X			

Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

RELINQUISHED BY/AFFILIATION

Jennifer Ings

DATE/TIME

ACCEPTED BY/AFFILIATION

#####

Alex Wade

21 Sep 2022 / 13:30

Project #: 2022-400

Mobile # 5195003444

DATE/TIME

DATE/TIME

DATE/TIME

DATE/TIME

DATE/TIME

SERVICE REQUEST (rush - subject to availability)

Regular (default)

Priority (2-3 business days) - 50% surcharge

Emergency (1 Business Day) - 100% surcharge

For Emergency <1 Day, ASAP or Weekend

Sampler's Name Jennifer Ings

Sampler's Signature *Jennifer Ings*

Date/Time September 19, 2022

Teck

COC ID: REP_LAEMP_EVO_2022-09 TRICH		TURNAROUND TIME:		RUSH:										
PROJECT/CLIENT INFO			LABORATORY											
Facility Name / Job# Regional Effects Program Project Manager Mike Pope Email Mike.Pope@teck.com Address 421 Pine Ave			Lab Name: TrichAnalytics Inc. Lab Contact Jennie Christensen Email jennie.christensen@trichanalytics.com Address 207-1753 Seam Heights											
City Sparwood	Province BC	City Saanich	Province BC	Report Format / Distribution	Excel PDF									
Postal Code V0B 2G0	Country Canada	Postal Code		Email 1: Aquatica@teck.com	X									
Phone Number: 250-425-8247		Phone Number		Email 2: jessica@trichanalytics.com	X									
				Email 3: Teck.Lab.Support@teck.com	X									
				Email 4: Lisa.Rosewood@trichan.ca	X									
				Email 5: Tyler.Mellor@trichan.ca	X									
				Email 6: jennise@trichan.ca	X									
SAMPLE DETAILS			VPO00818999											
Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	Tissue Type	Tissue Species	Sample Structure	Number of Containers	Mets in Bins by CRC (CPHS (wet and dry)	Mets in Bins by CVAAS (Wet, dry & routine)	Mixture Content by Gravimetry	ANALYSIS REQUESTED	
RG_MIDGA_INV-3_2022-09-18_N ✓	RG_MIDGA	TA		18-Sep-22	9:00	INV	Composite	Composite	1	X	X	X	Therm. F. Field L. Lab. P.C. Field L. Lab. N. Bins	
RG_ERCKDT_INV-1_2022-09-19_N ✓	RG_ERCKDT	TA		13-Sep-22	9:00	INV	Composite	Composite	1	X	X	X		
RG_ERCKDT_INV-2_2022-09-19_N ✓	RG_ERCKDT	TA		13-Sep-22	10:00	INV	Composite	Composite	1	X	X	X		
RG_ERCKDT_INV-3_2022-09-19_N ✓	RG_ERCKDT	TA		13-Sep-22	11:00	INV	Composite	Composite	1	X	X	X		
RG_ERCKDT_INV-4_2022-09-19_N ✓	RG_ERCKDT	TA		13-Sep-22	12:00	INV	Composite	Composite	1	X	X	X		
RG_ERCKDT_INV-5_2022-09-19_N ✓	RG_ERCKDT	TA		15-Sep-22	13:00	INV	Composite	Composite	1	X	X	X		
RG_ERCKDT_INV-4_2022-09-19_N ✓	RG_ERCKDT	TA		15-Sep-22	14:00	INV	Composite	Composite	1	X	X	X		
ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS			RELINQUISHED BY/AFFILIATION			DATE/TIME			ACCEPTED BY/AFFILIATION			DATE/TIME		
Please prioritize these samples over other LAEMP and RAEMP samples			Jennifer Ings			Jennifer Ings			Alex Wade			21 Sep 2022 10:30		
SERVICE REQUEST (rush - subject to availability)			Regular (default)											
Priority (2-3 business days) - 50% surcharge			Priority (1 Business Day) - 100% surcharge			For Emergency <1 Day, ASAP or Weekend								
Jennifer Ings			Mobile #			5195003444								
Date/Time			September 19, 2022											



TrichAnalytics Inc.

Tissue Microchemistry Analysis Report

Client: Mike Pope Project Manager Teck Coal Ltd	Date Received: 20 Sep 2022
Phone: (250)425-8247	Date of Analysis: 27 Sep 2022
Email: aquascilab@teck.com; teckcoal@equisonline.com; teck.lab.results@teck.com; lisa.bowron@minnow.ca; tyler.mehler@minnow.ca jessica.ritz@teck.com	Final Report Date: 06 Oct 2022
	Project No.: 2022-404
	Method No.: MET-002.06

Client Project: REP_LAEMP_EVO_2022-09 Regional Effects Program (PO 847031)

Analytical Request: Composite Benthic Invertebrate Tissue Microchemistry (total metals & moisture) - 3 samples.
See chain of custody form provided for sample identification numbers.

Notes:

Analytical results are expressed in parts per million (ppm) dry weight (equivalent to mg/kg).
Samples quantified using DORM-4, NIST-1566b, and NIST-2976 certified reference standards.
RPD values calculated according to the British Columbia Environmental Laboratory Manual (2020) criteria.
Client specific DQO for Selenium accuracy is 90-110% of the certified value; result achieved 103%.

This report provides the analytical results only for tissue samples noted above as received from the Client.

Reviewed and Approved by Jennie Christensen, PhD, RPBio

06 Oct 2022

Date

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TrichAnalytics Inc.
207-1753 Sean Heights
Saanichton, BC V8M 0B3
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CALA
Testing
Accreditation No. A4196

Teck Coal Limited
Tissue Analysis Results

Parameter	DL (ppm)	LOQ (ppm)	Client ID	RG_ERCKUC_INV-	RG_ERCKUC_INV-	RG_ERCKUC_INV-
			1_2022-09-14_N	2_2022-09-14_N	3_2022-09-14_N	
			Lab ID	246	247	248
			Wet Weight (g)	0.3308	0.3111	0.2226
			Dry Weight (g)	0.0688	0.0636	0.0428
			Moisture (%)	79.2	79.6	80.8
			(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.013	0.043	0.676	0.541	0.455	
11B	0.069	0.230	1.3	0.736	1.0	
23Na	2.0	6.7	2,527	1,731	1,073	
24Mg	0.056	0.187	2,062	1,542	1,401	
27Al	0.032	0.107	76	55	98	
31P	51	170	9,384	6,965	6,007	
39K	0.757	2.5	9,141	6,233	4,159	
44Ca	2.8	9.3	7,604	4,086	4,508	
49Ti	0.001	0.003	5.5	3.9	6.9	
51V	0.058	0.193	0.407	0.353	0.532	
52Cr	0.033	0.110	5.2	2.7	2.8	
55Mn	0.004	0.013	23	16	18	
57Fe	0.492	1.6	122	102	99	
59Co	0.007	0.023	1.0	0.741	0.608	
60Ni	0.027	0.090	10	6.0	6.6	
63Cu	0.018	0.060	15	13	9.7	
66Zn	0.163	0.543	142	107	93	
75As	0.467	1.6	0.525	<0.467	<0.467	
77Se	0.304	1.0	5.7	5.2	4.9	
88Sr	0.001	0.003	5.1	3.1	3.7	
95Mo	0.001	0.003	0.290	0.236	0.308	
107Ag	0.001	0.003	0.033	0.038	0.038	
111Cd	0.016	0.053	0.175	0.349	0.462	
118Sn	0.010	0.033	0.537	0.492	0.370	
121Sb	0.002	0.007	0.054	0.046	0.047	
137Ba	0.001	0.003	11	4.7	7.5	
202Hg	0.023	0.077	<0.023	0.023	0.043	
205Tl	0.001	0.003	0.003	0.003	0.004	
208Pb	0.001	0.003	0.059	0.044	0.056	
238U	0.001	0.003	0.157	0.108	0.256	

Notes:

- ppm = parts per million
- DL = detection limit
- LOQ = limit of quantitation
- < = less than detection limit
- g = grams
- % = percent

Teck Coal Limited
Tissue QA/QC Relative Percent Difference Results

Client ID	RG_ERCKUC_INV-1_2022-09-14_N
Lab ID	246

Parameter	DL (ppm)	Sample (ppm)	Sample Duplicate (ppm)	RPD (%)
7Li	0.013	0.676	0.660	2.4
11B	0.069	1.3	1.1	17
23Na	2.0	2,527	2,499	1.1
24Mg	0.056	2,062	2,026	1.8
27Al	0.032	76	72	5.4
31P	51	9,384	8,473	10
39K	0.757	9,141	7,920	14
44Ca	2.8	7,604	6,641	14
49Ti	0.001	5.5	5.2	5.6
51V	0.058	0.407	0.478	-
52Cr	0.033	5.2	4.7	10
55Mn	0.004	23	23	0.0
57Fe	0.492	122	138	12
59Co	0.007	1.0	0.868	14
60Ni	0.027	10	10	0.0
63Cu	0.018	15	14	6.9
66Zn	0.163	142	119	18
75As	0.467	0.525	<0.467	-
77Se	0.304	5.7	5.9	3.4
88Sr	0.001	5.1	4.4	15
95Mo	0.001	0.290	0.236	21
107Ag	0.001	0.033	0.047	35
111Cd	0.016	0.175	0.175	0.0
118Sn	0.010	0.537	0.380	34
121Sb	0.002	0.054	0.054	0.0
137Ba	0.001	11	8.3	28
202Hg	0.023	<0.023	0.023	-
205Tl	0.001	0.003	0.004	-
208Pb	0.001	0.059	0.061	3.3
238U	0.001	0.157	0.134	16

Notes:

ppm = parts per million
 RPD = relative percent difference
 DL = detection limit
 < = less than detection limit
 % = percent

Data Quality Objectives:

Laboratory Duplicates - RPD ≤40% for all elements, except Ca and Sr, which are ≤60%
 Minimum DQOs apply to individual samples at concentrations above 10x DL

Teck Coal Limited
Tissue QA/QC Accuracy and Precision Results

Sample Group ID		01			
Parameter	DL (ppm)	Certified Conc. (ppm)	Mean Estimated Conc. (ppm)	Accuracy (%)	Precision RSD (%)
7Li	0.013	1.21	1.2	99	5.9
11B	0.069	4.5	4.2	92	2.2
23Na	2.0	14,000	14,128	101	4.7
24Mg	0.056	910	986	108	4.5
27Al	0.032	197.2	147	74	4.5
31P	51	8,000	8,352	104	5.5
39K	0.757	15,500	15,625	101	5.8
44Ca	2.8	2,360	2,431	103	3.1
49Ti	0.001	12.24	10	83	4.5
51V	0.058	1.57	1.6	104	12
52Cr	0.033	1.87	1.9	103	7.7
55Mn	0.004	3.17	3.4	106	7.8
57Fe	0.492	343	339	99	3.9
59Co	0.007	0.25	0.252	101	4.5
60Ni	0.027	1.34	1.3	98	3.4
63Cu	0.018	15.7	16	99	3.5
66Zn	0.163	51.6	49	95	5.3
75As	0.467	6.87	7.0	102	4.1
77Se	0.304	3.45	3.5	103	7.6
88Sr	0.001	10.1	11	105	5.4
95Mo	0.001	0.29	0.277	96	5.4
107Ag	0.001	0.0252	0.024	94	13
111Cd	0.016	0.299	0.333	111	18
118Sn	0.010	0.061	0.057	94	8.4
121Sb	0.002	0.011	0.010	87	16
137Ba	0.001	8.6	7.3	85	4.5
202Hg	0.023	0.412	0.407	99	3.4
205Tl	0.001	0.0013	-	-	-
208Pb	0.001	0.404	0.443	110	13
238U	0.001	0.05	0.052	105	9.6

Notes:

ppm = parts per million; % = percent; DL = detection limit; RSD = relative standard deviation

Data Quality Objectives:

Accuracy: DQO of 60 - 140% of the certified values for B, Ti, Ag, Sn, Sb, and Ba.

Accuracy: DQO of 90 - 110% of the certified values for Se.

Accuracy: DQO of 70 - 130% of the certified values for all other elements provided.

Precision: DQO of ≤20% for all elements.

DORM-4 used for all parameters except B, Ti, Sb, Ba, and Al where NIST-1566b was used.

Tl certified concentration from NIST-2976.

Accuracy and precision for Tl are not reported as the certified concentration is too close to the reportable detection limit.

Teck Coal Limited
Sample Group Information

Sample Group ID	Client ID	Lab ID	Date of Analysis
01	RG_ERCKUC_INV-1_2022-09-14_N	246	27 Sep 2022
	RG_ERCKUC_INV-2_2022-09-14_N	247	
	RG_ERCKUC_INV-3_2022-09-14_N	248	

REP_LAEMP_EVO_2022-09 TRICH

COC ID:

TURNAROUND TIME:

RUSH:

PROJECT/CLIENT INFO		LABORATORY		OTHER INFO	
Facility Name / Job#	Regional Effects Program	Lab Name	TrichAnalytics Inc.	Report Format / Distribution	Excel
Project Manager	Mike Pope	Lab Contact	Jennie Christensen	Email 1:	AquaSciLab@Teck.com
Email	Mike.Pope@teck.com	Email	jennie.christensen@trichanalytics.com	Email 2:	teckcoal@teckonline.com
Address	421 Pine Ave	Address	207-1753 Sean Heights	Email 3:	TeckLab.Results@teck.com
City	Sparwood	City	Saanichton	Email 4:	Lisa.Bowman@minnow.ca
Postal Code	V0B 2G0	Province	BC	Email 5:	Tyler.Mehler@minnow.ca
Phone Number	250-425-8247	Country	Canada	Email 6:	Jessica.Ritz@Teck.com
SAMPLE DETAILS		Postal Code		PO number	VPO00847031

Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	Tissue type	Tissue Species	Sample Structure	ANALYSIS			ANALYSIS REQUESTED	
									Number of Containers	Metals in Biota by CRC	Mercury in Biota by CVAAS (wet, dry & routine)		Moisture Content by Gravimetry
RG_ERCKUC_INV-1_2022-09-14_N ✓	RG_ERCKUC	TA		14-Sep-22	9:00	INV Composite	Composite	Composite	1	X	X	X	
RG_ERCKUC_INV-2_2022-09-14_N ✓	RG_ERCKUC	TA		14-Sep-22	10:00	INV Composite	Composite	Composite	1	X	X	X	
RG_ERCKUC_INV-3_2022-09-14_N ✓	RG_ERCKUC	TA		14-Sep-22	11:00	INV Composite	Composite	Composite	1	X	X	X	
		TA											
		TA											
		TA											
		TA											
		TA											
		TA											

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
Please prioritize these samples over other LAEMP and RAEMP samples Samples on this COC are Privileged and Confidential	Jennifer Ings	#####	Alex Wade	21 Sep 2022 / 13:30
				404
				(Project # 2022-400)

SERVICE REQUEST (rush - subject to availability)		5195003444	
Regular (default)	Priority (2-3 business days) - 50% surcharge	Mobile #	
Emergency (1 Business Day) - 100% surcharge	For Emergency <1 Day, ASAP or Weekend	Date/Time	September 19, 2022

aw 26 Sep 2022



TrichAnalytics Inc.

Tissue Microchemistry Analysis Report

Client: Mike Pope Project Manager Teck Coal Ltd	Date Received: 28 Sep 2022
Phone: (250) 425-8247	Date of Analysis: 12 Oct 2022
Email: aquascilab@teck.com; jessica.ritz@teck.com; teck.lab.results@teck.com; lisa.bowron@minnow.ca; tyler.mehler@minnow.ca; teckcoal@equisonline.com; mike.pope@teck.com	Final Report Date: 12 Oct 2022
	Project No.: 2022-407
	Method No.: MET-002.06

Client Project: REP_LAEMP_EVO_2022-09 Regional Effects Program (PO 818999)

Analytical Request: Composite Benthic Invertebrate Tissue Microchemistry (total metals & moisture) - 11 samples.
See chain of custody form provided for sample identification numbers.

Notes:

Analytical results are expressed in parts per million (ppm) dry weight (equivalent to mg/kg).
Samples quantified using DORM-4, NIST-1566b, and NIST-2976 certified reference standards.
RPD values calculated according to the British Columbia Environmental Laboratory Manual (2020) criteria.
Client specific DQO for Selenium accuracy is 90-110% of the certified value; result achieved 108%.

This report provides the analytical results only for tissue samples noted above as received from the Client.

Reviewed and Approved by Jennie Christensen, PhD, RPBio

Date

12 Oct 2022

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TrichAnalytics Inc.
207-1753 Sean Heights
Saanichton, BC V8M 0B3
www.trichanalytics.com



CALA
Testing
Accreditation No. A4196

Teck Coal Limited
Tissue Analysis Results

	Client ID	RG_ERCKBR_INV-	RG_ERCKBR_INV-	RG_ERCKBR_INV-	RG_BOCKRD_INV-	RG_BOCKRD_INV-	
		1_2022-09-20_N	2_2022-09-20_N	3_2022-09-20_N	1_2022-09-20_N	2_2022-09-20_N	
	Lab ID	703	704	705	706	707	
	Wet Weight (g)	0.1502	0.2335	0.2206	0.0493	0.0878	
	Dry Weight (g)	0.0402	0.0443	0.0553	0.0152	0.0262	
	Moisture (%)	73.2	81.0	74.9	69.2	70.2	
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	
7Li	0.016	0.053	0.908	0.460	0.525	0.536	1.5
11B	0.139	0.463	2.3	0.546	1.3	0.546	2.4
23Na	5.2	17	5,203	4,833	5,662	6,937	5,811
24Mg	0.057	0.190	2,002	1,653	1,874	3,917	3,811
27Al	0.023	0.077	320	68	256	215	365
31P	77	257	16,110	14,155	17,456	15,050	17,320
39K	4.1	14	14,547	11,147	13,394	11,087	15,638
44Ca	15	50	5,929	4,291	5,405	5,794	6,147
49Ti	0.001	0.003	20	3.0	17	11	19
51V	0.020	0.067	0.945	0.217	0.611	0.448	0.789
52Cr	0.239	0.797	7.3	5.5	9.1	6.0	7.5
55Mn	0.007	0.023	20	14	20	26	34
57Fe	1.7	5.7	355	156	303	671	799
59Co	0.007	0.023	0.391	0.226	0.363	0.651	1.2
60Ni	0.036	0.120	11	5.5	11	12	35
63Cu	0.018	0.060	19	10	15	17	19
66Zn	0.295	0.983	139	61	124	189	254
75As	0.382	1.3	0.962	<0.382	0.424	<0.382	1.6
77Se	0.320	1.1	8.1	6.9	8.4	3.2	5.1
88Sr	0.001	0.003	17	2.8	4.2	11	12
95Mo	0.001	0.003	0.338	0.145	0.290	0.363	0.713
107Ag	0.001	0.003	0.057	0.033	0.054	0.038	0.045
111Cd	0.040	0.133	3.5	1.9	3.1	2.1	3.4
118Sn	0.031	0.103	1.2	0.450	0.416	0.359	0.367
121Sb	0.003	0.010	0.129	0.029	0.042	0.020	0.048
137Ba	0.001	0.003	570	8.0	14	30	72
202Hg	0.024	0.080	<0.024	<0.024	<0.024	0.070	0.111
205Tl	0.001	0.003	0.022	0.006	0.014	0.017	0.043
208Pb	0.001	0.003	0.153	0.031	0.090	0.076	0.212
238U	0.001	0.003	0.108	0.036	0.086	0.026	0.089

Notes:

- ppm = parts per million
- DL = detection limit
- LOQ = limit of quantitation
- < = less than detection limit
- g = grams
- % = percent

Teck Coal Limited
Tissue Analysis Results

			RG_BOCKRD_INV	RG_ERCKMD_INV	RG_ERCKMD_INV	RG_ERCKMD_INV	RG_ERCKMD_INV
Client ID			3_2022-09-20_N	1_2022-09-20_N	2_2022-09-20_N	3_2022-09-20_N	4_2022-09-20_N
Lab ID			708	709	710	711	712
Wet Weight (g)			0.0810	0.3116	0.2999	0.3374	0.1333
Dry Weight (g)			0.0232	0.0710	0.0624	0.0795	0.0315
Moisture (%)			71.4	77.2	79.2	76.4	76.4
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.016	0.053	0.858	0.701	1.2	0.820	0.575
11B	0.139	0.463	0.385	0.915	2.2	1.3	1.1
23Na	5.2	17	7,939	3,431	3,691	3,661	2,599
24Mg	0.057	0.190	3,847	1,707	2,006	1,945	1,304
27Al	0.023	0.077	62	500	864	358	459
31P	77	257	15,724	12,241	11,333	12,222	9,009
39K	4.1	14	10,998	8,964	9,100	9,433	6,406
44Ca	15	50	3,625	6,227	8,598	6,078	3,769
49Ti	0.001	0.003	3.8	22	54	21	34
51V	0.020	0.067	0.206	1.0	2.1	1.0	1.1
52Cr	0.239	0.797	5.1	7.6	8.9	6.2	7.0
55Mn	0.007	0.023	15	93	157	192	136
57Fe	1.7	5.7	231	456	724	544	723
59Co	0.007	0.023	0.593	4.8	8.9	11	8.1
60Ni	0.036	0.120	7.2	12	17	17	13
63Cu	0.018	0.060	14	15	16	16	13
66Zn	0.295	0.983	166	221	129	149	128
75As	0.382	1.3	<0.382	<0.382	0.566	0.566	0.622
77Se	0.320	1.1	3.7	5.9	6.5	6.8	5.4
88Sr	0.001	0.003	5.1	4.3	7.5	4.6	3.2
95Mo	0.001	0.003	0.363	0.242	0.363	0.338	0.242
107Ag	0.001	0.003	0.019	0.043	0.038	0.033	0.028
111Cd	0.040	0.133	2.2	1.4	1.6	1.2	0.873
118Sn	0.031	0.103	0.173	0.324	0.975	0.835	0.579
121Sb	0.003	0.010	0.009	0.070	0.062	0.060	0.056
137Ba	0.001	0.003	5.9	27	45	25	20
202Hg	0.024	0.080	0.067	0.029	0.024	<0.024	0.034
205Tl	0.001	0.003	0.009	0.022	0.032	0.026	0.022
208Pb	0.001	0.003	0.040	0.250	0.292	0.258	0.292
238U	0.001	0.003	0.013	0.068	0.138	0.115	0.077

Notes:

- ppm = parts per million
- DL = detection limit
- LOQ = limit of quantitation
- < = less than detection limit
- g = grams
- % = percent

Teck Coal Limited
Tissue Analysis Results

Client ID	RG_ERCKMD_INV- 5_2022-09-20_N
Lab ID	713
Wet Weight (g)	0.2725
Dry Weight (g)	0.0563
Moisture (%)	79.3

Parameter	DL (ppm)	LOQ (ppm)	(ppm)
7Li	0.016	0.053	0.805
11B	0.139	0.463	1.4
23Na	5.2	17	3,669
24Mg	0.057	0.190	2,031
27Al	0.023	0.077	590
31P	77	257	11,754
39K	4.1	14	8,068
44Ca	15	50	9,917
49Ti	0.001	0.003	45
51V	0.020	0.067	1.6
52Cr	0.239	0.797	8.2
55Mn	0.007	0.023	201
57Fe	1.7	5.7	810
59Co	0.007	0.023	13
60Ni	0.036	0.120	18
63Cu	0.018	0.060	17
66Zn	0.295	0.983	171
75As	0.382	1.3	0.679
77Se	0.320	1.1	6.0
88Sr	0.001	0.003	6.8
95Mo	0.001	0.003	0.387
107Ag	0.001	0.003	0.033
111Cd	0.040	0.133	1.3
118Sn	0.031	0.103	0.671
121Sb	0.003	0.010	0.053
137Ba	0.001	0.003	43
202Hg	0.024	0.080	<0.024
205Tl	0.001	0.003	0.027
208Pb	0.001	0.003	0.270
238U	0.001	0.003	0.151

Notes:

- ppm = parts per million
- DL = detection limit
- LOQ = limit of quantitation
- < = less than detection limit
- g = grams
- % = percent

Teck Coal Limited
Tissue QA/QC Relative Percent Difference Results

Client ID		RG_ERCKMD_INV-3_2022-09-20_N			RG_ERCKMD_INV-5_2022-09-20_N		
Lab ID		711			713		
Parameter	DL (ppm)	Sample (ppm)	Sample Duplicate (ppm)	RPD (%)	Sample (ppm)	Sample Duplicate (ppm)	RPD (%)
7Li	0.016	0.820	0.828	1.0	0.805	0.690	15
11B	0.139	1.3	1.3	-	1.4	1.2	-
23Na	5.2	3,661	3,687	0.7	3,669	3,068	18
24Mg	0.057	1,945	2,020	3.8	2,031	1,726	16
27Al	0.023	358	368	2.8	590	512	14
31P	77	12,222	12,897	5.4	11,754	10,314	13
39K	4.1	9,433	8,864	6.2	8,068	7,450	8.0
44Ca	15	6,078	6,594	8.1	9,917	8,122	20
49Ti	0.001	21	21	0.0	45	35	25
51V	0.020	1.0	1.1	9.5	1.6	1.3	21
52Cr	0.239	6.2	6.6	6.2	8.2	8.1	1.2
55Mn	0.007	192	190	1.0	201	195	3.0
57Fe	1.7	544	587	7.6	810	955	16
59Co	0.007	11	12	8.7	13	11	17
60Ni	0.036	17	18	5.7	18	18	0.0
63Cu	0.018	16	18	12	17	17	0.0
66Zn	0.295	149	158	5.9	171	151	12
75As	0.382	0.566	0.509	-	0.679	0.792	-
77Se	0.320	6.8	6.8	0.0	6.0	6.0	0.0
88Sr	0.001	4.6	5.1	10	6.8	5.7	18
95Mo	0.001	0.338	0.387	14	0.387	0.338	14
107Ag	0.001	0.033	0.028	16	0.033	0.033	0.0
111Cd	0.040	1.2	1.3	8.0	1.3	1.2	8.0
118Sn	0.031	0.835	0.908	8.4	0.671	0.566	17
121Sb	0.003	0.060	0.069	14	0.053	0.053	0.0
137Ba	0.001	25	26	3.9	43	37	15
202Hg	0.024	<0.024	<0.024	-	<0.024	0.034	-
205Tl	0.001	0.026	0.026	0.0	0.027	0.022	20
208Pb	0.001	0.258	0.270	4.5	0.270	0.334	21
238U	0.001	0.115	0.118	2.6	0.151	0.130	15

Notes:

ppm = parts per million
 RPD = relative percent difference
 DL = detection limit
 < = less than detection limit
 % = percent

Data Quality Objectives:

Laboratory Duplicates - RPD ≤40% for all elements, except Ca and Sr, which are ≤60%
 Minimum DQOs apply to individual samples at concentrations above 10x DL

Teck Coal Limited
Tissue QA/QC Accuracy and Precision Results

Sample Group ID		01			
Parameter	DL (ppm)	Certified Conc. (ppm)	Mean Estimated Conc. (ppm)	Accuracy (%)	Precision RSD (%)
7Li	0.016	1.21	1.4	114	6.1
11B	0.139	4.5	4.6	102	3.6
23Na	5.2	14,000	16,286	116	4.2
24Mg	0.057	910	1,042	114	5.2
27Al	0.023	197.2	197	100	3.6
31P	77	8,000	8,835	110	4.8
39K	4.1	15,500	18,542	120	5.1
44Ca	15	2,360	2,725	116	5.2
49Ti	0.001	12.24	12	95	7.7
51V	0.020	1.57	1.8	115	5.6
52Cr	0.239	1.87	2.2	118	4.5
55Mn	0.007	3.17	3.5	111	5.5
57Fe	1.7	343	398	116	4.4
59Co	0.007	0.25	0.301	121	2.5
60Ni	0.036	1.34	1.7	127	0.0
63Cu	0.018	15.7	19	118	4.8
66Zn	0.295	51.6	57	110	4.0
75As	0.382	6.87	7.5	109	4.9
77Se	0.320	3.45	3.7	108	4.0
88Sr	0.001	10.1	12	119	5.9
95Mo	0.001	0.29	0.350	121	3.6
107Ag	0.001	0.0252	0.028	112	11
111Cd	0.040	0.299	0.339	113	10
118Sn	0.031	0.061	0.082	134	11
121Sb	0.003	0.011	0.014	127	19
137Ba	0.001	8.6	8.3	96	3.3
202Hg	0.024	0.412	0.426	103	7.4
205Tl	0.001	0.0013	-	-	-
208Pb	0.001	0.404	0.471	116	11
238U	0.001	0.05	0.057	115	5.9

Notes:

ppm = parts per million; % = percent; DL = detection limit; RSD = relative standard deviation

Data Quality Objectives:

Accuracy: DQO of 60 - 140% of the certified values for B, Ti, Ag, Sn, Sb, and Ba.

Accuracy: DQO of 90 - 110% of the certified values for Se.

Accuracy: DQO of 70 - 130% of the certified values for all other elements provided.

Precision: DQO of ≤20% for all elements.

DORM-4 used for all parameters except B, Ti, Sb, Ba, and Al where NIST-1566b was used.

Tl certified concentration from NIST-2976.

Accuracy and precision for Tl are not reported as the certified concentration is too close to the reportable detection limit.

Teck Coal Limited
Sample Group Information

Sample Group ID	Client ID	Lab ID	Date of Analysis
01	RG_ERCKBR_INV-1_2022-09-20_N	703	12 Oct 2022
	RG_ERCKBR_INV-2_2022-09-20_N	704	
	RG_ERCKBR_INV-3_2022-09-20_N	705	
	RG_BOCKRD_INV-1_2022-09-20_N	706	
	RG_BOCKRD_INV-2_2022-09-20_N	707	
	RG_BOCKRD_INV-3_2022-09-20_N	708	
	RG_ERCKMD_INV-1_2022-09-20_N	709	
	RG_ERCKMD_INV-2_2022-09-20_N	710	
	RG_ERCKMD_INV-3_2022-09-20_N	711	
	RG_ERCKMD_INV-4_2022-09-20_N	712	
	RG_ERCKMD_INV-5_2022-09-20_N	713	

COC ID: REP_LAEMP_EVO_2022-09 TRICH

TURNAROUND TIME:

RUSH:

PROJECT/CLIENT INFO		LABORATORY		OTHER INFO	
Facility Name / Job#	Regional Effects Program	Lab Name	TrichAnalytics Inc.	Report Format / Distribution	Excel PDF
Project Manager	Mike Pope	Lab Contact	Jennie Christensen	Email 1:	AquaSci.Lab@Teck.com
Email	Mike.Pope@teck.com	Email	jennie.christensen@trichanalytics.com	Email 2:	teckcoal@equisonline.com
Address	421 Pine Ave	Address	207-1753 Sean Heights	Email 3:	Teck.Lab.Results@teck.com
City	Sparwood	City	Saanichton	Email 4:	Lisa.Bowron@minnow.ca
Province	BC	Province	BC	Email 5:	Tyler.Mehler@minnow.ca
Country	Canada	City		Email 6:	Jessica.Ritz@Teck.com
Postal Code	V0B 2G0	Postal Code		PO number	VPO00818999
Phone Number	250-425-8247	Phone Number			

SAMPLE DETAILS		ANALYSIS REQUESTED		ANALYSIS								
Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	Tissue type	Tissue Species	Sample Structure	Number of Containers	Metals in Biota by CRC	Mercury in Biota by CVAS (wet, dry & routine)	Moisture Content by Gravimetry
703	RG_ERCKBR_INV-1_2022-09-20_N	TA		20-Sep-22	9:00	INV	Composite	Composite	1	X	X	X
704	RG_ERCKBR_INV-2_2022-09-20_N	TA		20-Sep-22	10:00	INV	Composite	Composite	1	X	X	X
705	RG_ERCKBR_INV-3_2022-09-20_N	TA		20-Sep-22	11:00	INV	Composite	Composite	1	X	X	X
706	RG_BOCKRD_INV-1_2022-09-20_N	TA		20-Sep-22	9:00	INV	Composite	Composite	1	X	X	X
707	RG_BOCKRD_INV-2_2022-09-20_N	TA		20-Sep-22	10:00	INV	Composite	Composite	1	X	X	X
708	RG_BOCKRD_INV-3_2022-09-20_N	TA		20-Sep-22	11:00	INV	Composite	Composite	1	X	X	X
709	RG_ERCKMD_INV-1_2022-09-20_N	TA		20-Sep-22	9:00	INV	Composite	Composite	1	X	X	X
710	RG_ERCKMD_INV-2_2022-09-20_N	TA		20-Sep-22	10:00	INV	Composite	Composite	1	X	X	X
711	RG_ERCKMD_INV-3_2022-09-20_N	TA		20-Sep-22	11:00	INV	Composite	Composite	1	X	X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS		RELINQUISHED BY/AFFILIATION		ACCEPTED BY/AFFILIATION		DATE/TIME	
Please prioritize these samples over other LAEMP and RAEMP samples		Jennifer Ings		#####		29 Sep 2022 / 10:50	
				Genevieve LaBine			
				Gemma RB			

SERVICE REQUEST (rush - subject to availability)		Sampler's Name	Sampler's Signature	Jennifer Ings	Mobile #
Regular (default)				Jennifer Ings	5195003444
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge					
For Emergency <1 Day, ASAP or Weekend					
					September 26, 2022



TrichAnalytics Inc.

Tissue Microchemistry Analysis Report

Client: Mike Pope Project Manager Teck Coal Limited	Date Received: 10 Nov 2022
Phone: (250) 425-8202	Date of Analysis: 21 Nov 2022
Email: mike.pope@teck.com; jessica.ritz@teck.com; aquascilab@teck.com; teckcoal@equisonline.com; robin.valleau@minnow.ca; hillary.quinn-austin@minnow.ca	Final Report Date: 22 Nov 2022
	Project No.: 2022-432
	Method No.: MET-002.06

Client Project: EVO_LAEMP_NOV Regional Effects Program (PO 847031)

Analytical Request: Composite Benthic Invertebrate Tissue Microchemistry (total metals & moisture) - 56 samples.
See chain of custody form provided for sample identification numbers.

Notes:

Analytical results are expressed in parts per million (ppm) dry weight (equivalent to mg/kg).
Samples quantified using DORM-4, NIST-1566b, and NIST-2976 certified reference standards.
Aluminum concentrations above 1,000 ppm are outside linear range of the calibration curve.
RPD values calculated according to the British Columbia Environmental Laboratory Manual (2020) criteria.
Client specific DQO for Selenium accuracy is 90-110% of the certified value; result achieved 103% (ranged from 99-106%).

This report provides the analytical results only for tissue samples noted above as received from the Client.

Reviewed and Approved by Jennie Christensen, PhD, RPBio

22 Nov 2022

Date

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CALA
Testing
Accreditation No. A4196

Teck Coal Limited
Tissue Analysis Results

			RG_ERCKMD_INV	RG_ERCKMD_INV	RG_ERCKMD_INV	RG_ERCKMD_INV	RG_ERCKMD_INV
Client ID			1_2022-11-N	2_2022-11-N	3_2022-11-N	4_2022-11-N	5_2022-11-N
Lab ID			066	067	068	069	070
Wet Weight (g)			0.1634	0.1576	0.1509	0.1389	0.1749
Dry Weight (g)			0.0304	0.0310	0.0355	0.0221	0.0308
Moisture (%)			81.4	80.3	76.5	84.1	82.4
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.028	0.093	0.796	0.910	0.758	0.824	1.0
11B	0.130	0.433	2.7	2.7	1.4	2.7	2.7
23Na	6.1	20	2,103	3,112	3,970	2,278	2,759
24Mg	0.147	0.490	1,921	1,440	2,067	1,947	2,246
27Al	0.078	0.260	512	417	379	394	520
31P	85	283	7,781	9,262	12,734	7,253	8,654
39K	5.8	19	5,795	8,117	9,534	5,923	6,747
44Ca	10	33	5,764	4,098	6,249	7,974	6,454
49Ti	0.001	0.003	41	32	33	30	42
51V	0.041	0.137	1.3	1.1	1.0	1.1	1.6
52Cr	0.038	0.127	8.0	5.9	9.1	9.8	9.1
55Mn	0.009	0.030	201	297	182	302	250
57Fe	0.936	3.1	1,286	1,293	1,205	1,431	1,541
59Co	0.029	0.097	9.5	11	7.1	24	12
60Ni	0.057	0.190	22	25	21	30	27
63Cu	0.030	0.100	14	14	18	17	15
66Zn	0.199	0.663	178	230	444	194	240
75As	0.318	1.1	1.0	1.1	0.713	1.1	1.1
77Se	0.410	1.4	5.8	8.5	6.3	5.6	5.7
88Sr	0.002	0.007	7.1	6.1	7.1	8.7	8.3
95Mo	0.001	0.003	0.360	0.480	0.390	0.630	0.510
107Ag	0.001	0.003	0.045	0.057	0.076	0.038	0.045
111Cd	0.112	0.373	1.3	1.7	0.781	1.3	1.3
118Sn	0.023	0.077	0.538	0.330	0.547	1.1	0.609
121Sb	0.004	0.013	0.063	0.085	0.056	0.091	0.067
137Ba	0.060	0.200	32	33	24	38	37
202Hg	0.027	0.090	0.028	0.039	0.034	<0.027	0.028
205Tl	0.001	0.003	0.065	0.048	0.039	0.046	0.053
208Pb	0.003	0.010	0.396	0.412	0.319	0.328	0.450
238U	0.001	0.003	0.167	0.203	0.112	0.221	0.182

Notes:

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Teck Coal Limited
Tissue Analysis Results

			RG_ALUSM_INV- 1_2022-11_N	RG_ALUSM_INV- 2_2022-11_N	RG_ALUSM_INV- 3_2022-11_N	RG_GATE_INV- 1_2022-11_N	RG_GATE_INV- 2_2022-11_N
Client ID							
Lab ID			071	072	073	074	075
Wet Weight (g)			0.3865	1.4561	0.7738	0.0831	0.5098
Dry Weight (g)			0.0656	0.3425	0.1776	0.0161	0.1105
Moisture (%)			83.0	76.5	77.0	80.6	78.3
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.028	0.093	0.986	1.1	0.763	5.1	3.3
11B	0.130	0.433	4.9	5.3	3.4	14	12
23Na	6.1	20	5,178	3,905	3,848	3,298	5,137
24Mg	0.147	0.490	1,447	1,400	1,406	4,089	3,412
27Al	0.078	0.260	1,722	1,837	1,369	13,753	8,410
31P	85	283	11,315	11,643	11,238	11,825	8,274
39K	5.8	19	10,763	12,193	10,800	13,240	13,919
44Ca	10	33	3,382	2,250	2,411	30,281	12,932
49Ti	0.001	0.003	137	160	125	1,117	614
51V	0.041	0.137	2.6	3.2	2.2	28	16
52Cr	0.038	0.127	9.9	11	7.2	30	19
55Mn	0.009	0.030	89	127	97	66	66
57Fe	0.936	3.1	1,152	1,352	881	4,343	2,784
59Co	0.029	0.097	0.997	1.1	1.3	3.9	2.6
60Ni	0.057	0.190	13	19	11	65	62
63Cu	0.030	0.100	11	13	13	47	14
66Zn	0.199	0.663	155	172	148	231	198
75As	0.318	1.1	1.4	1.6	1.1	2.2	2.2
77Se	0.410	1.4	3.9	4.3	3.8	11	20
88Sr	0.002	0.007	9.8	6.1	5.4	188	189
95Mo	0.001	0.003	0.345	0.720	0.450	1.3	1.7
107Ag	0.001	0.003	0.053	0.076	0.068	0.242	0.091
111Cd	0.112	0.373	0.597	0.918	0.643	1.6	1.4
118Sn	0.023	0.077	0.502	0.354	0.585	1.6	0.472
121Sb	0.004	0.013	0.068	0.052	0.042	0.437	0.229
137Ba	0.060	0.200	115	140	76	17,654	23,562
202Hg	0.027	0.090	0.039	0.045	0.050	0.073	0.062
205Tl	0.001	0.003	0.044	0.038	0.031	0.306	0.153
208Pb	0.003	0.010	1.3	0.988	0.732	3.4	2.0
238U	0.001	0.003	0.166	0.149	0.093	0.701	0.569

Notes:

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Teck Coal Limited
Tissue Analysis Results

			Client ID	RG_GATE_INV- 3_2022-11_N	RG_BOCK_INVOL I-1_2022-11_N	RG_BOCK_INVOL I-2_2022-11_N	RG_BOCK_INVOL I-3_2022-11_N	RG_BOCK_COMP OLI-1_2022-11_N
			Lab ID	076	077	078	079	080
			Wet Weight (g)	0.2572	0.0400	0.0804	0.8792	0.0763
			Dry Weight (g)	0.0603	0.0097	0.0212	0.2728	0.0189
			Moisture (%)	76.6	75.7	73.6	69.0	75.2
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.028	0.093	4.4	2.3	1.6	6.1	3.9	
11B	0.130	0.433	15	4.4	7.5	13	8.9	
23Na	6.1	20	3,771	2,566	2,410	2,654	4,184	
24Mg	0.147	0.490	3,507	1,658	2,458	4,881	3,268	
27Al	0.078	0.260	9,723	2,673	1,999	8,561	6,008	
31P	85	283	8,737	8,002	10,126	9,655	11,419	
39K	5.8	19	15,009	5,906	7,200	9,616	13,039	
44Ca	10	33	14,293	27,681	22,250	29,548	64,531	
49Ti	0.001	0.003	995	260	146	844	489	
51V	0.041	0.137	19	5.3	3.9	16	11	
52Cr	0.038	0.127	26	20	14	15	27	
55Mn	0.009	0.030	81	32	28	121	80	
57Fe	0.936	3.1	4,074	1,166	1,021	3,562	2,499	
59Co	0.029	0.097	3.8	11	8.3	12	4.8	
60Ni	0.057	0.190	96	57	56	96	75	
63Cu	0.030	0.100	18	11	6.8	26	13	
66Zn	0.199	0.663	228	137	690	320	262	
75As	0.318	1.1	2.9	9.6	2.3	5.9	3.9	
77Se	0.410	1.4	19	314	87	295	67	
88Sr	0.002	0.007	104	68	77	105	178	
95Mo	0.001	0.003	1.8	1.9	1.5	1.7	1.0	
107Ag	0.001	0.003	0.136	0.219	0.166	0.799	0.151	
111Cd	0.112	0.373	1.7	3.0	8.2	7.1	2.2	
118Sn	0.023	0.077	0.606	0.580	0.421	0.656	1.1	
121Sb	0.004	0.013	0.349	0.213	0.143	0.560	0.272	
137Ba	0.060	0.200	8,966	2,027	726	5,769	5,603	
202Hg	0.027	0.090	0.062	0.392	0.106	0.356	0.112	
205Tl	0.001	0.003	0.244	0.212	0.289	0.485	0.366	
208Pb	0.003	0.010	2.8	1.8	0.845	5.6	2.4	
238U	0.001	0.003	0.619	0.993	1.4	1.1	0.591	

Notes:

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Teck Coal Limited
Tissue Analysis Results

			RG_BOCK_COMP	RG_BOCK_COMP	RG_BOCK_COMP	RG_BOCKRD_INV	RG_BOCKRD_INV
Client ID			OLI-2_2022-11_N	NOLI-1_2022-11_N	NOLI-2_2022-11_N	1_2022-11_N	2_2022-11_N
Lab ID			081	082	083	084	085
Wet Weight (g)			0.2628	0.0669	0.0845	0.1375	0.2758
Dry Weight (g)			0.0569	0.0130	0.0156	0.0371	0.0634
Moisture (%)			78.3	80.6	81.5	73.0	77.0
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.028	0.093	3.0	3.0	1.8	1.3	1.6
11B	0.130	0.433	6.3	67	4.6	0.519	1.4
23Na	6.1	20	4,477	1,584	15,332	6,213	6,467
24Mg	0.147	0.490	2,844	3,926	3,133	5,095	5,493
27Al	0.078	0.260	3,811	862	986	74	175
31P	85	283	11,296	18,471	12,289	15,257	15,753
39K	5.8	19	12,759	6,911	12,987	9,179	10,388
44Ca	10	33	23,942	12,313	25,528	4,415	9,339
49Ti	0.001	0.003	329	64	74	5.0	10
51V	0.041	0.137	7.5	1.6	2.0	0.263	0.661
52Cr	0.038	0.127	13	8.4	15	4.4	5.4
55Mn	0.009	0.030	36	63	30	19	33
57Fe	0.936	3.1	1,400	461	544	978	3,645
59Co	0.029	0.097	8.6	1.9	1.6	0.474	0.654
60Ni	0.057	0.190	48	31	39	8.3	15
63Cu	0.030	0.100	23	136	24	12	13
66Zn	0.199	0.663	509	475	175	209	234
75As	0.318	1.1	5.5	<0.318	1.0	0.471	1.2
77Se	0.410	1.4	230	13	35	4.4	7.8
88Sr	0.002	0.007	69	172	47	60	286
95Mo	0.001	0.003	1.6	1.5	0.305	0.275	0.519
107Ag	0.001	0.003	0.722	0.294	0.178	0.036	0.044
111Cd	0.112	0.373	10	12	1.1	2.9	3.5
118Sn	0.023	0.077	0.673	2.2	0.348	0.140	0.376
121Sb	0.004	0.013	0.244	0.155	0.108	0.024	0.066
137Ba	0.060	0.200	1,543	566	649	5,810	40,843
202Hg	0.027	0.090	0.314	0.069	<0.027	0.088	0.075
205Tl	0.001	0.003	0.412	0.138	0.194	0.015	0.022
208Pb	0.003	0.010	1.5	3.8	0.533	0.062	0.107
238U	0.001	0.003	0.679	0.176	0.313	0.044	0.261

Notes:

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Teck Coal Limited
Tissue Analysis Results

			RG_BOCKRD_INV	RG_ERCKDT_INV	RG_ERCKDT_INV	RG_ERCKDT_INV	RG_ERCKDT_INV
Client ID			3_2022-11_N	1_2022-11_N	2_2022-11_N	3_2022-11_N	4_2022-11_N
Lab ID			086	087	088	089	090
Wet Weight (g)			0.6073	0.1314	0.1832	0.2209	0.2572
Dry Weight (g)			0.1188	0.0410	0.0425	0.0627	0.0626
Moisture (%)			80.4	68.8	76.8	71.6	75.7
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.028	0.093	1.8	0.991	1.1	0.666	0.346
11B	0.130	0.433	9.1	4.5	4.5	2.3	1.8
23Na	6.1	20	14,893	2,885	3,455	1,923	1,550
24Mg	0.147	0.490	3,992	1,890	2,206	1,627	793
27Al	0.078	0.260	498	1,699	1,519	984	401
31P	85	283	16,054	9,539	11,084	7,976	5,336
39K	5.8	19	22,742	8,303	9,494	6,104	3,782
44Ca	10	33	11,386	3,913	5,587	3,846	1,813
49Ti	0.001	0.003	35	192	142	74	29
51V	0.041	0.137	1.4	3.4	3.0	1.7	0.736
52Cr	0.038	0.127	4.6	19	16	19	6.9
55Mn	0.009	0.030	41	182	642	184	131
57Fe	0.936	3.1	7,663	2,142	2,226	1,282	761
59Co	0.029	0.097	1.6	12	35	10	8.5
60Ni	0.057	0.190	40	41	55	41	16
63Cu	0.030	0.100	14	13	15	12	6.3
66Zn	0.199	0.663	249	155	203	149	91
75As	0.318	1.1	3.1	2.2	2.0	1.3	0.982
77Se	0.410	1.4	40	7.1	8.7	6.7	4.0
88Sr	0.002	0.007	1,671	6.6	8.3	4.7	2.4
95Mo	0.001	0.003	1.8	0.366	0.855	0.549	0.183
107Ag	0.001	0.003	0.036	0.062	0.053	0.044	0.018
111Cd	0.112	0.373	3.8	1.9	4.6	2.2	1.8
118Sn	0.023	0.077	0.249	0.636	0.682	0.514	0.308
121Sb	0.004	0.013	0.169	0.123	0.211	0.100	0.059
137Ba	0.060	0.200	208,262	73	127	86	29
202Hg	0.027	0.090	0.069	0.028	0.028	<0.027	<0.027
205Tl	0.001	0.003	0.075	0.121	0.133	0.095	0.045
208Pb	0.003	0.010	0.197	0.801	0.900	0.427	0.247
238U	0.001	0.003	0.820	0.162	0.241	0.127	0.066

Notes:

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Teck Coal Limited
Tissue Analysis Results

			RG_ERCKDT_INV-	RG_ERCKDT_INV-	RG_ERCKUT_INV-	RG_ERCKUT_INV-	RG_ERCKUT_INV-
Client ID			5_2022-11_N	6_2022-11_N	1_2022-11_N	2_2022-11_N	3_2022-11_N
Lab ID			091	092	093	094	095
Wet Weight (g)			0.2579	0.2226	0.1421	0.2345	0.2765
Dry Weight (g)			0.0636	0.0602	0.0299	0.0554	0.0571
Moisture (%)			75.3	73.0	79.0	76.4	79.3
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.028	0.093	0.657	0.956	0.815	0.706	0.600
11B	0.130	0.433	2.4	4.2	3.0	3.5	3.9
23Na	6.1	20	2,490	2,457	3,418	2,027	2,977
24Mg	0.147	0.490	1,671	1,889	2,044	1,710	2,189
27Al	0.078	0.260	990	2,546	423	1,501	865
31P	85	283	8,411	8,935	10,258	7,670	9,420
39K	5.8	19	6,643	7,312	7,511	6,055	7,383
44Ca	10	33	4,494	5,323	3,400	3,302	4,733
49Ti	0.001	0.003	154	192	27	126	74
51V	0.041	0.137	2.2	5.2	0.979	3.1	2.2
52Cr	0.038	0.127	10	34	12	24	16
55Mn	0.009	0.030	267	305	21	19	28
57Fe	0.936	3.1	1,388	2,362	364	627	578
59Co	0.029	0.097	18	17	0.912	1.3	1.6
60Ni	0.057	0.190	29	63	17	42	27
63Cu	0.030	0.100	13	15	15	15	19
66Zn	0.199	0.663	150	163	188	136	175
75As	0.318	1.1	1.4	1.5	0.785	0.589	0.510
77Se	0.410	1.4	7.1	7.2	5.7	4.5	5.6
88Sr	0.002	0.007	5.3	16	4.3	2.8	4.6
95Mo	0.001	0.003	0.519	0.611	0.244	0.153	0.183
107Ag	0.001	0.003	0.040	0.053	0.044	0.071	0.089
111Cd	0.112	0.373	4.8	5.8	20	3.2	2.2
118Sn	0.023	0.077	0.599	0.749	0.768	0.562	0.702
121Sb	0.004	0.013	0.161	0.187	0.123	0.135	0.205
137Ba	0.060	0.200	39	798	129	31	38
202Hg	0.027	0.090	0.028	<0.027	<0.027	0.031	0.031
205Tl	0.001	0.003	0.096	0.108	0.036	0.046	0.048
208Pb	0.003	0.010	0.528	0.931	0.132	0.289	0.310
238U	0.001	0.003	0.158	0.214	0.184	0.153	0.239

Notes:

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Teck Coal Limited
Tissue Analysis Results

			RG_ERCKUT_INV- 4_2022-11_N	RG_ERCKUT_INV- 5_2022-11_N	RG_MI3_INV- 1_2022-11_N	RG_MI3_INV- 2_2022-11_N	RG_MI3_INV- 3_2022-11_N
Client ID							
Lab ID			096	097	098	099	100
Wet Weight (g)			0.3312	0.1240	0.1392	0.2116	0.4903
Dry Weight (g)			0.0646	0.0344	0.0275	0.0394	0.0847
Moisture (%)			80.5	72.3	80.2	81.4	82.7
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.028	0.093	0.447	0.289	0.561	0.984	0.571
11B	0.130	0.433	2.2	2.6	5.4	9.3	3.7
23Na	6.1	20	3,617	1,577	5,589	6,416	6,160
24Mg	0.147	0.490	1,882	1,524	1,474	1,631	1,633
27Al	0.078	0.260	368	344	1,207	2,160	912
31P	85	283	11,409	7,263	13,606	15,578	15,784
39K	5.8	19	9,241	4,909	11,901	15,834	13,891
44Ca	10	33	2,903	2,711	3,140	4,330	3,753
49Ti	0.001	0.003	21	22	88	140	65
51V	0.041	0.137	1.0	0.803	2.3	4.8	2.1
52Cr	0.038	0.127	7.4	7.1	12	24	9.3
55Mn	0.009	0.030	23	23	46	85	83
57Fe	0.936	3.1	291	213	642	1,256	603
59Co	0.029	0.097	0.396	1.0	1.6	2.4	1.5
60Ni	0.057	0.190	13	11	19	39	15
63Cu	0.030	0.100	18	13	11	15	14
66Zn	0.199	0.663	189	138	224	184	227
75As	0.318	1.1	0.393	0.471	2.7	2.9	2.1
77Se	0.410	1.4	6.4	4.0	5.6	8.6	6.4
88Sr	0.002	0.007	2.8	2.1	6.7	9.0	7.8
95Mo	0.001	0.003	0.244	0.153	0.366	0.497	0.391
107Ag	0.001	0.003	0.098	0.044	0.071	0.097	0.130
111Cd	0.112	0.373	4.0	1.8	2.6	4.8	2.6
118Sn	0.023	0.077	0.428	0.286	0.849	1.1	0.615
121Sb	0.004	0.013	0.170	0.085	0.056	0.131	0.075
137Ba	0.060	0.200	61	22	58	137	87
202Hg	0.027	0.090	0.038	<0.027	0.031	0.056	0.049
205Tl	0.001	0.003	0.032	0.025	0.059	0.114	0.082
208Pb	0.003	0.010	0.183	0.104	0.391	0.796	0.521
238U	0.001	0.003	0.362	0.134	0.073	0.131	0.201

Notes:

- ppm = parts per million
- DL = detection limit
- LOQ = limit of quantitation
- < = less than detection limit
- g = grams
- % = percent

Teck Coal Limited
Tissue Analysis Results

			RG_ERCK_INV- 1_2022-11_N	RG_ERCK_INV- 2_2022-11_N	RG_ERCK_INV- 3_2022-11_N	RG_ERCKUC_INV- 1_2022-11_N	RG_ERCKUC_INV- 2_2022-11_N
Client ID							
Lab ID			101	102	103	104	105
Wet Weight (g)			0.1396	0.1062	0.2714	0.0840	0.1577
Dry Weight (g)			0.0227	0.0220	0.0527	0.0143	0.0287
Moisture (%)			83.7	79.3	80.6	83.0	81.8
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.028	0.093	0.783	0.624	0.614	0.709	0.635
11B	0.130	0.433	2.3	1.5	1.1	2.3	1.8
23Na	6.1	20	3,672	2,879	3,554	3,146	2,710
24Mg	0.147	0.490	2,216	1,538	1,564	1,784	1,985
27Al	0.078	0.260	232	156	113	348	127
31P	85	283	11,541	8,599	11,533	9,830	9,016
39K	5.8	19	7,864	5,879	7,898	6,820	6,041
44Ca	10	33	5,684	4,756	4,240	5,366	10,523
49Ti	0.001	0.003	12	11	6.3	25	8.2
51V	0.041	0.137	0.927	0.565	0.337	1.2	0.595
52Cr	0.038	0.127	26	7.5	4.5	14	5.6
55Mn	0.009	0.030	45	44	28	75	56
57Fe	0.936	3.1	540	258	151	345	166
59Co	0.029	0.097	3.0	2.0	1.1	3.0	2.6
60Ni	0.057	0.190	43	15	8.1	29	17
63Cu	0.030	0.100	17	14	13	14	13
66Zn	0.199	0.663	165	151	170	157	126
75As	0.318	1.1	0.485	0.338	0.338	0.401	<0.318
77Se	0.410	1.4	5.6	5.0	5.4	7.1	5.9
88Sr	0.002	0.007	6.0	4.7	3.9	6.7	7.9
95Mo	0.001	0.003	0.533	0.391	0.213	0.568	0.320
107Ag	0.001	0.003	0.054	0.032	0.054	0.043	0.043
111Cd	0.112	0.373	1.6	0.678	0.848	0.407	1.6
118Sn	0.023	0.077	1.3	0.418	0.653	1.4	0.792
121Sb	0.004	0.013	0.123	0.091	0.058	0.116	0.098
137Ba	0.060	0.200	21	12	8.9	19	34
202Hg	0.027	0.090	0.035	0.035	0.028	0.035	0.035
205Tl	0.001	0.003	0.060	0.050	0.033	0.053	0.043
208Pb	0.003	0.010	0.239	0.257	0.236	0.296	0.134
238U	0.001	0.003	0.166	0.179	0.075	0.417	0.244

Notes:

- ppm = parts per million
- DL = detection limit
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- % = percent

Teck Coal Limited
Tissue Analysis Results

			RG_ERCKUC_INV-	RG_MICOMP_IN	RG_MICOMP_IN	RG_MICOMP_IN	RG_MICOMP_IN
Client ID			3_2022-11_N	V-1_2022-11_N	V-2_2022-11_N	V-3_2022-11_N	V-4_2022-11_N
Lab ID			106	107	108	109	110
Wet Weight (g)			0.1987	0.6306	0.2797	0.6506	2.0201
Dry Weight (g)			0.0356	0.0971	0.0448	0.1674	0.4437
Moisture (%)			82.1	84.6	84.0	74.3	78.0
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.028	0.093	0.751	0.582	0.888	1.0	0.795
11B	0.130	0.433	1.4	5.4	6.0	6.5	6.1
23Na	6.1	20	4,764	8,085	7,102	7,845	11,706
24Mg	0.147	0.490	2,157	1,284	1,550	1,574	1,706
27Al	0.078	0.260	74	459	1,223	1,804	786
31P	85	283	14,489	14,506	15,435	11,778	15,892
39K	5.8	19	10,331	13,209	12,550	13,124	14,761
44Ca	10	33	5,234	3,944	3,819	3,113	3,569
49Ti	0.001	0.003	3.5	24	89	114	72
51V	0.041	0.137	0.382	1.1	3.0	3.3	2.4
52Cr	0.038	0.127	2.9	4.8	7.7	14	10
55Mn	0.009	0.030	66	55	81	76	118
57Fe	0.936	3.1	115	420	887	1,419	821
59Co	0.029	0.097	2.5	1.1	2.0	1.6	1.0
60Ni	0.057	0.190	15	15	20	26	22
63Cu	0.030	0.100	15	11	13	12	15
66Zn	0.199	0.663	190	153	167	138	164
75As	0.318	1.1	<0.318	2.4	2.3	2.7	1.3
77Se	0.410	1.4	8.9	7.3	11	7.0	7.1
88Sr	0.002	0.007	5.3	5.9	8.0	11	5.5
95Mo	0.001	0.003	0.284	0.231	0.373	0.456	0.456
107Ag	0.001	0.003	0.065	0.097	0.097	0.065	0.119
111Cd	0.112	0.373	0.475	1.6	3.5	2.1	1.8
118Sn	0.023	0.077	0.598	0.382	0.583	0.312	0.560
121Sb	0.004	0.013	0.102	0.048	0.082	0.143	0.045
137Ba	0.060	0.200	10	60	83	93	70
202Hg	0.027	0.090	0.049	0.056	0.074	0.065	0.084
205Tl	0.001	0.003	0.042	0.080	0.150	0.144	0.085
208Pb	0.003	0.010	0.090	0.288	0.581	0.954	0.521
238U	0.001	0.003	0.159	0.072	0.097	0.132	0.058

Notes:

- ppm = parts per million
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- < = less than detection limit
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Teck Coal Limited
Tissue Analysis Results

			RG_MICOMP_IN V-5_2022-11_N	RG_MIDBO_INV- 1_2022-11_N	RG_MIDBO_INV- 2_2022-11_N	RG_MIDBO_INV- 3_2022-11_N	RG_MIDER_INV- 1_2022-11_N
Client ID							
Lab ID			111	112	113	114	115
Wet Weight (g)			0.8089	0.3139	1.0375	0.4880	0.2499
Dry Weight (g)			0.1739	0.0590	0.1901	0.1012	0.0397
Moisture (%)			78.5	81.2	81.7	79.3	84.1
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.028	0.093	2.0	0.608	0.497	0.666	1.9
11B	0.130	0.433	20	3.6	3.9	4.7	11
23Na	6.1	20	6,978	6,672	6,597	5,724	4,052
24Mg	0.147	0.490	1,577	1,583	1,257	1,589	1,760
27Al	0.078	0.260	4,305	702	507	837	5,059
31P	85	283	9,807	16,573	13,391	13,494	11,920
39K	5.8	19	10,294	14,014	14,972	12,542	11,031
44Ca	10	33	8,381	3,613	2,287	4,377	6,965
49Ti	0.001	0.003	389	49	33	44	312
51V	0.041	0.137	13	1.8	1.2	2.2	9.6
52Cr	0.038	0.127	42	7.4	3.5	14	28
55Mn	0.009	0.030	135	69	82	67	90
57Fe	0.936	3.1	3,206	620	443	696	2,105
59Co	0.029	0.097	3.3	1.5	1.9	1.4	8.6
60Ni	0.057	0.190	77	17	16	29	52
63Cu	0.030	0.100	15	15	11	19	20
66Zn	0.199	0.663	117	203	107	164	256
75As	0.318	1.1	2.2	2.0	2.0	1.8	4.1
77Se	0.410	1.4	7.0	9.3	8.4	8.0	9.9
88Sr	0.002	0.007	19	6.6	4.8	7.9	15
95Mo	0.001	0.003	0.580	0.414	0.249	0.331	0.787
107Ag	0.001	0.003	0.086	0.097	0.081	0.151	0.130
111Cd	0.112	0.373	1.8	1.6	1.5	2.0	6.4
118Sn	0.023	0.077	0.408	0.506	0.358	0.551	1.3
121Sb	0.004	0.013	0.244	0.045	0.032	0.049	0.141
137Ba	0.060	0.200	179	69	55	60	122
202Hg	0.027	0.090	0.074	0.056	0.064	0.084	0.061
205Tl	0.001	0.003	0.181	0.103	0.074	0.097	0.180
208Pb	0.003	0.010	2.1	0.419	0.296	0.448	1.3
238U	0.001	0.003	0.265	0.078	0.068	0.078	0.197

Notes:

- ppm = parts per million
- DL = detection limit
- LOQ = limit of quantitation
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- % = percent

Teck Coal Limited
Tissue Analysis Results

			RG_MIDER_INV- 2_2022-11_N	RG_MIDER_INV- 3_2022-11_N	RG_MIDGA_INV- 1_2022-11_N	RG_MIDGA_INV- 2_2022-11_N	RG_MIDGA_INV- 3_2022-11_N
Client ID							
Lab ID			116	117	118	119	120
Wet Weight (g)			0.3317	0.2575	0.7830	0.4326	0.7945
Dry Weight (g)			0.0643	0.0519	0.1123	0.0805	0.1264
Moisture (%)			80.6	79.8	85.7	81.4	84.1
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.028	0.093	0.327	1.0	1.1	0.339	0.684
11B	0.130	0.433	2.7	4.5	6.8	2.5	9.2
23Na	6.1	20	3,581	4,530	8,016	3,835	5,893
24Mg	0.147	0.490	1,133	1,500	1,216	769	1,527
27Al	0.078	0.260	569	2,216	1,307	377	958
31P	85	283	11,279	11,938	11,517	10,699	12,788
39K	5.8	19	9,478	11,612	12,400	8,140	11,158
44Ca	10	33	2,678	3,260	3,308	1,532	4,556
49Ti	0.001	0.003	39	143	93	19	62
51V	0.041	0.137	1.4	5.0	3.3	0.766	2.5
52Cr	0.038	0.127	5.7	8.1	7.7	4.9	7.0
55Mn	0.009	0.030	72	85	90	29	70
57Fe	0.936	3.1	371	948	965	299	855
59Co	0.029	0.097	2.0	3.2	1.8	0.702	1.6
60Ni	0.057	0.190	11	19	24	9.5	18
63Cu	0.030	0.100	11	14	10	6.8	11
66Zn	0.199	0.663	152	194	108	77	127
75As	0.318	1.1	1.6	1.9	2.8	1.7	3.3
77Se	0.410	1.4	5.8	7.1	8.5	4.5	7.4
88Sr	0.002	0.007	5.7	7.2	6.7	3.3	8.8
95Mo	0.001	0.003	0.290	0.414	0.331	0.207	0.373
107Ag	0.001	0.003	0.054	0.119	0.065	0.032	0.076
111Cd	0.112	0.373	2.0	3.1	1.4	0.658	1.5
118Sn	0.023	0.077	0.395	0.446	0.420	0.357	0.635
121Sb	0.004	0.013	0.032	0.058	0.055	0.027	0.066
137Ba	0.060	0.200	58	91	126	34	73
202Hg	0.027	0.090	0.037	0.037	0.065	0.037	0.065
205Tl	0.001	0.003	0.075	0.091	0.084	0.065	0.115
208Pb	0.003	0.010	0.269	0.758	0.681	0.197	0.604
238U	0.001	0.003	0.042	0.105	0.088	0.041	0.084

Notes:

- ppm = parts per million
- DL = detection limit
- LOQ = limit of quantitation
- < = less than detection limit
- g = grams
- % = percent

Teck Coal Limited
Tissue Analysis Results

		Client ID	RG_GATEDP_INV- 1_2022-11_N
		Lab ID	121
		Wet Weight (g)	0.0701
		Dry Weight (g)	0.0089
		Moisture (%)	87.3
Parameter	DL (ppm)	LOQ (ppm)	(ppm)
7Li	0.028	0.093	1.9
11B	0.130	0.433	4.9
23Na	6.1	20	5,800
24Mg	0.147	0.490	2,899
27Al	0.078	0.260	1,740
31P	85	283	12,365
39K	5.8	19	15,628
44Ca	10	33	7,966
49Ti	0.001	0.003	142
51V	0.041	0.137	4.2
52Cr	0.038	0.127	14
55Mn	0.009	0.030	29
57Fe	0.936	3.1	1,051
59Co	0.029	0.097	1.8
60Ni	0.057	0.190	30
63Cu	0.030	0.100	14
66Zn	0.199	0.663	130
75As	0.318	1.1	0.727
77Se	0.410	1.4	62
88Sr	0.002	0.007	26
95Mo	0.001	0.003	0.704
107Ag	0.001	0.003	0.076
111Cd	0.112	0.373	8.0
118Sn	0.023	0.077	2.2
121Sb	0.004	0.013	0.101
137Ba	0.060	0.200	981
202Hg	0.027	0.090	0.037
205Tl	0.001	0.003	0.132
208Pb	0.003	0.010	0.885
238U	0.001	0.003	0.475

Notes:

- ppm = parts per million
- DL = detection limit
- LOQ = limit of quantitation
- < = less than detection limit
- g = grams
- % = percent

Teck Coal Limited
Tissue QA/QC Relative Percent Difference Results

Client ID		RG_ALUSM_INV-2_2022-11_N			RG_BOCKRD_INV-2_2022-11_N			RG_BOCKRD_INV-3_2022-11_N		
Lab ID		072			085			086		
Parameter	DL (ppm)	Sample (ppm)	Sample Duplicate (ppm)	RPD (%)	Sample (ppm)	Sample Duplicate (ppm)	RPD (%)	Sample (ppm)	Sample Duplicate (ppm)	RPD (%)
7Li	0.028	1.1	0.810	30	1.6	1.6	0.0	1.8	1.8	0.0
11B	0.130	5.3	4.1	26	1.4	1.3	-	9.1	9.8	7.4
23Na	6.1	3,905	3,987	2.1	6,467	6,618	2.3	14,893	14,460	3.0
24Mg	0.147	1,400	1,453	3.7	5,493	4,711	15	3,992	4,468	11
27Al	0.078	1,837	1,422	26	175	154	13	498	523	4.9
31P	85	11,643	13,140	12	15,753	13,831	13	16,054	16,139	0.5
39K	5.8	12,193	10,719	13	10,388	9,089	13	22,742	23,471	3.2
44Ca	10	2,250	2,278	1.2	9,339	7,794	18	11,386	12,961	13
49Ti	0.001	160	134	18	10	8.6	15	35	40	13
51V	0.041	3.2	2.2	37	0.661	0.468	34	1.4	1.7	19
52Cr	0.038	11	12	8.7	5.4	5.1	5.7	4.6	6.5	34
55Mn	0.009	127	144	13	33	26	24	41	51	22
57Fe	0.936	1,352	1,106	20	3,645	3,445	5.6	7,663	9,907	26
59Co	0.029	1.1	0.824	29	0.654	0.528	21	1.6	1.9	17
60Ni	0.057	19	19	0.0	15	14	6.9	40	43	7.2
63Cu	0.030	13	13	0.0	13	12	8.0	14	14	0.0
66Zn	0.199	172	178	3.4	234	217	7.5	249	278	11
75As	0.318	1.6	1.4	-	1.2	1.1	-	3.1	3.9	-
77Se	0.410	4.3	4.3	0.0	7.8	7.1	9.4	40	32	22
88Sr	0.002	6.1	6.0	1.7	286	236	19	1,671	2,094	23
95Mo	0.001	0.720	0.690	4.3	0.519	0.427	20	1.8	2.0	11
107Ag	0.001	0.076	0.076	0.0	0.044	0.044	0.0	0.036	0.044	20
111Cd	0.112	0.918	0.459	-	3.5	2.9	19	3.8	3.6	5.4
118Sn	0.023	0.354	0.349	1.4	0.376	0.220	-	0.249	0.350	34
121Sb	0.004	0.052	0.044	17	0.066	0.062	6.3	0.169	0.179	5.7
137Ba	0.060	140	184	27	40,843	35,543	14	208,262	208,447	0.1
202Hg	0.027	0.045	0.056	-	0.075	0.088	-	0.069	0.078	-
205Tl	0.001	0.038	0.038	0.0	0.022	0.023	4.4	0.075	0.082	8.9
208Pb	0.003	0.988	0.753	27	0.107	0.087	21	0.197	0.230	16
238U	0.001	0.149	0.121	21	0.261	0.178	38	0.820	1.1	29

Notes:

- ppm = parts per million
- RPD = relative percent difference
- DL = detection limit
- < = less than detection limit
- % = percent

Data Quality Objectives:

Laboratory Duplicates - RPD ≤40% for all elements, except Ca and Sr, which are ≤60%
Minimum DQOs apply to individual samples at concentrations above 10x DL

Teck Coal Limited
Tissue QA/QC Relative Percent Difference Results

Client ID	RG_MI3_INV-2_2022-11_N				RG_MICOMP_INV-2_2022-11_N			RG_MIDER_INV-3_2022-11_N		
	Lab ID	099			108			117		
Parameter	DL (ppm)	Sample (ppm)	Sample Duplicate (ppm)	RPD (%)	Sample (ppm)	Sample Duplicate (ppm)	RPD (%)	Sample (ppm)	Sample Duplicate (ppm)	RPD (%)
7Li	0.028	0.984	0.974	1.0	0.888	1.1	21	1.0	0.795	23
11B	0.130	9.3	6.8	31	6.0	8.0	29	4.5	4.5	0.0
23Na	6.1	6,416	5,756	11	7,102	7,625	7.1	4,530	3,905	15
24Mg	0.147	1,631	1,536	6.0	1,550	1,562	0.8	1,500	1,346	11
27Al	0.078	2,160	2,102	2.7	1,223	1,519	22	2,216	1,756	23
31P	85	15,578	14,233	9.0	15,435	15,520	0.5	11,938	11,031	7.9
39K	5.8	15,834	14,315	10	12,550	13,265	5.5	11,612	10,575	9.3
44Ca	10	4,330	3,842	12	3,819	4,144	8.2	3,260	3,188	2.2
49Ti	0.001	140	154	9.5	89	94	5.5	143	111	25
51V	0.041	4.8	4.8	0.0	3.0	3.6	18	5.0	4.0	22
52Cr	0.038	24	22	8.7	7.7	9.1	17	8.1	7.6	6.4
55Mn	0.009	85	81	4.8	81	85	4.8	85	82	3.6
57Fe	0.936	1,256	1,362	8.1	887	1,068	19	948	801	17
59Co	0.029	2.4	2.5	4.1	2.0	2.1	4.9	3.2	2.6	21
60Ni	0.057	39	39	0.0	20	24	18	19	16	17
63Cu	0.030	15	15	0.0	13	14	7.4	14	12	15
66Zn	0.199	184	163	12	167	172	2.9	194	162	18
75As	0.318	2.9	2.5	-	2.3	2.3	-	1.9	1.6	-
77Se	0.410	8.6	7.4	15	11	9.9	11	7.1	7.6	6.8
88Sr	0.002	9.0	8.4	6.9	8.0	9.2	14	7.2	8.2	13
95Mo	0.001	0.497	0.533	7.0	0.373	0.414	10	0.414	0.290	35
107Ag	0.001	0.097	0.086	12	0.097	0.108	11	0.119	0.108	9.7
111Cd	0.112	4.8	3.8	23	3.5	3.7	5.6	3.1	2.7	14
118Sn	0.023	1.1	0.880	22	0.583	0.568	2.6	0.446	0.388	14
121Sb	0.004	0.131	0.131	0.0	0.082	0.086	4.8	0.058	0.075	31
137Ba	0.060	137	131	4.5	83	91	9.2	91	82	10
202Hg	0.027	0.056	0.063	-	0.074	0.102	-	0.037	0.056	-
205Tl	0.001	0.114	0.107	6.3	0.150	0.173	14	0.091	0.098	7.4
208Pb	0.003	0.796	0.730	8.7	0.581	0.615	5.7	0.758	0.597	24
238U	0.001	0.131	0.115	13	0.097	0.127	27	0.105	0.080	27

Notes:

- ppm = parts per million
- RPD = relative percent difference
- DL = detection limit
- < = less than detection limit
- % = percent

Data Quality Objectives:

Laboratory Duplicates - RPD ≤40% for all elements, except Ca and Sr, which are ≤60%
Minimum DQOs apply to individual samples at concentrations above 10x DL

Teck Coal Limited
Tissue QA/QC Accuracy and Precision Results

Parameter	DL (ppm)	Certified Conc. (ppm)	01			02		
			Mean Estimated Conc. (ppm)	Accuracy (%)	Precision RSD (%)	Mean Estimated Conc. (ppm)	Accuracy (%)	Precision RSD (%)
7Li	0.028	1.21	1.3	104	4.3	1.1	93	4.0
11B	0.130	4.5	4.5	100	2.4	4.5	101	6.0
23Na	6.1	14,000	14,743	105	10	13,478	96	4.2
24Mg	0.147	910	957	105	5.9	905	99	2.6
27Al	0.078	197.2	180	92	5.8	212	107	3.6
31P	85	8,000	8,273	103	6.2	7,728	97	4.6
39K	5.8	15,500	16,804	108	7.7	15,351	99	6.3
44Ca	10	2,360	2,431	103	7.0	2,266	96	1.7
49Ti	0.001	12.24	13	106	19	14	111	17
51V	0.041	1.57	1.7	108	4.2	1.6	102	8.8
52Cr	0.038	1.87	1.9	104	2.8	1.9	103	4.4
55Mn	0.009	3.17	3.3	104	8.8	3.4	108	5.3
57Fe	0.936	343	365	106	2.0	347	101	2.5
59Co	0.029	0.25	0.279	112	6.1	0.251	101	7.6
60Ni	0.057	1.34	1.5	109	6.1	1.4	108	6.2
63Cu	0.030	15.7	16	103	5.2	16	99	3.5
66Zn	0.199	51.6	53	102	6.2	53	103	5.0
75As	0.318	6.87	7.3	106	5.9	7.0	102	3.7
77Se	0.410	3.45	3.4	99	9.1	3.7	106	4.2
88Sr	0.002	10.1	11	109	6.4	10	100	5.0
95Mo	0.001	0.29	0.318	110	13	0.284	98	4.7
107Ag	0.001	0.0252	0.026	102	15	0.030	121	12
111Cd	0.112	0.299	0.359	120	12	0.334	112	7.9
118Sn	0.023	0.061	0.068	111	9.2	0.062	102	12
121Sb	0.004	0.011	0.010	91	0.0	0.010	88	6.0
137Ba	0.060	8.6	8.7	102	7.2	9.3	108	13
202Hg	0.027	0.412	0.413	100	10	0.469	114	7.5
205Tl	0.001	0.0013	-	-	-	-	-	-
208Pb	0.003	0.404	0.451	112	8.5	0.427	106	12
238U	0.001	0.05	0.054	108	5.6	0.052	105	11

Notes:

ppm = parts per million; % = percent; DL = detection limit; RSD = relative standard deviation

Data Quality Objectives:

Accuracy: DQO of 60 - 140% of the certified values for B, Ti, Ag, Sn, Sb, and Ba.

Accuracy: DQO of 90 - 110% of the certified values for Se.

Accuracy: DQO of 70 - 130% of the certified values for all other elements provided.

Precision: DQO of ≤20% for all elements.

DORM-4 used for all parameters except B, Ti, Sb, Ba, and Al where NIST-1566b was used.

Tl certified concentration from NIST-2976.

Accuracy and precision for Tl are not reported as the certified concentration is too close to the reportable detection limit.

Teck Coal Limited
Tissue QA/QC Accuracy and Precision Results

Parameter	DL (ppm)	Certified Conc. (ppm)	03			04		
			Mean Estimated Conc. (ppm)	Accuracy (%)	Precision RSD (%)	Mean Estimated Conc. (ppm)	Accuracy (%)	Precision RSD (%)
7Li	0.028	1.21	1.1	91	6.4	1.0	86	5.9
11B	0.130	4.5	3.9	86	6.5	4.0	90	5.1
23Na	6.1	14,000	13,028	93	5.0	13,017	93	6.8
24Mg	0.147	910	869	96	7.6	821	90	1.9
27Al	0.078	197.2	165	84	5.6	160	81	4.1
31P	85	8,000	7,919	99	8.7	7,184	90	3.6
39K	5.8	15,500	15,609	101	6.3	14,224	92	5.8
44Ca	10	2,360	2,307	98	10	2,098	89	4.9
49Ti	0.001	12.24	11	92	16	11	94	16
51V	0.041	1.57	1.6	102	9.9	1.7	108	13
52Cr	0.038	1.87	1.9	100	7.2	1.8	94	8.6
55Mn	0.009	3.17	3.1	98	13	3.0	94	6.0
57Fe	0.936	343	337	98	6.9	312	91	4.7
59Co	0.029	0.25	0.248	99	12	0.223	89	8.0
60Ni	0.057	1.34	1.3	96	8.6	1.3	98	6.3
63Cu	0.030	15.7	16	99	3.5	14	92	6.2
66Zn	0.199	51.6	50	97	7.1	47	92	3.2
75As	0.318	6.87	6.7	98	5.4	6.5	95	3.2
77Se	0.410	3.45	3.5	103	5.5	3.6	105	12
88Sr	0.002	10.1	10	99	9.6	9.6	95	4.5
95Mo	0.001	0.29	0.281	97	6.9	0.274	94	8.2
107Ag	0.001	0.0252	0.027	107	13	0.024	95	19
111Cd	0.112	0.299	0.368	123	8.7	0.299	100	17
118Sn	0.023	0.061	0.067	110	16	0.068	112	9.7
121Sb	0.004	0.011	0.012	109	5.9	0.009	80	15
137Ba	0.060	8.6	7.7	90	7.6	7.6	88	3.1
202Hg	0.027	0.412	0.377	92	5.9	0.433	105	5.3
205Tl	0.001	0.0013	-	-	-	-	-	-
208Pb	0.003	0.404	0.390	96	9.9	0.443	110	16
238U	0.001	0.05	0.050	100	13	0.047	93	4.2

Notes:

ppm = parts per million; % = percent; DL = detection limit; RSD = relative standard deviation

Data Quality Objectives:

Accuracy: DQO of 60 - 140% of the certified values for B, Ti, Ag, Sn, Sb, and Ba.

Accuracy: DQO of 90 - 110% of the certified values for Se.

Accuracy: DQO of 70 - 130% of the certified values for all other elements provided.

Precision: DQO of ≤20% for all elements.

DORM-4 used for all parameters except B, Ti, Sb, Ba, and Al where NIST-1566b was used.

Tl certified concentration from NIST-2976.

Accuracy and precision for Tl are not reported as the certified concentration is too close to the reportable detection limit.

Teck Coal Limited
Sample Group Information

Sample Group ID	Client ID	Lab ID	Date of Analysis		
01	RG_ERCKMD_INV-1_2022-11-N	066	21 Nov 2022		
	RG_ERCKMD_INV-2_2022-11-N	067			
	RG_ERCKMD_INV-3_2022-11-N	068			
	RG_ERCKMD_INV-4_2022-11-N	069			
	RG_ERCKMD_INV-5_2022-11-N	070			
	RG_ALUSM_INV-1_2022-11_N	071			
	RG_ALUSM_INV-2_2022-11_N	072			
	RG_ALUSM_INV-3_2022-11_N	073			
	RG_GATE_INV-1_2022-11_N	074			
	RG_GATE_INV-2_2022-11_N	075			
	RG_GATE_INV-3_2022-11_N	076			
	RG_BOCK_INVOLI-1_2022-11_N	077			
	RG_BOCK_INVOLI-2_2022-11_N	078			
	RG_BOCK_INVOLI-3_2022-11_N	079			
	RG_BOCK_COMPOLI-1_2022-11_N	080			
	RG_BOCK_COMPOLI-2_2022-11_N	081			
	02	RG_BOCK_COMPNOLI-1_2022-11_N		082	21 Nov 2022
		RG_BOCK_COMPNOLI-2_2022-11_N		083	
		RG_BOCKRD_INV-1_2022-11_N		084	
		RG_BOCKRD_INV-2_2022-11_N		085	
		RG_BOCKRD_INV-3_2022-11_N		086	
RG_ERCKDT_INV-1_2022-11_N		087			
RG_ERCKDT_INV-2_2022-11_N		088			
RG_ERCKDT_INV-3_2022-11_N		089			
RG_ERCKDT_INV-4_2022-11_N		090			
RG_ERCKDT_INV-5_2022-11_N		091			
RG_ERCKDT_INV-6_2022-11_N		092			
RG_ERCKUT_INV-1_2022-11_N		093			
RG_ERCKUT_INV-2_2022-11_N		094			
RG_ERCKUT_INV-3_2022-11_N		095			
RG_ERCKUT_INV-4_2022-11_N		096			
RG_ERCKUT_INV-5_2022-11_N		097			
03		RG_MI3_INV-1_2022-11_N	098	21 Nov 2022	
	RG_MI3_INV-2_2022-11_N	099			
	RG_MI3_INV-3_2022-11_N	100			
	RG_ERCK_INV-1_2022-11_N	101			
	RG_ERCK_INV-2_2022-11_N	102			
	RG_ERCK_INV-3_2022-11_N	103			
	RG_ERCKUC_INV-1_2022-11_N	104			
	RG_ERCKUC_INV-2_2022-11_N	105			

Teck Coal Limited
Sample Group Information

Sample Group ID	Client ID	Lab ID	Date of Analysis
03	RG_ERCKUC_INV-3_2022-11_N	106	21 Nov 2022
	RG_MICOMP_INV-1_2022-11_N	107	
04	RG_MICOMP_INV-2_2022-11_N	108	21 Nov 2022
	RG_MICOMP_INV-3_2022-11_N	109	
	RG_MICOMP_INV-4_2022-11_N	110	
	RG_MICOMP_INV-5_2022-11_N	111	
	RG_MIDBO_INV-1_2022-11_N	112	
	RG_MIDBO_INV-2_2022-11_N	113	
	RG_MIDBO_INV-3_2022-11_N	114	
	RG_MIDER_INV-1_2022-11_N	115	
	RG_MIDER_INV-2_2022-11_N	116	
	RG_MIDER_INV-3_2022-11_N	117	
	RG_MIDGA_INV-1_2022-11_N	118	
	RG_MIDGA_INV-2_2022-11_N	119	
	RG_MIDGA_INV-3_2022-11_N	120	
	RG_GATEDP_INV-1_2022-11_N	121	

COC ID: EVO_LAEMP_NOV		TURNAROUND TIME:		RUSH:	
PROJECT/CLIENT INFO		LABORATORY		OTHER INFO	
Facility Name / Job#	Regional effects program	Lab Name	TrichAnalytics Inc.	Report Format / Distribution	Excel PDF EDD
Project Manager	Mike Pope	Lab Contact	Jennie Christensen	Email 1:	mike.pope@teck.com X X X
Email	mike.pope@teck.com	Email	jennie.christensen@trichanalytics	Email 2:	jessica.Ritz@teck.com X X X
Address	421 Pine Avenue	Address	207-1753 Seam Heights	Email 3:	teckcoal@equisonline.com X X X
City	Sparwood BC	City	Saanichton BC	Email 4:	AquaSciLab@teck.com X X X
Postal Code	V0B 2G0 Canada	Postal Code	V8M 0B3 Canada	Email 5:	robin.valleau@minnow.ca X X X
Phone Number	250-425-8202	Phone Number		Email 6:	hillary.gunn-austin@minnow.ca X X X
		ANALYSIS REQUESTED		PO number	
				VPO00847031	

SAMPLE DETAILS		ANALYSIS		ACCEPTED BY/AFFILIATION		DATE/TIME						
Sample ID	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	Tissue type	Tissue Species	Sample Structure	Number of Containers	Metals in Biotra by CRC ICPMS (wet and dry)	Mercury in Biotra by CVAAS (wet, dry & routine)	Moisture Content by Gravimetry
66	RG_ERCKMD_INV-1_2022-11-N ✓	TA	N	10/31/2022	9:00	INV	Composite	Composite	1	X	X	X
67	RG_ERCKMD_INV-2_2022-11-N ✓	TA	N	10/31/2022	10:00	INV	Composite	Composite	1	X	X	X
68	RG_ERCKMD_INV-3_2022-11-N ✓	TA	N	10/31/2022	11:00	INV	Composite	Composite	1	X	X	X
69	RG_ERCKMD_INV-4_2022-11-N ✓	TA	N	10/31/2022	12:00	INV	Composite	Composite	1	X	X	X
70	RG_ERCKMD_INV-5_2022-11-N ✓	TA	N	10/31/2022	13:00	INV	Composite	Composite	1	X	X	X
71	RG_ERCKMD_INV-1_2022-11-N *	TA	N	10/31/2022	14:00	INV	Composite	Composite	1	X	X	X
72	RG_ALUSM_INV-1_2022-11-N /	TA	N	11/3/2022	14:00	INV	Composite	Composite	1	X	X	X
73	RG_ALUSM_INV-2_2022-11-N /	TA	N	11/3/2022	15:00	INV	Composite	Composite	1	X	X	X
74	RG_ALUSM_INV-3_2022-11-N /	TA	N	11/3/2022	16:00	INV	Composite	Composite	1	X	X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS		RELINQUISHED BY/AFFILIATION		DATE/TIME	
* Sample IDs the same as Trach ID # 066. No extra samples were received. aw 10 Nov 2022		Alex McClymont		November 9, 2022	
		Genevieve LaBine		November 9, 2022	
		Chunmin Li		November 9, 2022	
		10 Nov 2022		November 9, 2022	
		@ 0:6:15		November 9, 2022	

SERVICE REQUEST (rush - subject to availability)		SAMPLER'S INFO	
Regular (default)	X	Sampler's Name	Alex McClymont
Priority (2-3 business days) - 50% surcharge		Mobile #	780-293-6750
Emergency (1 Business Day) - 100% surcharge		Sampler's Signature	
For Emergency <1 Day, ASAP or Weekend - Contact ALS		Date/Time	November 9, 2022

(Project # 2022-432)

Teck

COC ID: EVO_LAEMP_JULY		TURNAROUND TIME:		RUSH:									
PROJECT/CLIENT INFO		LABORATORY		OTHER INFO									
Facility Name / Job#	Regional Aquatic Effects	Lab Name	TrichAnalytics Inc.	Report Format / Distribution	Excel PDF EDD								
Project Manager	Mike Pope	Lab Contact	Jemie Christensen	Email 1:	mike.pope@teck.com X X X								
Email	giovanna.diaz@teck.com	Email	jemie.christensen@trichanalytics	Email 2:	jessica.riz@teck.com X X X								
Address	421 Pine Ave	Address	207-1753 Sean Heights	Email 3:	teckcoast@equisonline.com X X X								
City	Sparwood	City	Saanichton	Email 4:	AquaSciLab@teck.com X X X								
Postal Code	V0B 2G0	Province	BC	Email 5:	robin.valleau@mimnow.ca X X X								
Phone Number	250-425-8449	Country	Canada	Email 6:	hillary.quinn-austin@mimnow.ca X X X								
		Postal Code	V8M 0B3	PO number	VPO00847031								
		Phone Number											
SAMPLE DETAILS													
Sample ID	Sample Location (sys_loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	Tissue type	Tissue Species	Sample Structure	ANALYSIS	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME	
045	RG_GATE_INV-1_2022-11_N ✓	TA	N	11/3/2022	9:00	INV	Composite	Composite	Number of Containers	November 9, 2022	Generic LaSalle	November 9, 2022	
046	RG_GATE_INV-2_2022-11_N ✓	TA	N	11/3/2022	10:00	INV	Composite	Composite	Metals in Biota by CRC (ICPMS (wet and dry)	November 9, 2022	Generic LaSalle	November 9, 2022	
047	RG_GATE_INV-3_2022-11_N ✓	TA	N	11/3/2022	11:00	INV	Composite	Composite	Mercury in Biota by CVAAS (wet, dry & routine)	November 9, 2022	Generic LaSalle	November 9, 2022	
048	RG_BOCK_INVOLI-1_2022-11_N ✓	TA	N	11/3/2022	12:00	INVOLI	Oligochaete	Oligochaete	Moisture Content by Gravimetry	November 9, 2022	Generic LaSalle	November 9, 2022	
049	RG_BOCK_INVOLI-2_2022-11_N ✓	TA	N	11/3/2022	13:00	INVOLI	Oligochaete	Oligochaete		November 9, 2022	Generic LaSalle	November 9, 2022	
050	RG_BOCK_INVOLI-3_2022-11_N ✓	TA	N	11/3/2022	14:00	INVOLI	Oligochaete	Oligochaete		November 9, 2022	Generic LaSalle	November 9, 2022	
051	RG_BOCK_COMPOLI-1_2022-11_N ✓	TA	N	11/3/2022	12:00	COMP	Composite	Composite		November 9, 2022	Generic LaSalle	November 9, 2022	
052	RG_BOCK_COMPOLI-2_2022-11_N ✓	TA	N	11/3/2022	13:00	COMP	Composite	Composite		November 9, 2022	Generic LaSalle	November 9, 2022	
053	RG_BOCK_COMPOLI-1_2022-11_N ✓	TA	N	11/3/2022	12:00	COMP	Composite	Composite		November 9, 2022	Generic LaSalle	November 9, 2022	
054	RG_BOCK_COMPOLI-2_2022-11_N ✓	TA	N	11/3/2022	13:00	COMP	Composite	Composite		November 9, 2022	Generic LaSalle	November 9, 2022	
ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS													
RELINQUISHED BY/AFFILIATION						Alex McClymont				DATE/TIME		DATE/TIME	
SERVICE REQUEST (rush - subject to availability)						Regular (default) X		Priority (2-3 business days) - 50% surcharge		Emergency (1 Business Day) - 100% surcharge		For Emergency <1 Day, ASAP or Weekend - Contact ALS	
SAMPLER INFO						Sampler's Name		Alex McClymont		Mobile #		780-293-6750	
SAMPLER SIGNATURE						Sampler's Signature				Date/Time		November 9, 2022	

(Project #: 2022-432)

10 Nov 2022
 @ 06:15

Teck

COC ID: EVO_LAEMP_JULY		TURNAROUND TIME:		RUSH:	
PROJECT/CLIENT INFO		LABORATORY		OTHER INFO	
Facility Name / Job# Regional Aquatic Effects		Lab Name: TrichAnalytics Inc.		Report Format / Distribution	
Project Manager: Mike Pope		Lab Contact: Jennie Christensen		Email 1: mike.pope@teck.com	
Email: govanna.diaz@teck.com		Email: jennie.christensen@trichanalytics.com		Email 2: jessica.fitz@teck.com	
Address: 421 Pine Ave		Address: 207-1753 Seam Heights		Email 3: teckool@equationflow.com	
City: Sparwood		City: Saanichton		Email 4: Agood@teck.com	
Postal Code: V0B 2G0		Postal Code: V8M 0B3		Email 5: robin.vakleau@minnow.ca	
Province: BC		Province: BC		Email 6: ryan.gerrard@minnow.ca	
Country: Canada		Country: Canada		PO number: VPO00847031	
Phone Number: 250-425-8449		Phone Number:		VPO00847031	

Sample ID	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	Tissue type	Tissue Species	Sample Structure	ANALYSIS REQUESTED									
									Number of Containers	Meths in Bots by CRC (CPMS (wet and dry))	Mercury in Bots by CVAAS (wet, dry & routine)	Moisture Content by Gravimetry	F	N	F	N		
84	RG_BOCKRD_INV-1_2022-11_N ✓	TA	N	11/3/2022	13:15	INV	Composite	Composite	1	X	X	X						
85	RG_BOCKRD_INV-2_2022-11_N ✓	TA	N	11/3/2022	14:15	INV	Composite	Composite	1	X	X	X						
86	RG_BOCKRD_INV-3_2022-11_N ✓	TA	N	11/3/2022	15:15	INV	Composite	Composite	1	X	X	X						
87	RG_ERCKDT_INV-1_2022-11_N ✓	TA	N	10/31/2022	8:48	INV	Composite	Composite	1	X	X	X						
88	RG_ERCKDT_INV-2_2022-11_N ✓	TA	N	10/31/2022	9:00	INV	Composite	Composite	1	X	X	X						
89	RG_ERCKDT_INV-3_2022-11_N ✓	TA	N	10/31/2022	9:15	INV	Composite	Composite	1	X	X	X						
90	RG_ERCKDT_INV-4_2022-11_N ✓	TA	N	10/31/2022	9:30	INV	Composite	Composite	1	X	X	X						
91	RG_ERCKDT_INV-5_2022-11_N ✓	TA	N	10/31/2022	9:48	INV	Composite	Composite	1	X	X	X						
92	RG_ERCKDT_INV-6_2022-11_N ✓	TA	N	10/31/2022	10:00	INV	Composite	Composite	1	X	X	X						

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
	Alex McClaymont	November 9, 2022	Gerlene Colburn	November 9, 2022
			Christina F.B.	10 Nov 2022
			@06.15	

SERVICE REQUEST (rush - subject to availability)		Sampler's Name		Mobile #	
Regular (default) X		Alex McClaymont		780-293-6750	
Priority (2-3 business days) - 50% surcharge					
Emergency (1 Business Day) - 100% surcharge					
For Emergency <1 Day, ASAP or Weekend - Contact ALS					

(Project #: 2022-432)

[Signature]

November 9, 2022

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COC ID: EVO_LAEMP_JULY		TURNAROUND TIME:		RUSH:	
PROJECT/CLIENT INFO					
Facility Name / Job# Regional Aquatic Effects					
Project Manager Mike Pope					
Email giovanna.diaz@teck.com					
Address 421 Pine Ave					
City Sparwood		Province BC		Report Format / Distribution	
Postal Code V0B 2G0		Country Canada		Email 1: mike.pope@teck.com	
Phone Number 250-425-8449				Email 2: jessica.ritzi@teck.com	
				Email 3: teckco@tequilashine.com	
				Email 4: Aquasolab@teck.com	
				Email 5: robin.valou@teck.com	
				Email 6: helen.greene@teck.com	
				PO number	
OTHER INFO					
Excel					
PDF					
EDD					

Sample ID	Sample Location (sys_loc_code)	Field Matrix	Hazardous Material (Yes/No)	Time (24hr)	Tissue type	Tissue Species	Sample Structure	ANALYSIS REQUESTED										
								PH	F	N	F	N	F	N	F	N		
03	RG_ERCK_INV-1_2022-11_N	TA	N	14:00	INV	Composite	Composite	1	X	X	X	X						
04	RG_ERCKUC_INV-1_2022-11_N	TA	N	11:45	INV	Composite	Composite	1	X	X	X	X						
05	RG_ERCKUC_INV-1_2022-11_N	TA	N	11:30	INV	Composite	Composite	1	X	X	X	X						
06	RG_ERCKUC_INV-1_2022-11_N	TA	N	11:45	INV	Composite	Composite	1	X	X	X	X						
07	RG_MICOMP_INV-1_2022-11_N	TA	N	8:00	INV	Composite	Composite	1	X	X	X	X						
08	RG_MICOMP_INV-1_2022-11_N	TA	N	8:15	INV	Composite	Composite	1	X	X	X	X						
09	RG_MICOMP_INV-1_2022-11_N	TA	N	8:30	INV	Composite	Composite	1	X	X	X	X						
10	RG_MICOMP_INV-1_2022-11_N	TA	N	8:45	INV	Composite	Composite	1	X	X	X	X						
11	RG_MICOMP_INV-1_2022-11_N	TA	N	9:00	INV	Composite	Composite	1	X	X	X	X						

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS		RELINQUISHED BY/AFFILIATION		ACCEPTED BY/AFFILIATION		DATE/TIME	
		Alex McClymont		November 9, 2022		November 9, 2022	
				Greene Lab Inc Greene Lab Inc 10 Nov 2022 @06:15		(Inpct # 2022-432)	

SERVICE REQUEST (rush - subject to availability)		Sampler's Name		Mobile #	
Regular (default) X		Alex McClymont		780-293-6750	
Priority (2-3 business days) - 50% surcharge		Sampler's Signature		Date/Time	
Emergency (1 Business Day) - 100% surcharge				November 9, 2022	
For Emergency <1 Day, ASAP or Weekend - Contact ALS					



TrichAnalytics Inc.

Tissue Microchemistry Analysis Report

Client: Mike Pope Project Manager Teck Coal Limited	Date Received: 06 Dec 2022
Phone: 250-425-8202	Date of Analysis: 07 Dec 2022
Email: mike.pope@teck.com; aquascilab@teck.com; jessica.ritz@teck.com; teckcoal@equisonline.com; robin.valleau@minnow.ca; hillary.quinn-austin@minnow.ca	Final Report Date: 08 Dec 2022
	Project No.: 2022-444
	Method No.: MET-002.06

Client Project: EVO_LAEMP_DEC Regional Effects Program (PO 847031)

Analytical Request: Composite Benthic Invertebrate Tissue Microchemistry (total metals & moisture) - 46 samples.
See chain of custody form provided for sample identification numbers.

Notes:

Analytical results are expressed in parts per million (ppm) dry weight (equivalent to mg/kg).
Samples quantified using DORM-4, NIST-1566b, and NIST-2976 certified reference standards.
Aluminum concentrations above 1,000 ppm are outside linear range of the calibration curve.
RPD values calculated according to the British Columbia Environmental Laboratory Manual (2020) criteria.
Client specific DQO for Selenium accuracy is 90-110% of the certified value; result achieved 96% (ranging from 91-99%).

This report provides the analytical results only for tissue samples noted above as received from the Client.

Reviewed and Approved by Jennie Christensen, PhD, RPBio

08 Dec 2022

Date

[The analytical report shall not be reproduced except in full under the expressed written consent of TrichAnalytics Inc.]

TrichAnalytics Inc.
207-1753 Sean Heights
Saanichton, BC V8M 0B3
www.trichanalytics.com



CALA
Testing
Accreditation No. A4196

Teck Coal Limited
Tissue Analysis Results

			RG_ERCKMD_INV	RG_ERCKMD_INV	RG_ERCKMD_INV	RG_ERCKMD_INV	RG_ERCKMD_INV
Client ID			1_2022-12_N	2_2022-12_N	3_2022-12_N	4_2022-12_N	5_2022-12_N
Lab ID			001	002	003	004	005
Wet Weight (g)			0.2090	0.2606	0.3212	0.4120	0.7898
Dry Weight (g)			0.0498	0.0540	0.0553	0.0546	0.1555
Moisture (%)			76.2	79.3	82.8	86.7	80.3
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.023	0.077	2.0	0.922	1.3	1.7	1.9
11B	0.118	0.393	5.5	2.5	3.4	5.2	7.1
23Na	5.0	17	3,786	2,416	3,458	3,736	3,115
24Mg	0.087	0.290	2,805	2,256	3,049	3,815	2,658
27Al	0.072	0.240	3,089	798	1,182	1,512	2,458
31P	87	290	12,239	10,661	11,240	14,555	10,651
39K	6.9	23	8,790	7,027	7,932	9,340	8,384
44Ca	8.3	28	12,402	10,485	15,674	11,346	8,791
49Ti	0.656	2.2	221	60	93	104	424
51V	0.056	0.187	5.6	1.7	2.9	3.5	5.8
52Cr	0.064	0.213	18	10	10	14	14
55Mn	0.021	0.070	348	271	484	768	254
57Fe	0.700	2.3	2,632	1,947	3,083	5,208	2,269
59Co	0.025	0.083	12	12	19	25	9.3
60Ni	0.098	0.327	37	30	35	47	34
63Cu	0.028	0.093	17	19	21	21	22
66Zn	0.238	0.793	227	202	227	280	281
75As	0.341	1.1	1.7	1.4	1.9	3.1	1.2
77Se	0.730	2.4	13	9.7	12	15	11
88Sr	0.003	0.010	19	10	15	17	17
95Mo	0.001	0.003	0.571	0.408	0.557	0.843	0.435
107Ag	0.001	0.003	0.068	0.068	0.068	0.076	0.073
111Cd	0.104	0.347	3.3	1.5	2.0	2.4	1.8
118Sn	0.017	0.057	0.682	0.883	0.927	0.924	0.713
121Sb	0.004	0.013	0.201	0.108	0.166	0.264	0.255
137Ba	0.447	1.5	139	52	79	96	124
202Hg	0.020	0.067	0.051	<0.020	0.046	0.074	0.055
205Tl	0.001	0.003	0.117	0.079	0.102	0.163	0.142
208Pb	0.001	0.003	1.2	0.579	1.0	1.4	1.3
238U	0.001	0.003	0.284	0.215	0.290	0.401	0.340

Notes:

- ppm = parts per million
- DL = detection limit
- LOQ = limit of quantitation
- < = less than detection limit
- g = grams
- % = percent

Teck Coal Limited
Tissue Analysis Results

			RG_ERCKUT_INV- 1_2022-12_N	RG_ERCKUT_INV- 2_2022-12_N	RG_ERCKUT_INV- 3_2022-12_N	RG_ERCKUT_INV- 4_2022-12_N	RG_ERCKUT_INV- 5_2022-12_N
Client ID							
Lab ID			006	007	008	009	010
Wet Weight (g)			0.1408	0.1998	0.3187	0.1418	0.2278
Dry Weight (g)			0.0283	0.0378	0.0484	0.0260	0.0445
Moisture (%)			79.9	81.1	84.8	81.7	80.5
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.023	0.077	0.777	0.672	0.742	0.672	0.466
11B	0.118	0.393	2.4	5.5	8.7	2.5	2.2
23Na	5.0	17	2,966	2,873	2,389	1,323	1,061
24Mg	0.087	0.290	3,220	2,335	2,912	2,719	2,058
27Al	0.072	0.240	288	520	664	809	847
31P	87	290	11,527	10,817	10,229	9,836	6,605
39K	6.9	23	5,545	7,269	6,755	4,221	3,517
44Ca	8.3	28	12,036	6,076	5,951	6,444	5,443
49Ti	0.656	2.2	16	36	51	59	45
51V	0.056	0.187	1.0	1.4	2.8	1.9	2.2
52Cr	0.064	0.213	11	12	11	15	11
55Mn	0.021	0.070	15	16	19	20	13
57Fe	0.700	2.3	294	347	404	483	410
59Co	0.025	0.083	0.472	0.651	0.423	0.759	0.482
60Ni	0.098	0.327	14	14	15	21	14
63Cu	0.028	0.093	19	18	25	22	15
66Zn	0.238	0.793	229	199	224	224	219
75As	0.341	1.1	<0.341	0.921	1.2	0.379	0.379
77Se	0.730	2.4	8.8	6.4	8.0	7.4	5.2
88Sr	0.003	0.010	9.3	5.4	6.4	5.6	4.2
95Mo	0.001	0.003	0.245	0.163	0.272	0.136	0.163
107Ag	0.001	0.003	0.079	0.060	0.053	0.076	0.053
111Cd	0.104	0.347	9.2	4.8	3.5	2.7	2.1
118Sn	0.017	0.057	0.741	0.804	0.601	0.810	0.491
121Sb	0.004	0.013	0.134	0.128	0.257	0.174	0.233
137Ba	0.447	1.5	29	25	32	22	20
202Hg	0.020	0.067	0.046	0.046	0.037	0.037	0.028
205Tl	0.001	0.003	0.024	0.021	0.030	0.034	0.033
208Pb	0.001	0.003	0.129	0.162	0.266	0.235	0.195
238U	0.001	0.003	0.353	0.187	0.259	0.181	0.203

Notes:

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Teck Coal Limited
Tissue Analysis Results

			RG_ERCKDT_INV-	RG_ERCKDT_INV-	RG_ERCKDT_INV-	RG_ERCKDT_INV-	RG_ERCKDT_INV-
Client ID			1_2022-12_N	2_2022-12_N	3_2022-12_N	4_2022-12_N	5_2022-12_N
Lab ID			011	012	013	014	015
Wet Weight (g)			0.1550	0.1487	0.3961	0.5436	0.1504
Dry Weight (g)			0.0383	0.0413	0.0870	0.1114	0.0351
Moisture (%)			75.3	72.2	78.0	79.5	76.7
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.023	0.077	1.4	0.993	1.0	0.822	0.571
11B	0.118	0.393	3.7	5.6	1.9	2.1	0.915
23Na	5.0	17	2,786	2,638	4,289	3,132	1,401
24Mg	0.087	0.290	2,087	2,875	2,058	1,692	1,633
27Al	0.072	0.240	2,309	1,035	600	623	500
31P	87	290	11,701	11,317	13,141	11,184	9,107
39K	6.9	23	9,906	8,278	10,580	8,080	4,946
44Ca	8.3	28	4,651	13,354	3,444	3,205	3,716
49Ti	0.656	2.2	167	76	48	43	40
51V	0.056	0.187	4.7	2.2	1.6	1.6	0.874
52Cr	0.064	0.213	39	12	8.6	13	8.9
55Mn	0.021	0.070	180	327	252	346	102
57Fe	0.700	2.3	1,999	1,786	1,680	1,074	702
59Co	0.025	0.083	12	18	18	22	4.8
60Ni	0.098	0.327	72	39	45	37	14
63Cu	0.028	0.093	18	17	19	13	12
66Zn	0.238	0.793	182	208	287	183	153
75As	0.341	1.1	2.0	2.1	1.4	1.2	0.596
77Se	0.730	2.4	9.3	12	18	17	8.8
88Sr	0.003	0.010	7.0	13	6.0	4.2	4.7
95Mo	0.001	0.003	0.734	0.571	0.897	0.598	0.326
107Ag	0.001	0.003	0.045	0.038	0.076	0.038	0.023
111Cd	0.104	0.347	1.7	2.0	8.6	4.7	1.3
118Sn	0.017	0.057	0.668	0.677	0.342	0.162	0.358
121Sb	0.004	0.013	0.139	0.269	0.181	0.134	0.049
137Ba	0.447	1.5	37	56	31	26	16
202Hg	0.020	0.067	<0.020	0.046	0.055	<0.020	<0.020
205Tl	0.001	0.003	0.088	0.072	0.099	0.080	0.041
208Pb	0.001	0.003	0.647	0.513	0.507	0.398	0.225
238U	0.001	0.003	0.181	0.305	0.332	0.188	0.072

Notes:

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Teck Coal Limited
Tissue Analysis Results

			RG_ERCKDT_INV-	RG_BOCKRD_INV-	RG_BOCKRD_INV-	RG_BOCKRD_INV-	RG_GATE_INV-
Client ID			6_2022-12_N	1_2022-12_N	2_2022-12_N	3_2022-12_N	1_2022-12_N
Lab ID			016	017	018	019	020
Wet Weight (g)			0.2329	0.2066	0.6985	0.3587	0.2900
Dry Weight (g)			0.0573	0.0569	0.1270	0.0761	0.0320
Moisture (%)			75.4	72.5	81.8	78.8	89.0
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.023	0.077	0.652	1.1	2.2	1.6	6.2
11B	0.118	0.393	1.3	1.6	18	5.3	12
23Na	5.0	17	1,759	6,539	11,472	5,959	14,787
24Mg	0.087	0.290	2,046	5,226	4,881	4,331	3,339
27Al	0.072	0.240	632	456	694	306	9,767
31P	87	290	10,316	17,663	16,632	14,770	10,913
39K	6.9	23	6,198	12,174	24,068	14,561	14,123
44Ca	8.3	28	4,132	23,161	17,249	10,812	30,477
49Ti	0.656	2.2	39	35	42	23	681
51V	0.056	0.187	1.3	1.4	2.6	1.2	21
52Cr	0.064	0.213	12	13	7.9	7.2	17
55Mn	0.021	0.070	123	27	63	34	86
57Fe	0.700	2.3	749	2,108	6,704	3,813	7,558
59Co	0.025	0.083	7.4	1.0	1.7	0.646	3.1
60Ni	0.098	0.327	24	26	100	29	66
63Cu	0.028	0.093	12	16	19	18	16
66Zn	0.238	0.793	124	273	284	301	206
75As	0.341	1.1	0.758	1.0	2.5	1.6	3.1
77Se	0.730	2.4	8.7	6.6	18	8.5	13
88Sr	0.003	0.010	4.8	96	252	408	278
95Mo	0.001	0.003	0.353	0.326	5.2	1.2	2.0
107Ag	0.001	0.003	0.030	0.030	0.057	0.057	0.151
111Cd	0.104	0.347	1.7	3.3	3.3	2.7	1.8
118Sn	0.017	0.057	0.321	0.321	0.238	0.610	1.3
121Sb	0.004	0.013	0.079	0.061	0.169	0.077	0.434
137Ba	0.447	1.5	15	4,962	34,567	40,404	33,586
202Hg	0.020	0.067	0.032	0.129	0.093	0.103	0.065
205Tl	0.001	0.003	0.050	0.038	0.077	0.042	0.214
208Pb	0.001	0.003	0.230	0.207	0.300	0.161	2.3
238U	0.001	0.003	0.091	0.144	0.894	0.275	0.606

Notes:

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- LOQ = limit of quantitation
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- % = percent

Teck Coal Limited
Tissue Analysis Results

			Client ID	RG_GATE_INV- 2_2022-12_N	RG_GATE_INV- 3_2022-12_N	RG_MIDER_INV- 1_2022-12_N	RG_MIDER_INV- 2_2022-12_N	RG_MIDER_INV- 3_2022-12_N
			Lab ID	021	022	023	024	025
			Wet Weight (g)	0.2215	0.2470	0.7687	0.3463	1.7737
			Dry Weight (g)	0.0428	0.0626	0.1200	0.0571	0.3434
			Moisture (%)	80.7	74.7	84.4	83.5	80.6
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.023	0.077	2.3	2.4	0.789	0.687	0.400	
11B	0.118	0.393	7.5	9.7	4.0	4.8	2.0	
23Na	5.0	17	5,957	3,457	5,017	5,841	6,969	
24Mg	0.087	0.290	4,796	3,593	2,098	1,698	1,546	
27Al	0.072	0.240	3,269	4,732	1,343	1,092	456	
31P	87	290	15,765	11,019	15,215	15,555	13,017	
39K	6.9	23	17,902	13,407	12,679	13,165	11,802	
44Ca	8.3	28	28,984	28,902	5,275	4,196	2,680	
49Ti	0.656	2.2	276	517	114	69	26	
51V	0.056	0.187	7.0	11	3.0	2.6	0.833	
52Cr	0.064	0.213	9.4	22	12	9.1	4.9	
55Mn	0.021	0.070	76	56	68	91	62	
57Fe	0.700	2.3	3,033	3,492	814	701	314	
59Co	0.025	0.083	1.7	2.8	8.3	7.7	2.5	
60Ni	0.098	0.327	71	73	23	21	9.2	
63Cu	0.028	0.093	19	17	18	14	12	
66Zn	0.238	0.793	332	249	302	220	126	
75As	0.341	1.1	2.0	3.4	2.3	2.8	1.1	
77Se	0.730	2.4	27	13	7.9	6.2	4.3	
88Sr	0.003	0.010	143	152	10	9.5	4.2	
95Mo	0.001	0.003	2.4	1.8	0.360	0.330	0.240	
107Ag	0.001	0.003	0.123	0.113	0.123	0.104	0.095	
111Cd	0.104	0.347	3.0	3.8	5.7	3.0	3.0	
118Sn	0.017	0.057	0.688	0.572	0.732	0.751	0.225	
121Sb	0.004	0.013	0.217	0.307	0.055	0.070	0.024	
137Ba	0.447	1.5	14,854	8,421	95	104	35	
202Hg	0.020	0.067	0.079	0.084	0.047	0.037	0.037	
205Tl	0.001	0.003	0.217	0.205	0.076	0.089	0.040	
208Pb	0.001	0.003	0.909	1.4	0.483	0.405	0.145	
238U	0.001	0.003	0.539	0.515	0.096	0.104	0.036	

Notes:

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- < = less than detection limit
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- % = percent

Teck Coal Limited
Tissue Analysis Results

			Client ID	RG_M13_INV- 1_2022-12_N	RG_M13_INV- 2_2022-12_N	RG_M13_INV- 3_2022-12_N	RG_ERCKUC_INV- 1_2022-12_N	RG_ERCKUC_INV- 2_2022-12_N
			Lab ID	026	027	028	029	030
			Wet Weight (g)	0.5916	0.8014	0.5420	0.1501	0.2645
			Dry Weight (g)	0.0875	0.2168	0.0990	0.0214	0.0487
			Moisture (%)	85.2	72.9	81.7	85.7	81.6
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.023	0.077	0.625	0.349	0.359	0.533	0.487	
11B	0.118	0.393	3.3	1.8	3.2	1.0	0.812	
23Na	5.0	17	6,167	4,756	6,783	1,892	1,816	
24Mg	0.087	0.290	1,477	1,093	1,415	1,991	1,774	
27Al	0.072	0.240	671	704	486	31	14	
31P	87	290	16,059	13,916	13,746	9,005	8,654	
39K	6.9	23	15,165	10,401	14,204	4,971	5,129	
44Ca	8.3	28	3,163	1,845	2,150	4,606	5,319	
49Ti	0.656	2.2	60	59	32	2.2	1.0	
51V	0.056	0.187	1.1	2.4	1.1	0.142	0.126	
52Cr	0.064	0.213	5.3	8.7	3.9	3.5	3.3	
55Mn	0.021	0.070	92	60	66	36	25	
57Fe	0.700	2.3	540	478	329	77	69	
59Co	0.025	0.083	1.5	0.737	0.692	1.4	1.0	
60Ni	0.098	0.327	10	10	7.7	6.5	5.3	
63Cu	0.028	0.093	12	17	11	13	13	
66Zn	0.238	0.793	182	209	136	169	128	
75As	0.341	1.1	2.1	0.789	1.6	<0.341	<0.341	
77Se	0.730	2.4	6.9	5.9	4.3	5.6	6.2	
88Sr	0.003	0.010	7.1	4.6	4.7	5.3	4.9	
95Mo	0.001	0.003	0.420	0.465	0.270	0.270	0.240	
107Ag	0.001	0.003	0.057	0.113	0.057	0.038	0.038	
111Cd	0.104	0.347	2.6	0.569	1.3	0.126	0.190	
118Sn	0.017	0.057	0.633	0.071	0.197	0.454	0.307	
121Sb	0.004	0.013	0.074	0.040	0.045	0.047	0.038	
137Ba	0.447	1.5	104	96	66	9.1	6.4	
202Hg	0.020	0.067	0.065	0.065	0.056	0.037	0.042	
205Tl	0.001	0.003	0.071	0.031	0.039	0.020	0.015	
208Pb	0.001	0.003	0.363	0.262	0.266	0.016	0.015	
238U	0.001	0.003	0.122	0.063	0.058	0.108	0.097	

Notes:

- ppm = parts per million
- DL = detection limit
- LOQ = limit of quantitation
- < = less than detection limit
- g = grams
- % = percent

Teck Coal Limited
Tissue Analysis Results

			RG_ERCKUC_INV- 3_2022-12_N	RG_ERCK_INV- 1_2022-12_N	RG_ERCK_INV- 2_2022-12_N	RG_ERCK_INV- 3_2022-12_N	RG_BOCK_INV- 1_2022-12_N
Client ID							
Lab ID			031	032	033	034	035
Wet Weight (g)			0.2568	0.3363	0.2552	0.2682	0.3441
Dry Weight (g)			0.0283	0.0583	0.0404	0.0487	0.0482
Moisture (%)			89.0	82.7	84.2	81.8	86.0
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.023	0.077	0.677	0.871	0.656	0.718	1.7
11B	0.118	0.393	1.3	1.2	1.7	1.3	3.8
23Na	5.0	17	1,884	4,672	2,608	3,626	21,644
24Mg	0.087	0.290	2,682	2,326	2,170	1,890	2,790
27Al	0.072	0.240	56	39	101	37	1,015
31P	87	290	8,655	18,703	11,876	11,985	14,617
39K	6.9	23	4,766	11,011	6,169	9,202	19,903
44Ca	8.3	28	8,205	8,748	7,003	8,852	13,348
49Ti	0.656	2.2	3.4	2.7	1.9	2.7	67
51V	0.056	0.187	0.373	0.236	0.232	0.164	2.9
52Cr	0.064	0.213	7.1	4.5	4.8	3.2	12
55Mn	0.021	0.070	40	72	50	39	44
57Fe	0.700	2.3	145	130	153	131	553
59Co	0.025	0.083	1.6	2.0	1.7	1.7	1.7
60Ni	0.098	0.327	13	11	12	9.1	27
63Cu	0.028	0.093	15	17	14	14	33
66Zn	0.238	0.793	154	344	191	211	170
75As	0.341	1.1	<0.341	<0.341	0.364	0.364	1.4
77Se	0.730	2.4	5.6	7.5	8.0	6.2	31
88Sr	0.003	0.010	8.7	8.2	8.3	8.0	27
95Mo	0.001	0.003	0.390	0.270	0.390	0.450	0.290
107Ag	0.001	0.003	0.038	0.095	0.066	0.047	0.161
111Cd	0.104	0.347	0.316	0.569	0.442	0.442	0.671
118Sn	0.017	0.057	0.875	0.483	0.562	0.441	0.376
121Sb	0.004	0.013	0.056	0.076	0.094	0.058	0.138
137Ba	0.447	1.5	18	17	14	16	660
202Hg	0.020	0.067	0.037	0.075	0.047	0.056	0.033
205Tl	0.001	0.003	0.032	0.027	0.032	0.022	0.184
208Pb	0.001	0.003	0.046	0.127	0.158	0.198	0.448
238U	0.001	0.003	0.176	0.086	0.174	0.117	0.146

Notes:

- ppm = parts per million
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- < = less than detection limit
- g = grams
- % = percent

Teck Coal Limited
Tissue Analysis Results

			RG_GATEDP_INV	RG_GATEDP_CO	RG_GATEDP_CO	RG_MICOMP_IN	RG_MICOMP_IN
Client ID			OLI-1_2022-12_N	MPOLI-1_2022-	MPNOLI-1_2022-	V-1_2022-12_N	V-2_2022-12_N
Lab ID			036	037	038	039	040
Wet Weight (g)			0.0951	0.0549	0.1086	0.6054	0.9502
Dry Weight (g)			0.0270	0.0096	0.0148	0.1017	0.1440
Moisture (%)			71.6	82.5	86.4	83.2	84.8
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.023	0.077	5.6	4.3	1.9	0.695	1.0
11B	0.118	0.393	14	13	4.8	2.3	40
23Na	5.0	17	4,003	5,379	1,888	6,557	5,745
24Mg	0.087	0.290	4,655	4,019	4,277	1,394	1,973
27Al	0.072	0.240	6,654	2,791	1,191	775	1,231
31P	87	290	13,038	12,634	8,787	13,501	12,549
39K	6.9	23	16,815	10,670	6,450	12,564	10,410
44Ca	8.3	28	59,584	41,807	17,204	1,921	7,523
49Ti	0.656	2.2	913	286	99	51	88
51V	0.056	0.187	20	6.2	2.6	1.8	2.0
52Cr	0.064	0.213	19	4.4	9.4	13	11
55Mn	0.021	0.070	62	40	30	101	97
57Fe	0.700	2.3	4,052	2,738	1,194	2,350	1,513
59Co	0.025	0.083	12	4.4	1.1	1.3	1.5
60Ni	0.098	0.327	67	22	17	18	19
63Cu	0.028	0.093	16	12	14	11	15
66Zn	0.238	0.793	237	171	158	190	181
75As	0.341	1.1	10	5.2	0.870	1.7	2.1
77Se	0.730	2.4	95	63	25	7.1	8.7
88Sr	0.003	0.010	155	135	37	4.2	17
95Mo	0.001	0.003	1.7	0.906	0.616	0.254	0.348
107Ag	0.001	0.003	0.170	0.123	0.047	0.076	0.132
111Cd	0.104	0.347	3.8	2.1	3.4	1.3	2.4
118Sn	0.017	0.057	1.5	0.893	1.1	0.298	0.400
121Sb	0.004	0.013	0.600	0.260	0.132	0.088	0.100
137Ba	0.447	1.5	9,088	8,760	1,324	80	149
202Hg	0.020	0.067	0.154	0.115	0.033	0.089	0.121
205Tl	0.001	0.003	0.248	0.116	0.039	0.027	0.046
208Pb	0.001	0.003	2.6	0.998	0.492	0.463	0.631
238U	0.001	0.003	1.0	0.586	0.781	0.057	0.141

Notes:

- ppm = parts per million
- DL = detection limit
- LOQ = limit of quantitation
- < = less than detection limit
- g = grams
- % = percent

Teck Coal Limited
Tissue Analysis Results

			RG_MICOMP_IN V-3_2022-12_N	RG_MICOMP_IN V-4_2022-12_N	RG_MICOMP_IN V-5_2022-12_N	RG_MIDGA_INV- 1_2022-12_N	RG_MIDGA_INV- 2_2022-12_N
Client ID							
Lab ID			041	042	043	044	045
Wet Weight (g)			0.5457	0.4650	0.9913	0.5900	0.6324
Dry Weight (g)			0.0703	0.0732	0.1216	0.0780	0.1061
Moisture (%)			87.1	84.3	87.7	86.8	83.2
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.023	0.077	0.622	0.690	0.769	0.588	0.475
11B	0.118	0.393	2.8	3.4	3.4	2.4	1.8
23Na	5.0	17	7,157	7,301	7,601	6,696	6,137
24Mg	0.087	0.290	1,310	1,552	1,393	2,004	1,679
27Al	0.072	0.240	328	295	410	509	373
31P	87	290	11,514	12,063	14,288	14,313	13,548
39K	6.9	23	9,526	12,248	12,177	11,727	11,690
44Ca	8.3	28	2,380	2,186	2,364	3,250	3,355
49Ti	0.656	2.2	22	22	28	33	21
51V	0.056	0.187	0.745	0.761	1.1	1.0	0.979
52Cr	0.064	0.213	5.1	4.4	2.7	6.4	7.4
55Mn	0.021	0.070	48	62	53	61	48
57Fe	0.700	2.3	381	397	503	802	550
59Co	0.025	0.083	0.597	0.749	0.747	2.1	0.805
60Ni	0.098	0.327	8.9	12	9.4	14	10
63Cu	0.028	0.093	10	12	11	13	11
66Zn	0.238	0.793	143	167	169	206	169
75As	0.341	1.1	1.9	2.2	1.8	2.5	1.5
77Se	0.730	2.4	5.9	8.7	9.9	11	9.5
88Sr	0.003	0.010	4.7	4.2	4.6	6.8	6.2
95Mo	0.001	0.003	0.290	0.254	0.254	0.326	0.290
107Ag	0.001	0.003	0.066	0.076	0.076	0.076	0.066
111Cd	0.104	0.347	1.3	1.5	1.1	2.1	1.0
118Sn	0.017	0.057	0.345	0.331	0.329	0.550	0.349
121Sb	0.004	0.013	0.037	0.043	0.059	0.052	0.041
137Ba	0.447	1.5	49	51	57	69	79
202Hg	0.020	0.067	0.071	0.077	0.055	0.066	0.055
205Tl	0.001	0.003	0.035	0.034	0.051	0.067	0.034
208Pb	0.001	0.003	0.196	0.210	0.285	0.345	0.316
238U	0.001	0.003	0.051	0.059	0.080	0.072	0.053

Notes:

- ppm = parts per million
- DL = detection limit
- LOQ = limit of quantitation
- < = less than detection limit
- g = grams
- % = percent

Teck Coal Limited
Tissue Analysis Results

		Client ID	RG_MIDGA_INV- 3_2022-12_N
		Lab ID	046
		Wet Weight (g)	0.2975
		Dry Weight (g)	0.0564
		Moisture (%)	81.0
Parameter	DL (ppm)	LOQ (ppm)	(ppm)
7Li	0.023	0.077	0.633
11B	0.118	0.393	2.0
23Na	5.0	17	5,601
24Mg	0.087	0.290	1,858
27Al	0.072	0.240	602
31P	87	290	15,391
39K	6.9	23	13,280
44Ca	8.3	28	3,264
49Ti	0.656	2.2	39
51V	0.056	0.187	1.5
52Cr	0.064	0.213	14
55Mn	0.021	0.070	65
57Fe	0.700	2.3	973
59Co	0.025	0.083	2.3
60Ni	0.098	0.327	29
63Cu	0.028	0.093	16
66Zn	0.238	0.793	291
75As	0.341	1.1	1.9
77Se	0.730	2.4	13
88Sr	0.003	0.010	7.3
95Mo	0.001	0.003	0.471
107Ag	0.001	0.003	0.088
111Cd	0.104	0.347	2.9
118Sn	0.017	0.057	1.1
121Sb	0.004	0.013	0.054
137Ba	0.447	1.5	129
202Hg	0.020	0.067	0.066
205Tl	0.001	0.003	0.061
208Pb	0.001	0.003	0.392
238U	0.001	0.003	0.075

Notes:

ppm = parts per million
DL = detection limit
LOQ = limit of quantitation
< = less than detection limit
g = grams
% = percent

Teck Coal Limited
Tissue QA/QC Relative Percent Difference Results

Client ID	RG_ERCKMD_INV-1_2022-12_N				RG_ERCKUT_INV-5_2022-12_N			RG_MI3_INV-1_2022-12_N		
	Lab ID	001			010			026		
Parameter	DL (ppm)	Sample (ppm)	Sample Duplicate (ppm)	RPD (%)	Sample (ppm)	Sample Duplicate (ppm)	RPD (%)	Sample (ppm)	Sample Duplicate (ppm)	RPD (%)
7Li	0.023	2.0	2.4	18	0.466	0.602	26	0.625	0.461	30
11B	0.118	5.5	7.4	30	2.2	2.8	24	3.3	2.6	24
23Na	5.0	3,786	3,881	2.5	1,061	1,169	9.7	6,167	6,525	5.6
24Mg	0.087	2,805	3,572	24	2,058	2,411	16	1,477	1,478	0.1
27Al	0.072	3,089	3,898	23	847	1,034	20	671	573	16
31P	87	12,239	14,418	16	6,605	7,643	15	16,059	16,565	3.1
39K	6.9	8,790	10,900	21	3,517	4,017	13	15,165	15,338	1.1
44Ca	8.3	12,402	13,262	6.7	5,443	5,955	9.0	3,163	3,473	9.3
49Ti	0.656	221	320	37	45	60	29	60	43	33
51V	0.056	5.6	7.6	30	2.2	3.0	31	1.1	1.3	17
52Cr	0.064	18	25	33	11	11	0.0	5.3	4.5	16
55Mn	0.021	348	463	28	13	15	14	92	94	2.2
57Fe	0.700	2,632	3,911	39	410	585	35	540	420	25
59Co	0.025	12	17	35	0.482	0.724	40	1.5	1.5	0.0
60Ni	0.098	37	53	36	14	19	30	10	8.7	14
63Cu	0.028	17	22	26	15	19	24	12	13	8.0
66Zn	0.238	227	268	17	219	169	26	182	210	14
75As	0.341	1.7	2.3	-	0.379	0.487	-	2.1	1.9	-
77Se	0.730	13	15	14	5.2	6.9	-	6.9	6.5	-
88Sr	0.003	19	23	19	4.2	4.6	9.1	7.1	6.6	7.3
95Mo	0.001	0.571	0.625	9.0	0.163	0.163	0.0	0.420	0.390	7.4
107Ag	0.001	0.068	0.091	29	0.053	0.076	36	0.057	0.076	29
111Cd	0.104	3.3	4.1	22	2.1	2.7	25	2.6	2.8	7.4
118Sn	0.017	0.682	0.740	8.2	0.491	0.607	21	0.633	0.606	4.4
121Sb	0.004	0.201	0.224	11	0.233	0.189	21	0.074	0.066	11
137Ba	0.447	139	178	25	20	21	4.9	104	99	4.9
202Hg	0.020	0.051	0.055	-	0.028	0.046	-	0.065	0.065	-
205Tl	0.001	0.117	0.165	34	0.033	0.040	19	0.071	0.065	8.8
208Pb	0.001	1.2	1.3	8.0	0.195	0.261	29	0.363	0.325	11
238U	0.001	0.284	0.409	36	0.203	0.241	17	0.122	0.090	30

Notes:

- ppm = parts per million
- RPD = relative percent difference
- DL = detection limit
- < = less than detection limit
- % = percent

Data Quality Objectives:

Laboratory Duplicates - RPD ≤40% for all elements, except Ca and Sr, which are ≤60%
Minimum DQOs apply to individual samples at concentrations above 10x DL

Teck Coal Limited
Tissue QA/QC Relative Percent Difference Results

Client ID		RG_BOCK_INV-1_2022-12_N			RG_MIDGA_INV-1_2022-12_N		
Lab ID		035			044		
Parameter	DL (ppm)	Sample (ppm)	Sample Duplicate (ppm)	RPD (%)	Sample (ppm)	Sample Duplicate (ppm)	RPD (%)
7Li	0.023	1.7	1.8	5.7	0.588	0.458	25
11B	0.118	3.8	4.7	21	2.4	2.0	18
23Na	5.0	21,644	21,850	0.9	6,696	4,891	31
24Mg	0.087	2,790	3,035	8.4	2,004	1,747	14
27Al	0.072	1,015	1,272	23	509	389	27
31P	87	14,617	14,771	1.0	14,313	11,071	26
39K	6.9	19,903	20,649	3.7	11,727	11,896	1.4
44Ca	8.3	13,348	14,213	6.3	3,250	3,213	1.1
49Ti	0.656	67	66	1.5	33	24	32
51V	0.056	2.9	3.7	24	1.0	0.852	16
52Cr	0.064	12	17	35	6.4	5.3	19
55Mn	0.021	44	54	20	61	46	28
57Fe	0.700	553	720	26	802	575	33
59Co	0.025	1.7	2.2	26	2.1	1.8	15
60Ni	0.098	27	36	29	14	11	24
63Cu	0.028	33	44	29	13	11	17
66Zn	0.238	170	185	8.5	206	192	7.0
75As	0.341	1.4	1.7	-	2.5	2.1	-
77Se	0.730	31	30	3.3	11	9.9	11
88Sr	0.003	27	32	17	6.8	5.7	18
95Mo	0.001	0.290	0.385	28	0.326	0.308	5.7
107Ag	0.001	0.161	0.198	21	0.076	0.076	0.0
111Cd	0.104	0.671	0.732	-	2.1	2.2	4.7
118Sn	0.017	0.376	0.556	39	0.550	0.481	13
121Sb	0.004	0.138	0.195	34	0.052	0.046	12
137Ba	0.447	660	710	7.3	69	60	14
202Hg	0.020	0.033	0.033	-	0.066	0.066	-
205Tl	0.001	0.184	0.192	4.3	0.067	0.059	13
208Pb	0.001	0.448	0.639	35	0.345	0.267	26
238U	0.001	0.146	0.195	29	0.072	0.063	13

Notes:

ppm = parts per million
 RPD = relative percent difference
 DL = detection limit
 < = less than detection limit
 % = percent

Data Quality Objectives:

Laboratory Duplicates - RPD ≤40% for all elements, except Ca and Sr, which are ≤60%
 Minimum DQOs apply to individual samples at concentrations above 10x DL

Teck Coal Limited
Tissue QA/QC Accuracy and Precision Results

Parameter	DL (ppm)	Certified Conc. (ppm)	01			02		
			Mean Estimated Conc. (ppm)	Accuracy (%)	Precision RSD (%)	Mean Estimated Conc. (ppm)	Accuracy (%)	Precision RSD (%)
7Li	0.023	1.21	1.2	96	7.7	1.2	98	7.1
11B	0.118	4.5	3.8	84	3.4	4.3	95	3.8
23Na	5.0	14,000	13,286	95	3.9	14,363	103	4.7
24Mg	0.087	910	897	98	3.2	927	102	4.3
27Al	0.072	197.2	173	88	7.9	182	92	5.9
31P	87	8,000	8,047	101	6.7	7,997	100	4.0
39K	6.9	15,500	15,127	98	3.9	16,421	106	6.2
44Ca	8.3	2,360	2,316	98	3.9	2,454	104	3.0
49Ti	0.656	12.24	9.0	73	11	12	98	0.0
51V	0.056	1.57	1.6	102	11	1.9	121	7.4
52Cr	0.064	1.87	1.9	100	4.8	1.9	103	6.8
55Mn	0.021	3.17	3.4	107	7.1	3.5	111	6.2
57Fe	0.700	343	347	101	4.3	373	109	5.2
59Co	0.025	0.25	0.243	97	2.5	0.281	112	6.6
60Ni	0.098	1.34	1.3	97	5.4	1.6	116	5.7
63Cu	0.028	15.7	15	97	5.5	16	103	6.8
66Zn	0.238	51.6	45	87	4.7	49	95	7.2
75As	0.341	6.87	6.5	95	6.1	7.0	102	4.8
77Se	0.730	3.45	3.4	98	14	3.2	91	5.5
88Sr	0.003	10.1	9.8	97	2.2	11	109	6.4
95Mo	0.001	0.29	0.253	87	9.1	0.276	95	9.1
107Ag	0.001	0.0252	0.025	98	14	0.025	101	16
111Cd	0.104	0.299	0.288	96	16	0.307	103	17
118Sn	0.017	0.061	0.060	99	15	0.070	115	15
121Sb	0.004	0.011	0.011	98	4.1	0.011	96	11
137Ba	0.447	8.6	7.5	88	5.0	7.9	91	5.4
202Hg	0.020	0.412	0.389	94	9.5	0.390	95	8.0
205Tl	0.001	0.0013	-	-	-	-	-	-
208Pb	0.001	0.404	0.362	90	14	0.503	124	15
238U	0.001	0.05	0.048	96	14	0.063	126	6.8

Notes:

ppm = parts per million; % = percent; DL = detection limit; RSD = relative standard deviation

Data Quality Objectives:

Accuracy: DQO of 60 - 140% of the certified values for B, Ti, Ag, Sn, Sb, and Ba.

Accuracy: DQO of 90 - 110% of the certified values for Se.

Accuracy: DQO of 70 - 130% of the certified values for all other elements provided.

Precision: DQO of ≤20% for all elements.

DORM-4 used for all parameters except B, Ti, Sb, Ba, and Al where NIST-1566b was used.

Tl certified concentration from NIST-2976.

Accuracy and precision for Tl are not reported as the certified concentration is too close to the reportable detection limit.

Teck Coal Limited
Tissue QA/QC Accuracy and Precision Results

Sample Group ID		03			
Parameter	DL (ppm)	Certified Conc. (ppm)	Mean Estimated Conc. (ppm)	Accuracy (%)	Precision RSD (%)
7Li	0.023	1.21	1.3	109	6.3
11B	0.118	4.5	4.4	98	3.6
23Na	5.0	14,000	14,093	101	2.4
24Mg	0.087	910	883	97	5.0
27Al	0.072	197.2	168	85	4.3
31P	87	8,000	7,685	96	4.1
39K	6.9	15,500	15,727	102	3.8
44Ca	8.3	2,360	2,449	104	5.2
49Ti	0.656	12.24	11	88	18
51V	0.056	1.57	1.6	99	15
52Cr	0.064	1.87	1.9	103	4.4
55Mn	0.021	3.17	3.3	104	5.7
57Fe	0.700	343	361	105	5.7
59Co	0.025	0.25	0.256	102	6.1
60Ni	0.098	1.34	1.3	100	8.5
63Cu	0.028	15.7	18	116	6.0
66Zn	0.238	51.6	54	105	4.3
75As	0.341	6.87	6.7	98	4.4
77Se	0.730	3.45	3.4	99	12
88Sr	0.003	10.1	11	104	9.2
95Mo	0.001	0.29	0.312	108	13
107Ag	0.001	0.0252	0.028	111	0.0
111Cd	0.104	0.299	0.328	110	6.5
118Sn	0.017	0.061	0.067	110	16
121Sb	0.004	0.011	0.008	75	18
137Ba	0.447	8.6	8.5	99	5.1
202Hg	0.020	0.412	0.451	110	9.2
205Tl	0.001	0.0013	-	-	-
208Pb	0.001	0.404	0.416	103	18
238U	0.001	0.05	0.049	98	11

Notes:

ppm = parts per million; % = percent; DL = detection limit; RSD = relative standard deviation

Data Quality Objectives:

Accuracy: DQO of 60 - 140% of the certified values for B, Ti, Ag, Sn, Sb, and Ba.

Accuracy: DQO of 90 - 110% of the certified values for Se.

Accuracy: DQO of 70 - 130% of the certified values for all other elements provided.

Precision: DQO of ≤20% for all elements.

DORM-4 used for all parameters except B, Ti, Sb, Ba, and Al where NIST-1566b was used.

Tl certified concentration from NIST-2976.

Accuracy and precision for Tl are not reported as the certified concentration is too close to the reportable detection limit.

Teck Coal Limited
Sample Group Information

Sample Group ID	Client ID	Lab ID	Date of Analysis
01	RG_ERCKMD_INV-1_2022-12_N	001	07 Dec 2022
	RG_ERCKMD_INV-2_2022-12_N	002	
	RG_ERCKMD_INV-3_2022-12_N	003	
	RG_ERCKMD_INV-4_2022-12_N	004	
	RG_ERCKMD_INV-5_2022-12_N	005	
	RG_ERCKUT_INV-1_2022-12_N	006	
	RG_ERCKUT_INV-2_2022-12_N	007	
	RG_ERCKUT_INV-3_2022-12_N	008	
	RG_ERCKUT_INV-4_2022-12_N	009	
	RG_ERCKUT_INV-5_2022-12_N	010	
	RG_ERCKDT_INV-1_2022-12_N	011	
	RG_ERCKDT_INV-2_2022-12_N	012	
	RG_ERCKDT_INV-3_2022-12_N	013	
	RG_ERCKDT_INV-4_2022-12_N	014	
	RG_ERCKDT_INV-5_2022-12_N	015	
	RG_ERCKDT_INV-6_2022-12_N	016	
	02	RG_BOCKRD_INV-1_2022-12_N	
RG_BOCKRD_INV-2_2022-12_N		018	
RG_BOCKRD_INV-3_2022-12_N		019	
RG_GATE_INV-1_2022-12_N		020	
RG_GATE_INV-2_2022-12_N		021	
RG_GATE_INV-3_2022-12_N		022	
RG_MIDER_INV-1_2022-12_N		023	
RG_MIDER_INV-2_2022-12_N		024	
RG_MIDER_INV-3_2022-12_N		025	
RG_MI3_INV-1_2022-12_N		026	
RG_MI3_INV-2_2022-12_N		027	
RG_MI3_INV-3_2022-12_N		028	
RG_ERCKUC_INV-1_2022-12_N		029	
RG_ERCKUC_INV-2_2022-12_N		030	
RG_ERCKUC_INV-3_2022-12_N		031	
RG_ERCK_INV-1_2022-12_N		032	
RG_ERCK_INV-2_2022-12_N		033	
RG_ERCK_INV-3_2022-12_N	034		
03	RG_BOCK_INV-1_2022-12_N	035	07 Dec 2022
	RG_GATEDP_INVOLI-1_2022-12_N	036	
	RG_GATEDP_COMPOLI-1_2022-12_N	037	
	RG_GATEDP_COMPNOLI-1_2022-12_N	038	
	RG_MICOMP_INV-1_2022-12_N	039	
	RG_MICOMP_INV-2_2022-12_N	040	

Teck Coal Limited
Sample Group Information

Sample Group ID	Client ID	Lab ID	Date of Analysis
03	RG_MICOMP_INV-3_2022-12_N	041	07 Dec 2022
	RG_MICOMP_INV-4_2022-12_N	042	
	RG_MICOMP_INV-5_2022-12_N	043	
	RG_MIDGA_INV-1_2022-12_N	044	
	RG_MIDGA_INV-2_2022-12_N	045	
	RG_MIDGA_INV-3_2022-12_N	046	

5
G02 06 Dec 2022

COC ID: EVO_LAEMP_DEC		TURNAROUND TIME:		RUSH: yes	
PROJECT/CLIENT INFO		LABORATORY		OTHER INFO	
Facility Name / Job#	Regional effects program	Lab Name	TrichAnalytics Inc.	Report Format / Distribution	Excel PDF EDD
Project Manager	Mike Pope	Lab Contact	Jennie Christensen	Email 1:	mike.pope@teck.com X X X
Email	mike.pope@teck.com	Email	jennie.christensen@trichanalytics	Email 2:	jessica.ritz@teck.com X X X
Address	421 Pine Avenue	Address	207-1755 Sean Heights	Email 3:	teckcoal@equisonline.com X X X
City	Sparwood	City	Saanichton	Email 4:	AquaSciLab@teck.com X X X
Postal Code	V0B 2G0	Province	BC	Email 5:	robin.valleau@minnow.ca X X X
Phone Number	250-425-8202	Country	Canada	Email 6:	hillary.quinn-austin@minnow.ca X X X

SAMPLE DETAILS		ANALYSIS REQUESTED		ANALYSIS		DATE/TIME		ACCEPTED BY/AFFILIATION		DATE/TIME		
Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	Tissue type	Tissue Species	Sample Structure	Number of Containers	ICPMS (wet and dry)	Mercury in Biota by CVAAS (wet, dry & routine)	Moisture Content by Gravimetry
RG_ERCKMD_INV-1_2022-12_N ✓	RG_ERCKMD	TA	N	11/28/2022	9:30	INV	Composite	Composite	1	X	X	X
RG_ERCKMD_INV-2_2022-12_N ✓	RG_ERCKMD	TA	N	11/28/2022	9:35	INV	Composite	Composite	1	X	X	X
RG_ERCKMD_INV-3_2022-12_N ✓	RG_ERCKMD	TA	N	11/28/2022	9:40	INV	Composite	Composite	1	X	X	X
RG_ERCKMD_INV-4_2022-12_N ✓	RG_ERCKMD	TA	N	11/28/2022	9:45	INV	Composite	Composite	1	X	X	X
RG_ERCKMD_INV-5_2022-12_N ✓	RG_ERCKMD	TA	N	11/28/2022	9:50	INV	Composite	Composite	1	X	X	X
RG_ERCKUT_INV-1_2022-12_N ✓	RG_ERCKUT	TA	N	11/29/2022	13:00	INV	Composite	Composite	1	X	X	X
RG_ERCKUT_INV-2_2022-12_N ✓	RG_ERCKUT	TA	N	11/29/2022	13:05	INV	Composite	Composite	1	X	X	X
RG_ERCKUT_INV-3_2022-12_N ✓	RG_ERCKUT	TA	N	11/29/2022	13:10	INV	Composite	Composite	1	X	X	X
RG_ERCKUT_INV-4_2022-12_N ✓	RG_ERCKUT	TA	N	11/29/2022	13:15	INV	Composite	Composite	1	X	X	X
RG_ERCKUT_INV-5_2022-12_N ✓	RG_ERCKUT	TA	N	11/29/2022	13:20	INV	Composite	Composite	1	X	X	X
ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS		RELINQUISHED BY/AFFILIATION		DATE/TIME		ACCEPTED BY/AFFILIATION		DATE/TIME		DATE/TIME		
		Robin Valleau/Minnow		December 2, 2022		Alex Ucode		06 Dec 2022 / 09:25				

SERVICE REQUEST (rush - subject to availability)		Mobile #	
Regular (default)	X	613-620-3778	
Priority (2-3 business days) - 50% surcharge			
Emergency (1 Business Day) - 100% surcharge			
For Emergency <1 Day, ASAP or Weekend - Contact ALS		Date/Time	
		December 2, 2022	

(Project #: 2022-444)

HOA

Teck

Teck

COC ID: **EVO_LAEMP_DEC**

TURNAROUND TIME:

RUSH: OTHER INFO

PROJECT/CLIENT INFO		LABORATORY		REPORT FORMAT / DISTRIBUTION	
Facility Name / Job#	Regional effects program	Lab Name	TeckAnalytics Inc.	Report Format	Excel
Project Manager	Mike Pope	Lab Contact	Jennie Christensen	Email 1:	mike.pope@teck.com
Email	mike.pope@teck.com	Email	jennie.christensen@teckanalytics.com	Email 2:	jessica.ritz@teck.com
Address	421 Pine Avenue	Address	207-1733 Seem Heights	Email 3:	teckmail@teck.com
City	Sparwood	City	Saanichton	Email 4:	Agus@teck.com
Postal Code	V0B 2G0	Province	BC	Email 5:	robin.valleau@minnow.ca
Phone Number	250-425-8202	Country	Canada	Email 6:	hillary.quinn@minnow.ca
		Postal Code	V8M 0B3	PO number	VPO000847031
		Phone Number			

LABORATORY: TeckAnalytics Inc. Lab Contact: Jennie Christensen. Address: 207-1733 Seem Heights. City: Saanichton, Province: BC, Country: Canada. Postal Code: V8M 0B3. Phone Number: [blank].

REPORT FORMAT / DISTRIBUTION: Report Format: Excel. Email 1: mike.pope@teck.com. Email 2: jessica.ritz@teck.com. Email 3: teckmail@teck.com. Email 4: Agus@teck.com. Email 5: robin.valleau@minnow.ca. Email 6: hillary.quinn@minnow.ca. PO number: VPO000847031.

TURNAROUND TIME: [blank]

RUSH: OTHER INFO: [blank]

Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	Tissue type	Tissue Species	Sample Structure	ANALYSIS		ACCEPTED BY/AFFILIATION	DATE/TIME
									Number of Containers	Mercury in Biotin by CVAAS (wet, dry & routine)		
113	RG_ERCKDIT_INV-1_2022-12_N /	TA	N	11/28/2022	12:20	INV	Composite	Composite	1	X	X	
112	RG_ERCKDIT_INV-2_2022-12_N /	TA	N	11/28/2022	12:25	INV	Composite	Composite	1	X	X	
113	RG_ERCKDIT_INV-3_2022-12_N /	TA	N	11/28/2022	12:30	INV	Composite	Composite	1	X	X	
114	RG_ERCKDIT_INV-4_2022-12_N /	TA	N	11/28/2022	12:35	INV	Composite	Composite	1	X	X	
115	RG_ERCKDIT_INV-5_2022-12_N /	TA	N	11/28/2022	12:40	INV	Composite	Composite	1	X	X	
116	RG_ERCKDIT_INV-6_2022-12_N /	TA	N	11/28/2022	12:45	INV	Composite	Composite	1	X	X	
117	RG_BOCKRD_INV-1_2022-12_N /	TA	N	11/29/2022	12:20	INV	Composite	Composite	1	X	X	
118	RG_BOCKRD_INV-2_2022-12_N /	TA	N	11/29/2022	12:25	INV	Composite	Composite	1	X	X	
119	RG_BOCKRD_INV-3_2022-12_N /	TA	N	11/29/2022	12:30	INV	Composite	Composite	1	X	X	

ANALYSIS: Number of Containers, Mercury in Biotin by CVAAS (wet, dry & routine), Moisture Content by Gravimetry.

ACCEPTED BY/AFFILIATION: December 2, 2022. DATE/TIME: December 2, 2022 / 04:27.

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS: [blank]

SERVICE REQUEST (rush - subject to availability): Regular (default) X, Priority (2-3 business days) - 50% surcharge, Emergency (1 Business Day) - 100% surcharge, For Emergency <1 Day, ASAP or Weekend - Contact ALS.

Project #: 2022-444

Mobile #: 613-620-3778

Date/Time: December 2, 2022

Signature: [Handwritten Signature]

Teck

5
602 06 Dec 2022

COC ID: **EVO_LAEMP_DEC**

TURNAROUND TIME:

LABORATORY

OTHER INFO

PROJECT/CLIENT INFO

Facility Name / Job# Regional effects program
 Project Manager Mike Pope
 Email mike.pope@teck.com
 Address 421 Pine Avenue

LABORATORY

Lab Name TrichAnalytics Inc.
 Lab Contact Jennie Christensen
 Email jennie.christensen@trichanalytics.com
 Address 207-1753 Sean Heights

REPORTING

Report Format / Distribution
 Email 1: mike.pope@teck.com
 Email 2: jessica.ritz@teck.com
 Email 3: teckcoal@equisonline.com
 Email 4: AquaSciLab@teck.com
 Email 5: robin.valleau@minnow.ca
 Email 6: hiliary.quinn-austing@minnow.ca

OTHER INFO

PO number **17000847031**

SAMPLE DETAILS

ANALYSIS REQUESTED

Filtered - F: Field, L: Lab, FL: Field & Lab, N: None

Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Date	Time (24hr)	Tissue type	Tissue Species	Sample Structure	Number of Containers	ICPMS in wet and dry	Mercury in Biota by CVAAS (wet, dry & routine)	Moisture Content by Gravimetry
020	RG_GATE_INV-1_2022-12_N ✓	TA	N	11/29/2022	13:45	INV	Composite	Composite	1	X	X	X
021	RG_GATE_INV-2_2022-12_N ✓	TA	N	11/29/2022	13:50	INV	Composite	Composite	1	X	X	X
022	RG_GATE_INV-3_2022-12_N ✓	TA	N	11/29/2022	13:55	INV	Composite	Composite	1	X	X	X
023	RG_MIDER_INV-1_2022-12_N ✓	TA	N	11/30/2022	12:30	INV	Composite	Composite	1	X	X	X
024	RG_MIDER_INV-2_2022-12_N ✓	TA	N	11/30/2022	13:30	INV	Composite	Composite	1	X	X	X
025	RG_MIDER_INV-3_2022-12_N ✓	TA	N	11/30/2022	14:30	INV	Composite	Composite	1	X	X	X
026	RG_M13_INV-1_2022-12_N ✓	TA	N	11/30/2022	11:15	INV	Composite	Composite	1	X	X	X
027	RG_M13_INV-2_2022-12_N ✓	TA	N	11/30/2022	11:20	INV	Composite	Composite	1	X	X	X
028	RG_M13_INV-3_2022-12_N ✓	TA	N	11/30/2022	11:25	INV	Composite	Composite	1	X	X	X

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS

RELINQUISHED BY/AFFILIATION: Robin Valleau/Minnow

DATE/TIME

December 2, 2022

ACCEPTED BY/AFFILIATION

Alex wide

DATE/TIME

06 Dec 2022 / 09:29

(Project #: 2022-444)

SERVICE REQUEST (rush - subject to availability)

Regular (default)
 Priority (2-3 business days) - 50% surcharge
 Emergency (1 Business Day) - 100% surcharge
 For Emergency < 1 Day, ASAP or Weekend - Contact ALS

Sampler's Name: Hillary Quinn-Austin

Mobile #: 613-620-3778

Date/Time: December 2, 2022

HLQA

Teck

Per 4 5
602-06-DEC-2022

RUSH!

COC ID: **EVO_LAEMP_DEC**

TURNAROUND TIME:

OTHER INFO

PROJECT/CLIENT INFO		LABORATORY		OTHER INFO							
Facility Name / Job#	Regional effects program	Lab Name	Teck/Analytics Inc.	Report Format / Distribution	Excel PDF EDD						
Project Manager	Mike Pope	Lab Contact	Jennie Christensen	Email 1:	mike.pope@teck.com X X						
Email	mike.pope@teck.com	Email	jennie.christensen@trschannalyns	Email 2:	jessica.riz@teck.com X X						
Address	421 Pine Avenue	Address	207-1753 Sean Heights	Email 3:	teckcan@teck.com X X						
City	Sparwood	City	Samichton	Email 4:	Agua-sti-01@teck.com X X						
Postal Code	V0B 2G0	Postal Code	V8M 0B3	Email 5:	robin.valleau@minnow.ca X X						
Province	BC	Province	BC	Email 6:	niky.carr@trschannalyns.ca X X						
Country	Canada	Country	Canada	PO number	VPO00847031						
Phone Number	250-425-8202	Phone Number									
SAMPLE DETAILS											
Sample ID	Sample Location (sys loc code)	Field Matrix	Hazardous Material (Yes/No)	Time (24hr)	Tissue type	Tissue Species	Sample Structure	Number of Containers	Metals in Blot by CRC (CPMS wet and dry)	Necery in Blot by CVAS (wet, dry & routine)	Moisture Content by Gravimetry
029	RG_ERCKUC_INV-1_2022-12_N ✓	TA	N	11/30/2022	INV	Composite	Composite	1	X	X	X
030	RG_ERCKUC_INV-2_2022-12_N ✓	TA	N	11/30/2022	INV	Composite	Composite	1	X	X	X
031	RG_ERCKUC_INV-3_2022-12_N ✓	TA	N	11/30/2022	INV	Composite	Composite	1	X	X	X
032	RG_ERCK_INV-1_2022-12_N ✓	TA	N	11/30/2022	INV	Composite	Composite	1	X	X	X
033	RG_ERCK_INV-2_2022-12_N ✓	TA	N	11/30/2022	INV	Composite	Composite	1	X	X	X
034	RG_ERCK_INV-3_2022-12_N ✓	TA	N	11/30/2022	INV	Composite	Composite	1	X	X	X
035	RG_BOCK_INV-1_2022-12_N ✓	TA	N	11/29/2022	INV	Composite	Composite	1	X	X	X
036	RG_GATEDP_INVOL1_2022-12_N ✓	TA	N	11/29/2022	INV	Composite	Composite	1	X	X	X
037	RG_GATEDP_COMPOLI1_2022-12_N ✓	TA	N	11/29/2022	INV	Composite	Composite	1	X	X	X
038	RG_GATEDP_COMPOLI1_2022-12_N ✓	TA	N	11/29/2022	INV	Composite	Composite	1	X	X	X
ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS											
			RELINQUISHED BY/AFFILIATION								
			December 2, 2022								
			Robin Valleau/Minnow								
			ACCEPTED BY/AFFILIATION								
			December 2, 2022								
			Alex 602.06								
			DATE/TIME								
			06 Dec 2022 / 08:31								
SERVICE REQUEST (rush - subject to availability)											
Regular (default) X											
Priority (2-3 business days) - 50% surcharge											
Emergency (1 Business Day) - 100% surcharge											
For Emergency <1 Day, ASAP or Weekend - Contact ALS											
Hillary Quinn-Austin		Mobile #		613-620-3778							
Samplers Name		Date/Time		December 2, 2022							
Samplers Signature		Date/Time		December 2, 2022							

(Project #. 2022-444)

AAA

60106 Dec 2022

COC ID: **EVO_LAEMP_DEC**

TURNAROUND TIME:

RUSH!

PROJECT/CLIENT INFO

Facility Name / Job# Regional effects program
 Project Manager Mike Pope
 Email mike.pope@teck.com
 Address 421 Pine Avenue

LABORATORY

Lab Name TrichAnalytics Inc.
 Lab Contact Jennie Christensen
 Email jennie.christensen@trichanalytics.com
 Address 207-1753 Scan Heights

OTHER INFO

Report Format / Distribution
 Email 1: mike.pope@teck.com
 Email 2: jessica.rtz@teck.com
 Email 3: teckcoal@equisonline.com
 Email 4: AquaSciLab@teck.com
 Email 5: robin.valleau@minnow.ca
 Email 6: hiliary.quinn-austin@minnow.ca
 PO number **VPO00847031**

PROVINCE/COUNTRY

Province BC
 Country Canada

PROVINCE/COUNTRY

Province BC
 Country Canada

POSTAL CODE

V0B 2G0

POSTAL CODE

V8M 0B3

PHONE NUMBER

250-425-8202

ANALYSIS REQUESTED

Number of Containers
 Metals in Biota by CRC
 Mercury in Biota by CVAAS
 (wet, dry & routine)
 Moisture Content by Gravimetry

FILE

PRESEV.

HAZARDOUS MATERIAL (Yes/No)

N

DATE

11/30/2022

TIME (24hr)

14:00

TISSUE TYPE

INV

TISSUE SPECIES

Composite

SAMPLE STRUCTURE

Composite

DATE/TIME

December 2, 2022

ACCEPTED BY/AFFILIATION

Alex Wade

RELINQUISHED BY/AFFILIATION

Robin Valleau/Minnow

DATE/TIME

December 2, 2022

DATE/TIME

06 Dec 2022 / 09:33

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS

Rec'd 3 extra samples not on COC:
 RG-MID80-INV-1-2022-12-N } Containers empty - no sample.
 RG-MID80-INV-2-2022-12-N }
 RG-MID80-INV-3-2022-12-N }
 Dec 06 Dec 2022

SERVICE REQUEST (rush - subject to availability)

Regular (default) X
 Priority (2-3 business days) - 50% surcharge
 Emergency (1 Business Day) - 100% surcharge
 For Emergency <1 Day, ASAP or Weekend - Contact ALS

MOBILE #

613-620-3778

DATE/TIME

December 2, 2022

DATE/TIME

December 2, 2022

PROJECT #

2022-444

SAMPLER'S NAME

Hillary Quinn-Austin

SAMPLER'S SIGNATURE

HQA

MOBILE #

613-620-3778

DATE/TIME

December 2, 2022

DATE/TIME

December 2, 2022

PROJECT #

2022-444

SAMPLER'S NAME

Hillary Quinn-Austin

SAMPLER'S SIGNATURE

HQA

MOBILE #

613-620-3778

DATE/TIME

December 2, 2022

DATE/TIME

December 2, 2022

PROJECT #

2022-444

SAMPLER'S NAME

Hillary Quinn-Austin

SAMPLER'S SIGNATURE

HQA

MOBILE #

613-620-3778

DATE/TIME

December 2, 2022

DATE/TIME

December 2, 2022

PROJECT #

2022-444

SAMPLER'S NAME

Hillary Quinn-Austin

SAMPLER'S SIGNATURE

HQA

MOBILE #

613-620-3778

DATE/TIME

December 2, 2022

DATE/TIME

December 2, 2022

PROJECT #

2022-444

SAMPLER'S NAME

Hillary Quinn-Austin

SAMPLER'S SIGNATURE

HQA

MOBILE #

613-620-3778

DATE/TIME

December 2, 2022

DATE/TIME

December 2, 2022

PROJECT #

2022-444

SAMPLER'S NAME

Hillary Quinn-Austin

SAMPLER'S SIGNATURE

HQA

MOBILE #

613-620-3778

DATE/TIME

December 2, 2022

DATE/TIME

December 2, 2022

PROJECT #

2022-444

SAMPLER'S NAME

Hillary Quinn-Austin

SAMPLER'S SIGNATURE

HQA

MOBILE #

613-620-3778

DATE/TIME

December 2, 2022

DATE/TIME

December 2, 2022

PROJECT #

2022-444

SAMPLER'S NAME

Hillary Quinn-Austin

SAMPLER'S SIGNATURE

HQA

MOBILE #

613-620-3778

DATE/TIME

December 2, 2022

DATE/TIME

December 2, 2022

PROJECT #

2022-444

SAMPLER'S NAME

Hillary Quinn-Austin

SAMPLER'S SIGNATURE

HQA

MOBILE #

613-620-3778

DATE/TIME

December 2, 2022

DATE/TIME

December 2, 2022

PROJECT #

2022-444

SAMPLER'S NAME

Hillary Quinn-Austin

SAMPLER'S SIGNATURE

HQA

MOBILE #

613-620-3778

DATE/TIME

December 2, 2022

DATE/TIME

December 2, 2022

PROJECT #

2022-444

SAMPLER'S NAME

Hillary Quinn-Austin

SAMPLER'S SIGNATURE

HQA

MOBILE #

613-620-3778

DATE/TIME

December 2, 2022

DATE/TIME

December 2, 2022

PROJECT #

2022-444

SAMPLER'S NAME

Hillary Quinn-Austin

SAMPLER'S SIGNATURE

HQA

MOBILE #

613-620-3778

DATE/TIME

December 2, 2022

DATE/TIME

December 2, 2022

PROJECT #

2022-444

SAMPLER'S NAME

Hillary Quinn-Austin

SAMPLER'S SIGNATURE

HQA

MOBILE #

613-620-3778

DATE/TIME

December 2, 2022

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BENTHIC COMMUNITY

Cordillera Report

Methods and QC Report 2023

Project ID: EVO LAEMP (22-12)



Client: Minnow Environmental

Prepared by:

Cordillera Consulting Inc.

Summerland, BC

© 2023

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Table of Contents

Sample Reception	3
Sample Sorting.....	4
Sorting Quality Control - Sorting Efficiency.....	5
Sorting Quality Control - Sub-Sampling QC.....	6
Taxonomic Effort	9
Taxonomists	9
Taxonomic QC.....	10
Error Summary.....	11
Error Rationale.....	11
References	15
Taxonomic Keys	15

Sample Reception

On September 29, 2022, Cordillera Consulting received 32 benthic samples from Minnow Environmental. When samples arrived to Cordillera Consulting, exterior packaging was initially inspected for damage or wet spots that would have indicated damage to the interior containers.

Samples were logged into a proprietary software database (INSTAR1) where the clients assigned sample name was recorded along with a Cordillera Consulting (CC) number for cross-reference. Each sample was checked to ensure that all sites and replicates recorded on field sheets or packing lists were delivered intact and with adequate preservative. Any missing, mislabelled or extra samples were reported to the client immediately to confirm the total numbers and correct names on the sample jars. The client representative was notified of the arrival of the shipment and provided a sample inventory once intake was completed.

See table below for sample inventory:

Table 1: Summary of sample information including Cordillera Consulting (CC) number

Sample	CC#	Date	Size	# of Jars
RG_BOCK_BIC-1_2022-09-15_N	CC231066	9/15/2022	400µM	2
RG_BOCK_BIC-2_2022-09-15_N	CC231067	9/15/2022	400µM	3
RG_BOCK_BIC-3_2022-09-15_N	CC231068	9/15/2022	400µM	3
RG_ERCK_BIC-1_2022-09-14_N	CC231069	9/14/2022	400µM	8
RG_GATE_BIC-1_2022-09-15_N	CC231070	9/15/2022	400µM	3
RG_GATE_BIC-2_2022-09-15_N	CC231071	9/15/2022	400µM	1
RG_MI3_BIC-1_2022-09-12_N	CC231072	9/12/2022	400µM	1
RG_MI3_BIC-2_2022-09-12_N	CC231073	9/12/2022	400µM	1
RG_MI3_BIC-3_2022-09-12_N	CC231074	9/12/2022	400µM	1
RG_MIDBO_BIC-1_2022-09-13_N	CC231075	9/13/2022	400µM	1
RG_MIDBO_BIC-2_2022-09-13_N	CC231076	9/13/2022	400µM	1
RG_MIDBO_BIC-3_2022-09-13_N	CC231077	9/13/2022	400µM	1
RG_MIDER_BIC-1_2022-09-13_N	CC231078	9/13/2022	400µM	1
RG_MIDER_BIC-2_2022-09-13_N	CC231079	9/13/2022	400µM	1
RG_MIDER_BIC-3_2022-09-13_N	CC231080	9/13/2022	400µM	1
RG_ALUSM_BIC-1_2022-09-18_N	CC231081	9/18/2022	400µM	1
RG_ALUSM_BIC-2_2022-09-18_N	CC231082	9/18/2022	400µM	1
RG_ALUSM_BIC-3_2022-09-18_N	CC231083	9/18/2022	400µM	1
RG_MIDGA_BIC-1_2022-09-18_N	CC231084	9/18/2022	400µM	2
RG_MIDGA_BIC-2_2022-09-18_N	CC231085	9/18/2022	400µM	1
RG_MIDGA_BIC-3_2022-09-18_N	CC231086	9/18/2022	400µM	1
RG_MICOMP_BIC-1_2022-09-18_N	CC231087	9/18/2022	400µM	2
RG_MICOMP_BIC-2_2022-09-18_N	CC231088	9/18/2022	400µM	1
RG_MICOMP_BIC-3_2022-09-18_N	CC231089	9/18/2022	400µM	2
RG_MICOMP_BIC-4_2022-09-18_N	CC231090	9/18/2022	400µM	2
RG_MICOMP_BIC-5_2022-09-18_N	CC231091	9/18/2022	400µM	1
RG_ERCKUT_BIC-1_2022-09-16_N	CC231092	9/16/2022	400µM	4

RG_ERCKUT_BIC-2_2022-09-16_N	CC231093	9/16/2022	400µM	3
RG_ERCKUT_BIC-3_2022-09-16_N	CC231094	9/16/2022	400µM	5
RG_ERCKDT_BIC-1_2022-09-19_N	CC231095	9/19/2022	400µM	12
RG_ERCKDT_BIC-2_2022-09-19_N	CC231096	9/19/2022	400µM	17
RG_ERCKDT_BIC-3_2022-09-19_N	CC231097	9/19/2022	400µM	8

Sample Sorting

- Using a gridded Petri dish, fine forceps and a low power stereo-microscope (Olympus, Nikon, Leica) the sorting technicians removed the invertebrates and sorted them into family/orders.
- The sorting technician kept a running tally of total numbers excluding organisms from Porifera, Nemata, Platyhelminthes, Ostracoda, Copepoda, Cladocera and terrestrial drop-ins such as aphids. These organisms were marked for their presence (given a value of 1) only and left in the sample. They were not included towards the 300-organism subsample count.
- Where specimens are broken or damaged, only heads were counted.
- Subsampling was conducted with the use of a Marchant Box.
- When using the Marchant box, cells were extracted at the same time in the order indicated by a random number table. If the 300th organism was found part way into sorting a cell then the balance of that cell was sorted. If the organism count had not reached 300 by the 50th cell then the entire sample was sorted.
- The total number of cells sorted and the number of organisms removed were recorded manually on a bench sheet and then recorded into INSTAR1
- Organisms were stored in vials containing 80% ethanol and an interior label indicating the site names, date of sampling, site code numbers and portion subsampled. This information was also recorded on the laboratory bench sheet and on INSTAR1.
- The sorted portion of the debris was preserved and labeled separately from the unsorted portion and was tested for sorting efficiency (Sorting Quality Control – Sorting Efficiency). The unsorted portion was also labeled and preserved in separate jars.

Percent sub-sampled and total countable invertebrates pulled from the samples were summarized in the table below.

Table 2: Percent sub-sample and invertebrate count for each sample

Sample	Date	CC#	400 micron fraction	# Invertebrates
			% Sampled	
RG_BOCK_BIC-1_2022-09-15_N	15-Sep-22	CC231066	25%	424
RG_BOCK_BIC-2_2022-09-15_N	15-Sep-22	CC231067	5%	356

RG_BOCK_BIC-3_2022-09-15_N	15-Sep-22	CC231068	5%	505
RG_ERCK_BIC-1_2022-09-14_N	14-Sep-22	CC231069	5%	994
RG_GATE_BIC-1_2022-09-15_N	15-Sep-22	CC231070	5%	579
RG_GATE_BIC-2_2022-09-15_N	15-Sep-22	CC231071	5%	403
RG_MI3_BIC-1_2022-09-12_N	12-Sep-22	CC231072	6%	328
RG_MI3_BIC-2_2022-09-12_N	12-Sep-22	CC231073	7%	339
RG_MI3_BIC-3_2022-09-12_N	12-Sep-22	CC231074	7%	355
RG_MIDBO_BIC-1_2022-09-13_N	13-Sep-22	CC231075	7%	362
RG_MIDBO_BIC-2_2022-09-13_N	13-Sep-22	CC231076	5%	367
RG_MIDBO_BIC-3_2022-09-13_N	13-Sep-22	CC231077	6%	349
RG_MIDER_BIC-1_2022-09-13_N	13-Sep-22	CC231078	5%	366
RG_MIDER_BIC-2_2022-09-13_N	13-Sep-22	CC231079	5%	323
RG_MIDER_BIC-3_2022-09-13_N	13-Sep-22	CC231080	5%	341
RG_ALUSM_BIC-1_2022-09-18_N	18-Sep-22	CC231081	5%	336
RG_ALUSM_BIC-2_2022-09-18_N	18-Sep-22	CC231082	7%	318
RG_ALUSM_BIC-3_2022-09-18_N	18-Sep-22	CC231083	5%	355
RG_MIDGA_BIC-1_2022-09-18_N	18-Sep-22	CC231084	5%	825
RG_MIDGA_BIC-2_2022-09-18_N	18-Sep-22	CC231085	5%	469
RG_MIDGA_BIC-3_2022-09-18_N	18-Sep-22	CC231086	5%	434
RG_MICOMP_BIC-1_2022-09-18_N	18-Sep-22	CC231087	5%	532
RG_MICOMP_BIC-2_2022-09-18_N	18-Sep-22	CC231088	5%	317
RG_MICOMP_BIC-3_2022-09-18_N	18-Sep-22	CC231089	5%	579
RG_MICOMP_BIC-4_2022-09-18_N	18-Sep-22	CC231090	5%	769
RG_MICOMP_BIC-5_2022-09-18_N	18-Sep-22	CC231091	5%	563
RG_ERCKUT_BIC-1_2022-09-16_N	16-Sep-22	CC231092	5%	414
RG_ERCKUT_BIC-2_2022-09-16_N	16-Sep-22	CC231093	7%	475
RG_ERCKUT_BIC-3_2022-09-16_N	16-Sep-22	CC231094	5%	605
RG_ERCKDT_BIC-1_2022-09-19_N	19-Sep-22	CC231095	50%	581
RG_ERCKDT_BIC-2_2022-09-19_N	19-Sep-22	CC231096	5%	934
RG_ERCKDT_BIC-3_2022-09-19_N	19-Sep-22	CC231097	5%	556

Sorting Quality Control - Sorting Efficiency

As a part of Cordillera's laboratory policy, all projects undergo sorting efficiency checks.

- As sorting progresses, 10% of samples were randomly chosen by senior members of the sorting team for resorting.
- All sorters working on a project had at least 1 sample resorted by another sorter.
- An efficiency of 90 % was expected (95% for CABIN samples).
- If 90/95% efficiency was not met, samples from that sorter were resorted.
- To calculate sorting efficiency the following formula was used:

$$\frac{\#OrganismsMissed}{TotalOrganismsFound} * 100 = \% OM$$

Table 3 Summary of sorting efficiency

	Total from Sample	Percent Efficiency
Site - QC, Sample - QC 1, CC# - CC231072, Percent sampled = 6%, Sieve size = 400		
Chironomidae	1	
Total:	1	328 99.70%

	Total from Sample	Percent Efficiency
Site - QC, Sample - QC 2, CC# - CC231075, Percent sampled = 7%, Sieve size = 400		
Ephemerellidae	3	
Chironomidae	5	
Empididae	1	
Heptageniidae	1	
Trichoptera	1	
Total:	11	362 96.96%

	Total from Sample	Percent Efficiency
Site - QC, Sample - QC 3, CC# - CC231082, Percent sampled = 7%, Sieve size = 400		
Ephemerellidae	1	
Psychodidae	1	
Total:	2	318 99.37%

Sorting Quality Control - Sub-Sampling QC

Certain Provincial and Mining projects require additional sorting checks in the form of sub-sampling QC, (Environmental Effects Monitoring (EEM) protocol). This ensured that any fraction of the total sample that was examined was actually an accurate

representation of the number of total organisms. Organisms from the additional sub-samples were not identified; rather total organism count only was compared.

Sub-Sampling efficiency was measured on 10% of the number of sub-sampled samples in the project. Ex. In a project where 50 of 100 total samples were processed through subsampling using a Marchant box, then 10% of 50; or 5 samples were used for sub sampling efficiency.

Sub-Sampling efficiency was performed by fractioning the entire sample into sub-sample percentages. On each sub-sampled portion, a total organism count was recorded and compared to the rest of the sub-samples. In order to pass, all fractions were required to be within 20% of total organism count.

Example: If 300 organisms are found in 10% of the sample, the sorter will continue to sample in 10% fractions until the entire sample is separated. They will then count the total number of organisms in each of the 10 fractions of 10% and compare the organism count.

When divergence is >20% the sorting manager examines for the source of the problem and takes steps to correct it. With the Marchant box, the problem typically rested with how the box is flipped back to the upright position. For this reason, subsampling was performed by experienced employees only. Another common source of error would be the type of debris in the sample. Samples with algae or heavy with periphyton have a higher incident of failure due to clumping than clear samples.

Table 4 Summary of Sub Sample efficiency

Station ID		Organisms in Subsample																			Sorter		Actual Total	Precision		Accuracy		
CC#	Sample Name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	By		Time	Percent Range		Min	Max
231066	RG_BOCK_BIC-1_2022-09-15_N	442	446	452	437																	TS	620	1777	0.90	3.32	0.39	1.74
231078	RG_MIDER_BIC-1_2022-09-13_N	372	361	380	376	369																VWA	200	1858	0.81	5.00	0.11	2.85
231083	RG_ALUSM_BIC-3_2022-09-18_N	356	330	299	332	338																AR	280	1655	0.60	16.01	0.30	9.67

Taxonomic Effort

The next procedure was the identification to genus-species level where possible of all the organisms in the sample.

- Identifications were made at the genus/species level for all insect organisms found including Chironomidae (Based on CABIN protocol).
- Non-insect organisms (except those not included in CABIN count) were identified to genus/species where possible and to a minimum of family level with intact and mature specimens.
- The Standard Taxonomic Effort lists compiled by the CABIN manual¹, SAFIT², and PNAMP³ were used as a guide line for what level of identification to achieve where the condition and maturity of the organism enabled.
- Organisms from the same families/order were kept in separate vials with 80% ethanol and an interior label of printed laser paper.
- Chironomidae was identified to genus/species level where possible and was aided by slide mounts. CMC-10 was used to clear and mount the slide.
- Oligochaetes was identified to family/genus level with the aid of slide mounts. CMC-10 was used to clear and mount the slide.
- Other Annelida (leeches, polychaetes) were identified to the family/genus/species level with undamaged, mature specimens.
- Mollusca was identified to family and genus/species where possible
- Decapoda, Amphipoda and Isopoda were identified at family/genus/species level where possible.
- Bryozoans and Nemata remained at the phylum level
- Hydrachnidae and Cnidaria were identified at the family/genus level where possible.
- When requested, reference collections were made containing at least one individual from each taxa listed. Organisms represented will have been identified to the lowest practical level.
- Reference collection specimens were stored in 55 mm glass vials with screw-cap lids with polyseal inserts (museum quality). They were labeled with taxa name, site code, date identified and taxonomist name. The same information was applied to labels on the slide mounts.

Taxonomists

The taxonomists for this project were certified by the Society of Freshwater Science (SFS) Taxonomic Certification Program at level 2 which is the required certification for CABIN projects:

Scott Finlayson: Group 1 General Arthropods (East/West); Group 2 EPT (East/West);
Group 3 Chironomidae (East/West); Group 4 Oligochaeta

Adam Bliss: Group 1 General Arthropods (East/West); Group 2 EPT (East/West); Group 3 Chironomidae

Rita Avery: Group 1 General Arthropods (East/West); Group 2 EPT (East/West)

Taxonomic QC

Taxonomic QC was performed in house by someone other than the original taxonomist.

- Quality control protocol involved complete, blind re-identification and re-enumeration of at least 10% of samples by a second SFS-certified taxonomist.
- Samples for taxonomic quality control were randomly selected and quality control procedures were conducted as the project progresses through the laboratories.
- The second (QC) taxonomist will calculate and record four types of errors:
 1. Misidentification error
 2. Enumeration error
 3. Questionable taxonomic resolution error
 4. Insufficient taxonomic resolution error

The QC coordinator then calculates the following estimates of taxonomic precision.

1. The percent total identification error rate is calculated as:

$$\frac{\text{Sum of incorrect identifications}}{\text{total organisms counted in audit}} * (100)$$

The average total identification error rate of audited samples did not exceed 5%. All samples that exceed a 5% error rate were re-evaluated to determine whether repeated errors or patterns in error contributed.

2. The percent difference in enumeration (PDE) to quantify the consistency of specimen counts.

$$PDE = \frac{|n_1 - n_2|}{n_1 + n_2} \times 100$$

3. The percent taxonomic disagreement (PTD) to quantify the shared precision between two sets of identifications.

$$PTD = \left(1 - \left[\frac{a}{N}\right]\right) \times 100$$

4. Bray Curtis dissimilarity Index to quantify the differences in identifications.

$$BC_{ij} = 1 - \frac{2C_{ij}}{S_j + S_i}$$

Error Summary

All samples report errors within the acceptable limits for CABIN Laboratory methods (less than 5% error).

Table 5 Summary of taxonomic error following QC

Site	Taxa Identified	% Error	PDE	PTD	Bray - Curtis Dissimilarity index
Site - 2022, Sample - RG_BOCK_BIC-2_2022-09-15_N, CC# - CC231067, Percent sampled = 5%, Sieve size = 400	357	0.00	0.14025245	0.56022409	0.00420757
Site - 2022, Sample - RG_MI3_BIC-1_2022-09-12_N, CC# - CC231072, Percent sampled = 6%, Sieve size = 400	326	0.00	0.3058104	0.91463415	0.00611621
Site - 2022, Sample - RG_MICOMP_BIC-2_2022-09-18_N, CC# - CC231088, Percent sampled = 5%, Sieve size = 400	315	0.00	0.3164557	0.94637224	0.00632911

There will always be disagreements between taxonomists regarding the degree of taxonomic resolution in immature specimens and when laboratories make use of different keys for certain groups (Mollusks is an especially disputed group). It is always possible that some taxa found by the original taxonomist were overlooked in QC.

All of the Taxonomic QC samples that were observed passed testing according to the CABIN misidentification protocols. See the tables below for results from taxonomic QC audit.

Error Rationale

Site - 2022, Sample - RG_BOCK_BIC-2_2022-09-15_N, CC# - CC231067, Percent sampled = 5%, Sieve size = 400	Laboratory Count	QC Audit Count	Agreement	Misidentification	Questionable Taxonomic Resolution	Enumeration	Insufficient Taxonomic Resolution	Comments
Aeshna	1	1						
Amphipoda	2	2						

Arrenurus	10	10						
Baetis	1	1						
Bezzia/ Palpomyia	1	1						
Callibaetis	8	8						
Chironomidae	19	19						
Clinocera	3	3						
Coenagrionidae	3	3						
Collembola	1	1						
Corynoneura	4	4						
Dixella	5	5						
Dixella	1	1						
Dixidae	3	3						
Enchytraeus	16	16						
Epeorus	1	1						
Eukiefferiella	1	1						
Fossaria	33	33						
Hyalella	7	7						
Hydroptila	6	6						
Hydroptilidae	6	6						
Lepidoptera	1	1						
Limnephilidae	2	2						
Limnophyes	9	9						
Malenka	1	1						
Meringodixa chalonensis	1	1						
Micropsectra	3	3						
Orthocladus complex	3	3						
Paramerina	59	60	No			X		
Parametriocnemus	4	4						
Pentaneura	2	2						
Simuliidae	1	1						
Simuliidae	1	1						
Simulium	46	47	No			X		
Stratiomyidae	6	6						
Thienemanniella	10	10						
Thienemannimyia group	67	66	No			X		
Trichoptera	7	7						
Trombidiformes	1	1						
Total:	356	357						
						0	3	0

Total:	328	326						
					0	4	0	
% Total Misidentification Rate =	misidentifications	x100 =	0.00	Pass				
	total number							
Site - 2022, Sample - RG_MICOMP_BIC-2_2022-09-18_N, CC# - CC231088, Percent sampled = 5%, Sieve size = 400	Laboratory Count	QC Audit Count	Agreement	Misidentification	Questionable Taxonomic Resolution	Enumeration	Insufficient Taxonomic Resolution	Comments
Ameletus	2	2						
Antocha	2	2						
Apatania	2	2						
Arctopsyche	10	10						
Atherix	3	3						
Atractides	1	1						
Baetidae	1	1						
Baetis	10	11	No			X		
Baetis rhodani group	20	19	No			X		
Brachycentrus americanus	1	1						
Chironomidae	51	50	No			X		
Dicranota	1	1						
Doroneuria	1	1						
Drunella doddsii	3	3						
Ephemerella	4	4						
Ephemerellidae	7	7						
Eukiefferiella	24	24						
Glossosoma	3	3						
Heptageniidae	13	13						
Hexatoma	1	1						
Hydropsychidae	1	1						
Hydroptila	2	2						
Lebertia	3	3						
Micropsectra	1	1						
Nais	7	7						
Orthocladius complex	65	64	No			X		
Pericoma/Telmatoscopus	6	6						
Perlidae	1	1						
Rheocricotopus	1	1						
Rhithrogena	2	2						

Rhyacophila	5	5						
Simulium	2	2						
Sperchon	3	3						
Sweltsa	8	8						
Taeniopterygidae	1	1						
Torrenticola	23	23						
Trichoptera	7	7						
Tvetenia	6	6						
Zapada	6	6						
Zapada cinctipes	6	6						
Zapada oregonensis group	1	1						
Total:	317	315						
					0	4	0	
% Total Misidentification Rate =	misidentifications	x100 =	0.00	Pass				
	total number							

References

¹ McDermott, H., Paull, T., Strachan, S. (May 2014). Laboratory Methods: Processing, Taxonomy, and Quality Control of Benthic Macroinvertebrate Samples, Environment Canada. ISBN: 978-1-100-25417-3

² Southwest Association of Freshwater Invertebrate Taxonomists. (2015). www.safit.org

³ Pacific Northwest Aquatic Monitoring Partnership (Accessed 2015). www.pnamp.org

Taxonomic Keys

Below is a reference list of taxonomic keys utilized by taxonomists at Cordillera Consulting. Cordillera taxonomists routinely seek out new literature to ensure the most accurate identification keys are being utilized. This is not reflective of the exhaustive list of resources that we use for identification. A more complete list of taxonomic resources can be found at Southwest Association of Freshwater Invertebrate Taxonomists. (2015).

http://www.safit.org/Docs/SAFIT_Taxonomic_Literature_Database_1_March_2011.enl

Brook, Arthur R. and Leonard A. Kelton. 1967. Aquatic and semiaquatic Heteroptera of Alberta, Saskatchewan and Manitoba (Hemiptera) Memoirs of the Entomological Society of Canada. No. 51.

Brown HP & White DS (1978) Notes on Separation and Identification of North American Riffle Beetles (Coleoptera: Dryopidea: Elmidae). Entomological News 89 (1&2): 1-13

Clifford, Hugh F. 1991. Aquatic Invertebrates of Alberta. University of Alberta Press Edmonton, Alberta.

- Epler, John. 2001 The Larval Chironomids of North and South Carolina. <http://home.earthlink.net/~johnepler/>
- Epler, John. Identification Manual for the Water Beetles of Florida. <http://home.earthlink.net/~johnepler/>
- Epler, John. Identification Manual for the Aquatic and Semi-aquatic Heteroptera of Florida. <http://home.earthlink.net/~johnepler/>
- Trond Andersen, Peter S. Cranston & John H. Epler (Eds) (2013) Chironomidae of the Holarctic Region: Keys and Diagnoses. Part 1. Larvae. *Insect Systematics and Evolution Supplements* 66: 1-571.
- Jacobus, Luke and Pat Randolph. 2005. Northwest Ephemeroptera Nymphs. Manual from Northwest Biological Assessment Working Group. Moscow Idaho 2005. Not Published.
- Jacobus LM, McCafferty WP (2004) Revisionary Contributions to the Genus *Drunella* (Ephemeroptera : Ephemerellidae). *Journal of the New York Entomological Society* 112: 127-147
- Jacobus LM, McCafferty WP (2003) Revisionary Contributions to North American *Ephemerella* and *Serratella* (Ephemeroptera : Ephemerellidae). *Journal of the New York Entomological Society* 111 (4): 174-193.
- Kathman, R.D., R.O. Brinkhurst. 1999. Guide to the Freshwater Oligochaetes of North America. Aquatic Resources Center, College Grove, Tennessee.
- Larson, D.J., Y. Alarie, R.E. Roughly. 2005. Predaceous Diving Beetles (Coleoptera: Dytiscidae) of the Nearctic Region. NRC-CNRC Research Press. Ottawa.
- Merritt, R.W., K.W. Cummins, M. B. Berg. (eds.). 2007. An introduction to the aquatic insects of North America, 4th. Kendall/Hunt, Dubuque, IA
- Moriyama DK, McCafferty WP (1979) The *Baetis* Larvae of North America (Ephemeroptera: Baetidae). *Transactions of the American Entomological Society* 105: 139-221.
- Needham, James, M. May, M. Westfall Jr. 2000. Dragonflies of North America. Scientific Publishers. Gainesville FL.
- Prescott David, R.C. and Medea M. Curteanu. 2004. Survey of Aquatic Gastropods of Alberta. Species at Risk Report No. 104. ISSN: 1496-7146 (Online Edition)
- Needham, K. 1996. An Identification Guide to the Nymphal Mayflies of British Columbia. Publication #046 Resource Inventory Committee, Government of British Columbia.
- Oliver, Donald R. and Mary E. Roussel. 1983. The Insects and Arachnids of Canada Part 11. The Genera of larval midges of Canada. Biosystematics Research Institute. Ottawa, Ontario. Research Branch, Agriculture Canada. Publication 1746.
- Proctor, H. The 'Top 18' Water Mite Families in Alberta. *Zoology* 351. University of Alberta, Edmonton, Alberta.
- Rogers, D.C. and M. Hill, 2008. Key to the Freshwater Malacostraca (Crustacea) of the mid-Atlantic Region. EPA-230-R-08-017. US Environmental Protection Agency, Office of Environmental Information, Washington, DC.
- Stewart, Kenneth W. and Bill Stark. 2002. The Nymphs of North American Stonefly Genera (Plecoptera). The Caddis Press. Columbus Ohio.
- Stewart, Kenneth W. and Mark W. Oswood. 2006 The Stoneflies (Plecoptera) of Alaska and Western Canada. The Caddis Press.

Stonedahl, Gary and John D. Lattin. 1986. The Corixidae of Oregon and Washington (Hemiptera: Heteroptera). Technical Bulletin 150. Oregon State University, Corvallis Oregon.

Thorpe, J. H. and A. P. Covich [Eds.] 1991. Ecology and classification of North American freshwater invertebrates. Academic Press, San Diego.

Tinerella, Paul P. and Ralph W. Gunderson. 2005. The Waterboatmen (Insecta: Heteroptera: Corixidae) of Minisota. Publication No. 23 Dept. Of Entomology, North Dakota State University, Fargo, North Dakota, USA.

Weiderholm, Torgny (Ed.) 1983. The larvae of Chironomidae (Diptera) of the Holartic region. Entomologica Scaninavica. Supplement No. 19.

Westfall, Minter J. Jr. and May, Michael L. 1996. Damselflies of North America. Scientific Publishers, Gainesville, FL.

Wiggins, Glenn B. 1998. Larvae of the North American Caddisfly Genera (Tricoptera) 2nd ed. University of Toronto Press. Toronto Ontario.